WAR DEPARTMENT.
OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY OF THE UNITED STATES.

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MONTHLY SUMMARY AND REVIEW

OF

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INTERNATIONAL METEOROLOGICAL OBSERVATIONS

FOR THE YEAR 1887.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

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WASHINGTON, D. C.

WAR DEPARTMENT.

OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY OF THE UNITED STATES.

SUMMARY AND REVIEW

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS

FOR THE MONTH OF JANUARY, 1887.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

A. W. GREELY,

BRIGADIER GENERAL, CHIEF SIGNAL OFFICER OF THE ARMY.

PRINTED FOR EXCHANGE WITH CO-OPERATING OBSERVERS.

WASHINGTON, D. C.

FEBRUARY, 1888.

List of merchant marine steam and sailing vessels from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of January, 1887.

Name of vessel.	Captain.
ALLAN LINE.	
Br. s. s. Circassian	Capt. W. Richardson.
Hibernian	J. Brown.
Manitoban	W. Dalziel.
Nova Scotian	R. H. Hughes.
Sardinian	W. H. Smith.
Scandinavian	John Park.
AMERICAN LINE.	
Br. s. s. British King	John Kelly.
British Prince	Samuel Nowell.
British Princess	E. H. Freeth.
Illinois	G. H. Dodge.
Indiana	R. W. Sargent.
Lord Clive	P. Urquhart.
ANCHOR LINE.	
Br. s. s. Bolivia	J. J. Small.
British Crown	Archibald Smith.
British Queen	R. Wills.
Caledonia	R. T. Garvie.
Circassia	A. Campbell.
Devonia	Hugh Young.
Dorian	J. McKeague.
Ethiopia	John Wilson.
Olympia	Isaac Swain.
ANGLO-AUSTRALIAN STEAMSHIP CO.	
Br. s. s. Port Phillip	Geo. Dulling.
ATLAS LINE.	
Br. s. s. Alvena	MacKay.
Andes	T. M. McKnight.
Athos	H. Low.
BOOTH'S S. S. CO. (limited).	
Br. s. s. Augustine	R. Harwood.
Ambrose	E. Bisson.
BRISTOL CITY LINE.	
Br. s. s. Brooklyn City	W. Fitt.
Llandaff City	T. H. Gore.
CLYDE STEAMSHIP COMPANY.	
Am. s. s. Yemassee	S. C. Platt.
CROMWELL LINE.	
Am. s. s. Louisiana	E. V. Gager.
CUNARD LINE.	
Br. s. s. Aurania	W. H. P. Hains.
Catalonia	E. Wylie.
Cephalonia	Henry Walker.
Gallia	M. Murphy.
Samaria	T. Roberts.
Umbria	W. McMickan.
EDWARD CARR'S S. S. LINE.	
Ger. s. s. Australia	G. Franck.
Polaria	Johannes Schade.
Polynesia	A. Kuhn.
Taormina	H. W. Franck.
FURNESS LINE.	
Br. s. s. Borderer	F. Manley.
Durham City	D. D. Galbraith.
Stockholm City	K. Doyle.
Ripon City	J. Jenkins.
GENERAL TRANS-ATLANTIC S.S.CO.	
Fr. s. s. La Bourgogne	Franguel.
La Bretagne	M. de Jousselin.
La Champagne	E. Traub.
La Gascogne	Santelli.
La Normandie	G. de Kersabiec.
GREAT WESTERN STEAMSHIP LINE.	
Br. s. s. Dorset	Ch. Offi. E. Crossmann.
Warwick	Capt. W. Janes.
GUION LINE.	
Br. s. s. Alaska	Geo. S. Murray.
Arizona	S. Brooks.
Nevada	John Douglas.
Wisconsin	Edward Bentley.
Wyoming	C. L. Rigby.
HAMBURG-AMERICAN LINE.	
Ger. s. s. Gothia	C. Kordell.
Moravia	O. Pezoldt.
Rhaetia	H. Vogelgesang.
Slavonia	H. Schmidt.
Suevia	C. Ludwig.
Wieland	C. Hebich.
HARRISON LINE.	
Br. s. s. Counsellor	Capt. Wm. Lang.
INMAN LINE.	
Br. s. s. City of Berlin	Francis S. Land.
City of Chicago	Fred. Watkins.
City of Chester	A. Lewis.
JOHNSTON LINE.	
Br. s. s. Nessmore	John Inch.
LAMPORT & HOLT'S STEAMSHIP CO.	
Br. s. s. Bessel	C. J. Watson.
Herschel	G. Braithwaite.
Mozart	W. Spratly.
Olbers	Jas Clark.
Nasmyth	T. G. Farrell.
LEYLAND LINE.	
Br. s. s. Bavarian	R. Leask.
Istrian	T. H. Fox.
Virginian	M. Fitt.
MALLORY LINE.	
Am. s. s. Lampassas	M. B. Crowell.
Rio Grande	J. F. Lewis.
MEDITERRANEAN & NEW YORK STEAMSHIP COMPANY.	
Br. s. s. Pontiac	H. M. Brown.
MISSISSIPPI & DOMINION S. S. CO.	
Br. s. s. Ontario	W. P. Couch.
Sarnia	Joseph Gibson.
Toronto	Jas. McAuley.
Vancouver	C. J. Lindall.
MONARCH LINE.	
Br. s. s. Assyrian Monarch	John Sparks.
Persian Monarch	John Harrison.
MORGAN LINE.	
Am. s. s. Eureka	R. B. Quick.
NATIONAL LINE.	
Br. s. s. Canada	Thos. Foote.
Denmark	R. S. Rigby.
Egypt	J. Sumner.
England	T. P. Heeley.
Erin	J. Robinson.
France	A. D. Hadley.
Greece	A. J. Jeffrey.
Helvetia	G. Cochrane.
Spain	W. A. Griffiths.
NAVIGAZIONE GENERALE ITALIANA.	
It. s. s. Gottardo	D. Viola.
Indipendente	P. Pirandello.
Polcevera	Brofferio.
NEW YORK AND CUBA MAIL STEAMSHIP COMPANY.	
Am. s. s. Cienfuegos	F. M. Faircloth.
NEW YORK, HAVANA AND MEXICAN MAIL S. S. CO.	
Am. s. s. City of Alexandria	J. W. Reynolds.
City of Washington	W. M. Rittig.
NORTH GERMAN LLOYD S. S. CO.	
Ger. s. s. Aller	F. Hamelmann.
Donau	H. Supmer.
Eider	H. Helmers.
Hohenstaufen	A. Kohlmann.
Hermann	A. Kohlmann.
Neckar	H. Baur.
Rhein	L. Jahns.
Saale	H. Reichter.
Trave	W. Willigerod.
Werra	Richard Bussins.
Weser	H. Bruns.
OCEAN STEAMSHIP COMPANY.	
Am. s. s. City of Savannah	H. C. Daggett.
City of Augusta	J. W. Catherine.
OCEANIC STEAMSHIP COMPANY.	
Am. s. s. Alameda	G. H. Morse.
Mariposa	H. M. Hayward.
Oceanic	H. Davidson.
OLD DOMINION STEAMSHIP CO.	
Am. s. s. Manhattan	Frank Stevens.
OREGON RAILWAY & NAVIGATION COMPANY.	
Am. s. s. Columbia	Capt. Fred Bolles.
Oregon	E. Polemann.
ORIENTAL STEAMSHIP COMPANY.	
Br. s. s. Auretta	G. W. Reed.
PACIFIC COAST STEAMSHIP CO.	
Am. s. s. City of Chester	J. Wallace.
Orizaba	John N. Ingalls.
PACIFIC MAIL STEAMSHIP CO.	
Am. s. s. Acapulco	C. S. Coye.
City of New York	Robt. R. Searle.
City of Peking	H. C. Dearborn.
City of Rio de Janeiro	Wm. B. Cobb.
City of Sydney	Daniel Friele.
Colon	Chas. C. Lima.
Newport	W. G. Shackford.
San Blas	T. Chapman.
San José	D S. Austin.
PYMAN LINE.	
Br. s. s. Netley Abbey	H. N. Vyvyan.
QUEBEC STEAMSHIP COMPANY.	
Br. s. s. Muriel	G. S. Locke.
Orinoco	J. S. Garvin.
RED "D" LINE.	
Am. s. s. Philadelphia	Sam. Hess.
Valencia	W. Woodrick.
RED STAR LINE.	
Belg. s. s. Belgenland	W. A. Beynon.
Nederland	A. J. Griffin.
Noordland	H. E. Nickels.
Pennland	Rud. Weyer.
Rhynland	J. C. Jamison.
Switzerland	H. Buschmann.
Westernland	Com. W. G. Randle.
Waesland	Capt. J. Ueberweg.
ROTTERDAM LINE.	
Dtch s. s. Leerdam	P. Slierendregt.
Rotterdam	G. J. Vis.
P. Caland	T. H. Bonjer.
W. A. Scholten	G. Bakker.
Zaandam	H. v. d. Zee.
ROYAL W. I. MAIL S. S. CO.	
Dtch. s. s. Oranje Nassau	J. A. LaCrooy.
ROYAL MAIL STEAMSHIP CO.	
Am. s.s. City of Dallas	C. W. Reed.
STATE LINE.	
Br. s. s. State of Georgia	G. Moodie.
State of Pennsylvania	A. J. A. Mann.
State of Nebraska	A. G. Braes.
State of Nevada	J. A. Stewart.
THINGVALLA LINE.	
Dan. s. s. Geiser	C. W. Moeller.
Island	W. Skjodt.
Thingvalla	S. T. H. Laub.
TWIN SCREW LINE.	
Br. s. s. Richmond Hill	A. Hyde.
Tower Hill	F. Archer, R.N.R.
UNION LINE.	
Ger. s. s. Amalfi	J. Bähr,
Marsala	
Devonshire	N. Maass.
Polynesia	A. Kuhn.
WARREN LINE.	
Br. s. s. Iowa	Samuel Walters.
Kansas	W. Gleig.
Norseman	E. Maddox.
WATTS, WARD LINE.	
Br. s. s. Camden	S. R. Chandler.
WHITE CROSS LINE.	
Belg. s. s. De Reuter	J. J. Brarens.
Jan Breydel	H. Meyer.
Pieter de Connick	E. Smit.
WHITE STAR LINE.	
Br. s. s. Adriatic	H. Parsell.

SUMMARY AND REVIEW OF INTERNATIONAL METEOROLOGICAL OBSERVATIONS, JANUARY, 1887.

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for January, 1887. Mean Barometer. Actual Inch.	Actual Mill.	Reduced. Inch.	Reduced. Mill.	Mean temperature. Fah.	Cent.	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
AUSTRALIAN.	° ′	° ′																								
Adelaide	S. 34 57	E. 138 35	9.14 p.m.	140	43	29.74	755.4	29.87	758.7	71.2	21.8	48	.....	1	.....	4	13	10	2	1	.....	7360	11845	3	0.69	17.5
Hobart Town	S. 42 53	E. 147 20	9.00 p.m.	190	58	29.67c	753.6c	29.86c	758.4c	c61.0	c16.1	89c	c	1	1	3	6	8	5	2	2	.....	.....	7c	3.43b	b87.1
Melbourne	S. 37 50	E. 144 58	9.40 p.m.	91	28	29.85	758.2	29.93	760.2	67.5	19.7	73	1	1	.....	3	11	10	5	.....	.....	.....	.....	5	1.11	28.2
AUSTRIAN.																										
Agram	N. 45 48	E. 15 53	1.04 p.m.	535	163	29.62	752.3	30.20	767.0	32.7	0.4	76	1	.....	1	3	.....	2	4	17	3	.....	.....	6	0.87	22.2
Cracow	N. 50 04	E. 20 00	1.20 p.m.	722	220	29.39	746.6	30.22	767.6	28.6	— 0.9	84	5	2	7	6	.....	1	3	7	.....	.....	.....	7	0.69	17.6
Eperies	N. 48 58	E. 21 15	1.25 p.m.	853	260	29.25	743.0	30.19	766.8	28.0	— 2.2	84	2	.....	.....	.....	2	.....	.....	.....	27	.....	.....	6	2.34	59.4
Kremsmunster	N. 48 03	E. 14 08	0.57 p.m.	1260	384	28.74	730.1	30.20	767.1	24.6	— 4.1	88	.....	.....	2	.....	.....	.....	3	4	22	.....	.....	5	0.47	12.0
Lemberg	N. 49 50	E. 24 00	1.36 p.m.	978	298	29.15	740.4	30.20	767.1	31.3	— 0.4	76	.....	10	.....	4	7	6	.....	4	.....	.....	.....	7	0.48	12.3
Pola	N. 44 52	E. 13 51	0.55 p.m.	105	32	29.97	761.1	30.08	764.0	45.9	7.7	68	3	3	7	.....	1	.....	7	7	3	.....	.....	3	2.10	53.2
Szathmar	N. 47 46	E. 22 53	1.32 p.m.	430	131	29.72	755.0	30.22	767.6	35.1	1.7	80	5	1	5	.....	3	10	1	6	.....	.....	.....	5	1.07	27.1
Szegedin	N. 46 15	E. 20 10	1.21 p.m.	315	96	29.83	757.6	30.13	765.3	34.9	1.6	82	5	4	5	2	3	4	3	4	1	.....	.....	5	1.56	39.5
Trieste	N. 45 39	E. 13 46	0.55 p.m.	85	26	30.02	762.4	30.11	764.9	43.0	6.1	58	.....	.....	2	2	.....	2	7	11	7	.....	.....	5	1.29	32.8
Vienna	N. 48 12	E. 16 22	1.05 p.m.	663	202	29.44	747 7	30.22	767.6	25.9	— 3.4	87	4	4	5	1	.....	7	.....	2	8	.....	.....	7	0.39	9.8
BRAZILIAN.																										
Rio de Janeiro	S. 22 54	W. 43 10	9.07 a.m.	217	66	29.74	755.6	29.92	760.0	79.7	26.5	76	3	10	....	1	.....	4	4	5	4	.....	.....	7	9.20	233.8
BRITISH.																										
Aberdeen	N. 57 10	W. 2 06	11.52 a.m.	89	27	29.68	753.9	29.81	757.2	40.3	4.6	74	.....	.....	4	4	13	7	1	1	.....	.....	.....	7	2.79	70.9
Bidston	N. 53 24	W. 3 04	11.48 a.m.	197	60	29.78	756.4	29.95	760.7	39.1	3.9	82	1	1	7	4	3	12	2	1	.....	.....	.....	7	.....	.....
Bradford	N. 53 48	W. 1 47	11.53 a.m.	366	112	29.52	749.8	29.94	760.5	39.1	3.9	80	2	5	5	6	7	3	2	1	.....	.....	.....	8	1.72	43.7
Bridgetown	N. 13 04	W. 59 37	8.02 a.m.	28	9	29.91	759.7	29.87	758.7	81.4	27.4	74	.....	.....	.....	.....	.....	.....	1	30	.....	.....	.....	4	.....	.....
Chatham	N. 51 25	E. 0 33	0.02 p.m.	160	49	29.81	757.2	30.01	762.2	37.6	3.1	81	.....	1	4	2	.....	.....	1	.....	23	.....	.....	8	.....	.....
Falmouth	N. 50 09	W. 5 04	11.40 a.m.	183	56	29.81	757.2	30.03	762.7	43.8	6.6	84	3	5	4	4	4	9	1	1	.....	.....	.....	8	.....	.....
Fort Napier	S. 30	E. 31	2.04 p.m.	2294	699	27.59	700.8	29.78	756.4	77.4	25.2	65	6	1	.....	.....	4	6	7	7	.....	.....	.....	5	.....	.....
Galway	N. 53 15	W. 9 03	11.24 a.m.	32	10	29.74	755.4	29.79	756.7	43.1	6.2	85	1	.....	1	19	6	2	.....	2	.....	.....	.....	6	2.40	61.0
Gibraltar	N. 36 09	W. 5 21	11.39 a.m.	50	15	30.10	764.5	30.10	764.5	56.8	13.8	84	.....	10	6	1	.....	.....	8	5	1	.....	.....	4	.....	.....
Greenwich	N. 51 29	0 00	12 m.	159	48	29.84	757.9	30.03	762.7	37.5	3.1	76	4	.....	2	11	9	2	....	3	.....	.....	.....	8	.....	.....
Guernsey	N. 49 27	W. 2 41	11.49 a.m.	275	84	29.73a	755 1a	30.05a	763.3a	a42.4	a5.8	91a	a1	2	5	4	6	4	3	3	2	.....	.....	6a	3.09	78.5
Kew	N. 51 28	W. 0 19	11.59 a.m.	34	10	29.99	761.7	30.05	763.3	36.9	2.7	81	3	.....	5	6	11	.....	1	1	4	.....	.....	7	.....	.....
Leicester	N. 52 39	W. 1 08	11.55 a.m.	245	75	29.71	754.6	29.99	761.7	37.4	3.0	91	1	2	3	16	3	1	....	3	2	.....	.....	9	.....	.....
Malta	N. 36 00	E. 14 30	0.58 p.m.	70	21	29.91	759.7	29.97	761.2	53.8	12.1	83	1	9	2	4	2	6	2	5	.....	.....	.....	6	0.78	19.8
Nassau	N. 25 04	W. 77 22	6.51 a.m.	44	13	30.12	765.0	30.12	765.0	68.7	20.4	80	5	2	1	.....	5	3	3	6	6	.....	.....	6	.....	.....
Oxford	N. 51 46	W. 1 17	11.55 a.m.	210	64	29.77	756.1	30.02	762.5	36.3	2.4	90	3	3	2	9	5	4	1	.....	4	.....	.....	8	.....	.....
Plymouth	N. 50 22	W. 4 10	11.43 a.m.	69	21	29.87	758.7	30.02	762.5	42.0	5.6	88	.....	7	1	6	3	3	1	3	7	.....	.....	7	.....	.....
Swanbister	N. 58 55	W. 3 05	11.46 a.m.	72	22	29.60	751.8	29.71	754.6	41.4	5.2	79	.....	.....	3	10	7	1	1	2	1	.....	.....	8	.....	.....
Scutari Cemet'y	N 41 00	E. 29 03	1.56 p.m.	60	18	30.03	762.7	30.08	764.0	46.9	8.3	70	9	.....	1	5	2	3	.....	7	4	.....	.....	6	.....	.....
Stonyhurst	N. 53 51	W. 2 28	11.50 a.m.	361	110	.....	.....	29.96	761.0	37.0	2.8	86	.....	1	6	6	8	1	4	5	.....	.....	.....	8	3.20	81.3
Valencia	N. 51 55	W. 10 18	11.19 a.m.	23	7	.....	.....	29.87	758.7	46.1	7.8	81	1	7	2	3	9	5	3	1	.....	.....	.....	8	.....	.....
Sub-series.																										
Gozo	N. 36 01	E. 14 16	0.57 p.m.	364	111	29.66	753.4	30.02	762.5	54.5	12.5	68	1	11	2	5	.....	3	3	5	1	4119	6629	6	2.60	66.1
CANADIAN.																										
Colgar y	N. 50 55	W. 114 04	4.24 a.m.	?	?	26.20	665.5	29.90	759.4	0.7	—17.4	87a	5	2	.....	....	1	1	.....	.....	22	.....	.....	3	0.92	23.4
Bathurst a	N. 47 39	W. 65 42	7.37 a.m.	35	11	29.92	760.0	29.97	761.2	3.3	—15.9	.....	.....	3	5	7	.....	.....	2	.....	13	.....	.....	6	4.16	105.7
Bird Rocks	N. 47 50	W. 61 10	7.56 a.m.	.....	.....	29.75	755.6	29.86	758.4	17.5	— 8.1	93	5	7	5	6	2	1	2	3	.....	.....	.....	8	3.52	89.4
Chatham	N. 47 03	W. 65 29	7.38 a.m.	56	17	29.89	759.2	29.95	760.7	2.5	—16.4	94	6	5	8	4	2	.....	1	5	.....	.....	.....	5	6.19	157.2
Cornwall	N. 45 01	W. 74 43	7.01 a.m.	175	53	29.74	755.4	29.95	760.7	5.4	—14.8	95	1	1	15	2	4	.....	2	5	1	.....	.....	6	4.55	115.6
Dalhousie b	N. 48 04	W. 66 22	7.35 a.m.	45	14	29.84	757.9	29.89	759.2	— 1.9	—18.8	.....	.....	1	12	.....	.....	1	1	.....	14	.....	.....	6	2.70	68.6
Father Point	N. 48 31	W. 68 28	7.26 a.m.	20	6	29.93	760.2	29.97	761.2	2.0	—16.7	86	1	7	2	7	6	2	1	5	.....	.....	.....	7	4.51	114.6
Fort Garry	N. 49 51	W. 97 07	5.32 a.m.	754	230	29.14	740.2	30.10	764 5	—19.9	—28.8	100b	10	6	1	1	9	4	.....	.....	.....	.....	.....	4	0.71	18.0
Fredericton	N. 45 57	W. 66 38	7.33 a.m.	164	50	29.78	756.4	29.98	761.5	4.7	—15.2	80	12	5	3	.....	1	3	1	2	4	5505	8859	6	6.45	163.8
Grand Manan	N. 44 46	W. 66 45	7.33 a.m.	49	15	29.92	760.0	29.97	761.2	22.3	— 5.4	84	6	3	9	6	1	1	2	2	1	.....	.....	7	7.10	180.3
Granton	N. 43 12	W. 81 21	6.35 a.m.	1015	309	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Halifax	N. 44 39	W. 63 36	7.46 a.m.	122	37	29.84	757.9	29.98	761.5	21.6	— 5.8	92	7	6	7	3	2	2	2	1	1	.....	.....	5	7.71	195.8
Hamilton	N. 43 16	W. 79 53	6.40 a.m.	372	113	29.58	751.3	30.02	762 5	19.7	— 6.8	78	1	4	9	6	7	.....	2	2	.....	.....	.....	8	3.05	77.5
Kingston	N. 44 14	W. 76 30	6.54 a.m.	307	94	29.61	752.1	29.98	761 5	10.4	—12.0	87a	4	7	3	6	3	3	.....	5	.....	.....	.....	8	4.92	125.0
Little Glace Bay a	N. 46 12	W. 59 58	8.00 a.m.	34	10	29.82	757.4	29.85	758.2	22.6	— 5.2	88	4	5	4	4	5	1	1	5	1	.....	.....	6	.....	.....
London	N. 43 00	W. 81 15	6.35 a.m.	832	254	29.03	737.3	30.01	762.2	16.9	— 8.4	89	4	1	7	9	3	.....	2	.....	5	6897	11100	8	3.97	100.8
Medicine Hat	N. 50 01	W. 110 37	4.38 a.m.	2136	651	27.47b	697.7b	29.94b	760.5b	—b1.8	—b18.8	92d	b3	3	1	7	1	....	1	1	12	.....	.....	5b	0.30b	b7.6
Minnedosa	N. 50 13	W. 99 48	5.21 a.m.	1796	547	28.03	711.9	30.07	763.8	—18.6	-28.1	93c	3	6	2	1	1	2	2	.....	14	.....	.....	4	0.49	12.4
Ottawa	N. 45 26	W. 75 41	6.57 a.m.	200	61	29.72	754.9	30.01	762.2	0.3	—17.6	90	2	6	6	4	1	.....	6	6	.....	4181	6728	6	4.70	119.4
Parry Sound	N. 45 19	W. 80 01	6.40 a.m.	635	194	29.18	741.2	29.93	760.2	3.7	—15.7	78a	8	3	5	3	1	3	6	2	.....	.....	.....	7	4.96	126.0
Peterborough	N. 44 17	W. 78 18	6.47 a.m.	668	204	29.16	740.7	30.02	762.5	10.2	—12.1	91	7	8	1	.....	7	.....	.....	.....	8	.....	.....	7	2.75	69.9
Port Arthur	N. 48 27	W. 89 12	6.03 a.m.	642	196	29.21	741.9	29.99	761.7	—10.5	—23.6	93	1	.....	3	.....	1	.....	3	3	20	.....	.....	3	0.94	23.9
Port Dover	N. 42 47	W. 80 13	6.39 a.m.	635	194	29.23	742.4	29.97	761.2	16.8	— 8.4	100	2	2	8	12	1	.....	.....	1	5	.....	.....	9	4.78	121.4
Port Stanley	N. 42 40	W. 81 13	6.35 a.m.	592	180	29.28	743.7	29.96	761.0	17.6	— 8.0	87	4	1	14	4	4	1	2	1	.....	.....	.....	8	2.49	63.2
Qu' Appelle	N. 50 44	W. 103 42	5.05 a.m.	2115	645	27.47	697.7	30.02	762.5	—15.8	—26.6	.....	.....	7	2	6	4	.....	1	4	7	.....	.....	3	0.50	12.7
Quebec	N. 46 48	W. 71 12	7.15 a.m.	293	89	29.63	752.6	30.00	762.0	3.4	—15.9	83	5	2	7	2	2	.....	3	3	7	.....	.....	7	6.17	156.7
Rockliffe	N. 46 10	W. 77 48	6.49 a.m.	418	127	29.47	748.5	29.98	761.5	— 6.4	—21.3	91a	.....	.....	11	.....	.....	.....	11	.....	9	.....	.....	6	2.95	74.9
Saint Andrews	N. 45 04	W. 67 06	7.32 a.m.	47	14	29.90	759.4	29.95	760.7	15.8	— 9.0	90	4	9	1	2	.....	3	1	6	5	.....	.....	5	7.75	196.8
Saint John, N.B	N. 45 17	W. 66 03	7.36 a.m.	116	35	29.85	758.2	29.99	761.7	14.7	— 9.6	88	7	7	3	3	1	.....	4	3	3	.....	.....	6	10.64	270.3
Saint Pierre	N. 46 47	W. 56 08	8.15 a.m.	?	?	.....	.....	29.85	758.2	27.1	— 2.7	.....	.....	8	3	8	1	2	1	7	1	.....	.....	.....	4.95	125.7
Sangeen	N 44 30	W. 81 21	6.35 a.m.	656	200	29.15	740.4	29.91	759.7	14.9	— 9.5	93	2	1	4	2	8	1	2	6	5	.....	.....	8	6.34	161.0
S.W. Pt. Anticosti	N. 49 24	W. 63 36	7.46 a.m.	30	9	29.84	757.9	29.88	758.9	6.2	—14.3	92	7	7	2	1	5	2	2	.....	5	.....	.....	7	3.80	96.5
Stratford	N. 43 23	W. 81 00	6.36 a.m.	1186	361	28.87?	733.3?	29.95	760.7	14.2	— 9.9	89	4	6	2	10	3	.....	2	3	1	8610	13856	8	5.39	136.9
Swift Current	N. 50 21	W. 107 33	4.50 a.m.	.....	.....	27.14	689.3	29.93	760.2	— 4.5	—20.3	85c	.....	5	3	4	4	4	2	.....	9	.....	.....	5	0.87	22 1
Sydney	N. 46 08	60 10	7.59 a.m.	37	11	29.95	758.2	29.91	759.7	22.4	— 5.3	93	5	4	5	7	4	1	2	.....	3	.....	.....	7	6.93	176.0
Toronto	N. 43 39	W. 79 23	6.42 a.m.	350	107	29.56	750.8	29.97	761 2	15.4	— 9.2	85	6	7	4	8	.....	4	.....	2	.....	.....	.....	9	3.20	81.3
Woodstock	N. 43 08	W. 80 47	6.37 a.m.	980	299	28.84	732.5	29.98	761.5	15.9	— 8.9	83	2	4	4	9	7	.....	3	.....	2	.....	.....	7	4.27	108.5
Yarmouth	N. 43 50	W. 66 02	7.36 a.m.	61	19	29.88	758.9	29.96	761.0	24.7	— 4.1	86	6	6	2	5	1	2	3	5	1	.....	.....	4	6.33	160 8
Montreal	N. 45 31	W. 73 33	7.06 a.m.	187	57	29.76	755.9	29.99	761.7	3.2	—16.0	89	5	2	5	4	6	3	2	4	.....	.....	.....	7	6.07	154.2
Sub-series.																										
Saint Johns, N.F.	N. 47 34	W. 52 42	8.29 a.m.	159	48	29.65	753.1	29.85	758.2	24.0	— 4.4	87	.....	7	4	4	5	4	1	6	.....	.....	.....	7	6.56	166.6
CHINESE.																										
Foochow	N. 26 08	E. 119 38	7.59 p.m.	34	10	30.22	767.6	30.20	767.1	50.9	10.5	86	2	1	.....	.....	.....	1	1	26	.....	.....	.....	9	6.50	165.1
Hong Kong	N. 22 18	E. 114 10	7.37 p.m.	110	34	29.97	761.2	30.03	762.7	56.0	13.3	83	9	.....	2	1	.....	1	10	8	.....	.....	.....	9	8.42	213.9
Sub-Series.																										
Zi-Ka-Wei	N. 31 12	E. 121 26	8.06 p.m.	23	7	30.29	769.4	30.28	769.1	37.0	2.8	85	9	6	4	.....	1	.....	2	9	.....	.....	.....	9	6.14	156.0
South Cape	N. 21 55	E. 120 51	8.04 p.m.	121	37	29.92	760.0	29.98	761.5	69.3	20.7	85	2	.....	.....	.....	.....	.....	2	25	2	.....	.....	6	1.82	46.2
DANISH.																										
Copenhagen	N. 55 41	E. 12 36	0.50 p.m.	43	13	30.06	763.5	30.13	765 3	32.7	0.4	86	2	2	3	8	3	9	3	1	.....	.....	.....	8	.....	.....
Fanoe	N. 55 27	E. 8 24	0.34 p.m.	20	6	30.04	763.0	30.09	764.3	30.4	— 0 9	93	1	1	2	5	4	12	5	1	.....	.....	.....	6	.....	.....
Stykkisholm	N. 65 05	W. 22 46	10.29 a.m.	36	11	29.00	736.6	29.09	738.9	29.3	— 1.5	86	.....	1	2	11	3	6	3	4	1	.....	.....	9	.....	.....
Thorshavn	N. 62 02	W. 6 44	11.33 a.m.	30	9	29.40	746.7	30.04	763.0	31.8	— 0.1	92	.....	1	2	3	6	10	6	2	1	.....	.....	8	.....	.....
Vestervig	N. 56 47	E. 8 20	0.33 p.m.	82	25	29.93	760.2	29.46	748.3	38.5	3.6	84	1	1	4	12	5	3	2	1	2	.....	.....	8	.....	.....

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for January, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0–10	Total Precipitation. Inch.	Mill.
FRENCH.	° ′	° ′																								
Agen	N. 44 12	E. 0 38	0.03 p.m.	604	184	29.47	748.5	30.14	765.5	41.2	5.1	90	3	3	3	5	.....	13	3	1	.....	.....	.....	.....	0.75	19.0
Alençon	N. 48 26	E. 0 05	0.00 m.	476	145	29.60	751.8	30.14	765.5	35.6	2.0	87	.....	1	.....	9	12	1	.....	7	1	.....	.....	7	1.08	27.5
Arras	N. 50 18	E. 2 46	0.11 p.m	223	68	29.84	757.9	30.10	764.5	34.5	1.4	90	.....	1	2	8	13	2	3	2	.....	.....	.....	5	0.69	17.6
Avignon	N. 43 57	E. 4 49	0.19 p.m	66	20	30.02	762.5	30.09	764.3	40.8	4.9	70	12	2	.....	1	7	2	1	6	.....	.....	.....	3	1.45	36.9
Bar-sur-Seine	N. 48 07	E. 4 22	0.17 p.m.	518	158	29.48	748.8	30.07	763.8	34.2	1.2	84	.....	.....	.....	4	7	15	4	1	.....	.....	.....	7	0.76	19.3
Beauvais	N. 49 26	E. 2 05	0.08 p.m.	269	82	29.73	755.1	30.04	763.0	35.4	1.9	.....	3	2	2	7	1	.....	.....	2	14	.....	.....	7	0.72	18.3
Besançon	N. 47 13	E. 6 02	0.24 p.m.	830	253	29.23	742.4	30.16	766.1	34.2	1.2	85	8	2	.....	.....	13	1	4	3	.....	.....	.....	.....	0.16	4.2
Bordeaux	N. 44 50	W. 0 32	11.58 a.m.	243	74	29.82	757.4	30.09	764.3	42.1	5.6	80	2	5	4	2	3	6	6	3	.....	.....	.....	6	3.34	84.9
Bourges	N. 47 10	E. 2 26	0.10 p.m.	512	156	29.52	749.8	30.10	764.5	37.6	3.1	84	4	.....	6	1	1	6	7	6	.....	.....	.....	6	0.50	12.8
Brest	N. 48 24	W. 4 30	11.42 a.m.	210	64	29.79	756.7	30.03	762.7	45.0	7.2	88	3	2	3	7	8	2	2	2	2	.....	.....	7	2.06	52.2
Caen	N. 49 11	W. 0 21	11.59 a.m.	69	21	29.95	760.7	30.03	762.7	40.5	4.7	81	4	.....	2	3	7	11	1	3	.....	.....	.....	.....	1.39	35.3
Châlons-sur-Marne	N. 48 57	E. 4 21	0.17 p.m.	292	89	29.83	757.7	30.17	766.3	33.3	0.7	90?	1	3	4	1	7	3	8	4	.....	.....	.....	7	0.15	3.8
Charleville c	N. 49 46	E. 4 43	0.19 p.m.	476	145	29.62	752.3	30.16	766.1	33.6	0.9	83	1	.....	2	5	12	3	5	.....	.....	.....	.....	6	1.00	25.4
Clermont-Fer'and	N. 45 46	E. 3 05	0.12 p.m.	1273	388	28.69	728.7	30.10	764.5	37.6	3.1	76	6	4	1	7	3	6	1	3	.....	.....	.....	6	0.64	16.3
Cluny	N. 46 26	E. 4 39	0.19 p.m.	787	240	29.26	743.2	30.15	765.8	34.3	1.3	85	2	1	4	7	4	4	.....	9	.....	.....	.....	7	1.08	27.4
Commercy	N. 48 46	E. 5 35	0.22 p m.	817	249	29.21	741 9	30.14	765 5	32.7	0.4	86	.....	.....	1	1	1	4	1	2	21	.....	.....	7	0.00	0.0
Gap	N. 44 33	E. 6 05	0.24 p.m.	2424	739	27.52	699.0	30.17	766.3	33.8	1.0	69	10	.....	.....	.....	.....	.....	5	10	6	.....	.....	.....	0.74	18.7
Gréasque	N. 43 25	E. 5 37	0.22 p.m.	1056	322	28.94	735.1	30.10	764.5	43.3	6.3	65	14	5	2	3	1	1	3	2	.....	.....	.....	4	2.27	57.6
Grenoble	N. 45 12	E. 5 43	0.23 p.m.	715	218	29.36	745.7	30.18	766.6	30.7	— 0.7	89	1	.....	.....	2	3	6	11	4	4	.....	.....	.....	1.03	26.1
Guéret	N. 46 10	E. 1 52	0.07 p.m.	1486	453	28.49	723.6	30.09	764.3	45.5	7.5	74	5	.....	.....	10	3	4	7	2	.....	.....	.....	.....	1.20	30.5
Lescar	N. 43 20	W. 0 26	11.58 a.m.	525	160	29.53	750 0	30.10	764.5	48.0	8.9	74	.....	3	12	5	2	1	1	7	.....	.....	.....	.....	8.55	217.2
Lorient	N. 47 45	W. 3 21	11.47 a.m.	85	26	29.99	761.7	30.09	764.3	43.7	6.5	81	5	2	2	5	1	6	3	6	1	.....	.....	5	3.30	83.8
Lyon	N. 45 41	E. 4 47	0.19 p.m.	981	299	29.04	737.6	30.14	765.5	33.3	0.7	80	6	4	3	.....	4	5	6	3	.....	.....	.....	4	0.59	15.1
Mans	N. 48 00	E. 0 12	0.01 p.m.	285	87	29.80	756.9	30.13	765.3	35.8	2.1	90	1	2	2	7	3	6	3	6	1	.....	.....	5	1.02	26.0
Marseille	N. 43 18	E. 5 23	0.22 p.m.	246	75	29.79	756.7	30.06	763.5	48.0	8.9	62	2	8	3	9	.....	2	6	1	.....	.....	.....	5	2.60	66.0
Montlouis	N. 42 30	E. 2 07	0.08 p.m.	5202	1586	24.79	629.7	29.62	752.3	33.6	0.9	60	3	4	10	9	1	.....	4	.....	.....	.....	.....	4	2.87	72.8
Montpellier	N. 43 37	E. 3 53	0.16 p.m.	118	36	29.89	759.2	30.02	762.5	43.9	6.6	62	0	5	.....	2	.....	3	1	1	13	.....	.....	4	1.97	50.0
Mont Ventoux b	N. 44 10	E. 5 16	0.21 p.m.	6234	1900	23.75	603.2	.....	.....	.....	.....	.....	3	6	2	1	6	7	2	2	.....	.....	.....	3	6.15	156.3
Nancy	N. 48 42	E. 6 11	0.25 p.m.	718	219	29.34	745.2	30.17	766.3	32.9	0.5	87	3	1	.....	7	6	2	4	8	.....	.....	.....	.....	0.40	10.1
Nantes	N. 47 13	W. 1 33	11.54 a.m.	134	41	29.96	761.0	30.11	764 8	40.1	4.5	83	5	.....	4	1	5	8	5	3	.....	.....	.....	6	1.14	29.0
Nice	N. 43 41	E. 7 16	0.29 p.m.	59	18	29.97	761.2	30.06	763.5	52.0	11.1	85	.....	1	.....	.....	.....	.....	1	.....	29	.....	.....	4	3.18	80.7
Perpignan	N. 42 42	E. 2 53	0.12 p.m.	105	32	29.98	761.5	30.10	764.5	46.8	8.2	66	1	10	2	5	1	2	2	5	3	.....	.....	6	1.38	35.0
Pic du Midi (Sum-	N. 42 56	W. 0 08	11.59 a.m.	9380	2859	21.07	535.2	.....	.....	20.5	— 6.4	67	2	5	4	7	1	.....	1	4	7	.....	.....	3	8.90	226.0
Privas. [mit.)	N. 44 45	E. 4 36	0.18 p.m.	997	304	29.04	737.6	30.16	766.1	35.1	1.7	77	9	.....	.....	.....	11	.....	1	.....	10	.....	.....	.....	0	0
Puy de Dôme	N. 45 46	E. 2 58	0.12 p.m.	4813	1467	25.06	636.5	.....	.....	27.7	— 2.4	78	2	3	6	4	3	6	4	3	.....	.....	.....	5	3.22	81.8
Rochefort	N. 45 56	W. 0 58	11.56 a.m.	30	9	30.06	763.5	30.09	764.3	42.1	5.6	79	2	2	3	3	2	10	5	4	.....	.....	.....	8	2.02	51.4
Roche-sur-Yon	N. 46 40	W. 1 26	11.54 a.m.	259	79	29.81	757.2	30.10	764.5	39.7	4.3	83	2	1	3	1	6	4	5	9	.....	.....	.....	5	1.84	46.8
Rodez	N. 44 21	E. 2 34	0.10 p.m.	2050	625	27.92	709.2	30.14	765 5	36.1	2.3	.....	11	4	3	.....	1	2	5	5	.....	.....	.....	3	.....	.....
Rouen	N. 49 26	E. 1 05	0.04 p.m.	39	12	30.07	763.8	30.12	765.0	35.4	1.9	87	1	.....	1	2	9	12	4	2	.....	.....	.....	6	1.01	30.8
Saint Brieuce	N. 48 37	E. 5 08	0.20 p.m.	348	106	29.65	753.1	30.05	763.3	40.1	4.5	85	1	2	2	4	13	1	4	4	.....	.....	.....	5	2.00	50.7
Saint Maur	N. 48 48	E. 2 21	0.09 p.m.	161	49	29.92	760.0	30.11	764.8	33.8	1.0	88	7	.....	.....	4	12	5	.....	3	.....	.....	.....	7	0.61	15.5
Toulouse	N. 43 37	E. 1 27	0.06 p.m.	636	194	29.41	747.0	30.12	765.0	42.1	5.6	90	.....	9	2	3	3	12	1	1	.....	.....	.....	7	2.90	73.7
Tours	N. 47 24	E. 0 41	0.03 p.m.	171	52	29.90	759.4	30.08	764.0	38.1	3.4	86	1	.....	3	3	3	5	10	6	.....	.....	.....	.....	1.62	41.4
Sub-Series.																										
St. Martin du Hinx.	N. 43 35	W. 1 16	11.55 a.m.	131	40	29.97	761.2	30.12	765.0	47.3	8.5	73	4	2	8	2	3	2	7	3	.....	.....	.....	6	11.87	301.5
GERMAN.																										
Ansbach	N. 45 18	E. 10 36	0.42 p.m.	1358	414	28.69	728.7	30.23	767.8	25.5	— 3.6	82	.....	.....	3	1	1	7	4	3	12	.....	.....	6	0.30	7.6
Bamberg	N. 49 54	E. 10 54	0.44 p.m.	787	240	29.26	743.2	30.11	764.8	25.5	— 3.6	79	4	1	3	4	4	7	.....	6	2	.....	.....	7	0.23	5.8
Berlin d	N. 52 30	E. 13 19	0.53 p.m.	151	46	30.00	762.0	30.17	766.3	32.0	0.0	78	.....	1	4	6	1	6	5	1	3	.....	.....	7	0.18	4.6
Breslau	N. 51 07	E. 17 02	1.08 p.m.	482	147	29.64	752.8	30.20	767.1	29.1	— 1.6	80	1	2	9	2	1	7	8	1	.....	.....	.....	6	0.46	11.9
Carlsruhe	N. 49 01	E. 8 25	0.34 p.m.	413	126	29.70	754.4	30.16	766.1	29.5	— 1.4	82	1	.....	.....	6	3	4	4	13	.....	.....	.....	8	0.26	6.6
Cassel	N. 51 19	E. 9 28	0.38 p.m.	669	204	29.41	747.0	30.15	765.8	27.9	— 2.3	86	3	.....	.....	1	19	2	1	1	4	.....	.....	5	0.31	7.9
Frankfort on M.	N. 50 08	E. 8 41	0.35 p.m.	338	103	29.78	756.4	30.24	768.1	28.6	— 1.9	80	2	.....	1	3	5	4	11	5	.....	.....	.....	8	0.39	9.9
Friedrichshafen	N. 47 39	E. 9 29	0.38 p.m.	1338	408	28.68	728.5	30.18	766.6	28.8	— 1.8	82	4	2	1	6	1	.....	.....	17	.....	.....	.....	9	0.50	12.7
Hamburg	N. 53 33	E. 9 58	0.40 p.m.	85	26	30.01	762.2	30.12	765.0	29.7	— 1.3	90	2	4	.....	5	2	9	9	.....	.....	.....	.....	6	0.12	3.0
Kiel	N. 54 19	E. 10 04	0.40 p.m.	13	4	30.11	764.8	30.15	765.8	32.0	0.0	80	.....	2	3	8	2	10	5	1	.....	.....	.....	7	0.15	3.8
Leipsic	N. 51 20	E. 12 24	0.50 p.m.	390	119	29.73	755.1	30.20	767.1	28.4	— 2.0	85	1	1	.....	4	11	6	4	4	.....	.....	.....	6	0.06	1.5
Memel	N. 55 43	E. 21 07	1.24 p.m.	39	12	30.13	765.3	30.21	767.3	30.0	— 1.1	88	1	5	2	4	8	8	2	1	.....	.....	.....	8	.....	.....
Munich	N. 48 09	E. 11 34	0.46 p.m.	1732	528	28.26	718.0	30.14	765.5	25.2	— 3.8	78	3	3	.....	.....	.....	3	6	4	12	.....	.....	6	0.29	7.4
Neufahrwasser	N. 54 24	E. 18 40	1.15 p.m.	36	11	30.13	765.3	30.19	766.8	19.4	— 7.0	83	1	1	8	2	11	7	.....	1	.....	.....	.....	8	0.68	17.3
Neustadt	N. 49 21	E. 8 08	0.33 p.m.	479	146	29.63	752.6	30.17	766.3	29.1	— 1.6	83	7	1	4	1	10	1	1	2	4	.....	.....	8	0.94	23.9
Stuttgart	N. 48 47	E. 9 11	0.37 p.m.	833	254	29.21	741.9	30.17	766.3	30.2	— 1.0	72	3	.....	.....	7	2	4	2	13	.....	.....	.....	6	0.13	3.3
Wustrow	N. 54 21	E. 12 24	0.50 p.m.	23	7	30.09	764.3	30.13	765.3	28.6	— 1.9	90	.....	.....	2	8	3	12	3	2	1	.....	.....	7	0.12	3.0
GREEK.																										
Athens	N. 37 58	E. 23 44	1.35 p.m.	348	106	29.71	754.6	30.09	764.3	50.5	10.3	65	13	1	1	1	1	7	1	6	.....	.....	.....	6	0.97	24.6
INDIAN.																										
Kurrachee	N. 24 47	E. 67 04	4.28 p.m.	49	15	29.89	759.3	29.89	759.3	71.4	21.9	49	1	2	9	9	2	1	3	4	.....	.....	.....	2	1.08	27.4
Deesa	N. 24 16	E. 72 14	4.49 p.m.	466	142	29.42	747.3	29.84	757.9	77.3	25.2	24	5	10	11	4	.....	.....	.....	1	.....	.....	.....	3	.....	.....
Bombay	N. 18 54	E. 72 49	4.51 p.m.	37	11	29.87	758.6	29.84	758 0	76.3	24.6	66	9	21	1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Poona	N. 18 28	E. 74 10	4.57 p.m.	1849	564	28.04	712.1	29.80	757.0	80.9	27.2	26	a2	10	7	4	1	3	3	.....	.....	.....	.....	2	.....	.....
Belgaum	N. 15 52	E. 74 42	4.59 p.m.	2524	770	27.32	693.8	29.73	755.1	80.3	26.8	31	a6	3	3	4	2	4	3	3	2	.....	.....	2	.....	.....
Lahore	N. 31 34	E. 74 20	4.57 p.m.	702	214	29.22	742.1	29.93	760.1	59.3	15.2	53	1	2	9	1	.....	.....	3	2	13	.....	.....	4	0.41	10.4
Roorkee	N. 29 52	E. 77 56	5.12 p.m.	887	270	28.99	736.3	29.88	759.0	60.1	15.6	63	.....	...	17	.....	1	.....	.....	.....	13	.....	.....	5	2.78	70.6
Agra	N. 27 10	E. 78 05	5.12 p.m.	555	169	29.36	745.8	29.90	759.4	65.6	18.7	56	3	13	2	.....	1	2	5	2	3	.....	.....	4	1.06	26.9
Nagpur	N. 21 09	E. 79 11	5.17 p.m.	1025	312	28.82	732.1	29.81	757.1	79.9	26.6	38	3	5	2	3	5	5	2	4	2	.....	.....	2	0.03	0.8
Jubbulpore	N. 23 09	E. 79 59	5.20 p.m.	1341	409	28.53	724.8	29.85	758.3	70.7	21.5	52	5	2	1	5	2	2	.....	.....	14	.....	.....	2	3.98	101.1
Lucknow	N. 26 50	E. 81 00	5.24 p.m.	369	112	29.54	750.2	29.88	759.0	63.0	17.2	57	9	5	1	.....	1	3	.....	3	9	.....	.....	2	0.42	10.7
Allahabad	N. 25 26	E. 81 52	5.27 p.m.	307	94	29.60	751.9	29.88	758.8	65.6	18.7	65	3	4	6	1	.....	.....	3	1	13	.....	.....	3	2.15	54.6
Patna	N. 25 37	E. 85 08	5.41 p.m.	183	56	29.74	755.3	29.88	759.0	63.7	17.6	69	.....	2	14	.....	3	.....	3	1	8	.....	.....	3	1.45	36.8
Hazaribagh	N. 24 00	E. 85 24	5.42 p.m.	2007	612	27.88	708.1	29.90	759.4	61.1	16.2	58	6	12	8	.....	.....	.....	2	2	1	.....	.....	2	.....	.....
Cuttack	N. 20 29	E. 85 54	5.44 p.m.	80	24	29.83	757.7	29.86	758.3	77.3	25.2	55	.....	5	6	7	5	2	2	4	.....	.....	.....	0	0.58	14.7
Calcutta	N. 22 33	E. 88 21	5.53 p.m.	21	6	29.90	759.5	29.87	758.6	67.9	19.9	65	6	8	3	3	2	.....	.....	3	6	.....	.....	1	1.49	37.8
Dhubri	N. 26 07	E. 89 50	5.59 p.m	115	35	29.81	757.1	29.88	759.0	64.4	18.0	70	1	.....	2	1	.....	.....	1	2	24	.....	.....	2	0.61	15.5
Chittagong	N. 22 21	E. 91 50	6.07 p.m.	87	27	29.83	757.8	29.86	758.3	67.6	19.8	70	.....	11	13	3	.....	1	1	1	1	.....	.....	1	2.28	57.9
Sibsagar	N. 26 59	E. 94 40	6.19 p.m.	333	101	29.61	752.1	29.92	760.0	59.9	15.5	89	1	1	.....	4	2	.....	2	21	.....	.....	.....	6	2.76	70.1
Jeypore	N. 26 55	E. 75 50	5.03 p.m.	1431	436	28.45	722.6	29.88	759.0	65.7	18.7	46	3	8	5	3	1	5	4	2	.....	.....	.....	4	0.72	18.3
Bellary	N. 15 09	E. 76 57	5.08 p.m.	1475	449	28.38	720.9	29.78	756.3	84.5	29.2	33	4	.....	1	.....	2	11	9	1	3	.....	.....	3	.....	.....
Trichinopoly	N. 10 50	E. 78 44	5.15 p.m.	275	84	29.62	752.4	29.83	757.6	85.3	29.6	49	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	.....	.....
ITALIAN.																										
Udine	N. 46 04	E. 13 13	0.53 p.m.	381	116	29.61	752.1	30.04	763.0	42.3	5.7	62	3	5	1	1	1	2	5	7	6	.....	.....	4	2.48	63.0
Milan	N. 45 28	E. 9 11	0.37 p.m.	482	147	29.62	752.3	30.16	766 0	33.6	0.9	77	3	1	12	8	.....	3	3	1	.....	.....	.....	6	2.76	70.0
Padua	N. 45 24	E. 11 53	0.48 p.m.	102	31	30.00	762.0	30.11	764.9	39.6	4.2	69	9	1	1	1	1	1	1	9	8	.....	.....	3	1.65	42.0
Moncalieri	N. 45 00	E. 7 41	0.31 p.m.	846	258	29.20	741.7	30.17	766.2	29.1	— 1.6	81	3	10	.....	1	1	2	8	6	.....	.....	.....	4	1.46	37.0
Genoa	N. 44 24	E. 8 55	0.36 p.m.	177	54	29.88	758.9	30.07	763.8	46.2	7.9	52	10	.....	.....	.....	.....	3	3	8	1	.....	.....	4	6.26	159.0
Pesaro	N. 43 55	E. 12 53	0.52 p.m.	46	14	30.05	763.3	30.10	764.4	40.8	4.9	76	7	14	5	2	1	1	1	.....	.....	.....	.....	6	2.16	55.0
Florence	N. 43 46	E. 11 15	0.45 p.m.	240	73	29.81	757.2	30.08	763.9	42.3	5.7	61	8	.....	.....	6	1	5	4	7	.....	.....	.....	4	1.38	35.0
Leghorn	N. 43 33	E. 10 18	0.41 p.m.	79	24	29.98	761.5	30.06	763.5	47.1	8.4	63	2	1	3	2	.....	1	.....	22	.....	.....	.....	5	2.09	53.0
Rome	N. 41 54	E. 12 29	0.50 p.m.	164	50	29.92	760.0	30.09	764.3	47.8	8.8	67	20	.....	.....	.....	3	.....	1	1	6	.....	.....	5	4.21	107.0
Lecce	N. 40 22	E. 18 12	1.13 p.m.	236	72	29.80	756.9	30.05	763.3	52.5	11.4	65	9	6	1	4	2	4	2	3	.....	.....	.....	5	1.97	50.0
Cosenza	N. 39 19	E. 16 17	1.05 p.m.	840	256	29.16	740.7	30.06	763.5	49.5	9.7	66	1	7	4	1	2	15	1	.....	.....	.....	.....	6	4.21	107.0
Syracuse	N. 37 03	E. 15 15	1.01 p.m.	72	22	29.99	761.7	30.04	763.0	54.5	12.5	61	10	7	6	1	3	.....	.....	4	.....	.....	.....	7	3.35	85.0
Sub-Series.																										
Stelvio	N. 46 32	E. 10 25	0.42 p.m.	8343	2543	22.03	559.7	.....	.....	16 7	— 8.5	67	.....	.....	1	2	5	8	7	8	.....	.....	.....	2	1.54	39.0
Valdobbia	N. 45 47	E. 7 51	0.31 p.m.	8360	2548	22.04	559.8	.....	.....	18.9	— 7.3	50	8	5	3	6	.....	2	.....	6	1	.....	.....	4	8.27	210.0

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metres	Result of Simultaneous Observations for January, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent.	Mean Rel. Humidity	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
JAPANESE.	° ′	° ′																								
Akita	N. 39 42	E. 140 07	9.20 p.m.	49	15	30.07	763.7	30.11	764.8	28.1	— 2.1	85	2	9	5	.....	.....	.....	10	1	4	7291	11802	8	2.41	61.2
Awomori	N. 40 51	E. 140 45	9.23 p.m.	33	10	30.06	763.6	30.09	764.3	26.4	— 3.1	84	.....	3	10	4	4	2	3	1	4	4972b	8000b	8	3.12	79.2
Fushiki	N. 36 47	E. 137 03	10.05 p.m.	13	4	.....	.....	.....	.....	35.1	1.8	83	2	2	2	10	1	.....	1	3	10	5301	8529	8	8.85	224.8
Gifu	N. 35 27	E. 136 46	9.07 p.m.	49	15	30.09	764.3	30.12	765.0	37.2	2.9	82	8	6	3	.....	.....	.....	1	11	2	2446	3938	4	6.12	155.2
Hakodate	N. 41 46	E. 140 44	9.23 p.m.	10	3	30.07	763.9	30.08	764.0	24.5	— 4.2	79	11	3	11	.....	.....	.....	5	1	.....	9087	14623	6	1.94	49.0
Hamamatsu	N. 34 42	E. 137 43	9.11 p.m.	92	28	29.99	761.7	30.06	763.5	40.3	4.6	76	1	5	17	.....	.....	.....	4	1	3	.....	.....	5	4.52	114.9
Erimo	N. 41 55	E. 143 15	9.30 p.m.	200	61	29.79	756.7	30.01	762.3	26.9	— 2.8	88	.....	8	9	.....	.....	.....	2	9	3	6743	10857	6	0.55	14.0
Hiroshima	N. 34 23	E. 132 27	8.50 p.m.	15	5	30.17	766.3	30.16	766.0	39.2	4.0	80	21	1	3	1	.....	.....	.....	4	1	3860	6210	8	4.68	119.0
Itsurhara	N. 34 12	E. 129 16	8.34 p.m.	16	5	30.17	766.4	30.16	766.1	41.5	5.3	83	16	9	1	.....	1	.....	1	3	.....	4259	6854	6	8.16	207.3
Kanazawa	N. 36 33	E. 136 40	9.07 p.m.	95	29	30.06	763.6	30.15	765.8	35.0	1.7	87	4	2	1	2	2	6	7	5	2	4391	7065	9	8.46	214.7
Kago-hima	N. 31 35	E. 130 33	8.42 p.m.	13	4	30.15	765.7	30.12	765.1	46.3	7.9	82	6	3	.....	.....	.....	1	5	3	13	2830	4555	7	9.81	248.9
Kioto	N. 35 01	E. 135 46	9.03 p.m.	161	49	29.98	761.6	30.14	765.6	36.9	2.8	83	11	3	3	3	3	1	4	3	.....	2926	4709	8	4.93	124.5
Miasaki	N. 31 56	E. 131 26	8.46 p.m.	26	8	30.14	765.6	30.14	765.5	45.4	7.4	81	7	2	19	.....	.....	.....	3	.....	.....	5937	9554	6	12.47	316.8
Miyako	N. 39 38	E. 141 59	9.28 p.m.	98	30	29.97	761.3	30.06	763.5	28.3	— 2.1	87	.....	2	11	4	1	.....	1	.....	12	2957	4761	5	7.02	178.2
Nagasaki	N. 32 44	E. 129 52	8.39 p.m.	190	58	29.96	761.1	30.14	765.6	43.1	6.1	78	13	4	2	1	.....	1	1	6	3	4391	7067	7	6.40	162.5
Nemuro	N. 43 20	E. 145 35	9.42 p.m.	89	27	29.92	759.9	30.01	762.3	23.0	— 5.0	69	5	8	5	1	.....	.....	6	5	1	9779	15737	4	0.63	16.0
Niigata	N. 37 55	E. 139 03	9.16 p.m.	33	10	30.10	764.5	30.12	765.1	34.4	1.3	86	1	3	8	4	.....	4	2	.....	9	4669	7514	8	4.97	125.9
Nobiru	N. 38 23	E. 141 11	9 25 p.m.	16	5	30.08	764.0	30.08	764.1	29.9	— 1.2	89	16	7	3	.....	.....	.....	1	.....	4	9458	15220	6	3.20	81.3
Numadzu	N. 35 06	E. 138 51	9.15 p.m.	30	9	30.04	762.9	30.05	763.2	41.0	5.0	75	3	1	1	1	1	1	16	6	1	5194	8355	7	6.54	166.1
Osaka	N. 34 42	E. 135 30	9.02 p.m.	46	14	30.12	765.0	30.14	765.6	38.8	3.8	81	3	4	5	.....	.....	.....	2	13	4	6337	10198	6	3.98	101.1
Sakai	N. 35 33	E. 133 14	8.53 p.m.	7	2	30.17	766.4	30.16	766.0	40.1	4.5	79	6	1	7	2	1	.....	3	6	5	6992	11252	9	8.29	210.5
Shimonoseki	N. 33 58	E. 130 56	8.44 p.m.	164	50	30.01	762.2	30.17	766.2	41.3	5.2	82	1	6	2	1	.....	.....	7	1	13	.....	.....	7	5.19	131.9
Tokei	N. 35 41	E. 139 46	9.19 p.m.	69	21	30.02	762.5	30.08	763.9	36.3	2.4	75	17	8	1	.....	1	.....	2	1	1	6021	9690	7	4.40	111.7
Wakayama	N. 34 14	E. 135 09	9.01 p.m.	49	15	30.10	764.8	30.13	765.2	40.5	4.7	72	9	8	.....	.....	.....	.....	3	9	2	3771	6068	7	3.54	90.2
MAURITIUS.																										
Mauritius	S. 20 06	E. 57 33	3.50 p.m.	181	55	29.69	754.1	29.81	757.2	80.4	26.9	72	5	2	.....	.....	.....	1	15	8	.....	3840	6180	8	9.84	249.9
MEXICAN.																										
Guanajuato	N. 21 01	W. 101 10	5.15 a.m.	6762	2061	23.72	602.5	29.84	757.9	47.3	8.5	64	1	2	4	7	.....	13	.....	4	.....	.....	.....	2	0.00	00.0
Leon	N. 21 07	W. 101 36	5.14 a.m.	5902	1799	24.47	621.4	30.29	769.4	43.9	6.6	78	3	22	.....	4	.....	.....	.....	2	.....	.....	.....	2	0.00	00.0
Mazatlan	N. 23 12	W. 106 17	4.55 a.m.	249	76	29.78	756.3	29.99	761.7	59.0	15.0	83	4	5	.....	.....	.....	1	11	10	.....	.....	.....	2	0.00	00.0
Mexico	N. 19 26	W. 99 00	5.24 a.m.	7490	2283	23.11	587.0	30.25	768.3	42.6	5.9	71	.....	1	1	.....	.....	.....	.....	.....	29	.....	.....	1	0.00	00.0
Zacatecas	N. 22 47	W. 102 26	5.10 a.m.	8100	2469	22.58	573.5	30.30	769.6	41.6	5.3	57	.....	.....	19	6	.....	6	.....	.....	.....	.....	.....	3	0.00	00.0
NETHERLANDS.																										
Flushing	N. 51 24	E. 3 35	0.14 p.m.	0	0	30.00	762.0	30.01	762.2	34.0	1.1	.....	2	.....	.....	4	16	1	4	4	.....	.....	.....	.....	0.41	10.5
Groningen	N. 53 12	E. 6 34	0.26 p.m.	60?	18?	30.02	762.6	30.10	764.5	32.0	0.0	.....	1	.....	4	5	10	7	3	.....	1	.....	.....	.....	0.32	8.0
Helder	N. 52 58	E. 4 45	0.19 p.m.	0	0	30.05	763.3	30.07	763.8	32.0	0.0	.....	1	.....	.....	4	14	6	5	1	.....	.....	.....	.....	0.80	20.3
Hellevoetsluis	N. 51 49	E. 4 08	0.17 p.m.	0	0	30.07	763.8	30.09	764.3	32.2	0.1	.....	1	.....	1	8	7	8	1	2	3	.....	.....	.....	0.81	20.5
Utrecht	N. 52 05	E. 5 07	0.20 p.m.	43	13	30.04	763.1	30.11	764.8	33.8	1.0	.....	2	.....	.....	3	13	7	3	3	.....	.....	.....	3	0.65	16.5
NORWEGIAN.																										
Bergen	N. 60 24	E. 5 20	0.21 p.m.	56	17	29.79	756 7	29.89	759.3	38.8	3.8	78	.....	1	.....	4	11	9	5	1	.....	.....	.....	7	9.37	238.0
Brono	N. 65 28	E. 12 14	0.49 p.m.	33	10	29.64	752.9	29.73	755.2	36.1	2.3	71	1	1	2	12	7	1	7	.....	.....	.....	.....	8	4.64	117.8
Christiania	N. 59 55	E. 10 45	0.43 p.m.	134	41	29.83	757.7	30.02	762.6	30.9	— 0.6	88	1	1	1	2	7	2	2	4	11	.....	.....	8	1.15	29.2
Gjæsvær	N. 71 00	E. 25 22	1.41 p.m.	23	7	29.47	748.5	29.55	750.6	30.7	— 0.7	.....	1	.....	4	6	6	6	.....	1	7	.....	.....	8	3.04	77.1
PORTUGUESE.																										
Funchal	N. 32 38	W. 16 55	10.52 a.m.	82	25	30.00	762.0	30.06	763.4	62.4	16.9	68	2	.....	.....	11	4	7	1	4	2	.....	.....	5	7.12	180.9
Lisbon	N. 38 42	W. 9 08	11.23 a.m.	312	95	29.82	757.5	30.15	765.8	51.6	10.9	71	6	3	3	2	2	.....	4	10	1	.....	.....	5	1.37	34.7
Ponta Delgada	N. 37 45	W. 25 41	10.17 a.m.	66	20	30.74	765.6	30.19	766.9	58.8	14.9	72	11	1	1	4	1	2	4	6	1	.....	.....	4	2.81	71.4
Saint Vincent	N. 16 37	W. 25 02	10.20 a.m.	35	11	29.98	761.6	29.96	760.9	72.7	22.6	72	16	.....	.....	.....	.....	.....	.....	15	.....	.....	.....	4	0.01	0.2
San Salvador	S. 6 17	E. 14 53	1.00 p.m.	1834	559	28.01	711.5	29.77	756.1	77.9	25.5	71	.....	.....	.....	1	.....	.....	.....	.....	30	.....	.....	8	6.67	169.5
Serra da Estrella	N. 40 25	W. 7 35	11.30 a.m.	4728	1441	25.26	641.7	30.12	765.1	35.2	1.8	80	.....	.....	12	4	.....	5	5	5	.....	.....	.....	6	13.95	354.3
RUSSIAN.																										
Archangel	N. 64 33	E. 40 32	2.42 p.m.	16	5	29.90	759.5	29.97	761.2	15.1	— 9.4	87	1	1	2	6	8	5	6	1	1	.....	.....	8	0.48	12.2
Baku	N. 40 21	E. 49 51	3.19 p.m.	39	12	30.28	769 0	30.27	768.8	37.4	3.0	75	2	9	.....	1	2	1	4	7	5	.....	.....	6	0.00	00.0
Barnaul	N. 53 20	E. 83 47	5.35 p.m.	459?	140?	29.85	758.1	30.45	773.2	— 6.3	—21.3	82	1	2	1	13	2	.....	.....	1	11	.....	.....	6	0.54	13.8
Dorpat	N. 58 23	E. 26 43	1.47 p.m.	223	68	29.87	758.7	30.19	766.8	27.0	— 2.8	.....	.....	1	6	6	6	5	4	2	1	.....	.....	9	0.98	24.8
Ekaterinburg	N. 56 49	E. 60 38	4.03 p.m.	899	274	29.18	741.1	30.29	769.4	4.5	—15.3	74	.....	.....	19	3	2	3	1	3	.....	.....	.....	6	0.17	4.4
Elisavetgrad	N. 48 31	E. 32 17	2.09 p.m.	407	124	29.79	756.6	30.27	768.8	29.5	— 1.4	70	3	6	4	3	.....	5	6	1	3	.....	.....	8	0.83	21.0
Irkutsk	N. 52 17	E. 104 16	6.57 p.m.	1610	491	28.65	727.6	30.57	776.5	—11.2	—24.0	.....	.....	.....	3	.....	1	14	8	.....	5	.....	.....	2	0.06	1.4
Kasalinsk	N. 45 46	E. 62 07	4.08 p.m.	148	45	30.07	763.7	30.25	768.3	3.9	—15.6	.....	11	2	1	1	1	5	.....	10	.....	.....	.....	3k	.....	.....
Kasan	N. 55 47	E. 49 08	3.17 p.m.	230	70	29.93	760 1	30.24	768.1	8.8	—12.9	86	4	2	1	2	8	9	2	2	1	.....	.....	7	0.06	1.5
Kem	N. 64 57	E. 34 39	2.19 p.m.	43	13	29.85	758.2	29.94	760.5	20.1	— 6.6	83	1	1	10	9	1	3	.....	1	5	.....	.....	7	.....	11.4
Kertch	N. 45 21	E. 36 29	2.26 p.m.	20?	6?	30.13	765.2	30.15	765.8	30.0	— 1.1	.....	6	1	2	.....	1	1	13	4	.....	.....	.....	6	.....	.....
Kieff	N. 50 27	E. 30 30	2.02 p.m.	600	183	29.56	750.7	30.26	768 6	26.2	— 3.2	86	5	9	3	1	1	8	3	1	.....	.....	.....	8	1.11	28.3
Korost shev	N. 50 19	E. 29 03	2.05 p.m.	?	?	29.52	749.8	.....	.....	26.4	— 3.1	88	.....	9	4	1	.....	6	4	.....	7	.....	.....	8	2.03	51.6
Kosiov	N. 52 53	E. 40 31	2.42 p.m.	505	154	29.64	752.8	30.26	768.6	17.1	— 8.3	92	3	5	5	3	6	4	5	.....	.....	.....	.....	7	.....	.....
Lgov	N. 51 38	E. 35 17	2.21 p.m.	518	158	29.65	753.0	30.27	768.8	24.1	— 4.4	80	1	2	5	4	2	1	11	3	2	.....	.....	8	0.39	9.9
Libau	N. 56 31	E. 21 01	1.24 p.m.	20	6	30.12	765.0	30.17	766.3	31.5	— 0.3	89o	1	3	4	4	2	12	4	1	.....	.....	.....	8	0.70	17.7
Lugan	N. 48 35	E. 39 20	2.37 p.m.	164	50	30.07	763.7	30.27	768.8	26.4	— 3.1	67	3	1	9	2	.....	1	12	3	.....	.....	.....	7	0.43	10.9
Moscow	N. 55 46	E. 37 40	2.31 p.m.	469	143	29.64	751.8	30.21	767.3	21.0	— 6.1	86	6	6	3	1	6	2	4	2	1	.....	.....	8	0.70	17.7
Ner chinsk	N. 51 19	E. 119 37	7.58 p.m.	2155?	657?	28.04	712.1	30.87	784.1	—27.8	—33.2	.....	1	.....	.....	.....	.....	.....	.....	.....	30	.....	.....	1	.....	.....
Nikolajev	N. 46 58	E. 31 58	2.08 p.m.	62	19	30.10	764.6	30.16	766.1	32.0	0.0	77	7	6	1	1	1	...	4	7	4	.....	.....	6	0.41	10.3
Nikolaievsk	N. 53 08	E. 140 45	9.23 p.m.	82	25	30.00	762.0	30.10	764.5	—15.7	—26.5	.....	.....	7	22	.....	.....	.....	.....	.....	2	.....	.....	2	0.15	3.8
Nikolsk	N. 59 32	E. 45 27	3.02 p.m.	485?	148?	29.71	754.6b	30.15	765.8b	13.3	—10.4a	87a	5a	3	1	2	5	10	2	1	1	.....	.....	8a	0.84	21.4
Perm	N. 58 01	E. 56 16	3.45 p.m.	328?	100?	29.77	756.1	30.19	766.8	5.2	—14.9	85	.....	.....	.....	10	3	3	2	5	8	.....	.....	7	1.89	48.1
Petro-Alexandrovsk	N. 41 28	E. 61 05	4.04 p.m.	328	100	29.95	760.6	30.31	769.9	22.1	— 5.5	.....	1	1	1	1	3	1	1	18	4	.....	.....	7	.....	.....
Petrozavodsk	N. 61 47	E. 34 23	2.18 p.m.	220?	67?	29.82	757.3	30.11	764.8	22.3	— 5.4	82	1	7	7	5	2	5	1	1	2	.....	.....	8	0.45	11.4
Pinsk	N. 52 07	E. 26 06	1.44 p.m.	459?	140?	29.69	754 2	30.24	768.1	28.3	— 2.0	84	.....	5	5	.....	2	5	10	1	3	.....	.....	8	1.13	28.8
Poti	N. 42 09	E. 41 37	2.46 p.m.	26	8	30.03	762.8	30.05	763.3	44.1	6.7	63	.....	2	4	1	2	.....	19	1	2	.....	.....	6	.....	.....
St. Petersburg	N. 59 56	E. 30 16	2.01 p.m.	20	6	30.07	763.8	30.13	765.3	25.2	— 3.8	86	.....	4	7	4	4	6	3	3	.....	.....	.....	8	0.36	9.1
Samarkand	N. 39 39	E. 66 57	4.28 p.m.	2379?	725?	27.65	702 2	30.31	769.9	29.5	— 1.4	.....	.....	.....	.....	1	.....	2	.....	.....	28	.....	.....	7	0.08	2.0
Sevastopol	N. 44 37	E. 33 31	2.14 p.m.	187	57	29.88	758 9	30.08	764.0	40.5	4.7	64	6	6	3	1	1	2	.....	11	1	.....	.....	5	0.77	19.6
Tashkend	N. 41 20	E. 69 18	4.37 p.m.	1607?	490?	28.50	723.8	30.31	769.9	27.9	— 2.3	.....	6	6	2	1	.....	1	1	.....	13	.....	.....	8	.....	.....
Tiflis	N. 41 43	E. 44 47	2.59 p.m.	1342	409	28.75	730.2	30.25	768.3	34.2	1.2	63	1	8	1	1	3	8	4	.....	5	.....	.....	6	1.10	27.9
Troit-kosavsk	N. 50 22	E. 106 27	7.06 p.m.	2529?	771?	c27.65	c702.4	30.83c	783.1c	—17.0	—27.2c	.....	0	5	.....	.....	5	.....	.....	.....	18	.....	.....	10	0.06	1.5
Viatka	N. 58 36	E. 49 41	3.19 p.m.	581?	177?	29.24	742.7	29.97	761.2	8.2	—13.2	.....	2	1	3	5	9	2	2	3	4	.....	.....	8	1.07	27.1
Warsaw	N. 52 13	E. 21 02	1.24 p.m.	390	119	29.54	750.4	30.22	767.6	28.8	— 1.8	87	.....	3	6	3	4	3	7	1	4	.....	.....	8	0.68	17.2
Yeniseisk	N. 58 27	E. 92 06	6 08 p.m.	276?	84	30.07	763.7	30.45	773 4	—13.5	—25.3	.....	1	1	1	4	2	1	3	.....	18	.....	.....	6	0.77	19.5
SCOTTISH.																										
Leith	N. 55 59	W. 3 10	11.47 a.m.	70	21	29.75	755.6	29.85	758.2	.....	.....	.....	.....	.....	9b	9	7	3	.....	1	.....	.....	.....	6	0.67	17.0
SPANISH.																										
Barcelona	N. 41 23	E. 2 15	0.09 p.m.	138	42	29.93	760.1	30.09	764.3	47.7	8.7	67	5	3	4	4	5	2	4	4	.....	.....	.....	5	0.42	10.8
Bilbao	N. 43 15	W. 2 59	11.48 a.m.	52	16	30.00	763.4	30.12	765.0	51.1	10.0	76	1	6	1	2	4	6	.....	1	10	2275	3661	6	7.82	198.6
Burgos	N. 42 20	W. 3 46	11.45 a.m.	2822	860	27.13	689.1	30.20	767.1	39.4	4.1	82	2	2	3	1	10	4	1	8	.....	4752	7648	8	1.68	42.7
Madrid	N. 40 25	W. 3 42	11.45 a.m.	2152	656	27.88	708 1	30.16	766 1	46.0	7.8	67	.....	2	7	1	2	2	6	4	7	5198	8365	5	0.54	13.8
Santiago	N. 42 53	W. 8 28	11.20 a.m.	863	263	29.17	740.9	30.10	764.6	50.4	10.2	75	.....	1	1	4	2	7	.....	8	8	4512	7262	7	3.98	101.0
SPANISH—*Sub.*																										
Havana	N. 23 08	W. 82 23	6.30 a.m.	62	19	30.07	763.8	30.08	764.0	63.3	17 4	86	7	.....	.....	.....	1	1	9	11	2	.....	.....	3	3.34	84.8
Manila	N. 14 35	E. 120 57	8.04 p.m.	52	16	29.89	759.2	29.87	758.7	76.9	24.9	85	2	.....	.....	.....	.....	.....	4	16	6	3	2329	3747	3	0.49	12.4
San Fernando	N. 36 28	W. 6 13	11.35 a.m.	95	29	30.06	763.5	30.14	765.5	56.4	13.6	67	3	2	4	.....	.....	.....	1	12	3	6	.....	5	1.36	34.5
San Juan de Porto Rico	N. 18 30	W. 66 10	7.35 a.m.	82	25	30.00	762.1	30.04	763.0	73.2	22.9	87	.....	.....	.....	.....	2	8	8	1	12	.....	.....	4	2.81	71.3
SWEDISH.																										
Haparanda	N. 65 47	E. 24 03	1.36 p.m.	30	9	29 76	755.9	29.86	758.4	25.0	— 3.9	94	.....	1	5	8	4	6	2	1	4	.....	.....	7	1.39	35.4
Umea	N. 63 50	E. 20 17	1.21 p.m.	39	12	29.82	757.5	29.92	760.0	28.6	— 1.9	90	2	2	5	9	4	2	2	1	4	.....	.....	8	1.47	37.3
Hernosand	N. 62 32	E. 17 57	1.12 p.m.	46	14	29.86	758.5	29.96	760.9	27 9	2.3	84	.....	2	2	1	11	3	.....	.....	12	.....	.....	6	1.63	41.5

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metrs	Result of Simultaneous Observations for January, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent.	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation Inch.	Mill.
SWEDISH—Con.	° ′	° ′																								
Stockholm	N. 59 20	E. 18 04	1.12 p.m.	144	44	29.85	758.3	30.07	763.7	32.0	0.0	84	1	3	6	6	8	2	2	1	2	.....	.....	8	:.00	25.3
Wisby	N. 57 39	E. 18 19	1.13 p.m.	52	16	29.98	761.6	30.08	763.9	34.3	1.3	86	3	1	5	7	7	3	3	2	.....	.....	.....	7	1.03	26.2
Sub-Series.																										
Upsala	N. 59 51	E. 17 37	1.10 p.m.	79	24	29.91	759.7	30.04	763 0	30.6	— 0.8	89	1	1	2	15	5	4	3	.....	.....	.....	.....	9	0.91	23.1
SWISS.																										
Geneva	N. 46 12	E 6 08	0.25 p.m.	1338	408	28.68	728.5	30.18	766.6	30.6	— 0.8	86	2	1	4	4	5	1	8	6	.....	.....	.....	9	0.61	15.5
TURKISH.																										
Constantinople	N. 41 02	E. 28 59	1.56 p.m.	246	75	.....	.....	30.12	765.1	45.9	7.7	71	12	5	.....	3	3	3	4	1	.....	.....	.....	7	2.46	62.5
Valona	N. 40 27	E. 19 27	1.18 p.m.	105	32	.....	.....	30.11	764.8	53.6	12.0	.....	2	7	2	2	2	4	.....	12	.....	.....	.....	5	5.71	145.0
Sub-Series.																										
Beirut	N. 33 54	E. 35 28	2.22 p.m.	112	34	.....	.....	29.91	760.5	58.6	14.8	69	8	3	6	3	5	1	1	1	3	.....	.....	5	8.91	226.3
UNITED STATES.																										
Atlantic states.																										
Eastport	N. 44 54	W. 66 59	7.32 a.m.	61	19	29.90	759.4	29.96	761.0	18.7	— 7.4	82	7	12	2	2	3	2	.....	3	.....	e8481	e13649	6	7.78	197.6
Portland	N. 43 39	W. 70 15	7.19 a.m.	99	30	29.88	758.9	29.99	761.7	15.4	— 9.2	85	10	7	4	7	1	.....	.....	1	1	6124	9855	5	3.89	98.8
Mt. Washington	N. 44 16	W. 71 18	7.15 a.m.	6279	1914	23.33	592.6	29.92	760.0	5.7	—14.6	92	1	13	9	4	2	2	.....	.....	.....	.....	.....	4	4.27	108.5
Boston	N. 42 21	W. 71 04	7.16 a.m.	124	38	29.88	758.9	30.02	762.5	22.5	— 5.3	77	5	7	8	3	4	1	1	2	.....	9865	15876	6	4.86	123.4
Nantucket	N. 41 14	W. 70 07	6.40 a.m.	14	4	30.02	762.5	30.02	762.5	30.8	— 0.7	87	4	9	2	7	2	1	2	3	1	9193	14794	5	2.97	75.4
Block Id	N. 41 10	W. 71 36	7.14 a.m.	27	8	30.01	762.2	30.03	762.7	29.6	— 1.3	86	4	1	7	8	1	4	.....	5	1	13829	22255	6	6.98	177.3
New London	N. 41 21	W. 72 05	7.12 a.m.	47	14	29.94	760.5	29.98	761.5	25.4	— 3.7	81	5	4	5	3	.....	.....	3	3	6	5292	8516	4	4.73	120.1
New Haven	N. 41 18	W. 72 56	7.08 a.m.	107	33	29.92	760.0	30.03	762.7	22.3	— 5.4	82	6	5	7	7	2	.....	1	5	.....	6746	10856	6	4.24	107.7
Albany	N. 42 39	W. 73 45	7.05 a.m.	85	26	29.96	761.0	30.05	763.3	18.2	— 7.7	79	5	4	5	.....	10	2	.....	1	4	5404	8697	6	3.02	76.7
New York City	N. 40 43	W. 74 00	7.04 a.m.	168	51	29.88	758.9	30.06	763.5	27.5	— 2.5	74	4	2	8	5	5	1	1	5	.....	6978	11230	5	4.19	106.4
Philadelphia	N. 39 57	W. 75 09	7.00 a.m.	117	36	29.97a	761.2	30.09a	764.3	a28.6	— 1.9	74a	2a	9	3	6	4	1	.....	5	.....	8623	13877	a6	3.23	82.0
Atlantic City	N. 39 22	W. 74 25	7.03 a.m.	13	4	30.07	763.8	30.07	763.8	29.1	— 1.6	86	3	7	7	9	2	.....	2	1	.....	7212	11606	4	3.50	88.9
Baltimore	N. 39 18	W. 76 37	6.54 a.m.	45	14	30.03	762.7	30.07	763.8	28.9	— 1.7	78	7	6	8	4	1	2	.....	2	1	4600	7403	5	2.57	65.3
Washington City	N. 38 54	W. 77 03	6.52 a.m.	106	32	29.98	761.5	30.08	764.0	28.6	— 1.9	78	6	6	2	2	9	1	1	1	3	4761	7662	5	2.39	60.7
Chincoteague	N. 37 55	W. 75 23	6.59 a.m.	8	2	30.08	764.0	30.07	763.8	32.8	0.4	79	.....	8	2	7	8	1	2	3	.....	11094	17854	4	3.50	88.9
Lynchburg	N. 37 25	W. 79 09	6.44 a.m.	652	199	29.38	746.2	30.08	764.0	30.0	— 1.1	81	1	5	1	11	3	.....	2	1	7	3156	5079	6	2.64	67.0
Norfolk	N. 36 51	W. 76 17	6.55 a.m.	30	9	29.09	738.9	30.10	764.5	35.1	1.7	83	5	2	3	6	7	1	.....	1	6	5727	9217	5	3.64	92.4
Hatteras	N. 35 15	W. 75 40	6.58 a.m.	12	4	30.15	765 8	30.14	765 5	42.7	5.9	85	9	5	5	7	4	.....	.....	.....	1	11269	18135	5	6.09	154.7
Wilmington	N. 34 14	W. 77 57	6.48 a.m	52	16	30.10	764.5	30.14	765.5	39.1	3.9	84	4	4	9	7	1	.....	.....	5	1	6164	9920	4	3.30	83.8
Charlotte	N. 35 13	W. 80 51	6.37 a.m.	808	246	29.26	743.2	30.11	764.8	32.7	0.4	79	5	2	1	12	3	.....	.....	.....	8	3480	5600	5	2.39	60.7
Charleston	N. 32 47	W. 79 56	6.40 a.m.	52	16	30.14	765.5	30.16	766.1	41.7	5.4	87	9	5	1	5	2	.....	.....	1	8	6059	9751	5	4.30	109.2
Augusta	N. 33 28	W. 81 54	6.32 a.m.	183	56	30.00	762.0	30.17	766.3	35.1	1.7	90	4	5	4	.....	6	2	2	3	5	3374	5430	4	3.87	98.3
Savannah	N. 32 05	W. 81 05	6.36 a.m.	87	27	30.10	764 5	30.16	766.1	41.3	5.2	80	8	4	5	3	8	.....	1	1	1	6297	10134	4	3.71	94.2
Jacksonville	N. 30 20	W. 81 39	6.34 a.m.	43	13	30.15	765.8	30.16	766.1	43.7	6.5	91	2	11	1	6	.....	2	1	2	6	4337	6980	5	4.34	110.2
Raleigh	N. 35 48	W. 78 29	6.39 a.m.	432	132	29.67	753.6	30.17	766.3	33.4	0.8	87	5	2	2	3	14	.....	.....	3	2	.....	.....	5	3.04	77.2
Cedar Keys	N. 29 08	W. 83 02	6.28 a.m.	22	7	30.21	767.3	30.19	766.8	45.8	7.7	88	7	3	4	.....	3	3	3	8	.....	6898	11111	4	1.31	33.3
Key West	N. 24 34	W. 81 49	6.33 a.m.	22	7	30.15	765.8	30.12	765.0	64.9	18.3	86	6	.....	2	1	3	1	11	6	1	8442	13586	5	0.77	19.6
Sanford	N. 28 48	W. 81 23	6.35 a.m.	25	8	30.15	765.8	30.14	765.5	50.0	10.0	85	7	4	2	4	6	1	.....	3	4	5382	8661	5	1.32	33.5
Gulf states.																										
Atlanta	N. 33 45	W. 84 23	6.23 a.m.	1129	344	28.96	735.6	30.16	766.1	33.9	1.1	83	1	7	6	2	5	3	5	2	.....	8666	13946	5	3.52	89.4
Pensacola	N. 30 25	W. 87 13	6.11 a.m.	30	9	30.15	765.8	30.14	765.5	44.4	6.9	84	8	1	2	3	3	1	5	8	.....	5518	8880	6	3.66	93.0
Mobile	N. 30 41	W. 88 02	6.08 a.m.	35	11	30.16	766.1	30.16	766.1	41.8	5.4	85	6	10	.....	2	4	5	2	2	.....	7073	11383	5	2.90	73.7
Montgomery	N. 32 23	W. 86 18	6.15 a.m.	219	67	29.96	761.0	30.17	766.3	38.3	3.5	85	4	8	1	2	3	9	.....	3	1	5070	8159	4	5.08	129.0
Vicksburg	N. 32 22	W. 90 53	5.57 a.m.	222	68	29.93	760.2	30.15	765.8	39.2	4.0	78	7	2	.....	4	6	7	1	3	1	6611	10623	5	3.62	92.0
New Orleans	N. 29 58	W. 90 04	6.00 a.m.	52	16	30.12	765.0	30.14	765.5	46.3	7.9	84	5	5	.....	1	3	5	3	7	2	7223	11624	5	4.26	108.2
Shreveport	N. 32 30	W. 93 40	5.46 a.m.	227	69	29.90	759.4	30.12	765.0	37.3	2.9	82	3	3	2	3	11	4	1	1	3	a5348	a8607	5	3.26	82.8
Fort Smith	N. 35 22	W. 94 24	5.43 a.m.	470	143	29.58	751.3	30.08	764.0	28.7	— 1.8	85	4	1	2	4	3	2	9	2	4	4339	6983	3	0.79	20.1
Little Rock	N. 34 45	W. 92 06	5.52 a.m.	299	91	29.79	756.7	30.08	764.0	33.7	0.9	80	.....	6	3	6	8	2	1	3	2	6006	9666	4	2.26	57.4
Galveston	N. 29 18	W. 94 47	5.41 a.m.	40	12	30.13	765 3	30.13	765.3	49.0	9.4	82	8	.....	.....	2	12	2	3	4	.....	8207	13208	4	1.19	30.2
Palestine	N. 31 45	W. 95 40	5.38 a.m.	533	162	29.59	751.6	30.13	765.3	38.5	3.6	83	2	5	2	4	8	3	2	5	.....	9168	14754	4	0.52	13.2
San Antonio	N. 29 27	W. 98 28	5.26 a.m.	781	238	29.31	744.5	30.12	765.0	40.9	4.9	72	13	5	1	2	5	1	.....	3	1	7158	11520	4	0.21	5.3
Brownsville	N. 25 53	W. 97 26	5.30 a.m.	57	17	30.07	763.8	30.08	764.0	52.2	11.2	90	15	.....	.....	3	9	1	1	1	1	7293	11737	3	0.22	5.6
Rio Grande City	N. 26 23	W. 98 48	5.25 a.m.	230	70	29.94	760.5	30.14	765.5	48.4	9.1	72	12	.....	1	1	4	2	1	4	6	5087	8187	4	0.02	0.5
Ohio val. & Tenn.																										
Chattanooga	N. 35 04	W. 85 15	6.19 a.m.	783	239	29.35	745.5	30.18	766.6	32.9	0.5	76	3	4	4	11	5	.....	1	3	.....	5981	9625	5	5.60	142.2
Knoxville	N. 35 56	W. 83 58	6.24 a.m.	980	299	29.11	739.4	30.16	766.1	31.2	— 0.4	79	3	4	5	6	1	1	1	6	4	6054	9743	4	3.99	101.3
Memphis	N. 35 09	W. 90 03	6.00 a.m.	320	98	29.79	756.7	30.12	765.0	35.0	1.7	77	.....	5	4	2	6	10	.....	2	2	6570	10573	4	5.00	127.0
Nashville	N. 36 10	W. 86 47	6.13 a.m.	549	167	29.54	750.3	30.12	765.0	32.0	0.0	74	2	8	.....	3	7	7	2	2	.....	7099	11424	6	5.13	130.3
Louisville	N. 38 15	W. 85 45	6.17 a.m.	551	168	29.49	749.0	30.08	764.0	27.7	— 2.4	76	4	1	6	6	8	3	.....	3	.....	7987	12854	6	4.08	103.6
Indianapolis	N. 39 46	W. 86 10	6.16 a.m.	766	233	29.20	741.7	30.04	763.0	20.8	— 6.2	84	2	2	4	9	6	5	.....	3	.....	5847	9410	7	1.48	37.6
Cincinnati	N. 39 06	W. 84 30	6.22 a.m.	628	191	29.39	746.5	30.07	763.8	25.5	— 3.6	74	3	6	4	8	1	6	.....	3	....	7212	11606	7	2.37	60.2
Columbus	N. 39 58	W. 83 00	6.28 a.m.	812	248	29.15	740.4	30.05	763.3	23.0	— 5.0	73	.....	4	7	4	10	2	2	2	.....	7344	11819	8	2.35	59.7
Pittsburg	N. 40 32	W. 80 02	6.40 a.m.	847	258	29.09	738.9	30.00	762.0	27.4	— 2.6	74	1	4	7	3	9	2	2	3	.....	7097	11421	8	1.92	48.8
Lake region.																										
Rochester	N. 43 08	W. 77 42	6.49 a.m.	621	189	29.28	743.7	29.97	761.2	19.5	— 6.9	85	.....	4	8	8	5	3	2	1	.....	10626	17101	9	1.34	34.0
Buffalo	N. 42 53	W. 78 53	6.45 a.m.	690	210	29.20	741.7	29.97	761.2	20.3	— 6.5	84	1	2	8	4	10	3	2	1	.....	12368	19904	9	1.92	48.8
Oswego	N. 43 29	W. 76 35	6.54 a.m	335	102	29.60	751.8	29.98	761.5	17.8	— 7.9	85	4	6	4	1	12	3	1	.....	.....	11755	18917	10	0.92	23.4
Erie	N. 42 07	W. 80 05	6.40 a.m.	681	208	29.24	742.7	29.99	761.7	21.8	— 5.7	80	2	7	4	11	5	.....	.....	2	.....	10045	16166	8	3.66	93.0
Sandusky	N 41 25	W. 82 40	6.30 a.m.	638	194	29.30	744.2	30.01	762.2	20.9	— 6.2	82	3	4	7	13	3	.....	1	.....	.....	11911	19168	7	1.51	38.4
Cleveland	N. 41 30	W. 81 42	6.33 a.m.	690	210	29.22	742.2	29.99	761.7	22.4	— 5.3	80	1'	4	5	5	13	1	2	.....	.....	9212	14825	8	1.92	48.8
Toledo	N. 41 40	W. 83 34	6.26 a.m.	651	198	29.27	743.4	29.99	761.7	19.9	— 6.7	78	1	2	2	10	12	.....	1	3	.....	8732	14054	7	2.21	56.1
Detroit	N. 42 20	W. 83 03	6.28 a.m.	662	202	29.23	742.4	29.96	761.0	21.3	— 5.9	77	5	4	10	8	.....	1	1	2	.....	8308	13370	7	1.31	33.3
Alpena	N. 45 05	W. 83 30	6.26 a.m.	609	186	29.23	742.4	29.92	760.0	11.3	—11.5	85	2	7	10	3	4	2	.....	2	1	7588	12212	9	5.02	127.5
Escanaba	N. 45 48	W. 87 05	6.12 a.m.	608	185	29.26	743.2	29.96	761.0	4.2	—15.4	82	11	8	1	5	2	.....	.....	3	1	6358	10232	5	1.15	29.2
Grand Haven	N. 43 05	W. 86 18	6.15 a.m.	620	189	29.24	742.7	29.93	760.2	20.1	— 6.6	81	4	3	5	6	3	2	4	4	.....	10344	16647	8	4.40	111.8
Mackinaw City	N. 45 47	W. 84 39	6.22 a.m.	605	184	29.23	742.4	29.92	760.0	10.9	—11.7	70	6	2	8	3	4	3	2	2	1	8529	13726	7	0.86	21.8
Marquette	N. 46 34	W. 87 24	6.11 a.m.	672	205	29.19	741 4	29.96	761.0	5.6	—14.7	79	3	13	7	3	1	2	1	1	.....	7773	12509	7	1.96	49.8
Port Huron	N. 43 00	W. 82 26	6.30 a.m	639	195	29.22	742.2	29.94	760.5	17.3	— 8.2	76	.....	5	6	3	12	2	3	.....	.....	10841	17446	8	2.03	51.6
Chicago	N. 41 52	W. 87 38	6.10 a.m.	661	201	29.16a	740.7a	29.95a	760.7	a14.7	— 9.6	a79	2a	12	3	5	5	1	2	.....	.....	9248	14883	a6	a3.13	a79.5
Green Bay	N. 45 35	W. 87 54	6.08 a.m.	616	188	29.29	744.0	30.00	762.0	3.4	—15.9	88	4	5	4	8	6	.....	.....	4	.....	6659	10716	6	2.51	63.8
Milwaukee	N. 43 02	W. 87 30	6.09 a.m.	697	212	29.18	741.2	29.97	761.2	11.5	—11.4	83	2	11	7	5	2	.....	2	1	1	9650	15530	5	2.66	67.6
Duluth	N. 46 48	W. 92 06	5.52 a.m.	672	205	29.25	742.9	30.03	762.7	— 3.3	—19.6	76	2	10	1	9	.....	3	1	4	1	4770	7676	4	1.62	41.2
Lansing	N. 42 45	W. 84 33	6.22 a.m.	870	265	28.99	736.3	29.99	761.7	20.5	— 6.4	84	2	3	4	10	5	1	1	3	2	7044	11336	8	3.88	98.6
Upper Miss. val.																										
Saint Paul	N. 44 58	W. 93 03	5.48 a.m.	831	253	29.07	738.4	30.03	762.7	— 4.6	—20.3	82	.....	9	4	1	2	2	5	1	7	3999	6436	4	1.79	45.5
La Crosse	N. 43 49	W. 91 15	5.55 a.m.	725	221	29.20	741.7	30.04	763.0	6.3	—14.3	74	10	3	4	2	6	4	2	.....	.....	5918	9524	5	0.25	6.4
Davenport	N. 41 30	W. 90 38	5.58 a.m.	615	187	29.33	745.0	30.02	762.5	9.3	—12.6	81	2	7	7	4	4	2	2	3	.....	7121	11460	5	1.43	36.3
Des Moines	N. 41 35	W. 93 37	5.46 a.m.	849	259	29.08	738.6	30.04	763.0	6.5	—14.2	84	8	7	2	4	4	2	2	1	1	5881	9464	3	0.83	21.1
Dubuque	N. 42 30	W. 90 44	5.57 a.m.	665	203	29.28	743.7	30.04	763.0	5.0	—15.0	69	6	7	4	1	5	.....	1	2	5	3093	4978	4	3.33	84.6
Keokuk	N. 40 22	W. 91 26	5.54 a.m.	618	188	29.36	745.7	30.04	763.0	14.7	— 9.6	83	2	8	5	3	6	.....	3	3	1	7444	11980	5	1.48	37.6
Cairo	N. 37 00	W. 89 10	6.04 a.m.	359	109	29.71	754.6	30.09	764.3	28.6	— 1.9	78	3	6	3	4	10	1	2	1	1	7976	12836	5	2.15	54.6
Springfield	N. 39 48	W. 89 39	6.02 a.m.	644	196	29.34	745.2	30.05	763.3	19.3	— 7.1	71	1	8	4	2	7	2	1	3	3	7969	12825	5	1.09	27.7
Saint Louis	N. 38 38	W. 90 12	5.59 a.m.	571	174	29.43	747.5	30.04	763.0	26.8	— 2.9	73	3	7	6	3	10	.....	.....	2	.....	9611	15467	4	0.65	16.5
Missouri valley.																										
Leavenworth	N. 39 19	W. 94 57	5.40 a.m.	842	257	29.15	740.4	30.07	763.8	15.5	— 9.2	82	9	6	2	.....	9	3	1	.....	1	5919	9526	5	1.27	32.3
Omaha	N. 41 16	W. 95 56	5.36 a.m.	1113	339	28.84	732.5	30.09	764.3	6.7	—14.1	68a	6	11	1	1	3	2	2	1	4	6049	9735	3	0.49	12.4
Fort Sully	N. 44 39	W.100 39	5.17 a.m.	1600	488	28.26	717.8	30.07	763.8	— 2.2	—19.0	72	1	8	2	.....	.....	3	.....	.....	17	5294	8520	4	1.03	26.2
Huron	N. 44 21	W. 98 09	5.28 a.m.	1307	398	28.58	725.9	30.08	764.0	— 5.8	—21.0	83	3	12	.....	1	2	7	1	1	4	5394	8681	4	0.33	8.4
Yankton	N. 42 54	W. 97 28	5.30 a.m.	1234	376	28.65	727.7	30.05	763.3	2.7	—16.3	75	5	9	5	2	2	1	2	1	4	5514	8874	3	0.43	10.9
Lamar	N. 37 32	W. 94 15	5.43 a.m.	1028	313	28.95	735.3	30.07	763.8	22.8	— 5.1	77	2	3	5	8	3	2	3	5	.....	9241	14872	4	0.63	16.0
Valentine	N. 42 50	W.100 32	5.18 a.m.	2604	793	27.18	690.4	30.01	762.2	9.4	—12.6	82	6	5	5	11	1	.....	1	1	1	9068	14593	3	0.29	7.4

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea		Result of Simultaneous Observations for January, 1887.																			Average Cloudiness.	Total Precipitation.	
						Mean Barometer.				Mean Temperature.		Mean Rel. Humidity.	Wind.														
						Actual.		Reduced.					Directions.									Total Movement.					
				Feet.	Metr's	Inch.	Mill.	Inch.	Mill.	Fah.	Cent.		N	NW	W	SW	S	SE	E	NE	C	Miles	Kil.	0–10	Inch.	Mill.
U. STATES—Con.																											
Missouri val.—Con	° ′	°																									
Moorhead *e*	N. 46 52	W. 96 44	5.33 a.m.	926	282	28.90	734.0	29.99	761.7	-14.3	-25.7	75	8	6	1	1	7	1	.....	1	1	5941	9561	4	0.48	12.2
Saint Vincent	N. 48 56	W. 97 14	5.31 a.m.	804	245	29.12	739.6	30.09	764.3	-18.0	-27.8	83	6	8	1	.....	7	2	.....	1	6	5108	8220	5	0.68	17.3
Bismarck	N. 46 47	W. 100 38	5.17 a.m.	1694	516	28.12	714.2	30.08	764.0	-10.8	-23.8	96	4	4	1	.....	.....	1	1	2	18	3814	6138	4	0.95	24.1
Fort Buford	N. 48 00	W. 103 56	5.04 a.m.	1930	588	27.85	707.4	29.98	761.5	-8.5	-22.5	92	2	6	4	2	7	.....	4	3	3	6489	10443	6	0.51	13.0
Fort Totten	N. 47 57	W. 98 57	5.24 a.m.	1487	453	28.30	718.8	30.06	763.5	-16.3	-26.8	84	.....	9	5	4	3	.....	2	3	5	9755	15699	6	0.70	17.8
Rocky Mount. reg.																											
Ft. Assinnaboine	N. 48 32	W. 109 42	4.41 a.m.	2720	829	26.96	684.8	29.92	760.0	8.4	-13.1	64	1	2	3	19	.....	1	1	1	3	9223	14843	6	1.17	29.7
Fort Custer	N. 45 42	W. 107 34	4.50 a.m.	3040	927	26.67	677.4	29.95	760.7	14.5	-9.7	83*b*	5	5	8	6	3	4	.....	.....	.....	6521	10494	7	1.31	33.3
Fort Maginnis	N. 47 12	W. 109 10	4.43 a.m.	4340	1323	25.27	641.8	29.80	756.9	15.2	-9.3	75	2	17	9	.....	.....	2	.....	.....	1	12413	19976	6	2.77	70.4
Helena	N. 46 34	W. 112 04	4.32 a.m.	4069	1240	25.61	650.5	29.88	758.9	17.9	-7.8	75	3	5	4	14	2	.....	1	2	.....	6973	11222	7	1.35	34.3
Deadwood	N. 44 23	W. 105 10	4.59 a.m.	2000	610	27.73	704.3	30.01	762.2	-12.7	-24.8	83	5	.....	10	.....	.....	1	3	5	7	4199	6758	4	0.49	12.4
North Platte	N. 41 08	W. 103 43	5.05 a.m.	4600	1402	25.14	638.5	29.95	760.7	17.8	-7.9	81	2	2	.....	20	2	.....	.....	5	.....	4729	7610	3	3.18	80.8
Pike's Peak	N. 38 50	W. 100 45	5.17 a.m.	2841	866	26.98	685.3	30.04	763.0	11.5	-11.4	82	2	7	15	1	1	2	3	.....	.....	5803	9339	2	0.15	3.8
Concordia	N. 39 35	W. 105 02	5.00 a.m.	14134	4308	17.41	442.2	30.03	762.7	-1.0	-18.3	82	6	13	9	3	.....	.....	.....	.....	.....	28691	46173	2	0.71	18.0
Denver	N. 39 45	W. 97 41	5.29 a.m.	1384	422	28.54	724.9	30.05	763.3	14.4	-9.8	79	7	5	4	4	1	.....	4	2	4	6481	10430	3	0.61	15.5
W. Las Animas	N. 38 04	W. 105 00	5.00 a.m.	5294	1614	24.59	624.6	29.94	760.5	25.7	-3.5	66	2	3	5	7	13	.....	.....	1	.....	8295	13349	3	0.67	17.0
Dodge City	N. 37 45	W. 103 12	5.07 a.m.	3899	1188	25.96	659.4	30.02	762.5	15.0	-9.4	85	.....	2	19	2	.....	2	4	1	1	5928	9540	3	0.13	3.3
Fort Elliott	N. 35 30	W. 100 00	5.20 a.m.	2524	770	27.35	694.7	30.06	763.5	17.1	-8.3	.2	3	7	2	3	6	3	1	5	1	7030	11314	2	0.07	1.8
Fort Sill	N. 34 40	W. 100 21	5.19 a.m.	2650	808	27.20	690.9	29.96	761.0	26.4	-3.1	69	2	17	2	1	2	3	.....	.....	4	9275	14926	1	0.01	0.2
Abilene	N. 32 14	W. 98 23	5.26 a.m.	1200	366	28.81	731.8	30.08	764.0	27.8	-2.3	68	13	5	3	7	2	.....	.....	.....	1	9902	15935	2	0	0
Fort Davis	N. 30 38	W. 99 45	5.21 a.m.	1748	533	28.25	717.5	30.08	764.0	35.3	1.8	64	3	3	2	17	2	.....	.....	4	.....	12017	19339	2	0.06	1.5
Fort Stanton	N. 33 30	W. 105 26	5.04 a.m.	4928	1502	25.18	639.6	30.05	763.3	37.7	3.2	33	2	2	2	14	4	.....	.....	3	4	7096	11420	2	0.01	0.2
Plateau region.																											
Keeler	N. 36 35	W. 117 50	4.09 a.m.	3622	1104	26.40	670.5	30.10	764.5	37.5	3.1	57	3	1	.....	1	.....	4	12	2	8	3138	5050	2	.....	.....
Santa Fé	N. 35 41	W. 105 57	4.56 a.m.	7026	2141	23.20	589.3	30.07	763.8	22.7	-5.2	61	15	1	.....	.....	2	1	1	5	6	4671	7517	2	0.10	2.5
Fort Thomas	N. 33 04	W. 110 02	4.40 a.m.	2710	826	27.35	694.7	30.15	765.8	26.6	-3.0	83	1	3	3	.....	2	13	8	1	.....	2220	3573	2	0.09	2.3
Fort Apache	N. 33 48	W. 109 57	4.40 a.m.	5950	1539	25.07	636.8	30.17	766.3	22.2	-5.4	69	1	.....	1	1	.....	.....	13	13	2	4451	7163	1	0.59	15.0
Fort Grant	N. 32 39	W. 109 57	4.40 a.m.	4856	1480	25.26	641.6	30.12	765.0	37.5	3.1	52	3	4	.....	2	1	4	7	10	.....	5187	8348	2	0.11	2.8
Prescott	N. 34 33	W. 112 28	4.30 a.m.	5389	1643	24.75	628.6	30.13	765.3	25.5	-3.6	76	1	1	.....	11	1	.....	1	2	14	4016	6463	2	Inap.	Inap.
Yuma	N. 32 45	W. 114 36	4.22 a.m.	141	43	29.94	760.5	30.06	763.6	46.5	8.1	56	13	3	1	2	.....	1	4	7	....	4654	7490	1	0	0
El Paso	N. 31 47	W. 106 30	4.54 a.m.	3764	1147	26.30	668.0	30.09	764.3	35.1	1.7	55	1	11	11	.....	.....	.....	1	2	4	4209	6774	1	0.03	0.8
Fort Bridger	N. 41 28	W. 110 30	4.38 a.m.	6643?	2025?	23.40	594.3	30.06	763.5	17.9	-7.8	70	1	4	8	16	2	.....	.....	.....	.....	13958	22463	6	1.44	36.6
Salt Lake City	N. 40 46	W. 111 54	4.32 a.m.	4348	1325	25.62	650.7	30.08	764.0	31.2	-0.4	75	4	2	3	.....	5	11	2	2	2	3862	6215	7	2.36	59.9
Frisco	N. 38 25	W. 113 16	4.27 a.m.	6400	1950	23.69	601.7	30.02	762.5	27.5	-2.5	63	12	2	7	9	.....	.....	.....	.....	1	7594	12221	3	0.15	3.8
Winnemucca	N. 40 58	W. 117 43	4.09 a.m.	4358	1328	25.67	652.0	30.14	765.5	29.4	-1.4	69	1	1	.....	21	1	.....	1	5	1	8543	13748	4	0.51	13.0
Montrose	N. 38 30	W. 107 56	4.48 a.m.	5780	1762	24.27	616.4	30.10	764.5	20.9	-6.2	73	1	1	3	2	5	14	3	1	1	4455	7170	5	0.16	4.1
Fort Bidwell	N. 41 53	W. 120 11	3.59 a.m.	4640	1414	25.41	645.4	30.15	765.8	31.1	-0.5	92	1	11	7	11	.....	.....	.....	1	.....	8072	12990	6	3.31	84.1
Boisé City	N. 43 37	W. 116 08	4.15 a.m.	2750	838	27.20	690.9	30.10	764.5	33.3	0.7	83	4	7	2	1	2	11	4	.....	.....	4268	6869	7	2.89	73.4
Spokane Falls	N. 47 40	W. 117 25	4.10 a.m.	1909	582	27.86	707.6	29.93	760.2	28.0	-2.2	87	2	1	4	17	1	.....	2	.....	4	5005	8055	4	1.91	48.5
Walla Walla	N. 46 03	W. 118 18	4.07 a.m.	1018	310	28.90	734.0	30.01	762.2	39.5	4.2	71	1	.....	1	25	2	2	.....	.....	....	8814	14185	7	2.36	59.9
Pacific coast reg'n.																											
Fort Canby	N. 46 16	W. 124 04	3.44 a.m.	179	55	29.81	757.2	30.01	762.2	41.0	5.0	96	.....	3	13	3	6	6	.....	.....	....	10762	17319	9	11.91	302.5
Olympia	N. 47 03	W. 122 53	3.48 a.m.	36	11	29.96	761.0	30.00	762.0	39.1	3.9	94	.....	1	3	7	18	.....	1	.....	1	4939	7948	8	9.83	249.7
Port Angeles	N. 48 07	W. 123 06	3.48 a.m.	14	4	29.91	759.7	29.93	760.2	36.2	2.3	95	.....	.....	1	4	25	.....	.....	.....	1	3261	5248	8	6.20	157.4
Tatoosh Id	N. 48 23	W. 124 44	3.41 a.m.	86	26	29.80	756.9	29.90	759.4	42.6	5.9	86	.....	4	8	9	1	5	4	.....	.....	12911	20778	8	14.46	367.3
Portland	N. 45 32	W. 122 43	3.49 a.m.	80	24	30.00	762.0	30.09	764.3	41.3	5.2	93	.....	1	.....	3	21	5	.....	.....	1	6328	10184	9	12.31	312.7
Roseburg	N. 43 13	W. 123 20	3.47 a.m.	523	159	29.64	752.8	30.21	767.3	41.2	5.1	89	.....	4	.....	3	9	3	3	7	2	3080	4957	8	8.64	219.5
Eureka	N. 52 08	W. 0 27	0.06 p.m.	109	143	30.17	766.3	.....	.....	43.7	6.5	92	6	1	1	.....	2	8	1	1	11	1219*k*	1962*k*	6	8.86	225.0
Red Bluff	N. 40 10	W. 122 15	3.51 a.m.	342	104	29.83	757.7	30.17	766.3	42.8	6.0	79	14	1	4	1	6	2	.....	2	1	5193	8357	4	0.57	14.5
Sacramento	N. 38 35	W. 121 30	3.54 a.m.	64	20	30.11	764.8	30.16	766.1	42.7	5.9	86	3	4	1	.....	4	10	2	1	6	4411	7099	2	1.12	28.4
San Francisco	N. 37 48	W. 122 26	3.50 a.m.	60	18	30.13	765.3	30.18	766.6	48.7	9.3	84	13	5	1	3	2	2	.....	1	4	4701	7565	4	1.90	48.3
Los Angeles	N. 34 03	W. 118 15	4.07 a.m.	339	103	29.73	755.1	30.06	763.5	46.5	8.1	71	6	.....	.....	....	.....	.....	1	24	.....	4388	7062	2	0.20	5.1
San Diego	N. 32 43	W. 117 10	4.11 a.m.	67	20	30.02	762.5	30.06	763.5	47.5	8.6	74	3	.....	2	.....	2	1	11	8	4	3508	5646	2	0.04	1.0
Sitka	N. 57 03	W. 135 19	2.59 a.m.	63	19	29.47	748.5	29.57	751.1	27.7	-2.4	72	.....	4	.....	1	.....	9	12	2	3	8543	13748	8	7.83	198.9
Sub-Series.																											
Colon	N. 9 22	W. 79 55	6.40 a.m.	7	2	29.88	758.9	29.82	757.4	76.1	24.5	87	19	.....	.....	.....	4	.....	1	.....	7	.....	.....	6	2.02	51.2
Gamboa	N. 9 05	W. 79 42	6.41 a.m.	107	31	29.84	757.9	29.87	758.7	68.5	20.3	96	1	.....	.....	1	.....	.....	.....	.....	29	.....	.....	6	2.22	56.5
Kingston	N. 18 01	W. 76 48	6.53 a.m.	10	3	30.06	763.5	30.01	762.2	68.7	20.4	89	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	0.46	11.7
Naos	N. 8 55	W. 79 32	6.42 a.m.	49	15	29.89	759.3	29.88	758.9	73.9	23.3	92	.....	30	1	.....	.....	.....	.....	.....	.....	.....	.....	4	0.69	17.5
Rivas	N. 11 26	W. 85 47	6.17 a.m.	150	46	.....	.....	.....	.....	73.6	23.1	77	.....	.....	.....	.....	.....	.....	12	19	.....	.....	.....	4	0.90	22.9
Vera Cruz	N. 19 11	W. 96 09	5.35 a.m.	16	5	30.03	762.7	30.05	763.3	.....	.....	.....	10	3	6	3	.....	1	.....	3	5	.....	.....	2	0	0

SUMMARY OF OBSERVATIONS TAKEN AT CHILIAN STATIONS, APRIL TO JULY, 1886.

APRIL, 1886.	° ′	° ′																									
Coquimbo	S. 29 56	W. 71 21	7.30 a.m.	74	22	29.92	760.0	29.96	761.0	57.0	13.9	88	6	3	.....	4	.....	6	2	2	7	.....	.....	c7	?	?
Iquique	S. 20 12	W. 70 11	7.30 a.m.	30	9	29.95	760.6	29.91	759.7	61.5	16.4	83	2	1	1	3	5	.....	.....	.....	18	.....	.....	4	0	0
Niebla	S. 39 53	W. 73 25	7.30 a.m.	98	30	29.58	751.3	29.68	753.9	50.0	10.0	90	5	.....	3	.....	.....	.....	21	.....	1	.....	.....	e6	10.65	27.05
Punta Caldera	S. 27 03	W. 70 53	7.30 a.m.	44	13	29.92	760.0	29.95	760.7	61.2	16.2	81	.....	5	.....	6	.....	6	2	11	.....	.....	.....	7	?	?
Punta Corona	S. 41 46	W. 73 53	7.30 a.m.	174	52	29.97	761.3	30.15	765.8	50.2	10.1	.....	.....	8	.....	5	2	10	1	5	.....	.....	.....	6	5.07	128.7
Quiriquina	S. 36 37	W. 73 03	7.30 a.m.	190	57	29.81	757.2	29.99	761.7	56.1	13.4	82	2	1	3	1	14	2	3	.....	4	.....	.....	4*d*	0.68	17.3
Valparaiso	S. 33 03	W. 71 36	7.30 a.m.	131	40	29.88	759.0	30.00	762.0	52.9	11.6	86*a*	4	1	...	3	2	.....	.....	4	16	.....	.....	e4	?	?
MAY, 1886.																											
Coquimbo	S. 29 56	W. 71 21	7.30 a.m.	74	22	29.95	760.7	29.99	761.7	52.9	11.6	89	3	.....	2	4	4	8	7	.....	3	.....	.....	6e	1.11	28.2
Iquique	S. 20 12	W. 70 11	7.30 a.m.	30	9	29.94	760.5	29.91	759.7	59.9	15.5	79	.....	.....	1	3	5	3	2	4	13	.....	.....	7	0	0
Niebla	S. 39 53	W. 73 25	7.30 a.m.	98	30	29.58	751.2	29.67	753.6	47.5	8.6	95	3	5	.....	.....	.....	.....	22	.....	1	.....	.....	*h*8	22.05	560.0
Punta Caldera	S. 27 03	W. 70 53	7.30 a.m.	44	13	29.95	760.7	29.99	761.7	59.0	15.0	78	3	5	.....	1	1	7	.....	13	*a*	.....	.....	7	0.72	18.3
Punta Corona	S. 41 46	W. 73 53	7.30 a.m.	174	52	29.92	759.9	30.10	764.5	48.9	9.4	.....	3	13	.....	7	2	4	.....	2	.....	.....	.....	8	8.10	205.8
Quiriquina	S. 36 37	W. 73 03	7.30 a.m.	190	57	29.87	758.6	30.05	763.3	54.5	12.5	84	2	7	4	3	7	5	1	.....	2	.....	.....	*b*7	5.10	129.4
Valparaiso	S. 33 01	W. 71 39	7.30 a.m.	131	40	29.93	760.3	30.05	763.3	49.5	9.7	87	1	.....	.....	2	3	1	.....	6	18	.....	.....	*g*4	2.80	71.2
JUNE, 1886.																											
Coquimb	S. 29 56	W. 71 21	7.30 a.m.	74	22	29.99	761.7	30.03	762.7	49.6	9.8	87	3	1	2	7	4	6	6	.....	1	.....	.....	e5	1.88	47.8
Iquique	S. 20 12	W. 70 11	7.30 a.m.	30	9	29.85	758.3	29.81	757.2	58.1	14.5	73	.....	1	.....	5	5	6	2	7	4	.....	.....	8	0	0
Niebla	S. 39 53	W. 73 25	7.30 a.m.	98	30	29.65	753.1	29.75	755.6	43.5	6.4	94	2	3	1	.....	.....	.....	.....	24	.....	.....	.....	7*l*	17.89	454.4
Punta Calder	S. 27 03	W. 70 53	7.30 a.m.	44	13	30.17	766.4	30.21	767.3	55.2	12.9	80	3	2	.....	4	1	5	3	12	.....	.....	.....	6	0.30	7.7
Punta Corona	S. 41 46	W. 73 53	7.30 a.m.	174	52	29.96	761.0	30.14	765.5	46.6	8.1	.....	5	3	.....	10	.....	4	1	2	1	.....	.....	7	12.57	319.3
Quiriquina	S. 36 37	W. 73 03	7.30 a.m.	190	57	29.91	759.7	30.09	764.3	50.2	10.1	80	4	3	3	2	7	7	1	2	1	.....	.....	6*a*	.....	.....
Valparaiso	S. 33 01	W. 71 39	7.30 a.m.	131	40	29.98	761.4	30.09	764.3	45.7	7.6	84	3	.....	2	4	6	1	1	2	11	.....	.....	4	2.73	69.3
JULY, 1886.																											
Coquimbo	S. 29 56	W. 71 21	7.30 a.m.	74	22	29.98	761.5	30.02	762.2	49.5	9.7	87	3	.....	3	4	3	5	11	2	.....	.....	.....	c7	0	0
Iquique	S. 20 12	W. 70 11	7.30 a.m.	30	9	29.85	758.2	29.82	757.4	57.2	14.0	70	2	.....	1	2	5	7	7	6	1	.....	.....	*b*10	0	0
Niebla	S. 39 53	W. 73 25	7.30 a.m.	98	30	29.64	752.9	29.74	755.4	45.0	7.2	94	7	5	2	.....	.....	.....	16	1	.....	.....	.....	*h*8	19.10	485.0
Punta Caldera	S. 27 03	W. 70 53	7.30 a.m.	44	13	29.97	761.2	30.01	762.2	53.6	12.0	79	1	4	.....	1	1	5	1	18	.....	.....	.....	7	?	?
Punta Corona	S. 41 46	W. 73 53	7.30 a.m.	174	52	29.89	759.3	30.07	763.8	46.6	8.1	.....	4	9	4	4	2	1	1	6	.....	.....	.....	8	13.14	333.7
Quiriquina	S. 36 37	W. 73 03	7.30 a.m.	190	57	29.89	759.2	30.08	764.0	50.5	10.3	81	2	8	3	2	4	11	.....	.....	1	.....	.....	*d*6	5.71	145.0
Valparaiso	S. 33 03	W. 71 37	7.30 a.m.	131	40	29.96	761.0	30.08	764.0	48.6	9.2	89	3	.....	2	1	5	3	1	4	12	.....	.....	e6	0.30	7.6

OCEAN SQUARE DATA FOR JANUARY, 1887.

Location of Centre of each Square.	Barometer.		Temperature.		Wind Frequency.										Wind force 0–10.
	Inch.	Mill.	Fah.	Cent.	N.	NW.	W.	SW.	S.	SE.	E.	NE.	Calm.	Blank.	
N. 12.5° W. 22.5°															
12.5 27.5															
12.5 32.5															
12.5 37.5	29.99	761.7									25	6			4.3
12.5 42.5	29.99	701.7								2	24	5			4.4
12.5 47.5	29.97	761.2								3	28				4.2
12.5 52.5	29.94	760.4								4	26	1			4.2
17.5 22.5															
17.5 27.5															
17.5 32.5															
17.5 37.5	30.07	763.8								2	18	11			4.7
17.5 42.5	30.07	763.8								4	19	8			4.7
17.5 47.5	30.06	763.5								4	21	6			4.5
17.5 52.5	30.03	762.7								7	19	5			4.3
17.5 57.5	30.00	762.0								1	25	5			4.4
22.5 22.5															
22.5 27.5	30.10	764.5			2	1		1		2	5	20			4.8
22.5 32.5	30.16	766.1			2					1	14	13	1		4.6
22.5 37.5	30.15	765.8			1					2	13	15			4.8
22.5 42.5	30.15	765.8			2					6	11	12			4.8
22.5 47.5	30.14	765.5			2					6	14	9			4.8
22.5 52.5	30.13	765.3			1					11	13	6			4.7
22.5 57.5	30.11	764.8							1	11	13	6			4.9
22.5 62.5	30.10	764.5					1		2	10	14	4			4.6
22.5 67.5															
22.5 72.5															
27.5 22.5	30.10	764.5			6	1	1		3	3	1	16			4.8
27.5 27.5	30.16	766.1			2	4		2	1	3	3	16			5.3
27.5 32.5	30.19	766.8			7	3				3	11	7			5.0
27.5 37.5	30.22	767.6			5	2		1	2	3	10	8			4.8
27.5 42.5	30.24	768.1			7	1		1	1	4	10	7			4.5
27.5 47.5	30.24	768.1			2				5	9	7	8			4.2
27.5 52.5	30.22	767.7			2	1		1	7	8	6	6			4.5
27.5 57.5	30.20	767.1				1		3	6	12	4	5			4.7
27.5 62.5	30.19	766.8			2	3	1		9	10	4	2			4.9
27.5 67.5	30.17	766.3			2	4	1	1	6	8	5	4			4.5
27.5 72.5	30.16	766.1			5	3	1	2	6	4	5	5			4.4
27.5 77.5															
32.5 12.5															
32.5 17.5															
32.5 22.5															
32.5 27.5	30.20	767.1			2	6	2	1	4	2	2	12			5.3
32.5 32.5	30.23	767.8			4	6	1	3	2	3	4	8			5.0
32.5 37.5	30.26	768.6			3	6		4	3	1	7	6	1		4.6
32.5 42.5	30.27	768.8			3	3	2	7	2	7	1	6			4.4
32.5 47.5	30.27	768.8			4	4	2	5	4	9		3			4.5
32.5 52.5	30.26	768.6			4		1	8	8	5		4	1		4.5
32.5 57.5	30.22	767.6			2		4	8	10	3	1	3			5.1
32.5 62.5	30.20	767.1			1	3	6	8	5	4	2	2			5.4
32.5 67.5	30.17	766.3			1	6	4	7	5	3	2	3			5.5
32.5 72.5	30.15	765.8			3	6	3	9	4		4	2			5.6
32.5 77.5															
37.5 12.5															
37.5 17.5															
37.5 22.5															
37.5 27.5															
37.5 32.5	30.23	767.8			5	9		5	2	1	3	6			5.0
37.5 37.5	30.24	768.1			1	7	3	7	2	4	3	4			5.0
37.5 42.5	30.24	768.1			1	9	2	8	3	5		3			5.0
37.5 47.5	30.22	767.6			3	4	5	12	4	1		2			5.1
37.5 52.5	30.18	766.6			4	2	3	16	3	1	1	1			5.6
37.5 57.5	30.14	765.5			5	1	6	14	3	1	1				6.1
37.5 62.5	30.10	764.5			3	6	5	9	4		2	2			6.5
37.5 67.5	30.09	764.3			1	7	6	8	2	3	1	3			5.9
37.5 72.5															
42.5 12.5															
42.5 17.5															
42.5 22.5	30.13	765.3			5	7	5	6	1	4	3				5.4
42.5 27.5	30.13	765.3			4	10	5	6	2	3	1				5.3
42.5 32.5	30.12	765.0			3	10	4	6	4	2	2				5.5
42.5 37.5	30.12	765.0			1	8	5	12	2	2		1			6.1
42.5 42.5	30.11	764.8			1	9	4	14	2			1			5.7
42.5 47.5	30.09	764.3			4	7	8	11	1						5.9
42.5 52.5	30.06	763.5			5	6	4	11	3			2			5.6
42.5 57.5	30.01	762.2			4	5	4	10	2	2	1	3			6.0
42.5 62.5															
42.5 67.5															
47.5 12.5															
47.5 17.5	30.02	762.5			2	9	5	8	6			1			5.7
47.5 22.5	29.96	761.0			5	6	6	11	3						6.0
47.5 27.5	29.96	761.0			1	11	6	10	2			1			6.4
47.5 32.5	29.95	760.7				10	9	8	2			2			6.7
47.5 37.5	29.95	760.7			2	12	6	6	1	4					6.5
47.5 42.5	29.95	760.7			2	9	6	8	3	1		2			6.5
47.5 47.5	29.95	760.7				9	5	9	3	1		3		1	5.8
52.5 12.5															
52.5 17.5	29.80	756.9			1	8	5	14	3						6.3
52.5 22.5	29.78	756.4			2	9	4	15		1					6.7
52.5 27.5	29.76	755.9				11	5	13	1		1				6.9
52.5 32.5	29.74	755.4			2	9	8	11	1						6.7
52.5 37.5	29.76	755.9			3	13	6	8			1				6.7
52.5 42.5	29.79	756.7			4	11	7	8	1						6.7
52.5 47.5	29.83	757.7			2	12	2	9	1	1				4	5.6
57.5 12.5	29.58	751.3			1	4	3	17	4		1	1			6.5
57.5 17.5	29.53	750.0			2	7	6	13	3						7.1
57.5 22.5	29.49	749.0			1	11	6	11	2						7.2
57.5 27.5	29.51	749.5			1	12	6	9	1			1		1	7.0
57.5 32.5	29.53	750.0			1	15	5	7		1		1		1	6.6
57.5 37.5	29.58	751.3			3	14	6	6		1				1	6.2
57.5 42.4	29.62	752.3			3	10	5	3				1		9	5.9
57.5 47.5	29.72	754.9			3	9	1	1	1			1		15	5.4

OCEAN SQUARES.—The table of ocean square data shows (1) the location of the centres of squares whose sides extend 5° each in latitude and longitude, (2) the monthly mean pressure and temperature of the air, and the mean force and total frequency of the wind at noon, Greenwich mean time, computed for the centre of each square from daily readings as obtained by interpolation between the isobars and isotherms of the daily international simultaneous weather maps.

REVIEW.

INTERNATIONAL METEOROLOGY FOR JANUARY, 1887.

[*Pressure expressed in inches and millimetres; temperature in degrees, Fahrenheit and Centigrade; wind-force by scale of* 0–10.]

The following refers to chart ii for the month of January, 1887. This chart continues the series of international charts begun in January, 1877, and exhibits the mean pressure and the prevailing wind-directions over the northern hemisphere, as determined from simultaneous observations taken once each day at 7 a. m., 75th meridian, or noon Greenwich, mean time:

The area of lowest mean pressure occupies the Greenland Sea northwest of Iceland, with minimum 29.09 (738.9) at Stykkisholm. A second area of low mean pressure appears off the west coast of the American continent, with minimum 29.57 (751.1) at Sitka, Alaska. An area of relatively low mean pressure, bounded by the isobar of 29.80 (756.9), is charted over the south-central part of British India.

The area of highest mean pressure is located over east-central Asia, with maximum 30.87 (784.1) at Nerchinsk. Two areas of high pressure, with included values rising above 30.20 (767.1), are traced, one over the north Atlantic Ocean south of the fortieth parallel, and the other off the west-central coast of the American continent.

In the United States the mean pressure is highest in Oregon, where it rises to 30.19 (766.8) at Roseburg; a second area, including values above 30.15 (765.8), extends over the east Gulf states. Two areas of low pressure appear, one occupying the northern plateau region, with minima below 29.95 (760.7); the other covering the upper Lake region, with means falling below 29.95 (760.7). In the British Possessions in North America the mean pressure is highest in the Saint Lawrence Valley, where it averages about 30.00 (762.0), and lowest on the Pacific coast north of the fifty-fifth parallel, where it falls below 29.60 (751.8). Over Labrador and the northern extremity of Newfoundland the pressure ranges below 29.80 (756.9). Over the north Atlantic Ocean there is a barometric gradient of 1.18 inches between the thirty-second parallel and Stykkisholm, Iceland. Over Europe the pressure is highest over, and to the northward of, the Caspian Sea, where it rises above 30.31 (769.9), and lowest in northern Norway, where it falls below 29.60 (751.8). Over Asia there is a gradient of 1.77 inches between Nerchinsk and Nikolaievsk, Siberia. From Nerchinsk southwest to Bellary, British India, there is a gradient of 1.09 inches, while along the one hundred and twentieth meridian there is a gradient of 1.00 between Manilla, Philippine Islands, and the fifty-first parallel.

When compared with the chart of the preceding month very large deficiencies in mean pressure occur in all parts of the United States, except in the south Atlantic and east Gulf states, and on the Pacific slope, where it coincides with, or is slightly above, that of December, 1886. In the northern plateau region and the Missouri and upper Mississippi valleys there has been an average decrease of about .17 inch. In the Lake region and Ohio Valley the deficiencies average about .15 inch. In Canada the mean pressure is about .10 inch lower over the Maritime Provinces. In the Saint Lawrence Valley and Lake region there has been a decrease of .05 to .16 inch. In the Saskatchewan Valley the deficit amounts to over .20 inch, while in British Columbia the mean pressure is about .10 inch lower than in December. Over the north Atlantic Ocean the area of low pressure central for the preceding month between Iceland and Norway has moved to the east-central coast of Greenland, with a decrease of about .37 inch in the barometric minimum, while within the area of high pressure west and southwest of the Azores the changes have been unimportant. Over the British Isles there has been an average increase of about .20 inch. Over Scandinavia the increase has varied from .06 inch in the extreme north to .43 on the west coast, and .54 inch over the extreme southern portion. Over the balance of Europe there has been a decided increase in pressure, except over the Spanish Peninsula, where slight changes are noted. In British India the mean pressure averages about .10 inch lower. Over the interior of Asia the centre of the area of high pressure has moved east about twenty degrees, with an increase in barometric maximum of .40 inch. Over the Japanese Islands there has been an increase of about .20 inch.

In the United States the departures from the normal pressure are small in the south Atlantic and Gulf states, Arizona, California, and southern Oregon; in all other districts large deficiencies occur, ranging from .20 to .26 inch in Montana, northern Idaho, and the eastern part of Washington Territory, .07 to .14 inch in the Missouri and upper Mississippi valleys and the Lake region, and .05 to .10 inch in New England. In Canada the average pressure is below the normal, except at some stations in Nova Scotia, where it is about normal. The defect is greatest over Ontario, where it is about .12 inch. In the Northwest Territories the pressure is below the normal obtained from three years by more than .20 inch. Over the north Atlantic Ocean there is a deficit of .47 inch at Stykkisholm, Iceland. Over the Azores the mean pressure is about .06 inch above the normal. Over the West Indies and Bahamas the departures are small, while in the vicinity of the Madeira Islands the mean pressure is about .11 inch below normal. Over the British Isles there is an average deficit of .02 inch. Over the continent of Europe the greatest departure above the normal, .10 inch, occurs over Denmark, and the largest deficit, .05 inch, in Norway. Over European Russia the average mean pressure corresponds with the normal for nine years. Over British India the pressure is .07 inch below the normal. Within the area of barometric maxima, central over Nerchinsk, Asia, the pressure is about .20 inch above the normal. At Zi-Ka-Wei, China, there is a deficit of .07 inch, while at Tokio, Japan, the excess amounts to .05 inch. At Nikolaievsk-on-the-Amoor the mean pressure is .09 inch above, and at Manilla, Philippine Islands, it is .12 below the normal. At Sitka, Alaska, the pressure is about .26 inch below the normal for six years.

In the United States the mean temperature was below the normal in Dakota, Nebraska, and over the entire eastern half of the country, except along the New England and middle Atlantic coasts, where it was about normal; over the western part of the country the temperature was above the January average. In Canada the mean temperature was below the normal for thirteen years in Manitoba, Ontario, Quebec, and New Brunswick. The greatest defects were at Winnipeg, 8°.1, and Rockliffe (ten years only), 8°.3. In Nova Scotia and British Columbia the mean temperature was above the normal. Over the British Isles the temperature averaged slightly below the normal. Over the continent of Europe the greatest departure above the normal, 5°.4, occurred in Sweden, and the least, 0°.8, in Austro-Hungary. The greatest departure below the normal, 4°.7, occurred in Germany, and the least, 1°.1, in Denmark. In British India the temperature averaged slightly below the normal, while at Zi-Ka-Wei, China, and Tokio, Japan, the month was somewhat warmer than the average January.

The following table shows the mean pressure and mean temperature for January, 1887, in the several countries of the eastern hemisphere, and the departures as compared with the means determined from observations taken during the last ten years:

Countries.	Mean pressure.			Mean temperature.		
	Jan. mean of 10 (1877–'86) years.	Jan., 1887.	Departure.	Jan. mean of 10 (1877–'86) years.	Jan., 1887.	Departure.
				°	°	°
Austro-Hungary	30.14	30.17	+ 0.03	33.4	34.2	+ 0.8
British Isles	29.97	29.95	— 0.02	40.8	39.9	— 0.9
Denmark	29.99	30.09	+ 0.10	32.8	31.7	— 1.1
France	30.10	30.06	— 0.04	41.9	38.9	— 3.0
Germany	30.09	30.17	+ 0.08	33.0	28.3	— 4.7
India	29.93	29.86	— 0.07	71.6	70.3	— 1.3
Italy	30.05	30.09	+ 0.04	47.6	43.8	— 3.8
Norway	29.85	29.80	— 0.05	29.9	34.2	+ 4.3
Russia	30.11	30.11	normal.	21.5	24.1	+ 2.6
Spain*	30.14	30.12	— 0.02	50.9	46.4	— 4.5
Sweden	29.90	29.98	+ 0.08	24.2	29.6	+ 5.4

* Means for nine years only.

The accompanying table shows the deviations in pressure and temperature at isolated stations during the month of January, 1887, as compared with the means for ten years:

Stations.	Mean pressure.			Mean temperature.		
	Jan. mean of 10 (1877–'86) years.	Jan., 1887.	Departure.	Jan. mean of 10 (1877–'86) years.	Jan., 1886.	Departure.
				°	°	°
Archangel, Russia *	29.83	29.97	+ 0.14	7.7	15.1	+ 7.4
Athens, Greece	30.04	30.09	+ 0.05	51.2	50.5	− 0.7
Beirut, Turkey in Asia	30.04	29.94	− 0.10	60.0	58.6	− 1.4
Barnaul, Siberia	30.41	30.45	+ 0.04	2.1	− 6.3	− 8.4
Bridgetown, Barbadoes	29.95	29.87	− 0.08	80.3	81.4	+ 1.1
Ekaterinburg, Russia	30.11	30.29	+ 0.18	5.4	18.1	+12.7
Funchal, Madeira Islands	30.17	30.06	− 0.11	64.1	63.4	− 0.7
Gibraltar *	.....	30.10	.....	58.7	56.8	− 1.9
Havana, Cuba, W. I.	30.07	30.08	+ 0.01	67.3	63.3	− 4.0
Malta, Mediterranean Sea	30.01	29.97	− 0.04	58.2	53.8	− 4.4
Melbourne, New South Wales	29.94	29.93	− 0.01	62.9	67.5	+ 4.6
Mauritius, Indian Ocean	29.87	29.81	− 0.06	81.5	80.4	− 1.1
Nassau, Bahamas, W. I.	30.12	30.12	normal.	70.6	68.7	− 1.9
Nikolaievsk-on-the-Amoor, Asia	.....	30.10	.....	− 9.6	− 15.7	− 6.1
Ponta Delgada, Azores	30.13	30.19	+ 0.06	60.3	58.8	− 1.5
Swanbister, Orkneys	29.81	29.71	− 0.10	39.2	41.4	− 2.2
San Juan de Puerto Rico, W. I.	30.01	30.04	+ 0.03	74.8	63.0	−11.8
Stykkisholm, Iceland	29.56	29.09	− 0.47	28.7	29.3	+ 0.6
Thorshavn, Färöe Islands	29.71	29.46	− 0.25	38.3	38.5	+ 0.2
Tiflis, Russia	30.19	30.25	+ 0.06	38.4	34.2	− 4.2
Tokio, Japan	30.03	30.08	+ 0.05	35.1	36.3	+ 1.2
Yeniseisk, Siberia	30.40	30.45	+ 0.05	− 5.7	− 13.5	+ 7.8
Zi-Ka-Wei, China	30.35	30.28	− 0.07	35.3	37.0	+ 1.7

* Means for nine years only.

In the United States the prevailing winds in New England, the middle Atlantic states, the Lake region, and upper Mississippi valley were west or northwest; in the west Gulf states, south; in the Ohio Valley, southwest; along the eastern slope of the Rocky Mountains, west; in California, northwest. In other parts of the country they were variable. In Canada south to west winds prevailed in the Saint Lawrence Valley and the Lake region, while in the Saskatchewan Valley they were variable. Over the north Atlantic Ocean the winds were anti-cyclonic south of the fortieth parallel, while to the northward of that latitude the directions were cyclonic, as dominated by the area of low pressure central off the east coast of Greenland. Over Europe the winds were generally from south to west, except in Spain and Portugal and over southern Russia, where they were variable. Over the greater part of Asia the winds were variable, or anti-cyclonic. Over the northern portion of Japan, and on the west coast of the Sea of Okhotsk, they were from north to west.

In the United States the precipitation was below the normal in all districts lying south of the fortieth parallel, except in portions of Georgia and South Carolina; it was also deficient in northern Idaho, northern Montana, Nebraska, Iowa, and northern Michigan. In Canada the rainfall exceeded the normal in Ontario, Quebec, and the Maritime Provinces. In British Columbia the precipitation was largely in excess of the January average.

TRACKS OF AREAS OF LOW PRESSURE FOR JANUARY, 1887.

Chart iii exhibits paths of the principal depressions which appeared in the northern hemisphere during January, 1887. This chart continues the series of international charts begun in November, 1877, and has been prepared from the following data: Chart i for each day of the month, containing the data of simultaneous observations taken once each day at noon, Greenwich mean time; abstracts of ships' logs; special reports, and other miscellaneous data on file at this office.

The paths of the centres of thirty-two areas of low pressure are shown, of which fourteen are traced over the North American continent; seven over the north Atlantic Ocean; four over Europe; two over the extreme southwestern part of Asia; three over the Japanese Islands; and two off the west coast of the American continent in the vicinity of Sitka, Alaska. The average number of areas of low pressure traced over the North American continent for the month of January during the last thirteen years is 13, or one less than the number traced for January, 1887.

The depressions traced over the American continent are described in detail in the MONTHLY WEATHER REVIEW for January, 1887, under the heading "Areas of low pressure."

Of the depressions traced over the north Atlantic Ocean four were continuations of storms which advanced over Newfoundland, one of which originated in the sub-tropical region north of the West Indies; one moved southeast from Greenland; one first appeared southwest of Iceland; and one developed over mid-ocean in the vicinity of the fiftieth parallel. Over the western portion of the ocean the storms pursued east to northeast tracks, while the one important depression which traversed the British Isles advanced southeast and recurved to the northwest. A noteworthy feature of the north Atlantic storms of this month was the abnornal northerly paths they pursued, which fact, when considered in connection with the abnormally low pressure which prevailed in the vicinity of Iceland, would seem to afford material for comparison and study. Depression number xv which moved southeast from Greenland to the British Isles, where it prevailed during the 6th, 7th, and 8th, and finally recurved northwest with the advance of depression number xvi, also constituted an interesting feature.

Three depressions advanced from the vicinity of Iceland to the north coast of Norway, and are thence traced southeastward over Russia. One of these storms, number xxv, was remarkable by reason of the extent of territory it traversed, its first appearance being noted on the night of the 8th, when it was central over the Gulf of Mexico. During the 15th and 16th a depression of moderate energy moved eastward over Sicily.

Two depressions are traced over the extreme southwestern portion of Asia, one of which appeared over the Mediterranean Sea on the 13th, and disappeared in the direction of the Persian Gulf after the 14th. During the 7th and 8th a depression of moderate energy, which apparently originated over northern Arabia, passed northeast over the lower valleys of the Euphrates and Tigris rivers and disappeared to the southward of the Caspian Sea.

Three depressions which advanced northeast over the Japanese Islands were unattended by abnormal features, and evidently united with the system of low barometric pressure which occupied Behring Sea and the ocean east of the Alaska Peninsula. In the vicinity of the American coast near Sitka, Alaska, the pressure was generally low, with marked fluctuations, and a large proportion of the storms traced as land low areas apparently developed in this region, or were continuations of depressions which advanced eastward from Behring Sea.

SPECIAL NOTES.

THE GRAVITY CORRECTION.

The gravity correction, reducing all barometer readings to the standard gravity at latitude 45°, has been applied to all observations not so reduced by the observers themselves.

All data referring to force, velocity, or pressure (in pounds per square foot) of the wind, are reduced to the scale of 0-10, and the approximate value is indicated by the number of feathers on the arrow (see below).

MONTHLY SUMMARY OF INTERNATIONAL SIMULTANEOUS METEOROLOGICAL OBSERVATIONS.

The positions of stations (latitude and longitude) are obtained from Keith Johnson's "Index Geographicus," except where more exact information is furnished. The elevations of stations are obtained either from the annual, semi-annual, and monthly publications of the various meteorological bureaus here represented, or from the original forms upon which are entered the daily observations. In the United States series the elevations are computed from the latest surveys, and are carefully revised each month, in order to note any change in the elevation of the barometer-cistern at any station. It is believed for the most part that, throughout the European and other series, the elevations as given represent the height of the barometer-cistern above sea-level; at least this should be the case. The local time, where omitted or not given correctly in the original, is carefully computed at this office. A letter placed opposite the name of a station, or some portion of the data credited thereto, indicates that a certain number of observations are missing, corresponding to the relative position in the English alphabet of the letter so used.

At Astrakhan, Ashurada, and Baku the barometer-cisterns are below sea-level.

List of merchant marine steam and sailing vessels from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of January, 1887—Continued.

Name of vessel.	Captain.
WHITE STAR LINE—Continued.	
Br. s. s. Britannic	Capt. H. Perry.
Germanic	C. W. Kennedy.
Gaelic	W. G. Pearne.
Republic	P. J Irving.
WILSON LINE.	
Br. s. s. Bassano	J. Murphy.
Buffalo	J. H. Malot.
Lepanto	T. M. Irwin.
Salerno	B. H. Rogers.
Sorrento	J. F. Rogers, RNR.
MISCELLANEOUS.	
Br. s. s. Athens	W. E Robertson.
Nor. s. s. Amicitia	P. M. Reimers.
Br. Auretta	G.W.Read, F.R.G.S.
Bedford	Thos. Aitkenhead.
Benalder	James Ross.
Biela	F. Graham.
City of Newcastle	R. Townsend.
Cranbrook	John W. Harvey.
Dragon Fly	J. W. Howling.
Edith Godden	John Bennett.
El Callao	J. Scholtz.
Elstow	T. Robertson.
Span. Emiliano	F. de Bengoa.
Est	C. Tassino.
Br. Fitzroy	Henry Gibb.
Ger. India	M. Hulsen.
Br. s. s. Lord Lansdowne	C. H. Baskfill.
Am. Lorenzo D. Baker	W. F. Wiley.
Nor. Ludvig Holboeg	N. Hougo.
Span. Manuel L. Villaverde	D. C. Gerales.
Br. Madrid	M. Garson.
Matthew Bedlington	Thos. Kirby.
Mercia	J. Taylor.
Span. Mexico	Carmona.
Br. Monkseaton	J. N. Beazley.
Span. Navarro	S. de Aldecocea.
Ger. Palme	W. Bahls.
Br. Peconic	G. Evans.
Ger. Raiatea	J. Vierseik.
Br. Rover	Jas. Mansfield.
Saint Ronans	H. Campbell.
Span. Serra	F. de Lauzarraga.
Br. s. s. Stag	Jas. Adams.
Straits of Gibraltar	Ch. Offl. W. T. Tomlinson.
Venetian	Capt. Trant.
Swed. Victoria	J. A. Kunmann.
Br. Viola	L. Murray.
Yedmandale	B. W. Hick.
N. Y. HERALD WEATHER SERVICE.	
Br. Alene	Siders.
Andes	T. M. McKnight.
Angerton	S. M. Orr.
Am. Caracas	W. M. Hopkins.
City of Puebla	Deakin.
City of Washington	W. M. Rittig.
Comal	J. Bolger.
El Paso	H. S. Quick.
Br. Furnesia	Hedderwick.
Am. Lampassas	M. B. Crowell.
Dtch. Leerdam	Slirendregt.
Br. Landaff City	T. H. Gore.
Am. Lone Star	G. W. Mason.
Br. Martello	F. E. Jenkins.
Br. Miranda	E. Bendon.
Am. Morgan City	J. G. Percy.
Br. Muriel	G. S. Locke.
Niagara	G. V. Bemis.
Br. Portia	H. Dawson.
Republic	P. J. Irving.
Am. Rio Grande	J. F. Lewis.
Br. Sirius	W. H. Stapledon.
Spain	W. A. Griffiths.
Am. Valencia	Woodrick.
SAILING VESSELS.	
Am. bg. Abbie Clifford	Capt. D. W. Storer.
Br. bk. Abyssinia	B. R. Hilton
bk. Abyssinian	John Hughes.

Name of vessel.	Captain.
SAILING VESSELS—Continued.	
Br. bg. Achsah	Capt. A. M. Shaw.
Ger. bg. Adelheird	H. Bollen.
Nor. bg. Adria	J. H. Welden.
It. bk. Angelica Accame	Vincenzo Niggi.
It. bk. Agostino Rombo	V. Basso.
Am. schr. Anna B. Hutcheson	Daniel Zeluff.
bg. Arcot	J. M. Cates.
Ger. bk. Arnold von Bippen	T. Möller.
Nor. sp. B. D. Metcalf	E. P. Larsen.
Am. schr. Benjamin Hale	John Hull.
Am. bkt. Bonny Doon	C. Burgess.
bgt. Boston Marine	H. V. Porter.
Br. sp. British Isles	G. Southcott.
Ger. sp. Carl	T. Hashagen.
Br. sp. Cabul	John Ronie.
Am. bk. Carib	Ch. Offl. A. P. Goodman.
Am. schr. C. B. Church	Capt. N. A. Anderson.
sp. Columbus	B. Saurmilch.
Am schr. Comet	W. H. Aldrich.
Br. sp. Chas. S. Whitney	Geo. D. Spicer.
Am. bk. Chas R. Lewis	A. Montgomery.
Am. bk. Crescent	W. P. Gibbs.
Br. sp. Cyromene	Ch. Off. Jas. Masson.
Ger. sp. Dakota	Capt. N. E. Schaffer.
Am. bk. Don Justo	E. Orcutt.
Am. bg. Daisy Boynton	C. Harding.
schr. Edward R Emerson	A. H. Child.
bk. Eliza Barss	Henry R. Hollis.
Aus. bk. Errante	A. G. Nicolich.
Am. sp. E. B. Sutton	C. O. Carter.
Ger. bk. Emilie	W. Siems.
Span. Fanbass	F. Aiken.
Br. bkt. Ettie E	F. L. White.
Am. schr. Florence Rogers	J. S. F. McLeod.
It. bk. Fratelli Laurin	Lodovico Laurin.
Ger. sp. Frederike	Th. Tiedken.
Br. sp. F. B. Taylor	J. A. Tilley.
Am. bk. Forest	C. F. Cunningham.
Ger. sp. Georg	G. A. Scholtz.
Am. bk. General Fairchild	M. P. S. Porter.
Nor. bk. Grundloven	O. G. Ellingsen.
Nor. bk. Haavund	C. Ullenaess.
Am. Harriet S. Jackson	W. T Bacon.
Ger. sp. Hedwig	Th. Minssen.
Dtch. bk. Helena	T. T. Verbeet.
Am. Harvard	Samuel Pray.
Am. sp. Henry Villard	F. B. Perkins.
Am. Hoogly	W. P. Lewis.
Nor. bk. Hermon	O. Olsen.
sp. India	B. Jorgueson.
Br. bk. Iodine	Adam Smith.
Am. bkt. Josephine	Chas. Brown.
schr. John S. Wood	Wm. A. Bernard.
bk. José E. More	Asmus Lenhard.
schr. James Slater	James L. Tooker.
Am. bk. Jane Adeline	G. W. Cates.
Ger. sp. J. W. Wendt	L. Lass.
Am. bkt. John J. Marsh	F. P. Whittier.
Ger. sp. J. W. Gildermeister	A. Lehmann.
Am. schr. José Olaverri	Seth C. Avery.
Ger. bk. Kepler	G. Atken.
Br. bg. Kenilworth	P. Doig.
Nor. sp. Komandor Svend Foyn	Johan Bryde.
Am. bg. L. Staples	J. P. Stowers.
Br. bk. Lalla	P. Le Blanc.
Ger. bk. Leocadia	John Stohff.
Am. bkt. Levanter	Geo. F. Gerry.
Am. bg. L. & W. Armstrong	A. Alexander.
Br. bg. Lilian	H. F. Schive.
Am. bkt. Lizzie Carter	C. J. Carter.
Br. bkt. Linnet	Ch. Offl. W. A. Hayward.
Br. sp. Mabel Taylor	Capt. Chas. E. Durkee.
Am. schr. Maggie Abbott	D. C. McIntosh.
Am. bg. Mary Fink	D. F. Darrah.
Swed. bk. Maria Margretha	J. E. Fogman.
Aust. bk Mattea	G. V. Vidulish.
Br. bk. Minnie G. Whitney	J. D. Foley.
Am. Mohican	B. F. Berry.
Nor. bk. Moland	T. Omundsen.
Am. bg. Manson	E. T. Page.
bg. Morancy	E. Wass.
Am. schr. N. Hand	F. G. Phiffs.
bkt. Nellie M. Slade	J. A. Gould.
Ger. sp. Otto	W. Langon.
Am. schr. Pearl	Anderson.
Am. bkt. Pearl	John B. Zimmer.
Ger. sp. Paline	Wm. Bahls.

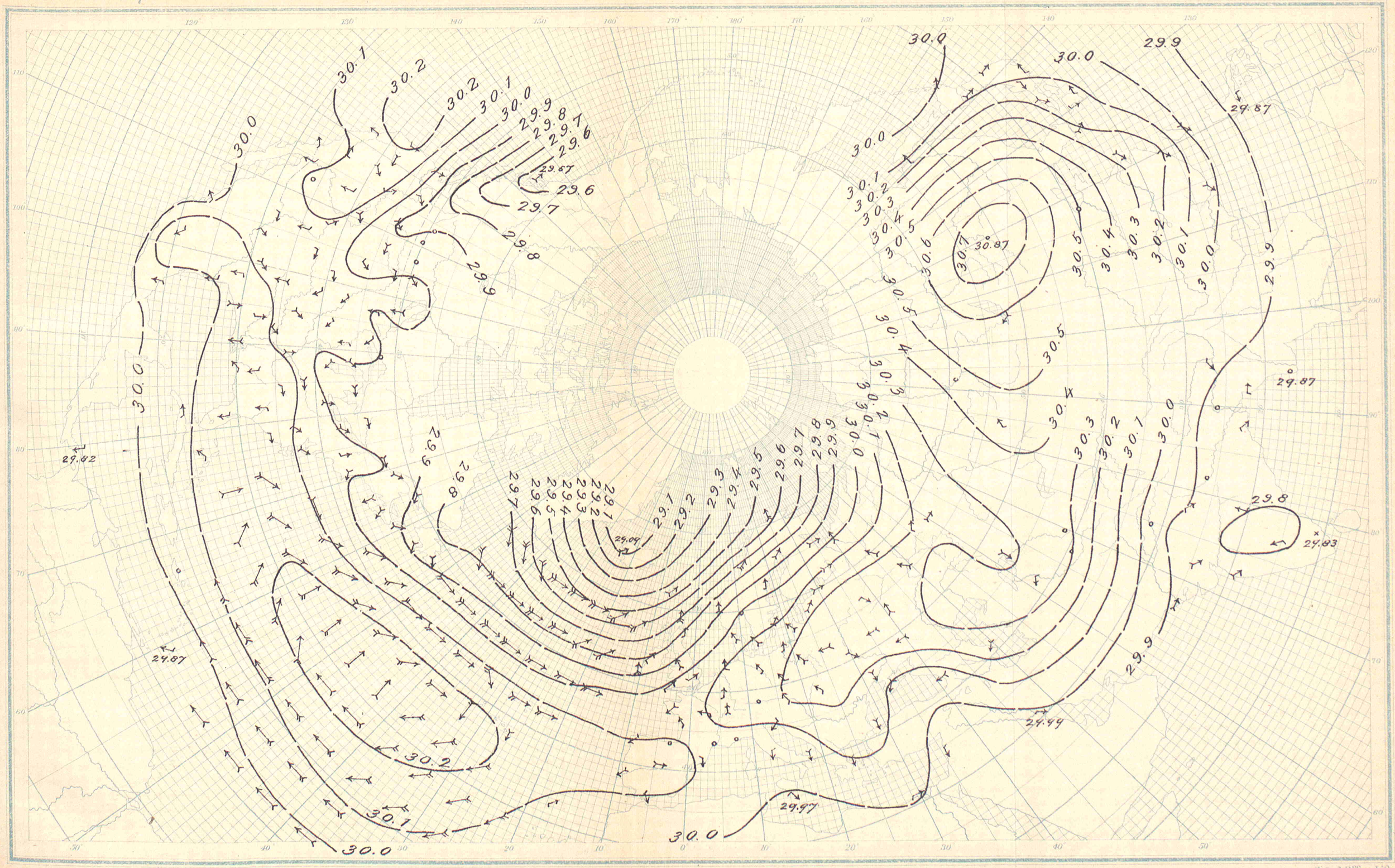
Name of vessel.	Captain.
SAILING VESSELS—Continued.	
Ger. bk. Pillau	Capt. G. Gerlach.
Nor. bk. Qvos	Gunder Olsen.
Br. Recovery	T. E. Blagdon.
Ger. bk. Richard	A. von Seggern.
Br. bkt. Rosebud	John Collie.
Br. bk. Rothiemay	C. Olsen.
Br. bk. River Ganges	T. Naile.
It. Rosina	Giocomo Tomaselli.
Am. bk Ralph M. Hayward	J. Baxter.
bg. Ruby	A. J. V. von Post.
Ger bk. Shakspere	Carl Muller.
Br. sp. Stephen D. Horton	J. Spicer.
Am. Sachem	J. C. Bartlett.
Am. bk. Sarah	R. L. Hale.
Am. bg. Teneriffe	W. S. Richardson.
It. bk. Teresa Accame	Gerolamo Boetto.
Br. Tiber	D. Keiff.
Nor. bk. Tros	S. Brager.
Am. bk. Thomas A. Goddard	A. C. Sears.
Ger. sp. Union	H. Fokken.
bk. Victoria	B. F. Rehm.
Am. bg. Water Witch	Max Knaebel.
Am. Schr. Winnie Lawry	A. McRitchie.
Am. schr. W. H. Fredson	A. J. Biddle.
sp. Light-ship No. 37	Andrew Jackson.
UNITED STATES NAVAL.	
U. S. S. Adams	Louis Kempff.
U. S. S. Alliance	C. McGregor.
U. S. S. Alert	J. D. Graham.
U. S. S. Brooklyn	E. O. Matthews.
U. S. S. Essex	Theo. F. Jewell.
U. S. S. Galena	C. W. Chester.
U. S. S. Iroquois	J. C. Watson.
U. S. S. Jamestown	C. J. Nain.
U. S. S. Juniata	G. T. Davis.
U. S. S. Lancaster	S. L. Breese.
U. S. S. Monocacy	Henry Glass.
U. S. S. Monongahela	S. H Baker.
U. S. S. Mohican	B. F. Day.
U. S. S. Marion	Merrill Miller.
U. S. S. Ossipee	J. F. McGlensey.
U. S. S. Omaha	T. O. Selfridge.
U. S. S. Palos	T. Nelson.
U. S. S. Pinta	
U. S. S. Pensacola	Geo. Dewey.
U. S. S. Portsmouth	Edwin White.
U. S. S. Quinnebaug	
U. S. S. Ranger	F. A. Cook.
U. S. S. Saratoga	C. H. Davis.
U. S. S. Tallapoosa	Wm. Whitehead.
U. S. S. Tennessee	Robert Boyd.
U. S. S. Vandalia	H. L. Howison.
BRITISH NAVAL.	
H. M. S. Algeria	Forsyth.
H. M. S. Audacious	R. H. Harris.
H. M. S. Champion	A. T. Powlett.
H. M. S. Constance	S. H. P. Dacres.
H. M. S. Cleopatria	L. C. Kepper.
H. M. S. Dart	A. M. Fields.
H. M. S. Flying Fish	J. P. McLear.
H. M. S. Himalaya	J. E. Stoke.
H. M. S. Kingfisher	J. H. Rainier.
H. M. S. Lark	T. F. Pullen.
H. M. S. Mariner	J. Dumford.
H. M. S. Myrmidon	R. F. Hoskyn.
H. M. S. Nelson	A. Lake.
H. M S. Raleigh	A. K. Wilson
H. M. S. Ruby	W. R. Kennedy.
H. M. S. Rifleman	
H. M. S Rambler	W. U. Moore.
H. M. S. Satellite	A. H. Allington.
H. M. S. Torquoise	R. Woodward, C. B.
PORTUGUESE NAVAL.	
H. P. M S. Mandois	
H. P. M. S. Tamega	
H. P. M. S. Yaire	
SWEDISH NAVAL.	
H. S. M. S. Freja	C. Lundgren.

List of foreign stations and observers from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of January. 1887.

Stations.	Observers
AUSTRALIAN.	
Adelaide, South Australia	C. L. Wragge.
Hobart Town, Tasmania	Com. J. Shortt, R. N.
Melbourne, Victoria	R. L. J. Ellery.
AUSTRO-HUNGARIAN.	
Agram	Prof. Ivan Stozir.
Cracow, I. R. Observatory	Dr. Wierzbiski.
Eperies	Julius Mikolik.
Kremsmunster Observatory	The Staff.
Lemberg	Dr. T. Stanecki.
Pola	Fr. Cœselrohe.
Szathmar	Aloysius Daubner, S. J.
Szegedin	Emerick Markos.
Trieste	Naval Observatory.
Vienna	I. R. Central Met. Obs'y.
BRAZILIAN.	
Rio de Janeiro Imperial Obs.	Prof. E. Cruls, Director.
BRITISH.	
Aberdeen	W. Boswell.
Bidston, Liverpool Obs'y	John Hartnup.
Bradford, Yorkshire	McLandsborough & Preston.
Bridgetown, Barbadoes, W. I.	G. Beater.
Chatham, School M. E	P D. P. McHugo, R. E.
Falmouth, Observatory	The Staff.
Fort Napier, Natal	Thomas Murray, M. S. C.
Galway, Queen's College	Wm. Ryan.
Gibraltar, Mediterranean	E. Irvine.
Greenwich, Royal Observatory	The Staff.
Guernsey	A. Collenette, F. R. M. S.
Kew, Observatory	The Staff.
Leicester, Museum	J. C. Smith.
Malta, Mediterranean	R. R. Willan.
Nassau, Bahamas	J. A. Kerr.
Oxford, Radcliffe Observatory	The Staff.
Plymouth	John Merrifield.
Swanbister, Orkneys	W. I. Fortesque.
Scutari Cemetery, Turkey	W. H. Lyne.
Stonyhurst, Observatory	Rev. S. J. Perry.
Valencia, Observatory	The Meteorological Office.
Sub-series.	
Gozo, Episcopal Seminary	Rev. Algelo Lo Re, S. J., Dir.
CANADIAN.	
Bathurst, N. B	Miss Andrews
Bird Rocks	
Calgarry	
Chatham, N. B	G. A. Blair.
Cornwall, Ontario	Jas. Smith, M. A.
Dalhousie, N. B	H. A. Johnson.
Father Point, Quebec	J. McWilliams.
Fort Garry, Manitoba	James Stewart.
Fredericton, N. B	Dr. Harrison.
Grand Manan, N. B	J. Chipman Seeley.
Granton, Ontario	Jas. Grant.
Halifax, N S	A. Allison.
Hamilton, Ontario	Geo. Dickson, B. A.
Kingston, Ontario	A. P. Knight, M. A.
Little Glace Bay, N. S	C. H. Rigby, C. E.
London, Ontario	E. B. Reed.
Medicine Hat, N. W. T	John Ewart.
Minnedosa, N. W. T	Rev. J. M. Wellwood.
Montreal, Quebec	C. H. McLeod, C. E.
Ottawa, Ontario	A. McGill, M. A.
Parry Sound, Ontario	Rev. R. Mosley.
Peterborough, Ontario	J. H. Long.
Port Arthur, Ontario	W. P. Cooke.
Port Dover, Ontario	H. Morgan.
Port Stanley, Ontario	M. Payne.
Qu' Appelle, N. W. T	Leslie Gordon.
Quebec, Quebec	Captain Ashe, R. N.
Rockliffe, Ontario	W. H. McIntyre.
St. Andrews, N. B	S. T. Gove, M. D.
St. John, N. B	G. Hutchinson.
Saint Pierre, N. F	The Commandant.
Saugeen, Ontario	
Southwest Point of Anticosti	
Stratford, Ontario	W. McBride, M. A.
Swift Current	
Sydney, C. B	T. C. Hill, C. E.
Toronto, Ontario	Magnetic Observatory.
Woodstock, Ontario	Prof. N. Wolverton, M. A.
Yarmouth, N. S	Lieut. F. E. Wilmot, R. N
Sub-series.	
Saint Johns, N. F	J. Higgins.
CHINESE.	
Foochow	J. N. Segardal.
Hong Kong Observatory	The Staff.
Sub-series.	
Zi-Ka-Wei, near Shanghai	M. Marc Dechevrens, S. J.
South Cape, Formosa	G. Taylor.
DANISH.	
Copenhagen	Oversergent Fischer.
Fanöe	Overloerer Lauridsen.
Stykkisholm	A. O. Thorlacius.
Thorshavn	Overloever Bergh.
Vestervig	Loerer Oesterbol.
FRENCH.	
Agen, Normal School	M. Labroue, Director.
Alençon, Normal School	M. Nicot, Director.
Arras, Normal School	M. Sion, Director.
Avignon, Normal School	M. Giraud, Director.
Bar-sur-Seine	M. Saillard, Director.
Beauvais, Normal School	M. Mutelet.
Besançon, Normal School	M. Gobin, Director.
Bordeaux, Observatory	M. Rayet, Director.
Bourges, Normal School	M. Bourgoine, Director.
Brest, Naval Observatory	M. de Kermaree, Director.
Caen, Normal School	M. Berson, Director.
Châlons-sur-Marne, N. School	M. Mathieu, Director.
Charleville, Normal School	M. Noël, Director.
Clermont-Ferrand, Obs'y	M. Hurion, Director.
FRENCH—*Continued.*	
Cluny, Normal School	M. de Villemontée, Director.
Commercy, Normal School	M. Vaissade, Director.
Gap, Normal School	M. Poussel, Director.
Greasque, du Rhone	M. Kina, Director.
Grenoble, Normal School	M. Ablard, Director.
Guéret, Normal School	M. Delorme, Director.
Lescar, Normal School	M. Lefevre, Director.
Lorient, Naval Observatory	Lt. T. Carré, Director.
Lyon, St. Genis-Laval	M. André, Director.
Mans, Normal School	M. Thériot, Director.
Marseille, Observatory	M. Stephan, Director.
Montlouis	M. Cave for Dr. Fines.
Montpellier, Normal School	M. Galzin, Director.
Mont Ventoux	M. Blanc.
Nancy, Normal School	M. Hasse, Director.
Nantes, Observatory	M. Larocque, Director.
Nice, Normal School	M. Cantier.
Perpignan, Observatory	Dr. Fines, Director.
Pic-du-Midi, Summit	M. Vaussenat, Director.
Privas, Normal School	M. Curely, Director.
Puy de Dôme Obs'y, Summit	M. Hurion, Director.
Rochefort, Naval Observatory	Lt. E. Decante, Director.
Roche-sur-Yon, N. School	M. Brotier, Director.
Rodez, Normal School	M. Seger, Director.
Rouen, Normal School	M. Vieillot, Director.
Saint Brience	M. Richard.
Saint Maur, Observatory	M. Renon, Director.
Toulouse, Observatory	M. Baillaud, Director.
Tours	M. Letellier.
Versailles	Dr. A. Berigny.
Sub-series.	
St. Martin du Hinx	M. Carlier, Director.
GERMAN.	
Ansbach	Prof. Jüdt.
Bamberg	Prof. Dr. Hoh.
Berlin	Meteorological Institute.
Breslau	Royal University Obs'y.
Carlsruhe	Albert Senz.
Cassel	Dr. H. Möhl.
Frankfort-on-the-Main	Physical Society.
Friedrichshafen	Wilhelm, Chief Tel.
Hamburg	Carl H. Seeman.
Kiel	Prof. Dr. G. Karsten.
Leipsic, Astronomical Obs'y	H. Leppig, Assistant.
Memel	Issermann.
Munich	Dr. C. Lang.
Neufahrwasser	A. Lothes.
Neustadt, Palatinate	Prof. Dicknether.
Stuttgart	Dr. L. Meyer.
Wustrow	Profs. Brandes & Reimer.
GREEK.	
Athens	Kokkides & Wourlisch.
INDIAN.	
Kurrachee	
Deesa	
Bombay	
Poona	
Belgaum	
Lahore	
Roorkee	
Agra	
Nagpur	
Jubulpore	
Lucknow	
Allahabad	
Patna	
Hazaribagh	
Cuttack	
Calcutta	
Chittagong	
Dhubri	
Sibsagar	
Jeypore	
Bellary	
Trichinopoly	
ITALIAN.	
Udine	Prof. Giovanni Clodig.
Milan	Prof. G. V. Schiapparelli.
Padua	Prof. Dott. Lorenzoni.
Moncalieri	Prof. P. F. Denza.
Genoa	Prof. G. M. Garibaldi.
Pesaro	Prof. Luigi Guidi.
Florence	Prof. Constantino Pittei.
Leghorn	Prof. P. Monte.
Rome	Prof. P. Tacchini.
Leece	Prof. C. de Giorgi.
Cosenza	Prof. D. Conti.
Palermo	Prof. G. Cacciatore.
Syracuse	Sig. V. Giuliano.
ITALIAN SUB-SERIES	
Stelvio	Prof. P. F. Denza.
Valdobbia	Prof. P. F. Denza.
JAPANESE.	
Akita	S. Hattori.
Awomori	K. Ogawa.
Fushiki	N. Tokuda.
Erimo	T. Sato.
Gifu	R. Ikuchi.
Hakodate	T. Wakayama.
Hamamatsu	Sakigawa and Miyake.
Hiroshima	Y. Okamoto.
Itsurhara	S. Kumafu.
Kanazawa	S. Kuriyama.
Kagoshima	G. Miyanohara.
Kioto	M. Negishi.
Miasaka	T. Ishitain & T Saki.
Miyako	K. Suwa & K. Ishie.
Nagasaki	K. Yamasaki and M Chin.
Nemuro	M. Itabashi.
JAPANESE—*Continued.*	
Niigata	M. Morita and C. Tomikawa.
Nobiru	R. Zuchi and T. Saito.
Numadzu	R Kaneda.
Osaka	H. Omura.
Sakai	K. Yamawchi & P. Yoshimura
Shimonoseki	S. Nagasuye.
Supporo	K. Kugly.
Tokei	The Staff.
Wakayama	K. Sakai.
MAURITIUS.	
Mauritius R. A. Observatory	The Staff.
MEXICAN.	
Guanajuato	Prof. Vicente Fernandez.
Leon	Prof. M. Leal & Espana.
Mazatlan	C. Carmina.
Mexico	The Staff.
Zacatecas	J. A. Bonilla, M. E.
NETHERLANDS.	
Flushing	
Groningen	
Helder	
Hellevoetsluis	
Utrecht	G. F. C. Zaalberg.
NORWEGIAN.	
Bergen	
Brono	
Christiania	
Gjæsvær	
PORTUGUESE.	
Funchal, Madeira	Capt. D. A. de Cunha.
Lisbon, Observatory	The Staff.
Ponta Delgada, Azores	
St. Vincent, Cape Verd	
San Salvador	
Serra da Estrella	
RUSSIAN.	
Archangel	Capt. Sseliwerstow.
Baku	
Barnaul	Meteorological Office.
Dorpat	Blumbach.
Ekaterinburg	Meteorological Observatory.
Elisavetgrad	
Irkutsk	Ed. Stelling.
Kasalinsk	Butkewitsch.
Kasan	Observatory.
Kem	M. Kosnobr.
Kertch	E. M. Zacmsipeyz.
Kieff	Observatory.
Korostishev	
Koslov	
Lgov	R. I. Ssaweljew, Engineer.
Libau	E. Quaas.
Lugan	Meteorological Observatory.
Moscow	Meteorological Observatory.
Nerchinsk	
Nikolaiev	Capt. Kurdakow.
Nikolaievsk-on-the Amoor	Schobberg.
Nikolsk	Nadeshdin.
Perm	
Petro-Alexandrovsk	Walther.
Petrozavodsk	Dr. Bergmann.
Pinsk	
Poti	
St. Petersburg	Central Physical Observatory.
Samarkand	Dresch.
Sevastopol	Colonobr.
Tashkend Laboratory	Teich, A. M.
Tiflis	Physical Observatory.
Troitskosavsk	
Viatka	
Warsaw	Astronomical Observatory.
Yeniseisk	Wishnewzky.
SCOTCH.	
Leith	J. Bolam & Geo. Redpath.
SPANISH.	
Barcelona Met. Observatory	B. Jelin.
Bilbao, Met. Observatory	Tomas Eschriche.
Burgos, Met. Observatory	Domingo Martin.
Madrid, Royal Observatory	The Staff.
Santiago, Met. Observatory	R. Gil Villanueva, Director.
Sub-series.	
Havana, Cuba	Benito Viñes, S. J.
Manilla, Philippine Islands	F. Faura, S. J.
San Fernando, Naval Obs'y	Capt. C. Pujazon, R. N.
San Juan de Porto Rico, W. I.	Enrique Gadea, Ch'f Eng'r.
SWEDISH.	
Haparanda	
Umea	
Hernosand	
Stockholm	
Wisby	
Sub-series.	
Upsala	Nils. Ekholm.
SWISS.	
Geneva	Observatory.
TURKISH.	
Constantinople	The Observatory.
Valona	A. Bertrand.
Sub-series.	
Beirut, Lee Obs'y, Syria	R. H. West, B. A., Director.
UNITED STATES SUB-SERIES.	
Colon	Pellegrin.
Gamboa	Lutnywich.
Kingston	Barzelay.
Noas	Maxwell Hall.
Rivas, Nicaragua, C. A	Earl Flint, M. D.
Vera Cruz	Capt. Geo. E. Powell.

Form No. 106 R---1887.

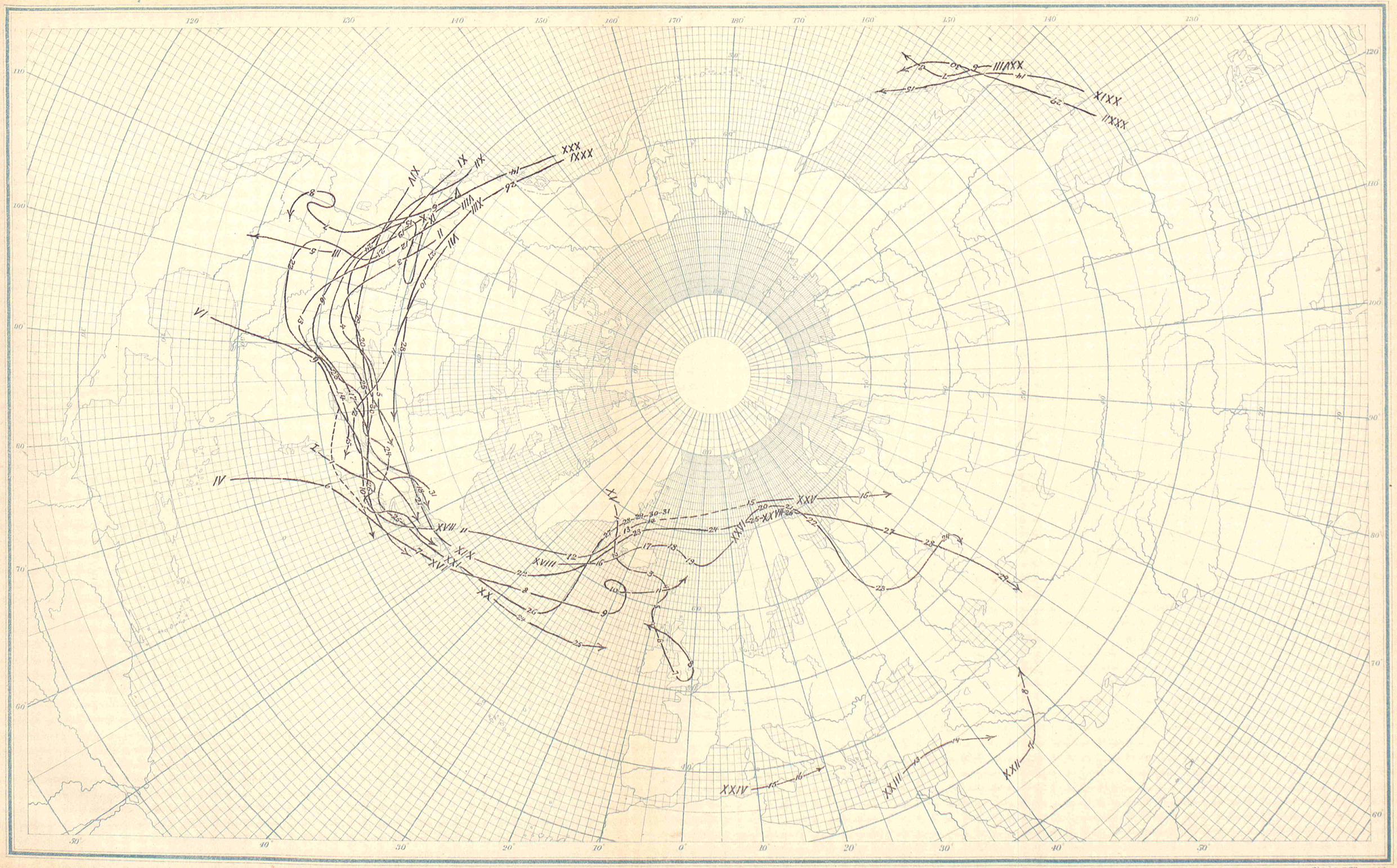
International Chart II. January, 1887. Isobars, Isotherms, and Winds.



Signal Office Lith.

Form No. 106 R---1887.

International Chart III. January, 1887. Tracks of Areas of Low Pressure.



Signal Office Lith.

WAR DEPARTMENT.
OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY OF THE UNITED STATES.

SUMMARY AND REVIEW

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS

FOR THE MONTH OF FEBRUARY, 1887.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

A. W. GREELY,

BRIGADIER GENERAL, CHIEF SIGNAL OFFICER OF THE ARMY.

PRINTED FOR EXCHANGE WITH CO-OPERATING OBSERVERS.

WASHINGTON, D. C
MARCH, 1888

List of merchant marine steam and sailing vessels from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of February, 1887.

Name of vessel.	Captain.
ALLAN LINE.	
Br. s. s. Hibernian	Capt. John Brown.
Manitoban	W. Dalziel.
Scandinavian	John Park.
Sarmation	Wm. Richardson.
Sardinian	W. H. Smith.
AMERICAN LINE.	
Br. s. s. British King	John Kelly.
British Princess	E. H. Freeth.
Lord Clive	P. Urquhart.
Ocean Prince	W. J. Milburn.
British Prince	Samuel Nowell.
Lord Gough	E. M. Hughes.
ANCHOR LINE.	
Br. s. s. Australia	A. M. McRitchie.
British Crown	Archibald Smith.
British Queen	R. Wills.
Circassia	A. Campbell.
Devonia	Hugh Young.
Dorian	J. McKeague.
Ethiopia	John Wilson.
Trinacria	Geo Mitchell.
Bolivia	J. J. Small.
Caledonia	R. T. Garvie.
ARROW LINE.	
Br. s. s. Critic	W. R. Lord
ATLAS LINE.	
Br. s. s. Alvena	MacKay.
Ailsa	J. W. Sanson
Andes	T. M. McKnight.
BOOTH'S S. S. Co. (limited).	
Br. s. s. Clement	Thomas Burley.
Ambrose	E. Bisson.
Bernard	Ch. Offi. S. Richards.
Jerome	Capt. Benj. Crimp.
Cyril	J. H. Johnson.
BORDEAUX STEAM NAVIGATION Co.	
Fr. s. s. Chateau Yquem	C. Journiel.
BUCKNELL LINE.	
Br. s. s. Madrid	M. Garson.
BRISTOL CITY LINE.	
Br. s. s. Brooklyn City	W. Fitt.
Llandaff City	T. H. Gore.
CAY, HALL COMPANY.	
Br. s. s. Bedford	Thos. Aikenhead
CIUDAD BOLIVAR S. S. LINE.	
Br. s. s. El Callao	Jos. Schlitz.
CROMWELL LINE.	
Am. s. s. Hudson	H. R. Freeman.
Louisiana	E. V. Gager.
COMPANIA TRANSATLANTICA ESPAÑIOLA.	
Span. s. s. Manuel L. Villaverde	Claudio Perales.
Mexico	M. Carmona.
CUNARD LINE.	
Br. s. s. Aurania	W. H. P. Hains.
Catalonia	E. Wylie.
Cephalonia	Henry Walker.
Gallia	M. Murphy.
Scythia	T. Roberts.
Servia	H. McKay.
Samaria	T. Roberts.
EDWARD CARR'S S. S. LINE.	
Ger. s. s. Amalfi	Julius Bahr.
Australia	G. Franck.
Polynesia	A. Kuhn.
Polaria	Johannes Schade.
FURNESS LINE.	
Br. s. s. Borderer	F. Manley.
Durham City	D. D. Galbraith.
Ripon City	J. Jenkins.
Stockholm City	K. Doyle.
GENERAL TRANS-ATLANTIC S.S.Co.	
Fr. s. s. La Bourgogne	Franguel.
La Bretagne	M. de Jousselin.
La Champagne	E. Traub.
La Normandie	G. de Kersabiec.
La Gascogne	Santelli.
GREAT WESTERN STEAMSHIP LINE.	
Br. s. s. Warwick	Capt. J. H. Janes.
GUION LINE.	
Br. s. s. Alaska	Geo. S. Murray.
Arizona	S. Brooks.
Wisconsin	Edward Bentley.
Wyoming	C. L. Rigby.
HAMBURG-AMERICAN LINE.	
Ger. s. s. Lessing	H. Behrends,
Rhaetia	H. Vogelgesang.
Rugia	A. Albers.
Gothia	C. Kordell.
Moravia	O. Pezoldt.
Suevia	C. Ludwig.
HARRISON LINE.	
Br. s. s. Counsellor	Wm. Lang.
INMAN LINE.	
Br. s. s. City of Berlin	Francis S. Land.
City of Chester	A. Lewis.
City of Richmond	A. Redford.
JOHNSTON LINE.	
Br. s. s. Nessmore	John Inch.
LAMPORT & HOLT'S STEAMSHIP Co.	
Br. s. s. Bessel	C. J. Watson.
Biela	Fred Graham.
Dalton	J. Russell.
Mozart	W. Spratly.
Olbers	Jas Clark.
Humboldt	Jas. Grimes.
Nasmyth	T. G. Farrell.
LEYLAND LINE.	
Br. s. s. Bavarian	J. Oseinak.
Bulgarian	E. Parry.
Istrian	T. H. Fox.
Virginian	M. Fitt.
MALLORY LINE.	
Am. s. s. Alamo	S. Risk.
Colorado	Jas. Daniels.
Lampassas	M. B. Crowell.
MEDITERRANEAN & NEW YORK STEAMSHIP COMPANY.	
Br. s. s. Ponca	W. Bowen.
Pontiac	Ch. Offi. R. Blyth.
MILBURN LINE.	
Br. s. s. Angerton	Capt. S. M. Orr.
MISSISSIPPI & DOMINION S. S. Co.	
Br. s. s. Ontario	W. P. Couch.
Sarnia	Joseph Gibson.
Toronto	Jas. McAuley.
Vancouver	C. J. Lindall.
MORGAN LINE.	
Am. s. s. Eureka	R. B. Quick.
NATIONAL LINE.	
Br. s. s. Canada	Thos. Foote.
Denmark	R. S. Rigby.
Egypt	J. Sumner.
England	T. P. Heeley.
Erin	J. Robinson.
France	A. D. Hadley.
Greece	A. J. Jeffrey.
Spain	W. A. Griffiths.
NAVIGAZIONE GENERALE ITALIANA.	
It. s. s. Gottardo	D. Viola.
NEW YORK AND CUBA MAIL STEAMSHIP COMPANY.	
Am. s. s. Cienfuegos	F. M. Faircloth.
NEW YORK, HAVANA AND MEXICAN MAIL S. S. Co.	
Am. s. s. City of Alexandria	J. W. Reynolds.
City of Washington	W. M. Rittig.
NEW YORK & JAMAICA S. S. LINE.	
Br. s. s. Edith Godden	J. H. Bennett.
NORTH GERMAN LLOYD S. S. Co.	
Ger. s. s. Donau	H. Supmer.
Elbe	G. Meyer.
NORTH GERMAN LLOYD—Con'd.	
Ger. s. s. Ems	Capt. T. Jungst.
Fulda	R. Ringk.
Saale	H. Reichter.
Trave	W. Willigerod.
Weser	H. Bruns.
Aller	H. Christoffers.
Hohenstaufen	A. Kohlmann.
Neckar	H. Baur.
Rhein	L. Jahns.
OCCIDENTAL & ORIENTAL S. S. Co.	
Br. s. s. Gaellic	W. G. Pérne.
Oceanic	H. Davison.
OCEAN STEAMSHIP COMPANY.	
Am. s. s. City of Augusta	J. W. Catherine.
OCEANIC STEAMSHIP COMPANY.	
Am. s. s. Mariposa	H. M Hayward.
OLD DOMINION STEAMSHIP Co.	
Am. s. s. Manhattan	Frank Stevens.
OREGON RAILWAY & NAVIGATION COMPANY.	
Am. s. s. Columbia	Fred Bolles.
Oregon	E. Polemann.
PACIFIC COAST STEAMSHIP Co.	
Am. s. s. Orizaba	John N. Ingalls.
City of Chester	J. Wallace.
PACIFIC MAIL STEAMSHIP Co.	
Am. s. s. City of New York	Robt. R. Searle.
City of Peking	H. C. Dearborn.
City of Rio de Janeiro	Wm. B. Cobb.
City of Sydney	Daniel Friele.
Colima	J. M. Caverly.
Colon	Chas. C. Lima.
Granada	J. L. Lockwood.
San Blas	T. Chapman.
San José	D S. Austin.
Acapulco	C. S. Coye.
City of Para	L. Dexter
Newport	W. G. Shackford.
PYMAN LINE.	
Br. s. s. Netley Abbey	H. N. Vyvyan.
QUEBEC STEAMSHIP COMPANY.	
Br. s. s. Muriel	G. S. Locke.
Orinoco	J. S Garvin.
Trinidad	W. J. Fraser.
RED "D" LINE.	
Am. s. s. Philadelphia	Sam. Hess.
Valencia	W. Woodrick.
RED STAR LINE.	
Belg. s. s. Belgenland	W. A. Beynon.
Pennland	Rud. Weyer.
Rhynland	J. C. Jamison.
Switzerland	H. Buschmann.
Waesland	J. Ueberweg.
Westernland	Com. W. G. Randle.
Nederland	Capt. A. J. Griffin.
Noordland	H. E. Nickels.
ROTTERDAM LINE.	
Dtch s. s. P. Caland	T. H. Bonjer.
Schiedam	A Potjer.
Zaandam	H. v. d. Zee.
Leerdam	P. Slierendregt.
Rotterdam	G. J. Vis.
W. A. Scholten	G. Bakker.
ROYAL MAIL STEAMSHIP Co.	
Am. s. s. City of Dallas	C. W. Reed.
ROYAL W. I. MAIL S. S. Co.	
Dtch. s. s. Oranje Nassau	J. A. LaCrooy.
STATE LINE.	
Br. s. s. State of Georgia	G. Moodie.
State of Pennsylvania	A. J. A. Mann.
State of Nebraska	A. G. Brass.
State of Nevada	J. A. Stewart.
THINGVALLA LINE.	
Dan. s. s. Geiser	C. W. Moeller.
Hekla	A. G. Thomsen.
Island	W. Skjodt.
Thingvalla	S. T. H. Laub.

SUMMARY AND REVIEW OF INTERNATIONAL METEOROLOGICAL OBSERVATIONS, FEBRUARY, 1887.

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metrs	Result of Simultaneous Observations for February, 1887. Mean Barometer. Actual Inch.	Actual Mill.	Reduced Inch.	Reduced Mill.	Mean temperature. Fah.	Cent.	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
	° ′	° ′																								
AUSTRALIAN.																										
Adelaide	S. 34 57	E. 138 35	9.14 p.m.	140	43	29.77	756.1	29.92	760.0	69.5	20.8	52	.....	1	1	4	7	9	3	2	1	7865	12656	4	0.50	12.7
Hobart Town	S. 42 53	E. 147 20	9.00 p.m.	190	58	29.72	754.9	29.93	760.2	b59.9	b15.5	77b	5a	2	2	3	9	3	.....	1	2	.....	.....	7a	1.52	38.6
Melbourne	S. 37 50	E. 144 58	9.40 p.m.	91	28	29.91	759.7	29.98	761.5	66.5	19.2	69	2	.....	3	3	6	6	4	4	.....	.....	.....	6	2.67	67.8
AUSTRIAN.																										
Agram	N. 45 48	E. 15 53	1.04 p.m.	535	163	29.78	756.4	30.39	771.6	32.4	0.2	74	.....	.....	1	3	1	1	3	13	6	.....	.....	6	1.16	29.4
Cracow	N. 50 04	E. 20 00	1.20 p.m.	722	220	29.57	751.1	30.41	772.4	28.9	— 1.7	79	6	1	7	8	.....	.....	2	4	.....	.....	.....	6	0.75	19.1
Eperies	N. 48 58	E. 21 15	1.25 p.m.	853	260	29.42	747.3	30.37	771.4	25.0	— 3.9	83	10	.....	.....	.....	2	.....	.....	.....	16	.....	.....	7	0.70	17.8
Kremsmunster	N. 48 03	E. 14 08	0.57 p.m.	1260	384	28.96	735.6	30.39	771.9	29.5	— 1.4	84	2	1	6	.....	.....	.....	4	6	19	.....	.....	5	0.84	21.3
Lemberg	N. 49 50	E. 24 00	1.36 p.m.	978	298	29.27	743.4	30.38	771.6	28.8	— 1.8	71	.....	13	.....	2	2	3	.....	8	.....	.....	.....	5	1.61	41.0
Pola	N. 44 52	E. 13 51	0.55 p.m.	105	32	30.16	766.1	30.28	769.1	43.9	6.6	62	1	6	7	.....	1	2	8	3	.....	.....	.....	3	0.65	16.6
Szathmar	N. 47 46	E. 22 53	1.32 p.m.	430	131	29.84	757.9	30.34	770.6	30.6	— 0.8	83	3	2	6	1	1	9	6	1	.....	.....	.....	4	1.14	29.0
Szegedin	N. 46 15	E. 20 10	1.21 p.m.	315	96	29.99	761.7	30.32	770.1	32.0	0.0	80	2	3	4	1	.....	5	2	6	5	.....	.....	7	0.28	7.0
Trieste	N. 45 39	E. 13 46	0.55 p.m.	85	26	30.21	767.3	30.29	769.4	42.4	5.8	57	.....	1	4	.....	.....	.....	6	9	8	.....	.....	3	.....	.....
Vienna	N. 48 12	E. 16 22	1.05 p.m.	663	202	29.63	752.6	30.39	771.9	31.6	— 0.2	73	4	6	3	.....	2	8	2	2	1	.....	.....	7	0.49	12.5
BRAZILIAN.																										
Rio de Janeiro	S. 22 54	W. 43 10	9.07 a.m.	217	66	29.72	754.9	29.90	759.4	79.7	26.5	78	4	10	.....	.....	.....	.....	1	12	1	.....	.....	6	2.95	74.9
BRITISH.																										
Aberdeen	N. 57 10	W. 2 06	11.52 a.m.	89	27	30.08	764.0	30.20	767.1	42.9	6.1	70	1	2	4	5	12	4	.....	.....	.....	8439	13581	6	1.00	25.4
Bidston	N. 53 24	W. 3 04	11.48 a.m.	197	60	30.06	763.5	30.30	769.6	42.2	5.7	70	2	.....	6	5	1	6	6	2	.....	.....	.....	5	.....	.....
Bradford	N. 53 48	W. 1 47	11.53 a.m.	366	112	29.87	758.7	30.30	769.6	42.5	5.8	74	.....	2	5	5	4	3	3	6	.....	.....	.....	7	0.73	18.5
Bridgetown	N. 13 04	W. 59 37	8.02 a.m.	28	9	29.96	761.0	29.92	760.0	77.9	25.5	72	.....	.....	.....	.....	.....	.....	.....	28	.....	.....	.....	3	.....	.....
Chatham	N. 51 25	E. 0 33	0.02 p.m.	160	49	30.13	765.3	30.33	770.4	42.7	5.9	92	.....	.....	2	8	.....	1	.....	5	12	.....	.....	6	.....	.....
Falmouth	N. 50 09	W. 5 04	11.40 a.m.	183	56	30.13	765.3	30.34	770.6	44.0	6.7	76	5	5	1	3	5	2	5	2	.....	.....	.....	7	.....	.....
Fort Napier	S. 30	E. 31	2.04 p.m.	2294	699	27.61	701.3	29.80	756.9	81.9	27.7	56	2	2	.....	1	4	1	8	7	3	.....	.....	6	.....	.....
Galway	N. 53 15	W. 9 03	11.24 a.m.	32	10	30.11	764.8	30.16	766.1	45.2	7.3	84	.....	.....	3	10	2	7	4	2	.....	.....	.....	5	2.96	75.2
Gibraltar	N. 36 09	W. 5 21	11.39 a.m.	50	15	30.15	765.8	30.17	766.3	56.1	13.4	93	.....	7	5	1	.....	.....	4	8	3	.....	.....	3	.....	.....
Greenwich	N. 51 29	0 00	12 m.	159	48	30.15	765.8	30.35	770.9	42.8	6.0	72	2	.....	2	5	5	3	1	10	.....	.....	.....	7	lo.32	18.1
Guernsey	N. 49 27	W. 2 41	11.49 a.m.	275	84	29.99	761.7	30.31	769.9	43.3	6.3	88	5	2	2	4	2	2	6	5	.....	7535	12126	5	mo.86	m21.8
Kew	N. 51 28	W. 0 19	11.59 a.m.	34	10	30.34	770.6	30.39	771.9	41.2	5.1	74	3	.....	3	7	2	1	5	7	.....	.....	.....	6	.....	.....
Leicester	N. 52 39	W. 1 08	11.55 a.m.	245	75	30.05	763.3	30.34	770.6	43.4	6.3	75	1	3	.....	14	1	1	.....	7	1	.....	.....	6	.....	.....
Malta	N. 36 00	E. 14 30	0.58 p.m.	70	21	30.01	762.2	30.06	763.5	56.4	13.6	75	.....	9	1	3	.....	5	.....	10	.....	.....	.....	5	.....	.....
Nassau	N. 25 04	W. 77 22	6.51 a.m.	44	13	30.20	767.1	30.19	766.8	72.9	22.7	72	2	.....	.....	.....	.....	7	9	9	1	.....	.....	6	.....	.....
Oxford	N. 51 46	W. 1 17	11.55 a.m.	210	64	29.97	761.2	30.22	767.6	41.7	5.4	74	4	2	2	5	6	.....	.....	8	1	.....	.....	6	.....	.....
Plymouth	N. 50 22	W. 4 10	11.43 a.m.	69	21	30.18	766.6	30.33	770.4	43.4	6.3	80	2	4	1	5	.....	3	7	4	2	.....	.....	6	.....	.....
Swanbister	N. 58 55	W. 3 05	11.46 a.m.	72	22	29.97	761.2	30.08	764.0	43.3	6.3	73	2	1	2	8	11	2	.....	2	.....	.....	.....	8	.....	.....
Scutari Cemet'y	N. 41 00	E. 29 03	1.56 p.m.	60	18	30.15	765.8	30.20	767.1	45.6	7.6	54	4	1	.....	3	1	1	1	17	.....	.....	.....	6	.....	.....
Stonyhurst	N. 53 51	W. 2 28	11.50 a.m.	361	110	29.86a	758.4a	30.29a	769.4a	39.4	4.1	91	.....	1	4	8	6	.....	3	6	.....	.....	.....	9f	1.84	46.7
Valencia	N. 51 55	W. 10 18	11.19 a.m.	23	7	30.20	767.1	30.24	768.1	46.8	8.2	77	6	1	2	3	4	8	2	2	.....	.....	.....	7	.....	.....
Sub-series.																										
Gozo	N. 36 01	E. 14 16	0.57 p.m.	364	111	29.77	756.1	30.15	765.8	56.3	13.5	69	4	5	3	5	.....	4	3	4	.....	4728	7614	6	1.24	31.5
Penang	N. 5 24	E. 120 20	6.41 p.m.	20	6	29.78	756.4	29.72	754.9	85.4	29.7	66	2	20	1	.....	1	4	.....	.....	.....	.....	.....	6	6.47	164.3
Malacca	. 1 10	E. 102 14	6.49 p.m.	12	4	29.80	756.9	29.73	755.1	84.1	28.9	81	6	.....	14	5	2	.....	1	.....	.....	.....	.....	6	4.74	120.4
CANADIAN.																										
Bathurst	N. 47 39	W. 65 42	7.37 a.m.	35	11	30.09	764.3	30.14	765.5	1.9	—16.7	.....	.....	7	9	.....	.....	2	.....	.....	10	.....	.....	5	5.30	134.6
Bird Rocks	N. 47 50	W. 61 10	7.56 a.m.	.....	.....	29.89	759.2	30.03	762.7	9.5	—12.5	90	7	4	1	2	2	.....	3	9	.....	.....	.....	6	1.11	28.2
Chatham	N. 47 03	W. 65 29	7.38 a.m.	56	17	30.05	763.3	30.11	764.8	1.7	—16.8	98	.....	3	1	.....	1	3	11	3	6	.....	.....	5	4.36	110.7
Colgarry	N. 50 55	W. 114 04	4.24 a.m.	?	?	26.31	668.3	30.39	771.9	—13.2	—25.1	84	5	.....	.....	.....	.....	1	1	2	19	.....	.....	4	0.19	4.8
Cornwall	N. 45 01	W. 74 43	7.01 a.m.	175	53	29.94	760.5	30.15	765.8	11.6	—11.3	93	1	.....	13	3	.....	.....	3	7	1	.....	.....	6	2.85	74.9
Dalhousie	N. 48 04	W. 66 22	7.35 a.m.	45	14	30.09d	764.3d	30.14d	765.6d	—do.5	—d18.1	.....	.....	.....	15	.....	.....	.....	1	.....	d8	.....	.....	4d	2.60	66.0
Father Point	N. 48 31	W. 68 28	7.26 a.m.	20	6	30.11	764.8	30.14	765.4	3.3	—15.9	83	7	4	1	2	2	6	.....	6	.....	.....	.....	6	2.45	62.2
Fort Garry	N. 49 51	W. 97 07	5.32 a.m.	754	230	29.32	744.7	30.28	769.1	—13.6	—25.3	98	9	1	.....	2	5	3	1	7	.....	.....	.....	5	1.07	27.2
Fredericton	N. 45 57	W. 66 38	7.33 a.m.	164	50	29.97	761.2	30.17	766.3	7.1	—13.8	85	18	1	1	.....	1	.....	2	3	1	6114	9839	5	4.21	106.9
Grand Manan	N. 44 46	W. 66 45	7.33 a.m.	49	15	30.08	764.0	30.13	765.3	20.1	— 6.6	86	5	2	.....	4	1	2	3	9	2	.....	.....	6	4.16	105.7
Halifax	N. 44 39	W. 63 36	7.46 a.m.	122	37	29.99	761.7	30.14	765.5	18.0	— 7.8	89	2	1	.....	2	2	3	11	6	1	.....	.....	6	6.70	170.2
Hamilton	N. 43 16	W. 79 53	6.40 a.m.	372	113	29.82	757.4	30.26	768.6	22.3	— 5.4	85	3	1	12	1	5	.....	3	3	.....	.....	.....	7	4.61	117.1
Kingston	N. 44 14	W. 76 30	6.54 a.m.	307	94	29.81	757.2	30.18	766.6	15.3	— 9.3	87	4	10	1	2	3	2	2	4	.....	.....	.....	7	4.88	123.9
Little Glace Bay	N. 46 12	W. 59 58	8.00 a.m.	34	10	29.92	760.0	29.95	760.7	17.5	— 8.1	87	1	11	9	4	1	1	1	.....	.....	.....	.....	7	.....	.....
London	N. 43 00	W. 81 15	6.35 a.m.	832	254	29.22	742 2	30.19	766.8	20.8	— 6.2	89	2	5	5	.....	2	.....	5	.....	9	5634	9067	8	8.65	219.7
Medicine Hat	N. 50 01	W. 110 37	4.38 a.m.	2136	651	27.70	703 6	30.33	770.4	—12.7	—24.8	90	.....	.....	.....	.....	2	3	5	1	17	.....	.....	2	0.00	00.0
Minnedosa	N. 50 13	W. 99 48	5.21 a.m.	1796	547	28.22	716.8	30.31	769.9	—16.3	—26.8	97	1	2	4	.....	1	1	1	5	13	.....	.....	5	0.50	12.7
Montreal	N. 45 31	W. 73 33	7.06 a.m.	187	57	29.95	760.7	30.17	766.3	9.5	—12.5	85	1	5	3	1	3	4	9	2	.....	.....	.....	7	4.57	116.1
Ottawa	N. 45 26	W. 75 41	6.57 a.m.	200	61	29.92	760.0	30.20	767.1	7.6	—13.6	94	1	6	5	3	.....	.....	5	8	.....	4942	7953	6	7.10	180.3
Parry Sound	N. 45 19	W. 80 01	6.40 a.m.	635	194	29.42	747.3	30.17	766.3	7.9	—13.4	87	.....	.....	10	2	1	2	8	2	3	.....	.....	6	3.31	84.1
Peterborough	N. 44 17	W. 78 18	6.47 a.m.	668	204	29.39	746.5	30.25	768.3	10.3	—12.1	81	6	3	2	1	2	.....	.....	2	12	.....	.....	5	3.20	81.3
Port Arthur	N. 48 27	W. 89 12	6.03 a.m.	642	196	29.44	747.8	30.23	767.8	— 2.3	—19.1	92	3	3	2	.....	1	2	7	1	9	.....	.....	5	0.89	22.6
Port Dover	N. 42 47	W. 80 13	6.39 a.m.	635	194	29.44	747.8	30.17	766.3	23.0	— 5.0	92	.....	4	1	.....	2	4	3	1	13	.....	.....	8	5.17	131.3
Port Stanley	N. 42 40	W. 81 13	6.35 a.m.	592	180	29.48	748.8	30.07	763.8	22.1	— 5.5	89	1	5	8	.....	.....	.....	13	1	.....	.....	.....	6	5.60	142.2
Qu' Appelle	N. 50 44	W. 103 42	5.05 a.m.	2115	645	27.70	703.6	30.33	770.4	—17.9	—27.7	.....	.....	1	.....	1	6	.....	2	2	16	.....	.....	2	0.40	10.2
Quebec	N. 46 48	W. 71 12	7.15 a.m.	293	89	29.83	757.7	30.18	766.6	5.0	—15.0	74	6	4	.....	.....	.....	1	8	1	8	.....	.....	5	3.68	93.5
Rockliffe	N. 46 10	W. 77 48	6.49 a.m.	418	127	29.66	753.4	30.17	766.3	2.1	—16.6	86	.....	1	11	.....	.....	.....	6	.....	10	.....	.....	5	3.19	81.0
Saint Andrews	N. 45 04	W. 67 06	7.32 a.m.	47	14	30.05	763.3	30.10	764.5	15.7	— 9.1	00	2	5	1	2	1	1	1	15	.....	.....	.....	4	5.21	132.3
Saint John, N.B.	N. 45 17	W. 66 03	7.36 a.m.	116	35	30.00	762.0	30.14	765.6	14.4	— 9.8	88	5	12	1	2	2	.....	3	1	2	.....	.....	5	4.82	122.4
Saint Pierre	N. 46 47	W. 56 08	8.15 a.m.	?	?	.....	.....	29.90	759.5	20.7	— 6.3	.....	1	13	1	5	.....	3	.....	4	1	.....	.....	.....	1.66	42.2
Saugeen	N. 44 30	W. 81 21	6.35 a.m.	656	200	29.38	746.2	30.15	765.8	15.8	— 9 0	87	1	2	2	1	2	2	4	3	11	6751	10864	7	5.64	143.3
S.W. Pt. Anticosti	N. 49 24	W. 63 36	7.46 a.m.	30	9	29.98	761.5	30.02	762 5	5.2	—14.9	89	9	1	.....	1	2	.....	2	7	6	.....	.....	5	2.35	59.7
Stratford	N. 43 23	W. 81 00	6.36 a.m.	1186	361	28.79	731.3	30.17	766.3	16.1	— 8.8	88	1	6	4	1	1	3	2	.....	10	.....	.....	7	6.68	169 7
Swift Current	N. 50 21	W. 107 33	4.50 a.m.	.....	.....	27.36	694 9	30.35	770.9	—12.1	—11.1	90	.....	.....	.....	2	4	7	2	4	9	.....	.....	5	1.49	37.8
Sydney	N. 46 08	. 60 10	7.59 a.m.	37	11	29.98	761.5	30.02	762.5	12.7	—10.7	88	1	.....	.....	2	4	8	6	4	3	.....	.....	6	5.10	129.5
Toronto	N. 43 39	W. 79 23	6.42 a.m.	350	107	29.78	756.4	30.19	766.8	18.3	— 7.6	88	6	4	3	.....	1	4	5	3	2	.....	.....	8	4.18	106.2
Woodstock	N. 43 08	W. 80 47	6.37 a.m.	980	299	29.05	737.9	30.18	766.6	19.8	— 6.8	86	.....	2	10	4	2	1	0	1	2	.....	.....	7	4.94	124.6
Yarmouth	N. 43 50	W. 66 02	7.36 a.m.	61	19	30.07	763.8	30.13	765.3	23.0	— 5.0	82	11	6	1	2	1	2	1	3	1	.....	.....	8	4.24	107.7
Sub-series.																										
Saint Johns, N.F.	N. 47 34	W. 52 42	8.29 a.m.	159	48	29.59	751.6	29.88	758.9	16.1	— 8.8	93	2	2	.....	2	.....	1	3	12	.....	.....	.....	5	2.50	63.5
CHINESE.																										
Hong Kong	N. 22 18	E. 114 10	7.37 p.m.	110	34	30.01	762.2	30.07	763.8	55.6	13.1	80	9	1	1	.....	.....	.....	15	2	.....	.....	.....	6	1.90	48.3
Foochow	N. 26 08	E. 119 38	7.59 p.m.	34	10	30.22	767.6	30.13	765.3	49.0	9.4	79	.....	.....	2	.....	.....	1	3	21	1	.....	.....	8	1.44	36.6
Sub-Series.																										
South Cape	N. 21 55	E. 120 51	8.04 p.m.	121	37	29.94	760.5	30.00	762.0	68.5	20.3	84	1	.....	.....	.....	.....	.....	1	24	2	.....	.....	6	2.09	53.1
Zi-Ka-Wei	N. 31 12	E. 121 26	8.06 p.m.	23	7	30.29	769.4	30.27	768.8	37.9	3.3	83	7	3	1	.....	1	4	1	11	.....	.....	.....	6	1.50	38.0
DANISH.																										
Copenhagen	N. 55 41	E. 12 36	0.50 p.m.	43	13	30.30	769.7	30.37	771.4	35.6	2.0	79	5	1	3	6	7	3	2	1	.....	.....	.....	5	.....	.....
Fanoe	N. 55 27	E. 8 24	0.34 p.m.	20	6	30.30	769.6	30.35	770.9	35.1	1.7	87	1	2	.....	8	6	3	5	2	1	.....	.....	5	.....	.....
Stykkisholm	N. 65 05	W. 22 46	10.29 a.m.	36	11	29.33	745.0	29.42	747.3	30.0	— 1.1	85	.....	.....	3	7	3	5	3	5	2	.....	.....	8	.....	.....
Thorshavn	N. 62 02	W. 6 44	11.33 a.m.	30	9	29.75	755.7	29.82	757.4	41.9	5.5	79	4	2	5	9	5	.....	1	.....	2	.....	.....	7	.....	.....
Vestervig	N. 56 47	E. 8 20	0.33 p.m.	82	25	30.18	766.6	30.20	769.4	36.3	2.4	88	.....	1	.....	6	6	7	1	3	4	.....	.....	6	.....	.....

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for February, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
FRENCH.	° ′	° ′																								
Agen	N. 44 12	E. 0 38	0.03 p.m.	604	184	29.59	751.6	30.25	768.3	42.8	6.0	83	1	4	5	1	1	10	3	3	...	...	...	...	0.31	8.0
Alençon	N. 48 26	E. 0 05	0.00 m.	476	145	29.83	757.7	30.37	771.4	41.0	5.0	84	8	2	...	3	3	4	...	8	...	...	...	3	0.65	16.4
Arras	N 50 18	E. 2 46	0.11 p.m.	223	68	30.08	764.0	30.34	770.6	40.3	4.6	74	6	3	1	5	3	1	2	7	...	...	...	2	0.92	23.4
Avignon	N. 43 57	E. 4 49	0.19 p.m	66	20	30.17	766.3	30.24	768.1	46.4	8.0	62	17	3	...	...	...	1	1	6	...	...	...	3	2.30	58.4
Bar-sur-Seine	N. 48 07	E. 4 22	0.17 p.m.	518	158	29.74	755.4	30.33	770.4	39.6	4.2	79	d2	1	...	2	4	10	...	5	...	...	...	5	0.33	8.4
Beauvais	N. 49 26	E. 2 05	0.08 p.m.	269	82	30.02	762.5	30.33	770.4	44.1	6.7	81	4	3	2	1	...	...	4	4	10	...	...	5	0.26	6.6
Besançon	N. 47 13	E. 6 02	0.24 p.m.	895	273	29.39	746.5	30.37	771.4	42.3	5.7	86	2	...	...	2	11	1	4	8	...	...	...	...	0.21	5.4
Bordeaux	N. 44 50	W. 0 32	11.58 a.m.	243	74	29.99	761.7	30.26	768.6	44.4	6.9	68	6	2	1	...	1	7	5	6	...	...	...	4	0.37	9.5
Bourges	N. 47 10	E. 2 26	0.10 p.m.	512	156	29.73	755.1	30.30	769.6	42.3	5.7	77	1	1	5	2	2	1	2	14	...	...	...	4	0.37	9.4
Brest	N. 48 24	W. 4 30	11.42 a.m.	210	64	30.04	763.0	30.28	769.1	47.3	8.5	83	8	1	1	5	2	2	1	6	2	...	...	7	0.68	17.2
Caen	N. 49 11	W. 0 21	11.59 a.m.	69	21	30.27	768.8	30.35	770.9	41.4	5.2	80	6	3	1	2	4	3	3	6	...	...	...	4	0.65	16.4
Châlons-sur-Marne	N. 48 57	E. 4 21	0.17 p.m.	292	89	30.10	764.5	30.44	773.2	40.5	4.7	82	2	1	4	5	3	2	1	10	...	...	...	6	0.65	16.4
Charleville	N. 49 46	E. 4 43	0.19 p.m.	476	145	29.80	756.9	30.34	770.6	40.8	4.9	68	5	1	...	1	6	5	9	1	...	...	...	4	0.28	7.2
Clermont-Fer'and	N. 45 46	E. 3 05	0.12 p.m.	1273	388	28.89	733.8	30.29	769.4	41.5	5.3	62	12	2	2	4	...	1	1	6	...	...	...	6	0.21	5.4
Cluny	N. 46 26	E. 4 39	0.19 p.m.	787	240	29.41	747.0	30.28	769.2	41.9	5.5	71	2	6	1	1	4	...	...	14	...	...	...	5	0.05	1.2
Commercy	N. 48 46	E. 5 35	0.22 p m.	817	249	29.49	749.0	30.39	771.9	38.3	3.5	73	1	2	2	3	1	2	1	12	4	...	...	4	0.28	7.0
Gap	N. 44 33	E. 6 05	0.24 p.m.	2424	739	27.65	702.3	30.29	769.4	37.4	3.0	54	3	...	...	...	...	...	6	4	15	...	...	1	0.00	0.0
Gréasque	N. 43 25	E. 5 37	0.22 p.m.	1056	322	29.08	738.6	30.24	769.1	45.7	7.6	63	12	5	1	4	3	...	1	2	...	...	...	5	3.95	100.3
Grenoble	N. 45 12	E. 5 43	0.23 p.m.	715	218	29.58	751.3	30.39	771.9	37.0	2.8	76	1	...	2	2	2	6	14	1	...	...	...	...	0.05	1.2
Guéret	N. 46 10	E. 1 52	0.07 p.m.	1486	453	28.62	726.9	30.23	767.8	43.0	6.1	66	6	2	1	3	1	4	6	5	...	...	...	o3	1.00	25.5
Lescar	N. 43 20	W. 0 26	11.58 a.m.	525	160	29.68	753.9	30.25	768.3	47.7	8.7	60	3	5	5	4	2	1	2	6	...	...	...	k3	0.55	13.9
Lorient	N. 47 45	W. 3 21	11.47 a.m.	85	26	30.23	767.8	30.33	770.4	45.7	7.6	72	6	...	2	2	4	5	...	9	...	...	...	4	1.13	28.8
Lyon	N. 45 41	E. 4 47	0.19 p.m.	981	299	29.21	741.9	30.29	769.4	39.6	4.2	63	7	1	5	...	1	4	4	6	...	...	...	5	0.04	1.1
Mans	N. 48 00	E. 0 12	0.01 p.m.	285	87	30.02	762.5	30.35	770.9	41.5	5.3	83	...	...	2	6	3	...	3	14	...	...	...	5	0.58	14.8
Marseille	N. 43 18	E. 5 23	0.22 p.m.	246	75	29.95	760.7	30.22	767.6	50.0	10.0	59	1	2	8	3	2	3	5	4	...	...	...	6	4.42	112.3
Montlouis	N. 42 30	E. 2 07	0.08 p.m.	5202	1586	24.83	730.7	29.73	755.1	33.6	0.9	64	4	2	4	8	...	3	5	2	...	...	...	4	6.50	165.1
Montpellier	N. 43 37	E. 3 53	0.16 p.m.	118	36	30.13	765.3	30.26	768.6	47.7	8.7	71	13	1	2	...	...	2	...	5	5	...	...	4	3.28	83.4
Mont Ventoux	N. 44 10	E. 5 16	0.21 p.m.	6234	1900	23.85	605.8	...	...	23.7	— 4.6	69	6	4	1	...	3	7	3	4	...	...	...	3	5.52	140.3
Nancy	N. 48 42	E. 6 11	0.25 p.m.	718	219	29.51	749.5	30.34	770.6	35.8	2.1	75	2	1	...	...	8	3	1	13	...	...	...	...	0.12	3.1
Nantes	N. 47 13	W. 1 33	11.54 a.m.	134	41	30.18	766.6	30.33	770.4	43.7	6.5	71	6	1	1	...	7	2	3	8	...	...	...	5	0.82	20.9
Nice	N. 43 41	E. 7 16	0.29 p.m.	59	18	30.13	765.3	30.20	767.1	52.3	11.3	84	2	...	...	...	...	...	8	...	18	...	...	1	1.06	27.0
Perpignan	N. 42 42	E. 2 53	0.12 p.m.	105	32	30.14	765.5	30.26	768.6	47.3	8.5	65	3	8	4	1	...	...	6	6	...	...	...	5	4.97	126.3
Pic du Midi (Sum-	N. 42 56	W. 0 08	11.59 a.m.	9380	2859	21.13	536.7	...	...	19.0	— 7.2	58	2	2	...	5	1	...	1	10	7	...	...	1	1.70	43.3
Privas. ... [mit.)	N. 44 45	E. 4 36	0.18 p.m.	997	304	29.22	742.2	30.32	770.1	41.9	5.5	71	17	...	...	...	8	1	2	...	...	...	...	...	0.00	0.0
Puy de Dôme	N. 45 46	E. 2 58	0.12 p.m.	4813	1467	25.22	640.6	...	...	27.0	— 2.8	82	1	3	4	2	2	5	4	7	...	...	...	5	0.92	23.4
Rochefort	N. 45 56	W. 0 58	11.56 a.m.	30	9	30.25	768.3	30.28	769.1	45.1	7.3	68	...	1	1	3	4	2	6	11	...	...	...	6	0.62	15.7
Roche-sur-Yon	N. 46 40	W. 1 26	11.54 a.m.	259	79	29.99	761.7	30.28	769.1	42.6	5.9	82	4	3	1	2	3	3	5	7	...	...	...	0	0.76	19.3
Rodez	N. 44 21	E. 2 34	0.10 p.m.	2050	625	28.04	712.2	30.24	768.1	41.0	5.0	74	8	3	2	...	1	7	3	4	...	...	...	...	0.12	3.0
Rouen	N. 49 26	E. 1 05	0.04 p.m.	39	12	30.30	769.6	30.34	770.6	44.2	6.8	70	1	2	1	3	5	2	9	5	...	...	...	5	0.29	7.3
Saint Brieuc	N. 48 37	E. 5 08	0.20 p.m.	348	106	29.91	759.7	30.31	769.9	42.1	5.6	83	3	2	6	5	4	...	2	6	...	...	...	7	0.66	16.7
Saint Maur	N. 48 48	E. 2 21	0.09 p.m.	161	49	30.16	766.1	30.35	770.9	40.8	4.9	94	4	3	...	6	4	...	...	11	...	...	...	6	0.12	3.1
Toulouse	N. 43 37	E. 1 27	0.06 p.m.	636	194	29.56	750.8	30.26	768.6	44.1	6.7	78	...	8	4	...	1	13	2	...	...	...	...	6	1.01	25.7
Tours	N. 47 24	E. 0 41	0.03 p.m.	171	52	30.13	765.3	30.31	769.9	42.8	6.0	73	1	2	1	5	3	1	6	8	1	...	...	...	0.64	16.2
Sub-Series.																										
St. Martin du Hinx.	N. 43 35	W. 1 16	11.55 a.m.	131	40	30.12	765.0	30.27	768.8	48.6	9.2	61	5	2	2	3	2	...	5	8	1	...	...	5	0.82	20.7
GERMAN.																										
Ansbach	N. 49 18	E. 10 36	0.42 p.m.	1358	414	28.89	733.9	30.42	772.7	33.3	0.7	66	...	1	8	2	2	1	5	7	2	...	...	5	0.31	7.9
Bamberg	N. 49 54	E. 10 54	0.44 p.m.	787	240	29.44	747.7	30.33	770.4	34.7	1.5	64	b	2	...	6	...	1	11	4	2	...	...	5	0.19	4.9
Berlin	N. 52 30	E. 13 19	0.53 p.m.	151	46	30.28	769.0	30.45	773.4	36.5	2.5	79	2	4	2	7	...	4	5	4	...	...	...	5	0.62	15.8
Breslau	N. 51 07	E. 17 02	1.08 p.m.	482	147	29.85	758.3	30.42	772.7	32.0	0.0	71	3	5	3	3	4	3	5	2	...	...	...	5	0.70	17.7
Carlsruhe	N. 49 01	E. 8 25	0.34 p.m.	413	126	29.89	759.2	30.37	771.4	36.1	2.3	69	...	...	1	12	...	...	4	11	...	...	...	6	0.69	17.6
Cassel	N. 51 19	E 9 28	0.38 p.m.	669	204	29.63	752.7	30.40	772.1	35.6	2.0	74	4	2	...	2	8	...	2	4	6	...	...	5	0.16	4.1
Frankfort on M.	N. 50 08	E. 8 41	0.35 p.m.	338	103	30.00	761.9	30.40	772.1	37.0	2.8	66	1	1	2	8	1	1	7	6	1	...	...	6	0.47	12.0
Friedrichshafen	N. 47 39	E. 9 29	0.38 p.m.	1338	408	28.86	733.1	30.35	770.8	33.3	0.7	70	2	2	1	9	2	...	...	11	1	...	...	4	0.51	13.0
Hamburg	N. 53 33	E. 9 58	0.40 p.m.	85	26	30.28	769.2	30.38	771.6	35.8	2.1	78	2	1	...	8	3	4	3	7	...	...	...	5	0.42	10.6
Kiel	N. 54 19	E. 10 04	0.40 p.m.	13	4	30.36	771.2	30.39	771.9	37.9	3.3	72	1	1	1	9	4	...	4	7	1	...	...	6	0.63	16.1
Leipsic	N. 51 20	E. 12 24	0.50 p.m.	390	119	29.82	757.4	30.29	769.4	34.7	1.5	81	2	1	4	3	2	3	3	10	...	...	...	6	0.56	14.2
Memel	N. 55 43	E. 21 07	1.24 p.m.	39	12	30.29	769.4	30.39	771.9	32.5	0.3	83	2	1	5	6	6	...	3	5	...	...	...	a8	...	...
Munich	N. 48 09	E. 11 34	0.46 p.m.	1732	528	28.46	722.8	30.35	770.9	32.9	0.5	70	2	6	...	...	1	...	4	13	2	...	...	5	0.28	7.0
Neufahrwasser	N. 54 24	E. 18 40	1.15 p.m.	36	11	30.34	770.6	30.40	772.1	34.3	1.3	78	3	...	7	1	11	1	1	4	...	...	...	7	0.22	5.7
Neustadt	N. 49 21	E. 8 08	0.33 p.m.	479	146	29.83	757.7	30.37	771.4	36.0	2.2	79	2	1	5	2	4	1	3	8	2	...	...	7	0.51	13.0
Stuttgart	N. 48 47	E. 9 11	0.37 p.m.	833	254	29.38	746.3	30.33	770.4	36.3	2.4	64	3	1	...	5	...	3	5	10	1	...	...	6	0.73	18.5
Wustrow	N. 54 21	E. 12 24	0.50 p.m.	23	7	30.32	770.1	30.36	771.1	35.1	1.7	82	...	1	3	7	3	6	5	3	...	...	...	5	0.21	5.4
GREEK.																										
Athens	N. 37 58	E. 23 44	1.35 p.m.	348	106	29.82	757.3	30.18	766.6	54.0	12.2	68	7	2	...	1	7	1	2	8	...	...	...	6	0.71	18.1
INDIAN.																										
Kurrachee	N. 24 47	E. 67 04	4.28 p.m.	49	15	29.94	760.4	29.94	760.4	76.3	24.6	46	...	1	5	19	1	...	1	1	...	...	...	1	0	0
Deesa	N. 24 16	E. 72 14	4.49 p.m.	466	142	29.46	748.3	29.87	758.7	86.0	30.0	11	4	7	9	7	1	...	...	...	...	...	...	2	0	0
Bombay	N. 18 54	E. 72 49	4.51 p.m.	37	11	29.89	759.3	29.87	758.7	78.0	25.6	64	...	21	7	...	...	...	...	...	...	...	...	1	0	0
Poona	N. 18 28	E. 74 10	4.57 p.m.	1849	564	28.07	713.0	29.82	757.4	87.5	30.8	14	2	7	8	...	...	1	6	4	...	...	...	1	0	0
Belgaum	N. 15 52	E. 74 42	4.59 p.m.	2524	770	27.36	694.9	29.74	755.4	84.6	29.2	22	6	1	1	5	...	1	3	9	2	...	...	1	0	0
Lahore	N. 31 34	E. 74 20	4.57 p.m.	702	214	29.24	742.8	29.94	760.3	70.7	21.5	27	1	5	14	1	...	1	1	2	3	...	...	4	0	0
Roorkee	N. 29 52	E. 77 56	5.12 p.m.	887	270	29.00	736.7	29.88	758.9	70.5	21.4	32	...	1	19	...	...	...	...	...	8	...	...	2	0.02	0.5
Agra	N. 27 10	E. 78 05	5.12 p.m.	555	169	29.39	746.5	29.91	759.8	76.0	24.4	28	1	17	4	2	...	1	...	...	3	...	...	2	0	0
Nagpur	N. 21 09	E. 79 11	5.17 p.m.	1025	312	28.86	733.2	29.83	757.8	86.4	30.2	16	1	5	2	4	...	2	3	6	5	...	...	0	0	0
Jubbulpore	N. 23 09	E. 79 59	5.20 p.m.	1341	409	28.59	726.2	29.90	759.5	76.3	24.6	24	4	6	2	1	...	...	...	6	9	...	...	0	0	0
Lucknow	N. 26 50	E. 81 00	5.24 p.m.	369	112	29.56	750.7	29.90	759.4	73.3	22.9	27	6	13	3	1	...	...	...	2	3	...	...	2	0	0
Allahabad	N. 25 26	E. 81 52	5.27 p.m.	307	94	29.62	752.3	29.90	759.4	75.2	24.0	31	...	6	17	...	...	1	...	...	4	...	...	1	0	0
Patna	N. 25 37	E. 85 08	5.41 p.m.	183	56	29.75	755.6	29.89	759.2	71.8	22.1	44	...	...	18	...	...	...	...	2	8	...	...	1	0	0
Hazaribagh	N. 24 00	E. 85 24	5.42 p.m.	2007	612	27.91	709.0	29.90	759.5	68.3	20.2	28	1	11	16	...	...	...	...	...	...	...	...	0	0	0
Cuttack	N. 20 29	E. 85 54	5.44 p.m.	80	24	29.85	758.2	29.87	758.7	81.4	27.4	41	3	1	3	8	4	3	1	5	...	...	...	1	0	0
Calcutta	N. 22 33	E. 88 21	5.53 p.m.	21	6	29.91	759.7	29.87	758.7	74.6	23.7	45	2	9	8	5	1	2	...	...	1	...	...	0	0	0
Dhubri	N. 26 07	E. 89 50	5.59 p.m.	115	35	29.80	757.0	29.87	758.7	71.1	21.7	52	...	...	...	1	...	...	1	1	25	...	...	1	0	0
Chittagong	N. 22 21	E. 91 50	6.07 p.m.	87	27	29.85	758.1	29.88	759.0	70.2	21.1	75	...	2	16	6	2	1	...	...	1	...	...	1	0.91	23.1
Sibsagar	N. 26 59	E. 94 40	6.19 p.m.	333	101	29.61	752.2	29.91	759.8	65.4	18.6	77	2	2	...	3	...	3	2	16	...	...	...	3	0.64	16.3
Jeypore	N. 26 55	E. 75 50	5.03 p.m.	1431	436	28.50	724.0	29.91	759.6	76.6	24.8	19	5	16	4	1	1	...	...	...	1	...	...	3	0	0
Bellary	N. 15 09	E. 76 57	5.08 p.m.	1475	449	28.41	721.6	29.80	756.8	90.0	32.2	25	3	...	...	...	...	6	16	1	2	...	...	1	0	0
Trichinopoly	N. 10 50	E. 78 44	5.15 p.m.	275	84	29.64	752.9	29.84	757.9	89.2	31.8	35	1	...	...	...	...	...	13	14	...	...	...	2	0	0
ITALIAN.																										
Udine	N. 46 04	E. 13 13	0.53 p.m.	381	116	29.80	756.9	30.22	767.6	43.5	6.4	49	1	3	3	...	3	7	3	1	7	...	...	3	0.16	4.1
Milan	N. 45 28	E. 9 11	0.37 p.m.	482	147	29.80	756.9	30.34	770.6	39.6	4.2	66	1	2	10	5	...	4	3	3	...	...	...	5	0.37	9.4
Padua	N. 45 24	E. 11 53	0.48 p.m.	102	31	30.19	766.8	30.30	769.6	40.6	4.8	57	6	5	2	2	...	...	1	7	5	...	...	3	1.49	37.8
Moncaliera	N. 45 00	E. 7 41	0.31 p.m.	846	258	29.39	746.5	30.35	770.9	34.3	1.3	72	3	7	2	...	1	3	8	4	...	...	...	5	1.25	31.7
Genoa	N. 44 24	E. 8 55	0.36 p.m.	177	54	30.07	763.8	30.26	768.6	39.0	3.9	49	10	2	...	...	1	4	2	3	...	...	...	4	0.69	17.5
Pesaro	N. 43 55	E. 12 53	0.52 p.m.	46	14	30.09	764.3	30.14	765.5	41.0	5.0	72	11	9	1	...	...	...	...	7	...	...	...	6	1.51	38.4
Florence	N. 43 46	E. 11 15	0.45 p.m.	240	73	29.98	761.5	30.25	768.3	44.2	6.8	63	...	2	1	4	1	1	3	10	...	...	...	4	0.80	20.3
Leghorne	N. 43 33	E. 10 18	0.41 p.m.	79	24	30.15	765.8	30.23	767.8	47.5	8.6	55	2	1	3	1	...	...	3	18	...	...	...	4	1.12	28.4
Rome	N. 41 54	E. 12 29	0.50 p.m.	164	50	30.02	762.5	30.19	766.8	49.5	9.7	54	13	2	2	1	...	2	1	2	5	...	...	4	1.82	46.2
Cosenza	N. 39 19	E. 16 17	1.05 p.m.	840	256	29.31	744.5	30.21	767.3	49.3	9.6	69	1	5	18	8	...	...	...	...	...	...	...	6	1.82	46.2
Syracuse	N. 37 03	E. 15 15	1.01 p.m.	72	22	30.10	764.5	30.15	765.8	55.8	13.2	64	9	4	3	1	2	1	3	5	...	...	...	6	5.62	142.7
Sub-Series.																										
Stelvio	N. 46 32	E. 10 25	0.42 p.m.	8343	2543	22.15	562.6	...	...	17.2	— 8.2	62	...	...	1	2	...	8	...	17	...	...	...	3	...	...
Valdobbia	N. 45 47	E. 7 51	0.31 p.m.	8360	2548	22.17	563.1	...	...	19.6	— 6.9	44	4	9	2	4	...	1	4	4	...	...	...	3	...	...

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for February, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent.	Mean Rel. Humidity	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0–10	Total Precipitation. Inch.	Mill.
JAPANESE.	° ′	° ′																								
Akita	N. 39 42	E. 140 07	9.20 p.m.	49	15	30.03	762.8	30.05	763.3	30.4	− 0.9	85	2	2	12	.....	.....	3	6	.....	3	6221	10005	6	2.62	66.7
Awomori	N. 40 51	E. 140 45	9.23 p.m.	33	10	30.00	762.0	30.02	762.5	28.2	− 2.1	83	2	2	6	5	3	2	1	.....	7	4077j	6560j	6	1.91	48.6
Erimo	N. 41 55	E. 143 15	9.30 p.m.	200	61	29.71	754.5	29.93	760.1	29.1	− 1.6	87	2	4	13	.....	.....	.....	2	4	3	.....	.....	4	0.29	7.4
Fushiki	N. 36 47	E. 137 03	10.05 p.m.	13	4	.....	.....	.....	.....	35.4	1.9	77	3	2	2	5	3	.....	1	.....	12	3740	6019	8	2.60	66.1
Gifu	N. 35 27	E. 136 46	9.07 p.m.	49	15	30.08	763.9	30.10	764.7	37.4	3.0	72	9	6	4	.....	.....	.....	.....	1	8	3117	5018	3	0.18	4.5
Hakodate	N. 41 46	E. 140 44	9.23 p.m.	10	3	29.99	761.7	29.99	761.7	27.9	− 2.3	80	10	2	10	.....	.....	.....	2	2	2	7545	12154	5	0.78	19.4
Hamamatsu	N. 34 42	E. 137 43	9.11 p.m.	92	28	29.96	761.1	30.02	762.5	39.4	4.3	64	.....	6	18	.....	.....	.....	.....	.....	4	.....	.....	3	0.15	3.9
Hiroshima	N. 34 23	E. 132 27	8.50 p.m.	15	5	30.18	766.5	30.17	766.2	39.6	4.2	77	20	2	.....	.....	.....	.....	2	4	.....	3414	5493	5	0.18	4.7
Itaurhara	N. 34 12	E. 129 16	8.34 p.m.	16	5	30.19	766.9	30.18	766.6	39.2	4.0	78	16	2	2	4	.....	.....	1	1	2	2920	4699	4	0.17	4.3
Kanazawa	N. 36 33	E. 136 40	9.07 p.m.	95	29	30.07	763.8	30.15	765.8	34.7	1.5	84	4	1	.....	1	2	14	3	2	1	3546	5706	8	4.27	108.1
Kago-shima	N. 31 35	E. 130 33	8.42 p.m.	13	4	30.16	766.1	30.14	765.6	43.6	6.4	70	8	4	.....	.....	.....	.....	1	1	14	1713	2757	4	1.00	25.4
Kioto	N. 35 01	E. 135 46	9.03 p.m.	161	49	29.98	761.5	30.13	765.3	35.7	2.1	80	8	8	3	.....	.....	1	2	4	2	2708	4358	6	0.36	9.0
Miasaki	N. 31 56	E. 131 26	8.46 p.m.	26	8	30.15	765.7	30.14	765.6	44.2	6.8	75	6	1	12	2	1	.....	5	.....	1	4266	6866	4	0.90	22.9
Miyako	N. 39 38	E. 141 59	9.28 p.m.	98	30	29.92	760.0	30.02	762.5	28.9	− 1.7	84	3	.....	18	2	.....	.....	.....	.....	5	2566	4131	3	0.02	0.4
Nagasaki	N. 32 44	E. 129 52	8.39 p.m.	190	58	30.00	761.9	30.18	766.5	41.2	5.1	72	15	2	.....	2	.....	.....	.....	6	3	3284	5285	4	0.76	19.2
Nemuro	N. 43 20	E. 145 35	9.42 p.m.	89	27	29.80	757.0	29.84	757.9	26.1	− 3.3	70	10	5	2	2	5	.....	1	2	1	9837	15831	6	0.58	14.4
Niigata	N. 37 55	E. 139 03	9.16 p.m.	33	10	30.09	764.3	30.10	764.5	35.7	2.1	80	6	1	8	6	1	3	.....	.....	3	4108	6610	7	3.23	81.8
Nobiru	N. 38 23	E. 141 11	9 25 p.m.	16	5	30.04	763.0	30.04	763 0	31.3	− 0.4	81	8	6	5	.....	2	.....	1	.....	6	8164	13138	2	0.29	7.4
Numadzu	N. 35 06	E. 138 51	9.15 p.m.	30	9	30.00	762.0	30.00	762.0	41.2	5.1	69	.....	.....	1	1	2	.....	18	6	.....	3658	5901	6	0.19	4.7
Osaka	N. 34 42	E. 135 30	9.02 p.m.	46	14	30.11	764.9	30.13	765.3	38.0	3.3	77	5	4	3	1	.....	.....	.....	8	7	3267	5258	4	0.30	7.6
Sakai	N. 35 33	E. 133 14	8.53 p.m.	7	2	30.17	766.4	30.16	766.0	38.8	3.8	78	5	4	7	1	.....	1	1	1	8	3819	6146	8	3.34	84.9
Shimonoseki	N. 33 58	E. 130 56	8.44 p.m.	164	50	30.03	762.6	30.15	765.8	41.0	5.0	76	3	8	5	1	1	.....	4	2	4	.....	.....	5	0.77	19.6
Tokei	N. 35 41	E. 139 46	9.19 p.m.	69	21	29.99	761.7	30.04	763.1	39.1	4.0	66	12	6	1	.....	2	3	4	.....	.....	5390	8674	4	0.06	1.5
Wakayama	N. 34 14	E. 135 09	9.01 p.m.	49	15	30.10	764.6	30.12	765.0	39.1	4.0	68	15	1	.....	.....	.....	.....	2	7	3	3167	5097	4	0.58	14.6
MAURITIUS.																										
Mauritius	S. 20 06	E. 57 33	3.50 p.m.	181	55	29.76	755.9	29.89	759.2	79.4	26.3	70	.....	1	.....	.....	.....	1	17	9	.....	3550	5713	7	3.37	85.6
MEXICAN.																										
Guanajuato	N. 21 01	W. 101 10	5.15 a m.	6762	2061	23.71	602.3	29.84	757.9	52.5	11.4	68	5	1	1	4	1	3	5	8	.....	.....	.....	4	0.33	8.4
Leon	N. 21 07	W. 101 36	5.14 a.m.	5902	1799	24.46	621.1	30.17	766.3	50.4	10.2	84	2	20	1	4	.....	.....	.....	1	.....	.....	.....	4	1.30	33.0
Mazatlan	N. 23 12	W. 106 17	4.55 a.m.	249	76	29.74	755.5	29.96	761.0	61.6	16.4	86	2	9	2	.....	.....	1	3	11	.....	.....	.....	2	0.00	00.0
Mexico	N. 19 26	W. 99 00	5.24 a.m.	7490	2283	23.11	586.9	30.20	767.1	47.5	8.6	74	.....	1	1	1	.....	.....	.....	.....	25	.....	.....	3	0.00	00.0
Zacatecas	N. 22 47	W. 102 26	5.10 a m.	8100	2469	22.54	572.7	30.22	767.6	42.3	5.7	51	f	.....	1	15	1	5	.....	.....	.....	.....	.....	4	0.92	23.5
NETHERLANDS.																										
Flushing	N. 51 24	E. 3 35	0.14 p.m.	0	0	30.60	777.2	30.62	777.7	46.0	7.8	.....	2	.....	.....	7	5	.....	7	7	.....	.....	.....	.....	0.27	6.8
Groningen	N. 53 12	E. 6 34	0.26 p.m.	60?	18?	30.30	769.7	30.38	771.6	44.8	7.1	.....	1	.....	3	8	2	4	8	1	1	.....	.....	.....	0.30	7.5
Helder	N. 52 58	E. 4 45	0.19 p.m.	0	0	30.53	775.4	30.55	776.0	41.0	5.0	.....	2	.....	.....	9	2	2	6	7	.....	.....	.....	.....	0.33	8.4
Hellevoetsluis	N. 51 49	E. 4 08	0.17 p.m.	0	0	30.57	776.5	30.59	777.0	41.5	5.3	.....	1	1	1	8	3	.....	8	4	2	.....	.....	.....	0.46	11.7
Utrecht	N. 52 05	E. 5 07	0.20 p.m.	43	13	30.53	775.4	30.59	777.0	40.3	4.6	.....	5	2	.....	4	6	1	6	4	.....	.....	.....	5	0.34	8.6
NORWEGIAN.																										
Bergen	N. 60 24	E. 5 20	0.21 p.m.	56	17	30.06	763.5	30.16	766.1	39.7	4.3	81	2	.....	.....	4	15	3	1	1	2	.....	.....	8	7.61	193.2
Brono	N. 65 28	E. 12 14	0.49 p.m.	33	10	29.80	756.8	29.88	758.9	37.6	3.1	78	2	.....	2	15	3	3	.....	.....	3	.....	.....	9	6.82	173.2
Christiania	N. 59 55	E. 10 45	0.43 p.m.	134	41	30.02	762.4	30.21	767.3	35.1	1.7	76	.....	2	1	6	6	2	.....	1	10	.....	.....	6	0.44	11.3
Gjæsvær	N. 71 00	E. 25 22	1.41 p.m.	23	7	29.34	745.3	29.42	747.3	32.5	0.3	.....	3	2	4	11	2	1	3	1	1	.....	.....	9	2.91	73.8
PORTUGUESE.																										
Funchal	N. 32 38	W. 16 55	10.52 a.m.	82	25	30.14	765.6	30.19	766.8	61.9	16.6	57	2	2	.....	8	1	5	8	2	.....	.....	.....	4	2.64	67.0
Lisbon	N. 38 42	W. 9 08	11.23 a.m.	312	95	29.89	759.3	30.22	767.6	51.3	10.7	65	a11	3	.....	.....	1	1	4	7	.....	.....	.....	4	0.46	11.7
Ponta Delgada	N. 37 45	W. 25 41	10.17 a.m.	66	20	30.16	766.1	30.21	767 3	58.5	14.7	68	2	2	2	6	4	1	1	7	3	.....	.....	4	5.33	135.3
Saint Vincent	N. 16 37	W. 25 02	10.20 a.m.	35	11	30.01b	762.2b	29.98b	761.5b	b71.6	b22.0	b69	b10	.....	.....	.....	.....	.....	.....	16	.....	.....	.....	5b	0.01	0.2
Serra da Estrella	N. 40 25	W. 7 35	11.30 a.m.	4728	1441	25.35	643.8	30.21	767.2	36.3	2.4	68	.....	4	1	2	1	2	15	2	1	.....	.....	4	0.34	8.7
RUSSIAN.																										
Archangel	N. 64 33	E. 40 32	2.42 p.m.	16	5	29.81	757.2	29.88	757.9	23.4	− 4.8	90	.....	3	6	7	6	1	1	.....	4	.....	.....	7	0.32	8.1
Baku	N. 40 21	E. 49 51	3.19 p.m.	39	12	30.32	770.0	30.27	768.8	40.3	4.6	75	11	3	.....	3	7	.....	.....	1	3	.....	.....	9	0.00	00.0
Barnaul	N. 53 20	E. 83 47	5.35 p.m.	459?	140?	29.63	752.6	30.20	767.1	11.1	−11.6	82	.....	.....	1	20	1	1	.....	.....	5	.....	.....	8	1.37	34.9
Dorpat	N. 58 23	E. 26 43	1.47 p.m.	223	68	29.96a	761.0a	30.27a	768.8a	30.4	− 0.9	.....	3	.....	9	8	4	.....	2	2	.....	.....	.....	6	0.89	22.5
Ekaterinburg	N. 56 49	E. 60 38	4.03 p.m.	899	274	28.93	734.8	30.01	762.2	18.1	− 7.7	69	3	3	14	3	1	1	2	1	.....	.....	.....	6	0.16	4.0
Elisavetgrad	N. 48 31	E. 32 17	2.09 p.m.	407	124	29.87	758.6	30.35	770.9	24.1	− 4.4	78	2	6	5	2	2	2	2	6	1	.....	.....	8	0.31	7.8
Irkutsk	N. 52 17	E. 104 16	6.57 p.m.	1610	491	28.48	722.8	30.39	771.9	5.9	−14.5	.....	4	4	1	.....	2	9	6	.....	2	.....	.....	5	0.11	2.7
Kasalinsk	N. 45 46	E. 62 07	4.08 p.m.	148	45	29.95	760.8	30.13	765.3	15.3	− 9.3	.....	7	1	2	11	2	3	.....	2	.....	.....	.....	7	.....	.....
Kasan	N. 55 47	E. 49 08	3.17 p.m.	230	70	29.87	758.8	30.18	766.6	20.8	− 6.2	76	4	3	4	7	4	4	.....	.....	2	.....	.....	6	0.17	4.4
Kem	N. 64 57	E. 34 39	2.19 p.m.	43	13	29.76	756.0	29.85	758.2	26.8	− 2.9	73	1	7	10	8	1	.....	.....	.....	1	.....	.....	6	0.41	10.4
Kertch	N. 45 21	E. 36 29	2.26 p.m.	20?	6?	30.28	769 2	30.30	769.6	32.0	0.0	.....	10	2	6	1	1	1	4	3	.....	.....	.....	8	.....	.....
Kieff	N. 50 27	E. 30 30	2.02 p.m.	600	183	29.64	752.9	30.34	770.6	25.9	− 3.4	76	4	4	4	4	3	3	1	5	.....	.....	.....	6	0.39	9.9
Korostishev	N. 50 19	E. 29 03	2.05 p.m.	?	?	29.66	753.4	.....	.....	26.4	− 3.1	68	4	2	5	4	2	2	6	1	2	.....	.....	5	.....	.....
Koslov	N. 52 53	E. 40 31	2.42 p.m.	505	154	29.69	754.1	30.30	769.6	20.3	− 6.5	89	3	4	2	7	1	2	6	2	1	.....	.....	6	.....	.....
Lgov	N 51 38	E 35 17	2.21 p m.	518	158	29.70	754.3	30.32	770.1	23.9	− 4.5	78	1	1	5	6	.....	.....	7	3	5	.....	.....	8	0.40	10.2
Libau	N. 56 31	E. 21 01	1.24 p.m.	20	6	30.29	769.4	30.34	770.6	33.6	0.9	m83	.....	1	4	8	5	3	3	4	.....	.....	.....	6	0.72	18.3
Lugan	N. 48 35	E. 39 20	2.37 p.m.	164	50	30.14	765.6	30.34	770.6	25.9	− 3.4	73	2	.....	8	5	.....	1	9	3	.....	.....	.....	8	0.56	14.2
Moscow	N. 55 46	E. 37 40	2.31 p.m.	469	143	29 72	754.9	30.29	769.4	23.9	− 4.5	78	5	2	8	1	6	1	3	1	1	.....	.....	6	0.44	11.2
Nerchinsk	N. 51 19	E. 119 37	7.58 p.m.	2155?	657?	27.84	707 1	30.52	775.2	− 9.6	−23.1	.....	.....	1	1	.....	.....	1	.....	.....	25	.....	.....	2	.....	.....
Nikolaiev	N. 46 58	E. 31 58	2.08 p.m.	62	19	30.25	768.4	30.31	769.9	26.2	− 3.2	77	8	2	1	1	1	.....	1	3	11	.....	.....	7	0.44	11.1
Nikolaievsk	N. 53 08	E. 140 45	9.23 p.m.	82	25	c29.86	c758.4	29.96c	761.0c	−25.3	−20.7	c76	c1	3	15	.....	.....	.....	5	.....	1	.....	.....	10	.....	.....
Nikolsk	N. 59 32	E. 45 27	3.02 p.m.	485?	148?	29.69	754.0	30.12	765.0	24.4	− 4.2	71	2	6	2	9	2	5	1	1	.....	.....	.....	7	0.26	6.5
Perm	N. 58 01	E. 56 16	3.45 p.m.	328?	100?	29.57	751.1	29.98	761.5	18.5	− 7.5	75	1	3	11	5	1	1	2	1	3	.....	.....	8	0.78	19.7
Petro-Alexandrovsk	N. 41 28	E. 61 05	4.04 p.m.	328	100	29.98	761.4	30.33	770.4	30.6	− 0.8	.....	3	2	3	4	3	3	.....	9	1	.....	.....	6	.....	.....
Petrozavodsk	N. 61 47	E. 34 23	2.18 p.m.	220?	67?	29.81	757.2	30.10	764.5	27.5	− 2.5	71	2	6	7	8	3	.....	.....	2	.....	.....	.....	6	0.48	12.1
Pinsk	N. 52 07	E. 26 06	1.44 p.m.	459?	140?	29.81	757.1	30.36	771.1	29.5	− 1.4	69	5	2	4	3	2	1	.....	9	2	.....	.....	6	0.38	9.6
Poti	N. 42 09	E. 41 37	2.46 p.m.	26	8	30.17	766.2	30.19	766.8	45.0	7.2	70	.....	3	6	5	2	.....	3	5	4	.....	.....	7	.....	.....
St. Petersburg	N. 59 56	E. 30 16	2.01 p.m.	20	6	30.11	764.9	30.17	766.3	28.6	− 1.9	78	3	2	9	5	4	4	1	.....	.....	.....	.....	6	0.48	12.1
Samarkand	N. 39 39	E. 66 57	4.28 p.m.	2379?	725?	27.68	703.1	30.36	771.1	36.7	2.6	.....	.....	.....	1	1	.....	2	.....	.....	24	.....	.....	6	.....	.....
Sevastopol	N. 44 37	E. 33 31	2.14 p.m.	187	57	30.10	764.4	30.30	769.6	35.6	2.0	61	1	3	3	4	2	.....	.....	9	3	.....	.....	8	0.94	23.8
Tashkend	N. 41 20	E. 69 18	4.37 p.m.	1607?	490?	28.54	724.9	30.33	770.4	34.2	1.2	.....	4	3	5	1	1	5	.....	5	4	.....	.....	7	.....	.....
Tiflis	N. 41 43	E. 44 47	2.59 p.m.	1342	409	28.79	731.2	30.25	768.3	40.6	4.8	54	4	8	.....	.....	1	10	3	.....	2	.....	.....	6	1.01	25.7
Troitskosavsk b.	N. 50 22	E. 106 27	7.06 p.m.	2529?	771?	27.43	696.8	30.48	774.2	− 0.9	−18.3	76	.....	4	.....	.....	2	.....	.....	.....	20	.....	.....	2	0.05	1.2
Vlatka	N. 58 36	E. 49 47	3.19 p.m.	581?	177?	29.39	746.4	30.11	764.8	19.2	− 7.1	.....	.....	6	13	1	.....	1	1	.....	6	.....	.....	5	0.34	8.5
Warsaw	N. 52 13	E. 21 02	1.24 p.m.	390	119	29.91	759.8	30.38	771.6	30.0	− 1.1	78	5	1	3	4	2	1	5	2	5	.....	.....	6	0.47	11.9
Yeniseisk	N. 58 27	E. 92 06	6.08 p.m.	276?	84	29.84	757.8	30.20	767.1	7.5	−13.6	.....	.....	.....	3	3	1	.....	2	.....	17	.....	.....	6	0.81	20.6
Sub-series.																										
Petrowsky Acad'y	N. 55 50	E. 37 33	2.30 p.m.	558	170	29.61	752.1	30.19	766.8	23.0	− 5.0	65	5	.....	7	4	5	6	1	.....	.....	.....	.....	6	0.35	8.9
SPANISH.																										
Barcelona	N. 41 23	E. 2 15	0.09 p.m.	138	42	30.06	763.5	30.21	767.3	48.2	9.0	70	4	2	1	2	8	1	5	5	.....	.....	.....	4	0.82	20.7
Bilbao	N. 43 15	W. 2 59	11.48 a.m.	52	16	30.20	767.0	30.25	768.3	51.8	11.0	71	1	4	.....	2	3	7	1	3	7	1317	2110	6	1.81	45.9
Burgos	N. 42 20	W. 3 46	11.45 a.m.	2822	860	27.20	690.8	30.30	769.6	40.5	4.7	75	7	5	4	1	4	2	1	4	.....	3750	6035	5	0.77	19.6
Madrid	N. 40 25	W. 3 42	11.45 a.m.	2152	656	27.96	710.2	30.23	767.8	47.1	8.4	61	1	1	1	4	.....	1	1	7	12	5121	8241	3	0.17	4.4
Santiago	N. 42 53	W. 8 28	11.26 a.m.	863	263	29.28	743 8	30.21	767.3	52.2	−11.2	66	2	.....	.....	4	1	1	.....	11	9	4668	7513	7	0.86	50.8
SPANISH—*Sub.*																										
Havana	N. 23 08	W. 82 23	6.30 a.m.	62	19	30.12	765.0	30.13	765 3	67.8	19 9	88	1	.....	.....	.....	1	4	21	1	.....	.....	.....	1	0.01	0.2
Manila	N. 14 35	E. 120 57	8.04 p.m.	52	16	29.90	759 4	29.88	758.9	77.7	25.4	74	.....	.....	.....	.....	2	2	22	2	.....	.....	.....	4	0.19	4.8
San Fernando	N. 36 28	W. 6 13	11.35 a.m.	95	29	30.13	765.2	30.21	767.3	56.8	13.7	61	3	5	5	.....	3	1	6	5	.....	.....	.....	3	2.00	29.1
San Juan de Porto Rico	N. 18 30	W. 66 10	7.35 a.m.	82	25	30.06	763.5	30.08	764.0	73.8	23.2	78	.....	.....	.....	.....	1	4	14	6	3	.....	.....	6	2.30	58.4
SCOTTISH.																										
Leith	N. 55 59	W. 3 10	11.47 a.m.	70	21	.....	.....	30.20	767.1	.....	.....	.....	1	.....	11	8	4	2	1	.....	1	.....	.....	7	1.05	26.7

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for February, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent.	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation Inch.	Mill.
SWEDISH.	° ′	° ′																								
Haparands	N. 65 47	E. 24 03	1.36 p.m.	30	9	29.76	755.9	29.84	757.9	27.7	— 2.4	81	.....	3	9	9	4	1	.....	1	1	.....	.....	6	1.28	32.4
Umea	N. 63 50	E. 20 17	1.21 p.m.	39	12	29.89	759.2	29.98	761.5	32.5	0.3	80	3	8	2	11	.....	.....	.....	.....	4	.....	.....	6	0.26	6.6
Hernosand	N. 62 32	E. 17 57	1.12 p.m.	46	14	29.97	761.2	30.07	763.8	33.8	1.0	68	2	3	1	5	8	.....	.....	.....	9	.....	.....	5	0.51	12.9
Stockholm	N. 59 20	E. 18 04	1.12 p.m.	144	44	30.02	762.4	30.22	767.6	34.2	1.2	74	3	2	9	10	3	.....	.....	.....	1	.....	.....	6	0.18	4.6
Wisby	N. 57 39	E. 18 19	1.13 p.m.	52	16	30.19	766.9	30.27	768.8	34.7	1.5	79	2	.....	9	9	1	3	.....	4	.....	.....	.....	5	0.09	2.3
Sub-Series.																										
Upsala	N. 59 51	E. 17 37	1.10 p.m.	79	24	29.97	761.2	30.09	764.3	34.5	1.4	72	2	2	2	10	6	1	.....	1	5	.....	.....	6	0.49	12.4
SWISS.																										
Geneva	N. 46 12	E. 6 08	0.25 p.m.	1338	408	28.85	732.7	30.33	770.4	35.6	2.0	72	20	2	.....	1	2	1	.....	2	.....	.....	.....	5	0.02	0.6
TURKISH.																										
Constantinople	N. 41 02	E. 28 59	1.56 p.m.	246	75	29.98	761.5	30.22	767.6	43.3	6.3	68	12	1	.....	3	1	.....	.....	11	.....	.....	.....	6	2.73	69.4
Valona	N. 40 27	E. 19 27	1.18 p.m.	105	32	30.14	765.5	30.15	768.3	54.1	12.3	.....	2	10	8	2	3	1	.....	2	.....	.....	.....	5	2.52	64.0
Sub-Series.																										
Beirut	N. 33 54	E. 35 28	2.22 p.m.	112	34	29.96	761.0	30.05	763.3	60.6	15.9	61	12	2	6	1	1	.....	2	2	2	.....	.....	5	2.56	65.0
UNITED STATES.																										
Atlantic states.																										
Eastport	N. 44 54	W. 66 59	7.32 a.m.	61	19	30.08	764.0	.....	.....	18.5	— 7.5	77	4	10	3	1	3	2	.....	4	1	8614	13863	5	3.74	95.0
Portland	N. 43 39	W. 70 15	7.19 a.m.	99	30	30.06	763.5	30.17	766.3	18.6	— 7.4	81	6	6	8	4	.....	1	.....	2	1	5467	8798	7	5.73	145.5
Mt. Washington	N. 44 16	W. 71 18	7.15 a.m.	6279	1914	23.46	595.9	30.06	763.5	6.0	—14.4	95	.....	18	6	3	.....	.....	.....	1	.....	.....	.....	3	1.59	40.4
Boston	N. 42 21	W. 71 04	7.16 a.m.	124	38	30.07	763.8	30.20	767.1	25.8	— 3.4	74	6	6	9	3	1	1	2	.....	.....	9456	15214	6	3.69	93.7
Nantucket	N. 41 14	W. 70 07	6.40 a.m.	14	4	30.19	766.8	30.19	766.8	31.6	— 0.2	82	3	8	1	4	3	3	.....	6	.....	9304	14973	6	3.97	100.8
Block Id	N. 41 10	W. 71 36	7.14 a.m.	27	8	30.18	766.6	30.20	767.1	29.8	— 1.2	90	2	9	2	3	.....	3	2	6	1	13220	21275	5	7.02	178.3
New London	N. 41 21	W. 72 05	7.12 a.m.	47	14	30.17	766.3	30.21	767.3	28.3	— 2.1	79	5	7	.....	1	3	1	1	4	6	5018	8076	5	5.88	149.4
New Haven	N. 41 18	W. 72 56	7.08 a.m.	107	33	30.11	764.8	30.22	767.6	26.4	— 3.1	76	5	5	5	3	1	1	2	5	1	6554	10547	6	6.22	158.0
Albany	N. 42 39	W. 73 45	7.05 a.m.	85	26	30.16	766.1	30.25	768.3	22.0	— 5.6	79	5	7	4	2	4	4	.....	1	1	5421	8724	7	2.86	72.6
New York City	N. 40 43	W. 74 00	7.04 a.m.	168	51	30.05	763.3	30.23	767.8	31.1	— 0.5	70	3	6	4	3	2	2	3	5	.....	7190	11571	6	5.26	133.6
Philadelphia	N. 39 57	W. 75 09	7.00 a.m.	117	36	30.14	765.5	30.26	768.6	33.0	0.6	78	5	5	4	2	2	2	1	7	.....	a7582	12202a	5	4.43	112.5
Atlantic City	N. 39 22	W. 74 25	7.03 a.m.	13	4	30.24	768.1	30.24	768.1	33.9	1.1	87	6	6	4	3	1	2	3	2	1	7123	11463	4	4.17	105.9
Baltimore	N. 39 18	W. 76 37	6.54 a.m.	45	14	30.21	767.3	30.24	768.1	35.0	1.7	75	4	3	5	2	1	2	4	5	2	4407	7092	6	4.69	119.1
Washington City	N. 38 54	W. 77 03	6.52 a.m.	106	32	30.15	765.8	30.26	768.6	35.2	1.8	78	2	8	1	4	3	.....	1	5	3	4302	6923	6	3.42	86.9
Chincoteague	N. 37 55	W. 75 23	6.59 a.m.	8	2	30.24	768.1	30.23	767.8	40.1	4.5	82	3	5	3	4	4	2	2	6	.....	9521	15322	6	4.58	116.3
Lynchburg	N. 37 25	W. 79 09	6.44 a.m.	652	199	29.56	750.8	30.25	768.3	38.5	3.6	79	3	2	2	9	1	.....	3	6	2	3004	4834	8	3.51	89.2
Norfolk	N. 36 51	W. 76 17	6.55 a.m.	30	9	30.24	768.1	30.25	768.3	42.9	6.1	83	6	2	3	4	1	3	.....	7	2	5123	8244	8	2.61	66.3
Hatteras	N. 35 15	W. 75 40	6.58 a.m.	12	4	30.28	769.1	30.27	768.8	49.8	9.9	86	9	3	5	5	2	1	.....	3	.....	9011	14502	5	1.37	34.8
Wilmington	N. 34 14	W. 77 57	6.48 a.m.	52	16	30.22	767.6	30.24	768.1	50.6	10.3	87	2	3	2	6	3	2	3	6	1	5143	8277	5	1.61	40.9
Raleigh	N. 35 48	W. 78 29	6.39 a.m.	432	132	29.82	757.4	30.30	769.6	42.5	5.8	87	3	3	1	5	2	2	1	9	2	4680	7532	7	4.97	126.2
Charlotte	N. 35 13	W. 80 51	6.37 a.m.	808	246	29.40	746.7	30.25	768.3	43.5	6.4	87	.....	.....	4	5	4	.....	5	10	.....	4369	7031	7	4.81	122.2
Charleston	N. 32 47	W. 79 56	6.40 a.m.	52	16	30.22	767.6	30.24	768.1	53.4	11.9	88	5	2	4	3	.....	3	2	5	5	5783	9307	6	2.29	58.2
Augusta	N. 33 28	W. 81 54	6.32 a.m.	183	56	30.09	764.3	30.25	768.3	49.2	9.6	91	2	2	3	2	2	3	.....	7	7	2958	4760	4	2.95	74.9
Savannah	N. 32 05	W. 81 05	6.36 a.m.	87	27	30.18	766.6	30.24	768.1	54.2	12.3	86	3	4	3	5	3	1	1	7	1	5222	8404	5	3.63	92.2
Jacksonville	N. 30 20	W. 81 39	6.34 a.m.	43	13	30.22	767.6	30.23	767.8	58.5	14.7	93	2	2	3	2	2	2	.....	4	11	3559	5728	4	0.34	8.6
Cedar Keys	N. 29 08	W. 83 02	6.28 a.m.	22	7	30.25	768.3	30.23	767.8	62.5	16.9	93	.....	2	1	1	7	3	4	10	.....	6453	10385	4	0.19	4.8
Key West	N. 24 34	W. 81 49	6.33 a.m.	22	7	30.20	767.1	30.17	766.3	71.8	22.1	83	2	.....	.....	.....	2	6	13	4	1	8650	13921	4	0.90	22.9
Sanford	N. 28 48	W. 81 23	6.35 a.m.	25	8	30.22	767.6	30.21	767.3	62.1	16.7	94	6	2	1	1	7	1	3	.....	7	4135	6654	4	1.10	27.9
Gulf states.																										
Atlanta	N. 33 45	W. 84 23	6.23 a.m.	1129	344	29.06	738.1	30.23	767.8	48.3	9.1	94	.....	4	4	6	3	3	6	2	.....	7560	12166	5	3.74	95.0
Pensacola	N. 30 25	W. 87 13	6.11 a.m.	30	9	30.19	766.8	30.18	766.6	60.5	15.8	89	2	1	3	4	2	2	10	4	.....	4853	7810	5	3.42	86.9
Mobile	N. 30 41	W. 88 02	6.08 a.m.	35	11	30.18	766.6	30.18	766.6	59.4	15.2	88	5	4	1	2	10	3	2	1	.....	5431	8740	6	6.62	168.1
Montgomery	N. 32 23	W. 86 18	6.15 a.m.	219	67	30.00	762.0	30.20	767.1	54.8	12.7	86	3	3	.....	3	4	8	4	2	1	4564	7345	8	7.47	189.7
Vicksburg	N. 32 22	W. 90 53	5.57 a.m.	222	68	29.95	760.7	30.16	766.1	55.2	12.9	84	3	2	1	4	6	7	2	3	.....	5315	8554	7	4.13	104.9
New Orleans	N. 29 58	W. 90 04	6.00 a.m.	52	16	30.13	765.3	30.15	765.8	62.3	16.8	90	3	.....	.....	4	2	12	3	3	1	5861	9432	6	5.58	141.7
Shreveport	N. 32 30	W. 93 40	5.46 a.m.	227	69	29.92	760.0	30.13	765.3	52.4	11.3	85	3	5	.....	2	9	2	5	2	.....	5202	8372	6	3.31	84.1
Fort Smith	N. 35 22	W. 94 24	5.43 a.m.	470	143	29.68	753.9	30.17	766.3	38.2	3.4	90	5	1	2	1	1	4	9	2	3	4501	7244	7	4.39	111.5
Little Rock	N. 34 45	W. 92 06	5.52 a.m.	299	91	29.84	757.9	30.13	765.3	42.5	5.8	79	5	7	2	.....	4	1	3	6	.....	4623	7440	6	6.42	163.1
Galveston	N. 29 18	W. 94 47	5.41 a.m.	40	12	30.11	764.8	30.11	764.8	60.9	16.1	90	2	1	1	1	10	4	4	5	.....	7857	12644	6	1.86	47.2
Palestine	N. 31 45	W. 95 40	5.38 a.m.	533	162	29.59	751.6	30.13	765.3	51.1	10.6	83	4	4	2	2	8	2	1	5	.....	7593	12220	7	3.87	98.3
San Antonio	N. 29 27	W. 98 28	5.26 a.m.	781	238	29.30	744.2	30.09	764.3	53.5	11.9	80	13	1	.....	.....	5	3	1	5	.....	6702	10786	8	0.70	17.8
Corpus Christi	N. 27 50	W. 97 32	5.30 a.m.	18	5	30.10	764.5	30.08	764.0	60.6	15.9	87	5	5	.....	.....	3	11	1	3	.....	9056	14574	7	0.17	4.3
Brownsville	N. 25 53	W. 97 26	5.30 a.m.	57	17	30.03	762.7	30.04	763.0	64.0	17.8	92	9	.....	.....	1	14	.....	1	2	1	7652	12314	6	0.68	17.3
Rio Grande City	N. 26 23	W. 98 48	5.25 a.m.	230	70	29.89	759.2	30.09	764.3	62.2	16.8	76	10	2	1	.....	11	.....	2	.....	2	5754	9260	7	0.65	16.5
Ohio val. & Tenn.																										
Chattanooga	N. 35 04	W. 85 15	6.19 a.m.	783	239	29.41	747.0	30.23	767.8	46.4	8.0	83	1	4	2	2	8	2	2	7	.....	5399	8687	7	7.16	181.9
Knoxville	N. 35 56	W. 83 58	6.24 a.m.	980	299	29.19	741.4	30.23	767.8	44.3	6.8	88	3	1	3	4	.....	2	1	7	7	5090	8191	7	6.67	169.4
Memphis	N. 35 09	W. 90 03	6.00 a.m.	320	98	29.83	757.7	30.15	765.8	46.3	7.9	87	4	2	2	2	5	5	1	6	1	5018	8076	7	8.37	212.6
Nashville	N. 36 10	W. 86 47	6.13 a.m.	549	167	29.58	751.3	30.15	765.8	45.5	7.5	82	5	2	2	2	6	4	2	5	.....	5890	9479	7	8.47	215.1
Louisville	N. 38 15	W. 85 45	6.17 a.m.	551	168	29.58	751.3	30.17	766.3	39.9	4.4	82	1	1	4	3	7	1	5	5	1	6297	10134	8	7.60	193.0
Indianapolis	N. 39 46	W. 86 10	6.16 a.m.	766	233	29.33	745.0	30.16	766.1	31.4	— 0.3	89	2	5	3	2	4	3	7	2	.....	5187	8348	8	4.61	117.1
Cincinnati	N. 39 06	W. 84 30	6.22 a.m.	628	191	29.51	749.5	30.18	766.6	36.0	2.2	82	2	7	.....	3	2	6	2	5	1	6637	10681	8	7.29	185.2
Columbus	N. 39 58	W. 83 00	6.28 a.m.	812	248	29.29	744.0	30.18	766.6	32.8	0.4	73	2	4	5	2	5	4	3	3	.....	7582	12202	7	6.48	164.6
Pittsburg	N. 40 32	W. 80 02	6.40 a.m.	847	258	29.24	742.7	30.14	765.5	36.4	2.4	80	4	1	7	1	5	1	3	6	.....	6190	9962	8	6.52	165.6
Lake region.																										
Rochester	N. 43 08	W. 77 42	6.49 a.m.	621	189	29.48	748.8	30.17	766.3	23.8	— 4.6	86	1	6	5	4	3	4	3	2	.....	9535	15345	9	4.75	120.6
Buffalo	N. 42 53	W. 78 53	6.45 a.m.	690	210	29.39	746.5	30.16	766.1	24.6	— 4.1	84	1	.....	7	7	2	2	3	6	.....	10247	16486	7	5.51	140.0
Oswego	N. 43 29	W. 76 35	6.54 a.m.	335	102	29.80	756.9	30.18	766.6	21.5	— 5.8	82	2	5	3	1	5	7	2	3	.....	11054	17789	9	3.48	88.4
Erie	N. 42 07	W. 80 05	6.40 a.m.	681	208	29.42	747.3	30.17	766.3	26.4	— 3.1	83	3	4	6	2	5	.....	2	5	1	8399	13517	8	8.50	215.9
Sandusky	N. 41 25	W. 82 40	6.30 a.m.	638	194	29.48	748.8	30.18	766.6	28.0	— 2.2	85	3	5	4	3	4	1	1	7	.....	9883	15905	8	8.53	216.7
Cleveland	N. 41 30	W. 81 42	6.33 a.m.	690	210	29.39	746.5	30.15	765.8	29.0	— 1.7	83	2	5	4	2	4	4	5	2	.....	7446	11983	8	7.73	196.3
Toledo	N. 41 40	W. 83 34	6.26 a.m.	651	198	29.45	748.0	30.17	766.3	26.7	— 2.9	80	5	3	1	7	6	2	2	2	.....	7082	11397	8	6.84	173.7
Detroit	N. 42 20	W. 83 03	6.28 a.m.	662	202	29.41	747.8	30.17	766.3	25.3	— 3.7	83	3	3	4	3	3	1	4	5	2	6607	10633	7	4.16	105.7
Alpena	N. 45 05	W. 83 30	6.26 a.m.	609	186	29.49	748.3	30.16	766.1	12.3	—10.0	84	2	1	16	2	1	2	3	1	.....	6789	10926	7	4.60	116.8
Escanaba	N. 45 48	W. 87 05	6.12 a.m.	608	185	29.47a	748.5a	30.17a	766.3a	a7.1	—a13.8	a79	7a	5	2	2	2	1	1	4	3	5628	9057	a6	1.41	35.8
Grand Haven	N. 43 05	W. 86 18	6.15 a.m.	620	189	29.43	747.5	30.13	765.3	22.4	— 5.3	83	3	2	4	1	2	5	6	4	1	8671	13954	8	4.48	113.8
Lansing	N. 42 45	W. 84 33	6.22 a.m.	870	265	29.19	741.4	30.18	766.6	25.6	— 3.6	81	2	4	4	4	3	6	.....	4	1	6187	9957	7	5.91	150.1
Mackinaw City	N. 45 47	W. 84 39	6.22 a.m.	605	184	29.46	748.3	30.16	766.1	11.9	—11.2	66	.....	2	8	4	2	5	5	1	1	8405	13526	6	1.87	47.5
Marquette	N. 46 34	W. 87 24	6.11 a.m.	672	205	29.40	746.7	30.18	766.6	8.4	—13.1	79	1	17	1	2	1	3	2	.....	1	6047	9732	7	1.36	34.5
Port Huron	N. 43 00	W. 82 26	6.30 a.m.	639	195	29.44	747.8	30.16	766.1	21.4	— 5.9	76	1	3	7	4	3	3	2	4	1	8887	14302	6	4.86	123.4
Chicago	N. 41 52	W. 87 38	6.10 a.m.	661	201	29.34	745.2	30.12	765.0	25.0	— 3.9	86	.....	4	6	5	3	3	7	.....	.....	7463	12010	7	5.10	129.5
Green Bay	N. 45 35	W. 87 54	6.08 a.m.	616	188	29.47	748.5	30.18	766.6	10.5	—11.9	91	5	2	4	7	3	1	.....	6	.....	6112	9852	6	3.99	101.3
Milwaukee	N. 43 02	W. 87 30	6.09 a.m.	697	212	29.35	745.5	30.14	765.5	19.6	— 6.9	85	1	6	11	2	2	3	3	.....	.....	8748	14078	6	3.22	81.8
Duluth	N. 46 48	W. 92 06	5.52 a.m.	672	205	29.43	747.5	30.21	767.3	3.6	—15.8	86	2	4	2	7	1	1	.....	8	3	4843	7794	5	0.81	20.6
Upper Miss. val.																										
Saint Paul	N. 44 58	W. 93 03	5.48 a.m.	831	253	29.23	742.4	30.19	766.8	3.1	—16.1	82	1	5	6	.....	1	2	3	2	8	4288	6901	6	0.89	22.6
La Crosse	N. 43 49	W. 91 15	5.55 a.m.	725	221	29.36	745.7	30.20	767.1	10.3	—12.1	88	11	6	2	1	5	2	1	.....	.....	5263	8470	6	1.36	34.5
Davenport	N. 41 30	W. 90 38	5.58 a.m.	615	187	29.47	748.5	30.15	765.8	19.5	— 6.9	85	4	6	4	1	2	1	8	2	.....	6295	10131	6	4.87	123.7
Des Moines	N. 41 35	W. 93 37	5.46 a.m.	849	259	29.24	742.7	30.20	767.1	13.7	—10.2	85	6	8	1	1	1	4	.....	5	2	5448	8768	6	1.65	41.9
Dubuque	N. 42 30	W. 90 44	5.57 a.m.	665	203	29.44	747.8	30.18	766.6	15.2	— 9.3	74	4	3	6	1	3	2	1	1	7	2931	4717	6	3.56	90.4
Keokuk	N. 40 22	W. 91 26	5.54 a.m.	618	188	29.50	749.3	30.18	766.6	25.5	— 3.6	87	6	7	3	1	2	3	4	2	.....	7163	11528	7	5.19	131.8
Cairo	N. 37 00	W. 89 10	6.04 a.m.	359	109	29.79	756.7	30.16	766.1	39.3	4.1	85	7	2	2	2	4	4	3	3	1	7291	11734	7	4.60	116.8
Springfield	N. 39 48	W. 89 39	6.02 a.m.	644	196	29.47	748.5	30.17	766.3	31.9	— 0.1	75	1	3	6	1	5	5	2	3	2	7413	11959	6	4.26	108.2
Saint Louis	N. 38 38	W. 90 12	5.59 a.m.	571	174	29.54	750.3	30.16	766.1	36.6	2.6	75	5	4	6	1	5	3	1	2	1	7611	12248	7	3.68	93.5
Missouri valley.																										
Leavenworth	N. 39 19	W. 94 57	5.40 a.m.	842	257	29.29	744.0	30.20	767.1	23.8	— 4.6	81	9	8	.....	.....	5	3	1	2	.....	5540	8916	6	1.94	49.3
Omaha	N. 41 16	W. 95 56	5.36 a.m.	1113	339	29.00	736.6	30.24	768.1	12.9	—10.6	83	7	7	2	.....	3	2	.....	1	6	5406	8700	5	1.00	25.4
Fort Sully	N. 44 39	W. 100 39	5.17 a.m.	1600	488	28.41	721.6	30.24	768.1	— 4.2	—20.1	71	1	8	.....	.....	.....	2	1	.....	15	6033	9709	3	0.18	4.6

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea		Result of Simultaneous Observations for February, 1887.																		Average Cloudiness.	Total Precipitation.	
						Mean Barometer.				Mean Temperature.		Mean Rel. Humidity.	Wind.													
						Actual.		Reduced.					Directions.									Total Movement.				
				Feet.	Metr's	Inch.	Mill.	Inch.	Mill.	Fah.	Cent.		N	NW	W	SW	S	SE	E	NE	C	Miles	Kil.	0–10	Inch.	Mill.
U. STATES—Con.																										
Missouri val.—Con	° ′	°																								
Huron	N. 44 21	W. 98 09	5.28 a.m.	1307	398	28.74	730.0	30.24	768.1	−2.7	−19.3	83	2	10	.....	.....	.....	7	1	.....	8	6015	9680	6	1.11	28.2
Yankton	N. 42 54	W. 97 28	5.30 a.m.	1234	376	28.81	731.8	30.20	767.1	5.7	−14.6	77	2	9	2	1	2	3	.....	2	7	6362	10383	5	0.64	16.3
Lamar	N. 37 32	W. 94 15	5.43 a.m.	1028	313	29.06	738.1	30.17	766.3	32.0	0.0	84	2	2	2	6	3	6	3	7	.....	8527	13723	6	1.78	45.2
Valentine	N. 42 50	W. 100 32	5.18 a.m.	2604	793	27.31	693.7	30.17	766.3	5.1	−14.9	72	7	3	4	3	3	1	3	1	.....	8890	14307	4	0.41	10.4
Moorhead	N. 46 52	W. 96 44	5.33 a.m.	926	282	29.15	740.4	30.24	768.1	−7.6	−22.0	77	4	7	2	1	4	3	.....	2	5	6007	9667	7	0.58	14.7
Saint Vincent	N. 48 56	W. 97 14	5.31 a.m.	804	245	29.29	744.0	30.25	768.3	−10.5	−23.6	84	4	8	1	2	5	1	1	1	5	4428	7126	4	0.83	21.1
Bismarck	N. 46 47	W. 100 38	5.16 a.m.	1694	516	28.30	718.8	30.26	768.6	−9.1	−22.8	95	2	9	1	1	.....	3	3	3	6	4457	7173	4	0.52	13.2
Fort Buford	N. 48 00	W. 103 56	5.04 a.m.	1854	565	28.03	711.9	30.19	766.8	−11.4	−24.1	90	.....	5	5	5	.....	3	6	3	1	5544	8922	5	0.18	4.6
Fort Totten	N. 47 57	W. 98 57	5.24 a.m.	1487	453	28.49	723.6	30.25	768.3	−12.4	−24.7	81	3	7	3	2	3	5	2	1	2	8223	13233	5	0.50	12.7
Rocky Mount. reg.																										
Ft. Assinnaboine	N. 48 32	W. 109 42	4.41 a.m.	2690	802	27.19	690.6	30.23	767.8	−6.7	−21.5	59	1	5	4	13	.....	.....	2	1	2	7170	11539	4	0.05	1.3
Fort Custer	N. 45 42	W. 107 34	4.50 a.m.	3040	927	26.83	681.5	30.20	767.1	−3.6	−19.8	82c	4	3	1	5	.....	8	1	4	2	3820	6132	5	0.32	8.1
Fort Maginnis	N. 47 12	W. 109 10	4.44 a.m.	4340	1323	25.42	645.7	30.05	763.3	4.2	−15.4	71	1	7	8	2	.....	2	.....	1	7	7825	12593	6	0.94	23.9
Helena	N. 46 34	W. 112 04	4.32 a.m.	4069	1240	25.72	653.3	30.12	765.0	1.0	−17.2	80	5	3	2	11	.....	.....	.....	1	6	3282	5282	5	0.61	15.5
Poplar River	N. 48 08	W 105 10	5.00 a.m.	2000	610	27.93	709.4	30.23	767.8	−17.1	−27.3	87	2	1	7	1	1	.....	1	5	10	3231	5201	3	0.58	14.7
Deadwood	N. 44 23	W. 103 43	5.05 a.m.	4600	1402	25.22	640.6	30.11	764.8	11.2	−11.6	79	4	2	2	15	1	.....	.....	4	.....	4397	7076	2	0.74	18.8
North Platte	N. 41 08	W. 100 45	5.17 a.m.	2841	866	27.06	687.3	30.14	765.5	10.2	−12.1	83	5	6	3	1	3	6	1	1	2	6507	10472	4	0.49	12.4
Pike's Peak	N. 38 50	W. 105 02	5.01 a.m.	14134	4308	17.46	443.5	30.02	762.5	1.1	−17.2	84	1	5	9	12	.....	.....	.....	.....	1	21002	33799	2	0.46	11.7
Concordia	N. 39 35	W. 97 41	5.29 a.m.	1384	422	28.68	728.5	30.20	767.1	18.7	−7.4	86	5	2	2	.....	4	2	1	5	7	43810	70500	5	0.72	18.3
Denver	N. 39 45	W. 105 00	5.00 a.m.	5294	1614	24.62	625.3	29.99	761.7	22.8	−5.1	66	2	1	2	5	12	2	.....	3	1	5848	9411	2	0.30	7.6
W. Las Animas	N. 38 04	W. 103 12	5.07 a.m.	3899	1188	26.00	660.4	30.04	763.0	19.4	−7.0	80	3	.....	9	4	1	3	4	1	3	6551	10543	4	0.11	2.8
Dodge City	N. 37 45	W. 100 00	5.20 a.m.	2523	769	27.43	696.7	30.14	765.5	22.5	−5.3	82	2	1	2	1	3	8	.....	10	1	7804	12559	5	0.53	13.5
Fort Elliott	N. 35 30	W. 100 21	5.19 a.m.	2700	823	27.294	693.2	30.054	763.3	28.5	−1.9	80	2	7	1	.....	4	8	.....	.....	6	9572	15404	3	0.06	1.5
Fort Sill	N. 34 40	W. 98 23	5.27 a.m.	1200	366	28.90	734.0	30.17	766.3	34.0	1.1	84	14	.....	.....	4	6	2	.....	.....	2	8954	14410	4	0.82	20.8
Abilene	N. 32 14	W. 99 45	5.21 a.m.	1748	533	28.30	718.8	30.12	765.0	41.3	5.2	70	4	2	1	9	4	1	1	6	.....	9284	14941	6	1.21	30.7
Fort Davis	N. 30 38	W. 103 56	5.04 a.m.	4928	1502	25.20	640.1	30.03	762.7	41.2	5.1	45	2	1	3	12	.....	.....	.....	3	7	5621	9046	2	0.03	0.8
Fort Stanton	N. 33 30	W. 105 26	4.58 a.m.	6150?	1875?	23.94	608.1	29.93	760.2	28.2	−2.1	76	.....	11	9	3	.....	3	1	1	.....	7190	11571	3	0.11	2.8
Plateau region.																										
Keeler	N. 36 35	W. 117 50	4.09 a.m.	3622	1104	26.24	666.5	29.93	760.2	35.2	1.8	57	7	4	2	1	3	1	5	.....	5	5615	9036	3	0.93	23.6
Santa Fé	N. 35 41	W. 105 57	4.56 a.m.	7026	2141	23.22	589.8	30.04	763.0	26.9	−2.8	69	7	1	.....	.....	4	3	9	4	.....	3910	6292	3	0.85	21.6
Fort Thomas	N. 33 04	W. 110 02	4.40 a.m.	2710	826	27.29	693.2	30.06	763.5	35.2	1.8	79	.....	1	5	1	2	10	7	2	.....	2720	4377	4	0.84	21.3
Fort Apache	N. 33 48	W. 109 57	4.40 a.m.	5020	1835	25.01	635.2	30.06	763.5	30.7	−0.7	77	3	2	.....	3	3	1	8	8	.....	5470	8803	4	2.16	54.9
Fort Grant	N. 32 39	W. 109 57	4.40 a.m.	4856	1480	25.24	641.1	30.09	764.3	38.0	3.3	64	3	3	2	1	1	3	8	7	.....	5491	8837	4	2.58	65.5
Prescott	N. 34 33	W. 112 28	4.30 a.m.	5389	1643	24.66	626.4	30.01	762.2	29.9	−1.2	76	1	.....	.....	17	1	1	.....	1	7	6390	10284	2	3.12	79.2
Yuma	N. 32 45	W. 114 36	4.22 a.m.	141	43	29.90	759.4	30.02	762.5	47.0	8.3	73	7	3	3	2	2	3	1	7	.....	5748	9250	2	Inap.	Inap.
El Paso	N. 31 47	W. 106 30	4.54 a.m.	3764	1147	26.29	667.8	30.06	763.5	39.4	4.1	60	.....	1	3	7	4	.....	.....	4	9	3075	4947	2	0.15	3.8
Fort Bridger	N. 41 28	W. 110 30	4.38 a.m.	6643?	2025?	23.35	593.1	30.04	763.0	11.7	−11.3	66	3	2	6	11	2	1	2	1	.....	6481	10430	5	1.24	31.5
Salt Lake City	N. 40 46	W. 111 54	4.33 a.m.	4348	1325	25.54	648.7	29.98	761.5	30.9	−0.6	75	1	5	2	.....	6	8	1	4	1	5350	8610	6	1.41	35.8
Frisco	N. 38 25	W. 113 16	4.27 a.m.	6406	1950	23.56	598.4	29.89	759.2	24.1	−4.4	72	3	4	1	18	.....	.....	.....	.....	2	9670	15562	4	0.86	21.8
Winnemucca	N. 40 58	W. 117 43	4.09 a.m.	4358	1328	25.48	647.2	29.96	761.0	24.1	−4.4	72	1	.....	.....	18	.....	.....	1	8	.....	7354	11835	5	1.55	39.4
Montrose	N. 38 30	W. 107 56	4.48 a.m.	5780	1762	24.22	615.2	29.98	761.5	27.8	−2.3	66	.....	.....	1	17	4	7	8	.....	1	6634	19676	4	0.24	6.1
Fort Bidwell	N. 41 53	W. 120 11	3.59 a.m.	4615	1415	25.20	640.1	29.96	761.0	20.6	−6.3	96	1	8	5	11	.....	1	.....	1	1	4684	7538	7	4.85	123.2
Boisé City	N. 43 37	W. 116 08	4.16 a.m.	2750	838	27.08	687.8	30.00	762.0	25.6	−3.6	86	1	4	7	1	2	7	3	2	1	3474	5591	6	1.13	28.7
Spokane Falls	N. 47 40	W. 117 05	4.11 a.m.	1909	582	27.92	709.2	30.04	763.0	12.6	−10.8	83	.....	.....	2	6	5	.....	6	1	8	2545	4096	7	1.64	41.7
Walla Walla	N. 46 03	W. 118 18	4.07 a.m.	1018	310	28.94	635.1	30.08	764.0	19.9	−6.7	87	.....	1	3	13	5	1	.....	.....	5	3323	5348	7	1.78	45.2
Pacific coast reg'n.																										
Fort Canby	N. 46 16	W. 124 04	3.44 a.m.	179	55	29.72	754.9	29.92	760.0	32.1	0.1	90	2	2	6	.....	3	14	1	.....	.....	9680	15578	7	6.29	159.8
Olympia	N. 47 03	W. 122 53	3.49 a.m.	36	11	29.91	759.7	29.96	761.0	27.4	−2.6	89	1	2	.....	4	10	2	.....	8	1	3757	6046	6	4.28	108.7
Port Angeles	N. 48 07	W. 123 06	3.46 a.m.	14	4	29.92	760.0	29.94	760.5	24.3	−4.3	95	2	.....	1	.....	22	1	.....	2	.....	3711	5972	7	4.68	118.9
Tatoosh Id	N. 48 23	W. 124 44	3.41 a.m.	86	26	29.78	756.4	29.88	758.9	33.5	0.8	83	.....	3	1	2	.....	6	13	1	2	10957	17633	6	11.30	287.0
Portland	N. 45 32	W. 122 43	3.49 a.m	88	27	29.91	759.7	30.00	762.0	28.7	−1.8	84	4	2	.....	.....	10	5	1	4	2	4457	7173	6	2.81	71.4
Roseburg	N. 43 13	W. 123 20	3.47 a.m.	523	159	29.43	747.5	30.00	762.0	29.8	−1.2	94	1	3	5	3	2	2	3	3	6	2255	3629	6	6.24	158.5
Eureka	N. 52 08	W. 123 58	3.43 a.m.	50	18	29.95	760.7	.....	.....	36.5	2.5	87	4	.....	1	.....	8	5	1	3	6	2207	3230	6	9.07	230.4
Red Bluff	N. 40 10	W. 122 15	3.51 a.m.	342	104	29.65	753.1	30.00	762.0	38.8	3.8	84	10	.....	.....	.....	15	.....	.....	1	2	6562	10560	6	5.21	132.3
Sacramento	N. 38 35	W. 121 30	3.54 a.m.	64	20	29.97	761.2	30.02	762.5	40.7	4.8	87	1	6	.....	.....	7	8	5	.....	1	6305	10147	5	6.28	159.5
San Francisco	N. 37 48	W. 122 26	3.50 a.m.	60	18	29.98	761.5	30.03	762.7	43.9	6.6	85	3	4	2	2	3	8	1	4	1	5725	9213	5	9.24	234.7
Los Angeles	N. 34 03	W. 118 15	4.07 a.m.	339	103	29.70	754.4	30.04	763.0	44.5	6.9	90	5	1	3	.....	.....	1	7	11	.....	5300	8529	3	9.25	235.0
San Diego	N. 32 43	W. 117 10	4.11 a.m.	67	20	30.01	762.2	30.05	763.3	47.1	8.4	84	6	2	5	1	1	3	1	6	3	4954	7972	4	4.51	114.6
Sitka	N. 57 03	W. 135 19	2.59 a.m.	63	19	29.93	760.2	30.03	762.7	22.9	−5.1	73	1	3	.....	.....	.....	3	5	13	3	5993	9045	5	4.92	125.0
Sub-Series.																										
Colon	N. 9 22	W. 79 55	6.40 a.m.	7	2	29.90	759.4	29.84	757.9	76.5	24.7	85	26	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	6	0.44	11.2
Gamboa	N. 9 05	W. 79 42	6.41 a.m.	107	31	29.86	758.5	29.90	759.4	69.6	20.9	94	.....	.....	.....	.....	.....	1	.....	1	26	.....	.....	4	.....	.....
Naos	N. 8 55	W. 79 32	6.42 a.m.	49	15	29.89	759.3	29.86	758.4	72.9	22.7	88	.....	28	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	0.05	1.3
Paramaribo	N. 5 50	W. 55 13	8.19 a.m.	6	2	30.01	762.2	29.94	760.5	77.5	25.3	87	.....	.....	.....	.....	.....	1	18	9	.....	.....	.....	7	11.78	299.2
Rivas	N. 11 26	W. 85 47	6.17 a.m.	150	46	29.92	759.9	30.08	764.0	74.0	23.3	78	.....	.....	.....	.....	.....	.....	26	2	.....	.....	.....	3	0.81	20.6
San José	N. 9 56	W. 84 00	6.24 a.m.	.....	.....	.....	.....	.....	.....	68.1	20.1	.....	28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	.....	.....
Vera Cruz	N. 19 11	W. 96 09	5.35 a.m.	16	5	29.99	761.7	30.01	762.2	.....	.....	.....	6	4	8	1	1	.....	1	.....	7	.....	.....	2	.....	.....

SUMMARY OF OBSERVATIONS TAKEN AT CHILIAN STATIONS, AUGUST TO OCTOBER, 1886.

AUGUST, 1886.	° ′	° ′																								
Coquimbo	S. 29 56	W. 71 21	7.30 a.m.	74	22	29.99	761.7	30.03	762.7	51.1	10.6	86	2	.....	5	2	1	7	12	.....	2	.....	.....	6g	0.05	1.3
Iquique	S. 20 12	W. 70 11	7.30 a.m	30	9	29.85	758.1	29.81	757.2	58.3	14.6	72	.....	1	1	11	5	2	7	4	.....	.....	.....	10a	0	0
Niebla	S. 39 53	W. 73 25	7.30 a.m.	98	30	29.67	753.5	29.77	756.1	44.2	6.8	90	4	3	1	6	.....	13	3	.....	1	.....	.....	8	14.02	356.0
Punta Caldera	S. 27 03	W. 70 53	7.30 a.m.	44	13	29.97	761.1	30.00	762.0	54.9	12.7	79	1	5	.....	2	1	7	1	14	.....	.....	.....	7a	0.19	4.9
Punta Corona	S. 41 46	W. 73 53	7.30 a.m.	174	52	29.94	760.5	30.12	765.0	47.5	8.6	.....	3	19	1	4	1	2	.....	1	.....	.....	.....	6f	7.61	193.3
Quiriquina	S. 36 37	W. 73 03	7.30 a.m.	190	57	29.89	759.3	30.08	764.0	51.2	10.7	79	6	4	1	2	6	7	1	1	3	.....	.....	5e	3.61	91.8
Valparaiso	S. 33 03	W. 71 36	7.30 a.m.	131	40	29.99	761.7	30.11	764.8	50.0	10.0	84	2	2	2	.....	4	.....	3	.....	18	.....	.....	5b	1.58	40.2
SEPTEMBER, 1886.																										
Coquimbo	S. 29 56	W. 71 21	7.30 a.m.	74	22	29.99	761.8	30.03	762.7	53.2	11.8	87	2	2	4	5	2	8	5	2	.....	.....	.....	6d	?	?
Iquique	S. 20 12	W. 70 11	7.30 a.m.	30	9	29.85	758.2	29.82	757.4	60.4	15.8	69	2	.....	.....	6	10	3	1	6	2	.....	.....	8	0	0
Niebla	S. 39 53	W. 73 25	7.30 a.m.	98	30	29.69	754.0	29.79	756.4	46.0	7.8	89	3	3	.....	4	1	15	3	1	.....	.....	.....	7	10.22	259.5
Punta Caldera	S. 27 03	W. 70 53	7.30 a.m.	44	13	29.98	761.5	30.02	762.5	56.7	13.7	80	3	2	.....	21	.....	1	.....	3	.....	.....	.....	7	?	?
Punta Corona	S. 41 46	W. 73 53	7.30 a.m.	174	52	30.00	761.9	30.18	766.6	47.7	8.7	.....	.....	14	2	6	.....	4	2	2	.....	.....	.....	5e	7.12	180.9
Quiriquina	S. 36 37	W. 73 03	7.30 a.m.	190	57	29.91	759.6	30.09	764.3	53.2	11.8	79	7	2	4	1	5	7	3	.....	2	.....	.....	5b	2.47	62.8
Valparaiso	S. 33 01	W. 71 39	7.30 a.m.	131	40	29.97	761.3	30.09	764.3	53.2	11.8	85	3	.....	.....	.....	1	.....	.....	.....	26	.....	.....	5	0.13	3.2
OCTOBER, 1886.																										
Coquimb	S. 29 56	W. 71 21	7.30 a.m.	74	22	29.98	761.5	30.02	762.5	56.3	13.5	85	5	1	1	2	.....	4	5	5	2	.....	.....	6a	?	?
Iquique	S. 20 12	W. 70 11	7.30 a.m.	30	9	29.85	758.2	29.82	757.4	55.4	13.0	68	1	.....	7	9	13	4	.....	1	2	.....	.....	9	0	0
Niebla	S. 39 53	W. 73 25	7.30 a.m.	98	30	29.72	754.8	29.81	757.2	48.9	9.4	68	3	1	1	4	2	21	.....	.....	.....	.....	.....	6	7.78	197.7
Punta Caldera	S. 27 03	W. 70 53	7.30 a.m.	44	13	29.98	761.6	30.02	762.5	59.2	15.1	80	1	15	.....	5	1	.....	.....	9	.....	.....	.....	7	?	?
Punta Corona	S. 41 46	W. 73 53	7.30 a.m.	174	52	30.02	762.4	30.20	767.1	50.2	10.1	.....	3	9	.....	18	1	.....	1	1	.....	.....	.....	4	5.70	144.7
Quiriquina	S. 36 37	W. 73 03	7.30 a.m.	190	57	29.89	759.2	30.07	763.8	57.2	14.0	74	.....	3	.....	5	11	11	.....	.....	1	.....	.....	4b	0.98	25.0
Valparaiso	S. 33 01	W. 71 39	7.30 a.m.	131	40	29.97	761.1	30.08	764.0	52.0	11.1	83	1	.....	1	3	4	.....	.....	1	22	.....	.....	5a	0.06	1.4

OCEAN SQUARE DATA FOR FEBRUARY, 1887.

Location of Centre of each Square.	Barometer.		Temperature.		Wind Frequency.										Wind force 0–10.
	Inch.	Mill.	Fah.	Cent.	N.	NW.	W.	SW.	S.	SE.	E.	NE.	Calm.	Blank.	
N. 12.5° W. 22.5°															
12.5 27.5															
12.5 32.5															
12.5 37.5	30.02	762.5									11	17			
12.5 42.5	30.03	762.7									19	9			4.4
12.5 47.5	30.03	762.7								3	17	7		1	4.5
12.5 52.5	30.01	762.2								5	16	7			4.9
12.5 57.5															4.9
17.5 22.5															
17.5 27.5															
17.5 32.5															
17.5 37.5	30.11	764.8									12	16			
17.5 42.5	30.12	765.0			2						16	10			4.6
17.5 47.5	30.12	765.0								1	16	11			4.8
17.5 52.5	30.11	764.8								1	20	6		1	4.9
17.5 57.5	30.09	764.3								1	18	9			4.9
22.5 22.5															4.8
22.5 27.5	30.14	765.5				2	1			1	9	14		1	
22.5 32.5	30.16	766.1			3		1			1	13	10			4.4
22.5 37.5	30.18	766.6			2					1	6	17	1	1	4.5
22.5 42.5	30.20	767.1			3	1				1	12	11			4.4
22.5 47.5	30.20	767.1			3					2	9	14			4.1
22.5 52.5	30.20	767.1			3					2	12	10		1	4.6
22.5 57.5	30.20	767.1			2					1	16	8		1	4.7
22.5 62.5	30.19	766.8			1					4	17	6			4.4
22.5 67.5															4.6
22.5 72.5															
27.5 22.5	30.14	765.5				1			3	2	8	14			
27.5 27.5	30.21	767.3			1	1	1	1	3	2	5	14			4.1
27.5 32.5	30.22	767.6			4	1	3	2	3	4	6	5			4.1
27.5 37.5	30.22	767.6			4	6	2	1	1	3	5	6			4.6
27.5 42.5	30.24	768.1			7	7		1	1	3	2	7			4.6
27.5 47.5	30.25	768.3			4	8	1	1		3	4	5		2	4.6
27.5 52.5	30.27	768.8			4	7	1			5	3	6		2	4.5
27.5 57.5	30.28	769.1			4	5	1	1	2	1	5	7		2	4.6
27.5 62.5	30.28	769.1			7		1	1	3	1	4	11			4.3
27.5 67.5															4.6
27.5 72.5															
27.5 77.5															
32.5 12.5															
32.5 17.5															
32.5 22.5															
32.5 27.5	30.24	768.1			2	1	4	2	4	6	2	7			
32.5 32.5	30.22	767.6			3	3	3	6	3	3	5	1	1		4.4
32.5 37.5	30.21	767.3			6	3	5	4	3	5	1	1			4.9
32.5 42.5	30.20	767.1			5	6	4	5		4	3	1			5.1
32.5 47.5	30.22	767.6			4	5	6	3	3	3	1	2		1	5.1
32.5 52.5	30.25	768.3			7	7	2	4	3	1	1	2		1	5.3
32.5 57.5	30.26	768.6			5	6	4	4	2	4		2		1	5.3
32.5 62.5															5.0
32.5 67.5															
32.5 72.5															
32.5 77.5															
37.5 12.5															
37.5 17.5															
37.5 22.5															
37.5 27.5															
37.5 32.5	30.13	765.3			2	3	3	12	3	5					
37.5 37.5	30.10	764.5			4	5	9	4	6						5.5
37.5 42.5	30.11	764.8			2	10	6	5	1	4					5.8
37.5 47.5	30.13	765.3			4	11	3	6		2	1			1	5.7
37.5 52.5	30.17	766.3			6	8	5	5	1	2				1	5.3
37.5 57.5	30.17	766.3			7	5	2	8	3			2		1	5.9
37.5 62.5															5.7
37.5 67.5															
37.5 72.5															
42.5 12.5															
42.5 17.5															
42.5 22.5	30.19	766.8			1	2	2	12	3	3	2	3			5.1
42.5 27.5	30.05	763.3			1	1	2	18	4	2					5.6
42.5 32.5	29.93	760.2			1	4	4	14	3	1	1				6.2
42.5 37.5	29.93	760.2			1	10	6	7	3		1				6.5
42.5 42.5	29.97	761.2			4	10	4	4	3	1	2				6.4
42.5 47.5	30.00	762.0			3	12	4	7	1			1			6.4
42.5 52.5	30.02	762.5			2	13	3	6	2	1		1			6.2
42.5 57.5	30.08	764.0			4	11	4	5	2	1		1			6.8
42.5 62.5															
42.5 67.5															
47.5 12.5															
47.5 17.5	30.17	766.3				2	1	13	7	2	2	1			
47.5 22.5	30.06	763.5				1	4	11	9	2	1				5.6
47.5 27.5	29.90	759.4				2	2	15	8			1			5.3
47.5 32.5	29.77	756.1				4	5	14	4			1			5.7
47.5 37.5	29.75	755.6			4	8	7	8				1			6.2
47.5 42.5	29.82	757.4			2	12	5	6	2			1			6.7
47.5 47.5	29.86	758.4			2	11	3	7	3			1		1	6.5
52.5 12.5															6.1
52.5 17.5	30.03	762.7				2	2	14	8	2					
52.5 22.5	29.89	759.2			1	1	5	15	5	1					5.9
52.5 27.5	29.74	755.4				3	6	12	4	2			1		5.4
52.5 32.5	29.61	752.1			2	4	4	10	3	2		1		2	6.0
52.5 37.5	29.67	753.6			5	5	5	5	2	1		1		4	6.2
52.5 42.5	29.69	754.1			2	13		5	2					6	6.5
52.5 47.5	29.71	754.6			3	13	1	3	3					5	6.2
57.5 12.5	29.94	760.5				1	4	19	3			1			6.0
57.5 17.5	29.82	757.4				1	3	20	3					1	5.8
57.5 22.5	29.71	754.6				1	5	16	3	1				2	5.6
57.5 27.5	29.58	751.3			1	1	6	12	2	3		1		2	6.2
57.5 32.5	29.53	750.0			1	5	4	8	3	1	1	2		3	6.8
57.5 37.5	29.53	750.0			2	5	4	3	2	1		3		8	6.2
57.5 42.5	29.57	751.1			1	8		3	1			2		13	6.3
57.5 47.5	29.66	753.4			5	7			1					15	6.0
															6.1

OCEAN SQUARES.—The table of ocean square data shows (1) the location of the centres of squares whose sides extend 5° each in latitude and longitude, (2) the monthly mean pressure and temperature of the air, and the mean force and total frequency of the wind at noon, Greenwich mean time, computed for the centre of each square from daily readings as obtained by interpolation between the isobars and isotherms of the daily international simultaneous weather maps.

REVIEW.

INTERNATIONAL METEOROLOGY FOR FEBRUARY, 1887.

[*Pressure expressed in inches and millimetres; temperature in degrees, Fahrenheit and Centigrade; wind-force by scale of* 0–10.]

The following refers to chart ii for the month of February, 1887. This chart continues the series of international charts begun in January, 1877, and exhibits the mean pressure and the prevailing wind-directions over the northern hemisphere, as determined from simultaneous observations taken once each day at 7 a. m., 75th meridian, or noon Greenwich, mean time:

The area of lowest mean pressure extends northeastward from east of the southern extremity of Greenland to the east of Spitzbergen, with included values falling below 29.50 (749.3). Three areas of relatively low mean pressure, bounded by isobars of 29.90 (759.4), are located over British India, the Sea of Okhotsk, and the west coast of the North American continent in the vicinity of the fiftieth parallel, respectively.

Two areas of high mean pressure, showing values above 30.40 (772.1), are charted, one over central Asia, and the other over Germany. A third area of high pressure, with readings above 30.30 (769.5), occupies the Saskatchewan Valley in British America.

In the United States the mean pressure is highest in the extreme northern part of Montana and Dakota and in the eastern part of North Carolina, where it rises to 30.25 (768.3), and lowest along the coast of Washington Territory, where it falls to 29.89 (759.2) at Tatoosh Island. A second low area covers a greater part of the middle plateau, with means 29.95 (760.7) or less. In the British Possessions in North America the mean prersure is highest in the Saskatchewan Valley, where it rises to about 30.40 (772.1), and lowest in Newfoundland, Labrador, and British Columbia, where it falls below 29.90 (759.4). Over the north Atlantic Ocean an area of high pressure extends from Europe, south of the sixtieth parallel, southwestward to the thirtieth parallel, and thence west and northwest over the United States to the eighty-sixth meridian, The highest readings over the ocean, 30.28 (769.1), are charted southeast of Bermuda, and the lowest, 29.42 (747.3), appear at Stykkisholm, Iceland, and on the north coast of Norway. In Europe the pressure is highest, 30.45 (773.4), at Berlin, Germany, and lowest, 29.42 (747.3), at Gjæsvær, Norway. Over Asia barometric maximum, 30.52 (775.2), is shown at Nerchinsk, and minima, 29.80 (756.9) and 29.84 (757.9), at Bellary, India, and Nemuro, Japan, respectively,

As compared with the chart for January, 1887, an increase in mean pressure is shown in all districts of the United States, except in the middle and southern plateau regions, and along the Pacific coast. In Montana the increase amounts to .28 inch; in the upper Mississippi valley, the Lake region, and New England it averages about .18 inch. In Utah, Nevada, Oregon, and northern and central California there has been a decrease of about .15 inch. In British America there has been an increase in pressure ranging from .05 inch in Newfoundland to more than .40 inch in the Saskatchewan Valley; in British Columbia the changes have been slight. Over the north Atlantic Ocean there has been an increase in mean pressure of .33 inch at Stykkisholm, Iceland, and the area of low pressure central in January between Greenland and Iceland has elongated northeastward. Over the southern portion of the ocean there has been an increase of about .10 inch near the American and European coasts, while over mid-ocean the region of barometric maxima, within which slight changes are noted, is several degrees farther south than in the preceding month. Over central and western Europe there has been an increase in mean pressure of from .20 to .30 inch; over Scandinavia slight changes have occurred over the northern portion, while to the southward of the sixtieth parallel there has been an increase of about .20 inch; over southern Europe the increase averages about .10 inch, while over southeastern and east-central Europe the changes have been unimportant. Over British India there has been a slight increase in mean pressure. Within the area of high mean pressure over central Asia there has been a decrease of about .30 inch, while over the Japanese Islands the pressure averages .10 inch lower than in January.

In the United States the mean pressure was above the normal in the Mississippi and Missouri valleys, and thence eastward to the Atlantic. Along the Pacific coast and in the plateau regions it was considerably below the normal. The largest departure above the normal occurred in Maine, where it exceeded .10 inch, and the deficiences were greatest in Utah and Nevada, where they amounted to .18 and .17 inch, respectively. In Canada the pressure was above the normal at all stations, by amounts ranging from .06 inch at Port Stanley to more than .16 inch at Halifax. Over the north Atlantic Ocean the mean pressure was slightly above the normal in the vicinity of the Azores and Maderia Islands; at Bridgetown, Barbadoes, it was somewhat below the normal, while over the West Indies to the westward there was an excess, amounting to .10 at Havana. At Stykkisholm, Iceland, there was a deficit of .10 inch. Over Europe the pressure was above the normal, the greatest departure, .40 inch, occurring in Denmark, and the least, .11 inch, in Norway. Over British India there was an average deficit of .01 inch. Over east-central and southeastern Asia the pressure was generally below the normal.

In the United States the mean temperature was below the normal in Maine, the upper lake region, and thence westward to the Pacific; it was also below in Nevada, California, and western Arizona. In the southern and southeastern districts it was above the normal. A noteworthy feature was the unusually low temperature which prevailed in Montana and Dakota, where the mean was from 10° to 20° below the normal. In Canada the temperature was below the normal, except near Lakes Erie and Ontario, where it was slightly above. In Ontario the deficit was slight; in the eastern provinces it ranged from 2° to 6°; in Manitoba it was about 7°, and at Victoria, B. C., it was 8°.5 colder than the February normal of six years. Over Europe the mean temperature was generally below the normal, except in Denmark, Scandinavia, and Russia. In British India the month was somewhat warmer than the average February, while at Zi-Ka-Wei, China, and Tokio, Japan, the departures were less than 1°. At Siberian stations from which reports have been received, the average temperature was above the normal.

The accompanying table shows the deviations in pressure and temperature at isolated stations during the month of February, 1887, as compared with the means for ten years:

Stations.	Mean pressure.			Mean temperature.		
	Feb. mean of 10 (1877–'86) years.	Feb., 1887.	Departure.	Feb. mean of 10 (1877–'86) years.	Feb., 1886.	Departure.
				°	°	°
Archangel, Russia	29.79	29.88	+ 0.09	13.3	23.4	+10.1
Athens, Greece	30.03	30.18	+ 0.15	53.6	54.0	+ 0.4
Beirut, Turkey in Asia	30.00	30.05	+ 0.05	60.6	60.6	normal.
Barnaul, Siberia	30.39	30.20	— 0.19	4.2	11.1	+ 6.9
Bridgetown, Barbadoes	29.95	29.92	— 0.03	80.4	77.9	— 2.5
Ekaterinburg, Russia	30.12	30.01	— 0.11	12.2	18.1	+ 5.9
Funchal, Madeira Islands *	30.18	30.19	+ 0.01	63.6	61.9	— 1.7
Gibraltar †	30.13	30.18	+ 0.05	60.1	56.1	— 4.0
Havana, Cuba, W. I.	30.03	30.13	+ 0.10	70.1	67.8	— 2.3
Malta, Mediterranean Sea	30.03	30.06	+ 0.03	58.7	56.4	— 2.3
Melbourne, New South Wales	29.96	29.98	+ 0.02	63.5	66.5	+ 3.0
Mauritius, Indian Ocean	29.87	29.89	+ 0.02	81.4	79.4	— 2.0
Nassau, Bahamas, W. I.	30.10	30.19	+ 0.09	71.8	72.9	+ 1.1
Nikolaievsk-on-the-Amoor, Asia	.....	29.96	.....	.....	— 5.3	.....
Ponta Delgada, Azores	30.15	30.21	+ 0.06	59.8	58.5	— 1.3
Swanbister, Orkneys	29.74	30.08	+ 0.34	40.3	43.3	+ 3.0
San Juan de Puerto Rico, W. I.	30.03	30.08	+ 0.05	74.4	73.8	— 0.6
Stykkisholm, Iceland	29.52	29.42	— 0.10	27.4	30.0	+ 2.6
Thorshavn, Färöe Islands	29.66	29.82	+ 0.16	39.5	41.9	+ 2.4
Tiflis, Russia	30.15	30.25	+ 0.10	41.9	40.6	— 1.3
Tokio, Japan *	30.07	30.04	— 0.03	38.4	39.1	+ 0.7
Yeniseisk, Siberia	30.39	30.20	— 0.19	0.8	7.5	+ 6.8
Zi-Ka-Wei, China	30.29	30.27	— 0.02	37.4	37.9	+ 0.5

* Means for nine years only. † Barometric means for eight years only.

The following table shows the mean pressure and mean temperature for February, 1887, in the several countries of the east-

ern hemisphere, and the departures as compared with means determined from observations taken during the last ten years:

Countries.	Mean pressure.			Mean temperature.		
	Feb. mean of 10 (1877–'86) years.	Feb., 1887.	Departure.	Jan. mean of 10 (1877–'86) years.	Feb., 1887.	Departure.
				°	°	°
Austro-Hungary	30.09	30.36	+ 0.27	37.8	32.6	− 5.2
British Isles	29.90	30.28	+ 0.38	43.2	42.9	− 0.3
Denmark	29.94	30.34	+ 0.40	34.5	35.7	+ 1.2
France	30.07	30.31	+ 0.24	46.9	43.1	− 3.8
Germany	30.04	30.38	+ 0.34	37.7	34.8	− 2.9
India	29.88	29.87	− 0.01	74.9	77.2	+ 2.3
Italy	30.05	30.24	+ 0.19	50.2	44.2	− 6.0
Japan	.....	30.08	.....	.....	36.0	.....
Norway	29.81	29.92	+ 0.11	32.6	36.2	+ 3.6
Russia	30.10	30.23	+ 0.13	25.7	26.2	+ 0.5
Spain*	30.10	30.24	+ 1.14	54.4	48.0	− 6.4
Sweden	29.92	30.07	+ 0.15	25.3	32.6	− 7.3

* Means for nine years only.

In the United States west to northwest winds prevailed from Dakota eastward to New England; in the Gulf States they were southerly, and in the middle plateau southwest; in other parts of the country the winds were variable. In Canada north to west winds prevailed east of the eightieth meridian; elsewhere in British America they were variable. Over the north Atlantic Ocean the wind-directions were governed by the cyclonic and anti-cyclonic areas which appear on the monthly mean chart. Over Europe the winds were generally variable, except in the northern countries, where they were mostly from south to west. Over British India the winds were variable; over China easterly, and over the Japanese Islands variable.

In the United States the precipitation was in excess of the February average over a greater part of the country. In California about twice the usual amount fell; in the Lake region and Ohio Valley the excess was also large. The greatest deficiency occurred in Florida. In Canada the rainfall slightly exceeded the average.

TRACKS OF AREAS OF LOW PRESSURE FOR FEBRUARY, 1887.

Chart iii exhibits paths of the principal depressions which appeared in the northern hemisphere during February, 1887. This chart continues the series of international charts begun in November, 1877, and has been prepared from the following data: Chart i for each day of the month, containing the data of simultaneous observations taken once each day at noon, Greenwich mean time; abstracts of ships' logs; special reports, and other miscellaneous data on file at this office.

The paths of the centres of twenty-seven areas of low pressure are shown, of which, eleven are traced over the North American continent; seven over the north Atlantic Ocean; three over Europe; one over the Japanese Islands, and one on the west coast of North America in the vicinity of Sitka, Alaska. The average number of areas of low pressure traced over the North American continent for the month of February during the last thirteen years is 11.6, or .6 more than the number traced for February, 1887.

The depressions traced over the American continent are described in detail in the MONTHLY WEATHER REVIEW for February, 1887, under the heading "Areas of low pressure."

Of the depressions traced over the north Atlantic Ocean, six were continuations of storms which advanced eastward over Newfoundland or Labrador; two first appeared in the vicinity of Iceland, and three developed south or southeast of Newfoundland. With but two exceptions the storms moved northeastward to the vicinity of Iceland and thence passed north of east to the northward of the seventieth parallel. The depressions traced over the north Atlantic Ocean corresponded closely in number, distribution, and character with the February average.

Of the three depressions traced over Europe, two were continuations of storms which advanced from Iceland to the north of Norway; from which region the depressions moved southeastward into northern Russia, and thence passed eastward into Asia beyond the region of observation. One moved northnortheast from the Mediterranean Sea over Greece and Turkey and disappeared over central Russia. The depression which passed eastward to the north of Norway during the 4th and 5th was attended by barometric pressure falling to 28.77 (730.7) at Gjæsvær, Norway, at noon, Greenwich time, of the 4th. The other depressions traced were of small energy.

Off the eastern coast of Asia and over the north Pacific Ocean the month was unmarked by the appearance of important storms.

SPECIAL NOTES.

THE GRAVITY CORRECTION.

The gravity correction, reducing all barometer readings to the standard gravity at latitude 45°, has been applied to all observations not so reduced by the observers themselves.

All data referring to force, velocity, or pressure (in pounds per square foot) of the wind, are reduced to the scale of 0-10, and the approximate value is indicated by the number of feathers on the arrow (see below).

MONTHLY SUMMARY OF INTERNATIONAL SIMULTANEOUS METEOROLOGICAL OBSERVATIONS.

The positions of stations (latitude and longitude) are obtained from Keith Johnson's "Index Geographicus," except where more exact information is furnished. The elevations of stations are obtained either from the annual, semi-annual, and monthly publications of the various meteorological bureaus here represented, or from the original forms upon which are entered the daily observations. In the United States series the elevations are computed from the latest surveys, and are carefully revised each month, in order to note any change in the elevation of the barometer-cistern at any station. It is believed for the most part that, throughout the European and other series, the elevations as given represent the height of the barometer-cistern above sea-level; at least this should be the case. The local time, where omitted or not given correctly in the original, is carefully computed at this office. A letter placed opposite the name of a station, or some portion of the data credited thereto, indicates that a certain number of observations are missing, corresponding to the relative position in the English alphabet of the letter so used.

At Astrakhan, Ashurada, and Baku the barometer-cisterns are below sea-level.

INTERNATIONAL CHARTS.

International chart i shows the atmospheric pressure at sea-level in English inches, the isobars being drawn for every two-tenths of an inch.

Arrows show direction of, and fly with, the wind; force is shown as follows:

Symbols.	Force.	Velocity.	
		Miles per hour.	Metres per second.
○	0	0	0
	1, 2	0 to 9	0 to 4
	3, 4	9.1 to 22.5	4.1 to 10.1
	5, 6	22.6 to 40.5	10.1 to 18.1
	7, 8	40.6 to 67.5	18.1 to 30.2
	9, 10	67.6 up.	30.2 and over.

International chart ii (monthly mean chart) shows the mean pressure at sea-level in English inches; the mean force and prevailing direction of the wind, as determined from observations taken at noon, Greenwich mean time.

International chart iii shows the tracks of centres of low pressure. The Arabic numerals show the location of the centres of low pressure at noon, Greenwich mean time, of that date.

In the above charts, broken lines indicate that lines so drawn are doubtful.

List of merchant marine steam and sailing vessels from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of February, 1887—Continued.

Name of vessel.	Captain.
TWIN SCREW LINE.	
Br. s. s. Richmond Hill	Capt. A. Hyde.
Tower Hill	F. Archer, R.N.R.
TYNE AND WEAR STEAMSHIP CO.	
Br. s. s. City of Newcastle	R. Townsend.
UNION LINE.	
Ger. s. s. Australia	G. Franck.
Br. s. s. Devonshire	1st mate Sam Winter.
UNITED STATES & BRAZIL S. S. CO.	
Br. s. s. Alliance	Capt. J. R. Beers.
Advance	James Lord.
WARREN LINE.	
Br. s. s. Iowa	
Kansas	Samuel Walters.
Norseman	W. Gleig.
	E. Maddox.
WATTS, WARD LINE.	
Br. s. s. Chiswick	Ch. Offi. Jos. Mayne.
WHITE CROSS LINE.	
Belg. s. s. Pieter de Connick	Capt. E. Smit.
De Reuter	J. J. Brarens.
WHITE STAR LINE.	
Br. s. s. Adriatic	
Britannic	H. Parsell.
Celtic	H. Perry.
Germanic	P. J. Irving.
Republic	B. Gleadell.
	P. J Irving.
WILSON LINE.	
Br. s. s. Bassano	
Galileo	W. Rea.
Marengo	R. Potter.
Lepanto	Wm. Abbott.
Otranto	T. M. Irwin.
Chicago	W. Rippeth.
Sorrento	J. W. Jones.
MISCELLANEOUS.	
Nor. s. s. Amicitia	
Auretta	P. M. Reimers.
Basil	G.W.Read, F.R.G.S.
Benalder	Henry Thompson.
Chittagong	James Ross.
Dragon Fly	A. McDougal.
Span. Elcano	J. W. Howling.
Emiliano	V. de Ispizua.
Br. Fitzroy	F. de Bengoa.
Gwendoline	Henry Gibb.
Ger. India	Robert Milburn.
Br. Lord Lansdowne	M. Hulsen.
Am. Lorenzo D. Baker	C. H. Baskfill.
Nor. Ludvig Holboeg	W. F. Wiley.
Br. Mercia	N. Houge.
Monk Seaton	J. Taylor.
Span. Navarro	J. N. Beazley.
Ger. Albers	S. de Aldecocea.
Br. Peconic	Her. Lahnacyer.
Port Phillip	G. Evans.
Pomona	Geo. Dulling.
Saint Ronans	J. Legoe.
Straits of Gibraltar	H. Campbell.
Span. Serra	John Dewar.
Br. Strathleven	F. de Lanzarraga.
Tiber	C. W. Pearson.
Vertumnus	D. Keefe.
	C. E. Cook.

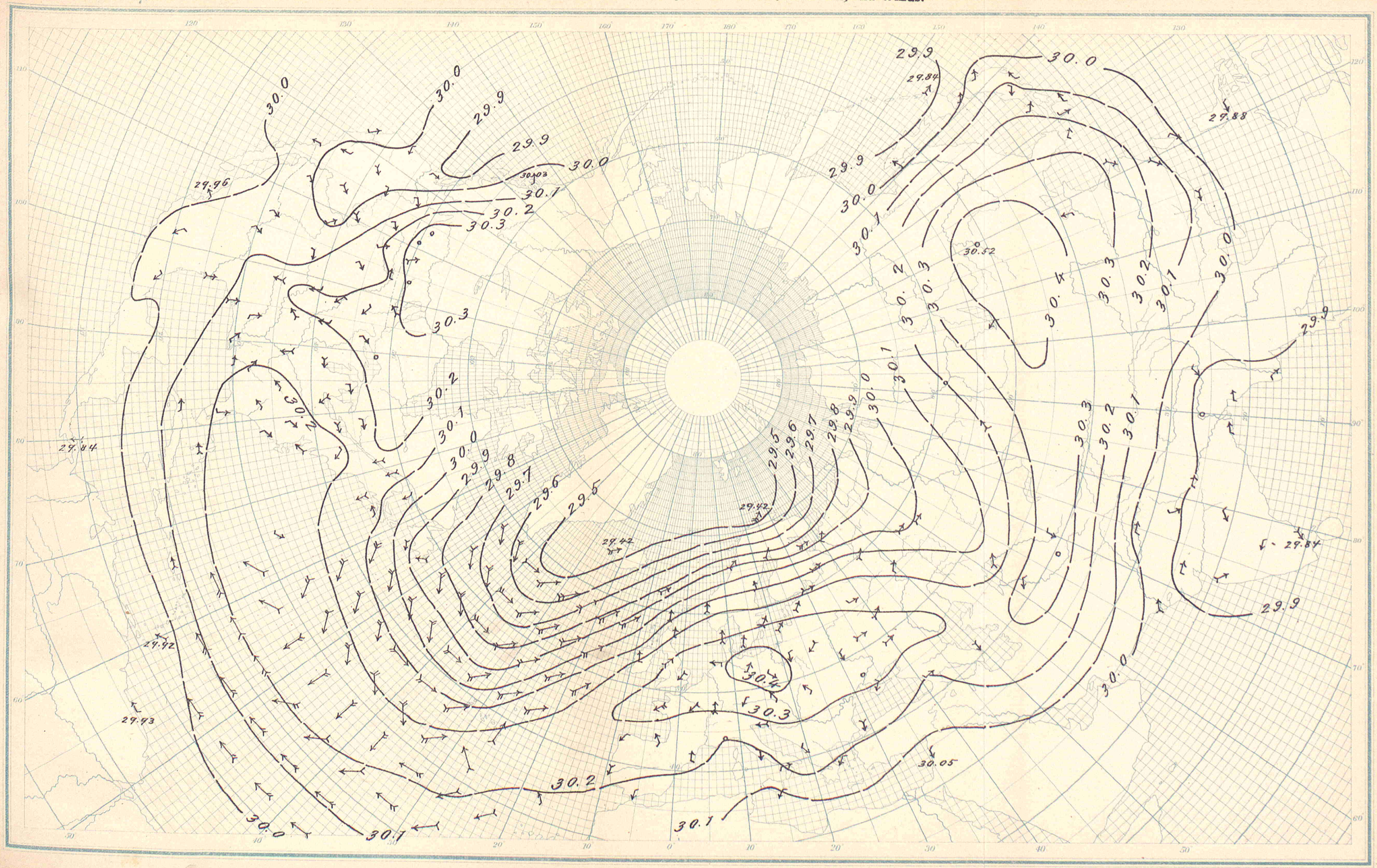
Name of vessel.	Captain.
MISCELLANEOUS—Continued.	
Swed. s. s. Victoria	Capt. J. A. Kunmann.
Br. Viola	L. Murray.
N. Y. HERALD WEATHER SERVICE.	
Br. Alban	H. R. Hughes.
Alene	Siders.
Alvo	D. Williams.
Baltic	R. E. Bence.
Bothnia	T. Robers.
Am. Caracas	W. M. Hopkins.
Br. City of Chicago	Fred Watkins.
Am. City of Puebla	Deakin.
Crescent City	J. L. Lockwood.
Ger. Eider	H. Helmers.
Br. Elysia	James Brown.
Ger. Lessing	B. Voss.
Br. Republic	P. J. Irving.
Am. San Marcos	Ch. Offi. A. B. Connor.
Saratoga	Capt. John McIntosh.
Fr. St. Laurent	M. de Jousselin.
Belg. Switzerland	H. Buschmann.
SAILING VESSELS.	
Br. bg. Abyssinian	John Hughes.
Am. bg. Abbie Clifford	D. W. Storer.
Am. schr. Anna B. Hutcheson	Daniel Zeluff.
bg. Arcot	J. M. Cates.
Nor. bk. Artemis	E. E. Moe.
Nor. sp. B. D. Metcalf	E. P. Larson.
Am. schr. Benjamin Hale	John Hull.
Am. bkt. Bonny Doon	C. Burgess.
Am. bkt. C. B. Church	N. A. Anderson.
Br. sp. Chas. S. Whitney	Geo. D. Spicer.
Am. schr. Comet	W. A. Aldrich.
Am. sp. E. B. Sutton	C. O. Carter.
schr. Edward R Emerson	A. H. Child.
Ger. bk. Emilie	W. Siems.
Aus. bk. Errante	A. H. Nicolich.
Am. bk. Ethel	W. Thompson.
Am. schr. Florence Rogers	J. S. F. McLeod.
It. bk. Fratelli Laurin	Laurin Lodovico.
Ger. sp. Frederike	Th. Tiedken.
Am. bk. General Fairchild	M. P. S. Porter.
Ger. sp. Georg	G. A. Scholtz.
Nor. bk. Grundloven	O. G. Ellingsen.
Ger. sp. Hedwig	Th. Minsson.
Dtch. bk. Helena	T. T. Verbeet.
Nor. bk. India	B. Jorgueson.
Am. schr. Henry Waddington	W. H. Megee.
Nor. bk. Hermon	O. Olsen.
Br. bk. Iodine	Adam Smith.
Am. bg. Jane Adeline	G. W. Cates.
Am. bkt. Josephine	Chas. Brown.
bk. José E. Moro	Asmus Lenhard.
Nor. sp. Komandor Svend Foyn	Johan Bryde.
Am. bg. L. & W. Armstrong	A. Alexander.
Ger. bk. Leocadia	John Stohff.
Am. bkt. Levanter	Geo. F. Gerry.
Br. bg. Lilian	H. T. Schive.
Br. sp. Mabel Taylor	Thos. E. Durkee.
bk. Mizpah	M. Dowlen.
Am. schr. Maggie Abbott	D. C. McIntosh.
Am. bg. Manson	E. T. Page.
Aust. bk. Mattea	G. V. Vidulish.
Am. schr. N. Hand	F. G. Phiffs.
Ger. sp. Otto	W. Langen.
Am. bkt. Pearl	John B. Zimmer.
Ger. sp. Palme	Wm. Bahls.
Ger. bk. Pillau	G. Gerlach.
Nor. bk. Qvos	Gunder Olsen.
Ger. Repler	G. Atken.
Ger. bk. Richard	A. von Seggern.
Br. bk. River Ganges	T. Naile.
Br. bkt. Rosebud	John Collie.
It. bk. Rosina	Giocomo Tomaselli.
Br. bk. Rothiemay	C. Olsen.
Am. bg. Ruby	A. J. V. von Post.
bk. Sarah Doe	B. S. Merryman.

Name of vessel.	Captain.
SAILING VESSELS—Continued.	
Br. sp. Sapphire	Capt. Geo. M. Murray.
Am. bk. Sarah	L. R. Hale.
Ger bk. Shakspere	Carl Muller.
Fin. bk. Toivo	H. W. Snellman.
Br. bg. Tuck Sing	Geo. H. Ryder.
Haitian Trois Soeurs	R. H. Cox.
Ger. sp. Union	H. Fokken.
Wilhelm	W. Wilmsen.
bk. Western Chief	Fr. Lauder.
Br. sp. Winnifred	R. MacDonald
UNITED STATES NAVAL.	
U. S. S. Adams	Louis Kempff.
U. S. S. Alliance	C. McGregor.
U. S. S. Alert	J. D. Graham.
U. S. S. Brooklyn	E. O. Matthews.
U. S. S. Essex	Thos. F. Jewell.
U. S. S. Galena	C. W. Chester.
U. S. S. Iroquois	J. C. Watson.
U. S. S. Jamestown	C. J. Nain.
U. S. S. Juniata	G. T. Davis.
U. S. S. Lancaster	S. L. Breese.
U. S. S. Monocacy	Henry Glass.
U. S. S. Monongahela	S. H Baker.
U. S S. Mohican	B. F. Day.
U. S. S. Marion	Merrill Miller.
U. S. S. Ossipee	J. F. McGlensey.
U. S. S. Omaha	T. O. Selfridge.
U. S. S. Palos	T. Nelson.
U. S. S. Pinta	
U. S. S. Pensacola	Geo. Dewey.
U. S. S. Portsmouth	Edwin White.
U. S. S. Quinnebaug	C. L. Sperry.
U. S. S. Ranger	F A. Cook.
U. S. S. Richmond	Robert Boyd.
U. S. S. Saratoga	C. H. Davis.
U S. S. Tallapoosa	Wm. Whitehead.
U. S. S. Vandalia	H. L. Howison.
U. S. S. Yantic	F. M. Green.
BRITISH NAVAL.	
H. M. S. Audacious	R. W. Harris.
H. M. S. Alexandra	J. Fellowes, C.B.
H. M. S. Active	Markham.
H. M. S. Bacchante	A. Moore.
H. M. S. Briton	R. M. Lloyd.
H. M. S. Champion	A. T. Powlett.
H. M. S. Constance	S. H. P. Dacres.
H. M. S. Cleopatria	L. C. Kepper.
H. M. Dockyard, Bermuda	J. F. G. Grant.
H. M. S. Egeria	P. Aldrich.
H. M. S. Flying Fish	J. P. McLear.
H. M. S. Himalayn	J. E. Stoke.
H. M. S. Kingfisher	J. H. Rainier.
H. M. S. Mariner	J. Dumford.
H. M. S. Myrmidon	R. F. Hoskyn.
H. M. S. Minotaur	J. A. Bruce.
H. M. S. Miranda	E. Rooke.
H. M. S. Nelson	A. Lake.
H. M. S Penguin	Haygarth.
H. M S. Raleigh	B. Watson.
H. M. S. Ruby	W. R. Kennedy.
H. M. S. Rifleman	Prater.
H. M. S Rambler	W. U. Moore.
H. M. S. Satellite	A. B. Allington
H. M. S. Torquoise	R. Woodward, C. B.
H. M. S. Woodlark	G. W. Burt.
PORTUGUESE NAVAL.	
H. P. M. S. Tamega	
H. P. M. S. Yaire	
SWEDISH NAVAL.	
H. S. M. S. Freja	C. Lundgren.

List of foreign stations and observers from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of February. 1887.

Stations.	Observers.
Australian.	
Adelaide, South Australia	C. L. Wragge.
Hobart Town, Tasmania	Com. J. Shortt, R. N.
Melbourne, Victoria	R. L. J. Ellery.
Austro-Hungarian.	
Agram	Prof. Ivan Stozir.
Cracow, I. R. Observatory	Dr. Wierzbiski.
Eperies	Julius Mikolik.
Kremsmunster Observatory	The Staff.
Lemberg	Dr. T. Stanecki.
Pola	Fr. Cœselrohe.
Szathmar	Aloysius Daubner, S. J.
Szegedin	Emerick Markos.
Trieste	Naval Observatory.
Vienna	I. R. Central Met. Obs'y.
Brazilian.	
Rio de Janeiro Imperial Obs.	Prof. E. Cruls, Director.
British.	
Aberdeen	W. Boswell.
Bidston, Liverpool Obs'y	John Hartnup.
Bradford, Yorkshire	McLandsborough & Preston.
Bridgetown, Barbadoes, W. I.	G. Beater.
Chatham, School M. E	P. D. P. McHugo, R. E.
Falmouth, Observatory	The Staff.
Fort Napier, Natal	Thomas Murray, M. S. C.
Galway, Queen's College	Wm. Ryan.
Gibraltar, Mediterranean	E. Irvine.
Greenwich, Royal Observatory	The Staff.
Guernsey	A. Collenette, F. R. M. S.
Kew, Observatory	The Staff.
Leicester, Museum	J. C. Smith.
Malta, Mediterranean	R. R. Willan.
Nassau, Bahamas	J. A. Kerr.
Oxford, Radcliffe Observatory	The Staff.
Plymouth	John Merrifield.
Swanbister, Orkneys	W. I. Fortesquo.
Scutari Cemetery, Turkey	W. H. Lyne.
Stonyhurst, Observatory	Rev. S. J. Perry.
Valencia, Observatory	The Meteorological Office.
Sub-series.	
Gozo, Episcopal Seminary	Rev. Algelo Lo Re, S. J., D
Penang	F. K. Hampshire, M. B. jr.
Malacca	W. R. Angus.
Canadian.	
Bathurst, N. B	Miss Andrews.
Bird Rocks	T. Turbide.
Calgarry	H. C. Cayley.
Chatham, N. B	G. A. Blair.
Cornwall, Ontario	W. D. Johnston, B. A.
Dalhousie, N. B	H. A. Johnson.
Father Point, Quebec	J. McWilliams.
Fort Garry, Manitoba	T. Warburton.
Fredericton, N. B	Dr. Harrison.
Grand Manan, N. B	J. Chipman Seeley.
Granton, Ontario	Jas. Grant.
Halifax, N. S	A. Allison.
Hamilton, Ontario	T. S. Campbell, B. A.
Kingston, Ontario	A. P. Knight, M. A.
Little Glace Bay, N. S	C. H. Rigby, C. E.
London, Ontario	E. B. Reed.
Medicine Hat, N. W. T	John Ewart.
Minnedosa, N. W. T	Rev. J. M. Wellwood.
Montreal, Quebec	C. H. McLeod, C. E.
Ottawa, Ontario	A. McGill, M. A.
Parry Sound, Ontario	Rev. R. Mosley.
Peterborough, Ontario	J. H. Long.
Port Arthur, Ontario	W. P. Cooke.
Port Dover, Ontario	H. Morgan.
Port Stanley, Ontario	M. Payne.
Qu' Appelle, N. W. T	Leslie Gordon.
Quebec, Quebec	Captain Ashe, R. N.
Rockliffe, Ontario	W. H. McIntyre.
St. Andrews, N. B	S. T. Gove, M. D.
St. John, N. B	G. Hutchinson.
Saint Pierre, N. F	The Commandant.
Saugeen, Ontario	W. K. Stewart.
Southwest Point of Anticosti	
Stratford, Ontario	W. McBride, M. A.
Swift Current	W. G. Knight.
Sydney, C. B	T. C. Hill, C. E.
Toronto, Ontario	Magnetic Observatory.
Woodstock, Ontario	Prof. N. Wolverton, M. A.
Yarmouth, N. S	J. E Murphy.
Sub-series.	
Saint Johns, N. F	J. Higgins.
Chinese.	
Foochow	J. N. Segardal.
Hong Kong Observatory	The Staff.
Sub-series.	
Zi-Ka-Wei, near Shanghai	M. Marc Dechevrens, S. J.
South Cape, Formosa	G. Taylor.
Danish.	
Copenhagen	Oversergent Fischer.
Fanöe	Overloerer Lauridsen.
Stykkisholm	A. O. Thorlacius.
Thorshavn	Overloever Bergh.
Vestervig	Loerer Oesterboi.
French.	
Agen, Normal School	M. Bousquet, Director.
Alençon, Normal School	M. Nicot, Director.
Arras, Normal School	M. Sion, Director.
Avignon, Normal School	M. Giraud, Director.
Bar-sur-Seine	M. Saillard, Director.
Beauvais, Normal School	M. Mutelet.
Besançon, Normal School	M. Gobin, Director.
Bordeaux, Observatory	M. Rayet, Director.
Bourges, Normal School	M. Bourgoine, Director.
Brest, Naval Observatory	M. de Kermaree, Director.
Caen, Normal School	M. Berson, Director.
Châlons-sur-Marne, N. School	M. Mathieu, Director.
French—*Continued.*	
Charleville, Normal School	M. Noél, Director.
Clermont-Ferrand, Obs'y	M. Hurion, Director.
Cluny, Normal School	M. de Villemontée, Director.
Commercy, Normal School	M. Vaissade, Director.
Gap, Normal School	M. Poussel, Director.
Greasque, du Rhone	M. Kina, Director.
Grenoble, Normal School	M. Ablard, Director.
Guéret, Normal School	M. Delorme, Director.
Lescar, Normal School	M. Lefevre, Director.
Lorient, Naval Observatory	Lt. T. Carré, Director.
Lyon, St. Genis-Laval	M. André, Director.
Mans, Normal School	M. Thériot, Director.
Marseille, Observatory	M. Stephan, Director.
Montlouis	M. Cave for Dr. Fines.
Montpellier, Normal School	M. Galzin, Director.
Mont Ventoux	M. Blanc.
Nancy, Normal School	M. Hasse, Director.
Nantes, Observatory	M. Larocque, Director.
Nice, Normal School	M. Cantier.
Perpignan, Observatory	Dr. Fines, Director.
Pic-du-Midi, Summit	M. Vaussenat, Director.
Privas, Normal School	M. Curely, Director.
Puy de Dôme Obs'y, Summit	M. Hurion, Director.
Rochefort, Naval Observatory	Lt. E. Decante, Director.
Roche-sur-Yon, N. School	M. Brotier, Director.
Rodez, Normal School	M. Seger, Director.
Rouen, Normal School	M. Vieillot, Director.
Saint Brience	M. Richard.
Saint Maur, Observatory	M. Renon, Director.
Toulouse, Observatory	M. Baillaud, Director.
Tours	M. Letellier.
Versailles	Dr. A. Berigny.
Sub-series.	
St. Martin du Hinx	M. Carlier, Director.
German.	
Ansbach	Prof. Jüdt.
Bamberg	Prof. Dr. Hoh.
Berlin	Meteorological Institute.
Breslau	Royal University Obs'y.
Carlsruhe	Albert Senz.
Cassel	Dr. H. Möhl.
Frankfort-on-the-Main	Physical Society.
Friedrichshafen	Wilhelm, Chief Tel.
Hamburg	Carl H. Seeman.
Kiel	Prof. Dr. G. Karsten.
Leipsic, Astronomical Obs'y	H. Leppig, Assistant.
Memel	Issermann.
Munich	Dr. C. Lang.
Neufahrwasser	A. Lothes.
Neustadt, Palatinate	Prof. Dicknether.
Stuttgart	Dr. L. Meyer.
Wustrow	Profs. Brandes & Reimer.
Greek.	
Athens	Kokkides & Wourlisch.
Indian.	
Kurrachee	
Deesa	
Bombay	
Poona	
Belgaum	
Lahore	
Roorkee	
Agra	
Nagpur	
Jubulpore	
Lucknow	
Allahabad	
Patna	
Hazaribagh	
Cuttack	
Calcutta	
Chittagong	
Dhubri	
Sibsagar	
Jeypore	
Bellary	
Trichinopoly	
Italian.	
Udine	Prof. Giovanni Clodig.
Milan	Prof. G. V. Schiapparelli.
Padua	Prof. Dott. Lorenzoni.
Moncalieri	Prof. P. F. Denza.
Genoa	Prof. G. M. Garibaldi.
Pesaro	Prof. Luigi Guidi.
Florence	Prof. Constantino Pittei.
Leghorn	Prof. P. Monte.
Rome	Prof. P. Tacchini.
Cosenza	Prof. D. Conti.
Syracuse	Sig. V. Giuliano.
Italian Sub-series	
Stelvio	Prof. P. F. Denza.
Valdobbia	Prof. P. F. Denza.
Japanese.	
Akita	S. Hattori.
Awomori	K. Ogawa.
Fushiki	N. Tokuda.
Erimo	T. Sato.
Gifu	R. Ikuchi.
Hakodate	T. Wakayama.
Hamamatsu	Sakigawa and Miyake.
Hiroshima	Y. Okamoto.
Itsurhara	S. Kumafu.
Kanazawa	S. Kuriyama.
Kagoshima	G. Miyanohara.
Kioto	M. Negishi.
Miasaka	T. Ishitain & T. Saki.
Miyako	K. Suwa & K. Ishie.
Nagasaki	K. Yamasaki and M Chin.
Nemuro	M. Itabashi.
Japanese—*Continued.*	
Niigata	M. Morita and C. Tomikawa.
Nobiru	R. Zuchi and T. Saito.
Numadzu	R. Kaneda.
Osaka	H. Omura.
Sakai	K. Yamawchi & P. Yoshimura
Shimonoseki	S. Nagasuye.
Tokei	The Staff.
Wakayama	K. Sakai.
Mauritius.	
Mauritius R. A. Observatory	The Staff.
Mexican.	
Guanajuato	Prof. Vicente Fernandez.
Leon	Prof. M. Leal & Espana.
Mazatlan	C. Carmina.
Mexico	The Staff.
Zacatecas	J. A. Bonilla, M. E.
Netherlands.	
Flushing	
Groningen	
Helder	
Hellevoetsluis	
Utrecht	G. F. C. Zaalberg.
Norwegian.	
Bergen	
Brono	
Christiania	
Gjæsvær	
Portuguese.	
Funchal, Madeira	Capt. D. A. de Cunha.
Lisbon, Observatory	The Staff.
Ponta Delgada, Azores	
St. Vincent, Cape Verd	
Serra da Estrella	
Russian.	
Archangel	Capt. Sseliwerstow.
Baku	
Barnaul	Meteorological Office.
Dorpat	Blumbach.
Ekaterinburg	Meteorological Observatory.
Elisavetgrad	
Irkutsk	Ed. Stelling.
Kasalinsk	Butkewitsch.
Kasan	Observatory.
Kem	M. Kosnobr.
Kertch	E. M. Zacmsipeyz.
Kieff	Observatory.
Korostishev	
Koslov	
Lgov	R. I. Ssaweljew, Engineer.
Libau	E. Quaas.
Lugan	Meteorological Observatory.
Moscow	Meteorological Observatory.
Nerchinsk	
Nikolaiev	Capt. Kurdakow.
Nikolaievsk-on-the Amoor	Schohberg.
Nikolsk	Nadeshdin.
Perm	
Petro-Alexandrovsk	Walther.
Petrozavodsk	Dr. Bergmann.
Pinsk	
Poti	
St. Petersburg	Central Physical Observatory
Samarkand	Dresch.
Sevastopol	Coionobr.
Tashkend Laboratory	Teich, A. M.
Tiflis	Physical Observatory.
Troitskosavsk	
Viatka	
Warsaw	Astronomical Observatory.
Yeniseisk	Wishnewzky.
Sub-series.	
Petrowsky Academy	Bachmetieff.
Scotch.	
Leith	J. Bolam & Geo. Redpath.
Spanish.	
Barcelona Met. Observatory	B. Jelin.
Bilbao, Met. Observatory	Tomas Eschriche.
Burgos, Met. Observatory	Domingo Martin.
Madrid, Royal Observatory	The Staff.
Santiago, Met. Observatory	R. Gil Villanueva, Director.
Sub-series.	
Havana, Cuba	Benito Viñes, S. J.
Manilla, Philippine Islands	F. Faura, S. J.
San Fernando, Naval Obs'y	Capt. C. Pujazon, R. N.
San Juan de Porto Rico, W. I.	Enrique Gadea, Ch'f Eng'r.
Swedish.	
Haparanda	
Umea	
Hernosand	
Stockholm	
Wisby	
Sub-series.	
Upsala	Nils. Ekholm.
Swiss.	
Geneva	Observatory.
Turkish.	
Constantinople	The Observatory.
Valona	A. Bertrand.
Sub-series.	
Beirut, Lee Obs'y, Syria	R. H. West, B. A., Director.
United States Sub-series.	
Colon	Pellegrin.
Gamboa	Lutnywich.
Nons	Barzelay.
Paramaribo, D. Guiana, S. A.	Dr. C. J. Hering.
Rivas, Nicaragua, C. A	Earl Flint, M. D.
San Josè de Costa Rica	John J. de. Jonge, C. E.
Vera Cruz	Capt. Geo. E. Powell.

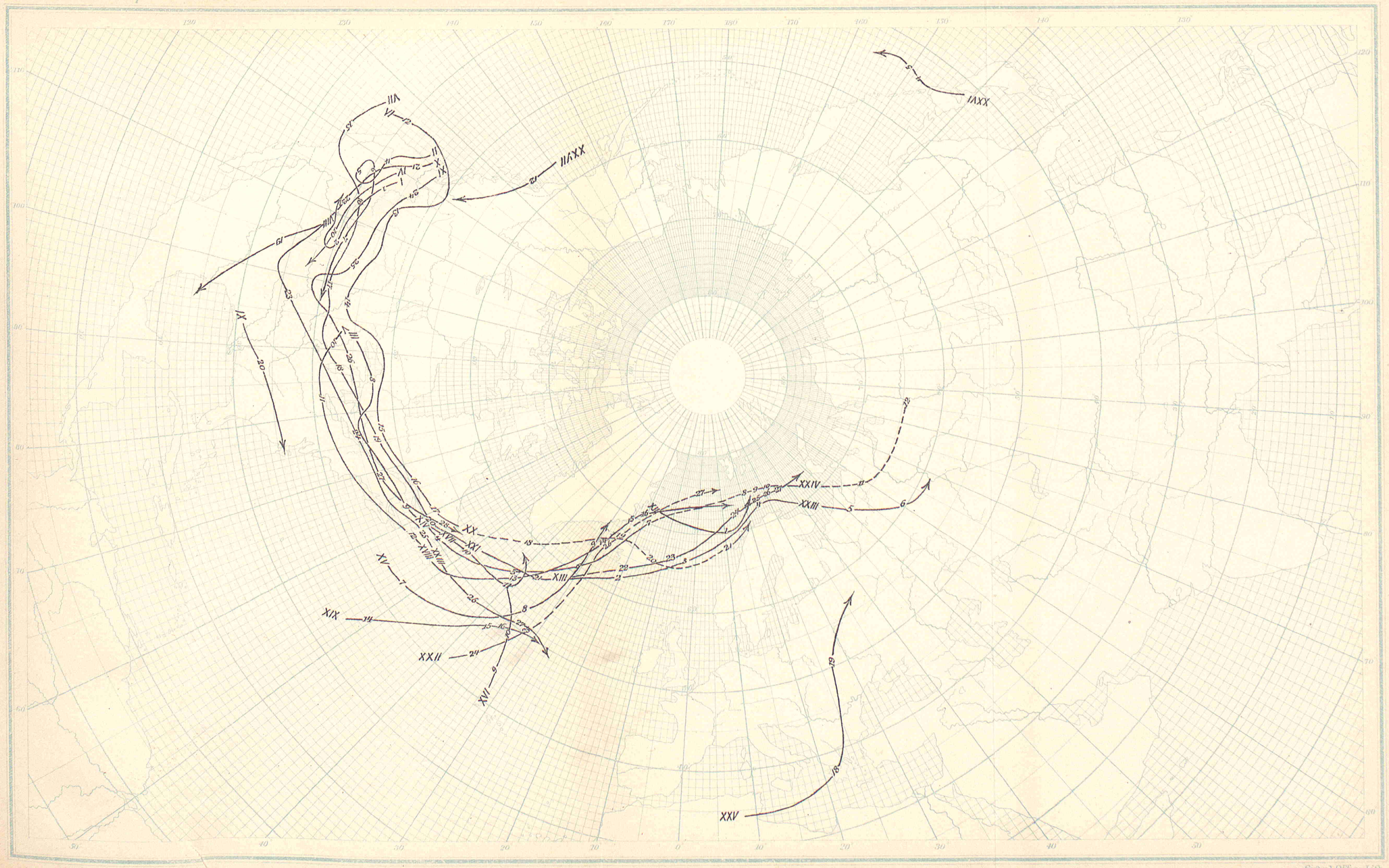
International Chart II. February, 1887. Isobars, Isotherms, and Winds.



Signal Office Lith.

Form No. 106 R---1887.

International Chart III. February, 1887. Tracks of Areas of Low Pressure.



Signal Office Lith.

WAR DEPARTMENT.
OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY OF THE UNITED STATES.

SUMMARY AND REVIEW

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS

FOR THE MONTH OF MARCH, 1887.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

A. W. GREELY,
BRIGADIER GENERAL, CHIEF SIGNAL OFFICER OF THE ARMY.

PRINTED FOR EXCHANGE WITH CO-OPERATING OBSERVERS.

WASHINGTON, D. C
APRIL, 1888.

List of merchant marine steam and sailing vessels from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of March, 1887.

	Name of vessel.	Captain.
Am.	s. s. Acapulco	Capt. C. S. Coye.
Br.	Adriatic	H. Parsell.
	Advance	James Lord.
Am.	Alameda	G. H. Morse.
	Alamo	S. Risk.
Br.	Alaska	Geo. S. Murray.
	Ailsa	J. W. Sanson
Ger.	Aller	H. Christoffers.
Br.	Alliance	J. R. Beers.
	Alsatia	J. Brown.
	Alvena	MacKay.
Ger.	Amalfi	Julius Bahr.
Nor.	Amicitia	P. M. Reimers.
Br.	Andes	T. M. McKnight.
	Angerton	S. M. Orr.
	Arizona	S. Brooks.
	Athos	H. Low.
	Aurania	W. H. P. Harris.
	Auretta	G.W.Read, F.R.G.S.
	Australia	A. M. McRitchie.
Ger.	Australia	G. Franck.
Br.	Basil	Henry Thompson.
	Bavarian	J. Oseinak.
	Bedford	Thos. Aikenhead
	Beiair	Geo. Dunlap.
Belg.	Belgenland	W. A. Beynon.
Br.	Ben Lodi	S. A. *Adamson*.
	Bernard	Ch. Offi. S. Richards.
	Bessel	Capt. C. J. Watson.
	Biela	Fred Graham.
	Borderer	F. Manley.
	Britannic	H. Perry.
	British Crown	Archibald Smith.
	British King	John Kelly.
	British Prince	Samuel Nowell.
	British Princess	E *H. Freeth*.
	British Queen	R. Wills.
	Brooklyn City	W. Fitt.
	Buffalo	J. H. Malet.
	Bulgarian	E. Parry.
	Caledonia	R. T. Garvie.
Ger.	California	O. Winkler.
Br.	Canada	*Thos. Foote*.
	Catalonia	E. Wylie.
	Celtic	P. J. *Irving*.
	Cephalonia	Henry Walker.
Fr.	*Chateau Leoville*	M. L. Chapelair.
	Chateau Yquem	C. Journiel.
Br.	Chicago	J. W. Jones.
	Chiswick	E. Leighton.
	Circassia	A. Campbell.
Am.	City of Alexandria	J. W. Reynolds.
	City of Augusta	J. W. Catherine.
Br.	City of Berlin	*Francis S. Land*.
	City of Chester	A. Lewis.
Am.	*City of Chester*	J. Wallace.
	City of Dallas	C. W. Reed.
Br.	City of Newcastle	R. Townsend.
Am.	City of New York	Robt. R. Searle.
	City of Para	L. Dexter
	City of Peking	H. C. Dearborn.
Br.	City of Richmond	A. Redford.
Am.	City of Washington	W. M. *Rittig*.
Br.	Clement	Thomas Burley.
Am.	*Colima*	J. M. Caverly.
	Colon	Chas. C. Lima.
	Columbia	Fred Bolles.
Br.	Counsellor	Wm. Lang.
	Coventry	W. C. Bacon.
	Critic	W. R. Lord
	Dalton	J. Russell.
	Denmark	R. S. *Rigby*.
Belg.	De Reuter	J. J. Brarens.
Br.	*Devonia*	Hugh Young.
Ger.	Donau	H. Supmer.
Br.	Dorian	J. McKeague.
	Durham City	D. D. Galbraith.
Dtch.	Edam	J. H. Taat.
Br.	Edith Godden	J. H. Bennett.
	Egypt	J. Sumner.
Ger.	Eider	P. H. Berdrow.
	Elbe	G. Meyer.
Br.	El Callao	Jos. Schlitz.
Span.	Elcano	V. de Ispizua.
Br.	Elstow	T. Robertson.
Am.	El Paso	H. S. Quick.
Br.	Elysia	W. Baxter.
Ger.	Ems	T. Jungst.
Br.	England	T. P. Heeley.
	Erin	*J. Robinson*.
	Etruria	T. Cook.
Nor.	*Ferdinand*	*H. Lutken*.
Br.	Fitzroy	Henry Gibb.
	France	A. D. Hadley.
Ger.	Fulda	R. Ringk.
Br.	Gaellic	W. G. Pérne.
	Galileo	R. T. Jones.
	Gallia	M. Murphy.
	Gallic	W. G. Pearne.
Dan.	Geiser	C. W. Moeller.
Ger.	*Gellert*	W. Kühlewein.
Br.	Germanic	B. Gleadell.
It.	Gottardo	D. Viola.
Ger.	Gothia	C. Kordell.
Am.	Granada	J. L. Lockwood.
Br.	Greece	A. J. Jeffrey.
	Grecian	C. E. Le Gallais.
Dan.	Hekla	A. G. Thomsen.
Br.	Helvetia	*G. Cochrane*.
	Hibernian	*John Brown*.
Br.	s. s. Holland	W. Tyson.
Span.	Hugo	A. de Mugica.
Br.	s. s. Humboldt	Capt. Jas. Grimes.
Am.	*Illinois*	G. H. Dodge.
Ger	India	M. Hulsen.
It.	Independenze	P. *Pirandello*.
Br.	Iowa	Samuel Walters.
Dan.	Island	W. Skjodt.
Br.	Istrian	T. H. Fox.
	Italy	W. Pcarce.
Belg.	Jan Breydal	H. Meyer.
Br.	Jerome	Benj. Crimp.
	Jersey City	E. *Horlor*.
	Kansas	W. Gleig.
Fr.	La Bourgogne	Frangnel.
	La Bretagne	M. de Jousselin.
	La Champagne	E. Traub.
	La Gascogne	Santelli.
Am.	Lampassas	M. B. Crowell.
Br.	Lepanto	T. M. Irwin.
Ger.	Lessing	H. Behrends,
Br.	*Llandaff City*	T. H. *Gore*.
	Lord Lansdowne	C. H. Baskfill.
Am.	Lorenzo D. Baker	W. F. Wiley.
	Louisiana	E. V. Gager.
Nor.	Ludvig Holboeg	N. Houge.
Br.	Madrid	M. Garson.
Ger.	Main	H. Boedeker.
Am.	Manhattan	Frank Stevens.
Br.	Manitoban	W. Dalziel.
Span.	Manuel L. Villaverde	Claudio Perales.
Br.	Marengo	Wm. Abbott.
Am.	Mariposa	H. M Hayward.
Br.	Mexico	John Taylor.
Span.	Mexico	M. Carmona.
Ger.	Moravia	C. Hebich.
Br.	Muriel	G. S. Locke
	Nasmyth	T. T. Farrell.
Span.	Navarro	S. de Aldecocea.
Ger.	*Neckar*	H. *Baur*.
Belg.	Nederland	A. J. Griffin.
Br.	Nessmore	John Inch.
	Netley Abbey	H. N. Vyvyan.
Am.	Newport	W. G. Shackford.
Belg.	Noordland	H. E. Nickels.
Br.	Oceanic	H. Davison.
	Olbers	Jas. Clark.
	Ontario	W. P. Couch.
Dtch.	*Oranje Nassau*	J. A. *LaCrooy*.
Am.	Oregon	E. Polemann.
Br.	Orinoco	J. S Garvin.
Am.	Orizaba	John N. Ingalls.
Br.	Otranto	W. Rippeth.
	Pavonia	B. Wolfenden.
	Pawnee	J. James.
Dtch.	P. Caland	T. *H. Bonjer*.
Br.	Peconic	G. Evans.
Belg.	*Pennland*	*Rud. Weyer*.
Am.	Philadelphia	Sam. Hess.
Belg.	Pieter de Connick	E. Smit.
Ger.	Polaria	Johannes Schade.
	Polynesia	A. Kuhn.
Br.	Pomona	J. Legoe.
	Ponca	W. Bowen.
	Pontiac	Ch. Offi. R. Blyth.
	Portuense	Capt. F. Hews.
	Queen	J. *Annison*.
	Republic	P. J Irving.
Ger.	Rhaetia	H. Vogelgesang.
	Rhein	L. Jahns.
Belg.	Rhynland	J. C. Jamison.
Br.	Richmond Hill	A. Hyde.
Am.	Rio Grande City	J F Lewis.
Ger.	Rugia	A. Albers.
	Saale	H. Reichter.
Br.	*Samaria*	B. Watt.
Am.	San Blas	T. Chapman.
Br.	Santiago	R. Potter.
	Sarmatian	Wm. Richardson.
	Sarnia	Joseph Gibson.
Dtch.	Schiedam	K. Mensonides.
Br.	Scandinavian	John Park.
	Scythia	*T. Roberts*.
	Servia	H. McKay.
Ger.	*Slavonia*	H *Schmidt*.
Br.	Sorrento	
	Spain	W. A. Griffiths.
	State of Georgia	G. *Moodie*.
	State of Nebraska	A. G. Braes.
	State of Nevada	J. A. Stewart.
	State of Pennsylvania	A. J. A. Mann.
	Stockholm City	K. *Doyle*.
	Saint Ronans	H. Campbell.
Ger.	*Suevia*	*C. Ludwig*.
Belg.	Switzerland	H. Buschmann.
Ger.	Taormina	H. M. Franck.
Br.	The Queen	John Milligan.
Dan.	Thingvalla	S. T. H. Laub.
Br.	Toronto	Jas. McAuley.
	Tower Hill	F. Archer, R.N.R.
Ger.	Trave	W. Willigerod.
Br.	Trinacria	Geo Mitchell.
	Trinidad	W. J. *Fraser*.
	Umbria	W. McMickan.
Am.	Valencia	W. *Woodrick*.
Br.	Vancouver	C. J. Lindall.
Swed.	Victoria	J. A. Kinnmann.
Br.	Viola	L. Murray.
	Virginian	M. Fitt.
Belg.	Waesland	H. Buschmann.
Dtch.	W. A. Scholten	G. Bakker.
Br.	*Wells City*	T. L. Weiss.
Ger.	s. s. Werra	R. Russius.
	Weser	*H. Bruns*.
Belg.	s. s. Westernland	Com. W. G. Randle.
Ger.	Wieland	Capt. C. Hebich.
Br.	Wyoming	C. L. Rigby.
Dtch.	*Zaandam*	*H. v. d. Zee*.

N. Y. HERALD WEATHER SERVICE.

Br.	s. s. Bolivia	J. McFarland.
Am.	Caracas	W. M. Hopkins.
	City of Puebla	*J. Deakin*.
Fr.	Chateau Lafitte	C. Ollivier
Am.	El Monte	J. W. *Hawthorne*.
	El Paso	H. S. Quick.
Br.	Ethiopia	John Wilson.
	Greece	A. J. *Jeffrey*.
Am.	Knickerbocker	F. Remble.
	New Orleans	T. P. C. Halsey.
	New York	J. B. Perry.
	Nevada	J. A. R. Cushing.
	Niiagara	S. F. Bennis.
	Samana	W. Taylor.

SAILING VESSELS.

Am.	bg. Abbie Clifford	*D. W. Storer*.
	bk. Abyssinia	B. R. Hilton.
Br.	bg. Abyssinian	John Hughes.
	bgt. Adria	J. H. Weldon.
Am.	schr. Anna E. Hutcheson	Daniel Zeluff.
	bg. Arcot	J. M. Cates.
Nor.	bk. Artemis	E. E. Moe.
Ger.	sp. August	*G. H. Jaburg*.
Am.	schr. Benjamin Hale	John Hull.
Nor.	sp. B. D. Metcalf	E. P. *Larsen*.
Am.	bkt. Bonny Doon	C. Burgess.
Ger.	bk. Bremerhaven	A. Witte.
Am.	schr. C. B. Church	N. A. *Anderson*.
Br.	sp. Chas. S. Whitney	Geo. D. Spicer.
Am	schr. Comet	W. A. Aldrich.
Ger	sp. Columbus	L. Haesloop.
	Columbus	*B. Sauermilch*.
Am.	bg. Daisy Boynton	C. Harding.
Ger.	sp. Dakota	N. E. *Schaller*.
Am.	schr. Edward R Emerson	A. H. Child.
Ger.	bk. Emilie	W. Siems.
Aus.	bk. Errante	A. H. *Nicolich*.
It.	bk. Est	E. Tassino.
Am.	bk. Ethel	W. Thompson.
Am.	schr. Florence Rogers	J. S. F. McLeod.
It.	bk. *Fratelli Laurin*	Laurin Lodovico.
Ger.	sp. Georg	G. A. Scholtz.
Nor.	bk. *Grundloven*	*O. G. Ellingsen*.
Am.	bk. General Fairchild	H. B. Coombs.
Ger.	sp. Hedwig	Th. Minssen.
Dtch.	bk. Helena	T. T. Verbeet.
Am.	schr. Henry Waddington	W. H. Megee.
Ger.	sp. *Hermann*	H. Vahland.
Nor.	bk. Hermon	O. Olsen.
Am.	sp. *Hoogly*	*William P. Lewis*.
Ger.	sp. Ida	J. Winter.
Nor.	bk. India	B. *Jorgenson*.
Am.	bg. Jane Adeline	G. W. Cates.
Am.	bkt. Josephine	Chas. Brown.
	bk. José E. More	*Asmus Lenhard*.
Br.	bg. Kenilworth	Doig.
Am.	bg. L. & W. Armstrong	A. Alexander.
Br.	bk. Lalla	Paul Le Blanc.
Ger.	bk. *Leocadia*	John Stohff.
Am.	bkt. Levanter	Geo. F. Gerry.
Br.	bg. Lilian	H. T. *Schive*.
Hait.	bg. Les Trois Soeurs	R. H. Cox.
Am.	L. Staples	J. P. Stowens.
Am.	bg. Manson	E. T. *Page*.
Swed.	bk. Maria Margretha	J. E. Fogman.
Br.	sp. Mabel Taylor	Thos. E. Durkee.
Br.	bk. Mary	Chas. Acocks.
Aust.	bk *Mattea*	G. V. Vidulich.
Nor.	bk. Matthanja	D. T. Pedersen.
Br.	bk. *Mizpah*	M. *Dowlen*.
Ger.	sp. Otto	W. Langen.
Am.	bkt. Pearl	John B. Zimmer.
Ger.	bk. Pillau	G. *Gerlach*.
Nor.	bk. Qvos	Gunder Olsen.
Am.	bkt. Ralph M. Haywood	Joseph Baxter.
Br.	bk. Recovery	T. E. Blagden.
	River Ganges	T. Naife.
It.	bk. Rosina	Giocomo Tomaselli.
Br.	bk. *Rothiemay*	*Ch. Offi. O. M. Lund*.
Am.	bg. Ruby	Capt. A. J. von Post.
Br.	sp. Sapphire	Geo. M. Murray.
Am.	bk. Sarah	L. R. Hale.
	Sarah Doe	B. S. Merryman.
Ger	bk. Shakspere	Carl Muller.
Br.	bk. Sodium	Wm. Manson.
It.	Teresa Accame	G. Boetto.
Rus.	bk. Toivo	H. W. Snellman.
Ger.	sp. *Union*	*H. Fokken*.
	bk. Western Chief	Fr. Lander.
Am.	schr. Winnie Lawry	A. McRitchie.
Br.	sp. Winnifred	R. MacDonald
Nor.	bk. Ymer	J. E. Andersen.

UNITED STATES NAVAL.

U. S. S. Adams	Louis Kempff.
U. S. S. Alliance	C. McGregor.
U. S. S. Alert	J. D. Graham.
U. S. S. Brooklyn	E. O. Matthews.
U. S. S. Essex	Theo. F. Jewell.
U. S. S. Galena	C. W. Chester.

SUMMARY AND REVIEW OF INTERNATIONAL METEOROLOGICAL OBSERVATIONS, MARCH, 1887.

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for March, 1887. Mean Barometer. Actual Inch.	Actual Mill.	Reduced. Inch.	Reduced. Mill.	Mean temperature. Fah.	Cent.	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
AUSTRALIAN.	° ′	° ′																								
Adelaide	S. 34 57	E. 138 35	9.14 p.m.	140	43	29.91	759.7	30.03	762.7	64.8	18.2	61	1	.....	3	8	7	7	3	.....	2	7505	12078	3	0.32	8.1
Hobart Town	S. 42 53	E. 147 20	9.00 p.m.	190	58	29.66	753.4	29.87	758.7	56.2	13.4	84	5	9	7	4	2	.....	1	1	2	.....	.....	5	1.81	46.0
Melbourne	S. 37 50	E. 144 58	9.40 p.m.	91	28	29.98	761.5	30.05	763.3	63.3	17.4	74	3	.....	6	5	4	11	.....	2	.....	.....	.....	4	0.78	19.8
AUSTRIAN.																										
Agram	N. 45 48	E. 15 53	1.04 p.m.	535	163	29.49	749.2	30.09	764.3	44.4	6.9	65	.....	2	.....	11	4	4	5	5	.....	.....	.....	5	3.39	86.2
Cracow	N. 50 04	E. 20 00	1.20 p.m.	722	220	29.21	741.9	30.03	762.7	38.8	3.8	77	2	3	11	4	2	1	4	4	.....	.....	.....	8	1.44	36.7
Eperies	N. 48 58	E. 21 15	1.25 p.m.	853	260	29.08	738.6	30.00	762.0	34.9	1.6	77	11	.....	.....	1	9	.....	.....	.....	10	.....	.....	7	2.10	53.2
Kremsmunster	N. 48 03	E. 14 08	0.57 p.m.	1260	384	28.65	727.8	30.04	763.1	36.5	2.5	86	.....	1	8	4	.....	.....	4	6	8	.....	.....	8	3.76	95.4
Lemberg	N. 49 50	E. 24 00	1.36 p.m.	978	298	28.94	735.1	30.04	763.0	36.1	2.3	71	.....	16	.....	5	4	4	.....	2	.....	.....	.....	7	3.52	89.4
Pola	N. 44 52	E. 13 51	0.55 p.m.	105	32	29.87	758.7	29.99	761.7	53.2	11.8	61	1	1	10	5	4	4	6	.....	.....	.....	.....	4	3.71	94.3
Szathmar	N. 47 46	E. 22 53	1.32 p.m.	430	131	29.54	750.4	30.02	762 5	42.8	6.0	72	9	6	4	4	1	4	.....	3	.....	.....	.....	6	2.99	75.9
Szegedin	N. 46 15	E. 20 10	1.21 p.m.	315	96	29.67a	753 5a	30.00a	762.0a	45.5	7.5	72	2a	10	2	5	2	4	2	3	.....	.....	.....	7a	3.28	83.4
Vienna	N. 48 12	E. 16 22	1.05 p.m.	663	202	29.32	744.6	30.08	764.0	39.6	4.2	69	5	7	9	.....	1	5	1	2	1	.....	.....	7	2.26	57.3
BRAZILIAN.																										
Rio de Janeiro	S. 22 54	W. 43 10	9.07 a.m.	217	66	29.76	755.8	30.03	762.7	75.0	23.9	80	5	9	.....	.....	.....	2	3	10	2	.....	.....	7	8.06	204.8
BRITISH.																										
Aberdeen	N. 57 10	W. 2 06	11.52 a.m.	89	27	29.92	760.0	30.04	763.0	42.9	6.1	64	1	5	4	2	6	3	1	2	.....	7673	12348	6	2.27	57.7
Bidston	N. 53 24	W. 3 04	11.48 a.m.	197	60	29.83	757.7	30.07	763.8	41.6	5.3	65	2	2	11	6	1	3	5	1	.....	.....	.....	6	.....	.....
Bradford	N. 53 48	W. 1 47	11.53 a.m.	366	112	29.66	753.4	30.09	764.3	41.3	5.2	73	5	4	11	1	2	.....	6	2	.....	.....	.....	8	1.73	43.9
Bridgetown	N. 13 04	W. 59 37	8.02 a.m.	28	9	29.97	761 2	29.93	760.2	82.3	27.9	65	.....	.....	.....	.....	.....	2	2	27	.....	.....	.....	3	.....	.....
Chatham	N. 51 25	E. 0 33	0.02 p.m.	160	49	29.87	758.7	30.07	763.8	42.3	5.7	75	.....	.....	1	3	1	.....	1	8	17	.....	.....	6	.....	.....
Falmouth	N. 50 09	W. 5 04	11.40 a.m.	183	56	29.94	760.5	30.15	765.8	43 7	6.5	68	4	3	5	2	1	3	11	2	.....	.....	.....	7	.....	.....
Fort Napier	S. 30	E. 31	2.04 p.m.	2294	699	27.64	702 0	29.86	758.4	77.4	25.2	65	1	.....	.....	.....	2	4	6	1	2	.....	.....	5	.....	.....
Galway	N. 53 15	W. 9 03	11.24 a.m.	32	10	30.01	762.2	30.06	763.5	46.1	7.8	84	7	1	5	5	3	3	5	2	.....	.....	.....	6	1.36	34.5
Gibraltar	N. 36 09	W. 5 21	11.39 a.m.	50	15	29.96	761.0	29.99	761.7	59.7	15.4	98	.....	2	9	.....	.....	.....	13	6	1	.....	.....	5	.....	.....
Greenwich	N. 51 29	0 00	12 m.	159	48	29.90	759.4	30.10	764.5	41.6	5.3	70	4	2	5	5	1	.....	6	8	.....	.....	.....	8	.....	.....
Guernsey	N. 49 27	W. 2 41	11.49 a.m.	275	84	29.82	757 4	30.14	765.5	43.8	6.6	83	4	5	4	1	.....	1	6	6	4	2760	4442	7	1.00	25.4
Kew	N. 51 28	W. 0 19	11.59 a.m.	34	10	30.05	703.3	30.10	764.5	39.7	4.2	78	5	5	8	2	1	.....	4	6	.....	.....	.....	7b	.....	.....
Leicester	N. 52 39	W. 1 08	11.55 a.m.	245	75	29.82	757.4	30.11	764.8	41.4	5.2	75	3	2	7	7	1	.....	1	9	1	.....	.....	8	.....	.....
Malta	N. 36 00	E. 14 30	0.58 p.m.	70	21	29.86	758.4	29.91	759.7	62.1	16.7	63	.....	12	.....	4	3	8	2	2	.....	.....	.....	5	.....	.....
Nassau	N. 25 04	W. 77 22	6.51 a.m.	44	13	30.08	764.0	30.07	763.8	71.4	21.9	68	3	3	2	3	4	3	4	6	3	.....	.....	7	.....	.....
Oxford	N. 51 46	W. 1 17	11.55 a.m.	210	64	29.86	758.4	30.11	764.8	41.0	5.0	87	3	6	4	6	.....	.....	2	9	1	.....	.....	7	.....	.....
Plymouth a	N. 50 22	W. 4 10	11.43 a.m.	69	21	29.98	761.5	30.06	763.5	44.3	6.8	75	2	5	3	.....	1	3	9	3	4	.....	.....	6	.....	.....
Swanbister	N. 58 55	W. 3 05	11.46 a.m.	72	22	29.89	759.2	29.99	761.7	42.5	5.8	74	4	5	8	5	4	3	1	1	.....	.....	.....	8	.....	.....
Scutari Cemet'y	N 41 00	E. 29 03	1.56 p.m.	60	18	29.94	760.5	29.99	761.7	54.1	12.3	57	7	1	.....	12	4	.....	.....	4	3	.....	.....	5	.....	.....
Stonyhurst	N. 53 51	W. 2 28	11.50 a.m.	361	110	29.67	753.6	30.10	764.5	40.1	4.5	82	3	3	11	3	.....	1	3	7	.....	.....	.....	7	3.01	76.4
Valencia	N. 51 55	W. 10 18	11.19 a.m.	23	7	30.10	764.5	30.14	765.5	46.4	8.0	64	2	3	4	3	3	5	5	6	.....	.....	.....	7	.....	.....
Sub-series.																										
Gozo	N. 36 01	E. 14 16	0.57 p.m.	364	111	29.69	754.1	30.01	762.2	61.2	16.3	63	4	6	2	8	5	1	5	.....	.....	5499	8850	4	0.41	10.4
Penang	N. 5 24	E. 120 20	6.41 p.m.	20	6	29.75	755.6	29.69	754 1	87.9	31.1	63	.....	18	.....	.....	.....	12	.....	1	1	.....	.....	5	5.71	15.0
CANADIAN.																										
Bathurst a	N. 47 39	W. 65 42	7.37 a.m.	35	11	29.73	755.1	29.78	756.4	19.5	— 6.9	.....	3	6	5	3	.....	.....	4	3	6	.....	.....	8	5.39	136.9
Bird Rocks	N. 47 50	W. 61 10	7.56 a.m.	.....	.....	29.59	751.6	29.72	754.9	21.0	— 6.1	87	6	8	3	2	4	1	5	2	.....	.....	.....	7	2.14	54.4
Colgarry	N. 50 55	W. 114 04	4.24 a.m.	?	?	26 34	669.0	29.97	701.2	15.9	— 8.9	79	6	.....	3	.....	3	.....	4	.....	15	.....	.....	5	0.35	8.9
Chatham	N. 47 03	W. 65 29	7.38 a.m.	56	17	29.74	755.4	29.80	756.9	17.7	— 7.9	96	4	4	.....	.....	.....	3	7	5	8	.....	.....	7	4.87	123.7
Cornwall	N. 45 01	W. 74 43	7.01 a.m.	175	53	29.72	754.9	29.92	760.0	18.4	— 7.6	83	3	2	18	.....	.....	.....	4	3	1	.....	.....	6	2.10	53.3
Dalhousie a	N. 48 04	W. 66 22	7.35 a.m.	45	14	29.73	755.1	29.78	756.4	18.0	— 7.8	.....	.....	1	10	2	1	1	2	.....	13	.....	.....	6	1.40	35.6
Father Point	N. 48 31	W. 68 28	7.26 a.m.	20	6	29.82	757.4	29.85	758.2	16.6	— 8.6	87	1	10	1	2	1	8	.....	8	.....	.....	.....	8	2.79	70.9
Fort Garry	N. 49 51	W. 97 07	5.32 a.m.	754	230	29.28	743.7	30.18	766.6	3.2	—16.0	96	12	1	3	2	8	.....	2	3	.....	.....	.....	5	0.93	23.6
Fredericton	N. 45 57	W. 66 38	7.33 a.m.	164	50	29.64	752.8	29.83	757.7	24.5	— 4.2	79	9	4	.....	2	1	4	5	3	3	7117	11454	7	4.48	113.8
Grand Manan	N. 44 46	W. 66 45	7.33 a.m.	49	15	29.74	755.4	29.79	756.7	26.5	— 3.1	84	7	.....	3	4	.....	.....	8	9	.....	.....	.....	6	4.69	119.1
Halifax	N. 44 39	W. 63 36	7.46 a.m.	122	37	29.63	752.6	29.77	756.1	25.0	— 3.9	84	5	1	3	1	3	1	6	9	2	.....	.....	6	4.45	113.0
Hamilton	N. 43 16	W. 79 53	6.40 a.m.	372	113	29.64	752 8	30.07	763.8	25.0	— 3.9	82	3	3	15	1	4	.....	3	2	.....	.....	.....	6	Inap.	Inap.
Kingston	N. 44 14	W. 76 30	6.54 a.m.	307	94	29.64	752.8	30.00	762.0	19.4	— 7.0	86	7	6	1	1	2	2	5	7	.....	.....	.....	6	1.28	32.5
Little Glace Bay	N. 46 12	W. 59 58	8.00 a.m.	34	10	29.60	751.8	29.63	752.6	26.6	— 3.0	92	2	5	6	7	3	2	2	4	.....	.....	.....	7	.....	.....
London	N. 43 00	W. 81 15	6.35 a.m.	832	254	29.13	739.9	30.10	764.5	22.1	— 5.5	88	5	12	2	1	3	.....	2	.....	6	6612	10641	6	2.01	51.0
Medicine Hat	N. 50 01	W. 110 37	4.38 a.m.	2136	651	27.60	701.0	29.98	761.5	25.5	— 3.6	86	3	.....	.....	.....	2	1	13	2	10	.....	.....	6	Inap.	Inap.
Minnedosa	N. 50 13	W. 99 48	5.21 a.m.	1796	547	28.19	716.0	30.11	764.8	3.1	—16.1	96	1	.....	7	2	1	2	5	2	11	.....	.....	5	0.21	5.3
Montreal	N. 45 31	W. 73 33	7.06 a.m.	187	57	29.71	754.6	29.93	760.2	17.4	— 8 1	77	2	2	2	2	1	6	11	3	2	.....	.....	6	3.32	84.3
Ottawa	N. 45 26	W. 75 41	6.57 a.m.	200	61	29.73	755.1	30.01	762.2	11.2	—11.6	96	1	13	8	2	1	.....	3	3	.....	5535	8908	4	3.60	91 4
Parry Sound	N. 45 19	W. 80 01	6.40 a.m.	635	194	29.30	744.2	30.04	763.0	9.3	—12.6	84	12	1	5	1	1	.....	9	2	.....	.....	.....	5	1.20	30.5
Peterborough	N. 44 17	W. 78 18	6.47 a.m.	722	220	29.22	742.2	30.07	763.8	15.6	— 9.1	80	.....	9	6	.....	2	.....	.....	2	12	.....	.....	6	2.13	54.1
Port Arthur	N. 48 27	W. 89 12	6.03 a.m.	642	196	29.42	747.3	30.17	766.3	6.7	—14.1	82	7	5	2	.....	1	.....	4	9	3	.....	.....	4	0.52	13.2
Port Dover	N. 42 47	W. 80 13	6.39 a.m.	635	194	29.32	744.7	30.06	763.5	23.1	— 4.9	95	3	2	1	.....	.....	1	3	6	15	.....	.....	6	1.25	31.8
Port Stanley	N. 42 40	W. 81 13	6.35 a.m.	592	180	29.39	746.5	30.06	763.5	23.3	— 4.8	84	2	1	7	1	.....	2	13	5	.....	.....	.....	5	1.76	44.7
Qu' Appelle	N. 50 44	W. 103 42	5.05 a.m.	2115	645	27.70	703 6	30.09	764.3	8.3	—13.2	.....	.....	1	3	4	3	2	2	9	7	.....	.....	5	0.25	6.4
Quebec	N. 46 48	W. 71 12	7.15 a.m.	293	89	29.55	750.6	29.90	759.4	16.2	— 8.8	76	7	5	1	.....	.....	2	11	.....	5	.....	.....	6	1.70	44.7
Rockliffe	N. 46 10	W. 77 48	6.49 a.m.	418	127	29.53	750.0	30.06	763.5	5.3	—14.8	81	.....	.....	3	.....	.....	.....	14	2	12	.....	.....	6	1.35	34.3
Saint Andrews	N. 45 04	W. 67 06	7.32 a.m.	47	14	29.72	754.9	29.77	756.1	23.3	— 4.8	78	5	9	1	2	2	.....	1	8	3	.....	.....	6	4.59	116.6
Saint John, N.B	N. 45 17	W. 66 03	7.36 a.m.	116	35	29.67	753.6	29.81	757.2	23.5	— 4.7	89	12	7	2	1	3	.....	3	2	1	.....	.....	6	5.10	129.5
Saint Pierre	N. 46 47	W. 56 08	8.15 a.m.	?	?	.....	.....	29.66	753.4	31.5	— 0.3	.....	.....	9	1	7	.....	3	3	7	1	.....	.....	.....	0.12	3.0
Saugeen	N 44 30	W. 81 21	6.35 a.m.	656	200	29.30	744.2	30.06	763.5	17.8	— 7.9	89	3	6	1	.....	2	2	2	1	14	.....	.....	7	1.43	36.3
S.W. Pt. Anticosti	N. 49 24	W. 63 36	7.46 a.m.	30	9	29.69	754.1	29.72	754.9	20.2	— 6.2	86	9	4	6	.....	2	1	2	4	3	.....	.....	7	2.20	55.9
Stratford	N. 43 23	W. 81 00	6.36 a.m.	1186	361	28.68	728.5	30.03	762.7	18.6	— 7.4	80	6	6	3	2	3	1	1	2	7	7810	12569	6	1.54	39.1
Swift Current	N. 50 21	W. 107 33	4.50 a.m.	2439	744	27.34	694.4	30.04	763.0	18.4	— 7.6	84	.....	.....	1	4	4	5	9	2	6	.....	.....	5	0.51	13.0
Sydney	N. 46 08	W. 60 10	7.59 a.m.	37	11	29.69	754.1	29.69	754.1	23.0	— 5.0	87	8	2	.....	.....	3	11	.....	4	3	.....	.....	.....	5.29	134.4
Toronto	N. 43 39	W. 79 23	6.42 a.m.	350	107	29.64	752.8	30.05	763 3	20.9	— 6.2	84	9	3	5	1	1	1	1	10	.....	.....	.....	7	1.62	41.2
Woodstock	N. 43 08	W. 80 47	6.37 a.m.	980	299	28.93	734.8	30.06	763.5	21.9	— 5.6	84	1	8	9	5	3	.....	1	2	2	.....	.....	6	3.51	89.2
Yarmouth	N. 43 50	W. 66 02	7.36 a.m.	61	19	29.70	754.4	29.76	755.9	26.9	— 2.8	78	14	5	3	4	1	1	.....	2	1	.....	.....	6	5.40	137.2
Sub-series.																										
Saint Johns, N.F.	N. 47 34	W. 52 42	8.29 a.m.	159	48	29.58	751.3	29.72	754.9	28.4	— 2.0	93	.....	7	1	5	5	5	1	7	.....	.....	.....	6	1.37	34.9
CHINESE.																										
Hong Kong	N. 22 18	E. 114 10	7.37 p.m.	110	34	29.94	760.5	30.00	762.0	61.0	16.1	79	2	2	1	.....	.....	.....	18	7	1	.....	.....	7	2.92	74.2
Sub-Series.																										
Zi-Ka-Wei	N. 31 12	E. 121 26	8.06 p.m.	23	7	30.18	766.5	30.16	766.1	45.5	7.5	80	2	.....	1	1	2	4	9	11	1	.....	.....	5	1.37	34.9
DANISH.																										
Copenhagen	N. 55 41	E. 12 36	0.50 p.m.	43	13	29.92	760.0	29.99	761.7	37.6	3.1	76	3	8	4	.....	4	5	4	3	.....	.....	.....	7	.....	.....
Fanoe	N. 55 27	E. 8 24	0.34 p.m.	20	6	29.97	761.1	30.02	762.5	38.3	3.5	85	1	4	9	5	3	1	4	4	.....	.....	.....	6	.....	.....
Stykkisholm	N. 65 05	W. 22 46	10.29 a.m.	36	11	29.72	754.8	29.81	757.2	29.7	— 1.3	86	.....	1	4	7	3	4	3	5	4	.....	.....	7	.....	.....
Thorshavn	N. 62 02	W. 6 44	11.33 a.m.	30	9	29.86	758.5	29.92	760.0	40.1	4.5	78	10	.....	8	6	2	3	.....	2	.....	.....	.....	6	.....	.....
Vestervig	N. 56 47	E. 8 20	0.33 p.m.	82	25	29.87	758.8	29.98	761.5	38.3	3.5	80	1	4	7	1	3	8	1	4	2	.....	.....	5	.....	.....

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for March, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
FRENCH.	° ′	° ′																								
Agen	N. 44 12	E. 0 38	0.03 p.m.	604	184	29.42	747.2	30.07	763.8	52.0	11.1	66	4	5	5	.....	4	10	1	2	.....	.....	.....	.....	1.98	50.4
Alençon	N. 48 26	E. 0 05	0.00 m.	476	145	29.63	752.6	30.17	766.3	44.8	7.1	81	7	1	.....	6	2	.....	.....	15	.....	.....	.....	.....	0.54	13.7
Arras	N 50 18	E. 2 46	0.11 p.m	223	68	29.85	758.3	30.11	764.8	41.5	5.3	81	2	5	4	2	.....	4	7	7	.....	.....	.....	.....	1.37	34.8
Avignon	N. 43 57	E. 4 49	0.19 p.m	66	20	29.97	761.2	30.04	763 0	55.2	12.9	54	16	1	4	2	1	1	2	4	.....	.....	.....	3	1.27	32.3
Bar-sur-Seine	N. 48 07	E. 4 22	0.17 p.m.	518	158	29.48	748.9	30.06	763.5	44.6	7.0	71	2	2	.....	4	3	7	6	7	.....	.....	.....	4	1.98	50.4
Beauvais	N. 49 26	E. 2 05	0.08 p.m.	269	82	29.72	755.0	30.03	762.7	46.0	7.8	80	5	5	5	1	.....	.....	.....	13	2	.....	.....	4	0.67	17.0
Besançon	N. 47 13	E. 6 02	0.24 p.m.	895	273	29.16	740.7	30.14	765.5	45.9	7.7	75	3	3	.....	3	10	2	7	3	.....	.....	.....	.....	2.64	67.0
Bordeaux	N. 44 50	W. 0 32	11.58 a.m.	243	74	29.80	756.9	30.07	763.8	52.0	11.1	55	5	5	2	3	1	5	6	4	.....	.....	.....	4	0.92	23.3
Bourges	N. 47 10	E. 2 26	0.10 p.m.	512	156	29.55	750.5	30.11	764.7	48.7	9.3	65	4	1	9	1	.....	2	2	12	.....	.....	.....	3	0.81	20.6
Brest	N. 48 24	W. 4 30	11.42 a.m.	210	64	29.84	757.9	30.08	764.0	51.6	10.9	78	6	.....	5	2	2	2	2	7	5	.....	.....	5	0.86	21.8
Caen	N. 49 11	W. 0 21	11.59 a.m.	69	21	29.98	761.6	30.06	763.5	44.6	7.0	78	6	4	2	3	.....	.....	4	10	2	.....	.....	3	0.56	14.3
Châlons-sur-Marne	N. 48 57	E. 4 21	0.17 p.m.	292	89	29.74	755.4	30.08	764.0	45.1	7.3	77	3	4	7	3	2	2	3	4	3	.....	.....	5	1.76	44.6
Charleville	N. 49 46	E. 4 43	0.19 p.m.	476	145	29.54	750.2	30.08	764.0	45.0	7.2	74	.....	3	9	3	3	6	5	2	.....	.....	.....	6	2.53	64.2
Clermont-Fer'and	N. 45 46	E. 3 05	0.12 p.m.	1273	388	28.68	728.4	30.06	763.4	48.0	8.9	56	12	5	7	5	.....	1	1	.....	.....	.....	.....	6	1.76	44.8
Cluny	N. 46 26	E. 4 39	0.19 p.m.	787	240	29.21	742.0	30.06	763.5	52.5	11.4	71	1	3	6	4	4	1	.....	11	1	.....	.....	4	1.43	36.4
Commercy	N. 48 46	E. 5 35	0.22 p m.	817	249	29.15	740.5	30.04	763.0	43.3	6.3	76	1	4	7	3	1	.....	5	10	.....	.....	.....	5	2.87	72.9
Gap	N. 44 33	E. 6 05	0.24 p.m.	2424	739	27.48	697.9	30.03	762.7	49.1	9.5	54	2	.....	.....	.....	3	.....	1	3	22	.....	.....	.....	2.31	58.8
Gréasque	N. 43 25	E. 5 37	0.22 p.m.	1056	322	28.88	733.5	30.00	762.1	53.8	12.1	56	8	.....	4	2	3	2	.....	12	.....	.....	.....	4	1.76	44.7
Guéret	N. 46 10	E. 1 52	0.07 p.m.	1532	467	28.42	721.8	30.04	762.9	44.2	6.8	74	3	6	.....	7	2	4	.....	9	.....	.....	.....	.....	2.30	58.4
Lescar	N. 43 20	W. 0 26	11.58 a.m.	525	160	29.46	748.3	30.02	762.5	58.8	14.9	61	4	3	9	3	3	.....	3	4	2	.....	.....	.....	2.08	52.7
Lorient	N. 47 45	W. 3 21	11.47 a.m.	85	26	30.02	762.0	30.12	765.0	50.0	10.0	63	5	2	2	3	2	4	3	9	1	.....	.....	4	1.23	31.2
Lyon	N. 45 41	E. 4 47	0.19 p.m.	981	299	28.99	736.3	30.06	763.5	46.4	8.0	61	7	5	1	.....	4	5	6	3	.....	.....	.....	5	1.25	31.7
Mans	N. 48 00	E. 0 12	0.01 p.m.	285	87	29.78	756.5	30.10	764.5	46.2	7.9	70	3	3	4	.....	1	5	6	9	.....	.....	.....	5	0.90	22.9
Marseille	N. 43 18	E. 5 23	0.22 p.m.	246	75	29.74	755.4	30.01	762.2	55.6	13.1	58	.....	7	13	5	2	3	1	.....	.....	.....	.....	5	1.02	25.8
Montlouis	N. 42 30	E. 2 07	0.08 p.m.	5202	1586	24.80	630.0	29.65	753.0	43.5	6.4	58	2	3	7	11	1	.....	5	2	.....	.....	.....	3	1.75	44.5
Montpellier	N. 43 37	E. 3 53	0.16 p.m.	118	36	29.89	759.1	30.02	762.5	54.5	12.5	71	4	6	2	4	2	5	3	4	1	.....	.....	3	1.43	137.9
Mont Ventoux	N. 44 10	E. 5 16	0.21 p.m.	6234	1900	23.74	603.1	.....	.....	29.7	— 1.3	70	5	5	2	1	7	5	3	3	.....	.....	.....	3	8.92	226.5
Nancy	N. 48 42	E. 6 11	0.25 p.m.	718	219	29.22	742.1	30.04	763.0	40.8	4.9	80	.....	1	1	9	.....	.....	2	18	.....	.....	.....	.....	0.79	20.1
Nantes	N. 47 13	W. 1 33	11.54 a.m.	134	41	29.97	761.1	30.12	765.0	48.2	9.0	59	5	3	2	3	2	.....	8	8	.....	.....	.....	5	0.85	21.5
Nice	N. 43 41	E. 7 16	0.29 p.m.	59	18	29.88	759.0	29.96	761.0	58.5	14.7	80	1	.....	.....	.....	1	.....	3	1	25	.....	.....	2	3.32	84.4
Perpignan	N. 42 42	E. 2 53	0.12 p.m.	105	32	29.93	760.2	30.05	763.3	56.3	13.5	55	4	10	1	.....	1	1	6	8	.....	.....	.....	5	0.62	15.7
Pic du Midi (Sum-	N. 42 56	W. 0 08	11.59 a.m.	9380	2859	20.97	532.6	.....	.....	26.6	— 3.0	38	1	3	8	7	.....	1	.....	5	6	.....	.....	3	1.22	31.1
Privas. [mit.)	N. 44 45	E. 4 36	0.18 p.m.	997	304	28.88	733 5	29.96	761.0	52.5	11.4	56	12	2	.....	.....	15	1	.....	.....	1	.....	.....	.....	2.32	59.0
Puy de Dôme	N. 45 46	E. 2 58	0.12 p.m.	4813	1467	25.06	630.6	.....	.....	30.6	— 0.8	84	1	3	6	9	4	3	1	4	.....	.....	.....	6	3.57	90.6
Rochefort	N. 45 56	W. 0 58	11.56 a.m.	30	9	30.04	763.1	30.07	763.8	53.2	11.8	55	.....	2	4	3	.....	1	10	11	.....	.....	.....	3	0.95	24.2
Roche-sur-Yon	N. 46 40	W. 1 26	11.54 a.m.	259	79	29.79	756.6	30.07	763.8	48.7	9.3	67	4	.....	3	4	1	3	7	9	.....	.....	.....	.....	0.68	17.3
Rodez	N. 44 21	E. 2 34	0.10 p.m.	2050	625	27.87	708.0	30.06	763.4	49.8	9.9	61	3	10	3	1	1	10	.....	3	.....	.....	.....	3	1.30	33.1
Rouen	N. 49 26	E. 1 05	0.04 p.m.	39	12	30.06	763.4	30.11	764.8	45.0	7.2	64	4	4	4	3	.....	6	4	6	.....	.....	.....	5	0.59	15.1
Saint Brience	N. 48 37	E. 5 08	0.20 p.m.	348	106	29.68	753.8	30.08	764.0	43.5	6.4	82	1	5	5	6	3	.....	2	9	.....	.....	.....	5	0.58	14.6
Saint Maur	N. 48 48	E. 2 21	0.09 p.m.	161	49	29.88	759.0	30.09	764.3	43.9	6.6	64	12	1	4	4	1	.....	.....	8	1	.....	.....	4	0.79	20.0
Toulouse	N. 43 37	E. 1 27	0.06 p.m.	636	194	29.36	745.7	30.04	763.0	55.0	12.8	59	2	10	3	.....	.....	13	1	1	1	.....	.....	4	1.50	38.0
Tours	N. 47 24	E. 0 41	0.03 p.m.	171	52	29.89	759.2	30.07	763.8	48.7	9.3	64	3	2	7	2	.....	.....	7	10	.....	.....	.....	.....	0.78	19.7
Sub-Series.																										
St. Martin du Hinx.	N. 43 35	W. 1 16	11.55 a.m.	131	40	29.92	760.0	30.05	763.3	56.5	13.6	50	5	2	5	3	.....	1	1	14	.....	.....	.....	5	1.51	38.3
GERMAN.																										
Ansbach	N. 49 18	E. 10 36	0.42 p.m.	1358	414	28.58	725.9	30.09	764.3	38.8	3.8	64	.....	2	5	3	1	3	2	11	4	.....	.....	7	2.01	51.0
Bamberg	N. 49 54	E. 10 54	0.44 p.m.	787	240	29.15	740.3	30.03	762.7	40.1	4.5	64	4	6	5	6	.....	4	.....	5	1	.....	.....	7	1.47	37.3
Berlin	N. 52 30	E. 13 19	0.53 p.m.	151	46	29.84	758.0	30.03	762.7	40.3	4.6	78	1	8	7	2	2	4	4	1	2	.....	.....	7	1.50	38.2
Breslau	N. 51 07	E. 17 02	1.08 p.m.	482	147	29.48	748.8	30.04	763.0	38.1	3.4	69	1	6	12	2	2	2	3	3	.....	.....	.....	8	1.34	33.9
Carlsruhe	N. 49 01	E. 8 25	0.34 p.m.	413	126	29.61	752.1	30.09	764.3	41.2	5.1	68	1	1	.....	12	.....	1	3	13	.....	.....	.....	8	3.98	101.1
Cassel	N. 51 19	E 9 28	0.38 p.m.	669	204	29.32	744.6	30.10	764.5	39.2	4.0	73	6	4	.....	5	4	3	3	.....	6	.....	.....	7	2.07	52.6
Frankfort on M.	N. 50 08	E. 8 41	0.35 p.m.	338	103	29.69	754.1	30.09	764.3	41.9	5.5	62	6	2	6	1	3	3	4	5	1	.....	.....	7	1.97	50.1
Friedrichshafen	N. 47 39	E. 9 29	0.38 p.m.	1338	408	28.61	726.7	30.06	763.6	38.1	3.4	73	.....	2	3	17	.....	1	.....	8	.....	.....	.....	8	3.21	81.6
Hamburg	N. 53 33	E. 9 58	0.40 p.m.	85	26	29.93	760.2	30.03	762.7	40.3	4.6	68	3	4	11	5	2	3	1	2	.....	.....	.....	7	0.95	24.1
Kiel	N. 54 19	E. 10 04	0.40 p.m.	13	4	30.00	762.0	30.03	762.7	40.1	4.5	69	4	6	11	1	1	5	1	2	.....	.....	.....	8	0.70	19.3
Leipsic	N. 51 20	E. 12 24	0.50 p.m.	390	119	29.62	752.4	30.08	764.0	38.8	3.8	74	.....	4	7	7	5	1	3	4	.....	.....	.....	9	2.08	52.9
Memel	N. 55 43	E. 21 07	1.24 p.m.	39	12	29.90	759.5	29.97	761.2	34.0	1.1	79	6	7	4	2	3	3	2	4	.....	.....	.....	7	.....	.....
Munich	N. 48 09	E. 11 34	0.46 p.m.	1732	528	28.18	715.8	30.05	763.3	37.6	3.1	74	5	10	1	.....	1	1	1	11	1	.....	.....	7	3.42	86.9
Neufahrwasser	N. 54 24	E. 18 40	1.15 p.m.	36	11	29.93	760.1	29.99	761.7	37.4	3.0	76	4	3	9	1	3	4	4	2	1	.....	.....	6	0.92	23.3
Neustadt	N. 49 21	E. 8 08	0.33 p.m.	479	146	29.53	750.1	30.07	763.8	41.2	5.1	78	5	2	3	2	5	2	3	7	2	.....	.....	7	2.82	71.7
Stuttgart	N. 48 47	E. 9 11	0.37 p.m.	833	254	29.14	740.1	30.08	764.0	41.2	5.1	66	6	3	5	3	2	2	2	8	.....	.....	.....	8	2.33	59.1
Wustrow	N. 54 21	E. 12 24	0.50 p.m.	23	7	29.97	761.1	30.01	762.2	36.7	2.6	83	1	1	10	6	1	5	1	6	.....	.....	.....	8	1.31	33.3
GREEK.																										
Athens	N. 37 58	E. 23 44	1.35 p.m.	348	106	29.66	753.3	30.02	762.5	62.1	16.7	60	6	4	1	4	9	4	2	1	.....	.....	.....	5	0.26	6.6
INDIAN.																										
Kurrachee	N. 24 47	E. 67 04	4.28 p.m.	49	15	29.78	756.3	29.78	756.4	81.3	27.4	55	.....	1	18	12	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Deesa	N. 24 16	E. 72 14	4.49 p.m.	466	142	29.32	744.7	29.73	755.0	93.5	34.2	9	1	5	8	15	2	.....	.....	.....	.....	.....	.....	1	.....	.....
Bombay	N. 18 54	E. 72 49	4.51 p.m.	37	11	29.81	757.3	29.79	756.7	80.7	27.1	63	5	18	5	3	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Poona	N. 18 28	E. 74 10	4.57 p.m.	1849	564	27.98	710.7	29.71	754.6	91.0	32.8	16	.....	20	8	2	.....	1	.....	.....	.....	.....	.....	2	.....	.....
Belgaum	N. 15 52	E. 74 42	4.59 p.m.	2524	770	27.28	693.0	29.67	753 5	85.0	29.4	37	6	3	11	6	1	3	4	1	.....	.....	.....	2	1.69	42.9
Lahore	N. 31 34	E. 74 20	4.57 p.m.	702	214	29.06	738.0	29.74	755.4	83.2	28.4	24	4	7	10	1	.....	3	4	.....	2	.....	.....	4	0.05	1.3
Roorkee	N. 29 52	E. 77 56	5.12 p.m.	887	270	28.86	733.1	29.72	755.0	82.0	27.8	23	.....	7	6	.....	2	6	2	.....	8	.....	.....	2	0.05	1.3
Agra	N. 27 10	E. 78 05	5.12 p.m.	555	169	29.22	742.1	29.72	755.0	88.7	31.5	18	2	14	2	5	.....	3	1	1	3	.....	.....	2	0.07	1.8
Nagpur	N. 21 09	E. 79 11	5.17 p.m.	1025	312	28.72	729.4	29.66	753.4	95.5	35.3	16	3	6	7	5	1	1	.....	2	6	.....	.....	2	.....	.....
Jubbulpore	N. 23 09	E. 79 59	5.20 p.m.	1341	409	28.44	722.3	29.71	754.6	89.0	31.7	18	4	11	7	4	.....	.....	.....	2	3	.....	.....	1	.....	.....
Lucknow	N. 26 50	E. 81 00	5.24 p.m.	369	112	29.41	747.0	29.72	754.9	84.0	29.4	22	7	5	4	3	2	2	2	3	3	.....	.....	2	0.22	5.6
Allahabad	N. 25 26	E. 81 52	5.27 p.m.	307	94	29.46	748.3	29.72	754.8	89.2	31.8	19	5	15	3	.....	.....	2	1	1	4	.....	.....	2	0.08	2.0
Patna	N. 25 37	E. 85 08	5.41 p.m.	183	56	29.59	751.6	29.72	755.0	83.3	28.5	41	1	1	9	.....	.....	.....	3	1	16	.....	.....	2	0.56	14.2
Hazaribagh	N. 24 00	E. 85 24	5.42 p.m.	2007	612	27.80	706.0	29.73	755.0	82.1	27.8	22	7	13	7	.....	.....	.....	1	2	1	.....	.....	1	0.07	1.8
Cuttack	N. 20 29	E. 85 54	5.44 p.m.	80	24	29.74	755.3	29.76	755.8	86.4	30.2	54	.....	.....	1	5	14	5	6	.....	.....	.....	.....	3	1.55	39.4
Calcutta	N. 22 33	E. 88 21	5.53 p.m.	21	6	29.77	759.1	29.73	755.1	83.8	28.8	50	2	7	4	6	7	2	2	1	.....	.....	.....	2	3.25	82.6
Dhubri	N. 26 07	E. 89 50	5.59 p.m	115	35	29.67	753.6	29.74	755.4	78.9	26.1	54	1	.....	1	3	1	.....	4	3	18	.....	.....	2	3.41	86.6
Chittagong	N. 22 21	E. 91 50	6.07 p.m.	87	27	29.75	755.7	29.78	756.4	78.0	25.6	78	.....	.....	4	9	9	2	1	.....	6	.....	.....	3	6.26	159.0
Sibsagar	N. 26 59	E. 94 40	6.19 p.m.	333	101	29.52	749.8	29.82	757.4	71.6	22.0	78	1	.....	1	4	1	3	3	18	.....	.....	.....	7	6.63	168.4
Jeypore	N. 26 55	E. 75 50	5.03 p.m.	1431	436	28.36	720.3	29.72	754.9	88.4	31.3	13	6	14	7	3	.....	.....	.....	.....	1	.....	.....	2	0.01	0.2
Bellary	N. 15 09	E. 76 57	5.08 p.m.	1475	449	28.32	719.2	29.68	753.9	96.2	35.7	22	6	5	2	2	2	7	5	1	1	.....	.....	3	.....	.....
Trichinopoly	N. 10 50	E. 78 44	5.15 p.m.	275	84	29.55	750.6	29.75	755.6	93.0	33.9	35	1	.....	1	2	3	10	7	7	.....	.....	.....	3	1.59	40.4
ITALIAN.																										
Udine	N. 46 04	E. 13 13	0.53 p.m.	381	116	29.52	749.8	29.93	760.2	51 3	10.7	51	.....	3	2	4	3	10	1	2	6	.....	.....	6	0.51	13.0
Milan	N. 45 28	E. 9 11	0.37 p.m.	482	147	29.48	748.8	30.01	762.3	50.5	10.3	60	1	3	4	11	1	4	1	6	.....	.....	.....	6	2.13	54.0
Padua	N. 45 24	E. 11 53	0.48 p.m.	102	31	29.88	758.9	29.99	761.7	50.2	10.1	59	8	4	2	3	.....	4	4	6	.....	.....	.....	6	1.96	49.7
Moncaliera	N. 45 00	E. 7 41	0.31 p.m.	846	258	29.09	738.9	30.01	762.2	49.6	9.8	57	1	4	2	1	3	12	2	6	.....	.....	.....	4	0.31	7.9
Genoa	N. 44 24	E. 8 55	0.36 p.m.	177	54	29.79	756.7	29.98	761.4	53.2	11.8	59	11	2	.....	2	7	6	.....	2	1	.....	.....	6	1.82	46.2
Cuneo	N. 44 20	E. 7 20	0.30 p.m.	1820	555	.....	.....	30.00	761.9	47.7	8.7	49	1	1	5	5	3	6	7	3	.....	.....	.....	5	0.39	10.0
Pesaro	N. 43 55	E. 12 53	0.52 p.m.	46	14	29.95	760.7	30.00	762.0	50.4	10.2	69	12	6	.....	5	2	.....	3	3	.....	.....	.....	6	2.26	57.4
Florence	N. 43 46	E. 11 15	0.45 p.m.	240	73	29.71	754.6	29.97	761.3	55.4	13.0	53	5	7	3	5	7	2	.....	2	.....	.....	.....	6	2.51	63.7
Leghorn	N. 43 33	E. 10 18	0.41 p.m.	79	24	29.90	759.4	29.98	761.4	56.3	13.5	65	.....	4	9	3	6	2	3	4	.....	.....	.....	6	4.37	111.0
Rome	N. 41 54	E. 12 29	0.50 p.m.	164	50	29.80	756.9	29.98	761.5	59.0	15.0	54	2	2	2	14	5	1	.....	2	3	.....	.....	6	3.29	83.5
Lecce	N. 40 22	E. 18 12	1.13 p.m.	236	72	29.74	755.4	29.99	761.7	60.1	15.6	57	2	5	2	8	5	5	1	3	.....	.....	.....	6	0.79	20.0
Cosenza	N. 39 19	E. 16 17	1.05 p.m.	840	256	29.11	739.4	29.99	761.7	59.2	15.1	71	.....	6	12	7	4	2	.....	.....	.....	.....	.....	7	2.06	52.4
Palermo	N. 38 07	E. 13 21	0.53 p.m.	236	72	29.75	755.6	29.98	761.6	64.2	17.9	59	.....	4	5	6	.....	.....	.....	9	7	.....	.....	7	1.13	28.6
Syracuse	N. 37 03	E. 15 15	1.01 p.m.	72	22	29.98	761.2	30.02	762.5	60.8	16.0	63	4	2	2	5	5	2	4	7	.....	.....	.....	7	4.12	104.5
Sub-Series.																										
Stelvio	N. 46 32	E. 10 25	0.42 p.m	8343	2543	22.01	559.1	.....	.....	24.8	— 4.0	73	1	.....	4	12	3	.....	1	7	.....	.....	.....	5	4.98	126.6
Valdobbia	N. 45 47	E. 7 51	0.31 p.m.	8360	2548	22.02	559.4	.....	.....	27.5	— 2.5	58	2	7	4	12	.....	6	1	5	.....	.....	.....	5	27.46	700.0

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for March, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent.	Mean Rel. Humidity	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
JAPANESE.	° ′	° ′																								
Akita	N. 39 42	E. 140 07	9.20 p.m.	49	15	29.89	759.3	29.91	759.6	36.5	2.5	79	4	3	11	2	1	.....	7	3	.....	10019	16122	8	5.19	131.8
Awomori	N. 40 51	E. 140 45	9.23 p.m.	33	10	29.85	758.3	29.87	758.8	33.5	0.8	80	1	6	3	7	5	.....	1	.....	8	d6447	d10373	7	2.56	65.1
Erimo	N. 41 55	E. 143 15	9.30 p.m.	200	61	29.57	751.0	29.79	756.6	32.0	0.0	88	1	1	15	.....	1	.....	4	3	6	.....	.....	4	1.81	47.6
Fushiki	N. 36 47	E. 137 03	10.05 p.m.	13	4	.....	.....	.....	.....	40.3	4.6	77	.....	4	5	3	.....	.....	1	3	15	4481	7209	7	5.72	145.4
Gifu	N. 35 27	E. 136 46	9.07 p.m.	49	15	29.98	761.4	30.00	762.0	42.3	5.7	71	18	5	.....	.....	1	2	1	4	.....	4599	7404	3	4.68	118.6
Hakodate	N. 41 46	E. 140 44	9.23 p.m.	10	3	29.85	758.1	29.85	758.2	33.9	1.1	77	8	2	9	4	.....	2	2	2	2	10175	16374	5	2.72	68.8
Hamamatsu	N. 34 42	E. 137 43	9.11 p.m.	92	28	29.87	758.7	29.93	760.2	44.4	6.9	64	2	8	15	1	.....	.....	2	1	2	.....	.....	2	5.04	128.1
Hiroshima	N. 34 23	E. 132 27	8.50 p.m.	15	5	30.07	763.9	30.00	763.6	43.8	6.6	63	24	.....	.....	3	2	.....	1	.....	1	4631	7451	3	2.06	52.3
Kanazawa	N. 36 33	E. 136 40	9.07 p.m.	95	29	29.95	760.8	30.03	762.9	39.4	4.1	80	4	4	5	.....	5	7	5	.....	1	5299	8527	8	8.46	214.9
Kago-hima	N. 31 35	E. 130 33	8.42 p.m.	13	4	30.09	764.2	30.07	763 7	47.3	8.5	77	3	3	.....	.....	.....	.....	2	2	21	2438	3924	3	2.78	70.6
Kioto	N. 35 01	E. 135 46	9.03 p.m.	161	49	29.88	758.8	30.03	762.9	40.2	4.5	77	14	8	5	1	.....	.....	.....	2	1	4187	6738	5	4.02	102.1
Kochi	N. 33 33	E. 133 34	8.54 p.m.	20	6	30.04	762.9	30.03	762.9	47.7	8.7	65	7	6	1	.....	.....	.....	5	9	.....	6698	10779	3	2.76	70.2
Miasaki	N. 31 56	E. 131 26	8.46 p.m.	26	8	30.06	763.6	30.06	763.6	48.9	9.4	77	6	1	11	2	2	6	.....	1	1	5933	9548	3	2.99	75.9
Miyako	N. 39 38	E. 141 59	9.28 p.m.	98	30	29.78	756.4	29.87	758.8	35.5	1.9	76	3	2	13	8	1	.....	.....	.....	4	3926	6321	4	4.19	106.5
Nagasaki	N. 32 44	E. 129 52	8.39 p.m.	190	58	29.91	759.8	30.09	764.3	45.7	7.6	74	13	3	2	4	1	.....	1	4	3	3703	5960	2	2.96	75.1
Nemuro	N. 43 20	E. 145 35	9.42 p.m.	89	27	29.68	753 6	29.72	754.9	28.6	— 1.9	78	8	2	5	2	7	1	5	1	.....	9640	15514	6	2.10	53.4
Niigata	N. 37 55	E. 139 03	9.16 p.m.	33	10	29.96	761.0	29.97	761.2	40.1	4.5	78	6	.....	12	2	.....	6	.....	1	4	6652	10705	7	2.94	74.6
Nobiru	N. 38 23	E. 141 11	9 25 p.m.	16	5	29.91	759 6	29.91	759 6	37.5	3.1	76	7	6	5	...	5	.....	.....	.....	8	12178	19599	3	1.08	27.4
Numadzu	N. 35 06	E. 138 51	9.15 p.m.	30	9	29.90	759.5	29.90	759 5	46.1	7.8	64	1	.....	2	2	3	2	12	9	.....	8448	13582	4	3.62	92.0
Osaka	N. 34 42	E. 135 30	9.02 p.m.	46	14	30.01	762.3	30.02	762.5	43.1	6.2	42	12	1	2	2	.....	.....	.....	8	6	6149	9895	4	3.29	83.6
Sakai	N. 35 33	E. 133 14	8.53 p.m.	7	2	30.07	763.9	30.06	763.5	43.5	6.4	72	8	3	9	2	1	.....	2	1	5	5985	9632	6	2.94	74.6
Shimonoseki	N. 33 58	E. 130 56	8.44 p.m.	164	50	29.94	760.5	30.06	763.5	44.7	7.1	72	1	5	9	.....	1	.....	3	2	10	.....	.....	3	2.63	66.7
Tokei	N. 35 41	E. 139 46	9.19 p.m.	69	21	29.88	758.8	29.93	760.2	43.9	6.6	66	6	9	1	1	9	.....	4	1	.....	7700	12392	4	5.53	140.5
Wakayama	N. 34 14	E. 135 09	9.01 p.m.	49	15	30.00	762.1	30.02	762.5	44.3	6.8	63	9	2	1	1	2	.....	2	7	7	3840	6180	4	2.67	67.8
MAURITIUS.																										
Mauritius	S. 20 06	E. 57 33	3.50 p.m.	181	55	29.70	754.4	29.83	757.7	79.2	26.2	76	1	1	.....	.....	.....	3	16	10	.....	3825	6155	7	12.08	306.8
MEXICAN.																										
Leon	N. 21 07	W. 101 36	5.14 a.m.	5902	1799	24.35	618.3	30.07	763.8	55.8	13.2	75	1	23	1	4	.....	.....	.....	2	.....	.....	.....		0.00	00.0
Mazatlan c	N. 23 12	W. 106 17	4.55 a.m.	249	76	29 73	755.1	29.95	760.7	65.4	18 6	87	.....	3	.....	.....	.....	4	7	14	.....	.....	.....	1	0.00	00.0
Mexico	N. 19 26	W. 99 00	5.24 a.m.	7490	2283	23.09	586.5	30.16	766.1	45.9	7.7	65	.....	3	.....	.....	1	.....	.....	.....	27	.....	.....	1	0.16	4.1
Zacatecas	N. 22 47	W. 102 26	5.10 a m.	8100	2469	22.56	573.0	30.20	767.1	48.4	9.1	50	.....	.....	.....	16	1	11	3	.....	.....	.....	.....	1	0.00	00.0
NETHERLANDS.																								4		
Flushing	N. 51 24	E. 3 35	0.14 p.m.	0	0	30.09	764.3	30.11	764.8	40.1	4.5	.....	2	1	4	8	3	.....	5	8	.....	.....	.....	.....	1.04	26.4
Groningen	N. 53 12	E. 6 34	0.26 p.m.	60?	18?	29.98	761 5	30.06	763.5	40.5	4.7	.....	2	3	8	1	6	1	2	6	2	.....	.....	.....	0.82	20.8
Helder	N. 52 58	E. 4 45	0.19 p.m.	0	0	30.00	762.0	30.02	762.5	38.5	3.6	.....	2	1	3	10	4	1	2	8	.....	.....	.....	.....	1.76	44.8
Hellevoetsluis	N. 51 49	E. 4 08	0.17 p.m.	0	0	30.06	763.6	30.08	764.0	42.4	5.8	.....	2	1	4	9	1	.....	5	6	3	.....	.....	.....	0.66	16.7
Utrecht	N. 52 05	E. 5 07	0.20 p.m.	43	13	30.02	762.6	30.08	764.0	41.9	5.5	.....	7	.....	1	9	5	.....	5	4	.....	.....	.....	4	1.29	32.7
NORWEGIAN.																										
Bergen	N. 60 24	E. 5 20	0.21 p.m.	56	17	29.89	759.1	29.99	761.7	41.0	5.0	70	1	8	6	1	8	7	.....	.....	.....	.....	.....	.....	3.58	91.0
Brono	N. 65 28	E. 12 14	0.49 p.m.	33	10	29.74	755.3	29.82	757.4	35.6	2.0	68	5	2	3	3	8	2	3	1	4	.....	.....	7	2.76	70.2
Christiania	N. 59 55	E. 10 45	0.43 p.m.	134	41	29.78	756.5	29.97	761.2	39.9	4.4	56	2	2	3	7	5	.....	4	4	4	.....	.....	6	0.75	19.1
Gjæsvær	N. 71 07	E. 25 22	1.41 p.m.	23	7	29.57	751.0	29.65	753.1	20.8	— 2.9	.....	2	1	2	3	1	3	7	7	5	.....	.....	8	1.61	41.0
PORTUGUESE.																										
Funchal	N. 32 38	W. 16 55	10.52 a.m.	82	25	29.88	758.9	29.93	760.2	64.4	18.0	66	.....	.....	2	15	5	4	3	1	1	.....	.....	6	4.28	108.6
Lisbon	N. 38 42	W. 9 08	11.23 a.m.	312	95	29.64	752.8	29.95	760.7	57.6	14.2	74	3	1	.....	4	6	5	2	9	1	.....	.....	7	4.85	123.2
Ponta Delgada	N. 37 45	W. 25 41	10.17 a.m.	66	20	29.84	757.9	29.89	759.2	60.4	15.8	75	3	3	3	9	.....	2	2	8	1	.....	.....	4	8.46	215.0
Saint Vincent b	N. 16 37	W. 25 02	10.20 a.m.	35	11	29.98	761.5	29.96	761.0	73.2	22.9	67	9	.....	.....	.....	.....	.....	.....	20	.....	.....	.....	3	0.00	0.0
Serra da Estrella	N. 40 25	W. 7 35	11.30 a.m.	4728	1441	25.19	639.8	29.97	761.2	40.5	4.7	82	1	.....	4	4	.....	8	12	2	.....	.....	.....	7	6.88	174.7
San Salvador	S. 6 17	E. 14 53	1.00 p.m.	1834	559	28.02	711.8	29.77	756.1	81.1	27.3	62	1	2	11	8	1	.....	2	.....	6	.....	.....	6	1.46	37.1
RUSSIAN.																										
Archangel	N. 64 33	E. 40 32	2.42 p.m.	16	5	29.72	754 9	29.79	756.7	23.9	— 4.5	76	.....	5	3	4	1	.....	1	.....	17	.....	.....	7	.....	.....
Baku	N. 40 21	E. 49 51	3.19 p.m.	39	12	30.05	763.2	30.00	762.0	40.6	8.1	74	3	9	.....	2	14	.....	.....	.....	3	.....	.....	4	0.00	0.0
Barnaul	N. 53 20	E. 83 47	5.35 p.m.	459?	140?	29.66	753.2	30.20	767.1	25.7	— 3.5	70	1	.....	1	20	2	.....	.....	3	4	.....	.....	8	0.49	12.5
Dorpat	N. 58 23	E. 26 43	1.47 p.m.	223	68	29.65	753.0	29.93	760.2	33.6	0.9	.....	.....	7	6	4	4	.....	4	6	.....	.....	.....	7	0.32	8.2
Ekaterinburg	N. 56 49	E. 60 38	4.03 p.m.	899	274	28.83	732.3	29.89	759.2	22.8	— 5 1	61	3	.....	8	6	6	4	2	1	1	.....	.....	7	0.03	15.9
Elisavetgrad	N. 48 31	E. 32 17	2.09 p.m.	407	124	29.51	749.5	29.98	761.5	38.1	3.4	68	4	6	7	6	2	3	1	2	.....	.....	.....	7	1.32	33.4
Irkutsk	N. 52 17	E. 104 16	6.57 p.m.	1610	491	28.50	723.9	30.36	771.1	20.8	— 6.2	.....	4	4	1	1	1	12	1	3	4	.....	.....	5	0.16	4.1
Kasalinsk	N. 45 46	E. 62 07	4.08 p.m.	148	45	29.78	756.5	29.95	760.7	38.3	3.5	.....	3	6	3	4	5	2	5	3	.....	.....	.....	6	.....	.....
Kasan	N. 55 47	E. 49 08	3.17 p.m.	230	70	29.65	753.0	29.95	760.7	24.1	— 4.4	71	1	2	3	6	6	10	.....	3	.....	.....	.....	7	0.40	10.1
Kem	N. 64 57	E. 34 39	2.19 p.m.	43	13	29.69	751.0	29.78	756.4	24.6	— 3.1	61	.....	9	2	7	1	.....	.....	.....	12	.....	.....	6	0.28	7.0
Kertch	N. 45 21	E. 36 29	2.26 p.m.	20?	6?	29.97	761.1	29.99	761.7	41.9	5.5	85d	5	1	8	..	9	2	4	2	.....	.....	.....	3	0.67	17.0
Kieff	N. 50 27	E. 30 30	2.02 p.m.	600	183	29.28	743.7	29.97	761.2	35.1	1.7	65	2	8	7	5	3	2	2	2	.....	.....	.....	4	2.04	51.8
Korostishev	N. 50 19	E. 29 03	2.05 p.m.	?	?	29.32	744.7	.....	.....	35.2	1.8	64	1	6	10	4	1	3	1	2	3	.....	.....	6	0.18	4.5
Koslov	N. 52 53	E. 40 31	2.42 p.m.	505	154	29.29	744.0	29.90	759.4	25.7	— 3.5	82	.....	7	6	6	5	2	3	2	.....	.....	.....	7	.....	.....
Lgov	N 51 38	E 35 17	2.21 p m.	518	158	29.31	744.4	29.92	760.0	30.4	— 0.9	74	2	2	6	6	3	2	5	4	1	.....	.....	5	1.50	38.0
Libau	N. 56 31	E. 21 01	1.24 p.m.	20	6	29.91	759 7	29.96	761.0	34.9	1.6	77k	1	6	7	1	5	3	4	4	.....	.....	.....	5	0.58	14.6
Lugan	N. 48 35	E. 39 20	2.37 p.m.	164	50	29.76	756.0	29.95	760.7	35.1	1.7	71	3	1	9	3	3	3	5	3	1	.....	.....	8	2.20	55.8
Moscow	N. 55 46	E. 37 40	2.31 p.m.	469	143	29.32	744.7	29.89	759.2	28.2	— 2.1	69	4	9	2	2	3	5	2	2	.....	.....	.....	6	1.14	28.9
Ner chinsk	N. 51 19	E. 119 37	7.58 p.m.	2155?	657?	27.84	707 1	30.40	772.1	13.3	—10.4	.....	.. ..	5	3	.....	.....	.....	.....	.....	23	.....	.....	2	.....	.....
Nikolaiev	N. 46 58	E. 31 58	2.08 p.m.	62	19	29.91	759.8	29.97	761.2	41.0	5.1	65	7	4	3	1	6	1	2	2	5	.....	.....	6	1.86	47.3
Nikolaievsk a	N. 53 08	E. 140 45	9.23 p.m.	82	25	29.77	756.1	29.86	758.4	12.7	—10.7	81	1	6	9	.....	.....	1	9	3	1	.....	.....	5	1.37	34.9
Nikolsk	N. 59 32	E. 45 27	3.02 p.m.	485?	148?	29.22	742.2	29.82	757.4	25.3	— 3.7	57	6	6	.....	1	6	2	1	8	1	.....	.....	7	0.50	12.6
Perm	N. 58 01	E. 56 16	3.45 p.m.	328?	100?	29.36	746.5	29.77	759.1	22.5	— 5.3	69	1	.....	9	6	2	4	1	3	5	.....	.....	7	2.57	65.3
Petro-Alexandrovsk	N. 41 28	E. 61 05	4.04 p.m.	328	100	29.74	755.4	30.09	764.3	44.1	6.7	.....	.....	1	4	4	2	8	5	4	3	.....	.....	7	.....	.....
Petrozavodsk	N. 61 47	E. 34 23	2.18 p.m.	220?	67?	29.62	752.3	29.90	759.4	27 0	— 2.8	59	3	8	2	4	1	.....	10	2	1	.....	.....	5	1.06	27.0
Pinsk	N. 52 07	E. 26 06	1.44 p.m.	459?	140?	29.43	747.5	29.97	761.2	34.9	1.6	63	1	7	9	3	2	5	2	2	.....	.....	.....	7	1.13	28.7
Poti	N. 42 09	E. 41 37	2.46 p.m.	26	8	29.88	759.0	29.90	759.4	52.7	11.5	58	.....	2	8	6	.....	.....	10	2	3	.....	.....	7	.....	.....
St. Petersburg	N. 59 56	E. 30 16	2.01 p.m.	20	6	29.85	758.2	29.92	760.0	30.0	— 1.1	61	.....	5	12	2	1	5	3	3	.....	.....	.....	6	0.91	23.0
Samarkand	N. 39 39	E. 66 57	4.28 p.m.	2379?	725?	27.56	700.0	30.15	765.8	54.3	12.4	.....	.....	.....	.....	2	.....	.....	3	1	25	.....	.....	4	.....	.....
Semipalatinsk	N. 50 24	E. 80 13	5.21 p.m.	594	181	29.54?	759 3?	30.21?	767.3?	23.4	— 4.8	86	1	2	1	6	1	12	6	2	.....	.....	.....	6	0.76	19.2
Sevastopol	N. 44 37	E. 33 31	2.14 p.m.	187	57	29.82	757.5	30.02	762 5	40.2	7.9	64	2	2	9	3	7	.....	.....	4	4	.....	.....	8	1.87	47.6
Tashkend	N. 41 20	E. 69 18	4.37 p.m.	1607?	490?	28.3	720.3	30.08	764.0	54.1	12.3	39b	.....	6	9	3	1	2	.....	7	3	.....	.....	6	.....	.....
Tiflis	N. 41 43	E. 44 47	2.59 p.m.	1342	409	28.58	725 9	30.4	763 0	52.2	11.2	36	1	16	2	.....	6	3	.....	.....	3	.....	.....	5	0.48	12.1
Troitskosavsk	N. 50 22	E. 106 27	7.06 p.m.	2529?	771?	27.64b	702.1b	30.55b	776.0b	b20.7	b—6.3	64b	b	8	.....	.....	.....	.....	.....	.....	21	.....	.....	3b	0.00	0.0
Viatka	N. 58 36	E. 49 41	3.19 p.m.	581?	177?	29.10	739.1	29.81	757.2	22.8	— 5.1	.....	2	6	6	.....	3	2	1	2	9	.....	.....	7	1.63	41.3
Warsaw	N. 52 13	E. 21 02	1.24 p.m.	390	119	29.52	749.9	29.98	761.5	35.4	1.9	74	3	3	10	2	5	2	3	2	1	.....	.....	8	1.35	34.3
Yeniseisk	N. 58 27	E. 92 06	6.08 p.m.	276?	84	29.86	758.5	30.20	767.1	22.6	— 5.2	.....	1	.....	6	7	5	2	4	.....	6	.....	.....	7	0.75	19.1
Sub-series.																										
Petrowsky Acad'y	N. 55 50	E. 37 33	2.50 p.m.	558	170	29.22	742.2	29.90	759.4	27.1	— 2.7	57	1	7	7	2	2	8	1	1	2	.....	.....	6	1.39	35.2
SPANISH.																										
Barcelona	N. 41 23	E. 2 15	0.09 p.m.	138	42	29.87	758.8	30.02	762.5	54.0	12.2	79	4	1	1	5	8	1	5	6	.....	.....	.....	5	0.74	18.8
Bilbao	N. 43 15	W. 2 59	11.48 a.m.	52	16	29.98	761.5	30.04	763.0	59.5	15.3	62	2	6	2	4	2	4	.....	1	10	1564	2517	6	1.63	41.5
Burgos	N. 42 20	W. 3 46	11.45 a.m.	2822	860	27.05	687.1	30.04	763.0	49.6	9.8	64	4	2	2	2	7	2	4	8	.....	6081	9786	4	0.79	20.1
Madrid	N. 40 25	W. 3 42	11.45 a.m.	2152	656	27 78	705.6	30.00	762.0	56.	13.5	60	1	.....	7	5	1	1	6	6	4	6720	10814	6	2.25	57.1
Santiago	N. 42 53	W. 8 28	11.20 a.m.	863	203	29.03	737.4	29.91	759.7	58.1	14.5	62	.....	1	.....	5	2	5	2	8	8	7458	12003	7	5.02	127.4
SPANISH—*Sub.*																										
Havana	N. 23 08	W. 82 23	6.30 a.m.	62	19	30.01	762 4	30.02	762 5	65.7	18.7	84	2	2	1	1	7	10	8	.....	.....	.....	.....	2	3.44	87.4
Manila	N. 14 35	E. 120 57	8.04 p.m.	52	16	29.86	758.4	29.84	7 7.9	80.1	26.7	79	.....	.....	.....	2	1	6	20	1	1	3438	5533	4	3.95	100.2
San Fernando	N. 36 28	W. 6 13	11.35 a.m.	95	29	29.91	759.7	29.99	761.7	61.6	16.4	70	.....	1	6	1	4	3	14	.....	2	.....	.....	7	5.31	135.1
San Juan de Porto Rico	N. 18 30	W. 66 10	7.35 a.m.	82	25	29.98	761.5	30.00	762.0	73.9	23.3	73	.....	.....	.....	3	3	11	4	.....	6	.....	.....	4	0.48	12.3
SCOTTISH.																										
Leith a	N. 55 59	W. 3 10	11.47 a.m.	70	21	29.96	761.0	30.06	763.5	.....	.....	.....	4	5	10	3	.....	4	2	2	.....	.....	.....	7	1.35	34.3

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea.		Result of Simultaneous Observations for March, 1887.																			Average Cloudiness.	Total Precipitation	
						Mean Barometer.				Mean Temperature.		Mean Rel. Humidity	Wind.														
						Actual.		Reduced.					Directions.									Total Movement.					
				Feet.	Metr's	Inch.	Mill.	Inch.	Mill.	Fah.	Cent.		N	NW	W	SW	S	SE	E	NE	C	Miles	Kil.		0-10	Inch.	Mill.
SWEDISH.	° ′	° ′																									
Haparanda	N. 65 47	E. 24 03	1.36 p.m.	30	9	29.69	754.1	29.77	756.1	27.0	— 2.8	78	5	3	3	6	4	5	.....	.....	5	.....	.....		6	0.39	9.8
Umea	N. 63 50	E. 20 17	1.21 p.m.	39	12	29.74	755.4	29.82	757.4	33.3	0.7	75	7	5	2	10	1	3	1	2	.....	.....	.....		6	0.39	9.8
Hernosand	N. 62 32	E. 17 57	1.12 p.m.	46	14	29.79	756.6	29.89	759.2	36.0	2.2	63	3	7	3	.....	11	.....	.....	1	6	.....	.....		4	0.36	9.1
Stockholm	N. 59 20	E. 18 04	1.12 p.m.	144	44	29.74	755 5	29.91	760.5	37.0	2.8	57	5	4	5	6	4	1	.....	3	3	.....	.....		6	0.75	19.1
Wisby	N. 57 39	E. 18 19	1.13 p.m.	52	16	29.84	758.0	29.92	760.0	36.3	2.4	73	3	2	8	5	1	4	2	6	.....	.....	.....		3	0.74	18.9
Sub-Series.																											
Upsala	N 59 51	E. 17 37	1.10 p.m.	79	24	29.80	756.9	29.92	760.0	37.9	3.3	56	4	6	2	7	6	2	1	3	.....	.....	.....		6	0.46	11.6
SWISS.																											
Geneva	N. 46 12	E 6 08	0.25 p m.	1338	408	28.63	727.3	30.11	764.7	39.7	4.3	77	15	1	2	2	8	1	2	.....	.....	.....	.....		7	3.41	86.6
TURKISH.																											
Constantinople	N 41 02	E. 28 59	1.56 p.m.	246	75	29.79	756.7	30.04	762.9	53.2	11.8	58	5	3	.....	14	4	1	.....	4	.....	.....	.....		6	3 02	76.8
Valona	N. 40 27	E. 19 27	1.18 p.m.	105	32	30.00	762.0	30.11	764.8	61.7	16.5	.....	.....	10	.....	3	12	2	1	.....	3	.....	.....		6	0.98	25.0
Sub-Series.																											
Beirut	N. 33 54	E. 35 28	2.22 p.m.	112	34	29.90	759.4	29.99	761.7	63.9	17.7	61	13	1	3	5	3	.....	.....	.....	6	.....	.....		4	:.68	42.8
UNITED STATES.																											
Atlantic states.																											
Eastport	N. 44 54	W. 66 59	7.32 a.m.	53	16	29.74	755.4	29.79	756.7	25.3	— 3.7	76	8	7	3	1	4	2	1	5	.....	10275	16536		7	4.46	113.3
Portland	N. 43 39	W. 70 15	7.19 a.m.	99	30	29.74	755.4	29.85	758.2	24.5	— 4.2	76	6	10	9	3	.....	.....	2	1	.....	7379	11875		7	4.15	105.4
Manchester	N. 43 13	W. 73 03	7.14 a.m.	.....	.....	29.62	752.3	.....	.....	22.7	— 5.2	77	2	18	4	.....	2	.....	1	2	2	6932	11156		6	3.68	93.5
Mt. Washington	N. 44 16	W. 71 18	7.15 a.m.	6279	1914	23.30	591.8	29.82	757.4	8.5	—13.1	92	3	11	6	3	1	.....	2	5	.....	.....	.....		4	2.88	73.2
Northfield	N. 44 08	W. 72 42	7.09 a.m.	871	266	28.95	735.3	.....	.....	15.9	— 8.9	78	9	3	1	6	8	.....	.....	4	.....	9684	15585		8	4.68	118.9
Boston	N. 42 21	W. 71 04	7.16 a.m.	124	38	29.75	755.6	29.88	758.9	27.6	— 2.4	73	7	11	7	.....	1	1	3	1	.....	10755	17308		7	3.86	98.0
Nantucket	N. 41 14	W. 70 07	7.20 a.m.	14	4	29.86	758.4	29.86	758.4	31.4	— 0.3	84	9	9	2	.....	4	1	1	5	.....	10517	16925		6	2.84	72.1
Block Id	N. 41 10	W. 71 36	7.14 a.m.	27	8	29.86	758.4	29.88	758.9	31.0	— 0.6	80	11	9	.....	2	1	2	2	4	.....	13522	21761		6	4.49	114.0
New Haven	N. 41 18	W. 72 56	7.08 a.m.	107	33	29.81	757.2	29.92	760.0	27.3	— 2.6	70	12	8	3	1	1	.....	5	1	.....	8089	13018		5	4.22	107.2
New London	N. 41 21	W. 72 05	7.12 a.m.	47	14	29.85	758.2	29.89	759.2	30.7	— 0.7	76	11	5	3	.....	2	.....	2	2	6	6187	9957		5	4.65	118.1
Albany	N. 42 39	W. 73 45	7.05 a.m.	85	26	29.90	759.4	29.99	761.7	24.0	— 4.4	80	6	7	6	2	3	4	1	2	.....	6556	10567		7	2.90	73.7
New York City	N. 40 43	W. 74 00	7.04 a.m.	158	48	29.76	755 9	29.93	760.2	31.3	— 0.4	66	5	16	1	3	.....	1	1	3	1	8177	13159		5	3.51	89.2
Philadelphia	N. 39 57	W. 75 09	7.00 a.m.	117	36	29.86	758.4	29.90	761.0	32.3	0.2	69	9	13	.....	1	1	1	1	5	.....	10241	16481		6	2.59	65.8
Atlantic City	N. 39 22	W. 74 25	7.03 a.m.	13	4	29.97	761.2	29.97	761.2	32.5	0.3	86	7	12	2	1	1	.....	2	3	3	8327	12401		5	2.94	74.7
Baltimore	N. 39 18	W. 76 37	6.54 a.m.	45	14	29.97	761.2	30.01	762.2	33.8	1.0	66	5	11	5	2	1	1	1	5	.....	5862	9482		6	3.49	88.6
Washington City	N. 38 54	W. 77 03	6.52 a.m.	106	32	29.92	760.0	30.02	762.5	33.3	0.7	70	1	14	.....	1	2	2	4	3	4	6337	10198		6	3.83	97.3
Chincoteague	N. 37 55	W. 75 23	6.59 a.m.	8	2	29.97	761.2	29.96	761.0	37.1	2.8	78	1	11	4	1	1	5	1	7	.....	13177	21206		5	4.47	113.5
Lynchburg	N. 37 25	W. 79 09	6.44 a.m.	652	199	29.33	745.0	30.03	762.7	37.3	2.9	71	.....	11	7	6	.....	.....	2	5	.....	4537	7302		5	2.58	65.5
Norfolk	N. 36 51	W. 76 17	6.55 a.m.	30	9	29.98	761.5	30.01	762.2	39.4	4.1	80	11	4	3	4	1	1	3	3	1	6414	10322		6	4.38	111.2
Hatteras	N. 35 15	W. 75 40	6.58 a.m.	12	4	30.02	762.5	30.01	762.2	46.5	8.1	77	9	6	5	4	.....	1	.....	5	1	10777	17344		5	3.04	77.2
Wilmington	N. 34 14	W. 77 57	6.48 a.m	52	16	29.98	761.5	30.01	762.2	44.9	7.2	80	6	6	6	4	.....	1	2	6	.....	5903	9500		4	1.48	37.6
Raleigh	N. 35 48	W. 78 29	6.39 a.m.	432	132	29.58	751.3	30.05	763.3	40.4	4.7	75	7	4	4	5	1	1	1	7	1	5976	9617		4	4.13	104.9
Charlotte	N. 35 13	W. 80 51	6.37 a.m.	808	246	29.19	741 4	30.04	763.0	40.0	4.4	76	6	5	3	5	2	1	4	3	2	4929	7932		4	2.93	74.4
Charleston	N. 32 47	W. 79 56	6.40 a.m.	52	16	30.02	762.5	30.04	763.0	49.1	9.5	74	6	6	7	5	.....	.....	1	4	2	6658	10715		4	0.50	12.7
Augusta	N. 33 28	W. 81 54	6.32 a.m.	183	56	29.89	759 2	30.05	763.3	43.7	6.5	88	.....	10	7	2	2	3	3	2	3	3214	5712		3	0.64	16.3
Savannah	N. 32 05	W. 81 05	6.36 a.m.	87	27	29.99	761.7	30.05	763.3	49.1	9.5	72	1	11	6	6	1	.....	2	3	1	6199	9976		3	0.76	19.3
Jacksonville	N. 30 20	W. 81 39	6.34 a.m.	43	13	30.05	763 3	30.00	763.5	52.9	11.6	83	2	5	4	2	5	.....	....	4	9	2763	4446		4	3.51	89.2
Cedar Keys	N. 29 08	W. 83 02	6.28 a.m.	22	7	30.09	764.3	30.07	763.8	56.8	13.8	77	6	5	6	.....	3	2	2	7	.....	6755	10871		3	1.87	47.5
Key West	N. 24 34	W. 81 49	6.33 a.m.	22	7	30.08	764.0	30.05	763.3	69.1	20.6	78	6	2	2	1	2	6	4	8	.....	8436	13576		4	1.99	50.6
Sanford	N. 28 48	W. 81 23	6.35 a.m.	25	8	30.06	763.5	30.05	763.3	54.8	12.7	85	3	4	6	5	4	1	.....	2	6	4787	7704		2	2.22	56.4
Gulf states.																											
Atlanta	N. 33 45	W. 84 23	6.23 a.m.	1129	344	28.89	733.8	30.07	763.8	44.1	6.7	85	1	7	12	2	3	1	4	1	.....	8825	14202		2	1.99	50.6
Pensacola	N. 30 25	W. 87 13	6.11 a.m.	30	9	30.07	763.8	30.00	763.5	54.2	12.3	81	8	3	4	3	3	3	1	5	1	5077	8170		3	2.25	57.2
Mobile	N. 30 41	W. 88 02	6.08 a.m.	35	11	30.07	763.8	30.07	763.8	52.1	11.2	82	8	8	4	.....	4	4	1	1	1	5628	9144		5	3.65	92.7
Montgomery	N. 32 23	W. 86 18	6.15 a.m.	219	67	29.86	758.4	30.06	763.5	48.7	9.3	80	5	6	.....	4	9	4	.....	2	1	4715	7588		4	0.72	18.3
Vicksburg	N. 32 22	W. 90 53	5.57 a.m.	222	68	29.87	758.7	30.06	763.5	52.7	11.5	76	4	1	3	2	6	6	5	2	2	5231	8418		3	2.77	70.4
New Orleans	N. 29 58	W. 90 04	6.00 a.m.	52	16	30.04	763.0	30.06	763.5	56.2	13.4	81	3	1	1	4	2	7	3	8	2	5656	9102		3	3.37	85.6
Shreveport	N. 32 30	W. 93 40	5.46 a.m.	227	69	29.85	758.2	30.06	763.5	52.1	11.2	83	10	3	1	3	7	3	3	.....	1	5045	8119		3	1.28	32.5
Fort Smith	N. 35 22	W. 94 24	5.43 a.m.	470	143	29.58	751.3	30.10	764.5	43.5	6.4	92	2	2	.....	.....	1	6	8	9	3	4448	7158		4	1.53	38.9
Little Rock	N. 34 45	W. 92 06	5.52 a.m	309	94	29.76	755.9	30.07	763.8	47.7	8.7	78	6	6	1	5	4	3	2	4	.....	4387	7060		4	4.54	115.3
Galveston	N. 29 18	W. 94 47	5.41 a.m.	40	12	30.06	763.5	30.00	763.5	62.3	16.8	83	3	1	3	1	12	3	1	5	2	7753	12477		4	1.98	50.3
San Antonio	N. 29 27	W. 98 28	5.26 a.m.	781	238	29.25	742 9	30.04	763 0	55.6	13.1	78	12	.....	3	2	6	5	.....	3	.....	6818	10972		5	0.51	13.0
Corpus Christi	N. 27 50	W. 97 32	5.30 a.m.	18	5	30.04	763.0	30.04	763.0	60.8	16.0	87	5	5	2	2	4	9	1	2	1	9263	14907		4	1.61	40.9
Brownsville	N. 25 53	W. 97 26	5.30 a.m.	57	17	29.99	761.7	30.00	762.0	60.1	15.6	93	5	2	2	1	13	2	2	1	3	6665	10726		3	2.87	72.9
Rio Grande City	N. 26 23	W. 98 48	5.25 a.m.	230	70	29.85	758.2	30.00	762.0	59.7	15.4	83	6	1	.....	.....	6	4	3	3	8	5300	8529		3	2.01	51.0
Palestine	N. 31 45	W. 95 40	5.38 a.m.	533	162	29.54	750.3	30.08	764.0	53.5	11.9	82	6	3	1	5	9	3	2	2	.....	7711	12409		4	1.45	36.8
Ohio val. & Tenn.																											
Chattanooga	N. 35 04	W. 85 15	6.19 a.m.	783	239	29.26	743.2	30.08	764.0	43.6	6.4	74	3	5	2	8	4	1	.....	8	.....	5705	9181		5	4.52	114.8
Knoxville	N. 35 56	W. 83 58	6.24 a.m.	980	299	29.04	737.6	30.08	764.0	41.1	5.1	82	4	5	3	4	.....	.....	.....	7	8	4999	8045		5	3.97	100.8
Memphis	N. 35 09	W. 90 03	6.00 a.m.	320	98	29.74	755.4	30.06	763.5	47.2	8.4	80	6	5	2	4	3	3	5	2	1	5321	8563		4	4.18	106.2
Nashville	N. 36 10	W. 86 47	6.13 a.m.	549	167	29.48	748.8	30.06	763.5	42.1	5.6	78	4	8	4	3	1	3	4	3	1	5568	8961		5	3.36	85.3
Louisville	N. 38 15	W 85 45	6.17 a.m.	551	168	29.48	748.8	30.06	763.5	38.9	3.8	71	7	2	4	4	3	1	3	5	2	6186	9955		6	1.88	47.8
Indianapolis	N. 39 46	W. 86 10	6.16 a.m.	766	233	29.24	742.7	30.07	763.8	32.3	0.2	79	8	6	2	1	1	4	3	5	1	5218	8397		6	2.78	70.6
Cincinnati	N. 39 06	W. 84 30	6.22 a.m.	628	191	29.40	746.7	30.08	764.0	35.1	1.7	73	7	5	1	2	1	7	1	5	2	7097	4421		7	2.07	52.6
Columbus	N. 39 58	W. 83 00	6.28 a.m.	812	248	29.17	740.9	30.06	763.5	31.7	— 0.2	72	2	9	3	2	4	1	5	5	.....	6918	11133		7	2.56	65.0
Pittsburg	N. 40 32	W. 80 02	6.40 a.m.	847	258	29.10	739.1	30.10	764.5	32.0	0.0	74	9	10	3	1	2	1	2	3	.....	6128	9862		7	1.49	37.8
Lake region.																											
Rochester	N. 43 08	W. 77 42	6.49 a.m.	621	189	29.32	744.7	30.02	762.2	24.7	— 4.1	83	1	12	5	3	3	2	3	2	.....	10056	16183		8	0.94	23.9
Buffalo	N. 42 53	W. 78 53	6.45 a.m.	692	210	29.26	743.2	30.04	763.0	25.0	— 3.9	84	4	6	9	2	3	3	3	1	.....	8208	13209		7	2.12	53.8
Oswego	N. 43 29	W. 76 35	6.54 a.m	335	102	29.62	752.3	30.00	762.0	23.6	— 4.7	77	11	6	.....	2	6	3	1	2	.....	10397	16732		7	1.21	30.7
Erie	N. 42 07	W. 80 05	6.40 a.m.	681	208	29.29	744.0	30.05	763.3	27.0	— 2.8	78	7	9	.....	5	4	2	2	1	1	8569	13790		6	3.06	77.7
Sandusky	N 41 25	W. 82 40	6.30 a.m.	638	194	29.38	746.2	30.09	764 3	29.3	— 1.5	78	5	11	3	4	1	.....	4	2	1	10606	17068		6	2.16	54.9
Cleveland	N. 41 30	W. 81 42	6.33 a.m.	690	210	29.28	743.7	30.04	763.0	28.8	— 1.8	77	.....	10	2	1	5	2	6	5	.....	7109	11441		6	3.05	77.5
Toledo	N. 41 40	W. 83 34	6.26 a.m.	651	198	29.36	745.7	30.08	764.0	27.7	— 2.4	77	3	9	5	4	3	2	2	3	.....	6881	11074		5	1.12	28.4
Detroit	N. 42 20	W. 83 03	6.28 a.m.	662	202	29.33	745.0	30.07	763.8	26.6	— 3.0	78	11	3	2	2	1	3	3	6	.....	6506	10470		5	1.44	36.6
Alpena	N. 45 05	W. 83 30	6.26 a.m.	609	186	29.39	746.5	30.09	764.3	15.2	— 9.3	80	1	8	13	1	.....	2	2	.....	4	7524	12108		7	1.22	31.0
Escanaba	N. 45 48	W. 87 05	6.12 a.m.	608	185	29.44	747.8	30.15	765.8	13.4	—10.3	78	13	3	2	1	.....	3	.....	7	2	6864	11042		5	0.31	7.9
Grand Haven	N. 43 05	W. 86 18	6.15 a.m.	620	189	29.39	746.5	30.09	764 3	23.7	— 4.6	74	10	2	2	1	2	4	5	4	1	8326	12399		6	0.95	24.1
Lansing	N. 42 45	W. 84 33	6.22 a.m.	870	265	29.13	739.9	30.14	765.5	28.3	— 2.1	81	8	5	3	2	3	2	3	4	1	5474	8809		5	1.98	50.3
Mackinaw City	N. 45 47	W. 84 39	6.22 a.m.	605	184	29.40	746.7	30.10	764.5	15.2	— 9.3	62	5	3	6	.....	1	3	2	1	10	6137	9876		6	0.22	5.6
Marquette	N. 46 34	W. 87 24	6.11 a.m.	672	205	29.37	746.0	30.15	765.8	15.5	— 9.2	81	5	17	2	2	4	.....	1	.....	.....	7334	11803		6	0.31	7.9
Port Huron	N. 43 00	W. 82 26	6.30 a.m	639	195	29.34	745.2	30.06	763.5	22.1	— 5.5	81	4	9	6	1	3	2	2	4	.....	8056	14413		6	1.20	30.5
Chicago	N. 41 52	W. 87 38	6.10 a.m.	715	218	29.29	744.0	30.06	763.5	28.8	— 1.8	79	5	8	4	5	3	1	3	2	.....	8271	13311		6	0.89	22.6
Green Bay	N. 45 00	W. 87 30	6.08 a.m.	616	188	29.44	747.8	30.16	766.1	18.7	— 7.4	88	11	2	1	4	2	1	2	7	1	5571	8966		5	1.01	25.6
Milwaukee	N. 43 02	W. 87 54	6.09 a.m.	697	212	29.32	744.8	30.10	764.5	25.5	— 3.6	80	2	12	4	3	.....	2	4	4	.....	8321	13391		6	1.25	31.8
Duluth	N. 46 48	W. 92 06	5.52 a.m.	672	205	29.40	746.7	30.18	766.6	14.2	— 9.9	88	2	12	2	1	.....	1	.....	9	4	4219	6790		5	0.55	14.0
Upper Miss. val.																											
Saint Paul	N. 44 58	W. 93 03	5.48 a.m.	831	253	29.19	741.4	30.12	765.0	21.6	— 5.8	82	4	8	4	.....	.....	5	5	1	4	4908	7898		6	0.33	8.4
La Crosse	N. 43 49	W. 91 15	5.55 a.m.	744	227	29.33	745.0	30.15	765.8	23.9	— 4.5	84	9	6	1	.....	4	6	.....	4	1	6469	10411		7	0.26	6.6
Davenport	N. 41 30	W. 90 38	5.58 a.m.	615	187	29.42	747.3	30.10	764.5	29.1	— 1.6	79	5	9	1	3	.....	3	4	6	.....	6365	10243		5	0.77	19.6
Des Moines	N. 41 35	W. 93 37	5.46 a.m.	866	264	29.18	741.2	30.14	765.5	29.7	— 1.3	80	12	3	2	3	3	2	2	4	.....	6158	9910		5	1.79	45.5
Dubuque	N. 42 30	W. 90 44	5.57 a.m.	665	203	29.38	746.2	30.11	764.8	25.9	— 3.4	78	5	4	1	.....	2	7	.....	4	8	3277	5274		5	1.80	45.7
Keokuk	N. 40 22	W. 91 26	5.54 a.m.	618	188	29.43	747.5	30.11	764 8	32.5	0.3	84	7	5	4	1	3	3	3	3	2	7015	11289		5	0.76	19.3
Cairo	N. 37 00	W. 89 10	6.04 a.m.	359	109	29.70	754.4	30.07	763.8	41.9	5.5	74	10	3	3	4	1	3	2	5	.....	7045	11338		6	2.18	55.4
Springfield	N. 39 48	W. 89 39	6.02 a.m.	644	196	29.40	746.7	30.08	764.0	35.1	1.7	72	5	6	4	3	1	5	2	4	1	7504	12076		5	1.41	35.8
Saint Louis	N. 38 38	W. 90 12	5.59 a.m.	571	174	29.47	748.5	30.09	764.3	40.0	4.4	67	9	5	1	4	4	2	4	2	.....	7176	11548		5	3.54	89.9

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea Feet.	Metr's	Result of Simultaneous Observations for March, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent.	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
U. STATES—Con.																										
Missouri valley.	° ′	°																								
Leavenworth	N. 39 19	W. 94 57	5.40 a.m.	842	257	29.22	742.2	30.14	765.5	34.4	1.3	73	5	10	.....	.....	7	3	2	3	1	5987	9635	5	1.59	40.4
Omaha	N. 41 16	W. 95 56	5.36 a.m.	1113	339	28.94	735 1	30.16	766.1	31.1	—0.5	78	9	5	2	1	5	5	.....	2	2	5533	8904	5	0.48	12.2
Fort Sully	N. 44 39	W. 100 39	5.17 a.m.	1600	488	28.40	721.3	30.15	765.8	27.8	—2.3	75	2	16	.....	.....	.....	3	4	1	5	7926	12756	6	Inap.	Inap.
Huron	N. 44 21	W. 98 09	5.28 a.m.	1307	398	28.70	729.0	30.18	766.6	23.6	—4.7	82	5	9	.....	.....	.....	10	1	2	4	5997	9651	5	0.64	16.3
Yankton	N. 42 54	W. 97 28	5.30 a.m.	1234	376	28.75	730.2	30.13	765 3	27.5	—2.5	79	5	6	4	2	5	3	3	3	.....	6791	10929	5	0.26	6.6
Lamar	N. 37 32	W. 94 15	5.43 a.m.	1028	313	28.99	736.3	30.11	764 8	37.7	3.2	70	6	1	2	4	2	4	6	6	.....	9191	14791	4	2.63	66.8
Valentine	N. 42 50	W. 100 32	5.18 a.m.	2604	794	27.35	694.7	30.05	763.3	27.8	—2.3	62	4	5	3	5	5	2	3	4	.....	11345	18258	6	0 23	5.8
Moorhead	N. 46 52	W. 96 44	5.33 a.m.	926	282	29.10	739.1	30.18	766.6	16.2	—8.8	78	11	2	.....	1	4	4	.....	3	6	7546	12144	5	0.26	6.6
Saint Vincent	N. 48 56	W. 97 14	5.31 a.m.	804	245	29.26	743.2	30.22	767.6	9.0	-12.8	87	5	7	2	.....	8	2	1	.....	6	6919	11135	5	0.48	12.2
Bismarck	N. 46 47	W. 100 38	5.16 a.m.	1694	. 516	28.27	718.0	30.19	766.8	19.6	—6.9	92	11	2	2	1	1	5	3	2	4	6253	10063	5	0.78	19.8
Fort Buford	N. 48 00	W. 103 56	5.04 a.m.	1854	565	28.00	711.2	30.09	764.3	21.5	—5.8	86	1	5	5	2	7	4	4	3	.....	7999	12873	6	0.12	3.0
Fort Totten	N. 47 57	W. 98 57	5.24 a.m.	1487	453	28.47	723.1	30.19	766.8	12.4	-10.9	85	5	6	2	2	4	6	1	2	3	10882	17512	5	0.56	14.2
Rocky Mount. reg.																										
Ft. Assinnaboine	N. 48 32	W. 109 42	4.41 a.m.	2690	802	27.16	689.9	30.16	766.1	28.2	—2.1	59	1	5	2	15	.....	3	1	4	.....	10015	16117	6	0.07	1.8
Fort Custer	N. 45 42	W. 107 34	4.50 a.m.	3040	927	26.86	682.2	30.19	766.8	31.4	—0.3	81	3	2	3	3	3	3	.....	6	1	5627	9056	6	1.19	30.2
Fort Maginnis	N. 47 12	W. 109 10	4.44 a.m.	4320	1317	25.52	648.2	30.10	764.5	32.7	0.4	62	2	8	9	4	.....	10	.....	.....	6	10339	16639	5	1.19	30.2
Helena	N. 46 34	W. 112 04	4.32 a.m.	4069	1240	25.81	655.6	30.13	765.3	35.4	1.9	77	2	3	11	15	.....	2	.....	.....	.....	7168	11536	6	0.12	3.0
Poplar River	N. 48 08	W 105 10	5.00 a.m.	2002	610	27.89	708.4	30.20	767.1	17.5	—8.1	72	7	2	12	.....	1	.....	1	4	.....	6467	10408	5	0.14	3.6
Deadwood	N. 44 23	W. 103 43	5.05 a.m.	4600	1402	25.36	644.1	30.20	767.1	30.7	—0.7	76	2	4	.....	13	3	4	1	8	.....	4057	6529	4	2.01	51.0
Cheyenne *k*	N. 41 08	W. 104 48	5.01 a.m.	6105	1861	24.01	609 8	30.22	767.6	33.8	1.0	58	1	9	5	2	2	.....	1	.....	.....	5655	9101	2	0.14	3.6
North Platte	N. 41 08	W. 100 45	5.17 a.m.	2841	866	27.13	689.1	30.17	766.3	28.4	—2.0	82	1	9	7	3	4	1	4	2	.....	7275	11708	4	0.22	5.6
Pike's Peak	N. 38 50	W. 105 02	5.01 a.m.	14134	4308	17.72	450.1	30.30	769.6	12.8	-10.7	76	12	12	3	2	.....	.....	.....	1	1	15859	25522	3	2.52	64.0
Concordia	N. 39 35	W. 97 41	5.29 a.m.	1384	422	28.65	727.7	30.16	766.1	33.9	1.1	74	4	5	3	4	2	2	2	4	5	6105*b*	9825*b*	4	0.23	5.8
Denver	N. 39 45	W. 105 00	5.00 a.m.	5294	1614	24.77	629.1	30.14	765.5	35.1	1.7	60	4	3	4	4	14	.....	2	.....	.....	6055	9744	4	0.23	5.8
W. Las Animas	N. 38 04	W. 103 12	5.07 a.m.	3899	1188	26.10	662.9	30.15	765.8	29.6	—1.3	76	4	3	15	2	.....	1	2	2	2	5804	9340	4	0.09	2.3
Dodge City	N. 37 45	W. 100 00	5.20 a.m.	2523	769	27.46	697.5	30.14	765.5	31.8	—0.1	73	8	1	2	1	4	7	2	6	.....	7648	12308	2	0.17	4.3
Fort Elliott	N. 35 30	W. 100 21	5.19 a.m.	2700	823	27.28	692.9	30.14	765.5	38.4	3.6	64	4	13	4	1	3	3	.....	.....	3	10314	16598	3	0.19	4.8
Fort Sill	N. 31 40	W. 98 23	5.27 a.m.	1200	366	28.83	732.3	30.09	764.3	41.9	5.5	67	19	.....	.....	3	5	2	.....	1	1	9753	15696	2	0.60	15.2
Abilene	N. 32 14	W. 99 45	5.21 a.m.	1748	533	28.25	717.5	30.10	764.5	48.5	9.2	54	4	1	1	15	2	.....	1	6	1	10164	16357	4	0.03	0.8
Fort Davis	N. 30 38	W. 103 56	5.04 a.m.	4928	1502	25.23	640 8	30.07	763.8	44.5	6.9	39	1	4	2	8	2	.....	.....	8	6	5809	9348	2	Inap.	Inap.
Fort Stanton	N. 33 30	W. 105 26	4.58 a.m.	6150?	1875?	24.02	610.1	29.99	761.7	29.7	—1.3	68	.....	18	5	1	.....	5	.....	.....	2	6277	10102	2	0.25	0.4
Plateau region.																										
Keeler	N. 36 35	W. 117 50	4.09 a.m.	3622	1104	26.40	670.5	30.03	762.7	47.7	8.7	41	5	1	.....	.....	1	6	8	4	6	3529	5679	1	0.00	0.0
Santa Fé	N. 35 41	W. 105 57	4.56 a.m.	7026	2141	23.31	592.1	30.21	767.3	33.4	0 8	52	9	1	1	1	2	1	4	9	3	2830	4554	2	0.66	16.8
Fort Thomas	N. 33 04	W. 110 02	4.40 a.m.	2710	826	27.29	693.2	30.04	763.0	39.9	4.4	57	2	2	2	1	5	7	4	1	7	2744	4416	1	0.00	0.0
Fort Apache	N. 33 48	W. 109 57	4.40 a.m.	5020	1835	25.11	637.8	30.08	764.0	31.6	—0.2	61	2	2	.....	.....	.....	.....	22	5	.....	5496	8845	1	0.04	1.0
Fort Grant	N. 32 39	W. 109 57	4.40 a.m.	4856	1480	25.27	641.8	30.12	765.0	48.8	9.3	39	8	5	2	1	1	2	7	5	.....	5687	9152	1	Inap.	Inap
Prescott	N. 34 33	W. 112 28	4.30 a.m.	5389	1643	24.78	629.4	30.15	765.8	33.7	0.9	73	2	1	.....	10	2	.....	.....	1	15	4437	7141	2	Inap.	Inap
Yuma	N. 32 45	W. 114 36	4.22 a.m.	141	43	29.85	758.2	29.97	761.2	55.8	13.2	79	6	1	4	4	2	2	5	6	1	4578	7368	1	0.00	0.0
El Paso	N. 31 47	W. 106 30	4.54 a.m.	3764	1147	26.31	668.3	30.08	764.0	45.4	7.4	51	.....	9	2	2	.....	2	6	1	9	3383	5444	0	0.32	8.1
Fort Bridger	N. 41 28	W. 110 30	4.38 a.m.	6643?	2025?	23.58	598.9	30.17	766.3	29.2	—1.6	63	1	4	11	14	.....	.....	.....	.....	1	8320	13390	4	0.33	8.4
Salt Lake City	N. 40 46	W. 111 54	4.33 a.m.	4348	1325	25.73	653.5	30.24	768.1	39.6	4.2	66	3	3	.....	.....	1	12	6	4	2	3933	6329	3	0.35	8.9
Frisco	N. 38 25	W. 113 16	4.27 a.m	6406	1950	23.78	604.0	30.02	762.5	39.5	4.2	49	15	4	1	9	.....	.....	.....	.....	2	7174	11545	2	0.46	11.7
Winnemucca	N. 40 58	W. 117 43	4.09 a.m.	4358	1328	25.72	653.3	30.22	767.6	33.8	1.0	61	.....	.....	.....	14	2	1	1	13	.....	6475	10420	3	0.40	10.2
Montrose	N. 38 30	W. 107 56	4.48 a.m.	5780	1762	24.37	619.0	30.31	769 9	32.4	0.2	62	1	.....	3	1	4	16	5	1	.....	4759	7659	2	0.28	7.1
Fort Bidwell	N. 41 53	W. 120 11	3.59 a.m.	4615	1415	25.46	646.7	30.16	766.1	36.7	2.6	77	1	10	10	9	.....	.....	.....	.....	1	5012	8066	4	0.97	24.6
Boisé City	N. 43 37	W. 116 08	4.16 a.m.	2750	838	27.28	692.9	30.20	767.1	38.8	3.8	78	4	4	5	2	.....	6	2	2	6	3433	5525	6	1.33	33.8
Spokane Falls	N. 46 28	W. 117 05	4.11 a.m.	1909	582	28.02	711.7	30.16	766.1	35.7	2.1	86	1	.....	2	5	9	1	3	6	4	3774	6074	6	2.50	63.5
Walla Walla	N. 46 03	W. 118 18	4.07 a.m.	1018	310	29.00	736.6	30.10	764.5	44.3	6.8	66	.....	1	4	11	7	.....	1	.....	7	5428	8735	6	1.83	46.5
Pacific coast reg'n.																										
Astoria	N. 46 11	W. 123 42	3.45 a.m.	20	6	.....	.....	.....	.....	43.1	6.2	90	.....	.....	.....	14	1	5	5	6	.....	6076	9778	8	16.11	409.2
Fort Canby	N. 46 16	W. 124 04	3.44 a.m.	179	55	29.89	759.2	30.09	764 3	43.4	6.3	92	1	2	2	1	16	8	.....	.....	1	12156	19563	8	14.12	358.6
Olympia	N. 47 03	W. 122 53	3.49 a.m.	36	11	30.05	763.3	30.10	764.5	40.7	4.8	92	5	.....	1	2	16	.....	.....	2	5	3587	5773	6	10.60	269.2
Port Angeles	N. 48 07	W. 123 06	3.46 a.m.	14	4	30.03	762.7	30.05	763.3	36.0	2.2	96	.....	.....	1	.....	29	1	.....	.....	.....	3488	5613	6	3.65	92.7
Tatoosh Id	N. 48 23	W. 124 44	3.41 a.m.	86	26	29.92	760.0	30.02	762.5	42.7	5.9	86	.....	2	3	6	.....	13	7	.....	.....	10331	17430	7	16.36	415.5
Portland	N. 45 32	W. 122 43	3.49 a.m	88	27	30.04	763.0	30.13	765.3	43.8	6.6	86	3	5	.....	1	10	3	.....	1	8	5350	8610	7	8.00	203.2
Roseburg	N. 43 13	W. 123 20	3.47 a.m.	523	159	29.59	751.6	30.16	766.1	42.4	5.8	88	.....	2	4	2	3	1	5	9	5	2726	4387	6	2.38	60.4
Eureka	N. 40 52	W. 123 58	3.43 a.m.	50	18	30.11	764.8	30.13	765.3	44.9	7.2	87	2	2	2	4	1	9	6	1	4	3585	5769	6	2.28	57.9
Red Bluff	N. 40 10	W. 122 15	3.51 a.m.	342	104	29.78	756.4	30.12	765.0	49.5	9.7	74	13	3	2	2	10	.....	.....	.....	1	4384	7055	3	1.13	28.7
Sacramento	N. 38 35	W. 121 30	3.54 a.m.	64	20	30.05	763.3	30.10	764.5	49.5	9.7	83	3	3	.....	3	1	16	3	.....	2	4469	7192	2	0.94	23.9
San Francisco	N. 37 48	W. 122 26	3.50 a.m.	60	18	30.08	764.0	30.13	765.3	49.1	9.5	87	5	2	8	5	1	2	1	.....	7	5887	9474	4	0.84	21.3
Los Angeles	N. 34 03	W. 118 15	4.07 a.m.	339	103	29.72	754.9	30.13	765.3	49.7	9.8	87	4	2	.....	1	.....	1	5	12	6	3823	6152	2	0.29	7.4
San Diego	N. 32 43	W. 117 10	4.12 a.m.	67	20	30.01	762.2	30.05	763.3	51.7	10.9	86	3	1	1	2	2	.....	3	9	10	4250	6840	4	0.02	0.5
Sitka	N. 57 03	W. 135 19	2.59 a.m.	63	19	29.68	753.9	29.78	756.4	30.9	—0.6	77	.....	4	.....	.....	.....	7	7	4	9	7796	12546	7	7.38	187.5
Sub-Series.																										
Colon	N. 9 22	W. 79 55	6.40 a.m.	7	2	29.95	760.7	29.89	759 2	77.0	25.0	.....	26	2	1	.....	.....	.....	2	.....	.....	4834	7780	6	0.40	10.2
Gamboa	N. 9 05	W. 79 42	6.41 a.m.	107	31	29.90	759.4	29.94	760.5	69.3	20.7	92	3	.....	.....	.....	.....	.....	2	2	24	.....	.....	3	0.63	16.0
Naos	N. 8 55	W. 79 32	6.42 a.m.	49	15	29.92	760 0	29.90	759.4	71.8	22.1	86	.....	31	.....	.....	.....	.....	.....	.....	.....	1612	2595	4	0.03	0.8
Paramaribo	N. 5 50	W. 55 13	8.19 a.m.	6	2	30.00	762.0	29.93	760.2	78.7	25.9	85	.....	.....	.....	.....	.....	3	23	5	.....	.....	.....	6	9.74	247.4
Rivas	N. 11 26	W. 85 47	6.17 a.m.	150	46	29.92	760.0	30.08	764.0	74.0	23.3	77	.....	.....	.....	.....	.....	.....	22	9	.....	.....	.....	2	.....	.....
Vera Cruz	N 19 11	W. 96 09	5.35 a.m.	16	5	29.95	760.7	29.97	761.2	.....	.....	.....	8	3	7	1	1	1	.....	.....	10	.....	.....	1	.....	.....
Belize	N. 12 00	W. 83 43	6.25 a.m.	20	6	30.05	763.3	30.06	763.5	81.1	27.3	84	.....	5	2	4	.....	18	.....	2	.....	.....	.....	.....	0.66	16.8

SUMMARY OF OBSERVATIONS TAKEN AT DANISH STATIONS, JANUARY TO MAY, 1886.

JANUARY, 1866.	° ′	° ′																								
Godthaab	N. 64 11	W. 51 46	8.33 a m.	36	11	29.66	753.3	29.75	755.6	10.9	-11.7	90	9	4	.....	1	2	2	5	7	1	.....	.....	9	.....	.....
Ivigtut	N. 61 12	W. 48 00	8.48 a.m	16	5	29.67	753.6	29.73	755.1	20.3	—6.5	.....	3	3	.....	2	.....	6	.....	3	14	.....	.....	8	.....	.....
Jacobshavn	N. 69 13	W. 50 55	8.36 a.m.	43	13	29.79	756.6	29.89	759.2	—4.0	-20.0	.....	1	.....	1	5	5	1	6	.....	12	.....	.....	5	.....	.....
Upernavik	N. 72 47	W. 56 00	8.16 a.m.	39	12	29.80	756.8	29.90	759.4	-11.9	-24.4	.....	3	1	.....	4	.....	1	8	4	10	.....	.....	6	.....	.....
FEBRUARY, 1866.																										
Godthaab	N. 64 11	W. 51 46	8.33 a.m.	36	11	29.52	749.8	29.61	752.1	9.9	-12.3	91*f*	6	4	.....	1	2	1	1	11	2	.....	.....	8	.....	.....
Ivigtut	N. 61 12	W. 48 00	8.48 a.m.	16	5	29.56	750 8	29.72	754.9	20.7	—6.3	.....	7	1	.....	1	2	7	.....	2	8	.....	.....	8	.....	.....
Jacobshavn	N. 69 13	W. 50 55	8.36 a.m.	43	13	29.68	753.9	29.78	756 4	—9.6	-23.1	.....	1	.....	.....	.....	9	3	5	.....	10	.....	.....	3	.....	.....
Upernavik	N. 72 47	W. 56 00	8.16 a.m.	39	12	29.71	754.7	29.81	757.2	-14.4	-25.8	.....	2	.....	.....	4	.....	.....	8	2	12	.....	.....	7	.....	.....
MARCH, 1866.																										
Godthaab	N. 64 11	W. 51 46	8.33 a.m.	36	11	29.56	750.8	29.65	753.1	17.4	—8.1	85*b*	1	2	3	.....	.....	1	4	19	1	.....	.....	5	.....	.....
Ivigtut	N. 61 12	W. 48 00	8.48 a.m.	16	5	29.51	749.5	29.58	751.3	27.7	—2.4	.....	7	.....	.....	.....	.....	1	8	.....	15	.....	.....	7	.....	.....
Jacobshavn	N. 69 13	W. 50 55	8.36 a.m.	43	13	29.75	755.7	29.85	758.2	—7.2	-21.8	.....	3	.....	.....	.....	4	1	2	.....	21	.....	.....	3	.....	.....
Upernavik	N. 72 47	W. 56 00	8.16 a.m.	39	12	29.79	756.7	29.89	759.2	-12.3	-24.6	.....	.....	.....	.....	2	2	.....	14	5	8	.....	.....	6	.....	.....
APRIL, 1866.																										
Godthaab	N. 64 11	W. 51 46	8.33 a.m.	36	11	29.74	755.5	29.83	757.7	22.6	—5.2	82	2	1	.....	.....	5	2	4	12	4	.....	.....	8	.....	.....
Ivigtut	N. 61 12	W. 48 00	8.48 a.m.	16	5	29.76	755.9	29.82	757.4	28.4	—2.0	.....	3	.....	1	.....	2	4	.....	.....	19	.....	.....	8	.....	.....
Jacobshavn	N. 69 13	W. 50 55	8.35 a.m.	43	13	29.86	758.5	29.96	761.0	2.1	-16.6	.....	3	.....	2	2	2	1	.....	.....	21	.....	.....	4	.....	.....
Upernavik	N. 72 47	W. 56 00	8.16 a.m.	39	12	29.89	759.3	29.99	761.7	—2.7	-19.3	.....	2	2	.....	2	1	.....	10	3	10	.....	.....	6	.....	.....
MAY, 1866.																										
Godthaab	N. 64 11	W. 51 46	8.33 a.m.	36	11	29.85	758.2	29.94	760.5	35.4	1.9	88	7	1	.....	1	17	.....	.....	3	2	.....	.....	9	.....	.....
Ivigtut	N. 61 12	W. 48 00	8.48 a.m.	16	5	29.93	760.2	29.99	761.7	42.1	5.6	.....	3	1	1	4	2	4	.....	.....	16	.....	.....	9	.....	.....
Jacobshavn	N. 69 13	W. 50 55	8.36 a.m.	43	13	29.90	759.4	30.00	762.0	30.6	—0.8	.....	6	1	2	.....	3	2	2	.....	15	.....	.....	5	.....	.....
Upernavik	N. 72 47	W. 56 00	8.16 a.m.	39	12	29.96	761.0	30.06	763.5	26.6	—3.0	.....	.....	.....	1	6	1	.....	7	3	13	.....	.....	8	.....	.....

OCEAN SQUARE DATA FOR MARCH, 1887.

Location of Centre of each Square.	Barometer.		Temperature.		Wind Frequency.										Wind force 0–10.
	Inch.	Mill.	Fah.	Cent.	N.	NW.	W.	SW.	S.	SE.	E.	NE.	Calm.	Blank.	
N. 12.5° W. 22.5°															
12.5 27.5															
12.5 32.5															
12.5 37.5	30.00	762.0			1					1	15	14			3.6
12.5 42.5	30.01	762.2			1					3	20	7			4.0
12.5 47.5	30.01	762.2								8	16	7			4.0
12.5 52.5	29.99	701.7								13	15	3			4.1
12.5 57.5															
17.5 22.5															
17.5 27.5															
17.5 32.5															
17.5 37.5	30.07	763.8			4	3		2	1	2	8	11			3.8
17.5 42.5	30.08	764.0			3	2			3	2	16	5			3.6
17.5 47.5	30.08	764.0			5			1	1	6	14	4			4.0
17.5 52.5	30.06	763.5			2				2	8	13	5	1		4.3
17.5 57.5	30.03	762.7				1			3	6	12	9			4.3
22.5 22.5															
22.5 27.5	30.06	763.5			9	2	2	7			3	8			4.0
22.5 32.5	30.07	763.8			5	3	7	1			5	10			4.1
22.5 37.5	30.09	764.3			5	2	5	2	1	1	5	9	1		4.0
22.5 42.5	30.11	764.8			5	4	2	2	2	5	8	2	1		3.5
22.5 47.5	30.11	764.8			2	5	1	4	1	7	8	3			4.0
22.5 52.5	30.11	764.8			1	3	1	4	4	1	10	6	1		4.2
22.5 57.5	30.09	764.3			3	1	2	6	1	4	9	5			4.4
22.5 62.5	30.06	763.5			2	1		5	5	5	5	8			4.2
22.5 67.5															
22.5 72.5															
27.5 22.5	30.02	762.5			9	9	2	8		1		2			3.9
27.5 27.5	30.03	762.7			10	6	7	6				2			4.2
27.5 32.5	30.05	763.3			7	4	9	5			1	5			4.1
27.5 37.5	30.08	764.0			3	6	8	4			1	7	2		3.7
27.5 42.5	30.08	764.0			3	6	2	8	3	2	4	2	1		3.8
27.5 47.5	30.07	763.8			3	5	8	5	3	2	4			1	4.4
27.5 52.5	30.08	764.0			5	8	2	7	3	1	3	2			4.9
27.5 57.5	30.09	764.3			2	6	4	8	3	2	1	5			4.8
27.5 62.5	30.06	763.5			3	4	4	9	2	3	2	4			4.8
27.5 67.5															
27.5 72.5															
27.5 77.5															
32.5 12.5															
32.5 17.5															
32.5 22.5															
32.5 27.5	29.96	761.0			4	6	5	9		1		5	1		4.6
32.5 32.5	29.96	761.0			6	1	9	10		1		2	2		4.7
32.5 37.5	29.96	761.0				6	4	13		1		4	1	2	5.0
32.5 42.5	29.98	761.5			3	7	3	13	2			1		2	5.2
32.5 47.5	29.94	760.5			1	7	5	10	4	1	2			1	5.5
32.5 52.5	29.99	761.7			1	11	4	11	2		1		1		5.4
32.5 57.5	29.99	761.7			4	7	9	10			1				5.5
32.5 62.5															
32.5 67.5															
32.5 72.5															
32.5 77.5															
37.5 12.5															
37.5 17.5															
37.5 22.5															
37.5 27.5															
37.5 32.5	20.85	758.2			3	1	6	12	5	2	1	1			5.5
37.5 37.5	29.83	757.7			1	6	2	13	5			3		1	5.7
37.5 42.5	29.84	757.9			5	7	3	13	3						5.8
37.5 47.5	29.84	757.9			2	10	3	13	3						6.1
37.5 52.5	29.83	757.7			4	8	4	11	3		1				6.3
37.5 57.5	29.82	757.4			4	9	6	10		1	1				6.2
37.5 62.5															
37.5 67.5															
37.5 72.5															
42.5 12.5															
42.5 17.5															
42.5 22.5	29.96	761.0			1	2	1	4	7	6	7	3			5.2
42.5 27.5	29.87	758.7				3	1	5	7	10	3	2			5.3
42.5 32.5	29.78	756.4			2	1	4	6	8	6	2	2			5.6
42.5 37.5	29.72	754.9			4	3	1	10	5	3	4	1			5.8
42.5 42.5	29.68	753.9			5	5	4	7	6	1		2	1		5.5
42.5 47.5	29.71	754.6			6	7	3	9	4	1		1			5.6
42.5 52.5	29.70	754.4			5	8	3	5	6	2		2			5.3
42.5 57.5	29.70	754.4			5	5	9	3	1	3	1	3	1		5.5
42.5 62.5															
42.5 67.5															
47.5 12.5															
47.5 17.5	30.02	762.5				2	1	3	5	10	5	5			5.2
47.5 22.5	29.98	761.5			3	1		2	8	12	2	3			5.2
47.5 27.5	29.91	759.7			1	3	1	4	6	12	2	2			5.5
47.5 32.5	29.80	756.9			3	2		7	6	10	2	1			5.9
47.5 37.5	29.71	754.6				1	4	6	3	11	3	3			5.9
47.5 42.5	29.67	753.6			6	2	3	6	1	6	2	5			5.5
47.5 47.5	29.69	754.1			5	5		7	3	5		6			5.2
52.5 12.5															
52.5 17.5	30.07	763.8			2	4	2	5	7	5	3	3			5.0
52.5 22.5	30.01	762 2			2	3	2	8	4	8	3	1			5.4
52.5 27.5	29.95	760.7			1	3	2	8	5	8	3	1			5.8
52.5 32.5	29.87	758.7				5	1	7	5	10	2			1	6.1
52.5 37.5	29.78	756.4			1	4		5	3	12	1	1		4	6.0
52.5 42.5	29.73	755.1			3	2	2	6	1	8	3	2		4	5.9
52.5 47.5	29.73	755.1			5	2	1	5	1	5	5			7	5.0
57.5 12.5	30.01	762.2			1	5	4	10	4		1	6			5.1
57.5 17.5	30.00	762.0			3	4	4	10	4		2	4			5.1
57.5 22.5	29.95	760.7				4	4	9	4	3	4	2		1	5.3
57.5 27.5	29.89	759.2			1	4	5	9	3	6	2			1	5.6
57.5 32.5	29.88	758.9				5	1	10	3	8	1			4	5.7
57.5 37.5	29.83	757.7			1	4	1	6	4	9		1		6	5.3
57.5 42.5	29.82	757.4			2	2	1	3	2	8		1		12	5.6
57.5 47.5	29.77	756.1			2	3		3	1	3	3	1		15	5.3

OCEAN SQUARES.—The table of ocean square data shows (1) the location of the centres of squares whose sides extend 5° each in latitude and longitude, (2) the monthly mean pressure and temperature of the air, and the mean force and total frequency of the wind at noon, Greenwich mean time, computed for the centre of each square from daily readings as obtained by interpolation between the isobars and isotherms of the daily international simultaneous weather maps.

REVIEW.

INTERNATIONAL METEOROLOGY FOR MARCH, 1887.

[*Pressure expressed in inches and millimetres; temperature in degrees, Fahrenheit and Centigrade; wind-force by scale of* 0–10.]

The following refers to chart ii for the month of March, 1887. This chart continues the series of international charts begun in January, 1877, and exhibits the mean pressure and the prevailing wind-directions over the northern hemisphere, as determined from simultaneous observations taken once each day at 7 a. m., 75th meridian, or noon Greenwich, mean time:

Three areas of low mean pressure, bounded by isobars of 29.70 (754.4), are charted, respectively, over British India, northern Scandinavia and the ocean to the northward, and Newfoundland and the ocean to the eastward to the fortieth meridian. An area of relatively low mean pressure, with values below 29.80 (756.9), occupies the Sea of Okhotsk, and at Sitka, Alaska, a mean reading of 29.78 (756.4) is shown.

The area of highest mean pressure extends over east-central Asia, with maximum 30.40 (772.1) at Nerchinsk. A second area of high mean pressure, with maxima above 30.20 (767.1), appears over the west-central portion of the United States. Two areas of relatively high mean pressure, included within isobars of 30.10 (764.5), occupy, respectively, the north Atlantic Ocean between the twenty-first and twenty-fourth parallels and the fortieth and fifty-sixth meridians, and northern France and the ocean westward to the thirtieth meridian.

Over the North American continent the mean pressure is highest over Utah, Nevada, and Colorado, where it rises to 30.31 (769.9), and lowest over Newfoundland, where it falls to 29.66 (753.4). From the area of barometric maxima northward the pressure decreases to 29.78 (756.4) at Sitka, Alaska. Over the north Atlantic Ocean the highest barometric means are included within two small areas, bounded by isobars of 30.10 (764.5), one of which is situated northeast of the Windward Islands and the other south of the British Isles. The lowest mean readings occupy an area surrounded by the isobar of 29.70 (754.4), which extends south and east from Newfoundland. Over the northern part of the ocean the mean barometer decreases from 29.81 (757.2) at Stykkisholm, Iceland, to 29.65 (753.1) on the north coast of Norway. Over Europe the mean pressure is highest over France, where it rises to 30.12 (765.0) at Lorient, and lowest at Gjæsvær, Norway, where it is 29.65 (753.1). Over Asia there is a gradient of .68 inch between the region of barometric maximum and Nemuro, Japan, and the lowest readings are shown in British India, where they fall to 29.66 (753.4) at Bellary.

As compared with the chart for February, 1887, the following changes in mean pressures are shown: Over the North American continent an area of high pressure has moved southward from the Saskatchewan Valley to the middle plateau of the Rocky Mountains, with a decrease in included mean values of about .10 inch. Over the north Atlantic Ocean the area of high pressure which in February extended from coast to coast has divided and there remain two limited areas of high, one northeast of the West Indies and the other south of the British Isles, within each of which there has been a decided decrease in pressure. The area of low mean pressure which in February extended from the southern extremity of Greenland to the northward of Norway has also divided, the western portion having moved to the vicinity of Newfoundland, with an increase of more than .20 inch in pressure, while over the ocean north of Norway there remains a second area of low pressure within which a corresponding increase in pressure has occurred. Over Europe an area of high pressures has moved westward from Germany and occupies northern France and the ocean south of the British Isles, with a decrease of about .30 inch in barometric values. Over Asia the relative positions of the areas of high and low mean pressures remain unchanged. There has been a decrease of about .10 inch within the area of high, and over the Sea of Okhotsk, while in British India the barometric minimum is nearly .20 inch lower than in February.

Over the North American continent the departures from the normal pressure were small, except in Maine and the Canadian Maritime Provinces, where they were below the normal by from .06 inch at Portland, Me., to .19 inch at Sydney, Cape Breton Island. The largest departures above the normal occurred in the upper lake region and upper Mississippi valley, where they amounted to .13 inch. In Nevada and northern California the mean pressure averaged about .07 inch above the normal. Over the north Atlantic Ocean the mean pressure was about .10 inch above the normal in the vicinity of Iceland and the Färöe Islands; over the West Indies there was a small deficit, while over the Madeira Islands the defect was marked. Over Europe the departures were above the normal, except in Spain, where they averaged .02 inch below. In British India the mean pressure was slightly below the normal. In China and over the Japanese Islands the mean pressure was somewhat below the average for the month.

The accompanying table shows the deviations in pressure and temperature at isolated stations during the month of March, 1887, as compared with the means for ten years:

Stations.	Mean pressure.			Mean temperature.		
	Mar. mean of 10 (1877–'86) years.	Mar., 1887.	Departure.	Mar. mean of 10 (1877–'86) years.	Mar., 1886.	Departure.
				°	°	°
Archangel, Russia	29.76	29.79	+ 0.03	23.5	23.9	+ 0.4
Athens, Greece	29.96	30.02	+ 0.06	58.7	62.1	+ 3.4
Beirut, Turkey in Asia	29.94	29.99	+ 0.05	64.1	63.9	− 0.2
Barnaul, Siberia	30.27	30.20	− 0.07	21.9	25.7	+ 3.8
Bridgetown, Barbadoes	29.94	29.93	− 0.01	81.4	82.3	+ 0.9
Ekaterinburg, Russia	30.01	29.89	− 0.12	26.4	22.8	− 3.6
Funchal, Madeira Islands	30.09	29.93	− 0.16	63.2	64.4	+ 1.2
Gibraltar †	30.04	29.99	− 0.05	61.0	59.7	− 1.3
Havana, Cuba, W. I.	30.02	30.02	normal.	71.2	65.7	− 5.5
Malta, Mediterranean Sea	29.92	29.91	− 0.01	60.6	62.1	+ 1.5
Melbourne, New South Wales	30.04	30.05	+ 0.01	61.7	63.3	+ 1.6
Mauritius, Indian Ocean	29.88	29.83	− 0.05	81.1	79.2	− 1.9
Nassau, Bahamas, W. I.*	30.06	30.07	+ 0.01	72.7	71.4	− 1.3
Nikolaievsk-on-the-Amoor, Asia	.....	.....	.....	8.1	12.7	+ 4.6
Swanbister, Orkneys	29.84	29.99	+ 0.15	40.4	42.5	+ 2.1
San Juan de Puerto Rico, W. I.*	30.01	29.99	− 0.02	75.4	61.6	−13.8
Stykkisholm, Iceland	29.70	29.81	+ 0.11	26.9	29.7	+ 2.8
Thorshavn, Färöe Islands	29.80	29.92	+ 0.12	39.3	40.1	+ 0.8
Tiflis, Russia	29.98	30.04	+ 0.06	51.9	52.2	+ 0.3
Tokio, Japan *	30.02	29.93	− 0.09	42.2	43.9	+ 1.7
Yeniseisk, Siberia	30.26	30.20	− 0.06	21.5	22.6	+ 1.1
Zi-Ka-Wei, China	30.18	30.16	− 0.02	44.3	45.5	+ 1.2

* Means for nine years only. † Barometric means for eight years only.

The following table shows the mean pressure and mean temperature for March, 1887, in the several countries of the eastern hemisphere, and the departures as compared with means determined from observations taken during the last ten years:

Countries.	Mean pressure.			Mean temperature.		
	Mar. mean of 10 (1877–'86) years.	Mar., 1887.	Departure.	Mar. mean of 10 (1877–'86) years.	Mar., 1887.	Departure.
				°	°	°
Austro-Hungary	29.96	30.03	+ 0.07	44.3	41.3	− 3.0
British Isles	29.98	30.09	+ 0.11	45.2	42.5	− 2.7
Denmark	29.93	30.00	+ 0.07	36.3	38.0	+ 1.7
France	30.01	30.17	+ 0.16	51.7	49.2	− 2.5
Germany	30.00	30.05	+ 0.05	41.6	39.1	− 2.5
India *	29.76	29.73	− 0.03	84.6	85.3	+ 0.7
Italy	29.95	29.99	+ 0.04	54.6	55.2	+ 0.6
Japan	.....	29.96	.....	.....	41.0	.....
Norway	29.82	29.86	+ 0.04	35.2	36.0	+ 0.8
Russia	29.92	29.96	+ 0.04	33.5	32.0	− 1.5
Spain*	30.02	30.00	− 0.02	57.1	55.8	− 1.3
Sweden	29.86	29.88	+ 0.02	31.1	34.5	+ 3.4

* Means for nine years only.

In the United States the mean temperature was below the normal in all states bordering on the Lakes and Atlantic Ocean, along the Gulf coast, and in southern Texas; in all other districts the month was warmer than the average March. In Canada the mean temperature was below the normal in Ontario and Quebec, the greatest defect, 3°.9, occurring at Parry Sound; in New Brunswick, Nova Scotia, and at Victoria, B. C., it was slightly above the normal. In Europe the mean temperature was generally below the normal, except in

Italy, Denmark, and Scandinavia, the departures in all districts being small. In British India the month was slightly warmer than the average. At Zi-Ka-Wei, China, and Tokio, Japan, the mean temperature was from one to two degrees above the normal.

Over the North American continent north to west winds prevailed east of the one hundredth meridian, while to the westward of that longitude they were variable. Over the north Atlantic Ocean the wind-directions were governed by the cyclonic and anti-cyclonic areas which appear on the monthly mean chart. Over Europe the winds were mostly from south to west, except in the southwest portion, where they were variable. Over British India they were westerly, except over the extreme southern part, where they were easterly. Over the balance of Asia the winds were dominated by the extensive area of high pressure which occupied the central portion of the continent.

In the United States the precipitation was generally below the normal, except in Washington Territory, Oregon, Idaho, and southern Texas. In Canada the rainfall was deficient, except in New Brunswick and Manitoba, where it was considerably above the average.

TRACKS OF AREAS OF LOW PRESSURE FOR MARCH, 1887.

Chart iii exhibits paths of the principal depressions which appeared in the northern hemisphere during March, 1887. This chart continues the series of international charts begun in November, 1877, and has been prepared from the following data: Chart i for each day of the month, containing the data of simultaneous observations taken once each day at noon, Greenwich mean time; abstracts of ships' logs; special reports, and other miscellaneous data on file at this office.

The paths of the centres of forty-five areas of low pressure are shown, of which, ten are traced over the North American continent; thirteen over the north Atlantic Ocean; twelve over Europe; six over, or in the vicinity of, the Japanese Islands; and four off the Pacific coast of North America near Sitka, Alaska.

The depressions traced over the American continent are described in detail in the MONTHLY WEATHER REVIEW for March, 1887, under the heading "Areas of low pressure."

Of the depressions traced over the north Atlantic Ocean, nine orignated west of the forty-fifth meridian; two first appeared in the vicinity of Iceland or Greenland; one developed over mid-ocean; and one is given a north of east track to the west coast of Portugal. The tracks predominated between Newfoundland and the Azores, where their rate of progression was, in general, slow, and their direction of movement irregular. As a whole, the weather over the north Atlantic during the month was unusually severe west of the thirtieth meridian, this fact being due rather to the frequency of storms than to their exceptional individual strength.

The depressions traced over Europe, while predominating north of the fiftieth parallel, were fairly well distributed over the continent, the central and west-central portions alone being untraversed by their tracks. In number the depressions exceeded the average for the month, and, as a rule, their passage was attended by disturbances of abnormal severity.

The depressions which appeared in the vicinity of the Japanese Islands pursued normal northeast paths, and their passage was unattended by noteworthy features. Of the four depressions which advanced eastward from the Pacific Ocean in the vicinity of Sitka, Alaska, three apparently moved into the Saskatchewan Valley, and one passed northeast towards the valley of the Mackenzie River.

SPECIAL NOTES.

THE GRAVITY CORRECTION.

The gravity correction, reducing all barometer readings to the standard gravity at latitude 45°, has been applied to all observations not so reduced by the observers themselves.

All data referring to force, velocity, or pressure (in pounds per square foot) of the wind, are reduced to the scale of 0-10, and the approximate value is indicated by the number of feathers on the arrow (see below).

MONTHLY SUMMARY OF INTERNATIONAL SIMULTANEOUS METEOROLOGICAL OBSERVATIONS.

The positions of stations (latitude and longitude) are obtained from Keith Johnson's "Index Geographicus," except where more exact information is furnished. The elevations of stations are obtained either from the annual, semi-annual, and monthly publications of the various meteorological bureaus here represented, or from the original forms upon which are entered the daily observations. In the United States series the elevations are computed from the latest surveys, and are carefully revised each month, in order to note any change in the elevation of the barometer-cistern at any station. It is believed for the most part that, throughout the European and other series, the elevations as given represent the height of the barometer-cistern above sea-level; at least this should be the case. The local time, where omitted or not given correctly in the original, is carefully computed at this office. A letter placed opposite the name of a station, or some portion of the data credited thereto, indicates that a certain number of observations are missing, corresponding to the relative position in the English alphabet of the letter so used.

At Astrakhan, Ashurada, and Baku the barometer-cisterns are below sea-level.

INTERNATIONAL CHARTS.

International chart i shows the atmospheric pressure at sea-level in English inches, the isobars being drawn for every two-tenths of an inch.

Arrows show direction of, and fly with, the wind; force is shown as follows:

SYMBOLS.	FORCE.	VELOCITY.	
		MILES PER HOUR.	METRES PER SECOND.
○	0	0	0
	1, 2	0 to 9	0 to 4
	3, 4	9.1 to 22.5	4.1 to 10.1
	5, 6	22.6 to 40.5	10.1 to 18.1
	7, 8	40.6 to 67.5	18.1 to 30.2
	9, 10	67.6 up.	30.2 and over.

International chart ii (monthly mean chart) shows the mean pressure at sea-level in English inches; the mean force and prevailing direction of the wind, as determined from observations taken at noon, Greenwich mean time.

International chart iii shows the tracks of centres of low pressure. The Arabic numerals show the location of the centres of low pressure at noon, Greenwich mean time, of that date.

In the above charts, broken lines indicate that lines so drawn are doubtful.

List of merchant marine steam and sailing vessels from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of March, 1887—Continued.

Name of vessel.	Captain.
UNITED STATES NAVAL—Cont'd.	
U. S. S. Iroquois	Capt. J. C. Watson.
U. S. S. Jamestown	C. J. Nain.
U. S. S. Juniata	G. T. Davis.
U. S. S. Lancaster	S. L. Breese.
U. S. S. Monocacy	Henry Glass.
U. S. S. Monongahela	S. H Baker.
U. S S. Mohican	B. F. Day.
U. S. S. Marion	Merrill Miller.
U. S. S. Omaha	Frank Courtis.
U. S. S. Palos	T. Nelson.
U. S. S. Pensacola	Geo. Dewey.
U. S. S. Pinta	
U. S. S. Portsmouth	Edwin White.
U. S. S. Quinnebaug	C. S. Sperry.
U. S. S. Ranger	F. A. Cook.
U. S. S. Richmond	Robert Boyd.
U. S. S. Saratoga	C. H. Davis.
U. S. S. Tallapoosa	Wm. Whitehead.
U. S. S. Vandalia	H. L. Howison.
U. S. S. Yantic	F. M. Green.

Name of vessel.	Captain.
BRITISH NAVAL.	
H. M. S. Alexandra	Capt. J. Fellowes, C. B.
H. M. S. Algerine	W. C. C. Forsyth.
H. M. S. Bacchante	A. W. Moore.
H. M. S. Briton	R. M. Lloyd.
H. M. S. Colossus	A. G. Bridge.
H. M. S. Comus	T. J. Jackson.
H. M. S. Constance	S. H. P. Dacres.
H. M. S. Diamond	F. S. Clayton.
H. M. Dockyard, Bermuda	Denniston.
H. M. S. Dragon Fly	J. W. Howling.
H. M. S. Dreadnaught	H. F. Stevenson.
H. M. S. Egeria	P. Aldrich.
H. M. S. Flying Fish	J. P. McLear.
H. M. S. Himalaya	J. E. Stoke.
H. M. S. Icarus	Annesley.
H. M. S. Mariner	J. Dumford.
H. M. S. Minotaur	J. A. Bruce.
H. M. S. Myrmidon	R. F. Hoskyn.
H. M. S. Nelson	A. Lake.
H. M. S. Orion	H. Royse.

Name of vessel.	Captain.
BRITISA NAVAL—Continued.	
H. M. S. Penguin	Capt. Haygarth.
H. M S. Raleigh	B. Watson.
H. M. S Rambler	W. U. Moore.
H. M. S. Rifleman	Prater.
H. M. S. Ruby	W. R. Kennedy.
H. M. S. Superb	C. E. Buckle.
H. M. S. Sylvia	Dawson.
H. M. S. Triumph	H. Rose.
H. M. S. Torquoise	R. Woodward, C. B.
H. M. S. Woodlark	C. W. Burt.
PORTUGESE NAVAL.	
H. P. M. S. Tamega	
H. P. M. S. Yaire	
SWEDISH NAVAL.	
H. S. M. S. Freja	C. Lundgren.

List of foreign stations and observers from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of March. 1887.

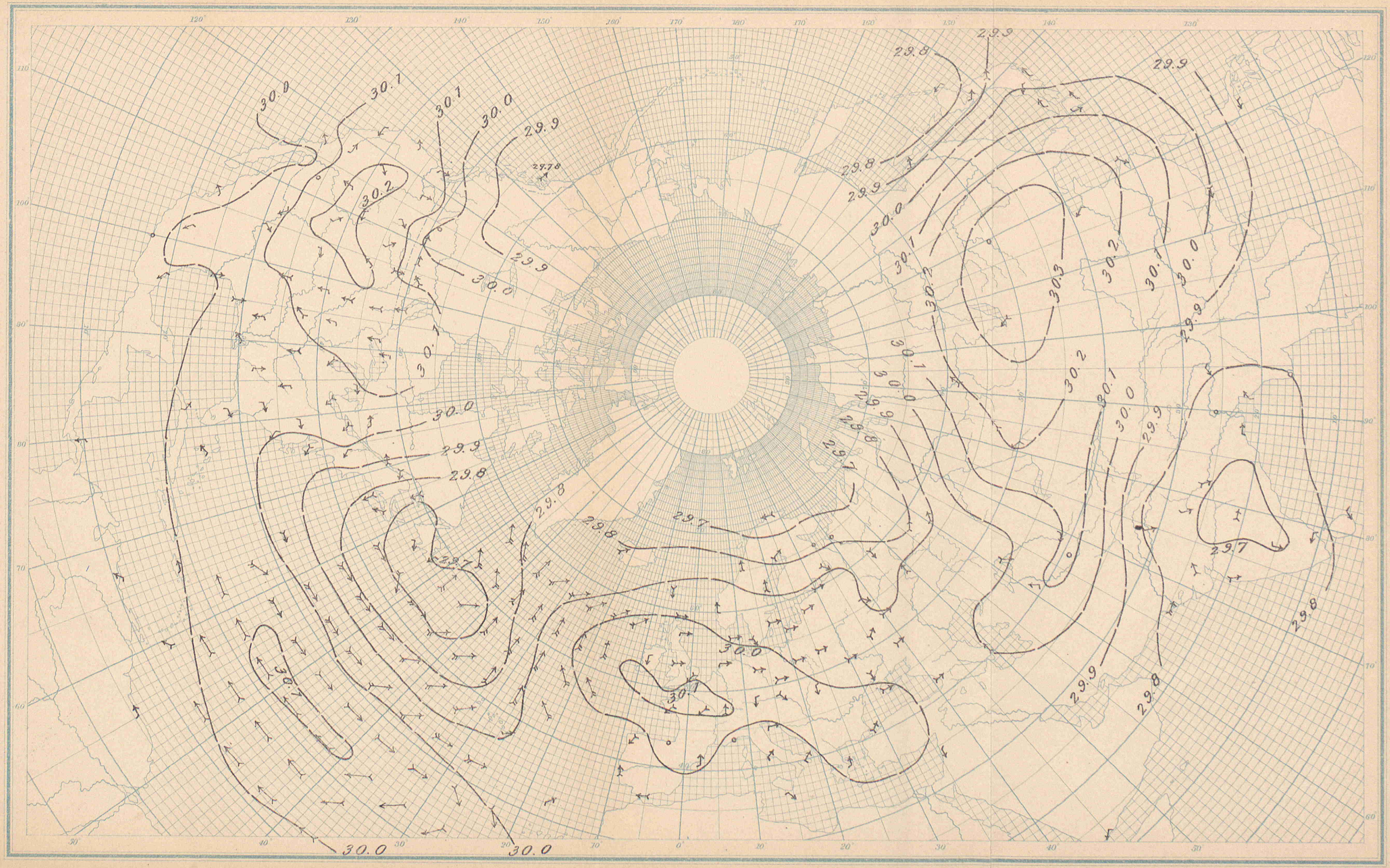
Stations.	Observers
AUSTRALIAN.	
Adelaide, South Australia	C. L. Wragge.
Hobart Town, Tasmania	Com. J. Shortt, R.N.
Melbourne, Victoria	R. L. J. Ellery.
AUSTRO-HUNGARIAN.	
Agram	Prof. Ivan Stozir.
Cracow, I. R. Observatory	Dr. Wierzbiski.
Eperies	Julius Mikolik.
Kremsmunster Observatory	The Staff.
Lemberg	Dr. T. Stanecki.
Pola	Fr. Cœselrohe.
Szathmar	Aloysius Daubner, S. J.
Szegedin	Emerick Markos.
Vienna	I. R. Central Met. Obs'y.
BRAZILIAN.	
Rio de Janeiro Imperial Obs.	Prof. E. Cruls, Director.
BRITISH.	
Aberdeen	W. Boswell.
Bidston, Liverpool Obs'y	John Hartnup.
Bradford, Yorkshire	McLandsborough & Preston.
Bridgetown, Barbadoes, W. I.	G. Beater.
Chatham, School M. E	P. D. P. McHugo, R. E.
Falmouth, Observatory	The Staff.
Fort Napier, Natal	Thomas Murray, M. S. C.
Galway, Queen's College	Wm. Ryan.
Gibraltar, Mediterranean	E. Irvine.
Greenwich, Royal Observatory	The Staff.
Guernsey	A. Collenette, F.R.M.S.
Kew, Observatory	The Staff.
Leicester, Museum	J. C. Smith.
Malta, Mediterranean	R. R. Willan.
Nassau, Bahamas	J. A. Kerr.
Oxford, Radcliffe Observatory	The Staff.
Plymouth	*John Merrifield.*
Swanbister, Orkneys	W. J. Fortesque.
Scutari Cemetery, Turkey	W. H. Lyne.
Stonyhurst, Observatory	Rev. S. J. Perry.
Valencia, Observatory	The Meteorological Office.
Sub-series.	
Gozo, Episcopal Seminary	Rev. Algelo Lo Re, S.J., Dir.
Penang	F. K. Hampshire,
CANADIAN.	
Bathurst, N. B	Miss Andrews.
Bird Rocks	T. Turbide.
Calgarry	H. C. Cayley.
Chatham, N. B	G. A. Blair.
Cornwall, Ontario	W. D. Johnston, B. A.
Dalhousie, N. B	H. A. Johnson.
Father Point, Quebec	J. McWilliams.
Fort Garry, Manitoba	T. Warburton.
Fredericton, N. B	Dr. Harrison.
Grand Manan, N. B	*J. Chipman Seeley.*
Halifax, N S	A. Allison.
Hamilton, Ontario	T. S. Campbell, B. A.
Kingston, Ontario	A. P. Knight, M. A.
Little Glace Bay, N. S	C. H. Rigby, C.E.
London, Ontario	E. B. Reed.
Medicine Hat, N. W. T	John Ewart.
Minnedosa, N. W. T	Rev. J. M. Wellwood.
Montreal, Quebec	C. H. McLeod, C. E.
Ottawa, Ontario	A. McGill, M. A.
Parry Sound, Ontario	Rev. R. Mosley.
Peterborough, Ontario	J. H. Long.
Port Arthur, Ontario	W. P. Cooke.
Port Dover, Ontario	H. Morgan.
Port Stanley, Ontario	M. Payne.
Qu' Appelle, N. W. T	Leslie Gordon.
Quebec, Quebec	Captain Ashe, R. N.
Rockliffe, Ontario	W. H. McIntyre.
St. Andrews, N. B	S. T. Gove, M. D.
St. John, N. B	G. Hutchinson.
Saint Pierre, N. F	The Commandant.
Saugeen, Ontario	W. K. Stewart.
Southwest Point of Anticosti	
Stratford, Ontario	W. McBride, M. A.
Swift Current	W. G. Knight.
Sydney, C. B	T. C. Hill, C. E.
Toronto, Ontario	Magnetic Observatory.
Woodstock, Ontario	*Prof. N. Wolverton, M. A.*
Yarmouth, N. S	J. E. Murphy.
Sub-series.	
Saint Johns, N. F	J. Higgins.
CHINESE.	
Hong Kong Observatory	The Staff.
Sub-series.	
Zi-Ka-Wei, near Shanghai	M. Marc Dechevrens, S. J.
DANISH.	
Copenhagen	*Oversergent Fischer.*
Faröe	Overlœrer Lauridsen.
Stykkisholm	A. O. Thorlacius.
Thorshavn	Overloever Bergh.
Vestervig	Loerer Oesterbol.
FRENCH.	
Agen, Normal School	M. Bousquet, Director.
Alençon, Normal School	M. Nicot, Director.
Arras, Normal School	M. Sion, Director.
Avignon, Normal School	M. Girard, Director.
Bar-sur-Seine	M. Saillard, Director.
Beauvais, Normal School	M. Mutelet.
Besançon, Normal School	M. Gobin, Director.
Bordeaux, Observatory	M. Rayet, Director.
Bourges, Normal School	M. Bourgoine, Director.
Brest, Naval Observatory	M. de Kermaree, Director.
Caen, Normal School	*M. Berson, Director.*
Châlons-sur-Marne, N. School	M. Mathieu, Director.
Charleville, Normal School	*M. Noël, Director.*
Clermont-Ferrand, Obs'y	M. Hurion, Director.
Cluny, Normal School	M. de Villemontée, Director.

Stations.	Observers.
FRENCH—*Continued.*	
Commercy, Normal School	M. Vaissade, Director.
Gap, Normal School	M. Poussel, Director.
Greasque, du Rhone	M. Kina, Director.
Guéret, Normal School	M. Delorme, Director.
Lescar, Normal School	M. Lefevre, Director.
Lorient, Naval Observatory	Lt. T. Carré, Director.
Lyon, St. Genis-Laval	M. André, Director.
Mans, Normal School	M. Thériot, Director.
Marseille, Observatory	M. Stephan, Director.
Montlouis	M. Cave for Dr. Fines.
Montpellier, Normal School	M. Galzin, Director.
Mont Ventoux	M. Blanc.
Nancy, Normal School	M. Hasse, Director.
Nantes, Observatory	M. Larocque, Director.
Nice, Normal School	M. Cantier.
Perpignan, Observatory	Dr. Fines, Director.
Pic-du-Midi, Summit	M. Vaussenat, Director.
Privas, Normal School	M. Curely, Director.
Puy de Dôme Obs'y, Summit	M. Hurion, Director.
Rochefort, Naval Observatory	Lt. E. Decante, Director.
Roche-sur-Yon, N. School	M. Brotier, Director.
Rodez, Normal School	M. Seger, Director.
Rouen, Normal School	M. Vieillot, Director.
Saint Brience	M. Richard.
Saint Maur, Observatory	M. Renon, Director.
Toulouse, Observatory	M. Baillaud, Director.
Tours	M. Letellier.
Sub-series.	
St. Martin du Hinx	M. Carlier, Director.
GERMAN.	
Ansbach	Prof. Jüdt.
Bamberg	Prof. Dr. Hoh.
Berlin	Meteorological Institute.
Breslau	Royal University Obs'y.
Carlsruhe	Albert Senz.
Cassel	Dr. H. Möhl.
Frankfort-on-the-Main	Physical Society.
Friedrichshafen	Wilhelm, Chief Tel.
Hamburg	Carl H. Seeman.
Kiel	Prof. Dr. G. Karsten.
Leipsic, Astronomical Obs'y	H. Leppig, Assistant.
Memel	Issermann.
Munich	Dr. C. Lang.
Neufahrwasser	A. Lothes.
Neustadt, Palatinate	Prof. Dicknether.
Stuttgart	Dr. L. Meyer.
Wustrow	Profs. Brandes & Reimer.
GREEK.	
Athens	Kokkides & Wourlisch.
INDIAN.	
Kurrachee	
Decsa	
Bombay	
Poona	
Belgaum	
Lahore	
Roorkee	
Agra	
Nagpur	
Jubulpore	
Lucknow	
Allahabad	
Patna	
Hazaribagh	
Cuttack	
Calcutta	
Chittagong	
Dhubri	
Sibsagar	
Jeypore	
Bellary	
Trichinopoly	
ITALIAN.	
Udine	Prof. Giovanni Clodig.
Milan	Prof. G. V. Schiapparelli.
Padua	Prof. Dott. Lorenzoni.
Moncalieri	Prof. P. F. Denza.
Genoa	Prof. G. M. Garibaldi.
Cuneo	
Pesaro	Prof. Luigi Guidi.
Florence	Prof. Constantino Pittei.
Leghorn	Prof. P. Monte.
Rome	Prof. P. Tacchini.
Cosenza	Prof. D. Conti.
Syracuse	Sig. V. Giuliano.
ITALIAN SUB-SERIES	
Stelvio	Prof. P. F. Denza.
Valdobbia	Prof. P. F. Denza.
JAPANESE.	
Akita	S. Hattori.
Awomori	K. Ogawa.
Erimo	T. Sato.
Fushiki	N. Tokuda.
Erimo	T. Sato.
Gifu	R. Ikuchi.
Hakodate	T. Wakayama.
Hamamatsu	Sakigawa and Miyake.
Hiroshima	Y. Okamoto.
Kanazawa	S. Kuriyama.
Kagoshima	G. Miyanohara.
Kioto	M. Negishi.
Kochi	K. Kusunose.
Miasaka	T. Ishitain & T. Saki.
Miyako	K. Suwa & K. Ishie.
Nagasaki	K. Yamasaki and M. Chin.
Nemuro	M. Itabashi.
Niigata	M. Morita and C. Tomikawa.

Stations.	Observers.
JAPANESE—*Continued.*	
Nobiru	R. Zuchi and T. Saito.
Numadzu	R. Kaneda.
Osaka	H. Omura.
Sakai	K. Yamawchi & P. Yoshimura
Shimonoseki	S. Nagasuye.
Tokei	The Staff.
Wakayama	K. Sakai.
MAURITIUS.	
Mauritius R. A. Observatory	The Staff.
MEXICAN.	
Leon	Prof. M. Leal & Espana.
Mazatlan	C. Carmina.
Mexico	The Staff.
Zacatecas	J. A. Bonilla, M. E.
NETHERLANDS.	
Flushing	
Groningen	
Helder	
Hellevoetsluis	
Utrecht	G. F. C. Zaalberg.
NORWEGIAN.	
Bergen	
Brono	
Christiania	
Gjæsvær	
PORTUGUESE.	
Funchal, Madeira	Capt. D. A. de Cunha.
Lisbon, Observatory	The Staff.
Ponta Delgada, Azores	
St. Vincent, Cape Verd	
Serra da Estrella	
RUSSIAN.	
Archangel	Capt. Sseliwerstow.
Baku	
Barnaul	Meteorological Office.
Dorpat	Blumbach.
Ekaterinburg	Meteorological Observatory.
Elisavetgrad	
Irkutsk	*Ed. Stelling.*
Kasalinsk	Butkewitsch.
Kasan	Observatory.
Kem	M. Kosnobr.
Kertch	E. M. Zacmsipeyz.
Kieff	Observatory.
Korostishev	
Koslov	
Ligov	R. I. Ssaweljew, Engineer.
Liban	*E. Quaas.*
Lugan	Meteorological Observatory.
Moscow	Meteorological Observatory.
Nerchinsk	
Nikolaiev	Capt. Kurdakow.
Nikolaievsk-on-the Amoor	Schobberg.
Nikolsk	Nadeshdin.
Perm	
Petro-Alexandrovsk	Walther.
Petrozavodsk	*Dr. Bergmann.*
Pinsk	
Poti	
St. Petersburg	Central Physical Observatory.
Samarkand	Dresch.
Sevastopol	Colonobr.
Semipalatinsk	Major Lasarew.
Taskkend Laboratory	Teich, A. M.
Tiflis	Physical Observatory.
Troitskosavsk	
Viatka	
Warsaw	Astronomical Observatory.
Yeniseisk	Wishnewzky.
Sub-series.	
Petrowsky Academy	Bachmetieff.
SCOTCH.	
Leith	J. Bolam & Geo. Redpath.
SPANISH.	
Barcelona Met. Observatory	B. Jolia.
Bilbao, Met. Observatory	Tomas Eschriche.
Burgos, Met. Observatory	Domingo Martin.
Madrid, Royal Observatory	The Staff.
Santiago, Met. Observatory	R. Gil Villanueva, Director.
Sub-series.	
Havana, Cuba	Benito Viñes, S. J.
Manilla, Philippine Islands	*F. Faura, S. J.*
San Fernando, Naval Obs'y	Capt. C. Pujazon, R. N.
San Juan de Porto Rico, W. I.	*Enrique Gadea, Ch'f Eng'r.*
SWEDISH.	
Haparanda	
Umea	
Hernosand	
Stockholm	
Wisby	
Sub-series.	
Upsala	Nils. Ekholm.
SWISS.	
Geneva	Observatory.
TURKISH.	
Constantinople	The Observatory.
Valona	A. Bertrand.
Sub-series.	
Beirut, Lee Obs'y, Syria	R. H. West, B. A., Director.
UNITED STATES SUB-SERIES.	
Colon	Pellegrin.
Gamboa	Lutnywich.
Noas	Barzelay.
Paramaribo, D. Guiana, S. A.	Dr. C. J. Hering.
Rivas, Nicaragua, C. A	Earl Flint, M. D.
Vera Cruz	Capt. Geo. E. Powell.

Form No. 106 R---1887.

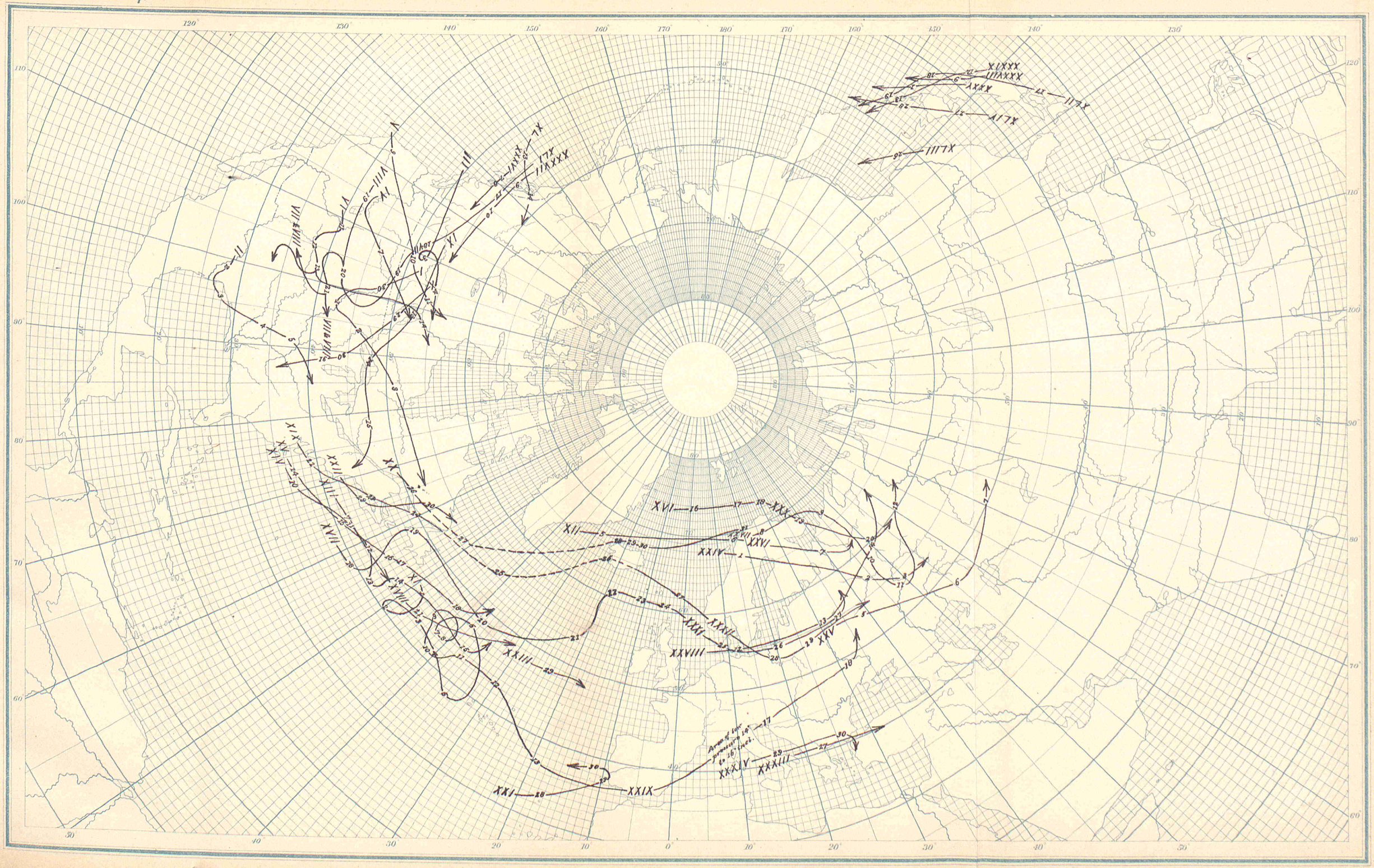
International Chart II. March, 1887. Isobars, Isotherms, and Winds.



Signal Office Lith.

Form No. 106 R---1887.

International Chart III. March, 1887. Tracks of Areas of Low Pressure.



Signal Office Lith.

WAR DEPARTMENT.

OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY OF THE UNITED STATES.

SUMMARY AND REVIEW

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS

FOR THE MONTH OF APRIL, 1887.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

A. W. GREELY,

BRIGADIER GENERAL, CHIEF SIGNAL OFFICER OF THE ARMY.

PRINTED FOR EXCHANGE WITH CO-OPERATING OBSERVERS.

WASHINGTON, D. C

MAY, 1888.

List of merchant marine steam and sailing vessels from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of April, 1887.

Name of vessel.	Captain.
Am. s. s. Acapulco	Capt. Chas C. Lima.
Br. Ada Peard	Nath'l Hocken.
Adriatic	H. Parsell.
Am. Advanee	James Lord.
Br. Ailsa	J. W. Sanson.
Am. Alamo	S. Risk.
Alameda	G. H. Morse.
Alaska	Geo. S. Murray.
Alexandria	D. Pert.
Ger. Aller	H. Christoffers.
Am. Alliance	J. R. Beers.
Alsatia	J. Brown.
Alvena	MacKay.
Alvo	D. Williams.
Ger. Amalfi	Julius Bahr.
America	H. Hineke.
Nor. Amicitia	P. M. Reimers.
Br. Ambrose	Edward Bisson.
Andes	T. M. McKnight.
Angerton	S. M. Orr.
Arabic	G. Burton.
Arizona	S. Brooks.
Athos	H. Low.
Aurania	W. H. P. Hains.
Auretta	G.W.Read, F.R.G.S.
Ger. Australia	G. Franck.
Baltic	H. Davinson.
Br. Basil	Henry Thompson.
Bassano	W. Rea.
Bavarian	J. Oscinak.
Belg. Belgenland	W. A. Beynon.
Br. Benalder	J. Ross.
Ben Ledi	S. A. Adamson.
Bessel	C. J. Watson.
Bernard	Ch. Offi. S. Richards.
Bolivia	Capt. J. J. Small.
Borderer	F. Manley.
Bothnia	T. Dutton.
Britannic	H. Perry.
British Crown	Archibald Smith.
British King	John Kelly.
British Prince	Samuel Nowell.
British Princess	E H. Freeth.
British Queen	R. Wills.
Brooklyn City	W. Fitt.
Ger. Brutus	J. A. Voge.
Br. Buffalo	J. H. Malet.
Bulgarian	E. Parry.
Ger. California	O. Winkler.
Br. Canada	Thos. Foote.
Catalonia	E. Wylie.
Celtic	P. J. Irving.
Cephalonia	Henry Walker.
Fr. Chateau Leoville	M. L. Chapelain.
Chateau Yquem	C. Journiel.
Br. Chicago	J. W. Jones.
Chigwell	W. Masters.
Chiswick	E. Leighton.
Circassia	A. Campbell.
Am. City of Alexandria	J. W. Reynolds.
City of Augusta	J. W. Catherine.
Br. City of Berlin	Francis S. Land.
City of Chester	A. Lewis.
Am. City of Chester	J. Wallace.
City of Dallas	C. W. Reed.
Br. City of Montreal	R Leitch.
Am. City of New York	Robt. R. Searle.
Br. City of Newcastle	R. Townsend.
Am. City of Para	L. Dexter
City of Peking	H. C. Dearborn.
Br. City of Richmond	A. Redford.
Am. City of Rio de Janeiro	W. B. Seabury.
Am. City of Sydney	D. Friele.
City of Washington	W. M. Rittig.
Br. Clement	Thomas Burley.
Am. Colima	J. M. Caverly.
Columbia	Fred Bolles.
Colorado	J. Daniels.
Br. Counsellor	Wm. Lang.
Critic	W. R. Lord
Cypromene	Alex. Robertson.
Denmark	R. S. Rigby.
Belg. De Ruyter	J. J. Brarens.
Br. Devonia	Hugh Young.
Devonshire	Mate Samuel Winter.
Ger. Donau	Capt. H. Supmer.
Br. Dorian	J. McKeague.
Dorset	Ch. Off. E. Crossman.
Dtch. Edam	Capt. J. H. Taat.
Br. Edith Godden	J. H. Bennett.
Egypt	J. Sumner.
Ger. Eider	P. H. Berdrow.
Elbe	G. Meyer.
Br. El Callao	Jos Schiltz.
Span. Elcano	V. de Ispizua.
Br. Elstow	T. Robertson.
Br. Elysia	W. Baxter.
Ger. Ems	T. Jungst.
Br. England	T. P. Heeley.
Erin	J. Robinson.
Ethiopia	John Wilson.
Etruria	T. Cook.
Euclid	A. Matheson.
Am. Eureka	R. B. Quick.
Nor. Fadrelandet	A. C. Brunn.
Br. Fitzroy	Henry Gibb.
France	A. D. Hadley.
Ger. Fulda	R. Ringk.
Br. Galileo	R. T. Jones.
Gallia	M. Murphy.
Dan. Geiser	C. W. Moeller.
Ger. Gellert	W. Kühlewein.

Name of vessel.	Captain.
Br. s. s. Germanic	Capt. B. Gleadell.
Ger. Gothia	C. Kordell.
It. Gottardo	D. Viola.
Am. Granada	J. L. Lockwood.
Br. Greece	A. J. Jeffrey.
Grecian	C. E. Le Gallais.
Ger. Hammonia	H. F. Schwensen.
Dan. Hekla	A. G. Thomsen.
Br. Helvetia	G. Cochrane.
Holland	W. Tyson.
Humboldt	Jas. Grimes.
Ger. Hungaria	W. Leithauser.
Am. Illinois	G. H. Dodge.
Ger India	M. Hulsen.
It. Independente	P. Pirandello.
Br. Iowa	Samuel Walters.
Dan. Island	W. Skjodt.
Br. Istrian	T. H. Fox.
Italy	W. Pearce.
Belg. Jan Breydal	H. Meyer.
Br. Jerome	Benj. Crimp.
Jersey City	E. Horlor.
John Dixon	L C. Welch.
Kansas	W. Gleig.
Fr. La Bourgogne	E. Franguel.
La Bretagne	M. de Jousselin.
La Champagne	E. Traub.
La Gascogne	Santelli.
La Normandie	G. de Kersabiec.
Br. Lepanto	T. M. Irwin.
Ger. Lessing	H. Behrends,
Am. Light-ship No. 37	Andrew Jackson.
Br. Llandaff City	T. H. Gore.
Lord Clive	P. Urquhart.
Lord O'Neil	James Dunn.
Am. Lorenzo D. Baker	W. F. Wiley.
Br. Ludgate Hill	2d Off. H. Dumaresy.
Madrid	Capt. M. Garson.
Ger. Main	H. Boedeker.
Am. Manhattan	Frank Stevens.
Br. Manitoban	W. Dalziel.
Span. Manuel L. Villaverde	Claudio Perales.
Br. Marengo	Wm. Abbott.
Am. Mariposa	H. M Hayward.
Span. Mexico	M. Carmona.
Ger. Moravia	O. Pezoldt.
Br. Monte Rosa	C. Thomas.
Mozart	T. Sawyer.
Br. Muriel	G. S. Locke
Ger. Neckar	H. Baur.
Belg. Nederland	A. J. Griffin.
Br. Nessmore	John Inch.
Newcomen	
Am. Newport	W. G. Shackford.
Belg. Noordland	H. E. Nickels.
Br. Norseman	E. Maddox.
Oceanic	John Metcalf.
Olbers	Jas. Clark.
Dtch. Oranje Nassau	J. A. LaCrooy.
Am. Oregon	E. Polemann.
Br. Orinoco	J. S Garvin.
Am. Orizaba	John N. Ingalls.
Br. Otranto	W. Rippeth.
Pavonia	A. McKay.
Dtch. P. Caland	F. H. Bonjer.
Belg. Pennland	Rud. Weyer.
Br. Peconic	G. Evans.
Am. Philadelphia	Sam. Hess.
Belg. Pieter de Connick	E. Smit.
Ger. Polaria	Johannes Schade.
Polynesia	A. Kuhn.
Br. Pomona	J. Legoe.
Ponca	W. Bowen.
Pontiac	Ch. Offi. R. Blyth.
Port Phillip	Capt. Geo. Dulling.
Portuense	F. Hews.
Prydain	M. Parry.
Queen	J. Annison.
Republic	P. J Irving.
Ger. Rhaetia	R. Karlowa.
Belg. Rhynland	J. C. Jamison.
Br. Richmond Hill	A. Hyde.
Am. Rio Grande City	J F Lewis.
Roseville	J. Dove.
Dtch. Rotterdam	G. J. Vis.
Ger. Rugia	A. Albers.
Saale	H. Reichter.
Br. Saint Ronans	H. Campbell.
Samaria	B. Watt.
Am. San Blas	T. Chapman.
San José	D S. Austin.
Br. Santiago	R. Potter.
Sarnia	Joseph Gibson.
Scandinavian	John Park.
Dtch. Schiedam	A. Potjer.
Br. Scythia	T. Roberts.
Servia	H. McKay.
Span. Serra	F. de Lanzarraga.
Ger. Slavonia	H Schmidt.
Br. Sorrento	J. T. Rogers, R.N.R.
Spain	W. A. Griffiths.
State of Georgia	G. Moodie.
State of Indiana	A. Ritchie.
State of Nebraska	A. G. Braes.
State of Nevada	J. A. Stewart.
State of Pennsylvania	A. J. A. Mann.
Stockholm City	K. Doyle.
Strathleven	C. W. Pearson.
It. Stura	G. Cafiero.
Ger. Suevia	C. Ludwig.
Br. Surrey	R Griffiths.
Sussex	I. P. O'Callahan.

Name of vessel.	Captain.
Belg. Switzerland	H. Buschmann.
Ger. Taormina	W. M. Franck.
Br. The Queen	John Milligan.
Dan. s. s. Thingvalla	Capt. S. T. H. Laub.
Br. Tower Hill	Lieut. F. Archer, R.N.R.
Toronto	Capt. Jas. McAuley.
Ger. Trave	W. Willigerod.
Br. Umbria	W. McMickan.
Am. Valencia	W. Woodrick.
Vancouver	C. J. Lindall.
Vertumnus	C. E. Cook.
Viola	L. Murray.
Virginian	M. Fitt.
Belg. Waesland	J. Ucberweg.
Ger. Werra	R. Bussius.
Weser	H. Bruns.
Belg. Westernland	Com. W. R. Randle.
Ger. Wieland	Capt. C. Hebich.
Br. Wyoming	C. L. Rigby.
Dtch. Zaandam	H. v. d. Zee.
N. Y. Herald Weather Service.	
Br. s. s. Alene	J. H. Siders.
Alvo	D. Williams.
Belgravia	G. L. Boothly.
Burgandia	L. Dulac.
Am. Caracas	N. M. Hopkins.
Fr. Chateau Lafitte	C. Ollivier
Chateau Marquax	
Am City of Puebla	J. Deakin.
El Monte	J. W. Hawthorne.
El Paso	H. S. Quick.
Knickerbocker	F. Remble.
Lampassas	M. B. Crowell.
Br. Marco Aurelio	H. Bermpohl.
Napier	J. H. Henderson.
Nevada	J. A. R. Cushing.
Am. New Orleans	T. P. C. Halsey.
Niagara	S. F. Bennis.
Br. Portia	Henry Dawson.
Samana	W. Taylor.
Straits of Gibraltar	G. Grigs.
Sailing Vessels.	
Am. bg. Abbie Clifford	D. W. Storer.
bk. Abyssinia	R. H. Hilton.
Br. bgt. Achsah	Alfred M. Shaw.
Adria	J. H. Weldon.
It. bk. Agostino Rombo	Vincenzo Basso.
Angelo di Amore	M. Travega.
Nor. Artemis	E. E. Moe.
Ger. sp. August	G. H. Jaburg.
Am. bkt. Bonny Doon	C. Burgess.
Ger. sp. Carl	T. Husbagen.
Am. schr. C. B. Church	N. A. Anderson.
Br. sp. Chas. S. Whitney	Geo. D. Spicer.
bk. Chidwall	T. C. Watson.
Ger sp. Columbus	B. Sauermilch.
Am schr. Comet	W. A. Aldrich.
Am. bg. Daisy Boynton	C. Harding.
Am. schr. Edward R Emerson	A. H. Child.
Ger. sp. Ellida	T. H. Zinke.
bk. Emilie	W. Siems.
Aus. bk. Errante	A. H. Nicolich.
Am. Essex	G. W. Hall.
It. bk. Est	E. Tassino.
Nor. sp. Ferdinand	H. Lutken.
Am. schr. Florence Rogers	J. S. F. McLeod.
It. bk. Fratelli Laurin	L. Laurin.
Ger. sp. Geestemunde	F. Lente.
Ger. sp. Georg	G. A. Scholtz.
Nor. bk. Grundloven	O. G. Ellingsen.
Dtch. bk. Helena	T. T. Verbeet.
Ger. sp. Hedwig	Th. Minssen.
Am. schr. Henry Waddington	W. H. Megee.
Nor. bk. Hermon	O. Olsen.
Am. sp. Hoogly	William P. Lewis.
Ger. Ida	J. Winter.
Am. Independence	Samuel Pavett.
Nor. bgt. India	B. Jorgenson.
Br. bk. Iodine	Adam Smith.
Am. bk. James S. Stone	C. F. Barstow.
Br. Jane	Thomas England.
Am. bg. Jane Adeline	G. W. Cates.
bkt. Josephine	Chas. Brown.
bk. José E. Moro	Asmus Lenhard.
Br. bk. Katahdin	Chas. W. Seeley.
Ger. Kepler	Atken.
Br. bg. Kenilworth	P. Doig.
Nor. sp. Komander Svend Foyn	J. Bryde.
Am. bg. L. & W. Armstrong	A. Alexander.
Ger. bk. Leocadia	John Stohff.
Am. bg. Lilian	H. T. Schive.
L. Staples	J. P. Stowens.
schr. Maggie Abbott	D. C. McIntosh.
bg. Manson	E. T. Page.
Swed. bk. Maria Margretha	J. E. Fogman.
Br. Mary	Chas. Acocks.
Nor. Orion	A. Mathieson.
Ger. sp. Otto	W. Langen.
Palme	W. Bahls.
Am. bkt. Pearl	John B. Zimmer.
Ger. bk. Pillau	G. Gerlach.
Nor. Qvos	Gunder Olsen.
Am. bkt. Ralph M. Haywood	Joseph Baxter.
Br. bk. Recovery	T. E. Blagden.
Ger. Richard	A. von Seggern.
It. bk. Rosina	Giocomo Tomaselli.
Am. bg. Ruby	A J. von Post.
Br. sp. Sapphire	Geo. M. Murray.

SUMMARY AND REVIEW OF INTERNATIONAL METEOROLOGICAL OBSERVATIONS, APRIL, 1887.

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea.		Result of Simultaneous Observations for April, 1887.																		Average Cloudiness.	Total Precipitation.	
						Mean Barometer.				Mean temperature.		Mean Rel. Humidity.	Wind.													
						Actual		Reduced.					Directions.									Total Movement.				
				Feet.	Metr's	Inch.	Mill.	Inch.	Mill.	Fah.	Cent.		N	NW	W	SW	S	SE	E	NE	C	Miles	Kil.	0–10	Inch.	Mill.
Australian.	° ′	° ′																								
Hobart Town *a*	S. 42 53	E. 147 20	9.00 p.m.	190	58	30.03	762.7	30.24	768.1	53.4	11.9	77	8	4	6	5	3	1	.....	1	1	.....	.....	6	0.77	19.6
Melbourne	S. 37 50	E. 144 58	9.40 p.m.	91	28	30.16	766.1	30.24	768.1	58.9	14.9	81	3	.....	4	2	7	7	3	4	.....	.....	.....	5	4.84	122.9
Austrian.																										
Agram	N. 45 48	E. 15 53	1.04 p.m.	535	163	29.42	747.2	29.99	761.7	59.9	15.5	42	.....	1	1	8	4	6	4	6	.....	.....	.....	5	1.01	25.7
Cracow	N. 50 04	E. 20 00	1.20 p.m.	722	220	29.16	740.6	29.95	760.7	53.2	11.8	56	3	3	6	3	3	3	3	6	.....	.....	.....	6	2.75	69.9
Eperies	N. 48 58	E. 21 15	1.25 p.m.	853	260	29.04	737.6	29.93	760.2	55.8	13.2	63	11	.....	.....	.....	9	.....	.....	.....	10	.....	.....	5	0.23	5.9
Gratz	N. 47 04	E. 15 28	1.02 p.m.	1171	357	28.69	728.6	29.92	760.0	57.7	14.3	45	1	3	1	10	3	6	2	3	1	.....	.....	4	0.28	7.0
Kremsmunster	N. 48 03	E. 14 08	0.57 p.m.	1260	384	28.57	725.6	29.92	760.0	53.8	12.1	63	.....	.....	9	2	.....	1	2	11	5	.....	.....	5	1.52	38.5
Lemberg	N. 49 50	E. 24 00	1.36 p.m.	978	298	28.93	734.8	29.99	761.7	51.8	11.0	59	.....	8	2	3	11	2	.....	4	.....	.....	.....	4	0.75	19.1
Pola	N. 44 52	E. 13 51	0.55 p.m.	105	32	29.84	758.0	29.96	761.0	58.1	14.5	58	.....	2	3	1	4	11	6	3	.....	.....	.....	4	2.08	52.7
Szathmar	N. 47 46	E. 22 53	1.32 p.m.	430	131	29.48	748.7	29.96	761.0	60.1	15.6	48	5	1	8	1	3	6	1	5	.....	.....	.....	4	0.94	24.0
Szegedin	N. 46 15	E. 20 10	1.21 p.m.	315	96	29.54	750.2	29.85	758.2	60.3	15.7	53*a*	1	4	6	1	6	7	1	3	1	.....	.....	6	0.14	3.5
Trieste	N. 45 39	E. 13 46	0.55 p.m.	85	26	29.89	759.3	29.97	761.2	57.4	14.1	55	1	9	6	3	1	.....	5	4	1	.....	.....	6	0.48	12.3
Vienna	N. 48 12	E. 16 22	1.05 p.m.	663	202	29.23	742.4	29.95	760.7	55.9	13.3	47	4	3	7	1	1	12	1	.....	1	.....	.....	5	2.00	50.7
Brazilian.																										
Rio de Janeiro	S. 22 54	W. 43 10	9.07 a.m.	217	66	29.84	758.0	30.02	762.5	74.1	23.4	80	2	8	2	.....	.....	3	1	12	2	.....	.....	6	.....	.....
British.																										
Aberdeen	N. 57 10	W. 2 06	11.52 a.m.	89	27	29.88	758.9	30.00	762.0	45.2	7.3	62	4	5	4	1	1	10	2	3	.....	8567	13787	6	1.89	48.1
Bidston	N. 53 24	W. 3 04	11.48 a.m.	197	60	29.81	757.2	30.05	763.3	46.6	8.1	62	4	1	13	3	2	.....	2	5	.....	.....	.....	6	.....	.....
Bradford *a*	N. 53 48	W. 1 47	11.53 a.m.	366	112	29.60	751.8	30.02	762.5	47.0	8.3	66	2	4	9	1	1	5	1	6	.....	.....	.....	7	0.65	16.5
Bridgetown *o*	N. 13 04	W. 59 37	8.02 a.m.	28	9	29.97	761.2	29.93	760.2	82.7	28.2	58	.....	.....	.....	.....	.....	.....	3	12	.....	.....	.....	4	.....	.....
Chatham	N. 51 25	E. 0 33	0.02 p.m.	160	49	29.84	757.9	30.04	763.0	48.9	9.4	60	3	.....	2	4	1	.....	1	5	14	.....	.....	5	.....	.....
Falmouth	N. 50 09	W. 5 04	11.40 a.m.	183	56	29.84	757.9	30.05	763.3	48.0	8.9	66	3	6	2	6	.....	5	8	.....	.....	.....	.....	6	.....	.....
Galway	N. 53 15	W. 9 03	11.24 a.m.	32	10	29.97	761.2	30.02	762.5	49.1	9.5	76	3	5	.....	9	2	2	1	8	.....	.....	.....	4	2.22	56.4
Greenwich	N. 51 29	0 00	12 m.	159	48	29.82	757.4	30.02	762.5	50.6	10.3	58	6	2	2	7	3	.....	2	8	.....	.....	.....	6	.....	.....
Guernsey	N. 49 27	W. 2 41	11.49 a.m.	275	84	29.71	754.6	30.02	762.5	48.4	9.1	72	3	4	2	5	.....	1	1	14	.....	.....	.....	5	1.60	40.6
Kew	N. 51 28	W. 0 19	11.59 a.m.	34	10	29.97	761.2	30.02	762.5	48.9	9.4	53	10	2	4	5	2	1	.....	6	.....	.....	.....	6	.....	.....
Leicester	N. 52 39	W. 1 08	11.55 a.m.	245	75	29.74	755.4	30.03	762.7	49.3	9.6	57	5	2	2	10	.....	1	.....	10	.....	.....	.....	7	.....	.....
Malta	N. 36 00	E. 14 30	0.58 p.m.	70	21	29.78	756.4	29.83	757.7	61.4	16.3	70	4	7	3	1	.....	9	2	4	.....	.....	.....	5	.....	.....
Nassau *n*	N. 25 04	W. 77 22	6.51 a.m.	44	13	30.05	763.3	30.04	763.0	73.6	23.1	76	1	.....	.....	.....	.....	3	7	4	1	.....	.....	7	.....	.....
Oxford	N. 51 46	W. 1 17	11.55 a.m.	210	64	29.78	756.4	30.04	763.0	48.5	9.2	60	4	4	2	6	2	.....	.....	11	1	.....	.....	6	.....	.....
Plymouth	N. 50 22	W. 4 10	11.43 a.m.	69	21	29.88	758.9	30.03	762.7	50.4	10.2	62	1	4	1	5	6	2	4	7	.....	.....	.....	5	.....	.....
Swanbister	N. 58 55	W. 3 05	11.46 a.m.	72	22	29.84	757.9	29.95	760.7	44.4	6.9	74	5	9	7	3	2	2	2	.....	.....	.....	.....	7	.....	.....
Scutari Cemet'y	N 41 00	E. 29 03	1.56 p.m.	60	18	29.86	758.4	29.91	759.7	54.7	12.6	76	5	.....	.....	8	4	.....	.....	11	2	.....	.....	5	.....	.....
Valencia	N. 51 55	W. 10 18	11.19 a.m.	23	7	30.05	763.3	30.09	764.3	48.9	9.4	64	6	5	4	4	.....	5	2	4	.....	.....	.....	6	.....	.....
Sub-series.																										
Gozo	N. 36 01	E. 14 16	0.57 p.m.	364	111	29.64	753.0	30.01	762.2	61.5	16.4	64	4	7	5	2	6	1	4	1	.....	5482	8228	6	1.77	45.0
Malacca	N. 2 10	E. 102 14	6.49 p.m.	12	4	29.82	757.4	29.75	755.6	79.2	24.2	96	.....	3	10	1	.....	2	11	3	.....	.....	.....	4	5.07	128.8
Penang	N. 5 24	E. 120 20	6.41 p.m.	20	6	29.86	758.4	29.83	757.7	78.6	25.9	84	.....	19	.....	.....	.....	6	.....	5	.....	.....	.....	9	8.77	222.8
Canadian.																										
Bathurst *a*	N. 47 39	W. 65 42	7.37 a.m.	35	11	29.86	758.4	29.91	759.7	30.9	— 0.6	.....	.....	2	3	2	.....	2	4	3	13	.....	.....	7	3.45	86.5
Bird Rocks	N. 47 50	W. 61 10	7.56 a.m.	.....	.....	29.76	755.9	29.89	759.2	29.2	— 1.6	82	9	2	3	6	5	1	3	1	.....	.....	.....	5	2.73	69.3
Calgarry	N. 50 55	W. 114 04	4.24 a.m.	?	?	26.29	667.8	29.95	760.7	29.4	— 1.4	85	3	1	2	.....	1	.....	1	3	19	.....	.....	5	0.22	5.6
Chatham	N. 47 03	W. 65 29	7.38 a.m.	56	17	29.88	758.9	29.94	760.5	28.4	— 2.0	90	2	3	5	.....	.....	2	2	10	6	.....	.....	6	2.79	70.9
Cornwall	N. 45 01	W. 74 43	7.01 a.m.	175	53	29.74	755.4	29.93	760.2	41.9	5.5	73	2	.....	16	3	2	.....	3	4	.....	.....	.....	5	1.25	31.7
Dalhousie *d*	N. 48 04	W. 66 22	7.35 a.m.	45	14	29.93	760.2	29.98	761.5	25.9	— 3.4	.....	.....	.....	10	.....	.....	.....	4	1	11	.....	.....	6	1.47	37.3
Father Point	N. 48 31	W. 68 28	7.26 a.m.	20	6	29.94	760.5	29.97	761.2	29.5	— 1.4	85	1	6	1	1	2	11	2	4	2	.....	.....	7	1.21	30.7
Fort Garry	N. 49 51	W. 97 07	5.32 a.m.	754	230	29.10	739.1	29.97	761.2	27.7	— 2.4	85	10	3	1	5	6	.....	1	5	.....	.....	.....	6	1.14	29.0
Fredericton	N. 45 57	W. 66 38	7.33 a.m.	104	50	29.78	756.4	29.96	761.0	33.6	0.9	60	13	3	.....	1	3	3	1	4	2	6339	10202	5	3.61	91.7
Grand Manan	N. 44 46	W. 66 45	7.33 a.m.	49	15	29.88	758.9	29.93	760.2	30.3	2.4	75	2	1	4	1	2	2	6	12	.....	.....	.....	4	3.21	81.5
Halifax	N. 44 39	W. 63 30	7.46 a.m.	122	37	29.77	756.1	29.91	759.7	35.2	1.8	80	6	4	2	4	3	.....	4	6	1	.....	.....	5	6.39	162.3
Hamilton	N. 43 16	W. 79 53	6.40 a.m.	372	113	29.61	752.1	30.02	762.5	40.5	4.7	74	4	.....	13	4	3	.....	1	5	.....	.....	.....	5	0.87	22.1
Kingston	N. 44 14	W. 76 30	6.54 a.m.	307	94	29.65	753.1	30.00	762.0	32.9	0.5	78	4	10	1	2	1	7	5	.....	.....	.....	.....	6	1.70	43.2
Little Glace Bay	N. 46 12	W. 59 58	8.00 a.m.	34	10	29.77*a*	756.2*a*	29.80*a*	756.9*a*	*a*34.6	*a*1.4	90*a*	5	2	3	4	3	4	4	1	.....	.....	.....	7	.....	.....
London	N. 43 00	W. 81 15	6.35 a.m.	832	254	29.08	738.6	30.00	762.0	36.4	2.4	83	2	2	4	2	5	.....	7	.....	8	6417	10327	6	1.46	37.1
Medicine Hat	N. 50 01	W. 110 37	4.38 a.m.	2136	651	27.57	700.3	29.91	759.7	35.5	1.9	81	2	3	.....	.....	2	1	10	1	11	.....	.....	6	0.63	16.0
Minnedosa	N. 50 13	W. 99 48	5.21 a.m.	1665	501	28.08	713.2	29.96	761.0	26.1	— 3.3	91	3	3	4	2	1	.....	3	5	9	.....	.....	7	0.93	23.6
Montreal	N. 45 31	W. 73 33	7.06 a.m.	187	57	29.77	756.1	29.99	761.7	32.0	0.0	72	4	6	2	2	2	8	6	.....	.....	.....	.....	5	3.02	76.7
Ottawa	N. 45 26	W. 75 41	6.57 a.m.	200	61	29.74	755.4	29.97	761.2	28.9	— 1.7	91	3	5	4	5	.....	2	6	5	1	3624	5832	5	0.93	23.6
Parry Sound	N. 45 19	W. 80 01	6.40 a.m.	635	194	29.26	743.2	29.98	761.5	30.5	— 0.8	86	5	2	12	2	3	1	5	.....	.....	.....	.....	6	1.75	44.4
Peterborough	N. 44 17	W. 78 18	6.47 a.m.	722	220	28.92	734.6	29.74	755.4	34.0	1.1	77	5	3	3	1	3	.....	.....	3	12	.....	.....	5	1.05	26.7
Port Arthur	N. 48 27	W. 89 12	6.03 a.m.	642	196	29.23	742.4	29.98	761.5	27.1	— 2.7	86	5	7	1	1	1	2	2	4	7	.....	.....	5	0.81	20.6
Port Dover	N. 42 47	W. 80 13	6.39 a.m.	635	194	29.29	744.0	30.01	762.2	36.2	2.3	.....	2	3	2	.....	1	8	2	3	9	.....	.....	5	1.45	36.8
Port Stanley	N. 42 40	W. 81 13	6.35 a.m.	592	180	29.33	745.0	30.00	762.0	35.4	1.9	83	2	3	9	2	.....	2	9	2	1	.....	.....	6	1.30	33.0
Qu' Appelle	N. 50 44	W. 103 42	5.05 a.m.	2115	645	27.62	701.5	29.97	761.2	30.8	— 0.7	72	2	1	1	2	2	1	2	4	15	.....	.....	4	0.61	15.5
Quebec	N. 46 48	W. 71 12	7.15 a.m.	293	89	29.66	753.4	29.99	761.7	27.9	— 2.3	77	2	7	.....	1	1	2	6	4	7	.....	.....	4	2.74	69.6
Rockliffe	N. 46 10	W. 77 48	6.49 a.m.	418	127	29.52	749.8	30.00	762.0	27.5	— 2.5	86	.....	.....	7	.....	.....	.....	9	2	12	.....	.....	6	1.79	45.5
Saint Andrews	N. 45 04	W. 67 06	7.32 a.m.	47	14	29.87	758.7	29.92	760.0	32.7	0.4	78	2	3	.....	6	.....	.....	.....	12	7	.....	.....	3	2.87	72.9
Saint John, N.B.	N. 45 17	W. 66 03	7.36 a.m.	116	35	29.81	757.2	29.94	760.5	33.9	1.1	80	4	11	2	1	.....	.....	5	2	5	.....	.....	5	2.66	67.6
Saint Pierre	N. 46 47	W. 56 08	8.15 a.m.	?	?	.....	.....	29.84	757.8	37.4	3.0	.....	.....	8	.....	4	.....	3	3	10	2	.....	.....	.....	4.75	120.6
Saugeen	N. 44 30	W. 81 21	6.35 a.m.	656	200	29.25	742.9	29.99	761.7	34.1	1.2	86	4	.....	4	4	4	7	2	2	3	.....	.....	7	2.33	59.2
S.W. Pt. Anticosti	N. 49 24	W. 63 36	7.46 a.m.	30	9	29.87	758.7	29.90	759.4	29.4	— 1.4	81	8	2	3	5	1	.....	1	4	6	.....	.....	6	2.25	57.1
Stratford	N. 43 23	W. 81 00	6.36 a.m.	1186	361	28.67	728.2	29.98	761.5	34.8	1.6	77	3	4	3	6	1	5	4	.....	4	7125	.....	6	2.10	53.3
Swift Current	N. 50 21	W. 107 33	4.50 a.m.	2439	744	27.28	692.9	29.95	760.7	31.2	— 0.4	86	3	.....	1	4	6	2	2	2	10	.....	.....	5	1.60	40.6
Sydney	N. 46 08	W. 60 10	7.59 a.m.	37	11	29.81	757.2	29.85	758.2	33.6	0.9	83	7	3	1	4	3	4	3	4	1	.....	.....	8	5.75	146.0
Toronto	N. 43 39	W. 79 23	6.42 a.m.	350	107	29.61	752.1	30.01	762.2	35.9	2.2	77	3	10	1	1	1	4	6	4	.....	.....	.....	7	1.61	40.9
Woodstock	N. 43 08	W. 80 47	6.37 a.m.	980	299	28.94	735.1	30.04	763.0	35.9	2.2	82	1	.....	5	4	7	4	.....	6	3	.....	.....	6	1.04	26.4
Yarmouth	N. 43 50	W. 66 02	7.36 a.m.	61	19	29.84	757.9	29.90	759.4	36.5	2.5	76	13	4	2	2	2	1	1	5	.....	.....	.....	4	5.70	144.8
Sub-series.																										
Saint Johns, N.F.	N. 47 34	W. 52 42	8.29 a.m.	159	48	29.67	753.6	29.86	758.4	35.4	1.9	47	5	1	1	3	7	6	.....	7	.....	.....	.....	8	4.66	118.4
Cape Colony																										
Cape St. Francis	S. 34 10	E. 24 50	1.39 p.m.	25	8	30.12	765.0	30.11	764.8	65.7	18.7	86	.....	.....	10	7	1	1	6	2	3	.....	.....	4	5.56	141.2
Chinese.																										
Hong Kong	N. 22 18	E. 114 10	7.37 p.m.	110	34	29.85	758.2	29.91	759.7	68.5	20.3	84	3	4	1	1	2	1	15	3	.....	.....	.....	7	5.62	142.7
Foochow	N. 26 08	E. 119 38	7.59 p.m.	34	10	29.94	760.5	29.92	760.1	64.3	17.9	80	.....	.....	.....	1	.....	11	3	13	2	.....	.....	7	3.29	83.6
Sub-series.																										
South Cape	N. 21 55	E. 121 51	8.04 p.m.	121	37	29.83	757.7	29.90	759.4	72.4	22.4	90	1	2	2	1	.....	.....	.....	20	4	.....	.....	6	1.65	41.9
Zi-Ka-Wei	N. 31 12	E. 121 26	8.06 p.m.	23	7	29.98	761.5	29.96	761.0	56.7	13.7	75	4	1	3	.....	3	13	2	4	.....	.....	.....	5	1.54	39.1
Danish.																										
Copenhagen	N. 55 41	E. 12 36	0.50 p.m.	43	13	29.85	758.1	29.92	760.0	46.2	7.9	67	3	5	6	2	5	5	3	1	.....	.....	.....	6	.....	.....
Fanoe	N. 55 27	E. 8 24	0.34 p.m.	20	6	29.90	759.5	29.95	760.7	44.8	7.1	78	2	6	7	6	4	1	1	2	1	.....	.....	6	.....	.....
Godthaab	N. 64 11	W. 51 46	8.33 a.m.	36	11	29.89	759.2	29.98	761.5	24.8	— 4.0	89	5	1	1	.....	5	4	2	11	1	.....	.....	8	.....	.....
Ivigtut	N. 61 12	W. 48 00	8.48 a.m.	16	5	29.93	760.3	29.99	761.7	33.8	1.0	.....	.....	.....	.....	2	.....	7	.....	.....	22	.....	.....	9	.....	.....
Jacobshavn	N. 69 13	W. 50 55	8.36 a.m.	43	13	29.99	761.7	30.09	764.3	1.9	—16.7	.....	3	1	1	1	4	2	1	.....	17	.....	.....	4	.....	.....

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metrs	Result of Simultaneous Observations for April, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation Inch.	Mill.
DANISH—Con.	° ′	° ′																								
Stykkisholm	N. 65 05	W. 22 46	10.29 a.m.	36	11	29.94	760 5	30.03	762.7	31.6	— 0.2	82	.....	.....	2	2	6	1	5	11	3	.....	.....	6	.....	.....
Thorshavn	N. 62 02	W. 6 44	11.33 a.m.	30	9	29.91	759.7	29.98	761 5	41.9	5.5	71	7	1	9	3	1	1	4	4	.....	.....	.....	6	.....	.....
Upernavik	N. 72 47	W 56 00	8.16 a.m.	39	12	30.14	765.6g	30.24	768.1g	— 4.5	-g20.3	.....	6	2	.....	.....	4	1	4	3	12	.....	.....	4c	.....	.....
Vestervig	N. 56 47	E. 8 20	0.33 p.m.	82	25	29.81	757.2	29.92	760.0	43.9	6.6	75	3	5	6	3	5	3	.....	5	.....	.....	.....	6	.....	.....
FRENCH.																										
Alençon	N. 48 26	E. 0 05	0.00 m.	476	145	29.50	749.4	30.03	762.7	51 3	10.7	63	3	1	.....	7	3	.....	1	15	.....	.....	.....	.....	2.47	62.7
Arras	N 50 18	E. 2 46	0.11 p.m	223	68	29.75	755.7	30.01	762.2	50.9	10.5	60	.....	8	2	7	2	2	2	7	.....	.....	.....	2	2.14	54.3
Avignon	N. 43 57	E. 4 49	0.19 p.m	66	20	29.85	758.2	29.92	760 0	61.2	16.2	53	7	8	.....	7	4	2	2	.....	.....	.....	.....	4	3.27	83.1
Bar-sur-Seine	N. 48 07	E. 4 22	0.17 p.m.	518	158	29.39	746.5	29.95	760.7	54.5	12.5	59	1	.....	7	7	.....	.....	.....	15	.....	.....	.....	6	1.68	42.7
Beauvais	N. 49 26	E. 2 05	0.08 p.m.	269	82	29.62	752.2	29.92	760.0	54.1	12.3	61	8	10	4	2	2	.....	.....	4	.....	.....	.....	4	1.15	29.2
Besançon	N. 47 13	E. 6 02	0.24 p.m.	895	273	29.12	740.0	29.96	761.1	55.2	12.9	55	8	2	.....	3	11	2	2	2	.....	.....	.....	.....	1.91	48.4
Bordeaux	N. 44 50	W. 0 32	11.58 a.m.	243	74	29.69	754.1	29.96	761.0	50.7	10.4	57	5	4	4	4	.....	5	3	5	.....	.....	.....	5	1.70	43.2
Bourges	N. 47 10	E. 2 26	0.10 p.m.	512	156	29.39	746.4	29.94	760 5	56.1	13.4	52	5	1	5	8	2	.....	1	8	.....	.....	.....	5	1.65	41.9
Brest	N. 48 24	W. 4 30	11.42 a.m.	210	64	29.75	755.7	29.99	761.7	52.3	11.3	10	8	.....	2	5	2	1	1	10	1	.....	.....	6	1.61	40.8
Caen	N. 49 11	W. 0 21	11.59 a.m.	69	21	29.86	758.5	29.94	760.5	50.4	10.2	74	6	4	4	1	5	.....	1	9	.....	.....	.....	5	1.04	26.5
Châlons-sur-Marne	N. 48 57	E. 4 21	0.17 p.m.	292	89	29.65	753.0	29.98	761.5	51.3	10.7	69	.....	4	4	5	6	3	1	7	.....	.....	.....	4	1.70	43.3
Charleville	N. 49 46	E. 4 43	0.19 p.m.	476	145	29.44	747.7	29.95	760.7	53.4	11.9	66	6	3	3	6	2	2	6	1	.....	.....	.....	2	2.40	61.0
Clermont-Fer'and	N. 45 46	E. 3 05	0.12 p.m.	1273	388	28.57	725.7	29.92	760.0	54.9	12.7	48	14	4	2	2	2	4	2	.....	.....	.....	.....	6	1.05	26.6
Cluny	N. 46 26	E. 4 39	0.19 p.m.	787	240	29.08	738.6	29.92	760.0	55.9	13.3	54	a1	5	2	4	5	.....	.....	12	.....	.....	.....	4	2.08	52.7
Commercy	N. 48 46	E. 5 35	0.22 p m.	817	249	29.09	738.8	29.98	761.5	52.9	11.6	59	2	2	8	7	2	1	4	4	.....	.....	.....	4	2.30	58.3
Gap	N. 44 33	E. 6 05	0.24 p.m.	2424	739	27.41	696.1	29.91	759.8	55.0	12.8	42	6	1	.....	.....	6	.....	.....	.....	17	.....	.....	.....	1.02	25.9
Gréasque	N. 43 25	E. 5 37	0.22 p.m.	1056	322	28.78	731.0	29.90	759.4	57.7	14.3	53	2	1	2	7	5	4	1	8	.....	.....	.....	5	2.62	66.5
Guéret	N. 46 10	E. 1 52	0.07 p.m.	1532	467	28.32	719.4	29.91	759.6	51.1	10.6	73	1	3	3	5	.....	5	4	9	.....	.....	.....	5	2.04	51.8
Lescar	N. 43 20	W. 0 26	11.58 a.m.	525	160	29.39	746.6	29.95	760.7	58.3	14.6	.....	3	3	15	1	2	2	.....	4	.....	.....	.....	.....	2.26	57.5
Lorient	N. 47 45	W. 3 21	11.47 a.m.	85	26	29.91	759.8	30.00	762.0	53.4	11.9	65	6	1	1	3	5	.....	1	13	.....	.....	.....	4	3.75	95.3
Lyon	N. 45 41	E. 4 47	0.19 p.m.	981	299	28.87	733.3	29.92	760.0	55.2	12.9	52	7	5	.....	.....	11	2	3	2	.....	.....	.....	5	2.17	55.2
Mans	N. 48 00	E. 0 12	0.01 p.m.	285	87	29.67	753.5	29.99	761.7	52.5	11.4	66	4	5	2	6	.....	2	5	6	.....	.....	.....	5	1.49	37.9
Marseille	N. 43 18	E. 5 23	0.22 p.m.	246	75	29.64	752.8	29.91	759.7	60.1	15.6	57	1	4	4	6	4	7	4	.....	.....	.....	.....	.....	2.44	61.9
Montlouis	N. 42 30	E. 2 07	0.08 p.m.	5202	1586	24.72	627.8	29.55	750.6	41.2	5.1	72	6	8	1	6	.....	2	5	2	.....	.....	.....	6	2.54	64.6
Montpellier	N. 43 37	E. 3 53	0.16 p.m.	118	36	29.81	757.1	29.91	759 7	59.5	15.3	66	3	7	.....	1	7	4	1	7	.....	.....	.....	4	5.09	129.3
Mont Ventoux	N. 44 10	E. 5 16	0.21 p.m.	6234	1900	23.74	603.0c	.....	.....	31.8	—c0.1	c79	c4	5	.....	1	10	4	2	1	.....	.....	.....	4c	5.10	129.6
Nancy	N. 48 42	E. 6 11	0.25 p.m.	718	219	29.16	740.6	29.94	760.5	53.6	12.0	55	.....	2	4	5	2	.....	6	11	.....	.....	.....	.....	0.08	1.9
Nantes	N. 47 13	W. 1 33	11.54 a.m.	134	41	29.85	758.1	30.00	762.0	54.0	12.2	57	6	3	1	5	3	1	2	9	.....	.....	.....	6	0.74	18.7
Nice	N. 43 41	E. 7 16	0.29 p.m.	59	18	29.83	757.7	29.80	759.2	59.5	15.3	80	2	.....	4	.....	.....	1	4	.....	19	.....	.....	3	2.44	62.0
Perpignan	N. 42 42	E. 2 53	0.12 p.m.	105	32	29.82	757.3	29.94	760.5	57.9	14.4	55	1	12	1	1	.....	5	4	6	.....	.....	.....	6	3.09	78.4
Pic du Midi (Sum-	N. 42 56	W. 0 08	11.59 a.m.	9380	2859	20.88	530.4	.....	.....	25.7	— 3.5	60	2	3	6	7	.....	.....	5	4	3	.....	.....	3	3.77	95.8
Privas. [mit.)	N. 44 45	E. 4 36	0.18 p.m.	997	304	28.88	733.6	29.94	760.5	58.1	14.5	62	12	.....	3	.....	13	.....	.....	.....	2	.....	.....	.....	3.11	79.0
Puy de Dôme	N. 45 46	E. 2 58	0.12 p.m.	4813	1467	25.17	639 4	.....	.....	34.5	1.4	80	3	1	6	7	3	2	2	6	.....	.....	.....	7	2.83	71.9
Rochefort	N. 45 56	W. 0 58	11.56 a.m.	30	9	29.93	760.3	29.96	761.0	58.6	14.8	55	4	2	2	5	2	3	2	10	.....	.....	.....	6	0.95	24.2
Roche-sur-Yon	N. 46 40	W. 1 26	11.54 a.m.	259	79	29.68	753.8	29.96	761.0	53.8	12.1	63	2	2	2	6	2	3	2	11	.....	.....	.....	5	0.80	20.2
Rodez	N. 44 21	E. 2 34	0.10 p.m.	2050	625	27.78	705.5	29.91	759.8	52.5	11.4	.....	7	10	.....	.....	.....	10	2	3	.....	.....	.....	5	1.37	34.7
Rouen	N. 49 26	E. 1 05	0.04 p.m.	39	12	29.94	760.5	29.99	761.7	52.0	11.1	58	5	3	3	3	1	3	3	9	.....	.....	.....	6	1.69	43.0
Saint Brience	N. 48 37	E. 5 08	0.20 p.m.	348	106	29.61	752.0	30.01	762.2	48.2	9.0	69	6	7	1	2	2	1	1	10	...	.....	.....	4	3.19	81.0
Saint Maur	N. 48 48	E. 2 21	0.09 p.m.	161	49	29.79	756.7	29.99	761.7	53.2	11.8	51	9	1	2	9	.....	1	1	7	.....	.....	.....	.....	1.32	33.6
Toulouse	N. 43 37	E. 1 27	0.06 p.m.	636	194	29.26	743.3	29.94	760.5	56.1	13.4	66	4	9	4	4	.....	7	2	.....	.....	.....	.....	7	3.00	76.3
Tours	N. 47 24	E. 0 41	0.03 p.m.	171	52	29.78	756.4	29.97	761.2	56.5	13.6	55	1	4	3	6	6	.....	4	11	.....	.....	.....	.....	1.91	48.8
Sub-Series.																										
St. Martin du Hinx.	N. 43 35	W. 1 16	11.55 a.m.	131	40	29.83	757.6	29.98	761.5	57.0	13.9	56	4	4	11	1	1	.....	6	3	.....	.....	.....	6	3.52	89.3
GERMAN.																										
Ansbach	N. 45 18	E. 10 36	0.42 p.m.	1358	414	28.48	723.4	29.96	761.0	52.9	11.6	43	2	5	4	5	5	.....	.....	7	2	.....	.....	5	0.71	18.1
Bamberg	N. 49 54	E. 10 54	0.44 p.m.	787	240	29.06	738.2	29.91	759.7	54.7	12.6	48	4	4	3	10	1	4	1	3	.....	.....	.....	5	1.39	35.2
Breslau	N. 51 07	E. 17 02	1.08 p.m.	482	147	29.42	747.3	29.97	761.2	50.7	10.4	52	3	5	7	2	8	2	2	1	.....	.....	.....	7	5.84	148.4
Carlsruhe	N. 49 01	E. 8 25	0.34 p.m.	413	126	29.51	749.5	29.97	761.2	55.9	13.3	46	1	2	2	14	.....	2	1	8	.....	.....	.....	5	1.14	28.9
Cassel	N. 51 19	E 9 28	0.38 p.m.	669	204	29.22	742.3	29.97	761.2	51.6	10.9	54	7	2	5	5	6	.....	.....	5	.....	.....	.....	6	1.52	38.6
Frankfort on M.	N. 50 08	E. 8 41	0.35 p.m.	338	103	29.61	752.0	29.99	761.7	55.6	13.1	42	5	3	6	6	1	2	3	4	.....	.....	.....	5	0.59	15.1
Friedrichshafen	N. 47 39	E. 9 29	0.38 p.m.	1338	408	28.51	724.1	29.92	760.0	53.2	11.8	62	.....	1	3	12	6	.....	1	7	.....	.....	.....	4	1.63	41.4
Hamburg	N. 53 33	E. 9 58	0.40 p.m.	85	26	29.84	757.8	29.94	760.5	49.3	9.6	59	4	7	5	5	1	4	1	3	.....	.....	.....	7	0.78	19.8
Kiel	N. 54 19	E. 10 04	0.40 p.m.	13	4	29.93	760.1	29.96	761.0	42.3	5.7	61	4	6	5	3	5	2	1	4	.....	.....	.....	6	1.54	39 0
Leipsic	N. 51 20	E. 12 24	0.50 p.m.	390	119	29.53	750.1	29.97	761.0	51.8	11.0	55	2	6	6	4	5	2	2	3	.....	.....	.....	6	2.43	61.8
Memel	N. 55 43	E. 21 07	1.24 p.m.	39	12	29.84	757.8	29.91	759.7	45.9	7.7	76	4	12	5	3	3	1	.....	2	.....	.....	.....	6	.....	.....
Munich	N. 48 09	E. 11 34	0.46 p.m.	1732	528	28.10	713.8	29.97	761.2	52.9	11.6	56	2	11	.....	1	2	2	3	9	.....	.....	.....	5	0.96	24.5
Neufahrwasser	N. 54 24	E. 18 40	1.15 p.m.	36	11	29.87	758.6	29.93	760.2	48.6	9.2	67	9	2	7	2	1	2	6	1	.....	.....	.....	7	0.85	21.6
Neustadt	N. 49 21	E. 8 08	0.33 p.m.	479	146	29.43	747.5	29.94	760.5	56.7	13.7	49	3	1	6	2	6	3	1	8	.....	.....	.....	5	0.56	14.3
Stuttgart	N. 48 47	E. 9 11	0.37 p.m.	833	254	29.04	737.5	29.95	760.7	54.9	12.7	46	7	5	2	5	1	1	2	7	.....	.....	.....	6	1.04	26.4
Wustrow	N. 54 21	E. 12 24	0.50 p.m.	23	7	29.88	759.0	29.92	760.0	47.5	8.6	67	6	2	8	3	2	5	.....	4	.....	.....	.....	6	0.87	22.1
GREEK.																										
Athens	N. 37 58	E. 23 44	1.35 p.m.	348	106	29.56	750.8	29.91	759.7	63.3	17.4	60	5	2	.....	8	6	2	3	4	.....	.....	.....	5	1.86	47.3
INDIAN.																										
Kurrachee	N. 24 47	E. 67 04	4.28 p.m.	49	15	29.72	754.8	29.72	754.8	84.4	29.1	64	.....	.....	1	28	1	.....	.....	.....	.....	.....	.....	1	0	.0
Deesa	N. 24 16	E. 72 14	4.49 p.m.	466	142	29.26	743.2	29.66	753.4	101.3	38.5	10	.....	2	4	19	4	.....	1	.....	.....	.....	.....	2	0	0
Bombay	N. 18 54	E. 72 49	4.51 p.m.	37	11	29.75	755.6	29.73	755.1	83.7	28.7	70	.....	16	13	1	.....	.....	.....	.....	.....	.....	.....	1	0.02	0.5
Poona	N. 18 28	E. 74 10	4.57 p.m.	1849	564	27.72	709.2	29.64	752.8	93.9	34.4	21	1	13	11	3	.....	1	.....	1	.....	.....	.....	5	0.10	2.5
Belgaum	N. 15 52	E. 74 42	4.59 p.m.	2524	770	27.25	692.2	29.64	752.9	82.7	28.2	21	c2	.....	5	17	.....	1	1	.....	1	.....	.....	4	2.57	65.3
Lahore	N. 31 34	E. 74 20	4.57 p.m.	702	214	29.00	736.7	29.67	753 6	95.4	35.2	21	4	3	11	2	.....	1	1	3	5	.....	.....	3	0.01	0.2
Roorkee	N. 29 52	E. 77 56	5.12 p.m.	887	270	28.81	731.7	29.64	752.7	92.8	33.8	16	2	8	10	1	.....	1	2	1	5	.....	.....	2	1.02	25.9
Agra	N. 27 10	E. 78 05	5.12 p.m.	555	169	29.15	740.3	29.64	752.9	98.1	36.7	19	6	11	3	1	1	.....	.....	1	7	.....	.....	1	0	0
Nagpur	N. 21 09	E. 79 11	5.17 p.m.	1025	312	28.66	728.0	29.60	751.8	100.2	37.9	18	6	2	2	3	3	6	3	2	3	.....	.....	4	0.30	7.6
Jubbulpore	N. 23 09	E. 79 59	5.20 p.m.	1341	409	28.38	721.0	29.63	752.7	96.2	35.7	15	3	13	2	4	.....	3	1	2	2	.....	.....	3	0	0
Lucknow	N. 26 50	E. 81 00	5.24 p.m.	369	112	29.35	745.4	29.67	753.6	95.5	35.3	24	7	6	1	2	3	4	1	1	5	.....	.....	1	0.02	0.5
Allahabad	N. 25 26	E. 81 52	5.27 p.m.	307	94	29.38	746.2	29.64	752.9	98.4	36.9	18	7	10	3	.....	.....	.....	1	1	8	.....	.....	1	0.19	4.8
Patna	N. 25 37	E. 85 08	5.41 p.m.	183	56	29.52	749.9	29.65	753.1	91.2	32.9	40	2	8	1	.....	1	.....	2	11	5	.....	.....	1	0.13	3.3
Hazaribagh	N. 24 00	E. 85 24	5.42 p.m.	2007	612	27.75	704.9	29.66	753.4	88.6	31.4	19	8	16	.....	1	2	1	2	.....	.....	.....	.....	2	0.27	6.9
Cuttack	N. 20 29	E. 85 54	5.44 p.m.	80	24	29.69	754.2	29.71	754.7	90.2	32.3	62	.....	.....	1	.....	26	1	.....	2	.....	.....	.....	2	0.99	25.2
Calcutta	N. 22 33	E. 88 21	5.53 p.m.	21	6	29.72	754.8	29.69	754.1	87.1	30.6	54	.....	2	1	2	20	3	2	.....	.....	.....	.....	2	0.68	17.3
Dhubri	N. 26 07	E. 89 50	5.59 p.m	115	35	29.64	752.8	29.71	754.7	82.4	28.0	64	.....	.....	1	.....	.....	.....	5	5	19	.....	.....	2	7.22	183.4
Chittagong	N. 22 21	E. 91 50	6.07 p.m.	87	27	29.70	754.4	29.73	755.2	82.9	28.3	74	.....	1	3	18	7	.....	.....	.....	1	.....	.....	2	0.09	2.3
Sibsagar	N. 26 59	E. 94 40	6.19 p.m.	333	101	29.48	748.8	29.77	756.1	77.7	25.4	77	.....	1	.....	5	2	1	.....	18	3	.....	.....	6	6.50	165.1
Jeypore	N. 26 55	E. 75 50	5.03 p.m.	1431	436	28.30	718.9	29.64	752.8	97.7	36.5	13	2	18	6	4	.....	.....	.....	.....	.....	.....	.....	3	0.05	1.3
Bellary	N. 15 09	E. 76 57	5.08 p.m.	1475	449	28.26	717.8	29.62	752.4	96.6	35.9	28	.....	2	5	.....	2	5	11	2	3	.....	.....	5	0	0
Trichinopoly	N. 10 50	E. 78 44	5.15 p.m.	275	84	29.52	749.7	29.72	754.8	93.9	34.4	43	.....	3	.....	.....	1	6	11	7	2	.....	.....	4	2.27	57.7
ITALIAN.																										
Udine	N. 46 04	E. 13 13	0.53 p.m.	381	116	29.49	749.0	29.90	759.4	59.0	15.0	49	.....	3	2	11	2	3	5	2	2	.....	.....	7	1.50	38.2
Milan	N. 45 28	E. 9 11	0.37 p.m.	482	147	29.44	747.8	29.96	760.9	57.9	14.4	53	.....	4	3	4	1	9	6	3	.....	.....	.....	6	4.75	120.7
Padua	N. 45 24	E. 11 53	0.48 p.m.	102	31	29.85	758.2	29.96	760.9	57.0	13.9	54	2	3	1	1	.....	8	12	3	.....	.....	.....	6	2.51	63.7
Moncaliera	N. 45 00	E. 7 41	0.31 p.m.	846	258	29.03	737.3	29.95	760.6	55.8	13.2	54	1	6	2	1	3	6	9	2	.....	.....	.....	6	2.23	56.6
Genoa	N. 44 24	E. 8 55	0.36 p.m.	177	54	29.74	755.4	29.93	760.2	57.6	14.2	60	5	2	.....	3	11	2	3	4	.....	.....	.....	6	3.80	96.6
Cuneo	N. 44 20	E. 7 20	0.30 p.m.	1820	555	.....	.....	29.93	760.1	52.2	11.2	51	1	2	4	2	4	4	5	8	.....	.....	.....	6	2.94	74.8
Pesaro	N. 43 55	E. 12 53	0.52 p.m.	46	14	29.90	759 4	29.95	760.8	55.2	12.9	70	5	.....	.....	.....	1	3	12	9	.....	.....	.....	5	1.74	44.2
Florence	N. 43 46	E. 11 15	0.45 p.m.	240	73	29.66	753.4	29.92	760.0	60.6	15.9	44	6	5	4	6	1	3	1	4	.....	.....	.....	6	1.89	48.0
Leghorn	N. 43 33	E. 10 18	0.41 p.m.	79	24	29.84	757.9	29.92	760.0	59.2	15.1	56	.....	2	10	3	4	2	6	3	.....	.....	.....	6	4.11	104.3
Rome	N. 41 54	E. 12 29	0.50 p.m.	164	50	29.74	755.4	29.91	759.7	62.1	16.7	50	1	3	9	10	3	3	1	.....	.....	.....	.....	6	2.84	72.0
Lecce	N. 40 22	E. 18 12	1.13 p.m.	236	72	29.68	753.9	29.92	760.0	60.8	16.0	58	7	5	1	3	2	6	2	4	.....	.....	.....	5	3.02	76.6
Cosenza	N. 39 19	E. 16 17	1.05 p.m.	840	256	29.03	737.3	29.91	759.7	60.4	15.8	70	.....	1	10	7	4	8	.....	.....	.....	.....	.....	5	1.13	28.8
Sassari	N. 40 43	E. 8 34	12.34 p.m.	735	224	29.10	739.1	29.87	758.7	58.6	14.8	58	1	2	5	1	4	10	2	5	.....	.....	.....	6	2.47	62.7

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for April, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent.	Mean Rel. Humidity	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0–10	Total Precipitation. Inch.	Mill.
ITALIAN—Con.	° ′	° ′																								
Palermo	N. 38 07	E. 13 21	0.53 p.m.	236	72	29.70	754.4	29.93	760.2	62.2	16.8	65	.....	1	2	1	.....	1	1	10	14	.....	.....	6	4.92	125.1
Syracuse	N. 37 03	E. 15 15	1.01 p.m.	72	22	29.89	759.2	29.94	760.5	61.5	16.4	67	5	.....	2	2	3	2	6	10	.....	.....	.....	7	2.64	67.1
Sub-Series.																										
Stelvio	N. 46 32	E 10 25	0.42 p.m	8343	2543	22.03	559.5	.....	.....	29.5	— 1.4	76	1	.....	5	9	1	3	4	7	.....	.....	.....	6	3.88	98.6
Valdobbia	N. 45 47	E. 7 51	0.31 p.m.	8360	2548	22.03	559.6	.....	.....	29.8	— 1.2	64	3	7	4	5	.....	3	2	6	.....	.....	.....	7	.....	.....
JAPANESE.																										
Awomori	N. 40 51	E.140 45	9.23 p.m.	33	10	29.85	758.3	29.87	758.7	41.9	5.5	74	2	3	6	4	9	.....	2	.....	4	d6041	d9720	5	2.41	61.2
Fushiki	N. 36 47	E.137 03	10.05 p.m.	13	4	.....	.....	.....	.....	50.7	10.4	76	2	.....	1	2	4	1	1	4	15	4831	7775	5	3.44	87.4
Gifu	N. 35 27	E.136 46	9.07 p.m.	49	15	29.91	759 6	29.93	760.2	53.7	12.1	71	7	3	3	2	1	4	4	4	2	3118	5018	4	5.34	135.2
Hakodate	N. 41 46	E.140 44	9.23 p.m.	10	3	29.86	758.5	29.86	758.5	41.3	5.2	76	8	1	9	5	1	1	5	.....	.....	9724	15649	6	3.07	78.1
Hamamatsu	N. 34 42	E.137 43	9.11 p.m.	92	28	29.85	758.1	29.91	759.6	54.4	12.5	76	.....	5	12	.....	1	1	3	4	4	4181	6729	5	6.36	161.7
Hiroshima	N. 34 23	E.132 27	8.50 p.m.	15	5	29.95	760.8	29.93	760.2	55.2	12.9	74	15	2	3	4	3	.....	1	2	.....	3999	6436	5	3.52	89.2
Kanazawa	N. 36 33	E.136 40	9.07 p.m.	95	29	29.85	758.1	29.93	760.2	50.5	10.3	77	.....	3	4	1	5	6	6	.....	5	5290	8513	5	5.28	133.3
Kago-hima	N. 31 35	E.130 33	8.42 p.m.	13	4	30.00	762.0	29.98	761.5	56.4	13.6	82	2	1	.....	.....	2	.....	.....	.....	25	1256	2025	5	8.72	221.4
Kioto	N. 35 01	E.135 46	9.03 p.m.	161	49	29.80	756.8	29.95	760.7	51.3	10.7	77	12	6	2	2	1	1	3	3	...	3330	5358	5	5.81	147.2
Kochi	N. 33 33	E.133 34	8.54 p.m.	20	6	29.97	761.2	29.96	761.0	57.8	14.3	79	4	8	4	.....	.....	1	8	3	2	5903	9500	5	11.30	286.9
Miasaki	N. 31 56	E.131 26	8.46 p.m.	26	8	29.98	761.5	29.98	761.5	58.4	14.7	80	3	1	14	1	4	1	3	.....	3	6313	10160	4	5.78	146.8
Miyako	N. 39 38	E.141 59	9.28 p.m.	98	30	29.79	756.7	29.88	758.9	43.9	6.7	76	1	2	13	7	.....	.....	2	1	4	2792	4493	4	4.08	103.5
Nagasaki	N. 32 44	E.129 52	8.39 p.m.	190	58	29.80	756.8	29.98	761.5	56.4	13.5	77	8	7	1	8	1	1	1	.....	3	4304	6926	5	7.39	181.1
Nemuro	N. 43 20	E.145 35	9.42 p.m.	89	27	29.75	755.6	29.84	757.9	35.8	2.1	83	6	.....	4	7	5	2	4	.....	2	8281	13327	5	2.71	68.9
Niigata	N. 37 55	E.139 03	9.16 p.m.	33	10	29.90	759.4	29.91	759.7	48.2	9.0	79	5	.....	5	6	.....	3	2	3	6	5542	8917	5	3.21	81.3
Nobiru	N. 38 23	E.141 11	9 25 p.m.	16	5	29.89	759.2	29.89	759.2	46.2	7.9	82	4	6	5	....	3	1	4	1	6	8348	13435	5	3.55	90.0
Numadzu	N. 35 06	E.138 51	9.15 p.m.	30	9	29.87	758.8	29.87	758 8	55.3	12.9	72	2	1	6	6	2	.....	11	2	.....	6264	10081	6	6.55	166.5
Osakaa	N. 34 42	E.135 30	9.02 p.m.	46	14	29.92	758.0	29.94	760.5	52.7	12.1	71	3	5	3	.....	1	1	1	8	7	5553	8936	4	5.34	135.7
Sakai	N. 35 33	E.133 14	8.53 p.m.	7	2	29.94	760 5	29.92	758.0	51.8	11.0	77	4	4	8	1	5	.....	2	2	4	5995	9648	5	3.44	113.9
Shimonoseki	N. 33 58	E.130 56	8.44 p.m.	164	50	29.82	757.3	29.97	761.2	54.7	12.6	76	1	7	9	1	.....	2	5	2	3	.....	.....	4	3.98	101.0
Tokei	N. 35 41	E.139 46	9.19 p.m.	69	21	29.84	758.0	29.89	759.2	53.5	12.0	77	6	3	1	.....	9	3	3	1	1	6377	10263	6	3.14	70.8
Wakayama	N. 34 14	E.135 09	9.01 p.m.	49	15	29.91	759.7	29.93	760.2	55.6	13 1	70	3	4	1	1	6	.....	1	4	10	2954	4754	5	3.09	78.5
MAURITIUS.																										
Mauritius	S. 20 06	E. 57 33	3.50 p.m.	181	55	29.83	757 7	29.96	761.0	77.3	25.2	71	1	1	.....	.....	.....	4	23	1	.....	.....	.....	5	2.91	73.9
MEXICAN.																										
Guanajuato	N. 21 01	W.101 10	5.15 a.m.	6762	2061	23.68	604.5	29.84	757.9	58.6	14.8	59	1	2	2	6	.....	10	2	7	.....	.....	.....	4	0.12	2.9
Leon	N. 21 07	W.101 36	5.14 a.m.	5902	1799	24.32	617.8	29.92	760.0	56.5	13.6	73	2	23	.....	4	.....	.....	.....	1	.....	.....	.....	4	0.90	22.8
Maza lan	N. 23 12	W.106 17	4.55 a.m.	249	76	29 72	755.0	29.94	760.5	65.2	18.4	88	1	9	.....	.....	.....	4	9	7	.....	.....	.....	1	0.00	0.0
Mexico	N. 19 26	W. 99 00	5.24 a.m.	7490	2283	23.08	586.3	30.07	763.8	52.0	11.1	74	.....	1	.....	.....	.....	.....	.....	.....	29	.....	.....	1	1.67	42.5
Zacatecas	N. 22 47	W.102 26	5.10 a m.	8100	2469	22.55	572.8	30.20	767.1	50.5	10.3	50	.....	1	.....	16	3	9	.....	1	.....	.....	.....	4	0.63	16.0
NETHERLANDS.																										
Flushing	N. 51 24	E. 3 35	0.14 p.m.	0	0	29.93	760.1	29.95	760.7	49.1	9.5	.....	3	1	9	4	3	.....	1	9	.....	.....	.....	.....	1.07	27.2
Gronigen	N. 53 12	E. 6 34	0.26 p.m.	60?	18?	29.92	759.9	30.00	762.0	47.8	8.8	.....	7	1	7	3	.....	2	3	5	2	.....	.....	.....	0.62	15.7
Helder	N. 52 58	E. 4 45	0.19 p.m.	0	0	29.98	761.6	30.00	762.0	44.8	7.1	.....	1	3	3	9	2	.....	1	11	.....	.....	.....	.....	0.34	8.7
Hellevoetsluis	N. 51 49	E. 4 08	0.17 p.m.	0	0	29.99	761.7	30.01	762.2	49.3	9.6	.....	2	2	7	5	1	.....	2	9	2	.....	.....	.....	1.71	43.5
Utrecht	N. 52 05	E. 5 07	0.20 p.m.	43	13	29.95	760.7	30.01	762.2	50.9	10.5	.....	7	2	4	7	3	2	2	3	.....	.....	.....	5	1.50	38.0
NORWEGIAN.																										
Bergen	N. 60 24	E. 5 20	0.21 p.m.	56	17	29.83	757.7	29.93	760.2	42.8	6.0	68	3	10	7	1	4	4	.....	.....	1	.....	.....	6	8.54	216.9
Brono	N. 65 28	E. 12 14	0.49 p.m.	33	10	29.71	754.5	29.79	756.7	39.4	4.1	68	6	4	4	2	6	2	3	.....	3	.....	.....	8	5.42	137.7
Christiania	N. 59 55	E. 10 45	0.43 p.m.	134	41	29.70	754.4	29.85	758.2	46.8	8.2	46	3	4	2	8	4	1	1	3	4	.....	.....	7	1.74	44.3
Gjæsvær	N. 71 07	E. 25 22	1.41 p.m.	23	7	29.57	751.1	29.65	753.1	35.1	1.7	.....	2	1	8	1	.....	9	3	2	4	.....	.....	6	2.55	64.8
PORTUGUESE.																										
Funchal	N. 32 38	W. 16 55	10.52 a.m.	82	25	29.93	760.2	29.98	761.5	65.3	18.5	65	.....	.....	2	14	3	5	3	1	2	.....	.....	7	2.61	66.4
Lisbon	N. 38 42	W. 9 08	11.23 a.m.	312	95	29.65	753.0	29.96	761.0	59.7	15.4	53	6	5	1	9	1	2	.....	6	.....	.....	.....	5	0.72	18.4
Ponta Delgada	N. 37 45	W. 25 41	10.17 a.m.	66	20	29.89	759.3	29.94	760.5	61.7	16.5	74	2	1	1	3	6	2	4	11	.....	.....	.....	4	6.50	165.2
Saint Vincent	N. 16 37	W. 25 02	10.20 a.m.	35	11	30.00	761.9	29.97	761.2	73.9	23.3	74	17	.....	.....	.....	.....	.....	.....	12	1	.....	.....	3	0.39	9.9
Serra da Estrella	N. 40 25	W. 7 35	11.30 a.m.	4728	1441	25.15	638.9	29.97	761.2	42.3	5.7	59	5	.....	7	4	2	2	5	5	.....	.....	.....	5	2.66	67.7
San Salvador	S. 6 17	E. 14 53	1.00 p.m.	1834	559	28.01	711.5	29.76	755.9	80.2	26.8	69	2	1	3	3	2	.....	1	1	17	.....	.....	7	6.14	155.9
RUSSIAN.																										
Archangel	N. 64 33	E. 40 32	2.42 p.m.	16	5	29.79	756.6	29.86	758.4	37.6	3.1	65	.....	5	2	1	.....	5	1	2	14	.....	.....	7	.....	.....
Baku	N. 40 21	E. 49 51	3.19 p.m.	39	12	30.06	763.4	30.01	762.2	53.4	11.9	74	13	2	.....	.....	12	1	.....	.....	2	.....	.....	5	0.02	0.4
Barnaul	N. 53 20	E. 83 47	5.35 p.m.	459?	140?	29.39	746.5	29.92	760.0	42.8	6.0	59	3	1	4	10	1	2	.....	5	4	.....	.....	7	1.40	35.6
Dorpat	N. 58 23	E. 26 43	1.47 p.m.	223	68	29.58	751.4	29.86	758.4	46.0	7.8	64i	2	3	9	6	1	2	4	3	.....	.....	.....	7	1.81	45.9
Ekaterinburg	N. 56 49	E. 60 38	4.03 p.m.	899	274	28.90	734.1	29.93	760.2	41.7	5.4	58	3	2	7	4	1	6	5	1	1	.....	.....	6	0.97	24.6
Elisavetgrad	N. 48 31	E. 32 17	2.09 p.m.	407	124	29.55	750.5	30.01	762.2	52.2	1.2	48	3	5	5	3	2	5	5	2	.....	.....	.....	7	1.01	25.7
Irkutsk	N. 52 17	E.104 16	6.57 p.m.	1610	491	28.32	719.2	30.14	765.5	37.0	2.8	43	1	13	2	1	.....	11	.....	2	.....	.....	.....	7	0.48	12.2
Kasalinsk	N. 45 46	E. 62 07	4.08 p.m.	148	45	29.72	754.8	29.89	759.2	59.0	15.0	43a	4a	8	5	.....	1	3	2	6	.....	.....	.....	6	.....	.....
Kasan	N. 55 47	E. 49 08	3.17 p.m.	230	70	29.64	752.8	29.93	760.3	44.6	7.0	60	1	2	5	4	10	3	3	1	1	.....	.....	6	0.02	0.4
Kem	N. 64 57	E. 34 39	2.19 p.m.	43	13	29.72	754.8	29.81	757.2	37.4	3.0	64	1	6	1	5	2	4	3	3	5	.....	.....	7	0.85	21.5
Kertch	N. 45 21	E. 36 29	2.26 p.m.	20?	6?	29.98	761.6	30.00	762.0	51.1	10.6	68	4	2	.....	.....	11	1	7	5	.....	.....	.....	6	.....	.....
Kischinev	N. 46 59	E. 28 51	1.55 p.m.	361	110	29.62	752.4	30.01	762.2	56.8	13.8	43	6	9	1	2	4	5	2	1	.....	.....	.....	6	0.37	9.4
Korostishev	N. 50 19	E. 29 03	2.05 p.m.	?	?	29.41	746.9	.....	.....	52.7	11.5	49	1	7	6	3	4	5	1	1	2	.....	.....	6	0.70	17.9
Koslov	N. 52 53	E. 40 31	2.42 p.m.	505	154	29.39	746.6	29.97	761.2	45.3	7.4	74	.....	3	3	8	8	4	.....	3	1	.....	.....	6	.....	.....
Lgov	N. 51 38	E 35 17	2.21 p.m.	518	158	29.38	746.2	29.97	761.2	47.1	8.4	67	2	1	3	12	3	.....	2	2	5	.....	.....	8	2.04	51.9
Libau	N. 56 31	E. 21 01	1.24 p.m.	20	6	29.85	758.1	29.90	759.4	43.7	6.5	72	.....	8	4	7	5	2	1	2	1	.....	.....	5	1.85	46.9
Lugan	N. 48 35	E. 39 20	2.37 p.m.	164	50	29.85	758.2	30.04	763.0	52.9	11.6	48	1	1	6	5	5	2	4	6	.....	.....	.....	7	1.26	32.1
Moscow	N. 55 46	E. 37 40	2.31 p.m.	469	143	29.45	748.0	30.01	762.2	46.8	8.2	60	.....	7	1	3	10	1	1	2	5	.....	.....	6	1.07	27.1
Ner chinsk	N. 51 19	E. 119 37	7.58 p.m.	2155?	657?	27.61	701.4	30.06	763.5	31.1	— 0.5	53	3	3	2	.....	.....	1	2	1	18	.....	.....	5	.....	.....
Nikolaiev	N. 46 58	E. 31 58	2.08 p.m.	62	19	29.94	760.5	30.00	762.0	53.8	12.1	49	5	.....	3	3	3	.....	7	4	5	.....	.....	5	1.54	39.1
Nikolaievsk	N. 53 08	E.140 45	9.23 p.m.	82	25	29.66	753.4b	29.76	755.9b	28.8	—1.8a	86a	3a	2	4	.....	.....	7	8	2	3	.....	.....	7a	0.20	05.2
Nikolsk	N. 59 32	E. 45 27	3.02 p.m.	485?	148?	29.30	744.1	29.88	758.9	44.4	6.9	52	3	5	...	3	4	9	1	5	.....	.....	.....	8	1.18	30.1
Perm	N. 58 01	E. 56 16	3.45 p.m.	328?	100?	29.47	748.6	29.87	758.7	42.4	5.8	63	2	3	6	5	1	5	.....	1	7	.....	.....	8	1.22	31.1
Petro-Alexandrovsk	N. 41 28	E. 61 05	4.04 p.m.	328	100	29.65	753.0	29.99	761.7	57.6	14.2	.....	4	4	2	1	4	6	2	6	1	.....	.....	7	.....	.....
Petrozavodsk	N. 61 47	E. 34 23	2.18 p.m.	220?	67?	29.60	751.8	29.88	758.9	39.0	3.9	63	2	5	4	3	1	2	8	5	.....	.....	.....	7	1.61	40.9
Pinsk	N. 52 07	E. 26 06	1.44 p.m.	459?	140?	29.42	747.2	29.95	760.7	52.2	11.2	53	2	8	3	3	2	10	1	1	.....	.....	.....	6	0.72	18.4
Poti	N. 42 09	E. 41 37	2.46 p.m.	26	8	29.96	760.9	29.98	761.5	56.8	13.8	70	...	6	5	6	3	.....	5	.....	5	.....	.....	7	.....	.....
St.Petersburg	N. 59 56	E. 30 16	2.01 p.m.	20	6	29.79	756.6	29.85	758.2	41.7	5.4	63	2	5	10	3	2	5	1	2	.....	.....	.....	6	0.65	16.6
Samarkand	N. 39 39	E. 66 57	4.28 p.m.	2379?	725?	27.50	698.5	29.96	761.0	67.5	19.7	.....	.....	.....	4	.....	1	2	6	.....	17	.....	.....	4	.....	.....
Sevastopola	N. 44 37	E. 33 31	2.14 p.m.	187	57	29.80	757.0	30.00	762.0	55.4	13.0	55	3	2	6	5	6	1	.....	2	4	.....	.....	7	0.78	19.8
Tashkend	N. 41 20	E. 69 18	4.37 p.m.	1607?	490?	28.28	718.4	29.97	761.2	58.8	14.9	40	4	6	5	1	1	1	.....	.....	12	.....	.....	6	.....	.....
Tiflis	N. 41 43	E. 44 47	2.59 p.m.	1342	409	28.56	725.5	29.96	761.0	60.3	15.7	47	1	6	3	.....	3	12	3	.....	2	.....	.....	7	2.65	67.2
Viatka	N. 58 36	E. 49 41	3.19 p.m.	581?	177?	29.21	742.0	29.90	759.4	41.4	5.2	.....	2	6	5	2	7	2	.....	.....	6	.....	.....	6	1.35	34.3
Warsaw	N. 52 13	E. 21 02	1.24 p.m.	390	119	29.48	748.7	29.93	760.2	52.3	11.3	56	4	4	3	6	9	1	.....	1	2	.....	.....	6	0.92	23.4
Yeniseisk	N. 58 27	E. 92 06	6.08 p.m.	276?	84	29.76	755.9	30.10	764.5	37.9	3.3	.....	1	4	4	4	6	1	3	1	6	.....	.....	6	0.91	23.0
Sub-series.																										
Petrowsky Acad'y	N. 55 50	E. 37 33	2.30 p.m.	558	170	29.27	743 4	29.92	760.0	46.0	7.8	51	2	3	7	4	10	1	2	1	.....	.....	.....	6	0.90	22.8
SCOTTISH.																										
Leith	N. 55 59	W. 3 10	11.47 a.m.	70	21	29.88	758.9	29.98	761.5	.....	.....	.....	3a	2	10	2	1	1	6	4	.....	.....	.....	8	1.11	28.2
SPANISH.																										
Barcelona	N. 41 23	E. 2 15	0.09 p.m.	138	42	29.76	755.8	29.90	759.4	56.7	13.7	72	5	.....	1	4	7	3	3	7	.....	.....	.....	5	2.57	65.2
Bilbao	N. 43 15	W. 2 59	11.48 a.m.	52	16	29.90	759.4	29.95	760.7	58.8	14.9	65	4	15	1	1	2	1	1	2	3	1678	2700	7	2.53	64.3
Burgos	N. 42 20	W. 3 46	11.45 a.m.	2821	860	26.98	685.2	29.95	760.7	51.6	10.9	54	4	4	2	4	7	.....	3	6	.....	6593	10510	4	0.92	23.5
Madrid	N. 40 25	W. 3 42	11.45 a.m.	2152	656	27.69	703.4	29.89	759.2	60.1	15.6	41	3	.....	5	7	6	1	1	4	3	7765	12497	4	1.16	29.5
Santiago	N. 42 53	W. 8 28	11.26 a.m.	863	263	29.02	737.2	29.94	760.5	57.9	14.4	59	5	2	1	8	.....	3	2	8	1	7366	11855	8	2.20	55.8
Valencia	N. 39 30	W. 0 20	11.59 a.m.	59	18	30.01	762.2	30.06	763.5	59.7	15.4	68	1	1	1	.....	1	8	1	3	.....	.....	.....	4	2.76	70.0
SPANISH—*Sub.*																										
Havana	N. 23 08	W.82 23	6.30 a.m.	62	19	30.00	761.9	30.01	762.2	70.5	21.4	85	4	.....	.....	1	1	13	8	3	.....	.....	.....	3	2.77	70.4
Manila	N. 39 30	W. 0 20	11.59 p.m.	59	18	29.83	757.7	29.83	757.7	80.7	27.6	80	1	1	.....	4	.....	11	12	.....	1	3673	5909	4	1.07	27.2

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent.	Mean Rel. Humidity	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation Inch.	Mill.
SPANISH—Con.	° ′	° ′																								
San Fernando	N. 36 28	W. 6 13	11.35 a.m.	95	29	29.88	758.9	29.96	761.0	63.0	17.2	65	2	3	13	4	.....	.....	6	.....	2	.....	.....	7	2.89	73.3
San Juan de Porto Rico	N. 18 30	W. 66 10	7.35 a.m.	82	25	29.98	761.6	30.00	762.0	76.6	24.8	77	.....	.....	.....	1	4	6	2	4	13	.....	.....	4	1.93	49.1
SWEDISH.																										
Haparanda	N. 65 47	E. 24 03	1.36 p.m.	30	9	29.69	754.1	29.77	756.1	35.4	1.9	76	8	.....	4	1	9	4	.....	1	3	.....	.....	6	0.72	18.4
Umea	N. 63 50	E. 20 17	1.21 p.m.	39	12	29.69	754.2	29.78	756.4	41.4	5.2	67	4	7	2	3	6	.....	3	5	.....	.....	.....	7	0.97	24.7
Hernosand	N. 62 32	E. 17 57	1.12 p.m.	46	14	29.73	755.1	29.83	757.7	42.1	5.6	63	4	2	5	5	.....	9	.....	1	4	.....	.....	6	1.06	26.8
Stockholm	N. 59 20	E. 18 04	1.12 p.m.	144	44	29.65	753.0	29.85	758.2	45.0	7.2	59	8	1	3	5	4	2	1	4	2	.....	.....	6	1.16	29.6
Wisby	N. 57 39	E. 18 19	1.13 p.m.	52	16	29.78	756.3	29.86	758.4	43.7	6.5	66	2	2	8	6	3	2	.....	7	.....	.....	.....	4	0.80	20.2
Sub-Series.																										
Upsala	N 59 51	E. 17 37	1.10 p.m.	79	24	29.73	755.1	29.85	758.2	45.9	7.7	54	6	4	4	6	3	3	2	2	.....	.....	.....	6	1.13	28.6
SWISS.																										
Geneva	N. 46 12	E 6 08	0.25 p m.	1338	408	28.52	724.3	29.95	760.7	52.3	11.3	53	18	.....	5	1	3	.....	1	2	.....	.....	.....	6	1.38	35.0
TURKISH.																										
Constantinople	N 41 02	E. 28 59	1.56 p.m.	246	75	29.70	754.4	29.96	760.9	57.4	14.1	59	8	.....	.....	13	.....	.....	....	6	3	.....	.....	5	3.04	77.1
Valona	N. 40 27	E. 19 27	1.18 p.m.	105	32	29.93	760.2	30.03	762.7	62.6	17.0	.....	.....	13	....	9	2	5	.....	.....	1	.....	.....	3	2.68	68.0
Sub-Series.																										
Beirut	N. 33 54	E. 35 28	2.22 p.m.	112	34	29.78	756.4	29.87	758.7	70.5	21.4	63	9	2	6	7	1	.....	.....	2	3	.....	.....	6	0.35	8.9
UNITED STATES.																										
Atlantic states.																										
Eastport	N. 44 54	W. 66 59	7.32 a.m.	53	16	29.88	758.9	29.91	760.5	35.1	1.7	73	8	9	3	.....	2	1	4	3	.....	9242	14873	5	2.92	74.2
Portland	N. 43 39	W. 70 15	7.19 a.m.	99	30	29.85	758.2	29.96	761.0	37.2	2.9	65	7	9	4	3	1	2	1	2	1	6311	10156	5	4.96	126.0
Manchester	N. 43 13	W. 73 03	7.14 a.m.	.....	.....	29.72	754.9	.....	.....	36.9	2.7	72	7	12	6	.....	2	.....	2	1	.....	5137	8267	5	2.54	64.5
Mt. Washington	N. 44 16	W. 71 18	7.15 a.m.	6279	1914	23.55	598.2	30.00	762.0	17.8	— 7.9	90	4	14	3	3	1	2	1	2	.....	.....	.....	4	5.17	131.3
Northfield	N. 44 08	W. 72 42	7.09 a.m.	871	266	29.04	737.6	30.03	762.7	29.8	— 1.2	74	5	1	1	3	16	.....	1	1	2	6253	10063	5	3.37	85.6
Boston	N. 42 21	W. 71 04	7.16 a.m.	124	38	29.85	758.2	29.97	761.2	40.8	4.9	66	4	7	9	1	2	1	2	4	.....	9315	14975	6	2.62	66.6
Nantucket	N. 41 14	W. 70 07	7.20 a.m.	14	4	29.97	761.2	29.97	761.2	40.9	4.9	78	2	2	9	3	.....	2	2	10	.....	8575	13800	5	6.23	158.2
Block Id	N. 41 10	W. 71 36	7.14 a.m.	27	8	29.95	760.7	29.97	761.2	40.5	4.7	82	3	7	5	3	2	.....	1	9	.....	12232	19685	5	3.49	88.6
New Haven	N. 41 18	W. 72 56	7.08 a.m.	107	33	29.89	759.2	30.00	762.0	39.4	4.1	66	5	4	3	3	4	1	.....	9	1	6476	10422	7	2.75	69.8
New London	N. 41 21	W. 72 05	7.12 a.m.	47	14	29.94	760.5	29.98	761.5	41.5	5.3	75	8	.....	3	1	1	.....	3	3	11	4302	6923	6	3.63	92.2
Albany	N. 42 39	W. 73 45	7.05 a.m.	85	26	29.95	760.7	30.04	763.0	38.4	3.6	75	7	6	4	1	7	2	.....	2	1	5066	8153	5	2.49	63.2
New York City	N. 40 43	W. 74 00	7.04 a.m.	158	48	29.85	758.2	30.01	762.2	43.4	6.3	61	4	10	1	5	1	1	1	7	.....	6067	9704	5	3.67	93.2
Philadelphia	N. 39 57	W. 75 09	7.00 a.m.	117	36	29.94	760.5	30.04	763.0	43.4	6.3	67	3	8	4	2	5	...	2	6	.....	8447	13594	6	2.00	50.8
Atlantic City	N. 39 22	W. 74 25	7.03 a.m.	13	4	30.04	763.0	30.04	763.0	43.7	6.5	86	1	10	4	5	.....	1	3	6	.....	7033	11318	4	2.85	72.4
Baltimore	N. 39 18	W. 76 37	6.54 a.m.	45	14	30.01	762.2	30.04	763.0	45.9	7.7	69	5	8	3	2	6	2	1	3	....	4963	7987	5	2.44	62.0
Washington City	N. 38 54	W. 77 03	6.52 a.m.	106	32	29.96	761.0	30.06	763.5	45.3	7.4	74	4	6	2	5	3	2	4	3	1	4984	8021	5	3.24	82.3
Chincoteague	N. 37 55	W. 75 23	6.59 a.m.	8	2	30.04	763.0	30.03	762.7	46.5	8.1	82	.....	7	5	6	3	4	1	4	.....	9953	16018	5	3.34	84.8
Lynchburg	N. 37 25	W. 79 09	6.44 a.m.	652	199	29.38	746.2	30.06	763.5	46.6	8.1	76	.....	5	2	7	3	1	.....	4	8	2882	4638	5	3.29	83.6
Norfolk	N. 36 51	W. 76 17	6.55 a.m.	30	9	30.06	763.5	30.07	763.8	48.7	9.3	77	6	4	1	5	1	1	6	4	2	5439	8753	5	3.37	85.6
Hatteras	N. 35 15	W. 75 40	6.58 a.m.	11	3	30.08	764.0	30.07	763.8	55.1	12.8	82	5	4	5	5	3	.....	.....	8	.....	11666	18774	5	2.71	68.8
Wilmington	N. 34 14	W. 77 57	6.48 a.m.	52	16	30.03	762.7	30.06	763.5	54.3	12.4	78	2	3	6	2	5	1	2	5	4	6029	9703	3	3.96	100.6
Raleigh	N. 35 48	W. 78 29	6.39 a.m.	432	132	29.63	752.6	30.10	764.5	49.8	9.9	72	10	5	7	1	4	1	1	1	.....	5586	8900	4	2.10	53.3
Charlotte	N. 35 13	W. 80 51	6.37 a.m.	808	246	29.24	742.7	30.07	763.8	50.9	10.5	77	3	2	2	6	3	2	5	6	1	4284	6894	4	1.84	46.7
Charleston	N. 32 47	W. 79 56	6.40 a.m.	52	16	30.05	763.3	30.07	763.8	58.0	14.4	84	4	2	6	7	.....	.....	4	4	3	6783	10916	2	3.53	89.7
Augusta	N. 33 28	W. 81 54	6.32 a.m.	183	56	29.93	760.2	30.09	764.3	52.9	11.6	83	3	3	8	2	6	1	3	4	.....	2985	4804	3	2.77	70.4
Savannah	N. 32 05	W. 81 05	6.36 a.m.	87	27	30.02	762.5	30.08	764.0	57.6	14.2	79	4	4	5	6	3	2	.....	6	.....	6298	10136	2	2.06	52.3
Jacksonville	N. 30 20	W. 81 39	6.34 a.m.	43	13	30.06	763.5	30.07	763.8	62.2	16.8	85	1	.....	4	6	3	.....	2	5	9	5173	8325	3	4.15	105.4
Cedar Keys	N. 29 08	W. 83 02	6.28 a.m.	22	7	30.08	764.0	30.06	763.5	63.7	17.6	80	4	1	2	3	.....	5	5	9	1	7545	12142	4	6.63	168.4
Key West	N. 24 34	W. 81 49	6.33 a.m.	22	7	30.06	763.5	30.03	762.7	72.7	22.6	82	3	1	1	1	3	5	8	7	1	7570	12182	5	0.78	19.8
Sanford	N. 28 48	W. 81 23	6.35 a.m.	25	8	30.06	763.5	30.05	763.3	64.8	18.2	84	3	2	6	2	6	2	3	5	1	5782	9305	3	3.19	81.0
Gulf states.																										
Atlanta	N. 33 45	W. 84 23	6.23 a.m.	1129	344	28.92	734.6	30.08	764.0	53.6	12.0	66	1	9	5	4	2	4	5	.....	.....	7913	12734	3	1.38	35.1
Pensacola	N. 30 25	W. 87 13	6.11 a.m.	30	9	30.07	763.8	30.06	763.5	60.8	16.0	81	9	3	4	1	2	2	1	7	1	5428	8735	4	0.95	24.1
Mobile	N. 30 41	W. 88 02	6.08 a.m.	35	11	30.07	763.8	30.07	763.8	58.4	14.7	84	9	6	4	3	4	.....	.....	4	.....	6285	10114	4	1.93	49.0
Montgomery	N. 32 23	W. 86 18	6.15 a.m.	219	67	29.87	758.7	30.07	763.8	55.4	13.0	83	6	3	.....	3	6	5	2	1	4	4123	6635	3	1.18	30.0
Vicksburg	N. 32 22	W. 90 53	5.57 a.m.	222	68	29.87	758.7	30.08	764.0	57.6	14.2	76	2	2	.....	3	8	10	1	4	.....	4898	7882	3	0.75u	a19.0
New Orleans	N. 29 58	W. 90 04	6.00 a.m.	52	16	30.04	763.0	30.06	763.5	61.7	16.5	85	5	2	3	.....	2	6	6	4	2	5548	8928	4	1.87	47.5
Shreveport	N. 32 30	W. 93 40	5.46 a.m.	227	69	29.82	757.4	30.03	762.7	57.2	14.0	84	1	4	.....	3	9	5	.....	3	5	4611	7420	2	0.44	11.2
Fort Smith	N. 35 22	W. 94 24	5.43 a.m.	470	143	29.54	750.3	30.02	762.5	51.7	10.9	83	3	1	1	3	4	7	5	5	1	4557	7334	4	2.31	58.7
Little Rock	N. 34 45	W. 92 06	5.52 a.m	309	94	29.74	755.4	30.04	763.0	54.4	12.4	82	4	4	5	4	4	2	2	.....	5	5117	8293	3	0.49	12.4
Galveston	N. 29 18	W. 94 47	5.41 a.m.	40	12	30.03	762.7	30.03	762.7	66.8	19.3	81	1	.....	.....	2	9	11	2	4	1	9056	14574	4	0.01	0.3
San Antonio	N. 29 27	W. 98 28	5.26 a.m.	781	238	29.19	741.4	29.96	761.0	60.2	15.7	85	3	.....	2	.....	8	11	1	5	.....	7886	12691	7	0.60	15.2
Corpus Christi	N. 27 50	W. 97 32	5.30 a.m.	18	5	30.00	762.0	29.98	761.5	66.6	19.2	86	2	1	1	1	3	18	2	2	.....	11594	18658	4	Inap.	Inap.
Brownsville	N. 25 53	W. 97 26	5.30 a.m.	57	17	29.93	760.2	29.94	760.5	67.3	19.6	92	4	.....	.....	.....	10	13	2	1	.....	7301	11846	4	0.07	1.8
Rio Grande City	N. 26 23	W. 98 48	5.25 a.m.	230	70	29.78	756.4	29.98	761.5	67.2	19.6	81	3	1	.....	.....	12	7	2	.....	5	6840	11004	4	0.26	6.6
Palestine	N. 31 45	W. 95 40	5.38 a.m.	533	162	29.51	749.5	30.04	763.0	57.9	14.4	84	3	2	.....	.....	17	4	.....	4	.....	7753	12477	5	0.74	18.8
Ohio val. & Tenn.																										
Chattanooga	N. 35 04	W. 85 15	6.19 a.m.	783	239	29.28	743.7	30.08	764.0	52.3	11.3	67	7	4	4	7	1	3	1	1	2	4932	7937	4	3.06	77.7
Knoxville	N. 35 56	W. 83 58	6.24 a.m.	980	299	29.06	738.1	30.08	764.0	50.2	10.1	80	5	2	4	3	.....	2	4	4	6	4756	7654	4	4.43	112.5
Memphis	N. 35 09	W. 90 03	6.00 a.m.	320	98	29.73	755.1	30.04	763.0	55.3	12.9	68	1	6	1	4	4	9	2	2	1	5241	8434	4	2.34	59.4
Nashville	N. 36 10	W. 86 47	6.13 a.m.	549	167	29.48	748.8	30.04	763.0	50.6	10.3	72	.....	3	6	4	1	5	3	3	5	5059	8142	3	2.67	67.8
Louisville	N. 38 15	W. 85 45	6.17 a.m.	551	168	29.46	748.3	30.04	763.0	47.8	8.8	70	.....	1	5	3	8	5	.....	4	4	6125	9857	4	7.31	185.7
Indianapolis	N. 39 46	W. 86 10	6.16 a.m.	766	233	29.20	741.7	30.01	762.2	44.4	6.9	72	2	3	4	4	8	4	1	3	1	4974	8004	5	3.92	99.6
Cincinnati	N. 39 06	W. 84 30	6.22 a.m.	628	191	29.37	746.0	30.03	762.7	45.7	7.6	70	2	4	3	2	2	11	3	2	1	5994	9646	6	5.86	148.8
Columbus	N. 39 58	W. 83 00	6.28 a.m.	812	248	29.15	740.4	30.01	762.2	43.7	6.5	76	2	2	2	5	5	6	5	3	.....	6626	10663	6	3.44	87.4
Pittsburg	N. 40 32	W. 80 02	6.40 a.m.	847	258	29.11	739.4	29.99	761.7	44.1	6.7	75	3	3	6	.....	3	4	3	6	2	5054	8133	5	4.29	109.0
Lake region.																										
Rochester	N. 43 08	W. 77 42	6.49 a.m.	621	189	29.33	745.0	30.01	762.2	38.4	3.6	71	1	3	5	10	4	1	4	2	.....	9577	15412	5	2.51	63.8
Buffalo	N. 42 53	W. 78 53	6.45 a.m.	692	210	29.26	743.2	30.01	762.2	37.3	2.9	73	.....	2	3	8	7	.....	2	7	1	7834	12611	5	1.47	37.3
Oswego	N. 43 29	W. 76 35	6.54 a.m	335	102	29.63	752.6	30.00	762.0	37.6	3.1	67	2	2	7	2	6	7	1	3	.....	8354	13443	5	1.58	40.1
Erie	N. 42 07	W. 80 05	6.40 a.m.	681	208	29.28	743.7	30.02	762.5	40.4	4.7	74	1	3	6	5	6	2	4	3	.....	8535	13730	5	2.55	64.8
Sandusky	N 41 25	W. 82 40	6.30 a.m.	638	194	29.33	745.0	30.02	762.5	41.4	5.2	74	1	5	4	8	3	1	5	2	1	10469	16848	5	2.10	53.3
Cleveland	N. 41 30	W. 81 42	6.33 a.m.	690	210	29.25	742.9	30.00	762.0	41.2	5.1	74	.....	3	1	5	4	10	4	3	.....	6900	11104	6	1.82	46.2
Toledo	N. 41 40	W. 83 34	6.26 a.m.	651	198	29.30	744.2	30.00	762.0	40.6	4.8	73	.....	2	2	8	5	1	4	8	.....	7351	11830	6	1.57	39.9
Detroit	N. 42 20	W. 83 03	6.28 a.m.	662	202	29.28	743.7	29.99	761.7	41.5	5.3	79	4	1	7	4	2	2	6	3	1	6888	11085	6	1.19	30.2
Alpena	N. 45 05	W. 83 30	6.26 a.m.	609	186	29.29	744.0	29.97	761.2	32.5	0.3	84	2	3	8	2	4	4	5	.....	2	6632	10673	6	2.66	67.6
Escanaba	N. 45 48	W. 87 05	6.12 a.m.	608	185	29.26	743.2	29.94	760.5	30.1	— 1.1	87	5	2	.....	7	4	.....	1	6	5	6082	9788	7	2.65	67.3
Grand Haven	N. 43 05	W. 86 18	6.15 a.m.	620	189	29.29	744.0	29.97	761.2	38.2	3.4	73	.....	3	3	2	7	3	8	4	.....	9576	15411	6	1.09	27.7
Lansing	N. 42 45	W. 84 33	6.22 a.m.	870	265	29.04	737.6	30.00	762.0	43.5	6.4	73	1	4	2	7	3	8	3	2	.....	6225	10018	6	1.02	25.9
Mackinaw City	N. 45 47	W. 84 39	6.22 a.m.	605	184	29.27	743.4	29.95	760.7	31.0	— 0.6	80	2	2	1	4	1	5	5	1	9	7760	12488	6	1.46	37.1
Marquette	N. 46 34	W. 87 24	6.11 a.m.	672	205	29.17	740.9	29.92	760.0	32.6	0.3	79	4	9	5	4	1	1	3	3	.....	6436	10358	6	3.44	87.4
Port Huron	N. 43 00	W. 82 26	6.30 a.m.	639	195	29.29	744.0	29.99	761.7	37.0	2.8	80	3	4	1	5	7	3	3	3	1	8999	14482	6	0.80	20.3
Chicago	N. 41 52	W. 87 38	6.10 a.m.	715	218	29.19	741.4	29.94	760.5	41.6	5.3	72	2	3	4	10	3	3	2	2	1	8786	14140	5	0.46	11.7
Green Bay	N. 45 00	W. 87 30	6.08 a.m.	616	188	29.27	743.4	29.95	760.7	36.0	2.2	80	3	2	3	10	4	2	2	4	.....	6978	11220	6	1.76	44.7
Milwaukee	N. 43 02	W. 87 54	5.09 a.m.	697	212	29.20	741.7	29.96	761.0	38.0	3.3	77	1	4	5	6	1	3	3	4	3	8273	13314	6	1.05	26.7
Duluth	N. 46 48	W. 92 06	5.52 a.m.	672	205	29.19	741.4	29.93	760.2	31.8	— 0.1	83	2	6	1	5	2	1	.....	11	2	5516	8877	5	1.58	40.1
Upper Miss. val.																										
Saint Paul	N. 44 58	W. 93 03	5.48 a.m.	831	253	29.00	736.6	29.92	760.0	37.1	2.8	82	2	6	3	3	.....	3	7	.....	6	5936	9554	5	3.14	79.8
La Crosse	N. 43 49	W. 91 15	5.55 a.m.	744	227	29.15	740.4	29.95	760.7	39.8	4.3	80	3	5	1	9	5	2	2	3	.....	6921	11138	6	1.94	49.3
Davenport	N. 41 30	W. 90 38	5.58 a.m.	615	187	29.30	744.2	29.96	761.0	43.8	6.6	70	3	5	4	7	6	2	2	1	.....	7752	12475	4	1.17	29.7
Des Moines	N. 41 35	W. 93 37	5.46 a.m.	866	264	29.03	737.3	29.95	760.7	43.6	6.4	74	2	4	3	10	2	1	3	1	4	6177	9941	5	2.48	63.0
Dubuque	N. 42 30	W. 90 44	5.57 a.m.	665	203	29.24	742.7	29.95	760.7	43.0	6.1	70	2	5	1	6	3	4	2	1	6	3977	6400	5	1.37	34.8
Keokuk	N. 40 22	W. 91 26	5.54 a.m.	618	188	29.32	744.7	29.98	761.5	45.6	7.6	73	5	3	4	3	9	5	1	.....	.....	8532	13731	4	1.84	46.7
Cairo	N. 37 00	W. 89 10	6.04 a.m.	359	109	29.67	753.6	30.03	762.7	52.1	11.2	71	.....	8	5	2	9	4	1	1	.....	6430	10348	5	2.09	53.1
Springfield	N. 39 48	W. 89 39	6.02 a.m.	644	196	29.33	745.0	30.01	762.2	46.4	8.0	72	5	4	5	4	10	1	1	.....	.....	8246	13270	4	2.89	73.4
Saint Louis	N. 38 38	W. 90 12	5.59 a.m.	571	174	29.40	746.7	30.00	762.0	53.1	11.7	58	3	2	6	7	7	2	1	1	1	9653	15535	5	4.36	110.7

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea		Result of Simultaneous Observations for April, 1887.																			Average Cloudiness.	Total Precipitation.	
						Mean Barometer.				Mean Temperature.		Mean Rel. Humidity.	Wind.														
						Actual.		Reduced.					Directions.									Total Movement.					
				Feet.	Metr's	Inch.	Mill.	Inch.	Mill.	Fah.	Cent.		N	NW	W	SW	S	SE	E	NE	C	Miles	Kil.	0-10	Inch.	Mill.
U. STATES—Con.																											
Missouri valley.	° ′	°																									
Leavenworth	N. 39 19	W. 94 57	5.40 a.m.	842	257	29.10	739.1	29.98	761.5	48.4	9.1	71	3	7	.....	2	9	7	.....	1	1	6805	10951	4	1.99	50.5
Omaha	N. 41 16	W. 95 56	5.36 a.m.	1113	339	28.78	731.0	29.96	761.0	45.8	7.7	76	.....	9	.....	.....	7	7	1	.....	6	7376	11870	6	0.88	22.4
Fort Sully	N. 44 39	W. 100 39	5.17 a.m.	1600	488	28 21	716.5	29.91	759.7	51.6	10.9	77	2	9	2	.....	.....	5	2	4	6	7579	12197	6	0.90	22.9
Huron	N. 44 21	W. 98 09	5.28 a.m.	1307	398	28.50	723.9	29.91	759.7	37.4	3.0	74	2	8	.....	.....	1	10	.....	4	5	8158	13129	5	3 72	94.5
Yankton	N. 42 54	W. 97 28	5.30 a.m.	1234	376	28.56	725.4	29.87	758.7	42.4	5.8	80	3	10	1	2	4	5	3	2	.....	8239	13259	6	2.45	62.2
Lamar	N. 37 32	W. 94 15	5.43 a.m.	1028	313	28.92	734.6	30.00	762.0	47.0	8.3	65	6	1	1	7	8	5	1	1	.....	9478	15253	3	4.78	121.4
Valentine	N. 42 50	W. 100 32	5.18 a.m.	2614	797	27.19	690.6	29.91	759.7	38.2	3.4	65	2	9	3	4	4	2	4	2	.....	10340	16640	5	2.52	64.0
Moorhead	N. 46 52	W. 96 44	5.33 a.m.	926	282	28.90	734.0	29.92	760.0	33.0	0.6	80	11	3	.....	.....	6	6	.....	4	.....	10162	16354	6	2.45	62.2
Saint Vincent	N. 48 56	W. 97 14	5.31 a.m.	804	245	29.07	738.4	29.97	761.2	30.7	—0.7	89	7	5	3	.....	5	4	1	.....	5	6040	9720	5	1.43	36.3
Bismarck	N. 46 47	W. 100 38	5.16 a.m.	1694	516	28.10	713.7	29.94	760.5	34.6	1.4	85	8	2	3	.....	1	4	6	3	3	6358	10232	6	1.52	38.6
Fort Buford	N. 48 00	W. 103 56	5.04 a.m.	1854	565	27.88	708.1	29.89	759.2	34.0	1.1	80	4	6	4	.....	4	3	4	3	2	7737	12451	7	1.09	27.7
Fort Totten	N. 47 57	W. 98 57	5.24 a.m.	1487	453	28.30	718.8	29.95	760.7	30.2	—1.0	85	4	8	3	.....	5	1	2	5	2	10308	16599	5	0.63	16.0
Rocky Mount. reg.																											
Ft. Assinnaboine	N. 48 32	W. 109 42	4.41 a.m.	2690	802	27.09	688.1	29.94	760.5	38.6	3.7	56	.....	5	3	13	2	4	2	1	.....	9595	15441	6	1.64	41.7
Fort Custer	N. 45 42	W. 107 34	4.50 a.m.	3040	927	26.76	679.7	29.93	760.2	37.5	3.1	83	7	3	2	1	3	7	4	2	1	6017	9683	6	2.16	54.9
Fort Maginnis	N. 47 12	W. 109 10	4.44 a.m.	4320	1317	25.47	646.6	29.91	759.7	36.4	2.4	64	1	13	6	1	.....	2	1	3	3	8717	14028	6	2.16	54.9
Helena	N. 46 34	W. 112 04	4.32 a.m.	4069	1240	25.74	653 8	29.91	759.7	36.9	2.7	79	2	4	5	16	1	.....	.....	1	1	5865	9439	7	1.93	49.0
Poplar River	N. 48 08	W 105 10	5.00 a.m.	2002	610	27.79	705.9	29.94	760.5	31.7	—0.2	75	7	3	8	.....	2	1	3	6	.....	7423	11946	4	0.31	7.9
Deadwood	N. 44 23	W. 103 43	5.05 a.m.	4600	1402	25.27	641.8	29.96	761.0	36.3	2.4	78	3	.....	.....	11	7	2	1	6	.....	3700	5994	6	6.47	14.3
Cheyenne	N. 41 08	W. 104 48	5.01 a.m.	6105	1861	23.91	607.3	29.90	759.4	34.9	1.6	63	4	16	5	2	1	.....	1	1	.....	8613	13863	5	2.20	55.9
North Platte	N. 41 08	W. 100 45	5.17 a.m.	2841	866	26.98	685.3	29.92	760.0	39.3	4.1	84	2	4	11	1	3	4	3	2	.....	9290	14950	4	3.41	86.6
Pike's Peak	N. 38 50	W. 105 02	5.01 a.m.	14134	4308	17.62	447.5	29.93	760.2	11.1	—11.6	79	2	8	8	6	.....	.....	.....	2	4	17217	27708	3	4.52	114.8
Concordia	N. 39 35	W. 97 41	5.29 a.m.	1384	422	28.50	723.9	29.95	760.7	48.0	8.9	76	.....	.....	9	2	5	4	1	.....	9	4536	7300	4	1.95	49.5
Denver	N. 39 45	W. 105 00	5.00 a.m.	5294	1614	24.66	626.4	29.90	759.4	40.1	4.5	60	5	1	4	3	12	3	.....	1	1	6755	10871	5	2.16	54.9
W. Las Animas	N. 38 04	W. 103 12	5.07 a.m.	3899	1188	25.97	659.6	29.90	759.4	39.0	3.9	85	.....	2	13	2	3	3	5	1	1	7255	16111	5	2.55	64.8
Dodge City	N. 37 45	W. 100 00	5.20 a.m.	2523	769	27.36	694.9	29.98	761.5	43.7	6.5	76	2	2	3	3	2	9	4	4	1	8576	13801	3	2.46	62.5
Fort Elliott	N. 35 30	W. 100 21	5.19 a.m.	2700	823	27.22	691.4	29.91	759.7	47.5	8.6	73	1	7	9	1	6	3	1	1	1	10369	16687	4	6.06	153.9
Fort Sill	N. 34 40	W. 98 23	5.27 a.m.	1200	366	28.77	730 7	30.00	762.0	51.3	10.7	78	7	2	3	.....	12	.....	2	1	3	9920	15964	2	2.06	52.3
Abilene	N. 32 14	W. 99 45	5.21 a.m.	1748	533	28.18	715.8	29.95	760.7	55.6	13.1	67	2	1	1	10	7	5	1	4	.....	10270	16528	4	2.45	62.2
Fort Davis	N. 30 38	W. 103 50	5.04 a.m.	4928	1502	25.15	638.8	29.93	760.2	49.4	9.7	50	1	3	7	13	.....	.....	.....	2	4	6571	10575	1	0.20	5.1
Fort Stanton	N. 33 30	W. 105 26	4.58 a.m.	6150	1875	23.92	607.6	29.82	757.4	34.4	1.3	64	1	12	3	1	1	5	.....	.....	7	6331	10189	2	0.04	1.0
Plateau region.																											
Keeler	N. 36 35	W. 117 50	4.09 a.m.	3622	1104	26.26	667.0	29.87	758.7	50.1	10.1	48	8	1	.....	2	.....	3	7	4	5	5499	8850	2	1.14	29.0
Santa Fé	N. 35 41	W. 105 57	4.56 a.m.	7026	2141	23.23	590.0	29.94	760.5	38.6	3.7	49	6	.....	2	8	5	2	1	2	4	3103	4994	4	0.74	18.8
Fort Apache	N. 33 48	W. 109 57	4.40 a.m.	5020	1835	25.02	635.5	30.01	762.2	36.0	2.2	65	.....	.....	1	4	....	4	16	5	.....	6148	9894	3	0.81	20.6
Fort Grant	N. 32 39	W. 109 57	4.40 a.m.	4856	1480	25.20	640 1	29.98	761.5	47.3	8.5	42	9	7	5	.....	.....	1	3	3	2	5747	9249	2	0.36	9.1
Prescott	N. 34 33	W. 112 28	4.30 a.m.	5389	1643	24.68	626.9	29.96	761.0	37.3	2.9	78	.....	.....	1	12	1	.....	1	3	12	5904	9501	3	2.57	65.3
Yuma	N. 32 45	W. 114 36	4.22 a.m.	141	43	29.78	756.4	29.88	758 9	56.8	13.8	83	10	2	4	2	3	6	3	.....	.....	5575	8972	1	0.20	5.1
El Paso	N. 31 47	W. 106 30	4.54 a.m.	3764	1147	26 22	666.0	29.91	759.7	48.6	9.2	44	1	4	2	13	2	.....	1	.....	7	3716	5980	1	0.09	2.3
Fort Bridger	N. 41 28	W. 110 30	4.38 a.m.	6643	2025	23.45	595.6	29.97	761.2	30.1	—1.1	67	3	4	12	4	2	.....	.....	3	2	8333	13410	5	0.37	9.4
Salt Lake City	N. 40 46	W. 111 54	4.33 a.m.	4348	1325	25.58	649.7	29.95	760.7	42.5	5 8	67	3	4	1	1	5	8	5	2	1	4877	7849	4	1.87	47.5
Frisco	N. 38 25	W. 113 16	4.27 a.m	6406	1950	23.65	600.7	29.88	758.9	38.3	3.5	60	15	1	2	7	3	.....	.....	.....	2	8375	13478	3	1.53	38.9
Winnemucca	N. 40 58	W. 117 43	4.09 a.m.	4358	1328	25.59	650.0	29.99	761.7	35.4	1.9	69	.....	2	1	12	3	1	1	10	.....	6552	10544	4	1.94	49.3
Montrose	N. 38 30	W. 107 56	4.48 a.m.	5780	1762	24.25	615.9	29.93	760.2	36.2	2.3	67	.....	.....	.....	1	10	8	3	1	7	5126	8249	3	1.21	30.7
Fort Bidwell	N. 41 53	W. 120 11	3.59 a.m.	4615	1415	25.36	644.1	30.05	763.3	36.0	2.2	80	.....	8	15	7	.....	.....	.....	.....	.....	5585	8988	6	1.96	49.8
Boisé City	N. 43 37	W. 116 08	4.16 a.m.	2750	838	27.16	689.9	30.02	762.5	40.5	4.7	73	2	6	1	.....	.....	7	2	1	11	3694	5945	6	1.54	39.1
Spokane Falls	N. 46 28	W. 117 05	4.11 a.m.	1909	582	27.95	709.9	29.99	761.7	39.6	4.2	85	.....	1	3	9	13	1	1	.....	2	3518	5662	6	1.83	46.5
Walla Walla	N. 46 03	W. 118 18	4.07 a.m.	1018	310	28.93	734.8	30.03	762.7	44.5	6.9	71	.....	.....	1	16	9	2	.....	1	1	5965	9600	7	1.57	39.9
Pacific coast reg'n.																											
Astoria	N. 46 11	W. 123 42	3.45 a.m.	20	6	30.07	763.8	30.09	764 3	43.5	6.4	88	.....	6	.....	6	6	3	5	4	.....	5569	8962	9	6.83	173.5
Fort Canby	N. 46 16	W. 124 04	3.44 a.m.	179	55	29.87	758.7	30.07	763.8	43.6	6.4	89	4	1	11	4	5	4	.....	.....	1	8846	14236	8	6.38	162.1
Olympia	N. 47 03	W. 122 53	3.49 a.m.	36	11	30.02	762.5	30.06	763.5	40.6	4.8	92	2	.....	2	5	14	.....	1	1	5	3449	5550	6	3.94	100.1
Port Angeles	N. 48 07	W. 123 06	3.46 a.m.	14	4	30.00	762.0	30.02	762.5	36.9	2.7	95	.....	.....	.....	2	28	.....	.....	.....	.....	4328	6965	6	1.16	29.5
Tatoosh Id	N. 48 23	W. 124 44	3.41 a.m.	86	26	29.91	759.7	30.01	762.2	43.8	6.6	85	.....	3	6	6	2	4	6	1	2	8632	13892	6	8.51	216.2
Portland	N. 45 32	W. 122 43	3.49 a.m	88	27	30.00	762.0	30.10	764.5	44.4	6.9	89	.....	4	1	.....	14	4	.....	.....	7	4577	7366	7	5.06	128.5
Roseburg	N. 43 13	W. 123 20	3.47 a.m.	523	159	29.55	750.6	30.11	764 8	43.6	6.4	87	.....	1	4	4	3	1	1	5	11	3256	5240	7	3.79	96.3
Eureka	N. 40 52	W. 123 58	3.43 a.m.	50	18	30.04	763.0	30.08	764.0	45.4	7.4	90	7	2	.....	5	4	3	6	.....	3	7021	11299	7	5.55	141.0
Red Bluff	N. 40 10	W. 122 15	3.51 a.m.	342	104	29.67	753.6	30.01	762.2	51.2	10.7	63	10	1	8	.....	8	1	.....	.....	2	6371	10253	4	1.76	44.7
Sacramento *a*	N. 38 35	W. 121 30	3.54 a.m.	64	20	29.94	760.5	29.99	761.7	50.6	10.3	81	.....	8	1	2	4	10	.....	1	4	6320	10171	2	2.53	64.3
San Francisco	N. 37 48	W. 122 26	3.50 a.m.	60	18	29.99	761.7	30.04	763.0	49.9	9.9	82	3	4	10	7	2	.....	1	.....	3	7235	11643	4	2.30	58.4
Los Angeles	N. 34 03	W. 118 15	4.07 a.m.	339	103	29.64	752.8	29.96	761.1	51.3	10.7	90	2	1	5	.....	3	4	4	9	2	4087	6577	5	2.36	59.9
San Diego	N. 32 43	W. 117 10	4.12 a.m.	67	20	29.94	760 5	29.98	761.5	54.5	12.5	85	1	1	3	2	7	1	6	5	4	5092	8195	6	2.14	54.4
Sitka	N. 57 03	W. 135 19	2.59 a m.	63	19	29.73	755.1	29.83	757.7	36.2	2.3	78	.....	.....	3	2	1	8	6	.....	10	7122	11462	7	6.64	168.7
Sub-Series.																											
Belize	N. 17 32	W. 88 09	6.09 a.m.	10	3	30.03	762.7	29.98	761.5	83.5	28.6	85	.....	6	.....	.....	.....	22	.....	2	.....	.....	.....	5	1.09	27.7
Colon	N. 9 22	W. 79 55	6.40 a.m.	7	2	29.90	759.5	29.90	759.5	77.9	25.5	86	18	2	3	1	3	1	.....	.....	2	.....	.....	6	10.61	269.5
Gamboa	N. 9 05	W. 79 42	6.41 a.m.	107	31	29.87	758.6	29.91	759.7	71.4	21.9	94	.....	.....	.....	.....	.....	.....	.....	1	29	.....	.....	5	6.83	173.5
Naos	N. 8 55	W. 79 32	6.42 a.m.	49	15	29.91	759.6	29.93	760.2	74.8	23.8	89	.....	30	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	.....	.....
Paramaribo	N. 5 50	W. 55 13	8.19 a.m.	6	2	30.00	762.0	29.93	760.2	78.2	25.7	87	.....	.....	.....	.....	.....	3	21	6	.....	.....	.....	6	14.96	380.0
Rivas	N. 11 26	W. 85 47	6.17 a.m.	150	46	29.91	759.7*b*	30.07	763.8*b*	76.6	24.8	78	.....	.....	.....	.....	.....	.....	21	9	.....	.....	.....	3	.....	.....
Vera Cruz	N 19 11	W. 96 09	5.35 a.m	16	5	29.96	761.0	29.98	761.5	.....	.....	.....	6	1	1	.....	3	3	.....	.....	16	.....	.....	1	.....	.....

SUMMARY OF OBSERVATIONS TAKEN AT DANISH STATIONS, JUNE TO SEPTEMBER, 1886.

JUNE, 1886.	° ′	° ′																									
Godthaab	N. 64 11	W. 51 46	8.33 a m.	36	11	29.66	753.4	29.75	755 6	39.0	3.9	86	3	.....	1	3	6	1	.....	3	13	.....	.....	8	.....	.....
Ivigtut	N. 61 12	W. 48 00	8.48 a.m	16	5	29 73	755.2	29.79	756.7	43.9	6.6	.....	1	11	2	2	1	4	.....	.....	9	.....	.....	9	.....	.....
Jacobshavn	N. 69 13	W. 50 55	8.36 a.m.	43	13	29.68	753.8	29.78	756 4	38.7	3.7	.....	7	.....	2	5	3	2	.....	.....	11	.....	.....	5	.....	.....
Upernavik	N. 72 47	W. 56 00	8.16 a.m.	39	12	29.71	754.5	29.81	757.2	34.5	1.4	.....	5	3	3	5	.....	.....	2	1	11	.....	.....	8	.....	.....
JULY, 1886.																											
Godthaab	N. 64 11	W. 51 46	8.33 a.m.	36	11	29.72	755.0	29.81	757.2	44.2	6.8	79	8	6	.....	2	5	2	.....	1	7	.....	.....	6	.....	.....
Ivigtut	N. 61 12	W. 48 00	8.48 a.m.	16	5	29.75	755.6	29.81	757.2	47.7	8.7	.....	1	11	3	....	2	1	.....	.....	13	.....	.....	8	.....	.....
Jacobshavn	N. 69 13	W. 50 55	8.36 a.m.	43	13	29 74	755.4*l*	29.84	757.9*l*	43.9	6.6	.....	1	8	9	2	2	2	2	.....	5	.....	.....	4	.....	.....
Stykkisholm	N. 65 05	W. 22 46	10.29 a.m.	36	11	29.69	754.0	29.78	756.4	49.8	9.9	78	1	2	2	2	.....	4	13	1	6	.....	.....	6	.....	.....
Thorshavn	N. 62 02	W. 6 44	11.33 a.m.	30	9	29.68	753.8	29.75	755.6	51.8	11.0	83	4	4	5	4	2	2	4	6	.....	.....	.....	7	.....	.....
Upernavik	N. 72 47	W. 56 00	8.16 a.m.	39	12	29.74	755.4	29.84	757.9	41.5	5.3	87	4	.4	.....	6	3	1	1	.....	12	.....	.....	8	.....	.....
AUGUST, 1886.																											
Godthaab	N. 64 11	W. 51 46	8.33 a.m.	36	11	29.60	751.9	29.68	753.9	43.2	6.2	79	6	.....	.....	1	3	3	.....	7	11	.....	.....	8	.....	.....
Ivigtut	N. 61 12	W. 48 00	8.48 a.m.	16	5	29.60	751.9	29.66	753.4	46.6	8.1	.....	2	6	.....	1	.....	1	.....	.....	21	.....	.....	7	.....	.....
Jacobshavn	N. 69 13	W. 50 55	8.36 a.m.	43	13	29.57	751.1*f*	29.67	753.6*f*	41.7	5.4	.....	1	.....	5	2	4	12	3	1	3	.....	.....	5	.....	.....
Stykkisholm	N. 65 05	W. 22 46	10.29 .m.	36	11	29.46	748.2	29.55	750.6	47.3	8.5	79	1	1	4	3	4	5	3	7	3	.....	.....	8	.....	.....
Thorshavn	N. 62 02	W. 6 44	11.33 a.m.	30	9	29.59	751.6	29.66	753.4	52.7	11.5	87	3	1	4	17	2	3	.....	.....	1	.....	.....	8	.....	.....
Upernavik	N. 72 47	W. 56 00	8.16 a.m.	39	12	29.63	753.0	29.75	755.6	39.6	4.2	84*b*	6	4	.....	5	.....	1	8	2	5	.....	.....	9	.....	.....
SEPTEMBR, 1886.																											
Godthaab	N. 64 11	W. 51 46	8.33 a.m.	36	11	29.59	751 6	29.68	753.9	38.1	3.4	85	.....	.....	.....	.....	7	5	1	9	8	.....	.....	7	.....	.....
Ivigtut	N. 61 12	W. 48 00	8.48 a.m.	16	5	29.67	753.6	29.73	755.1	41.2	5.1	.....	2	1	1	1	.....	5	.....	.....	20	.....	.....	8	.....	.....
Jacobshavn	N. 69 13	W. 50 55	8.35 a.m.	43	13	29.62	752.3*f*	29.72	754.9*f*	37.0	2.8	.....	1	1	1	2	3	6	5	2	9	.....	.....	5	.....	.....
Stykkisholm	N. 65 05	W. 22 46	10.29 a.m.	36	11	29.65	753 2	29.74	755.4	45.5	7.5	81	.....	.....	.....	1	5	6	3	11	4	.....	.....	8	.....	.....
Thorshavn	N. 62 02	W. 6 44	11.33 a.m.	30	9	29.73	755.1	29.80	756.9	49.6	9.8	82	5	3	2	8	2	4	1	2	3	.....	.....	7	.....	.....
Upernavik	N. 72 47	W. 56 00	8.16 a.m.	39	12	29.68	753.8	29.78	756.4	32.2	0.1	91*b*	6	2	.....	.....	1	3	11	3	4	.....	.....	9	.....	.....

OCEAN SQUARE DATA FOR APRIL, 1887.

Location of Centre of each Square.	Barometer.		Temperature.		Wind Frequency.										Wind force 0–10.
	Inch.	Mill.	Fah.	Cent.	N.	NW.	W.	SW.	S.	SE.	E.	NE.	Calm.	Blank.	
N. 12.5° W. 22.5°															
12.5 27.5															
12.5 32.5															
12.5 37.5	29.98	761.5			1					3	9	17			3.5
12.5 42.5	29.98	761.5				1				4	13	12			3.8
12.5 47.5	29.97	761.2			2						17	11			4.2
12.5 52.5	29.96	761.0								1	18	11			4.4
12.5 57.5															
17.5 22.5															
17.5 27.5															
17.5 32.5															
17.5 37.5	30.03	762.7			2				2	4	7	15			3.2
17.5 42.5	30.03	762.7			3	1			4	5	8	9			3.3
17.5 47.5	30.02	762.5			4	2				2	13	7		2	3.9
17.5 52.5	30.01	762.2			8					1	12	9			4.0
17.5 57.5	30.01	762.2								4	18	8			4.1
22.5 22.5															
22.5 27.5	29.98	761.5			10		1	1	5	2	2	8		1	3.9
22.5 32.5	30.04	763.0			8	1	1	2	5	2	2	6	2	1	2.9
22.5 37.5	30.05	763.3			4	3	3	4	2	2	1	9	2		2.6
22.5 42.5	30.05	763.3			5	3	4	3	3		3	7		2	3.2
22.5 47.5	30.05	763.3			4	7	5				3	8		3	3.6
22.5 52.5	30.06	763.5			8	6				2	8	6			3.6
22.5 57.5	30.07	763.8			10	2			1	5	8	4			3.6
22.5 62.5	30.06	763.5			3				1	9	7	9	1		3.5
22.5 67.5															
22.5 72.5															
27.5 22.5	29.95	760.7			3	3	6	2	4	1	4	6		1	3.6
27.5 27.5	29.97	761.2			7	3	2	7	3	1	3	3		1	3.9
27.5 32.5	30.01	762.2			7	3	6	5	3	1		4		1	3.8
27.5 37.5	30.01	762.2			6	3	7	5	3		1	3	1	1	3.6
27.5 42.5	30.01	762.2			5	3	8	3	1		1	5	1	3	3.9
27.5 47.5	30.02	762.5			3	7	9				4	2	1	4	3.7
27.5 52.5	30.04	763.0			4	11	3	2		2	3	3		2	3.8
27.5 57.5	30.08	764.0			4	12	3		1	5		4	1		3.9
27.5 62.5	30.09	764.3			8	8	1		2	4	2	4	1		3.9
27.5 67.5															
27.5 72.5															
27.5 77.5															
32.5 12.5															
32.5 17.5															
32.5 22.5															
32.5 27.5	29.97	761.2			7	1	3	7	2	2	2	6			4.1
32.5 32.5	29.95	760.7			6		6	7	2	1	1	6	1		3.9
32.5 37.5	29.95	760.7			3	3	6	8	2		3	4		1	4.4
32.5 42.5	29.95	760.7			3	1	10	5	1	1	1	5	1	2	4.3
32.5 47.5	29.95	760.7			2	6	7	4	1	2	6			2	4.4
32.5 52.5	29.98	761.5			3	11	5	2	3	3		3			4.6
32.5 57.5	30.02	762.5			3	13	3	4	4	1		2			5.1
32.5 62.5															
32.5 67.5															
32.5 72.5															
32.5 77.5															
37.5 12.5															
37.5 17.5															
37.5 22.5															
37.5 27.5															
37.5 32.5	29.91	759.7			2		2	8	2	3	1	11	1		4.7
37.5 37.5	29.90	759.4			2	1	3	5	5	3	2	9			4.8
37.5 42.5	29.88	758.9			2	1	7	5	5	3	3	3		1	4.9
37.5 47.5	29.87	758.7			2	5	5	6	5	4	1	1	1		4.7
37.5 52.5	29.87	758.7			6	9	4	5	6						5.5
37.5 57.5	29.91	759.7			4	13	4	4	4	1					5.6
37.5 62.5															
37.5 67.5															
37.5 72.5															
42.5 12.5															
42.5 17.5															
42.5 22.5	29.99	761.7			2	3		4	6	3	5	7			4.8
42.5 27.5	29.97	761.2			2	2		3	6	3	6	8			4.6
42.5 32.5	29.93	760.2			1	2		5	6	4	5	7			5.2
42.5 37.5	29.89	759.2			2		1	6	3	9	5	4			5.2
42.5 42.5	29.84	757.9			4	2	4	2	6	8	1	3			5.0
42.5 47.5	29.81	757.2			3	7	1	1	5	6	2	5			5.3
42.5 52.5	29.81	757.2			6	7	2	1	6	2	1	4		1	4.9
42.5 57.5	29.84	757.9			9	5	3	3	1	5	2	2			5.2
42.5 62.5															
42.5 67.5															
47.5 12.5															
47.5 17.5	30.07	763.8			3	5	1	1	5	7		8			5.4
47.5 22.5	30.05	763.3			5	3	1	2	6	3	3	7			5.3
47.5 27.5	30.04	763.0			5	1	1	2	5	5	3	8			5.3
47.5 32.5	30.01	762.2				4		3	5	6	2	9		1	4.6
47.5 37.5	29.95	760.7			2	3		5	5	8	4	3			4.7
47.5 42.5	29.87	757.7			3	3	1	3	6	11	3				5.1
47.5 47.5	29.86	758.2			3	2	2	3	3	5	4	7		1	4.4
52.5 12.5															
52.5 17.5	30.07	763.8			7	7	1	2	4	6	3				5.3
52.5 22.5	30.08	764.0			8	4	1	3	4	6	2	2			5.4
52.5 27.5	30.07	763.8			8	2	2	1	7	8	1	1			4.6
52.5 32.5	30.02	762.5			3	5	3	1	6	10	1	1			4.5
52.5 37.5	29.98	761.5			2	1	4	1	5	10	5	2			4.6
52.5 42.5	29.92	760.0				2	2	3	6	7	4	3		3	4.9
52.5 47.5	29.90	759.4				3	2	3	7	4	2	7		2	4.4
57.5 12.5	29.99	761.7			7	4	3	3	3	1	3	4		2	4.4
57.5 17.5	30.04	763.0			5	6	2	3	6	2	1	4		1	4.5
57.5 22.5	30.06	763.5			7	4	1	1	7	4		4		2	5.1
57.5 27.5	30.06	763.5			6	5		3	7	7		2			4.9
57.5 32.5	30.04	763.0			5	6		5	3	9	1	1			4.6
57.5 37.5	30.01	762.2			3	2	5	4	2	11	1	2			4.6
57.5 42.5	29.97	761.2			1	2	2	6	5	6	3	3		3	4.3
57.5 47.5	29.94	760.5				3		6	4	4	7	4	1	1	4.1

OCEAN SQUARES.—The table of ocean square data shows (1) the location of the centres of squares whose sides extend 5° each in latitude and longitude, (2) the monthly mean pressure of the air, and the mean force and total frequency of the wind at noon, Greenwich mean time, computed for the centre of each square from daily readings as obtained by interpolation between the isobars of the daily international simultaneous weather maps.

REVIEW.

INTERNATIONAL METEOROLOGY FOR APRIL, 1887.

[*Pressure expressed in inches and millimetres; temperature in degrees, Fahrenheit and Centigrade; wind-force by scale of* 0–10.]

The following refers to chart ii for the month of April, 1887. This chart continues the series of international charts begun in January, 1877, and exhibits the mean pressure and the prevailing wind-directions over the northern hemisphere, as determined from simultaneous observations taken once each day at 7 a. m., 75th meridian, or noon Greenwich, mean time:

The area of lowest mean pressure is located over the interior of British India, with minimum 29.60 (751.8) at Nagpur. A second area of low occupies northern Scandinavia and the ocean to the northward, with minima falling to 29.65 (753.1) at Gjæsvær. An area of relatively low mean pressure, bounded by the isobar of 29.80 (756.9), appears over the Sea of Okhotsk, whence it apparently extends eastward over Behring Sea.

Three areas of high mean pressure, with included values above 30.10 (764.5), are shown, respectively, over the interior of Asia, off the west-central American coast, and over central and west-central Greenland.

Over the North American continent the mean pressure is lowest in Alaska, where it falls to 29.83 (757.7) at Sitka, and highest in Oregon, where it rises to 30.11 (764.8) at Roseburg. Over southeastern California and Arizona, and the Canadian Maritime Provinces, the pressure is below 29.90 (759.4), while over the eastern portion of the United States, south of the fortieth parallel, it rises above 30.00 (762.0). Over the north Atlantic Ocean an area of relatively low mean pressure extends southward and southeastward from Labrador, with values falling to 29.81 (757.2) over the southern part of the Banks of Newfoundland. Between the east coast of Greenland and the northern extremity of Scandinavia there is a decrease in pressure of about 0.45 inch. The isobar of 30.10 (764.8), which is plotted over Greenland, apparently bounds the southeastern extremity of an area of high pressure which extends over the Arctic Ocean, north of British America. The highest observed reading within this area is 30.24 (768.1) at Upernavik, Greenland. Over the southern portion of the ocean an area of mean pressure, bounded by the isobar of 30.00 (762.0), extends westward from the thirtieth to the one hundred and eighth meridians. Over Europe the mean pressure is lowest over northern Scandinavia, where it falls below 29.70 (754.4), and highest over the British Isles and southern and southeastern Russia, where it rises above 30.00 (762.0). Over east-central Spain and the Mediterranean northeastward to the French coast, and over the Mediterranean Sea east of Sicily, values below 29.90 (759.4) are shown. Over Asia there is a barometric gradient of 0.54 inch between Nagpur, British India, and Irkutsk Siberia, while from Irkutsk eastward to the mouth of the Amoor there is a decrease in pressure of 0.38 inch.

As compared with the chart for March, 1887, the following changes in mean pressure are shown: Over the west-central portion of North America there has been a decrease of about 0.30 inch, while over the Canadian Maritime Provinces an increase of about 0.20 inch is noted. Over the north Atlantic Ocean, in the vicinity of Iceland, Greenland, and Newfoundland, the pressure has risen about 0.20 inch, while to the northeastward of the Windward Islands it has falllen 0.10 inch. Over the eastern portion of the ocean, south of the fifty-fifth parallel, there has been a decrease in pressure of from .04 to .05 inch. In Europe the greatest change has occurred over the western extremity of the Mediterranean Sea, eastern Spain, France, and the southern portion of the British Isles, where the decrease averages about 0.10 inch; elsewhere over Europe the barometric changes have been unimportant. In Asia the area of high mean pressure central in March near Nerchinsk has contracted to the westward, with a decrease of 0.34 inch in included values. Over British India and the Sea of Okhotsk the mean pressure remains materially the same.

The accompanying table shows the deviations in pressure and temperature at isolated stations during the month of April, 1887, as compared with the means for ten years:

Stations.	Mean pressure.			Mean temperature.		
	April mean of 10 (1877–'86) years.	April, 1887.	Departure.	April mean of 10 (1877–'86) years.	April, 1886.	Departure.
				°	°	°
Archangel, Russia	30.00	29.86	— 0.14	33.6	37.6	+ 4.0
Athens, Greece	29.89	29.91	+ 0.02	66.9	63.3	— 3.6
Beirut, Turkey in Asia	29.89	29.87	— 0.02	69.4	70.5	+ 1.1
Barnaul, Siberia	30.12	29.92	— 0.20	37.0	42.8	+ 5.8
Bridgetown, Barbadoes	29.94	29.93	— 0.01	82.9	82.7	— 0.2
Ekaterinburg, Russia	30.03	29.93	— 0.10	39.9	41.7	+ 1.8
Funchal, Madeira Islands*	30.08	29.98	— 0.10	64.6	65.3	+ 0.7
Havana, Cuba, W. I.	29.97	30.01	+ 0.04	74.1	70.5	— 3.6
Malta, Mediterranean Sea	29.85	29.83	— 0.02	63.1	61.4	— 1.7
Melbourne, New South Wales	30.11	30.24	+ 0.13	57.6	58.9	+ 1.3
Mauritius, Indian Ocean	29.91	29.96	+ 0.05	79.1	77.3	— 1.8
Nassau, Bahamas, W. I.	30.01	30.04	+ 0.03	75.9	73.6	— 2.3
Nikolaievsk-on-the-Amoor, Asia	.....	29.76	.....	23.1	28.8	+ 5.7
Ponta Delgada, Azores	30.09	29.94	— 0.15	63.2	61.7	— 1.5
Swanbister, Orkneys	29.92	29.95	+ 0.03	45.1	44.4	— 0.7
San Juan de Puerto Rico, W. I.*	29.97	30.00	+ 0.03	77.2	76.6	— 0.6
Stykkisholm, Iceland	29.84	30.03	+ 0.19	33.6	31.6	— 2.0
Thorshavn, Färöe Islands	29.90	29.98	+ 0.08	44.1	41.9	— 2.2
Tiflis, Russia	29.88	29.96	+ 0.08	62.1	60.3	— 1.9
Tokio, Japan*	30.03	29.89	— 0.14	52.7	53.5	+ 0.8
Yeniseisk, Siberia	30.09	30.10	+ 0.01	32.2	37.9	+ 5.7
Zi-Ka-Wei, China	30.00	29.96	— 0.04	53.9	56.7	+ 2.8

* Means for nine years only.

The following table shows the mean pressure and mean temperature for April, 1887, in the several countries of the eastern hemisphere, and the departures as compared with means determined from observations taken during the last ten years:

Countries.	Mean pressure.			Mean temperature.		
	April mean of 10 (1877–'86) years.	April, 1887.	Departure.	April mean of 10 (1877–'86) years.	April, 1887.	Departure.
				°	°	°
Austro-Hungary	29.84	29.94	+ 0.10	56.3	56.7	+ 0.4
British Isles	29.86	30.03	+ 0.17	50.0	48.1	— 1.9
Denmark	29.93	29.93	normal.	45.9	45.0	— 0.9
France	29.85	29.96	+ 0.11	57.0	54.7	— 2.3
Germany	29.91	29.95	+ 0.04	51.5	51.7	+ 0.2
India*	29.66	29.67	+ 0.01	90.3	91.4	+ 1.1
Italy	29.84	29.93	+ 0.09	61.1	58.7	— 2.4
Japan	.....	29.92	.....	.....	51.1	.....
Norway	29.96	29.80	— 0.16	43.6	41.0	— 2.6
Russia	29.96	29.94	— 0.02	46.7	47.5	+ 0.8
Spain*	29.90	29.95	+ 0.05	59.3	57.7	— 1.6
Sweden	29.98	29.82	— 0.16	40.2	42.2	+ 2.0

* Means for nine years only.

In the United States the departures above the normal pressure were greatest in southeastern Texas, where they amounted to .09 inch, and on the north Pacific coast, where the excess varied from .04 to .09 inch. The greatest deficiencies occurred in the Lake region and westward to Dakota, where the mean pressure at a number of stations was .10 inch, or more, below the normal; elsewhere the departures were small. In Canada the mean pressure was above the normal east of the Lake region, except at some points in Nova Scotia. From the Lakes to the Rocky Mountains it was below the normal. Over the north Atlantic Ocean the mean pressure was above the normal in high latitudes by amounts ranging from .08 inch at Thorshavn, Färöe Islands, to .19 inch at Stykkisholm, Iceland. Over the West Indies the excess was slight, while over the Azores and Madeira Islands there was a deficit of 0.10 to 0.15 inch. In Europe the pressure was normal over Denmark. The greatest excess, 0.17 inch, occurred over the British Isles, and the largest deficiency, 0.16 inch, over Norway. In British India the mean pressure averaged slightly above the normal, while over eastern and southeastern Asia there wss a marked deficit.

In the United States the only considerable departure from the normal temperature occurred in the central Mississippi and lower Missouri valleys, where the month was 2° to 5°.9 warmer than the average April. In Canada the temperature was below the normal in Ontario, Quebec, and New Brunswick, and slightly above normal along the coast of Nova Scotia and in

Manitoba and the Northwest Territories. In British Columbia it was 1°.2 below the normal at Victoria. Over Europe the departures from the normal temperature were small, the greatest deficiency, 2°.4, occurring in Italy, and the largest excess, 2°.0, in Sweden. In British India the mean temperature averaged slightly above the normal.

In the United States the precipitation was generally below the normal east of the Rocky Mountains, although there were in this region several large areas in which an excess occurred. In the southeastern districts very little rain fell, the deficiencies ranging from three to six inches, and in southern and eastern Texas there was a drought. In Canada the rainfall slightly exceeded the normal in Manitoba, Ontario, Quebec, Nova Scotia, and Prince Edward Island; in other parts of the Dominion it was in defect.

TRACKS OF AREAS OF LOW PRESSURE FOR APRIL, 1887.

Chart iii exhibits paths of the principal depressions which appeared in the northern hemisphere during April, 1887. This chart continues the series of international charts begun in November, 1877, and has been prepared from the following data: Chart i for each day of the month, containing the data of simultaneous observations taken once each day at noon, Greenwich mean time; abstracts of ships' logs; special reports, and other miscellaneous data on file at this office.

The paths of the centres of forty-three areas of low pressure are shown, of which thirteen are traced over the North American continent; ten over the north Atlantic Ocean; eleven over Europe; six off the coast of Asia in the vicinity of the Japanese Islands, and three on the west coast of North America near Sitka, Alaska. The average number of areas of low pressure traced over the northern hemisphere for the month of April during the last eight years is 38.7, or 4.3 less than the number traced for April, 1887.

The more important depressions that traversed the North American continent and the north Atlantic Ocean during the month are described in detail in the MONTHLY WEATHER REVIEW for April, 1887.

Over Europe the storm-tracks were unusually well distributed, and while the depressions were unmarked by abnormal individual strength, the frequency of their appearance, and the extent of territory they traversed, caused a continuation of unsettled weather over a greater part of the continent.

Off the eastern coast of Asia the depressions exceeded in number the average for the month. With but one exception they first appeared in the vicinity of the Philippine Islands, and pursued normal tracks to the Sea of Okhotsk, attended by disturbances of seasonable energy. Three depressions which advanced eastward to the west coast of North America, north of the fiftieth parallel, are continued as land storms.

SPECIAL NOTES.

THE GRAVITY CORRECTION.

The gravity correction, reducing all barometer readings to the standard gravity at latitude 45°, has been applied to all observations not so reduced by the observers themselves.

All data referring to force, velocity, or pressure (in pounds per square foot) of the wind, are reduced to the scale of 0-10, and the approximate value is indicated by the number of feathers on the arrow (see below).

MONTHLY SUMMARY OF INTERNATIONAL SIMULTANEOUS METEOROLOGICAL OBSERVATIONS.

The positions of stations (latitude and longitude) are obtained from Keith Johnson's "Index Geographicus," except where more exact information is furnished. The elevations of stations are obtained either from the annual, semi-annual, and monthly publications of the various meteorological bureaus here represented, or from the original forms upon which are entered the daily observations. In the United States series the elevations are computed from the latest surveys, and are carefully revised each month, in order to note any change in the elevation of the barometer-cistern at any station. It is believed for the most part that, throughout the European and other series, the elevations as given represent the height of the barometer-cistern above sea-level; at least this should be the case. The local time, where omitted or not given correctly in the original, is carefully computed at this office. A letter placed opposite the name of a station, or some portion of the data credited thereto, indicates that a certain number of observations are missing, corresponding to the relative position in the English alphabet of the letter so used.

At Baku the barometer-cistern is below sea-level.

INTERNATIONAL CHARTS.

International chart i shows the atmospheric pressure at sea-level in English inches, the isobars being drawn for every two-tenths of an inch.

Arrows show direction of, and fly with, the wind; force is shown as follows:

Symbols.	Force.	Velocity.	
		Miles per hour.	Metres per second.
○	0	0	0
	1, 2	0 to 9	0 to 4
	3, 4	9.1 to 22.5	4.1 to 10.1
	5, 6	22.6 to 40.5	10.1 to 18.1
	7, 8	40.6 to 67.5	18.1 to 30.2
	9, 10	67.6 up.	30.2 and over.

International chart ii (monthly mean chart) shows the mean pressure at sea-level in English inches; the mean force and prevailing direction of the wind, as determined from observations taken at noon, Greenwich mean time.

International chart iii shows the tracks of centres of low pressure. The Arabic numerals show the location of the centres of low pressure at noon, Greenwich mean time, of that date.

In the above charts, broken lines indicate that lines so drawn are doubtful.

List of merchant marine steam and sailing vessels from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of April, 1887—Continued.

Name of vessel.	Captain.
SAILING VESSELS—Continued.	
Am. bg. Sarah	Capt. L. R. Hale.
Br. sp. Stephen D. Horton	J. Spicer.
It. bk. Teresa Accame	G. Boetto.
Br. bk. Tiber	D. Keefe.
Am. Tillie Baker	Jas. W. Carty.
Rus. Toivo	W. H. Snellman.
Ger. Western Chief	Fr. Sander.
Am. schr. Winnie Lawry	A. McRitchie.
Br. sp. Winnifred	R. MacDonald
Nor. bk. Ymer	J. E. Andersen.
UNITED STATES NAVAL.	
U. S. S. Adams	Louis Kempff.
U. S. S. Alliance	C. McGregor.
U. S. S. Alert	J. D. Graham.
U. S. S. Brooklyn	E. O. Matthews.
U. S. S. Essex	Theo. F. Jewell.
U. S. S. Galena	C. W. Chester.
U. S. S. Iroquois	J. C. Watson.
U. S. S. Jamestown	C. J. Nain.
U. S. S. Juniata	G. T. Davis.
U. S. S. Lancaster	S. L. Breese.
U. S. S. Monocacy	Henry Glass.
U. S. S. Monongahela	S. H. Baker.

Name of vessel.	Captain.
UNITED STATES NAVAL—Cont'd.	
U. S. S. Mohican	Capt. B. F. Day.
U. S. S. Marion	Merrill Miller.
U. S. S. Omaha	Frank Courtis.
U. S. S. Palos	L. Tremain.
U. S. S. Pensacola	Geo. Dewey.
U. S. S. Pinta	
U. S. S. Portsmouth	Edwin White.
U. S. S. Quinnebaug	W. L. Folger.
U. S. S. Ranger	F. A. Cook.
U. S. S. Richmond	Robert Boyd.
U. S. S. Saratoga	E. M. Moore.
U. S. S. Tallapoosa	Wm. Whitehead.
U. S. S. Vandalia	H. L. Howison.
U. S. S. Yantic	F. M. Green.
BRITISH NAVAL.	
H. M. S. Active	A. H. Markham.
H. M. S. Alexandra	J. Fellowes, C. B.
H. M. S. Audacious	R. H. Harris.
H. M. S. Briton	R. M. Lloyd.
H. M. S. Colossus	C. Bridge.
H. M. S. Champion	A. T. Powlett.
H. M. S. Cleopatra	L. C. Keppel.

Name of vessel.	Captain.
BRITISA NAVAL—Continued.	
H. M. S. Comus	Capt. T. J. Jackson.
H. M. Dockyard, Bermuda	P. P. Dennistonn.
H. M. S. Dreadnaught	H. F. Stevenson.
H. M. S. Egeria	P. Aldrich.
H. M. S. Flying Fish	J. P. McLear.
H. M. S. Himalaya	J. E. Stoke.
H. M. S. Hyacinth	E. Bourk.
H. M. S. Icarus	W. M. Annesley.
H. M. S. Minotaur	J. A. Bruce.
H. M. S. Myrmidon	R. F. Hoskyn.
H. M. S. Nelson	A. Lake.
H. M. S. Orion	H. Royse.
H. M. S Penguin	Haygarth.
H. M. S. Raleigh	B. Watson
H. M. S Rambler	W. U. Moore.
H. M. S. Rifleman	
H. M. S. Ruby	W. R. Kennedy.
H. M. S. Sylvia	Dawson.
H. M. S. Triumph	H. Rose.
H. M. S. Torquoise	R. Woodward, C. B.
SWEDISH NAVAL.	
H. S. M. S. Freja	C. Lundgren.

List of foreign stations and observers from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of April. 1887.

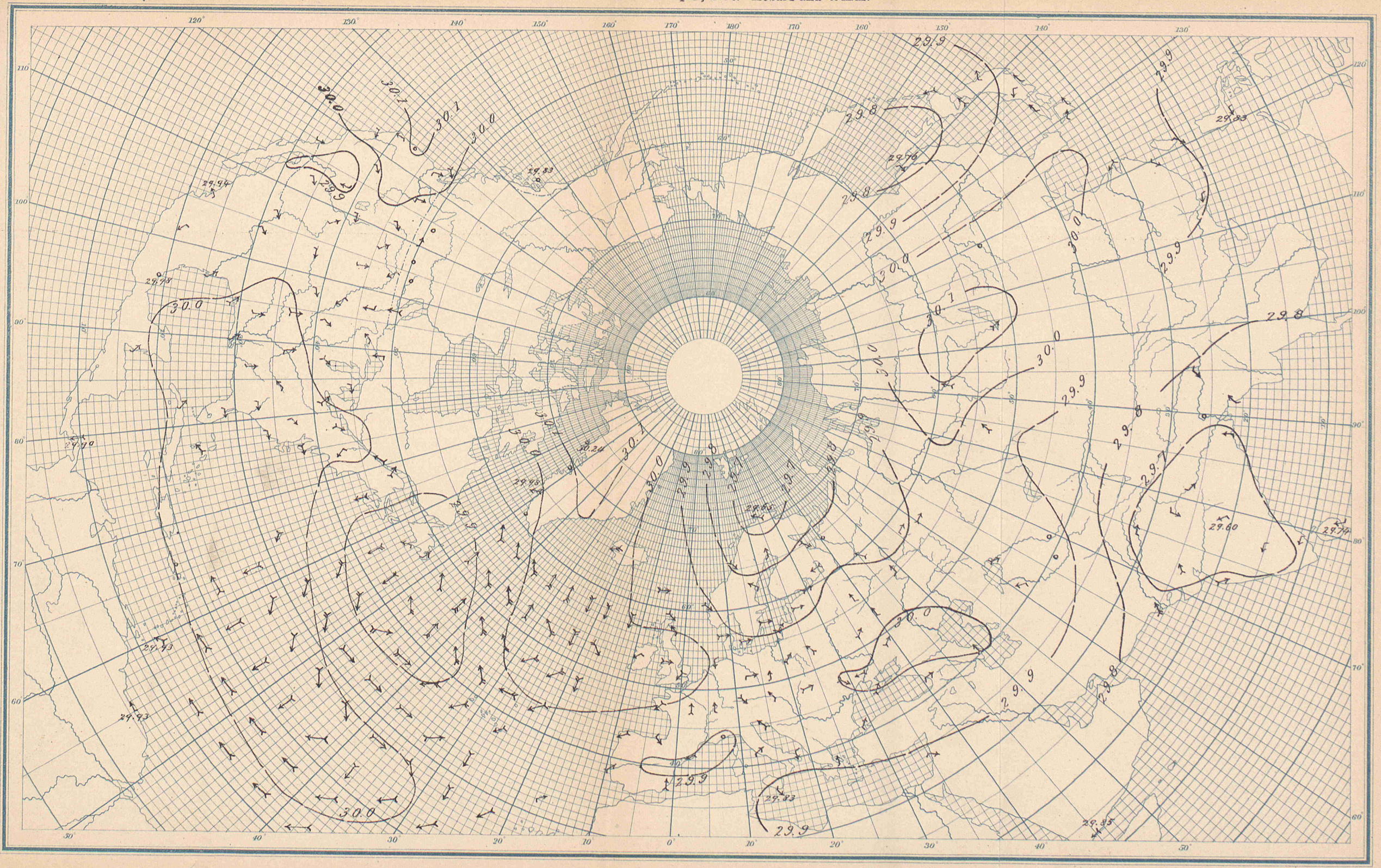
Stations.	Observers
AUSTRALIAN.	
Hobart Town, Tasmania	Com. J. Shortt, R.N.
Melbourne, Victoria	R. L. J. Ellery.
AUSTRO-HUNGARIAN.	
Agram	Prof. Ivan Stozir.
Cracow, I. R. Observatory	Dr. Wierzbiski.
Eperies	Julius Mikolik.
Kremsmunster Observatory	The Staff.
Lemberg	Dr. T. Stanecki.
Pola	Fr. Cœselrohe.
Szathmar	Aloysius Daubner, S. J.
Szegedin	Emerick Markos.
Vienna	I.R.Central Met. Obs'y.
BRAZILIAN.	
Rio de Janeiro Imperial Obs.	Prof. E. Cruls, Director.
BRITISH.	
Aberdeen	W. Boswell.
Bidston, Liverpool Obs'y	John Hartnup.
Bradford, Yorkshire	McLandsborough & Preston.
Bridgetown, Barbadoes, W.I.	A. T. Green.
Chatham, School M. E	Percy McHugo, R. E.
Falmouth, Observatory	The Staff.
Galway, Queen's College	Wm. Ryan.
Greenwich, Royal Observatory	The Staff.
Guernsey	A. Collenette, F.R.M.S.
Kew, Observatory	The Staff.
Leicester, Museum	J. C. Smith.
Malta, Mediterranean	R. R. Willan.
Nassau, Bahamas	J. A. Kerr.
Oxford, Radcliffe Observatory	The Staff.
Plymouth	John Merrifield.
Swanbister, Orkneys	W. I. Fortesque.
Scutari Cemetery, Turkey	W. H. Lyne.
Valencia, Observatory	The Meteorological Office.
Sub-series.	
Gozo, Episcopal Seminary	Rev. Algelo Lo Re, S.J., Dir.
Penang	F. K. Hampshire,
CANADIAN.	
Bathurst, N. B	Miss Andrews.
Bird Rocks	T. Turbide.
Calgarry	H. S. Cayley.
Chatham, N. B	G. A. Blair.
Cornwall, Ontario	W. D. Johnston, B. A.
Dalhousie, N. B	H. A. Johnson.
Father Point, Quebec	J. McWilliams.
Fort Garry, Manitoba	T. Warburton.
Fredericton, N. B	Dr. Harrison.
Grand Manan, N. B	J. Chipman Seeley.
Halifax, N S	A. Allison.
Hamilton, Ontario	T. S. Campbell, B. A.
Kingston, Ontario	A. P. Knight, M. A.
Little Glace Bay, N. S	C. H. Rigby, C.E.
London, Ontario	E. B. Reed.
Medicine Hat, N. W. T	John Ewart.
Minnedosa, N. W. T	Rev. J. W. Wellwood.
Montreal, Quebec	C. H. McLeod, C. E.
Ottawa, Ontario	A. McGill, M. A.
Parry Sound, Ontario	Rev. R. Mosley.
Peterborough, Ontario	J. H. Long.
Port Arthur, Ontario	W. P. Cooke.
Port Dover, Ontario	H. Morgan.
Port Stanley, Ontario	M. Payne.
Qu' Appelle, N. W. T	Leslie Gordon.
Quebec, Quebec	Captain Ashe, R. N.
Rockliffe, Ontario	W. H. McIntyre.
St. Andrews, N. B	S. T. Gove, M. D.
St. John, N. B	G. Hutchinson.
Saint Pierre, N. F	The Commandant.
Saugeen, Ontario	W. K. Stewart.
Southwest Point of Anticosti	
Stratford, Ontario	W. McBride, M. A.
Swift Current	W. G. Knight.
Sydney, C. B	T. C. Hill, C. E.
Toronto, Ontario	Magnetic Observatory.
Woodstock, Ontario	Prof. N. Wolverton, M. A.
Yarmouth, N. S	J. E. Murphy.
Sub-series.	
Saint Johns, N. F	J. Higgins.
CHINESE.	
Hong Kong Observatory	The Staff.
Sub-series.	
Zi-Ka-Wei, near Shanghai	M. Marc Dechevrens, S. J.
DANISH.	
Copenhagen	Oversergent Fischer.
Fanöe	Overloerer Lauridsen.
Godthaab	S. Kleinsemidt.
Stykkisholm	A. O. Thorlacius.
Thorshavn	Overloever Bergh.
Vestervig	Loerer Oesterbol.
FRENCH.	
Alençon, Normal School	M. Nicot, Director.
Arras, Normal School	M. Sion, Director.
Avignon, Normal School	M. Giraud, Director.
Bar-sur-Seine	M. Saillard, Director.
Beauvais, Normal School	M. Mutelet.
Besançon, Normal School	M. Gobin, Director.
Bordeaux, Observatory	M. Rayet, Director.
Bourges, Normal School	M. Bourgoine, Director.
Brest, Naval Observatory	M. de Kermaree, Director.
Caen, Normal School	M. Berson, Director.
Châlons-sur-Marne, N.School	M. Mathieu, Director.
Charleville, Normal School	M. Noël, Director.
Clermont-Ferrand, Obs'y	M. Hurion, Director.
Cluny, Normal School	M. de Villemontée, Director.
Commercy, Normal School	M. Vaissade, Director.
Gap, Normal School	M. Poussel, Director.
Greasque, du Rhone	M. Kina, Director.

Stations.	Observers.
FRENCH—*Continued.*	
Guéret, Normal School	M. Delorme, Director.
Lescar, Normal School	M. Lefevre, Director.
Lorient, Naval Observatory	Lt. T. Carré, Director.
Lyon, St. Genis-Laval	M. André, Director.
Mans, Normal School	M. Tenot, Director.
Marseille, Observatory	M. Stephan, Director.
Montlouis	M. Cave for Dr. Fines.
Montpellier, Normal School	M. Galzin, Director.
Mont Ventoux	M. Blanc.
Nancy, Normal School	M. Hasse, Director.
Nantes, Observatory	M. Larocque, Director.
Nice, Normal School	M. Cantier.
Perpignan, Observatory	Dr. Fines, Director.
Pic-du-Midi, Summit	M. Vaussenat, Director.
Privas, Normal School	M. Curely, Director.
Puy de Dôme Obs'y, Summit	M. Hurion, Director.
Rochefort, Naval Observatory	Lt. E. Decante, Director.
Roche-sur-Yon, N. School	M. Brotier, Director.
Rodez, Normal School	M. Seger, Director.
Rouen, Normal School	M. Vieillot, Director.
Saint Brience	M. Richard.
Saint Maur, Observatory	M. Renon, Director.
Toulouse, Observatory	M. Baillaud, Director.
Tours	M. Letellier.
Sub-series.	
St. Martin du Hinx	M. Carlier, Director.
GERMAN.	
Ansbach	Prof. Jüdt.
Bamberg	Prof. Dr. Hoh.
Breslau	Royal University Obs'y.
Carlsruhe	Albert Senz.
Cassel	Dr. H. Möhl.
Frankfort-on-the-Main	Physical Society.
Friedrichshafen	Wilhelm, Chief Tel.
Hamburg	Carl H. Seeman.
Kiel	Prof. Dr. G. Karsten.
Leipsic, Astronomical Obs'y	H. Leppig, Assistant.
Memel	Issermann.
Munich	Dr. C. Lang.
Neufahrwasser	A. Lothes.
Neustädt, Palatinate	Prof. Dicknether.
Stuttgart	Dr. L. Meyer.
Wustrow	Profs. Brandes & Reimer.
GREEK.	
Athens	Kokkides & Wourlisch.
INDIAN.	
Kurrachee	
Deesa	
Bombay	
Poona	
Belgaum	
Lahore	
Roorkee	
Agra	
Nagpur	
Jubulpore	
Lucknow	
Allahabad	
Patna	
Hazaribagh	
Cuttack	
Calcutta	
Dhubri	
Sibsagar	
Jeypore	
Bellary	
Trichinopoly	
ITALIAN.	
Udine	Prof. Giovanni Clodig.
Milan	Prof. G. V. Schiapparelli.
Padua	Prof. Dott. Lorenzoni.
Moncalieri	Prof. P. F. Denza.
Genoa	Prof. G. M. Garibaldi.
Cuneo	
Pesaro	Prof. Luigi Guidi.
Florence	Prof. Constantino Pittei.
Leghorn	Prof. P. Monte.
Rome	Prof. P. Tacchini.
Lecce	C. de Giorgi.
Cosenza	Prof. D. Conti.
Palermo	Prof. G. Cacciotore.
Syracuse	Sig. V. Giuhano.
Sassari	
ITALIAN SUB-SERIES	
Stelvio	Prof. P. F. Denza.
Valdobbia	Prof.P. F. Denza.
JAPANESE.	
Awomori	K. Ogawa.
Erimo	T. Sato.
Fushiki	T. S. Tanad and T. Enas.
Gifu	R. Ikuchi.
Hakodate	T. Wakayama.
Hamamatsu	Sakigawa and Miyake.
Hiroshima	Y. Okamoto.
Kanazawa	S. Kuriyama.
Kagoshima	G. Miyanohara.
Kioto	M. Negishi.
Kochi	K. Kusunose.
Miasaka	T. Ishitain & T. Saki.
Miyako	K. Suwa & K. Ishie.
Nagasaki	K. Yamasaki and M Chin.
Nemuro	M. Itabashi.
Niigata	M. Morita and C. Tomikawa.
Nobiru	T. Saitoo.
Numadzu	R. Kaneda.
Osaka	H. Omura.

Stations.	Observers.
JAPANESE—*Continued.*	
Sakai	K. Yamawchi & P. Yoshimura
Shimonoseki	S. Nagasuye.
Tokei	The Staff.
Wakayama	K. Sakai.
MAURITIUS.	
Mauritius R. A. Observatory	The Staff.
MEXICAN.	
Leon	Prof. M. Leal & Espana.
Mazatlan	C. Carmina.
Mexico	The Staff.
Zacatecas	J. A. Bonilla, M. E.
NETHERLANDS.	
Flushing	
Groningen	
Helder	
Hellevoetsluis	
Utrecht	G. F. C. Zaalberg.
NORWEGIAN.	
Bergen	
Brono	
Christiania	
Gjæsvær	
PORTUGUESE.	
Funchal, Madeira	Capt. D. A. de Cunha.
Lisbon, Observatory	The Staff.
Ponta Delgada, Azores	
St. Vincent, Cape Verd	
Serra da Estrella	
San Salvador	
RUSSIAN.	
Archangel	Capt. Sseliwerstow.
Baku	
Barnaul	Meteorological Office.
Dorpat	Blumbach.
Ekaterinburg	Meteorological Observatory.
Elisavetgrad	
Irkutsk	Ed. Stelling.
Kasalinsk	Butkewitsch.
Kasan	Observatory.
Kem	M. Kosnobr.
Kertch	E. M. Zacmsipeyz.
Kischinev	
Korostishev	
Koslov	
Lgov	R. I. Ssaweljew, Engineer.
Libau	E. Quaas.
Lugan	Meteorological Observatory.
Moscow	Meteorological Observatory.
Nerchinsk	
Nikolaiev	Capt. Kurdakow.
Nikolaievsk-on-the Amoor	Schonberg.
Nikolsk	Nadeshdin.
Perm	
Petro-Alexandrovsk	Walther.
Petrozavodsk	Dr. Bergmann.
Pinsk	
Poti	
St. Petersburg	Central Physical Observatory.
Samarkand	Dresch.
Sevastopol	Coionobr.
Semipalatinsk	Major Lasarew.
Tashkend Laboratory	Teich, A. M.
Tiflis	Physical Observatory.
Viatka	
Warsaw	Astronomical Observatory.
Yeniseisk	Wishnewzky.
Sub-series.	
Petrowsky Academy	Bachmetieff.
SCOTCH.	
Leith	J. Bolam & Geo. Redpath.
SPANISH.	
Barcelona Met. Observatory	B. Jelin.
Bilbao, Met. Observatory	Tomas Eschriche.
Burgos, Met. Observatory	Domingo Martin.
Madrid, Royal Observatory	The Staff.
Santiago, Met. Observatory	R. Gil Villanueva, Director.
Valencia	J. A. Estopina.
Sub-series.	
Havana, Cuba	Benito Viñes, S. J.
Manilla, Philippine Islands	F. Faura, S. J.
San Fernando, Naval Obs'y	Capt. C. Pujazon, R. N.
San Juan de Porto Rico, W.I.	Enrique Gadea, Ch'f Eng'r.
SWEDISH.	
Haparanda	
Umea	
Hernosand	
Stockholm	
Wisby	
Sub-series.	
Upsala	Nils. Ekholm.
SWISS.	
Geneva	Observatory.
TURKISH.	
Constantinople	The Observatory.
Valona	A. Bertrand.
Sub-series.	
Beirut, Lee Obs'y, Syria	R. H. West, B. A., Director.
UNITED STATES SUB-SERIES.	
Colon	Pellegrin.
Gamboa	Lutnywich.
Naos	Barzelay.
Paramaribo, D. Guiana, S. A	Dr. C. J. Hering.
Rivas, Nicaragua, C. A	Earl Flint, M. D.
Vera Cruz	Capt. Geo. E. Powell

Form No. 106 R---1887.

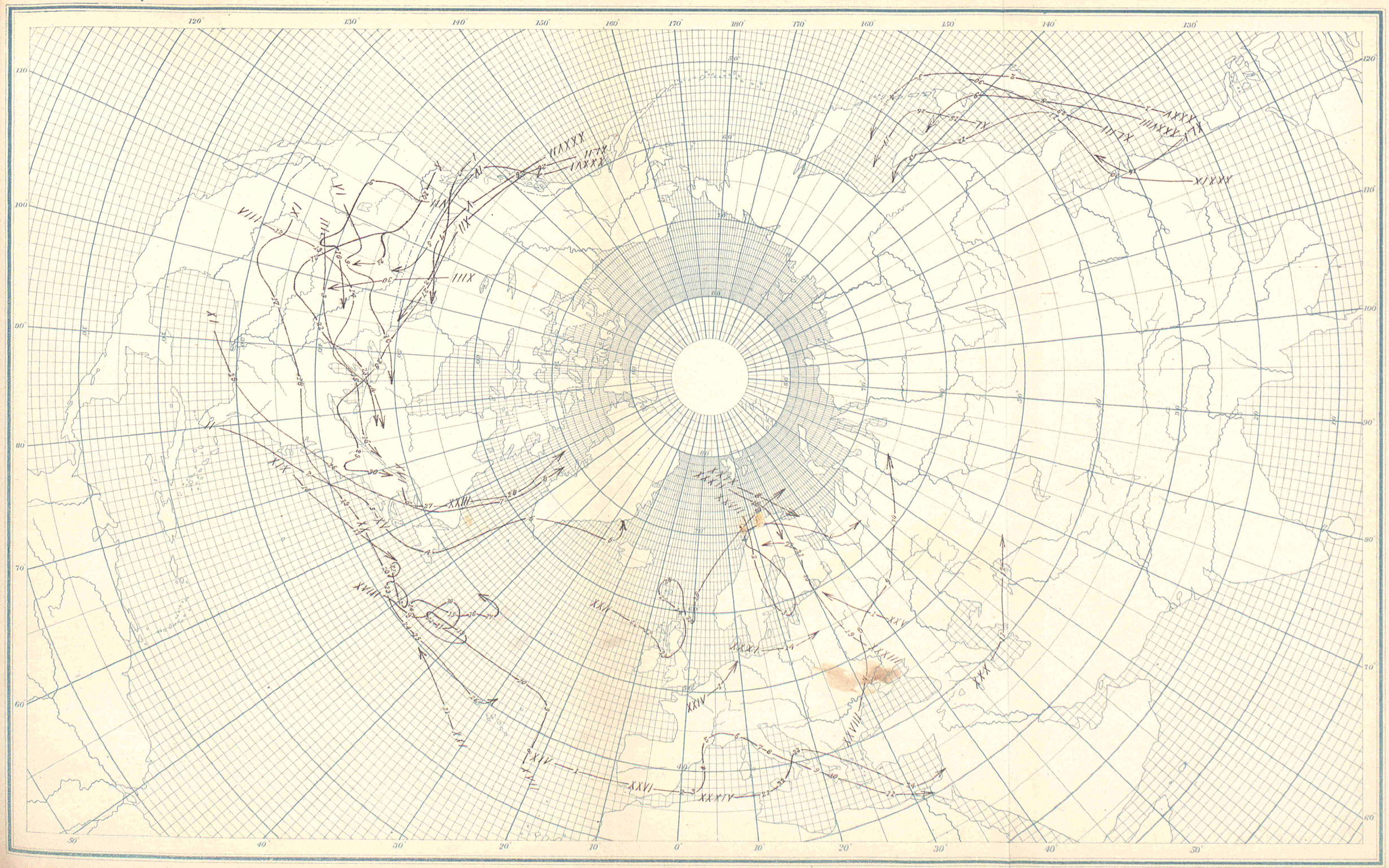
International Chart II. April, 1887. Isobars and Winds.



Signal Office Lith.

Form No. 106 R---1887.

International Chart III. April, 1887. Tracks of Areas of Low Pressure.



Signal Office Lith.

WAR DEPARTMENT.
OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY OF THE UNITED STATES.

SUMMARY AND REVIEW

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS

FOR THE MONTH OF MAY, 1887.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

A. W. GREELY,

BRIGADIER GENERAL, CHIEF SIGNAL OFFICER OF THE ARMY.

PRINTED FOR EXCHANGE WITH CO-OPERATING OBSERVERS.

WASHINGTON, D. C.
JUNE, 1888

List of merchant marine steam and sailing vessels from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of May, 1887.

	Name of vessel.	Captain.
Am.	s. s. Acapulco	Capt. Chas C. Lima.
Br.	Ada Peard	Nath'l Hocken.
	Adriatic	H. Parsell.
Am.	Advance	James Lord.
Br.	Aguan	J. Adair.
	Ailsa	J. W. Sanson
Am.	Alameda	G. H. Morse.
Br.	Alaska	Geo. S. Murray.
	Alexandria	D. Pert.
Ger.	Aller	H. Christoffers.
Am.	Alliance	J. R. Beers.
Br.	Alsatia	J. Brown.
	Alvena	MacKay.
	Alvo	D. Williams.
Ger.	Amalfi	Julius Bahr.
Br.	Ambrose	Edward Bisson.
Ger.	America	H. Hineke.
Nor.	Amicitia	P. M. Reimers.
Br.	Andes	T. M. McKnight.
	Arizona	S. Brooks.
	Arabic	G. Burton.
Span.	Asturiano	Arribal Seaga.
Br.	Athos	H. Low.
Am.	Augustine	Harwood.
Br.	Aurania	W. H. P. Hains.
	Australia	R. McRitchie.
Ger.	Australia	G. Franck.
Br.	Baltic	H. Davinson.
	Baltimore	I. Trenery
	Bassano	W. Rea.
	Bavarian	J. Oscinak.
Belg.	Belgenland	W. A. Beynon.
Br.	Benalder	J. Ross.
	Ben Ledi	S. Adamson.
	Bengore Head	J. R. Brady.
	Bessel	C. J. Watson.
	Biela	Fred Graham.
	Bolivia	J. J. Small.
	Bothnia	T. Dutton.
	Britannic	H. Perry.
	British King	John Kelly.
	British Prince	Samuel Nowell.
	British Princess	E H. Freeth.
	British Queen	R. Wills.
	Brooklyn City	W. Fitt.
Ger.	Brutus	J. A. Voge.
Br.	Buenos Ayrean	J. Scott,
	Buffalo	J. H. Malet.
	Bulgarian	E. Parry.
	Caledonia	R. T. Garvie.
Ger.	California	O. Winkler.
Br.	Canada	Thos. Foote.
	Catalonia	E. Wylie.
Am.	Cærense	John Jellard.
Br.	Celtic	P. J. Irving.
	Cephalonia	Henry Walker.
Fr.	Chateau Leoville	M. L. Chapelain.
	Chateau Yquem	C. Journiel.
Br.	Chicago	J. W. Jones.
	Chigwell	W. Masters.
	Chilian	E. F. Bannister.
Am.	Cienfuegos	F. M. Faircloth.
	Chiswick	Robert Gowing.
Br.	Circassia	A. Campbell.
Am.	City of Alexandria	J. W. Reynolds
	City of Augusta	J. W. Catherine.
Br.	City of Berlin	Francis S. Land.
	City of Chester	A. Lewis.
	City of Chicago	Fred Watkins.
Am.	City of Dallas	C. W. Reed.
Br.	City of Montreal	R Leitch.
	City of Newcastle	R. Townsend.
Am.	City of New York	Robt. R. Searle.
	City of Para	L. Dexter
	City of Peking	H. C. Dearborn.
Br.	City of Richmond	A. Redford.
	City of Rome	R. D. Munro.
Am.	City of Rio de Janeiro	W. B. Seabury.
	City of Sydney	D. Frielc.
	City of Washington	W. M. Rittig.
	Clement	Thomas Burley.
	Colima	J. M. Caverly.
	Colorado	J. Daniels.
	Columbia	Fred Bolles.
Br.	Columbia	T. Mitchell.
	Counsellor	Wm. Lang.
	Critic	W. R. Lord
	Cypromene	Alex. Robertson.
	Denmark	R. S. Rigby.
Belg.	De Ruyter	J. J. Brarens.
Br.	Devonia	Hugh Young.
	Devonshire	Mate Samuel Winter.
	Dorian	Capt. J. McKeagne.
	Dragonfly	J. W. Howling.
	Durham City	D. D. Galbraith.
	Earnmoor	R. J. Grey.
	Edith Godden	J. H. Bennett.
Am.	El Callao	Jos Schiltz.
Br.	Egypt	J. Sumner.
Ger.	Eider	P. H. Berdrow.
	Elbe	G. Meyer.
Span.	Elcano	V. de Ispizua.
Br.	Elysia	W. Baxter.
Ger.	Ems	T. Jungst.
Br.	England	T. P. Heeley.
	Erin	J. Robinson.
	Ethiopia	John Wilson.
	Etruria	T. Cook.
	Euclid	A. Matheson.
	Fitzroy	Henry Gibb.
	France	A. D. Hadley.
Ger.	Fulda	R. Ringk.

	Name of vessel.	Captain.
Br.	s. s. Gaelic	Capt. W. G. Pearne.
	Galileo	R. T. Jones.
	Gallia	M. Murphy.
Dan.	Geiser	C. W. Moeller.
Ger.	Gellert	W. Kühlewein.
Br.	Germanic	B. Gleadell.
Ger.	Gothia	C. Kordell.
It.	Gottardo	D. Viola.
Am.	Granada	J. L. Lockwood.
Br.	Greece	A. J. Jeffrey.
	Grecian	C. E. Le Gallais.
Ger.	Hammonia	H. F. Schwensen.
Dan.	Hekla	A. G. Thomsen.
Br.	Helvetia	G. Cochrane.
Ger.	Hermann	A. Kohlmann.
Br.	Hibernian	J. Brown.
	Holland	W. Tyson.
	Humboldt	Jas. Grimes.
Ger.	Hungaria	W. Leithauser.
Am.	Illinois	G. H. Dodge.
Ger.	India	M. Hulsen.
It.	Independente	P. Pirandello.
Dan.	Island	W. Skjodt.
Br.	Istrian	T. H. Fox.
	Italy	W. Pearce.
	Iowa	Samuel Walters.
Belg.	Jan Breydal	H. Meyer.
Br.	Jerome	Benj. Crimp.
	Jersey City	E. Horlor.
	John Dixon	L C. Webb.
	Kansas	W. Gleig.
Fr.	La Bourgogne	E. Franguel.
	La Bretagne	M. de Jousselin.
	La Champagne	E. Traub.
	La Gascogne	Santelli.
	La Normandie	G. de Kersabiec.
Br.	Lake Winnepeg	Howard Campbell.
Dtch.	Leerdam	G. S Stenger.
Ger.	Lessing	H. Barends
It.	Letimbro	3d offi. Fr. Dilliberto.
Br.	Llandaff City	Capt. T. H. Gore.
	Lord Clive	P. Urquhart.
	Lord Gough	E. M. Hughes.
	Lord Lansdowne	C. H. Baskfill.
	Lord O'Neil	James Dunn.
Am.	Lorenzo D. Baker	W. F. Wiley.
	Louisiana	E V. Gager.
Br.	Ludgate Hill	2d Off. H. Dumaresy.
	Madrid	Capt. M. Garson.
Ger.	Main	H. Boedeker.
Am.	Manhattan	Frank Stevens.
Br.	Manitoban	W. Dalziel.
Span.	Manuel L. Villaverde	Claudio Perales.
Br.	Marengo	Wm. Abbott.
Am.	Mariposa	H. M Hayward.
Ger	Marsala	N. Maass.
Br.	Mercia	J. Taylor.
Span.	Mexico	M. Carmona.
Br.	Monte Rosa	C. Thomas
	Mozart	W. Sprathly.
	Mozart	T. Sawyer.
	Muriel	G. S. Locke
	Nasmyth	T. T. Farrell.
Ger.	Neckar	H. Baur.
Belg.	Nederland	A. J. Griffin.
Fr.	Neustria	P. Yerries.
Br.	Nessmore	John Inch.
Am.	New Orleans	T. P. Halsey.
Br.	Newcomen	Chas. Hansen.
Am.	Newport	W. G. Shackford.
Belg.	Noordland	H. E. Nickels.
Br.	Norseman	E. Maddox.
Am.	Oceanic	John Metcalf.
Br.	Ocean Prince	W. H. Milburn.
	Olbers	Jas Clark.
	Ontario	W. P. Couch.
Am.	Oregon	E. Polemann.
Dtch.	Oranje Nassau	J. A. LaGrooy.
Br.	Orinoco	J. S Garvin.
	Otranto	W. Rippeth.
	Pavonia	A. McKay.
	Pawnee	J. James.
	Peconic	G. Evans.
Dtch.	P. Caland	F. H. Bonjer.
Belg.	Pennland	Rud. Weyer.
Am.	Philadelphia	Sam. Hess.
Belg.	Pieter de Connick	E. Smit.
Ger.	Polaria	Johannes Schade.
	Polynesia	A. Kuhn.
Br.	Pomona	J. Legoe.
	Port Phillip	Capt. Geo. Dulling.
	Pontiac	Ch. Offi. R. Blyth.
	Prussian	Capt. J. Ambury.
	Prydain	M. Parry.
	Queen	J. Annison.
	Republic	P. J Irving.
Ger.	Rhaetia	R. Karlowa.
	Rhein	L. Jahns.
Belg.	Rhynland	J. C. Jamison.
Br.	Rialto	W. Kerr.
	Richmond Hill	A. Hyde.
	Roseville	J. Dove.
Dtch.	Rotterdam	G. J. Vis.
Ger.	Rugia	A. Albers.
	Saale	H. Reichter.
Br.	Saint Ronans	H. Campbell.
	Salerno	B. H. Rogers.
	Samaria	B. Watt.
Am.	San Blas	T. Chapman.
	San José	D S. Austin.
Br.	Santiago	R. Potter.
	Sarmatian	Wm. Richardson.

	Name of vessel.	Captain.
Br.	s. s. Sarnia	Capt. Joseph Gibson.
	Scandinavian	John Park.
Dtch.	Schiedam	A. Potjer.
Br.	Scythia	T. Roberts.
Span.	Serra	F. de Lauzarraga.
Br.	Servia	H. McKay.
Ger.	Slavonia	H Schmidt.
Br.	Spain	W. A. Griffiths.
	State of Georgia	G. Moodie.
	State of Indiana	A. Ritchie.
	State of Nebraska	A. G. Braes.
	State of Nevada	J. A. Stewart.
	State of Pennsylvania	A. J. A. Mann.
	Stockholm City	K. Doyle.
	Strathleven	C. W. Pearson.
It.	Stura	G. Cañero.
Ger.	Suevia	C. Ludwig.
Br.	Surrey	R Griffiths.
Belg.	Switzerland	H. Buschmann.
Br.	Taormina	W. M. Franck.
	The Queen	John Milligan.
Dan.	Thingvalla	S. T. H. Laub.
Br.	Toronto	Jas. McAuley.
	Tower Hill	Lieut. F. Archer, R. N. R.
Ger.	Trave	Capt. W. Willigerod.
Br.	Trinacria	Geo Mitchell.
	Umbria	W. McMickan.
Am.	Valencia	W. Woodrick.
Br.	Vancouver	C. J. Lindall.
	Vertumnus	C. E. Cook.
	Virginian	M. Fitt.
Belg.	Waesland	J. Ueberweg.
Ger.	Werra	R. Bussius.
Belg.	Westermland	Com. W. G Randle.
Ger.	Weser	Capt. H. Bruns.
	Wieland	C. Hebich.
Br.	Worcester	W. Stamper.
	Wylo	T. L. Rogers.
	Wyoming	C. L. Rigby.
Dtch.	Zaandam	H. v. d. Zee.

N. Y. HERALD WEATHER SERVICE.

	Name of vessel.	Captain.
Ger.	bk. Bremerhaven	A. Witte.
Am.	s. s. Caracas	N M. Hopkins.
Fr.	Chateau Lafitte	C. Ollivier
	Chateau Marquax	A. Sensine.
Am	City of Puebla	J. Deakin.
	El Monte	J. W. Hawthorne.
	El Paso	H. S. Quick.
	Knickerbocker	F. Remble.
Br.	Marco Aurelio	H. Bermpohl.
	Nevada	J. A. R. Cushing.
Am.	Niagara	S. V. Bennis.
Br.	Portia	Henry Dawson.
Am.	Rio Grande City	J F Lewis.
Br.	Samana	W. Taylor.
	Straits of Gibraltar	G. Grigs.
	Trinidad	W. J. Fraser.

SAILING VESSELS.

	Name of vessel.	Captain.
Am.	bg. Abbie Clifford	D. W. Storer.
	bk. Abyssinia	John Hughes.
Br.	bg. Achsah	Alfred M. Shaw.
Ger.	bg. Adelherd	H. Bollen.
Br.	bg. Adria	J. H. Weldon.
Am.	bk. Alice	W. G. Kair.
Nor.	Artemis	E. E. Moe.
It.	bk. Angelo di Amore	M. Travega.
Am.	bg. Arcot	J. W. Cates.
Ger.	sp. August	G. H. Jaburg.
Am.	bkt. Bonny Doon	C. Burgess.
Ger.	sp. Carl	T. Hashagen.
Swed.	bk Carl von Doebeln	O. Jonssen.
Am.	schr. C. B. Church	N. A. Anderson.
	bk. Chas. R. Lewis	A. Montgomery.
Br.	sp. Chas. S. Whitney	Geo. D. Spicer.
	bk. Chidwall	T. C. Watson.
Ger	sp. Columbus	B. Sauermilch.
Am	schr. Comet	W. A. Aldrich.
Am.	bg. Daisy Boynton	C. Harding.
Ger.	sp. Dakota	N. E. Schaffer.
Am.	sp. E. B. Sutton	C. O. Carter.
Am.	schr. Edward R Emerson	A. H. Child.
Ger.	sp. Ellida	T. H. Zinke.
	bk. Emilie	W. Siems.
Aus.	bk. Errante	A. H. Nicolich.
Am.	Essex	G. W. Hall.
Nor.	sp. Ferdinand	H. Lutken.
Ger.	sp. Fidelio	T. H. Schutte.
Am.	schr. Florence Rogers	J. S. F. McLeod.
	bk. Forest	C. F. Cunningham.
It.	bk. Fratelli Laurin	L. Laurin.
Am.	bk. Geo. S. Homer	J. B. Perry.
Nor.	bk. Grundloven	O. G. Ellingsen.
Am.	Guy C. Goss	W. O. Weeden.
Nor.	Hanna	S. Falch Muns.
Ger.	sp. Hermann	H. Vahland.
Nor.	bk. Hermon	O. Olsen.
Nor.	bgt. India	B. Jorgenson.
Br.	bk. Jane	Thomas England.
Am	bg. Jane Adeline	G. W. Cates.
Swed.	bk. John Fougt	O. Carlsson.
Br.	bkt. Josephine	Chas. Brown.
	bk. José E. More	Asmus Lenhard.
Br.	bg. Kenilworth	P. Doig.
Ger.	bk. Kepler	Atken.
Nor.	sp. Komander Svend Foyn	J. Bryde.
Am.	bg. L. & W. Armstrong	A. Alexander.
Am.	Light-ship No. 37	Andrew Jackson.
Br.	sp. Mabel Taylor	Chas E. Durkee.

SUMMARY AND REVIEW OF INTERNATIONAL METEOROLOGICAL OBSERVATIONS, MAY, 1887.

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for May, 1887. Mean Barometer. Actual Inch.	Actual Mill.	Reduced. Inch.	Reduced. Mill.	Mean temperature. Fah.	Cent.	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
AUSTRALIAN.	° ′	° ′																								
Hobart Town	S. 42 53	E. 147 20	9.00 p.m.	190	58	29.86	758.4	30.07	763.8	47.4	8.6	93	4	6	8	2	2	2	.....	1	4	.....	.....	6	1.81	46.0
Melbourne	S. 37 50	E. 144 58	9.40 p.m.	91	28	30.08	764.0	30.15	765.8	51.9	11.1	84	6	5	6	4	2	3	1	2	2	.....	.....	7	1.98	50.3
AUSTRIAN.																										
Agram	N. 45 48	E. 15 53	1.04 p.m.	535	163	29.40	746.8	29.97	761.2	65.3	18.5	54	3	1	3	11	4	3	2	4	.....	.....	.....	7	4.41	112.1
Cracow	N. 50 04	E. 20 00	1.20 p.m.	722	220	29.13	739.9	29.91	759.7	60.8	16.0	60	5	2	5	5	2	3	5	4	.....	.....	.....	7	5.32	135.1
Eperies	N. 48 58	E. 21 15	1.25 p.m.	853	260	28.99	736.3	29.87	758.7	57.0	13.9	74	7	1	.....	.....	13	.....	1	.....	9	.....	.....	8	5.82	147.9
Gratz	N. 47 04	E. 15 28	1.02 p.m.	1171	357	28.66	728.0	29.89	759.2	61.7	16.5	70	3	6	3	11	3	1	3	1	.....	.....	.....	6	2.94	74.6
Kremsmunster	N. 48 03	E. 14 08	0.57 p.m.	1260	384	28.57	725.7	29.91	759.7	57.2	14.0	74	1	3	11	2	.....	.....	2	9	3	.....	.....	7	5.61	142.5
Lemberg	N. 49 50	E. 24 00	1.36 p.m.	978	298	28.89	733.7	29.92	760.0	62.8	17.1	65	.....	10	.....	5	1	8	.....	7	.....	.....	.....	7	4.66	118.4
Pola	N. 44 52	E. 13 51	0.55 p.m.	105	32	29.83	757.7	29.94	760.5	64.4	a18.0	63	.....	5	5	3	8	6	3	.....	1	.....	.....	5	3.73	94.8
Szathmar	N. 47 46	E. 22 53	1.32 p.m.	430	131	29.44	747.7	29.90	759.4	68.5	20.3	58	3	3	13	6	2	2	1	1	.....	.....	.....	6	3.98	101.0
Szegedin	N. 46 15	E. 20 10	1.21 p.m.	315	96	29.54b	750.4	29.87b	758.7	68.7	20.4	63	b	4	6	4	4	3	2	3	2	.....	.....	7	2.71	68.8
Trieste	N. 45 39	E. 13 46	0.55 p.m.	85	26	29.87	758.7	29.95	760.7	64.4	18.0	61	1	6	6	9	1	1	1	3	3	.....	.....	6	6.25	158.7
Vienna	N. 48 12	E. 16 22	1.05 p.m.	663	202	29.19	741.4	29.90	759.4	60.3	15.7	62	5	6	8	.....	1	6	2	1	2	.....	.....	7	5.06	128.5
BRITISH.																										
Aberdeen	N. 57 10	W. 2 06	11.52 a.m.	89	27	29.93	760.2	30.05	763.3	51.5	10.8	62	3	7	3	1	1	11	4	1	.....	.....	.....	6	1.64	41.7
Bidston	N. 53 24	W. 3 04	11.48 a.m.	197	60	29.80	756.9	30.05	763.3	51.7	10.9	62	.....	3	15	.....	.....	1	5	7	.....	.....	.....	6	.....	.....
Bradford	N. 53 48	W. 1 47	11.53 a.m.	366	112	29.51	749.5	29.93	760.2	52.2	11.2	63	2	9	4	.....	.....	2	3	11	.....	.....	.....	8	1.51	38.4
Bridgetown	N. 13 04	W. 59 37	8.02 a.m.	28	9	29.99	761.7	29.95	760.7	83.7	28.7	70	.....	.....	.....	.....	.....	3	21	7	.....	.....	.....	4	.....	.....
Chatham	N. 51 25	E. 0 33	0.02 p.m.	130	40	29.89	759.2	30.04	763.0	52.8	11.6	76	2	.....	1	1	.....	.....	4	5	18	.....	.....	7	.....	.....
Falmouth	N. 50 09	W. 5 04	11.40 a.m.	183	56	29.92	760.0	30.12	765.0	55.1	12.8	70	5	7	4	1	.....	7	4	3	.....	.....	.....	7	.....	.....
Freetown	N. 8 30	W. 13 14	11.07 a.m.	224	68	29.63	752.6	29.78	756.4	83.4	28.6	80	8	5	4	5	3	.....	.....	.....	6	.....	.....	3	.....	.....
Fort Napier	S. 30	E. 31	2.04 p.m.	2294	699	27.85	707.4	29.95	760.7	68.7	20.4	47	5	2	.....	.....	3	2	4	6	9	.....	.....	3	.....	.....
Galway	N. 53 15	W. 9 03	11.24 a.m.	32	10	29.99	761.7	30.04	763.0	56.0	13.3	87	4	5	2	9	2	1	5	3	.....	.....	.....	5	1.65	41.9
Gibraltar	N. 36 09	W. 5 21	11.39 a.m.	50	15	29.90	759.4	29.93	760.2	68.8	20.4	79	.....	6	7	.....	.....	.....	15	3	.....	.....	.....	3	.....	.....
Greenwich	N. 51 29	0 00	12 m.	159	48	29.84	757.9	30.03	762.7	54.4	12.4	67	10	5	2	2	.....	.....	5	6	1	.....	.....	8	.....	.....
Guernsey a	N. 49 27	W. 2 41	11.49 a.m.	275	84	29.74	755.4	30.04	763.0	52.4	11.3	82	3	10	4	2	.....	.....	2	9	.....	.....	.....	5	.....	.....
Kew	N. 51 28	W. 0 19	11.59 a.m.	34	10	29.99	761.7	30.04	763.0	53.4	11.9	65	10	8	2	4	1	.....	.....	6	.....	.....	.....	8	.....	.....
Leicester	N. 52 39	W. 1 08	11.55 a.m.	245	75	29.76	755.9	30.05	763.3	53.2	11.8	69	1	4	3	3	.....	.....	.....	20	.....	.....	.....	9	.....	.....
Malta	N. 36 00	E. 14 30	0.58 p.m.	70	21	29.88	758.9	29.93	760.2	68.0	20.0	79	2	13	1	1	6	3	1	4	.....	.....	.....	3	.....	.....
Nassau	N. 25 04	W. 77 22	6.51 a.m.	44	13	29.98	761.5	29.95	760.7	78.6	25.9	75	3	1	4	2	4	2	4	9	2	.....	.....	8	.....	.....
Oxford	N. 51 46	W. 1 17	11.55 a.m.	210	64	29.80	756.9	30.04	763.0	52.8	11.6	74	6	5	4	3	.....	1	2	10	.....	.....	.....	8	.....	.....
Plymouth	N. 50 22	W. 4 10	11.43 a.m.	125	38	29.92	760.0	30.07	763.8	56.4	13.6	66	2	7	1	.....	7	2	4	7	1	.....	.....	7	.....	.....
Swanbister	N. 58 55	W. 3 05	11.46 a.m.	72	22	29.93	760.2	30.03	762.7	50.2	10.1	73	2	4	10	2	2	7	.....	1	3	.....	.....	7	.....	.....
Scutari Cemet'y	N. 41 00	E. 29 03	1.56 p.m.	60	18	29.84	757.9	29.89	759.2	76.5	24.7	47	1	.....	.....	13	5	.....	.....	9	3	.....	.....	3	.....	.....
Valencia	N. 51 55	W. 10 18	11.19 a.m.	23	7	30.11	764.8	30.15	765.8	58.4	14.7	72	9	8	4	3	2	1	3	1	.....	.....	.....	7	.....	.....
Stonyhurst	N. 53 51	W. 2 28	11.50 a.m.	361	110	29.66	753.4	30.08	764.0	52.0	11.4	65	3	2	12	.....	1	1	3	9	.....	.....	.....	8	2.79	70.9
Sub-series.																										
Gozo	N. 36 01	E. 14 16	0.57 p.m.	364	111	29.66	753.4	30.02	762.5	69.8	21.0	58	4	5	7	9	1	1	4	.....	.....	5191	8360	3	0.29	7.3
Penang	N. 5 24	E. 120 20	6.41 p.m.	20	6	29.84	757.9	29.78	756.4	78.8	26.0	86	.....	28	.....	.....	.....	2	.....	1	.....	.....	.....	5	14.76	374.9
CANADIAN.																										
Bathurst a	N. 47 39	W. 65 42	7.37 a.m.	35	11	30.00	762.0	30.05	763.3	47.8	8.8	.....	3	.....	2	3	1	3	4	.....	14	.....	.....	6	1.29	32.8
Bird Rocks	N. 47 50	W. 61 10	7.56 a.m.	.....	.....	29.90	759.4	30.03	762.7	36.6	2.6	80	5	6	1	2	5	4	3	5	.....	.....	.....	3	1.35	34.3
Colgarry	N. 50 55	W. 114 04	4.24 a.m.	?	?	26.35	669.3	29.97	761.2	36.5	2.5	80	2	.....	1	1	.....	2	1	4	20	.....	.....	4	0.70	17.8
Chatham	N. 47 03	W. 65 29	7.38 a.m.	56	17	29.99	761.7	30.05	763.3	45.9	7.7	75	5	6	2	.....	2	8	1	3	4	.....	.....	6	1.50	38.1
Cornwall	N. 45 01	W. 74 43	7.01 a.m.	175	53	29.81	757.2	30.00	762.0	58.3	14.6	74	4	.....	11	2	2	.....	9	3	.....	.....	.....	4	1.27	32.3
Dalhousie b	N. 48 04	W. 66 22	7.35 a.m.	45	14	29.98	761.5	30.03	762.7	44.0	7.0	.....	.....	.....	14	.....	.....	.....	5	.....	10	.....	.....	5	2.86	72.6
Father Point	N. 48 31	W. 68 28	7.26 a.m.	20	6	30.02	762.5	30.05	763.3	42.9	6.1	82	2	11	.....	.....	.....	6	8	4	.....	.....	.....	6	0.60	15.2
Fort Garry	N. 49 51	W. 97 07	5.32 a.m.	754	230	29.04	737.6	29.87	758.7	48.0	8.9	80	9	2	2	3	7	3	2	3	.....	.....	.....	8	3.01	76.4
Fredericton	N. 45 57	W. 66 38	7.33 a.m.	164	50	29.92	760.0	30.10	764.5	50.3	10.2	64	2	3	7	.....	3	6	4	6	.....	5133	8261	6	1.65	41.9
Grand Manan	N. 44 46	W. 66 45	7.33 a.m.	49	15	30.01	762.2	30.06	763.5	47.4	8.6	77	2	5	2	4	4	2	3	5	4	.....	.....	4	3.13	79.5
Halifax	N. 44 39	W. 63 36	7.46 a.m.	122	37	29.94	760.5	30.08	764.0	47.1	8.4	78	15	1	.....	1	9	1	2	.....	2	.....	.....	4	2.13	54.1
Hamilton	N. 43 16	W. 79 53	6.40 a.m.	372	113	29.67	753.6	30.07	763.8	58.9	14.9	69	5	.....	4	5	3	.....	5	9	.....	.....	.....	5	0.53	13.5
Kingston	N. 44 14	W. 76 30	6.54 a.m.	307	94	29.71	754.6	30.04	763.0	54.1	12.3	76	1	11	2	1	5	9	1	1	.....	.....	.....	6	0.76	19.3
Little Glace Bay	N. 46 12	W. 59 58	8.00 a.m.	34	10	29.92	760.0	29.95	760.7	45.9	7.7	91	2	5	6	7	3	2	1	4	1	.....	.....	6	.....	.....
London	N. 43 00	W. 81 15	6.35 a.m.	832	254	29.15	740.4	30.05	763.3	55.4	13.0	82	2	1	2	.....	7	1	1	2	15	4307	6931	5	0.66	16.8
Medicine Hat	N. 50 01	W. 110 37	4.38 a.m.	2136	651	27.62	701.5	29.90	759.4	45.6	7.6	64	2	.....	1	.....	.....	.....	25	.....	3	.....	.....	5	0.12	3.0
Minnedosa	N. 50 13	W. 99 48	5.21 a.m.	1665	501	28.05	712.5	29.85	758.2	44.2	6.8	83	3	2	4	3	.....	2	2	5	10	.....	.....	5	2.34	59.4
Montreal	N. 45 31	W. 73 33	7.06 a.m.	187	57	29.84	757.9	30.04	763.0	55.1	12.8	67	6	9	1	3	2	6	3	1	.....	.....	.....	5	1.26	32.0
Ottawa	N. 45 26	W. 75 41	6.57 a.m.	200	61	29.79	756.7	30.01	762.2	56.6	13.7	72	3	3	3	3	1	2	8	8	.....	2857	4598	4	0.39	9.9
Parry Sound	N. 45 19	W. 80 01	6.40 a.m.	635	194	29.34	745.2	30.02	762.5	53.7	12.1	83	2	.....	14	2	6	2	4	1	.....	.....	.....	3	0.58	14.7
Peterborough	N. 44 17	W. 78 18	6.47 a.m.	722	220	29.29	744.0	30.07	763.8	56.9	13.8	75	.....	3	6	1	2	4	4	.....	11	.....	.....	3	0.43	10.9
Port Arthur	N. 48 27	W. 89 12	6.03 a.m.	642	196	29.24	742.7	29.96	761.0	47.0	8.3	81	4	11	4	.....	.....	1	3	.....	8	.....	.....	2	2.35	59.7
Port Dover	N. 42 47	W. 80 13	6.39 a.m.	635	194	29.35	745.5	30.03	762.7	55.5	13.1	94	2	7	2	.....	.....	.....	.....	.....	20	.....	.....	3	0.82	20.8
Port Stanley	N. 42 40	W. 81 13	6.35 a.m.	592	180	29.38	746.2	30.01	762.2	55.2	12.9	82	3	5	13	1	1	2	3	2	1	.....	.....	4	1.52	38.6
Qu' Appelle	N. 50 44	W. 103 42	5.05 a.m.	2115	645	27.59	700.8	29.86	758.4	45.4	7.4	62	3	.....	2	.....	4	4	4	7	.....	.....	.....	5	2.21	56.1
Quebec	N. 46 48	W. 71 12	7.15 a.m.	293	89	29.74	755.4	30.06	763.5	48.6	9.2	75	2	18	.....	.....	.....	4	4	1	2	.....	.....	4	0.27	6.9
Rockliffe	N. 46 10	W. 77 48	6.49 a.m.	418	127	29.58	751.3	30.04	763.0	50.7	10.4	82	.....	.....	4	1	.....	.....	4	2	20	.....	.....	3	1.17	29.7
Saint Andrews	N. 45 04	W. 67 06	7.32 a.m.	47	14	30.00	762.0	30.05	763.3	45.9	7.7	81	2	8	3	2	1	1	.....	3	11	.....	.....	4	2.36	59.9
Saint John, N.B.	N. 45 17	W. 66 03	7.36 a.m.	116	35	29.91	759.7	30.04	763.0	46.2	7.9	85	4	3	.....	.....	10	.....	.....	5	9	.....	.....	6	1.56	39.6
Saint Pierre a	N. 46 47	W. 56 08	8.15 a.m.	?	?	.....	.....	30.00	762.0	45.3	7.4	.....	.....	4	.....	9	.....	3	.....	9	5	.....	.....	.....	4.66	118.4
Sangeen	N. 44 30	W. 81 21	6.35 a.m.	656	200	29.31	744.5	30.01	762.2	52.7	11.5	83	.....	.....	2	.....	6	3	.....	.....	20	.....	.....	2	1.05	26.7
S.W. Pt. Anticosti	N. 49 24	W. 63 36	7.46 a.m.	30	9	29.97	761.2	30.01	762.2	40.5	4.7	88	7	4	.....	9	1	.....	1	7	2	.....	.....	5	1.79	45.5
Stratford	N. 43 23	W. 81 00	6.36 a.m.	1186	361	28.75	730.3	30.01	762.2	56.9	13.8	74	2	1	2	1	2	3	4	2	14	3790	6099	4	1.71	43.4
Swift Current	N. 50 21	W. 107 33	4.50 a.m.	2439	744	27.28	692.9	29.90	759.4	42.0	5.6	72	3	.....	.....	1	5	8	3	5	6	.....	.....	4	1.56	39.6
Sydney	N. 46 08	W. 60 10	7.59 a.m.	37	11	29.97	761.2	30.01	762.2	45.3	7.4	79	7	2	1	2	8	4	3	2	2	.....	.....	7	1.76	44.7
Toronto	N. 43 39	W. 79 23	6.42 a.m.	350	107	29.68	753.9	30.06	763.5	55.0	12.8	73	7	9	.....	2	3	2	1	4	3	.....	.....	4	0.81	20.6
Woodstock	N. 43 08	W. 80 47	6.37 a.m.	980	299	28.92	734.6	29.97	761.2	55.9	13.3	77	4	.....	1	2	5	.....	3	7	9	.....	.....	4	0.66	16.8
Yarmouth	N. 43 50	W. 66 02	7.36 a.m.	61	19	29.98	761.5	30.04	763.0	48.3	9.1	84	7	1	6	5	6	3	.....	1	2	.....	.....	4	2.43	61.7
Sub-series.																										
Saint Johns, N.F.	N. 47 34	W. 52 42	8.29 a.m.	159	48	29.72	754.9	29.93	760.2	45.7	7.6	86	.....	7	.....	4	6	7	3	4	.....	.....	.....	7	4.06	103.1
CAPE COLONY																										
Cape St. Francis	S. 34 10	E. 24 50	1.39 p.m.	25	8	30.02	762.5	30.01	762.2	63.7	17.6	86	.....	.....	7	7	.....	1	7	4	5	.....	.....	4	2.08	52.8
CHINESE.																										
Hong Kong	N. 22 18	E. 114 10	7.37 p.m.	110	34	29.76	755.9	29.81	757.2	74.1	23.4	86	.....	3	.....	.....	3	.....	21	4	.....	.....	.....	7	2.03	51.6
Foochow	N. 26 08	E. 119 38	7.59 p.m.	34	10	29.95	760.7	29.93	760.2	68.3	20.2	77	1	1	1	1	.....	3	2	21	1	.....	.....	8	2.96	75.2
Sub-Series.																										
South Cape	N. 21 55	E. 120 51	8.04 p.m.	121	37	29.74	755.4	29.81	757.2	77.0	25.0	88	4	.....	5	.....	.....	1	2	18	1	.....	.....	5	2.00	50.8
Zi-Ka-Wei	N. 31 12	E. 121 26	8.06 p.m.	23	7	29.91	759.8	29.89	759.2	62.8	17.1	84	2	2	2	.....	4	8	8	5	.....	.....	.....	7	3.56	90.5
DANISH.																										
Copenhagen	N. 55 41	E. 12 36	0.50 p.m.	43	13	29.87	758.6	29.94	760.5	53.6	12.0	63	3	1	1	4	2	4	.....	.....	16	.....	.....	6	.....	.....
Fanoe	N. 55 27	E. 8 24	0.34 p.m.	20	6	29.89	759.2	29.94	760.5	53.4	1.9	70	1	4	10	4	1	3	1	7	.....	.....	.....	6	.....	.....
Godthaab	N. 64 11	W. 51 46	8.33 a.m.	36	11	29.75	755.6	29.84	757.9	33.1	0.6	78	10	4	1	1	1	2	.....	8	4	.....	.....	8	.....	.....
Ivigtut	N. 61 12	W. 48 00	8.48 a.m.	16	5	29.75	755.6	29.81	757.2	38.8	3.8	.....	9	1	1	.....	.....	4	.....	.....	6	.....	.....	8	.....	.....

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
DANISH—(Con.	° ′	° ′																								
Jacobshavn	N. 69 13	W. 50 55	8.36 a.m.	43	13	29.83	757.7	29.93	760.2	24.3	— 4.3	.....	11b	.....	1	1	1	.....	2	.....	13	.....	.....	5	.....	.....
Stykkisholm	N. 65 05	W. 22 46	10.29 a.m.	30	11	29.83	757.7	29.92	760.0	40.1	4.5	82	1	.....	2	1	5	8	1	6	7	.....	.....	7	.....	.....
Thorshavn	N. 62 02	W. 6 44	11.33 a.m.	30	9	29.92	760.0	29.99	761.7	46.9	8.3	75	3	.....	6	8	2	3	6	2	1	.....	.....	7	.....	.....
Upernavik	N. 72 47	W. 56 00	8.16 a.m.	39	12	29.91	759.8	30.01	762.2	17.8	— 7.9	.....	10	.....	.....	3	1	.....	5	1	11	.....	.....	9	.....	.....
Vestervig	N. 56 47	E. 8 20	0.33 p.m.	82	25	29.83	757.6	29.94	760.5	51.6	10.9	72	2	7	6	3	.....	2	1	9	1	.....	.....	5	.....	.....
FRENCH.																										
Alençon	N. 48 26	E. 0 05	0.00 m.	476	145	29.54	750.4	30.04	763.0	56.7	13.7	64	4	3	.....	6	7	1	.....	10	.....	.....	.....	7	4.17	106.0
Arras	N. 50 18	E. 2 46	0.11 p.m	223	68	29.80	757.0	30.05	763.3	57.0	13.9	62	5	8	4	4	.....	1	.....	7	2	.....	.....	3	2.74	69.5
Avignon	N. 43 57	E. 4 49	0.19 p.m	66	20	29.89	759.2	29.96	761.0	67.6	19.8	52	16	3	.....	4	3	4	.....	.....	1	.....	.....	4	0.79	20.1
Bar-sur-Seine	N. 48 07	E. 4 22	0.17 p.m.	518	158	29.43	747.4	29.99	761.7	58.6	14.8	69	2	4	2	7	1	4	3	8	.....	.....	.....	8	5.27	133.9
Beauvais	N. 49 26	E. 2 05	0.08 p.m.	269	82	29.68	753.8	29.98	761.5	59.2	15.1	59	7	10	1	5	.....	.....	.....	8	.....	.....	.....	5	3.12	79.2
Besançon	N. 47 13	E. 6 02	0.24 p.m.	895	273	29.12	739.6	30.07	763.8	57.6	14.2	65	6	3	.....	2	11	5	4	.....	.....	.....	.....	.....	5.47	139.0
Bordeaux	N. 44 50	W. 0 32	11.58 a.m.	243	74	29.77	756.1	30.03	762.7	61.3	16.3	61	3	4	10	5	2	2	3	2	.....	.....	.....	8	2.79	70.9
Bourges	N. 47 10	E. 2 26	0.10 p.m.	512	156	29.45	747.9	30.00	762.0	59.5	15.3	64	8	4	7	3	.....	3	2	4	.....	.....	.....	5	4.31	109.4
Brest	N. 48 24	W. 4 30	11.42 a.m.	210	64	29.84	758.0	30.08	764.0	57.4	14.1	82	6	4	2	5	.....	1	3	10	.....	.....	.....	7	1.00	25.5
Caen	N. 49 11	W. 0 21	11.59 a.m.	69	21	29.96	761.0	30.04	763.0	54.9	12.7	77	10	4	4	1	1	1	.....	10	.....	.....	.....	5	1.06	27.0
Châlons-sur-Marne	N. 48 57	E. 4 21	0.17 p.m.	292	89	29.66	753.3	29.98	761.5	58.1	14.5	71	2	2	10	8	6	.....	1	2	.....	.....	.....	6	6.22	157.9
Charleville	N. 49 46	E. 4 43	0.19 p.m.	476	145	29.47	748.4	29.99	761.7	58.1	14.5	58	1	5	8	7	2	1	3	4	.....	.....	.....	7	2.54	64.4
Clermont-Fer'and	N. 45 46	E. 3 05	0.12 p.m.	1273	388	28.64	727.5	29.98	761.6	58.8	14.9	54	9	4	3	7	4	2	2	.....	.....	.....	.....	8	2.91	73.8
Cluny	N. 46 26	E. 4 39	0.19 p.m.	787	240	29.14	740.2	29.98	761.5	60.1	15.6	65	1	4	9	5	1	3	.....	7	1	.....	.....	8	3.82	97.0
Commercy	N. 48 46	E. 5 35	0.22 p.m.	817	249	29.11	739.4	30.00	762.0	57.2	14.0	66	3	3	16	2	.....	1	2	4	.....	.....	.....	5	3.35	85.1
Gap	N. 44 33	E. 6 05	0.24 p.m.	2424	739	27.43	696.7	29.93	760.1	60.4	15.8	48	6	.....	.....	.....	2	2	.....	.....	21	.....	.....	.....	2.10	53.2
Gréasque	N. 43 25	E. 5 37	0.22 p.m.	1056	322	28.84	732.6	29.93	760.1	63.3	17.4	49	2	3	2	4	2	5	1	12	.....	.....	.....	4	1.53	38.8
Guéret	N. 46 10	E. 1 52	0.07 p.m.	1535	468	28.38	720.8	29.96	761.0	56.7	13.7	83	3	1	9	5	4	5	2	2	.....	.....	.....	7e	.....	.....
Lescar	N. 43 20	W. 0 26	11.58 a.m.	525	160	29.44	747.8	30.00	762.0	63.3	17.4	65	2	3	17	3	.....	1	1	4	.....	.....	.....	.....	5.22	132.5
Lorient	N. 47 45	W. 3 21	11.47 a.m.	85	26	29.99	761.8	30.08	764.0	58.5	14.7	74	5	4	1	8	2	2	1	8	.....	.....	.....	7	4.72	120.0
Lyon	N. 45 41	E. 4 47	0.19 p.m.	981	299	28.94	735.0	29.98	761.5	58.1	14.5	60	9	5	2	1	4	8	2	.....	.....	.....	.....	8	3.50	88.9
Mans	N. 48 00	E. 0 12	0.01 p.m.	285	87	29.73	755.2	30.04	763.0	58.6	14.8	71	4	4	8	1	.....	1	7	6	.....	.....	.....	7	3.50	88.9
Marseille	N. 43 18	E. 5 23	0.22 p.m.	246	75	29.69	754.0	29.96	761.0	66.0	18.9	46	.....	3	17	3	1	5	1	1	.....	.....	.....	5	0.86	21.9
Montlouis	N. 42 30	E. 2 07	0.08 p.m.	5202	1586	24.84	630.9	29.67	753.6	41.2	5.1	72	10	4	3	11	.....	.....	3	.....	.....	.....	.....	6	1.71	43.4
Montpellier	N. 43 37	E. 3 53	0.16 p.m.	118	36	29.85	758.2	29.97	761.2	66.2	19.0	54	2	10	2	1	3	7	2	1	3	.....	.....	4	0.44	11.2
Mont Ventoux	N. 44 10	E. 5 16	0.21 p.m.	6234	1900	23.78	604.0	.....	.....	36.3	2.4	80	5	9	.....	2	10	3	.....	2	.....	.....	.....	4	3.10	78.8
Nancy	N. 48 42	E. 6 11	0.25 p.m.	718	219	29.13	740.0	29.91	759.7	55.2	12.9	70	2	2	5	7	2	1	7	5	.....	.....	.....	.....	4.18	106.2
Nantes	N. 47 13	W. 1 33	11.54 a.m.	134	41	29.90	759.5	30.05	763.3	59.4	15.2	65	10	4	5	3	4	.....	2	3	.....	.....	.....	8	1.92	48.9
Nice	N. 43 41	E. 7 16	0.29 p.m.	59	18	29.79	756.7	29.87	758.7	65.5	18.6	77	.....	.....	1	.....	.....	1	7	.....	22	.....	.....	2	0.87	22.1
Perpignan	N. 42 42	E. 2 53	0.12 p.m.	105	32	29.89	759.2	30.00	762.0	63.3	17.4	56	.....	17	1	.....	.....	.....	6	7	.....	.....	.....	6	1.38	35.0
Pic du Midi (Sum-	N. 42 56	W. 0 08	11.59 a.m.	9380	2859	21.15	537.4	.....	.....	30.0	— 1.1	74	1	7	6	8	.....	.....	.....	6	3	.....	.....	.....	4.17	105.9
Privas. [mit.)	N. 44 45	E. 4 36	0.18 p.m.	997	304	28.87	733.3	29.93	760.2	61.2	16.2	62	17	.....	2	.....	9	.....	1	2	.....	.....	.....	5	3.41	86.5
Puy de Dôme	N. 45 46	E. 2 58	0.12 p.m.	4813	1467	25.10	637.6	.....	.....	38.3	3.5	90	4	6	6	7	2	3	1	2	.....	.....	.....	9	5.44	138.2
Rochefort	N. 45 56	W. 0 58	11.56 a.m.	30	9	30.00	762.0	30.03	762.7	64.4	18.0	63	6	5	4	7	1	4	.....	3	1	.....	.....	5	1.61	40.8
Roche-sur-Yon	N. 46 40	W. 1 26	11.54 a.m.	259	79	29.76	755.8	30.04	763.0	58.8	14.9	68	6	8	6	5	1	1	2	2	.....	.....	.....	6	1.83	46.5
Rodez	N. 44 21	E. 2 34	0.10 p.m.	2050	625	27.86	707.6	30.00	762.1	56.5	13.6	66	.....	5	.....	.....	10	16	.....	.....	.....	.....	.....	3	3.40	86.4
Rouen	N. 49 26	E. 1 05	0.04 p.m.	39	12	29.97	761.2	30.02	762.5	58.3	14.6	62	4	6	4	4	.....	2	3	5	3	.....	.....	8	3.19	81.1
Saint Brience	N. 48 37	E. 5 08	0.20 p.m.	348	106	29.67	753.7	30.06	763.5	52.9	11.6	85	13	1	.....	2	.....	.....	.....	12	3	.....	.....	6	2.02	51.2
Saint Maur	N. 48 48	E. 2 21	0.09 p.m.	161	49	29.82	757.4	30.01	762.2	58.3	14.6	62	7	5	4	6	3	1	2	2	1	.....	.....	8	3.05	77.4
Toulouse	N. 43 37	E. 1 27	0.06 p.m.	636	194	29.35	745.6	30.02	762.5	61.0	16.1	67	1	12	10	2	1	5	.....	.....	.....	.....	.....	7	2.47	62.8
Sub-Series.																										
St. Martin du Hinx.	N. 43 35	W. 1 16	11.55 a.m.	131	40	29.93	760.1	30.08	764.0	61.0	16.1	64	1	6	11	7	1	1	.....	4	.....	.....	.....	8	3.74	e95.0
GERMAN.																										
Ansbach	N. 49 18	E. 10 36	0.42 p.m.	1358	414	28.51	724.2	29.96	761.0	57.2	14.0	58	3	4	9	4	1	1	.....	8	1	.....	.....	7	5.28	134.2
Bamberg	N. 49 54	E. 10 54	0.44 p.m.	787	240	29.11	739.3	29.96	761.0	58.5	14.7	65	1	5	9	5	.....	1	2	8	.....	.....	.....	8	4.55	115.6
Breslau	N. 51 07	E. 17 02	1.08 p.m.	482	147	29.40	746.7	29.94	760.5	58.3	14.6	59	4	3	10	3	1	1	6	3	.....	.....	.....	9	3.78	96.1
Carlsruhe	N. 49 01	E. 8 25	0.34 p.m.	413	126	29.53	750.0	29.99	761.7	57.7	14.3	65	3	3	.....	17	.....	1	3	3	1	.....	.....	8	7.21	183.2
Cassel	N. 51 19	E. 9 28	0.38 p.m.	669	204	29.23	742.5	29.95	760.7	54.9	12.7	66	5	5	1	5	3	3	1	3	5	.....	.....	8	2.92	74.1
Frankfort on M.	N. 50 08	E. 8 41	0.35 p.m.	338	103	29.65	753.2	30.03	762.7	58.1	14.5	60	6	3	7	6	1	.....	5	3	.....	.....	.....	8	3.41	86.6
Friedrichshafen	N. 47 39	E. 9 29	0.38 p.m.	1338	408	28.55	725.1	29.96	761.0	56.3	13.5	73	.....	1	3	17	6	.....	2	2	.....	.....	.....	8	5.17	131.4
Hamburg	N. 53 33	E. 9 58	0.40 p.m.	85	26	29.84	757.9	29.94	760.5	54.5	12.5	68	4	6	4	3	2	.....	4	8	.....	.....	.....	8	3.44	87.3
Kiel	N. 54 19	E. 10 04	0.40 p.m.	13	4	29.93	760.2	29.96	761.0	53.1	11.7	66	6	2	8	2	1	.....	2	10	.....	.....	.....	7	3.10	78.6
Leipsic	N. 51 20	E. 12 24	0.50 p.m.	390	119	29.53	750.0	29.98	761.5	52.0	11.1	62	.....	5	7	7	1	1	3	5	2	.....	.....	9	4.82	122.5
Memel	N. 55 43	E. 21 07	1.24 p.m.	39	12	29.89	759.2	29.96	761.0	55.9	13.3	68	6	9	6	2	3	3	1	1	.....	.....	.....	6	.....	.....
Munich	N. 48 09	E. 11 34	0.46 p.m.	1732	528	28.12	714.2	29.99	761.7	55.8	13.2	61	.....	13	3	3	.....	2	4	5	1	.....	.....	8	4.15	105.3
Neufahrwasser	N. 54 24	E. 18 40	1.15 p.m.	36	11	29.89	759.2	29.95	760.7	53.2	11.8	70	11	2	4	.....	4	.....	3	7	.....	.....	.....	6	3.62	92.0
Neustadt *a*	N. 49 21	E. 8 08	0.33 p.m.	479	146	29.41	747.0	29.93	760.2	57.2	14.0	71	8	1	7	1	7	1	2	2	1	.....	.....	8	0.49	12.5
Stuttgart	N. 48 47	E. 9 11	0.37 p.m.	833	254	29.05	737.8	29.95	760.7	58.1	14.5	60	4	5	9	5	.....	3	.....	5	.....	.....	.....	7	1.88	47.8
Wustrow	N. 54 21	E. 12 24	0.50 p.m.	23	7	29.88	759.0	29.92	760.0	52.9	11.6	72	5	.....	9	5	1	2	1	8	.....	.....	.....	6	1.63	41.3
GREEK.																										
Athens	N. 37 58	E. 23 44	1.35 p.m.	348	106	29.60	751.9	29.94	760.5	79.5	26.4	43	.....	1	2	6	22	.....	.....	.....	.....	.....	.....	4	.....	.....
INDIAN.																										
Kurrachee	N. 24 47	E. 67 04	4.28 p.m.	49	15	29.60	751.8	29.60	751.8	86.6	30.3	71	.....	.....	17	14	.....	.....	.....	.....	.....	.....	.....	2	.....	.....
Deesa	N. 24 16	E. 72 14	4.49 p.m.	466	142	29.15	740.4	29.55	750.6	103.5	39.7	19	1	1	8	15	5	1	.....	.....	.....	.....	.....	2	.....	.....
Bombay	N. 18 54	E. 72 49	4.51 p.m.	37	11	29.75	755.5	29.73	755.1	86.2	30.1	67	.....	9	18	4	.....	.....	.....	.....	.....	.....	.....	4	0.09	2.3
Poona	N. 18 28	E. 74 10	4.57 p.m.	1849	564	27.91	708.8	29.64	752.9	87.8	31.0	42	.....	15	13	3	.....	.....	.....	.....	.....	.....	.....	5	1.58	40.1
Belgaum	N. 15 52	E. 74 42	4.59 p.m.	2524	770	27.24	691.9	29.64	752.9	80.8	27.1	58	.....	.....	18	13	.....	.....	.....	.....	.....	.....	.....	4	0.36	9.1
Lahore	N. 31 34	E. 74 20	4.57 p.m.	702	214	28.79	731.2	29.45	748.0	105.5	40.8	12	4	5	6	2	4	2	.....	1	7	.....	.....	2	0.14	3.6
Roorkee	N. 29 52	E. 77 56	5.12 p.m.	887	270	28.62	726.9	29.45	748.0	101.7	38.7	16	.....	.....	16	.....	4	.....	1	.....	10	.....	.....	0	.....	.....
Agra	N. 27 10	E. 78 05	5.12 p.m.	555	169	29.98	736.2	29.47	748.5	106.6	41.4	16	43	15	6	1	2	1	1	.....	1	.....	.....	0	.....	.....
Nagpur	N. 21 09	E. 79 11	5.17 p.m.	1025	312	29.53	724.8	29.46	748.3	102.4	39.1	18	5	6	6	3	.....	3	1	7	1	.....	.....	5	0.36	9.1
Jubbulpore	N. 23 09	E. 79 59	5.20 p.m.	1341	409	28.24	717.4	29.47	748.6	102.0	38.9	16	4	11	7	5	.....	.....	1	3	.....	.....	.....	4	0.28	7.1
Lucknow	N. 26 50	E. 81 00	5.24 p.m.	369	112	29.18	741.3	29.50	749.3	101.3	38.5	23	8	7	4	5	3	.....	.....	2	2	.....	.....	2	0.12	3.0
Allahabad	N. 25 26	E. 81 52	5.27 p.m.	307	94	29.22	742.2	29.48	748.8	102.3	39.1	23	11	10	.....	.....	.....	.....	9	1	.....	.....	.....	2	.....	.....
Patna *a*	N. 25 37	E. 85 08	5.41 p.m.	183	56	29.36	745.8	29.49	749.0	93.1	33.9	50	3	2	2	.....	.....	.....	11	11	1	.....	.....	4	9.61	244.1
Hazaribagh	N. 24 00	E. 85 24	5.42 p.m.	2007	612	27.61	701.2	29.50	749.2	89.4	31.9	39	10	9	2	1	.....	2	4	3	.....	.....	.....	6	5.85	148.6
Calcutta	N. 22 33	E. 88 21	5.53 p.m.	21	6	29.58	751.2	29.54	750.4	86.2	30.1	71	.....	.....	1	5	14	7	3	1	.....	.....	.....	5	5.38	136.6
Dhubri	N. 26 07	E. 89 50	5.59 p.m.	115	35	29.52	749.8	29.59	751.6	82.3	27.9	79	1	.....	.....	1	1	5	3	6	14	.....	.....	5	22.09	561.1
Chittagong	N. 22 21	E. 91 50	6.07 p.m.	87	27	29.59	751.6	29.62	752.4	83.8	28.8	79	.....	.....	4	10	10	2	1	1	3	.....	.....	6	8.55	217.2
Sibsagar	N. 26 59	E. 94 40	6.19 p.m.	333	101	29.34	745.2	29.63	752.6	82.5	28.1	81	2	1	1	7	1	2	1	16	.....	.....	.....	6	13.52	343.4
Jeypore	N. 26 55	E. 75 50	5.03 p.m.	1431	436	28.15	715.0	29.46	748.4	105.1	40.6	13	7	12	11	1	.....	.....	.....	.....	.....	.....	.....	2	.....	.....
Bellary	N. 15 09	E. 76 57	5.08 p.m.	1475	449	28.22	716.8	29.58	751.3	96.9	36.1	30	4	11	10	4	1	1	.....	.....	.....	.....	.....	6	.....	.....
Trichinopoly	N. 10 50	E. 78 44	5.15 p.m.	275	84	29.46	748.2	29.66	753.4	96.3	35.7	39	.....	5	17	4	3	.....	.....	.....	2	.....	.....	6	0.81	20.6
ITALIAN.																										
Udine	N. 46 04	E. 13 13	0.53 p.m.	381	116	29.47	748.5	29.87	758.8	64.2	17.9	58	.....	7	9	3	1	3	1	1	6	.....	.....	7	10.15	257.9
Milan	N. 45 28	E. 9 11	0.37 p.m.	482	147	29.43	747.5	29.94	760.4	65.8	18.8	47	3	.....	3	11	1	6	3	4	.....	.....	.....	7	2.80	71.2
Padua	N. 45 24	E. 11 53	0.48 p.m.	102	31	29.83	757.7	29.93	760.2	64.2	17.9	55	4	4	2	6	4	6	4	1	.....	.....	.....	6	4.55	115.6
Moncalieri	N. 45 00	E. 7 41	0.31 p.m.	846	258	29.03	737.3	29.93	760.1	63.3	17.4	51	.....	4	3	4	1	7	12	.....	.....	.....	.....	6	3.40	86.3
Genoa	N. 44 24	E. 8 55	0.36 p.m.	177	54	29.76	755.9	29.95	760.8	62.1	16.7	60	3	.....	.....	1	13	11	2	1	.....	.....	.....	6	4.22	107.2
Cuneo	N. 44 20	E. 7 20	0.30 p.m.	1820	555	27.99	710.9	29.92	760.0	59.5	15.3	50	4	.....	.....	1	5	.....	13	8	.....	.....	.....	7	0.86	21.8
Pesaro	N. 43 55	E. 12 53	0.52 p.m.	46	14	29.90	759.4	29.95	760.7	62.6	17.0	65	4	.....	3	2	1	1	13	7	.....	.....	.....	6	2.72	69.2
Florence	N. 43 46	E. 11 15	0.45 p.m.	240	73	29.69	754.1	29.95	760.7	66.4	19.1	50	1	2	3	18	3	2	.....	2	.....	.....	.....	7	3.77	95.7
Leghorn	N. 43 33	E. 10 18	0.41 p.m.	79	24	29.89	759.2	29.97	761.2	63.7	17.6	60	1	6	11	7	6	.....	.....	.....	.....	.....	.....	7	4.31	109.4
Rome	N. 41 54	E. 12 29	0.50 p.m.	164	50	29.81	757.2	29.97	761.2	69.8	21.0	44	.....	3	.....	18	9	.....	.....	1	.....	.....	.....	6	1.63	41.3
Lecce	N. 40 22	E. 18 12	1.13 p.m.	236	72	29.74	755.4	29.98	761.5	70.7	21.5	49	5	3	1	6	5	2	2	7	.....	.....	.....	4	1.53	38.9
Cosenza	N. 39 19	E. 16 17	1.05 p.m.	840	256	29.10	739.1	29.97	761.2	70.2	21.2	69	.....	3	16	6	1	5	.....	.....	.....	.....	.....	4	1.39	35.4
Sassari	N. 40 43	E. 8 34	12.34 p.m.	735	224	29.24	742.7	29.99	761.7	67.5	19.7	48	1	1	1	.....	2	10	14	2	.....	.....	.....	5	0.15	3.9
Palermo	N. 38 07	E. 13 21	0.53 p.m.	236	72	29.78	756.4	30.01	762.2	73.8	23.2	51	1	3	3	3	2	1	.....	14	3	.....	.....	5	1.51	38.3

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for May, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent.	Mean Rel. Humidity	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
ITALIAN—Con.	° ′	° ′																								
Syracuse	N. 37 03	E. 15 15	1.01 p.m.	72	22	29.95	760.7	30.00	762.0	70.2	21.2	64	6	2	1	6	3	1	2	10	.....	.....	.....	6	0.76	19.4
Sub-Series.																										
Stelvio	N. 46 32	E. 10 25	0.42 p.m	8343	2543	22.08	560.9	.....	.....	35.1	1.7	76	1	.....	9	9	.....	1	1	10	.....	.....	.....	8	6.33	160.7
Valdobbia	N. 45 47	E. 7 51	0.31 p.m.	8360	2548	22.10	561.2	.....	.....	36.0	2.2	62	1	2	6	13	.....	1	3	5	.....	.....	.....	8	.....	.....
JAPANESE.																										
Awomori	N. 40 51	E.140 45	9.23 p.m.	33	10	29.93	760.2	29.95	760.8	48.2	9.0	74	6	2	9	2	.....	.....	4	8	.....	c5524	c8888	5	2.38	60.6
Fushiki	N. 36 47	E.137 03	10.05 p.m.	13	4	29.97	761.2	29.96	761.0	55.7	13.2	84	2	1	.....	6	.....	1	2	9	10	6351	10218	8	1.60	40.6
Gifu	N. 35 27	E.136 46	9.07 p.m.	49	15	29.93	760.1	29.95	760.9	59.6	15.3	77	6	1	4	2	8	3	2	2	3	2964	4772	5	7.33	186.2
Hakodate	N. 41 46	E.140 44	9.23 p.m.	10	3	29.95	760.9	29.95	760.9	45.8	7.7	84	2	2	8	2	1	3	9	1	3	8692	13988	5	2.01	50.8
Hamamatsu	N. 34 42	E.137 43	9.11 p.m.	92	28	29.87	758.6	29.93	760.2	59.9	15.5	82	.....	1	8	.....	2	2	6	3	9	3089	4977	6	5.67	143.9
Hiroshima	N. 34 23	E.132 27	8.50 p.m.	15	5	29.94	760.5	29.93	760.2	60.3	15.7	79	18	3	3	.....	.....	1	.....	2	4	3766	6059	4	6.39	162.4
Kanazawa	N. 36 33	E.136 40	9.07 p.m.	95	29	29.89	759.1	29.97	761.1	55.2	12.9	82	2	1	3	2	3	5	8	1	6	3924	6314	7	4.38	111.1
Kago-hima	N. 31 35	E.130 33	8.42 p.m.	13	4	29.94	760.3	29.92	760.0	64.2	17.9	83	1	4	.....	1	2	.....	3	4	16	1918	3087	7	5.90	149.7
Kioto	N. 35 01	E.135 46	9.03 p.m.	161	49	29.81	757.1	29.96	761.0	58.2	14.5	76	14	6	1	.....	1	1	2	5	1	3281	5280	6	4.25	107.6
Kochi	N. 33 33	E.133 34	8.54 p.m.	20	6	29.95	760.7	29.94	760.5	63.4	17.4	78	3	11	5	.....	1	2	4	4	1	5189	8351	5	9.46	240.3
Miasaki	N. 31 56	E.131 26	8.46 p.m.	26	8	29.94	760.5	29.94	760.5	64.6	18.1	83	8	2	9	.....	3	1	6	1	1	5040	8111	7	10.74	272.7
Miyako	N. 39 38	E.141 59	9.28 p.m.	98	30	29.87	758.8	29.96	761.0	48.4	9.1	85	4	2	4	5	4	.....	.....	.....	12	1876	3026	6	4.53	115.4
Nagasaki	N. 32 44	E.129 52	8.39 p.m.	190	58	29.76	755.8	29.94	760.5	61.5	16.4	82	7	1	1	9	1	2	1	6	3	3785	6091	5	6.94	176.3
Nemuro	N. 43 20	E.145 35	9.42 p.m.	89	27	29.90	759.4	29.99	761.7	38.9	3.9	88	6	.....	1	2	7	6	8	1	.....	8234	13251	6	5.04	127.8
Niigata	N. 37 55	E.139 03	9.16 p.m.	33	10	29.95	760.6	29.96	761.0	54.7	12.6	82	5	3	4	6	.....	2	3	2	6	5259	8463	6	2.51	63.6
Nobiru	N. 38 23	E.141 11	9.25 p.m.	16	5	29.96	761.0	29.96	761.0	52.4	11.3	83	9	4	2	.....	4	4	5	1	2	9231	14855	6	2.68	68.0
Numadzu	N. 35 06	E.138 51	9.15 p.m.	30	9	29.92	759.9	29.92	760.0	60.2	15.7	80	1	2	4	2	1	1	12	8	.....	3984	6428	8	6.15	156.2
Osaka	N. 34 42	E.135 30	9.02 p.m.	46	14	29.93	760.1	29.95	760.7	59.9	15.5	77	8	1	1	1	.....	.....	4	9	7	5536	8905	5	3.42	86.9
Sakai	N. 35 33	E.133 14	8.53 p.m.	7	2	29.96	761.0	29.94	760.5	57.7	14.3	77	6	1	7	1	.....	.....	4	8	4	5834	9389	6	2.39	60.8
Shimonoseki	N. 33 58	E.130 56	8.44 p.m.	164	50	29.80	756.8	29.95	760.7	59.2	15.1	84	3	1	7	.....	.....	.....	14	3	3	.....	.....	5	5.44	138.2
Tokei	N. 35 41	E.139 46	9.19 p.m.	69	21	29.89	759.3	29.94	760.5	55.3	14.6	85	6	2	2	.....	9	3	7	1	1	5466	9156	8	5.82	147.8
Wakayama	N. 34 14	E.135 09	9.01 p.m.	49	15	29.91	759.6	29.93	760.2	60.9	16.1	74	6	.....	1	1	1	1	.....	3	18	1574	2543	6	3.33	84.7
MAURITIUS.																										
Mauritius	S. 20 06	E. 57 33	3.50 p.m.	181	55	29.86	758.4	29.99	761.7	75.0	23.9	74	2	2	5	.....	1	3	15	3	.....	.....	.....	6	4.68	118.9
MEXICAN.																										
Guanajuato	N. 21 01	W.101 10	5.15 a.m.	6762	2061	23.68	601.4	29.82	757.4	61.5	16.4	60	2	3	4	3	1	7	1	10	.....	.....	.....	3	1.58	40.2
Leon	N. 21 07	W.101 36	5.14 a.m.	5902	1799	24.31	617.4	29.90	759.4	61.0	16.1	72	4	15	2	4	1	1	.....	4	.....	.....	.....	4	0.13	3.2
Maza lan	N. 23 12	W.106 17	4.55 a.m.	249	76	29.68	753.9	29.90	759.4	70.4	21.3	87	.....	1	1	.....	.....	6	12	11	.....	.....	.....	4	0.00	0.0
Mexico	N. 19 26	W. 99 00	5.24 a.m.	7490	2283	23.08	586.2	30.04	763.0	54.5	12.5	70	2	.....	2	.....	.....	.....	.....	.....	27	.....	.....	3	1.53	39.0
NETHERLANDS.																										
Flushing	N. 51 24	E. 3 35	0.14 p.m.	0	0	29.99	761.8	30.01	762.2	54.5	12.5	.....	6	4	7	5	.....	1	5	3	.....	.....	.....	.....	1.20	30.5
Groningen	N. 53 12	E. 6 34	0.26 p.m.	60?	18?	29.89	759.2	29.97	761.2	53.4	11.9	.....	11	4	1	2	.....	.....	5	6	.....	.....	.....	.....	3.48	88.5
Helder	N. 52 58	E. 4 45	0.19 p.m.	0	0	29.97	761.2	29.99	761.7	49.5	9.7	.....	4	8	3	7	.....	.....	2	7	.....	.....	.....	.....	1.51	38.3
Hellevoetsluis	N. 51 49	E. 4 08	0.17 p.m.	0	0	30.02	762.5	30.04	763.0	54.0	12.2	.....	2	8	9	1	.....	.....	2	7	2	.....	.....	.....	1.34	34.0
Utrecht	N. 52 05	E. 5 07	0.20 p.m.	43	13	29.93	760.3	29.99	761.7	56.7	13.7	.....	4	5	5	9	.....	.....	4	4	.....	.....	.....	4	2.12	53.9
NORWEGIAN.																										
Bergen	N. 60 24	E. 5 20	0.21 p.m.	56	17	29.87	758.7	29.97	761.2	51.8	11.0	62	3	12	8	.....	3	5	.....	.....	.....	.....	.....	.....	3.11	79.1
Brono	N. 65 28	E. 12 14	0.49 p.m.	33	10	29.85	758.3	29.93	760.2	46.6	8.1	72	10	1	4	8	2	1	3	.....	2	.....	.....	.....	4.48	113.8
Christiania	N. 59 55	E. 10 45	0.43 p.m.	134	41	29.70	755.8	29.95	760.7	58.6	14.8	45	3	.....	.....	10	6	2	5	4	1	.....	.....	6	2.35	59.7
Gjæsvær	N. 71 07	E. 25 22	1.41 p.m.	23	7	29.72	754.8	29.80	756.9	43.7	6.5	.....	.....	8	2	2	.....	11	1	.....	7	.....	.....	6	2.12	53.9
PORTUGUESE.																										
Funchal	N. 32 38	W. 16 55	10.52 a.m.	82	25	30.02	762.6	30.07	763.8	66.2	19.0	62	2	1	3	19	.....	1	.....	2	3	.....	.....	7	0.89	22.7
Lisbon	N. 38 42	W. 9 08	11.23 a.m.	312	95	29.69	754.2	30.00	762.0	65.7	18.7	54	8	3	.....	8	3	1	1	7	.....	.....	.....	4	2.39	60.7
Ponta Delgada	N. 37 45	W. 25 41	10.17 a.m.	66	20	30.16	766.1	30.21	767.3	57.9	14.4	65	6	4	3	1	1	4	2	9	1	.....	.....	4	1.73	43.9
Saint Vincent *b*	N. 16 37	W. 25 02	10.20 a.m.	35	11	30.02	762.4	30.00	762.0	75.6	24.2	70	18	.....	.....	.....	.....	.....	.....	11	.....	.....	.....	4	0.00	0.0
Serra da Estrella	N. 40 25	W. 7 35	11.30 a.m.	4728	1441	25.26	641.7	29.97	761.3	48.6	9.2	62	3	.....	7	2	1	6	7	4	1	.....	.....	4	6.87	174.4
San Salvador	S. 6 17	E. 14 53	1.00 p.m.	1834	559	28.07	713.0	29.83	757.6	78.4	25.8	71	.....	3	7	.....	.....	.....	1	1	19	.....	.....	6	1.48	37.5
RUSSIAN.																										
Archangel	N. 64 33	E. 40 32	2.42 p.m.	16	5	29.87	758.6	29.94	760.5	51.4	10.8	59	1	14	1	5	.....	4	1	1	4	.....	.....	4	.....	.....
Baku	N. 40 21	E. 49 51	3.19 p.m.	39	12	30.04	763.1	30.07	763.8	69.1	20.6	63	10	3	.....	.....	10	2	3	1	2	.....	.....	2	0	0
Barnaul	N. 53 20	E. 83 47	5.35 p.m.	459?	140?	29.42	747.2	29.93	760.2	54.1	12.3	55	1	2	5	13	2	2	.....	2	4	.....	.....	8	3.01	76.4
Dorpat	N. 58 23	E. 26 43	1.47 p.m.	223	68	29.06	753.4	29.93	760.2	59.0	15.0	50	3	1	8	5	2	5	3	4	.....	.....	.....	8	2.56	64.9
Ekaterinburg	N. 56 49	E. 60 38	4.03 p.m.	899	274	28.96	735.0	29.95	760.7	62.2	16.8	42	7	4	11	5	.....	1	.....	3	.....	.....	.....	5	1.84	46.6
Elisavetgrad	N. 48 31	E. 32 17	2.09 p.m.	407	124	29.51	749.6	29.95	760.7	73.6	23.1	39	1	1	3	5	6	8	4	3	.....	.....	.....	7	1.16	29.4
Irkutsk	N. 52 17	E.104 16	6.57 p.m.	1610	491	28.25	717.6	30.01	762.2	52.3	11.3	44*d*	4	8	1	2	3	4	3	3	3	.....	.....	8	1.77	45.0
Kasalinsk	N. 45 46	E. 62 07	4.08 p.m.	148	45	29.75	755.6	29.91	759.7	75.2	24.0	27	2	2	5	3	.....	1	4	14	.....	.....	.....	4	.....	.....
Kasan *a*	N. 55 47	E. 49 08	3.17 p.m.	230	70	29.72	754.8	30.00	762.0	66.4	19.1	46	.....	2	1	15	3	7	.....	1	1	.....	.....	5	0.58	14.6
Kem	N. 64 57	E. 34 39	2.19 p.m.	43	13	29.82	757.5	29.91	759.7	49.6	9.8	60	2	5	7	1	.....	6	8	2	.....	.....	.....	8	1.76	44.6
Kertch	N. 45 21	E. 36 29	2.26 p.m.	20?	6?	29.85	758.3	29.87	758.7	69.3	20.7	59	7	.....	3	.....	7	5	6	1	2	.....	.....	4	.....	.....
Keiff	N. 50 27	E. 30 30	2.02 p.m.	600	183	29.31	744.5	29.95	760.7	69.1	20.6	50	4	.....	5	2	4	11	3	1	1	.....	.....	6	1.91	48.6
Kischinev	N. 46 59	E. 28 51	1.55 p.m.	361	110	29.47	748.5	29.85	758.2	74.5	23.6	46	5	4	1	2	15	3	1	.....	.....	.....	.....	6	1.63	41.3
Korostishev	N. 50 19	E. 29 03	2.05 p.m.	?	?	29.31	744.5	.....	.....	68.1	20.4	54	2	2	1	6	4	7	8	1	.....	.....	.....	6	2.69	68.4
Koslov	N. 52 53	E. 40 31	2.42 p.m.	505	154	29.47	748.0	30.02	762.5	69.3	20.7	52	.....	2	6	3	5	4	6	2	3	.....	.....	5	.....	.....
Lgov	N. 51 38	E. 35 17	2.21 p.m.	518	158	29.43	747.6	29.99	761.7	70.0	21.1	48	1	.....	6	6	4	3	6	2	3	.....	.....	7	1.26	32.0
Libau	N. 56 31	E. 21 01	1.24 p.m.	20	6	29.89	759.3	29.94	760.5	52.3	11.3	70	1	12	5	8	4	1	.....	.....	.....	.....	.....	5	2.44	61.9
Lugan	N. 48 35	E. 39 20	2.37 p.m.	164	50	29.77	756.1	29.95	760.7	75.0	23.9	34	1	1	5	5	1	4	10	4	.....	.....	.....	6	2.14	54.3
Moscow	N. 55 46	E. 37 40	2.31 p.m.	469	143	29.47	748.5	29.99	761.7	67.5	19.6	49	1	4	5	3	9	2	1	1	5	.....	.....	5	0.74	18.9
Ner chinsk	N. 51 19	E. 119 37	7.58 p.m.	2155?	657?	27.60	701.1	29.93	760.2	49.3	9.6	45	4	5	2	4	.....	1	1	.....	14	.....	.....	5	.....	.....
Nikolaiev	N. 46 58	E. 31 58	2.08 p.m.	62	19	29.89	759.2	29.95	760.7	73.0	23.1	49	4	1	1	1	12	2	5	1	4	.....	.....	4	2.78	70.5
Nikolaievsk *b*	N. 53 08	E.140 45	9.23 p.m.	82	25	29.61	752.0	29.71	754.6	38.8	3.8	78	1	4	1	.....	.....	7	10	2	4	.....	.....	5	.....	.....
Nikolsk	N. 59 32	E. 45 27	3.02 p.m.	485?	148?	29.41	747.0	29.96	761.0	63.0	17.2	51	4	6	.....	7	4	5	2	3	.....	.....	.....	7	3.42	86.8
Perm	N. 58 01	E. 56 16	3.45 p.m.	328?	100?	29.52	749.9	29.89	759.2	64.8	18.2	43	.....	5	11	7	2	3	1	3	.....	.....	.....	7	1.53	38.8
Petro-Alexandrovsk	N. 41 28	E. 61 05	4.04 p.m.	328	100	29.71	754.6	29.94	760.5	60.3	15.7	.....	3	.....	4	5	1	2	1	15	.....	.....	.....	3	.....	.....
Petrozavodsk *k*	N. 61 47	E. 34 23	2.18 p.m.	220?	67?	29.63	752.6	29.91	759.7	49.1	9.5	63	1	4	2	2	3	.....	7	1	.....	.....	.....	8	0.92	23.5
Pinsk	N. 52 07	E. 26 06	1.44 p.m.	459?	140?	29.40	745.7	29.91	759.7	66.6	19.2	55	1	1	4	2	2	8	7	5	1	.....	.....	7	5.09	129.3
Poti	N. 42 09	E. 41 37	2.46 p.m.	26	8	30.00	761.9	29.98	761.5	70.2	21.2	64	.....	5	8	9	3	.....	1	1	4	.....	.....	6	.....	.....
St. Petersburg	N. 59 56	E. 30 16	2.01 p.m.	20	6	29.87	758.7	29.93	760.2	57.2	14.0	53	2	1	9	2	6	4	4	3	.....	.....	.....	7	2.15	54.6
Samarkand	N. 39 39	E. 66 57	4.28 p.m.	2379?	725?	27.51	698.7	29.94	760.5	75.7	24.3	.....	2	4	.....	2	.....	.....	10	11	2	.....	.....	4	0.20	5.2
Semipalatinsk	N. 50 24	E. 80 13	5.21 p.m.	594	181	28.41	721.0	30.05	763.3	54.0	12.2	61	1	1	5	11	5	3	.....	3	2	.....	.....	6	1.25	31.8
Sevastopol	N. 44 37	E. 33 31	2.14 p.m.	187	57	29.78	756.3	29.98	761.5	72.9	22.7	49	.....	3	9	10	6	.....	.....	.....	2	.....	.....	4	0.42	10.7
Tashkend	N. 41 20	E. 69 18	4.37 p.m.	1607?	490?	28.36	720.3	29.97	761.2	77.9	25.5	30	3	8	1	5	2	1	1	.....	10	.....	.....	3	.....	.....
Tiflis	N. 41 43	E. 44 47	2.59 p.m.	1342	409	28.61	726.6	29.95	760.7	73.8	23.2	43	4	5	2	.....	7	11	1	1	.....	.....	.....	6	3.07	77.9
Viatka	N. 58 36	E. 49 41	3.19 p.m.	581?	177?	29.30	744.1	29.96	761.0	63.5	17.5	51	2	3	9	5	2	3	1	.....	6	.....	.....	5	1.20	30.4
Yeniseisk	N. 58 27	E. 92 06	6.08 p.m.	276?	84	29.69	754.0	30.02	762.5	52.3	11.3	54	5	1	8	3	5	2	3	2	2	.....	.....	6	1.66	42.1
Sub-series.																										
Petrowsky Acad'y	N. 55 50	E. 37 33	2.30 p.m.	558	170	29.37	746.1	30.00	762.0	66.9	19.4	44	.....	2	6	2	13	4	3	1	.....	.....	.....	5	1.48	37.5
SCOTTISH.																										
Leith	N. 55 59	W. 3 10	11.47 a.m.	70	21	29.96	761.0	30.06	763.5	.....	.....	.....	2	7	6	2	.....	2	8	4	.....	.....	.....	7	1.52	38.6
SPANISH.																										
Bilbao	N. 43 15	W. 2 59	11.48 a.m.	52	16	30.01	762.2	30.06	763.5	64.4	18.0	67	2	20	1	4	.....	.....	2	.....	2	1830	2945	8	4.78	121.3
Burgos	N. 42 20	W. 3 46	11.45 a.m.	2821	860	27.09	688.2	30.03	762.7	58.1	14.5	69	7	1	3	5	5	.....	1	9	.....	6139	9880	5	1.35	34.3
Madrid	N. 40 25	W. 3 42	11.45 a.m.	2152	656	27.81	706.4	29.99	761.0	68.2	20.1	39	3	.....	8	6	4	1	5	4	.....	8373	13475	4	1.40	35.6
Santiago	N. 42 53	W. 8 28	11.26 a.m.	863	263	29.11	739.3	30.02	762.5	63.7	17.6	59	5	1	3	9	.....	2	.....	10	1	8980	14451	6	3.97	100.8
Valencia	N. 39 30	W. 0 20	11.59 a.m.	59	18	30.01	762.2	30.08	764.0	67.6	19.8	53	1	3	1	.....	7	17	1	1	.....	.....	.....	5	1.69	42.9
SPANISH—*Sub.*																										
Havana	N. 23 08	W.82 23	6.30 a.m.	62	19	29.95	760.7	29.96	761.0	74.6	23.7	80	1	.....	.....	.....	3	15	10	2	.....	.....	.....	2	0.68	17.3
Manila	N. 14 35	E.120 57	8.04 p.m.	52	16	29.80	756.9	29.78	756.4	80.6	27.0	84	1	.....	1	8	4	5	5	2	5	3438	5533	7	10.06	255.5
San Fernando	N. 36 28	W. 6 13	11.35 a.m.	95	29	29.95	760.7	30.03	762.7	69.3	20.7	58	1	.....	7	7	5	1	9	1	.....	.....	.....	4	0.78	19.9
San Juan de Porto Rico	N. 18 30	W.66 10	7.35 a.m.	82	25	29.93	760.3	30.00	762.0	79.3	26.3	80	.....	.....	.....	3	1	3	3	1	10	.....	.....	4	5.82	147.7

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for May, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent.	Mean Rel. Humidity	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
SWEDISH.	° ′	° ′																								
Haparanda	N. 65 47	E. 24 03	1.36 p.m.	30	9	29.82	757.4	29.90	759.4	49.1	9.5	65	6	6	1	1	13	1	1	.....	2	.....	.....	5	0.98	25.0
Umea	N. 63 50	E. 20 17	1.21 p.m.	39	12	29.83	757.7	29.92	760.0	52.2	11.2	53	9	2	.....	6	6	1	4	3	.....	.....	.....	5	1.35	34.4
Hernosand	N. 62 32	E. 17 57	1.12 p.m.	46	14	29.85	758.2	29.95	760.7	52.3	11.3	56	3	7	.....	.....	12	1	4	1	3	.....	.....	5	1.71	43.5
Stockholm	N. 59 20	E. 18 04	1.12 p.m.	144	44	29.74	755.5	29.91	760.5	54.0	12.2	66	6	2	5	2	3	2	2	6	3	.....	.....	6	0.70	17.7
Wisby	N. 57 39	E. 18 19	1.13 p.m.	52	16	29.84	757.9	29.92	760.0	50.5	10.3	71	3	5	9	5	1	.....	3	5	.....	.....	.....	5	2.33	59.2
Sub-Series.																										
Upsala	N 59 51	E. 17 37	1.10 p.m.	79	24	29.81	757.2	29.93	760.2	56.5	13.6	48	6	6	3	3	5	1	3	4	.....	.....	.....	6	0.51	13.0
SWISS.																										
Geneva	N. 46 12	E 6 08	0.25 p m.	1338	408	28.44	722.3	29 85	758.3	56.8	13.8	58	14	2	2	2	7	1	2	1	.....	.....	.....	8	3.17	80.6
TURKISH.																										
Constantinople	N 41 02	E. 28 59	1.56 p.m.	246	75	29.58	751.2	29.84	758.0	74.8	23.8	44	2	.....	.....	15	5	.....	.....	9	.....	.....	.....	4	0.04	1.0
Valona	N. 40 27	E. 19 27	1.18 p.m.	105	32	30.05	763.3	30.14	765.5	72.9	22.7	.....	.....	7	3	12	8	1	.....	.....	.....	.....	.....	4	3.19	81.0
Sub-Series.																										
Beirut	N. 33 54	E. 35 28	2.22 p.m.	112	34	29.97	761.2	30.06	763.5	75.9	24.4	62	7	3	7	5	2	1	.....	1	5	.....	.....	1	0.37	9.5
UNITED STATES.																										
Atlantic states.																										
Eastport	N. 44 54	W. 66 59	7.32 a.m.	53	16	30.01	762.2	30.07	763.8	46.6	8.1	81	8	2	.....	4	8	2	2	4	1	6159	9912	5	2.57	65.3
Portland	N. 43 39	W. 70 15	7.19 a.m.	99	30	29.95	760.7	30.05	763.3	53.4	11.9	72	4	5	1	6	3	4	2	4	2	5558	8945	5	1.93	49.0
Manchester	N. 43 13	W. 73 03	7.14 a.m.	.....	.....	29.81	757.2	.....	.....	56.7	13.7	66	5	5	3	2	6	4	2	4	.....	3773	6072	4	2.20	55.9
Mt. Washington	N. 44 16	W. 71 18	7.15 a.m.	6279	1914	23.87	606.3	30.05	763.3	39.5	4.2	79	2	11	7	4	1	4	1	1	.....	183806	29579	3	4.23	107.4
Northfield	N. 44 08	W. 72 42	7.09 a.m.	871	266	29.13	739.9	30.06	763.5	53.0	11.7	79	6	.....	1	3	14	1	1	5	.....	6161	9915	3	1.39	35.3
Boston	N. 42 21	W. 71 04	7.16 a.m.	124	38	29.95	760.7	30.08	764.0	56.8	13.8	70	3	4	4	6	2	2	3	7	.....	7458	12002	5	1.67	42.4
Nantucket	N. 41 14	W. 70 07	7.20 a.m.	14	4	30.06	763.5	30.06	763.5	53.7	12.1	79	2	6	2	4	5	2	1	9	.....	5927	9538	4	1.75	44.4
Block Id	N. 41 10	W. 71 36	7.14 a.m.	27	8	30.05	763 3	30.07	763.8	53.7	12.1	85	6	5	4	6	4	2	.....	4	.....	7271	11701	3	0.51	13.0
New Haven	N. 41 18	W. 72 56	7.08 a.m.	107	33	29.96	761.0	30.06	763.5	56.4	13.6	75	5	3	.....	2	4	1	3	4	9	4382	7052	4	0.18	4.6
New London	N. 41 21	W. 72 05	7.12 a.m.	47	14	30.02	762 5	30.06	763.5	56.4	13.6	79	4	2	....	2	1	2	1	1	18	2829	4552	3	1.36	34.5
Wood's Holl	N. 40 28	W. 74 00	7.04 a.m.	22	7	30.09	764.3	30.10	764.5	52.1	11.2	85	4	3	2	8	4	3	1	6	.....	6862	11043	4	1.91	48.5
Albany	N. 42 39	W. 73 45	7.05 a.m.	85	26	29.99	761.7	30.07	763.8	59.2	15.1	77	3	1	2	.....	7	3	.....	6	9	3665	5898	4	2.27	57.7
New York City	N. 40 43	W. 74 00	7.04 a.m.	168	51	29.90	759.4	30.06	763.5	58.8	14.9	68	2	6	3	3	3	3	3	7	1	3865	6220	4	0.99	25.2
Philadelphia	N. 39 57	W. 75 09	7.00 a.m.	117	36	29.96	761.0	30.07	763.8	59.7	15.4	75	3	2	6	4	2	1	7	5	1	5101	8209	5	0.62	15.8
Atlantic City	N. 39 22	W. 74 25	7.03 a.m.	13	4	30.07	763.8	30.07	763.8	57.3	14.1	88	1	2	5	5	9	.....	2	6	1	5188	8349	2	1.61	40.9
Baltimore	N. 39 18	W. 76 37	6.54 a.m.	45	14	30.02	762.5	30.05	763.3	62.7	17.1	76	5	3	1	1	5	3	3	8	2	3783	6088	5	2.57	65.3
Washington City	N. 38 54	W. 77 03	6.52 a.m.	106	32	29.95	760 7	30.05	763 3	62.3	16.8	80	4	3	1	1	4	4	1	7	6	3131	5039	5	2.50	63.5
Chincoteague	N. 37 55	W. 75 23	6.59 a.m.	8	2	30.05	763.3	30.04	763.0	61.3	16.3	87	3	2	3	2	5	10	3	3	.....	6320	10171	3	3.34	84.8
Lynchburg	N. 37 25	W. 79 09	6.44 a.m.	652	199	29.37	746.0	30.04	763.0	63.8	17.7	79	.....	4	1	5	4	3	6	6	2	2177	3504	5	3.59	91.2
Norfolk	N. 36 51	W. 76 17	6.55 a.m.	30	9	30.02	762.5	30.03	762.7	64.0	17.8	83	3	1	.....	4	3	5	4	8	3	4106	6608	5	1.94	49.3
Hatteras	N. 35 15	W. 75 40	6.58 a.m.	11	3	30.07	763.8	30.06	763.5	68.6	20.3	77	6	.....	5	3	6	2	6	3	.....	8343	13426	4	2.58	65.5
Wilmington	N. 34 14	W. 77 57	6.48 a.m	52	16	29.98	761.5	30.01	762.2	66.9	19.4	81	2	3	2	8	4	6	.....	2	4	4402	7084	4	5.62	142.7
Raleigh	N. 35 48	W. 78 29	6.39 a.m.	432	132	29.60	751.8	30.07	763.8	64.0	17.8	85	5	1	1	6	5	4	4	4	1	3853	6201	5	3.46	87.9
Charlotte	N. 35 13	W. 80 51	6.37 a.m	808	246	29.22	742.2	30.04	763.0	64.6	18.1	84	1	1	.....	3	4	2	9	4	7	2935	4723	6	3.64	92.4
Charleston	N. 32 47	W. 79 56	6.40 a.m	52	16	29.99*a*	761.7	30.01*a*	762.2	*a*69.7	20.9	*a*81	6	4	1	6	2	2	1	4	5	6099	7815	*a*6	4.26	108.2
Augusta	N. 33 28	W. 81 54	6.32 a.m.	183	56	29.87	758.7	30.03	762.7	66.5	19.2	84	4	3	5	1	1	6	3	6	2	2676	4307	4	1.61	40.9
Savannah	N. 32 05	W. 81 05	6.36 a.m.	87	27	29.96*a*	761.0	30.02*a*	762.5	*a*68.1	20.1	*a*81	3	4	3	8	3	3	.....	6	1	5249	8447	*a*4	2.73	69.3
Jacksonville	N. 30 20	W. 81 39	6.34 a.m.	43	13	29.99	761.7	30.00	762.0	69.7	20.9	82	3	.....	3	8	8	6	2	2	2	5424	8729	4	7.15	181.6
Cedar Keys	N. 29 08	W. 83 02	6.28 a.m.	22	7	30.01	762.2	29.99	761.7	71.8	22.1	82	4	3	4	1	1	5	5	5	3	6290	10123	6	4.43	112.5
Key West	N. 24 34	W. 81 49	6.33 a.m.	22	7	30.01	762.2	29.98	761.5	76.8	24.9	75	2	2	1	.....	2	4	12	4	4	6295	10131	6	2.48	63.0
Sanford	N. 28 48	W. 81 23	6.35 a.m.	25	8	30.00	762.0	29.99	761.7	70.3	21.3	87	3	1	6	2	7	3	2	2	5	4763	7665	4	3.22	81.8
Gulf states.																										
Atlanta	N. 33 45	W. 84 23	6.23 a.m.	1129	344	28.88	733.5	30.01	762.2	64.9	18.3	78	.....	7	4	1	3	7	4	5	.....	6008	9669	5	1.76	44.7
Pensacola	N. 30 25	W. 87 13	6.11 a.m.	30	9	29.98	761.5	29.97	761.2	71.2	21.8	84	7	2	9	1	2	2	3	3	2	5851	9416	6	1.84	46.7
Mobile	N. 30 41	W. 88 02	6.08 a.m.	35	11	29.98	761.5	29.98	761.5	68.7	20.4	86	7	9	4	4	2	2	2	.....	1	5593	9001	5	3 06	77.7
Montgomery	N. 32 23	W. 86 18	6.15 a.m.	219	67	29.78	756 4	29.98	761.5	68.5	20.3	83	3	3	1	4	3	10	1	3	3	3403	5476	4	2.84	72.1
Vicksburg	N. 32 22	W. 90 53	5.57 a.m.	222	68	29.78	756.4	29.98	761.5	68.0	20.0	87	.....	.....	3	5	5	4	1	2	11	3532	5684	5	5.40	137.2
New Orleans	N. 29 58	W. 90 04	6.00 a.m.	52	16	29.96	761.0	29.98	761.5	70.5	21.4	89	.....	1	3	9	4	6	.....	7	1	5186	8346	5	3.99	101.3
Shreveport	N. 32 30	W. 93 40	5.46 a.m.	227	69	29.76	755.9	29.96	761.0	67.1	19.5	90	1	.....	2	7	7	5	1	3	5	3850	6196	4	5.15	130.8
Fort Smith	N. 35 22	W. 94 24	5.43 a.m.	470	143	29.50	749.3	29.98	761.5	61.2	16.2	85	1	1	3	1	1	5	11	2	6	2853	4591	5	6.51	165.4
Little Rock	N. 34 45	W. 92 06	5.52 a.m	309	94	29.66	753.4	29.95	760.7	65.0	18.3	91	5	2	6	2	6	1	5	.....	4	3522	5668	4	6.08	154.4
Galveston	N. 29 18	W. 94 47	5.41 a.m.	40	12	29.96	761.0	29.96	761.0	73.4	23.0	84	2	3	.....	2	13	3	2	1	5	7278	11713	5	4.84	122.9
San Antonio	N. 29 27	W. 98 28	5.26 a.m.	781	238	29.15	740.4	29.92	760.0	66.2	19.0	91	3	1	2	.....	6	5	7	3	.....	7031	11315	6	2.61	66.3
Corpus Christi	N. 27 50	W. 97 32	5.30 a.m.	18	5	29.94	760.5	29.92	760.0	72.4	22.4	90	1	2	1	2	5	16	2	2	.....	11193	18013	4	1.26	32.0
Brownsville	N. 25 53	W. 97 26	5.30 a.m.	57	17	29.89	759.2	29.90	759.4	70.7	21.5	93	4	2	1	2	7	10	4	1	.....	6695	10774	5	3.94	100.1
Rio Grande City	N. 26 23	W. 98 48	5.25 a.m.	230	70	29.74	755.4	29.93	760.2	70.9	21.6	85	2	1	2	.....	6	9	6	3	2	6447	10375	4	4.09	103.9
Palestine	N. 31 45	W. 95 40	5.38 a.m.	533	162	29.46	748.3	29.98	761.5	65.3	18.5	87	.....	2	2	.....	13	7	4	3	.....	6134	9872	5	6.76	171.7
Ohio val. & Tenn.																										
Chattanooga	N. 35 04	W. 85 15	6.19 a.m.	783	239	29.24	742.7	30.02	762.5	63.7	17.6	83	4	1	6	4	4	5	1	6	.....	3237	5209	5	6.57	166.9
Knoxville	N. 35 56	W. 83 58	6.24 a.m.	980	299	29.03	737.3	30.04	763.0	62.1	16.7	89	6	.....	1	4	1	1	6	2	10	2993	4817	4	4.79	121.7
Memphis	N. 35 09	W. 90 03	6.00 a.m.	320	98	29.66	753.4	29.96	761.0	66.6	19.2	84	2	4	6	4	3	4	3	3	2	3779	6082	5	2.83	71.9
Nashville	N. 36 10	W. 86 47	6.13 a.m.	549	167	29.43	747.5	29.99	761.7	62.7	17.1	88	2	5	4	3	.....	5	3	3	6	3516	5658	4	3.43	87.1
Louisville	N. 38 15	W. 85 45	6.17 a.m.	551	168	29.43	747.5	29.99	761.7	63.8	17.7	77	8	2	2	5	5	4	1	4	.....	4134	6653	4	2.12	53.8
Indianapolis	N. 39 46	W. 86 10	6.16 a.m.	766	233	29.20	741.7	29.99	761.7	60.6	15.9	79	6	3	2	2	2	3	2	8	3	3252	5234	4	2.39	60.7
Cincinnati	N. 39 06	W. 84 30	6.22 a.m.	628	191	29.36	745.7	30.00	762.0	62.8	17.1	76	2	3	1	1	1	7	1	9	6	3925	6312	4	3.62	92.0
Columbus	N. 39 58	W. 83 00	6.28 a.m.	812	248	29.16	740.7	30.00	762.0	60.9	16.1	75	4	4	1	2	3	6	5	5	1	4341	6986	5	2.97	75.4
Pittsburg	N. 40 32	W. 80 02	6.40 a.m.	847	258	29.13	739.9	29.99	761.7	61.0	16.1	78	3	7	2	1	1	1	5	7	4	3904	6283	4	5.78	146.8
Lake region.																										
Rochester	N. 43 08	W. 77 42	6.49 a.m.	621	189	29.40	746.7	30.06	763 5	57.0	13.9	76	.....	2	2	12	3	8	1	3	.....	6085	9793	5	1.17	29.7
Buffalo	N. 42 53	W. 78 53	6.45 a.m.	692	210	29.32	744.7	30.06	763.5	56.9	13.8	73	2	2	3	6	6	2	3	7	.....	5230	8417	4	3.08	78.2
Oswego	N. 43 29	W. 76 35	6.54 a.m	335	102	29.68	753.9	30.04	763.0	56.2	13.4	76	2	3	5	3	8	7	1	2	.....	5643	9081	5	1.03	26.2
Erie	N. 42 07	W. 80 05	6.40 a.m.	681	208	29.30	744.2	30.02	762.5	58.8	14.9	72	1	2	4	2	11	1	3	6	1	5699	9172	4	2.96	75.2
Sandusky	N 41 25	W. 82 40	6.30 a.m.	638	194	29.36	745.7	30.03	762.7	58.3	14.6	77	2	1	2	6	4	2	8	5	1	7147	11502	3	1.61	40.9
Cleveland	N. 41 30	W. 81 42	6.33 a.m.	690	210	29.29	744.0	30.02	762.5	57.7	14.3	75	1	4	.....	.....	4	9	2	4	7	5103	8212	4	3.45	87.6
Toledo	N. 41 40	W. 83 34	6.26 a.m.	651	198	29.34	745.2	30.03	762.7	59.0	15.0	74	2	1	1	5	4	1	.....	12	5	4609	7417	4	1.46	37.1
Detroit	N. 42 20	W. 83 03	6.28 a.m.	662	202	29.32	744.7	30.02	762.5	58.0	14.4	73	2	.....	4	2	2	1	6	8	6	4962	7980	5	2.11	53.6
Alpena	N. 45 05	W. 83 30	6.26 a.m.	609	186	29.36	745.7	30.02	762.5	51.6	10.9	78	1	3	8	1	1	4	3	3	7	4941	7952	4	2.63	66.8
Escanaba	N. 45 48	W. 87 05	6.12 a.m.	608	185	29.34	745.2	30.01	762.2	50.2	10.1	83	5	.....	1	3	7	2	1	7	5	5198	8365	4	0.73	18.5
Grand Haven	N. 43 05	W. 86 18	6.15 a.m.	620	189	29.34	745.2	30.00	762.0	56.6	13.7	74	2	2	2	5	4	5	8	3	.....	6385	10275	4	2.91	73.9
Lansing	N. 42 45	W. 84 33	6.22 a.m.	870	265	29.12	739 6	30.04	763.0	62.9	17.2	75	2	2	2	7	2	6	2	7	1	4091	6584	4	1.75	44.4
Mackinaw City	N. 45 47	W. 84 39	6.22 a.m.	605	184	29.35	745.5	30.01	762.2	45.9	7.7	82	.....	5	2	4	1	9	8	.....	2	6262	10078	4	1.49	37.8
Marquette	N. 46 34	W. 87 24	6.11 a.m.	672	205	29.25	742 9	29.98	761.5	55.1	12.8	76	2	8	5	5	5	3	1	2	.....	5554	8938	4	1.04	26.4
Port Huron	N. 43 00	W. 82 26	6.30 a.m	639	195	29.35	745.5	30.04	763.0	52.4	11.3	82	1	1	4	3	8	1	1	12	.....	6722	10818	4	2.24	56.9
Chicago	N. 41 52	W. 87 38	6.10 a.m.	715	218	29.22	742.2	29.97	761.2	56.5	13.6	74	6	.....	1	8	4	5	1	6	.....	6915	11128	4	1.38	35.0
Green Bay	N. 45 00	W. 87 30	6.08 a.m.	616	188	29.33	745.0	30.00	762.0	57.7	14.3	71	3	1	2	7	5	1	2	7	3	5999	9654	4	0.90	22.9
Milwaukee	N. 43 02	W. 87 54	6.09 a.m.	697	212	29.25	742.9	30.00	762.0	53.7	12.1	69	6	3	1	7	2	3	2	3	4	6054	9743	5	1.80	45.7
Duluth	N. 46 48	W. 92 06	5.52 a.m.	672	205	29.23	742.4	29.97	761.2	45.3	7.4	84	1	4	2	2	1	1	.....	18	2	4426	7123	3	4.93	125.2
Upper Miss. val.																										
Saint Paul	N. 44 58	W. 93 03	5.48 a.m.	831	253	29.04	737.6	29.94	760.5	55.7	13.2	79	2	3	2	4	2	7	7	.....	4	5863	9435	4	1.60	40.6
La Crosse	N. 43 49	W. 91 15	5.55 a.m.	744	227	29.20	741.7	29.99	761.7	57.1	13.9	78	3	2	1	4	12	2	1	2	4	5870	9447	5	0.50	12.7
Davenport	N. 41 30	W. 90 38	5.58 a.m.	615	187	29.33	745 0	29.97	761.2	60.5	15.8	73	5	1	5	2	5	2	3	7	1	5396	8684	4	1.76	44.7
Des Moines	N. 41 35	W. 93 37	5.46 a.m.	866	264	29.06	738.1	29.97	761.2	56.0	13.3	74	3	4	4	3	4	5	2	2	4	5293	8518	3	2.31	58.7
Dubuque	N. 42 30	W. 90 44	5.57 a.m.	665	203	29.28	743.7	30.00	762.0	59.7	15.4	73	3	3	1	2	7	8	3	1	3	3541	5699	2	2.53	64.3
Keokuk	N. 40 22	W. 91 26	5.54 a.m.	618	188	29.32	744.7	29.97	761.2	60.4	15.8	78	4	1	7	3	3	4	4	3	2	5305	8537	4	2.54	64.5
Cairo	N. 37 00	W. 89 10	6.04 a.m.	359	109	29.61	752.1	29.97	761.2	64.6	18.1	88	6	.....	1	4	4	2	5	1	8	4162	6698	6	1.37	34.8
Springfield	N. 39 48	W. 89 39	6.02 a.m.	644	196	29.32	744.7	29.99	761.7	59.9	15.5	80	2	5	2	.....	7	4	5	3	3	5154	8294	5	1.92	48.8
Saint Louis	N. 38 38	W. 90 12	5.59 a.m.	571	174	29.38	746.2	29.96	761.0	66.0	18.9	74	4	3	3	5	7	2	3	3	1	4674	7522	0	5.27	133.9

RESULT OF SIMULTANEOUS OBSERVATIONS FOR MAY, 1887.

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea		Mean Barometer.				Mean Temperature.		Mean Rel. Humidity.	Wind.											Average Cloudiness.	Total Precipitation.	
						Actual.		Reduced.					Directions.									Total Movement.				
				Feet.	Metr's	Inch.	Mill.	Inch.	Mill.	Fah.	Cent.		N	NW	W	SW	S	SE	E	NE	C	Miles	Kil.	0–10	Inch.	Mill.
U. STATES—Con.																										
Missouri valley.	° ′	°																								
Leavenworth	N. 39 19	W. 94 57	5.40 a.m.	842	257	29.12	739.6	29.99	761.7	60.3	15.7	77	7	6	1	.....	7	6	1	2	1	4823	7762	6	3 07	78.0
Omaha	N. 41 16	W. 95 56	5.36 a.m.	1113	339	28.81	731.8	29.98	761.5	56.8	13.8	74	7	6	2	1	9	4	.....	.....	2	7384	11883	4	1.39	35.3
Fort Sully	N. 44 39	W. 100 39	5.17 a.m.	1600	488	28.23	717.0	29.92	760.0	56.4	13.6	70	3	10	1	.....	.....	6	3	.....	8	7546	12144	4	1.28	32.5
Huron	N. 44 21	W. 98 09	5.28 a.m.	1307	398	28.54	724.9	29.93	760.2	50.7	10.4	76	6	7	.....	2	1	14	.....	.....	1	10086	16232	2	1.39	35.3
Yankton	N. 42 54	W. 97 28	5.30 a.m.	1234	376	28.61	726.7	29.92	760.0	52.5	11.4	82	5	5	3	2	8	4	1	1	2	7565	12174	4	1.28	32.5
Lamar	N. 37 32	W. 94 15	5.43 a.m.	1028	313	28.93	734.8	29.99	761.7	59.3	15.2	80	4	3	2	6	6	7	2	1	.....	5986	9633	4	2.74	69.6
Valentine	N. 42 50	W. 100 32	5.18 a.m.	2614	797	27.26	692 4	29.94	760.5	51.5	10.8	74	4	6	4	5	6	2	2	2	.....	10553	16983	4	2.60	66.0
Moorhead	N. 46 52	W. 96 44	5.33 a.m.	926	282	28.88	733.5	29.88	758 9	51.8	11.0	76	7	3	2	4	7	7	.....	1	.....	10553	16983	6	2.57	65.3
Saint Vincent	N. 48 56	W. 97 14	5.31 a.m.	804	245	29.02	737.1	29.92	760.0	49.9	9.9	86	2	12	3	3	5	4	1	.....	1	7305	11756	4	3.57	90.7
Bismarck	N. 46 47	W. 100 38	5.16 a.m.	1694	516	28.12	714.2	29.90	759.4	49.8	9.9	82	6	5	2	2	1	4	3	2	6	7201	11589	4	2.19	55.6
Fort Buford	N. 48 00	W. 103 56	5.04 a.m.	1854	565	27.89	708.4	29.86	758.4	47.2	8.4	75	3	10	3	1	6	2	4	2	.....	9584	15424	6	1.59	40.4
Fort Totten	N. 47 57	W. 98 57	5.24 a.m.	1487	453	28.30	718.8	29.92	760.0	48.6	9.2	80	5	7	5	1	2	4	2	1	4	10960	17638	4	1.57	39.9
Rocky Mount. reg.																										
Ft. Assinnaboine	N. 48 32	W. 109 42	4.41 a.m.	2690	802	27.14	689.3	29.95	760.7	46.3	7.9	51	.....	8	7	12	.....	1	2	1	.....	9378	15092	4	0.72	18.3
Fort Custer	N. 45 42	W. 107 34	4.50 a.m.	3040	927	26.84	681.7	29.97	761.2	45.3	7.4	75	4	1	4	3	5	10	2	2	.....	6373	10256	4	1.15	29.2
Fort Maginnis	N. 47 12	W. 109 10	4.44 a.m.	4320	1317	25.57	649.5	29.97	761.2	45.6	7.6	49	1	15	4	4	3	2	1	1	.....	10383	16709	4	0.51	13.0
Helena	N. 46 34	W. 112 04	4.32 a.m.	4069	1240	25.83	656 1	29.96	761.0	43.1	6.2	83	2	3	4	22	.....	.....	.....	.....	.....	6084	9791	4	2.41	61.2
Poplar River	N. 48 08	W. 105 10	5.00 a.m.	2002	610	27.80	706.1	29.91	759.7	44.4	6.9	80	10	3	10	.....	5	1	1	1	.....	8841	14228	3	1.04	26.4
Deadwood	N. 44 23	W. 103 43	5.05 a.m.	4600	1402	25.37	644.4	29.99	761.7	47.2	8.4	76	1	.....	1	21	4	2	.....	2	.....	4501	7244	3	4.25	108.0
Cheyenne	N. 41 08	W. 104 48	5.01 a.m.	6105	1861	24.02	610.1	29.95	760.7	42.6	5.9	66	2	13	9	.....	4	.....	1	1	1	8240	13261	5	0.94	23.9
North Platte	N. 41 08	W. 100 45	5.17 a.m.	2841	866	27.04	686.8	29.93	760.2	50.7	10.4	81	4	3	6	3	1	7	5	.....	2	8345	13430	3	0.81	20.6
Pike's Peak	N. 38 50	W. 105 02	5.01 a.m.	14134	4308	17.85	453.4	29.95	760.7	23.2	—4.9	80	5	3	5	11	3	.....	1	3	.....	13124	21121	2	2.00	50.8
Concordia	N. 39 35	W. 97 41	5.29 a.m.	1384	422	28.52	724.4	29.96	761.1	56.6	13.7	79	2	4	2	2	4	4	1	1	11	6586	10599	3	6.08	154.4
Denver	N. 39 45	W. 105 00	5.00 a.m.	5294	1614	24.77	629.1	29.95	760.7	48.1	8.9	68	5	2	1	1	18	1	1	.....	2	5672	9128	3	1.13	28.7
W. Las Animas	N. 38 04	W. 103 12	5.07 a.m.	3899	1188	26.04	661.4	29.91	759.7	51.7	10.9	85	2	1	16	2	3	1	3	3	.....	6078	9781	4	2.92	74.2
Dodge City	N. 37 45	W. 100 00	5.20 a.m.	2523	769	27.38	695.4	29.98	761.5	55.7	13.2	77	4	3	1	.....	2	12	3	7	.....	7912	12733	3	3.69	93.7
Fort Elliott	N. 35 30	W. 100 21	5.19 a.m.	2700	823	27.24	691.9	29.90	759.4	56.7	13.7	71	3	6	4	6	5	3	.....	.....	4	9114	14667	4	7.01	178.1
Fort Sill	N. 34 40	W. 98 23	5.27 a.m.	1200	366	28.74	730.0	29.90	761.0	63.2	17.3	83	11	1	.....	.....	11	4	1	2	1	7718	12421	4	5.36	136.1
Abilene	N. 32 14	W. 99 45	5.21 a.m.	1748	533	28.17	715.5	29.93	760.2	63.8	17.7	74	1	2	2	6	9	4	5	2	.....	8645	13913	6	3.95	100.3
Fort Davis	N. 30 38	W. 103 56	5.04 a.m.	4928	1502	25.18	639.6	29.91	759.7	58.5	14.7	49	2	3	8	11	2	.....	.....	3	2	5622	9048	2	0.61	15.5
Fort Stanton	N. 33 30	W. 105 26	4.58 a.m.	6150	1875	24.00	609.6	29.88	758.9	41.2	5.1	64	1	13	2	3	3	1	.....	.....	8	4655	7491	1	0.72	18.3
Plateau region.																										
Keeler	N. 36 35	W. 117 50	4.09 a.m.	3622	1104	26.28	667.5	29.84	757.9	57.3	14.1	43	6	3	.....	1	1	4	4	8	4	5535	8908	1	0.04	1.0
Santa Fé	N. 35 41	W. 105 57	4.56 a.m.	7026	2141	23.30	591.8	29.96	761.0	46.8	8.2	53	2	.....	.....	4	1	5	8	4	7	1569	2525	3	1.73	43.9
Fort Apache	N. 33 48	W. 109 57	4.40 a.m.	5020	1835	25.03	635.8	29.96	761.0	43.7	6.5	50	.....	.....	2	.....	.....	1	24	3	1	6918	11133	2	0.15	3.8
Fort Grant	N. 32 39	W. 109 57	4.40 a.m.	4856	1480	25.20	640.1	29.92	760.0	57.1	13.9	31	8	5	.....	1	.....	3	2	5	7	5733	9226	3	0.16	4.1
Prescott	N. 34 33	W. 112 28	4.30 a.m.	5389	1643	24.71	627.6	29.92	760 0	43.7	6.5	74	.....	1	.....	14	2	2	1	1	10	5727	9217	2	0.43	10.9
Yuma	N. 32 45	W. 114 36	4.22 a.m.	141	43	29.71	754.6	29.82	757.4	62.0	16.7	76	2	3	5	2	3	2	6	8	.....	5121	8241	1	Inap.	Inap.
El Paso	N. 31 47	W. 106 30	4.54 a.m.	3764	1147	26.25	666.7	29.91	759.7	58.4	14.7	46	.....	13	.....	.....	.....	1	4	2	11	3164	5092	1	0.13	3.3
Fort Bridger	N. 41 28	W. 110 30	4.38 a.m.	6643	2025	23.54	597.9	30.00	762.0	37.0	2.8	62	4	2	11	1	.....	.....	.....	13	.....	7092	11413	3	0.71	18.0
Salt Lake City	N. 40 46	W. 111 54	4.33 a.m.	4348	1325	25.62*a*	650.7*a*	29.93*a*	760.2*a*	50.2*a*	10.1*a*	65*a*	*a*4	6	.....	.....	1	12	1	3	3	4926	7928	*a*2	0.73	18.5
Frisco	N. 38 25	W. 113 16	4.27 a.m.	6406	1950	23.70	602.0	29.84	757.9	48.5	9.2	50	13	4	5	4	4	.....	.....	.....	1	9132	14696	2	0.19	4.8
Winnemucca	N. 40 58	W. 117 43	4.09 a.m.	4358	1328	25.62	650.7	29.97	761.2	41.7	5.4	56	.....	1	.....	12	1	.....	2	14	1	6919	11135	2	0.36	9.1
Montrose	N. 38 30	W. 107 56	4.48 a.m.	5780	1762	24.30	617.2	29.90	759.4	45.4	7.4	51	.....	1	.....	1	11	8	5	1	4	5640	9076	2	0.07	1.8
Fort Bidwell	N. 41 53	W. 120 11	3.59 a.m.	4615	1415	25.39	644.9	30.02	762.5	44.3	6.8	68	1	9	13	4	1	1	.....	2	.....	5954	9582	5	1.47	37.3
Boisé City	N. 43 37	W. 116 08	4.16 a.m.	2750	838	27.17	690.1	30.00	762.0	47.4	8.6	73	2	6	.....	.....	1	7	1	.....	14	3259	5245	4	0.51	13.0
Spokane Falls	N. 46 28	W. 117 05	4.11 a.m.	1909	582	28.00	711.2	30.03	762.7	44.6	7.0	67	1	1	6	9	3	.....	2	1	8	3433	5525	3	1.06	26.9
Walla Walla	N. 46 03	W. 118 18	4.07 a.m.	1018	310	28.94	735.1	30.03	762.7	51.2	10.7	61	.....	.....	4	10	11	4	2	.....	.....	4827	7768	5	1.08	27.4
Pacific coast reg'n.																										
Astoria	N. 46 11	W. 123 42	3.45 a.m.	20	6	30.03	762.7	.....	.....	48.5	9.2	86	.....	.....	1	18	2	4	3	3	.....	5854	9421	8	7.33	186.2
Fort Canby	N. 46 16	W. 124 04	3.44 a.m.	179	55	29.84	757.9	30.04	763.0	48.6	9.2	87	5	1	4	2	15	3	.....	1	.....	9345	15039	7	4.88	124.0
Olympia	N. 47 03	W. 122 53	3.49 a.m.	36	11	30.01	762.2	30.05	763.3	45.7	7.6	92	2	.....	1	4	11	.....	.....	4	9	3489	5615	6	5.66	143.8
Port Angeles	N. 48 07	W. 123 06	3.46 a.m.	14	4	30.00	762.0	30.02	762.5	41.7	5.4	94	.....	.....	1	1	27	2	.....	.....	.....	4166	7704	5	2.11	53.6
Tatoosh Id.	N. 48 23	W. 124 44	3.41 a.m.	86	26	29.89	759.2	29.99	761.7	47.3	8.5	86	.....	.....	2	4	2	13	9	1	.....	10522	16933	6	8.85	224.8
Portland	N. 45 32	W. 122 43	3.49 a.m	88	27	29.98	761.5	30.07	763.8	50.0	10.0	80	3	10	.....	2	11	3	.....	.....	2	5282	8500	6	4.77	121.2
Roseburg	N. 43 13	W. 123 20	3.47 a.m.	523	159	29.51	749.5	30.07	763.8	47.5	8 6	86	2	2	3	1	3	1	2	6	11	3444	5542	6	1.53	38.9
Eureka	N. 40 52	W. 123 58	3.43 a.m.	50	18	30.01	762.2	.....	.....	48.1	8.9	91	8	2	3	1	2	10	1	1	3	5449	8769	7	3.51	89.2
Red Bluff	N. 40 10	W. 122 15	3.51 a.m.	342	104	29.64	752.8	29.98	761.5	58.0	14.4	61	10	2	2	1	14	.....	.....	.....	2	5924	9534	4	0.77	19.6
Sacramento	N. 38 35	W. 121 30	3.54 a.m.	64	20	29.92	760.0	29.97	761.2	52.2	11.2	82	1	3	1	1	7	17	.....	.....	1	6422	10335	2	Inap.	Inap.
San Francisco	N. 37 48	W. 122 26	3.50 a.m.	60	18	29.98	761.5	30.03	762.7	51.4	10.8	84	2	3	8	12	3	1	.....	1	1	8233	13250	5	0.60	1.5
Los Angeles	N. 34 03	W. 118 15	4.07 a.m.	339	103	29.63*a*	752.6*a*	29.96*a*	761.0*a*	53.2*a*	11.8*a*	84*a*	3	2	1	2	4	5	4	9	1	4694	7554	*a*3	0.20*a*	*a*5.1
San Diego	N. 32 43	W. 117 10	4.12 a.m.	67	20	29.91	759.7	29.95	760.7	57.6	14.2	81	2	2	5	2	2	3	2	0	7	5026	8088	7	0.47	11.9
Sitka	N. 57 03	W. 135 19	2.59 a m.	63	19	29.84	757.9	29.94	760.5	42.2	5.7	79	.....	4	2	2	.....	7	6	1	9	6697	10778	8	7.30	185.4
Sub-Series.																										
Belize	N. 17 32	W. 88 09	6.09 a.m.	10	3	30.02	762.5	30.00	762.0	84.3	29.1	86	.....	1	.....	1	.....	26	1	2	.....	.....	.....	0	0.19	4.9
Colon	N. 9 22	W. 79 55	6.40 a.m.	7	2	29.87	758.6	29.81	757.2	76.6	24.8	90	7	.....	.....	.....	11	7	1	.....	5	.....	.....	7	10.21	259.4
Gamboa	N. 9 05	W. 79 42	6.41 a.m.	107	31	29.84	757.8	29.88	758.9	75.4	24.1	91	.....	.....	.....	3	.....	2	.....	2	24	.....	.....	6	11.02	280.0
Naos	N. 8 55	W. 79 32	6.42 a.m.	49	15	29.90	759.5	29.88	758.9	77.4	25.2	88	.....	16	.....	.....	.....	15	.....	.....	.....	.....	.....	5	9.99	253.8
Paramaribo	N. 5 50	W. 55 13	8.19 a.m.	6	2	30.01	762.2	29.94	760.5	78.4	25.8	86	.....	.....	.....	.....	.....	6	25	.....	.....	.....	.....	5	13.95	354.3
Rivas	N. 11 26	W. 85 47	6.17 a.m.	150	46	29.95*u*	760.7*u*	30.11*u*	764 8*u*	76.3	24.6	80	1	.....	6	.....	2	4	11	7	.....	.....	.....	3*e*	9.17	232.9
Vera Cruz	N 19 11	W. 96 09	5.35 a.m	16	5	29.88	758.9	29.90	759.4	.....	.....	.....	2	2	4	1	2	1	1	1	17	.....	.....	1	.....	.....

SUMMARY OF OBSERVATIONS TAKEN AT DANISH STATIONS, OCTOBER, 1886, TO MARCH, 1887.

OCTOBER, 1886.	° ′	° ′																								
Ivigtut	N. 61 12	W. 48 00	8.48 a.m	16	5	29.49	749.0	29.55	750.6	31.5	—0.3	.....	7	1	.....	1	1	4	.....	1	16	.....	.....	6	.....	.....
NOVEMBER, 1886.																										
Ivigtut	N. 61 12	W. 48 00	8.48 a.m.	16	5	29.64	752.9	29.70	754.4	27.7	—2.4	.....	4	.....	.....	1	.....	3	.....	2	20	.....	.....	6	.....	.....
DECEMBER, 1886.																										
Ivigtut	N. 61 12	W. 48 00	8.48 a.m.	16	5	29.49	749.0	29.55	750.6	21.6*k*	—5.8*k*	.....	3	.....	.....	3	1	7	.....	.....	17	.....	.....	7	.....	.....
JANUARY, 1867.																										
Godthaab	N. 64 11	W. 51 46	8.33 a.m.	36	11	29.22	742.3	29.31	744.5	9.0	—12.8	90	3	5	2	2	3	2	3	9	2	.....	.....	9	.....	.....
Ivigtut	N. 61 12	W. 48 00	8.48 a.m.	16	5	29.44	741.7	29.50	749.3	12.4	—10.9	.....	5	1	.....	2	.....	6	.....	1	16	.....	.....	6	.....	.....
Jacobshavn	N. 69 13	W. 50 55	8.36 a.m.	43	13	29.37	745.9	29.47	748.5	—2.7	—19.3	.....	.....	.....	.....	1	3	2	14	.....	11	.....	.....	4	.....	.....
Upernavik	N. 72 47	W. 56 00	8.16 a.m.	39	12	29.45	748.0	29.55	750.6	-13.9	-25.5	.....	1	.....	.....	...	2	1	13	2	12	.....	.....	4	.....	.....
FEBRUARY, 1887.																										
Godthaab	N. 64 11	W. 51 46	8.33 a.m.	36	11	29.32	744.7	29.41	747.0	5.9	-14.5	95	3	8	5	.....	.....	5	.....	5	2	.....	.....	8	.....	.....
Ivigtut	N. 62 12	W. 48 00	8.48 a.m.	16	5	29.37	745.9	29.43	747.5	9.3	-12.6	.....	1	1	.....	.....	1	4	.....	.....	21	.....	.....	5	.....	.....
Jacobshavn	N. 69 13	W. 50 55	8.36 a.m.	43	13	29.41	747.1	29.51	749.5	-13.9	-25.5	.....	.....	1	.....	1	2	2	6	.....	16	.....	.....	3	.....	.....
Upernavik	N. 72 47	W. 56 00	8.16 a.m.	39	12	29.47	748.5	29.57	751.1	-20.4	-29.1	.....	1	.....	.....	.....	1	1	13	3	9	.....	.....	4	.....	.....
MARCH, 1887.																										
Godthaab	N. 64 11	W. 51 46	8.33 a.m.	36	11	29.89	759.1	29.98	761.5	11.5	-11.4	86	5	2	2	.....	1	3	1	9	8	.....	.....	6	.....	.....
Ivigtut	N. 61 12	W. 48 00	8.48 a.m.	16	5	29.85	758.2	29.91	759.7	17.1	—8.3	.....	.....	.....	.....	1	.....	2	.....	2	26	.....	.....	5	.....	.....
Jacobshavn	N. 69 13	W. 50 55	8.35 a.m.	43	13	30.10	764.5*e*	30.20	767.1*e*	-11.7	-24.3	.....	4	.....	.....	.....	.....	3	3	4	1	17	.....	2	.....	.....
Upernavik	N. 72 47	W. 56 00	8.16 a.m.	39	12	30.09	764.2	30.19	766.8	-21.8	-29.9	.....	1	.....	.....	.....	.....	3	.....	4	3	20	.....	5	.....	.....

OCEAN SQUARE DATA FOR MAY, 1887.

Location of Centre of each Square.	Barometer.		Temperature.		Wind Frequency.										Wind force 0–10.
	Inch.	Mill.	Fah.	Cent.	N.	NW.	W.	SW.	S.	SE.	E.	NE.	Calm.	Blank.	
N. 12.5° W. 37.5°	29.99	761.7									12	19			3.9
12.5 42.5	30.00	762.0								1	22	8			4.1
12.5 47.5	29.99	761.7								3	26	2			4.1
12.5 52.5	29.97	761.2								6	23	2			4.1
17.5 37.5	30.06	763.5			1					1	18	10		1	3.9
17.5 42.5	30.06	763.5								3	21	6		1	3.9
17.5 47.5	30.06	763.5								7	22	1		1	3.9
17.5 52.5	30.03	762.7								10	18	2	1		3.9
17.5 57.5	30.00	762.0								14	16	1			3.7
22.5 27.5	30.07	763.8			1						7	22		1	3.8
22.5 32.5	30.11	764.8			1					1	12	11		6	4.2
22.5 37.5	30.12	765.0							2	2	11	9		7	4.2
22.5 42.5	30.13	765.3					1			6	11	5		8	3.9
22.5 47.5	30.12	765.0								8	12	3		8	4.0
22.5 52.5	30.09	764.3			1				1	10	11	1		7	3.9
22.5 57.5	30.06	763.5			1			1	2	12	9	4		2	3.6
22.5 62.5	30.03	762.7			1		1	1	5	11	7	5			3.7
27.5 22.5	30.08	764.0			6	2					4	17		2	3.7
27.5 27.5	30.14	765.5			7	1				3	12	7		1	3.9
27.5 32.5	30.17	766.3			4	1			2	3	7	8		6	4.4
27.5 37.5	30.19	766.8			2	1	1		1	2	11	6		7	4.2
27.5 42.5	30.19	766.8			1	2			1	10	7	2		8	4.2
27.5 47.5	30.19	766.8			2	1			2	12	4	2		8	4.2
27.5 52.5	30.15	765.8			1	2			2	16	2	1		7	4.0
27.5 57.5	30.10	764.5			3				9	7	5	4		3	4.1
27.5 62.5	30.08	764.0			5			5	5	4	6	5	1		3.7
27.5 67.5	30.05	763.3			5	3	1	2	5	4	8	3			3.9
27.5 72.5	30.03	762.7			1	2		4	3	11	4	6			4.0
32.5 27.5	30.19	766.8			7	3	2			5	5	9			3.8
32.5 32.5	30.21	767.3			6	2	2		8	1	7	5			4.6
32.5 37.5	30.21	767.3			3	3	3	4	3	6	5	4			4.1
32.5 42.5	30.21	767.3			2	3	2	4	3	10	1	4	1	1	3.9
32.5 47.5	30.18	766.6			2	5	2	2	5	12	1	2			4.1
32.5 52.5	30.15	765.8			3	3	3	3	5	10	1	2		1	4.2
32.5 57.5	30.11	764.8			1	5	1	4	7	7	1	4	1		4.1
32.5 62.5	30.08	764.0			6	5	1	4	7	3	2	2	1		3.8
32.5 67.5	30.06	763.5			4	3	4	4	2	3	6	5			3.9
32.5 72.5	30.04	763.0			7	1	1	4	5	8	3	2			4.2
37.5 32.5	30.21	767.3			7	5	3	3	6	2	5				4.3
37.5 37.5	30.20	767.1			4	7	2	7	3	5	3				4.6
37.5 42.5	30.18	766.6			2	6	2	7	4	6		3	1		4.1
37.5 47.5	30.16	766.1			4	2	6	7	2	9			1		4.4
37.5 52.5	30.12	765.0			2	5	4	7	6	6		1			4.8
37.5 57.5	30.09	764.3			3	5	5	5	7	3	1	2			5.1
37.5 62.5	30.06	763.5			5	4	3	7	1	5	1	4	1		4.8
37.5 67.5	30.06	763.5			3	5		7	1	2	3	9	1		4.4
42.5 22.5	30.17	766.3			3	6	2	3	2	3	4	8			4.5
42.5 27.5	30.18	766.6			6	5	2	3	6	3	2	4			4.5
42.5 32.5	30.17	766.3			7	6	3	3	7	3		1	1		4.5
42.5 37.5	30.15	765.8			5	7	3	9	4	2	1				4.5
42.5 42.5	30.12	765.0			1	5	7	6	8	1	3				4.5
42.5 47.5	30.08	764.0			1	3	6	9	5	4	1	1	1		4.0
42.5 52.5	30.05	763.3			5	5	4	4	8	2	2			1	4.5
42.5 57.5	30.04	763.0			5	4	4	7	4	2		5			4.6
47.5 17.5	30.17	766.3				8	2	3	4	3	5	6			4.5
47.5 22.5	30.16	766.1			2	5	4	3	5	4	3	5			4.9
47.5 27.5	30.14	765.5			3	3	5	4	5	5		5	1		4.7
47.5 32.5	30.10	764.5			5	3	4	6	9			4			5.0
47.5 37.5	30.07	763.8			4	10	3	6	5	1	1	1			4.5
47.5 42.5	30.03	762.7			1	6	6	13	4		1				4.6
47.5 47.5	29.98	761.5			2	5	4	10	7	1	1	1			4.4
52.5 17.5	30.13	765.3			3	6	5	8	3	1	2	3			4.7
52.5 22.5	30.11	764.8			2	7	2	10	4	1	1	4			4.9
52.5 27.5	30.07	763.8			1	5	5	12	1	3	2	2			5.0
52.5 32.5	30.01	762.2			1	5	5	12	3	2	2	1			5.1
52.5 37.5	29.96	761.0			1	4	5	11	3	4	1	2			5.1
52.5 42.5	29.92	760.0			2	3	8	10	4	3	1				4.5
52.5 47.5	29.89	759.2			3	6	5	8	1	5		2	1		4.4
57.5 12.5	30.02	762.5			3	4	4	11	1	3	2	3			4.7
57.5 17.5	29.99	761.7			2	4	6	9	2	4		4			4.6
57.5 22.5	30.00	762.0			2	5	3	12	1	4	2	1	1		4.8
57.5 27.5	29.98	761.5			2	5	4	12	3	2	2			1	4.6
57.5 32.5	29.92	760.0			1	5	1	12	5	2	3			2	5.0
57.5 37.5	29.86	758.4				7	3	9	4	3	2	2		1	4.7
57.5 42.5	29.84	757.9			3	5	5	6	1	8		3			4.3
57.5 47.5	29.80	756.9			6	7	2	6	2	2	4	2			4.4

OCEAN SQUARES.—The table of ocean square data shows (1) the location of the centres of squares whose sides extend 5° each in latitude and longitude, (2) the monthly mean pressure of the air, and the mean force and total frequency of the wind at noon, Greenwich mean time, computed for the centre of each square from daily readings as obtained by interpolation between the isobars of the daily international simultaneous weather maps.

REVIEW.

INTERNATIONAL METEOROLOGY FOR MAY, 1887.

[*Pressure expressed in inches and millimetres; temperature in degrees, Fahrenheit and Centigrade; wind-force by scale of* 0–10.]

The following refers to chart ii for the month of May, 1887. This chart continues the series of international charts begun in January, 1877, and exhibits the mean pressure and the prevailing wind-directions over the northern hemisphere, as determined from simultaneous observations taken once each day at 7 a. m., 75th meridian, or noon Greenwich, mean time:

The area of lowest mean pressure is located over the interior of British India, with minima falling to 29.46 (748.3) at Nagpur. Two areas of low mean pressure, bounded by isobars of 29.80 (756.9) appear, respectively, over the Sea of Okhotsk and the southern extremity of Greenland. Over south-central and northern Europe, and the north-central and southwestern portions of the American continent, the mean pressure falls below 29.90 (759.4).

The area of highest mean pressure occupies the north Atlantic Ocean in the vicinity of the Azores, with maxima rising above 30.20 (767.1). Three areas of relatively high mean pressure, with included values rising above 30.00 (762.0), appear, respectively, over the interior of Asia, southwestern Europe, Persia, and Arabia, and off the west-central coast of North America. The presence of an area of barometric maxima over northern Geeenland and Arctic North America is indicated by a mean reading of 30.01 (762.2) at Upernavik, Greenland.

Over the North American continent the mean barometer is lowest in Arizona and the Saskatchewan Valley, where readings 29.82 (757.4) at Yuma and 29.86 (758.4) at Q'Appelle, respectively, are shown. The pressure is highest over Nova Scotia and Oregon, where it rises to 30.08 (764.0). Over the north Atlantic Ocean there is a gradient of .40 inch between Ivigtut, Greenland, and the Azores, while between the southern extremity of Greenland and Upernavik a gradient of .20 inch exists. Over Europe the barometer is lowest, 29.80 (756.9), at Gjæsvær, and highest, 30.08 (764.0), over western France and the west coast of the Caspian Sea. Over Asia there is a gradient of .53 inch between Nagpur, British India, and the forty-fifth parallel; from Nagpur southward the increase in pressure is more gradual. From the Sea of Okhotsk westward to Irkutsk there is an increase in pressure averaging about .01 inch to a degree of longitude.

Compared with the chart for the preceding month a decrease in mean pressure of about .10 inch is shown in the Saskatchewan Valley and along the middle Pacific coast. There has also been a slight decrease over Mexico and Central America; at Sitka, Alaska, the mean pressure has risen .11 inch. Over Greenland there has been a decrease in mean pressure by amounts ranging from .23 inch at Upernavik to .18 inch at Ivigtut. Over the north Atlantic Ocean the area of low pressure central in April over, and southeast of, Newfoundland has apparently moved northward to the southern extremity of Greenland, with a decrease of about .10 inch in included values. Over the southern portion of the ocean an area of high pressure has formed near the Azores, in which locality there has been an increase in mean pressure of .24 inch. Over Europe the barometer changes have been slight, except over northern Scandinavia, where there has been an increase of .15 inch. Over southern Europe barometer changes of less than .10 inch have attended the transition of an area of relatively low mean pressure from over the western portion of the Mediterranean to Austro-Hungary and the Black Sea. Over Asia the barometer changes have been most marked over British India, where there has been a decrease of .14 inch over the central districts. Within the area of high mean pressure central over the interior of Asia there has been a decrease in mean pressure of from .08 to .13 inch. Over the Sea of Okhotsk and northern Japan the changes in mean pressure have been slight, while over southeastern Asia there has been a decrease of .05 to .07 inch.

In the United States the mean pressure differed but slightly from the normal. In the Rocky Mountain districts, upper Missouri valley, and from Lake Superior westward to the Pacific coast it was below the normal; it was also slightly below the normal over a greater part of the country lying south of the Ohio River and east of the Mississippi. In all other districts the pressure was normal or above. The most marked excess, and the greatest deficiency in the United States and Canada occurred, respectively, over Manitoba and the Red River Valley of the North, and in the Maritime Provinces of Canada, the departures in each instance being 0.10 inch. Over the north Atlantic Ocean the pressure was slightly below the normal near Iceland and above normal to the northward of the British Isles. Over the southern portion of the ocean the departures were generally above normal. Over Europe the mean pressure averaged normal in Sweden and Austro-Hungary. In Germany and Denmark it was slightly below the normal. Elsewhere over Europe the mean barometer for the month was above the normal by amounts ranging from .01 inch in Italy and Norway to .06 over Russia and .07 inch over the British Isles. In British India the pressure was slightly below normal. Over the balance of Asia a small departure above the normal was shown.

The following table shows the mean pressure and mean temperature for May, 1887, in the several countries of the eastern hemisphere, and the departures as compared with means determined from observations taken during the last ten years:

Countries.	Mean pressure.			Mean temperature.		
	May mean of 10 (1877–'86) years.	May, 1887.	Departure.	May mean of 10 (1877–'86) years.	May, 1887.	Departure.
				°	°	°
Austro-Hungary	29.91	29.91	normal.	65.1	62.7	− 2.4
British Isles	29.98	30.05	+ 0.07	55.0	53.4	− 1.6
Denmark	29.96	29.94	− 0.02	53.5	53.0	− 0.5
France	29.96	30.00	+ 0.04	63.1	59.5	− 3.6
Germany	29.97	29.96	− 0.01	60.1	55.7	− 4.4
India *	29.56	29.55	− 0.01	91.8	94.4	+ 2.6
Italy	29.95	29.96	+ 0.01	68.1	66.3	− 1.8
Japan	.....	29.95	.....	.....	56.7	.....
Norway	29.90	29.91	+ 0.01	50.3	50.5	+ 0.2
Russia	29.89	29.95	+ 0.06	61.6	65.0	+ 4.4
Spain*	29.98	30.03	+ 0.05	67.0	64.4	− 2.6
Sweden	29.94	29.94	normal.	49.8	52.1	+ 2.3

* Means for nine years only.

The accompanying table shows the deviations in pressure and temperature at isolated stations during the month of May, 1887, as compared with the means for ten years:

Stations.	Mean pressure.			Mean temperature.		
	May mean of 10 (1877–'86) years.	May, 1887.	Departure.	May mean of 10 (1877–'86) years.	May, 1886.	Departure.
				°	°	°
Archangel, Russia	29.88	29.94	+ 0.06	46.1	51.4	+ 5.3
Athens, Greece*	29.92	29.94	+ 0.02	74.3	79.5	+ 5.2
Beirut, Turkey in Asia	29.89	30.06	+ 0.17	75.3	75.9	+ 0.6
Barnaul, Siberia	29.92	29.93	+ 0.01	57.7	54.1	− 3.6
Bridgetown, Barbadoes	29.92	29.95	+ 0.03	83.5	83.7	+ 0.2
Ekaterinburg, Russia	29.88	29.95	+ 0.07	58.0	62.2	+ 4.2
Funchal, Madeira Islands	30.08	30.07	− 0.01	67.4	66.2	− 1.2
Gibraltar	30.01	30.03	+ 0.02	68.7	68.8	+ 0.1
Havana, Cuba, W. I.	29.96	29.96	normal.	77.2	74.6	− 2.6
Malta, Mediterranean Sea	29.93	29.93	normal.	68.7	68.0	− 0.7
Melbourne, New South Wales	30.04	30.15	+ 0.11	53.0	51.9	− 1.1
Mauritius, Indian Ocean	29.99	29.99	normal.	75.6	75.0	− 0.6
Nassau, Bahamas, W. I.	29.98	29.95	− 0.03	78.4	78.6	+ 0.2
Nikolaievsk-on-the-Amoor, Asia	.....	29.71	.....	36.0	38.8	+ 2.8
Paramaribo, S. A.	29.96	29.94	− 0.02	79.7	78.4	− 1.3
Ponta Delgada, Azores	30.13	30.21	+ 0.08	65.2	63.7	− 1.5
Swanbister, Orkneys	29.94	30.03	+ 0.09	48.7	50.2	+ 1.5
San Juan de Puerto Rico, W. I.*	29.95	30.00	+ 0.05	79.6	79.3	− 0.3
Stykkisholm, Iceland	29.97	29.92	− 0.05	40.1	40.1	normal
Thorshavn, Färöe Islands	29.92	29.99	+ 0.07	46.1	46.9	+ 0.8
Tiflis, Russia	29.88	29.95	+ 0.07	71.6	73.8	+ 2.2
Tokio, Japan	29.91	29.94	+ 0.03	60.3	58.3	− 2.0
Yeniseisk, Siberia	29.96	30.02	+ 0.06	47.1	52.3	+ 5.2
Zi-Ka-Wei, China	29.85	29.89	+ 0.04	62.9	62.8	− 0.1

* Means for nine years only.

In the United States the mean temperature of the month was decidedly above the normal in all parts of the country,

except along the Atlantic coast and in middle California. The greatest excess over the normal occurred in the Lake region and upper Mississippi valley, where it ranged from 4° to 8°. In Canada the temperature was above the normal at all stations by amounts varying from 2° in Nova Scotia and New Brunswick to 8°.2 at Parry Sound, Ontario. In Manitoba the excess was about 4°. Over the West Indies the mean temperature was normal or slightly above. Over the British Isles the month was cooler than the average May. Over the continent of Europe the mean temperature was below the normal, except in Scandinavia and northern Russia, where it ranged from 2° to 4° above. In British India the mean temperature was above the normal. Over Japan and eastern China the temperature was somewhat below the normal, while over Siberia the thermometer readings generally averaged above the normal.

In the United States there was a marked deficiency in rainfall in New England, the Lake region, upper Mississippi and Missouri valleys, and east Gulf states, in which districts but from 30 to 75 per cent. of the average precipitation for the month was reported. There was a slight excess in precipitation in portions of the Ohio Valley and Tennessee, and along the south Atlantic and west Gulf coasts. To the westward of the Mississippi River the most marked excess occurred on the north Pacific coast, where the rainfall was about double the average for the month. In Canada the rainfall was generally very deficient.

Over the United States southerly winds prevailed east of the Rocky Mountains. In the plateau region and on the Pacific coast they were variable. In the Canadian Maritime Provinces the winds were mostly from south to west. Over the north Atlantic Ocean the winds were distinctively cyclonic and anti-cyclonic, as governed by the areas of low and high pressure which appear on the monthly mean chart. Over Europe, in the absence of marked cyclonic and anti-cyclonic areas, the winds were variable. In British India the wind-directions were governed by the area of low mean pressure central over the central provinces.

TRACKS OF AREAS OF LOW PRESSURE FOR MAY, 1887.

Chart iii exhibits paths of the principal depressions which appeared in the northern hemisphere during May, 1887. This chart continues the series of international charts begun in November, 1877, and has been prepared from the following data: Chart i for each day of the month, containing the data of simultaneous observations taken once each day at noon, Greenwich mean time; abstracts of ships' logs; special reports, and other miscellaneous data on file at this office.

The paths of the centres of thirty-one areas of low pressure are shown, of which ten are traced over the North American continent; five over the north Atlantic Ocean; ten over Europe; four off the eastern coast of Asia or over the Japanese Islands; and two in the vicinity of Sitka, Alaska. The average number of areas of low pressure traced over the northern hemisphere for May during the last eight years is 33.1, or 2.1 more than the number traced for May, 1887.

The depressions traced over the North American continent are described in detail in the MONTHLY WEATHER REVIEW for May, 1887, under the heading, "Areas of low pressure." Of these depressions, numbers vi, vii, and viii were remarkable by reason of their abnormal movements.

Of the depressions traced over the north Atlantic Ocean two, numbers xi and xii, were attended by disturbances of exceptional violence. Number xi first appeared on the 2d west of the southern extremity of Greenland, with barometric minima about 29.55 (750.6), and thence passed to the southwest of Iceland by the 4th, with pressure about 29.40 (746.7). From the 5th to the 8th, inclusive, the centre of disturbance remained nearly stationary, after which it advanced to northern Scandinavia, and thence passed southeastward. Number xii also traversed the ocean in high latitudes, attended by low barometric pressure and severe storms. Of the remaining depressions traced over the ocean, number xiii advanced from the south of Bermuda to Greenland, and thence moved slowly southeastward to the vicinity of the Azores, from which position it disappeared in the direction of the French coast. Number xiv apparently originated over the southwestern portion of the Caribbean Sea, under the lee of the mountains of Central America and thence moved east of north to the Bahama Islands, in which region it disappeared.

The depressions which appeared over Europe were well distributed over the continent, and exceeded in number and energy the storms traced for corresponding months of previous years. With the exception of numbers xviii, xxiii, and xxiv, the depressions pursued normal paths. The severest disturbances of the month attended the passage of numbers xvi, xvii, xx, and xxii.

Of the depressions traced over eastern Asia, numbers xxix and xxx possessed marked energy. Number xxix first appeared in the upper valley of the Amoor River, whence it advanced eastward and disappeared over the Sea of Okhotsk. Number xxx apparently developed over the Sea of Japan off the coast of Corea, and thence passed north of east over Yesso. Of the two depressions charted near Sitka, Alaska, one, number xxvii, moved southeast and is continued as land low area number iv.

SPECIAL NOTES.

THE GRAVITY CORRECTION.

The gravity correction, reducing all barometer readings to the standard gravity at latitude 45°, has been applied to all observations not so reduced by the observers themselves.

All data referring to force, velocity, or pressure (in pounds per square foot) of the wind, are reduced to the scale of 0-10, and the approximate value is indicated by the number of feathers on the arrow (see below).

MONTHLY SUMMARY OF INTERNATIONAL SIMULTANEOUS METEOROLOGICAL OBSERVATIONS.

The positions of stations (latitude and longitude) are obtained from Keith Johnson's "Index Geographicus," except where more exact information is furnished. The elevations of stations are obtained either from the annual, semi-annual, and monthly publications of the various meteorological bureaus here represented, or from the original forms upon which are entered the daily observations. In the United States series the elevations are computed from the latest surveys, and are carefully revised each month, in order to note any change in the elevation of the barometer-cistern at any station. It is believed for the most part that, throughout the European and other series, the elevations as given represent the height of the barometer-cistern above sea-level; at least this should be the case. The local time, where omitted or not given correctly in the original, is carefully computed at this office. A letter placed opposite the name of a station, or some portion of the data credited thereto, indicates that a certain number of observations are missing, corresponding to the relative position in the English alphabet of the letter so used.

At Baku the barometer-cistern is below sea-level.

INTERNATIONAL CHARTS.

International chart i shows the atmospheric pressure at sea-level in English inches, the isobars being drawn for every two-tenths of an inch.

Arrows show direction of, and fly with, the wind; force is shown as follows:

Symbols.	Force.	Velocity.	
		Miles per hour.	Metres per second.
○	0	0	0
	1, 2	0 to 9	0 to 4
	3, 4	9.1 to 22.5	4.1 to 10.1
	5, 6	22.6 to 40.5	10.1 to 18.1
	7, 8	40.6 to 67.5	18.1 to 30.2
	9, 10	67.6 up.	30.2 and over.

International chart ii (monthly mean chart) shows the mean pressure at sea-level in English inches; the mean force and prevailing direction of the wind, as determined from observations taken at noon, Greenwich mean time.

International chart iii shows the tracks of centres of low pressure. The Arabic numerals show the location of the centres of low pressure at noon, Greenwich mean time, of that date.

In the above charts, broken lines indicate that lines so drawn are doubtful.

List of merchant marine steam and sailing vessels from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of May, 1887—Continued.

Name of vessel.	Captain.
SAILING VESSELS—Continued.	
Br. bk. Madura	Capt. O. Bernice.
schr. Maggie Abbott	D. C. McIntosh.
bg. Manson	E. T. Page.
Swed. bk. Maria Margretha	J. E. Fogman.
Br. Mary	Chas. Acocks.
Nor. Orion	A. Mathieson.
Ger. sp. Otto	W. Langen.
Nor. bk. Qvos	Gunder Olsen.
Ger. sp. Palme	W. Bahls.
Am. bk. Ralph M. Haywood	Joseph Baxter.
Ger. Richard	A. von Seggern.
Am. bg. Ruby	A. J. von Post.
Br. sp. Sapphire	Geo. M. Murray.
Am. bg. Sarah	R. L. Hale.
Ger. bk. Shakspere	Carl Muller.
Br. bk. Sodium	Wm. Manson.
Br. sp. Stephen D. Horton	J. Spicer.
It. bk. Teresa Accame	G. Boetto.
Br. bk. Tiber	D. Keefe.
Am. Tillie Baker	Jas. W. Carty.
Rus. Toivo	W. H. Snellman.
Am. bk. Water Witch	Max Knaebel.
Nor. bk. Ymer	J. E. Andersen.
UNITED STATES NAVAL.	
U. S. S. Adams	Louis Kempff.
U. S. S. Alert	J. D. Graham.
U. S. S. Alliance	C. McGregor.
U. S. S. Brooklyn	E. O. Matthews.

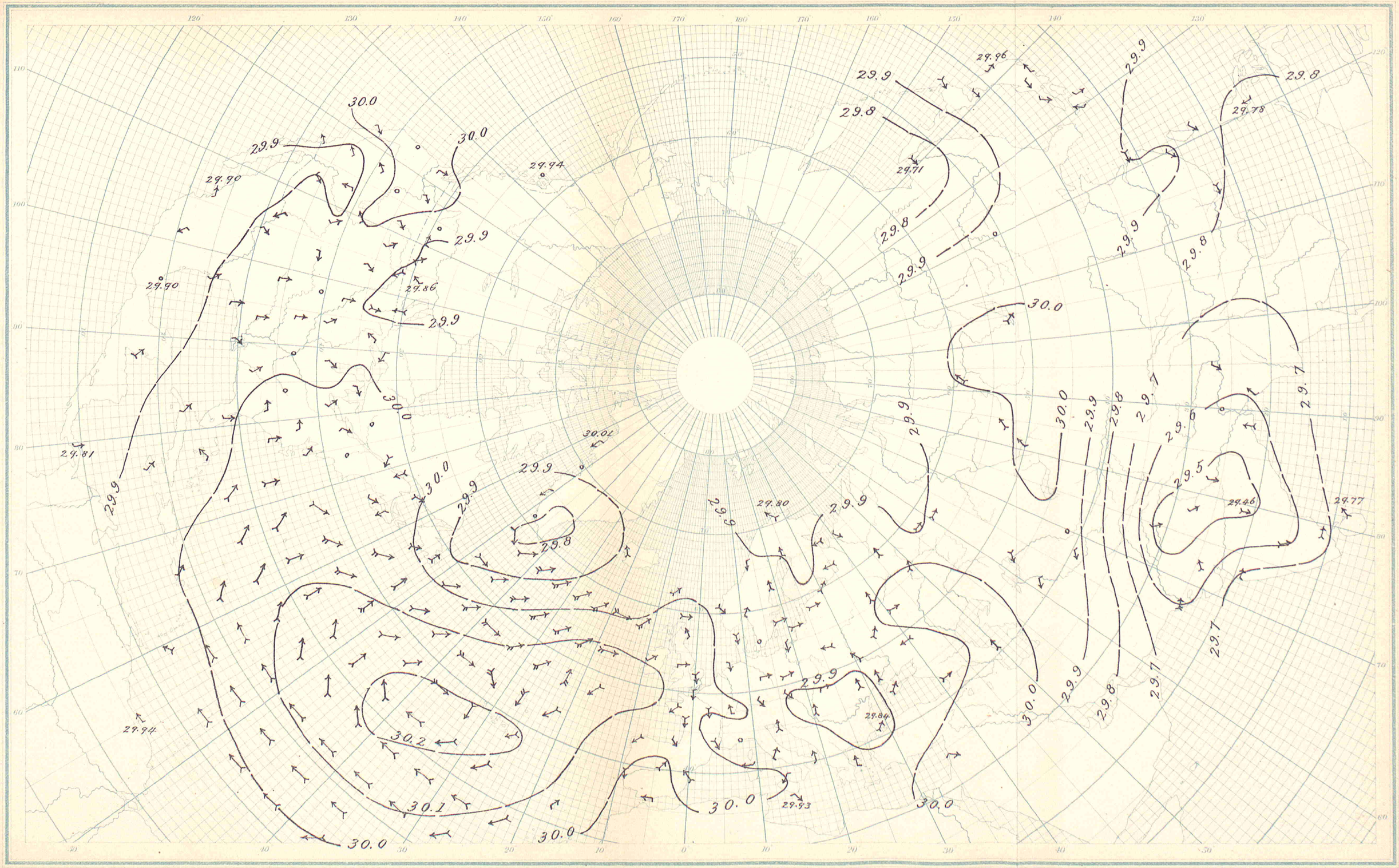
Name of vessel.	Captain.
UNITED STATES NAVAL—Cont'd.	
U. S. S. Essex	Capt. Theo. F. Jewell.
U. S. S. Galena	C. W. Chester.
U. S. S. Iroquois	J. C. Watson.
U. S. S. Jamestown	C. J. Nain.
U. S. S. Juniata	G. T. Davis.
U. S. S. Lancaster	S. L. Breese.
U. S. S. Marion	Merrill Miller.
U. S. S. Mohican	B. F. Day.
U. S. S. Monocacy	Henry Glass.
U. S. S. Monongahela	S. H. Baker.
U. S. S. Omaha	F. V. McNeir.
U. S. S. Palos	L. Tremain.
U. S. S. Pensacola	Geo. Dewey.
U. S. S. Pinta	
U. S. S. Portsmouth	Edwin White.
U. S. S. Quinnebaug	W. L. Folger.
U. S. S. Ranger	F. A. Cook.
U. S. S. Richmond	Robert Boyd.
U. S. S. Saratoga	C. H. Davis.
U. S. S. Tallapoosa	Wm. Whitehead.
U. S. S. Vandalia	H. L. Howison.
U. S. S. Yantic	F. M. Green.
BRITISH NAVAL.	
H. M. S. Alexandra	J. Fellowes, C. B.
H. M. S. Audacious	R. H. Harris.
H. M. S. Bacchante	A. W. Moore.
H. M. S. Briton	R. M. Lloyd.

Name of vessel.	Captain.
BRITISH NAVAL—Continued.	
H. M. S. Champion	Capt. A. T. Powlett.
H. M. S. Cleopatra	L. C. Keppel.
H. M. S. Colossus	C. Bridge.
H. M. S. Comus	T. J. Jackson.
H. M. Dockyard, Bermuda	R. P. Dennistoun.
H. M. S. Dreadnaught	H. F. Stevenson.
H. M. S. Egeria	P. Aldrich.
H. M. S. Flying Fish	J. P. McLear.
H. M. S. Heroine	C. J. Balfour.
H. M. S. Hyacinth	E. Bourke.
H. M. S. Minotaur	J. A. Bruce.
H. M. S. Myrmidon	R. F. Hoskyn.
H. M. S. Nelson	A. Lake.
H. M. S. Phaeton	St. Clair.
H. M. S. Raleigh	B. Watson
H. M. S. Rambler	W. U. Moore.
H. M. S. Rifleman	C. Prater.
H. M. S. Ruby	W. R. Kennedy.
H. M. S. Sylvia	Dawson.
H. M. S. Torquoise	R. Woodward, C. B.
SWEDISH NAVAL.	
H. S. M. S. Saga	A. Meister
DUTCH NAVAL.	
H. D. M. S. Prinz Hendrig	
H. D. M. S. Köning der Nederland.	

List of foreign stations and observers from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of May. 1887.

Stations.	Observers
AUSTRALIAN.	
Hobart Town, Tasmania	Com. J. Shortt, R.N.
Melbourne, Victoria	R. L. J. Ellery.
AUSTRO-HUNGARIAN.	
Agram	Prof. Ivan Stozir.
Cracow, I. R. Observatory	Dr. Wierzbiski.
Eperies	Julius Mikolik.
Gratz	Andreas Rospini.
Kremsmunster Observatory	The Staff.
Lemberg	Dr. T. Stanecki.
Pola	Fr. Cœselrohe.
Szathmar	Aloysius Daubner, S. J.
Szegedin	Emerick Markos.
Trieste	Naval Observatory.
Vienna	I.R.Central Met. Obs'y.
BRITISH.	
Aberdeen	W. Boswell.
Bidston, Liverpool Obs'y	John Hartnup.
Bradford, Yorkshire	McLandsborough & Preston.
Bridgetown, Barbadoes, W.I.	A. T. Green.
Chatham, School M. E	Percy McHugo, R. E.
Falmouth, Observatory	The Staff.
Fort Napier, Natal	Thomas Murray, M. S. C.
Freetown, Sierra Leone	J. W. Smith.
Galway, Queen's College	Wm. Ryan.
Gibraltar, Mediterranean	E. Herrick.
Greenwich, Royal Observatory	The Staff.
Guernsey	A. Collenette, F.R.M.S.
Kew, Observatory	The Staff.
Leicester, Museum	J. C. Smith.
Malta, Mediterranean	R. R. Willan.
Nassau, Bahamas	J. A. Kerr.
Oxford, Radcliffe Observatory	The Staff.
Plymouth	John Merrifield.
Swanbister, Orkneys	W. I. Fortesque.
Scutari Cemetery, Turkey	W. H. Lyne.
Stonyhurst, Observatory	J. Roeny.
Valencia, Observatory	The Meteorological Office.
Sub-series.	
Gozo, Episcopal Seminary	Rev. Algelo Lo Re, S.J., Dir.
Penang	F. K. Hampshire,
CANADIAN.	
Bathurst, N. B	Miss Andrews.
Bird Rocks	T. Turbide.
Calgarry	H. S. Cayley.
Chatham, N. B	G. A. Blair.
Cornwall, Ontario	W. D. Johnston, B. A.
Dalhousie, N. B	H. A. Johnson.
Father Point, Quebec	J. McWilliams.
Fort Garry, Manitoba	T. Warburton.
Fredericton, N. B	Dr. Harrison.
Grand Manan, N. B	J. Chipman Seeley.
Halifax, N S	A. Allison.
Hamilton, Ontario	T. S. Campbell, B. A.
Kingston, Ontario	A. P. Knight, M. A.
Little Glace Bay, N. S	C. H. Rigby, C.E.
London, Ontario	E. B. Reed.
Medicine Hat, N. W. T	John Ewart.
Minnedosa, N. W. T	Rev. J. W. Wellwood.
Montreal, Quebec	C. H. McLeod, C. E.
Ottawa, Ontario	A. McGill, M. A.
Parry Sound, Ontario	Rev. R. Mosley.
Peterborough, Ontario	J. H. Long.
Port Arthur, Ontario	W. P. Cooke.
Port Dover, Ontario	H. Morgan.
Port Stanley, Ontario	M. Payne.
Qu' Appelle, N. W. T	Leslie Gordon.
Quebec, Quebec	Captain Ashe, R. N.
Rockliffe, Ontario	W. H. McIntyre.
St. Andrews, N. B	S. T. Gove, M. D.
St. John, N. B	G. Hutchinson.
Saint Pierre, N. F	The Commandant.
Saugeen, Ontario	W. K. Stewart.
Southwest Point of Anticosti	
Stratford, Ontario	W. McBride, M. A.
Swift Current	W. G. Knight.
Sydney, C. B	T. C. Hill, C. E.
Toronto, Ontario	Magnetic Observatory.
Woodstock, Ontario	Prof. N. Wolverton, M. A.
Yarmouth, N. S	J. E. Murphy.
Sub-series.	
Saint Johns, N. F	J. Higgins.
CAPE COLONY.	
Cape St. Francis	I. Garfelt.
CHINESE.	
Foochow	J. N. Segardal.
Hong Kong Observatory	The Staff.
Sub-series.	
Zi-Ka-Wei, near Shanghai	M. Marc Dechevrens, S. J.
South Cape, Formosa	G. Taylor.
DANISH.	
Copenhagen	Oversergent Fischer.
Fanöe	Overloerer Lauridsen.
Godthaab	S. Kleinscmidt.
Ivigtut	
Stykkisholm	A. O. Thorlacius.
Thorshavn	Overloever Bergh.
Upernavik	
Vestervig	Loerer Oesterbol.
FRENCH.	
Alençon, Normal School	M. Nicot, Director.
Arras, Normal School	M. Sion, Director.
Avignon, Normal School	M. Giraud, Director.
Bar-sur-Seine	M. Saillard, Director.
Beauvais, Normal School	M. Mutelet.
Besançon, Normal School	M. Gobin, Director.
Bordeaux, Observatory	M. Rayet, Director.
Bourges, Normal School	M. Bourgoine, Director.
Brest, Naval Observatory	M. de Kermaree, Director.
Caen, Normal School	M. Berson, Director.
FRENCH—*Continued.*	
Châlons-sur-Marne, N. School	M. Mathieu, Director.
Charleville, Normal School	M. Noél, Director.
Clermont-Ferrand, Obs'y	M. Hurion, Director.
Cluny, Normal School	M. de Villemontée, Director.
Commercy, Normal School	M. Vaissade, Director.
Gap, Normal School	M. Poussel, Director.
Greasque, du Rhone	M. Kina, Director.
Guéret, Normal School	M. Delorme, Director.
Lescar, Normal School	M. Lefevre, Director.
Lorient, Naval Observatory	Lt. T. Carré, Director.
Lyon, St. Genis-Laval	M. André, Director.
Mans, Normal School	M. Tenot, Director.
Marseille, Observatory	M. Stephan, Director.
Montlouis	M. Cave for Dr. Fines.
Montpellier, Normal School	M. Galzin, Director.
Mont Ventoux	M. Blanc.
Nancy, Normal School	M. Hasse, Director.
Nantes, Observatory	M. Larocque, Director.
Nice, Normal School	M. Cantier.
Perpignan, Observatory	Dr. Fines, Director.
Pic-du-Midi, Summit	M. Vaussenat, Director.
Privas, Normal School	M. Curely, Director.
Puy de Dôme Obs'y, Summit	M. Hurion, Director.
Rochefort, Naval Observatory	Lt. E. Decante, Director.
Roche-sur-Yon, N. School	M. Brotier, Director.
Rodez, Normal School	M. Seger, Director.
Rouen, Normal School	M. Vieillot, Director.
Saint Brience	M. Richard.
Saint Maur, Observatory	M. Renon, Director.
Toulouse, Observatory	M. Baillaud, Director.
Tours	M. Letellier.
Sub-series.	
St. Martin du Hinx	M. Carlier, Director.
GERMAN.	
Ansbach	Prof. Jüdt.
Bamberg	Prof. Dr. Hoh.
Berlin	Meteorological Institute.
Breslau	Royal University Obs'y.
Carlsruhe	Albert Senz.
Cassel	Dr. H. Möhl.
Frankfort-on-the-Main	Physical Society.
Friedrichshafen	Wilhelm, Chief Tel.
Hamburg	Carl H. Seeman.
Kiel	Prof. Dr. G. Karsten.
Leipsic, Astronomical Obs'y	H. Leppig, Assistant.
Memel	Issermann.
Munich	Dr. C. Lang.
Neufahrwasser	A. Lothes.
Neustadt, Palatinate	Prof. Dicknether.
Stuttgart	Dr. L. Meyer.
Wustrow	Profs. Brandes & Reimer.
GREEK.	
Athens	Kokkides & Wourlisch.
INDIAN.	
Kurrachee	
Deesa	
Bombay	
Poona	
Belgaum	
Lahore	
Roorkee	
Agra	
Nagpur	
Jubulpore	
Lucknow	
Allahabad	
Patna	
Hazaribagh	
Calcutta	
Chittagong	
Dhubri	
Sibsagar	
Jeypore	
Bellary	
Trichinopoly	
ITALIAN.	
Udine	Prof. Giovanni Clodig.
Milan	Prof. G. V. Schiapparelli.
Padua	Prof. Dott. Lorenzoni.
Moncalieri	Prof. P. F. Denza.
Genoa	Prof. G. M. Garibaldi.
Cuneo	
Pesaro	Prof. Luigi Guidi.
Florence	Prof. Constantino Pittei.
Leghorn	Prof. P. Monte.
Rome	Prof. P. Tacchini.
Cosenza	Prof. D. Conti.
Sassari	
Syracuse	Sig. V. Giuliano.
ITALIAN SUB-SERIES	
Stelvio	Prof. P. F. Denza.
Valdobbia	Prof. P. F. Denza.
JAPANESE.	
Awomori	K. Ogawa.
Fushiki	T. S. Tanad and T. Enas.
Gifu	R. Ikuchi.
Hakodate	T. Wakayama.
Hamamatsu	Sakigawa and Miyake.
Hiroshima	Y. Okamoto.
Kanazawa	S. Kuriyama.
Kagoshima	G. Miyanohara.
Kioto	M. Negishi.
Kochi	K. Kusunose.
Miasaka	T. Ishitain & T. Saki.
Miyako	K. Suwa.
Nagasaki	K. Yamasaki and M Chin.
Nemuro	M. Itabashi.
Niigata	M. Morita and C. Tomikawa.
JAPANESE—*Continued.*	
Nobiru	T. Saitoo.
Numadzu	R Kaneda.
Osaka	H. Omura.
Sakai	K. Yamawchi & P. Yoshimura
Shimonoseki	S. Nagasuye.
Tokei	The Staff.
Wakayama	K. Sakai.
MAURITIUS.	
Mauritius R. A. Observatory	The Staff.
MEXICAN.	
Guanajuato	Prof. Vicente Fernandez.
Leon	Prof. M. Leal & Espana.
Mazatlan	C. Carmina.
Mexico	The Staff.
NETHERLANDS.	
Flushing	
Groningen	
Helder	
Hellevoetsluis	
Utrecht	G. F. C. Zaalberg.
NORWEGIAN.	
Bergen	
Brono	
Christiania	
Gjæsvær	
PORTUGUESE.	
Funchal, Madeira	Capt. D. A. de Cunha.
Lisbon, Observatory	The Staff.
Ponta Delgada, Azores	
St. Vincent, Cape Verd	
Serra da Estrella	
St. Paul de Loanda	
RUSSIAN.	
Archangel	Capt. Sseliwerstow.
Baku	
Barnaul	Meteorological Office.
Dorpat	Blumbach.
Ekaterinburg	Meteorological Observatory.
Elisavetgrad	
Irkutsk	Ed. Stelling.
Kasalinsk	Butkewitsch.
Kasan	Observatory.
Kem	M. Kosnobr.
Kertch	E. M. Zacmsipeyz.
Kischinev	
Korostishev	
Koslov	
Lgov	R. I. Ssaweljew, Engineer.
Libau	E. Quaas.
Lugan	Meteorological Observatory.
Moscow	Meteorological Observatory.
Nerchinsk	
Nikolaiev	Capt. Kurdakow.
Nikolaievsk-on-the Amoor	Schonberg.
Nikolsk	Nadeshdin.
Perm	
Petro-Alexandrovsk	Walther.
Petrozavodsk	Dr. Bergmann.
Pinsk	
Poti	
St. Petersburg	Central Physical Observatory.
Samarkand	Dresch.
Sevastopol	Coionobr.
Semipalatinsk	Major Lasarew.
Tashkend Laboratory	Teich, A. M.
Tiflis	Physical Observatory.
Troitskosavsk	
Viatka	
Yeniscisk	Wishnewzky.
Sub-series.	
Petrowsky Academy	Bachmetieff.
SCOTCH.	
Leith	J. Bolam & Geo. Redpath.
SPANISH.	
Bilbao, Met. Observatory	Tomas Eschriche.
Burgos, Met. Observatory	Domingo Martin.
Madrid, Royal Observatory	The Staff.
Santiago, Met. Observatory	R. Gil Villanueva, Director.
Valencia	J. A. Estopina.
Sub-series.	
Havana, Cuba	Benito Viñes, S. J.
Manilla, Philippine Islands	F. Faura, S. J.
San Fernando, Naval Obs'y	Capt. C. Pujazon, R. N.
San Juan de Porto Rico, W. I.	Enrique Gadea, Ch't Eng'r.
SWEDISH.	
Haparanda	
Umea	
Hernosand	
Stockholm	
Wisby	
Sub-series.	
Upsala	Nils. Ekholm.
SWISS.	
Geneva	Observatory.
TURKISH.	
Constantinople	The Observatory.
Valona	A. Bertrand.
Sub-series.	
Beirut, Lee Obs'y, Syria	R. H. West, B. A., Director.
UNITED STATES SUB-SERIES.	
Belize	J. M. Moir.
Colon	Pellegrin.
Gamboa	Lutnywich.
Naos	Barzeley.
Paramaribo, D. Guiana, S. A.	Dr. C. J. Hering.
Rivas, Nicaragua, C. A.	Earl Flint, M. D.
Vera Cruz	Capt. Geo. E. Powell.

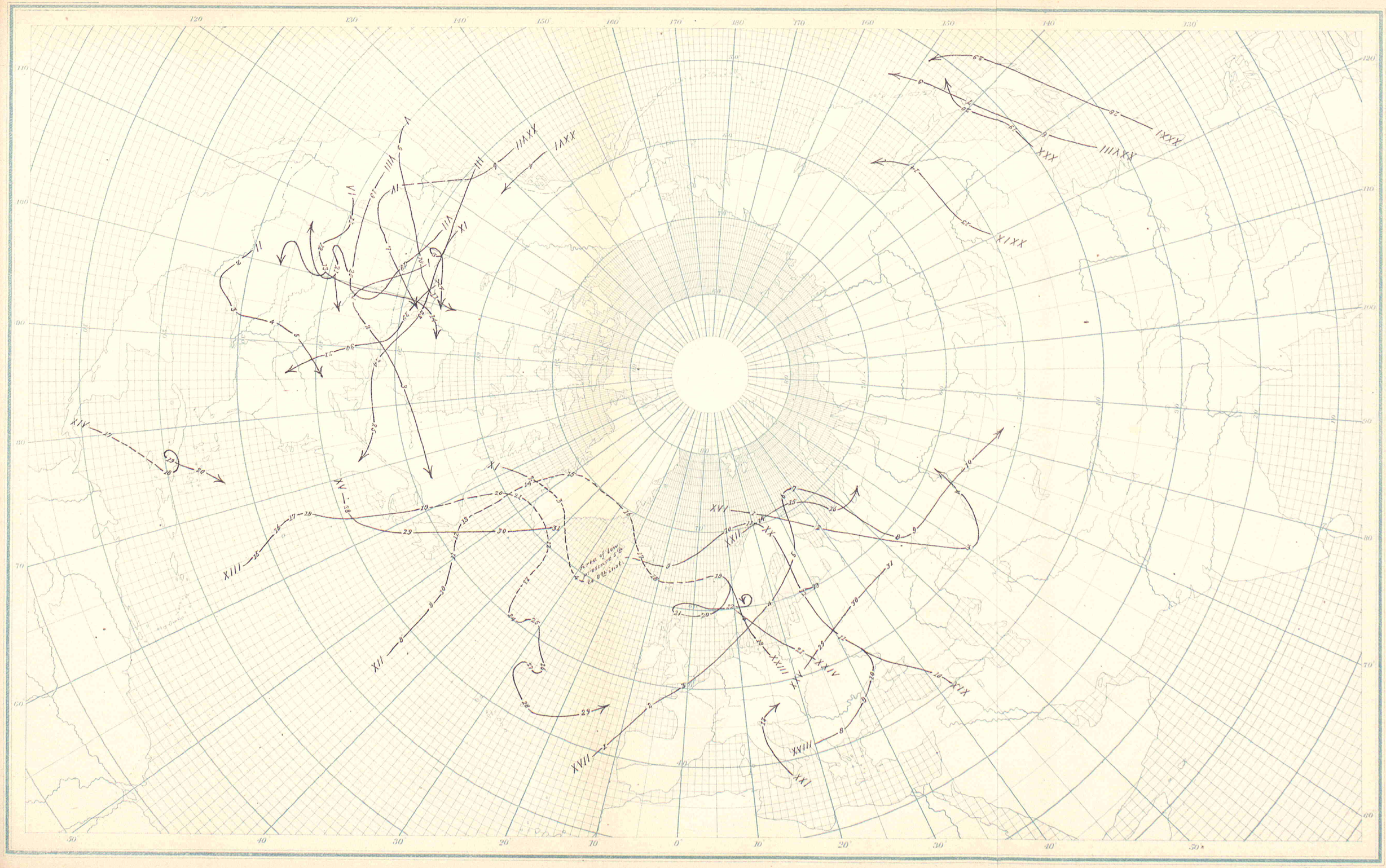
International Chart II. May, 1887. Isobars and Winds.



Signal Office Lith.

Form No. 106 R---1887.

International Chart III. May, 1887. Tracks of Areas of Low Pressure.



Signal Office Lith.

WAR DEPARTMENT.
OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY OF THE UNITED STATES.

SUMMARY AND REVIEW

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS

FOR THE MONTH OF JUNE, 1887.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

A. W. GREELY,
BRIGADIER GENERAL, CHIEF SIGNAL OFFICER OF THE ARMY.

PRINTED FOR EXCHANGE WITH CO-OPERATING OBSERVERS.

WASHINGTON, D. C
AUGUST, 1888.

List of merchant marine steam and sailing vessels from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of June, 1887.

Name of vessel.	Captain.
Am. s. s. Acapulco	Capt. Chas C. Lima.
Br. Adriatic	H. Parsell.
Am. Advance	James Lord.
Br. Aquan	J. Adair.
Ailsa	J. W. Sanson.
Am. Alameda	G. H. Morse.
Br. Alaska	Geo. S. Murray.
Alexandria	D. Pert.
Ger. Aller	H. Christoffers.
Br. Alsatia	J. Brown.
Alvena	MacKay.
Alvo	D. Williams.
Ger. Amalfi	Julius Bahr.
Br. Ambrose	Edward Bisson.
Ger. America	H. Hineke.
Nor. Amicitia	P. M. Reimers.
Br. Amoor	H. Gasson.
Anchoria	W. Brown.
Andes	T. M. McKnight.
Arabic	G. Burton.
Arizona	S. Brooks.
Athos	H. Low.
Augustine	R. Harwood.
Aurania	W. H. P. Hains.
Australia	R. McRitchie.
Ger. Australia	G. Franck.
Br. Baltic	H. Davinson.
Baltimore	I. Trenery
Bassano	W. Rea.
Bavarian	J. Oseinak.
Beiair	G. Dunlop.
Belg. Belgenland	W. A. Beynon.
Br. Bengore Head	J. R. Brady.
Ben Ledi	S. Adamson.
Bessel	C. J. Watson.
Biela	Fred Graham.
Bolivia	J. J. Small.
Bothnia	T. Dutton.
British King	John Kelly.
British Prince	Samuel Nowell.
British Princess	E H. Freeth.
British Queen	R. Wills.
Brooklyn City	W. Fitt.
Buenos Ayreau	J. Scott.
Buffalo	J. H. Malet.
Bulgarian	E. Parry.
Caledonia	R. T. Garvie.
Ger. California	O. Winkler.
Br. Canada	Thos. Foote.
Catalonia	E. Wylie.
Celtic	P. J. Irving.
Cephalonia	Henry Walker.
Cervin	S. Hughson.
Fr. Chateau Leoville	M. L. Chapelain.
Br. Chicago	J. W. Jones.
Chilian	E. F. Bannister.
Chiswick	Chf. Off. J. Mayne.
Circassia	Capt. A. Campbell.
Am. City of Alexandria	J. W. Reynolds.
City of Augusta	J. W. Catherine.
Br. City of Chester	A. Lewis.
City of Chicago	Fred Watkins.
Am. City of Dallas	C. W. Reed.
Br. City of Montreal	R Leitch.
City of Newcastle	R. Townsend.
Am. City of New York	Robt. R. Searle.
City of Para	L. Dexter
City of Peking	H. C. Dearborn.
Br. City of Richmond	A. Redford.
Am. City of Rio de Janeiro	W. B. Scabury.
Br. City of Rome	R. D. Munro.
Am. City of Sydney	D. Friele.
City of Washington	W. M. Rittig.
Am. Cienfuegos	F. M. Faircloth.
Br. Clement	Thomas Burley.
Am. Colorado	J. Daniels.
Columbia	Fred Bolles.
Br. Columbia	T. Mitchell.
Counsellor	Wm. Lang.
Critic	W. R. Lord
Cyril	J. H. Johnson.
Denmark	R. S. Rigby.
Belg. De Ruyter	J. J. Brarens.
Br. Devonia	Hugh Young.
Devonshire	Mate Samuel Winter.
Gr. Donau	Capt. H. Supmer.
Br. Dorian	J. McKeague.
Dorset	John Brown.
Durham City	D. D. Galbraith.
Earnmoor	R. J. Grey.
Dtch. Edam	J. H. Taat.
Br. Edith Godden	J. H. Bennett.
Egypt	J. Sumner.
Ger. Eider	P. H. Berdrow.
Elbe	G. Meyer.
Am. El Callao	Jos. Scholtz.
Span. Elcano	V. de Ispizua.
Emiliano	F. de Bengoa.
Ger. Ems	T. Jungst.
Br. England	T. P. Heeley.
Erin	J. Robinson.
Ethiopia	John Wilson.
Etruria	T. Cook.
Euclid	A. Mathieson.
Am. Eureka	R. B. Quick.
Ger. Europa	F. H. Stiefel.
Br. Fitzroy	Henry Gibb.
France	A. D. Hadley.
Ger. Fulda	R. Ringk.
Br. Furnessia	J. Hedderwick.
Gaelic	W. G. Pearne.
Galileo	R. T. Jones.

Name of vessel.	Captain.
Br. s. s. Gallia	Capt. M. Murphy.
Dan. Geiser	C. W. Moeller.
Ger. Gellert	W. Kühlewein.
Br. Germanic	B. Greadell.
It. Gottardo	D. Viola.
Am. Granada	J. L. Lockwood.
Br. Grecian	C. E. Le Gallais.
Greece	A. J. Jeffrey.
Ger. Hammonia	H. F. Schwensen.
Dan. Hekla	A. G. Thomsen.
Br. Helvetia	G. Cochrane.
Ger. Hermann	A. Kohlmann.
Br. Hibernian	J. Brown.
Holland	W. Tyson.
Horden	C. A. Topp.
Am. Hudson	H. R. Fre.man.
Span. Hugo	A de Mugica.
Am. Illinois	G. H. Dodge.
Ger. India	M. Hulsen.
Br. Iowa	Samuel Walters.
Dan. Island	W. Skjodt.
Br. Istrian	T. H. Fox.
Italia	T. Craig.
Italy	W. Pearce.
Belg. Jan Breydal	H. Meyer.
Br. Jerome	Benj. Crimp.
Kansas	W. Gleig.
Kepler	P. H. Tanner.
Fr. La Bourgogne	E. Frangueł.
La Bretagne	M. de Jousselin.
La Gascogne	Santelli.
La Normandie	G. de Kersabiec.
Br. Lake Winnepeg	Howard Campbell.
Am. Lampassas	M. B. Crowell.
Dtch. Leerdam	G. S Stenger.
Br. Leo	C. J. Caines.
Ger. Lessing	H. Barends
It. Letimbro	3d offi. Fr. Dilliberto.
Br. Lord Clive	Capt. P. Urquhart.
Lord Gough	E. M. Hughes.
Lord O'Neil	James Dunn.
Ludgate Hill	2d Off. H. Dumaresy.
Ger. Main	Capt. H. Boedeker.
Am. Manhattan	Frank Stevens.
Span. Manuel L. Villaverde	Claudio Perales.
It. Marco Minghetti	L. Mustica.
Br. Marengo	Wm. Abbott.
Am. Mariposa	H. M Hayward.
Ger. Marsala	N. Maass.
Br. Mercia	J. Taylor.
Monte Rosa	C. Thomas.
Mozart	W. Sprathly.
Muriel	G. S. Locke
Belg. Nederland	A. J. Griffin.
Ger. Neckar	H. Baur.
Br. Nessmore	John Inch.
Fr. Neustria	P. Verries.
Am. New Orleans	T. P. Halsey.
Am. Newport	W. G. Shackford.
Belg. Noordland	H. E. Nickels.
Br. Norseman	E. Maddox.
Am. Oceanic	John Metcalf.
Br. Olbers	Jas Clark.
Dtch. Oranje Nassau	J. A. LaCrooy.
Am. Oregon	E. Polemann.
Br. Orinoco	J. S Garvin.
Otranto	W. Rippeth.
Oxford	W. James.
Pavonia	A. McKay.
Pawnee	J. James.
Dtch. P. Caland	F. H. Bonjer.
Br. Peconic	G. Evans.
Belg. Pennland	Rud. Weyer.
Am. Philadelphia	Sam. Hess.
Belg. Pieter de Connick	E. Smit.
Ger. Polaria	G. Franck.
Polynesia	A. Kuhn.
Br. Pomona	J. Legoe.
Pontiac	Ch. Offi. H. W. Brown.
Prussian	Capt. J. Ambury.
Prydain	M. Parry.
Republic	P. J Irving.
Ger. Rhaetia	R. Karlowa.
Rhein	Topser.
Belg. Rhynland	J. C. Jamison.
Br. Rialto	F. Kerr.
Richmond Hill	A. Hyde.
Roseville	J. Dove.
Dtch. Rotterdam	G. J. Vis.
Ger. Rugia	A. Albers.
Saale	H. Reichter.
Br. Saint Ronans	H. Campbell.
Salerno	B. H. Rogers.
Am. San Blas	T. Chapman.
Br. Santiago	R. Potter.
Sarmatian	Wm. Richardson.
Sarnia	Joseph Gibson.
Scandinavian	John Park.
Dtch. Schiedam	A. Potjer.
Br. Scythia	T. Roberts.
Br. Servia	H. McKay.
Ger. Slavonia	H Schmidt.
Br. Spain	W. A. Griffiths.
State of Georgia	G. Moodie.
State of Indiana	A. Ritchie.
State of Nebraska	A. G. Braes.
State of Nevada	J. A. Stewart.
State of Pennsylvania	A. J. A. Mann.
Stockholm City	K. Doyle.
Straits of Gibraltar	G. Grigs.
Strathleven	C. W. Pearson.
Ger. Suevia	C. Ludwig.

Name of vessel.	Captain.
Belg. s. s. Switzerland	Capt. H. Buschmann.
Br. Taormina	W. H. Franck.
The Queen	John Milligan.
Dan. Thingvalla	S. T. H. Laub.
Br. Tower Hill	Lieut. F. Archer, R.N.R.
Ger. Trave	Capt. W. Willigerod.
Br. Umbria	W. McMickan.
Belg. Vaderland	C. H. Grant.
Am. Valencia	W. Woodrick.
Br Vertumnus	C. E. Cook.
Viola	L. Murray.
Virginian	M. Fitt.
Belg. Waesland	H. Buschmann.
Dtch. W. A. Scholten	G. Bakker.
Ger. Werra	R. Bussius.
Belg. Westernland	Com. W. G. Randle.
Ger. Weser	Capt. H. Bruns.
Wieland	C. Hebich.
Wisconsin	Edward Bentley.
Br. Worcester	W. Stamper.
Wylo	T. L. Rogers.
Wyoming	C. L. Rigby.
Dtch. Zaandam	H. v. d. Zee.
N. Y. Herald Weather Service.	
Br. s s Britannic	H. Perry.
Ger. bk. Bremerhaven	A. Witte.
Am. s. s. Caracas	N. M. Hopkins.
Fr. Chateau Lafitte	C. Ollivier.
Chateau Marquax	A. Sensine.
Chateau Yquem	C. Journiel.
Am City of Puebla	J. Deakin.
El Monte	J. W. Hawthorne.
El Paso	H. S. Quick.
It. Independente	M. Rossasco.
Am. Knickerbocker	F. Remble.
Br. Llandaff City	F. H. Gore.
Am. Louisiana	E. V. Gager.
Br. Marco Aurelio	H. Bernpohl.
Nevada	J. A. R. Cushing.
Am. Niagara	S. V. Bennis.
Br. Portia	Henry Dawson.
Am. Rio Grande City	J. T Lewis.
Br. Samana	W. Taylor.
Trinidad	W. J. Fraser.
Sailing Vessels.	
Am. bg. Abbie Clifford	D. W. Storer.
Br. bk. Abyssinia	B. R. Hilton.
Ger. bg. Adelherd	H. Bollen.
Br. bg. Adria	J. H. Weldon.
Am. bk. Alice	W. G. Kair.
schr. Annie B. Hutcheson	Daniel Zeluff.
bg. Arcot	J. W. Cates.
Nor. Artemis	E. E. Moe.
Am. bkt. Bonny Doon	C. Burgess.
Ger. sp. Carl	T. Hashagen.
Swed. bk Carl von Doebeln	O. Jonssen.
Am. schr. C. B. Church	N. A. Anderson.
bk. Chas. R. Lewis	A. Montgomery.
Br. sp. Chas. S. Whitney	Geo. D. Spicer.
Am. bk. Chidwall	T. O. Watson.
Am. schr. Comet	W. A. Aldrich.
Gr. bk. Cornelius	H. Windhorts.
Br. sp. Cypromene	Alex. Robertson.
Am. bg. Daisy Boynton	C. Harding.
Ger. sp. Dakota	N. E. Schaffer.
Am. sp. E. B. Sutton	C. O. Carter.
Am. schr. Edward R Emerson	A. H. Child.
Ger. sp. Ellida	T. H. Zinke.
Aus. bk. Errante	A. H. Nicolich.
Am. Essex	G. W. Hall.
Ger. sp. Fidelio	T. H. Schutte.
Am. bk. Florence	A. P. Carter.
schr. Florence Rogers	J. S. F. McLeod.
bk. Florence	C. F. Cunningham.
Ger. sp. Georg	G. Scholtz.
Am. bk. Geo. S. Homer	J. B. Perry.
Nor. bk. Grundloven	O. G. Ellingsen.
Nor. sp. Hanna	S. Falch Muns.
Ger. sp. Hedwig	Th. Minssen.
Dtch. bk. Helena	T. T. Verrbeet.
Nor. bk. Hermon	O. Olsen.
Am. sp. Independence	Samuel Pavett.
Br. bk. Iodine	Adam Smith.
bkt. Josephine	Chas. Brown.
bg. Kenilworth	P. Doig.
Ger. bk. Kepler	Atken.
It. bk. Lazzaro Bianchi	Dallorso Nicola.
Ger. bk. Leocadia	John Stohff.
Am. sp. Light-ship No. 37	Andrew Jackson.
bg. Lillian	H. T. Schive.
Am. bg. L. & W. Armstrong	A. Alexander.
Br. sp. Mabel Taylor	Chas E. Durkee.
bk. Madura	O. Berner.
Am. bg. Manson	E. T. Page.
Swed. bk. Maria Margretha	J. E. Fogman.
Nor. bk. Ovos	Gunder Olsen.
Ger. bk. Pillau	G. Gerlach.
Br. bk. Rothiemay	Ch. Off. O. M. Lund.
Am. bgt. Ruby	Capt. A. J. von Post.
Br. sp. Sapphire	Geo. M. Murray.
Ger. bk. Shakspere	Carl Muller.
Br. bk. Sodium	Wm. Manson.
Am. bk. S. R. Lyman	Albion Pinkham.
bg. Stacy Clark	C. M. Haskell.
It. bk. Teresa Accame	G. Boetto.
Br. bk. Tiber	D. Keefe.

SUMMARY AND REVIEW OF INTERNATIONAL METEOROLOGICAL OBSERVATIONS, JUNE, 1887.

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for June, 1887. Mean Barometer. Actual Inch.	Actual Mill.	Reduced Inch.	Reduced Mill.	Mean temperature. Fah.	Cent.	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
AUSTRALIAN.	° ′	° ′																								
Hobart Town	S. 42 53	E. 147 20	9.00 p.m.	190	58	29.71	754.6	29.92	759.7	45.6	7.6	93	7	7	.....	1	9	2	.....	.....	4	.....	.....	7	2.30	58.4
Melbourne	S. 37 50	E. 144 58	9.40 p.m.	91	28	30.10	764.5	30.17	766.3	48.0	8.9	86	13	1	4	5	3	4	.....	.....	.....	.....	.....	6	2.86	72.6
AUSTRIAN.																										
Agram	N. 45 48	E. 15 53	1.04 p.m.	535	163	29.54	750.4	30.10	764.5	72.5	22.5	52	2	2	1	4	4	9	1	7	2	.....	.....	6	2.35	59.8
Cracow	N. 50 04	E. 20 00	1.20 p.m.	722	220	29.23	742.5	30.00	762.0	64.8	18.2	57	3	6	11	6	1	.....	3	.....	.....	.....	.....	7	2.64	67.2
Eperies	N. 48 58	E. 21 15	1.25 p.m.	853	260	29.09	738.9	30.01	762.2	60.6	15.9	69	14	.....	.....	.....	6	.....	.....	.....	10	.....	.....	7	3.29	83.5
Gratz	N. 47 04	E. 15 28	1.02 p.m.	1171	357	28.62	726.9	30.22	767.6	67.6	19.8	64	1	7	5	5	6	1	3	2	.....	.....	.....	6	8.12	206.2
Kremsmunster	N. 48 03	E. 14 08	0.57 p.m.	1260	384	28.72	729.5	30.07	763.8	68.4	20.2	60	1b	7	15	.....	.....	.....	2	2	.....	.....	.....	7	1.39	35.4
Lemberg	N. 49 50	E. 24 00	1.36 p.m.	978	298	28.95	735.3	29.95	761.5	64.2	17.9	59	.....	18	.....	4	2	2	1	3	.....	.....	.....	4	3.61	91.8
Pola	N. 44 52	E. 13 51	0.55 p.m.	105	32	29.94	760.4	30.05	763.3	75.4	24.1	49	.....	5	9	3	.....	4	8	1	.....	.....	.....	5	1.92	48.7
Szathmar	N. 47 46	E. 22 53	1.32 p.m.	430	131	29.55	750.6	30.01	762.2	71.1	21.7	.....	5	4	8	4	2	2	1	4	.....	.....	.....	7	1.46	37.1
Szegedin	N. 46 15	E. 20 10	1.21 p.m.	315	96	29.67	753.5	30.00	762.0	72.9	22.7	67	1	13	3	1	.....	.....	4	4	4	.....	.....	3	1.39	35.3
Trieste	N. 45 39	E. 13 46	0.55 p.m.	85	26	29.97	761.2	30.05	763.3	76.6	24.8	59	1	2	7	8	.....	1	2	5	4	.....	.....	5	1.43	36.2
Vienna	N. 48 12	E. 16 22	1.05 p.m.	663	202	29.36	745.7	30.06	763.5	67.3	19.6	54	4	11	11	.....	.....	1	3	.....	.....	.....	.....	5	1.51	38.3
BRITISH.																										
Aberdeen	N. 57 10	W. 2 06	11.52 a.m.	89	27	30.13	765.3	30.22	767.6	59.6	15.3	68	2	3	4	2	4	7	4	4	.....	.....	.....	5	0.65	16.5
Bidston	N. 53 24	W. 3 04	11.48 a.m.	197	60	30.00	762.0	30.22	767.6	64.8	18.2	62	3	5	11	2	.....	3	6	.....	.....	.....	.....	8	.....	.....
Bradford	N. 53 48	W. 1 47	11.53 a.m.	366	112	29.66	753.4	30.06	763.5	64.8	18.2	59	2	4	9	.....	.....	5	3	6	1	.....	.....	6	0.09	23
Bridgetown	N. 13 04	W. 59 37	8.02 a.m.	28	9	29.95	760.7	29.98	761.5	83.8	28.8	71	.....	.....	.....	.....	1	.....	20	9	.....	.....	.....	4	.....	.....
Chatham	N. 51 25	E. 0 33	0.02 p.m.	130	40	30.15	765.8	30.33	770.4	68.1	20.1	51	.....	.....	4	.....	.....	.....	9	2	15	.....	.....	4	.....	.....
Falmouth	N. 50 09	W. 5 04	11.40 a.m.	183	56	30.03	762.7	30.16	766.1	60.3	15.7	84	3	3	1	5	.....	8	10	.....	.....	.....	.....	3	.....	.....
Freetown	N. 8 30	W. 13 14	11.07 a.m.	224	68	29.64	752.8	29.86	758.4	83.7	28.7	89	3	3	3	4	5	2	5	3	2	.....	.....	5	.....	.....
Fort Napier	S. 30	E. 31	2.04 p.m.	2294	699	27 85	707.4	30.04	763.0	67.6	19.8	62	3	2	1	3	.....	1	2	4	14	.....	.....	2	.....	.....
Galway	N. 53 15	W. 9 03	11.24 a.m.	32	10	30.13	765.3	30.18	766.6	68.1	20.1	82	.....	.....	4	6	4	6	5	5	.....	.....	.....	3	0.46	11.7
Gibraltar	N. 36 09	W. 5 21	11.39 a.m.	50	15	30.03	762.7	30.06	763.5	74.8	23.8	77	.....	1	9	.....	.....	.....	14	6	.....	.....	.....	2	.....	.....
Greenwich	N. 51 29	0 00	12 m.	159	48	30.02	762.5	30.21	767.3	68.5	20.3	58	5	1	4	6	.....	1	3	10	.....	.....	.....	5	.....	.....
Guernsey *a*	N. 49 27	W. 2 41	11.49 a.m.	275	84	29.91	759.7	30.21	767.3	62.9	17.2	78	4	1	1	5	1	1	2	14	1	.....	.....	3	0.56	14.2
Kew	N. 51 28	W. 0 19	11.59 a.m.	34	10	30.13	765.3	30.18	766.6	65.3	18.5	58	9	2	4	6	.....	.....	3	6	.....	.....	.....	8	.....	.....
Leicester	N. 52 39	W. 1 08	11.55 a.m.	245	75	29.93	760 2	30.21	767.3	66.4	19.1	62	3	3	3	7	2	1	.....	11	.....	.....	.....	6	.....	.....
Malta	N. 36 00	E. 14 30	0.58 p.m.	70	21	29.93	760.2	29.98	761.5	78.0	25.6	59	4	7	.....	2	2	3	3	9	.....	.....	.....	2	.....	.....
Nassau	N. 25 04	W. 77 22	6.51 a.m.	44	13	29.97	761.2	30.01	762.2	81.9	27 7	82	.....	.....	.....	2	5	5	12	2	4	.....	.....	9	.....	.....
Oxford	N. 51 46	W. 1 17	11.55 a.m.	210	64	29.98	761.5	30.23	767.8	65.9	18.8	64	2	2	4	7	.....	.....	1	12	.....	.....	.....	5	.....	.....
Plymouth	N. 50 22	W. 4 10	11.43 a.m.	125	38	30.11	764.8	30.22	767.6	66.3	19.1	64	.....	1	.....	7	7	5	4	1	5	.....	.....	3	.....	.....
Swanbister	N. 58 55	W. 3 05	11.46 a.m.	72	22	30.06	763.5	30.18	766.6	55.9	13.3	86	.....	6	10	3	.....	2	7	.....	2	.....	.....	7	.....	.....
Scutari Cemet'y *a*	N 41 00	E. 29 03	1.56 p.m.	60	18	29.85	758.2	29.90	759.4	83.0	28.3	39	8	1	.....	3	2	.....	.....	14	.....	.....	.....	3	.....	.....
Valencia	N. 51 55	W. 10 18	11.19 a.m.	23	7	30.15	765.8	30.19	766.8	65.7	18.7	69	1	3	5	6	6	5	3	1	.....	.....	.....	6	.....	.....
Stonyhurst	N. 53 51	W. 2 28	11.50 a.m.	361	110	29.84	757.9	30.24	768.1	65.3	18.5	51	1	.....	12	6	.....	1	3	7	.....	.....	.....	6	0.52	13.2
Sub-series.																										
Gozo	N. 36 01	E. 14 16	0.57 p.m.	364	111	29.66	753.4	30.01	762.2	77.8	25.4	56	5	7	2	4	2	4	5	1	5	3724	5998	3	0.00	00.0
Penang	N. 5 24	E. 100 20	6.41 p.m.	20	6	29.84	757.9	29.78	756.4	78.1	25.6	86	.....	17	.....	.....	.....	12	.....	1	.....	.....	.....	6	7.17	182.1
Singapore	N. 1 17	E. 103 51	6.55 p.m.	10	3	29.86	758.4	29.79	756.7	77.5	25.3	92	.....	.....	.....	5	3	.....	.....	.....	22	.....	.....	5	10.23	259.8
CANADIAN.																										
Bathurst	N. 47 39	W. 65 42	7.37 a.m.	35	11	29.97	761.2	30.01	762.2	59.3	15.2	.....	.....	3	4	6	4	3	6	2	2	.....	.....	6	1.82	46.2
Bird Rocks	N. 47 50	W. 61 10	7.56 a.m.	.....	.....	29.90	759.4	30.02	762.5	45.7	7.6	88	2	4	2	1	3	10	4	4	.....	.....	.....	4	2.69	68.3
Calgarry	N. 50 55	W. 114 04	4.24 a.m.	?	?	26.40	670.5	29.94	760.5	44.7	7.1	83	2	.....	.....	.....	.....	....	1	2	25	.....	.....	6	2.15	54.6
Chatham	N. 47 03	W. 65 29	7.38 a.m.	56	17	29.95	760.7	30.01	762.2	56.5	13.6	78	2	3	.....	.....	5	7	2	2	9	.....	.....	5	2.52	64.0
Cornwall	N. 45 01	W. 74 43	7.01 a.m.	175	53	29.77	756.0	29.90	759.4	63.7	17.6	80	1	.....	14	2	2	.....	8	3	.....	.....	.....	5	1.72	43.7
Dalhousie *a*	N. 48 04	W. 66 22	7.35 a.m.	45	14	29.93	760.2	29.98	761.5	58.2	14.6	.....	.....	.....	20	.....	.....	.....	3	.....	6	.....	.....	3	3.64	92.5
Father Point	N. 48 31	W. 68 28	7.26 a.m.	20	6	29.91	759.7	29.94	760.5	52.5	11.4	84	.....	11	.....	.....	1	8	5	4	1	.....	.....	6	3.73	94.7
Fort Garry	N. 49 51	W. 97 07	5.32 a.m.	754	230	29.07	738.4	29.90	759.4	57.2	14.0	88	6	2	2	5	9	3	.....	3	.....	.....	.....	6	2.94	74.7
Fredericton	N. 45 57	W. 66 38	7.33 a.m.	164	50	29.87	758.7	30.05	763.3	60.3	15.7	71	1	4	9	4	3	4	3	2	.....	4921	7919	5	5.10	129.5
Grand Manan	N. 44 46	W. 66 45	7.33 a.m.	49	15	29.99	761.7	30.04	763.0	55.7	13.2	70	4	.....	1	3	10	1	2	2	7	.....	.....	4	2.45	62.2
Halifax	N. 44 39	W. 63 36	7.46 a.m.	122	37	29.94	760.5	30.08	764.0	55.4	13.0	81	8	2	1	.....	14	2	1	2	.....	.....	.....	4	2.12	53.8
Hamilton	N. 43 16	W. 79 53	6.40 a.m.	372	113	29.64	752.9	30.03	762.7	64.7	18.2	80	.....	.....	5	5	8	.....	9	3	.....	.....	.....	5	3.42	86.9
Kingston	N. 44 14	W. 76 30	6.54 a.m.	307	94	29.68	753.9	30.00	762.0	61.6	16.4	83	2	4	2	4	3	9	3	2	1	.....	.....	7	2.20	55.9
Little Glace Bay	N. 46 12	W. 59 58	8.00 a.m.	34	10	29.97	761.2	30.00	762.0	56.5	13.6	90	6	2	7	7	2	.....	1	5	.....	.....	.....	.....	.....	.....
London	N. 43 00	W. 81 15	6.35 a.m.	832	254	29.13	739.9	30.01	762.2	61.7	16.5	88	3	2	2	6	1	1	4	1	10	3380	5439	6	2.07	52.6
Medicine Hat	N. 50 01	W. 110 37	4.38 a.m.	2136	651	27 59	700.8	29.84	757.9	51.9	11.1	80	4	1	5	.....	.....	.....	7	1	12	.....	.....	6	5.75	146.0
Minnedosa	N. 50 13	W. 99 48	5.21 a.m.	1665	501	29.08	738.6	29.84	757.9	54.8	12.7	87	1	1	2	2	.....	.....	3	5	16	.....	.....	5	7.00	177.8
Montreal	N. 45 31	W. 73 33	7.06 a.m.	187	57	29.80	756.9	30.00	762.0	62.3	16.8	75	6	2	3	1	3	10	3	2	.....	.....	.....	6	2.44	62.0
Ottawa	N. 45 26	W. 75 41	6.57 a.m.	200	61	29.76	755.9	29.98	761.5	62.0	16.7	84	4	2	8	3	4	2	6	1	.....	2888	4648	5	2.45	62.3
Parry Sound	N. 45 19	W. 80 01	6.40 a.m.	635	194	29.32	744.7	29.99	761.7	60.4	15.8	89	1	5	6	2	2	6	3	.....	5	.....	.....	7	2.05	52.1
Peterborough	N. 44 17	W. 78 18	6.47 a.m.	722	220	29.28	743.7	29.98	761.5	63.4	17.4	82	.....	1	2	3	2	3	2	3	14	.....	.....	5	1.33	33.8
Port Arthur	N. 48 27	W. 89 12	6.03 a.m.	642	196	29.24	742.7	29.94	760.5	54.8	12.7	87	3	2	4	.....	.....	1	2	4	14	.....	.....	5	1.68	42.7
Port Dover	N. 42 47	W. 80 13	6.39 a.m.	635	194	29.34	745.2	30.00	762.0	62.3	16.8	92	1	3	1	.....	.....	1	1	1	22	.....	.....	5	2.17	55.1
Port Stanley	N. 42 40	W. 81 13	6.35 a.m.	592	180	29.36	745.7	29.98	761.5	61.7	16.5	89	6	3	8	.....	.....	3	7	3	.....	.....	.....	5	1.13	28.7
Qu' Appelle	N. 50 44	W. 103 42	5.05 a.m.	2115	645	27.61	701 3	29.84	757.9	54.4	12.4	78	1	1	5	1	4	3	3	1	11	.....	.....	3	4.26	108.2
Quebec	N. 46 48	W. 71 12	7.15 a.m.	293	89	29.68	753.9	29.99	761.7	58.7	14.8	79	4	1	6	5	.....	1	5	4	4	.....	.....	5	2.59	65.8
Rockliffe	N. 46 10	W. 77 48	6.49 a.m.	418	127	29.55	750.6	30.00	762.0	57.0	13.9	88	.....	.....	5	.....	.....	.....	5	3	17	.....	.....	5	1.93	49.0
Saint Andrews	N. 45 04	W. 67 06	7.32 a.m.	47	14	29.97	761.2	30.02	762.5	53.5	11.9	86	2	3	.....	3	5	3	2	3	.....	.....	.....	4	4.83	122.7
Saint John, N.B.	N. 45 17	W. 66 03	7.36 a.m.	116	35	29.89	759.2	30.02	762.5	55.2	12.9	75	.....	4	.....	1	10	.....	3	6	.....	.....	.....	5	5.38	136.7
Saint Pierre	N. 46 47	W. 56 08	8.15 a.m.	?	?	.....	.....	29.93	760.3	50.2	10.1	.....	2	3	6	7	2	3	1	5	1	.....	.....	.....	1.35	34.3
Saugeen	N 44 30	W. 81 21	6.35 a.m.	656	200	29.29	744 0	29.99	761.7	57.0	13.9	89	.....	3	2	1	3	3	1	.....	17	.....	.....	6	1.97	50.0
S.W. Pt. Anticosti	N. 49 24	W. 63 36	7.46 a.m.	30	9	29.92	760.0	29.96	761.0	50.4	10.2	88	2	1	3	7	5	.....	2	5	5	.....	.....	3	2.24	56.9
Stratford	N. 43 23	W. 81 00	6.36 a.m.	1186	361	28.75	730.2	29.99	761.7	63.0	17.2	85	4	3	5	3	1	3	5	1	5	3325	5351	5	2.68	68.0
Swift Current	N. 50 21	W. 107 33	4.50 a.m.	2439	744	27.28	692.9	29.86	758.4	50.2	10.1	86	2	3	3	2	2	1	8	4	5	.....	.....	6	3.85	97.8
Sydney	N. 46 08	W. 60 10	7.59 a.m.	37	11	29.97	761.2	30.01	762.2	55.5	13.1	75	4	1	.....	.....	10	7	3	2	3	.....	.....	6	1.25	31.7
Toronto	N. 43 39	W. 79 23	6.42 a.m.	350	107	29.65	753.1	30.03	762.7	61.2	16.2	82	4	5	5	2	.....	4	3	5	2	.....	.....	6	2.66	67.6
Woodstock	N. 43 08	W. 80 47	6.37 a.m.	980	299	28 98	736.1	30.01	762 2	62.8	17.1	84	3	1	2	6	3	2	2	5	6	.....	.....	6	2.34	59.4
Yarmouth	N. 43 50	W. 66 02	7.36 a.m.	61	19	29.97	761.2	30.03	762.7	55.5	13.1	81	5	3	2	2	12	2	3	1	.....	.....	.....	4	2.29	58.2
Sub-series.																										
Saint Johns, N.F.	N. 47 34	W. 52 42	8.29 a.m.	159	48	29.72	754.9	29.89	759.2	50.7	10.4	84	.....	10	1	.....	2	5	10	.....	2	.....	.....	6	1.01	25.6
CHINESE.																										
Hong Kong	N. 22 18	E. 114 10	7.37 p.m.	110	34	29.64	752.8	29.65	753.1	80.9	27.2	81	.....	.....	.....	1	22	1	4	2	.....	.....	.....	7	6.52	165.6
Foochow	N. 26 08	E. 119 38	7.59 p.m.	34	10	29.56	750.8	29.54	750.3	78.8	26.0	.....	.....	.....	.....	8	11	5	.....	6	.....	8679	13967	7	2.07	52.6
Sub-Series.																										
South Cape	N. 21 55	E. 120 51	8.04 p.m.	121	37	29.66	753.4	29.73	755.1	80.4	26.9	.....	.....	.....	18	1	.....	5	1	3	2	.....	.....	4	4.63	117.6
Zi-Ka-Wei	N. 31 12	E. 121 26	8.06 p.m.	23	7	29.72	754.8	29.70	754.4	70.2	21.2	92	1	1	.....	.....	6	7	9	5	1	.....	.....	9	8.90	226.0
DANISH.																										
Copenhagen	N. 55 41	E. 12 36	0.50 p.m.	43	13	29.96	761.0	30.03	762.7	64.0	17.8	59	4	7	8	3	3	1	2	2	.....	.....	.....	5	.....	.....
Fanoe	N. 55 27	E. 8 24	0.34 p.m.	20	6	30.05	763.3	30.10	764.5	61.7	16.5	67	1	9	14	3	.....	1	1	1	.....	.....	.....	4	.....	.....
Godthaab	N. 64 11	W. 51 46	8.33 a.m.	36	11	29.66	753.4	29.75	755.6	40.6	4.8	74	.....	3	.....	1	2	4	.....	14	6	.....	.....	6	.....	.....
Ivigtut	N. 61 12	W. 48 00	8.48 a.m.	16	5	29.67	753.7	29.73	755.1	44.1	6.7	.....	12	3	.....	2	1	5	.....	.....	7	.....	.....	8	.....	.....
Jacobshavn	N. 69 13	W. 50 55	8.36 a.m.	43	13	29.77	756.2	29.87	758.7	37.0	2.8	.....	2	4	8	1	3	1	4	.....	7	.....	.....	5	.....	.....

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metrs	Result of Simultaneous Observations for June, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
DANISH—Con.	° ′	° ′																								
Stykkisholm	N. 65 05	W. 22 46	10.29 a.m.	36	11	29.83	757.6	29.92	760.0	48.0	8.9	79	1	4	4	2	7	5	5	.....	2	.....	.....	8	.....	.....
Thorshavn	N. 62 02	W. 6 44	11.33 a.m.	30	9	30.02	762.4	30.09	764.3	52.9	11.6	81	1	.....	14	4	.....	1	4	4	2	.....	.....	6	.....	.....
Upernavik	N. 72 47	W 56 00	8.16 a.m.	39	12	29.75	755 6	29.85	758.2	34.0	1.1	82	3	3	.....	6	.....	1	3	5	9	.....	.....	9	.....	.....
Vestervig	N. 56 47	E. 8 20	0.33 p.m.	82	25	29.96	761.0	30.07	763.8	59.4	15.2	66	1	10	9	5	1	1	.....	3	.....	.....	.....	4	.....	.....
FRENCH.																										
Alençon	N. 48 26	E. 0 05	0.00 m.	476	145	29.63	752.6	30.13	765.3	69.4	20.8	55	6	.....	.....	.....	6	.....	.....	18	.....	.....	.....	.....	0.74	18.7
Arras	N 50 18	E. 2 46	0.11 p.m	223	68	29.92	759.9	30.17	766.3	68.9	20.5	55	.....	6	4	4	2	3	2	9	.....	.....	.....	4	0.54	13.6
Avignon	N. 43 57	E. 4 49	0.19 p.m	66	20	29.98	761.4	30.05	763.3	83.8	28.8	44	11	3	2	3	3	6	.....	2	.....	.....	.....	.....	0.54	13.7
Bar-sur-Seine	N. 48 07	E. 4 22	0.17 p.m.	518	158	29.58	751.3	30.13	765.3	71.1	21.7	52	1	1	.....	.....	2	6	5	15	.....	.....	.....	5	1.22	32.1
Beauvais	N. 49 26	E. 2 05	0.08 p.m.	269	82	29.84	757.8	30.13	765.3	73.4	23.0	52	8	8	6	.....	.....	.....	.....	8	.....	.....	.....	.....	1.50	38.0
Besançon	N. 47 13	E. 6 02	0.24 p.m.	895	273	29.24	742.8	30.16	766.1	74.1	23.4	43	3	.....	1	4	3	.....	10	9	.....	.....	.....	.....	4.23	107.4
Bordeaux	N. 44 50	W. 0 32	11.58 a.m.	243	74	29.84	758.0	30.10	764.5	77.4	25.2	47	4	3	3	1	1	2	6	10	.....	.....	.....	4	1.17	29.8
Bourges	N. 47 10	E. 2 26	0.10 p.m.	512	156	29.58	751.2	30.12	765.0	74.3	23.5	67	8	5	3	3	.....	.....	2	9	.....	.....	.....	3	0.90	22.8
Brest	N. 48 24	W. 4 30	11.42 a.m.	210	64	29.95	760.7	30.18	766.6	68.9	20.5	75	6	2	.....	6	4	.....	2	10	.....	.....	.....	3	0.30	7.5
Caen	N. 49 11	W. 0 21	11.59 a.m.	69	21	30.07	763.7	30.15	765.8	65.8	18.8	71	16	.....	1	.....	2	1	2	8	.....	.....	.....	3	1.99	50.5
Châlons-sur-Marne	N. 48 57	E. 4 21	0.17 p.m.	292	89	29.83	757.7	30.15	765.8	73.6	23.1	58	2	3	14	6	4	.....	1	.....	.....	.....	.....	3	1.21	30.7
Charleville	N. 49 46	E. 4 43	0.19 p.m.	476	145	29.64	752.8	30.14	765.5	72.7	22.6	47	2	1	4	5	2	1	2	13	.....	.....	.....	3	0.91	23.2
Clermont-Fer'and	N. 45 46	E. 3 05	0.12 p.m.	1273	388	28.77	730.8	30.08	763.9	74.3	23.5	51	20	.....	1	1	.....	1	2	5	.....	.....	.....	4	2.37	60.2
Cluny	N. 46 26	E. 4 39	0.19 p.m.	787	240	29.27	743.4	30.07	763.8	76.5	24.7	47	6	4	4	2	1	.....	1	12	.....	.....	.....	3	1.38	35.0
Commercy	N. 48 46	E. 5 35	0.22 p.m.	817	249	29.26	743.1	30.12	765.0	72.3	22.4	50	6	3	9	2	.....	.....	5	5	.....	.....	.....	3	1.93	49.1
Gap	N. 44 33	E. 6 05	0.24 p.m.	2424	739	27.56	700.0	29.98	761.6	76.8	24.9	42	2	.....	.....	.....	3	.....	.....	3	22	.....	.....	.....	1.68	42.7
Gréasque	N. 43 25	E. 5 37	0.22 p.m.	1056	322	28.94	735.1	30.01	762.2	79.2	26.2	40	2	.....	1	.....	2	18	3	1	3	.....	.....	2	0.50	12.6
Guéret	N. 46 10	E. 1 52	0.07 p.m.	1535	468	28.54	724.9	30.07	763.8	70.2	21.2	77	4	1	2	8	2	.....	5	7	1	.....	.....	.....	5.06	128.4
Lescar	N. 43 20	W. 0 26	11.58 a.m.	525	160	29.53	750.0	30.07	763.8	78.1	25.6	61	.....	6	11	1	1	.....	4	7	.....	.....	.....	.....	3.35	85.1
Lorient	N. 47 45	W. 3 21	11.47 a.m.	85	26	30.11	764.7	30.20	767.1	74.7	23.7	56	3	1	1	1	9	1	1	12	1	.....	.....	3	0.94	23.9
Lyon	N. 45 41	E. 4 47	0.19 p.m.	981	299	29.06	738.0	30.07	763.8	73.9	23.3	44	9	9	1	.....	1	5	3	2	.....	.....	.....	.....	1.14	28.9
Mans	N. 48 00	E. 0 12	0.01 p.m.	285	87	29.86	758.5	30.17	766.3	71.6	22.0	64	3	4	2	1	1	1	9	9	.....	.....	.....	3	1.89	47.9
Marseille	N. 43 18	E. 5 23	0.22 p.m.	246	75	29.78	756.5	30.04	763.0	77.5	25.3	49	.....	2	16	6	2	4	.....	.....	.....	.....	.....	2	0.28	7.2
Montlouis	N. 42 30	E. 2 07	0.08 p.m.	5202	1586	25.03	635.7	29.87	758.7	63.3	17.4	43	4	5	1	5	2	3	8	2	.....	.....	.....	5	2.34	59.5
Montpellier	N. 43 37	E. 3 53	0.16 p.m.	102	31	29.93	760.2	30.03	762.7	80.6	27.0	45	3d	6	2	2	5	6	1	1	.....	.....	.....	2	0.16	4.2
Mont Ventoux	N. 44 10	E. 5 16	0.21 p.m.	6234	1900	24.00	609.7	.....	.....	53.2	11.9	71	9	12	3	1	5	.....	.....	.....	.....	.....	.....	3	3.96	100.7
Nancy	N. 48 42	E. 6 11	0.25 p.m.	718	219	29.35	745.6	30.13	765 3	70.7	21.5	53	1	1	3	3	.....	4	17	1	.....	.....	.....	.....	2.00	50.7
Nantes	N. 47 13	W. 1 33	11.54 a.m.	134	41	30.01	762 3	30.15	765.8	73.8	23.2	54	4	3	1	4	.....	.....	10	8	.....	.....	.....	5	1.05	26.7
Nice	N. 43 41	E. 7 16	0.29 p.m.	59	18	29.93	760.1	30.00	762.0	74.8	23.8	73	1	.....	.....	.....	1	2	7	1	18	.....	.....	2	0.94	23.8
Perpignan	N. 42 42	E. 2 53	0.12 p.m.	105	32	29.97	761.1	30.08	764.0	77.2	25.1	49	.....	9	3	.....	.....	.....	6	12	.....	.....	.....	4	0.42	10.8
Pic du Midi (Sum-	N. 42 56	W. 0 08	11.59 a.m.	9380	2859	21.42	544.1	.....	.....	46.4	8.0	53	2	.....	4	7	.....	.....	1	1	15	.....	.....	.....	4.29	108.9
Privas. ..... [mit.)	N. 44 45	E. 4 36	0.18 p.m.	997	304	29.08	738.6	30.10	764.5	79.0	26.1	58	9	.....	.....	.....	12	2	7	.....	.....	.....	.....	.....	0.75	19.0
Puy de Dôme	N. 45 46	E. 2 58	0.12 p.m.	4813	1467	25.32	643.2	.....	.....	53.4	11.8	79	8	1	6	.....	.....	3	4	8	.....	.....	.....	5	3.54	89.8
Rochefort	N. 45 56	W. 0 58	11.56 a.m.	30	9	30.10	764.6	30.11	764.8	79.0	26.1	52	1	2	4	6	1	.....	9	7	.....	.....	.....	5	0.26	6.5
Roche-sur-Yon	N. 46 40	W. 1 26	11.54 a.m.	259	79	29.87	758.8	30.15	765.8	75.4	24.1	53	2	3	2	4	1	2	6	10	.....	.....	.....	4	0.39	9.8
Rodez	N. 44 21	E. 2 34	0.10 p.m.	2050	625	28.05	712.4	30.13	765.2	75.6	24.2	66	8	4	.....	1	.....	9	1	7	.....	.....	.....	1	1.66	42.2
Rouen	N. 49 26	E. 1 05	0.04 p.m.	39	12	29.14	765.5	30.19	766.8	70.9	21.6	54	3	5	4	1	1	2	3	11	.....	.....	.....	4	1.58	40.2
Saint Brieuce	N. 48 37	E. 5 08	0.20 p.m.	348	106	29.79	756.6	30.17	766.3	65.1	18.4	70	4	1	1	2	3	.....	.....	19	.....	.....	.....	.....	1.00	25.5
Saint Maur	N. 48 48	E. 2 21	0.09 p.m.	161	49	29.99	761.7	30.18	766.6	71.1	21.7	55	5	6	2	2	3	1	.....	11	.....	.....	.....	.....	1.74	44.2
Toulouse	N. 43 37	E. 1 27	0.06 p.m.	636	194	29.43	747.6	30.11	764.8	77.9	25.5	58	13	2	2	.....	6	3	.....	4	.....	.....	.....	3	6.15	156.3
Sub-Series.																										
St. Martin du Hinx.	N. 43 35	W. 1 16	11.55 a.m.	131	40	29.98	761.4	30.12	765.0	76.8	24.9	55	6	11	5	1	2	2	3	6	.....	.....	.....	4	1.74	44.2
GERMAN.																										
Ansbach	N. 45 18	E. 10 36	0.42 p.m.	1358	414	28.69	728.8	30.10	764.5	68.7	20.4	64	3	7	7	1	.....	2	.....	10	.....	.....	.....	4	0.67	17.0
Bamberg	N. 49 54	E. 10 54	0.44 p.m.	787	240	29.24	742.8	30.07	763.8	68.5	20.3	53	.....	5	10	5	.....	1	3	6	.....	.....	.....	4	1.54	39.0
Berlin	N. 52 30	E. 13 19	0.53 p.m.	151	46	29.87	758.7	30.05	763.3	66.6	a19.2	a54	a1	12	6	2	.....	3	1	4	.....	.....	.....	6	1.58	40.2
Breslau	N. 51 07	E. 17 02	1.08 p.m.	482	147	29.51	749.6	30.04	763.0	62.8	17.1	57	1	10	11	2	.....	2	2	2	.....	.....	.....	7	2.48	63.1
Carlsruhe	N. 49 01	E. 8 25	0.34 p.m.	413	126	29.69	754.0	30.13	765.3	71.8	22.1	51	3	2	1	11	.....	.....	2	11	.....	.....	.....	5	3.91	99.2
Cassel	N. 51 19	E 9 28	0.38 p.m.	669	204	29.40	746.8	30.13	765.3	66.7	19.3	58	5	10	6	.....	1	2	1	1	4	.....	.....	5	0.84	21.2
Frankfort on M.	N. 50 08	E. 8 41	0.35 p.m.	338	103	29.75	755.6	30.12	765.0	71.4	21.9	48	6	5	7	2	.....	2	3	5	.....	.....	.....	5	0.85	21.6
Friedrichshafen	N. 47 39	E. 9 29	0.38 p.m.	1338	408	28.68	728.5	30.05	763.2	70.2	21.2	58	2	1	6	9	3	2	.....	7	.....	.....	.....	4	2.66	67.7
Hamburg	N. 53 33	E. 9 58	0.40 p.m.	85	26	30.00	761.9	30.10	764.5	64.6	18.1	55	3	13	3	3	.....	1	2	5	.....	.....	.....	5	0.43	10.9
Kiel	N. 54 19	E. 10 04	0.40 p.m.	13	4	30.18	766.5	30.21	767.3	64.0	17.8	57	4	9	8	2	.....	.....	.....	7	.....	.....	.....	5	0.48	12.2
Leipsic	N. 51 20	E. 12 24	0.50 p.m.	390	119	29.67	753.6	30.10	764.5	66.2	19.0	59	5	4	14	1	1	.....	2	1	2	.....	.....	6	2.60	65.9
Memel	N. 55 43	E. 21 07	1.24 p.m.	39	12	29.88	759.0	29.95	760.7	57.9	14.0	71	3	11	8	6	.....	1	1	.....	.....	.....	.....	6	.....	.....
Munich	N. 48 09	E. 11 34	0.46 p.m.	1732	528	28.30	718.7	30.18	766.6	68.2	20.1	46	.....	14	2	.....	.....	2	1	10	1	.....	.....	5	2.33	59.1
Neufahrwasser	N. 54 24	E. 18 40	1.15 p.m.	36	11	29.93	760.3	29.99	761.7	59.4	15.2	69	9	1	7	1	1	.....	5	6	.....	.....	.....	7	1.65	41.8
Neustadt	N. 49 21	E. 8 08	0.33 p.m.	479	146	29.59	751.6	30.09	764.3	72.5	22.5	54	8	1	3	4	3	.....	2	6	2	.....	.....	5	2.17	55.2
Stuttgart	N. 48 47	E. 9 11	0.37 p.m.	833	254	29.22	742.2	30.10	764.5	71.1	21.7	52	4	10	2	1	2	.....	4	7	.....	.....	.....	4	2.45	62.2
Wustrow	N. 54 21	E. 12 24	0.50 p.m.	23	7	30.00	762.1	30.04	763.0	60.8	16.0	70	5	4	11	6	.....	.....	1	3	.....	.....	.....	4	0.52	13.3
GREEK.																										
Athens	N. 37 58	E. 23 44	1.35 p.m.	348	106	29.58	751.3	29.91	759.7	83.7	28.7	43	6	.....	.....	5	16	1	1	1	.....	.....	.....	4	0.59	15.0
INDIAN.																										
Kurrachee	N. 24 47	E. 67 04	4.28 p.m.	49	15	29.46	748.3	29.46	748.3	89.5	31.9	67	.....	.....	8	21	1	.....	.....	.....	.....	.....	.....	4	0.03	0.8
Deesa	N. 24 16	E. 72 14	4.49 p.m.	466	142	29.05	737.8	29.45	748.0	97.7	36.5	34	.....	1	2	12	11	2	.....	2	.....	.....	.....	5	1.52	38.6
Bombay	N. 18 54	E. 72 49	4.51 p.m.	37	11	29.64	752.8	29.61	752.2	82.3	27.9	81	.....	2	17	7	3	1	.....	.....	.....	.....	.....	8	23.01	586.0
Poona	N. 18 28	E. 74 10	4.57 p.m.	1849	564	27.83	707.0	29.59	751.6	79.3	26.3	68	.....	5	16	9	.....	.....	.....	.....	.....	.....	.....	7	3.99	101.4
Belgaum	N. 15 52	E. 74 42	4.59 p.m.	2524	770	27.19	690.7	29.63	752.6	71.9	22.2	85	.....	1	5	19	5	.....	.....	.....	.....	.....	.....	9	10.46	265.7
Lahore	N. 31 34	E. 74 20	4.57 p.m.	702	214	28.74	730.0	29.39	746.5	99.7	37.6	28	2	.....	7	3	1	3	5	1	8	.....	.....	4	2.41	61.2
Roorkee	N. 29 52	E. 77 56	5.12 p.m.	887	270	28.55	725.3	29.38	746.2	96.9	36.1	30	1	.....	17	1	1	1	2	.....	7	.....	.....	2	2.55	64.8
Agra	N. 27 10	E. 78 05	5.12 p.m.	555	169	28.91	734 2	29.40	746.7	101.7	38.7	30	2	8	4	1	2	.....	4	5	4	.....	.....	3	1.48	37.6
Nagpur	N. 21 09	E. 79 11	5.17 p.m.	1025	312	28.50	724.0	29.46	748.2	88.9	31.6	58	4	3	6	9	2	2	.....	1	3	.....	.....	8	9.99	253.8
Jubbulpore	N. 23 09	E. 79 59	5.20 p.m.	1341	409	28.19	716.1	29.45	748.0	90.3	32.4	51	1	4	9	6	3	3	1	1	2	.....	.....	8	7.38	187.4
Patna	N. 25 37	E. 85 08	5.41 p.m.	183	56	29.32	744.7	29.45	748.0	87.4	30.8	83	.....	.....	.....	.....	.....	3	8	7	12	.....	.....	7	6.29	159.8
Hazaribagh	N. 24 00	E. 85 24	5.42 p.m.	2007	612	27.56	700.0	29.47	748.6	82.1	27.8	70	5	6	4	2	4	3	4	1	1	.....	.....	9	4.32	109.7
Calcutta	N. 22 33	E. 88 21	5.53 p.m.	21	6	29.52	749.8	29.48	748.9	84.7	29.3	79	.....	.....	2	6	17	3	2	.....	.....	.....	.....	7	6.45	163.8
Dhubri	N. 26 07	E. 89 50	5.59 p.m.	115	35	29.45	748.0	29.51	749.5	80.4	26.9	88	.....	1	.....	2	.....	1	5	3	18	.....	.....	7	32.29	820.2
Chittagong	N. 22 21	E. 91 50	6.07 p.m.	87	27	29.54	750.3	29.57	751.1	82.2	27.9	86	.....	.....	1	5	13	8	.....	.....	3	.....	.....	9	14.86	377.4
Sibsagar	N. 26 59	E. 94 40	6.19 p.m.	333	101	29.26	743.2	29.54	750.4	82.8	28.2	86	.....	2	3	8	4	3	1	9	.....	.....	.....	7	16.17	410.7
Jeypore	N. 26 55	E. 75 50	5.03 p.m.	1431	436	28.08	713.2	29.40	756.8	98.0	36.7	21	5	10	4	3	1	1	2	4	.....	.....	.....	5	1.49	37.8
Bellary	N. 15 09	E. 76 57	5.08 p.m.	1475	449	28.21	716.5	29.60	751.8	85.2	29.6	54	2	4	16	5	1	.....	1	.....	1	.....	.....	9	0.24	6.1
Trichinopoly	N. 10 50	E. 78 44	5.15 p.m.	275	84	29.47	748.5	29.67	753.6	89.4	31.8	50	.....	3	18	5	1	.....	.....	.....	3	.....	.....	7	3.05	77.5
Lucknow	N. 26 50	E. 81 00	5.24 p.m.	369	112	29.11	739.4	29.42	747.3	96.6	35.9	43	5	7	3	3	1	1	3	4	3	.....	.....	3	3.28	83.3
Allahabad	N. 25 26	E. 81 52	5.27 p.m.	307	94	29.14	740.1	29.39	746.4	95.5	35.3	37	7	7	.....	.....	3	3	5	2	3	.....	.....	5	0.80	20.3
ITALIAN.																										
Udine	N. 46 04	E. 13 13	0.53 p.m.	381	116	29.66	753.4	30.06	763.6	76.8	24.9	44	2	2	10	3	1	4	1	4	3	.....	.....	5	1.00	25.3
Milan	N. 45 28	E. 9 11	0.37 p.m.	482	147	29.55	750.6	30.04	762.9	78.4	25.8	46	3	2	3	10	2	6	2	2	.....	.....	.....	5	2.57	65.2
Padua	N. 45 24	E. 11 53	0.48 p.m.	102	31	29.93	760.2	30.03	762.8	75.6	24.2	49	3	.....	1	4	4	9	6	3	.....	.....	.....	4	3.18	80.8
Moncalieri	N. 45 00	E. 7 41	0.31 p.m.	846	258	29.13	739.9	30.01	762.3	76.1	24.5	51	.....	3	.....	4	3	8	10	2	.....	.....	.....	4	3.20	81.2
Genoa	N. 44 24	E. 8 55	0.36 p.m.	177	54	29.86	758.4	30.04	763.0	72.9	22.7	58	4	1	.....	1	19	5	.....	.....	.....	.....	.....	4	6.35	161.3
Cuneo	N. 44 20	E. 7 20	0.30 p.m.	1820	555	.....	.....	30.00	761.9	71.8	22.1	52	3	1	1	1	.....	1	10	13	.....	.....	.....	5	5.03	127.7
Pesaro	N. 43 55	E. 12 53	0.52 p.m.	46	14	30.01	762.2	30.06	763.4	71.2	21.8	67	4	.....	2	.....	.....	1	15	8	.....	.....	.....	3	2.13	54.1
Florence	N. 43 46	E. 11 15	0.45 p.m.	240	73	29.77	756.1	30.03	762.7	77.7	25.4	43	7	1	4	11	4	1	.....	2	.....	.....	.....	4	2.07	52.5
Leghorn	N. 43 33	E. 10 18	0.41 p.m.	79	24	29.96	761.0	30.04	763.0	74.5	23.6	53	2	5	13	2	5	.....	1	2	.....	.....	.....	4	0.74	18.8
Rome	N. 41 54	E. 12 29	0.50 p.m.	164	50	29.84	757.9	30.01	762.2	80.2	26.8	40	2	.....	8	13	5	.....	.....	2	.....	.....	.....	4	1.17	29.8
Cosenza	N. 39 19	E. 16 17	1.05 p.m.	840	256	29.16	740.7	30.00	762.0	80.2	26.8	66	.....	4	17	1	2	5	1	.....	.....	.....	.....	2	0.50	12.7
Sassari	N. 40 43	E. 8 34	0.34 p.m.	735	224	29.29	744.0	30.03	762.7	77.7	25.4	43	1	1	.....	2	14	9	2	1	.....	.....	.....	2	0.34	8.7
Palermo	N. 38 07	E. 13 21	0.53 p.m.	236	72	29.84	757.9	30.06	763.5	79.9	26 6	52	.....	1	.....	1	.....	1	1	25	1	.....	.....	2	0.22	5.7
Syracuse	N. 37 03	E. 15 15	1.01 p.m.	72	22	29.95	760.7	29.98	761 5	75.6	24.2	57	6	2	1	3	6	.....	4	8	.....	.....	.....	4	0.07	1.8

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for June, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent.	Mean Rel. Humidity	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
ITALIAN—Con.	° ′	° ′																								
Sub-Series.																										
Stelvio	N. 46 32	E. 10 25	0.42 p.m	8343	2543	22.33	567.2	.....	.....	46.2	7.9	65	.....	.....	2	4	2	5	6	11	...	.....	.....	3	1.89	47.9
Valdobbia	N. 45 47	E. 7 51	0.31 p.m.	8360	2548	22.35	567.6	.....	.....	47.7	8.7	62	6	3	9	5	1	1	2	3	.....	.....	.....	8	3.94	100.0
JAPANESE.																										
Awomori	N. 40 51	E.140 45	9.23 p.m.	33	10	29.77	756.1	29.79	756.7	57.9	14.4	88	15	3	4	2	.....	1	1	4	.....	4367	7028	7	1.99	50.5
Fushiki	N. 36 47	E.137 03	10.05 p.m.	13	4	29.75	755.6	29.74	755.4	65.1	18.4	91	7	2	1	4	.....	1	2	8	5	6121	9851	7	3.97	100.8
Gifu	N. 35 27	E.136 46	9.07 p.m.	49	15	29.72	754.9	29.74	755.4	68.9	20.5	81	3	2	.....	.....	3	8	2	.....	12	2294	3692	6	11.31	287.0
Hakodate	N. 41 46	E.140 44	9.23 p.m.	10	3	29.81	757 2	29.81	757.2	54.3	12.4	93	1	2	5	2	3	5	11	.....	.....	7390	1193	8	1.94	49.3
Hamamatsu	N. 34 42	E.137 43	9.11 p.m.	92	28	29.68	753.8	29.74	755.4	67.7	19.8	89	.....	.....	8	1	2	.....	5	.....	14	1963	3159	7	13.11	333.0
Hiroshima	N. 34 23	E.132 27	8.50 p.m.	15	5	29.74	755.4	29.73	755.2	68.5	20.3	82	9	.....	.....	2	2	.....	2	.....	15	3448	5549	6	8.83	224.2
Kanazawa	N. 36 33	E.136 40	9.07 p.m.	95	29	29.67	753.6	29.75	755 7	65.4	18.5	87	3	.....	.....	6	2	1	4	1	13	3408	5484	7	5.96	151.5
Kagoshima	N. 31 35	E.130 33	8.42 p.m.	13	4	29.77	756.2	29.75	755.6	68.9	20.5	91	.....	3	1	2	.....	.....	2	1	21	2577	4147	8	23.71	602.2
Kioto	N. 35 01	E.135 46	9.03 p.m.	161	49	29.59	751.7	29.73	755.2	68.1	20.1	80	10	2	1	1	1	2	2	6	5	2537	4083	8	9.43	249.5
Kochi	N. 33 33	E.133 34	8.54 p.m.	20	6	29.76	755.8	29.74	755.4	70.2	21.2	86	6	10	4	2	.....	4	2	1	1	4041	6503	6	12.33	313.2
Miasaki	N. 31 56	E.131 26	8.46 p.m.	26	8	29.77	756.1	29.76	756.0	69.4	20.8	87	4	1	10	.....	2	1	9	.....	3	4814	7747	7	18.78	476.9
Miyako	N. 39 38	E.141 59	9.28 p.m.	98	30	29.73	755.1	29.82	757.4	56.0	13.3	95	3	.....	1	1	4	.....	.....	1	20	971	1563	6	8.29	210.6
Nagasaki	N. 32 44	E.129 52	8.39 p.m.	190	58	29.57	751.1	29.73	755.2	68.4	20.2	88	4	2	1	6	1	2	2	2	10	3416	5497	6	12.76	324.0
Nemuro	N. 43 20	E.145 35	9.42 p.m.	89	27	29.80	757.0	29.89	759.2	45.2	7.3	96	.....	1	.....	1	8	5	11	2	2	6101	9818	9	1.82	46.0
Niigata	N. 37 55	E.139 03	9.16 p.m.	33	10	29.74	755.4	29.75	755.6	64.6	18 1	85	5	1	2	7	1	2	1	3	8	4405	7089	9	2.78	70.6
Nobiru	N. 38 23	E.141 11	9 25 p.m.	16	5	29.78	756.5	29.78	756.5	61.5	16.4	93	2	2	.....	.....	6	5	8	2	5	7589	12213	8	4.58	116.2
Numadzu	N. 35 06	E.138 51	9.15 p.m.	30	9	29.73	755.2	29.73	755.2	68.6	20.3	84	.....	1	5	5	1	1	12	.....	5	4224	6798	8	14.27	362.6
Osaka	N. 34 42	E.135 30	9.02 p.m.	46	14	29.72	755.0	29.70	754.4	69.1	20.6	81	3	2	13	.....	1	.....	1	3	7	4886	7863	6	8.36	212.3
Sakai	N. 35 33	E.133 14	8.53 p.m.	7	2	29.76	756.0	29.74	755.4	65.9	18.8	81	3	2	4	2	.....	1	2	5	11	4632	7454	5	4.28	108.6
Shimonoseki	N. 33 58	E.130 56	8.44 p.m.	164	50	29.61	752.0	29.75	755.6	66.6	19.2	88	.....	6	8	.....	1	.....	11	.....	4	.....	.....	6	8.54	217.0
Tokei	N. 35 41	E.139 46	9.19 p.m.	69	21	29.70	754.3	29.74	755.4	67.1	19.5	88	1	1	2	.....	13	2	8	3	.....	5411	8708	8	8.53	216.6
Wakayama	N. 34 14	E.135 09	9.01 p.m.	49	15	29.71	754.5	29.73	755.1	69.1	20.6	82	3	.....	1	.....	2	.....	.....	1	23	1023	1646	6	6.53	165.9
MAURITIUS.																										
Mauritius	S. 20 06	E. 57 33	3.50 p.m.	181	55	29.94	760.5	30.07	763.8	72.1	22.3	65	1	.....	.....	.....	.....	13	15	1	.....	4395	7073	4	1.68	42.7
MEXICAN.																										
Guanajuato	N. 21 01	W.101 10	5.15 a.m.	6762	2061	23.65	600.7	29.83	757.7	60.8	16.0	80	2	2	1	6	2	2	3	12	.....	.....	.....	8	11.89	302.0
Leon	N. 21 07	W.101 36	5.14 a.m.	5902	1799	24.25	615.9	29.84	757.9	62.2	16.8	89	.....	10	3	10	.....	3	.....	4	.....	.....	.....	9	8.65	219.6
Mazatlan	N. 23 12	W.106 17	4.55 a.m.	249	76	29.60	751.7	29.82	757.4	77.1	25.0	85	1	4	3	4	.....	3	9	6	.....	.....	.....	7	2.58	65.5
Mexico	N. 19 26	W. 99 00	5.24 a.m.	7490	2283	23.02	584.7	30.00	761.9	57.5	14.2	85	.....	7	1	2	.....	.....	.....	2	18	.....	.....	8	6.20	157.4
NETHERLANDS.																										
Flushing	N. 51 24	E. 3 35	0.14 p.m.	0	0	30.10	764.6	30.12	765.0	63 7	17.6	.....	11	5	5	6	.....	.....	.....	3	.....	.....	.....	.....	0.88	22.3
Groningen	N. 53 12	E. 6 34	0.26 p.m.	60?	18?	30.07	763.8	30.15	765.8	62.8	17.1	.....	7	6	3	6	2	.....	.....	6	.....	.....	.....	.....	0.18	4.5
Helder	N. 52 58	E. 4 45	0.19 p.m.	0	0	30.17	766.2	30.19	766.8	59.5	15.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.07	1.9
Hellevoetsluis	N. 51 49	E. 4 08	0.17 p.m.	0	0	30.06	763.6	30.08	764.0	65.7	18.7	.....	11	7	5	2	.....	.....	2	3	.....	.....	.....	.....	0.67	17.0
Utrecht	N. 52 05	E. 5 07	0.20 p.m.	43	13	30.13	765.2	30.19	766.8	68.0	20.0	.....	7	5	6	5	1	.....	2	4	.....	.....	.....	5	0.11	2.8
NORWEGIAN.																										
Bergen	N. 60 24	E. 5 20	0.21 p.m.	56	17	30.00	762.0	30.10	764.5	57.2	14.0	68	8	10	6	1	5	.....	.....	.....	.....	.....	.....	5	.....	.....
Brono	N. 65 28	E. 12 14	0.49 p.m.	33	10	29.91	759.8	29.99	761.7	49.3	9.6	74	11	1	5	9	2	.....	1	.....	1	.....	.....	7	3.46	87.8
Christiania	N. 59 55	E. 10 45	0.43 p.m.	134	41	29.78	756.5	29.99	761.7	70.0	21.1	35	2	3	1	2	17	1	.....	3	1	.....	.....	4	0.58	14.6
Gjæsvær	N. 71 07	E. 25 22	1.41 p.m.	23	7	29.78	756.5	29.86	758.4	44.4	6.9	.....	.....	7	13	.....	1	1	1	4	3	.....	.....	8	1.56	39.7
PORTUGUESE.																										
Angra	N. 38 39	W. 27 14	10.11 a.m.	444	44	29.95	760.8	30.08	764.0	65.7	18.7	88	5	6	3	2	6	7	1	.....	.....	.....	.....	5	1.42	36.0
Funchal	N. 32 38	W. 16 55	10.52 a.m.	82	25	30.05	763.2	30.08	764.0	71.1	21.7	67	.....	.....	1	19	.....	1	.....	.....	9	.....	.....	4	Inap.	Inap.
Lisbon	N. 38 42	W. 9 08	11.23 a.m.	312	95	29.75	755.6	30.06	763.5	75.9	24.4	54	6	.....	.....	11	6	2	.....	5	.....	.....	.....	3	0.66	16.7
Ponta Delgada	N. 37 45	W. 25 41	10.17 a.m.	66	20	30.08	764.1	30.13	765.3	68.4	20.2	79	4	1	2	7	3	4	.....	4	5	.....	.....	4	1.84	46.8
Saint Vincent	N. 16 37	W. 25 02	10.20 a.m.	35	11	30.00	761.9	29.98	761.5	77.7	25.4	75	22	1	1	.....	.....	.....	.....	7	.....	.....	.....	4	0.02	0.4
Serra da Estrella	N. 40 25	W. 7 35	11.30 a.m.	4728	1441	25.41	645.4	30.00	761.9	62.6	17.0	57	2	1	4	2	1	6	11	3	.....	.....	.....	4	3.29	83.5
San Salvador	S. 6 17	E. 14 53	1.00 p.m.	1834	559	28.11	714.1	29.89	759.2	73.2	22.9	67	.....	5	14	3	1	.....	.....	.....	7	.....	.....	3	0.00	0.0
RUSSIAN.																										
Archangel	N. 64 33	E. 40 32	2.42 p.m.	16	5	29.73	755.2	29.79	756.7	53.2	11.8	67	3	11	1	1	2	4	1	4	3	.....	.....	8	.....	.....
Baku	N. 40 21	E. 49 51	3.19 p.m.	39	12	29.94	760.5	29.97	761.2	76.5	24.7	57	15	2	.....	.....	5	6	.....	1	1	.....	.....	1	.....	.....
Barnaul	N. 53 20	E. 83 47	5.35 p.m.	459?	140?	29.33	744.9	29.83	757.7	71.4	1.9	43	5	5	1	1	3	1	.....	10	4	.....	.....	5	1.50	38.2
Dorpat	N. 58 23	E. 26 43	1.47 p.m.	223	68	29.56	750.9	29.93	760.2	61.9	16.6	57	6	3	5	9	4	1	1	1	.....	.....	.....	7	3.26	82.8
Ekaterinburg	N. 56 49	E. 60 38	4.03 p.m.	899	274	28.83	732.3	29.80	756.9	70.9	21.6	48	1	1	6	8	9	4	1	1	.....	.....	.....	6	3.12	79.3
Elisavetgrad	N. 48 31	E. 32 17	2.09 p.m.	407	124	29.42	747.3	29.88	758.9	62.2	16.8	48	2	12	6	6	2	1	.....	.....	1	.....	.....	8	2.10	53.4
Irkutsk	N. 52 17	E.104 16	6.57 p.m.	1610	491	28.17	715.6	29.82	757.4	61.7	16.5	55*f*	5	5	7	2	2	4	1	2	2	.....	.....	7	1.49	37.9
Kasalinsk	N. 45 46	E. 62 07	4.08 p.m.	148	45	29.54	750.2	29.69	754.1	86.4	30.2	24	3	11	4	1	1	1	4	5	.....	.....	.....	4	.....	.....
Kasan	N. 55 47	E. 49 08	3.17 p.m.	230	70	29.52	749.7	29.82	757.4	68.7	20.4	52	2	.....	3	11	9	2	.....	.....	3	.....	.....	8	0.03	0.8
Kem	N. 64 57	E. 34 39	2.19 p.m.	43	13	29.72	755.0	29.81	757.2	52.9	11.6	62	1	.....	1	5	.....	1	11	10	1	.....	.....	8	1.43	36.4
Kertch *a*	N. 45 21	E. 36 29	2.26 p.m.	20?	6?	29.93	760.3	29.95	760.7	72.3	22.4	58	4	1	5	2	7	.....	5	3	2	.....	.....	5	.....	.....
Keiff	N. 50 27	E. 30 30	2.02 p.m.	600	183	29.28	743 6	29.93	760.2	63.3	17.4	62	1	6	11	2	4	3	.....	2	1	.....	.....	8	3.20	81.2
Kischinev	N. 46 59	E. 28 51	1.55 p.m.	361	110	29.58	751.3	29.96	761.0	70.7	21.5	53	9	9	3	2	6	.....	1	.....	1	.....	.....	6	1.03	26.2
Korostishev	N. 50 19	E. 29 03	2.05 p.m.	?	?	29.31	744.5	.....	.....	64.8	18.2	62	4	4	8	7	3	1	1	.....	2	.....	.....	8	3.35	85.2
Koslov	N. 52 53	E. 40 31	2.42 p.m.	505	154	29.28	743.7	29.84	757.9	66.2	19.0	64	.....	3	6	10	4	2	1	1	3	.....	.....	7	.....	.....
Lgov	N. 51 38	E 35 17	2.21 p.m.	518	158	29.29	744.0	29.86	758.5	65.1	18.4	65	2	2	10	8	1	2	2	1	.....	.....	.....	8	3.83	97.3
Libau	N. 56 31	E. 21 01	1.24 p.m.	20	6	29.88	758.9	29.93	760.2	56.1	13.4	72	2	7	8	9	1	1	2	.....	.....	.....	.....	5	1.18	30.1
Lugan	N. 48 35	E. 39 20	2.37 p.m.	164	50	29.72	755.0	29.89	759.2	74.3	23.5	40	.....	2	8	11	2	1	5	1	.....	.....	.....	7	1.21	30.7
Moscow	N. 55 46	E. 37 40	2.31 p.m.	469	143	29.28	743.6	29.79	756.7	63.1	17.3	59	1	6	9	4	5	1	1	.....	3	.....	.....	8	1.84	46.8
Ner chinsk	N. 51 19	E. 119 37	7.58 p.m.	2155?	657?	27.54	699.4	29.85	758.2	57.4	14.1	60	2	1	1	2	.....	.....	1	2	21	.....	.....	5	.....	.....
Nikolaiev	N. 46 58	E. 31 58	2.08 p.m.	62	19	29.88	759.0	29.95	760.7	71.8	22.1	52	5	7	4	3	4	.....	2	.....	5	.....	.....	4	3.12	79.2
Nikolaievsk *e*	N. 53 08	E.140 45	9.23 p.m.	82	25	29.71	754.6	29.81	757.2	46.9	8.3	80	2	.....	.....	1	.....	5	11	5	1	.....	.....	5	.....	.....
Nikolsk	N. 59 32	E. 45 27	3.02 p.m.	485?	148?	29.20	741.7	29.76	755.9	60.8	16.0	63	5	2	.....	4	1	8	4	4	2	.....	.....	8	3.71	94.2
Perm	N. 58 01	E. 56 16	3.45 p.m.	328?	100?	29.45	748.0	29.82	757.4	68.4	20.2	57	.....	2	3	8	6	5	1	2	3	.....	.....	8	2.87	73.0
Petro-Alexandrovsk	N. 41 28	E. 61 05	4.04 p.m.	328	100	29.47	748.5	29.78	756.4	91.0	32.8	.....	4	6	5	8	2	.....	1	4	.....	.....	.....	4	.....	.....
Petrozavodsk *e*	N. 61 47	E. 34 23	2.18 p.m.	220?	67?	29.54	750.4	29.82	757.4	57.4	14.1	59	4	4	.....	3	2	2	9	3	.....	.....	.....	7	2.15	54.6
Pinsk	N. 52 07	E. 26 06	1.44 p.m.	459?	140?	29.45	747.9	29.96	761.0	64.2	17.9	59	2	7	11	2	2	1	2	3	.....	.....	.....	7	3.39	86.0
Poti	N. 42 09	E. 41 37	2.46 p.m.	26	8	29.95	760.7	29.97	761.2	74.5	23.6	65	.....	3	18	8	1	.....	.....	.....	.....	.....	.....	4	.....	.....
St. Petersburg	N. 59 56	E. 30 16	2.01 p.m.	20	6	29.75	755.6	29.81	757.2	59.2	15.1	57	4	8	8	2	1	1	1	5	.....	.....	.....	7	2.22	56.4
Samarkand	N. 39 39	E. 66 57	4.28 p.m.	2379?	725?	27.36	695.0	29.73	755.1	86.0	30.0	.....	10	7	5	.....	.....	.....	1	6	1	.....	.....	4	0.44	11.1
Sevastopol *a*	N. 44 37	E. 33 31	2.14 p.m.	187	57	29.77	756.1	29.97	761.2	74.1	23.4	51	2	9	11	2	4	1	.....	.....	.....	.....	.....	4	0.43	10.9
Tashkend	N. 41 20	E. 69 18	4.37 p.m.	1607?	490?	28.12	714.2	29.71	754.6	89.4	31.9	32*a*	*a*	5	2	2	5	2	1	1	11	.....	.....	4	.....	.....
Tiflis	N. 41 43	E. 44 47	2.59 p.m.	1342	409	28.52	724.3	29.87	758.7	79.3	26.3	42	1	12	.....	1	6	6	2	1	1	.....	.....	4	2.50	63.6
Viatka	N. 58 36	E. 49 41	3.19 p.m.	581?	177?	29.11	739 3	29.77	756.1	64.6	18.1	73	2	3	7	6	7	.....	1	.....	4	.....	.....	7	2.87	73.3
Warsaw	N. 52 13	E. 21 02	1.24 p.m.	390	119	29.52	749.7	29.95	760.7	64.0	17.8	56	3	6	10	5	.....	1	2	2	1	.....	.....	7	2.62	66.6
Yeniseisk	N. 58 27	E. 92 06	6.08 p.m.	276?	84	29.67	753.5	29.99	761.7	68.5	20.3	48	7	9	5	2	.....	1	1	1	4	.....	.....	5	1.66	42.1
Sub-series.																										
Petrowsky Acad'y	N. 55 50	E. 37 33	2.30 p.m.	558	170	29.17	741.0	29.75	755.6	62.4	16.9	56	2	5	10	3	6	2	2	.....	.....	.....	.....	8	2.11	53.5
SCOTTISH.																										
Leith	N. 55 59	W. 3 10	11.47 a.m.	70	21	30.14	765.5	30.24	768.1	.....	.....	.....	1*a*	2	10	1	1	.....	9	5	.....	.....	.....	6	0.33	8.4
SPANISH.																										
Bilbao	N. 43 15	W. 2 59	11.48 a.m.	52	16	30.05	763.2	30.10	764.5	79.0	26.1	55	3	17	.....	.....	1	4	.....	2	3	1850	2978	4	0.68	17.4
Burgos	N. 42 20	W. 3 46	11.45 a.m.	2821	860	27.19	690.6	30.04	763.0	73.0	22.8	55	.....	1	2	5	2	1	7	12	.....	4295	6912	3	4.55	115.6
Madrid	N. 40 25	W. 3 42	11.45 a.m.	2152	656	27.89	708.3	30.01	762.2	82.4	28.0	35	1	1	3	4	4	3	9	3	2	663	1067	3	1.00	25.5
Santiago	N. 42 53	W. 8 28	11.26 a.m.	863	263	29.15	740.4	30.04	763.0	78.1	25.6	57	3	1	2	8	2	1	.....	8	5	6531	10510	4	3.60	91.5
SPANISH—*Sub.*																										
Havana	N. 23 08	W.82 23	6.30 a.m.	62	19	29.91	759.7	29.92	760.0	75.5	24.2	90	.....	.....	.....	.....	2	9	14	5	.....	.....	.....	6	15.12	384.0
San Fernando	N. 36 28	W. 6 13	11.35 a.m.	95	29	29.98	761.4	30.06	763.5	78.6	25.9	54	.....	.....	11	4	2	.....	13	.....	.....	.....	.....	2	0.32	8.1
San Juan de Porto Rico	N. 18 30	W.66 10	7.35 a.m.	82	25	29.94	760.5	29.96	761.0	80.1	26.7	82	.....	.....	.....	.....	3	16	6	2	3	.....	.....	5	6.52	165.9

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for June, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent.	Mean Rel. Humidity	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation Inch.	Mill.
SWEDISH.	° ′	° ′																								
Haparanda	N. 65 47	E. 24 03	1.36 p.m.	30	9	29.74	755.5	29.82	757.4	58.5	14.7	60	13	2	1	1	10	.....	.....	1	2	.....	.....	6	0.63	16.1
Umea	N. 63 50	E. 20 17	1.21 p.m.	39	12	29.77	756.2	29.86	758.4	62.4	16.9	44	4	3	.....	.....	5	7	3	8	.....	.....	.....	5	0.39	9.9
Hernosand	N. 62 32	E. 17 57	1.12 p.m.	46	14	29.85	758.2	29.89	759.2	52.3	11.3	56	3	11	1	1	6	3	3	2	.....	.....	.....	5	1.71	43.5
Stockholm	N. 59 20	E. 18 04	1.12 p.m.	144	44	29.73	755.1	29.93	760.2	62.4	16.9	60	5	7	4	5	1	2	.....	6	.....	.....	.....	5	2.15	54.7
Wisby	N. 57 39	E. 18 19	1.13 p.m.	52	16	29.85	758.1	29.93	760.2	56.5	13.6	67	5	8	11	2	.....	.....	2	2	.....	.....	.....	3	1.59	40.3
Sub-Series.																										
Upsala	N. 59 51	E. 17 37	1.10 p.m.	79	24	29.79	756.7	29.91	759.7	63.1	17.3	47	10	9	4	2	2	.....	1	2	.....	.....	.....	6	2.28	58.0
SWISS.																										
Geneva	N. 46 12	E 6 08	0.25 p.m.	1338	408	28.69	728.8	30.08	763.9	69.8	21.0	53	24	2	1	.....	1	.....	2	.....	.....	.....	.....	.....	1.75	44.4
TURKISH.																										
Constantinople	N. 41 02	E. 28 59	1.56 p.m.	246	75	29.68	753.9	29.96	760.9	74.1	23.4	54	14	2	.....	2	2	1	.....	9	.....	.....	.....	4	1.10	27.9
Valona	N. 40 27	E. 19 27	1.18 p.m.	105	32	29.84	757.9	29.96	760.9	81.3	27.4	.....	1	12	3	10	2	1	1	1	.....	.....	.....	2	Inap.	Inap.
Sub-Series.																										
Beirut	N. 33 54	E. 35 28	2.22 p.m.	112	34	29.70	754.4	29.81	757.2	82.4	28.0	61	3	.....	13	12	.....	.....	2	.....	2	.....	.....	1	.....	.....
UNITED STATES.																										
Atlantic states.																										
Eastport	N. 44 54	W. 66 59	7.32 a.m.	53	16	29.98	761.5	30.04	763.0	53.7	12.1	81	6	.....	1	5	7	1	2	7	1	5693	9162	5	6.01	152.7
Portland	N. 43 39	W. 70 15	7.19 a.m.	99	30	29.92	760.0	30.02	762.5	60.1	15.6	78	1	7	4	5	3	3	1	1	6	5439	8753	6	4.07	103.4
Manchester	N. 43 13	W. 73 03	7.14 a.m.	.....	.....	29.78	756.4	.....	.....	62.2	16.8	77	5	10	1	1	5	4	.....	4	.....	3283	5283	6	3.37	85.6
Mt. Washington	N. 44 16	W. 71 18	7.15 a.m.	6279	1914	23.91	607.3	30.02	762.5	44.8	7.1	87	2	12	4	4	5	.....	1	2	.....	17250	27760	4	9.78	248.4
Northfield	N. 44 08	W. 72 42	7.09 a.m.	871	266	29.10	739.1	30.02	762.5	59.2	15.1	84	6	1	.....	5	9	.....	2	7	.....	5107	8219	5	4.12	104.6
Boston	N. 42 21	W. 71 04	7.16 a.m.	124	38	29.91	759.7	30.04	763.0	62.6	17.0	75	4	3	5	5	3	2	2	6	.....	7198	11584	5	1.98	50.3
Nantucket	N. 41 14	W. 70 07	7.20 a.m.	14	4	30.03	762.7	30.03	762.7	59.5	15.3	85	1	2	5	2	7	2	7	4	.....	7349	11827	3	2.12	53.8
Block Id	N. 41 10	W. 71 36	7.14 a.m.	27	8	30.00	762.0	30.02	762.5	60.4	15.8	87	3	6	2	6	3	3	1	6	.....	8200	13196	3	2.75	69.8
New Haven	N. 41 18	W. 72 56	7.08 a.m.	107	33	29.92	760.0	30.02	762.5	62.6	17.0	78	4	3	2	2	5	.....	2	11	1	4234	6814	6	5.62	142.7
New London	N. 41 21	W. 72 05	7.12 a.m.	47	14	29.98	761.5	30.02	762.5	63.2	17.3	81	3	1	1	1	1	3	3	3	14	3354	5398	4	4.69	119.1
Wood's Holl	N. 41 33	W. 70 40	7.18 a.m.	22	7	30.05	763.3	30.06	763.5	59.7	15.4	87	2	4	1	10	2	3	4	3	1	7895	12705	3	4.03	102.4
Albany	N. 42 39	W. 73 45	7.05 a.m.	85	26	29.95	760.7	30.03	762.7	64.4	18.0	74	5	3	2	1	6	6	1	1	5	3450	6358	6	2.99	75.9
New York City	N. 40 43	W. 74 00	7.04 a.m.	185	56	29.84	757.9	30.02	762.5	65.1	18.4	75	6	.....	5	1	4	2	3	4	5	4541	7308	4	7.70	195.6
Philadelphia	N. 39 57	W. 75 09	7.00 a.m.	117	36	29.92	760.0	30.03	762.7	65.2	18.4	77	3	3	8	2	3	.....	8	5	.....	6198	9975	5	6.81	173.0
Atlantic City	N. 39 22	W. 74 25	7.03 a.m.	13	4	30.03	762.7	30.03	762.7	64.5	18.1	87	4	2	5	3	5	1	2	7	1	6265	10082	4	4.21	106.9
Baltimore	N. 39 18	W. 76 37	6.54 a.m.	45	14	30.00	762.0	30.03	762.7	67.7	19.8	72	6	2	3	6	3	1	3	0	.....	4122	6634	5	4.44	112.8
Washington City	N. 38 54	W. 77 03	6.52 a.m.	106	32	29.93	760.2	30.03	762.7	66.6	19.2	78	6	3	.....	4	5	2	3	4	3	3377	5435	5	2.99	75.9
Chincoteague I	N. 37 55	W. 75 23	6.59 a.m.	8	2	29.98	761.5	29.97	761.2	65.5	18.6	84	2	2	1	2	2	2	1	0	.....	5505	8859	4	0.51	13.0
Lynchburg	N. 37 25	W. 79 09	6.44 a.m.	652	199	29.37	746.0	30.04	763.0	67.9	19.9	77	3	3	1	7	1	1	1	7	6	2004	3225	4	3.65	92.7
Norfolk	N. 36 51	W. 76 17	6.55 a.m.	30	9	30.00	762.0	30.01	762.2	69.4	20.8	86	2	3	2	5	1	1	3	10	3	5255	8457	5	2.72	69.1
Hatteras	N. 35 15	W. 75 40	6.58 a.m.	11	3	30.03	762.7	30.02	762.5	71.9	22.2	84	10	.....	3	8	3	.....	1	5	.....	10589	17041	5	3.41	86.6
Wilmington	N. 34 14	W. 77 57	6.48 a.m	52	16	29.97	761.0	30.00	762.0	71.8	22.1	79	2	.....	2	12	1	2	3	7	1	5190	8352	5	6.41	162.8
Raleigh	N. 35 48	W. 78 29	6.39 a.m.	432	132	29.60	751.8	30.06	763.5	68.2	20.1	82	b10	5	2	2	2	1	1	3	2	4303	6925	4	6.22	158.0
Charlotte	N. 35 13	W. 80 51	6.37 a.m	808	246	29.22	742.2	30.04	763.0	69.5	20.8	77	6	3	.....	3	2	.....	2	6	8	3068	4937	5	4.44	112.8
Charleston	N. 32 47	W. 79 56	6.40 a.m	52	16	29.98	761.5	30.00	762.0	74.7	23.7	82	3	.....	4	8	.....	.....	3	9	3	6799	10942	5	4.54	115.3
Augusta	N. 33 28	W. 81 54	6.32 a.m.	183	56	29.87	758.7	30.03	762.7	72.2	22.3	81	.....	2	2	4	7	3	3	8	1	2939	4730	3	4.79	121.7
Savannah	N. 32 05	W. 81 05	6.36 a.m.	87	27	29.95	760.7	30.01	762.2	73.2	22.9	85	3	.....	5	7	2	2	2	9	.....	4933	7939	4	10.76	273.3
Jacksonville	N. 30 20	W. 81 39	6.34 a.m.	43	13	29.99	761.7	30.00	762.0	74.7	23.7	84	.....	.....	1	10	5	1	2	8	3	4968	7995	4	9.68	245.9
Cedar Keys	N. 29 08	W. 83 02	6.28 a.m.	22	7	29.99	761.7	29.97	761.2	76.1	24.5	86	.....	.....	2	2	4	2	8	9	3	5862	9434	6	8.65	219.7
Key West	N. 24 34	W. 81 49	6.33 a.m.	22	7	29.98	761.5	29.95	760.7	78.2	25.7	83	1	.....	.....	1	4	1	20	2	1	5563	8952	8	8.22	208.8
Sanford	N. 28 48	W. 81 23	6.35 a.m.	25	8	29.98	761.5	29.97	761.2	75.2	24.0	87	1	.....	2	3	8	1	5	6	4	4300	6920	5	6.12	155.4
Tit sville	N. 28 40	W. 80 50	6.37 a.m.	12	4	30.00	762.0	29.97	761.2	j 77.2	25.1	j 86	j	.....	.....	.....	3	5	3	5	4	.....	.....	5	.....	.....
Gulf states.																										
Atlanta	N. 33 45	W. 84 23	6.23 a.m.	1129	344	28.90	734.0	30.04	763.0	68.8	20.4	75	.....	6	8	2	.....	2	7	5	.....	6561	10559	4	2.82	71.6
Pensacola	N. 30 25	W. 87 13	6.11 a.m.	30	9	29.97	761.2	29.96	761.0	75.8	24.3	81	2	4	2	6	.....	1	5	9	1	5607	9026	6	14.11	358.4
Mobile	N. 30 41	W. 88 02	6.08 a.m.	35	11	29.97	761.2	29.97	761.2	72.9	22.7	87	7	7	3	1	2	.....	5	5	.....	5083	8187	5	8.91	226.3
Montgomery	N. 32 23	W. 86 18	6.15 a.m.	219	67	29.79	756.7	29.99	761.7	72.9	22.7	80	3	1	.....	8	5	3	4	6	.....	3768	6064	3	3.31	84.1
Vicksburg	N. 32 22	W. 90 53	5.57 a.m.	222	68	29.77	756.1	29.97	761.2	72.7	22.6	85	2	1	1	3	4	5	4	3	7	3333	5364	4	2.99	75.9
New Orleans	N. 29 58	W. 90 04	6.00 a.m.	52	16	29.92	760.0	29.94	760.5	75.4	24.1	88	2	.....	2	.....	3	6	5	8	4	4864	7828	4	11.33	287.8
Shreveport	N. 32 30	W. 93 40	5.46 a.m.	227	69	29.74	755.4	29.91	760.5	72.2	22.3	87	1	1	.....	.....	12	5	5	2	4	3124	5027	4	4.00	101.6
Fort Smith	N. 35 22	W. 94 24	5.43 a.m.	470	143	29.50	749.3	29.98	761.5	66.7	19.3	81	1	.....	.....	.....	.....	9	13	3	4	2985	4804	4	2.30	58.4
Little Rock	N. 34 45	W. 92 06	5.52 a.m	309	94	29.68	753.9	29.97	761.2	69.3	20.7	89	10	.....	2	.....	4	2	7	2	3	3381	5441	4	2.20	55.9
Galveston	N. 29 18	W. 94 47	5.41 a.m.	40	12	29.91	759.7	29.91	759.7	77.3	25.3	81	2	.....	.....	1	8	7	4	7	1	7803	12557	4	8.28	210.3
San Antonio	N. 29 27	W. 98 28	5.26 a.m.	781	238	29.13	739.9	29.89	759.2	71.5	21.9	92	6	.....	1	.....	2	9	3	7	2	6054	9743	4	2.21	56.1
Corpus Christi	N. 27 50	W. 97 32	5.30 a.m.	18	5	29.90	759.4	29.88	758.9	77.2	25.1	89	7	1	.....	2	2	12	2	4	.....	10382	16708	4	3.80	96.5
Brownsville	N. 25 53	W. 97 26	5.30 a.m.	57	17	29.83	757.7	29.84	757.9	74.8	23.8	96	9	2	.....	1	4	7	3	1	3	4598	7398	5	13.80	350.5
Rio Grande City	N. 26 23	W. 98 48	5.25 a.m.	230	70	29.70	754.4	29.89	759.2	74.7	23.7	90	10	.....	.....	.....	7	3	5	.....	5	4968	7995	3	8.08	205.2
Palestine	N. 31 45	W. 95 40	5.38 a.m.	533	162	29.44	747.8	29.96	761.0	70.3	21.3	88	2	.....	.....	.....	10	7	7	3	1	5097	8203	4	2.57	65.3
Ohio val. & Tenn.																										
Chattanooga	N. 35 04	W. 85 15	6.19 a.m.	783	239	29.26	743.2	30.05	763.3	67.1	19.5	80	1	1	4	6	4	4	2	6	2	3153	5074	3	2.18	55.4
Knoxville	N. 35 56	W. 83 58	6.24 a.m.	980	299	29.05	737.9	30.06	763.5	66.5	19.2	84	2	.....	3	7	3	1	.....	10	4	3350	5391	3	3.07	78.0
Memphis	N. 35 09	W. 90 03	6.00 a.m.	320	98	29.68	753.9	29.99	761.7	71.1	21.7	77	2	3	1	7	1	1	7	6	2	3568	5729	4	1.04	26.4
Nashville	N. 36 10	W. 86 47	6.13 a.m.	549	167	29.46	748.3	30.02	762.5	68.0	20.0	83	2	1	8	2	2	2	3	4	6	3397	5467	4	2.31	58.7
Louisville	N. 38 15	W. 85 45	6.17 a.m.	551	168	29.46	748.3	30.02	762.5	68.5	20.3	72	1	.....	.....	6	9	2	2	8	2	4897	7881	4	1.79	45.5
Indianapolis	N. 39 46	W. 86 10	6.16 a.m.	766	233	29.22	742.2	30.01	762.2	66.9	19.4	73	.....	4	6	7	1	3	4	4	1	3376	5433	5	2.45	62.2
Cincinnati	N. 39 06	W. 84 30	6.22 a.m.	628	191	29.38	746.2	30.03	762.7	68.5	20.3	75	.....	2	5	2	1	8	3	5	4	4132	6650	4	2.64	67.0
Columbus	N. 39 58	W. 83 00	6.28 a.m.	812	248	29.18	741.2	30.02	762.5	65.3	18.5	77	2	1	3	5	5	5	5	3	1	4680	7532	5	2.82	71.6
Pittsburg	N. 40 32	W. 80 02	6.40 a.m.	847	258	29.13	739.9	29.99	761.7	66.4	19.1	76	4	5	5	.....	5	2	3	6	.....	3769	6065	4	4.50	114.3
Lake region.																										
Rochester	N. 43 08	W. 77 42	6.49 a.m.	621	189	29.36	745.7	30.02	762.5	61.4	16.3	85	.....	3	3	14	4	1	2	3	.....	5406	8700	6	1.51	38.4
Buffalo	N. 42 53	W. 78 53	6.45 a.m.	692	210	29.30	744.2	30.03	762.7	63.0	17.2	82	3	.....	2	9	5	1	1	8	1	5134	8262	5	2.05	52.1
Oswego	N. 43 29	W. 76 35	6.54 a.m	335	102	29.65	753.1	30.01	762.2	60.7	15.9	85	4	1	4	6	5	6	1	1	2	4681	7533	5	2.72	69.1
Erie	N. 42 07	W. 80 05	6.40 a.m.	681	208	29.29	744.0	30.00	762.0	65.8	18.8	76	.....	2	3	8	9	3	2	3	.....	4804	7731	5	5.21	132.3
Sandusky	N. 41 25	W. 82 40	6.30 a.m.	638	194	29.35	745.5	30.02	762.5	65.9	18.8	80	1	.....	3	7	10	2	4	3	.....	6892	11091	5	4.44	112.8
Cleveland	N. 41 30	W. 81 42	6.33 a.m.	690	210	29.28	743.7	30.00	762.0	64.6	18.1	78	.....	1	6	4	3	9	2	3	2	5041	8110	5	2.43	61.7
Toledo	N. 41 40	W. 83 34	6.26 a.m.	651	198	29.34	745.2	30.03	762.7	65.4	18.6	78	2	1	5	10	3	.....	2	5	2	4997	8042	5	3.26	82.8
Detroit	N. 42 20	W. 83 03	6.28 a.m.	662	202	29.31	744.5	30.00	762.0	63.8	17.7	83	.....	1	7	1	3	1	7	3	7	4198	6756	5	4.19	106.4
Alpena	N. 45 05	W. 83 30	6.26 a.m.	609	186	29.36	745.7	30.01	762.2	58.9	14.9	84	2	2	10	1	3	1	2	2	7	4702	7567	4	2.20	55.9
Escanaba	N. 45 48	W. 87 05	6.12 a.m.	608	185	29.34	745.2	30.00	762.0	59.1	15.1	80	2	3	.....	8	8	.....	1	8	.....	5009	8061	5	2.27	57.7
Grand Haven	N. 43 05	W. 86 18	6.15 a.m.	620	189	29.33	745.0	29.98	761.5	62.2	16.8	80	2	6	2	3	1	7	6	3	.....	5806	9344	0	0.55	14.0
Lansing	N. 42 45	W. 84 33	6.22 a.m.	870	265	29.09	738.9	29.99	761.7	65.7	18.7	82	2	.....	5	5	6	5	2	5	.....	4028	6482	6	1.88	47.8
Mackinaw City	N. 45 47	W. 84 39	6.22 a.m.	605	184	29.34	745.2	30.00	762.0	56.1	13.4	87	2	2	4	2	1	9	3	5	2	5517	8974	6	1.11	28.2
Marquette	N. 46 34	W. 87 24	6.11 a.m.	672	205	29.25	742.9	29.98	761.5	57.9	14.4	81	3	6	6	3	2	2	2	4	2	4329	6967	6	3.15	80.0
Port Huron	N. 43 00	W. 82 26	6.30 a.m	639	195	29.33	745.0	30.02	762.5	60.4	15.8	88	4	.....	3	7	4	2	4	6	.....	5775	9294	4	2.44	62.0
Chicago	N. 41 52	W. 87 38	6.10 a.m.	715	218	29.24	742.7	29.98	761.5	63.5	17.5	78	4	3	5	8	1	5	1	3	.....	6463	10401	5	1.63	41.4
Green Bay	N. 45 00	W. 87 30	6.08 a.m.	616	188	29.33	745.0	29.99	761.7	62.2	16.8	78	4	.....	5	6	7	.....	1	5	2	5011	8074	5	2.38	60.5
Milwaukee	N. 43 02	W. 87 54	6.09 a.m.	697	212	29.26	743.2	30.01	762.2	59.0	15.0	80	6	2	5	4	1	2	2	3	5	4839	7787	4	0.81	20.6
Duluth	N. 46 48	W. 92 06	5.52 a.m.	672	205	29.24	742.7	29.98	761.5	51.7	10.9	80	.....	2	.....	4	.....	2	1	19	2	3801	6117	3	2.71	68.8
Upper Miss. val.																										
Saint Paul	N. 44 58	W. 93 03	5.48 a.m.	831	253	29.07	738.4	29.95	760.7	62.9	17.2	85	.....	1	4	.....	1	4	7	1	12	3910	6292	5	2.89	73.4
La Crosse	N. 43 49	W. 91 15	5.55 a.m.	744	227	29.22	742.2	30.00	762.0	63.1	17.3	82	3	4	1	2	15	2	.....	.....	3	5241	8434	6	0.98	24.9
Davenport	N. 41 30	W. 90 38	5.58 a.m.	615	187	29.34	745.2	29.98	761.5	66.3	19.1	78	2	3	1	4	4	3	7	6	.....	4763	7665	5	1.66	42.2
Des Moines	N. 41 35	W. 93 37	5.46 a.m.	866	264	29.08	738.6	29.98	761.5	63.2	17.3	78	3	3	1	4	2	10	2	.....	5	4106	6608	4	2.25	57.2
Dubuque	N. 42 30	W. 90 44	5.57 a.m.	665	203	29.29	744.0	29.99	761.7	65.3	18.5	79	.....	1	1	2	1	4	2	1	18	2383	3835	4	1.32	33.5
Keokuk	N. 40 22	W. 91 26	5.54 a.m.	618	188	29.34	745.2	29.98	761.5	65.5	18.6	81	2	4	3	5	1	6	6	.....	3	5205	8370	4	1.55	39.4
Cairo	N. 37 00	W. 89 10	6.04 a.m.	359	109	29.65	753.1	30.01	762.2	69.1	20.6	84	1	3	3	5	5	4	6	2	1	4180	6727	5	2.34	59.4
Springfield	N. 39 48	W. 89 39	6.02 a.m.	644	196	29.34	745.2	30.02	762.5	65.1	18.4	82	1	4	2	9	4	4	4	.....	2	5152	8291	4	3.07	78.0
Saint Louis	N. 38 38	W. 90 12	5.59 a.m.	571	174	29.41	747.0	29.99	761.7	71.4	21.9	70	1	2	6	5	4	6	4	2	.....	4868	7828	4	2.54	64.5

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea		Result of Simultaneous Observations for June, 1887.																		Average Cloudiness.	Total Precipitation.	
						Mean Barometer.				Mean Temperature.		Mean Rel. Humidity.	Wind.													
						Actual.		Reduced.					Directions.									Total Movement.				
				Feet.	Metr's	Inch.	Mill.	Inch.	Mill.	Fah.	Cent.		N	NW	W	SW	S	SE	E	NE	C	Miles	Kil.	0–10	Inch.	Mill.
U. STATES—Con.																										
Missouri valley.	° ′	°																								
Leavenworth	N. 39 19	W. 94 57	5.40 a.m.	842	257	29.11	739.4	29.98	761.5	66.9	19.4	83	1	4	.....	1	11	9	3	.....	1	4235	6815	5	5.43	137.9
Omaha	N. 41 16	W. 95 56	5.36 a.m.	1113	339	28.82	732.0	29.98	761.5	65.2	18.4	81	4	5	.....	.....	7	12	.....	1	1	5822	9369	6	4.56	115.8
Fort Sully	N. 44 39	W. 100 39	5.17 a.m.	1600	488	28.22	716.8	29.89	759.2	60.9	16.1	81	8	4	2	....	.....	3	7	1	5	8174	13154	5	2.88	73.2
Huron	N. 44 21	W. 98 09	5.28 a.m.	1307	398	28.54	724.9	29.91	759.7	61.4	16.3	83	2	6	1	.....	2	15	3	1	.....	8631	13890	4	3.98	101.1
Yankton	N. 42 54	W. 97 28	5.30 a.m.	1234	376	28.62	726.9	29.91	759.7	62.9	17.2	86	.....	3	3	1	8	8	2	4	1	5874	9453	4	2.48	63.0
Lamar	N. 37 32	W. 94 15	5.43 a.m.	1028	313	28.93	734.8	29.98	761.5	66.1	18.9	78	1	1	.....	11	6	7	2	2	.....	5723	9210	2	6.90	175.3
Valentine	N. 42 50	W. 100 32	5.18 a.m.	2614	797	27.25	692.1	29.91	759.7	61.5	16.4	76	4	4	4	.....	9	4	3	1	1	9548	15366	6	3.89	98.8
Moorhead	N. 46 52	W. 96 44	5.33 a.m.	926	282	28.90	734.0	29.89	759.2	60.9	16.1	83	4	4	1	.....	9	9	1	2	.....	9349	15045	5	3.77	95.8
Saint Vincent	N. 48 56	W. 97 14	5.31 a.m.	804	245	29.05	737.9	29.93	760.2	58.5	14.7	85	4	7	2	.....	6	6	2	.....	3	6283	10111	4	4.15	105.4
Bismarck	N. 46 47	W. 100 38	5.16 a.m.	1694	516	28.14	714.7	29.92	760.0	58.7	14.8	82	3	6	1	2	4	4	8	.....	2	7934	12768	5	0.85	21.6
Fort Buford	N. 48 00	W. 103 56	5.04 a.m.	1854	565	27.88	708.1	29.83	757.7	57.3	14.1	79	.....	4	9	.....	3	3	7	4	.....	8392	13505	6	3.25	82.6
Fort Totten	N. 47 57	W. 98 57	5.24 a.m.	1487	453	28.31	719.1	29.91	759.7	58.4	14.7	84	1	4	6	3	7	4	2	3	.....	11457	18438	3	5.57	141.5
Rocky Mount. reg.																										
Ft. Assinnaboine	N. 48 32	W. 109 42	4.41 a.m.	2690	802	27.11	688.6	29.90	759.4	53.2	11.8	67	2	2	10	5	1	2	3	5	.....	8642	13908	5	9.33	237.0
Fort Custer	N. 45 42	W. 107 34	4.50 a.m.	3040	927	26.77	679.9	29.87	758.7	54.5	12.5	77	3	2	1	6	1	14	2	1	.....	6223	10015	4	0.97	24.6
Fort Maginnis	N. 47 12	W. 109 10	4.44 a.m.	4320	1317	25.54	648.7	29.89	759.2	51.1	10.6	61	2	11	3	3	.....	5	2	4	.....	7945	12786	4	2.53	64.3
Helena	N. 46 34	W. 112 04	4.32 a.m.	4069	1240	25.79	655.1	29.89	759.2	49.4	9.7	84	2	6	1	.....	2	15	3	1	.....	5235	8425	5	3.48	88.4
Poplar River	N. 48 08	W. 105 10	5.00 a.m.	2002	610	27.78	705.6	29.86	758.4	56.3	13.5	80	4	1	9	1	2	4	7	.....	2	6975	11225	2	4.19	106.4
Deadwood	N. 44 23	W. 103 43	5.05 a.m.	4600	1402	25.38	644.6	29.94	760.5	56.1	13.4	77	1	.....	.....	10	13	1	1	3	1	4546	7316	3	2.16	54.9
Cheyenne	N. 41 08	W. 104 48	5.01 a.m.	6105	1861	24.03	610.4	29.86	758.4	53.3	11.8	66	6	5	4	3	8	2	.....	.....	2	7788	12533	4	0.80	20.3
North Platte	N. 41 08	W. 100 45	5.17 a.m.	2841	866	27.04	686.8	29.91	759.7	61.7	16.5	86	1	3	4	1	2	11	5	2	1	8153	13120	4	3.20	81.3
Pike's Peak	N. 38 50	W. 105 02	5.01 a.m.	14134	4308	17.95	455.9	29.90	759.4	33.1	0.6	76	4	3	7	9	1	1	.....	4	1	1329	2139	1	1.44	36.6
Concordia	N. 39 35	W. 97 41	5.29 a.m.	1384	422	28.50	723.9	29.93	760.2	65.0	18.3	82	4	1	1	.....	7	8	3	1	5	5813	9355	5	3.13	79.5
Denver	N. 39 45	W. 105 00	5.00 a.m.	5294	1614	24.74	628.4	29.83	757.7	56.9	13.8	62	4	3	1	3	15	1	2	.....	1	5934	9549	3	0.53	13.5
W. Las Animas	N. 38 04	W. 103 12	5.07 a.m.	3899	1188	26.00	660.4	29.82	757.4	61.6	16.4	85	.....	1	10	1	3	2	9	3	1	5728	9218	3	1.89	48.0
Dodge City	N. 37 45	W. 100 00	5.20 a.m.	2523	769	27.37	695.2	29.94	760.5	65.0	18.3	83	2	.....	.....	.....	2	12	8	0	.....	7648	12309	4	4.00	101.6
Fort Elliott	N. 35 30	W. 100 21	5.19 a.m.	2700	823	27.22	691.4	29.86	758.4	65.5	18.6	81	.....	1	1	3	4	13	1	1	6	8007	12886	4	2.39	60.7
Fort Sill	N. 34 40	W. 98 23	5.27 a.m.	1200	366	28.74	730.0	29.95	760.7	70.4	21.3	86	3	1	.....	1	17	1	5	1	1	6761	10880	4	3.69	93.7
Abilene	N. 32 14	W. 99 45	5.21 a.m.	1748	533	28.15	715.0	29.90	759.4	70.6	21.4	76	1	2	.....	6	16	3	1	1	.....	7948	12791	4	3.26	82.8
Fort Davis	N. 30 38	W. 103 56	5.04 a.m.	4928	1502	25.17	639.3	29.87	758.7	65.3	18.5	62	1	3	7	15	.....	1	1	1	1	4772	7679	2	1.17	29.7
Fort Stanton	N. 33 30	W. 105 26	4.58 a.m.	6150	1875	24.00	609.6	29.81	757.2	52.1	11.2	72	3	6	8	5	1	4	1	1	4	3345	5383	2	2.50	63.5
Plateau region.																										
Keeler	N. 36 35	W. 117 50	4.09 a.m.	3622	1104	26.19	665.2	29.72	754.9	64.2	17.9	44	7	3	1	.....	.....	5	2	7	5	5964	9598	1	Inap.	Inap.
Santa Fé	N. 35 41	W. 105 57	4.56 a.m.	7026	2141	23.32	592.3	29.89	759.2	56.8	13.8	58	1	.....	.....	.....	3	5	7	0	8	2228	3584	2	0.60	15.2
Fort Apache	N. 33 48	W. 109 57	4.40 a.m.	5020	1835	25.01	635.2	29.88	758.9	52.7	11.5	52	1	.....	1	.....	.....	1	21	5	1	6362	10238	3	1.70	43.2
Fort Grant	N. 32 39	W. 109 57	4.40 a.m.	4856	1480	25.16	639.1	29.83	757.7	65.9	18.8	31	4	5	8	.....	.....	1	4	7	1	5557	8943	4	0.85	21.6
Prescott	N. 34 33	W. 112 28	4.30 a.m.	5389	1643	24.68	626.9	29.83	757.7	52.9	11.6	72	.....	1	2	17	1	3	1	.....	5	5640	9077	1	0.57	14.5
Yuma	N. 32 45	W. 114 36	4.22 a.m.	141	43	29.57	751.1	29.68	753.9	71.2	21.8	64	1	2	5	3	5	3	5	5	1	4883	7858	1	0.01	0.3
El Paso	N. 31 47	W. 106 30	4.54 a.m.	3764	1147	26.20	665.5	29.82	757.4	68.2	20.1	59	.....	2	2	.....	1	2	12	3	8	3240	5214	1	0.34	8.6
Fort Bridger	N. 41 28	W. 110 30	4.38 a.m.	6643	2025	23.50	596.9	29.89	759.2	44.4	6.9	62	2	1	9	9	3	.....	.....	5	1	6816	10969	4	0.16	4.1
Salt Lake City	N. 40 46	W. 111 54	4.33 a.m.	4348	1325	25.55	649.0	29.80	756.9	58.8	14.9	60	10	4	.....	.....	1	7	6	2	.....	4589	7395	2	0.37	9.4
Frisco	N. 38 25	W. 113 16	4.27 a.m.	6406	1950	23.68	601.5	29.72	754.9	59.1	15.1	40	9	2	9	9	.....	.....	.....	.....	1	10109	16269	1	0.02	0.5
Winnemucca	N. 40 58	W. 117 43	4.09 a.m.	4358	1328	25.57	649.5	29.89	759.2	48.8	9.3	57	3	.....	.....	4	3	4	3	13	.....	5599	8973	2	1.14	29.0
Montrose	N. 38 30	W. 107 56	4.48 a.m.	5780	1762	24.28	616.7	29.80	756.9	55.2	12.9	44	1	.....	.....	2	9	13	3	.....	2	6094	9807	2	0.04	1.0
Fort Bidwell	N. 41 53	W. 120 11	3.59 a.m.	4615	1415	25.36	644.1	29.98	761.5	46.4	8.0	72	3	8	12	5	1	1	.....	.....	.....	4610	7419	4	0.73	18.5
Boisé City	N. 43 37	W. 116 08	4.16 a.m.	2750	838	27.11	688.6	29.92	760.0	50.3	10.2	78	.....	4	4	.....	3	3	.....	.....	16	1778	2861	4	1.58	40.1
Spokane Falls	N. 46 28	W. 117 05	4.11 a.m.	1909	582	27.94	709.7	29.96	761.0	49.3	9.6	77	2	1	1	8	4	.....	3	.....	11	2477	3986	4	2.06	52.3
Walla Walla	N. 46 03	W. 118 18	4.07 a.m.	1018	310	28.90	734.0	30.00	762.0	53.4	11.9	66	.....	.....	1	13	13	2	.....	.....	1	4449	7160	4	2.12	53.9
Pacific coast reg'n.																										
Astoria	N. 46 11	W. 123 42	3.45 a.m.	20	6	30.04	763.0	.....	.....	51.5	10.8	75	.....	5	7	11	.....	4	2	1	.....	5132	8229	8	0.63	16.0
Fort Canby	N. 46 16	W. 124 04	3.44 a.m.	179	55	29.87	758.7	30.07	763.8	51.2	10.7	86	9	2	10	1	6	1	.....	.....	1	5794	9324	8	0.95	24.1
Olympia	N. 47 03	W. 122 53	3.49 a.m.	36	11	30.02	762.5	30.06	763.5	46.6	8.1	94	1	.....	1	4	1	.....	.....	.....	23	1581	2544	5	1.01	25.7
Port Angeles	N. 48 07	W. 123 06	3.46 a.m.	14	4	30.02	762.5	30.04	763.0	45.7	7.6	93	.....	.....	4	1	24	.....	.....	.....	1	4749	7643	6	1.12	28.4
Tatoosh Id.	N. 48 23	W. 124 44	3.41 a.m.	86	26	29.93	760.2	30.03	762.7	49.6	9.8	88	.....	1	4	15	1	5	4	.....	.....	5766	9279	8	1.12	28.4
Portland	N. 45 32	W. 122 43	3.49 a.m.	88	27	29.97	761.2	30.06	763.5	52.3	11.3	79	4	8	.....	1	5	1	1	.....	10	3942	6344	4	1.44	36.6
Roseburg	N. 43 13	W. 123 20	3.47 a.m.	523	159	29.49	749.5	30.05	763.3	48.4	9.1	87	6	3	1	1	2	.....	1	4	12	3363	5412	4	0.89	22.6
Eureka	N. 40 52	W. 123 58	3.43 a.m.	50	18	29.92	760.0	.....	.....	48.8	9.3	92	2	5	2	1	9	7	2	.....	2	5150	8288	5	1.92	48.8
Red Bluff	N. 40 10	W. 122 15	3.51 a.m.	342	104	29.51	749.5	29.85	758.2	64.6	18.1	52	15	3	.....	.....	8	1	.....	.....	3	6042	9723	2	0.26	6.6
Sacramento	N. 38 35	W. 121 30	3.54 a.m.	64	20	29.77	756.1	29.82	757.4	57.1	13.9	82	.....	4	.....	4	1	18	.....	1	2	5791	9319	1	0.00	0.0
San Francisco	N. 37 48	W. 122 26	3.50 a.m.	60	18	29.85	758.2	29.89	759.2	53.1	11.7	86	1	2	15	9	2	.....	.....	.....	1	9102	14648	4	0.07	1.8
Los Angeles	N. 34 03	W. 118 15	4.07 a.m.	339	103	29.52	749.8	29.85	758.2	55.6	13.1	92	.....	1	10	1	3	3	8	4	.....	4444	7152	4	0.07	1.8
San Diego	N. 32 43	W. 117 10	4.12 a.m.	66	20	29.82	757.4	29.86	758.4	60.5	15.8	89	10	2	3	2	7	1	2	.....	3	5321	8563	8	0.04	1.0
Sitka	N. 57 03	W. 135 19	2.59 a.m.	63	19	29.91	759.7	30.01	762.2	45.7	7.6	85	.....	8	2	3	.....	6	4	.....	7	5807	9345	8	5.01	127.3
Sub-Series.																										
Belize	N. 17 32	W. 88 09	6.09 a.m.	10	3	29.80	756.9	29.81	76.72	85.0	29.4	.....	.....	2	.....	1	.....	19	1	7	.....	.....	.....	.....	4.55	115.6
Bogota	N. 4 36	W. 74 14	7.11 a.m.	8655	2638	22.03	539.5	.....	.....	52.7	11.5	79	.....	.....	.....	5	2	.....	.....	.....	23	.....	.....	8	2.27	57.7
Colon	N. 9 22	W. 79 55	6.40 a.m.	7	2	29.84	758.0	29.78	756.4	76.1	24.5	92	1	1	.....	.....	19	3	2	.....	4	.....	.....	7	11.79	299.4
Gamboa	N. 9 05	W. 79 42	6.41 a.m.	107	31	29.82	757.4	29.86	758.4	74.5	23.6	94	3	.....	.....	.....	.....	.....	.....	2	25	.....	.....	8	19.45	494.0
Kingston	N. 18 01	W. 76 48	6.53 a.m.	10	3	29.97	761.2	29.92	760.0	79.3	26.3	74	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5.64	143.3
Naos	N. 8 55	W. 79 32	6.42 a.m.	49	15	29.89	759.1	29.87	758.7	77.4	25.2	90	1	14	1	1	4	5	.....	2	.....	.....	.....	6	7.08	179.8
Rivas	N. 11 26	W. 85 47	6.17 a.m.	150	46	.....	.....	.....	.....	75.7	24.3	80	1	.....	14	.....	.....	2	10	3	.....	.....	.....	7	8.18	207.8
Vera Cruz	N. 19 11	W. 96 09	5.35 a.m.	16	5	29.80	756.9	29.82	757.4	.....	.....	.....	1	2	6	5	3	.....	1	1	11	.....	.....	2	.....	.....

RETARDED DATA FOR BOGATA.

January, 1887	N. 4 36	W. 74 14	7.11 a.m.	8100	2638	22.02	559.3	.....	.....	50.7	10.4	82	.....	.....	.....	1	1	.....	.....	.....	29	.....	.....	4	4.06	103.2
February, 1887	"	"	"	"	"	22.02	559.3	.....	.....	52.5	11.4	79	1	.....	.....	1	3	2	.....	1	20	.....	.....	7	3.19	81.1
March, 1887	"	"	"	"	"	22.00	558.7	.....	.....	53.2	11.8	76	2	.....	1	3	4	.....	.....	.....	21	.....	.....	7	1.02	26.0
April, 1887	"	"	"	"	"	22.03	559.5	.....	.....	52.7	11.5	79	1	2	.....	2	1	1	.....	.....	23	.....	.....	8	5.83	148.1
May, 1887	"	"	"	"	"	22.04	559.7	.....	.....	52.3	11.3	83	1	.....	.....	2	1	.....	1	1	25	.....	.....	8	6.57	166.9

RETARDED DATA FOR ANGRA.

August, 1886	N. 38 39	W. 27 14	10.11 a.m.	144	44	30.11	764.8	30.24	768.1	74.8	23.8	84	2	1	10	2	1	4	8	3	.....	.....	.....	3	0.75	19.0
September, 1886	"	"	"	"	"	29.97	761.2	30.10	764.5	69.8	21.0	80	7	6	11	1	2	1	1	1	.....	.....	.....	4	2.32	59.0
October, 1886	"	"	"	"	"	30.02	762.6	30.15	765.8	65.3	18.5	83	7	3	7	.....	2	2	5	5	.....	.....	.....	5	5.91	150.0
November, 1886	"	"	"	"	"	30.09	764.3	30.23	767.8	62.1	16.7	82	5	4	7	3	1	2	4	3	1	.....	.....	4	2.84	72.0
December, 1886	"	"	"	"	"	30.06	763.4	30.20	767.1	59.4	15.2	86	2	2	6	1	.....	5	9	6	.....	.....	.....	6	10.65	270.5
January, 1887	"	"	"	"	"	30.04	763.1	30.18	766.6	57.6	14.2	84	7	6	5	2	2	5	3	1	.....	.....	.....	4	2.70	68.5
February, 1887	"	"	"	"	"	30.04	763.0	30.18	766.6	56.8	13.8	84	1	.....	7	5	3	8	4	.....	.....	.....	.....	5	2.93	74.5
March, 1887	"	"	"	"	"	29.74	755.5	29.88	758.9	58.8	14.9	86	.....	1	6	6	3	4	10	1	.....	.....	.....	5	11.41	290.0
April, 1887	"	"	"	"	"	29.80	756.8	29.94	760.5	60.3	15.7	86	1	4	1	6	2	8	6	2	.....	.....	.....	5	5.57	141.5
May, 1887	"	"	"	"	"	30.06	763.6	30.20	767.1	61.7	16.5	81	3	3	10	2	1	2	5	5	.....	.....	.....	4	1.75	44.5

RETARDED DATA FOR CAPE SAINT FRANCIS, CAPE COLONY.

August, 1886	S. 34 10	E. 24 50	1.39 p.m.	23	8	30.10	764.5	30.09	764.3	61.2	16.2	77	.....	1	12	1	.....	1	7	1	8	.....	.....	3	2.11	53.6
September, 1886	"	"	"	"	"	30.05	763.3	30.04	763.0	62.6	17.0	80	.....	1	11	3	.....	2	8	.....	5	.....	.....	3	1.19	30.2
October, 1886	"	"	"	"	"	30.03	762.7	30.02	762.5	64.2	17.9	80	.....	.....	7	9	4	1	6	.....	4	.....	.....	3	2.11	53.6
November, 1886	"	"	"	"	"	30.11	764.8	30.10	764.5	66.9	19.4	83	.....	2	1	8	5	7	6	.....	1	.....	.....	3	1.84	46.7
December, 1886	"	"	"	"	"	30.00	762.0	29.99	761.7	66.7	19.3	81	.....	.....	10	3	4	3	10	1	.....	.....	.....	2	1.80	45.7
January, 1887	"	"	"	"	"	29.96	761.0	29.95	760.7	69.4	20.8	90	.....	.....	8	11	3	2	5	2	.....	.....	.....	3	1.17	29.7
February, 1887	"	"	"	"	"	30.09	764.3	30.08	764.0	72.7	22.6	74	.....	1	7	3	2	1	13	.....	1	.....	.....	4	0.13	3.3
March, 1887	"	"	"	"	"	30.04	763.0	30.03	762.7	67.0	19.4	86	.....	.....	14	1	1	2	8	.....	5	.....	.....	3	1.77	45.0

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OCEAN SQUARE DATA FOR JUNE, 1887.

Location of Centre of each Square.		Barometer.		Temperature.		Wind Frequency.										Wind force 0–10.
		Inch.	Mill.	Fah.	Cent.	N.	NW.	W.	SW.	S.	SE.	E.	NE.	Calm.	Blank.	
N. 12.5°	W. 37.5°	29.95	760.7									15	15			4.1
12.5	42.5	29.96	761.0								3	15	12			4.1
12.5	47.5	29.96	761.0								2	19	9			4.2
12.5	52.5	29.94	760.5								1	26	3			4.0
17.5	37.5	30.02	762.5								1	16	13			4.1
17.5	42.5	30.03	762.7								1	21	8			4.2
17.5	47.5	30.03	762.7								2	23	5			4.2
17.5	52.5	30.02	762.5								3	24	3			4.2
17.5	57.5	30.00	762.0								3	26	1			4.0
22.5	27.5	30.05	763.3			1						9	19		1	4.0
22.5	32.5	30.07	763.8								1	9	19		1	4.1
22.5	37.5	30.09	764.3			1				2	1	17	8		1	3.7
22.5	42.5	30.10	764.5			3				1	2	17	5		2	3.7
22.5	47.5	30.10	764.5			1					8	12	7		2	3.8
22.5	52.5	30.10	764.5								7	17	5		1	4.0
22.5	57.5	30.08	764.0							1	10	13	5		1	4.2
22.5	62.5	30.06	763.5							3	12	15				4.1
27.5	22.5	30.09	764.3			2		2		2	2	9	11		2	3.1
27.5	27.5	30.11	764.8			5	1	1		2	1	9	9		2	3.4
27.5	32.5	30.13	765.3			4	2		1	3	3	8	7		2	3.8
27.5	37.5	30.15	765.8			4	4	1	2	1	2	5	9		2	3.4
27.5	42.5	30.17	766.3			6	2	1		5	6	4	5		1	3.4
27.5	47.5	30.17	766.3			4				9	7	2	4	2	2	3.4
27.5	52.5	30.15	765.8			3				13	3	4	5	1	1	3.7
27.5	57.5	30.14	765.5			1	1		6	6	2	6	5	2	1	3.6
27.5	62.5	30.11	764.8			2		1	6	5	6	7	3			3.7
32.5	27.5	30.14	765.5			6	2	1	4	5	5	3	4			3.5
32.5	32.5	30.13	765.3			4	4	3	5	2	3	5	3		1	3.6
32.5	37.5	30.15	765.8			3	9	3	4	5	1	2	2		1	3.8
32.5	42.5	30.16	766.1			3	5	2	10	2	1	1	4	2		3.6
32.5	47.5	30.14	765.5			4	4	5	8	4	2		3			3.9
32.5	52.5	30.12	765.0			2	2	7	6	6	1		5		1	4.1
32.5	57.5	30.12	765.0			3	2	7	6	1	6	2	2	1		4.8
37.5	32.5	30.09	764.3			1	5	6	5	8	4	1				4.0
37.5	37.5	30.09	764.3			4	5	7	9	4			1			4.5
37.5	42.5	30.09	764.3			3	7	5	10	1		2	2			4.6
37.5	47.5	30.08	764.0			4	4	7	8	2	1		3	1		4.3
37.5	52.5	30.07	763.8			5	4	4	8	2	3	2	2			4.6
37.5	57.5	30.08	764.0			4	5	6	7	3	2	1	2			5.3
42.5	22.5	30.13	765.3			1		2	7	5	6	3	4	2		3.6
42.5	27.5	30.08	764.0			3	1	1	8	8	4	2	3			4.6
42.5	32.5	30.04	763.0			4	4	3	9	6	4					4.9
42.5	37.5	30.00	762.0			5	3	3	10	6	1	1	1			4.9
42.5	42.5	29.98	761.5			6	8	2	5	5	2		2			4.5
42.5	47.5	29.98	761.5			8	8	4	3	4	1		2			4.3
42.5	52.5	30.01	762.2			5	2	5	3	3	3	3	5	1		4.2
42.5	57.5	30.03	762.7			4	4	3	6	4	2	2	5			4.6
47.5	17.5	30.16	766.1			2		2	9	2	4	6	4	1		3.7
47.5	22.5	30.11	764.8			1			11	6	6	4	2			4.0
47.5	27.5	30.02	762.5			2	1	2	10	4	6	3	2			4.7
47.5	32.5	29.96	761.0			3	3	3	11	5	3	2				5.2
47.5	37.5	29.90	759.4			1	5	7	7	6	3		1			4.8
47.5	42.5	29.88	758.9			3	10	3	5	3	2		1	2	1	4.6
47.5	47.5	29.90	759.4			5	12	2	9	1			1			4.7
52.5	17.5	30.13	765.3			1	1	1	11	5	6	4	1			3.9
52.5	22.5	30.05	763.3				1	2	10	7	8		1	1		4.3
52.5	27.5	29.96	761.0				2	3	11	8	3	2	1			4.2
52.5	32.5	29.87	758.7				2	4	10	9	4		1			4.6
52.5	37.5	29.79	756.7			2	3	2	13	6	3	1				4.6
52.5	42.5	29.77	756.1			3	7	3	9	2	1	1	1		3	5.0
52.5	47.5	29.79	756.7			8	9	1	6	2	1		1		2	4.6
57.5	12.5	30.16	766.1				2	4	11	3	6	2	2			3.7
57.5	17.5	30.10	764.5			1		3	14	3	9					4.2
57.5	22.5	29.99	761.7					1	12	8	7				2	4.6
57.5	27.5	29.92	760.0					1	11	11	5	1			1	4.4
57.5	32.5	29.83	757.7				1	3	8	9	7	1	1			4.2
57.5	37.5	29.76	755.9			1		4	8	3	7	3	2			4.5
57.5	42.5	29.70	754.4			4	3	3	7	2	3	1	5		2	4.2
57.5	47.5	29.74	755.4			9	6	1	4	3	1	1	3		2	3.9

OCEAN SQUARES.—The table of ocean square data shows (1) the location of the centres of squares whose sides extend 5° each in latitude and longitude, (2) the monthly mean pressure of the air, and the mean force and total frequency of the wind at noon, Greenwich mean time, computed for the centre of each square from daily readings as obtained by interpolation between the isobars of the daily international simultaneous weather maps.

REVIEW.

INTERNATIONAL METEOROLOGY FOR JUNE, 1887.

[*Pressure expressed in inches and millimetres; temperature in degrees, Fahrenheit; wind-force by scale of* 0–10.]

The following refers to chart ii for the month of June, 1887. This chart continues the series of international charts begun in January, 1877, and exhibits the mean pressure and the prevailing wind-directions over the northern hemisphere, as determined from simultaneous observations taken once each day at 7 a. m., 75th meridian, or noon Greenwich, mean time:

The area of lowest mean barometric pressure occupies the north-central portion of British India, with included values falling to 29.39 (746.5) at Allahabad. A second area of low mean pressure, bounded by the isobar of 29.70 (754.4), is located over the lower Colorado valley in North America. Three areas of relatively low mean pressure, showing minima below 29.80 (756.9), appear, respectively, over central and northern European Russia, southern Greenland and the ocean southward to the fifty-first parallel, and over a greater portion of Central America.

The area of highest mean pressure is embraced by the isobar of 30.20 (767.1) which trends northward from France to the fifty-eighth parallel and thence southward along the east coast of Ireland. The eastern limit of an area of high mean pressure which occupies the north Pacific Ocean is shown by the isobar of 30.00 (762.0), which is traced along the Pacific coast of North America, between the fortieth and sixtieth parallels.

Over the North American continent the mean pressure is lowest at Yuma, Ariz., where it falls to 29.68 (753.9), and highest at Halifax and Olympia, where it rises to 30.08 (764.0) and 30.06 (763.5), respectively. Over the north Atlantic Ocean barometric minimum 29.70 (754.4) is shown off the southern extremity of Greenland, while extending southwestward from the British Isles to the thirtieth parallel and thence westward to the vicinity of Burmuda there is an area of mean pressure within which the pressure rises above 30.10 (764.5). Over Europe the pressure decreases from the British Isles, where it rises to 30.22 (767.6), to Nikolsk, Russia, where a mean reading of 29.76 (755.9) is reported. Over Asia there is a barometric gradient of .60 inch between Allahabad, British India, and Yeniseisk, Siberia, where the mean pressure is 29.99 (761.7). From British India eastward to Foochow, China, the mean pressure ranges below 29.60 (751.8).

As compared with the chart for May, 1887, the following changes in mean pressure are shown: over the North American continent there has been a decrease of .20 inch in the lower Colorado valley; along the Pacific coast north of the fortieth parallel there has been a slight increase; in the Saskatchewan Valley the mean pressure remains about the same; to the eastward of the Mississippi River the changes have been unimportant. Over Central America the pressure is somewhat lower than during the preceding month. Over the north Atlantic ocean an area of low pressure has remained nearly stationary over and off the southern extremity of Greenland, with small changes in included values; at Upernivik, Greenland, there has been a decrease in mean pressure of .16 inch; over and to the southwestward of the Azores the decrease amounts to from .06 to .12 inch; elsewhere over the ocean the pressure remains materially the same. Over the British Isles there has been an increase in pressure of .15 to .18 inch, from which region there has been a general increase to the Black Sea, where the pressure remains about the same. Over northern Scandinavia there has been an increase of .06 inch, while over north-central Russia the decrease amounts to .10 inch. Within the area of low barometric pressure central over the interior of British India the mean pressure averages about .10 inch lower than in May. Over central and north-central Asia the decrease ranges from .03 to .19 inch; at Nikolaivsk-on-the-Amoor an increase of .10 inch is shown, while over the Japanese Islands the mean pressure has fallen about .20 inch. On the south and east coasts of China there has been a decrease averaging about .20 inch.

Over the North American continent the mean pressure was above the normal in Washington Territory and over the country east of the ninety-fifth meridian and north of the thirty-fifth parallel, the departures being less than .05 inch, except in the northern part of the upper lake region, in the Saint Lawrence valley, New England, and the Canadian Maritime Provinces, where they ranged from .05 to .13 inch, being greatest in Nova Scotia. In all other districts the mean pressure was below the normal. Along the Gulf coast the deficiencies ranged from .01 to .05 inch; in the central and southern Rocky Mountain districts, and over the region north of Montana, they were from .05 to .15 inch. Over the north Atlantic Ocean the mean pressure was .01 to .06 inch below the normal in the vicinity of the West Indies; over the Azores and Maderia Islands the defect was .08 to .09 inch; over the northern portion of the ocean the pressure ranged from .10 to .20 inch above the normal. Over the British Isles the mean pressure averaged about .24 inch above the normal of ten years; over the continent of Europe the pressure was everywhere above the normal, except in Russia, where the average corresponded with the normal, and in Sweden where there was a defect of .01 inch. Over British India the mean pressure was .02 inch above the normal; in Siberia it ranged from .06 to .12 inch above, while over the Japanese Islands and on the east coast of China the departures above normal varied from .05 to .10 inch.

In the United States the month was decidedly warmer than the average June over the northern portions of the country from Dakota eastward to the lower lake region. In Florida, along the Gulf coast, and in the northern plateau region, the mean temperature was 2° to 4° below the average. In all other parts of the country the temperature differed but slightly from the June normal. In Canada the temperature was above the normal in Ontario, Quebec, and the northern portion of New Brunswick, by amounts ranging from 1° to over 3°. In Nova Scotia and the southern part of New Brunswick it was slightly below the normal. In Manitoba it was above the normal. In the Northwest Territories and at Victoria it was below the normal. Over the West Indies and the southern part of the ocean the mean temperature was somewhat below the normal, while over the north Atlantic in high latitudes it was above the average for the month. Over Europe the greatest departure above normal, 4°.8 occurred in Spain, and the most marked departure below, 7°.2, in Norway. In British India and over central Siberia there was a slight departure above the normal, while along the eastern coast of Asia the mean temperature was somewhat below the average.

The accompanying table shows the deviations in pressure and temperature at isolated stations during the month of June, 1887, as compared with the means for ten years:

Stations.	Mean pressure.			Mean temperature.		
	June mean of 10 (1877–'86) years.	June, 1887.	Departure.	June mean of 10 (1877–'86) years.	June, 1886.	Departure.
				°	°	°
Archangel, Russia	29.82	29.79	— 0.03	58.3	53.2	— 5.1
Athens, Greece	29.88	29.91	+ 0.03	82.7	83.7	+ 1.0
Beirut, Turkey in Asia	29.81	29.81	normal.	82.5	82.4	— 0.1
Barnaul, Siberia	29.71	29.83	+ 0.12	68.1	71.4	+ 3.3
Bridgetown, Barbadoes	29.95	29.98	+ 0.03	83.0	83.8	+ 0.8
Ekaterinburg, Russia	29.73	29.80	+ 0.07	60.8	70.9	+10.1
Funchal, Madeira Islands*	30.16	30.08	— 0.08	70.4	71.1	+ 0.7
Havana, Cuba, W. I.	29.98	29.92	— 0.06	80.4	75.5	+ 4.9
Malta, Mediterranean Sea	29.96	29.98	+ 0.02	76.1	78.0	+ 1.9
Melbourne, New South Wales	30.09	30.17	+ 0.08	48.4	48.0	— 0.4
Mauritius, Indian Ocean	30.07	30.07	normal.	73.0	72.1	— 0.9
Nassau, Bahamas, W. I.	30.02	30.01	— 0.01	82.8	81.9	— 0.9
Nikolaievsk-on-the-Amoor, Asia	.....	29.81	.....	51.0	46.9	— 4.1
Ponta Delgada, Azores	30.22	30.13	— 0.09	69.9	68.4	— 1.5
Swanbister, Orkneys	.....	30.18	.....	.....	55.9	.....
San Juan de Puerto Rico, W. I.*	29.99	29.96	— 0.03	81.7	80.1	— 1.6
Stykkisholm, Iceland	29.82	29.92	+ 0.10	47.3	48.0	+ 0.7
Thorshavn, Färöe Islands	29.90	30.09	+ 0.19	50.6	52.9	+ 2.3
Tiflis, Russia	29.81	29.87	+ 0.06	78.8	79.3	+ 0.5
Tokio, Japan	29.84	29.74	— 0.10	67.3	67.1	— 0.2
Yeniseisk, Siberia	.....	29.99	.....	.....	68.5	.....
Zi-Ka-Wei, China	29.75	29.70	— 0.05	70.7	70.2	— 0.5

* Means for nine years only.

The following table shows the mean pressure and mean temperature for June, 1887, in the several countries of the eastern hemisphere, and the departures as compared with means determined from observations taken during the last ten years:

Countries.	Mean pressure.			Mean temperature.		
	June mean of 10 (1877-'86) years.	June, 1887.	Departure.	June mean of 10 (1877-'86) years.	June, 1887.	Departure.
				°	°	°
Austro-Hungary	29.89	30.06	+ 0.17	70.7	69.2	− 1.5
British Isles	29.96	30.20	+ 0.24	60.8	64.3	+ 3.5
Denmark	29.93	30.07	+ 0.14	60.8	61.7	+ 0.9
France	30.01	30.11	+ 0.10	69.3	74.1	+ 3.8
Germany	29.97	30.09	+ 0.12	67.2	66.5	− 0.7
India	29.47	29.49	+ 0.02	88.9	89.5	+ 0.6
Italy	29.96	30.03	+ 0.07	75.3	76.8	+ 1.5
Japan	.....	29.75	.....	.....	64.8	.....
Norway	29.88	29.98	+ 0.10	58.7	55.0	− 3.7
Russia	29.84	29.84	normal.	70.1	62.9	− 7.2
Spain*	30.01	30.05	+ 0.04	73.2	78.0	+ 4.8
Sweden	29.90	29.89	− 0.01	60.0	59.0	− 1.0

* Means for nine years only.

In the United States large deficiencies were shown in the monthly precipitation in the central valleys and the upper lake region, while a marked excess occurred along the Gulf and south Atlantic coasts, and in Florida. In Canada the rainfall was slightly below the average, except in Manitoba, Quebec, and New Brunswick.

In the United States south to southeast winds prevailed west of the Mississippi River, except on the north Pacific coast, where they were light and variable, and on the south Pacific coast and in the Colorado Valley, where they were cyclonic. In the British Possessions in North America the winds were variable, except in the Saint Lawrence Valley and the Maritime Provinces, where they were westerly. Over the north Atlantic Ocean the wind-directions were governed by the cyclonic and anticyclonic areas which appear on the monthly mean chart. Over west-central and southwestern Europe the winds were variable; elsewhere over the continent they were mostly westerly. In British India the wind-directions were dominated by the area of low barometric pressure which occupies the north-central part of the country. Over the balance of Asia the winds were variable.

TRACKS OF AREAS OF LOW PRESSURE FOR JUNE, 1887.

Chart iii exhibits paths of the principal depressions which appeared in the northern hemisphere during June, 1887. This chart continues the series of international charts begun in November, 1877, and has been prepared from the following data: Chart i for each day of the month, containing the data of simultaneous observations taken once each day at noon, Greenwich mean time; abstracts of ships' logs; special reports, and other miscellaneous data on file at this office.

The paths of the centres of twenty-eight areas of low pressure are shown, of which ten appeared over the North American continent; nine over the north Atlantic Ocean; six over Europe; and three off the eastern coast of Asia. The average number of depressions traced over the northern hemisphere for June during the last eight years is thirty, or two more than the number traced for June, 1887.

The depressions traced over the North American continent, while exceeding by one the average number for the month, were, as a rule, of small energy, with tracks confined principally to the western half of the continent. These depressions are described in detail in the MONTHLY WEATHER REVIEW for June, 1887, under the heading "Areas of low pressure."

Of the depressions traced over the north Atlantic Ocean, one traversed the ocean from coast to coast. The region of greatest storm frequency was included within an area extending from the coasts of Newfoundland and Labrador to Iceland, within which region the depressions pursued irregular paths. The most important storms of the month occurred on the 4th, 5th, and 7th, attending the passage over mid-ocean of depressions numbers xii and xiii, when pressure ranging from 29.24 (742.7) to 29.39 (746.5) was shown, and on the 9th and 12th during the passage of depression number xv, when pressure 29.38 (746.2) and 29.42 (747.3) was reported at Saint John's, N. F., and Upernavik, Greenland, respectively.

Of the depressions traced over Europe, number xxii, which was a continuation of a storm which had advanced from the lower Mississippi valley, exhibited great energy during its passage over Scandinavia from the 8th to the 12th, inclusive, when barometric pressure ranging from 29.28 (743.7) to 29.49 (749.0) was reported. Of the remaining depressions, one advanced eastward over the southern portion of the British Isles and subsequently recurved northward into the North Sea, whence it passed eastward over Germany and disappeared in the direction of the Black Sea; two moved south of east over Scandinavia and disappeared over Russia; one apparently developed over the Gulf of Bothnia, and one is traced eastward from central Russia into Siberia.

Of the depressions traced off the eastern coast of Asia but one, number xxvi, possessed marked strength, and during its passage over the Sea of Japan from the 9th to the 11th, inclusive, had pressure falling below 29.60 (751.8). The month was marked by continued low pressure over east-central and southern Asia, and, while minor disturbances were of frequent occurrence, the conditions were apparently unfavorable for the development of cyclones possessing well-defined motions of translation.

SPECIAL NOTES.

THE GRAVITY CORRECTION.

The gravity correction, reducing all barometer readings to the standard gravity at latitude 45°, has been applied to all observations not so reduced by the observers themselves.

All data referring to force, velocity, or pressure (in pounds per square foot) of the wind, are reduced to the scale of 0-10, and the approximate value is indicated by the number of feathers on the arrow (see below).

MONTHLY SUMMARY OF INTERNATIONAL SIMULTANEOUS METEOROLOGICAL OBSERVATIONS.

The positions of stations (latitude and longitude) are obtained from Keith Johnson's "Index Geographicus," except where more exact information is furnished. The elevations of stations are obtained either from the annual, semi-annual, and monthly publications of the various meteorological bureaus here represented, or from the original forms upon which are entered the daily observations. In the United States series the elevations are computed from the latest surveys, and are carefully revised each month, in order to note any change in the elevation of the barometer-cistern at any station. It is believed for the most part that, throughout the European and other series, the elevations as given represent the height of the barometer-cistern above sea-level; at least this should be the case. The local time, where omitted or not given correctly in the original, is carefully computed at this office. A letter placed opposite the name of a station, or some portion of the data credited thereto, indicates that a certain number of observations are missing, corresponding to the relative position in the English alphabet of the letter so used.

At Baku the barometer-cistern is below sea-level.

INTERNATIONAL CHARTS.

International chart i shows the atmospheric pressure at sea-level in English inches, the isobars being drawn for every two-tenths of an inch.

Arrows show direction of, and fly with, the wind; force is shown as follows:

Symbols.	Force.	Velocity.	
		Miles per hour.	Metres per second.
○	0	0	0
	1, 2	0 to 9	0 to 4
	3, 4	9.1 to 22.5	4.1 to 10.1
	5, 6	22.6 to 40.5	10.1 to 18.1
	7, 8	40.6 to 67.5	18.1 to 30.2
	9, 10	67.6 up.	30.2 and over.

International chart ii (monthly mean chart) shows the mean pressure at sea-level in English inches; the mean force and prevailing direction of the wind, as determined from observations taken at noon, Greenwich mean time.

International chart iii shows the tracks of centres of low pressure. The Arabic numerals show the location of the centres of low pressure at noon, Greenwich mean time, of that date.

In the above charts, broken lines indicate that lines so drawn are doubtful.

List of merchant marine steam and sailing vessels from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of June, 1887—Continued.

Name of vessel.	Captain.
SAILING VESSELS—Continued.	
Am. bk. Tillie Baker	Capt. Jas. W. Carty.
Ger. sp. Union	H. Fokken.
bk. Victoria	B. J. Rehm.
Am. bk. Water Witch	Max Knaebel.
UNITED STATES NAVAL.	
U. S. S. Adams	Louis Kempff.
U. S. S. Alert	J. D. Graham.
U. S. S. Alliance	C. McGregor.
U. S. S. Brooklyn	
U. S. S. Constellation	
U. S. S. Essex	Theo. F. Jewell.
U. S. S. Galena	C. W. Chester.
U. S. S. Iroquois	R. P. Leary.
U. S. S. Jamestown	C. J. Nain.
U. S. S. Juniata	G. T. Davis.
U. S. S. Lancaster	S. L. Breese.
U. S. S. Marion	Merrill Miller.
U. S. S. Mohican	B. F. Day.
U. S. S. Monocacy	Henry Glass.
U. S. S. Monongahela	S. H. Baker.
U. S. S. Omaha	F. V. McNeir.

Name of vessel.	Captain.
UNITED STATES NAVAL—Cont'd.	
U. S. S. Ossipee	Capt. Wm. B. Hoff.
U. S. S. Palos	J. E. Craig.
U. S. S. Pensacola	R. D. Hitchcock.
U. S. S. Pinta	
U. S. S. Portsmouth	Edwin White.
U. S. S. Quinnebaug	W. L. Folger.
U. S. S. Ranger	T. A. Lyons.
U. S. S. Richmond	H. Cook.
U. S. S. Saratoga	C. H. Davis.
U. S. S. Tallapoosa	Wm. Whitehead.
U. S. S. Trenton	W. Farquhar.
U. S. S. Vandalia	H. L. Howison.
U. S. S. Yantic	F. M. Green.
BRITISH NAVAL.	
H. M. S. Alexandra	J. Fellowes, C. B.
H. M. S. Audacious	R. N. Harris.
H. M. S. Bacchante	A. U. Moore.
H. S. M. Comus	T. J. Jackson.
H. M. Dockyard, Bermuda	R. P. Dennistoun.
H. M. S. Dreadnaught	H. F. Stevenson.
H. M. S. Egeria	P. Aldrich.

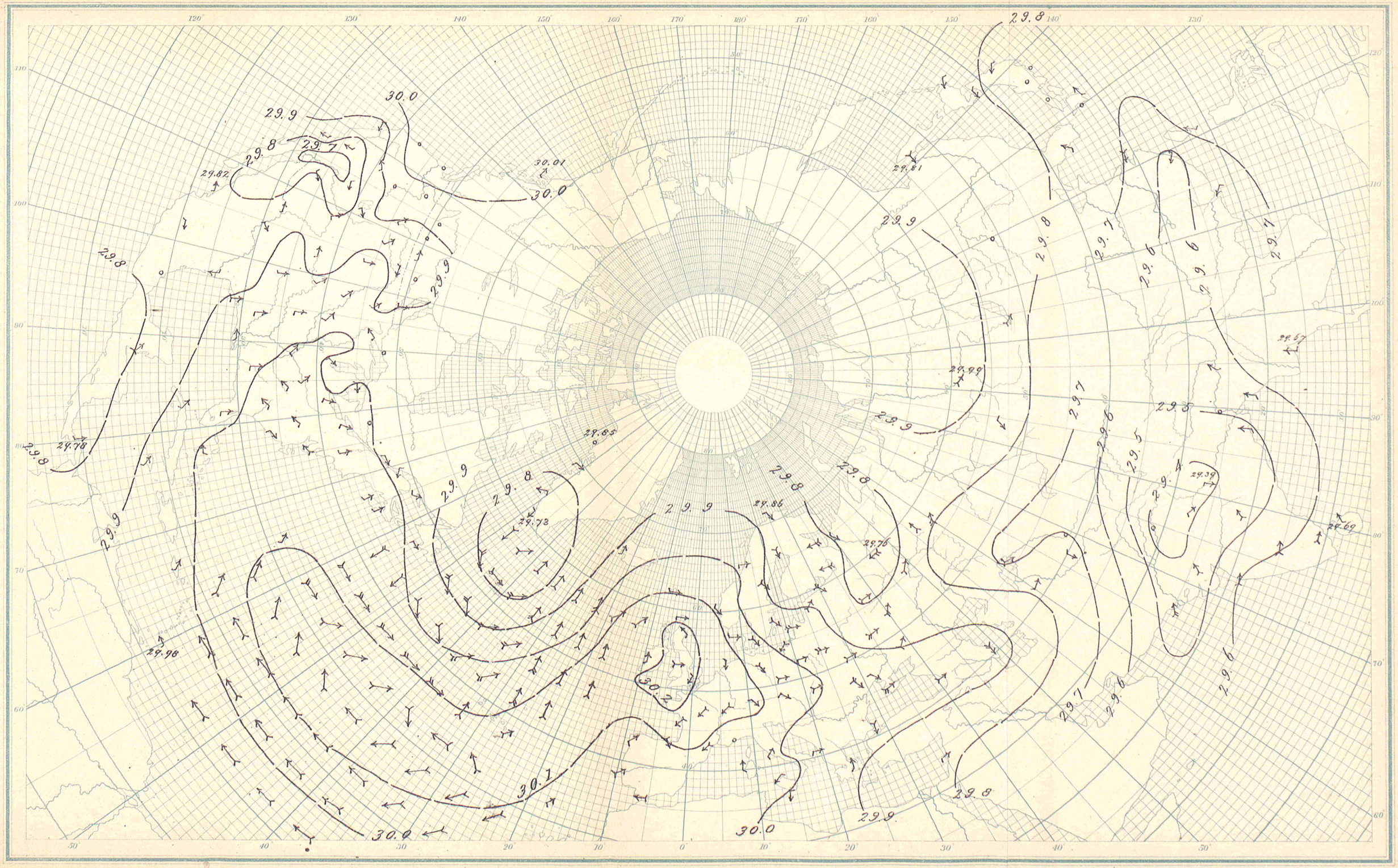
Name of vessel.	Captain.
BRITISA NAVAL—Continued.	
H. M. S. Heroine	Capt. C. J. Balfour.
H. M. S. Hyacinth	E. Bourke.
H. M. S. Icarus	W. M. Annesley.
H. M. S. Mariner	J. Dumford.
H. M. S. Myrmidon	R. F. Hoskyn.
H. M. S. Nelson	T. L. Hammill.
H. M. S Penguin	Haygarth.
H. M. S. Raleigh	B. Watson
H. M. S Rambler	W. U. Moore.
H. M. S. Rifleman	C. Prater.
H. M. S. Ruby	W. R. Kennedy.
H. M. S. Sylvia	Dawson.
H. M. S. Torquoise.	R. Woodward, C. B.
SWEDISH NAVAL.	
H. S. M. S. Saga	A. Meister
DUTCH NAVAL.	
H. D. M. S. Prinz Hendrig	
H. D. M. S. Küning der Nederland.	

List of foreign statoins and observers from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of June, 1887.

Stations.	Observers.
AUSTRALIAN.	
Hobart Town, Tasmania	Com. J. Shortt, R.N.
Melbourne, Victoria	R. L. J. Ellery.
AUSTRO-HUNGARIAN.	
Agram	Prof. Ivan Stozir.
Cracow, I. R. Observatory	Dr. Wierzbiski.
Eperies	Julius Mikolik.
Gratz	Andreas Rospini.
Kremsmunster Observatory	The Staff.
Lemberg	Dr. T. Stanecki.
Pola	Fr. Cœselrohe.
Szathmar	Aloysius Daubner, S. J.
Szegedin	Emerick Markos.
Trieste	Naval Observatory.
Vienna	I.R.Central Met. Obs'y.
BRITISH.	
Aberdeen	W. Boswell.
Bidston, Liverpool Obs'y	John Hartnup.
Bradford, Yorkshire	McLandsborough & Preston.
Bridgetown, Barbadoes, W.I.	A. T. Green.
Chatham, School M. E	Percy McHugo, R. E.
Falmouth, Observatory	The Staff.
Fort Napier, Natal	Thomas Murray, M. S. C.
Freetown, Sierra Leone	J. W. Smith.
Galway, Queen's College	Wm. Ryan.
Gibraltar, Mediterranean	E. Herrick.
Greenwich, Royal Observatory	The Staff.
Guernsey	A. Collenette, F.R.M.S.
Kew, Observatory	The Staff.
Leicester, Museum	J. C. Smith.
Malta, Mediterranean	R. R. Willan.
Nassau, Bahamas	J. A. Kerr.
Oxford, Radcliffe Observatory	The Staff.
Plymouth	John Merrifield.
Swanbister, Orkneys	W. I. Fortesque.
Scutari Cemetery, Turkey	W. H. Lyne.
Stonyhurst, Observatory	J. Roony.
Valencia, Observatory	The Meteorological Office.
Sub-series.	
Gozo, Episcopal Seminary	Rev. Algelo Lo Re, S.J., Dir.
Penang	F. K. Hampshire, M. D.
Singapore	T. Irvine Powell, M. D.
CANADIAN.	
Bathurst, N. B	Miss Andrews.
Bird Rocks	T. Turbide.
Calgarry	H. S. Cayley.
Chatham, N. B	G. A. Blair.
Cornwall, Ontario	W. D. Johnston, B. A.
Dalhousie, N. B	H. A. Johnson.
Father Point, Quebec	J. McWilliams.
Fort Garry, Manitoba	T. Warburton.
Fredericton, N. B	Dr. Harrison.
Grand Manan, N. B	J. Chipman Seeley.
Halifax, N S	A. Allison.
Hamilton, Ontario	T. S. Campbell, B. A.
Kingston, Ontario	A. P. Knight, M. A.
Little Glace Bay, N. S	C. H. Rigby, C.E.
London, Ontario	E. B. Reed.
Medicine Hat, N. W. T	John Ewart.
Minnedosa, N. W. T	Rev. J. W. Wellwood.
Montreal, Quebec	C. H. McLeod, C. E.
Ottawa, Ontario	A. McGill, M. A.
Parry Sound, Ontario	Rev. R. Mosley.
Peterborough, Ontario	J. H. Long.
Port Arthur, Ontario	W. P. Cooke.
Port Dover, Ontario	H. Morgan.
Port Stanley, Ontario	M. Payne.
Qu' Appelle, N. W. T	Leslie Gordon.
Quebec, Quebec	Captain Ashe, R. N.
Rockliffe, Ontario	W. H. McIntyre.
St. Andrews, N. B	S. T. Gove, M. D.
St. John, N. B	G. Hutchinson.
Saint Pierre, N. F	The Commandant.
Saugeen, Ontario	W. K. Stewart.
Southwest Point of Anticosti	
Stratford, Ontario	W. McBride, M. A.
Swift Current	W. G. Knight.
Sydney, C. B	T. C. Hill, C. E.
Toronto, Ontario	Magnetic Observatory.
Woodstock, Ontario	Prof. N. Wolverton, M. A.
Yarmouth, N. S	J. E. Murphy.
Sub-series.	
Saint Johns, N. F	J. Higgins.
CHINESE.	
Foochow	A. E. Pfankuchen.
Hong Kong Observatory	The Staff.
Sub-series.	
Zi-Ka-Wei, near Shanghai	M. Marc Dechevrens, S. J.
South Cape, Formosa	G. Taylor.
DANISH.	
Copenhagen	Oversergent Fischer.
Fanöe	Overloerer Lauridsen.
Godthaab	S. Kleinscmidt.
Ivigtut	
Stykkisholm	A. O. Thorlacius.
Thorshavn	Overloever Bergh.
Upernavik	
Vestervig	Loerer Oesterbol.
FRENCH.	
Alençon, Normal School	M. Nicot, Director.
Arras, Normal School	M. Sion, Director.
Avignon, Normal School	M. Giraud, Director.
Bar-sur-Seine	M. Saillard, Director.
Beauvais, Normal School	M. Mutelet.
Besançon, Normal School	M. Gobin, Director.
Bordeaux, Observatory	M. Rayet, Director.
Bourges, Normal School	M. Bourgoine, Director.
Brest, Naval Observatory	M. de Kermaree, Director.
Caen, Normal School	M. Berson, Director.
FRENCH—*Continued.*	
Châlons-sur-Marne, N. School	M. Mathieu, Director.
Charleville, Normal School	M. Noél, Director.
Clermont-Ferrand, Obs'y	M. Hurion, Director.
Cluny, Normal School	M. de Villemontée, Director.
Commercy, Normal School	M. Vaissade, Director.
Gap, Normal School	M. Poussel, Director.
Greasque, du Rhone	M. Kina, Director.
Guéret, Normal School	M. Delorme, Director.
Lescar, Normal School	M. Lefevre, Director.
Lorient, Naval Observatory	Lt. T. Carré, Director.
Lyon, St. Genis-Laval	M. André, Director.
Mans, Normal School	M. Tenot, Director.
Marseille, Observatory	M. Stephan, Director.
Montlouis	M. Cave for Dr. Fines.
Montpellier, Normal School	M. Galzin, Director.
Mont Ventoux	M. Blanc.
Nancy, Normal School	M. Hasse, Director.
Nantes, Observatory	M. Larocque, Director.
Nice, Normal School	M. Cantier.
Perpignan, Observatory	Dr. Fines, Director.
Pic-du-Midi, Summit	M. Vaussenat, Director.
Privas, Normal School	M. Curely, Director.
Puy de Dôme Obs'y, Summit	M. Hurion, Director.
Rochefort, Naval Observatory	Lt. E. Decante, Director.
Roche-sur-Yon, N. School	M. Brotier, Director.
Rodez, Normal School	M. Seger, Director.
Rouen, Normal School	M. Vieillot, Director.
Saint Brience	M. Richard.
Saint Maur, Observatory	M. Renon, Director.
Toulouse, Observatory	M. Baillaud, Director.
Sub-series.	
St. Martin du Hinx	M. Carlier, Director.
GERMAN.	
Ansbach	Prof. Jüdt.
Bamberg	Prof. Dr. Hoh.
Berlin	Meteorological Institute.
Breslau	Royal University Obs'y.
Carlsruhe	Albert Senz.
Cassel	Dr. H. Möhl.
Frankfort-on-the-Main	Physical Society.
Friedrichshafen	Wilhelm, Chief Tel.
Hamburg	Carl H. Seeman.
Kiel	Prof. Dr. G. Karsten.
Leipsic, Astronomical Obs'y	H. Leppig, Assistant.
Memel	Issermann.
Munich	Dr. C. Lang.
Neufahrwasser	A. Lothes.
Neustadt, Palatinate	Prof. Dicknether.
Stuttgart	Dr. L. Meyer.
Wustrow	Profs. Brandes & Reimer.
GREEK.	
Athens	Kokkides & Wourlisch.
INDIAN.	
Kurrachee	
Deesa	
Bombay	
Poona	
Belgaum	
Lahore	
Roorkee	
Agra	
Nagpur	
Jubulpore	
Lucknow	
Allahabad	
Patna	
Hazaribagh	
Calcutta	
Chittagong	
Dhubri	
Sibsagar	
Jeypore	
Bellary	
Trichinopoly	
ITALIAN.	
Udine	Prof. Giovanni Clodig.
Milan	Prof. G. V. Schiapparelli.
Padua	Prof. Dott. Lorenzoni.
Moncalieri	Prof. P. F. Denza.
Genoa	Prof. G. M. Garibaldi.
Cuneo	
Pesaro	Prof. Luigi Guidi.
Florence	Prof. Constantino Pittei.
Leghorn	Prof. P. Monte.
Rome	Prof. P. Tacchini.
Cosenza	Prof. D. Conti.
Sassari	
Syracuse	Sig. V. Giuliano.
ITALIAN SUB-SERIES	
Stelvio	Prof. P. F. Denza.
Valdobbia	Prof. P. F. Denza.
JAPANESE.	
Awomori	K. Ogawa.
Fushiki	N. Tokuda.
Gifu	R. Ikuchi.
Hakodate	T. Wakayama.
Hamamatsu	Sakigawa and Miyake.
Hiroshima	Y. Okamoto.
Kanazawa	S. Kuriyama.
Kagoshima	G. Miyanohara.
Kioto	M. Negishi.
Kochi	K. Kusunose.
Miasaka	T. Ishitain & T. Saki.
Miyako	K. Sawa.
Nagasaki	K. Yamasa and M Chin.
Nemuro	M. Itabashi.
Niigata	M. Morita.
Nobiru	T. Saitoo.
JAPANESE—*Continued.*	
Numadzu	R. Kaneda.
Osaka	H. Omura.
Sakai	K. Yamawchi & P. Yoshimura
Shimonoseki	S. Nagasuye.
Tokei	The Staff.
Wakayama	K. Sakai.
MAURITIUS.	
Mauritius R. A. Observatory	The Staff.
MEXICAN.	
Guanajuato	Prof. Vicente Fernandez.
Leon	Prof. M. Leal & Espana.
Mazatlan	C. Carmina.
Mexico	The Staff.
Zacatecas	J. A. Bonilla, M. E.
NETHERLANDS.	
Flushing	
Groningen	
Helder	
Hellevoetsluis	
Utrecht	G. F. C. Zaalberg.
NORWEGIAN.	
Bergen	
Brono	
Christiania	
Gjæsvær	
PORTUGUESE.	
Angra	Dr. J. A. Sampaio.
Funchal, Madeira	Capt. D. A. de Cunha.
Lisbon, Observatory	The Staff.
Ponta Delgada, Azores	
St. Vincent, Cape Verd	
Serra da Estrella	
St. Paul de Loanda	
San Salvador	
RUSSIAN.	
Archangel	Capt. Sseliwerstow.
Baku	
Barnaul	Meteorological Office.
Dorpat	Blumbach.
Ekaterinburg	Meteorological Observatory.
Elisavetgrad	
Irkutsk	Ed. Stelling.
Kasalinsk	Butkewitsch.
Kasan	Observatory.
Kem	M. Kosnobr.
Kertch	E. M. Zacmsipeyz.
Kischinev	
Korostishev	
Koslov	
Lgov	R. I. Ssaweljew, Engineer.
Libau	E. Quaas.
Lugan	Meteorological Observatory.
Moscow	Meteorological Observatory.
Nerchinsk	
Nikolaiev	Capt. Kurdakow.
Nikolaievsk-on-the Amoor	Schonberg.
Nikolsk	Nadeshdin.
Perm	
Petro-Alexandrovsk	Walther.
Petrozavodsk	Dr. Bergmann.
Pinsk	
Poti	
St. Petersburg	Central Physical Observatory.
Samarkand	Dresch.
Sevastopol	Colonobr.
Tashkend Laboratory	Teich, A. M.
Tiflis	Physical Observatory.
Troitskosavsk	
Viatka	
Warsaw	Astronomical Observatory.
Yeniseisk	Wishnewzky.
Sub-series.	
Petrowsky Academy	Bachmetieff.
SCOTCH.	
Leith	J. Bolam & Geo. Redpath.
SPANISH.	
Bilbao, Met. Observatory	Tomas Eschriche.
Burgos, Met. Observatory	Domingo Martin.
Madrid, Royal Observatory	The Staff.
Santiago, Met. Observatory	R. Gil Villanueva, Director.
Sub-series.	
Havana, Cuba	Benito Viñes, S. J.
Manilla, Philippine Islands	F. Faura, S. J.
San Fernando, Naval Obs'y	Capt. C. Pujazon, R. N.
San Juan de Porto Rico, W.I.	Enrique Gadea, Ch'f Eng'r.
SWEDISH.	
Haparanda	
Umea	
Hernosand	
Stockholm	
Wisby	
Sub-series.	
Upsala	Nils. Ekholm.
SWISS.	
Geneva	Observatory.
TURKISH.	
Constantinople	The Observatory.
Valona	A. Bertrand.
Sub-series.	
Beirut, Lee Obs'y, Syria	R. H. West, B. A., Director.
UNITED STATES SUB-SERIES.	
Belize	J. M. Moir.
Colon	Pellegrin.
Gamboa	Lutnywich.
Kingston	Maxwell Hall.
Naos	Barzelay.
Rivas, Nicaragua, C. A.	Earl Flint, M. D.
Vera Cruz	Capt. Geo. E. Powell.

Form No. 106 R---1887.

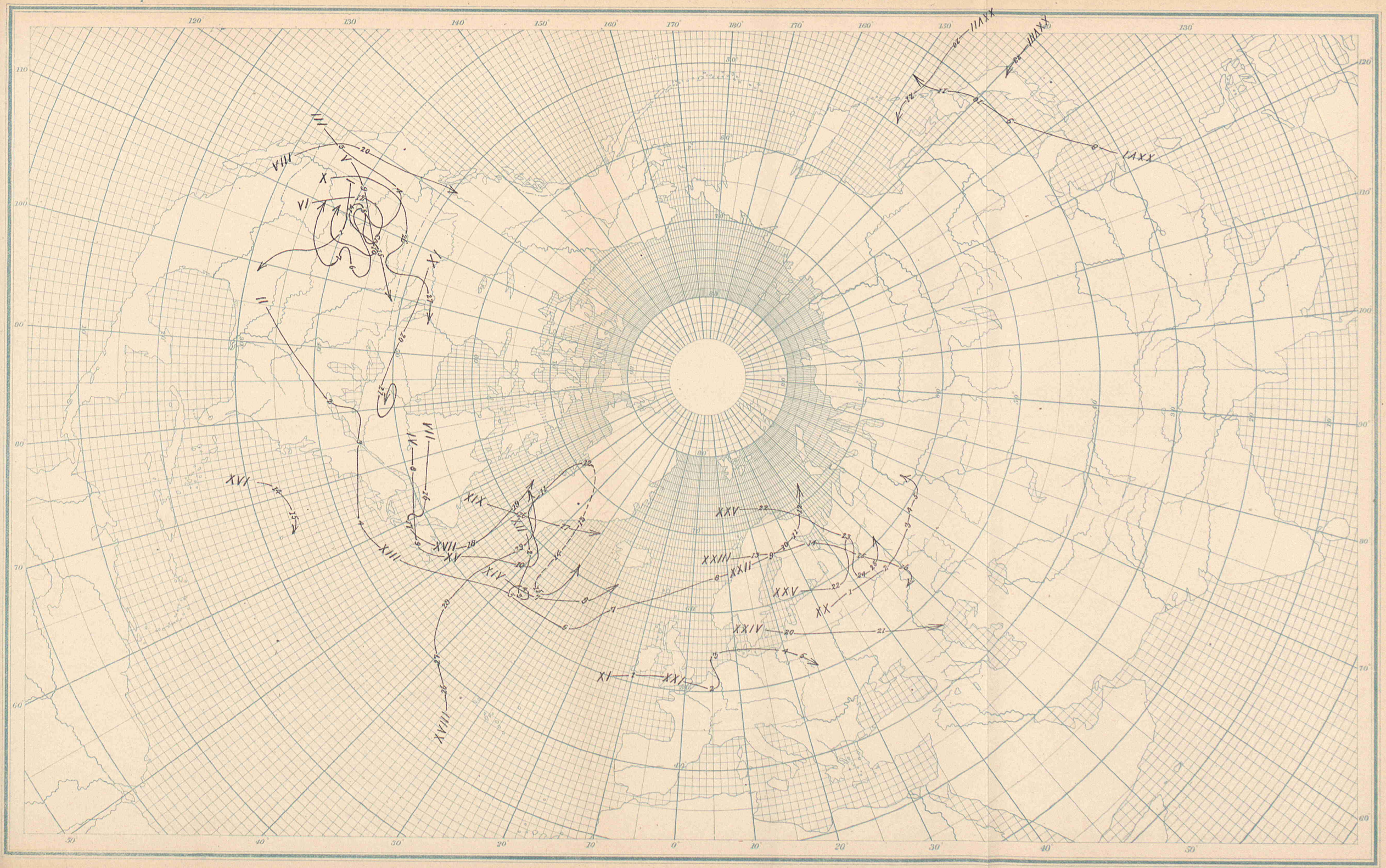
International Chart II. June, 1887. Isobars and Winds.



Signal Office Lith.

Form No. 106 R---1887.

International Chart III. June, 1887. Tracks of Areas of Low Pressure.



Signal Office Lith.

WAR DEPARTMENT.
OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY OF THE UNITED STATES.

SUMMARY AND REVIEW

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS

FOR THE MONTH OF JULY, 1887.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

A. W. GREELY,
BRIGADIER GENERAL, CHIEF SIGNAL OFFICER OF THE ARMY.

PRINTED FOR EXCHANGE WITH CO-OPERATING OBSERVERS.

WASHINGTON, D. C
SEPTEMBER, 1888

List of merchant marine steam and sailing vessels from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of July, 1887.

	Name of vessel.	Captain.
Br.	s. s. Austrian	Capt. A. Bentley.
	Australia	R. McRitchie.
	Alsatia	J. Brown.
	Anchoria	W. Brown.
	Ailsa	J. W. Sanson.
	Alvena	F. McKay.
	Alvo	D. Williams.
	Andes	T. M. McKnight.
	Athos	H. Low.
	Ambrose	E. Bisson.
	Aurania	W. H. P. Hains.
Ger.	Amalfi	Julius Bahr.
	Australia	G. Franck.
Br.	Alaska	Geo. S. Murray.
	Arizona	S. Brooks.
Ger.	Aller	H. Christoffers.
Am.	Alameda	G. H. Morse.
	Advance	James Lord.
Br.	Adriatic	J. G. Cameron.
	Arabic	G. Burton.
	Amoor	H. Gasson.
	Aquan	J. Adair.
	Augustine	R. Harwood.
	Buenos Ayrean	J. Scott.
	British King	John Kelly.
	British Prince	Samuel Nowell.
	British Princess	E. H. Freeth.
	British Crown	A. Smith
	Brooklyn City	W. Fitt.
	Bothnia	T. Dutton.
	Boston City	T. Davies.
Ger.	Bohemia	R. Karlowa.
Br.	British Queen	R. Wills.
	Biela	F. Graham.
	Bulgarian	E. Parry.
	Bengore Head	J. R. Brady.
	Britannic	H. Davinson.
	Bassano	W. Rea.
	Buffalo	J. H. Malet.
	Belair	G. Dunlop.
	Ben Ledi	S. Adamson.
	Bessarabia	2d Off. A. Thomson.
	Basil	Capt. Henry Thompson.
	Circassia	A. Campbell.
	Clement	T. Burley.
	Cyril	J. H. Johnson.
Fr.	Chateau Yquem	C. T. Journiel.
Br.	Catalonia	Edw'd Wylie.
	Cephalonia	Henry Walker.
Ger.	California	O. Winkler.
Br.	Celtic	
	Chicago	J. W. Jones.
	Cervin	S. Hughson.
	Chilian	E. F. Bannister.
Am.	Carondelet	W. F. Evans.
	Colorado	J. Daniel.
Br.	Canada	Thos. Foote.
Am.	Cienfuegos	F. M. Faircloth.
	Columbia	Fred Bolles.
	Colon	J. Henderson.
Br.	City of Rome	R. D. Munro.
	City of Chester	A. Lewis.
	City of Chicago	Fred Watkins.
	City of Richmond	A. Redford.
	City of Montreal	R. Leitch.
Am.	City of San Antonio	J. Wilder.
	City of Alexandria	J. W. Reynolds.
	City of Washington	W. M. Rittig.
	City of Augusta	J. W. Catherine.
	City of Rio de Janeiro	W. B. Seabury.
	City of Para	L. Dexter.
	City of Dallas	C. W. Read.
Br.	City of Newcastle	R. Townsend.
	Counsellor	Wm. Lang.
Am.	City of New York	Robt. R. Searle.
Br.	Caledonia	Robt. T. Garvie.
Ger.	Carl	T. Hashagen.
Br.	Devonia	Hugh Young.
	Dorian	J. McKeague.
	Dorset	Ch. Off. E. Crossman.
	Denmark	Capt. R. S. Rigby.
Gr.	Donau	H. Supmer.
Belg.	De Ruyter	J. J. Brarens.
Br.	Devonshire	Mate Samuel Winter.
	Durham City	Capt. D. D. Galbraith.
	Ethiopia	John Wilson.
	Etruria	T. Cook.
	Euclid	A. Mathieson.
Am.	Eureka	R. B. Quick.
Br.	Egypt	J. Sumner.
	England	T. P. Heeley.
	Erin	Thomas Foot.
Ger.	Eider	P. H. Berdrow.
	Elbe	G. Meyer.
	Ems	Th. Jungst.
Dtch.	Edam	J. H. Taat.
Br.	Earnmoor	R. J. Grey.
	Edith Godden	J. H. Bennett.
Am.	El Callao	J. Scholtz.
Span.	Elcano	V. de Ispizua.
	Emiliano	Don Fer. Bengoa.
Am.	E. B. Sutton	C. O. Carter.
Ger.	Europa	T. H. Stiefel.
Br.	Furnessia	J. Hedderwick.
	France	A. D. Hadley.
	Fitzroy	Henry Gibb.
Ger.	Fulda	R. Ringk.
Br.	Grecian	C. E. Le Gallais.
	Gallia	M. Murphy.
Ger.	Gellert	W. Kühlewein.
	Gothia	H. Bauer.
Br.	Greece	A. J. Jeffrey.

	Name of vessel.	Captain.
It.	s. s. Gottardo	Capt. Domenico Viola.
Br.	Gaelic	W. G. Pearne.
Am.	Granada	J. L. Lockwood.
Dan.	Geiser	C. W. Moeller.
Br.	Germanic	B. Gleadell.
	Galileo	R. T. Jones.
	Hibernian	J. Brown.
Ger.	Hammonia	H. F. Schwensen.
Br.	Herschel	G. Braithwaite.
	Helvetia	G. Cochrane.
	Holland	W. Tyson.
Dan.	Hekla	A. G. Thomsen.
Br.	Horden	C. A. Topp.
Span.	Hugo	A. de Mugica.
Ger.	Hermann	F. Vahland.
Am.	Humboldt	Jas. Grimes.
Ger.	Hedwig	M. Minsjen.
Am.	Illinois	G. H. Dodge.
Br.	Istrian	T. H. Fox.
	Italy	W. Pearce.
Dan.	Island	W. Skjodt.
Br.	Iowa	Samuel Walters.
Ger.	India	M. Hulsen.
Br.	India	John Jameson.
	Jerome	Benj. Crimp.
	Jersey City	E. Horlor.
Belg.	Jan Breydal	H. Meyer.
Br.	Kepler	P. H. Tanner.
	Kansas	W. Gleig.
	King's Cross	G. J. Mills.
	Lord Clive	P. Urquhart.
	Lord Gough	E. M. Hughes.
	Llandaff City	T. H. Gore.
	Lake Nepigon	P. D. Murray.
	Lake Winnepeg	Howard Campbell.
Am.	Louisiana	E. V. Gager.
Fr.	La Bourgogne	E. Franguel.
	La Bretagne	M. de Jousselin.
	La Champagne	E. Traub.
	La Gascogne	Santelli.
	La Normandie	G. de Kersabiec.
Ger.	Lessing	H. Barends
Am.	Lampassas	M. B. Crowell.
It.	Letimbro	3d off. Fr. Dilliberto.
Dtch.	Leerdam	Capt. G. S Stenger.
	Ludgate Hill	2d Off. H. Dumaresy.
Am.	Light-ship No. 37	Capt. Andrew Jackson.
Br.	Monte Rosa	C. Thomas.
Ger.	Marsala	N. Maass.
Br.	Mozart	W. Sprathly.
Ger.	Main	H. Boedcker.
Am.	Mariposa	H. M Hayward.
	Manhattan	Frank Stevens.
Br.	Muriel	G. S. Locke
	Marengo	Wm. Abbott.
Span.	Manuel L. Villaverde	Claudio Perales.
Am.	New Orleans	T. P. Halsey.
Fr.	Neustria	P. Yerries.
Br.	Nevada	J. Douglass.
	Nessmore	Geo. Elliott.
Am.	Neuces	J. Bolger.
Am.	Newport	W. G. Shackford.
Belg.	Nederland	A. J. Griffin.
	Noordland	H. E. Nickels.
Br.	Norseman	E. Maddox.
Ger.	Neckar	H. Baur.
Br.	Olympia	L. Swain.
	Olbers	Jas Clark.
	Ontario	W. P. Couch.
Am.	Oregon	E. Polemann.
Br.	Orinoco	J. S Garvin.
Am.	Oceanic	John Metcalf.
Dtch.	Oranje Nassau	J. A. J. LaCrooy.
Br.	Otranto	W. Rippeth.
	Ocean Prince	W. J. Milburn.
Am.	Oxford	J. W. James.
Br.	Prussian	J. Ambury.
	Pavonia	A. McKay.
Ger.	Polynesia	A. Kuhn.
Am.	Philadelphia	Sam. Hess.
Belg.	Pennland	Rud. Weyer.
Dtch.	P. Caland	F. H. Bonjer.
Belg.	Pieter de Connick	E. Smit.
Br.	Peconic	G. Evans.
	Pawnee	John James.
	Prydain	M. Parry.
	Pontiac	H. W. Brown.
Ger.	Rhaetia	Vogelgesang.
	Rugia	A. Albers.
	Rhein	Topser.
Belg.	Rhynland	J. C. Jamison.
Dtch.	Rotterdam	G. J. Vis.
Br.	Richmond Hill	A. Hyde.
	Rialto	F. Kerr.
	Roseville	J. Dove.
	Sarmatian	Wm. Richardson.
	Scandinavian	John Park.
	Scythia	T. Roberts.
	Servia	H. McKay.
	Stockholm City	K. Doyle.
Ger.	Slavonia	H Schmidt.
	Suevia	C. Ludwig.
Br.	Sarnia	Joseph Gibson.
	Spain	W. A. Griffiths.
Ger.	Saale	H. Reichter.
Am.	San José	D S. Austin.
Dtch.	Schiedam	A. Potjer.
Br.	Salerno	B. H. Rogers.
	Santiago	R. Potter.
	Saint Ronans	H. Campbell.
	Straits of Gibraltar	G. Grigs.
	Saxmundham	T. M. Milne.

	Name of vessel.	Captain.
Br.	Strathleven	Capt. C. W. Pearson.
	Sorrento	F. W. Ouston.
Am.	San Blas	T. Chapman.
Br.	State of Georgia	G. Moodie.
	State of Indiana	A. Ritchie.
	State of Pennsylvania	A. J. A. Mann.
	State of Nebraska	A. G. Braes.
	State of Nevada	J. A. Stewart.
	Trinacria	Geo Mitchell.
Ger.	Taormina	W. H. Franck.
Br.	The Queen	John Milligan.
Ger.	Trave	W. Willigerod.
Dan.	Thingvalla	S. T. H. Laub.
Br.	Tower Hill	Lieut. F. Archer, R. N. R.
	Umbria	Capt. W. McMickan.
	Virginian	M. Fitt.
Belg.	Vaderland	C. H. Grant.
Br.	Victory	S. Elcoate.
	Vertumnus	C. E. Cook.
	Viola	L. Murray.
	Vancouver	C. J. Lindall.
	Warwick	L. Morice.
	Worcester	W. Stamper.
	Wisconsin	Edward Bentley.
	Wyoming	C. L. Rigby.
Ger.	Wieland	C. Hebich.
	Werra	R. Bussius.
Belg.	Waesland	J. Ueberweg.
	Westernland	Com. W. G. Randle.
Dtch.	W. A. Scholten	Capt. G. Bakker.
Br.	Westbourne	Ch. Offi. W. Shaw.
	Wylo	Capt. T. L. Rogers.
	Winnifred	R. McDonald.
Am.	Yemessee	1st Off. J. C. Norton.
Dtch.	Zaandam	Capt. H. v. d. Zee.

N. Y. Herald Weather Service.

	Name of vessel.	Captain.
Br.	s. s. Amicitia	P. M. Reimers.
	Britannic	H. Parsell.
	Barracouta	Robt. Hubbard.
Am.	Caracas	N. M. Hopkins.
	City of Puebla	J. Deakin.
Br.	Devonia	W. G. Crockhart.
	Eureka	R. B. Quick.
Am	El Paso	H. S. Quick.
	El Monte	J. W. Hawthorne.
Br.	Germanic	B. Gleadell.
Am.	Knickerbocker	F. Remble.
Ger.	Moravia	O. Pezoldt.
Am.	Niagara	S. V. Bennis.
Br	Nova Scotian	R. H. Hughes.
	Portia	Henry Dawson.
	Pennsylvania	A. J. A. Mann.
	Samana	W. Taylor.

Sailing Vessels.

	Name of vessel.	Captain.
Br.	bk. Abyssinia	John Hughes.
Am.	Alice	W. G. Kair.
Nor.	Artemis	E. E. Moe.
Am.	bg. Abbie Clifford	D. W. Storer.
Br.	Adria	J. H. Weldon.
Ger.	Adelherd	C. S. Bollen.
Am	schr. Annie B. Hutcheson	Daniel Zeluff.
	bg. Arcot	J. W. Cates.
	bkt. Bonny Doon	C. Burgess.
Ger.	bk. Bremerhaven	A. Witte.
Am.	schr. C. B. Church	N. A. Anderson.
Br.	bk. C. S. Parnell	Donley.
Swed.	Carl von Doebeln	O. Jonssen.
Br.	sp. Chas. S. Whitney	Geo. D. Spicer.
Am.	bk. Chas. R. Lewis	A. Montgomery.
	schr. Comet	W. A. Aldrich.
Gr.	bk. Cornelius	H. Windhorst.
Br.	sp. Cypromene	Alex. Robertson.
Am.	bg. Daisy Boynton	C. Harding.
Ger.	sp. Dakota	N. E. Schaffer.
Am.	E. B. Sutton	C. O. Carter.
	schr. Edward R Emerson	A. H. Child.
Ger.	sp. Ellida	T. H. Zincke.
Am.	bk. Essex	G. W. Hall.
It.	Est	C. Tassino.
Ger.	sp. Fidelio	T. H. Schutte.
Am.	bk. Florence	Mate A. P. Goodman.
	schr. Florence Rogers	Capt. T. S. McLeod.
Ger.	sp. Friedlander	J. Bellmer.
	Georg	G. Scholtz.
Nor.	bk. Grundloven	O. G. Ellingsen.
	Hanna	S. Falch Muns.
Dtch.	bk. Helena	T. T. Verbeet.
Br.	bk. Iodine	Adam Smith.
	bkt. Josephine	Chas. Brown.
	bk. José E. More	A. Lenhard.
Swed.	bk. John Fought	O. Carlsson.
Br.	bk. Jane	Thomas England.
	bg. Kenilworth	P. Doig.
Nor.	sp. Komander Svend Foyn	J. Bryde.
Am.	bg. L. F. Munson	J. V. McKowen.
	L. & W. Armstrong	A. Alexander.
It.	bk. Lazzaro Bianchi	D. Nicola.
Am.	bg. Lillian	H. T. Schive.
Br.	sp. Mabel Taylor	Chas E. Durkee.
Br.	bk. Mary	Chas. Acocks.
Am.	Mohican	Benj. Berry.
	schr. Pardon G. Thomsen	A. B. Chase.
Ger.	bk. Pillau	G. Gerlach.
Br.	schr. Rothiemay	Ch. Off. O. M. Lund.
	Rebecca	Mate Nicolay Diesen.
Ger.	bk. Richard	Capt. A. von Seggern.
Br.	bkt. Rosebud	John Collin.
Am.	bg. Ruby	A. J. von Post.

SUMMARY AND REVIEW OF INTERNATIONAL METEOROLOGICAL OBSERVATIONS, JULY, 1887.

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for July, 1887. Mean Barometer. Actual Inch.	Mill.	Reduced. Inch.	Mill.	Mean temperature. Fah.	Cent.	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
AUSTRALIAN.	° ′	° ′																								
Hobart Town	S. 42 53	E. 147 20	9.00 p.m.	190	58	a29.58	751.3a	a29.79	756.7a	b44.8	b7.1	b91	4b	.....	.....	3	4	3	4	9	2	.....	.....	a5	3.52	84.3
Melbourne	S. 37 50	E. 144 58	9.40 p.m.	91	28	29.96	761.0	30.03	762.7	48 7	9.3	82	10	6	5	3	2	3	1	.....	1	.....	.....	7	3.69	93.7
AUSTRIAN.																										
Agram	N. 45 48	E. 15 53	1.04 p.m.	535	163	29.52	748.9	30.02	762.5	82.6	28.1	46	.....	1	.....	4	2	12	5	7	.....	.....	.....	4	1.22	31.1
Cracow	N. 50 04	E. 20 00	1.20 p.m.	722	220	29.28	743.6	30.03	762.7	74.5	23.6	56	2	4	5	6	2	2	4	6	.....	.....	.....	5	0.80	20.2
Eperies	N. 48 58	E. 21 15	1.25 p.m.	853	260	29.13	740.0	30.03	762.7	68.7	20.4	68	10	1	.....	.....	1	.....	.....	.....	19	.....	.....	5	1.23	31.3
Gratz	N. 47 04	E. 15 28	1.02 p.m.	1171	357	28 80	731.6	29.99	761.7	73.6	23.1	79	.....	4	1	5	13	4	3	.....	1	.....	.....	5	.....	.....
Kremsmunster	N. 48 03	E. 14 08	0.57 p.m.	1260	384	28.70	729.0	29.99	761.7	77.2	25.1	60	.....	1	9	1	.....	.....	3	11	16	.....	.....	4	3.46	88.0
Lemberg	N. 49 50	E. 24 00	1.36 p.m.	978	298	29.04	737.5	30.06	763.5	74.3	23.5	54	.....	7	1	8	1	8	1	5	.....	.....	.....	4	1.50	38.1
Pola	N. 44 52	E. 13 51	0.55 p.m.	105	32	29.90	759.4	30.01	762.2	84.4	29.1	51	.....	3	14	1	3	3	5	2	.....	.....	.....	3	1.19	30.2
Szathmar	N. 47 46	E. 22 53	1.32 p.m.	430	131	29.57	751.0	30.02	762.5	81.5	27.5	a41	7	5	3	2	2	5	5	2	.....	.....	.....	4	1.39	35.2
Trieste	N. 45 39	E. 13 46	0.55 p.m.	85	26	29.93	760.1	30.01	762 2	84.2	b29.0	50	.....	7	13	3	1	1	2	4	.....	.....	.....	4	1.76	44.7
Vienna	N. 48 12	E. 16 22	1.05 p.m.	663	202	29.33	745.0	30.02	762.5	78.4	25.8	48	6	6	5	1	4	6	1	1	1	.....	.....	4	0.52	13.2
BRITISH.																										
Aberdeen	N. 57 10	W. 2 06	11.52 a.m.	89	27	29.80	756.9	29.92	760.0	61.5	16.4	63	.....	4	6	5	5	9	2	.....	.....	7351	11830	6	2.40	61.0
Bidston	N. 53 24	W. 3 04	11.48 a.m.	197	60	29.79	756.7	30.03	762.7	66.2	19.0	62	.....	4	18	4	3	2	.....	.....	.....	.....	.....	6	.....	.....
Bradford	N. 53 48	W. 1 47	11.53 a.m.	366	112	29.59	751.6	29.99	761.7	68.3	20.2	54	1	6	11	6	2	1	.....	4	.....	.....	.....	7	1.39	35.3
Bridgetown	N. 13 04	W. 59 37	8.02 a.m.	28	9	29.99	761.7	29.95	760.7	83.9	28.8	72	.....	.....	.....	.....	3	19	8	.....	1	.....	.....	5	.....	.....
Chatham	N. 51 25	E. 0 33	0.02 p.m.	130	40	29.96	761.0	30.10	764.5	74.9	23.8	48	2	1	5	2	3	.....	1	2	15	.....	.....	4	.....	.....
Falmouth	N. 50 09	W. 5 04	11.40 a.m.	183	56	29.89	759.2	30.10	764.5	67.2	19.6	66	5	5	.....	10	3	7	1	.....	.....	.....	.....	6	.....	.....
Freetown	N. 8 30	W. 13 14	11.07 a.m.	224	68	29.63	752.6	29.79	756.7	82.6	28.1	89	7	2	3	2	4	2	6	2	.....	.....	.....	4	.....	.....
Fort Napier	S. 30	E. 31	2.04 p.m.	2294	699	27.78	705.6	29.97	761.2	69.4	20.8	42	3	2	2	1	7	.....	2	7	10	.....	.....	1	.....	.....
Galway	N. 53 15	W. 9 03	11.24 a.m.	32	10	29.91	759.7	29.96	761.0	66.3	19.1	86	.....	.....	3	23	5	.....	.....	.....	.....	.....	.....	5	4.10	104.1
Gibraltar	N. 36 09	W. 5 21	11.39 a.m.	50	15	29.90	759.4	29.93	760.2	78.9	26.1	68	.....	.....	12	.....	.....	.....	15	4	.....	.....	.....	2	.....	.....
Greenwich	N. 51 29	0 00	12 m.	159	48	29.87	758.7	30.06	763.5	75.0	23.9	48	6	2	.....	13	3	1	2	4	.....	.....	.....	5	.....	.....
Guernsey	N. 49 27	W. 2 41	11.49 a.m.	275	84	29.84	757.9	30.14	765.5	66.8	19.3	72	6	2	8	6	1	3	.....	4	1	5915	9519	3	0.95	24.1
Kew	N. 51 28	W. 0 19	11.59 a.m.	34	10	29.96	761.0	30.01	762.2	70.5	21.4	53	5	5	2	9	5	.....	3	2	.....	.....	.....	5	.....	.....
Leicester	N. 52 39	W. 1 08	11.55 a.m.	245	75	29.75	755.6	30.03	762.7	71.2	21.8	63	2	6	.....	18	2	1	.....	2	.....	.....	.....	5	.....	.....
Malta	N. 36 00	E. 14 30	0.58 p.m.	70	21	29.93	760.2	29.98	761.5	81.9	27.7	66	5	5	3	2	1	.....	1	14	.....	.....	.....	2	.....	.....
Nassau	N. 25 04	W. 77 22	6.51 a.m.	44	13	30.06	763.5	30.05	763.3	85.2	29.6	74	.....	.....	.....	.....	2	13	7	4	5	.....	.....	.....	.....	.....
Oxford	N. 51 46	W. 1 17	11.55 a.m.	210	64	29.81	757.2	30.05	763.3	71.6	22.0	53	3	4	2	12	7	.....	.....	1	2	.....	.....	4	.....	.....
Plymouth	N. 50 22	W. 4 10	11.43 a.m.	125	38	29.95	760.7	30.09	764.3	69.6	20.9	64	.....	4	2	9	11	3	.....	2	.....	.....	.....	5	.....	.....
Swanbister	N. 58 55	W. 3 05	11.46 a.m.	72	22	29.77	756.1	29.88	758.9	57.2	14.0	78	.....	4	11	6	3	5	2	.....	.....	.....	.....	7	.....	.....
Scutari Cemet'y a	N 41 00	E. 29 03	1.56 p.m.	60	18	29.82	757.4	29.87	758.7	86.1	30.1	48	3	.....	.....	1	1	.....	.....	25	.....	.....	.....	2	.....	.....
Valencia	N. 51 55	W. 10 18	11.19 a.m.	23	7	29.66	752.6	30.03	762.7	66.4	19.1	76	2	1	17	8	3	.....	.....	.....	.....	.....	.....	8	2.31	58.7
Stonyhurst	N. 53 51	W. 2 28	11.50 a.m.	361	110	29.99	761.7	30.03	762.7	63.7	17.6	78	2	7	3	11	6	1	.....	1	.....	.....	.....	8	.....	.....
Sub-series.																										
Gozo a	N. 36 01	E. 14 16	0.57 p.m.	364	111	29.72	754.9	30.07	763.8	79.4	26.3	53	1	9	10	2	1	2	3	1	1	2628	4232	2	0.00	00
Penang	N. 5 24	E. 100 20	6.41 p.m.	20	6	29.84	757.9	29.78	756.4	78.4	25.8	75	.....	11	.....	6	.....	14	.....	.....	.....	.....	.....	5	16.03	407.2
Singapore	N. 1 17	E. 103 51	6.55 p.m.	10	3	29.88	758.9	29.81	757.2	80.8	27.1	83	.....	.....	1	8	6	8	.....	.....	8	.....	.....	4	13.97	354.8
CANADIAN.																										
Bathurst	N. 47 39	W. 65 42	7.37 a.m.	35	11	29.89	759.2	29.93	760 2	64.9	18.3	.....	1	1	7	3	3	4	4	.....	8	.....	.....	7	4.04	102.6
Bird Rocks	N. 47 50	W. 61 10	7.56 a.m.	.....	.....	29.82	757.4	29.94	760.5	56.7	13.7	95	1	5	3	10	4	4	.....	4	.....	.....	.....	5	1.21	30.7
Calgarry	N. 50 55	W. 114 04	4.24 a.m.	?	?	26.46	672.1	29.93	760.2	49.0	9.4	86	5	10	1	.....	1	.....	1	.....	13	.....	.....	4	3.55	90.2
Chatham	N. 47 03	W. 65 29	7.38 a.m.	56	17	29.88	758.9	29.94	760.5	65.1	18.4	67	1	5	7	3	2	1	3	2	7	.....	.....	3	4.26	108.2
Cornwall	N. 45 01	W. 74 43	7.01 a.m.	175	53	29.71	754.6	29.89	759.2	73.6	23.1	76	2	1	14	3	4	.....	5	2	.....	.....	.....	4	2.44	62.0
Dalhousie a	N. 48 04	W. 66 22	7.35 a.m.	45	14	29.89	759.2	29.94	760.5	64.3	17.9	83	1	3	11	.....	.....	.....	9	.....	6	.....	.....	6	2.97	75.5
Father Point	N. 48 31	W. 68 28	7.26 a.m.	20	6	29.87	758 7	29.90	759.4	56.0	13.3	89	1	3	7	8	1	.....	.....	11	.....	.....	.....	4	3.58	90.9
Fort Garry	N. 49 51	W. 97 07	5.32 a.m.	754	230	29.12	739.6	29.93	760.2	58.3	14.6	90	5	7	3	5	2	3	3	3	.....	.....	.....	8	2.02	51.3
Fredericton	N. 45 57	W. 66 38	7.33 a.m.	164	50	29.80	756.9	29.98	761.5	66.2	19.0	86	.....	4	11	8	3	2	.....	3	.....	4777	7688	7	2.91	74.0
Grand Manan	N. 44 46	W. 66 45	7.33 a.m.	49	15	29.92	760.0	29.97	761.2	62.1	10.7	77	3	3	5	2	7	.....	1	1	9	.....	.....	2	3.41	86.6
Halifax	N. 44 39	W. 63 36	7.46 a.m.	122	37	29.88	758.9	30.01	762.2	65.1	18.4	82	5	.....	6	1	12	3	1	1	.....	.....	.....	4	2.06	52.3
Hamilton	N. 43 16	W. 79 53	6.40 a.m.	372	113	29.61	752.1	30.00	762.0	71.6	22.0	91	2	1	9	.....	8	.....	6	5	.....	.....	.....	3	0.33	7.7
Kingston	N. 44 14	W. 76 30	6.54 a.m.	307	94	29.62	752.3	29.95	760.7	69.5	20.8	80	2	4	1	5	8	3	.....	7	1	.....	.....	5	3.17	80.5
Little Glace Bay	N. 46 12	W. 59 58	8.00 a.m.	34	10	29.90	759.4	29.93	760.2	66.8	19.3	86	4	2	5	13	1	3	1	2	.....	.....	.....	6	.....	.....
London	N. 43 00	W. 81 15	6.35 a.m.	832	254	29.13	739.9	30.00	762.0	67.9	19.9	84	6	3	4	1	3	1	.....	.....	13	3821	6149	4	1.16	29.4
Medicine Hat	N. 50 01	W. 110 37	4.38 a.m.	2136	651	27.67	702 8	29.90	759 4	54.9	12.7	87	1	1	7	4	1	.....	6	.....	11	.....	.....	4	0.29	7.4
Minnedosa	N. 50 13	W. 99 48	5.21 a.m.	1665	501	28.16	715 3	29.92	760.0	55.0	12.8	88	.....	8	2	1	1	.....	3	6	10	.....	.....	4	1.90	48.3
Montreal	N. 45 31	W. 73 33	7.06 a.m.	187	57	29.74	755.4	29.93	760.2	69.7	20.9	77	3	1	5	9	4	4	3	2	1	.....	.....	6	2.64	67.1
Ottawa	N. 45 26	W. 75 41	6.57 a.m.	200	61	29.70	754.4	29.91	759.7	67.9	19.9	84	7	4	4	4	5	2	2	3	.....	3107	5000	6	0.94	24.0
Parry Sound	N. 45 19	W. 80 01	6.40 a.m.	635	194	29.29	744 0	29.96	761.0	66.8	19.3	87	1	5	3	7	6	1	5	2	1	.....	.....	4	4.36	110.7
Peterborough	N. 44 17	W. 78 18	6.47 a.m.	722	220	29.24	742.7	29.99	761.7	70.6	21.4	78	.....	4	8	3	.....	1	1	3	11	.....	.....	4	2.85	72 4
Port Arthur	N. 48 27	W. 89 12	6.03 a.m.	642	196	29.22	742.2	29.91	759.7	61.3	16.3	87	6	4	4	.....	1	.....	6	2	8	.....	.....	3	7.46	189.4
Port Dover	N. 42 47	W. 80 13	6.39 a.m.	635	194	29.33	745.0	29.99	761.7	68.2	20.1	97	.....	3	2	3	.....	.....	.....	.....	23	.....	.....	5	1.01	25.7
Port Stanley	N. 42 40	W. 81 13	6.35 a.m.	592	180	29.34	745.2	29.97	761.2	67.4	19.7	87	5	.....	7	3	.....	3	2	5	6	.....	.....	4	1.84	46.7
Qu' Appelle	N. 50 44	W. 103 42	5.05 a.m.	2115	645	27.71	703.8	29.91	759.7	56.1	13.4	83	1	5	3	1	3	2	.....	.....	16	.....	.....	4	1.16	29.5
Quebec	N. 46 48	W. 71 12	7.15 a.m.	293	89	29.62	752.3	29.93	760.2	65.9	18.8	83	6	.....	10	.....	1	.....	4	6	4	.....	.....	6	3.70	94.0
Rockliffe	N. 46 10	W. 77 48	6.49 a.m.	418	127	29.51	749.5	29.95	760.7	62.7	17.1	90	1	3	6	.....	.....	.....	4	.....	17	.....	.....	5	1.52	38.6
Saint Andrews	N. 45 04	W. 67 06	7.32 a.m.	47	14	29.91	759.7	29.96	761.0	60.5	15.8	92	1	2	.....	2	3	7	3	2	11	.....	.....	2	5.82	147.8
Saint John, N.B	N. 45 17	W. 66 03	7.36 a.m.	116	35	29.83	757.7	29.96	761.0	60.6	15.9	87	3	5	.....	1	19	.....	1	1	1	.....	.....	6	5.29	134.4
Saint Pierre	N. 46 47	W. 56 08	8.15 a.m.	?	?	.....	.....	29.96	761.0	59.2	15.1	.....	.....	3	5	11	.....	10	.....	2	.....	.....	.....	.....	3.98	101.0
Saugeen	N 44 30	W. 81 21	6.35 a.m.	656	200	29.28	743.7	29.97	761.2	64.0	17.8	90	1	2	2	2	4	1	1	3	15	.....	.....	3	1.23	31.2
S.W. Pt. Anticosti	N. 49 24	W. 63 36	7.46 a.m.	30	9	29.85	758.2	29.89	759.2	58.1	14.5	88	1	3	3	.....	6	11	2	1	4	.....	.....	4	4.16	105.7
Stratford b	N. 43 23	W. 81 00	6.36 a.m.	1186	361	b28.72	729.5b	29.94	760.5	70.3	21.3	80	1	3	2	9	1	.....	3	6	4	3490	5616	3	4.29	109.0
Swift Current	N. 50 21	W. 107 33	4.50 a.m.	2439	744	27.39	695.7	29.95	760.7	51.3	10.7	85	2	2	3	3	7	5	1	.....	8	.....	.....	5	3.70	94.0
Sydney	N. 46 08	W. 60 10	7.59 a.m.	37	11	29.90	759.4	29.94	760.5	64.0	17.8	70	3	1	5	7	7	.....	2	4	2	.....	.....	6	0.65	16.5
Toronto	N. 43 39	W. 79 23	6.42 a.m.	350	107	29.60	751.8	29.97	761.2	69.3	20.7	77	8	3	6	1	3	1	3	4	2	.....	.....	4	0.66	16.8
Woodstock	N. 43 08	W. 80 47	6.37 a.m.	980	299	28.95	735.3	29.97	761.2	69.3	20.7	80	7	4	2	7	4	4	1	1	1	.....	.....	4	0.43	10.9
Yarmouth	N. 43 50	W. 66 02	7.36 a.m.	61	19	29.92	760 0	29.98	761.5	62.3	16.8	84	3	3	1	5	10	4	.....	3	2	.....	.....	3	0.52	13.2
Sub-series.																										
Saint Johns, N.F.	N. 47 34	W. 52 42	8.29 a.m.	159	48	29.81	757.2	30.00	762.0	59.5	15.3	82	1	2	6	5	4	11	.....	2	.....	.....	.....	7	2.10	53.3
CAPE COLONY																										
Cape St. Francis	S. 34 10	E. 24 50	1.39 p.m.	25	8	30.19	766.8	30.18	766.6	61.9	16.6	93	.....	.....	15	4	.....	2	4	2	4	.....	.....	3	2.16	54.9
CHINESE.																										
Hong Kong	N. 22 18	E. 114 10	7.37 p.m.	110	34	29.59	751.6	29.64	752.8	80.6	27.0	85	.....	2	.....	4	4	2	14	3	2	.....	.....	8	12.02	305.3
Foochow	N. 26 08	E. 119 38	7.59 p.m.	34	10	29.01	752.1	29.59	751.6	81.5	27.5	83	1	1	.....	4	6	7	1	10	1	.....	.....	5	9.41	239.0
Sub-Series.																										
South Cape	N. 21 55	E. 120 51	8.04 p.m.	121	37	29.60	751.8	29.67	753.6	80.6	27.0	89	.....	1	7	6	1	5	2	5	4	.....	.....	6	17.85	453.4
Zi-Ka-Wei	N. 31 12	E. 121 26	8.06 p.m.	23	7	29.71	754.6	29.69	754.1	77.7	25.4	90	1	.....	.....	1	5	6	11	7	.....	.....	.....	6	6.58	167.1
DANISH.																										
Copenhagen	N. 55 41	E. 12 36	0.50 p.m.	43	13	29.92	759.9	29.99	761.7	67.8	19.9	67	1	.....	10	2	11	3	3	1	.....	.....	.....	6	.....	.....
Fanoe	N. 55 27	E. 8 24	0.34 p.m.	20	6	29.95	760.8	30.00	762.0	64.8	18.2	75	1	5	5	14	5	1	.....	.....	.....	.....	.....	6	.....	.....
Godthaab	N. 64 11	W. 51 46	8.33 a.m.	36	11	29.73	755.1	29.82	757.4	45.7	7.6	76	4	.....	3	2	5	5	.....	5	7	.....	.....	7	.....	.....
Ivigtut	N. 61 12	W. 48 00	8.48 a.m.	16	5	29.76	755.9	29.82	757.4	47.7	8.8	.....	3	.....	.....	.....	1	2	.....	.....	25	.....	.....	8	.....	.....

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metrs	Result of Simultaneous Observations for July, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
DANISH—Con.	° ′	° ′																								
Jacobshavn	N. 69 13	W. 50 55	8.36 a.m.	43	13	29.76	755.9	29.86	758.4	45.0	7.2	.....	d	2	8	3	1	2	.....	1	10	.....	.....	4	.....	.....
Stykkisholm	N. 65 05	W. 22 46	10.29 a.m.	30	11	29.71	754.6	29.80	756.9	47.8	8.8	77	1	4	2	1	.....	5	13	4	1	.....	.....	5	.....	.....
Thorshavn	N. 62 02	W. 6 44	11.33 a.m.	30	9	29.68	753.9	29.81	757.2	52.2	11.2	85	5	1	4	9	.....	2	2	3	5	.....	.....	8	.....	.....
Upernavik	N. 72 47	W. 56 00	8.16 a.m.	39	12	29.74	755.5	29.84	757.9	41.2	5.1	83	4	3	2	4	2	.....	2	1	13	.....	.....	8	.....	.....
Vestervig	N. 56 47	E. 8 20	0.33 p.m.	82	25	29.85	758.1	29.96	761.0	62.2	16.8	73	.....	7	8	9	6	1	.....	.....	.....	.....	.....	6	.....	.....
FRENCH.																										
Alençon	N. 48 26	E. 0 05	0.00 m.	476	145	29.57	751.1	30.07	763.8	74.1	23.4	55	9	4	1	7	5	.....	1	4	.....	.....	.....	5	0.50	12.7
Arras	N 50 18	E. 2 46	0.11 p.m.	223	68	29.86	758.5	30.11	764.8	73.4	23.0	58	1	2	4	5	2	2	7	3	5	.....	.....	.....	0.33	8.4
Avignon	N. 43 57	E. 4 49	0.19 p.m	66	20	29.95	760.7	30.02	762.5	86.0	30.0	53	15	1	1	8	3	1	.....	2	.....	.....	.....	2	3.74	94.9
Bar-sur-Seine	N. 48 07	E. 4 22	0.17 p.m.	518	158	29.51	749.6	30.05	763.3	76.5	24.7	56	1	.....	3	5	4	6	4	8	.....	.....	.....	5	2.28	58.0
Beauvais	N. 49 26	E. 2 05	0.08 p.m.	269	82	29.79	756.7	30.08	764.0	79.3	26.3	53	5	5	5	3	.....	1	.....	12	.....	.....	.....	4	1.15	29.3
Besançon	N. 47 13	E. 6 02	0.24 p.m.	895	273	29.21	741.8	30.12	765.0	78.1	25.6	66	a5	.....	.....	4	8	1	7	5	.....	.....	.....	4	3.51	89.1
Bordeaux	N. 44 50	W. 0 32	11.58 a.m.	243	74	29.81	757.1	30.06	763.5	77.9	25.5	52	3	6	3	6	2	1	4	6	.....	.....	.....	7	2.30	58.5
Bourges	N. 47 10	E. 2 26	0.10 p.m.	512	156	29.52	749.7	30.04	763.0	78.6	25.9	50	3	4	3	4	1	6	6	4	.....	.....	.....	4	7.44	189.0
Brest	N. 48 24	W. 4 30	11.42 a.m.	210	64	29.87	758.7	30.10	764.5	69.6	20.9	79	5	.....	5	11	2	.....	.....	8	.....	.....	.....	5	0.90	22.8
Caen	N. 49 11	W. 0 21	11.59 a.m.	69	21	30.02	762.4	30.10	764.5	71.4	21.9	79	10	3	5	.....	5	1	.....	6	1	.....	.....	2	0.11	2.8
Châlons-sur-Marne	N. 48 57	E. 4 21	0.17 p.m.	292	89	29.77	756.1	30.09	764.3	75.6	24.2	66	.....	6	3	7	4	2	1	7	.....	.....	.....	4	1.05	26.7
Charleville [a	N. 49 46	E. 4 43	0.19 p.m.	476	145	29.56	750.7	30.06	763.5	76.6	24.8	50	1	4	7	5	6	2	2	4	.....	.....	.....	3	1.92	48.8
Clermont-Fer'and	N. 45 46	E. 3 05	0.12 p.m.	1273	388	28.73	729.8	30.02	762.6	77.2	25.1	58	15	3	2	1	2	1	4	3	.....	.....	.....	5	5.66	143.9
Cluny	N. 46 26	E. 4 39	0.19 p.m.	787	240	29.23	742.4	30.13	765.3	78.1	25.6	56	2	9	4	4	.....	5	1	6	.....	.....	.....	5	4.84	123.0
Gap	N. 44 33	E. 6 05	0.24 p.m.	2424	739	27.61	701.2	30.02	762.6	80.6	27.0	47	.....	1	.....	.....	1	.....	.....	1	28	.....	.....	.....	1.98	50.4
Gréasque	N. 43 25	E. 5 37	0.22 p.m.	1056	322	28.95	735.2	30.01	762.3	83.5	28.6	42	3	.....	.....	6	6	10	1	5	.....	.....	.....	4	4.00	101.5
Guéret	N. 46 10	E. 1 52	0.07 p.m.	1535	468	28.52	724.5	30.03	762.7	71.2	21.8	79	.....	5	4	6	2	1	8	5	.....	.....	.....	2	2.56	65.0
Lescar	N. 43 20	W. 0 26	11.58 a.m.	525	160	29.52	749.8	30.05	763.3	77.9	25.5	67	2	3	8	7	2	.....	7	2	.....	.....	.....	.....	4.24	107.7
Lorient	N. 47 45	W. 3 21	11.47 a.m.	85	26	30.04	762.9	30.13	765.3	73.6	23.1	70	7	2	2	5	9	1	.....	5	.....	.....	.....	5	0.96	24.5
Lyon	N. 45 41	E. 4 47	0.19 p.m.	981	299	29.02	737.2	30.01	762.2	77.9	25.5	48	11	3	.....	.....	2	5	4	6	.....	.....	.....	5	4.08	103.7
Mans	N. 48 00	E. 0 12	0.01 p.m.	285	87	29.78	756.5	30.09	764.3	74.5	23.6	60	3	8	3	5	.....	1	.....	11	.....	.....	.....	.....	0.77	19.5
Marseille	N. 43 18	E. 5 23	0.22 p.m.	246	75	29.76	755.9	30.02	762.5	81.7	27.6	54	.....	2	13	12	1	1	1	1	.....	.....	.....	5	2.44	62.0
Montlouis	N. 42 30	E. 2 07	0.08 p.m.	5202	1586	25.02	635.6	29.87	758.6	65.8	18.8	40	.....	1	6	5	.....	5	14	.....	.....	.....	.....	5	6.31	160.3
Montpellier	N. 43 37	E. 3 53	0.16 p.m.	102	31	29.89	759.1	29.99	761.7	84.4	29.1	47	4	8	.....	2	2	10	2	1	2	.....	.....	2	2.56	64.9
Mont Ventoux	N. 44 10	E. 5 16	0.21 p.m.	6234	1900	24.06	611.0	.....	.....	57.2	14.0	74	2	8	6	2	9	3	.....	1	.....	.....	.....	4	5.69	144.5
Nancy	N. 48 42	E. 6 11	0.25 p.m.	718	219	29.28	743.6	30.01	762.2	75.2	24.0	61	.....	2	2	8	1	2	11	5	.....	.....	.....	.....	2.06	52.3
Nantes	N. 47 13	W. 1 33	11.54 a.m.	134	41	29.95	760.8	30.09	764.3	76.1	24.5	52	8	2	6	6	.....	.....	3	6	.....	.....	.....	5	2.23	56.6
Nice	N. 43 41	E. 7 16	0.29 p.m.	59	18	29.93	760.3	30.04	763.0	82.6	28.1	78	.....	.....	.....	.....	1	.....	4	.....	26	.....	.....	1	0.51	13.0
Perpignan	N. 42 42	E. 2 53	0.12 p.m.	105	32	29.93	760.3	30.02	762 5	81.0	27.2	53	2	4	2	1	1	2	7	12	.....	.....	.....	3	4.02	102.0
Pic du Midi (Sum-	N. 42 56	W. 0 08	11.59 a.m.	9380	2859	21.43	544.4	.....	.....	49.1	9.5	57	.....	1	9	9	14	.....	.....	1	9	.....	.....	.....	5.05	128.2
Privas [mit.)	N. 44 45	E. 4 36	0.18 p.m.	997	304	29.00	736.5	30.02	762.5	80.6	27.0	52	14	.....	1	.....	14	1	.....	.....	1	.....	.....	2	5.30	134.7
Puy de Dôme	N. 45 46	E. 2 58	0.12 p.m.	4813	1467	25.32	643.0	.....	.....	57.0	13.9	82	2	3	4	5	1	3	9	4	.....	.....	.....	7	4.02	102.2
Rochefort	N. 45 56	W. 0 58	11.56 a.m.	30	9	30.04	763.0	30.07	763.8	77.0	25.0	69	2	7	4	5	.....	1	5	7	.....	.....	.....	4	5.49	139.5
Roche-sur-Yon	N. 46 40	W. 1 26	11.54 a.m.	259	79	29.80	756.8	30.07	763.8	74.7	23.7	60	6	5	9	1	1	1	3	5	.....	.....	.....	6	3.15	80.1
Rouen	N. 49 26	E. 1 05	0.04 p.m.	39	12	30.03	762.8	30.08	764.0	75.6	24.2	49	5	5	8	5	2	1	3	2	.....	.....	.....	4	0.40	10.1
Saint Brieuc	N. 48 37	E. 5 08	0.20 p.m.	348	106	29.74	755.5	30.12	765.0	70.5	21.4	73	9	.....	2	4	5	.....	1	9	1	.....	.....	3	0.22	5.6
Saint Maur	N. 48 48	E. 2 21	0.09 p.m.	161	49	29.92	760.0	30.09	764.3	75.2	24.0	54	6	3	4	6	6	2	1	3	.....	.....	.....	.....	2.06	52.2
Toulouse	N. 43 37	E. 1 27	0.06 p.m.	636	194	29.39	746.5	30.04	763.0	78.4	25.8	64	2	13	1	.....	1	8	2	5	.....	.....	.....	4	2.02	51.4
Tours	N. 47 24	E. 0 41	0.03 p.m.	171	52	29.89	759.1	30.07	763.8	77.7	25.4	57	1	3	4	9	1	2	4	7	.....	.....	.....	.....	3.60	91.3
Sub-Series.																										
St. Martin du Hinx.	N. 43 35	W. 1 16	11.55 a.m.	131	40	29.93	760.3	30.06	763.5	77.4	25.2	59	5	6	6	1	.....	3	8	2	.....	.....	.....	5	4.80	121.9
GERMAN.																										
Ansbach	N. 49 18	E. 10 36	0.42 p.m.	1358	414	28.64	727.5	30.02	762.6	76.5	24.7	46	1	5	4	2	4	2	1	8	4	.....	.....	4	1.43	36.4
Bamberg	N. 49 54	E. 10 54	0.44 p.m.	787	240	29.35	745.6	30.16	766.1	77.2	25.1	48	.....	6	6	11	.....	3	3	2	.....	.....	.....	5	1.20	30.6
Berlin	N. 52 30	E. 13 19	0.53 p.m.	151	46	29.86	758.4	30.04	763.0	75.0	23.9	55	.....	9	10	3	2	1	.....	1	5	.....	.....	3	3.07	77.9
Breslau	N. 51 07	E. 17 02	1.08 p.m.	482	147	29.54	750.3	30.06	763.5	74.8	23.8	48	.....	6	10	.....	1	7	2	1	4	.....	.....	5	1.70	43.2
Carlsruhe	N. 49 01	E. 8 25	0.34 p.m.	413	126	29.61	752.2	30.04	763.0	76.8	24.9	54	3	.....	.....	13	1	2	2	10	.....	.....	.....	6	2.48	63.1
Cassel	N. 51 19	E 9 28	0.38 p.m.	669	204	29.36	745.7	30.06	763 5	74.1	23.4	59	5	6	3	6	3	1	.....	1	6	.....	.....	5	3.95	100.4
Frankfort on M.	N. 50 08	E. 8 41	0.35 p.m.	338	103	29.69	754.0	30.05	763.3	77.2	25.1	47	4	2	8	5	4	1	3	4	.....	.....	.....	4	1.67	42.4
Friedrichshafen	N. 47 39	E. 9 29	0.38 p.m.	1338	408	28.64	727 4	29.99	761.7	75.2	24.0	67	1	.....	5	16	6	2	.....	1	.....	.....	.....	5	4.56	115.9
Hamburg	N. 53 33	E. 9 58	0.40 p.m.	85	26	29.85	758.3	29.95	760.7	69.1	20.6	61	1	4	5	14	.....	5	2	.....	.....	.....	.....	7	2.55	64.8
Kiel	N. 54 19	E. 10 04	0.40 p.m.	13	4	30.02	762.6	30.06	763.6	68.0	20.0	64	4	5	15	4	2	.....	1	.....	1	.....	.....	7	5.25	133.4
Leipsic	N. 51 20	E. 12 24	0.50 p.m.	390	119	29.03	752.6	30.07	763.8	66.7	19.3	62	a3	5	8	3	3	2	2	4	.....	.....	.....	5	3.73	94.8
Memel	N. 55 43	E. 21 07	1.24 p.m.	39	12	29.99	761.8	30.06	763 5	68.5	20.3	69	4	14	9	2	1	1	.....	.....	.....	.....	.....	5	.....	.....
Munich	N. 48 09	E. 11 34	0.46 p.m.	1732	528	28.26	717.8	30.14	765 5	76.3	24.6	48	.....	15	.....	.....	.....	2	2	10	2	.....	.....	4	3.28	83.3
Neufahrwasser	N. 54 24	E. 18 40	1.15 p.m.	36	11	29.97	761.2	30.01	762.2	68.9	20.5	62	4	1	5	.....	5	2	7	7	.....	.....	.....	5	0.93	23.7
Neustadt	N. 49 21	E. 8 08	0.33 p.m.	479	146	29.53	750.0	30.03	762.7	77.4	25.2	54	6	1	7	5	4	1	1	1	5	.....	.....	5	2.09	53.1
Stuttgart	N. 48 47	E. 9 11	0.37 p.m.	833	254	29.10	740.7	30.03	762.7	76.6	24.8	56	4	7	1	6	3	3	1	6	.....	.....	.....	5	2.75	69.9
Wustrow	N. 54 21	E. 12 24	0.50 p.m.	23	7	29.97	761.2	30.01	762.2	68.0	20.0	71	2	5	15	2	.....	3	.....	3	.....	.....	.....	6	2.45	62.2
GREEK.																										
Athens	N. 37 58	E. 23 44	1.35 p.m.	348	106	29.55	750.6	29.88	758.9	88.7	31.5	35	11	.....	.....	.....	4	2	1	13	.....	.....	.....	2	.....	.....
INDIAN.																										
Kurrachee	N. 24 47	E. 67 04	4.28 p.m.	49	15	29.44	747.7	29.44	747.7	85.2	29.6	76	.....	.....	16	14	1	.....	.....	.....	.....	.....	.....	7	1.66	42.2
Deesa	N. 24 16	E. 72 14	4.49 p.m.	466	142	29.04	737.6	29.45	748.0	85.2	29.6	68	.....	.....	4	16	9	1	1	.....	.....	.....	.....	9	7.49	190.2
Bombay	N. 18 54	E. 72 49	4.51 p.m.	37	11	29.67	753.7	29.63	753.1	79.9	26.6	86	.....	1	19	10	1	.....	.....	.....	.....	.....	.....	9	31.00	786.9
Poona	N. 18 28	E. 74 10	4.57 p.m.	1849	564	27.86	707.6	29.63	752.7	75.2	24.0	78	.....	3	27	1	.....	.....	.....	.....	.....	.....	.....	9	10.86	275.8
Belgaum	N. 15 52	E. 74 42	4.59 p.m.	2524	770	27.22	691.4	29.67	753.6	69.9	21.1	91	.....	.....	10	21	.....	.....	.....	.....	.....	.....	.....	9	18.67	474.2
Lahore	N. 31 34	E. 74 20	4.57 p.m.	702	214	28.72	729.6	29.38	746.2	66.1	35.6	52	3	.....	3	2	3	5	5	2	8	.....	.....	6	2.50	63.5
Roorkee	N. 29 52	E. 77 56	5.12 p.m.	887	270	28.58	725.8	29.43	747.5	86.9	30.5	69	.....	.....	7	.....	2	3	1	.....	18	.....	.....	6	19.18	505.2
Agra	N. 27 10	E. 78 05	5.12 p.m.	555	169	28.92	734.6	29.43	747.5	86.8	30.4	75	2	10	3	3	1	6	3	3	.....	.....	.....	7	19.61	516.1
Nagpur	N. 21 09	E. 79 11	5.17 p.m.	1025	312	28.52	724.4	29.49	749.0	79.7	26.5	83	2	1	9	14	2	1	.....	2	.....	.....	.....	9	18.05	458.5
Jubbulpore	N. 23 09	E. 79 59	5.20 p.m.	1341	409	28.19	716.0	29.47	748.6	78.1	25.6	88	2	3	8	9	2	2	.....	1	4	.....	.....	9	40.57	1030.5
Allahabad	N. 25 26	E. 81 52	5.27 p.m.	307	94	29.15	740.3	29.40	746.8	86.3	30.2	75	4	5	4	3	1	2	5	4	3	.....	.....	8	11.13	282.7
Patna	N. 25 37	E. 85 08	5.41 p.m.	183	56	29.30	744.2	29.42	747.3	85.9	29.9	89	.....	1	2	.....	1	1	9	7	10	.....	.....	8	8.64	219.5
Hazaribagh	N. 24 00	E. 85 24	5.42 p.m.	2007	612	27.52	699.0	29.44	747.9	78.4	25.8	85	1	6	2	2	6	5	6	2	1	.....	.....	10	14.82	376.4
Cuttack	N. 20 29	E. 85 54	5.44 p.m.	80	24	29.44f	747.7f	29.46f	748.3f	f83.5	f28.6	f76	f	.....	2	8	3	.....	.....	.....	12	.....	.....	.....	11.59	294.4
Calcutta	N. 22 33	E. 88 21	5.53 p.m.	21	6	29.47	748.6	29.43	747.5	82.9	28.3	84	.....	2	1	7	5	11	2	2	1	.....	.....	8	18.15	461.0
Dhubri	N. 26 07	E. 89 50	5.59 p.m	115	35	29.41	747.0	29.47	748.6	84.2	29.0	83	.....	.....	.....	3	2	2	2	3	19	.....	.....	5	7.08	179.8
Chittagong	N. 22 21	E. 91 50	6.07 p.m.	87	27	29.48	748.9	29.51	749.3	80.8	27.1	88	.....	.....	1	4	11	13	.....	.....	2	.....	.....	9	22.00	558.8
Sibsagar	N. 26 59	E. 94 40	6.19 p.m.	333	101	29.21	741.9	29.49	749.0	87.3	30.7	79	.....	1	.....	12	4	2	2	7	3	.....	.....	5	10.79	274.1
Jeypore	N. 26 55	E. 75 50	5.03 p.m.	1431	436	28.06	712.8	29.42	747.4	84 5	29.2	72	1	9	8	2	.....	3	4	3	1	.....	.....	8	17.54	445.5
Bellary	N. 15 09	E. 76 57	5.08 p.m.	1475	449	28.25	717.4	29.64	752.9	82.7	28.2	58	.....	4	21	6	.....	.....	.....	.....	.....	.....	.....	9	0.05	1.3
Trichinopoly	N. 10 50	E. 78 44	5.15 p.m.	275	84	29.48	748.9	29.70	754.4	90.9	32.7	46	.....	8	18	5	.....	.....	.....	.....	.....	.....	.....	8	0.28	7.1
Lucknow	N. 26 50	E. 81 00	5.24 p.m.	369	112	29.12	739.6	29.43	747.5	83.6	28.7	73	8	5	2	2	1	2	2	4	5	.....	.....	6	6.57	166.9
ITALIAN.																										
Udine	N. 46 04	E. 13 13	0.53 p.m.	381	116	29.56	750.8	29.93	760.1	83.5	28.6	45	5	.....	1	4	4	3	4	1	9	.....	.....	4	5.68	144.2
Milan	N. 45 28	E. 9 11	0.37 p.m.	482	147	29.55	750.6	30.03	762.7	82.2	27.9	50	2	4	1	6	5	7	3	3	.....	.....	.....	5	2.38	60.4
Padua	N. 45 24	E. 11 53	0.48 p.m.	102	31	29.90	759.4	30.00	762.0	82.8	28.2	46	4	2	2	8	1	5	6	3	.....	.....	.....	2	1.96	49.7
Moncaliera	N. 45 00	E. 7 41	0.31 p.m.	846	258	29.19	741.4	30.01	762.3	80.6	27.0	58	.....	4	1	3	7	8	7	1	.....	.....	.....	4	3.09	78.4
Genoa	N. 44 24	E. 8 55	0.36 p.m.	177	54	29.85	758.2	30.02	762.5	80.8	27.1	56	5	1	.....	1	20	2	1	1	.....	.....	.....	3	0.44	11.2
Cuneo	N. 44 20	E. 7 20	0.30 p.m.	1820	555	.....	.....	30.00	761.9	75.7	24.3	54	5	2	.....	.....	1	2	9	12	.....	.....	.....	4	2.41	61.2
Pesaro	N. 43 55	E. 12 53	0.52 p.m.	46	14	29.97	761.2	30.02	762.6	79.0	26.1	66	10	1	.....	1	.....	2	1	16	.....	.....	.....	2	0.43	10.9
Florence	N. 43 46	E. 11 15	0.45 p.m.	240	73	29.78	756.4	30.00	761.9	85.6	29.8	36	6	3	2	8	5	3	.....	4	.....	.....	.....	2	1.22	31.0
Leghorn	N. 43 33	E. 10 18	0.41 p.m.	79	24	29.94	760.5	30.02	762.6	81.9	27.7	55	2	8	12	1	5	.....	1	2	.....	.....	.....	3	0.73	18.6
Rome	N. 41 54	E. 12 29	0.50 p.m.	164	50	29.84	757.9	29.98	761.5	88.2	31.2	35	3	.....	6	13	4	2	.....	1	2	.....	.....	3	1.18	30.1
Cosenza	N. 39 19	E. 16 17	1.05 p.m.	840	246	29.14	740.1	29.97	761.2	85.6	29.8	65	.....	5	16	2	2	4	1	1	.....	.....	.....	2	1.39	35.2
Sassari	N. 40 43	E. 8 34	0.34 p.m.	735	224	29.28	743.7	30.01	762.2	82.8	28 2	47	.....	.....	1	2	9	13	2	4	.....	.....	.....	3	0.32	8.1
Palermo	N. 38 07	E. 13 21	0.53 p.m.	236	72	29.81	757 2	30.02	762.5	86.0	30.0	49	1	2	1	.....	1	2	.....	24	.....	.....	.....	2	0.46	11.6

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for July, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent.	Mean Rel. Humidity	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
ITALIAN—Con.	° ′	° ′																								
Syracuse	N. 37 03	E. 15 15	1.01 p.m.	72	22	29.91	759.7	29.96	761.0	81.5	27.5	58	5	5	.....	3	4	1	9	4	.....	.....	.....	2	0.04	1.0
Sub-Series.																										
Stelvio	N. 46 32	E. 10 25	0.42 p.m.	8343	2543	22.39	568.6	.....	.....	53.2	11.8	68	.....	.....	15	5	.....	4	3	4	.....	.....	.....	7	3.46	87.9
Valdobbia	N. 45 47	E. 7 51	0.31 p.m.	8360	2548	22.41	569.0	.....	.....	52.9	11.6	70	.....	3	3	9	4	4	7	1	.....	.....	.....	9	4.02	102.2
JAPANESE.																										
Akita	N. 39 42	E. 140 07	9.20 p.m.	49	15	29.84	757.9	29.87	758.7	70.5	21.4	97	2	4	7	5	.....	2	6	3	2	5059	8082	6	4.19	106.5
Awomori	N. 40 51	E. 140 45	9.23 p.m.	33	10	29.84	757.9	29.86	758.4	69.7	21.0	84	10	2	4	4	2	.....	3	2	4	3571	5746	5	2.67	67.9
Erimo	N. 41 55	E. 143 15	9.30 p.m.	200	61	29.66	753.4	29.87	758.7	59.5	15.3	97	2	3	15	.....	.....	.....	4	3	4	9138	14712	7	2.09	53.1
Fushiki	N. 36 47	E. 137 03	10.05 p.m.	13	4	29.87	758.7	29.86	758.4	74.3	23.5	95	1	.....	1	2	1	.....	4	14	8	5661	9109	6	5.08	129.0
Gifu	N. 35 27	E. 136 46	9.07 p.m.	49	15	29.86	758.3	29.87	758.7	76.7	24.8	82	1	.....	3	2	6	7	6	.....	6	1988	3200	6	4.81	121.8
Hakodate	N. 41 46	E. 140 44	9.23 p.m.	10	3	29.86	758.4	29.87	758.7	64.4	18.0	92	2	1	1	6	5	2	9	5	.....	4985	8023	6	3.62	92.0
Hamamatsu	N. 34 42	E. 137 43	9.11 p.m.	92	28	29.82	757.4	29.88	758.9	74.5	23.6	92	.....	.....	6	2	3	1	1	1	17	2180	3510	7	3.92	99.6
Hiroshima	N. 34 23	E. 132 27	8.50 p.m.	16	5	29.85	758.2	29.84	757.9	76.9	24.9	84	8	1	3	4	9	.....	.....	1	5	3439	5553	5	5.48	139.3
Itsurhara	N. 34 12	E. 129 16	8.34 p.m.	16	5	.....	.....	.....	.....	75.3	24.0	88	4	1	1	4	6	1	.....	1	13	2330	3750	4	2.58	55.7
Kanazawa	N. 36 33	E. 136 40	9.07 p.m.	95	29	29.79	756.7	29.87	758.7	73.7	23.2	89	3	3	2	4	1	6	9	.....	3	3094	4978	5	4.56	115.8
Kago-hima	N. 31 35	E. 130 33	8.42 p.m.	13	4	29.86	758.4	29.83	757.7	77.5	25.3	84	.....	2	2	2	2	3	8	3	9	3985	6413	5	5.80	147.3
Kioto	N. 35 01	E. 135 46	9.03 p.m.	161	49	29.73	755.1	29.80	758.4	75.4	24.1	82	9	1	1	.....	2	5	5	5	3	2735	4401	6	4.98	126.4
Kochi	N. 33 33	E. 133 34	8.54 p.m.	20	6	29.89	759.2	29.88	758.9	76.4	24.7	90	3	6	4	1	3	2	9	3	.....	4144	6670	5	7.35	186.5
Miasaki	N. 31 56	E. 131 26	8.46 p.m.	26	8	29.87	758.7	29.86	758.4	76.7	24.8	90	7	.....	6	1	2	1	11	.....	3	5476	8812	6	9.29	236.0
Miyako	N. 39 38	E. 141 59	9.28 p.m.	98	30	29.79	756.7	29.87	758.7	66.2	19.0	93	5	.....	3	5	.....	1	1	1	15	3911	6257	6	3.90	99.0
Nagasaki	N. 32 44	E. 129 52	8.39 p.m.	190	58	29.66	753.4	29.82	757.4	77.1	25.0	84	3	1	.....	11	3	1	5	4	3	3996	6431	6	0.08	154.3
Nemuro	N. 43 20	E. 145 35	9.42 p.m.	89	27	29.77	756.1	29.86	758.4	55.8	13.2	95	1	1	.....	6	12	1	3	3	4	5138	8269	8	2.10	52.5
Niigata	N. 37 55	E. 139 03	9.16 p.m.	33	10	29.86	758.4	29.88	758.9	72.7	22.6	90	11	.....	1	3	2	3	.....	10	1	3552	5718	5	7.23	183.6
Nobiru	N. 38 23	E. 141 11	9 25 p.m.	16	5	29.88	758.9	29.88	758.9	70.5	21.4	93	2	.....	.....	1	11	6	5	1	5	5288	8510	7	2.14	54.1
Numadza	N. 35 06	E. 138 51	9.15 p.m.	30	9	29.88	758.9	29.88	758.9	75.1	24.0	85	1	1	7	9	3	.....	6	4	.....	5016	8044	7	3.40	86.2
Osaka	N. 34 42	E. 135 30	9.02 p.m.	46	14	29.85	758.2	29.87	758.7	76.9	24.9	80	3	1	19	.....	.....	.....	2	3	3	4671	7516	4	2.89	73.3
Sakai	N. 35 33	E. 133 14	8.53 p.m.	7	2	29.86	758.4	29.84	757.9	75.7	24.3	81	6	1	7	.....	1	.....	.....	10	6	4296	6913	5	3.50	89.0
Shimonoseki	N. 33 58	E. 130 56	8.44 p.m.	164	50	29.71	754.6	29.84	757.9	75.4	24.1	82	1	3	1	2	.....	3	18	1	3	.....	.....	5	4.54	115.3
Tokei	N. 35 41	E. 139 46	9.19 p.m.	69	21	29.83	757.7	29.87	758.7	72.8	22.7	90	3	.....	1	.....	20	1	3	2	1	6037	3715	6	3.59	91.2
Wakayama	N. 34 14	E. 135 09	9.01 p.m.	49	15	29.84	757.9	29.86	758.7	76.8	24.9	81	2	.....	.....	3	9	.....	.....	.....	17	1758	2828	5	2.49	63.2
MAURITIUS.																										
Mauritius	S. 20 06	E. 57 33	3.50 p.m.	181	55	29.99	761.7	30.11	764.8	70.8	21.6	68	.....	.....	.....	1	.....	11	18	1	.....	4375	7041	5	1.96	49.8
MEXICAN.																										
Guanajuato	N. 21 01	W. 101 10	5.15 a.m.	6762	2061	23.75	603.2	29.87	758.7	59.0	15.0	85	4	1	5	6	.....	.....	1	14	.....	.....	.....	8	11.06	280.7
Leon	N. 21 07	W. 101 36	5.14 a.m.	5902	1799	24.36	618.7	29.93	760.2	59.9	15.5	97	2	17	1	9	1	1	.....	.....	.....	.....	.....	8	6.83	173.4
Mazatlan	N. 23 12	W. 106 17	4.55 a.m.	249	76	29.71	754.6	29.92	760.0	77.0	25.0	88	3	1	1	3	.....	2	10	11	.....	.....	.....	6	9.95	252.5
Mexico	N. 19 26	W. 99 00	5.24 a.m.	7490	2283	23.13	587.5	30.09	764.3	55.2	12.9	84	1	3	1	.....	.....	.....	.....	.....	26	.....	.....	7	7.19	182.5
NETHERLANDS.																										
Flushing	N. 51 24	E. 3 35	0.14 p.m.	0	0	30.08	763.9	30.10	764.5	70.9	21.6	.....	6	4	8	8	1	1	2	1	.....	.....	.....	.....	0.34	8.6
Groningen	N. 53 12	E. 6 34	0.26 p.m.	60?	18?	29.97	761.2	30.05	763.3	67.8	19.9	.....	6	3	3	3	2	1	.....	1	12	.....	.....	.....	1.15	29.3
Helder	N. 52 58	E. 4 45	0.19 p.m.	0	0	30.04	763.0	30.06	763.5	64.6	18.1	.....	2	6	1	14	2	1	.....	5	.....	.....	.....	.....	2.32	59.0
Hellevoetsluis	N. 51 49	E. 4 08	0.17 p.m.	0	0	30.05	763.3	30.07	763.8	70.0	21.1	.....	4	6	10	4	2	2	.....	1	2	.....	.....	.....	0.35	8.9
Utrecht	N. 52 05	E. 5 07	0.20 p.m.	43	13	30.02	762.4	30.08	764.0	71.4	21.9	.....	3	6	2	14	3	2	.....	1	.....	.....	.....	5	0.77	19.5
Sub-Series.																										
Batavia	S. 6 11	E. 106 50	7.07 p.m.	26	8	29.82	757.4	29.77	756.1	79.0	26.1	80	3	.....	2	4	.....	.....	3	9	10	.....	.....	5	2.28	57.9
NORWEGIAN.																										
Bergen	N. 60 24	E. 5 20	0.21 p.m.	56	17	29.80	757.0	29.90	759.4	59.4	15.2	72	.....	7	5	.....	14	5	.....	.....	.....	.....	.....	8	12.36	313.9
Brono	N. 65 28	E. 12 14	0.49 p.m.	33	10	29.76	755.9	29.78	756.4	56.1	13.4	72	7	1	2	9	4	4	2	1	2	.....	.....	8	4.17	105.9
Christiania	N. 59 55	E. 10 45	0.43 p.m.	134	41	29.70	754.3	29.88	758.9	67.3	19.6	54	.....	1	3	7	15	1	.....	4	.....	.....	.....	7	3.32	84.4
Gjæsvær	N. 71 07	E. 25 22	1.41 p.m.	23	7	29.74	755.5	29.82	757.4	53.8	12.1	.....	1	.....	10	1	2	1	4	4	8	.....	.....	7	2.43	61.7
PORTUGUESE.																										
Angra	N. 38 39	W. 27 14	10.11 a.m.	444	44	30.11	764.7	30.24	768.1	70.3	21.3	87	1	2	10	8	3	.....	3	4	.....	.....	.....	3	2.24	57.0
Funchal	N. 32 38	W. 16 55	10.52 a.m.	82	25	30.10	764.4	30.15	765.8	73.9	23.3	64	.....	.....	.....	28	1	.....	.....	.....	2	.....	.....	6	0.00	0.0
Lisbon	N. 38 42	W. 9 08	11.23 a.m.	312	95	29.74	755.5	30.04	763.0	77.4	25.2	50	10	8	4	4	3	.....	1	1	.....	.....	.....	2	0.00	0.0
Ponta Delgada	N. 37 45	W. 25 41	10.17 a.m.	66	20	30.21	767.4	30.26	768.6	72.5	22.5	73	4	1	4	6	2	1	.....	10	3	.....	.....	4	0.68	17.4
San Salvador	S. 6 17	E. 14 53	1.00 p.m.	1834	559	28.18	715.8	29.98	761.4	68.4	20.2	70	.....	2	8	3	.....	.....	.....	.....	18	.....	.....	6	0.00	0.0
Saint Vincent	N. 16 37	W. 25 02	10.20 a.m.	35	11	30.00	761.9	29.98	761.5	79.7	26.5	71	17	1	.....	.....	.....	.....	.....	12	1	.....	.....	6	0.49	12.5
Serra da Estrella	N. 40 25	W. 7 35	11.30 a.m.	4728	1441	25.40	645.2	29.95	760.8	66.2	19.0	50	3	1	10	3	.....	2	5	7	.....	.....	.....	2	0.09	2.2
RUSSIAN.																										
Archangel	N. 64 33	E. 40 32	2.42 p.m.	16	5	29.80	757.0	29.89	759.2	68.9	20.5	63	1	14	.....	1	2	2	3	.....	8	.....	.....	5	.....	.....
Baku	N. 40 21	E. 49 51	3.19 p.m.	39	12	29.88	758.9	29.83	757.7	80.6	27.0	55	14	3	.....	.....	6	3	2	2	1	.....	.....	2	0.00	0.0
Barnaul	N. 53 20	E. 83 47	5.35 p.m.	459?	140?	29.18	741.2	29.67	753.6	73.8	23.2	56	2	6	2	7	2	2	.....	4	6	.....	.....	6	3.34	84.8
Dorpat	N. 58 23	E. 26 43	1.47 p.m.	210	64	29.68	753.9	29.93	760.2	71.2	21.8	50	1	8	4	10	4	1	1	2	.....	.....	.....	7	1.54	39.1
Ekaterinburg	N. 56 49	E. 60 38	4.03 p.m.	928	283	28.74	729.9	29.73	755.1	67.3	19.6	64	2	7	1	.....	3	3	3	9	3	.....	.....	7	3.72	94.6
Elisavetgrad	N. 48 31	E. 32 17	2.09 p.m.	407	124	29.55	750.6	29.98	761.5	77.0	25.0	41	4	12	3	.....	1	3	.....	4	4	.....	.....	6	1.32	33.4
Irkutsk	N. 52 17	E. 104 16	6.57 p.m.	1610	491	28.06	712.8	29.71	754.6	72.0	22.2	64b	2	7	4	.....	3	10	4	1	.....	.....	.....	8	0.96	24.4
Kasalinsk	N. 45 46	E. 62 07	4.08 p.m.	148	45	29.42	747.3	29.56	750.8	85.3	29.6	38	.....	12	13	3	1	.....	.....	2	.....	.....	.....	3	.....	.....
Kasan	N. 55 47	E. 49 08	3.17 p.m.	230	70	29.45	747.9	29.72	754.9	73.6	23.1	56	2	8	5	3	1	4	1	4	3	.....	.....	6	1.84	46.8
Kem	N. 64 57	E. 34 39	2.19 p.m.	43	13	29.76	755.8	29.85	758.2	66.0	18.9	63	1	2	3	4	1	4	9	4	3	.....	.....	7	2.21	56.1
Kertch	N. 45 21	E. 36 29	2.26 p.m.	20?	6?	29.91	759.6	29.93	760.2	79.5	26.4	49	9	3	1	.....	1	2	2	10	3	.....	.....	3	.....	.....
Keiff	N. 50 27	E. 30 30	2.02 p.m.	600	183	29.36	745.7	30.01	762.2	72.3	22.4	54	5	11	4	.....	1	1	3	4	2	.....	.....	5	1.27	32.2
Kischinev	N. 46 59	E. 28 51	1.55 p.m.	361	110	29.62	752.3	29.98	761.5	78.4	25.8	50	14	6	4	2	1	2	.....	2	.....	.....	.....	5	4.05	102.9
Korostishev	N. 50 19	E. 29 03	2.05 p.m.	?	?	29.28	743.4	.....	.....	68.9	20.5	57	1	11	6	1	2	3	3	.....	4	.....	.....	6	2.46	62.6
Koslov	N. 52 53	E. 40 31	2.42 p.m.	512	156	29.28	743.8	29.82	757.4	73.0	22.8	59	3	8	4	1	3	2	.....	5	5	.....	.....	6	.....	.....
Lgov	N. 51 38	E. 35 17	2.21 p.m.	518	158	29.37	745.9	29.93	760.2	68.7	20.4	57	6	8	5	1	.....	2	1	3	5	.....	.....	7	1.13	28.8
Libau	N. 56 31	E. 21 01	1.24 p.m.	20	6	29.95	760.6	30.00	762.0	62.1	16.7	73	.....	5	8	14	2	1	.....	1	.....	.....	.....	5	1.13	28.7
Lugan	N. 48 35	E. 39 20	2.37 p.m.	164	50	29.70	754.3	29.87	758.7	79.9	26.6	43	7	5	9	4	.....	.....	3	3	.....	.....	.....	2	2.18	55.4
Moscow	N. 55 46	E. 37 40	2.31 p.m.	469	143	29.37	745.9	29.88	758.9	72.7	22.6	58	6	17	2	1	2	.....	1	1	1	.....	.....	5	3.06	77.8
Ner chinsk	N. 51 19	E. 119 37	7.58 p.m.	2155?	657?	27.60	701.0	29.84	757.9	69.6	20.9	63	1	1	.....	3	.....	.....	2	1	23	.....	.....	5	.....	.....
Nikolaiev	N. 46 58	E. 31 58	2.08 p.m.	62	19	29.90	759.5	29.96	761.0	76.3	24.6	46	8	5	1	2	1	.....	.....	4	10	.....	.....	5	1.00	25.5
Nikolaievsk	N. 53 08	E. 140 45	9.23 p.m.	82	25	29.55	750.5	29.65	753.1	58.1	14.5	82	3	2	2	.....	.....	5	15	3	.....	.....	.....	4	.....	.....
Nikolsk	N. 59 32	E. 45 27	3.02 p.m.	485?	148?	29.27	743.4	29.81	757.2	75.9	24.4	50	3	11	.....	1	3	3	3	7	.....	.....	.....	6	1.40	35.5
Perm	N. 58 01	E. 56 16	3.45 p.m.	328?	100?	29.30	744.3	29.67	753.6	75.9	23.9	47	3	6	4	.....	1	5	3	6	3	.....	.....	7	0.82	20.8
Petro-Alexandrovsk	N. 41 28	E. 61 05	4.04 p.m.	328	100	29.41	747.0	29.72	754.9	91.2	32.9	.....	.....	4	4	10	5	.....	.....	5	3	.....	.....	5	.....	.....
Petrozavodsk n	N. 61 47	E. 34 23	2.18 p.m.	220?	67?	29.61	752.0	29.88	758.9	67.6	19.8	57	1	5	1	2	2	1	4	.....	1	.....	.....	5	1.23	31.2
Pinsk	N. 52 07	E. 26 06	1.44 p.m.	459?	140?	29.52	749.7	30.02	762.5	73.9	23.3	55	1	7	7	3	2	2	1	4	4	.....	.....	5	2.26	57.4
Poti	N. 42 09	E. 41 37	2.46 p.m.	26	8	29.94	760.5	29.95	760.7	75.4	24.1	71	.....	1	13	14	3	.....	.....	.....	.....	.....	.....	4	.....	.....
St. Petersburg	N. 59 56	E. 30 16	2.01 p.m.	20	6	29.85	758.3	29.91	759.7	68.7	20.4	55	2	6	17	4	1	.....	.....	1	.....	.....	.....	5	3.16	80.2
Samarkand	N. 39 39	E. 66 57	4.28 p.m.	2379?	725?	27.29	693.2	29.63	752.6	89.6	32.0	.....	1	6	1	.....	.....	.....	5	17	1	.....	.....	3	0.02	0.6
Sevastopol	N. 44 37	E. 33 31	2.14 p.m.	187	57	29.74	755.5	29.93	760.2	82.4	28.0	46	1	11	10	5	2	.....	.....	2	.....	.....	.....	4	0.04	1.0
Tashkend	N. 41 20	E. 69 18	4.37 p.m.	1607?	490?	28.06	712.6	29.64	752.8	92.5	33.6	25	.....	8	10	3	1	.....	.....	.....	9	.....	.....	3	.....	.....
Tiflis	N. 41 43	E. 44 47	2.59 p.m.	1342	409	28.47	723.2	29.81	757.2	80.8	27.1	39	3	10	2	1	5	6	2	.....	2	.....	.....	4	2.24	56.9
Viatka	N. 58 36	E. 49 41	3.19 p.m.	581?	177?	29.12	739.6	29.74	755.4	74.7	23.7	74	3	1	5	2	1	2	6	3	8	.....	.....	6	2.58	65.5
Warsaw	N. 52 13	E. 21 02	1.24 p.m.	390	119	29.59	751.6	30.02	762.5	73.2	22.9	54	4	2	7	5	2	4	2	.....	5	.....	.....	5	1.85	46.9
Yeniseisk	N. 58 27	E. 92 06	6.08 p.m.	276?	84	29.50	749.3	29.83	757.7	75.2	24.0	67	3	7	3	2	3	.....	5	1	7	.....	.....	8	3.30	83.7
Sub-series.																										
Petrowsky Acad'y	N. 55 50	E. 37 33	2.30 p.m.	558	170	29.26	743.3	29.89	759.2	71.8	22.1	52	7	9	9	2	3	.....	.....	1	.....	.....	.....	6	2.22	56.5
SCOTTISH.																										
Leith	N. 55 59	W. 3 10	11.47 a.m.	70	21	29.85	758.2	29.95	760.7	.....	.....	.....	a1	5	12	7	1	2	1	1	.....	.....	.....	8	2.36	59.9
SPANISH.																										
Bilbao	N. 43 15	W. 2 59	11.48 a.m.	52	16	30.01	762.2	30.06	763.5	77.4	25.2	65	4	17	1	.....	2	1	.....	1	5	1772	2852	6	10.21	259.0
Burgos	N. 42 20	W. 3 46	11.45 a.m.	2821	860	27.17	690.2	30.00	762.0	74.8	23.8	52	6	1	.....	3	9	1	4	7	.....	5034	8102	3	1.24	31.4
Madrid	N. 40 25	W. 3 42	11.45 a.m.	2152	656	27.85	707.5	29.94	760.5	87.3	30.7	31	.....	1	3	7	12	1	4	2	1	7095	11418	4	0.45	11.5
Santiago	N. 42 53	W. 8 28	11.26 a.m.	863	263	29.16	740.7	30.03	762.7	75.6	24.2	59	5	.....	2	11	.....	.....	1	11	1	8188	13176	5	0.44	11.1

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for July, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent.	Mean Rel. Humidity	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
SPANISH—*Sub.*	° ′	° ′																								
Havana	N. 23 08	W. 82 23	6.30 a.m.	62	19	30.00	762.0	30.01	762.2	78.0	25.5	85	.....	.....	.....	1	2	6	16	6	.....	.....	.....	4	3.26	82.7
Manila	N. 14 35	E. 120 57	8.04 p.m.	52	16	29.77	756.2	29.75	755.6	79.9	26.6	93	2	1	3	15	.....	4	2	2	2	8005	12877	8	15.15	384.7
San Fernando	N. 36 28	W. 6 13	11.35 a.m.	95	29	29.95	760.8	29.87	758.7	81.8	27.7	55	.....	.....	12	5	4	2	8	.....	.....	.....	.....	2	0	0
SWEDISH.																										
Haparanda	N. 65 47	E. 24 03	1.36 p.m.	30	9	29.73	755.1	29.81	757.2	63.0	17.2	68	5	1	3	5	11	2	1	2	1	.....	.....	6	1.45	36.9
Umea	N. 63 50	E. 20 17	1.21 p.m.	39	12	29.77	756.2	29.86	755.4	63.7	17.6	58	5	6	.....	4	11	2	2	1	.....	.....	.....	6	3.10	78.7
Hernosand	N. 62 32	E. 17 57	1.12 p.m.	46	14	29.76	755.8	29.84	757.9	65.8	18.8	57	.....	5	3	3	9	2	3	6	.....	.....	.....	5	2.53	64.2
Stockholm	N. 59 20	E. 18 04	1.12 p.m.	144	44	29.74	755.3	29.93	760.2	69.3	20.7	59	1	4	10	3	5	6	1	.....	1	.....	.....	5	2.23	56.7
Wisby	N. 57 39	E. 18 19	1.13 p.m.	52	16	29.86	758.4	29.94	760.5	66.6	19.2	64	3	1	16	5	1	1	2	2	.....	.....	.....	4	1.06	26.9
Sub-Series.																										
Upsala	N. 59 51	E. 17 37	1.10 p.m.	79	24	29.77	756.1	29.89	759.2	69.6	20.9	54	2	3	4	12	6	3	1	.....	.....	.....	.....	6	2.57	65.3
SWISS.																										
Geneva	N. 46 12	E. 6 08	0.25 p.m.	1338	408	28.54	725.0	29.91	759.6	76.8	24.9	54	22	2	.....	.....	4	1	1	1	.....	.....	.....	.....	1.90	48.2
TURKISH.																										
Constantinople	N. 41 02	E. 28 59	1.56 p.m.	246	75	29.69	754.1	29.93	760.3	78.3	25.7	51	16	1	.....	.....	1	1	.....	12	.....	.....	.....	2	0.43	11.0
Valona	N. 40 27	E. 19 27	1.18 p.m.	105	32	29.90	759.4	29.99	761.7	85.8	29.9	.....	.....	10	3	11	4	.....	.....	3	.....	.....	.....	1	0.12	3.0
Sub-Series.																										
Beirut	N. 33 54	E. 35 28	2.22 p.m.	112	34	29.63	752.6	29.71	754.6	87.1	30.6	60	.....	.....	10	21	.....	.....	.....	.....	.....	.....	.....	2	.....	.....
UNITED STATES.																										
Atlantic states.																										
Eastport	N. 44 54	W. 66 59	7.32 a.m.	53	16	29.92	760.0	29.98	761.5	59.2	15.1	89	8	.....	3	4	9	1	1	.....	5	5317	8557	4	4.51	114.6
Portland	N. 43 39	W. 70 15	7.19 a.m.	99	30	29.85	758.2	29.95	760.7	68.2	20.0	84	2	6	4	3	9	4	.....	2	1	5550	8932	4	4.70	119.4
Manchester	N. 43 13	W. 73 03	7.14 a.m.	.....	.....	29.72	754.9	.....	.....	69.5	20.8	84	2	5	3	7	7	3	1	2	1	3562	5732	7	7.14	181.4
Mt. Washington	N. 44 16	W. 71 18	7.15 a.m.	6279	1914	23.92	607.6	29.93	760.2	50.9	10.5	91	3	9	12	2	1	2	.....	2	.....	19430	31269	5	15.16	385.1
Northfield	N. 44 08	W. 72 42	7.09 a.m.	871	266	29.04	737.6	29.96	761.0	66.9	19.4	86	5	.....	1	6	10	1	1	7	.....	5438	8752	4	5.33	135.4
Boston	N. 42 21	W. 71 04	7.16 a.m.	124	38	29.86	758.4	29.98	761.5	71.3	21.8	81	2	1	8	9	7	1	.....	3	.....	7051	11347	6	3.59	91.2
Nantucket	N. 41 14	W. 70 07	7.20 a.m.	14	4	29.99	761.7	29.99	761.7	68.8	20.4	90	3	2	5	7	7	2	2	3	.....	6512	10480	5	2.10	53.3
Block Id	N. 41 10	W. 71 36	7.14 a.m.	27	8	29.97	761.2	29.99	761.7	70.3	21.3	91	1	1	3	15	4	2	1	4	.....	8501	13681	4	7.52	191.0
New Haven	N. 41 18	W. 72 56	7.08 a.m.	107	33	29.88	758.9	29.98	761.5	71.8	22.1	87	4	4	1	7	8	2	1	1	3	4400	7081	7	4.66	118.4
New London	N. 41 21	W. 72 05	7.12 a.m.	47	14	29.94	760.5	29.98	761.5	72.3	22.4	85	3	3	3	5	4	5	.....	1	7	4954	7972	7	5.47	138.9
Wood's Holl	N. 41 33	W. 70 40	7.18 a.m.	22	7	30.01	762.2	30.02	762.5	68.5	20.3	92	5	1	3	10	8	2	1	1	.....	8520	13711	5	2.93	74.4
Albany	N. 42 39	W. 73 45	7.05 a.m.	85	26	29.90	759.4	29.98	761.5	72.5	22.5	79	2	1	1	.....	15	1	.....	1	10	3690	5938	6	4.61	117.1
New York City	N. 40 43	W. 74 00	7.04 a.m.	185	56	29.81	757.2	29.99	761.7	73.8	23.2	80	3	2	3	5	8	3	.....	3	4	4472	7197	6	6.75	171.4
Philadelphia	N. 39 57	W. 75 09	7.00 a.m.	117	36	29.89	759.2	30.00	762.0	75.3	24.1	81	.....	2	7	4	7	3	5	2	1	6315	10156	6	7.14	181.4
Atlantic City	N. 39 22	W. 74 25	7.03 a.m.	13	4	30.01	762.2	30.01	762.2	73.4	23.0	91	.....	5	3	10	5	3	2	3	.....	5314	8552	3	1.95	49.5
Baltimore	N. 39 18	W. 76 37	6.54 a.m.	45	14	29.96	761.0	29.99	761.7	76.4	24.7	78	4	2	3	2	7	4	2	3	4	4072	6553	5	8.32	211.3
Washington City	N. 38 54	W. 77 03	6.52 a.m.	106	32	29.90	759.4	30.00	762.0	75.7	24.3	81	3	5	.....	7	3	2	1	1	9	3531	5682	6	3.29	83.6
Lynchburg	N. 37 25	W. 79 09	6.44 a.m.	652	199	29.35	745.5	30.01	762.2	75.2	24.0	84	.....	1	3	3	2	.....	2	.....	20	1052	1693	4	4.92	125.0
Norfolk	N. 36 51	W. 76 17	6.55 a.m.	30	9	29.99	761.7	30.00	762.0	77.0	25.0	90	1	2	1	4	10	6	6	.....	1	4892	7873	5	5.33	135.4
Hatteras	N. 35 15	W. 75 40	6.58 a.m.	11	3	30.06	763.5	30.04	763.0	78.2	25.7	87	2	1	6	9	6	5	2	.....	.....	8140	13100	5	6.18	157.0
Wilmington	N. 34 14	W. 77 57	6.48 a.m	52	16	29.98	761.5	30.01	762.2	78.4	25.8	85	2	3	7	14	1	3	.....	.....	1	4834	7779	4	6.77	172.0
Raleigh	N. 35 48	W. 78 29	6.39 a.m.	432	132	29.58	751.3	.....	.....	74.7	23.7	91	1	7	1	9	9	1	.....	1	2	2940	4731	6	6.11	155.2
Charlotte	N. 35 13	W. 80 51	6.37 a.m	808	246	29.21	741.9	30.02	762.5	74.9	23.8	90	4	1	1	6	.....	5	3	1	10	2482	3994	6	7.46	189.4
Charleston	N. 32 47	W. 79 56	6.40 a.m	52	16	30.00	762.0	30.02	762.5	79.5	26.4	84	1	1	8	7	4	1	.....	3	6	6223	10015	6	7.74	196.6
Augusta	N. 33 28	W. 81 54	6.32 a.m.	183	56	29.86	758.4	30.01	762.2	77.0	25.0	86	.....	1	1	8	5	4	3	7	2	2439	3925	5	8.83	224.3
Savannah	N. 32 05	W. 81 05	6.36 a.m.	87	27	29.96	761.0	30.02	762.5	77.4	25.2	88	3	1	6	13	6	.....	1	1	.....	4875	7845	5	4.72	119.9
Jacksonville	N. 30 20	W. 81 39	6.34 a.m.	43	13	30.02	762.5	30.03	762.7	78.3	25.7	86	.....	.....	.....	21	4	1	2	2	1	6560	10557	4	8.90	226.0
Cedar Keys	N. 29 08	W. 83 02	6.28 a.m.	22	7	30.02*d*	762.5*d*	30.00*d*	762.0*d*	81.3*d*	27.4*d*	80*d*	.....	.....	1	11	4	2	4	3	2	5660*g*	9109*g*	6*d*	9.40	238.8
Key West	N. 24 34	W. 81 49	6.33 a.m.	22	7	30.06	763.5	30.03	762.7	81.8	27.7	77	.....	.....	.....	3	2	1	17	5	3	4536	7300	7	5.52	140.2
Titusville	N. 28 40	W. 80 50	6.37 a.m.	12	4	30.07	763.8	.....	.....	78.0	25.6	91	1	1	4	9	11	2	2	1	.....	5806	9344	3	7.82	198.6
Gulf states.																										
Atlanta	N. 33 45	W. 84 23	6.23 a.m.	1129	344	28.89	733.8	30.02	762.5	72.6	22.6	88	1	.....	12	5	2	7	3	1	.....	5853	9419	6	14.11	358.1
Pensacola	N. 30 25	W. 87 13	6.11 a.m.	30	9	29.99	761.7	29.98	761.5	77.8	25.4	85	6	11	6	1	.....	1	2	2	2	5036	8105	5	4.96	126.0
Mobile	N. 30 41	W. 88 02	6.08 a.m.	35	11	30.06	763.5	30.01	762.2	76.0	24.4	90	2	10	7	6	1	.....	1	3	1	4593	7392	6	4.31	109.5
Montgomery	N. 32 23	W. 86 18	6.15 a.m.	217	66	29.80	756.9	30.00	762.0	74.2	23.4	90	4	4	4	6	2	5	2	3	1	3685	5930	5	8.56	217.4
Vicksburg	N. 32 22	W. 90 53	5.57 a.m.	222	68	29.82	757.4	30.02	762.5	74.6	23.7	92	.....	1	4	5	6	6	.....	1	8	3092	4976	4	4.11	104.4
New Orleans	N. 29 58	W. 90 04	6.00 a.m.	52	16	29.99	761.7	30.01	762.2	77.3	25.2	92	1	3	9	9	1	.....	3	1	4	3144	5060	4	7.85	199.4
Shreveport	N. 32 30	W. 93 40	5.46 a.m.	227	69	29.80	756.9	30.00	762.0	75.2	24.0	90	.....	.....	1	5	12	2	.....	.....	11	2447	3938	4	3.85	97.8
Fort Smith	N. 35 22	W. 94 24	5.43 a.m.	470	143	29.51	749.5	29.98	761.5	72.3	22.4	86	.....	.....	1	.....	.....	8	4	2	16	1923	3095	2	2.26	57.4
Little Rock	N. 34 45	W. 92 06	5.52 a.m.	309	94	29.70	754.4	29.99	761.7	74.2	23.4	88	1	4	4	9	5	2	1	.....	5	3008	4841	4	1.74	44.2
Galveston	N. 29 18	W. 94 47	5.41 a.m.	40	12	30.02	762.5	30.02	762.5	80.5	26.9	80	1	1	3	17	7	.....	1	1	.....	6344	10210	4	1.62	41.2
San Antonio	N. 29 27	W. 98 28	5.26 a.m.	781	238	29.23	742.4	29.99	761.7	74.2	23.4	92	.....	.....	.....	.....	18	8	1	4	.....	6401	10301	5	0.70	17.8
Corpus Christi	N. 27 50	W. 97 32	5.30 a.m.	18	5	30.00	762.0	29.98	761.5	78.0	25.6	88	.....	2	1	3	12	13	.....	.....	.....	8773	14118	3	0.10	2.5
Brownsville	N. 25 53	W. 97 26	5.30 a.m.	57	17	29.96	761.0	29.97	761.2	76.8	24.9	93	.....	1	.....	2	15	10	1	1	1	5370	8642	2	0.33	8.4
Rio Grande City	N. 26 23	W. 98 48	5.25 a.m.	230	70	29.81	757.2	30.00	762.0	75.4	24.1	90	.....	.....	.....	.....	9	12	8	.....	2	6664	10724	2	Inap.	Inap.
Palestine	N. 31 45	W. 95 40	5.38 a.m.	533	162	29.51	749.5	30.03	762.7	73.9	23.3	90	.....	.....	.....	2	22	2	1	1	3	5506	8861	2	2.97	75.4
Ohio val. & Tenn.																										
Chattanooga	N. 35 04	W. 85 15	6.19 a.m.	783	239	29.25	742.9	30.03	762.7	73.4	23.0	87	1	1	5	9	2	3	2	8	.....	3303	5316	6	5.30	134.6
Knoxville	N. 35 56	W. 83 58	6.24 a.m.	980	299	29.05	737.9	30.05	763.3	73.5	23.1	86	.....	2	5	5	3	2	3	7	4	3083	4962	5	2.93	74.4
Memphis	N. 35 09	W. 90 03	6.00 a.m.	320	98	29.69	754.1	30.00	762.0	74.8	23.8	88	1	6	8	6	3	6	.....	1	.....	3180	5118	4	3.30	83.8
Nashville	N. 36 10	W. 86 47	6.13 a.m.	549	167	29.45*a*	748.0*a*	30.03*a*	762.7*a*	74.0*a*	23.3*a*	86*a*	3	3	4	5	1	5	2	1	6	3195	5142	5	3.77	95.8
Louisville	N. 38 15	W. 85 45	6.17 a.m.	551	168	29.44	747.8	30.00	762.0	75.1	23.9	75	8	.....	.....	6	8	2	2	4	1	4132	6650	4	1.86	47.2
Indianapolis	N. 39 46	W. 86 10	6.16 a.m.	766	233	29.21	741.9	30.00	762.0	72.4	22.4	74	7	.....	1	7	3	3	.....	5	5	3093	4977	3	1.41	35.8
Cincinnati	N. 39 06	W. 84 30	6.22 a.m.	628	191	29.36	745.7	30.00	762.0	74.3	23.5	76	2	.....	3	2	2	11	3	2	6	3435	5528	3	1.31	33.3
Columbus	N. 39 58	W. 83 00	6.28 a.m.	812	248	29.16	740.7	30.00	762.0	72.2	22.3	78	4	2	1	4	9	3	2	4	2	3831	6165	3	1.45	36.8
Pittsburg	N. 40 32	W. 80 02	6.40 a.m.	847	258	29.11	739.4	29.96	761.0	74.0	23.3	77	5	5	5	2	6	2	2	2	2	3473	5589	4	9.51	241.6
Lake region.																										
Rochester	N. 43 08	W. 77 42	6.49 a.m.	621	189	29.33	745.0	29.98	761.5	69.4	20.8	83	6	4	1	16	3	1	.....	1	.....	6634	10676	4	1.90	48.3
Buffalo	N. 42 53	W. 78 53	6.45 a.m.	692	210	29.27	743.4	30.00	762.0	71.3	21.8	76	4	2	2	8	6	1	4	4	.....	6015	9680	4	1.98	50.3
Oswego	N. 43 29	W. 76 35	6.54 a.m.	335	102	29.60	751.8	29.96	761.0	70.0	21.1	80	1	3	6	2	7	8	.....	4	.....	5863	9435	5	1.82	46.2
Erie	N. 42 07	W. 80 05	6.40 a.m.	681	208	29.27	743.4	29.97	761.2	73.2	22.9	72	1	2	2	2	16	1	5	2	.....	5826	9376	4	0.80	20.3
Sandusky	N. 41 25	W. 82 40	6.30 a.m.	638	194	29.33	745.0	29.99	761.7	73.5	23.1	75	4	1	4	7	9	1	2	3	.....	6943	11173	4	0.59	15.0
Cleveland	N. 41 30	W. 81 42	6.33 a.m.	690	210	29.27	743.4	29.98	761.5	72.4	22.4	73	1	1	3	1	7	12	.....	4	2	4700	7564	4	0.99	25.2
Toledo	N. 41 40	W. 83 34	6.26 a.m.	651	198	29.33	745.0	30.01	762.2	70.9	21.6	76	7	2	4	8	4	2	.....	3	1	5125	8248	3	3.13	79.5
Detroit	N. 42 20	W. 83 03	6.28 a.m.	662	202	29.30	744.2	29.99	761.7	69.5	20.8	76	2	3	4	7	.....	1	.....	13	1	5963	9596	3	1.31	33.3
Alpena	N. 45 05	W. 83 30	6.26 a.m.	609	186	29.32	744.7	29.97	761.2	65.1	18.4	84	2	3	10	3	3	4	2	1	3	5372	8645	5	5.16	131.1
Escanaba	N. 45 48	W. 87 05	6.12 a.m.	608	185	29.30	744.2	29.95	760.7	65.5	18.6	80	7	5	2	10	.....	.....	.....	4	3	5408	8703	5	4.14	105.2
Grand Haven	N. 43 05	W. 86 18	6.15 a.m.	620	189	29.32	744.7	29.97	761.2	69.0	20.6	80	1	2	2	2	10	2	9	3	.....	6670	10734	5	2.94	74.7
Lansing	N. 42 45	W. 84 33	6.22 a.m.	870	265	29.09	738.9	29.98	761.5	71.9	22.2	82	2	4	2	8	6	.....	2	7	1	4408	7094	4	1.55	39.4
Mackinaw City	N. 45 47	W. 84 39	6.22 a.m.	605	184	29.30	744.2	29.95	760.7	65.1	18.4	85	3	2	2	7	4	5	2	1	5	6160	9913	5	2.38	60.5
Marquette	N. 46 34	W. 87 24	6.11 a.m.	672	205	29.22	742.2	29.94	760.5	65.0	18.3	80	.....	13	8	2	3	2	1	2	.....	5015	8071	5	2.62	66.6
Port Huron	N. 43 00	W. 82 26	6.30 a.m	639	195	29.30	744.2	29.98	761.5	68.8	20.4	82	5	3	4	8	4	1	2	4	.....	7096	11420	3	1.47	37.1
Chicago	N. 41 52	W. 87 38	6.10 a.m.	715	218	29.22	742.2	29.96	761.0	71.8	22.1	73	2	.....	4	11	3	4	1	6	.....	7161	11524	3	1.05	26.7
Green Bay	N. 45 00	W. 87 30	6.08 a.m.	616	188	29.31	744.5	29.97	761.2	68.6	20.3	78	2	.....	6	13	2	1	.....	4	3	4859	7820	4	4.31	109.5
Milwaukee	N. 43 02	W. 87 54	6.09 a.m.	697	212	29.24	742.7	29.98	761.5	68.4	20.2	79	6	1	6	5	4	3	1	3	2	5870	9447	4	5.21	132.3
Duluth	N. 46 48	W. 92 06	5.52 a.m.	672	205	29.24	742.7	29.96	761.0	61.9	16.6	85	2	9	2	4	1	1	.....	11	1	4628	7448	5	4.17	105.9
Upper Miss. val.																										
Saint Paul	N. 44 58	W. 93 03	5.48 a.m.	831	253	29.08	738.6	29.96	761.0	65.7	18.7	86	1	5	1	2	.....	2	6	.....	14	2256	3631	6	3.89	98.8
La Crosse	N. 43 49	W. 91 15	5.55 a.m.	744	227	29.22	742.2	30.00	762.0	66.9	19.4	86	4	4	2	3	14	2	.....	1	1	4928	7931	5	1.77	45.0
Davenport	N. 41 30	W. 90 38	5.58 a.m.	615	187	29.34	745.2	29.98	761.5	70.6	21.4	76	3	3	3	7	4	.....	6	5	.....	4606	7412	3	3.09	78.5
Des Moines	N. 41 35	W. 93 37	5.46 a.m.	866	264	29.09	738.9	29.98	761.5	67.6	19.8	79	4	1	2	3	2	.....	.....	4	15	3264	5253	3	1.94	49.3
Dubuque	N. 42 30	W. 90 44	5.57 a.m.	665	203	29.29	744.0	29.98	761.5	72.0	22.2	78	5	3	.....	5	5	3	1	1	8	2790	4490	4	2.44	62.0
Keokuk	N. 40 22	W. 91 26	5.54 a.m.	618	188	29.33	745.0	29.97	761.2	70.9	21.6	76	3	3	4	2	5	5	4	1	4	4721	7598	2	1.57	39.9
Cairo	N. 37 00	W. 89 10	6.04 a.m.	359	109	29.64	752.8	30.00	762.0	73.9	23.3	87	7	1	3	9	4	.....	1	3	3	3906	6286	3	1.42	36.1

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea		Result of Simultaneous Observations for July, 1887.																				Average Cloudiness.	Total Precipitation.	
						Mean Barometer.				Mean Temperature.		Mean Rel. Humidity.	Wind.															
						Actual.		Reduced.					Directions.									Total Movement.						
				Feet.	Metr's	Inch.	Mill.	Inch.	Mill.	Fah.	Cent.		N	NW	W	SW	S	SE	E	NE	C	Miles	Kil.		0–10	Inch.	Mill.
U. STATES—Con.																												
Upper Miss. val.																												
Springfield	N. 39 48	W. 89 39	6.02 a.m.	644	196	29.34	745.2	30.00	762.0	70.8	21.6	83	3	4	3	5	8	1	5	1	1	4535	7298		3	1.01	25.7
Saint Louis	N. 38 38	W. 90 12	5.59 a.m.	571	174	29.41	747.0	29.99	761.7	77.4	25.2	68	6	3	4	6	5	3	.....	4	.....	4488	7223		3	2.74	69.6
Missouri valley.																												
Leavenworth	N. 39 19	W. 94 57	5.40 a.m.	842	257	29.13	739.9	29.99	761.7	70.4	21.3	82	6	6	1	.....	12	2	.....	.....	4	3729	6001		3	1.36	34.5
Omaha	N. 41 16	W. 95 56	5.36 a.m.	1113	339	28.85	732.8	30.01	762.2	68.6	20.3	81	10	2	1	2	8	4	.....	.....	4	5065	8151		4	2.02	51.3
Fort Sully	N. 44 39	W. 100 39	5.17 a.m.	1600	488	28.27	718.0	29.94	760.5	65.0	18.3	82	5	5	4	.....	3	1	5	2	6	7175	11547		5	3.04	77.2
Huron	N. 44 21	W. 98 09	5.28 a.m.	1307	398	28.59	726.2	29.96	761.0	62.3	16.8	83	1	9	2	2	.....	15	.....	2	.....	7269	11698		4	4.96	126.0
Yankton	N. 42 54	W. 97 28	5.30 a.m.	1234	376	28.66	728.0	29.95	760.7	65.0	18.3	88	1	8	2	4	7	1	2	1	5	4775	7684		4	5.00	127.0
Lamar	N. 37 32	W. 94 15	5.43 a.m.	1028	313	28.96	735.6	30.01	762.2	69.2	20.7	80	2	1	4	11	5	2	4	2	.....	4784	7699		2	2.87	72.9
Valentine	N. 42 50	W. 100 32	5.18 a.m.	2614	797	27.32	693.9	29.97	761.5	63.1	17.3	79	2	8	2	2	7	5	2	3	.....	7086	11404		4	2.53	64.3
Moorhead	N. 46 52	W. 96 44	5.33 a.m.	926	282	28.94	735.1	29.93	760.2	60.2	15.7	91	8	5	1	1	7	4	2	2	1	6244	10048		5	6.40	162.6
Saint Vincent	N. 48 56	W. 97 14	5.31 a.m.	804	245	29.10	739.1	29.98	761.5	59.6	15.3	89	7	4	4	1	5	.....	2	4	4	3880	6244		4	4.28	108.7
Bismarck	N. 46 47	W. 100 38	5.16 a.m.	1694	516	28.19	716.0	29.97	761.2	60.4	15.8	86	1	3	2	2	1	3	4	2	13	4856	7815		5	4.49	114.0
Fort Buford	N. 48 00	W. 103 56	5.04 a.m.	1854	565	27.98	710.7	29.94	760.5	57.8	14.3	82	4	2	4	2	2	2	4	7	4	6111	9834		6	2.00	50.8
Fort Totten	N. 47 57	W. 98 57	5.24 a.m.	1487	453	28.38	720.8	29.98	761.5	59.5	15.3	86	9	7	2	4	2	2	4	1	.....	7816	12578		4	4.62	117.3
Rocky Mount. reg.																												
Ft. Assinnaboine	N. 48 32	W. 109 42	4.41 a.m.	2690	802	27.22	691.4	30.00	762.0	57.4	14.1	67	1	.....	5	6	5	2	8	4	.....	6653	10707		4	1.16	29.5
Fort Custer	N. 45 42	W. 107 34	4.50 a.m.	3040	927	26.89	683.0	29.98	761.5	58.7	14.8	71	5	.....	1	5	5	10	3	1	1	5076	8169		3	0.67	17.0
Fort Maginnis	N. 47 12	W. 109 10	4.44 a.m.	4320	1317	25.66	651.8	30.01	762.2	56.5	13.6	66	2	14	5	.....	.....	5	3	1	1	6670	10734		2	2.41	61.2
Helena	N. 46 34	W. 112 04	4.32 a.m.	4069	1240	25.93	658.6	30.01	762.2	56.5	13.6	68	.....	2	2	27	.....	.....	.....	.....	.....	5258	8462		2	0.27	6.9
Poplar River	N. 48 08	W. 105 10	5.00 a.m.	2002	610	27.88	708.1	29.97	761.2	56.7	13.7	85	9	1	8	.....	.....	.....	6	4	3	4879	7852		4	2.10	53.3
Deadwood	N. 44 23	W. 103 43	5.05 a.m.	4600	1402	25.48	647.2	30.04	763.0	58.3	14.6	82	.....	.....	11	12	4	.....	.....	1	3	3349	5390		4	3.70	94.0
Cheyenne	N. 41 08	W. 104 48	5.01 a.m.	6105	1861	24.14	613.1	29.99	761.7	54.5	12.5	76	10	9	5	5	1	.....	.....	.....	1	6359	10234		4	2.71	68.8
North Platte	N. 41 08	W. 100 45	5.17 a.m.	2841	866	27.12	688.8	29.98	761.5	63.6	17.6	83	5	4	3	2	4	8	2	3	.....	7103	11431		2	3.05	77.5
Pike's Peak	N. 38 50	W. 105 02	5.01 a.m.	14134	4308	18.08	459.2	30.01	762.2	35.9	2.2	70	4	7	9	5	.....	1	.....	5	.....	10204	16421		2	6.52	165.6
Concordia	N. 39 35	W. 97 41	5.29 a.m.	1384	422	28.55	725.2	29.97	761.2	67.9	19.9	78	3	2	1	2	6	3	2	1	11	4951	7968		4	2.36	59.9
Denver	N. 39 45	W. 105 00	5.00 a.m.	5294	1614	24.86	631.4	29.99	761.7	57.7	14.3	70	3	1	.....	5	18	.....	1	.....	3	5038	8108		2	2.49	63.2
W. Las Animas	N. 38 04	W. 103 12	5.07 a.m.	3899	1188	26.11	663.2	29.94	760.5	63.2	17.3	75	2	2	9	5	3	2	4	2	2	5066	8153		3	1.09	27.7
Dodge City	N. 37 45	W. 100 00	5.20 a.m.	2523	769	27.45	697.2	30.01	762.2	68.0	20.0	79	1	.....	1	1	5	9	5	9	.....	6836	11001		3	1.00	25.4
Fort Elliott	N. 35 30	W. 100 21	5.19 a.m.	2700	823	27.30	693.4	29.93	760.2	68.8	20.4	77	3	4	3	2	4	7	1	.....	7	7151	11508		2	0.92	23.4
Fort Sill	N. 34 40	W. 98 23	5.27 a.m.	1200	366	28.78	731.0	29.98	761.5	73.5	23.1	82	7	.....	.....	2	8	9	1	3	.....	5781	9303		2	3.11	79.0
Abilene	N. 32 14	W. 99 45	5.21 a.m.	1748	533	28.22	716.8	29.96	761.0	74.9	23.8	70	1	1	2	18	6	2	.....	1	.....	7448	11986		3	2.71	68.8
Fort Davis	N. 30 38	W. 103 56	5.04 a.m.	4928	1502	25.26	641.6	29.98	761.5	67.4	19.7	62	3	3	7	9	1	.....	.....	2	6	4189	6741		3	3.74	95.0
Fort Stanton	N. 33 30	W. 105 26	4.58 a.m.	6150	1875	24.11	612.4	29.94	760.5	53.6	12.0	82	6	9	7	1	.....	1	1	6	.....	3062	4928		3	2.59	65.8
Plateau region.																												
Keeler	N. 36 35	W. 117 50	4.09 a.m.	3622	1104	26 32	668.5	29.84	757.9	72.8	22.7	37	7	.....	.....	1	.....	2	10	4	7	4624	7441		2	0.52	13.2
Santa Fé	N. 35 41	W. 105 57	4.56 a.m.	7026	2141	23.42	594.9	30.02	762.5	58.4	14.7	63	1	.....	.....	1	1	8	4	6	10	3371	5425		2	2.24	56.9
Fort Apache	N. 33 48	W. 109 57	4.40 a.m.	5020	1835	25.14	638.5	30.01	762.2	59.3	15.2	79	.....	.....	1	.....	.....	1	25	.....	4	4552	7326		4	3.29	83.6
Fort Grant	N. 32 39	W. 109 57	4.40 a.m.	4860	1482	25.27	641.8	29.96	761.0	66.2	19.0	47	5	8	1	4	.....	2	3	4	4	3717	5982		4	9.00	228.6
Prescott	N. 34 33	W. 112 28	4.30 a.m.	5389	1643	24.82	630.4	29.96	761.0	60.3	15.7	79	1	.....	2	14	2	1	1	1	9	4324	6959		3	2.64	67.1
Yuma	N. 32 45	W. 114 36	4.22 a.m.	141	43	29.69	754.1	29.80	756.9	79.3	26.3	64	2	1	.....	4	9	9	3	3	.....	5629	9059		2	Inap.	Inap.
El Paso	N. 31 47	W. 106 30	4.54 a.m.	3764	1147	26.30	668.0	29.93	760 2	69.5	20.8	68	2	5	2	3	.....	.....	4	2	13	2460	3959		3	0.73	18.5
Fort Bridger	N. 41 28	W. 110 30	4.38 a.m.	6643	2025	23.64	600.4	30.01	762.2	52.2	11.2	59	2	5	8	8	.....	.....	1	6	1	4561	7340		4	0.58	14.7
Salt Lake City	N. 40 46	W. 111 54	4.33 a.m.	4348	1325	25.66	651 8	29.91	759.7	65.5	18.6	57	4	3	.....	.....	2	11	2	3	6	3800	6115		3	1.23	31.2
Frisco	N. 38 25	W. 113 16	4.27 a.m.	6406	1950	23.82	605.0	29.83	757.7	66.3	19.1	36	6	5	8	11	1	.....	.....	.....	.....	7412	11928		2	1.34	34.0
Winnemucca	N. 40 58	W. 117 43	4.09 a.m.	4358	1328	25.66	651.8	29.95	760 7	55.4	13.0	45	.....	1	.....	14	3	2	2	9	.....	5348	8607		1	0.09	2.3
Montrose	N. 38 30	W. 107 56	4.48 a.m.	5780	1762	24.41	620.0	29.95	760.7	58.5	14.7	56	2	3	.....	3	8	9	4	.....	2	4646	7477		2	1.34	34.0
Fort Bidwell	N. 41 53	W. 120 11	3.59 a.m.	4615	1415	25.46	646.7	30.05	763.3	54.7	12.6	59	5	4	19	1	1	.....	1	.....	.....	4777	7688		1	0.18	4.6
Boisé City	N. 43 37	W. 116 08	4.16 a.m.	2750	838	27.19	690.6	29.98	761.5	58.4	14.7	61	.....	2	3	1	1	5	1	.....	18	1720	2768		2	0.12	3.0
Spokane Falls	N. 46 28	W. 117 05	4.11 a.m.	1909	582	28.01	711.4	30.01	762.2	54.3	12.4	74	.....	.....	.....	7	.....	2	1	5	16	1860	2993		2	1.41	35.8
Walla Walla	N. 46 03	W. 118 18	4.07 a.m.	1018	310	28.96	735.6	30.03	762.7	62.5	16.9	52	.....	1	.....	11	11	2	1	.....	5	3701	5956		2	0.03	0.8
Pacific coast reg'n.																												
Astoria	N. 46 11	W. 123 42	3.45 a.m.	20	6	30.11	764.8	.....	.....	53.5	11.9	81	.....	.....	7	20	1	3	.....	.....	.....	5264	8471		8	0.72	18.3
Fort Canby	N. 46 16	W. 124 04	3.44 a.m.	179	55	29.94	760.5	30.14	765.5	52.3	11.3	92	13	6	3	.....	7	.....	.....	1	1	5301	8531		5	0.33	8.4
Olympia	N. 47 03	W. 122 53	3.49 a.m.	36	11	30.08	764.0	30.12	765.0	49.5	9.7	94	4	.....	.....	.....	6	.....	.....	.....	21	1511	2433		4	0.74	18.8
Port Angeles	N. 48 07	W. 123 06	3.46 a.m.	14	4	30.08	764.0	30.10	764.5	47.8	8.8	95	.....	.....	4	3	22	1	.....	.....	1	5554	8938		4	0.56	14.2
Tatoosh Id	N. 48 23	W. 124 44	3.41 a.m.	86	26	30.01	762.2	30.11	764.8	50.8	10.4	97	.....	.....	2	19	4	5	.....	.....	1	6025	9696		7	1.24	31.5
Portland	N. 45 32	W. 122 43	3.49 a.m.	88	27	30.02	762.5	30.11	764.8	56.2	13.4	83	5	3	.....	1	1	3	.....	.....	18	4191	6745		4	0.03	0.8
Roseburg	N. 43 13	W. 123 20	3.47 a.m.	523	159	29.54	750.3	30.10	764.5	52.2	11.2	87	.....	5	1	2	.....	.....	2	9	12	3606	5803		2	0.07	1.8
Eureka	N. 40 52	W. 123 58	3.43 a.m.	50	18	30.02	762.5	.....	.....	49.6	9.8	93	5	6	4	1	8	5	1	.....	1	4154	6685		4	0.06	1.5
Red Bluff	N. 40 10	W. 122 15	3.51 a.m.	342	104	29.57	751.1	29.90	759.4	69.5	20.8	50	6	2	2	1	18	2	.....	.....	.....	4196	6753		1	Inap.	Inap.
Sacramento	N. 38 35	W. 121 30	3.54 a.m.	64	20	29.84	757.9	29.89	759.2	56.0	13.3	80	.....	.....	.....	.....	8	23	.....	.....	.....	5589	8994		0	0.00	0.0
San Francisco	N. 37 48	W. 122 26	3.50 a.m.	60	18	29.93	760.2	29.98	761.5	51.6	10.9	92	.....	.....	14	17	.....	.....	.....	.....	.....	9708	15623		8	Inap.	Inap.
Los Angeles	N. 34 03	W. 118 15	4.07 a.m.	339	103	29.61	752.1	29.94	760.5	60.3	15.7	95	.....	.....	20	5	3	.....	.....	2	1	3974	6395		6	0.07	1.8
San Diego	N. 32 43	W. 117 10	4.12 a.m.	66	20	29.90	759.4	29.94	760.5	63.4	17.4	88	10	2	4	7	.....	.....	.....	1	7	4884	7860		9	0.01	0.3
Sitka	N. 57 03	W. 135 19	2.59 a.m.	63	19	30.00	762.0	30.10	764.5	49.6	9.8	90	1	2	3	9	1	3	3	.....	9	5041	8112		8	7.62	193.6
Sub-Series.																												
Bogota	N. 4 36	W. 74 14	7.11 a.m.	8655	2638	22.05	560.0	.....	.....	51.8	11.0	78	3	.....	.....	5	5	.....	1	.....	17	2755	4433		5	1.82	46.1
Rivas	N. 11 26	W. 85 47	6.17 a.m.	150	46	29.92	760.0	30.08	764.0	76.5	24.7	80	4	4	.....	2	.....	3	2	16	.....	.....	.....		1	4.10	104.1
Vera Cruz	N. 19 11	W. 96 09	5.35 a.m.	16	5	29.97	761.2	29.99	761.7	.....	.....	.....	1	8	8	1	.....	.....	3	.....	10	.....	.....		2	.....	.....
RETARDED DATA FOR CAMPO.																												
January, 1886	N. 39 02	W. 6 59	11.32 a.m.	945	288	28.99	736.4	29.99	761.7	49.8	9.9	72	5	.....	8	1	9	1	2	5	.....	.....	.....		6	2.92	74.2
RETARDED DATA FOR ANGRA.																												
January, 1886	N. 38 39	W. 27 14	10.11 a.m.	144	44	30.18	766.5	30.32	770.1	59.5	15.3	86	3	.....	1	2	5	7	4	8	1	.....	.....		4	1.32	33.5
February, 1886	"	"	"	"	"	30.02	762.5	30.15	765.8	57.4	14.1	80	1	3	4	3	3	3	7	4	.....	.....	.....		5	2.62	66.5
March, 1886	"	"	"	"	"	29.80	757.0	29.94	760.5	60.6	15.9	85	2	4	11	6	5	2	.....	.....	1	.....	.....		6	4.23	107.5
April, 1886	"	"	"	"	"	29.89	759.3	30.03	762 7	61.0	16.1	83	5	4	5	2	1	8	4	1	.....	.....	.....		5	4.57	116.0
May, 1886	"	"	"	"	"	30.02	762 4	30.15	765.8	62.6	17.0	84	4	3	4	6	2	3	3	6	.....	.....	.....		4	4.06	103.0
June, 1886	"	"	"	"	"	30.07	763.7	30.20	767.1	66.2	19.0	85	5	3	9	3	.....	6	2	2	.....	.....	.....		5	3.21	81.5
July, 1886	"	"	"	"	"	30.15	765.9	30.28	769.1	72.5	22.5	84	3	8	7	.....	1	5	6	1	.....	.....	.....		3	0.22	5.5
RETARDED DATA FOR SAN SALVADOR.																												
February, 1887	S. 6 17	E. 14 53	1.00 p.m.	1834	559	28.03	712.0	29.78	756.4	79.9	26.6	71	.....	.....	6	2	.....	.....	1	.....	19	.....	.....		7	1.82	46.2
RETARDED DATA FOR GRATZ, AUSTRO-HUNGARY.																												
January, 1887	N. 47 04	E. 15 28	1.02 p.m.	1171	357	28.88	733.6	30.20	767.1	32.4	0.2	71	.....	2	1	7	15	2	1	1	2	.....	.....		4	0.39	10.0
February, 1887	"	"	"	"	"	29.05	737.9	30.37	771.4	33.6	0.9	65	.....	3	.....	9	9	3	1	2	1	.....	.....		5	0.11	2.7
March, 1887	"	"	"	"	"	28.76	730.5	29.99	761.7	43.2	6.2	59	.....	5	2	8	6	7	1	2	.....	.....	.....		5	3.64	92.5

OCEAN SQUARE DATA FOR JULY, 1887.

Location of Centre of each Square.	Barometer.		Temperature.		Wind Frequency.										Wind force 0–10.
	Inch.	Mill.	Fah.	Cent.	N.	NW.	W.	SW.	S.	SE.	E.	NE.	Calm.	Blank.	
N. 12.5° W. 37.5°	29.98	761.5									17	14			3.4
12.5 42.5	29.98	761.5			2						20	9			3.3
12.5 47.5	29.98	761.5								3	21	7			3.1
12.5 52.5	29.97	761.2								7	22	2			3.3
17.5 37.5	30.06	763.5									25	6			3.6
17.5 42.5	30.06	763.5									29	2			3.6
17.5 47.5	30.06	763.5								3	27	1			3.8
17.5 52.5	30.04	763.0								6	24	1			3.8
17.5 57.5	30.03	762.7								11	20				3.7
22.5 27.5	30.11	764.8									6	25			3.8
22.5 32.5	30.12	765.0									14	17			3.8
22.5 37.5	30.14	765.5									25	6			3.8
22.5 42.5	30.14	765.5								2	28	1			3.7
22.5 47.5	30.14	765.5								8	20	3			3.9
22.5 52.5	30.12	765.0								10	19	2			4.0
22.5 57.5	30.11	764.8								11	18	1	1		3.8
22.5 62.5	30.08	764.0							3	12	12	3	1		3.8
27.5 22.5	30.16	766.1			3	1					2	25			4.0
27.5 27.5	30.19	766.8			3						8	20			3.6
27.5 32.5	30.22	767.6			1						13	17			3.6
27.5 37.5	30.23	767.8								3	16	12			3.6
27.5 42.5	30.23	767.8			2	1			1	7	20				3.4
27.5 47.5	30.22	767.6			3				4	10	13	1			3.6
27.5 52.5	30.20	767.1			2				6	8	13	2			3.7
27.5 57.5	30.19	766.8						1	8	7	14	1			3.8
27.5 62.5	30.16	766.1					3	2	8	12	6				3.5
32.5 27.5	30.25	768.3			4	4	2	1		5	5	9	1		3.5
32.5 32.5	30.27	768.8			8	4	1		2	3	6	6	1		3.5
32.5 37.5	30.28	769.1			6	2		4	1	8	7	3			3.8
32.5 42.5	30.27	768.8			4	5	1	4	5	6	2	2		2	3.8
32.5 47.5	30.25	768.3			4	4	2	5	6	5	2		1	2	3.8
32.5 52.5	30.22	767.6			2	3	2	6	8	4	1	1	2	2	3.5
32.5 57.5	30.20	767.1			3	1	4	8	5	6		2		2	4.0
37.5 32.5	30.27	768.8				4	9	4	4	4	4	2			3.5
37.5 37.5	30.24	768.1			1	4	10	6	3	5	2				3.9
37.5 42.5	30.22	767.6			1	4	11	8	5	2					4.3
37.5 47.5	30.19	766.8			2	4	11	6	8						4.5
37.5 52.5	30.16	766.1			1	5	5	14	4	1				1	4.5
37.5 57.5	30.13	765.3			2	6	6	12	3	2					4.5
42.5 22.5	30.21	767.3			1	4	9	8			2	7			4.3
42.5 27.5	30.20	767.1			1	4	5	9	4	4	3	1			3.9
42.5 32.5	30.17	766.3			1	3	8	8	7	3	1				4.3
42.5 37.5	30.13	765.3			1	5	10	8	6	1					4.5
42.5 42.5	30.09	764.3			1	9	4	8	6	2		1			4.6
42.5 47.5	30.07	763.8			1	5	10	10	3		1	1			4.4
42.5 52.5	30.03	762.7			2	3	6	12	2	2	1	2	1		4.1
42.5 57.5	30.00	762.0			2	3	5	12	2	2		3	2		4.1
47.5 17.5	30.11	764.8			1	5	10	9	1		2	3			4.5
47.5 22.5	30.08	764.0			2	3	8	13		3	1		1		4.5
47.5 27.5	30.06	763.5				7	5	13	2	3			1		4.4
47.5 32.5	30.03	762.7			1	7	3	13	5		2				4.8
47.5 37.5	29.99	761.7			2	8	4	7	8	1		1			4.7
47.5 42.5	29.96	761.0			1	10	6	3	7	1		1		2	4.5
47.5 47.5	29.94	760.5			3	5	8	4	7	1	1	1			4.0
52.5 17.5	29.96	761.0			1	1	16	12	1						4.5
52.5 22.5	29.93	760.2				7	5	17	1	1					4.5
52.5 27.5	29.90	759.4			1	6	6	16	2						5.0
52.5 32.5	29.87	758.7			2	7	2	15	5						4.8
52.5 37.5	29.85	758.2			3	7	5	11	4	1					4.5
52.5 42.5	29.84	757.9			2	4	11	7	5	1				1	4.7
52.5 47.5	29.81	757.2			4	6	4	10	3	3			1		4.4
57.5 12.5	29.81	757.2			1	4	11	7	7	1					4.9
57.5 17.5	29.76	755.9				4	13	6	1	4	1	1	1		4.7
57.5 22.5	29.75	755.6			1	6	8	6	4	4		2			4.9
57.5 27.5	29.74	755.4			2	4	6	5	5	3	2	3	1		4.6
57.5 32.5	29.75	755.6			2	3	3	9	4	3	2	5			4.8
57.5 37.5	29.75	755.6			5	6	1	6	4	2	1	4	1	1	4.8
57.5 42.5	29.76	755.9			7	2	4	5	4	2	1	4	1	1	4.4
57.5 47.5	29.78	756.4			6	5	5	1	4	4	1	4	1		4.3

OCEAN SQUARES.—The table of ocean square data shows (1) the location of the centres of squares whose sides extend 5° each in latitude and longitude, (2) the monthly mean pressure of the air, and the mean force and total frequency of the wind at noon, Greenwich mean time, computed for the centre of each square from daily readings as obtained by interpolation between the isobars of the daily international simultaneous weather maps.

REVIEW.

INTERNATIONAL METEOROLOGY FOR JULY, 1887.

[*Pressure expressed in inches and millimetres; temperature in degrees, Fahrenheit; wind-force by scale of* 0–10.]

The following refers to chart ii for the month of July, 1887. This chart continues the series of international charts begun in January, 1877, and exhibits the mean pressure and the prevailing wind-directions over the northern hemisphere, as determined from simultaneous observations taken once each day at 7 a. m., 75th meridian, or noon Greenwich, mean time:

The area of lowest mean pressure occupies the north-central portion of British India, where values falling to 29.38 (746.2) at Lahore are shown. The isobar of 29.70 (754.4) which is traced over the lower valley of the Amoor River apparently forms the western boundary of an area of low pressure which extends eastward over the Sea of Okhotsk. Over the north Atlantic Ocean from off the southern extremity of Greenland to the northwestern part of Scandinavia the mean pressure ranges below 29.80 (756.9), while over the southwestern portion of the United States the isobar of 29.90 (759.4) encloses an area of relatively low mean pressure.

The area of highest mean pressure is located over the north Atlantic Ocean between the twentieth and sixtieth meridians and the twenty-sixth and forty-third parallels, with readings rising to 30.28 (769.1) to the southwestward of the Azores. Along the Pacific coast of North America from the forty-third to the fifty-seventh parallels the pressure is above 30.10 (764.5).

Over the North American continent the mean pressure is highest on the middle Pacific coast, where it rises to 30.12 (765.0) at Olympia, Washington T., and lowest in the lower valley of the Colorado River, where it falls to 29.80 (756.9) at Yuma, Ariz.; elsewhere the pressure ranges between 29.90 (759.4) and 30.00 (762.0), except over the southeastern portion of the United States, where it is somewhat above 30.00 (762.0), and over the more northern parts of the Canadian Maritime Provinces, where it is below 29.90 (759.4). Over the north Atlantic Ocean there is a gradient of .54 of an inch between the parallels of fifty-eight and thirty-two degrees of north latitude. Over Europe the pressure is lowest in east-central Russia, where a mean reading of 29.72 (754.9) is shown at Kasan, and over the northwest portion of Norway, where it falls to 29.78 (756.4) at Brono; it is highest over central and west-central Europe, where values range from 30.01 (762.2) over Germany and Austro-Hungary to 30.13 (765.3) over the extreme western portion of France. Over Asia there is a gradient of about .50 of an inch from the area of low pressure central over British India northward to Siberia, and eastward to the Japanese Islands.

Compared with the chart for the preceding month an increase in mean pressure is shown over the North American continent from the Mississippi valley to the Pacific coast, the excess being most marked in the lower Colorado valley, where it amounts to .18 of an inch at Yuma, Ariz. There has also been an increase along the south Atlantic and Gulf coasts. To the eastward of the Mississippi, north of the thirty-fifth parallel, the pressure is lower than in June, the deficiency being greatest in New England and the Canadian Maritime Provinces, where it exceeds .05 of an inch. Over the north Atlantic Ocean the area of low pressure central in June over and off the southern extremity of Newfoundland has extended northeastward to the northwest coast of Norway, with slight changes in included values, while the area of maximum pressure central in June over and south of the British Isles is charted for July over and southwest of the Azores. Over the British Isles there has been a decrease in pressure of about .20 of an inch. Over Scandinavia the average decrease amounts to about .10 of an inch; over southern Europe slight changes have occurred; over east-central Russia there has been a decrease, while over northern Russia the mean pressure is somewhat higher than in June. Over Asia a decrease of .10 to .16 of an inch is shown over Siberia and the Sea of Okhotsk; over the balance of the continent the changes in mean pressure have been unimportant.

In the United States the mean pressure for the month corresponded closely with the July normal, the greatest deficiency being .03 and the maximum excess .06 of an inch. In Canada the pressure was slightly above the normal, except at Toronto and Kingston. Over the north Atlantic Ocean the mean pressure apparently averaged slightly above the July normal. In Europe the pressure was everywhere above the normal, the greatest excess, .10 of an inch, occurring over Norway. In British India the barometer averaged slightly below the normal.

Over a large part of the United States the mean temperature for the month was the highest that has occurred since the establishment of Signal Service stations; the region of greatest excess being the lower lake region and portions of the Ohio Valley and middle Atlantic states, where the temperature averaged from 4° to 7° above the normal. In Canada the mean temperature was from 2° to 6° above the normal, except in the Gulf of Saint Lawrence and British Columbia, where it was slightly cooler than the average July. Over the north Atlantic Ocean the mean temperature was apparently somewhat below the normal, except in the vicinity of the West Indies, where it was slightly above the average for ten years. Over the British Isles there was an excess in temperature of about 4°. Over the continen of Europe the temperature was above the normal, except in Norway, Russia, and Spain, the greatest excess, 3.6, occurring in Germany, and the largest deficiency, 5.4, being shown in Russia. Over British India the mean temperature averaged slightly below the normal.

The accompanying table shows the deviations in pressure and temperature at isolated stations during the month of July, 1887, as compared with the means for ten years:

Stations.	Mean pressure.			Mean temperature.		
	July mean of 10 (1877–'86) years.	July, 1887.	Departure.	July mean of 10 (1877–'86) years.	July, 1886.	Departure.
				°	°	°
Archangel, Russia	29.79	29.89	+ 0.10	65.7	68.9	+ 3.2
Athens, Greece	29.86	29.88	+ 0.02	86.6	88.7	+ 2.1
Beirut, Turkey in Asia	29.73	29.71	− 0.02	85.9	87.1	+ 1.2
Barnaul, Siberia	29.66	29.67	+ 0.01	72.7	73.8	+ 1.1
Bridgetown, Barbadoes	.....	29.95	.....	.....	83.9	.....
Ekaterinburg, Russia	29.73	29.73	normal.	70.2	67.3	− 2.9
Funchal, Madeira Islands	30.13	30.15	+ 0.02	72.7	73.9	+ 1.2
Freetown, Sierre Leone	29.86	29.79	− 0.07	82.8	82.6	− 0.2
Gibraltar	30.01	29.93	− 0.08	77.3	78.9	+ 1.6
Havana, Cuba, W. I*	30.00	30.01	+ 0.01	77.5	78.0	+ 0.5
Malta, Mediterranean Sea	29.94	29.98	+ 0.04	82.5	81.9	− 0.6
Melbourne, New South Wales	30.14	30.03	− 0.11	47.1	48.7	+ 1.6
Mauritius, Indian Ocean	30.12	30.11	− 0.01	71.6	70.8	− 0.8
Nassau, Bahamas, W. I.	30.01	30.05	+ 0.04	84.9	85.2	+ 0.3
Nikolaievsk-on-the-Amoor, Asia	.....	29.65	.....	.....	58.1	.....
Ponta Delgada, Azores	30.27	30.26	− 0.01	74.7	72.5	− 2.2
Swanbister, Orkneys	29.84	29.88	+ 0.04	56.4	57.2	+ 0.8
Stykkisholm, Iceland	29.79	29.80	+ 0.01	51.3	47.7	− 3.6
Thorshavn, Färöe Islands	29.81	29.81	normal.	53.6	52.2	− 1.4
Tiflis, Russia	29.76	29.81	+ 0.05	88.1	80.8	− 7.3
Tokio, Japan	.....	29.87	.....	.....	72.8	.....
Yeniseisk, Siberia	29.73	29.83	+ 0.10	70.0	75.2	+ 7.2
Zi-Ka-Wei, China	29.70	29.69	− 0.01	77.6	77.7	+ 0.1

* Means for nine years only.

The following table shows the mean pressure and mean temperature for July, 1887, in the several countries of the eastern hemisphere, and the departures as compared with means determined from observations taken during the last ten years:

Countries.	Mean pressure.			Mean temperature.		
	July mean of 10 (1877–'86) years.	July, 1887.	Departure.	July mean of 10 (1877–'86) years.	July, 1887.	Departure.
				°	°	°
Austro-Hungary	29.92	30.02	+ 0.10	74.9	77.9	+ 3.0
British Isles	29.95	30.03	+ 0.08	63.8	67.7	+ 3.9
Denmark	29.89	29.98	+ 0.09	63.9	65.0	+ 1.1
France	30.03	30.06	+ 0.03	74.1	77.1	+ 3.0
Germany	29.96	30.05	+ 0.09	69.6	73.2	+ 3.6
India	29.50	29.49	− 0.01	84.2	83.4	− 0.8
Italy	29.95	30.00	+ 0.05	81.5	82.8	+ 1.3
Japan	.....	29.86	.....	.....	72.6	.....
Norway	29.82	29.84	+ 0.02	62.4	59.0	− 3.4
Russia	29.82	29.87	+ 0.05	75.4	70.0	− 5.4
Spain*	30.02	30.03	+ 0.01	78.7	76.0	− 2.7
Sweden	29.84	29.88	+ 0.04	64.9	66.5	+ 1.9

* Means for nine years only.

In the United States the monthly precipitation was generally in excess of the average in the Atlantic coast and east Gulf states, in the extreme northwest, and in portions of the middle and southern Rocky Mountain districts; in the lake region, central valleys, and west Gulf states it was below the normal. A destructive freshet occurred in the Savannah River towards the close of the month, and numerous local freshets were occasioned in states bordering on the Atlantic by the very heavy rains of the latter portion of the month. In Canada a deficiency in rainfall amounting to a drought was reported in many parts of the dominion, and the precipitation was everywhere below the average, except in the north and northwest portions of Ontario, New Brunswick, and Manitoba.

Over the North American continent the winds were variable in the Colorado valley, the extreme northwest, and over the south Atlantic and east Gulf states; elsewhere they were mostly southerly. Over the north Atlantic Ocean the wind-directions were governed by the areas of high and low mean pressure that appear on chart ii. Over the British Isles, Scandinavia, and central Europe, north of the fiftieth parallel, south to west winds prevailed; over Russia and Austro-Hungary they were northwesterly; over the balance of Europe they were variable. Over British India the winds were generally westerly, except to the eastward of the eightieth meridian, where they were from south to east. Along the east coast of Asia and over the Japanese Islands south to east winds were most frequently noted.

TRACKS OF AREAS OF LOW PRESSURE FOR JULY, 1887.

Chart iii exhibits paths of the principal depressions that appeared in the northern hemisphere during July, 1887. This chart continues the series of international charts begun in November, 1877, and has been prepared from the following data: Chart i for each day of the month, containing the data of simultaneous observations taken once each day at noon, Greenwich mean time; abstracts of ships' logs; special reports, and other miscellaneous data on file at this office.

The paths of the centres of fifteen areas of low pressure are shown, of which seven are traced over the North American continent; four over the north Atlantic Ocean; three over Europe, and one off the eastern coast of Asia. The average number of areas of low pressure traced over the northern hemisphere for the month of July during the last eight years is 29.2, or 14.2 more than the number traced for July, 1887.

A history of the more important depressions that traversed the North American continent during the month, together with a description of a storm traced westward over the Caribbean Sea and to the north coast of the Gulf of Mexico, is given in the MONTHLY WEATHER REVIEW for July, 1887, under the heading "Areas of low pressure."

Over the north Atlantic Ocean, the depressions while being largely deficient in number when compared with the July average, were possessed of unusual summer energy, and by reason of their generally and irregular movements occasioned severe storms during a considerable portion of the month, more especially to the eastward of the fortieth meridian. Depression number viii, which is traced from the coast of Labrador to the Faröe Islands from the 3d to the 14th, inclusive, was attended throughout by gales of marked violence, and barometric pressure falling to 28.73 (729.7) on the 8th. Depression number ix advanced from the fortieth meridian south of Nova Scotia to the southern extremity of Newfoundland, from the 12th to the 16th, inclusive, with minimum pressure about 29.40 (746.7) over eastern Newfoundland during the 14th and 15th. During the passage of depression number x from Newfoundland to the Norwegian coast, from the 19th to the 24th, the lowest barometer reading, 29.33 (745.0), was reported at Stykkisholm, Iceland, on the 21st. Depression number xi, which prevailed over the ocean to the south and southeast of Iceland from the 25th to the 29th, exhibited minimum pressure 28.89 (733.8) on the 26th.

The month was characterized over Europe by an entire absence of important storms south of the fiftieth parallel. Of the depressions traced, two traversed Scandinavia and Finland during the first decade, and one advanced from the north coast of Norway east-southeast into Russia from the 20th to the 24th, inclusive. Attending the passage of depression number xii a barometer reading of 29.43 (747.5) was reported at Gjaesvaer, Norway, on the 1st. Under the influence of depression number xiii the barometer fell to 29.32 (744.7) at Saint Petersburg and Haparanda on the 6th and 7th, respectively. Depression number xiv attained greatest strength on the 23d, when a reading of 29.48 (748.8) was shown at Kasan, Russia.

Although the barometer continued generally low and fluctuating off the eastern coast of Asia during the month, and unusually low pressure and disturbances were frequently shown in localities, reports do not indicate that depressions with well-defined movements of translation advanced over or near the Japanese Islands. During the 23d and 24th a storm apparently moved northeastward from the Gulf of Tartary into the Sea of Okhotsk with pressure falling below 29.40 (746.7) at Nikolaievsk on the 23d. From the 9th to the 13th the barometer was low, about 29.40 (746.7), at Nikolaievsk; on the 17th a reading of 29.50 (749.3) was reported at Nemuro, Yesso; on the 18th the barometer had fallen to 29.53 (750.0) at Nikolaievsk; on the 22d it stood 29.33 (745.0) at Foochow, China, and on the 29th the weather was unsettled in the vicinity of Formosa, where the pressure fell to 29.38 (746.2).

SPECIAL NOTES.

THE GRAVITY CORRECTION.

The gravity correction, reducing all barometer readings to the standard gravity at latitude 45°, has been applied to all observations not so reduced by the observers themselves.

All data referring to force, velocity, or pressure (in pounds per square foot) of the wind, are reduced to the scale of 0-10, and the approximate value is indicated by the number of feathers on the arrow (see below).

MONTHLY SUMMARY OF INTERNATIONAL SIMULTANEOUS METEOROLOGICAL OBSERVATIONS.

The positions of stations (latitude and longitude) are obtained from Keith Johnson's "Index Geographicus," except where more exact information is furnished. The elevations of stations are obtained either from the annual, semi-annual, and monthly publications of the various meteorological bureaus here represented, or from the original forms upon which are entered the daily observations. In the United States series the elevations are computed from the latest surveys, and are carefully revised each month, in order to note any change in the elevation of the barometer-cistern at any station. It is believed for the most part that, throughout the European and other series, the elevations as given represent the height of the barometer-cistern above sea-level; at least this should be the case. The local time, where omitted or not given correctly in the original, is carefully computed at this office. A letter placed opposite the name of a station, or some portion of the data credited thereto, indicates that a certain number of observations are missing, corresponding to the relative position in the English alphabet of the letter so used.

At Baku the barometer-cistern is below sea-level.

INTERNATIONAL CHARTS.

International chart i shows the atmospheric pressure at sea-level in English inches, the isobars being drawn for every two-tenths of an inch.

Arrows show direction of, and fly with, the wind; force is shown as follows:

SYMBOLS.	FORCE.	VELOCITY.	
		MILES PER HOUR.	METRES PER SECOND.
○	0	0	0
→	1, 2	0 to 9	0 to 4
→	3, 4	9.1 to 22.5	4.1 to 10.1
→	5, 6	22.6 to 40.5	10.1 to 18.1
→	7, 8	40.6 to 67.5	18.1 to 30.2
→	9, 10	67.6 up.	30.2 and over.

International chart ii (monthly mean chart) shows the mean pressure at sea-level in English inches; the mean force and prevailing direction of the wind, as determined from observations taken at noon, Greenwich mean time.

International chart iii shows the tracks of centres of low pressure. The Arabic numerals show the location of the centres of low pressure at noon, Greenwich mean time, of that date.

In the above charts, broken lines indicate that lines so drawn are doubtful.

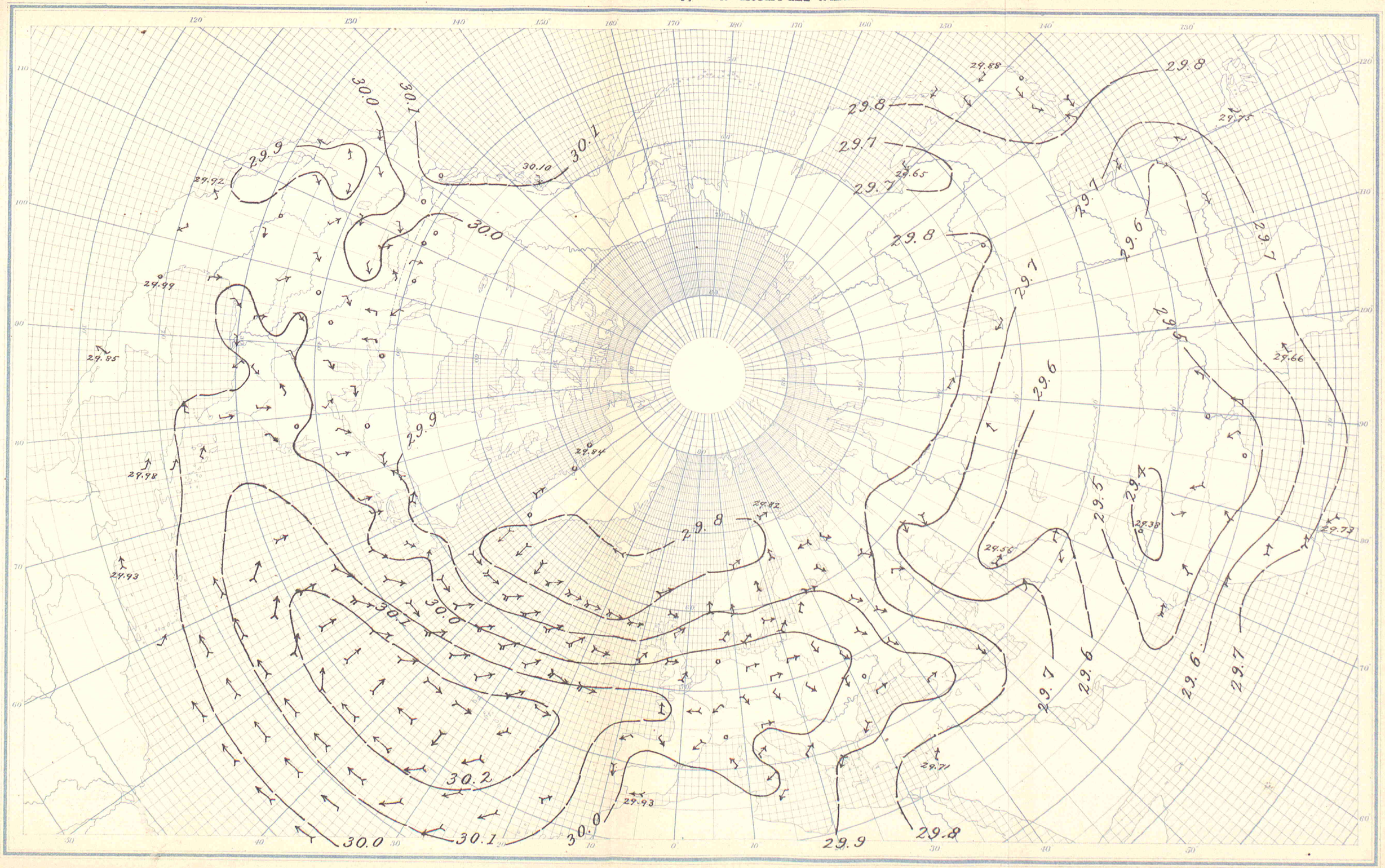
List of merchant marine steam and sailing vessels from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of July, 1887—Continued.

Name of vessel.	Captain.
SAILING VESSELS—Continued.	
Br. bk. Salina	Capt. John Peterson.
Am. bk. Sarah	L. R. Hale.
Sarah Doe	B. S. Merryman.
bg. Stacy Clark	C. M. Haskell.
It. bk. Teresa Accame	G. Boetto.
Fin. Toivo	H. W. Snellman.
Br. bk. Tiber	D. Keiffe.
Am. bk. Tillie Baker	J. W. Carty.
Ger. sp. Union	H. Fokken.
bk. Victoria	B. F. Rehm.
Western Chief	Fr. Lender.
UNITED STATES NAVAL.	
U. S. S. Adams	Louis Kempff.
U. S. S. Alert	J. D. Graham.
U. S. S. Alliance	C. McGregor.
U. S. S. Atlanta	R. M. Berry.
U. S. S. Brooklyn	E. O. Matthews.
U. S. S. Constellation	
U. S. S. Essex	Theo. F. Jewell.
U. S. S. Galena	W. T. Sharrer.
U. S. S. Iroquois	R. P. Leary.
U. S. S. Jamestown	C. J. Nain.
U. S. S. Juniata	G. T. Davis.
U. S. S. Lancaster	S. L. Breese.
UNITED STATES NAVAL—Cont'd.	
U. S. S. Marion	Capt. Merrill Miller.
U. S. S. Mohican	B. F. Day.
U. S. S. Monocacy	Henry Glass.
U. S. S. Monongahela	S. H. Baker.
U. S. S. Omaha	F. V. McNeir.
U. S. S. Ossipee	Wm. B. Hoff.
U. S. S. Palos	J. E. Craig.
U. S. S. Pensacola	Geo. Dewey.
U. S. S. Pinta	
U. S. S. Portsmouth	Edwin White.
U. S. S. Quinnebaug	W. L. Folger.
U. S. S. Ranger	F. A. Cook.
U. S. S. Richmond	Robert Boyd.
U. S. S. Saratoga	C. H. Davis.
U. S. S. Tallapoosa	F. W. Dickins.
U. S. S. Trenton	W. Farquhar.
U. S. S. Vandalia	H. L. Howison.
U. S. S. Yantic	F. M. Green.
BRITISH NAVAL.	
H. M. S. Alexandra	J. Fellowes, C. B.
H. M. S. Audacious	R. N. Harris.
H. M. S. Bacchante	A. U. Moore.
H. S. M. Comus	T. J. Jackson.
H. M. S. Cordelia	H. H. Boys.
BRITISA NAVAL—Continued.	
H. M. Dockyard, Bermuda	Capt. R. P. Dennistoun.
H. M. S. Dreadnaught	H. F. Stevenson.
H. M. S. Egeria	P. Aldrich.
H. M. S. Hyacinth	E. Bourke.
H. M. S. Icarus	W. M. Annesley.
H. M. S. Myrmidon	H. F. Hoskyn
H. M. S. Nelson	T. L. Hammill.
H. M. S. Penguin	Haygarth.
H. M. S. Raleigh	B. Watson.
H. M. S. Rambler	W. U. Moore.
H. M. S. Rifleman	C. Prater.
H. M. S. Royalist	G. W. Hand.
H. M. S. Ruby	W. R. Kennedy.
H. M. S. Sylvia	Dawson.
H. M. S. Torquoise	R. Woodward, C. B.
SWEDISH NAVAL.	
H. S. M. S. Saga	A. Meister
DUTCH NAVAL.	
H. D. M. S. Prinz Hendrig	
H. D. M. S. König	

List of foreign stations and observers from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of July. 1887.

Stations.	Observers.
AUSTRALIAN.	
Hobart Town, Tasmania	Com. J. Shortt, R.N.
Melbourne, Victoria	R. L. J. Ellery.
AUSTRO-HUNGARIAN.	
Agram	Prof. Ivan Stozir.
Cracow, I. R. Observatory	Dr. Wierzbiski.
Eperies	Julius Mikolik.
Gratz	Andreas Rospini.
Kremsmunster Observatory	The Staff.
Lemberg	Dr. T. Stanecki.
Pola	Fr. Cœselrohe.
Szathmar	Aloysius Daubner, S. J.
Szegedin	Emerick Markos.
Trieste	Naval Observatory.
Vienna	I.R.Central Met. Obs'y.
BRITISH.	
Aberdeen	W. Boswell.
Bidston, Liverpool Obs'y	John Hartnup.
Bradford, Yorkshire	McLandsborough & Preston.
Bridgetown, Barbadoes, W.I.	G. Beater.
Chatham, School M. E	Percy McHugo, R. E.
Falmouth, Observatory	The Staff.
Fort Napier, Natal	Thomas Murray, M. S. C.
Freetown, Sierra Leone	J. W. Smith.
Galway, Queen's College	Wm. Ryan.
Gibraltar, Mediterranean	E. Irvine.
Greenwich, Royal Observatory	The Staff.
Guernsey	A. Collenette, F.R.M.S.
Kew, Observatory	The Staff.
Leicester, Museum	J. C. Smith.
Malta, Mediterranean	R. R. Willan.
Nassau, Bahamas	J. A. Kerr.
Oxford, Radcliffe Observatory	The Staff.
Plymouth	John Merrifield.
Swanbister, Orkneys	W. I. Fortesque.
Scutari Cemetery, Turkey	W. H. Lyne.
Stonyhurst, Observatory	Rev. S. J. Perry.
Valencia, Observatory	The Meteorological Office.
Sub-series.	
Gozo, Episcopal Seminary	Rev. Algelo Lo Re, S.J., Dir.
Malacca	W. R. Angus.
Penang	F. K. Hampshire, M. D.
Singapore	T. Irvine Rowell, M. D.
CANADIAN.	
Bathurst, N. B	Miss Andrews.
Bird Rocks	T. Turbide.
Calgarry	H. C. Cayley.
Chatham, N. B	G. A. Blair.
Cornwall, Ontario	W. D. Johnston, B. A.
Dalhousie, N. B	H. A. Johnson.
Father Point, Quebec	J. McWilliams.
Fort Garry, Manitoba	T. Warburton.
Fredericton, N. B	Dr. Harrison.
Grand Manan, N. B	J. Chipman Seeley.
Halifax, N. S	A. Allison.
Hamilton, Ontario	T. S. Campbell, B. A.
Kingston, Ontario	A. P. Knight, M. A.
Little Glace Bay, N. S	C. H. Rigby, C.E.
London, Ontario	E. B. Reed.
Medicine Hat, N. W. T	John Ewart.
Minnedosa, N. W. T	Rev. J. M. Wellwood.
Montreal, Quebec	C. H. McLeod, C. E.
Ottawa, Ontario	A. McGill, M. A.
Parry Sound, Ontario	Rev. R. Mosley.
Peterborough, Ontario	J. H. Long.
Port Arthur, Ontario	W. P. Cooke.
Port Dover, Ontario	H. Morgan.
Port Stanley, Ontario	M. Payne.
Qu' Appelle, N. W. T	Leslie Gordon.
Quebec, Quebec	Captain Ashe, R. N.
Rockliffe, Ontario	W. H. McIntyre.
St. Andrews, N. B	S. T. Gove, M. D.
St. John, N. B	G. Hutchinson.
Saint Pierre, N. F	The Commandant.
Saugeen, Ontario	W. K. Stewart.
Southwest Point of Anticosti	
Stratford, Ontario	W. McBride, M. A.
Sydney, C. B	T. C. Hill, C. E.
Toronto, Ontario	Magnetic Observatory.
Woodstock, Ontario	Prof. N. Wolverton, M. A.
Yarmouth, N. S	J. E. Murphy.
Sub-series.	
Saint Johns, N. F	J. Higgins.
CAPE COLONY.	
Cape St. Francis	J. Garfelt.
CHINESE.	
Foochow	A. E. Pfankuchen.
Hong Kong Observatory	The Staff.
Sub-series.	
Zi-Ka-Wei, near Shanghai	M. Marc Dechevrens, S. J.
South Cape, Formosa	G. Taylor.
DANISH.	
Copenhagen	Oversergent Fischer.
Fanöe	Overloerer Lauridsen.
Godthaab	S. Kleinscmidt.
Ivigtut	
Jacobshavn	
Stykkisholm	A. O. Thorlacius.
Thorshavn	Overloerer Bergh.
Upernavik	
Vestervig	Loerer Oesterbol.
FRENCH.	
Alençon, Normal School	M. Nicot, Director.
Arras, Normal School	M. Sion, Director.
Avignon, Normal School	M. Giraud, Director.
Bar-sur-Seine	M. Saillard, Director.
Beauvais, Normal School	M. Mutélet.
Besançon, Normal School	M. Goon, Director.
Bordeaux, Observatory	M. Rayet, Director.
Bourges, Normal School	M. Bourgoine, Director.
FRENCH—*Continued.*	
Brest, Naval Observatory	M. de Kermaree, Director.
Caen, Normal School	M. Berson, Director.
Châlons-sur-Marne, N.School.	M. Mathieu, Director.
Charleville, Normal School	M. Noél, Director.
Clermont-Ferrand, Obs'y	M. Hurion, Director.
Cluny, Normal School	M. de Villemontée, Director.
Gap, Normal School	M. Poussel, Director.
Greasque, du Rhone	M. Kina, Director.
Guéret, Normal School	M. Delorme, Director.
Lescar, Normal School	M. Lefevre, Director.
Lorient, Naval Observatory	Lt. T. Carré, Director.
Lyon, St. Genis-Laval	M. André, Director.
Mans, Normal School	M. Theriot, Director.
Marseille, Observatory	M. Stephan, Director.
Montlouis	M. Cave for Dr. Fines.
Montpellier, Normal School	M. Galzin, Director.
Mont Ventoux	M. Blanc.
Nancy, Normal School	M. Hasse, Director.
Nantes, Observatory	M. Larocque, Director.
Nice, Normal School	M. Cantier.
Perpignan, Observatory	Dr. Fines, Director.
Pic-du-Midi, Summit	M. Vaussenat, Director.
Privas, Normal School	M. Curely, Director.
Puy de Dôme Obs'y, Summit	M. Hurion, Director.
Rochefort, Naval Observatory	Lt. E. Decante, Director.
Roche-sur-Yon, N. School	M. Brotier, Director.
Rouen, Normal School	M. Vieillot, Director.
Saint Brience	M. Richard.
Saint Maur, Observatory	M. Renon, Director.
Toulouse, Observatory	M. Baillaud, Director.
Tours	M. Letellier.
Sub-series.	
St. Martin du Hinx	M. Carlier, Director.
GERMAN.	
Ansbach	Prof. Jüdt.
Bamberg	Prof. Dr. Hoh.
Berlin	Meteorological Institute.
Breslau	Royal University Obs'y.
Carlsruhe	Albert Senz.
Cassel	Dr. H. Möhl.
Frankfort-on-the-Main	Physical Society.
Friedrichshafen	Wilhelm, Chief Tel.
Hamburg	Carl H. Seeman.
Kiel	Prof. Dr. G. Karsten.
Leipsic, Astronomical Obs'y	H. Leppig, Assistant.
Memel	Issermann.
Munich	Dr. C. Lang.
Neufahrwasser	A. Lothes.
Neustadt, Palatinate	Prof. Dicknether.
Stuttgart	Dr. L. Meyer.
Wustrow	Profs. Brandes & Reimer.
GREEK.	
Athens	Kokkides & Wourlisch.
INDIAN.	
Kurrachee	
Deesa	
Bombay	
Poona	
Belgaum	
Lahore	
Roorkee	
Agra	
Nagpur	
Jubulpore	
Lucknow	
Allahabad	
Patna	
Hazaribagh	
Calcutta	
Chittagong	
Cuttack	
Dhubri	
Sibsagar	
Jeypore	
Bellary	
Trichinopoly	
ITALIAN.	
Udine	Prof. Giovanni Clodig.
Milan	Prof. G. V. Schiapparelli.
Padua	Prof. Dott. Lorenzoni.
Moncalieri	Prof. P. F. Denza.
Genoa	Prof. G. M. Garibaldi.
Cuneo	
Pesaro	Prof. Luigi Guidi.
Florence	Prof. Constantino Pittei.
Leghorn	Prof. P. Monte.
Rome	Prof. P. Tacchini.
Cosenza	Prof. D. Conti.
Sassari	
Syracuse	Sig. V. Giuliano.
ITALIAN SUB-SERIES	
Stelvio	Prof. P. F. Denza.
Valdobbia	Prof. P. F. Denza.
JAPANESE.	
Akita	H. Hattori.
Awomori	K. Ogawa.
Erimo	T. Sato.
Fushiki	N. Tokuda.
Gifu	R. Ikuchi.
Hakodate	T. Wakayama.
Hamamatsu	Sakigawa and Miyake.
Hiroshima	Y. Okamoto.
Itsuhara	S. Kumafu.
Kanazawa	S. Kuriyama.
Kagoshima	G. Miyanohara.
Kioto	M. Negishi.
Kochi	K. Kusunose.
Miasaka	T. Ishitain & T. Saki.
Miyako	K. Suwa.
JAPANESE—*Continued.*	
Nagasaki	K. Yamasaki and M. Chin.
Nemuro	M. Itabashi.
Niigata	M. Morita.
Nobiru	T. Saitoo.
Numadzu	R. Kaneda.
Osaka	H. Omura.
Sakai	K. Yamawchi & P. Yoshimura
Shimonoseki	S. Nagasuye.
Tokei	The Staff.
Wakayama	K. Sakai.
MAURITIUS.	
Mauritius R. A. Observatory	The Staff.
MEXICAN.	
Guanajuato	Prof. Vicente Fernandez.
Leon	Prof. M. Leal & Espana.
Mazatlan	C. Carmina.
Mexico	The Staff.
NETHERLANDS.	
Flushing	
Groningen	
Helder	
Hellevoetsluis	
Utrecht	G. F. C. Zaalberg.
Sub.	
Batavia	Dr. I. P. v. d. Stok.
NORWEGIAN.	
Bergen	
Brono	
Christiania	
Gjæsvær	
PORTUGUESE.	
Angra	Dr. J. A. Sampaio.
Funchal, Madeira	Capt. D. A. de Cunha.
Lisbon, Observatory	The Staff.
Ponta Delgada, Azores	
San Salvador	
St. Vincent, Cape Verd	
Serra da Estrella	
RUSSIAN.	
Archangel	Capt. Sseliwerstow.
Baku	
Barnaul	Meteorological Office.
Dorpat	Blumbach.
Ekaterinburg	Meteorological Observatory.
Elisavetgrad	
Irkutsk	Ed. Stelling.
Kasalinsk	Butkewitsch.
Kasan	Observatory.
Kem	M. Kosnobr.
Kertch	E. M. Zacmsipeyz.
Kieff	Observatory.
Kischinev	
Korostishev	
Koslov	
Lgov	R. I. Ssaweljew, Engineer.
Libau	E. Quaas.
Lugan	Meteorological Observatory.
Moscow	Meteorological Observatory.
Nerchinsk	
Nikolaiev	Capt. Kurdakow.
Nikolaievsk-on-the Amoor	Schonberg.
Nikolsk	Nadeshdin.
Perm	
Petro-Alexandrovsk	Walther.
Petrozavodsk	Dr. Bergmann.
Pinsk	
Poti	
St. Petersburg	Central Physical Observatory.
Samarkand	Dresch.
Sevastopol	Colonobr.
Tashkend Laboratory	Teich, A. M.
Tiflis	Physical Observatory.
Viatka	
Warsaw	Astronomical Observatory.
Yeniseisk	Wishnewzky.
Sub-series.	
Petrowsky Academy	Bachmetieff.
SCOTCH.	
Leith	J. Bolam & Geo. Redpath.
SPANISH.	
Bilbao, Met. Observatory	Tomas Eschriche.
Burgos, Met. Observatory	Domingo Martin.
Madrid, Royal Observatory	The Staff.
Santiago, Met. Observatory	R. Gil Villanueva, Director.
Sub-series.	
Havana, Cuba	Benito Viñes, S. J.
Manilla, Philippine Islands	F. Faura, S. J.
San Fernando, Naval Obs'y	Capt. C. Pujazon, R. N.
San Juan de Porto Rico, W.I.	Eurique Gadea, Ch'f Eng'r.
SWEDISH.	
Haparanda	
Umea	
Hernosand	
Stockholm	
Wisby	
Sub-series.	
Upsala	Nils. Ekholm.
SWISS.	
Geneva	Observatory.
TURKISH.	
Constantinople	The Observatory.
Valona	A. Bertrand.
Sub-series.	
Beirut, Lee Obs'y, Syria	R. H. West, B. A., Director
UNITED STATES SUB-SERIES.	
Bogota	J. G. Otero.
Rivas, Nicaragua, C. A.	Earl Flint, M. D.
Vera Cruz	Capt. Geo. E. Powell.

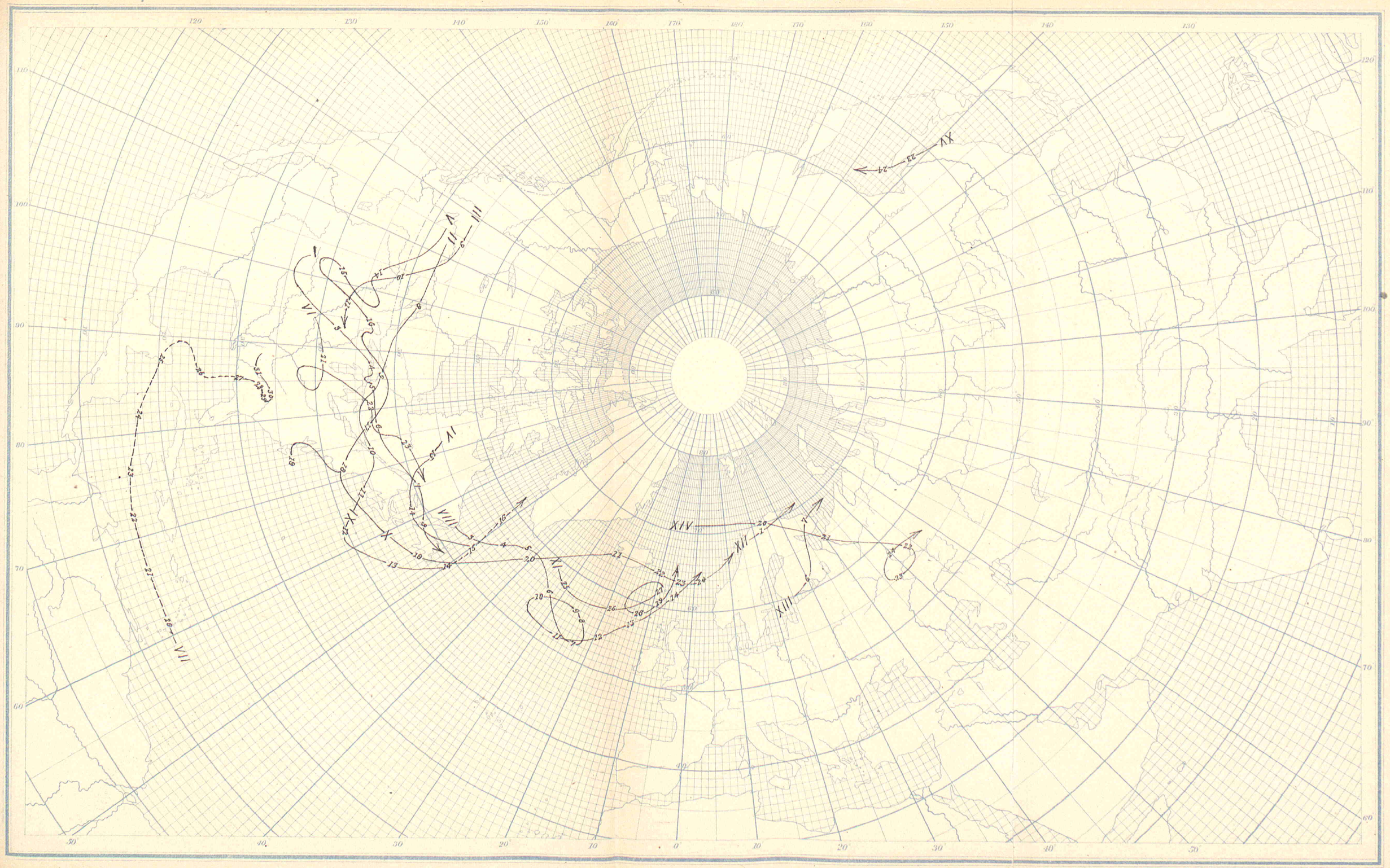
International Chart II. July, 1887. Isobars and Winds.



Signal Office Lith.

Form No. 106 R---1887.

International Chart III. July, 1887. Tracks of Areas of Low Pressure.



Signal Office Lith.

WAR DEPARTMENT.
OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY OF THE UNITED STATES.

SUMMARY AND REVIEW

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS

FOR THE MONTH OF AUGUST, 1887.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

A. W. GREELY,
BRIGADIER GENERAL, CHIEF SIGNAL OFFICER OF THE ARMY.

PRINTED FOR EXCHANGE WITH CO-OPERATING OBSERVERS.

WASHINGTON, D. C
SEPTEMBER, 1888.

List of merchant marine steam and sailing vessels from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of August, 1887.

	Name of vessel.	Captain.
Br.	s. s. Adriatic	Capt. J. G. Cameron.
Am.	Advance	James Lord.
Br.	Ailsa	J. W. Sanson.
Am.	Alameda	G. H. Morse.
Br.	Alaska	Geo. S. Murray.
Ger.	Aller	H. Christoffers.
Br.	Alsatia	J. Brown.
	Alvena	F. McKay.
	Alvo	D. Williams.
Ger.	Amalfi	Julius Bahr.
Br.	Ambrose	E. Bisson.
	Amoor	H. Gasson.
	Auchoria	W. Brown.
	Andes	T. M. McKnight.
	Arabic	G. Burton.
	Arizona	S. Brooks.
	Athos	H. Low.
	Augustine	R. Harwood.
	Aurania	W. H. P. Hains.
	Australia	R. McRitchie.
Ger.	Australia	G. Franck.
Br.	Austrian	J. Bentley.
	Bassano	W. Rea.
	Beiair	G. Dunlop.
	Bengore Head	J. R. Brady.
	Ben Ledi	S. Adamson.
	Bessarabia	2d Off. A. Thomson.
	Bessel	Capt. C. J. Watkins.
	Biela	F. Graham.
Ger.	Bohemia	R. Karlowa.
Br.	Bolivia	J. J. Small.
	Boston City	T. Davies.
	Bothnia	T. Dutton.
	British Crown	A. Smith
	British King	John Kelly.
	British Prince	Samuel Nowell.
	British Princess	E. H. Freeth.
	British Queen	R. Wills.
	Brooklyn City	W. Fitt.
	Buenos Ayrean	J. Scott.
	Buffalo	J. H. Malet.
	Bulgarian	E. Parry.
	Canada	Thos. Foote.
Am.	Carondelet	W. F. Evans.
Br.	Catalonia	E. Wylie.
	Celtic	
	Cephalonia	Henry Walker.
	Cervin	S. Hughson.
Fr.	Chateau Yquem	C. T. Journiel.
Br.	Chicago	J. W. Jones.
	Chilian	E. F. Bannister.
	Circassia	A. Campbell.
Am.	City of Alexandria	J. W. Reynolds.
	City of Augusta	J. W. Catherine.
Br.	City of Chester	A. Lewis.
	City of Chicago	Fred Watkins.
Am.	City of Dallas	C. W. Read.
Br.	City of Montreal	R. Leitch.
	City of Newcastle	R. Townsend.
Am.	City of Para	L. Dexter.
Br.	City of Richmond	A. Redford.
Am.	City of Rio de Janeiro	W. B. Seabury.
Br.	City of Rome	R. D. Munro.
Am.	City of San Antonio	J. Wilder.
	City of Sydney	D. Friele.
	City of Washington	W. M. Rittig.
	Cienfuegos	F. M. Faircloth.
Br.	Clement	T. Burley.
Am.	Colon	J. Henderson.
	Colorado	J. Daniel.
	Columbia	Fred Bolles.
Br.	Cyril	J. H. Johnson.
	Denmark	R. S. Rigby.
Belg.	De Ruyter	J. J. Brarens.
Br.	Devonshire	Mate Samuel Winter.
Gr.	Donau	Capt. H. Supmer.
Br.	Dorian	J. McKeague.
	Dorset	Ch. Off. E. Crossman.
	Durham City	Capt. D. D. Galbraith.
	Earnmoor	R. J. Grey.
Dtch.	Edam	J. H. Taat.
Br.	Edith Godden	J. H. Bennett.
	Egypt	J. Sumner.
Ger.	Elder	P. H. Berdrow.
	Elbe	G. Meyer.
Am.	El Callao	J. Scholtz.
Span.	Elcano	V. de Ispizua.
	Emiliano	Don Fer. Bengoa.
Ger.	Ems	Th. Jungst.
Br.	England	T. P. Heeley.
	Erin	J. Robinson.
	Ethiopia	John Wilson.
	Etruria	T. Cook.
	Euclid	A. Mathieson.
Am.	Eureka	R. B. Quick.
Br.	Fitzroy	Henry Gibb.
	France	A. D. Hadley.
Ger.	Fulda	R. Ringk.
Br.	Furnessia	J. Hedderwick.
	Gaelic	W. G. Pearne.
	Galileo	R. T. Jones.
	Gallia	M. Murphy.
Dan.	Geiser	C. W. Moeller.
Ger.	Gellert	W. Kühlewein.
Br.	Germanic	B. Gleadell.
It.	Gottardo	Domenico Viola.
Ger.	Gothia	H. Bauer.
Am.	Granada	J. L. Lockwood.
Br.	Grecian	C. E. Le Gallais.
	Greece	A. J. Jeffrey.
Ger.	Hammonia	H. F. Schwensen.
Dan.	Hekla	A. G. Thomsen.

	Name of vessel.	Captain.
Br.	s s Helvetia	Capt. G. Cochrane.
	Herschel	G. Braithwaite.
	Hibernian	J. Brown.
	Holland	W. Tyson.
	Horden	C. A. Topp.
Span.	Hugo	A. de Mugica.
Am.	Illinois	G. H. Dodge.
Ger.	India	M. Hulsen.
Br.	Iowa	Samuel Walters.
Dan.	Island	W. Skjodt.
Br.	Istrian	T. H. Fox.
	Italy	W. Pearce.
Belg.	Jan Breydal	H. Meyer.
Br.	Jerome	Benj. Crimp.
	Jersey City	E. Horlor.
	Kansas	W. Gleig.
	Kepler	P. H. Tanner.
Fr.	La Bourgogne	E. Franguel.
	La Bretagne	M. de Jousselin.
	La Champagne	E. Traub.
	La Gascogne	Santelli.
	La Normandie	G. de Kersabiec.
Br.	Lake Nepigon	P. D. Murray.
	Lake Winnepeg	Howard Campbell.
Am.	Lampassas	M. B. Crowell.
Dtch.	Leerdam	G. S Stenger.
Ger.	Lessing	H. Barends
It.	Letimbro	3d offi. Fr. Dilliberto.
Br.	Llandaff City	Capt. T. H. Gore.
	Lord Clive	P. Urquhart.
	Lord Gough	E. M. Hughes.
	Lord O'Neil	James Dunn.
Am.	Louisiana	E. V. Gager.
Br.	Ludgate Hill	2d Off. H. Dumaresy.
Ger.	Main	Capt. H. Boedcker.
Am.	Manhattan	Frank Stevens.
Br.	Marengo	Wm. Abbott.
Am.	Mariposa	H. M Hayward.
Ger.	Marsala	N. Maass.
Br.	Monte Rosa	C. Thomas.
	Mozart	W. Sprathly.
	Muriel	G. S. Locke.
Belg.	Nederland	A. J. Griffin.
Br.	Nessmore	Geo. Elliott.
Fr.	Neustria	P. Yerries.
Br.	Nevada	J. Douglass.
Am.	New Orleans	T. P. Halsey.
	Newport	W. G. Shackford.
Belg.	Noordland	H. E. Nickels.
Br.	Norseman	E. Maddox.
Am.	Neuces	J. Bolger.
	Oceanic	John Metcalf.
Br.	Ocean Prince	W. J. Milburn.
	Olbers	Jas Clark.
	Olympia	L. Swain.
	Ontario	W. P. Couch.
Dtch.	Orange Nassau	J. A. J. LaCrooy.
Am.	Oregon	E. Polemann.
Br.	Orinoco	J. S Garvin.
	Otranto	W. Rippeth.
	Pavonia	A. McKay.
	Pawnee	John James.
Dtch.	P. Caland	F. H. Bonjer.
Br.	Peconic	G. Evans.
Belg.	Pennland	Rud. Weyer.
Am.	Philadelphia	Sam. Hess.
Belg.	Pieter de Connick	E. Smit.
Ger.	Polynesia	A. Kuhn.
Br.	Pomona	J. Legoe.
	Prussian	J. Ambury.
	Prydain	M. Parry.
Ger.	Rhaetia	R. Karlowa.
	Rhein	Topser.
Belg.	Rhynland	J. C. Jamison.
Br.	Rialto	F. Kerr.
	Richmond Hill	A. Hyde.
	Roseville	J. Dove.
Dtch.	Rotterdam	G. J. Vis.
Ger.	Rugia	A. Albers.
	Saale	H. Reichter.
Br.	Saint Ronans	H. Campbell.
	Salerno	B. H. Rogers.
Am.	San José	D S. Austin.
Br.	Santiago	R. Potter.
	Sarmatian	Wm. Richardson.
	Sarnia	Joseph Gibson.
	Saxmundham	T. M. Milne.
	Scandinavian	John Park.
Dtch.	Schiedam	A. Potjer.
Br.	Scythia	T. Roberts.
Span.	Serra	F. de Lauzarraga.
Br.	Servia	H. McKay.
Ger.	Slavonia	H Schmidt.
Br.	Spain	W. A. Griffiths.
	State of Georgia	G. Moodie.
	State of Indiana	A. Ritchie.
	State of Nebraska	A. G. Brues.
	State of Nevada	J. A. Stewart.
	State of Pennsylvania	A. J. A. Mann.
	Stockholm City	K. Doyle.
	Straits of Gibraltar	G. Grigs.
Ger.	Suevia	C. Ludwig.
Br.	Taormina	W. H. Frank.
	The Queen	John Milligan.
Dan.	Thingvalla	S. T. H. Laub.
Br.	Tower Hill	Lieut. F. Archer, R. N. R.
Ger.	Trave	Capt. W. Willigerod.
Br.	Trinacria	Geo Mitchell.
	Umbria	W. McMickan.
Belg.	Vaderland	C. H. Grant.
Br.	Vertumnus	C. E. Cook.
	Victory	S. Elcoate.

	Name of vessel.	Captain.
Br.	s. s. Viola	Capt. L. Murray.
	Virginian	M. Fitt.
Belg.	Waesland	J. Ueberweg.
Br.	Warwick	L. Morice.
Dtch.	W. A. Scholten	G. Bakker.
Ger.	Werra	R. Bussius.
Br.	Westbourne	Ch. Offi. W. Shaw.
Belg.	Westernland	Com. W. G. Randle.
Ger.	Wieland	Capt. C. Hebich.
Br.	Wisconsin	Edward Bentley.
	Worcester	W. Stamper.
	Wyle	T. L. Rogers.
	Wyoming	C. L. Rigby.
Am.	Yemessee	1st Off. J. C. Norton.
Dtch.	Zaandam	Capt. H. v. d. Zee.
	N. Y. Herald Weather Service.	
Br.	s. s. Amicitia	P. M. Reimers.
	Britannic	H. Parsell.
	Barracoutta	Robt. Hubbard.
Am.	Caracas	N. M. Hopkins.
	City of Puebla	J. Deakin.
Br.	Devonia	W. G. Crockhart.
Am.	Eureka	R. B. Quick.
	El Paso	H. S. Quick.
	El Monte	J. W. Hawthorne.
Br.	Germanic	B. Gleadell.
Am.	Knickerbocker	F. Remble.
Ger.	Moravia	O. Pezoldt.
Am.	Niagara	S. V. Bennis.
Br	Nova Scotian	R. H. Hughes.
	Portia	Henry Dawson.
	Pennsylvania	A. J. A. Mann.
	Samana	W. Taylor.
	Sailing Vessels.	
Br.	bk. Abyssinia	B. R. Hilton.
Am.	Alice	W. G. Kair.
Nor.	Artemis	E. E. Moe.
Am.	bg. Abbie Clifford	D. W. Storer.
Br.	Adria	J. H. Weldon.
Am.	schr. Annie B. Hutcheson	Daniel Zeluff.
	bg. Arcot	J. W. Cates.
	bkt. Bonny Doon	C. Burgess.
Ger.	bk. Bremerhaven	A. Witte.
Am.	schr. C. B. Church	N. A. Anderson.
Swed.	bk. Carl von Doebeln	O. Jonssen.
Br.	sp. Chas. S. Whitney	Geo. D. Spicer.
Am.	bk. Chas. R. Lewis	A. Montgomery.
	schr. Comet	W. A. Aldrich.
Gr.	bk. Cornelius	H. Windhorst
Br.	sp. Cypromene	Alex. Robertson.
Am.	bg. Daisy Boynton	C. Harding.
Ger.	sp. Dakota	N. E. Schaffer.
Am.	E. B. Sutton	C. O. Carter.
	schr. Edward R. Emerson	A. H. Child.
Ger.	sp. Ellida	T. H. Zincke.
Am.	bk. Essex	G. W. Hall.
Ger.	sp. Fidelio	T. H. Schütte.
Am.	bk. Florence	Mate A. P. Goodman.
	schr. Florence Rogers	Capt. T. S. McLeod.
Ger.	sp. Friedlander	J. Bellmer.
	Georg	G. Scholtz.
Nor.	bk. Grundloven	O. G. Ellingsen.
	Hanna	S. Falch Muns.
Dtch.	bk. Helena	T. T. Verbeet.
Br.	sp. Houghton Tower	Geo. Scott.
Br.	bk. Iodine	Adam Smith.
Br.	bg. Jane Adeline	G. W. Cates.
	bkt. Josephine	Chas. Brown.
	bk. José E. More	A. Lenhard.
	bg. Kenilworth	P. Doig.
Nor.	sp. Komander Svend Foyn	J. Bryde.
Am.	bg. L. F. Munson	J. V. McKowen.
	L. & W. Armstrong	A. Alexander.
It.	bk. Lazzaro Bianchi	D. Nicola.
Ger.	bk. Leocadia	John Stoldt.
Am.	bg. Lillian	H. T. Schive.
Br.	sp. Mabel Taylor	Chas E. Durkee.
Am.	bk. Mohican	Benj. Berry.
	schr. Pardon G. Thomsen	A. B. Chase.
Br.	schr. Rothiemay	Ch. Off. O. M. Lund.
Am.	bg. Ruby	A. J. von Post.
Am.	bk. Sarah	L. R. Hale.
	Sarah Doe	B. S. Merryman.
	bg. Stacy Clark	C. M. Haskell.
It.	bk. Teresa Accame	G. Boetto.
Br.	bk. Tiber	D. Keiffe.
Am.	bk. Tillie Baker	J. W. Carty.
Ger.	sp. Union	H. Fokken.
	bk. Victoria	B. F. Rehm.
Am.	bk. Water Witch	Max Knaebel.
	United States Naval.	
U. S. S.	Adams	Louis Kempff.
U. S. S.	Alert	J. D. Graham.
U. S. S.	Alliance	C. McGregor.
U. S. S.	Atlanta	F. M. Bunce.
U. S. S.	Brooklyn	E. O. Matthews.
U. S. S.	Constellation	
U. S. S.	Essex	Theo. F. Jewell.
U. S. F. C.	Fish Hawk	Mate James A. Smith.
U. S. S.	Galena	Capt. C. W. Chester.
U. S. S.	Iroquois	R. P. Leary.
U. S. S.	Jamestown	C. J. Nain.
U. S. S.	Juniata	G. T. Davis.
U. S. S.	Lancaster	S. L. Breese.
U. S. S.	Marion	Merrill Miller.
U. S. S.	Mohican	B. F. Day.

SUMMARY AND REVIEW OF INTERNATIONAL METEOROLOGICAL OBSERVATIONS, AUGUST, 1887.

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for August, 1887. Mean Barometer. Actual Inch.	Mill.	Reduced. Inch.	Mill.	Mean temperature. Fah.	Cent.	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
AUSTRALIAN.	° ′	° ′																								
Adelaide	S. 34 57	E. 138 35	9.14 p.m.	140	43	30.05	763.3	30.18	766.6	51.0	10.6	76	2	4	2	1	2	5	4	8	3	7300	11748	5	1.37	34.8
Hobart Town	S. 42 53	E. 147 20	9.00 p.m.	190	58	29.91	759.7	30.12	765.0	46.6	8.1	91	5	6	7	3	3	1	.....	3	3	.....	.....	5	0.57	14.5
Melbourne	S. 37 50	E. 144 58	9.40 p.m.	91	28	30.15	765.8	30.22	767.6	49.1	9.5	85	10	.....	2	4	5	4	1	3	2	.....	.....	5	0.96	24.4
AUSTRIAN.																										
Agram	N. 45 48	E. 15 53	1.04 p.m.	535	163	29.43	747.4	29.98	761.5	76.3	24.6	46	2	1	2	6	3	6	6	5	.....	.....	.....	4	2.09	53.1
Cracow	N. 50 04	E. 20 00	1.20 p.m.	722	220	29.19	741.3	29.96	761.0	68.5	20.3	56	6	3	8	5	2	.....	6	1	.....	.....	.....	7	2.57	65.2
Eperies	N. 48 58	E. 21 15	1.25 p.m.	853	260	29.05	737.9	29.96	761.0	72.3	22.4	70	4	5	2	.....	7	.....	.....	.....	3	.....	.....	5	3.95	100 4
Gratz	N. 47 04	E. 15 28	1.02 p.m.	1171	357	28.76	730.6	29.95	760.6	71.0	22.0	76	2	3	1	8	8	4	3	2	.....	.....	.....	4	2.82	71.5
Kremsmunster	N. 48 03	E. 14 08	0.57 p.m.	1260	384	28.66	727.9	29.97	761.2	68.4	20.2	69	3	1	10	2	.....	.....	4	5	6	.....	.....	5	8.34	211.7
Lemberg	N. 49 50	E. 24 00	1.36 p.m.	978	298	28.92	734.6	29.94	760.5	68.0	20.0	62	1	8	4	4	1	5	2	6	.....	.....	.....	6	4.50	114.2
Pola	N. 44 52	E. 13 51	0.55 p.m.	105	32	29.85	758.3	29.95	760.7	81.1	27.3	52	.....	3	11	4	3	5	4	1	.....	.....	.....	3	2.68	68.2
Szathmar	N. 47 46	E. 22 53	1.32 p.m.	430	131	29.50	749.3	29.96	761.0	76.5	24.7	44	4	9	7	.....	2	5	1	3	.....	.....	.....	5	3.56	90.3
Trieste	N. 45 39	E. 13 46	0.55 p.m.	85	26	29.88	759.0	29.96	761.0	78.4	25.8	53	3	7	7	3	.....	.....	3	6	2	.....	.....	3	2.78	70.6
Vienna	N. 48 12	E. 16 22	1.05 p.m.	663	202	29.28	743.6	29.98	761.5	70.7	21.5	53	3	8	10	.....	3	4	3	.....	.....	.....	.....	3	2.77	70.4
BRITISH.																										
Aberdeen	N. 57 10	W. 2 06	11.52 a.m.	89	27	29.82	757.4	29.94	760.5	58.5	14.7	69	4	5	4	1	5	6	5	.....	.....	7181	11556	3	2.17	55.1
Bidston	N. 53 24	W. 3 04	11.48 a.m.	197	60	29.69	754.1	29.92	760.0	64.8	18.2	57	.....	4	12	4	.....	6	3	2	.....	.....	.....	6	.....	.....
Bradford	N. 53 48	W. 1 47	11.53 a.m.	366	112	29.59	751.6	29.99	761.7	63.6	17.6	55	3	5	9	3	5	2	1	3	.....	.....	.....	7	1.34	34.0
Bridgetown	N. 13 04	W. 59 37	8.02 a.m.	28	9	29.91	759.7	29.87	758.7	83.8	28.8	76	3	1	.....	1	.....	11	7	2	6	.....	.....	4	.....	.....
Chatham	N. 51 25	E. 0 33	0.02 p.m.	130	40	29.84	757.9	29.99	761.7	66.9	19.4	61	1	.....	1	3	.....	.....	4	4	18	.....	.....	5	.....	.....
Falmouth	N. 50 09	W. 5 04	11.40 a.m.	183	56	29.83	757.7	30.04	763.0	65.3	18.5	68	3	10	.....	2	3	10	3	.....	.....	.....	.....	4	.....	.....
Freetown	N. 8 30	W. 13 14	11.07 a.m.	224	68	29.65	753.1	29.80	756.9	84.2	29.0	91	6	2	5	1	12	2	1	2	.....	.....	.....	5	.....	.....
Fort Napier	S. 30	E. 31	2.04 p.m.	2294	699	27.63	701.8	29.90	759.4	70.3	21.3	37	2	5	1	2	.....	6	2	8	5	.....	.....	3	.....	.....
Galway	N. 53 15	W. 9 03	11.24 a.m.	32	10	29.92	760.0	29.97	761.2	63.5	17.5	87	1	5	3	13	8	.....	.....	1	.....	.....	.....	5	4.84	122.
Gibraltar	N. 36 09	W. 5 21	11.39 a.m.	50	15	29.89	759.2	29.92	760.0	78.7	25.9	82	.....	.....	16	.....	.....	.....	13	2	.....	.....	.....	2	.....	.....
Greenwich	N. 51 29	0 00	12 m.	159	48	29.81	757.2	29.99	761.7	70.4	21.3	51	4	5	2	6	4	1	4	5	.....	.....	.....	7	.....	.....
Guernsey	N. 49 27	W. 2 41	11.49 a.m.	275	84	29.77	756.1	30.07	763.8	66.4	19.1	66	2	7	4	4	3	2	3	5	1	.....	.....	3	.....	.....
Kew	N. 51 28	W. 0 19	11.59 a.m.	34	10	29.96	761.0	30.01	762.2	67.6	19.8	51	4	3	4	7	5	1	4	3	.....	.....	.....	5	.....	.....
Leicester *a*	N. 52 39	W. 1 08	11.55 a.m.	245	75	29.72	754.9	30.00	762.0	65.8	18.8	59	3	10	1	9	2	4	.....	1	.....	.....	.....	6	.....	.....
Malta	N. 36 00	E. 14 30	0.58 p.m.	70	21	29.93	760.2	29.98	761.5	84.1	28.9	65	5	6	3	1	.....	5	1	10	.....	.....	.....	2	.....	.....
Nassau	N. 25 04	W. 77 22	6.51 a.m.	44	13	29.91	759.7	29.90	759.4	83.6	28.7	77	1	1	2	2	4	9	5	6	1	.....	.....	5	.....	.....
Oxford	N. 51 46	W. 1 17	11.55 a.m.	210	64	29.76	755.9	30.00	762.0	67.7	19.8	57	2	6	3	7	6	2	2	3	.....	.....	.....	5	.....	.....
Plymouth	N. 50 22	W. 4 10	11.43 a.m.	125	38	29.88	758.9	30.02	762.5	68.3	20.2	62	2	2	3	4	14	2	2	2	.....	.....	.....	4	.....	.....
Swanbister	N. 58 55	W. 3 05	11.46 a.m.	72	22	29.80	756.9	29.91	759.7	55.0	12.8	80	4	6	8	1	2	6	3	1	.....	.....	.....	8	.....	.....
Scutari Cemet'y	N. 41 00	E. 29 03	1.56 p.m.	60	18	29.78	756.4	29.83	757.7	85.8	29.9	75	9	.....	1	2	.....	.....	.....	18	1	.....	.....	2	.....	.....
Stonyhurst	N. 53 51	W. 2 28	11.50 a.m.	361	110	29.60	751.8	30.00	762.0	63.0	17.2	61	.....	1	13	7	4	1	1	4	.....	.....	.....	7	2.26	57.4
Valencia	N. 51 55	W. 10 18	11.19 a.m.	23	7	29.98	761.5	30.02	762.5	62.8	17.1	75	3	5	4	4	6	9	.....	.....	.....	.....	.....	8	.....	.....
Sub-series.																										
Malacca	N. 2 10	E. 102 14	6.49 p.m.	12	4	29.81	757.2	29.74	755.4	79.0	26.1	93	.....	.....	13	5	2	1	6	4	.....	.....	.....	4	10.02	254.5
Gozo	N. 36 01	E. 14 16	0.57 p.m.	364	111	29.60	751.8	29.94	760.5	84.9	29.4	51	.....	7	8	7	3	2	3	1	.....	2224	3597	3	0.66	16.8
Penang	N. 5 24	E. 100 20	6.41 p.m.	20	6	29.84	757.9	29.78	756.4	77.2	25.1	87	.....	10	.....	1	.....	13	1	6	.....	.....	.....	7	23.39	594.1
Singapore	N. 1 17	E. 103 51	6.55 p.m.	10	3	29.87	758.7	29.80	756.9	77.8	25.4	89	.....	.....	.....	.....	.....	10	.....	.....	21	.....	.....	6	14.39	365.5
CANADIAN.																										
Bathurst	N. 47 39	W. 65 42	7.37 a.m.	35	11	29.89	759.2	29.93	760 2	61.5	16.4	.....	.....	1	4	6	5	.....	5	.....	10	.....	.....	7	2.37	60.2
Bird Rocks	N. 47 50	W. 61 10	7.56 a.m.	.....	.....	29.78	756.4	29.91	759.7	59.2	15.1	93	6	4	6	7	2	4	1	1	.....	.....	.....	4	2.31	58.7
Calgary	N. 50 55	W. 114 04	4.24 a.m.	?	?	26.44	671.6	29.93	760.2	46.0	7.8	92	3	2	6	1	1	1	.....	.....	17	.....	.....	8	2.12	53.8
Chatham	N. 47 03	W. 65 29	7.38 a.m.	56	17	29.87	758.7	29.93	760.2	60.0	15.6	81	1	4	14	2	1	2	2	4	1	.....	.....	4	3.13	79.5
Cornwall	N. 45 01	W. 74 43	7.01 a.m.	175	53	29.74	755.4	29.95	760.7	64.6	18.1	73	13	3	12	.....	.....	.....	3	.....	.....	.....	.....	4	1.07	27.2
Dalhousie *d*	N. 48 04	W. 66 22	7.35 a.m.	45	14	29.86	758.4	29.91	759.7	60.0	15.6	80	.....	.....	20	.....	.....	.....	6	.....	1	.....	.....	5	3.62	91.9
Father Point	N. 48 31	W. 68 28	7.26 a.m.	20	6	29.88	758.9	29.91	759.7	54.0	12.2	86	.....	5	6	13	1	1	.....	5	.....	.....	.....	6	2.91	73.9
Fort Garry	N. 49 51	W. 97 07	5.32 a.m.	754	230	29.15	740.4	29.98	761.5	51.0	10.6	94	9	4	2	3	6	4	.....	3	.....	.....	.....	5	1.49	37.8
Fredericton	N. 45 57	W. 66 38	7.33 a.m.	164	50	29.79	756 7	29.97	761.2	59.8	15.4	93	2	13	8	1	.....	3	.....	3	1	5043	8116	5	4.64	117.9
Grand Manan	N. 44 46	W. 66 45	7.33 a.m.	49	15	29.90	759.4	29.95	760.7	60.0	15.6	81	5	6	3	1	5	.....	2	2	7	.....	.....	3	5.57	141.5
Halifax	N. 44 39	W. 63 36	7.46 a.m.	122	37	29.82	757.4	29.96	761.0	62.0	16.7	88	9	3	8	3	.....	4	2	.....	2	.....	.....	5	8.30	212.3
Hamilton	N. 43 16	W. 79 53	6.40 a.m.	372	113	29.66	753.4	30.06	763.5	62.3	16.8	85	8	2	10	2	4	.....	4	1	.....	.....	.....	4	1.39	35.3
Kingston	N. 44 14	W. 76 30	6.54 a.m.	307	94	29.66	753.4	29.99	761.7	61.0	16.1	80	5	4	2	.....	4	1	.....	8	7	.....	.....	5	1.24	31.5
Little Glace Bay	N. 46 12	W. 59 58	8.00 a.m.	34	10	29.83	757.7	29.86	758.4	65.8	18.8	93	2	3	2	10	8	1	3	2	.....	.....	.....	4	.....	.....
London	N. 43 00	W. 81 15	6.35 a.m.	832	254	29.14	740.1	30.14	765.5	57.3	14.1	87	7	1	.....	1	1	.....	2	.....	19	3136	5047	3	1.00	25.4
Medicine Hat	N. 50 01	W. 110 37	4.38 a.m.	2136	651	27.66	702.6	29.92	760.0	53.0	11.7	85	4	3	4	2	.....	.....	4	2	12	.....	.....	5	0.62	15.7
Minnedosa	N. 50 13	W. 99 48	5.21 a.m.	1665	501	28.17	715 5	29.95	760.7	47.0	8.3	96	.....	5	2	1	1	2	.....	1	19	.....	.....	5	1.53	38.9
Montreal	N. 45 31	W. 73 33	7.06 a.m.	187	57	29.76	755.9	29.96	761.0	61.0	16.1	76	3	3	8	8	3	.....	2	4	.....	.....	.....	4	1.30	33.0
Ottawa	N. 45 26	W. 75 41	6.57 a.m.	200	61	29.74	755.4	29.96	761.0	57.9	14.4	89	8	6	7	3	2	1	4	.....	.....	2577	4147	5	4.38	111.2
Parry Sound	N. 45 19	W. 80 01	6.40 a.m.	635	194	29.34	745.2	30.02	762.5	55.0	12.8	90	6	3	2	.....	1	1	13	4	1	.....	.....	3	0.76	19.3
Peterborough	N. 44 17	W. 78 18	6.47 a.m.	722	220	29.28	743.7	30.05	763.3	59.5	15.3	80	2	6	5	.....	.....	1	.....	1	16	.....	.....	3	1.52	38.6
Port Arthur	N. 48 27	W. 89 12	6.03 a.m.	642	196	29.29	744.0	29.99	761.7	54.0	12.2	83	5	5	3	.....	2	.....	.....	2	14	.....	.....	4	0.85	21.6
Port Dover	N. 42 47	W. 80 13	6.39 a.m.	635	194	29.35	745.5	30.02	762 0	61.0	16.1	92	.....	2	.....	.....	.....	.....	.....	.....	29	.....	.....	3	1.87	47.5
Port Stanley	N. 42 40	W. 81 13	6.35 a.m.	592	180	29.37	746.0	30.00	762.0	58.0	14.4	86	7	9	2	1	.....	2	1	5	4	.....	.....	2	2.84	72.1
Qu' Appelle	N. 50 44	W. 103 42	5.05 a.m.	2115	645	27.71	703.8	29.93	760.2	53.0	11.7	89	2	2	2	.....	1	1	2	1	20	.....	.....	4	2.40	61.0
Quebec	N. 46 48	W. 71 12	7.15 a.m.	293	89	29.65	753.1	29.96	761.0	57.0	13.9	86	3	2	12	2	2	.....	2	3	5	.....	.....	5	3.87	98.3
Rockliffe	N. 46 10	W. 77 48	6.49 a.m.	418	127	29.55	750.6	30.00	762.0	53.0	11.7	90	.....	4	12	.....	.....	2	1	.....	12	.....	.....	5	1.50	38.1
Saint Andrews	N. 45 04	W. 67 06	7.32 a.m.	47	14	29.89	759.2	29.94	760.5	57.0	13.9	88	3	10	.....	3	2	2	1	3	7	.....	.....	3	4.26	108.2
Saint John, N.B.	N. 45 17	W. 66 03	7.36 a.m.	116	35	29.89	759.2	30.02	762.5	59.8	15.4	81	2	8	2	1	8	.....	1	3	6	.....	.....	5	4.64	117.9
Saint Pierre	N. 46 47	W. 56 08	8.15 a.m.	?	?	.....	.....	29.93	760.3	60.1	15.6	.....	1	9	4	6	.....	7	2	2	.....	.....	.....	.....	6.94	176.3
Sangeen	N 44 30	W. 81 21	6.35 a.m.	656	200	29.32	744.7	30.02	762.5	55.0	12.8	89	3	.....	1	1	2	2	.....	3	19	.....	.....	2	0.81	20.6
S.W. Pt. Anticosti	N. 49 24	W. 63 36	7.46 a.m.	30	9	29.82	757.4	29.86	758.4	56.0	13.3	88	2	6	4	.....	3	8	2	.....	6	.....	.....	3	1.47	37.3
Stratford *a*	N. 43 23	W. 81 00	6.36 a.m.	1186	361	28.75	730.2	30.01	762.2	58.7	14.8	83	9	2	2	3	.....	2	2	.....	10	3114	5053	4	2.50	63.5
Swift Current	N. 50 21	W. 107 33	4.50 a.m.	2439	744	27.38	695.4	29.92	760.0	50.0	10.0	87	1	.....	2	1	5	4	1	4	13	.....	.....	4	1.62	41.1
Sydney	N. 46 08	W. 60 10	7.59 a.m.	37	11	29.88	758.9	29.92	760.0	62.0	16.7	80	1	1	3	10	4	3	1	2	6	.....	.....	5	5.40	137.2
Toronto	N. 43 39	W. 79 23	6.42 a.m.	350	107	29.63	752.6	30.01	762.2	62.0	16.7	76	7	9	3	.....	.....	2	.....	7	3	.....	.....	5	1.99	50.5
Woodstock	N. 43 08	W. 80 47	6.37 a.m.	980	299	28 99	736.3	30.03	762.7	58.5	14.7	83	4	3	8	2	2	1	1	2	8	.....	.....	4	2.04	51.8
Yarmouth	N. 43 50	W. 66 02	7.36 a.m.	61	19	29.90	759.4	29.96	761.0	59.0	15.0	92	6	5	3	2	9	2	1	3	.....	.....	.....	3	9.59	243.6
Sub-series.																										
Saint Johns, N.F.	N. 47 34	W. 52 42	8.29 a.m.	159	48	29.53	750.0	29.72	754.9	58.3	14.6	55	2	6	2	5	8	1	2	5	.....	.....	.....	6	3.75	95.2
CAPE COLONY																										
Cape St. Francis	S. 34 10	E. 24 50	1.39 p.m.	25	8	.....	.....	.....	.....	62.1	16.7	87	.....	1	11	6	1	4	3	.....	5	.....	.....	4	2.88	73.2
CHINESE.																										
Hong Kong	N. 22 18	E. 114 10	7.37 p.m.	110	34	29.72	754.9	29.77	756.1	79.8	26.6	84	1	.....	.....	3	9	3	11	3	1	.....	.....	6	13.05	331.5
Foochow	N. 26 08	E. 119 38	7.59 p.m.	34	10	29.68	753.9	29.66	753.4	81.9	27.7	83	.....	.....	2	3	9	12	1	2	2	.....	.....	2	0.20	5.1
Sub-Series.																										
South Cape	N. 21 55	E. 120 51	8.04 p.m.	121	37	29.71	754.6	29.78	756.4	78.4	25.8	91	4	2	4	1	.....	.....	2	11	7	.....	.....	5	17.94	455.7
Zi-Ka-Wei	N. 31 12	E. 121 26	8.06 p.m.	23	7	29.74	755.5	29.72	754.9	79.3	26.3	91	2	1	.....	1	5	13	7	2	.....	.....	.....	3	2.40	60.9
DANISH.																										
Copenhagen	N. 55 41	E. 12 36	0.50 p.m.	43	13	29.84	757.9	29.91	759.7	64.0	17.8	65	5	5	8	1	8	2	1	1	.....	.....	.....	8	.....	.....
Fanoe	N. 55 27	E. 8 24	0.34 p.m.	20	6	29.87	758.0	29.92	760.0	63.5	17.5	72	.....	6	8	12	2	3	.....	.....	.....	.....	.....	7	.....	.....

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for August, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
DANISH—Con.	° ′	° ′																								
Godthaab	N. 64 11	W. 51 46	8.33 a.m.	36	11	29.78	756.4	29.86	758.4	43.7	6.5	83	4	1	2	1	2	4	.....	8	9	.....	.....	6	.....	.....
Ivigtut	N. 61 12	W. 48 00	8.48 a.m.	16	5	29.79	756.6	29.85	758.2	45.9	7.7	.....	2	1	.....	.....	.....	1	.....	.....	27	.....	.....	8	.....	.....
Stykkisholm	N. 65 05	W. 22 46	10.29 a.m.	36	11	29.82	757.5	29.91	759.7	48.4	9.1	80	.....	.....	4	1	1	5	11	1	8	.....	.....	6	.....	.....
Thorshavn	N. 62 02	W. 6 44	11.33 a.m.	30	9	29.83	757.6	29.90	759.4	50.9	10.5	80	9	4	4	3	1	1	2	5	2	.....	.....	8	.....	.....
Vestervig	N. 56 47	E. 8 20	0.33 p.m.	82	25	29.77	756.1	29.87	758.7	60.8	16.0	70	.....	8	14	2	3	2	.....	.....	2	.....	.....	7	.....	.....
FRENCH.																										
Agen	N. 44 12	E. 0 38	0.03 p.m.	604	184	29.35	745.5	29.98	761.5	77.9	25.5	61	5	10	6	1	2	4	3	.....	.....	.....	.....	.....	2.32	59.0
Alençon	N. 48 26	E. 0 05	0.00 m.	476	145	29.44	747.7	29.94	760.5	72.0	22.2	60	1	1	.....	3	7	5	2	12	.....	.....	.....	.....	0.73	18.5
Arras	N. 50 18	E. 2 46	0.11 p.m	223	68	29.79	756.7	30.04	763.0	73.8	23.2	52	.....	13	1	.....	.....	6	6	5	.....	.....	.....	.....	1.03	26.1
Avignon	N. 43 57	E. 4 49	0.19 p.m	66	20	29.91	759.8	29.98	761.5	82.4	28.0	52	11	2	3	10	1	1	.....	3	.....	.....	.....	.....	3.01	76.5
Bar-sur-Seine	N. 48 07	E. 4 22	0.17 p.m.	518	158	29.46	748.3	30.01	762.2	71.8	22.1	51	4	2	1	4	2	7	5	6	.....	.....	.....	5	1.75	44.5
Beauvais	N. 49 26	E. 2 05	0.08 p.m.	269	82	29.68	753.9	29.98	761.5	75.2	24.0	55	5	4	7	5	.....	.....	4	6	.....	.....	.....	4	1.31	33.2
Besançon	N. 47 13	E. 6 02	0.24 p.m.	895	273	29.15	740.3	30.07	763.8	73.8	23.2	56	3	1	1	7	8	1	2	8	.....	.....	.....	.....	4.05	102.9
Bordeaux	N. 44 50	W. 0 32	11.58 a.m.	243	74	29.74	755.5	30.00	761.9	78.4	25.8	50	4	1	5	8	3	2	4	4	.....	.....	.....	5	3.42	86.9
Bourges	N. 47 10	E. 2 26	0.10 p.m.	512	156	29.49	749.0	30.03	762.7	69.1	20.6	53	2	.....	3	4	6	9	3	3	1	.....	.....	5	2.83	71.8
Brest	N. 48 24	W. 4 30	11.42 a.m.	210	64	29.79	756.6	30.02	762.5	69.4	20.8	75	4	3	.....	10	2	1	4	6	1	.....	.....	4	1.15	29.2
Caen	N. 49 11	W. 0 21	11.59 a.m.	69	21	29.93	760.1	30.01	762.2	71.1	21.7	59	8	5	1	3	5	2	1	6	.....	.....	.....	4	1.53	38.8
Châlons-sur-Marne	N. 48 57	E. 4 21	0.17 p.m.	295	90	29.71	754.5	30.03	762.7	71.8	22.1	65	2	7	5	6	5	1	.....	1	4	.....	.....	4	1.40	35.5
Charleville	N. 49 46	E. 4 43	0.19 p.m.	470	145	29.51	749.5	30.01	762.2	72.0	22.2	57	1	4	5	4	5	3	5	4	.....	.....	.....	5	1.68	42.8
Clermont-Fer'and	N. 45 46	E. 3 05	0.12 p.m.	1273	388	28.67	728.2	29.97	761.3	74.5	23.5	51	8	3	4	1	4	3	3	5	.....	.....	.....	5	3.10	78.6
Cluny	N. 46 26	E. 4 39	0.19 p.m.	787	240	29.17	741.0	30.01	762.2	75.0	23.9	53	.....	6	4	5	2	4	.....	10	.....	.....	.....	4	3.64	92.4
Commercy	N. 48 46	E. 5 35	0.22 p.m.	817	249	29.15	740.4	30.00	762.0	72.5	22.5	59	.....	5	10	4	2	.....	6	4	.....	.....	.....	4	2.19	55.6
Gap	N. 44 33	E. 6 05	0.24 p.m.	2424	739	27.53	699.2	29.97	761.1	75.0	23.9	46	5	.....	.....	.....	19	1	.....	.....	6	.....	.....	.....	2.27	57.7
Gréasque	N. 43 25	E. 5 37	0.22 p.m.	1056	322	28.90	734.1	29.97	761.2	79.3	26.3	47	3	.....	.....	1	9	5	.....	13	.....	.....	.....	3	4.11	104.3
Grenoble	N. 45 12	E. 5 43	0.23 p.m.	715	218	29.24	742.6	29.97	761.2	74.5	23.6	58	4	15	3	.....	1	1	5	2	.....	.....	.....	.....	2.04	51.8
Guéret	N. 46 10	E. 1 52	0.07 p.m.	1486	453	28.40	721.3	29.91	759.8	68.2	20.1	77	.....	1	6	14	1	9	.....	.....	.....	.....	.....	.....	6.04	153.5
Lorient	N. 47 45	W. 3 21	11.47 a.m.	85	26	29.95	760.7	30.04	763.0	73.9	23.3	68	5	3	1	5	10	1	2	3	1	.....	.....	4	1.74	44.3
Lyon	N. 45 41	E. 4 47	0.19 p.m.	981	299	28.98	736.0	29.99	761.7	73.8	23.2	50	8	4	1	1	8	3	4	2	.....	.....	.....	.....	3.75	95.3
Mans	N. 48 00	E. 0 12	0.01 p.m.	285	87	29.71	754.6	30.02	762.5	72.5	22.5	60	4	1	2	9	.....	4	.....	10	1	.....	.....	3	0.60	15.3
Marseille	N. 43 18	E. 5 23	0.22 p.m.	246	75	29.72	755.0	29.98	761.5	80.6	27.0	49	1	4	8	8	5	4	1	.....	.....	.....	.....	3	1.36	34.6
Montlouis	N. 42 30	E. 2 07	0.08 p.m.	5202	1586	25.02	635.4	29.85	758.2	66.7	19.3	62	3	2	9	9	.....	3	5	.....	.....	.....	.....	4	2.05	52.1
Montpellier	N. 43 37	E. 3 53	0.16 p.m.	102	31	29.86	758.4	29.96	761.0	81.9	27.7	54	7	4	1	2	.....	9	4	4	.....	.....	.....	2	2.36	60.0
Mont Ventoux	N. 44 10	E. 5 16	0.21 p.m.	6234	1900	23.99	609.3	.....	.....	53.6	12.0	78	3	9	2	4	9	4	.....	.....	.....	.....	.....	2	2.01	51.1
Nancy	N. 48 42	E. 6 11	0.25 p.m.	718	219	29.22	742.3	29.97	761.2	71.4	21.9	52	3	4	2	7	1	5	.....	9	.....	.....	.....	.....	1.15	29.2
Nantes	N. 47 13	W. 1 33	11.54 a.m.	134	41	29.88	759.0	30.02	762.5	75.7	24.3	46	5	2	3	7	1	2	9	2	.....	.....	.....	5	1.54	39.0
Nice	N. 43 41	E. 7 16	0.29 p.m.	59	18	29.91	759.6	29.97	761.2	82.4	28.0	54	1	.....	.....	.....	17	.....	12	.....	1	.....	.....	2	0.34	8.5
Perpignan	N. 42 42	E. 2 53	0.12 p.m.	105	32	29.89	759.2	30.00	762.0	83.5	28.6	54	3	4	2	.....	1	.....	8	13	.....	.....	.....	3	0.44	11.2
Pic du Midi (Sum-	N. 42 56	W. 0 08	11.59 a.m.	9380	2859	21.40	543.5	.....	.....	49.3	9.6	50	1	.....	5	12	.....	.....	.....	.....	13	.....	.....	2	3.00	76.2
Privas. [mit.)	N. 44 45	E. 4 36	0.18 p.m.	997	304	28.99	736.3	30.02	762.5	75.9	24.4	54	8	.....	.....	.....	22	.....	.....	.....	1	.....	.....	4	0.42	10.6
Puy de Dôme	N. 45 46	E. 2 58	0.12 p.m.	4813	1467	25.24	641.1	.....	.....	65.1	18.4	81	2	1	5	6	5	3	2	7	.....	.....	.....	5	6.87	174.5
Rochefort	N. 45 56	W. 0 58	11.56 a.m.	30	9	29.97	761.2	30.00	762.0	76.1	24.5	60	3	2	4	4	1	2	9	6	.....	.....	.....	3	2.44	62.0
Roche-sur-Yon	N. 46 40	W. 1 26	11.54 a.m.	259	79	29.73	755.2	30.01	762.2	75.0	23.9	51	5	1	1	4	2	4	2	8	.....	.....	.....	5	1.24	31.4
Rodez	N. 44 21	E. 2 34	0.10 p.m.	2050	625	27.92	709.1	29.97	761.3	76.3	24.6	.....	.....	13	.....	.....	.....	10	1	6	1	.....	.....	.....	1.95	49.6
Rouen	N. 49 26	E. 1 05	0.04 p.m.	39	12	29.96	760.9	30.01	762.2	73.0	22.8	52	2	7	5	3	3	7	2	2	.....	.....	.....	6	3.12	79.2
Saint Brieuc	N. 48 37	E. 5 08	0.20 p.m.	348	106	29.65	753.1	30.03	762.7	71.6	22.0	72	9	.....	4	3	4	.....	1	10	.....	.....	.....	3	0.79	20.0
Saint Maur	N. 48 48	E. 2 21	0.09 p.m.	161	49	29.84	757.9	30.03	762.7	70.9	21.6	53	4	3	3	7	3	2	.....	9	.....	.....	.....	.....	3.50	89.0
Toulouse	N. 43 37	E. 1 27	0.06 p.m.	636	194	29.34	745.2	29.99	761.7	80.4	26.9	54	2	9	4	.....	.....	12	3	1	.....	.....	.....	3	1.84	46.6
Tours	N. 47 24	E. 0 41	0.03 p.m.	171	52	29.82	757.5	29.99	761.7	75.9	24.4	54	3	2	3	3	2	4	4	7	2	.....	.....	.....	0.87	22.0
Sub-Series.																										
St. Martin du Hinx.	N. 43 35	W. 1 16	11.55 a.m.	131	40	29.87	758.8	30.01	762.2	78.4	25.8	56	.....	7	7	.....	.....	3	4	10	.....	.....	.....	5	4.11	104.5
GERMAN.																										
Ansbach	N. 49 18	E. 10 36	0.42 p.m.	1358	414	28.59	726.2	30.00	762.0	69.4	20.8	43	2	5	8	5	1	2	5	3	.....	.....	.....	4	1.07	27.2
Bamberg	N. 49 54	E. 10 54	0.44 p.m.	787	240	29.15	740.5	30.00	762.0	69.4	20.8	46	2	5	7	6	.....	9	.....	2	.....	.....	.....	3	1.71	43.5
Berlin	N. 52 30	E. 13 19	0.53 p.m.	151	46	29.79	756.7	29.97	761.2	70.3	21.3	54	1	14	2	4	.....	1	6	2	.....	.....	.....	4	0.79	20.1
Breslau	N. 51 07	E. 17 02	1.08 p.m.	482	147	29.46	748.2	29.97	761.2	68.9	20.5	44	6	7	7	2	2	3	3	.....	1	.....	.....	6	1.83	46.5
Carlsruhe	N. 49 01	E. 8 25	0.34 p.m.	407	124	29.57	751.0	30.00	762.0	71.8	22.1	51	.....	3	.....	15	.....	3	5	5	.....	.....	.....	4	3.01	76.5
Cassel	N. 51 19	E. 9 28	0.38 p.m.	669	204	29.28	743.8	29.98	761.5	67.5	19.7	59	7	4	5	7	4	3	.....	1	.....	.....	.....	6	2.16	54.9
Frankfort on M.	N. 50 08	E. 8 41	0.35 p.m.	338	103	29.63	752.7	29.99	761.7	70.9	21.6	45	3	6	3	5	4	2	5	2	1	.....	.....	4	1.09	27.7
Friedrichshafen	N. 47 39	E. 9 29	0.38 p.m.	1338	408	28.58	725.9	29.97	761.3	69.6	20.9	65	2	.....	3	18	3	1	.....	4	.....	.....	.....	5	3.90	99.0
Hamburg	N. 53 33	E. 9 58	0.40 p.m.	85	26	29.85	758.1	29.95	760.7	66.2	19.0	60	2	7	5	7	4	5	.....	1	.....	.....	.....	7	0.84	21.2
Kiel	N. 54 19	E. 10 04	0.40 p.m.	13	4	29.93	760.2	29.96	761.0	61.9	16.6	63	3	4	11	5	2	2	1	3	.....	.....	.....	7	1.65	42.0
Leipsic	N. 51 20	E. 12 24	0.50 p.m.	390	119	29.57	751.1	30.00	762.0	64.9	18.3	56	2	5	5	8	4	3	1	3	.....	.....	.....	5	2.56	65.1
Memel	N. 55 43	E. 21 07	1.24 p.m.	39	12	29.84	757.8	29.91	759.7	63.7	17.6	71	4	17	6	2	2	.....	.....	.....	.....	.....	.....	6	.....	.....
Munich	N. 48 09	E. 11 34	0.46 p.m.	1732	528	28.21	716.4	30.07	763.8	69.8	21.0	49	4	8	3	.....	.....	.....	4	12	.....	.....	.....	5	3.28	83.2
Neufahrwasser	N. 54 24	E. 18 40	1.15 p.m.	36	11	29.88	758.9	29.94	760.5	65.5	18.6	64	6	.....	8	.....	5	1	2	9	.....	.....	.....	6	2.17	55.2
Neustadt	N. 49 21	E. 8 08	0.33 p.m.	479	146	29.48	748.7	29.98	761.5	72.0	22.2	60	1	2	11	1	1	6	2	7	.....	.....	.....	5	1.16	29.6
Stuttgart	N. 48 47	E. 9 11	0.37 p.m.	833	254	29.13	739.8	30.01	762.2	72.3	22.4	50	3	5	4	6	2	2	1	7	1	.....	.....	4	1.81	45.9
Wustrow	N. 54 21	E. 12 24	0.50 p.m.	23	7	29.88	759.0	29.92	760.0	66.9	19.4	61	4	6	13	1	3	3	.....	1	.....	.....	.....	6	1.75	44.5
GREEK.																										
Athens	N. 37 58	E. 23 44	1.35 p.m.	348	106	29.53	750.0	29.86	758.4	88.9	31.6	38	13	.....	.....	5	10	.....	.....	3	.....	.....	.....	2	0.01	0.3
INDIAN.																										
Kurrachee	N. 24 47	E. 67 04	4.28 p.m.	49	15	29.53	750.0	29.53	750.0	82.6	28.1	74	.....	.....	17	14	.....	.....	.....	.....	.....	.....	.....	7	0.56	14.2
Deesa	N. 24 16	E. 72 14	4.49 p.m.	466	142	29.13	739.9	29.54	750.3	83.1	28.4	72	1	2	1	17	10	.....	.....	.....	.....	.....	.....	9	4.40	111.8
Bombay	N. 18 54	E. 72 49	4.51 p.m.	37	11	29.71	754.6	29.69	754.1	80.1	26.7	83	1	4	22	4	.....	.....	.....	.....	.....	.....	.....	8	17.52	445.0
Poona	N. 18 28	E. 74 10	4.57 p.m.	1849	564	27.89	708.4	29.67	753.6	75.3	24.1	76	.....	3	25	3	.....	.....	.....	.....	.....	.....	.....	8	2.22	56.4
Belgaum	N. 15 52	E. 74 42	4.59 p.m.	2524	770	27.23	691.6	29.68	753.9	70.5	21.4	87	.....	1	12	18	.....	.....	.....	.....	.....	.....	.....	9	2.06	52.3
Lahore	N. 31 34	E. 74 20	4.57 p.m.	702	214	28.81	731.9	29.49	749.0	89.1	31.7	70	1	1	.....	.....	5	3	6	4	11	.....	.....	4	9.98	253.5
Roorkee	N. 29 52	E. 77 56	5.12 p.m.	887	270	28.65	727.8	29.51	749.5	82.8	28.2	81	.....	.....	4	.....	5	6	2	1	13	.....	.....	8	10.98	278.9
Agra	N. 27 10	E. 78 05	5.12 p.m.	555	169	29.00	736.6	29.51	749.5	83.0	28.3	87	2	4	4	1	.....	7	2	8	3	.....	.....	8	12.82	325.6
Allahabad	N. 25 26	E. 81 52	5.27 p.m.	307	94	29.24	742.6	29.51	749.5	84.0	29.9	82	3	4	4	1	1	1	5	4	8	.....	.....	8	18.95	481.3
Nagpur	N. 21 09	E. 79 11	5.17 p.m.	1025	312	28.58	725.9	29.56	750.8	80.6	27.0	80	1	2	10	14	2	1	.....	.....	1	.....	.....	9	12.62	320.5
Jubbulpore	N. 23 09	E. 79 59	5.20 p.m.	1341	409	28.26	717.9	29.55	750.6	79.4	26.3	82	1	6	8	6	.....	1	1	.....	8	.....	.....	8	22.82	579.6
Lucknow	N. 26 50	E. 81 00	5.24 p.m.	369	112	29.20	741.7	29.52	749.8	82.9	28.3	79	7	5	2	3	3	1	2	2	6	.....	.....	7	18.66	474.0
Patna	N. 25 37	E. 85 08	5.41 p.m.	183	56	29.39	746.5	29.53	750.0	84.6	29.2	90	.....	.....	.....	.....	.....	.....	17	1	13	.....	.....	9	5.25	133.4
Hazaribagh	N. 24 00	E. 85 24	5.42 p.m.	2007	612	27.60	701.0	29.52	749.8	78.6	25.9	83	2	4	1	2	5	10	6	.....	1	.....	.....	9	11.99	304.5
Cuttack	N. 20 29	E. 85 54	5.44 p.m.	80	24	29.53	750.2	29.55	750.6	83.8	28.8	80	.....	.....	2	6	4	.....	2	.....	16	.....	.....	.....	10.50	266.7
Calcutta	N. 22 33	E. 88 21	5.53 p.m.	21	6	29.58	751.4	29.55	750.6	82.5	28.1	84	.....	.....	3	7	13	7	1	.....	.....	.....	.....	7	10.32	262.1
Dhubri	N. 26 07	E. 89 50	5.59 p.m	115	35	29.50	749.4	29.57	751.1	82.5	28.1	83	.....	.....	.....	4	2	.....	1	2	22	.....	.....	5	17.85	453.4
Chittagong	N. 22 21	E. 91 50	6.07 p.m.	87	27	29.59	751.6	29.63	752.6	80.6	27.0	88	.....	.....	2	7	11	7	1	.....	3	.....	.....	9	16.03	409.7
Sibsagar	N. 26 59	E. 94 40	6.19 p.m.	333	101	29.31	744.4	29.59	751.6	84.1	28.9	84	.....	3	1	13	3	1	3	6	1	.....	.....	7	14.38	365.2
Jeypore	N. 26 55	E. 75 50	5.03 p.m.	1431	436	28.15	714.9	29.52	749.8	81.3	27.4	81	3	9	7	4	2	.....	3	3	.....	.....	.....	9	20.57	522.5
Bellary	N. 15 09	E. 76 57	5.08 p.m.	1475	449	28.24	717.2	29.63	752.6	84.5	29.2	56	1	5	24	1	.....	.....	.....	.....	.....	.....	.....	9	0.17	4.3
Trichinopoly	N. 10 50	E. 78 44	5.15 p.m.	275	84	29.47	748.6	29.67	753.6	91.0	32.8	50	1	11	4	4	2	.....	.....	2	7	.....	.....	7	7.99	203.0
ITALIAN.																										
Udine	N. 46 04	E. 13 13	0.53 p.m.	381	116	29.49	749.0	29.88	758.9	79.9	26.6	42	.....	.....	4	5	7	6	2	4	3	.....	.....	3	2.04	51.8
Milan	N. 45 28	E. 9 11	0.37 p.m.	482	147	29.47	748.5	29.96	760.9	80.6	27.0	48	.....	.....	6	5	2	10	7	1	.....	.....	.....	4	0.72	18.2
Padua	N. 45 24	E. 11 53	0.48 p.m.	102	31	29.84	757.9	29.94	760.5	79.7	26.5	48	1	2	2	6	4	6	6	3	1	.....	.....	4	1.82	46.3
Moncaliera	N. 45 00	E. 7 41	0.31 p.m.	846	258	29.06	738.1	29.93	760.1	78.8	26.0	46	2	5	1	5	4	6	6	2	.....	.....	.....	3	0.57	14.5
Genoa	N. 44 24	E. 8 55	0.36 p.m.	177	54	29.77	756.1	29.95	760.8	78.6	25.9	57	5	.....	.....	.....	18	8	.....	.....	.....	.....	.....	3	0.09	2.2
Cuneo	N. 44 20	E. 7 20	0.30 p.m.	1820	555	.....	.....	29.93	760.2	75.9	24.4	47	.....	1	1	.....	.....	6	13	10	.....	.....	.....	3	1.37	34.9
Pesaro	N. 43 55	E. 12 53	0.52 p.m.	46	14	29.91	759.7	29.96	761.0	77.9	25.5	61	1	1	3	1	.....	2	13	10	.....	.....	.....	3	1.08	27.3
Florence	N. 43 46	E. 11 15	0.45 p.m.	240	73	29.70	754.4	29.95	760.7	82.2	27.9	41	3	5	4	12	6	.....	.....	1	.....	.....	.....	3	0.65	16.6
Leghorn	N. 43 33	E. 10 18	0.41 p.m.	79	24	29.87	758.7	29.95	760.7	80.4	26.9	57	.....	6	15	6	2	1	1	.....	.....	.....	.....	2	0.00	0.0
Rome	N. 41 54	E. 12 29	0.50 p.m.	164	50	29.81	757.2	29.96	761.0	85.8	29.9	35	3	1	7	12	4	2	.....	.....	.....	.....	.....	3	1.16	29.5

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metrs	Result of Simultaneous Observations for August, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent.	Mean Rel. Humidity	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
ITALIAN—Con.	°	° ′																								
Cosenza	N. 39 19	E. 16 17	1.05 p.m.	840	256	29.12	739.6	29.95	760.7	84.7	29.3	64	.....	7	13	4	2	5	.....	.....	.....	.....	.....	2	0.16	4.0
Sassari	N. 40 43	E. 8 34	0.34 p.m.	735	224	29.23	742.4	29.97	761.2	81.9	27.7	46	d1	8	2	3	2	5	4	2	.....	.....	.....	3	0.33	8.3
Palermo	N. 38 07	E. 13 21	0.53 p.m.	236	72	29.78	756.4	30.00	762.0	87.3	30.7	47	1	1	.....	2	.....	1	1	25	.....	.....	.....	2	0.34	8.5
Syracuse	N. 37 03	E. 15 15	1.01 p.m.	72	22	29.87	758.7	29.92	760.0	84.7	29.3	61	5	.....	1	3	1	1	9	11	.....	.....	.....	3	0.85	21.7
Sub-Series.																										
Stelvio	N. 46 32	E. 10 25	0.42 p.m	8343	2543	22.17	563.2	.....	.....	49.3	9.6	92	3	.....	14	3	3	1	2	5	.....	.....	.....	6	3.23	82.1
Valdobbia	N. 45 47	E. 7 51	0.31 p.m.	8360	2548	22.32	566.9	.....	.....	52.0	11.1	62	1	6	2	15	3	3	.....	1	.....	.....	.....	7	1.85	47.0
JAPANESE.																										
Akita	N. 39 42	E. 140 07	9.20 p.m.	49	15	29.82	757.3	29.86	758.4	73.8	23.3	93	1	4	3	.....	.....	.....	15	2	6	5803	9464	4	8.12	206.1
Awomori	N. 40 51	E. 140 45	9.23 p.m.	33	10	29.83	757.7	29.85	758.2	72.3	22.4	87	5	3	4	3	7	1	5	3	.....	3315	5334	4	3.41	86.6
Erimo	N. 41 55	E. 143 15	9.30 p.m.	200	61	29.68	753.9	29.89	759.2	65.9	18.8	94	2	.....	14	.....	2	1	5	4	3	10908	17563	6	1.09	27.6
Fushiki	N. 36 47	E. 137 03	10.05 p.m.	13	4	29.83	757.7	29.82	757.4	78.8	26.0	89	1	1	.....	1	.....	1	5	7	15	4627	7445	4	3.75	95.3
Gifu	N. 35 27	E. 136 46	9.07 p.m.	49	15	29.84	757.8	29.86	758.4	78.4	25.8	84	.....	3	1	1	4	9	4	2	7	2215	3566	5	3.95	100.1
Hakodate	N. 41 46	E. 140 44	9.23 p.m.	10	3	29.86	758.3	29.86	758.4	68.9	20.6	90	5	2	3	.....	4	1	11	.....	5	5385	8666	6	3.28	83.1
Hamamatsu	N. 34 42	E. 137 43	9.11 p.m.	92	28	29.80	756.9	29.86	758.5	76.8	24.9	91	1	.....	4	1	1	4	6	3	11	.....	.....	5	6.53	165.8
Hiroshima	N. 34 23	E. 132 27	8.50 p.m.	16	5	29.80	756.9	29.79	756.6	79.2	26.2	84	12	1	2	1	4	.....	3	1	7	3343	5379	4	1.52	38.9
Itsurhara	N. 34 12	E. 129 16	8.34 p.m.	16	5	.....	.....	.....	.....	77.6	25.3	87	4	2	2	5	1	.....	.....	1	16	2738	4407	3	4.88	123.9
Kanazawa	N. 36 33	E. 136 40	9.07 p.m.	95	29	29.76	755.9	29.84	757.8	77.7	25.4	84	.....	2	.....	.....	2	12	3	1	11	3260	5245	4	3.07	78.0
Kioto	N. 35 01	E. 135 46	9.03 p.m.	161	49	29.69	754.2	29.82	757.4	77.0	25.0	86	9	2	.....	.....	1	2	5	8	4	2886	4644	5	6.34	160.6
Kochi	N. 33 33	E. 133 34	8.54 p.m.	20	6	29.84	757.9	29.83	757.7	77.9	25.5	90	5	7	1	.....	1	3	11	3	.....	5289	8510	6	12.73	323.4
Miasaki	N. 31 56	E. 131 26	8.46 p.m.	26	8	29.81	757.2	29.81	757.2	78.3	25.7	90	5	1	5	.....	4	2	11	.....	3	5983	9628	4	16.51	419.3
Miyako	N. 39 38	E. 141 59	9.28 p.m.	98	30	29.79	756.7	29.88	758.9	70.7	21.5	94	1	3	4	4	3	.....	.....	.....	16	710	1144	6	6.05	153.7
Nemuro	N. 43 20	E. 145 35	9.42 p.m.	89	27	29.79	756.7	29.88	758.9	63.5	17.5	92	1	.....	1	3	12	2	3	3	.....	4814	7747	7	1.31	52.2
Nagasaki	N. 32 44	E. 129 52	8.39 p.m.	190	58	29.62	752.3	29.78	756.4	77.5	25.6	89	5	2	1	12	2	.....	3	2	4	3868	6225	3	7.59	192.8
Niigata	N. 37 55	E. 139 03	9.16 p.m.	33	10	29.82	757.4	29.83	757.7	78.3	25.8	81	12	.....	.....	.....	5	7	6	.....	1	5589	8994	4	3.41	86.6
Nobiru	N. 38 23	E. 141 11	9 25 p.m.	16	5	29.86b	758.5b	29.86b	758.5b	b74.0	b23.6	b94	c1	1	2	5	6	4	3	1	6	6628c	10666c	7b	b3.66	b92.8
Numadzu	N. 35 06	E. 138 51	9.15 p.m.	30	9	29.86	758.5	29.86	758.7	76.8	24.9	87	.....	.....	1	5	2	.....	13	6	4	3734	6013	6	5.04	128.0
Osaka	N. 34 42	E. 135 30	9.02 p.m.	35	11	29.81	757.3	29.82	757.5	79.2	26.2	83	4	.....	10	2	.....	.....	6	8	1	6055	9761	2	3.86	97.9
Sakai	N. 35 33	E. 133 14	8.53 p.m.	7	2	29.82	757.4	29.81	757.3	78.4	25.8	81	4	1	6	.....	1	3	5	4	7	4073	6555	4	4.77	121.3
Shimonoseki	N. 33 58	E. 130 56	8.44 p.m.	164	50	29.66	753 4	29.80	756.9	77.4	25.2	85	.....	4	3	1	.....	.....	9	1	13	.....	.....	3	5.05	128.2
Tokei	N. 35 41	E. 139 46	9.19 p.m.	69	21	29.83	757.6	29.88	758.9	75.8	24.3	89	1	.....	1	1	17	1	8	1	1	5250	8449	5	3.61	91.6
Wakayama	N. 34 14	E. 135 09	9.01 p.m.	49	15	29.79	756.7	29.81	757.2	79.3	23.6	82	3	.....	.....	3	9	1	1	3	11	2200	3542	4	3.12	79.4
Kagoshima	N. 31 35	E. 130 33	8.42 p.m.	13	4	29.81	757.1	29.79	756.4	78.0	25.5	88	1	7	1	1	2	1	1	2	15	2883	4640	4	11.15	283.1
MAURITIUS.																										
Mauritius	S. 20 06	E. 57 33	3.50 p.m.	181	55	29.95	760.7	30.07	763.8	69.6	20.9	64	1	.....	.....	.....	.....	15	14	1	.....	4890	7870	6	2.11	53.6
MEXICAN.																										
Guanajuato	N. 21 01	W. 101 10	5.15 a m.	6762	2061	23.68	601.5	29.82	757.4	59.9	15.5	82	.....	6	1	9	1	2	.....	12	.....	.....	.....	7	4.94	124.1
Leon	N. 21 07	W. 101 36	5.14 a.m.	5902	1799	24.30	617.2	29.85	758.2	60.7	15.9	89	3	8	6	3	4	2	2	3	.....	.....	.....	7	5.21	132.3
Mazatlan	N. 23 12	W. 106 17	4.55 a.m.	249	76	29.61	752.2	29.82	757.4	77.9	25.5	89	10	1	2	.....	.....	.....	7	11	.....	.....	.....	8	13.82	351.0
Mexico	N. 19 26	W. 99 00	5.24 a.m.	7490	2283	23.08	586.2	30.01	762.2	56.0	13.3	82	.....	4	2	.....	.....	.....	.....	.....	25	.....	.....	8	5.89	149.5
NETHERLANDS.																										
Flushing	N. 51 24	E. 3 35	0.14 p.m.	0	0	30.01	762.2	30.03	762.7	67.1	19.5	.....	2	5	6	6	3	1	6	2	.....	.....	.....	.....	1.72	43.8
Groningen	N. 53 12	E. 6 34	0.26 p.m.	60?	18?	29.91	759.7	29.99	761.7	65.8	18.8	.....	8	4	3	5	3	2	3	3	.....	.....	.....	.....	3.16	80.2
Helder	N. 52 58	E. 4 45	0.19 p.m.	0	0	29.97	761.2	29.99	761.7	62.8	17.1	.....	3	7	4	6	2	1	2	6	.....	.....	.....	.....	1.28	32.6
Hellevoetsluis	N. 51 49	E. 4 08	0.17 p.m.	0	0	29.99	761.8	30.01	762.2	67.6	19.8	.....	.....	9	5	5	1	.....	6	2	.....	.....	.....	.....	2.16	55.0
Utrecht	N. 52 05	E. 5 07	0.20 p.m.	43	13	29.95	760.7	30.07	763.8	68.4	20.2	.....	4	2	7	5	8	2	1	2	.....	.....	.....	5	1.18	30.0
Sub-Series.																										
Batavia	S. 6 11	E. 106 50	7.07 p.m.	26	8	29.69	754.1	29.64	752.8	79.9	26.6	77	4	1	1	1	2	.....	2	9	11	.....	.....	6	0.41	10.4
NORWEGIAN.																										
Bergen	N. 60 24	E. 5 20	0.21 p.m.	56	17	29.75	755.6	29.85	758.2	57.7	14.3	72	.....	11	10	2	5	2	1	.....	.....	.....	.....	6	10.20	259.1
Brono	N. 65 28	E. 12 14	0.49 p.m.	33	10	29.71	754.7	29.79	756.7	55.2	12.9	77	10	3	4	6	2	3	.....	1	2	.....	.....	8	2.73	69.4
Christiania	N. 59 55	E. 10 45	0.43 p.m.	134	41	29.63	752.7	29.81	757.2	64.2	17.9	59	1	.....	4	15	4	1	2	1	3	.....	.....	7	2.24	57.0
Gjæsvær	N. 71 07	E. 25 22	1.41 p.m.	23	7	29.74	755.3	29.82	757.4	54.1	12.3	.....	.....	1	5	2	.....	1	7	7	8	.....	.....	7	2.29	58.2
PORTUGUESE.																										
Angra	N. 38 39	W. 27 14	10.11 a.m.	144	44	29.99	761.7	30.12	765.0	73.2	22.9	87	1	5	12	4	2	6	1	.....	.....	.....	.....	3	0.79	20.0
Funchal	N. 32 38	W. 16 55	10.52 a.m.	82	25	30.02	762.6	30.07	763.8	75 7	24.3	65	.....	.....	1	16	4	3	.....	.....	7	.....	.....	6	0.09	2.2
Lisbon	N. 38 42	W. 9 08	11.23 a.m.	312	95	29.69	754.0	29.99	761.7	76.6	24.8	56	5	6	.....	11	4	2	.....	3	.....	.....	.....	4	0.32	8.1
Ponta Delgada	N. 37 45	W. 25 41	10.17 a.m.	66	20	30.10	764.6	30.15	765.8	77.4	25.2	70	4	1	6	9	2	5	.....	1	3	.....	.....	4	1.41	35.8
Saint Vincent	N. 16 37	W. 25 02	10.20 a.m.	35	11	29.91	759.7	29.89	759.2	81.9	27.7	76	11	2	.....	.....	.....	.....	1	17	.....	.....	.....	6	5.20	132.2
Serra da Estrella	N. 40 25	W. 7 35	11.30 a.m.	4728	1441	25.40	645.2	29.96	761.0	65.5	18.6	46	6	1	4	3	...	3	4	10	.....	.....	.....	2	0.39	10.0
San Salvador	S. 6 17	E. 14 53	1.00 p.m.	1834	559	28.14	714.7	29.92	760.0	71.4	21.9	60	.....	2	7	4	.....	.....	.....	.....	18	.....	.....	5	0.00	0.0
RUSSIAN.																										
Archangel	N. 64 33	E. 40 32	2.42 p.m.	16	5	29.77	756.1	29.84	757.9	62.8	17.1	70	.....	6	1	1	4	4	9	1	5	.....	.....	5	.....	.....
Baku	N. 40 21	E. 49 51	3.19 p.m.	39	12	29.89	759.2	29.84	757.9	82.2	27.9	64	11	1	.....	.....	8	5	2	3	1	.....	.....	2	0,00	0.0
Barnaul	N. 53 20	E. 83 47	5.35 p.m.	459?	140?	29.28	743.6	29.78	756.4	64.6	18.1	62	4	11	1	2	1	2	.....	5	5	.....	.....	7	2.00	50.7
Dorpat	N. 58 23	E. 26 43	1.47 p.m.	210	64	29.55	750.6	29.80	756.9	66.0	18.9	60	3	5	2	10	4	2	1	4	.....	.....	.....	7	2.26	57.3
Ekaterinburg	N. 56 49	E. 60 38	4.03 p.m.	928	283	28.94	735.1	29.94	760.5	65.7	18.7	62	6	.....	4	4	1	5	4	6	1	.....	.....	7	3.80	96.5
Elisavetgrad	N. 48 31	E. 32 17	2.09 p.m.	407	124	29.46	748.3	29.88	758.9	77.5	25.3	35	3	8	4	8	3	1	4	.....	.....	.....	.....	6	0.64	16.2
Irkutsk	N. 52 17	E. 104 16	6.57 p.m.	1610	491	28.13	714.5	29.82	757.4	60.8	16.0	61	3	11	2	4	2	5	1	1	2	.....	.....	7	3.99	101.4
Kasalinsk b	N. 45 46	E. 62 07	4.08 p.m.	148	45	29.55	750.6	29.70	754.4	85.1	29.5	32	3	5	9	1	1	1	.....	9	.....	.....	.....	3	.....	.....
Kasan	N. 55 47	E. 49 08	3.17 p.m.	230	70	29.57	751.1	29.84	757.9	72.3	22.4	55	2	3	2	7	8	4	1	3	1	.....	.....	6	0.26	6.5
Kem	N. 64 57	E. 34 39	2.19 p.m.	43	13	29.71	754.6	29.78	756.4	60.6	15.9	70	1	4	3	3	4	3	5	5	3	.....	.....	8	4.50	114.2
Kertch	N. 45 21	E. 36 29	2.26 p.m.	20?	6?	29.89	759.1	29.91	759.7	78.6	25.9	48	6	3	1	1	7	.....	6	6	1	.....	.....	3	.....	.....
Keiff	N. 50 27	E. 30 30	2.02 p.m.	600	183	29.26	743.2	29.90	759.4	69.4	20.8	59	4	5	4	7	5	2	4	.....	.....	.....	.....	7	2.52	64.0
Kischinev	N. 46 59	E. 28 51	1.55 p.m.	361	110	29.56	750.8	29.92	760.0	77.5	25.3	54	10	5	4	3	4	.....	2	3	.....	.....	.....	4	1.60	40.6
Korostishev	N. 50 19	E. 29 03	2.05 p.m.	?	?	29.29	744.0	.....	.....	71.4	21.9	59	.....	3	6	6	1	3	5	1	6	.....	.....	6	2.12	53.8
Koslov	N. 52 53	E. 40 31	2.42 p.m.	512	156	29.30	744.3	29.85	758.2	71.8	22.1	56	3	3	2	6	7	3	2	3	2	.....	.....	6	.....	.....
Lgov	N. 51 38	E. 35 17	2.21 p.m.	518	158	29.34	745.3	29.89	759.2	70.3	21.3	59	3	4	3	6	4	1	1	7	2	.....	.....	7	1.93	49.1
Libau	N. 56 31	E. 21 01	1.24 p.m.	20	6	29.82	757.5	29.87	758.7	63.0	17.2	69	1	9	7	11	2	1	.....	.....	.....	.....	.....	3	1.84	46.8
Lugan	N. 48 35	E. 39 20	2.37 p.m.	164	50	29.71	755.0	29.89	759.2	81.9	27.7	35	1	5	6	8	3	1	2	5	.....	.....	.....	4	0.82	20.7
Moscow	N. 55 46	E. 37 40	2.31 p.m.	469	143	29.34	745.1	29.86	758.4	66.4	19.1	65	3	5	4	4	8	2	3	1	1	.....	.....	6	4.00	101.5
Ner chinsk	N. 51 19	E. 119 37	7.58 p.m.	2155?	657?	27.45	697.2	29.74	755.4	58.6	14.8	67	.....	3	1	5	1	2	1	.....	18	.....	.....	5	.....	.....
Nikolajev	N. 46 58	E. 31 58	2.08 p.m.	62	19	29.85	758.2	29.91	759.7	82.6	28.1	40	9	1	3	4	7	1	2	2	2	.....	.....	3	0.78	19.9
Nikolaievsk c	N. 53 08	E. 140 45	9.23 p.m.	82	25	29.54	750.3	29.64	752.8	62.2	16.8	81	2	1	5	.....	1	7	11	.....	1	.....	.....	5	.....	.....
Nikolsk	N. 59 32	E. 45 27	3.02 p.m.	485?	148?	29.30	744.2	29.84	757.9	67.6	19.8	64	3	4	1	1	7	8	5	1	1	.....	.....	8	2.99	76.0
Perm	N. 58 01	E. 56 16	3.45 p.m.	328?	100?	29.45	748.0	29.82	757.4	71.2	21.8	54	2	3	4	1	4	9	5	2	1	.....	.....	7	1.24	31.4
Petro-Alexandrovsk	N. 41 28	E. 61 05	4.04 p.m.	328	100	29.50	749.3	29.81	757.2	87.8	31.0	.....	6	13	5	.....	.....	.....	.....	7	.....	.....	.....	2	.....	.....
Petrozavodsk e	N. 61 47	E. 34 23	2.18 p.m.	220?	67?	29.52	749.7	29.79	756.7	61.7	16.5	66	1	2	3	5	2	3	7	3	.....	.....	.....	5	3.34	84.7
Pinsk	N. 52 07	E. 26 06	1.44 p.m.	459?	140?	29.39	746.4	29.89	759.2	66.6	19.2	67	2	3	5	5	1	4	4	4	3	.....	.....	7	6.08	154.4
Poti	N. 42 09	E. 41 37	2.46 p.m.	26	8	29.74	755.3	29.76	755.9	79.0	26.1	76	.....	4	8	13	6	.....	.....	.....	.....	.....	.....	5	.....	.....
St. Petersburg	N. 59 56	E. 30 16	2.01 p.m.	20	6	29.74	755.5	29.80	756.9	64.8	18.2	58	2	5	7	3	6	1	3	4	.....	.....	.....	7	2.89	73.4
Samarkand	N. 39 39	E. 66 57	4.28 p.m.	2379?	725?	27.34	694.5	29.72	754.9	86.2	30.1	.....	2	3	1	1	.....	4	12	4	4	.....	.....	2	.....	.....
Sevastopol	N. 44 37	E. 33 31	2.14 p.m.	187	57	29.70	754.3	29.89	759.2	81.7	27.6	44	.....	6	11	3	4	1	1	3	2	.....	.....	3	0.20	5.2
Tashkend	N. 41 20	E. 69 18	4.37 p.m.	1607?	490?	28.11	713.9	29.69	754.1	91.2	32.9	33	.....	4	8	2	.....	2	1	.....	14	.....	.....	2	.....	.....
Tiflis	N. 41 43	E. 44 47	2.59 p.m.	1342	409	28.49	723.7	29.75	755.6	84.7	29.3	36	1	7	.....	1	3	13	5	.....	1	.....	.....	3	2.94	74.7
Viatka	N. 58 36	E. 49 41	3.19 p.m.	581?	177?	29.24	742 6	29.88	758.9	68.5	20.3	b66	b1	3	6	2	7	5	1	1	3	.....	.....	6b	3.18	80.8
Warsaw	N. 52 13	E. 21 02	1.24 p.m.	390	119	29.48	748.8	29.91	759.7	67.3	19.6	54	3	2	10	4	4	2	3	2	1	.....	.....	7	2.76	70.0
Yeniseisk	N. 58 27	E. 92 06	6.08 p.m.	276?	84	29.64	752.9	29.96	761.0	64.2	17.9	67	4	6	5	3	2	2	1	4	4	.....	.....	6	1.30	33.0
Sub-series.																										
Petrowsky Acad'y	N. 55 50	E. 37 33	2.30 p.m.	558	170	29.22	742.3	29.85	758.2	65.8	18.8	62	2	3	9	2	8	4	.....	1	2	.....	.....	8	4.04	102.5
SCOTTISH.																										
Leith	N. 55 59	W. 3 10	11.47 a.m.	70	21	29.92	760.0	30.03	762.7	.....	.....	.....	b2	4	9	4	.....	2	5	3	.....	.....	.....	7	1.76	44.7
SPANISH.																										
Bilbao	N. 43 15	W. 2 59	11.48 a.m.	52	16	29.94	760.4	29.99	761.7	79.5	26.4	61	1	16	1	.....	2	4	.....	.....	7	.....	.....	5	1.08	27.3

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for August, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent.	Mean Rel. Humidity	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation Inch.	Mill.
SPANISH—Con.	° ′	° ′																								
Burgos	N. 42 20	W. 3 46	11.45 a.m.	2821	860	27.12	688.9	29.96	761.0	75.0	23.9	55	5	4	2	4	7	.....	1	8	.....	4754	7651	2	1.21	30.8
Madrid	N. 40 25	W. 3 42	11.45 a.m.	2152	656	27.83	706.8	29.92	760.0	86.4	30.2	32	.....	.....	5	8	6	4	3	2	3	7326	11790	3	0.91	23.2
Santiago	N. 42 53	W. 8 28	11.26 a.m.	863	263	29.08	738.5	29.94	760.5	78.6	25.9	55	5	4	1	11	1	1	.....	7	1	6143	9886	5	3.56	90.4
Sub-Series.																										
Manila	N. 14 35	E. 120 57	8.04 p.m.	46	14	29.80	757.0	29.78	756.4	80.5	26.9	87	2	3	.....	8	1	.....	7	3	7	.....	.....	6	5.62	142.8
San Fernando	N. 36 28	W. 6 13	11.35 a.m.	95	29	29.92	759.9	30.00	762.0	81.9	27.8	55	.....	.....	13	7	1	.....	10	.....	.....	.....	.....	2	0.01	0.2
SWEDISH.																										
Haparanda	N. 65 47	E. 24 03	1.36 p.m.	30	9	29.65	753.2	29.73	755.1	60.1	15.6	78	7	3	1	1	12	3	1	2	1	.....	.....	6	4.25	107.9
Umea	N. 63 50	E. 20 17	1.21 p.m.	39	12	29.67	753.7	29.76	755.9	61.7	16.6	68	4	4	.....	5	11	.....	2	5	.....	.....	.....	6	1.65	42.0
Hernosand	N. 62 32	E. 17 57	1.12 p.m.	46	14	29.67	753.7	29.77	756.1	62.2	16.8	67	5	5	3	4	5	3	2	2	2	.....	.....	6	3.84	97.4
Stockholm	N. 59 20	E. 18 04	1.12 p.m.	144	44	29.63	752.7	29.82	757.4	64.8	18.2	53	4	4	10	4	3	1	.....	3	2	.....	.....	6	1.50	38.2
Wisby	N. 57 39	E. 18 19	1.13 p.m.	52	16	29.77	756.2	29.85	758.2	63.1	17.3	66	5	5	16	3	.....	1	1	.....	.....	.....	.....	4	1.20	30.4
Sub-Series.																										
Upsala	N. 59 51	E. 17 37	1.10 p.m.	79	24	29.67	753.6	29.79	756.7	64.9	18.3	60	5	4	6	6	6	1	.....	3	.....	.....	.....	7	3.13	79.5
SWISS.																										
Geneva	N. 46 12	E 6 08	0.25 p.m.	1338	408	28.63	727.1	30.00	762.1	71.1	21.7	60b	16	1	3	1	9	.....	.....	1	.....	.....	.....	4	4.83	122.7
TURKISH.																										
Constantinople	N 41 02	E. 28 59	1.56 p.m.	246	75	29.64	752.8	29.88	758.9	80.2	26.8	55	13	1	.....	.....	3	.....	.....	14	.....	.....	.....	3	1.94	49.4
Valona	N. 40 27	E. 19 27	1.18 p.m.	105	32	29.82	757.4	29.92	760.0	84.7	29.3	.....	1	11	2	15	2	.....	.....	.....	.....	.....	.....	1	.....	.....
Sub-Series.																										
Beirut	N. 33 54	E. 35 28	2.22 p.m.	112	34	29.63	752.6	29.70	754.4	87.6	30.9	61	5	4	13	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
UNITED STATES.																										
Atlantic states.																										
Eastport	N. 44 54	W. 66 59	7.32 a.m.	53	16	29.90	759.4	29.96	761.0	57.4	14.1	84	7	6	1	4	6	.....	3	3	1	5441	8739	4	3.56	90.4
Portland	N. 43 39	W. 70 15	7.19 a.m.	99	30	29.86	758.4	29.96	761.0	62.0	16.7	78	1	12	5	3	5	.....	1	3	1	5101	8209	3	6.56	166.6
Manchester	N. 43 13	W. 73 03	7.14 a.m.	.....	.....	29.75	755.6	.....	.....	60.7	15.9	88	7	9	3	3	6	.....	2	.....	1	3345	5383	4	6.33	160.8
Mt. Washington	N. 44 16	W. 71 18	7.15 a.m.	6279	1914	23.86	606.0	30.00	762.0	42.5	5.8	86	3	11	7	6	1	1	1	1	.....	18910	30432	3	5.51	140.0
Northfield	N. 44 08	W. 72 42	7.09 a.m.	871	266	29.06	738.1	29.98	761.5	56.2	13.4	91	8	.....	.....	3	12	3	.....	5	.....	5063	8148	4	4.53	115.1
Boston	N. 42 21	W. 71 04	7.16 a.m.	124	38	29.87	758.7	29.99	761.7	63.8	17.7	79	5	9	6	4	1	3	.....	3	.....	6436	10358	4	3.05	77.5
Nantucket	N. 41 14	W. 70 07	7.20 a.m.	14	4	29.98	761.5	29.98	761.5	66.6	19.2	84	6	.....	5	6	5	1	2	6	.....	6641	10688	3	4.35	110.5
Block Id	N. 41 10	W. 71 36	7.14 a.m.	27	8	29.97	761.2	29.99	761.7	66.9	19.4	87	9	.....	3	6	3	1	1	6	2	7853	12638	5	3.13	79.5
New Haven	N. 41 18	W. 72 56	7.08 a.m.	107	33	29.89	759.2	29.99	761.7	64.2	17.9	84	11	4	2	3	3	1	.....	4	3	4592	7390	6	4.80	121.9
New London	N. 41 21	W. 72 05	7.12 a.m.	47	14	29.93	760.2	29.97	761.2	66.9	19.4	83	8	2	2	3	1	1	.....	10	4	3634	5848	6	4.19	106.4
Wood's Holl	N. 41 33	W. 70 40	7.18 a.m.	22	7	30.00	762.0	30.01	762.2	65.5	18.6	90	9	3	3	3	5	13	.....	5	.....	8425	13558	5	10.84	275.3
Albany	N. 42 39	W. 73 45	7.05 a.m.	85	26	29.93	760.2	30.01	762.2	63.0	17.2	83	4	4	.....	.....	8	3	.....	5	7	3133	5042	5	4.61	117.1
New York City	N. 40 43	W. 74 00	7.04 a.m.	185	56	29.81	757.2	29.99	761.7	67.9	19.9	76	11	3	4	4	2	2	1	2	2	5415	8714	5	3.66	93.0
Philadelphia	N. 39 57	W. 75 09	7.00 a.m.	117	36	29.90	759.4	30.01	762.2	68.3	20.2	79	7	3	1	5	6	1	2	5	1	5008	8060	5	2.31	58.7
Atlantic City	N. 39 22	W. 74 25	7.03 a.m.	13	4	30.00	762.0	30.00	762.0	68.8	20.4	89	7	3	4	6	3	.....	2	4	2	5216	8394	4	3.08	78.2
Baltimore	N. 39 18	W. 76 37	6.54 a.m.	45	14	29.97	761.2	30.00	762.0	69.0	20.6	78	12	1	3	.....	8	.....	3	4	.....	3652	5877	6	4.15	105.4
Washington City	N. 38 54	W. 77 03	6.52 a.m.	106	32	29.91	759.7	30.01	762.2	68.5	20.3	82	6	5	.....	5	3	1	1	3	7	3156	5079	6	2.34	59.4
Lynchburg	N. 37 25	W. 79 09	6.44 a.m.	652	199	29.34	745.2	30.01	762.2	68.7	20.4	87	2	1	3	3	5	...	4	6	7	1927	3101	5	4.73	120.1
Norfolk	N. 36 51	W. 76 17	6.55 a.m.	30	9	29.96	761.0	29.98	761.5	72.1	22.3	88	8	1	1	4	7	2	2	6	.....	4786	7704	6	8.56	217.4
Hatteras	N. 35 15	W. 75 40	6.58 a.m.	11	3	29.98	761.5	29.97	761.2	75.4	24.1	84	6	1	2	5	5	2	3	7	.....	9868	15881	5	7.99	202.9
Wilmington	N. 34 14	W. 77 57	6.48 a.m.	52	16	29.93	760.2	29.96	761.0	74.2	23.4	90	3	2	7	7	.....	2	5	5	.....	5115	8232	4	9.88	251.0
Raleigh	N. 35 48	W. 78 29	6.39 a.m.	375	114	29.55	750.6	30.01	762.2	69.7	20.9	95	6	5	1	3	5	3	.....	5	3	3212	5169	6	10.80	274.3
Charlotte	N. 35 13	W. 80 51	6.37 a.m.	808	246	29.18	741.2	30.00	762.0	70.1	21.2	89	6	1	.....	4	3	2	2	12	1	3413	5493	6	9.02	229.1
Charleston	N. 32 47	W. 79 56	6.40 a.m	52	16	29.94	760.5	29.96	761.0	77.3	25.2	85	2	4	2	10	.....	.....	1	10	2	7177	11540	5	4.12	104.6
Augusta	N. 33 28	W. 81 54	6.32 a.m.	183	56	29.82	757.4	29.98	761.5	73.5	23.1	91	3	5	1	1	1	4	7	9	.....	2478	3988	5	6.83	173.5
Savannah	N. 32 05	W. 81 05	6.36 a.m.	87	27	29.90	759.4	29.96	761.0	76.3	24.6	88	4	1	3	10	4	.....	3	6	...	5310	8546	4	1.89	48.0
Jacksonville	N. 30 20	W. 81 39	6.34 a.m.	43	13	29.93	760.2	29.94	760.5	76.6	24.8	88	1	2	1	5	10	1	3	8	.....	5766	9279	4	5.76	146.3
Cedar Keys	N. 29 08	W. 83 02	6.28 a.m.	22	7	29.94	760.5	29.92	760.0	79.7	26.5	82	6	3	3	4	3	3	1	8	.....	6437	10359	3	5.45	138.4
Key West	N. 24 34	W. 81 49	6.33 a.m.	22	7	29.93	760.2	29.90	759.4	82.3	27.9	79	b2	6	2	.....	1	7	5	5	1	6413	10320	6	2.14	54.4
Titusville	N. 28 40	W. 80 50	6.37 a.m.	12	4	29.96	761.0	.....	.....	77.8	25.4	88	1	4	4	5	6	1	3	5	2	7381	11878	2	2.47	62.7
Gulf states.																										
Atlanta	N. 33 45	W. 84 23	6.23 a.m.	1129	344	28.85	732.8	29.98	761.5	70.6	21.4	86	1	7	6	.....	3	3	5	6	.....	4738	7625	4	7.51	190.8
Pensacola	N. 30 25	W. 87 13	6.11 a.m.	30	9	29.94	760.5	29.93	760.2	76.6	24.8	84	4	8	5	4	.....	.....	3	6	1	4636	7461	4	3.42	86.9
Mobile	N. 30 41	W. 88 02	6.08 a.m.	35	11	29.95	760.7	29.95	760.7	74.6	23.7	90	6	15	3	1	1	.....	.....	5	.....	4200	6759	4	4.31	109.5
Montgomery	N. 32 23	W. 86 18	6.15 a.m.	217	66	29.76	755.9	29.96	761.0	72.4	22.4	91	5	1	4	6	1	1	5	8	.....	3172	5105	3	2.04	51.8
Vicksburg	N. 32 22	W. 90 53	5.57 a.m.	222	68	29.76	755.9	29.96	761.0	73.2	22.9	89	2	1	1	3	3	4	4	1	12	2861	4604	4	2.44	62.0
New Orleans	N. 29 58	W. 90 04	6.00 a.m.	52	16	29.92	760.0	29.94	760.5	77.0	25.0	89	1	1	10	2	4	.....	3	8	2	4134	6653	3	7.42	188.5
Shreveport	N. 32 30	W. 93 40	5.46 a.m.	227	69	29.74	755.4	29.94	760.5	74.5	23.6	87	1	.....	1	6	9	5	1	3	6	2534	4078	4	2.07	52.6
Fort Smith	N. 35 22	W. 94 24	5.43 a.m.	470	143	29.48	748.8	29.95	760.7	70.4	21.3	90	1	1	.....	1	1	15	4	3	5	3062	4928	4	4.94	125.5
Little Rock	N. 34 45	W. 92 06	5.52 a.m	309	94	29.67a	753.6a	29.96a	761.0a	a71.6	a22.0	84a	a4	4	2	1	2	3	5	4	5	3396	5465	4a	1.18	30.0
Galveston	N. 29 18	W. 94 47	5.41 a.m.	40	12	29.93	760.2	29.93	760.2	80.6	27.0	79	1	2	2	7	5	4	2	2	6	6334	10193	4	6.43	163.3
San Antonio	N. 29 27	W. 98 28	5.26 a.m.	781	238	29.15	740.4	29.91	759.7	74.9	23.8	93	4	.....	.....	1	12	8	4	2	.....	5874	9453	8	3.63	92.2
Corpus Christi	N. 27 50	W. 97 32	5.30 a.m.	18	5	29.92	760.0	29.90	759.4	78.8	26.0	89	1	1	1	1	9	17	.....	1	.....	9114	14667	4	2.84	72.1
Brownsville	N. 25 53	W. 97 26	5.30 a.m.	57	17	29.87	758.7	29.88	758.9	76.6	24.8	97	.....	1	.....	1	14	13	2	.....	.....	4831	7775	2	1.45	36.8
Rio Grande City	N. 26 23	W. 98 48	5.25 a.m.	230	70	29.73	755.1	29.92	760.0	76.5	24.7	90	.....	.....	.....	.....	6	11	8	....	6	6201	9980	3	1.65	41.9
Palestine	N. 31 45	W. 95 40	5.38 a.m.	533	162	29.45	748.0	29.97	761.2	73.5	23.1	89	.....	1	.....	2	15	4	4	5	.....	5494	8842	4	5.18	131.6
Ohio val. & Tenn.																										
Chattanooga	N. 35 04	W. 85 15	6.19 a.m.	783	239	29.22	742.2	30.00	762.0	70.3	21.3	86	5	3	4	6	2	3	1	6	1	3152	5072	4	3.13	79.5
Knoxville	N. 35 56	W. 83 58	6.24 a.m.	980	299	29.02	737.1	30.02	762.5	68.6	20.2	87	3	1	2	3	.....	2	3	13	4	3405	5480	4	4.48	113.8
Memphis	N. 35 09	W. 90 03	6.00 a.m.	320	98	29.66	753.4	29.97	761.2	72.0	22.2	85	4	7	6	4	.....	3	3	3	1	3889	6259	4	1.21	30.7
Nashville	N. 36 10	W. 86 47	6.13 a.m.	549	167	29.43	747.5	29.98	761.5	70.1	21.2	83	2	5	9	2	2	2	.....	6	3	3578	5758	3	2.89	73.4
Louisville	N. 38 15	W. 85 45	6.17 a.m.	551	168	29.44	747.8	30.00	762.0	70.1	21.2	70	13	1	2	1	6	1	1	5	1	4702	7567	4	2.74	69.6
Indianapolis	N. 39 46	W. 86 10	6.16 a.m.	766	233	29.23	742.4	30.02	762.5	61.7	18.2	76	6	3	2	1	2	2	6	6	3	3429	5518	5	3.15	80.0
Cincinnati	N. 39 06	W. 84 30	6.22 a.m.	628	191	29.36	745.7	30.02	762.5	68.0	20.0	73	5	1	2	2	1	4	2	9	5	4481	7211	5	2.81	71.4
Columbus	N. 39 58	W. 83 00	6.28 a.m.	812	248	29.17	740.9	30.01	762.2	65.1	18.4	75	8	1	1	4	3	3	2	8	1	4301	6922	4	2.21	56.1
Pittsburg	N. 40 32	W. 80 02	6.40 a.m.	847	258	29.13	739.9	29.99	761.7	65.9	18.8	79	3	8	7	3	3	2	13	1	1	.....	.....	4	2.16	54.9
Lake region.																										
Rochester	N. 43 08	W. 77 42	6.49 a.m.	621	189	29.36	745.7	30.02	762.5	60.5	15.8	84	4	4	1	16	1	2	2	1	.....	6160	9913	5	1.59	40.4
Buffalo	N. 42 53	W. 78 53	6.45 a.m.	692	210	29.29	744.0	30.02	762.5	63.1	17.3	75	7	4	4	1	5	1	3	5	1	5300	8529	4	3.56	90.4
Oswego	N. 43 29	W. 76 35	6.54 a.m	335	102	29.63	752.6	29.99	761.7	62.1	16.7	81	3	3	1	3	8	12	.....	1	.....	5922	9530	6	1.69	42.9
Erie	N. 42 07	W. 80 05	6.40 a.m.	681	208	29.29	744.0	30.00	762.0	65.4	18.6	70	4	1	.....	1	18	1	1	4	.....	5021	8080	4	3.54	89.9
Sandusky	N. 41 25	W. 82 40	6.30 a.m.	638	194	29.36	745.7	30.03	762.7	66.3	19.1	73	7	1	1	6	8	3	3	3	.....	6526	10502	5	1.57	39.9
Cleveland	N. 41 30	W. 81 42	6.33 a.m.	690	210	29.29	744.0	30.01	762.2	64.4	18.0	74	1	2	2	.....	3	16	3	2	2	4763	7665	6	3.52	89.4
Toledo	N. 41 40	W. 83 34	6.26 a.m.	651	198	29.35	745.5	30.04	763.0	63.8	17.7	75	9	5	2	3	2	.....	.....	6	2	4470	7194	4	1.81	46.0
Detroit	N. 42 20	W. 83 03	6.28 a.m.	662	202	29.34	745.2	30.02	762.5	62.3	16.8	78	5	2	1	4	1	3	7	8	.....	4891	7871	4	2.30	58.4
Alpena	N. 45 05	W. 83 30	6.26 a.m.	609	186	29.38	746.2	30.03	762.7	56.3	13.5	84	2	2	19	3	.....	1	1	2	1	5423	8727	5	1.09	27.7
Escanaba	N. 45 48	W. 87 05	6.12 a.m.	608	185	29.37	746.0	30.03	762.7	57.4	14.1	84	12	2	3	4	2	2	.....	5	1	5511	8869	5	1.44	36.6
Grand Haven	N. 43 05	W. 86 18	6.15 a.m.	620	189	29.37	746.0	30.03	762.7	60.6	15.9	82	2	.....	.....	2	1	11	6	9	.....	5334	8584	4	2.26	57.4
Lansing	N. 42 45	W. 84 33	6.22 a.m.	870	265	29.12	739.6	30.02	762.5	61.6	16.4	85	5	2	.....	6	9	1	2	3	3	3429	5518	4	0.89	22.6
Mackinaw City	N. 45 47	W. 84 39	6.22 a.m.	605	184	29.38	746.2	30.04	763.0	59.3	15.2	78	3	3	3	3	6	4	.....	6	3	5863	9435	5	0.28	7.1
Marquette	N. 46 34	W. 87 24	6.11 a.m.	672	205	29.31	744.5	30.04	763.0	57.8	14.3	81	2	15	2	3	3	3	.....	2	1	5617	9040	6	2.90	73.7
Port Huron	N. 43 00	W. 82 26	6.30 a.m	639	195	29.34	745.2	30.02	762.5	61.0	16.1	80	4	6	2	5	3	1	4	6	.....	5853	9419	3	1.87	47.5
Chicago	N. 41 52	W. 87 38	6.10 a.m.	715	218	29.26	743.2	30.00	762.0	65.6	18.7	75	3	6	4	1	1	7	3	5	1	6579	10588	5	3.35	85.1
Green Bay	N. 45 00	W. 87 30	6.08 a.m.	616	188	29.37	746.0	30.04	763.0	60.5	15.8	83	5	7	2	6	6	.....	2	3	.....	4425	7121	6	2.93	74.4
Milwaukee	N. 43 02	W. 87 54	6.09 a.m.	697	212	29.28	743.7	30.02	762.5	62.2	16.8	82	7	3	4	3	3	6	1	4	.....	6328	10200	5	2.25	57.1
Duluth	N. 46 48	W. 92 06	5.52 a.m.	672	205	29.28	743.7	30.01	762.2	58.1	14.5	84	1	9	3	2	.....	5	2	8	1	4826	7767	6	1.53	38.9
Upper Miss. val.																										
Saint Paul	N. 44 58	W. 93 03	5.48 a.m.	831	253	29.12	739.6	30.01	762.2	58.3	14.6	87	.....	4	2	.....	.....	4	4	1	16	3073	4945	6	3.37	85.6
La Crosse	N. 43 49	W. 91 15	5.55 a.m.	744	227	29.26	743.2	30.04	763.0	60.6	15.9	85	6	2	.....	3	8	4	2	2	4	4779	7691	6	2.21	56.1
Davenport	N. 41 30	W. 90 38	5.58 a.m.	615	187	29.36	745.7	30.00	762.0	64.0	17.8	77	5	3	1	4	2	1	11	4	.....	4799	7723	6	3.23	82.0
Des Moines	N. 41 35	W. 93 37	5.46 a.m.	866	264	29.10	739.1	30.00	762.0	63.0	17.2	80	3	4	.....	3	2	2	2	1	14	3548	5710	5	2.66	67.6

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea		Result of Simultaneous Observations for August, 1887.							Wind.											Average Cloudiness.	Total Precipitation.	
						Mean Barometer.				Mean Temperature.		Mean Rel. Humidity.	Directions.									Total Movement.				
						Actual.		Reduced.																		
				Feet.	Metr's	Inch.	Mill.	Inch.	Mill.	Fah.	Cent.		N	NW	W	SW	S	SE	E	NE	C	Miles	Kil.	0-10	Inch.	Mill.
U. STATES—Con.																										
Upper Miss. val.																										
Dubuque	N. 40 31	W. 90 41	5.57 a.m.	665	203	29.32	744.7	30.02	762.5	62.8	17.1	85	4	3	.....	1	5	7	3	1	7	2807	4517	5	4.40	111.8
Keokuk	N. 40 22	W. 91 26	5.54 a.m.	618	188	29.35	745.5	29.99	761.7	65.7	18.7	73	9	1	2	1	3	7	4	4	.....	5090	8191	4	2.38	60.5
Cairo	N. 37 00	W. 89 10	6.04 a.m.	359	109	29.63	752.6	29.99	761.7	70.3	21.3	78	10	.....	1	3	5	.....	5	4	3	4552	7326	4	1.10	27.9
Springfield	N. 39 48	W. 89 39	6.02 a.m.	644	196	29.35	745.5	30.02	762.5	65.3	18.5	79	7	1	1	3	2	6	4	7	.....	5143	8277	5	1.05	26.7
Saint Louis	N. 38 38	W. 90 12	5.59 a.m.	571	174	29.42	747.3	30.00	762.0	72.5	22.5	63	10	4	1	4	3	3	3	1	2	4898	7892	4	1.14	29.0
Missouri valley.																										
Leavenworth	N. 39 19	W. 94 57	5.40 a.m.	842	257	29.13	739.9	30.00	762.0	66.0	18.9	86	5	4	.....	.....	7	6	1	1	7	3755	6043	6	7.11	180.6
Omaha	N. 41 16	W. 95 56	5.36 a.m.	1113	339	28.86	733.5	30.02	762.5	64.4	18.0	82	5	3	1	7	5	2	2	6	.....	5477	8814	5	3.94	100.1
Fort Sully	N. 44 39	W. 100 39	5.17 a.m.	1600	488	28.27	718.0	29.95	760.7	59.9	15.5	88	3	5	2	1	.....	4	9	5	2	7428	11954	6	3.12	79.2
Huron	N. 44 21	W. 98 09	5.28 a.m.	1307	398	28.60	726.4	29.98	761.5	57.4	14.1	85	3	3	1	3	.....	15	1	3	2	6600	10622	4	6.13	155.7
Yankton	N. 42 54	W. 97 28	5.30 a.m.	1234	376	28.66	728.0	29.96	761.0	61.4	16.3	88	2	5	1	4	3	7	4	2	3	4468	7190	5	4.46	113.3
Lamar	N. 37 32	W. 94 15	5.43 a.m.	1028	313	28.97	735.8	30.02	762.5	66.3	19.1	88	3	2	.....	7	8	3	3	6	1	5591	8998	5	3.85	97.8
Valentine	N. 42 50	W. 100 32	5.18 a.m.	2614	797	27.29	693.2	29.95	760.7	59.7	15.4	85	4	4	2	2	6	6	2	4	1	7608	12244	5	2.94	74.7
Moorhead	N. 46 52	W. 96 44	5.33 a.m.	926	282	28.97	735.8	29.97	761.2	54.4	12.4	92	6	2	.....	4	8	6	1	1	3	6515	10485	6	1.45	36.8
Saint Vincent	N. 48 56	W. 97 14	5.31 a.m.	804	245	29.12	739.6	30.02	762.5	51.4	10.8	92	5	4	.....	.....	4	8	.....	1	9	3627	3837	4	1.68	42.7
Bismarck	N. 46 47	W. 100 38	5.16 a.m.	1694	516	28.19	716.0	29.99	761.7	56.3	13.5	88	1	4	1	.....	2	4	13	4	2	5471	8805	6	1.62	41.1
Fort Buford	N. 48 00	W. 103 56	5.04 a.m.	1854	565	27.95	709.9	29.90	759.4	56.4	13.6	88	3	3	2	1	4	1	12	5	.....	6166	9923	7	3.91	99.3
Fort Totten	N. 47 57	W. 98 57	5.24 a.m.	1487	453	28.39	721.1	30.00	762.0	54.9	12.7	87	4	2	1	2	1	11	6	4	.....	8024	12913	5	2.36	59.9
Rocky Mount. reg.																										
Ft. Assinnaboine	N. 48 32	W. 109 42	4.41 a.m.	2690	802	27.17	690.1	29.97	761.2	52.5	11.4	79	1	.....	.....	10	4	4	3	9	.....	6750	10863	4	2.56	65.0
Fort Custer	N. 45 42	W. 107 34	4.50 a.m.	3040	927	26.84	681.7	29.93	760.2	56.1	13.4	72	8	1	.....	7	4	5	3	2	1	5275	8489	4	1.48	37.6
Fort Maginnis	N. 47 12	W. 109 10	4.44 a.m.	4320	1317	25.60	650.2	29.95	760.7	53.0	11.7	77	4	18	2	.....	.....	.....	4	2	1	5957	9587	5	4.54	115.3
Helena	N. 46 34	W. 112 04	4.32 a.m.	4069	1240	25.87	657.1	29.95	760.7	55.3	12.9	63	.....	8	5	11	1	.....	1	2	2	4301	7018	4	1.86	47.2
Poplar River	N. 48 08	W. 105 10	5.00 a.m.	2002	610	27.85	707.4	29.95	760.7	54.7	12.6	88	5	.....	3	.....	1	4	10	5	3	5189	8351	5	3.72	94.5
Deadwood	N. 44 23	W. 103 43	5.05 a.m.	4600	1402	25.42	645.7	30.00	762.0	54.7	12.6	87	.....	4	8	15	1	1	.....	2	.....	3343	5380	5	3.22	81.8
Cheyenne	N. 41 08	W. 104 48	5.01 a.m.	6105	1861	24.08	611.6	29.95	760.7	52.5	11.4	78	1	5	11	4	5	.....	.....	2	3	6602	10625	3	1.90	48.3
North Platte	N. 41 08	W. 100 45	5.17 a.m.	2841	866	27.07	687.6	29.95	760.7	60.7	15.9	88	.....	3	4	.....	5	11	4	2	.....	6864	11046	4	4.61	117.1
Pike's Peak	N. 38 50	W. 105 02	5.01 a.m.	14134	4308	18.01	457.4	29.91	759.7	34.3	1.3	71	.....	11	5	12	.....	1	.....	2	.....	10510	17694	2	3.84	97.5
Denver	N. 39 45	W. 105 00	5.00 a.m.	5294	1614	21.80	629.9	29.92	760.0	56.3	13.5	73	4	3	1	2	17	.....	1	2	1	5013	8068	3	2.68	68.1
Concordia	N. 39 35	W. 97 41	5.29 a.m.	1384	422	28.54	724.9	29.97	761.2	65.7	18.7	82	6	.....	1	.....	6	6	3	3	6	5547	8927	6	3.88	98.6
W. Las Animas	N. 38 04	W. 103 12	5.07 a.m.	3899	1188	26.05	661.7	29.86	758.4	63.1	17.3	74	1	3	7	6	1	1	8	.....	4	4977	8010	4	2.35	59.7
Dodge City	N. 37 45	W. 100 00	5.20 a.m.	2523	769	27.40	695.9	29.97	761.2	65.9	18.8	84	1	.....	.....	1	8	9	3	8	1	7531	12120	5	2.28	57.9
Fort Elliott	N. 35 30	W. 100 21	5.19 a.m.	2700	823	27.26	692.4	29.90	759.4	67.6	19.8	83	3	3	2	2	6	8	5	1	1	8017	12902	5	3.52	89.4
Fort Sill	N. 34 40	W. 98 23	5.27 a.m.	1200	366	28.74	730.0	29.94	760.5	70.9	21.6	86	8	.....	.....	.....	4	12	3	2	2	7454	11996	3	5.89	149.6
Abilene	N. 32 14	W. 99 45	5.21 a.m.	1748	533	28.17	715.5	29.91	759.7	73.8	23.2	76	1	1	.....	11	12	1	1	4	.....	7147	11502	4	1.10	27.9
Fort Davis	N. 30 38	W. 103 50	5.04 a.m.	4928	1502	25.20	640.1	29.90	759.4	67.6	19.8	62	.....	2	9	5	.....	.....	.....	3	12	3786	6093	3	3.11	79.0
Fort Stanton	N. 33 30	W. 105 26	4.58 a.m.	6150	1875	24.06	611.1	29.90	759.4	53.8	12.1	82	.....	3	8	9	1	2	4	.....	4	2904	4673	3	3.49	88.6
Plateau region.																										
Keeler	N. 36 35	W. 117 50	4.09 a.m.	3622	1104	26.23	666.2	29.74	755.4	70.7	21.5	28	11	.....	.....	.....	.....	2	8	9	1	4609	7417	0	0.00	0.0
Santa Fé	N. 35 41	W. 105 57	4.56 a.m.	7026	2141	23.36	593.3	29.96	761.0	57.7	14.3	64	1	.....	.....	.....	4	4	8	6	8	3454	5558	2	1.57	39.9
Fort Apache	N. 33 48	W. 109 57	4.40 a.m.	5020	1835	25.06	636.5	29.94	760.5	59.5	15.3	80	.....	1	.....	2	.....	2	20	2	4	4375	7041	4	3.92	99.6
Fort Grant	N. 32 39	W. 109 57	4.40 a.m.	4860	1482	25.21	640.3	29.89	759.2	66.5	19.2	47	7	6	3	2	1	3	2	7	.....	3490	5616	4	6.20	157.4
Prescott	N. 34 33	W. 112 28	4.30 a.m.	5389	1643	24.75	628.6	29.90	759.4	59.3	15.2	80	.....	1	1	14	.....	.....	.....	2	13	4912	7905	2	0.71	18.0
Yuma	N. 32 45	W. 114 36	4.22 a.m.	141	43	29.60	751.8	29.71	754.6	78.3	25.7	72	2	1	.....	1	7	11	4	4	1	5219	8399	1	Inap.	Inap.
El Paso	N. 31 47	W. 106 30	4.54 a.m.	3764	1147	26.24	666.5	29.86	758.4	70.1	21.2	76	.....	4	1	.....	.....	2	9	2	13	2484	3998	4	1.68	42.7
Fort Bridger	N. 41 28	W. 110 30	4.38 a.m.	6643	2025	23.57	598.7	29.97	761.2	48.5	9.2	58	4	2	3	9	2	1	4	6	.....	5344	8600	4	2.21	56.1
Salt Lake City	N. 40 46	W. 111 54	4.33 a.m.	4348	1325	25.58	649.7	29.82	757.4	66.0	18.9	46	7	1	.....	.....	2	15	4	2	.....	4524	7280	3	0.69	17.5
Frisco	N. 38 25	W. 113 16	4.27 a.m.	6406	1950	23.74	603.0	29.75	755.6	63.4	17.4	35	3	.....	11	15	1	.....	.....	1	.....	9990	14629	2	0.54	13.7
Winnemucca	N. 40 58	W. 117 43	4.09 a.m.	4358	1328	25.58	649.7	29.86	758.4	52.3	11.3	38	.....	.....	3	7	4	2	10	4	1	5601	9014	1	0.13	3.3
Montrose	N. 38 30	W. 107 56	4.48 a.m.	5780	1762	24.36b	618.7b	29.92b	760.0b	55.0b	12.8b	59b	b	2	1	2	10	10	2	1	1	4617	7430	3b	2.12	53.8
Fort Bidwell	N. 41 53	W. 120 11	3.59 a.m.	4615	1415	25.38	644.6	29.96	761.0	53.5	11.9	62	2	4	11	2	.....	2	5	3	2	4301	6922	1	0.21	5.3
Boisé City	N. 43 37	W. 116 08	4.16 a.m.	2750	838	27.09	688.1	29.88	758.9	56.0	13.3	58	1	2	1	1	2	1	.....	.....	23	1356	2182	2	0.29	7.4
Spokane Falls	N. 46 28	W. 117 05	4.11 a.m.	1909	582	27.92	709.2	29.92	760.0	55.8	13.2	78	.....	.....	.....	5	1	7	.....	6	12	1811	2914	3	1.26	32.0
Walla Walla	N. 46 03	W. 118 18	4.07 a.m.	1018	310	28.87	733.3	29.94	760.5	60.7	15.9	56	.....	.....	.....	10	18	2	.....	1	.....	4182	6730	2	0.71	18.0
Pacific coast reg'n.																										
Astoria	N. 46 11	W. 123 42	3.45 a.m.	20	6	30.00	762.0	.....	.....	55.0	12.8	82	.....	6	1	21	.....	2	1	.....	.....	4287	6899	8	0.49	12.4
Fort Canby	N. 46 16	W. 124 04	3.44 a.m.	179	55	29.83	757.7	30.02	762.5	54.3	12.4	94	9	6	2	1	6	.....	.....	.....	7	4586	7380	8	0.16	4.1
Olympia	N. 47 03	W. 122 53	3.49 a.m.	36	11	29.98	761.5	30.02	762.5	51.3	10.7	94	5	.....	2	2	5	.....	.....	4	13	2084	3354	5	0.18	4.6
Port Angeles	N. 48 07	W. 123 06	3.46 a.m.	14	4	29.99	761.7	30.01	762.2	48.7	9.3	96	.....	.....	.....	1	25	3	.....	.....	2	4011	6455	4	0.14	3.6
Tatoosh Id.	N. 48 23	W. 124 44	3.41 a.m.	86	26	29.91	759.7	30.01	762.2	52.0	11.1	97	.....	.....	1	10	1	18	1	.....	.....	5958	9588	6	1.39	35.3
Portland	N. 45 32	W. 122 43	3.49 a.m.	88	27	29.92	760.0	30.01	762.2	56.9	13.8	86	1	10	.....	1	3	2	1	.....	13	3463	5572	3	0.58	14.7
Roseburg	N. 43 13	W. 123 20	3.47 a.m.	523	159	29.45	748.0	30.01	762.2	53.8	12.1	88	2	2	3	1	.....	.....	.....	7	16	3144	5060	3	0.08	2.0
Eureka	N. 40 52	W. 123 58	3.43 a.m.	50	18	29.93	760.2	.....	.....	52.5	11.4	91	8	9	2	1	4	.....	1	2	4	4016	6511	6	0.07	18.8
Red Bluff	N. 40 10	W. 122 15	3.51 a.m.	342	104	29.49	749.0	29.82	757.4	68.1	20.1	50	8	.....	2	1	11	7	.....	.....	2	4173	6716	0	Inap.	Inap.
Sacramento	N. 38 35	W. 121 30	3.54 a.m.	64	20	29.76	755.9	29.80	756.9	56.2	13.4	80	.....	1	.....	.....	6	20	.....	1	3	5085	8183	0	Inap.	Inap.
San Francisco	N. 37 48	W. 122 26	3.50 a.m.	66	18	29.83	757.7	29.87	758.7	52.5	11.4	91	.....	.....	14	15	2	.....	.....	.....	.....	8545	13752	7	0.01	0.2
Los Angeles	N. 34 03	W. 118 15	4.07 a.m.	339	103	29.53	750.0	29.86	758.4	59.6	15.3	93	1	3	22	.....	4	.....	1	.....	.....	4030	6486	7	Inap.	Inap.
San Diego	N. 32 43	W. 117 10	4.12 a.m.	66	20	29.82	757.4	29.86	758.4	63.5	17.5	86	14	1	3	3	1	.....	.....	.....	9	4528	7287	9	Inap.	Inap.
Sitka	N. 57 03	W. 135 19	2.59 a.m.	63	19	29.92	760.0	30.02	762.5	51.8	11.0	90	.....	1	2	7	1	6	1	.....	13	4525	7282	8	9.38	238.2
Sub-Series.																										
Havana	N. 23 08	W. 82 23	6.30 a.m.	62	19	29.97	761.2	29.93	760.2	78.4	25.8	86	.....	2	.....	3	2	3	2	1	18	.....	.....	4	1.17	29.7
Rivas a	N. 11 26	W. 85 47	6.17 a.m.	150	46	29.91?	759.7?	30.05?	763.3?	76.3	24.6	80	2	2	.....	5	.....	4	1	16	.....	.....	.....	4	5.03	127.8
Vera Cruz	N. 19 11	W. 96 09	5.35 a.m.	16	5	29.86	758.4	29.88	758.9	83.2	28.4	.....	1	3	10	4	.....	.....	.....	.....	13	.....	.....	2	.....	.....
Bogota	N. 4 36	W. 74 14	7.11 a.m.	8655	2638	22.04	559.8	.....	.....	52.9	11.6	77	2	.....	1	1	2	.....	.....	.....	25	.....	.....	8	2.59	65.7

RETARDED DATA FOR ADELAIDE.

April, 1887	S. 34 57	E. 138 35	9.00 p.m.	140	43	30.06	763.5	30.19	766.8	60.9	16.1	61	2	.....	3	4	5	7	1	4	4	6809	10958	3	2.08	52.8
May, 1887	"	"	"	"	"	30.04	763.0	30.17	766.3	53.9	12.2	80	3	3	1	4	3	3	3	4	7	5374	8648	7	4.09	103.9
June, 1887	"	"	"	"	"	29.90	759.4	30.03	762.7	50.1	10.1	84	4	1	4	9	4	2	.....	6	.....	8374	13476	6	6.02	152.9
July, 1887	"	"	"	"	"	29.99	761.7	30.12	765.0	49.3	9.6	83	4	5	3	6	5	1	1	4	2	9085	14621	6	2.57	65.3

OCEAN SQUARE DATA FOR AUGUST, 1887.

Location of Centre of each Square.	Barometer.		Temperature.		Wind Frequency.										Wind force 0–10.
	Inch.	Mill.	Fah.	Cent.	N.	NW.	W.	SW.	S.	SE.	E.	NE.	Calm.	Blank.	
N. 12.5° W. 37.5°	29.94	760.5								1	17	8		5	3.5
12.5 42.5	29.92	760.0								4	14	6		7	3.6
12.5 47.5	29.90	759.4							1	8	12	5		5	3.5
12.5 52.5	29.89	759.2								9	14	3		5	3.3
17.5 37.5	30.01	762.2								1	20	4		6	3.8
17.5 42.5	29.99	761.7								8	18	2		3	3.8
17.5 47.5	29.98	761.5								9	18	3		1	4.0
17.5 52.5	29.95	760.7								10	19	2			3.9
17.5 57.5	29.94	760.5								5	25	1			4.0
22.5 27.5	30.06	763.5									11	18		2	3.4
22.5 32.5	30.07	763.8								1	13	13	1	3	3.6
22.5 37.5	30.08	764.0								5	17	6		3	3.6
22.5 42.5	30.06	763.5								8	18	2		3	3.8
22.5 47.5	30.05	763.3								11	18	1		1	4.0
22.5 52.5	30.03	762.7								14	15	2			4.2
22.5 57.5	30.01	762.2								16	15				4.0
22.5 62.5	29.99	761.7								18	11	2			4.1
27.5 22.5	30.10	764.5			5	2					2	20		2	3.1
27.5 27.5	30.13	765.3			5					2	5	16		3	3.4
27.5 32.5	30.15	765.8			4					5	6	11		5	3.5
27.5 37.5	30.16	766.1			2					8	6	9		6	3.3
27.5 42.5	30.16	766.1							2	7	8	7		7	3.5
27.5 47.5	30.14	765.5							3	9	11	1		7	3.3
27.5 52.5	30.12	765.0							5	5	7		1	3	2.9
27.5 57.5	30.09	764.3			1				5	18	5		1	1	3.0
27.5 62.5	30.05	763.3			1				10	16	2	1	1		3.3
32.5 27.5	30.17	766.3			5	6			1	3	9	5	1	1	3.0
32.5 32.5	30.19	766.8			5	5			5	5	3	4		4	3.4
32.5 37.5	30.21	767.3			4	3	2	3	2	5	1	5		6	3.1
32.5 42.5	30.21	767.3			5	3		4	3	5	1	2	1	7	2.8
32.5 47.5	30.19	766.8			3	2	1	2	11	4	1	1	1	5	3.3
32.5 52.5	30.15	765.8			1			5	11	5		2		7	3.2
32.5 57.5	30.10	764.5				1		10	10	6		2		2	3.3
37.5 32.5	30.16	766.1			1	5	12	3	5			3		2	3.7
37.5 37.5	30.17	766.3			1	3	13	4	3	1	1	2		3	3.8
37.5 42.5	30.15	765.8			1	6	4	11	5	1		2		1	3.8
37.5 47.5	30.13	765.3			1	3	7	11	4	2	1	1		1	4.1
37.5 52.5	30.00	764.3			1	4	6	12	3	1	1	1		2	4.3
37.5 57.5	30.04	763.0			3	3	5	13	3	1	1			2	4.4
42.5 22.5	30.08	764.0			2	4	10	5	2	2	1	5			4.1
42.5 27.5	30.08	764.0			4	4	8	6	6			3			4.5
42.5 32.5	30.08	764.0			1	6	8	6	5	1		3		1	4.5
42.5 37.5	30.07	763.8			1	4	12	6	4	1	1	2			4.5
42.5 42.5	30.04	763.0			2	4	10	8	5		1	1			4.9
42.5 47.5	30.01	762.2			2	6	9	6	4	1		1	1	1	4.3
42.5 52.5	29.98	761.5				5	5	7	8	4		2			4.8
42.5 57.5	29.96	761.0			4	5	7	3	3	5	2	2			4.8
47.5 17.5	30.00	762.0			3	3	5	7	4	2	5	2			4.9
47.5 22.5	29.99	761.7			3	6	4	9	2	3	3	1			4.9
47.5 27.5	29.96	761.0			3	4	5	9	4	2	3	1			5.0
47.5 32.5	29.94	760.5			2	6	7	4	5	4	2	1			4.7
47.5 37.5	29.93	760.2			2	5	9	4	5	2		4			5.1
47.5 42.5	29.90	759.4			2	6	5	6	6	1	1	2	2		4.7
47.5 47.5	29.86	758.4			4	3	5	10	5			3	1		4.8
52.5 17.5	29.92	760.0			3	5	6	7	5	3		2			4.8
52.5 22.5	29.89	759.2			2	4	8	8	2	5	1		1		4.7
52.5 27.5	29.83	757.7			2	4	6	6	6	6				1	4.8
52.5 32.5	29.82	757.4			1	6	5	6	4	6	1	1		1	4.9
52.5 37.5	29.81	757.2			2	5	5	6	5	6		1		1	4.9
52.5 42.5	29.79	756.7			3	5	3	6	7	4	1	1		1	4.8
52.5 47.5	29.78	756.4			3	5	5	3	5	5	2	3			4.6
57.5 12.5	29.89	759.2			6	4	4	4	4	6		2		1	4.3
57.5 17.5	29.87	758.7			5	5	5	2	4	8		1		1	4.2
57.5 22.5	29.82	757.4			2	4	5	2	1	13		1		3	4.1
57.5 27.5	29.79	756.7			1	3	3	3	3	7	4	4		3	4.5
57.5 32.5	29.80	756.9				3	3	3	3	8	4	5		2	4.8
57.5 37.5	29.79	756.7			3	3	1	5	3	6	4	5		1	4.7
57.5 42.5	29.79	756.7			3	3	2	4	3	7		7		2	4.8
57.5 47.5	29.78	756.4			1	4	4	2	2	9	1	7	1	1	4.2

OCEAN SQUARES.—The table of ocean square data shows (1) the location of the centres of squares whose sides extend 5° each in latitude and longitude, (2) the monthly mean pressure of the air, and the mean force and total frequency of the wind at noon, Greenwich mean time, computed for the centre of each square from daily readings as obtained by interpolation between the isobars of the daily international simultaneous weather maps.

REVIEW.

INTERNATIONAL METEOROLOGY FOR AUGUST, 1887.

[*Pressure expressed in inches and millimetres; temperature in degrees, Fahrenheit; wind-force by scale of* 0–10.]

The following refers to chart ii for the month of August, 1887. This chart continues the series of international charts begun in January, 1877, and exhibits the mean pressure and the prevailing wind-directions over the northern hemisphere, as determined from simultaneous observations taken once each day at 7 a. m., 75th meridian, or noon Greenwich, mean time:

The area of lowest mean pressure is located over the north-central part of British India, where readings falling to 29.49 (749.0) at Lahore are shown. Areas of relatively low mean pressure, bounded by the isobars of 29.80 (756.9) appear, respectively, over Scandinavia and Finland, the north Atlantic Ocean south of Greenland, and the southwestern part of the United States and the Gulf of California. The area of highest mean pressure occupies the north Atlantic Ocean southwest of the Azores, with included values rising above 30.20 (767.1). Over the North American continent isobars of 30.00 (762.0) embrace areas which include, respectively, the Lake region and a greater part of the Ohio and upper Mississippi valleys, and the Pacific coast between the fortieth and sixtieth parallels.

In the United States the mean pressure is lowest over southern Arizona, where it falls to 29.71 (754.6) at Yuma, and highest in Wisconsin, where it rises to 30.04 (763.0). It is also somewhat above 30.00 (762.0) along the north Pacific coast. In Canada the pressure is low over the Maritime Provinces, where it falls to about 29.80 (756.9) along the northeast coast of Newfoundland, and highest along the Pacific coast, where it exceeds 30.00 (762.0). Over the north Atlantic Ocean there is a barometric gradient of about .43 of an inch between the thirty-second and fifty-fifth parallels. In Europe the mean pressure is lowest over Scandinavia, where it falls to 29.73 (755.1) at Haparanda, Sweden, and highest over the west-central portions of the continent, where the readings range to 30.07 (763.8) over France and northwestern Austria. Over Asia the pressure gradients are gentle from the area of barometric minimum northward to Siberia, where the isobar of 29.90 (759.4) is traced, and eastward to the Japanese and Philippine Islands, where the values rise above 29.80 (756.9).

Compared with the chart for the preceding month an increase in mean pressure is shown over the United States from the Missouri Valley eastward to the New England and middle Atlantic states. In all other portions of the country the mean pressure is lower than in July. The greatest increase, .09 of an inch, occurred over the Lake region, and the most marked decrease, .11 of an inch, on the Pacific coast. In the British Possessions in North America there has been a decrease of about .10 of an inch over Newfoundland and along the Pacific coast; in the Saint Lawrence Valley and the Lake region the increase varies from .01 at Quebec to .08 of an inch at Port Arthur; in the Saskatchewan Valley slight changes are noted. Over the north Atlantic Ocean the area of low pressure which extended in July from south of Newfoundland to northern Scandinavia has apparently divided, and the August chart shows areas located, respectively, over the north Atlantic south of Greenland, and over Scandinavia and Finland, within which the values correspond with those of the preceding month. The region of high pressure southwest of the Azores has contracted in area, and a slight decrease in the included readings is shown. Over Europe there has been a general decrease in pressure, except over the east and southeast portions, where a marked increase is shown. Over the interior of British India the increase amounts to .10 of an inch. There has also been an increase of about .10 of an inch over the interior and northern parts of the continent, while along the eastern coast of Asia and over the Japanese Islands the changes have been unimportant.

In the United States the mean pressure was below the normal, except along the northern border from Dakota to Lake Huron, where there was an excess of from .01 to .05 of an inch. The deficiencies nowhere exceeded .07, and over a large part of the country they were less than .05 of an inch. In Canada the pressure was above the normal in Ontario and Manitoba. It was below the normal in the Northwest Territory and in the Maritime Provinces, the departures in all districts being small. Over the north Atlantic Ocean in middle and low latitudes the readings were somewhat below the normal, while to the northward of the sixtieth parallel there was a marked excess in pressure. Over Europe the mean pressure was above the normal, except in Scandinavia and Spain, where it was deficient by amounts varying from .02 to .05 of an inch. In British India the pressure averaged somewhat above the normal.

In the United States the mean temperature differed but slightly from the normal; in the southern districts the month was somewhat warmer than the average August, while in the northern districts it was slightly cooler. In Canada the temperature was slightly above the normal in the Northwest Territory and somewhat below in Manitoba. In Ontario and Quebec it averaged from 1° to 5° below. In New Brunswick and Nova Scotia the departures were small. In British Columbia the mean temperature was about 1° below the average. In Europe the temperature was about or above the normal, except over Norway, where it was nearly 4° below the average for the month. In British India the mean temperature was somewhat below the normal.

The following table shows the deviations in pressure and temperature at isolated stations during the month of August, 1887, as compared with the means for ten years:

Stations.	Mean pressure.			Mean temperature.		
	Aug. mean of 10 (1877–'86) years.	Aug., 1887.	Departure.	Aug. mean of 10 (1877–'86) years.	Aug., 1886.	Departure.
				°	°	°
Archangel, Russia	29.79	29.84	+ 0.05	61.9	62.8	+ 0.9
Athens, Greece	29.88	29.86	— 0.02	87.7	88.9	+ 1.2
Beirut, Turkey in Asia	.....	29.70	.....	87.8	87.6	— 0.2
Barnaul, Siberia	29.75	29.78	+ 0.03	67.7	64.6	— 3.1
Bridgetown, Barbadoes	29.90	29.87	— 0.03	83.9	83.8	— 0.1
Ekaterinburg, Russia	29.75	29.94	+ 0.19	64.4	65.7	+ 1.3
Funchal, Madeira Islands	30.11	30.07	— 0.04	75.4	75.7	+ 0.3
Gibraltar	.....	29.92	.....	78.7	78.7	normal.
Havana, Cuba, W. I.	29.95	29.93	— 0.02	79.5	78.4	— 1.1
Malta, Mediterranean Sea*	29.95	29.98	+ 0.03	82.3	84.1	+ 1.8
Melbourne, New South Wales	29.99	30.22	+ 0.23	50.0	49.1	— 0.9
Mauritius, Indian Ocean	30.14	30.07	— 0.07	71.8	69.6	— 2.2
Nassau, Bahamas, W. I.	29.99	29.90	— 0.09	84.3	83.6	— 0.7
Ponta Delgada, Azores	30.18	30.15	— 0.03	76.1	77.4	+ 1.3
Swanbister, Orkneys	29.86	29.91	+ 0.05	55.9	55.0	— 0.9
San Juan de Puerto Rico, W. I.	29.95	.....	.....	81.5	.....	.....
Tiflis, Russia	29.78	29.75	— 0.03	85.5	84.7	— 0.8
Yeniseisk, Siberia	29.84	29.96	+ 0.12	63.0	64.2	+ 1.2
Zi-Ka-Wei, China	29.76	29.72	— 0.04	77.6	79.3	+ 1.7

* Means for nine years only.

The following table shows the mean pressure and mean temperature for August, 1887, in the several countries of the eastern hemisphere, and the departures as compared with means determined from observations taken during the last ten years:

Countries.	Mean pressure.			Mean temperature.		
	Aug. mean of 10 (1877–'86) years.	Aug., 1887.	Departure.	Aug. mean of 10 (1877–'86) years.	Aug., 1887.	Departure.
				°	°	°
Austro-Hungary	29.91	29.96	+ 0.05	73.2	73.0	— 0.2
British Isles	29.92	29.99	+ 0.07	62.8	64.7	+ 1.9
Denmark	29.88	29.90	+ 0.02	62.4	63.0	+ 0.6
France	29.97	30.00	+ 0.03	73.9	74.9	+ 1.0
Germany	29.95	29.98	+ 0.03	68.4	68.4	normal.
India	29.53	29.57	+ 0.04	83.4	82.0	— 1.4
Italy	29.92	29.95	+ 0.03	81.2	81.4	+ 0.2
Norway	29.84	29.82	— 0.02	61.4	57.8	— 3.6
Russia	29.86	29.86	normal.	70.6	70.9	+ 0.3
Spain*	29.97	29.95	— 0.02	79.2	80.0	+ 0.8
Sweden	29.84	29.79	— 0.05	63.4	62.8	— 0.6

* Means for nine years only.

In the United States the rainfall was very heavy in portions of the south Atlantic states, but there was a general deficiency in all other districts east of the Mississippi. From the upper Missouri valley westward to Washington Territory the rainfall

was above the average, while over the southwestern part of the country it was deficient. In Canada the rainfall was below the average for the month, except in New Brunswick and Nova Scotia.

In the United States southerly winds prevailed in the Missouri Valley, west Gulf states, and southern slope; in the Ohio Valley, east Gulf states, and on the Atlantic coast south of New England, they were northerly; in the Saint Lawrence Valley and on the Pacific coast, westerly; in the Lake region and Rocky Mountain districts, variable. Over the north Atlantic Ocean the wind-directions were governed by the cyclonic and anti-cyclonic areas which appear on the monthly mean map. Over Europe the prevailing winds were generally dominated by the areas of low pressure which occupied, respectively, Scandinavia, and the north Atlantic Ocean. Over British India the winds were cyclonic, as influenced by the area of low pressure located over the north-central districts. Along the east coast of Asia and over the Japanese Islands the winds were mostly from southeast to southwest.

TRACKS OF AREAS OF LOW PRESSURE FOR AUGUST, 1887.

Chart iii exhibits paths of the principal depressions that appeared in the northern hemisphere during August, 1887. This chart continues the series of international charts begun in November, 1877, and has been prepared from the following data: Chart i for each day of the month, containing the data of simultaneous observations taken once each day at noon, Greenwich mean time; abstracts of ships' logs; special reports, and other miscellaneous data on file at this office.

The paths of the centres of twenty-one areas of low pressure are shown, of which eight are traced over the North American continent; seven over the north Atlantic Ocean; five over Europe, and one off the eastern coast of Asia. The average number of areas of low pressure traced over the northern hemisphere for the month of August during the last eight years, 28.6, is 7.6 more than the number traced for August, 1887.

The depressions traced over the North American continent are described in detail in the MONTHLY WEATHER REVIEW for August, 1887, under the heading "Areas of low pressure."

Of the storms traced over the north Atlantic Ocean, numbers xiii and xiv were of the distinctive type of storms peculiar to the West Indies during the summer season. Number ix, which is given an approximate west-northwest track over the Caribbean Sea, was a depression of slight energy. Number x apparently moved southeast from Greenland, and was central off the west coast of Iceland on the 7th, when the barometric pressure fell to 29.32 (744.7) at Stykkisholm. By the 8th the depression had advanced eastward to the Norwegian coast, where pressure falling to 29.34 (745.2) at Brono was shown. Subsequent to the 8th the storm-centre moved eastward over Scandinavia. Number xi traversed the ocean from coast to coast, leaving Newfoundland during the 8th and arriving at the British Isles on the 16th, its path being considerably to the southward of the usual trans-Atlantic storm-tracks. This depression exhibited greatest energy on the 8th when central over northern Newfoundland where the pressure fell to about 29.30 (744.2). Number xii prevailed over Newfoundland as an area of low pressure from the 14th to the 19th, inclusive. Number xiii is traced from north of the Windward Islands, where it was central on the 16th, to the Bahamas by the 19th, in which locality it recurved to the northeastward and advanced to mid-ocean north of the fiftieth parallel by the 22d. From the 23d to the 26th the depression remained nearly stationary in about latitude N. 55° and between the twentieth and thirtieth parallels, after which it apparently united with depression number xiv. Subsequent to the storm's recurvature on the 19th, and attending its passage northeastward along the American coast, its progress was accompanied by severe and destructive disturbances, and from the 23d to the 26th, inclusive, the barometric pressure fell considerably below 29.00 (736.6), the lowest reading, 28.72 (729.5), being shown on the 25th. Number xiv followed closely in the wake of number xiii, and, while the disturbances attending it were somewhat less severe and the barometric depression less marked than in the case of its predecessor, it was a depression of remarkable energy, and during its passage from the Bahamas to the British Isles from the 22d to the 31st occasioned gales of hurricane force.

Of the five depressions traced over Europe, numbers xvii and xix exhibited marked energy. The former was a continuation of ocean depression number x, and advanced eastward over Scandinavia to the Gulf of Finland by the 9th, with central pressure about 29.15 (740.4). During the next three days the storm-centre remained nearly stationary in the vicinity of the Gulf of Finland, with a slight but appreciable increase in pressure after which it passed northward and remained over Finland as an area of low pressure from the 13th to the 18th. Number xix appeared over west-central Russia on the 19th with pressure falling to 29.19 (741.4), whence it moved northeastward and disappeared into Asia after the 28th, its advance being attended by a gradual increase in central pressure and a corresponding loss of energy.

But one storm possessing a well defined movement of translation appeared off the eastern coast of Asia. This depression advanced from the vicinity of Formosa, where it was central on the 2d, north-northeast over the Sea of Japan to the mouth of the Amoor River by the 8th. On the 2d the barometer read 29.12 (739.6) at South Cape, Formosa; on the 4th a reading of 29.44 (747.8) was reported at Che-Mul-Po, Corea, and on the 8th pressure falling to 29.33 (745.0) at Nikolaievsk was shown. Subsequent to the 8th the depression disappeared over the Sea of Okhotsk. During the 30th and 31st a storm apparently moved eastward over the valley of the Amoor, and barometric readings falling to 29.48 (748.8) on the 30th and to 29.54 (750.3) on the 31st were reported at Nikolaievsk.

SPECIAL NOTES.

THE GRAVITY CORRECTION.

The gravity correction, reducing all barometer readings to the standard gravity at latitude 45°, has been applied to all observations not so reduced by the observers themselves.

All data referring to force, velocity, or pressure (in pounds per square foot) of the wind, are reduced to the scale of 0-10, and the approximate value is indicated by the number of feathers on the arrow (see below).

MONTHLY SUMMARY OF INTERNATIONAL SIMULTANEOUS MET'L OBSERVATIONS.

The positions of stations (latitude and longitude) are obtained from Keith Johnson's "Index Geographicus," except where more exact information is furnished. The elevations of stations are obtained either from the annual, semi-annual, and monthly publications of the various meteorological bureaus here represented, or from the original forms upon which are entered the daily observations. In the United States series the elevations are computed from the latest surveys, and are carefully revised each month, in order to note any change in the elevation of the barometer-cistern at any station. It is believed for the most part that, throughout the European and other series, the elevations as given represent the height of the barometer-cistern above sea-level; at least this should be the case. The local time, where omitted or not given correctly in the original, is carefully computed at this office. A letter placed opposite the name of a station, or some portion of the data credited thereto, indicates that a certain number of observations are missing, corresponding to the relative position in the English alphabet of the letter so used.

At Baku the barometer-cistern is below sea-level.

INTERNATIONAL CHARTS.

International chart i shows the atmospheric pressure at sea-level in English inches, the isobars being drawn for every two-tenths of an inch.

Arrows show direction of, and fly with, the wind; force is shown as follows:

Symbols.	Force.	Velocity.	
		Miles per hour.	Metres per second.
○	0	0	0
	1, 2	0 to 9	0 to 4
	3, 4	9.1 to 22.5	4.1 to 10.1
	5, 6	22.6 to 40.5	10.1 to 18.1
	7, 8	40.6 to 67.5	18.1 to 30.2
	9, 10	67.6 up.	30.2 and over.

International chart ii (monthly mean chart) shows the mean pressure at sea-level in English inches; the mean force and prevailing direction of the wind, as determined from observations taken at noon, Greenwich mean time.

International chart iii shows the tracks of centres of low pressure. The Arabic numerals show the location of the centres of low pressure at noon, Greenwich mean time, of that date.

In the above charts, broken lines indicate that lines so drawn are doubtful.

List of merchant marine steam and sailing vessels from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of August, 1887—Continued.

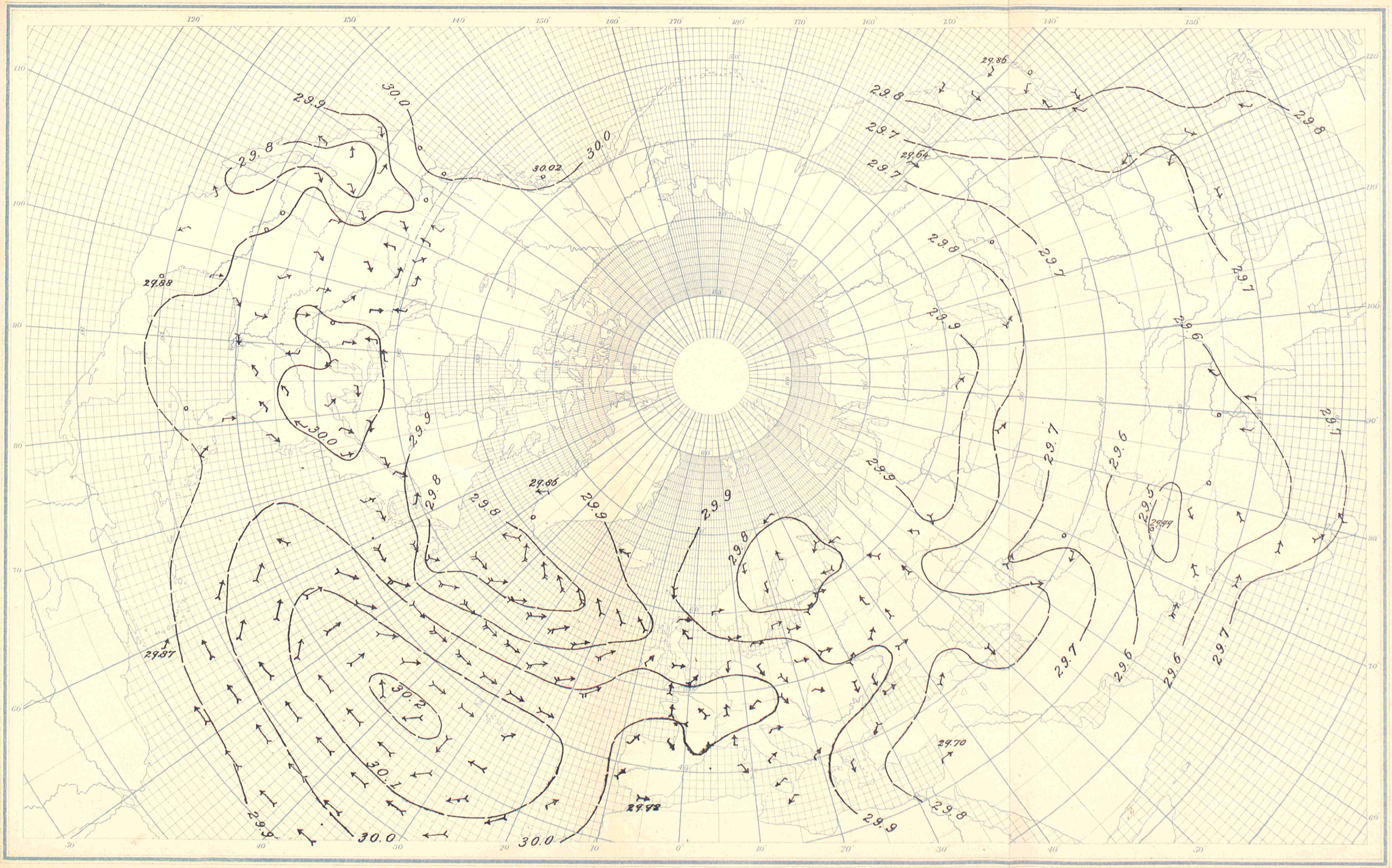
Name of vessel.	Captain.	Name of vessel.	Captain.	Name of vessel.	Captain.
UNITED STATES NAVAL—Cont'd.		UNITED STATES NAVAL—Cont'd.		BRITISA NAVAL—Continued.	
U. S. S. Monocacy	Capt. Henry Glass.	U. S. S. Vandalia	Capt. H. L. Howison.	H. M. S. Nelson	Capt. T. F. Hammill.
U. S. S. Monongahela	S. H Baker.	U. S. S. Yantic	F. M. Green.	H. M. S Penguin	Haygarth.
U. S. S. Omaha	F. V. McNeir.			H. M. S. Raleigh	B. Watson
U. S. S. Ossipee	Wm. B. Hoff.	BRITISH NAVAL.		H. M. S. Rambler	W. U. Moore.
U. S. S. Palos	J. E. Craig.			H. M. S. Rifleman	C. Prater.
U. S. S. Pensacola	Geo. Dewey.	H. M. S. Alexandra	J. Fellowes, C.B.	H. M. S. Royalist	G. W. Hand.
U. S. S. Pinta		H. M. S. Audacious	R. N. Harris.	H. M. S. Ruby	W. R. Kennedy.
U. S. S. Portsmouth	Edwin White.	H. M. S. Algerine	W. C. C. Forsyth.	H. M. S. Sylvia	Dawson.
U. S. S. Quinnebaug	W. L. Folger.	H. M. S. Bacchante	A. U. Moore.	H. M. S. Torquoise.	R. Woodward, C. B.
U. S. S. Ranger	F. A. Cook.	H. S. M. Comus	T. J. Jackson.		
U. S. S. Richmond	Robert Boyd.	H. M. Dockyard, Bermuda	R. P. Dennistoun.	DUTCH NAVAL.	
U. S. S. Saratoga	C. H. Davis.	H. M. S. Egeria	P. Aldrich.		
U. S. S. Tallapoosa	F. W. Dickins.	H. M. S. Hyacinth	E. Bourke.	H. D. M. S. Prinz Hendrig	
U. S. S. Trenton	W. Farquhar.	H. M. S. Myrmidon	H. F. Hoskyn.	H. D. M. S. König	

List of foreign stations and observers from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of August. 1887.

Stations.	Observers.
AUSTRALIAN.	
Adelaide	C. L. Wragge.
Hobart Town, Tasmania	Com. J. Shortt, R.N.
Melbourne, Victoria	R. L. J. Ellery.
AUSTRO-HUNGARIAN.	
Agram	Prof. Ivan Stozir.
Cracow, I. R. Observatory	Dr. Wierzbiski.
Eperies	Julius Mikolik.
Gratz	Andreas Rospini.
Kremsmunster Observatory	The Staff.
Lemberg	Dr. T. Stanecki.
Pola	Fr. Cœselrohe.
Szathmar	Aloysius Daubner, S. J.
Szegedin	Emerick Markos.
Trieste	Naval Observatory.
Vienna	I. R. Central Met. Obs'y.
BRITISH.	
Aberdeen	W. Boswell.
Bidston, Liverpool Obs'y	John Hartnup.
Bradford, Yorkshire	McLandsborough & Preston.
Bridgetown, Barbadoes, W. I.	A. T. Green.
Chatham, School M. E	Percy McHugo, R. E.
Falmouth, Observatory	The Staff.
Fort Napier, Natal	Thomas Murray, M. S. C.
Freetown, Sierra Leone	J. W. Smith.
Galway, Queen's College	Wm. Ryan.
Gibraltar, Mediterranean	T. Doolan.
Greenwich, Royal Observatory	The Staff.
Guernsey	A. Collenette, F.R.M.S.
Kew, Observatory	The Staff.
Leicester, Museum	J. C. Smith.
Malta, Mediterranean	R. R. Willan.
Nassau, Bahamas	J. A. Kerr.
Oxford, Radcliffe Observatory	The Staff.
Plymouth	John Merrifield.
Swanbister, Orkneys	W. I. Fortesque.
Scutari Cemetery, Turkey	W. H. Lyne.
Stonyhurst, Observatory	J. Roony.
Valencia, Observatory	The Meteorological Office.
Sub-series.	
Gozo, Episcopal Seminary	Rev. Algelo Lo Re, S.J., Dir.
Malacca	W. R. Angus.
Penang	F. K. Hampshire, M. D.
Singapore	T. Irvine Rowell, M. D.
CANADIAN.	
Bathurst, N. B	Miss Andrews.
Bird Rocks	T. Turbide.
Calgarry	H. S. Cayley.
Chatham, N. B	G. A. Blair.
Cornwall, Ontario	W. D. Johnston, B. A.
Dalhousie, N. B	H. A. Johnson.
Father Point, Quebec	J. McWilliams.
Fort Garry, Manitoba	T. Warburton.
Fredericton, N. B	Dr. Harrison.
Grand Manan, N. B	J. Chipman Seeley.
Halifax, N. S	A. Allison.
Hamilton, Ontario	T. S. Campbell, B. A.
Kingston, Ontario	A. P. Knight, M. A.
Little Glace Bay, N. S	C. H. Rigby, C.E.
London, Ontario	E. B. Reed.
Medicine Hat, N. W. T	John Ewart.
Minnedosa, N. W. T	Rev. J. M. Wellwood.
Montreal, Quebec	C. H. McLeod, C. E.
Ottawa, Ontario	A. McGill, M. A.
Parry Sound, Ontario	Rev. R. Mosley.
Peterborough, Ontario	J. H. Long.
Port Arthur, Ontario	W. P. Cooke.
Port Dover, Ontario	H. Morgan.
Port Stanley, Ontario	M. Payne.
Qu' Appelle, N. W. T	Leslie Gordon.
Quebec, Quebec	Captain Ashe, R. N.
Rockliffe, Ontario	W. H. McIntyre.
St. Andrews, N. B	S. T. Gove, M. D.
St. John, N. B	G. Hutchinson.
Saint Pierre, N. F	The Commandant.
Saugeen, Ontario	W. K. Stewart.
Southwest Point of Anticosti	
Stratford, Ontario	W. McBride, M. A.
Sydney, C. B	T. C. Hill, C. E.
Toronto, Ontario	Magnetic Observatory.
Woodstock, Ontario	Prof. N. Wolverton, M. A.
Yarmouth, N. S	J. E. Murphy.
Sub-series.	
Saint Johns, N. F	J. Higgins.
CAPE COLONY.	
Cape St. Francis	I. Garfelt.
CHINESE.	
Foochow	A. E. Pfankuchen.
Hong Kong Observatory	The Staff.
Sub-series.	
Zi-Ka-Wei, *near Shanghai*	M. Marc Dechevrens, S. J.
South Cape, Formosa	G. Taylor.
DANISH.	
Copenhagen	Oversergent Fischer.
Fanöe	Overloerer Lauridsen.
Godthaab	S. Kleinscmidt.
Ivigtut	
Stykkisholm	A. O. Thorlacius.
Thorshavn	Overloerer Bergh.
Vestervig	Loerer Oesterbol.
FRENCH.	
Agen	M. Bousquet.
Alençon, Normal School	M. Nicot, Director.
Arras, Normal School	M. Sion, Director.
Avignon, Normal School	M. Giraud, Director.
Bar-sur-Seine	M. Saillard, Director.
Beauvais, Normal School	M. Mutelet.
Besançon, Normal School	M. Gobin, Director.
Bordeaux, Observatory	M. Rayet, Director.
Bourges, Normal School	M. Bourgoine, Director.
FRENCH—*Continued.*	
Brest, Naval Observatory	M. de Kermarce, Director.
Caen, Normal School	M. Berson, Director.
Châlons-sur-Marne, N. School	M. Mathieu, Director.
Charleville, Normal School	M. Noél, Director.
Clermont-Ferrand, Obs'y	M. Hurion, Director.
Cluny, Normal School	M. de Villemontée, Director.
Gap, Normal School	M. Poussel, Director.
Greasque, du Rhone	M. Kina, Director.
Guéret, Normal School	M. Delorme, Director.
Lorient, Naval Observatory	Lt. T. Carré, Director.
Lyon, St. Genis-Laval	M. André, Director.
Mans, Normal School	M. Tenot, Director.
Marseille, Observatory	M. Stephan, Director.
Montlouis	M. Cave for Dr. Fines.
Montpellier, Normal School	M. Galzin, Director.
Mont Ventoux	M. Blanc.
Nancy, Normal School	M. Hasse, Director.
Nantes, Observatory	M. Larocque, Director.
Nice, Normal School	M. Cantier.
Perpignan, Observatory	Dr. Fines, Director.
Pic-du-Midi, Summit	M. Vaussenat, Director.
Privas, Normal School	M. Curely, Director.
Puy de Dôme Obs'y, Summit	M. Hurion, Director.
Rochefort, Naval Observatory	Lt. E. Decante, Director.
Roche-sur-Yon, N. School	M. Brotier, Director.
Rouen, Normal School	M. Vieillot, Director.
Saint Brience	M. Richard.
Saint Maur, Observatory	M. Renon, Director.
Toulouse, Observatory	M. Baillaud, Director.
Tours	M. Letellier.
Sub-series.	
St. Martin du Hinx	M. Carlier, Director.
GERMAN.	
Ansbach	Prof. Jüdt.
Bamberg	Prof. Dr. Hoh.
Berlin	Meteorological Institute.
Breslau	Royal University Obs'y.
Carlsruhe	Albert Senz.
Cassel	Dr. H. Möhl.
Frankfort-on-the-Main	Physical Society.
Friedrichshafen	Wilhelm, Chief Tel.
Hamburg	Carl H. Seeman.
Kiel	Prof. Dr. G. Karsten.
Leipsic, Astronomical Obs'y	H. Leppig, Assistant.
Memel	Issermann.
Munich	Dr. C. Lang.
Neufahrwasser	A. Lothes.
Neustadt, Palatinate	Prof. Dicknether.
Stuttgart	Dr. L. Meyer.
Wustrow	Profs. Brandes & Reimer.
GREEK.	
Athens	Kokkides & Wourlisch.
INDIAN.	
Kurrachee	
Deesa	
Bombay	
Poona	
Belgaum	
Lahore	
Roorkee	
Agra	
Nagpur	
Jubulpore	
Lucknow	
Allahabad	
Patna	
Hazaribagh	
Calcutta	
Chittagong	
Cuttack	
Dhubri	
Sibsagar	
Jeypore	
Bellary	
Trichinopoly	
ITALIAN.	
Udine	Prof. Giovanni Clodig.
Milan	Prof. G. V. Schiapparelli.
Padua	Prof. Dott. Lorenzoni.
Moncalieri	Prof. P. F. Denza.
Genoa	Prof. G. M. Garibaldi.
Cuneo	
Pesaro	Prof. Luigi Guidi.
Florence	Prof. Constantino Pittei.
Leghorn	Prof. P. Monte.
Rome	Prof. P. Tacchini.
Cosenza	Prof. D. Conti.
Sassari	
Syracuse	Sig. V. Giuliano.
ITALIAN SUB-SERIES	
Stelvio	Prof. P. F. Denza.
Valdobbia	Prof. P. F. Denza.
JAPANESE.	
Akita	S. Hattori.
Awomori	K. Ogawa.
Erimo	T. Sato.
Fushiki	T. Tokuda.
Gifu	R. Ikuchi.
Hakodate	T. Wakayama.
Hamamatsu	Sakigawa and Miyake.
Hiroshima	Y. Okamoto.
Itsuhara	H. Tanaka.
Kanazawa	S. Kuriyama.
Kagoshima	G. Miyanohara.
Kioto	M. Negishi.
Kochi	K. Kusunose.
Miasaka	T. Ishitain & T. Saki.
Miyako	K. Suwa.
JAPANESE—*Continued.*	
Nagasaki	K. Yamasaki and M Chin.
Nemuro	M. Itabashi.
Niigata	M. Morita.
Nobiru	T. Saitoo.
Numadzu	R. Kaneda.
Osaka	H. Omura.
Sakai	K. Yamawchi & P. Yoshimura
Shimonoseki	S. Nagasuye.
Tokei	The Staff.
Wakayama	K. Sakai.
MAURITIUS.	
Mauritius R. A. Observatory	The Staff.
MEXICAN.	
Guanajuato	Prof. Vicente Fernandez.
Leon	Prof. M. Leal & Espana.
Mazatlan	C. Carmina.
Mexico	The Staff.
NETHERLANDS.	
Flushing	
Groningen	
Helder	
Hellevoetsluis	
Utrecht	G. F. C. Zaalberg.
Sub.	
Batavia	Dr. I. P. v. d. Stok.
NORWEGIAN.	
Bergen	
Brono	
Christiania	
Gjæsvær	
PORTUGUESE.	
Angra	Dr. J. A. Sampaio.
Funchal, Madeira	Capt. D. A. de Cunha.
Lisbon, Observatory	The Staff.
Ponta Delgada, Azores	
San Salvador	
St. Vincent, Cape Verd	
Serra da Estrella	
RUSSIAN.	
Archangel	Capt. Sselliwerstow.
Baku	
Barnaul	Meteorological Office.
Dorpat	Blumbach.
Ekaterinburg	Meteorological Observatory.
Elisavetgrad	
Irkutsk	Ed. Stelling.
Kasalinsk	Butkewitsch.
Kasan	Observatory.
Kem	M. Kosnobr.
Kertch	E. M. Zacmsipeyz.
Kieff	Observatory.
Kischinev	
Korostishev	
Koslov	
Lgov	R. I. Ssaweljew, Engineer.
Libau	E. Quaas.
Lugan	Meteorological Observatory.
Moscow	Meteorological Observatory.
Nerchinsk	
Nikolaiev	Capt. Kurdakow.
Nikolaievsk-on-the Amoor	Schonberg.
Nikolsk	Nadeshdin.
Perm	
Petro-Alexandrovsk	Walther.
Petrozavodsk	Dr. Bergmann.
Pinsk	
Poti	
St. Petersburg	Central Physical Observatory.
Samarkand	Dresch.
Sevastopol	Coionobr.
Tashkend Laboratory	Teich, A. M.
Tiflis	Physical Observatory.
Viatka	
Warsaw	Astronomical Observatory.
Yeniseisk	Wishnewzky.
Sub-series.	
Petrowsky Academy	Bachmetieff.
SCOTCH.	
Leith	J. Bolam & Geo. Redpath.
SPANISH.	
Bilbao, Met. Observatory	Tomas Eschriche.
Burgos, Met. Observatory	Domingo Martin.
Madrid, Royal Observatory	The Staff.
Santiago, Met. Observatory	R. Gil Villanueva, Director.
Sub-series.	
Havana, Cuba	Benito Viñes, S. J.
Manilla, Philippine Islands	F. Faura, S. J.
San Fernando, Naval Obs'y	Capt. C. Pujazon, R. N.
San Juan de Porto Rico, W. I.	Enrique Gadea, Ch'f Eng'r.
SWEDISH.	
Haparanda	
Umea	
Hernosand	
Stockholm	
Wisby	
Sub-series.	
Upsala	Nils. Ekholm.
SWISS.	
Geneva	Observatory.
TURKISH.	
Constantinople	The Observatory.
Valona	A. Bertrand.
Sub-series.	
Beirut, Lee Obs'y, Syria	R. H. West, B. A., Director.
UNITED STATES SUB-SERIES.	
Bogota	J. G. Otero.
Rivas, Nicaragua, C. A.	Earl Flint, M. D.
Vera Cruz	Capt. Geo. E. Powell.

Form No. 106 R---1887.

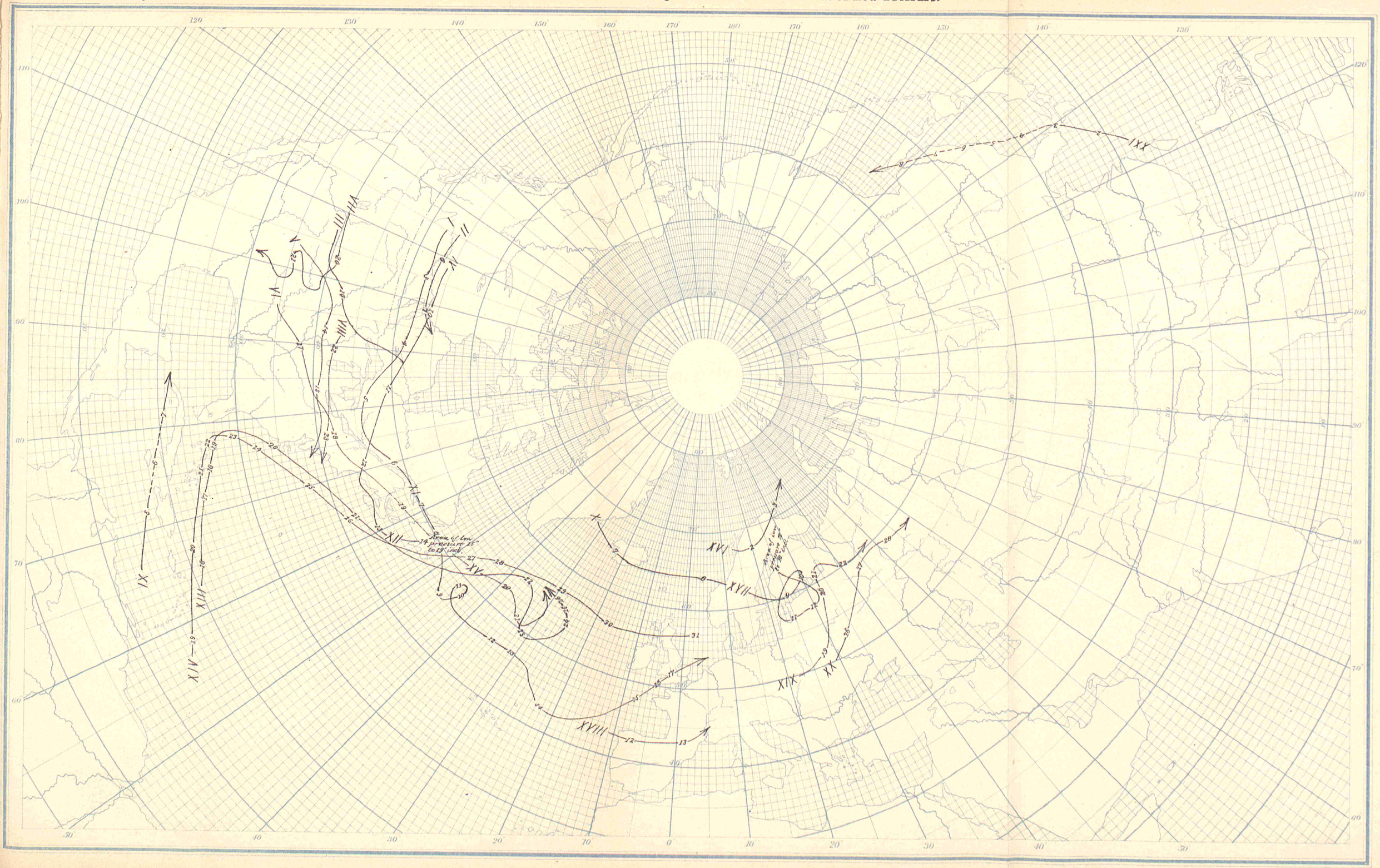
International Chart II. August, 1887. Isobars and Winds.



Signal Office Lith.

Form No. 106 R---1887.

International Chart III. August, 1887. Tracks of Areas of Low Pressure.



Signal Office Lith.

WAR DEPARTMENT.
OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY OF THE UNITED STATES.

SUMMARY AND REVIEW

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS

FOR THE MONTH OF SEPTEMBER, 1887.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

A. W. GREELY,
BRIGADIER GENERAL, CHIEF SIGNAL OFFICER OF THE ARMY.

PRINTED FOR EXCHANGE WITH CO-OPERATING OBSERVERS.

WASHINGTON, D. C
OCTOBER, 1888.

List of merchant marine steam and sailing vessels from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of September, 1887.

Name of vessel.	Captain.
Am. s. s. Acapulco	Capt. J. M. Caverly.
Br. Adriatic	J. G. Cameron.
Am. Advance	James Lord.
Br. Ailsa	J. W. Sanson.
Am. Alamo	Samuel Risk.
Br. Alaska	Geo. S. Murray.
Alene	E. J. Seiders.
Ger. Aller	H. Christoffers.
Br. Alsatia	J. Brown.
Alvena	F. McKay.
Alvo	D. Williams.
Ger. Amalfi	Julius Bahr.
Br. Ambrose	E. Bisson.
Ger. America	H. Hineke.
Br. Anchoria	W. Brown.
Andes	T. M. McKnight.
Arizona	G. S. Murray.
Augustine	R. Harwood.
Aurania	W. H. P. Hains.
Auretta	G. W. Read, F.R.S.
Australia	R. McRitchie.
Ger. Australia	G. Franck.
Br. Baltimore	J. Trenery.
Basil	H. Thompson.
Bavarian	R. Leask.
Beiair	G. Dunlop.
Belg. Belgenland	W. A. Beynon.
Br. Ben Ledi	S. Adamson.
Bessarabia	2d Off. A. Thomson.
Bessel	Capt. C. Watson.
Biela	F. Graham.
Boston City	T. Davies.
Bothnia	T. Dutton.
Britannic	H. Parsell.
British Crown	A. Smith
British King	John Kelly.
British Prince	Samuel Nowell.
British Princess	E. H. Freeth.
British Queen	R. Wills.
Brooklyn City	W. Fitt.
Buenos Ayrean	J. Scott.
Buffalo	J. H. Malet.
Bulgarian	E. Parry.
Ger. California	O. Winkler.
Br. Canada	J. Robinson.
Am. Carondelet	W. F. Evans.
Br. Catalonia	Edward Wylie.
Celtic	T. J. Irving.
Cephalonia	Henry Walker.
Cervin	S. Hughson.
Fr. Chateau Yquem	C. T. Journiel.
Chicago	J. W. Jones.
Am. Cienfuegos	F. M. Faircloth.
Br. Circassia	A. Campbell.
Am. City of Alexandria	J. W. Reynolds.
City of Augusta	J. W. Catherine.
Br. City of Chester	A. Lewis.
City of Chicago	Fred Watkins.
Am. City of Dallas	C. W. Read.
Br. City of Newcastle	R. Townsend.
Am. City of New York	R. R. Searle.
City of Para	L. Dexter
Br. City of Richmond	A. Redford.
City of Rome	H. Young.
Am. City of San Antonio	J. Wilder.
City of Washington	W. M. Rittig.
Br. Claribel	J. Evans.
Am. Colorado	J. Daniel.
Colon	F. Henderson.
Columbia	Fred Bolles.
Br. Counsellor	W. Lang.
Critic	Esen Davis.
Denmark	R. S. Rigby.
Belg. De Ruyter	J. J. Brarens.
Br. Devonia	W. G. Crockhart.
Gr. Donau	H. Supmer.
Br. Dorian	J. McKeague.
Dorset	Ch. Off. E. Crossman.
Douro	Capt. R. S. Branfoot.
Earnmoor	R. J. Grey.
Dtch. Edam	J. H. Taat.
Br. Edith Godden	J. H. Bennett.
Egypt	J. Sumner.
Ger. Eider	P. H. Berdrow.
Elbe	G. Meyer.
Am. El Callao	J. Scholtz.
Span. Elcano	V. de Ispizua.
Br. Elpis	Frank Burnett.
Elstow	T. Robertson.
Ger. Ems	Th. Jungst.
Br. England	A. F. Heeley.
Erin	Thos. Foote.
Ethiopia	John Wilson.
Etruria	T. Cook.
Am. Eureka	R. B. Quick.
Nor. Ferninand	H. Lutken.
Br. France	A. D. Hadley.
Ger. Fulda	R. Ringk.
Br. Furnessia	J. Hedderwick.
Galileo	R. T. Jones.
Dan. Geiser	C. W. Moeller.
Ger. Gellert	W. Kühlewein.
Br. Germanic	B. Gleadell.
Ger. Gothia	H. Bauer.
It. Gottardo	Domenico Viola.
Br. Grecian	C. E. Le Gallais.
Greece	A. J. Jeffrey.
Ger. Hammonia	C. Hebich.
Dan. Hekla	A. G. Thomsen.
Helvetia	G. Cochrane.
Herschel	Ch. Off. M. Seiders.
Hibernian	Capt. J. Brown.
Br. s. s. Holland	Capt. W. Tyson.
Span. Hugo	A. de Mugica.
Am. Illinois	G. W. Dodge.
Ger. India	M. Hulsen.
Am. Indiana	W. J. Boggs.
Br. Iowa	E. W. Owens.
Dan. Island	W. Skjodt.
Br. Italy	W. Pearce.
John Dixon	L. C. Welch.
Kansas	W. Gleig.
King's Cross	G. J. Mills.
Fr. La Bourgogne	E. Franguel.
La Bretagne	M. de Jousselin.
La Champagne	E. Traub.
La Gascogne	C Santelli.
La Normandie	G. de Kersabiec.
Br. Lake Nepigon	R. Owens.
Lake Superior	William Stewart.
Am. Lampassas	M. B. Crowell.
Dtch. Leerdam	G. S Stenger.
Ger. Lessing	H. Barends.
It. Letimbro	3d offi. Fr. Dilliberto.
Br. Llandaff City	Capt. T. H. Gore.
Lord Clive	P. Urquhart.
Lord Gough	E. M. Hughes.
Am. Louisiana	E. V. Gager.
Br. Ludgate Hill	2d Off. H. Dumaresy.
Ger. Main	Capt. H. Boedeker.
Am. Manhattan	Frank Stevens.
Br. Manitoban	W. Dunlap.
Ger. Marsala	N. Maass.
Br. Marengo	Wm. Abbott.
Mineola	T. L. Evans.
Ger. Moravia	O. Pezoldt.
Br. Muriel	G. S. Locke.
Belg. Nederland	A. J. Griffin.
Br. Nessmore	Geo. Elliott.
Fr. Neustria	P. Verries.
Br. Nevada	S. Brooks.
Am. New Orleans	T. P. Halsey.
Newport	W. G. Shackford.
Belg. Noordland	H. E. Nickels.
Br. Norseman	D. Morris.
Am. Neuces	J. Bolger.
Oceanic	John Metcalf.
Br. Ocean Prince	W. J. Milburn.
Am. Ohio	R. W. Sargent.
Br. Olbers	James Clark.
Dtch. Oranje Nassau	J. A. J. LaCrooy.
Br. Orinoco	J. S Garvin.
Otranto	W. Rippeth.
Oxford	W. Janes.
Pavonia	A. McKay.
Pawnee	John James.
Dtch. P. Caland	F. H. Bonjer.
Am. Philadelphia	Sam. Hess.
Belg. Pieter de Connick	E. Smit.
Ger. Polaria	Johannes Schade.
Polynesia	A. Kuhn.
Br. Pomona	J. Legoe.
Pontiac	H. W. Brown.
Port Phillip	G. Dulling.
Prussian	J. Ambury.
Prydain	Moses Parry.
Ger. Rhaetia	H. Vogelgesang.
Belg. Rhynland	J. C. Jamison.
Br. Rialto	F. Kerr.
Richmond Hill	A. Hyde.
Roseville	J. Dove.
Dtch. Rotterdam	G. J. Vis.
Br. Roxbury Castle	A. Turpin.
Ger. Rugia	C. Kordell.
Saale	H. Reichter.
Br. Saint Ronans	H. Campbell.
Salerno	B. H. Rogers.
Am. San José	D S. Austin.
Br. Santiago	R. Potter.
Sarmatian	Wm. Richardson.
Scandinavian	John Park.
Dtch. Schiedam	A. Potjer.
Br. Scythia	T. Roberts.
Servia	H. McKay.
Ger. Slavonia	H Schmidt.
Br. Sorrento	F. W. Ouston.
Spain	W. A. Griffiths.
State of Georgia	G. Moodie.
State of Indiana	A. Ritchie.
State of Nebraska	A. G. Braes.
State of Nevada	J. A. Stewart.
Am. State of Texas	Gilbert Williams.
Br. Stockholm City	K. Doyle.
Strabo	A. Matheson.
Straits of Gibraltar	G. Grigs.
Strathleven	C. W. Pearson.
Ger. Suevia	C. Ludwig.
Br. Surrey	R. Griffiths.
Belg. Switzerland	J. Ueberweg.
Ger. Taormina	G. W. Koch.
Br. The Queen	T P. Heeley.
Dan. Thingvalla	S. T. H. Laub.
Br. Thornhill	James Wetherell.
Tower Hill	Lieut. F. Archer, R.N.R.
Ger. Trave	Capt. W. Willigerod.
Br. Trinacria	G Mitchell.
Tyrian	A. Haig.
Umbria	W. McMickan.
Belg. Vaderland	C. H. Grant.
Am. Valencia	W. Woodrick.
Vancouver	C. J. Lindall.
Br. Vertumnus	C. E. Cook.
Virginian	M. Fitt.
Belg. Waesland	H. Buschmann.
Br. s. s. Warwick	Capt. L. Morice.
Dtch. W. A. Scholten	G. Bakker.
Ger. Werra	R. Bussius.
Belg. Westernland	Com. W. G Randle.
Ger. Wieland	Capt. A. Albers.
Br. Wisconsin	Edward Bentley.
Worcester	W. Stamper.
Wylo	T. L. Rogers.
Wyoming	C. L. Rigby.
Am. Yemessee	S. C. Platt.
Dtch. Zaandam	H. v. d. Zee.
N. Y. Herald Weather Service.	
Am. s. s. Algiers	J. B. Percy.
Br. Barracouta	Robert Hubbard.
Am. Caracas	N. M. Hopkins.
Fr. Chateau Lafite	C. Ollivier.
Chateau Marquax	A. Sensine.
Am. City of Puebla	J. Deakin.
Br. Egyptian Monarch	John Harrison.
Am El Monte	J. W. Hawthorne.
El Paso	H. S. Quick.
Knickerbocker	F. Remble.
Niagara	S. V. Bemis.
Br Portia	Henry Dawson.
Samana	W. Taylor.
Sailing Vessels.	
Am. bg. Abbie Clifford	D. W. Storer.
Br. bk. Abyssinia	B. R. Hilton.
Abyssinian	J. Hughes.
Achsah	A. M. Shaw.
Ada Peard	Nathaniel Hocken.
It. Agostino Rombo	Basso Vincenzos.
Am. Alice	W. G. Kair.
Swed. Arab Sted	C. A. Skantze.
Ger. Atlantic	A. Witte.
Nor. sp. B. F. Metcalf	E. P. Larsen.
Am. Big Bonanza	C. J. Andrews.
Ger Carl	T. Hashagen.
Br. Chas. S. Whitney	Geo. D. Spicer.
Am. schr. Comet	W. A. Aldrich.
Ger. sp. Cornelius	N. Windhorst.
Dakota	N. E. Schaffer.
Aust. bk. Errante	A. G. Nicolich.
It. Est	C. Rossino.
Am. Ethel	W. Thompson.
Ger. sp. Fidelio	T. H. Schütte.
Nor. bk. Grundloven	O. G. Ellingsen.
Hanna	S. Falch Muns.
Dtch. Helena	T. T. Verbeet.
Am. Henry Warner	—— Paine.
Nor. Hermon	O. Olsen.
Ger. sp. Hermann	Vahlund.
Ida	Th. Winters.
Swed. bk. Ida	O. Carlsson.
Br. Iodine	Adam Smith.
Am. bg. Jane Adeline	G. W. Cates.
bk. José E. More	A. Lenhard.
bkt. Josephine	Charles Brown.
Ger. sp. J. W. Gildemeister	A. Lehmann.
Nor. Komander Svend Foyn	J. Bryde.
It. bk. Lazzaro Bianchi	Nicola Dallorso.
Am. bg. L. F. Munson	J. V. McKowen.
sp. Light-ship No. 37	Andrew Jackson.
bg. Lillian	H. F. Schive.
L. Staples	J. P. Stowers.
Ger. bk. Leocadia	John Stohff.
Br. sp. Mabel Taylor	Chas. E. Durkee.
Am. bg. Manson	E. T. Page.
Swed. bk. Maria Margretha	J. E. Fogman.
Nor. Martin Luther	Albert Knesen.
Br. Mary	Charles Acocks.
Am. Matthew Baird	J. P. Williams.
Mohican	B. F. Berry.
sp. May	Albert Wilder.
Nor. bk. Qvos	G. Olsen.
Br. schr. Rebecca	Mate Nicolay Deesen.
Ger. bk. Richard	Capt. A. von Seggern.
Br. bkt. Rosebud	John Collie.
Br. schr. Rothiemay	C. Olsen.
Am. bg. Ruby	A. J. von Post.
Ger. sp. Shakspere	Carl Muller.
Br. bk. Salina	John Peterson.
sp. Sapphire	G. W. Murray.
Am. bg. Sarah Doe	B. S. Merryman.
Stacy Clark	C. M. Haskell.
bk. Thos. A. Goddard	Amasa C. Sears.
Tillie Baker	J. W. Carty.
Ger. sp. Wilhelm	W. Wilmsen.
Br. Winnifred	R. MacDonald.
United States Naval.	
U. S. S. Adams	Louis Kempff.
U. S. S. Alert	J. D. Graham.
U. S. S. Alliance	C. McGregor.
U. S. S. Atlanta	R. M. Berry.
U. S. S. Brooklyn	Byron Wilson.
U. S. S. Constellation	
U. S. S. Essex	Theo. F. Jewell.
U. S. F. C. Fish Hawk	
U. S. S. Galena	C. M. Chester.
U. S. S. Iroquois	R. P. Leary.
U. S. S. Jamestown	C. J. Nain.
U. S. S. Juniata	G. T. Davis.
U. S. S. Lancaster	S. L. Breese.
U. S. S. Marion	
U. S S. Mohican	B. F. Day.
U. S. S. Monocacy	Henry Glass.

SUMMARY AND REVIEW OF INTERNATIONAL METEOROLOGICAL OBSERVATIONS, SEPTEMBER, 1887.

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea.		Result of Simultaneous Observations for September, 1887.																		Average Cloudiness.	Total Precipitation.	
						Mean Barometer.				Mean temperature.		Mean Rel. Humidity.	Wind.													
						Actual		Reduced.					Directions.									Total Movement.				
				Feet.	Metr's	Inch.	Mill.	Inch.	Mill.	Fah.	Cent.		N	NW	W	SW	S	SE	E	NE	C	Miles	Kil.	0–10	Inch.	Mill.
Australian.	° ′	° ′																								
Adelaide	S. 34 57	E. 138 35	9.00 p.m.	140	43	29.92	761.0	30.02	762.5	51.8	11.0	76	4	2	5	7	5	1	1	3	2	9877	15895	4	2.52	64.0
Hobart Town	S. 42 53	E. 147 20	9.00 p.m.	190	58	29.56	750 8	29.77	756.1	46.1	7.8	88	4	4	3	5	5	2	1	1	5	.....	.....	5	3.11	79.0
Melbourne	S. 37 50	E. 144 58	9.40 p.m.	91	28	29.84	757.9	29.91	759.7	49.3	9.6	82	6	2	8	2	6	3	2	1	.....	.....	.....	5	2.71	68.8
Austrian.																										
Agram	N. 45 48	E. 15 53	1.04 p.m.	535	163	29.41	747.0	29.97	761.2	72.1	22.3	49	1	.....	3	5	5	3	6	7	.....	.....	.....	4	2.48	63.0
Cracow	N. 50 04	E. 20 00	1.20 p.m.	722	220	29.17	740.9	29.94	760.5	65.8	18.8	63	2	6	7	5	2	2	5	1	.....	.....	.....	7	1.95	49.5
Eperies	N. 48 58	E. 21 15	1.25 p.m.	853	260	29.04	737.7	29.96	761.0	60.6	15.9	76	5	4	.....	.....	15	.....	.....	.....	6	.....	.....	6	1.46	37.2
Gratz	N. 47 04	E. 15 28	1.02 p.m.	1171	357	28.72	729.6	29.94	760.4	67.1	19.5	76	.....	3	1	9	5	7	4	1	.....	.....	.....	4	1.93	49.0
Kremsmunster	N. 48 03	E. 14 08	0.57 p.m.	1260	384	28.62	727.0	29.96	761.0	61.5	16.4	77	1	3	6	1	.....	.....	6	9	4	.....	.....	5	2.40	60.9
Lemberg	N. 49 50	E. 24 00	1.36 p.m.	978	298	28.93	734.8	29.96	761.0	66.0	18.9	69	1	14	.....	5	3	3	.....	4	.....	.....	.....	5	3.66	92.9
Pola	N. 44 52	E. 13 51	0.55 p.m.	105	32	29.81	757.2	29.92	760.0	76.1	24.5	54	.....	.....	6	4	7	4	6	3	.....	.....	.....	4	1.92	48.8
Szathmar	N. 47 46	E. 22 53	1.32 p.m.	430	131	29.50	749.2	29.96	761.0	72.3	22.4	54	1	4	3	9	2	8	1	2	.....	.....	.....	4	3.16	80 2
Szegedin	N. 46 15	E. 20 10	1.21 p.m.	295	90	29.60	751.9	29.91	759.7	73.8	23.2	63	4	8	3	1	5	5	3	1	.....	.....	.....	4	1.72	43.6
Trieste	N. 45 39	E. 13 46	0.55 p.m.	85	26	29.86	758.5	29.94	760.5	73.4	23.0	56	.....	9	7	2	1	1	2	8	.....	.....	.....	4	6.28	159.4
Vienna	N. 48 12	E. 16 22	1.05 p.m.	663	202	29.26	743.2	29.97	761.2	65.7	18.7	60	4	12	5	1	3	4	.....	1	.....	.....	.....	5	0.98	24.9
British.																										
Aberdeen	N. 57 10	W. 2 06	11.52 a.m.	89	27	29.75	755.6	29.87	758.7	54.3	12.4	73	4	9	4	1	3	3	2	4	.....	7504	12076	7	2.99	75.9
Bidston	N. 53 24	W. 3 04	11.48 a.m.	197	60	29.66	753.4	29.90	759.4	56.8	13.8	66	.....	5	8	7	3	2	2	3	.....	.....	.....	6	.....	.....
Bradford	N. 53 48	W. 1 47	11.53 a.m.	366	112	29.46	748.3	29.88	758.9	55.9	13.3	70	6	4	5	6	2	.....	1	6	.....	.....	.....	8	3.51	89.2
Bridgetown	N. 13 04	W. 59 37	8.02 a.m.	28	9	29.91	759.7	29.87	758.7	85.0	29.4	76	2	.....	.....	.....	1	8	11	8	.....	.....	.....	4	.....	.....
Chatham	N. 51 25	E. 0 33	0.02 p.m.	130	40	29.85	758.2	30.02	762.5	56.7	13.7	81	.....	1	4	5	2	.....	.....	5	13	.....	.....	8	.....	.....
Falmouth	N. 50 09	W. 5 04	11.40 a.m.	183	56	29.79	756.7	30.00	762.0	58.0	14.4	70	2	6	2	6	4	.....	6	4	.....	.....	.....	6	.....	.....
Freetown	N. 8 30	W. 13 14	11.07 a.m.	224	68	29.63	752.6	29.78	756.4	86.5	30.3	83	6	1	8	5	7	.....	2	1	.....	.....	.....	6	.....	.....
Fort Napier	S. 30	E. 31	2.04 p.m.	2294	699	27.80	706.1	29.98	761.5	73.7	23.2	36	.....	2	.....	2	1	3	7	3	2	.....	.....	3	.....	.....
Galway	N. 53 15	W. 9 03	11.24 a.m.	32	10	29.82	757.4	29.87	758.7	57.8	14.3	87	2	7	5	7	1	1	.....	7	.....	.....	.....	6	6.97	177.0
Gibraltar	N. 36 09	W. 5 21	11.39 a.m.	50	15	29.99	761.7	30.02	762.5	74.7	23.7	70	.....	3	14	1	.....	.....	11	1	.....	.....	.....	4	.....	.....
Greenwich	N. 51 29	0 00	12 m.	159	48	29.76	755.9	29.96	761.0	59.2	15.1	78	5	3	2	12	3	1	1	3	.....	.....	.....	9	.....	.....
Guernsey	N. 49 27	W. 2 41	11.49 a.m.	275	84	29.69a	754.1a	29.99a	761.7a	a59.3	a15.2	80a	2	a2	6	9	1	.....	3	6	.....	7500a	12070a	5a	2.65	67.3
Kew	N. 51 28	W. 0 19	11.59 a.m.	34	10	29.93	760.2	29.98	761.5	58.3	14.6	68	6	2	5	11	3	.....	.....	2	.....	.....	.....	7	.....	.....
Leicester	N. 52 39	W. 1 08	11.55 a.m.	245	75	29.65	753.1	29.93	760.2	58.8	14.9	68	3	5	3	14	.....	.....	.....	5	.....	.....	.....	8	.....	.....
Malta	N. 36 00	E. 14 30	0.58 p.m.	70	21	29.84	757.9	29.89	759.2	80.8	27.1	70	5	2	3	5	.....	4	3	8	.....	.....	.....	3	0.35	8.9
Nassau	N. 25 04	W. 77 22	6.51 a.m.	44	13	29.92	760.0	29.91	759.7	82.0	27.8	79	1	.....	.....	.....	4	7	9	7	2	.....	.....	8	.....	.....
Oxford	N. 51 46	W. 1 17	11.55 a.m.	210	64	29.71	754.6	29.96	761.0	58.2	14.6	66	3	4	2	12	2	.....	.....	7	.....	.....	.....	7	.....	.....
Plymouth	N. 50 22	W. 4 10	11.43 a.m.	125	38	29.84	757.9	29.99	761.7	60.0	15.6	71	2	5	1	5	5	.....	6	6	.....	.....	.....	6	.....	.....
Swanbister	N. 58 55	W. 3 05	11.46 a.m.	72	22	29.75	755.6	29.86	758.4	53.2	11.8	77	5	6	6	4	2	2	3	2	.....	.....	.....	8	.....	.....
Scutari Cemet'y	N 41 00	E. 29 03	1.56 p.m.	60	18	29.81	757.2	29.86	758.4	78.3	25.7	61	4	.....	.....	9	2	.....	.....	12	3	.....	.....	4	.....	.....
Stonyhurst	N. 53 51	W. 2 28	11.50 a.m.	361	110	29.48	748.8	29.89	759.2	55.3	12.9	72	4	1	8	5	3	1	1	7	.....	.....	.....	8	5.76	146.3
Valencia	N. 51 55	W. 10 18	11.19 a.m.	23	7	29.91	759.7	29.95	760.7	a58.3	a14.6	73a	5	7	3	5	2	2	4	2	.....	.....	.....	7	.....	.....
Sub-series.																										
Gozo	N. 36 01	E. 14 16	0.57 p.m.	364	111	29.60	751.8	29.95	760.7	81.2	27.3	59	1	6	5	8	2	5	3	.....	.....	2134	3435	3	0.00	0.0
Malacca	N. 2 10	E. 102 14	6.49 p.m.	12	4	29.81	757.2	29.75	755.6	80.8	27.1	91	1	3	3	18	2	3	.....	.....	.....	.....	.....	4	9.29	236.0
Penang	N. 5 24	E. 100 20	6.41 p.m.	20	6	29.86	758.4	29.80	756.9	78.8	26.0	85	.....	16	.....	2	.....	8	.....	4	.....	.....	.....	7	11.98	304.3
Singapore	N. 1 17	E. 103 51	6.55 p.m.	10	3	29.90	759.4	29.83	757.7	78.8	26.0	89	.....	.....	.....	.....	7	3	.....	.....	20	.....	.....	4	8.53	216.7
Canadian.																										
Bathurst	N. 47 39	W. 65 42	7.37 a.m.	35	11	29.96	761.0	30.01	762.2	52.6	11.4	88	.....	2	4	9	2	1	2	2	8	.....	.....	6	1.33	33.8
Bird Rocks	N. 47 50	W. 61 10	7.56 a.m.	.....	.....	29.88	758.9	30.01	762.2	55.0	12.8	88	5	4	6	8	1	2	1	3	.....	.....	.....	4	3.44	87 4
Calgary	N. 50 55	W. 114 04	4.24 a.m.	?	?	26.42	671.1	29.95	760.7	41.2	5.1	90	1	2	1	.....	.....	1	.....	.....	25	.....	.....	5	1.54	39.1
Chatham	N. 47 03	W. 65 29	7.38 a.m.	56	17	29.95	760.7	30.01	762 2	50.0	10.0	86	5	2	17	3	.....	.....	1	2	.....	.....	.....	5	1.35	34.3
Cornwall	N. 45 01	W. 74 43	7.01 a.m.	175	53	29.86	758.4	30.05	763.3	52.3	11.3	79	8	1	10	3	.....	.....	3	2	3	.....	.....	4	0.43	10.9
Dalhousie	N. 48 04	W. 66 22	7.35 a.m.	45	14	29.95	760.7	30.00	762.0	50.7	10.4	.....	.....	.....	20	.....	.....	.....	2	.....	5	.....	.....	5	0.98	24.9
Father Point	N. 48 31	W. 68 28	7.26 a.m.	20	6	29.95	760.7	29.98	761.5	48.8	9.3	78	1	.....	5	18	1	.....	.....	3	2	.....	.....	6	3.20	81.3
Fort Garry	N. 49 51	W. 97 07	5.32 a.m.	754	230	29.17	740 9	30.01	762.2	43.7	6.5	85	5	2	4	3	8	4	3	1	.....	.....	.....	5	1.77	45.0
Fredericton	N. 45 57	W. 66 38	7.33 a.m.	164	50	29.87	758.7	30.05	763.3	50.5	10.3	86	2	7	8	2	5	3	.....	1	2	4541	7308	5	1.41	35.8
Grand Manan	N. 44 46	W. 66 45	7.33 a.m.	49	15	29.99	761.7	30.04	763.0	53.8	12.1	86	6	3	3	3	2	.....	.....	1	12	.....	.....	2	2.94	74.7
Halifax	N. 44 39	W. 63 36	7.46 a.m.	122	37	29.91	759.7	30.05	763.3	53.3	11.8	92	2	12	4	4	3	.....	.....	1	4	.....	.....	5	3.31	84.1
Hamilton	N. 43 16	W. 79 53	6.40 a.m.	372	113	29.75	755.6	30.16	766.1	51.9	11.1	86	4	1	4	4	6	.....	9	2	.....	.....	.....	3	1.22	31.0
Kingston	N. 44 14	W. 76 30	6.54 a.m.	307	94	29.76	755.9	30.10	764.5	52.4	11.3	81	9	.....	5	7	2	.....	2	4	1	.....	.....	5	1.70	43.2
Little Glace Bay	N. 46 12	W. 59 58	8.00 a.m.	34	10	29.93	760.2	29.96	761.0	58.0	14.4	94	4	1	2	10	3	2	3	3	2	.....	.....	6	.....	.....
London	N. 43 00	W. 81 15	6.35 a.m.	832	254	29.24	742.7	30.15	765.8	49.4	9.7	89	3	.....	1	3	1	.....	1	.....	21	2640	4249	5	1.32	33.5
Medicine Hat	N. 50 01	W. 110 37	4.38 a.m.	2136	651	27.66	702 6	29.93	760 2	48.0	8.9	85	7	7	3	.....	2	.....	1	1	9	.....	.....	4	0.77	19.6
Minnedosa	N. 50 13	W. 99 48	5.21 a.m.	1665	501	28.17	715.5	29.97	761.2	39.3	4.1	92	.....	7	3	.....	1	2	1	.....	16	.....	.....	4	1.15	29.2
Montreal	N. 45 31	W. 73 33	7.06 a.m.	187	57	29.87	758.7	30.07	763.8	51.4	10.8	77	5	4	4	8	4	2	1	1	1	.....	.....	4	1.30	33.0
Ottawa	N. 45 26	W. 75 41	6.57 a.m.	200	61	29.85	758.2	30.07	763.8	47.0	8.3	91	9	4	9	3	3	.....	2	.....	.....	3208	5163	6	0.74	18.8
Parry Sound	N. 45 19	W. 80 01	6.40 a.m.	635	194	29.42	747.3	30.12	765.0	45.2	7.3	91	5	2	2	1	1	5	6	8	.....	.....	.....	4	1.78	45.2
Peterborough	N. 44 17	W. 78 18	6.47 a.m.	722	220	29.39	746.5	30.18	766.6	49.0	9.4	81	.....	4	10	1	1	1	.....	.....	13	.....	.....	4	0.62	15.7
Port Arthur	N. 48 27	W. 89 12	6.03 a.m.	642	196	29.33	745.0	30.05	763.3	46.3	7.9	83	3	1	6	.....	4	.....	.....	.....	16	.....	.....	3	2.66	67.6
Port Dover	N. 42 47	W. 80 13	6.39 a.m.	635	194	29.44	747.8	30.13	765.3	51.9	11.1	96	.....	1	1	2	.....	.....	.....	.....	26	.....	.....	4	1.42	36.1
Port Stanley	N. 42 40	W. 81 13	6.35 a.m.	592	180	29.45	748.0	30.09	764.3	51.6	10.9	93	9	2	4	3	.....	2	7	2	1	.....	.....	4	2.17	55.1
Qu' Appelle	N. 50 44	W. 103 42	5.05 a.m.	2115	645	27.70	703.6	29.96	761.0	45.5	7.5	83	1	7	.....	.....	7	1	1	.....	13	.....	.....	2	0.86	21.8
Quebec	N. 46 48	W. 71 12	7.15 a.m.	293	89	29.73	755.1	30.05	763.3	48.7	9.3	84	1	.....	18	1	3	.....	.....	.....	7	.....	.....	4	1.55	39.4
Rockliffe	N. 46 10	W. 77 48	6.49 a.m.	418	127	29.65	753.1	30.11	764.8	42.9	6.1	87	.....	4	8	.....	.....	3	2	.....	13	.....	.....	3	0.70	17.8
Saint Andrews	N. 45 04	W. 67 06	7.32 a.m.	47	14	29.97	761.2	30.02	762.5	49.6	9.8	92	3	7	3	4	2	1	.....	1	9	.....	.....	3	0.80	20.3
Saint John, N.B	N. 45 17	W. 66 03	7.36 a.m.	116	35	29.88	759.0	30.04	763.0	51.8	11.0	88	2	4	2	4	7	.....	1	1	9	.....	.....	4	1.67	42.4
Saint Pierre	N. 46 47	W. 56 08	8.15 a.m.	?	?	.....	.....	29.99	761 7	55.4	13.0	.....	3	1	9	5	1	4	3	3	1	.....	.....	.....	5.09	129.4
Saugeen	N 44 30	W. 81 21	6.35 a.m.	656	200	29.39	746.5	30.11	764.8	47.4	8.6	87	1	1	2	2	4	2	.....	4	14	.....	.....	3	0.94	23.9
S.W. Pt. Anticosti	N. 49 24	W. 63 36	7.46 a.m.	30	9	29.90	759 4	29.94	760.5	51.5	10.8	90	1	2	4	.....	7	6	.....	2	8	.....	.....	5	1.51	38.4
Stratford	N. 43 23	W. 81 00	6.36 a.m.	1186	361	28.83	732.3	30.12	765.0	47.5	8.6	88	3	4	3	3	.....	1	4	2	10	4347	6996	6	2.26	57.4
Swift Current	N. 50 21	W. 107 33	4.50 a.m.	2439	744	27.35	694.7	29.91	759.7	41.7	5.4	84	.....	3	2	4	9	4	1	.....	7	.....	.....	4	1.44	36.6
Sydney	N. 46 08	W. 60 10	7.59 a.m.	37	11	29.97	761.2	30.01	762.2	55.3	12.9	87	1	2	2	2	11	1	.....	2	9	.....	.....	6	6.03	153.2
Toronto	N. 43 39	W 79 23	6.42 a.m.	350	107	29.74	755.4	30.13	765.3	51.5	10.8	80	10	6	3	.....	.....	.....	2	7	2	.....	.....	4	1.16	29.5
Woodstock	N. 43 08	W. 80 47	6.37 a.m.	980	299	29.08	738.6	30.14	765.5	48.5	9.2	88	3	2	2	3	1	2	1	5	11	.....	.....	4	1.74	44.2
Yarmouth	N. 43 50	W. 66 02	7.36 a.m.	61	19	30.00	762.0	30.06	763.5	52.7	11.5	86	6	3	2	7	2	1	2	4	3	.....	.....	3	2.55	64.8
Sub-series.																										
Saint Johns, N.F.	N. 47 34	W. 52 42	8.29 a.m.	159	48	29.83	757.7	30.02	762.5	54.3	12.4	52	1	2	3	9	7	1	.....	7	.....	.....	.....	6	5.78	146.8
Cape Colony																										
Cape St. Francis	S. 34 10	E. 24 50	1.39 p.m.	25	8	30.13	765.3	30.12	765.0	64.8	18.2	93	.....	.....	12	.....	4	1	8	2	3	.....	.....	3	0.16	4.1
Chinese.																										
Hong Kong	N. 22 18	E. 114 10	7.37 p.m.	110	34	29.65	753.1	29.70	754.4	81.2	27.3	81	1	1	3	2	.....	2	13	7	1	.....	.....	5	10.95	278.1
Foochow *b*	N. 26 08	E. 119 38	7.59 p.m.	34	10	29.87	758.7	29.85	758.2	79.6	26.4	95	1	.....	.....	1	.....	3	.....	23	.....	.....	.....	6	5.41	137.4
Sub-series.																										
South Cape	N. 21 55	E. 120 51	8.04 p.m.	121	37	29.68	753.9	29.75	755.6	80.5	26.9	88	.....	.....	.....	.....	.....	1	3	23	3	.....	.....	7	14.24	361.7
Zi-Ka-Wei	N. 31 12	E. 121 26	8.06 p.m.	23	7	29.93	760.3	29.91	759.7	72.0	22.2	90	12	.....	1	.....	.....	1	9	7	.....	.....	.....	6	9.39	238.4

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for September, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0–10	Total Precipitation. Inch.	Mill.
DANISH.	° ′	° ′																								
Copenhagen	N. 55 41	E. 12 36	0.50 p.m.	43	13	29.81	757.2	29.88	758.9	58.5	14.7	73	5	3	2	4	12	2	1	1	.....	.....	.....	7	.....	.....
Fanoe	N. 55 27	E. 8 24	0.34 p.m.	20	6	29.82	757.5	29.87	758.7	58.1	14.5	77	2	6	4	9	3	2	1	2	1	.....	.....	7	.....	.....
Ivigtut	N. 61 12	W. 48 00	8.48 a.m.	16	5	29.74	755.3	29.80	756.9	41.9	5.5	.....	2	2	.....	1	7	.....	.....	.....	19	.....	.....	8	.....	.....
Stykkisholm	N. 65 05	W. 22 46	10.29 a.m.	36	11	29.77	756.2	29.86	758.4	46.4	8.0	79	1	1	.....	7	2	9	2	3	5	.....	.....	7	.....	.....
Thorshavn	N. 62 02	W. 6 44	11.33 a.m.	30	9	29.78	756.4	29.85	758.2	49.3	9.6	82	6	1	4	6	2	.....	1	8	2	.....	.....	7	.....	.....
Vestervig	N. 56 47	E. 8 20	0.33 p.m.	82	25	29.72	754.8	29.83	757.7	57.0	13.9	75	2	5	3	5	5	.....	3	4	3	.....	.....	7	.....	.....
FRENCH.																										
Agen	N. 44 12	E. 0 38	0.03 p.m.	604	184	29.40	746.7	30.03	762.7	69.1	20.6	54	2	8	5	3	1	7	.....	4	.....	.....	.....	.....	1.85	47.1
Alençon	N. 48 26	E. 0 05	0.00 m.	476	145	29.51	749.5	30.04	763.0	61.3	16.3	79	1	1	.....	6	10	1	.....	11	.....	.....	.....	6	1.85	47.0
Arras	N 50 18	E. 2 46	0.11 p.m	223	68	29.76	755.8	30.00	762.0	60.1	15.6	67	1	15	3	2	.....	2	.....	7	.....	.....	.....	6	1.63	41.5
Avignon	N. 43 57	E. 4 49	0.19 p.m	66	20	29.89	759.3	29.96	761.0	73.0	22.8	57	19	1	1	3	.....	4	.....	2	.....	.....	.....	2	1.02	25.8
Bar-sur-Seine	N. 48 07	E. 4 22	0.17 p.m.	518	158	29.45	747.9	30.01	762.2	62.8	17.1	64	.....	1	.....	6	7	6	5	5	.....	.....	.....	5	2.16	55.0
Beauvais	N. 49 26	E. 2 05	0.08 p.m.	269	82	29.65	753.1	29.94	760.5	63.5	17.5	64	7	3	9	4	1	3	1	2	.....	.....	.....	.....	1.88	47.8
Besançon	N. 47 13	E. 6 02	0.24 p.m.	895	273	29.14	740.1	30.09	764.3	62.4	16.9	.....	3	1	3	8	7	.....	2	6	.....	.....	.....	4	3.67	93.2
Bordeaux	N. 44 50	W. 0 32	11.58 a.m.	243	74	29.74	755.3	30.00	762.0	68.0	20.0	56	8	2	4	5	2	2	4	3	.....	.....	.....	5	1.82	46.3
Bourges	N. 47 10	E. 2 26	0.10 p.m.	512	156	29.48	748.9	30.02	762 5	66.2	19.0	53	3	2	.....	7	4	3	1	10	.....	.....	.....	4	0.88	22.3
Brest	N. 48 24	W. 4 30	11.42 a.m.	210	64	29.77	756.1	30.01	762.2	61.9	16.6	82	1	5	2	11	1	.....	1	9	.....	.....	.....	5	1.56	39.5
Caen	N. 49 11	W. 0 21	11.59 a.m.	69	21	29.91	759.7	29.99	761.7	62.2	16.8	70	.....	4	6	7	1	1	4	7	.....	.....	.....	5	0.53	13.4
Châlons-sur-Marne	N. 48 57	E. 4 21	0.17 p.m.	295	90	29.70	754.4	30.02	762.5	62.6	17.0	67	2	2	1	8	12	.....	3	2	.....	.....	.....	.....	1.11	28.2
Charleville [a	N. 49 46	E. 4 43	0.19 p.m.	470	145	29.49	749.0	30.01	762.2	60.6	15.9	62	2	1	7	8	2	1	4	5	.....	.....	.....	6	2.81	71.4
Clermont-Fer'and	N. 45 46	E. 3 05	0.12 p.m.	1273	388	28.66	728 0	29.99	761.7	64.8	18.2	60	11	4	3	4	.....	3	4	1	.....	.....	.....	5	1.11	28.2
Cluny	N. 46 26	E. 4 39	0.19 p.m.	787	240	29.17	740.9	29.99	761.7	65.3	18.5	61	.....	3	10	4	.....	2	.....	11	.....	.....	.....	6	2.04	51.8
Commercy	N. 48 46	E. 5 35	0.22 p m.	817	249	29.13	739.8	30.01	762.2	62.1	16.7	66	3	2	6	9	1	2	4	3	.....	.....	.....	5	2.41	61.3
Gap	N. 44 33	E. 6 05	0.24 p.m.	2424	739	27.41	696.1	29.95	760.8	66.9	19.4	53	6	6	.....	.....	11	.....	.....	.....	7	.....	.....	.....	4.26	108.3
Gréasque	N. 43 25	E. 5 37	0.22 p.m.	1056	322	28.86	733 1	29.95	760.7	71.6	22.0	55	3	3	1	1	4	5	.....	13	.....	.....	.....	3	1.73	43.9
Grenoble	N. 45 12	E. 5 43	0.23 p.m.	715	218	29.26	743.2	30.01	762.2	66.9	19.4	62	1	11	3	1	4	.....	6	4	.....	.....	.....	.....	0.87	22.0
Guéret	N. 46 10	E. 1 52	0.07 p.m.	1535	468	28.42	721.9	29.99	761.8	63.7	17.6	86	1	.....	1	10	3	8	1	6	.....	.....	.....	.....	0.35	8.9
Lescar	N. 43 20	W. 0 26	11.58 a.m.	525	160	29.44	747.8	29.99	761.7	70.3	21.3	67	3	.....	13	2	4	2	2	4	.....	.....	.....	.....	1.70	43.3
Lorient	N. 47 45	W. 3 21	11.47 a.m.	85	26	29.93	760.2	30.02	762.5	65.5	18.6	82	1	4	1	13	4	1	.....	10	1	.....	.....	5	2.56	65.1
Lyon	N. 45 41	E. 4 47	0.19 p.m.	981	299	28.96	735.6	29.98	761.5	64.0	17.8	60	6	6	2	.....	2	6	4	4	.....	.....	.....	.....	1.53	38.9
Mans	N. 48 00	E. 0 12	0.01 p.m.	285	87	29.71	754.5	30.02	762.5	63.0	17.2	66	2	.....	9	5	1	1	.....	12	.....	.....	.....	.....	2.16	55.0
Marseille	N. 43 18	E. 5 23	0.22 p.m.	246	75	29.70	754.3	29.96	761.0	73.2	22.9	53	.....	2	12	10	2	3	1	.....	.....	.....	.....	.....	2.46	62.4
Montlouis	N. 42 30	E. 2 07	0.08 p.m.	5202	1586	24.92	632.9	29.76	755.9	59.7	15.4	66	5	5	7	7	.....	.....	2	4	.....	.....	.....	4	2.50	63.5
Montpellier	N. 43 37	E. 3 53	0.16 p.m.	102	31	29.84	757.9	29.94	760.5	75.6	24.2	60	9	4	3	3	1	8	1	1	.....	.....	.....	.....	0.79	20.0
Mont Ventoux	N. 44 10	E. 5 16	0.21 p.m.	6234	1900	23.90	607.1	.....	.....	47.8	8.8	67	1	12	1	1	7	6	.....	2	.....	.....	.....	1	6.72	170.8
Nancy	N. 48 42	E. 6 11	0.25 p.m.	718	219	29.19	741.4	29.96	761.0	60.1	15.6	76	.....	5	11	3	.....	8	1	2	.....	.....	.....	.....	2.40	60.9
Nantes	N. 47 13	W. 1 33	11.54 a.m.	134	41	29.87	758 7	30.01	762 2	64 8	18.2	58	4	3	5	6	2	2	2	6	.....	.....	.....	6	2.86	72.7
Nice	N. 43 41	E. 7 16	0.29 p.m.	59	18	29.86	758.5	29.92	760.0	77.0	25.0	60	.....	.....	3	.....	17	.....	8	.....	2	.....	.....	3	0.98	25.0
Perpignan	N. 42 42	E. 2 53	0.12 p.m.	105	32	29.87	758.8	29.96	761.0	72.9	22.7	52	.....	10	.....	1	.....	1	7	8	3	.....	.....	4	1.19	30.3
Pic du Midi (Sum-	N. 42 56	W. 0 08	11.59 a.m.	9380	2859	21.28	540.6	.....	.....	41.7	5.4	50	.....	.....	6	10	.....	.....	3	1	10	.....	.....	1	1.69	42.9
Privas. [mit.)	N. 44 45	E. 4 36	0.18 p.m.	997	304	28.90	734.1	29 93	760.2	68.5	20.3	59	10	.....	.....	.....	11	.....	.....	.....	9	.....	.....	.....	5.15	130.7
Puy de Dôme	N. 45 46	E. 2 58	0.12 p.m.	4813	1467	25.17	639.2	.....	.....	45.7	7.6	85	3	.....	7	10	2	1	2	5	.....	.....	.....	6	3.00	76.2
Rochefort	N. 45 56	W. 0 58	11.56 a.m.	30	9	29.97	761.1	30.00	762.0	67.8	19.9	62	1	2	7	5	1	.....	6	8	.....	.....	.....	3	1.25	31.8
Roche-sur-Yon	N. 46 40	W. 1 26	11.54 a.m.	259	79	29.72	754.8	29.99	761.7	65.1	18.4	59	.....	2	7	6	1	1	3	10	.....	.....	.....	5	3.33	84.5
Rodez	N. 44 21	E. 2 34	0.10 p.m.	2050	625	27.87	707.9	29.96	761.0	66.0	18.9	.....	6	8	.....	.....	.....	6	2	6	2	.....	.....	.....	1.73	43.9
Rouen	N. 49 26	E. 1 05	0.04 p.m.	39	12	29.94	760.5	29.99	761.7	63.1	17.3	66	5	1	3	11	2	2	5	1	.....	.....	.....	7	1.16	29.5
Saint Brieuc	N. 48 37	E. 5 08	0.20 p.m.	348	106	29.70	754.4	30.08	764.0	61.3	16.3	81	1	3	6	5	5	.....	.....	10	.....	.....	.....	6	0.55	14.0
Saint Maur	N. 48 48	E. 2 21	0.09 p.m.	161	49	29.84	757.9	30.02	762.4	61.9	16.6	63	5	.....	1	15	1	2	.....	5	1	.....	.....	7	1.19	30.2
Toulouse	N. 43 37	E. 1 27	0.06 p.m.	636	194	29.34	745.1	30.00	762.0	72.0	22.2	56	2	12	5	1	.....	8	2	.....	2	.....	.....	5	0.65	16.5
Tours	N. 47 24	E. 0 41	0.03 p.m.	171	52	29.78	756.5	29.96	761.0	64.9	18.3	64	1	4	6	5	1	1	9	3	.....	.....	.....	.....	2.46	62.6
Sub-Series.																										
St. Martin du Hinx.	N. 43 35	W. 1 16	11.55 a.m.	131	40	29.88	758.9	30.01	762.0	69.8	21.0	59	.....	12	7	.....	.....	5	1	5	.....	.....	.....	5	5.34	135.6
GERMAN.																										
Ansbach	N. 49 18	E. 10 36	0.42 p.m.	1358	414	28.56	725.4	30.00	762.0	62.1	16.7	51	3	5	6	10	1	1	.....	4	.....	.....	.....	6	0.83	21.1
Bamberg	N. 49 54	E. 10 54	0.44 p.m.	787	240	29.13	740.0	29.98	761.5	61.7	16.5	56	.....	8	6	9	.....	7	.....	.....	.....	.....	.....	5	1.07	27.1
Berlin	N. 52 30	E. 13 19	0.53 p.m.	151	46	29.77	756.1	29.95	760.7	65.3	18.5	60	.....	8	1	11	2	4	.....	1	3	.....	.....	4	1.14	28.9
Breslau	N. 51 07	E. 17 02	1.08 p.m.	482	147	29.43	747.6	29.96	761.1	63.9	17.7	56	2	6	9	4	4	2	1	2	.....	.....	.....	7	1.08	27.3
Carlsruhe	N. 49 01	E. 8 25	0.34 p.m.	407	124	29.57	751.1	30.02	762.5	62.2	16.8	63	1	1	3	17	.....	.....	2	5	1	.....	.....	6	3.16	80.3
Cassel	N. 51 19	E. 9 28	0.38 p.m.	669	204	29.26	743.2	29.98	761.5	60.4	15.8	66	6	.....	1	13	5	.....	2	8	.....	.....	.....	6	3.36	85.3
Frankfort on M.	N. 50 08	E. 8 41	0.35 p.m.	338	103	29.63	752.5	29.91	759.7	60.6	15.9	62	3	2	3	11	6	.....	.....	5	.....	.....	.....	6	2.24	56.8
Friedrichshafen	N. 47 39	E. 9 29	0.38 p.m.	1338	408	28.58	725.9	29.98	761.5	61.2	16.2	74	1	1	2	14	5	1	1	5	.....	.....	.....	6	3.21	81.6
Hamburg	N. 53 33	E. 9 58	0.40 p.m.	85	26	29.81	757.2	29.91	759.7	60.1	15.6	69	4	6	.....	13	4	2	1	.....	.....	.....	.....	7	1.98	50.3
Kiel	N. 54 19	E. 10 04	0.40 p.m.	13	4	29.85	758.3	29.89	759.2	58.3	14.6	70	2	4	3	12	5	1	.....	2	1	.....	.....	8	1.68	42.6
Leipsic	N. 51 20	E. 12 24	0.50 p.m.	390	119	29.54	750.3	29.97	761.2	63.0	17.2	60	1	5	5	11	3	2	2	1	.....	.....	.....	7	0.99	25.1
Memel	N. 55 43	E. 21 07	1.24 p.m.	39	12	29.84	757.9	29.91	759.7	59.9	15.5	79	6	9	2	4	4	2	2	1	.....	.....	.....	8	.....	.....
Munich	N. 48 09	E. 11 34	0.46 p.m.	1732	528	28.18	715.8	30.05	763.3	61.7	16 5	60	3	4	6	1	1	1	2	10	2	.....	.....	6	1.93	49.1
Neufahrwasser	N. 54 24	E. 18 40	1.15 p.m.	36	11	29.85	758.2	29.91	759.7	63.0	17.2	64	4	3	11	2	4	4	2	.....	.....	.....	.....	7	0.87	22.1
Neustadtb	N. 49 21	E. 8 08	0.33 p.m.	479	146	29.46	748.2	29.99	761.7	61.5	16.4	71	4	3	8	2	7	1	.....	3	.....	.....	.....	7	1.95	49.5
Stuttgart	N. 48 47	E. 9 11	0.37 p.m.	833	254	29.10	739.1	29.99	761.7	62.8	17.1	61	6	5	4	7	.....	1	2	4	1	.....	.....	6	1.02	25.8
Wustrow	N. 54 21	E. 12 24	0.50 p.m.	23	7	29.85	758.2	29.89	759.2	59.9	15.5	73	2	6	4	5	7	3	1	2	.....	.....	.....	8	1.28	32.5
GREEK.																										
Athens	N. 37 58	E. 23 44	1.35 p.m.	348	106	29.55	750.6	29.91	759.7	82.2	27.9	50	6	1	1	4	14	.....	2	2	.....	.....	.....	4	0.46	11.7
INDIAN.																										
Kurrachee	N. 24 47	E. 67 04	4.28 p.m.	49	15	29.66	753.3	29.66	753.4	82.3	27.9	72	.....	.....	14	16	.....	.....	.....	.....	.....	.....	.....	3	.....	.....
Deesa	N. 24 16	E. 72 14	4.49 p.m.	466	142	29.23	742.4	29.64	752.8	90.8	32.7	42	21	.....	6	12	8	.....	1	1	.....	.....	.....	5	.....	.....
Bombay	N. 18 54	E. 72 49	4.51 p.m.	37	11	29.78	756.3	29.76	755.9	80.5	26.9	79	1	14	14	1	.....	.....	.....	.....	.....	.....	.....	7	18.27	463.9
Poona	N. 18 28	E. 74 10	4.57 p.m.	1849	564	27.94	709.8	29.72	754.9	76.4	24.7	73	1	12	11	6	.....	.....	.....	.....	.....	.....	.....	7	4.96	126.0
Belgaum	N. 15 52	E. 74 42	4.59 p.m.	2524	770	27.27	692.6	29.71	754.7	71.5	21.9	84	.....	.....	10	20	.....	.....	.....	.....	.....	.....	.....	8	3.23	82.0
Lahore	N. 31 34	E. 74 20	4.57 p.m.	702	214	28.94	734.9	29.61	752.1	90.4	32.4	50	3	1	3	1	.....	2	2	.....	18	.....	.....	0	1.18	30.0
Roorkee	N. 29 52	E. 77 56	5.12 p.m.	887	270	28.74	730.0	29.60	751.8	84.2	29.0	67	.....	.....	12	.....	.....	4	1	1	12	.....	.....	3	9.65	245.1
Agra	N. 27 10	E. 78 05	5.12 p.m.	555	169	29.11	739.5	29.62	752.3	85.7	29.8	69	5	17	4	1	.....	.....	.....	1	2	.....	.....	3	7.93	201.4
Nagpur	N. 21 09	E. 79 11	5.17 p.m.	1025	312	28.65	727.7	29.62	752.3	82.3	27.9	72	5	8	7	4	1	1	2	1	1	.....	.....	7	6.65	168.9
Jubbulpore	N. 23 09	E. 79 59	5.20 p.m.	1341	409	28.34	719.8	29.62	752.4	81.3	27.4	72	2	5	3	3	.....	1	.....	3	13	.....	.....	6	10.38	263.6
Lucknow	N. 26 50	E. 81 00	5.24 p.m.	369	112	29.28	743.7	29.59	751.6	84.6	29.2	70	6	7	3	2	1	.....	1	2	8	.....	.....	4	5.31	134.6
Allahabad	N. 25 26	E. 81 52	5.27 p.m.	307	94	29.33	744.9	29.59	751.6	86.0	30.0	68	3	6	6	.....	.....	1	5	2	7	.....	.....	5	2.36	59.9
Patna	N. 25 37	E. 85 08	5.41 p.m.	183	56	29.46	748.2	29.59	751.6	85.1	29.5	77	.....	1	6	.....	.....	3	7	1	12	.....	.....	7	3.51	89.2
Hazaribagh	N. 24 00	E. 85 24	5.42 p.m.	2007	612	27.67	702.8	29.61	752.0	78.2	25.7	76	4	6	5	2	4	6	2	.....	1	.....	.....	7	6.53	165.9
Cuttack *a*	N. 20 29	E. 85 54	5.44 p.m.	80	24	29.59	751.5	29.61	752.0	84.5	29.2	78	.....	.....	.....	2	3	.....	1	.....	23	.....	.....	8	6.03	153.2
Calcutta	N. 22 33	E. 88 21	5.53 p.m.	21	6	29.63	752.6	29.60	751 8	82.3	27.9	85	3	2	5	6	5	6	1	.....	2	.....	.....	7	9.54	242.3
Dhubri	N. 26 07	E. 89 50	5.59 p.m	115	35	29.54	750.4	29.61	752.0	81.8	27.7	84	.....	.....	.....	3	1	2	1	2	21	.....	.....	5	12.98	329.7
Chittagong	N. 22 21	E. 91 50	6.07 p.m.	87	27	29.61	752.1	29.64	752.8	81.1	27.3	86	.....	.....	3	10	11	3	.....	.....	3	.....	.....	8	6.40	162.6
Sibsagar	N. 26 59	E. 94 40	6.19 p.m.	333	101	29.33	745.1	29.61	752.0	83.9	28.1	86	2	2	.....	11	3	5	.....	7	.....	.....	.....	6	14.18	360.2
Jeypore	N. 26 55	E. 75 50	5.03 p.m.	1431	436	28.26	717.8	29.62	752.4	87.5	30.8	53	2	12	3	1	.....	3	3	3	3	.....	.....	4	4.34	110.2
Bellary	N. 15 09	E. 76 57	5.08 p.m.	1475	449	28.28	718.4	29.68	753.8	83.7	28.7	57	5	8	12	2	.....	.....	.....	2	1	.....	.....	8	2.65	67.3
Trichinopoly	N. 10 50	E. 78 44	5.15 p.m.	275	84	29.51	749.4	29.71	754.6	89.9	32.2	49	1	4	10	1	1	.....	.....	1	12	.....	.....	6	1.97	50.0
ITALIAN.																										
Udine	N. 46 04	E. 13 13	0.53 p.m.	381	116	29.47	748.5	29.87	758.7	73.4	23.0	53	.....	.....	2	10	2	2	3	4	7	.....	.....	4	3.11	78.9
Milan	N. 45 28	E. 9 11	0.37 p.m.	482	147	29.45	748.0	29.95	760.7	72.0	22.2	59	1	2	3	9	1	7	2	5	.....	.....	.....	6	2.39	60.6
Padua	N. 45 24	E. 11 53	0.48 p.m.	102	31	29.83	757.7	29.93	760.3	73.2	22.9	54	5	2	1	2	2	3	4	11	.....	.....	.....	4	1.85	47.1
Moncaliera	N. 45 00	E. 7 41	0.31 p.m.	846	258	29.05	737.9	29.94	760.4	70.9	21.6	59	3	6	.....	5	5	8	3	.....	.....	.....	.....	5	1.28	32.5
Genoa	N. 44 24	E. 8 55	0.36 p.m.	177	54	29.76	755.9	29.94	760.4	73.2	22.9	59	5	.....	.....	2	15	6	1	1	.....	.....	.....	4	3.26	82.7
Cuneo	N. 44 20	E. 7 20	0.30 p.m.	1820	555	.....	.....	29.87a	758.8?	67.8	19.9	55	2	1	.....	.....	.....	2	10	14	1	.....	.....	5	1.56	39.5
Pesaro	N. 43 55	E. 12 53	0.52 p.m.	46	14	29.89	759.2	29.94	760.5	72.9	22.7	67	4	2	2	2	.....	1	11	8	.....	.....	.....	4	2.60	66.0
Florence	N. 43 46	E. 11 15	0.45 p.m.	240	73	29.67	753.6	29.93	760.3	75.2	24.0	47	7	1	2	13	6	1	.....	.....	.....	.....	.....	4	1.68	42.8

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for September, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent.	Mean Rel. Humidity	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0–10	Total Precipitation. Inch.	Mill.
ITALIAN—Con.	°	° ′																								
Leghorn	N. 43 33	E. 10 18	0.41 p.m.	79	24	29.85	758.2	29.93	760.2	74.8	23.8	59	.....	4	12	4	1	.....	6	3	.....	.....	.....	5	1.84	46.6
Rome	N. 41 54	E. 12 29	0.50 p.m.	164	50	29.76	755.9	29.92	760.0	79.2	26.2	45	2	1	5	14	5	.....	1	.....	2	.....	.....	5	4.63	117.5
Cosenza	N. 39 19	E. 16 17	1.05 p.m.	840	256	29.10	739.1	29.94	760.5	78.3	25.7	61	.....	4	12	.....	4	10	.....	.....	.....	.....	.....	4	1.16	29.5
Sassari	N. 40 43	E. 8 34	0.34 p.m.	735	224	29.21	741.9	29.94	760.5	76.5	24.7	57	6	13	6	3	1	.....	.....	1	.....	.....	.....	5	4.34	110.2
Palermo	N. 38 07	E. 13 21	0.53 p.m.	236	72	29.75	755.6	29.97	761.2	82.0	27.8	53	1	4	.....	4	.....	3	1	16	1	.....	.....	4	0.84	21.3
Syracuse	N. 37 03	E. 15 15	1.01 p.m.	72	22	29.87	758.7	29.92	760.0	81.0	27.2	69	3	.....	2	6	4	2	3	10	.....	.....	.....	5	0.89	22.6
Sub-Series.																										
Stelvio	N. 46 32	E. 10 25	0.42 p.m	8343	2543	22.22	564.3	.....	.....	43.9	6.6	75	1	.....	15	3	.....	1	2	8	.....	.....	.....	5	3.96	100.7
Valdobbia	N. 45 47	E. 7 51	0.31 p.m.	8360	2548	22.22	564.3	.....	.....	46.0	7.8	61	4	4	1	13	5	.....	1	2	.....	.....	.....	6	8.68	220.6
JAPANESE.																										
Akita	N. 39 42	E. 140 07	9.20 p.m.	49	15	29.87	758.7	29.91	759.7	61.7	16.5	89	4	3	7	.....	1	1	8	6	.....	6768	10955	5	7.32	185.8
Awomori	N. 40 51	E. 140 45	9.23 p.m.	33	10	29.85	758.2	29.87	758.7	60.4	15.8	86	.....	3	10	5	7	2	1	.....	2	4606b	7412b	5	5.78	147.0
Fushiki	N. 36 47	E. 137 03	10.05 p.m.	13	4	29.92	759.9	29.91	759.7	68.3	20.2	85	.....	.....	1	4	1	.....	2	5	17	4035	6493	7	9.59	243.4
Gifu	N. 35 27	E. 136 46	9.07 p.m.	49	15	29.90	759.5	29.92	760.0	69.7	20.9	84	5	4	.....	1	.....	4	2	1	13	1816	2924	6	6.63	168.1
Hakodate	N. 41 46	E. 140 44	9.23 p.m.	10	3	29.85	758.2	29.85	758.2	59.8	15.4	84	8	2	9	2	.....	1	4	2	2	7267	11694	5	9.84	249.5
Hamamatsu	N. 34 42	E. 137 43	9.11 p.m.	92	28	29.85	758.2	29.91	759.7	70.0	21.1	85	2	.....	7	2	1	.....	5	2	11	2271	3654	7	5.09	129.3
Hiroshima	N. 34 23	E. 132 27	8.50 p.m.	16	5	29.92	759.9	29.91	759.7	71.5	21.9	81	19	.....	1	1	5	.....	.....	3	1	3794	6104	6	6.05	153.6
Itsurhara	N. 34 12	E. 129 16	8.34 p.m.	16	5	.....	.....	.....	.....	69.7	20.9	90	4	1	1	1	.....	.....	1	.....	22	1435	2310	6	19.77	502.1
Kanazawa	N. 36 33	E. 136 40	9.07 p.m.	95	29	29.85	758.1	29.93	760.2	66.7	19.3	85	1	.....	1	3	1	14	6	1	3	2907	4678	8	7.68	195.2
Kagoshima	N. 31 35	E. 130 33	8.42 p.m.	13	4	29.92	760.0	29.90	759.4	74.7	23.9	86	.....	1	.....	.....	2	.....	3	2	22	1529	2461	5	6.63	168.3
Kioto	N. 35 01	E. 135 46	9.03 p.m.	161	49	29.78	756.4	29.92	760.0	67.9	19.9	87	14	4	.....	.....	2	1	1	3	5	2107	3390	6	3.33	84.7
Kochi	N. 33 33	E. 133 34	8.54 p.m.	20	6	29.93	760.3	29.92	760.0	73.2	22.9	85	6	9	1	.....	.....	3	5	3	3	4028	6483	7	7.45	189.3
Miasaki	N. 31 56	E. 131 26	8.46 p.m.	26	8	29.93	760.1	29.94	760 5	73.6	23.2	89	7	.....	4	1	2	.....	11	2	3	3548	5710	6	9.19	233.4
Miyako	N. 39 38	E. 141 59	9.28 p.m.	98	30	29.80	756.8	29.89	759.2	60.6	15.9	90	1	1	8	10	4	.....	.....	.....	6	1160	1868	5	2.27	57.4
Nagasaki	N. 32 44	E. 129 52	8.39 p.m.	190	58	29.74	755.4	29.91	759.7	72.3	22.4	85	4	6	2	3	1	4	.....	4	6	2721	4379	6	12.70	322.7
Nemuro	N. 43 20	E. 145 35	9.42 p.m.	89	27	29.73	755.1	29.82	757.4	57.3	14.0	84	5	4	3	2	7	3	3	1	.....	7265	11695	5	3.77	95.5
Niigata	N. 37 55	E. 139 03	9.16 p.m.	33	10	29.90	759.4	29.91	759.7	67.4	19.7	81	4	.....	5	1	2	6	3	2	7	4534	7297	6	6.70	170.1
Numadzu	N. 35 06	E. 138 51	9.15 p.m.	30	9	29.90	759.4	29.90	759.4	70.1	21.2	85	2	.....	1	4	3	.....	16	4	.....	4555	7318	8	6.59	167.5
Osaka	N. 34 42	E. 135 30	9.02 p.m.	35	11	29.91	759.6	29.90	759.4	71.4	21.9	80	5	.....	4	2	1	.....	1	10	7	3724	5939	6	3.74	95.1
Sakai	N. 35 33	E. 133 14	8.53 p.m.	7	2	29.93	760.2	29.92	760.0	70.6	21.4	80	4	.....	3	4	2	.....	4	5	8	3452	5555	7	7.96	189.5
Shimonoseki	N. 33 58	E. 130 56	8.44 p.m.	164	50	29.78	756.4	29.92	760.0	71.4	21.9	80	.....	2	3	.....	.....	.....	9	2	14	.....	.....	6	8.17	207.5
Tokei	N. 35 41	E. 139 46	9.19 p.m.	69	21	29.86	758.5	29.91	759.7	68.8	20.4	84	10	.....	.....	1	12	3	3	.....	1	4317c	6948c	7	3.87	98.4
Wakayama	N. 34 14	E. 135 09	9.01 p.m.	49	15	29.89	759.1	29.91	759.7	72.1	22.3	79	5	.....	1	.....	4	.....	1	7	12	2456	3952	6	4.80	122.2
MAURITIUS.																										
Mauritius	S. 20 06	E. 57 33	3.50 p.m.	181	55	29.97	761.2	30.10	764.5	71.8	22.1	63	.....	.....	.....	.....	2	12	15	1	.....	.....	.....	5	0.86	21.8
MEXICAN.																										
Guanajuato	N. 21 01	W. 101 10	5.15 a m.	6762	2061	23.70	601.9	29.83	757.7	59.1	15.1	80	.....	.....	1	7	.....	3	.....	19	.....	.....	.....	5	1.60	40.5
Leon	N. 21 07	W. 101 36	5.14 a.m.	5902	1799	24.31	617.5	29.90	759.4	63.0	17.2	86	5	12	3	4	3	.....	1	2	.....	.....	.....	8	3.11	79.0
Mazatlan	N. 23 12	W. 106 17	4.55 a.m.	249	76	29.63	752.6	29.84	757.9	78.0	25.6	90	8	6	1	1	.....	2	7	5	.....	.....	.....	7	0.19	4.7
Mexico	N. 19 26	W. 99 00	5.24 a.m.	7490	2283	23.08	586.2	30.03	762.7	55.2	12.9	88	.....	6	.....	.....	.....	.....	.....	1	23	.....	.....	9	3.83	97.3
NETHERLANDS.																										
Flushing	N. 51 24	E. 3 35	0.14 p.m.	0	0	29.96	761.0	29.98	761.5	59.5	15.3	.....	2	2	3	11	6	1	.....	5	.....	.....	.....	.....	2.12	53.8
Groningen	N. 53 12	E. 6 34	0.26 p.m.	60?	18?	29.83	757.7	29.91	759.7	58.8	14.9	.....	9	.....	7	7	4	1	.....	2	.....	.....	.....	.....	2.58	65.4
Helder	N. 52 58	E. 4 45	0.19 p.m.	0	0	29.89	759.3	29.91	759.7	57.6	14.2	.....	3	7	3	10	4	.....	1	2	.....	.....	.....	.....	2.86	72.7
Hellevoetsluis	N. 51 49	E. 4 08	0.17 p.m.	0	0	29.94	760.5	29.96	761.0	59.5	15.3	.....	5	5	3	11	3	.....	.....	1	2	.....	.....	.....	2.57	65.2
Utrecht	N. 52 05	E. 5 07	0.20 p.m.	43	13	29.90	759.4	29.96	761.0	59.4	15.2	.....	5	6	.....	8	9	1	.....	1	.....	.....	.....	3	1.92	48.9
Sub-Series.																										
Batavia	S. 6 11	E. 106 50	7.07 p.m.	26	8	29.83	757.7	29.78	756.4	79.0	26.1	83	5	4	1	6	1	.....	2	5	6	.....	.....	7	7.21	183.1
NORWEGIAN.																										
Bergen	N. 60 24	E. 5 20	0.21 p.m.	56	17	29.72	754.9	29.82	757.4	55.0	12.8	73	2	11	1	1	10	3	2	.....	.....	.....	.....	.....	14.66	372.4
Brono	N. 65 28	E. 12 14	0.49 p.m.	33	10	29.73	755.1	29.81	757.2	54.9	12.7	68	3	3	3	5	1	6	6	1	2	.....	.....	7	3.92	99.6
Christiania	N. 59 55	E. 10 45	0.43 p.m.	134	41	29.67	753.6	29.86	758.4	57.6	14.2	68	2	2	1	6	6	.....	1	.....	12	.....	.....	7	5.37	136.5
Gjæsvær	N. 71 07	E. 25 22	1.41 p.m.	23	7	29.73	755.2	29.81	757.2	49.1	9.5	.....	1	1	2	4	5	3	3	1	10	.....	.....	7	1.67	42.5
PORTUGUESE.																										
Angra	N. 38 39	W. 27 14	10.11 a.m.	144	44	30.08	764.0	30.20	767.1	70.5	21.4	82	2	8	4	1	1	5	7	2	.....	.....	.....	4	0.73	18.5
Funchal	N. 32 38	W. 16 55	10.52 a.m.	82	25	30.03	762.8	30.08	764.0	75 2	24.0	60	.....	.....	3	15	3	4	2	.....	3	.....	.....	5	0.22	5.6
Lisbon	N. 38 42	W. 9 08	11.23 a.m.	312	95	29.69	754.2	30.00	762.0	70.9	21.6	58	6	8	1	5	5	3	1	1	.....	.....	.....	4	0.73	18.5
Ponta Delgada	N. 37 45	W. 25 41	10.17 a.m.	66	20	30.17	766.2	30.22	767.6	72.9	22.7	66	4	5	5	2	1	.....	1	10	2	.....	.....	4	1.89	48.1
Saint Vincent	N. 16 37	W. 25 02	10.20 a.m.	35	11	29.96	761.0	29.94	760.5	82.4	28.0	.....	10	.....	1	1	.....	.....	.....	17	1	.....	.....	6	5.31	134.8
Serra da Estrella	N. 40 25	W. 7 35	11.30 a.m.	4728	1441	25.29	642.3	29.92	760.0	56.1	13.4	66	1	1	7	2	.....	8	6	5	.....	.....	.....	4	9.65	245.1
San Salvador	S. 6 17	E. 14 53	1.00 p.m.	1834	559	28.11	714.0	29.88	758.9	75.7	24.3	59	.....	1	12	.....	.....	.....	.....	.....	17	.....	.....	6	0.13	3.4
RUSSIAN.																										
Archangel	N. 64 33	E. 40 32	2.42 p.m.	16	5	29.89	759.2	29.96	761.0	53.4	11.9	73	.....	1	6	6	6	1	1	6	3	.....	.....	8	.....	.....
Baku	N. 40 21	E. 49 51	3.19 p.m.	39	12	29.99	761.8	30.04	760.5	79.2	26.2	67	11	.....	.....	.....	9	5	3	.....	2	.....	.....	2	0.00	0.0
Barnaul	N. 53 20	E. 83 47	5.35 p.m.	459?	140?	29.52	749.8	30.01	762.2	59.4	15.2	59	2	4	3	9	1	1	1	1	8	.....	.....	6	0.99	25.1
Dorpat	N. 58 23	E. 26 43	1.47 p.m.	210	64	29.58	751.4	29.84	757.9	61.0	16.1	72	5	1	2	7	5	4	6	.....	.....	.....	.....	8	3.93	99.8
Ekaterinburg	N. 56 49	E. 60 38	4.03 p.m.	928	283	29.15	740.3	30.15	765.8	62.8	17.1	54	1	1	13	6	.....	4	2	.....	3	.....	.....	4	0.24	6.0
Elisavetgrad	N. 48 31	E. 32 17	2.09 p.m.	407	124	29.51	749.5	29.94	760.5	74.3	23.5	43	3	3	3	4	4	5	3	5	.....	.....	.....	5	2.42	61.5
Irkutsk	N. 52 17	E. 104 16	6.57 p.m.	1610	491	28.34	719.7	30.09	764.3	48.0	8.9	69	4	9	1	2	1	7	.....	4	2	.....	.....	8	2.04	51.7
Kasalinsk a	N. 45 46	E. 62 07	4.08 p.m.	148	45	29.76	755.8	29.92	760.0	75.7	24.3	33	4	3	1	...	1	.....	2	17	1	.....	.....	2	.....	.....
Kasan	N. 55 47	E. 49 08	3.17 p.m.	230	70	29.79	756.6	30.07	763.8	68.9	20 5	48	3	1	5	7	8	5	1	.....	.....	.....	.....	6	0.11	2.7
Kem	N. 64 57	E. 34 39	2.19 p.m.	43	13	29.87	758.6	29.96	761.0	54.7	12.6	71	.....	2	8	6	.....	1	4	6	3	.....	.....	8	2.66	67.6
Kertch	N. 45 21	E. 36 29	2.26 p.m.	20?	6?	29.90	759.5	29.92	760 0	73.4	23.0	a61	1	5	1	1	8	1	5	5	3	.....	.....	3	.....	.....
Keiff	N. 50 27	E. 30 30	2.02 p.m.	600	183	29.31	744.5	29.95	760.7	67.6	19.8	55	2	7	1	6	6	2	3	2	1	.....	.....	4	2.90	73.6
Kischinev	N. 46 59	E. 28 51	1.55 p.m.	361	110	29.57	751.1	29.95	760.7	73.9	23.3	45	5	4	1	3	4	3	6	4	.....	.....	.....	3	0.98	24.8
Korostishev	N. 50 19	E. 29 03	2.05 p.m.	?	?	29.29	743.9	.....	.....	71.4	21.9	52	1	5	1	1	8	1	7	1	5	.....	.....	4	1.48	37.5
Koslov	N. 52 53	E. 40 31	2.42 p.m.	512	156	29.47	748.5	30.03	762.7	70.3	21.3	52	1	1	1	3	6	6	3	6	3	.....	.....	4	.....	.....
Lgov	N 51 38	E 35 17	2.21 p m.	518	158	29.40	746.8	29.96	761.0	70.2	21.2	56	2	1	.....	7	4	3	5	6	2	.....	.....	6	0.99	25.2
Libau	N. 56 31	E. 21 01	1.24 p.m.	20	6	29.85	758.1	29.91	759.7	60.1	15.6	74	3	2	9	4	7	1	3	1	.....	.....	.....	6	3.58	90.9
Lugan	N. 48 35	E. 39 20	2.37 p.m.	164	50	29.81	757.1	29.99	761.7	76.1	24.5	44	.....	1	3	3	3	3	9	8	.....	.....	.....	5	0.93	23.7
Moscow	N. 55 46	E. 37 40	2.31 p.m.	469	143	29.50	749.4	30.03	762.7	65.5	18.6	58	.....	4	1	3	8	6	5	1	2	.....	.....	5	0.82	20.7
Nertchinsk	N. 51 19	E. 119 37	7.58 p.m.	2155?	657?	27.65	702.3	30.01	762.2	46.2	7.9	61	.....	2	.....	6	.....	.....	1	.....	21	.....	.....	4	.....	.....
Nikolaiev	N. 46 58	E. 31 58	2.08 p.m.	62	19	29.87	758.6	29.93	760.2	77.7	25.4	48	5	.....	2	1	3	.....	6	5	8	.....	.....	2	1.97	50.0
Nikolaievsk	N. 53 08	E. 140 45	9.23 p.m.	82	25	29.61a	752.1a	29.71a	754.6a	b48.7	b9.3	b88	a4	1	4	.....	1	2	10	2	5	.....	.....	6	.....	.....
Nikolsk	N. 59 32	E. 45 27	3.02 p.m.	485?	148?	29.50	749.3	30.06	763.5	61.2	16.2	64	1	4	1	4	5	6	3	4	2	.....	.....	7	2.13	54.2
Perm	N. 58 01	E. 56 16	3.45 p.m.	328?	100?	29.65	753.1	30.02	762.5	64.0	17.8	56	1	.....	15	5	2	4	1	.....	2	.....	.....	7	1.27	32.2
Petro-Alexandrovsk	N. 41 28	E. 61 05	4.04 p.m.	328	100	29.61	752.0	29.95	760.7	82.0	27.8	.....	4	1	3	1	.....	.....	.....	19	2	.....	.....	2	.....	.....
Petrozavodsk	N. 61 47	E. 34 23	2.18 p.m.	220?	67?	29.71	754.7	29.99	761.7	55.2	12.9	74	2	4	3	3	4	3	6	5	1	.....	.....	7	3.28	83.2
Pinsk	N. 52 07	E. 26 06	1.44 p.m.	459?	140?	29.41	746.9	29.93	760 2	58.6	14.8	60	.....	2	6	4	7	4	2	4	1	.....	.....	6	1.51	38.4
Poti	N. 42 09	E. 41 37	2.46 p.m.	26	8	29.78	756.3	29.80	756.9	78.1	25.6	73	.....	9	8	11	1	.....	.....	.....	1	.....	.....	5	.....	.....
St. Petersburg	N. 59 56	E. 30 16	2.01 p.m.	20	6	29.87	758.6	29.93	760.2	53.4	11.9	66	1	2	3	5	3	7	2	7	.....	.....	.....	5	2.74	69.6
Samarkand	N. 39 39	E. 66 57	4.28 p.m.	2379?	725?	27.48	698.0	29.90	759.4	74.5	23.6	.....	.....	5	3	2	.....	4	5	6	5	.....	.....	3	0.38	9.7
Sevastopol a	N. 44 37	E. 33 31	2.14 p.m.	187	57	29.69	754.2	29.88	758.9	77.7	25.4	55	.....	4	7	11	5	.....	.....	1	1	.....	.....	3	3.56	90.4
Tashkend	N. 41 20	E. 69 18	4.37 p.m.	1607?	490?	28.29	718.5	29.91	759.7	79.0	26.1	42	.....	1	2	3	1	1	.....	.....	22	.....	.....	3	.....	.....
Tiflis	N. 41 43	E. 44 47	2.59 p.m.	1342	409	28.56	725.3	29.92	760.0	81.5	27.5	38	2	2	.....	1	9	13	3	.....	.....	.....	.....	5	1.52	38.5
Viatka	N. 58 36	E. 49 41	3.19 p.m.	581?	177?	29.26	743.2	29.92	760.0	61.2	16.2	67	1	7	5	5	5	2	3	1	1	.....	.....	6	0.83	21.0
Warsaw	N. 52 13	E. 21 02	1.24 p.m.	390	119	29.47	748.5	29.90	759.4	63.9	17.7	69	2	7	4	6	7	1	1	1	1	.....	.....	8	2.76	70.2
Yeniseisk	N. 58 27	E. 92 06	6 08 p.m.	276?	84	29.76	755.9	30.09	764.3	47.8	8.8	78	3	5	6	4	2	1	1	.....	8	.....	.....	8	1.42	36.0
Sub-series.																										
Petrowsky Acad'y	N. 55 50	E. 37 33	2.30 p.m.	558	170	29.39	746.5	30.02	762.5	64.4	18.0	57	1	.....	5	3	11	5	2	3	.....	.....	.....	6	0.68	17.4
SCOTTISH.																										
Leith	N. 55 59	W. 3 10	11.47 a.m.	70	21	29.82	757.4	29.92	760.0	.....	.....	.....	b4	3	6	4	1	1	5	4	.....	.....	.....	8	3.81	96.8

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for September, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent.	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation Inch.	Mill.
SPANISH.	° ′	° ′																								
Bilbao	N. 43 15	W. 2 59	11.48 a.m.	52	16	29.95	760.6	30.00	762.0	72.5	22.5	53	5	13	.....	.....	1	3	3	2	3	1491	2399	5	1.57	40.0
Burgos	N. 42 20	W. 3 46	11.45 a.m.	2821	860	27.09	688.0	29.98	761.5	65.8	18.8	51	2	1	3	4	7	.....	.....	13	.....	5128	8253	3	0.18	4.7
Madrid	N. 40 25	W. 3 42	11.45 a.m.	2152	656	27.79	705.8	29.91	759.7	76.3	24.6	38	2	1	7	2	9	.....	5	1	3	6579	10590	4	0.88	22.4
Santiago	N. 42 53	W. 8 28	11.26 a.m.	863	263	29.08	738.6	29.98	761.5	69.1	20.6	61	1	4	1	9	1	1	1	11	1	7067	11373	7	1.75	44.4
Sub-Series.																										
Havana	N. 23 08	W. 82 23	6.30 a.m.	62	19	29.91	759.8	29.92	760.0	75.9	24.4	88	1	.....	.....	2	3	8	15	1	.....	.....	.....	5	2.79	70.8
Manila	N. 14 35	E. 120 57	8.04 p.m.	46	14	29.74	755.4	29.72	754.9	78.7	25.9	93	2	1	1	10	5	3	4	3	1	.....	.....	9	29.04	738.0
San Fernando	N. 36 28	W. 6 13	11.35 a.m.	95	29	29.93	760.3	30.01	762.2	75.4	24.1	60	.....	2	18	2	4	1	2	.....	1	.....	.....	3	0.11	2.9
San Juan de Porto Rico	N. 18 30	W. 66 10	7.35 a.m.	82	25	29.93	760.1	29.95	760.7	81.9	27.7	81	.....	.....	.....	1	9	10	5	.....	5	.....	.....	3	3.13	79.4
SWEDISH.																										
Haparanda	N. 65 47	E. 24 03	1.36 p.m.	30	9	29.78	756.3	29.85	758.2	53.4	11.9	81	5	.....	4	3	8	5	4	.....	1	.....	.....	7	2.60	65.9
Umea	N. 63 50	E. 20 17	1.21 p.m.	39	12	29.79	756.7	29.88	758.9	54.7	12.6	73	1	4	1	7	2	4	3	6	2	.....	.....	6	1.61	41.0
Hernosand	N. 62 32	E. 17 57	1.12 p.m.	46	14	29.79	756.7	29.89	759.2	55.9	13.3	71	1	4	4	2	7	5	2	5	.....	.....	.....	7	1.97	50.1
Stockholm	N. 59 20	E. 18 04	1.12 p.m.	144	44	29.69	754.2	29.89	759.2	58.3	14.6	64	3	1	1	11	3	3	2	5	1	.....	.....	7	2.55	64.7
Wisby	N. 57 39	E. 18 19	1.13 p.m.	52	16	29.79	756.7	29.87	758.7	59.0	15.0	71	4	1	9	5	2	1	5	3	.....	.....	.....	6	1.42	36.1
Sub-Series.																										
Upsala	N. 59 51	E. 17 37	1.10 p.m.	79	24	29.74	755.4	29.86	758.4	57.2	14.0	65	3	3	1	10	5	2	3	3	.....	.....	.....	7	2.12	53.8
SWISS.																										
Geneva	N. 46 12	E. 6 08	0.25 p.m.	1338	408	28.67	728.3	30.07	763.8	64.4	18.0	58	15	.....	3	1	8	3	.....	.....	.....	.....	.....	5	2.52	63.9
TURKISH.																										
Constantinople	N. 41 02	E. 28 59	1.56 p.m.	246	75	29.66	753.4	29.91	759.8	74.8	23.8	61	5	3	.....	8	.....	2	1	11	.....	.....	.....	5	2.77	70.3
Valona	N. 40 27	E. 19 27	1.18 p.m.	105	32	29.80	756.9	29.90	759.4	77.7	25.4	.....	.....	7	4	11	6	1	1	.....	.....	.....	.....	2	6.26	159.0
Sub-Series.																										
Beirut	N. 33 54	E. 35 28	2.22 p.m.	112	34	29.78	756.4	29.86	758.4	84.2	29.0	57	7	4	12	6	.....	.....	.....	.....	1	.....	.....	2	0.13	3.4
UNITED STATES.																										
Atlantic states.																										
Eastport	N. 44 54	W. 66 59	7.32 a.m.	53	16	29.97	761.2	30.03	762.7	52.2	11.2	84	4	5	7	7	1	.....	1	3	2	5324	8568	4	1.05	26.7
Portland	N. 43 39	W. 70 15	7.19 a.m.	99	30	29.96	761.0	30.06	763.5	53.1	11.7	79	6	6	7	6	1	.....	.....	.....	4	4798	7722	4	0.70	17.8
Manchester	N. 43 13	W. 73 03	7.14 a.m.	.....	.....	29.83	757.7	.....	.....	50.2	10.1	89	8	8	5	3	3	1	.....	1	1	3295	5303	3	0.94	23.9
Mt. Washington	N. 44 16	W. 71 18	7.15 a.m.	6279	1914	23.84	605.5	30.08	764.0	34.9	1.6	85	5	12	8	3	.....	.....	.....	2	.....	21575	34721	2	4.03	102.4
Northfield	N. 44 08	W. 72 42	7.09 a.m.	871	266	29.16	740.7	30.10	764.5	46.6	8.1	90	3	3	1	4	12	.....	1	2	4	5473	8808	5	1.78	45.2
Boston	N. 42 21	W. 71 04	7.16 a.m.	124	38	29.97	761.2	30.10	764.5	55.5	13.1	78	7	8	9	4	.....	.....	.....	1	1	7319	11780	3	0.97	24.6
Nantucket	N. 41 14	W. 70 07	7.20 a.m.	14	4	30.09	764.3	30.09	764.3	59.7	15.4	80	2	4	7	3	.....	2	5	7	.....	6766	10889	5	1.99	50.5
Block Id	N. 41 10	W. 71 36	7.14 a.m.	27	8	30.08	764.0	30.10	764.5	59.5	15.3	84	7	4	2	7	.....	2	.....	7	1	9193	14794	5	2.00	50.8
New Haven	N. 41 18	W. 72 56	7.08 a.m.	107	33	30.01	762.2	30.11	764.8	55.0	12.8	81	9	5	3	5	1	.....	.....	5	2	4805	7733	4	2.21	56.1
New London	N. 41 21	W. 72 05	7.12 a.m.	47	14	30.05	763.3	30.09	764.3	57.7	14.3	82	2	6	4	1	.....	1	1	8	7	3709	5969	6	2.32	58.9
Wood's Holl	N. 41 33	W. 70 40	7.18 a.m.	22	7	30.11	764.8	30.12	765.0	58.6	14.8	88	3	9	5	9	1	1	2	.....	.....	10122	16289	5	1.99	50.5
Albany	N. 42 39	W. 73 45	7.05 a.m.	85	26	30.05	763.3	30.13	765.3	53.6	12.0	83	4	5	1	1	13	.....	1	2	3	3636	5852	6	1.94	49.3
New York City	N. 40 43	W. 74 00	7.04 a.m.	185	56	29.94	760.5	30.13	765.3	59.1	15.1	75	8	8	3	4	.....	2	.....	4	1	5271	8483	3	2.30	58.4
Philadelphia	N. 39 57	W. 75 09	7.00 a.m.	117	36	30.04	763.0	30.14	765.5	59.2	15.1	79	10	2	1	4	3	.....	.....	7	3	6048	9733	5	4.92	125.0
Atlantic City	N. 39 22	W. 74 25	7.03 a.m.	13	4	30.14	765.5	30.14	765.5	60.0	15.6	92	8	5	2	7	2	2	.....	2	2	5379	8656	5	3.12	79.2
Baltimore	N. 39 18	W. 76 37	6.54 a.m.	45	14	30.11	764.8	30.14	765.5	59.9	15.5	78	8	4	.....	3	4	1	2	6	2	3184	5124	5	2.80	71.1
Washington City	N. 38 54	W. 77 03	6.52 a.m.	106	32	30.04	763.0	30.14	765.5	59.1	15.1	82	7	2	.....	1	5	.....	1	2	12	3057	4920	5	3.12	79.2
Lynchburg	N. 37 25	W. 79 09	6.44 a.m.	652	199	29.47	748.5	30.15	765.8	59.6	15.3	89	.....	2	2	1	2	.....	2	10	11	1677	2699	6	3.11	79.0
Norfolk	N. 36 51	W. 76 17	6.55 a.m.	30	9	30.11	764.8	30.12	765.0	64.9	18.3	88	5	.....	.....	2	4	4	5	10	.....	4687	7543	4	3.06	77.7
Hatteras	N. 35 15	W. 75 40	6.58 a.m.	11	3	30.14	765.5	30.13	765.3	69.4	20.8	81	7	2	3	4	1	3	2	8	.....	8458	13612	4	0.80	20.3
Wilmington	N. 34 14	W. 77 57	6.48 a.m.	52	16	30.07	763.8	30.10	764.5	66.7	19.3	83	4	.....	5	5	1	3	1	9	2	4371	7034	3	0.46	11.7
Raleigh	N. 35 48	W. 78 29	6.39 a.m.	375	114	29.75	755.6	.....	.....	61.1	16.2	92	4	2	1	9	2	1	2	6	3	2443	3932	4	2.17	55.1
Charlotte	N. 35 13	W. 80 51	6.37 a.m.	808	246	29.30	744.2	30.12	765.0	63.6	17.6	86	3	.....	1	7	3	2	4	9	1	3408	5485	5	1.24	31.5
Charleston	N. 32 47	W. 79 56	6.40 a.m.	52	16	30.07	763.8	30.09	764.3	70.1	21.2	85	4	4	.....	4	1	.....	1	13	3	6681	10752	3	1.31	33.3
Augusta	N. 33 28	W. 81 54	6.32 a.m.	183	56	29.96	761.0	30.12	765.0	66.2	19.0	85	3	1	.....	.....	5	4	3	11	3	2658	4278	4	0.81	20.6
Savannah	N. 32 05	W. 81 05	6.36 a.m.	87	27	30.03	762.7	30.09	764.3	68.3	20.2	92	8	.....	.....	4	3	.....	4	11	.....	5399	8689	3	1.97	50.0
Jacksonville	N. 30 20	W. 81 39	6.34 a.m.	43	13	30.03	762.7	30.04	763.0	71.6	22.0	90	.....	.....	.....	1	4	1	3	21	.....	5715	9197	4	9.40	238.8
Cedar Keys	N. 29 08	W. 83 02	6.28 a.m.	22	7	30.02*a*	762.5*a*	30.00*a*	762.0*a*	*a*73.2	*a*22.9	87*a*	7	1	2	.....	2	2	2	14	.....	7162	11526	3	1.11	28.2
Key West	N. 24 34	W. 81 49	6.33 a.m.	22	7	29.97	761.2	29.94	760.5	80.2	26.8	80	2	2	2	1	1	1	12	8	1	7234	11642	6	7.30	185.4
Titusville	N. 28 40	W. 80 50	6.37 a.m.	12	4	30.03	762.7	30.00	762.0	75.8	24.3	85	6	1	2	1	1	2	8	9	.....	8912	14342	4	6.32	160.5
Gulf states.																										
Atlanta	N. 33 45	W. 84 23	6.23 a.m.	1129	344	28.96	735.6	30.10	764.5	64.6	18.1	78	1	1	3	1	3	5	11	5	.....	6150	9736	4	4.20	106.7
Pensacola	N. 30 25	W. 87 13	6.11 a.m.	30	9	30.01	762.2	30.00	762.0	72.8	22.7	82	3	4	3	1	1	1	10	6	1	6073	9773	4	4.64	117.9
Mobile	N. 30 41	W. 88 02	6.08 a.m.	35	11	30.02	762.5	30.02	762.5	70.7	21.5	86	6	8	5	1	.....	1	3	6	.....	5064	8150	4	6.21	157.7
Montgomery	N. 32 23	W. 86 18	6.15 a.m.	217	66	29.85	758.2	30.05	763.3	67.4	19.7	80	2	.....	3	2	1	4	11	6	1	3676	5916	3	2.03	51.6
Vicksburg	N. 32 22	W. 90 53	5.57 a.m.	222	68	29.82	757.4	30.02	762.5	67.9	19.9	88	1	1	4	2	2	11	3	3	3	3520	5665	3	4.55	115.6
New Orleans	N. 29 58	W. 90 04	6.00 a.m.	52	16	29.97	761.7	29.99	761.7	73.0	22.8	89	.....	1	4	2	1	3	6	8	5	5657	9104	3	6.51	165.4
Shreveport	N. 32 30	W. 93 40	5.46 a.m.	227	69	29.80	756.9	30.00	762.0	68.6	20.3	86	2	1	3	3	9	3	3	1	5	3194	5140	4	3.64	92.5
Fort Smith	N. 35 22	W. 94 24	5.43 a.m.	470	143	29.53	750.0	30.01	762.2	65.1	18.4	90	1	3	1	1	1	13	9	1	.....	2863	4607	4	3.74	95.0
Little Rock	N. 34 45	W. 92 06	5.52 a.m.	309	94	29.72	754.9	30.01	762.2	66.8	19.3	80	.....	1	2	3	3	1	2	8	10	3433	5225	4	1.04	26.4
Galveston	N. 29 18	W. 94 47	5.41 a.m.	40	12	29.97	761.7	29.97	761.2	76.7	24.8	80	1	1	2	2	2	10	3	8	1	8046	12949	4	2.52	64.0
San Antonio	N. 29 27	W. 98 28	5.26 a.m.	781	238	29.21	741.9	29.98	761.5	70.5	21.4	90	6	.....	.....	1	1	3	6	13	.....	5953	9580	6	1.77	45.0
Corpus Christi	N. 27 50	W. 97 32	5.30 a.m.	18	5	29.96	761.0	29.94	760.5	76.1	24.5	87	7	1	.....	2	5	5	5	5	.....	9096	14638	6	9.24	234.7
Brownsville	N. 25 53	W. 97 26	5.30 a.m.	57	17	29.90	759.4	29.90	759.4	73.9	23.3	96	7	.....	1	.....	7	6	3	4	2	5067	8154	4	13.65	346.7
Rio Grande City	N. 26 23	W. 98 48	5.25 a.m.	230	70	29.78	756.4	29.97	761.2	73.9	23.3	91	4	4	.....	1	3	3	4	.....	11	4619	7433	3	6.89	175.0
Palestine	N. 31 45	W. 95 40	5.38 a.m.	533	162	29.49	749.0	30.01	762.2	68.4	20.2	88	1	1	1	2	13	2	1	9	.....	5448	8768	3	2.20	55.9
Ohio val. & Tenn.																										
Chattanooga	N. 35 04	W. 85 15	6.19 a.m.	783	239	29.32	744.7	30.12	765.0	62.8	17.1	83	3	1	3	2	3	6	2	5	5	3371	5425	4	3.60	91.4
Knoxville	N. 35 56	W. 83 58	6.24 a.m.	980	299	29.13	739.9	30.14	765.5	61.3	16.3	86	1	1	1	6	3	.....	6	11	1	3425	5512	4	1.63	41.4
Memphis	N. 35 09	W. 90 03	6.00 a.m.	320	98	29.73	755.1	30.04	763.0	65.8	18.8	76	2	2	2	5	2	5	6	6	.....	3909	6291	6	2.15	54.6
Nashville	N. 36 10	W. 86 47	6.13 a.m.	549	167	29.49	749.0	30.05	763.3	63.3	17.4	78	2	.....	.....	1	3	7	11	5	1	3360	5407	6	6.85	174.0
Louisville	N. 38 15	W. 85 45	6.17 a.m.	551	168	29.53	750.0	30.09	764.3	63.1	17.3	69	8	1	.....	2	5	5	1	4	4	4677	7527	5	2.84	72.1
Indianapolis	N. 39 46	W. 86 10	6.16 a.m.	766	233	29.30	744.2	30.10	764.5	58.5	14.7	80	5	.....	3	2	4	5	7	3	1	3456	5562	6	2.11	53.6
Cincinnati	N. 39 06	W. 84 30	6.22 a.m.	628	191	29.46	748.3	30.11	764.8	60.8	16.0	72	4	1	1	4	.....	10	1	5	4	4611	7420	6	1.93	49.0
Columbus	N. 39 58	W. 83 00	6.28 a.m.	812	248	29.27	743.4	30.12	765.0	58.5	14.7	75	6	1	1	2	4	6	4	6	.....	4484	7216	6	1.35	34.3
Pittsburg	N. 40 32	W. 80 02	6.40 a.m.	847	258	29.23	742.4	30.10	764.5	58.9	14.9	74	9	2	2	2	2	4	7	2	.....	3854	6207	6	2.03	51.6
Lake region.																										
Rochester	N. 43 08	W. 77 42	6.49 a.m.	621	189	29.46	748.3	30.12	765.0	53.4	11.9	82	3	3	3	14	2	3	2	.....	.....	6991	11251	6	0.90	22.9
Buffalo	N. 42 53	W. 78 53	6.45 a.m.	692	210	29.40	746.7	30.14	765.5	54.9	12.7	77	5	1	4	3	6	2	3	5	1	5694	9164	6	2.30	58.4
Oswego	N. 43 29	W. 76 35	6.54 a.m.	335	102	29.74	755.4	30.10	764.5	53.8	12.1	76	5	2	2	1	6	12	.....	2	.....	7076	11388	7	1.91	48.5
Erie	N. 42 07	W. 80 05	6.40 a.m.	681	208	29.39	746.5	30.11	764.8	56.7	13.7	79	5	1	1	4	13	.....	2	3	1	5701	9175	6	3.17	80.5
Sandusky	N. 41 25	W. 82 40	6.30 a.m.	638	194	29.46	748.3	30.13	765.3	58.3	14.6	80	5	1	2	4	6	6	2	2	2	7660	12327	6	2.31	58.7
Cleveland	N. 41 30	W. 81 42	6.33 a.m.	690	210	29.38	746.2	30.11	764.8	57.1	13.9	75	3	1	3	.....	6	9	5	3	.....	5318	8558	7	3.62	92.0
Toledo	N. 41 40	W. 83 34	6.26 a.m.	651	198	29.44*a*	747.8*a*	30.14*a*	765.5*a*	*a*55.4	*a*13.0	82*a*	*a*6	2	3	6	2	1	4	5	.....	4975	8006	5*a*	3.37	85.6
Detroit	N. 42 20	W. 83 03	6.28 a.m.	662	202	29.43	747.5	30.14	765.5	54.4	12.4	84	2	4	2	4	1	3	7	7	.....	5800	9334	5	4.41	112.0
Alpena	N. 45 05	W. 83 30	6.26 a.m.	609	186	29.45	748.0	30.12	765.0	48.0	8.9	86	.....	5	13	4	3	2	1	2	.....	5817	9361	5	2.14	54.4
Escanaba	N. 45 48	W. 87 05	6.12 a.m.	608	185	29.43	747.5	30.10	764.5	50.1	10.1	83	12	3	.....	6	4	1	.....	3	1	5829	9381	4	1.13	28.7
Grand Haven	N. 43 05	W. 86 18	6.15 a.m.	620	189	29.45	748.0	30.12	765.0	53.2	11.8	84	1	3	.....	1	5	5	11	4	.....	6334	10193	5	4.71	119.6
Lansing	N. 42 45	W. 84 33	6.22 a.m.	870	265	29.20	741.7	30.11	764.8	53.2	11.8	90	1	2	2	5	2	5	4	6	3	4083	6571	5	5.21	132.3
Mackinaw City	N. 45 47	W. 84 39	6.22 a.m.	605	184	29.45*a*	748.0*a*	30.12*a*	765.0*a*	*a*50.8	*a*10.4	79*a*	3	1	3	7	1	7	3	2	3	7765	12496	4*a*	1.65	41.9
Marquette	N. 46 34	W. 87 24	6.11 a.m.	672	205	29.36	745.7	30.10	764.5	50.9	10.5	79	1	15	6	1	3	3	1	.....	.....	6212	9997	6	1.06	26.9
Port Huron	N. 43 00	W. 82 26	6.30 a.m	639	195	29.44	747.8	30.13	765.3	53.8	12.1	86	3	.....	5	7	2	3	6	4	.....	6822	10979	6	2.48	63.0
Chicago	N. 41 52	W. 87 38	6.10 a.m.	715	218	29.32	744.7	30.07	763.8	58.8	14.9	79	1	3	.....	9	3	5	5	4	.....	7849	12632	6	4.03	102.4
Green Bay	N. 45 00	W. 87 30	6.08 a.m.	616	188	29.44	747.8	30.11	764.8	53.0	11.7	87	8	.....	2	10	5	1	2	2	.....	5318	8558	7	3.29	83.6
Milwaukee	N. 43 02	W. 87 54	6.09 a.m.	697	212	29.34	745.2	30.09	764.3	57.2	14.0	81	3	3	2	4	2	7	6	3	.....	7609	12245	6	4.36	110.7
Duluth	N. 46 48	W. 92 06	5.52 a.m.	672	205	29.35	745.5	30.06	763.5	50.5	10.3	81	2	7	1	3	1	4	1	9	2	5111	8225	5	2.68	68.1

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea		Result of Simultaneous Observations for September, 1887.																		Average Cloudiness.	Total Precipitation.	
						Mean Barometer.				Mean Temperature.		Mean Rel. Humidity.	Wind.													
						Actual.		Reduced.					Directions.									Total Movement.				
				Feet.	Metr's	Inch.	Mill.	Inch.	Mill.	Fah.	Cent.		N	NW	W	SW	S	SE	E	NE	C	Miles	Kil.	0–10	Inch.	Mill.
U. STATES—Con.																										
Upper Miss. val.																										
Saint Paul	N. 44 58	W. 93 03	5.48 a.m.	831	253	29.19	741.4	30.09	764.3	51.4	10.8	87	.....	5	2	2	.....	5	7	1	8	3908	6289	6	4.35	110.5
La Crosse	N. 43 49	W. 91 15	5.55 a.m.	744	227	29.32	744.7	30.12	765.0	52.6	11.4	89	6	2	1	4	9	2	.....	5	1	4595	7395	6	4.35	110.5
Davenport	N. 41 30	W. 90 38	5.58 a.m.	615	187	29.42	747.3	30.07	763.8	57.0	13.9	82	3	3	1	6	2	3	5	6	1	5318	8558	6	5.45	138.4
Des Moines	N. 41 35	W. 93 37	5.46 a.m.	866	264	29.16	740.7	30.07	763.8	56.5	13.6	84	6	3	1	3	3	1	2	.....	11	3614	5816	5	5.36	136.1
Dubuque	N. 40 31	W. 90 41	5.57 a.m.	665	203	29.38	746.2	30.09	763.4	55.6	13.1	88	4	2	3	2	5	2	3	1	8	3211	5168	6	7.62	193.6
Keokuk	N. 40 22	W. 91 26	5.54 a.m.	618	188	29.41	747.0	30.06	763.5	58.3	14.6	80	6	1	.....	5	4	4	4	5	1	5938	9548	5	3.13	79.5
Cairo	N. 37 00	W. 89 10	6.04 a.m.	359	109	29.70	754.4	30.06	763.5	64.1	17.8	80	4	1	.....	5	7	1	4	6	2	4801	7823	6	1.67	42.4
Springfield	N. 39 48	W. 89 39	6.02 a.m.	644	196	29.42	747.3	30.10	764.5	58.6	14.8	84	3	1	.....	3	9	4	3	5	2	5372	8645	6	2.89	73.4
Saint Louis	N. 38 38	W. 90 12	5.59 a.m.	571	174	29.48	748.8	30.07	763.8	63.2	17.3	76	3	.....	1	4	10	3	4	5	.....	5554	8938	5	2.47	62.7
Missouri valley.																										
Leavenworth	N. 39 19	W. 94 57	5.40 a.m.	842	257	29.19	741.4	30.06	763.5	60.4	15.8	84	7	3	.....	.....	5	10	1	1	3	4468	7190	7	5.73	145.5
Omaha	N. 41 16	W. 95 56	5.36 a.m.	1113	339	28.91	734.3	30.08	764.0	58.6	14.8	82	10	2	.....	2	8	6	.....	1	1	5848	9411	6	2.44	62.0
Fort Sully	N. 44 39	W. 100 39	5.17 a.m.	1600	488	28.32	719.3	30.01	762.2	53.0	11.7	83	2	2	5	.....	.....	1	12	1	7	7803	12558	4	0.35	8.9
Huron	N. 44 21	W. 98 09	5.28 a.m.	1307	398	28.66	728.0	30.06	763.5	50.5	10.3	82	8	3	1	.....	7	5	2	3	1	7984	12849	4	0.15	3.8
Yankton	N. 42 54	W. 97 28	5.30 a.m.	1234	376	28 72	729.5	30.03	762.7	54.5	12.5	90	4	4	1	3	3	4	1	4	6	3890	6260	5	6.70	170.2
Lamar	N. 37 32	W. 94 15	5.43 a.m.	1028	313	29.01	736.8	30.08	764.0	61.1	16.2	90	2	.....	2	5	6	6	2	5	2	5139	8270	6	4.01	101.8
Valentine	N. 42 50	W. 100 32	5.18 a.m.	2614	797	27.35	694.7	30.03	762.7	52.5	11.4	80	5	1	4	4	6	3	2	1	4	8867	14270	5	1.36	34.5
Moorhead	N. 46 52	W. 96 44	5.33 a.m.	926	282	29.03	737.3	30.04	763.0	47.1	8.4	87	5	2	2	2	8	16	1	.....	4	7900	12714	4	0.30	7.6
Saint Vincent	N. 48 56	W. 97 14	5.31 a.m.	804	245	29.15	740.4	30.05	763.3	44.7	7.1	90	2	2	6	2	8	1	1	1	7	6400	10300	4	0.45	11.4
Bismarck	N. 46 47	W. 100 38	5.16 a.m.	1694	516	28.23	717.0	30.03	762.7	48.6	9.2	84	2	4	3	.....	3	5	6	4	3	5992	9643	4	1.35	34.3
Fort Buford	N. 48 00	W. 103 56	5.04 a.m.	1854	565	27.98	710.7	29.94	760.5	48.2	9.0	79	2	6	3	1	1	5	5	6	1	6169	9928	5	1.07	27.2
Fort Totten	N. 47 57	W. 98 57	5.24 a.m.	1487	453	28.42	721.9	30.04	763.0	47.2	8.4	85	5	7	1	3	7	5	1	1	.....	10906	17557	4	0.59	15.0
Rocky Mount. reg.																										
Ft. Assinnaboine	N. 48 32	W. 109 42	4.41 a.m.	2690	802	27.18	690.4	30.00	762.0	47.2	8.4	78	1	3	4	13	1	1	3	4	.....	6868	11053	3	1.14	29.0
Fort Custer	N. 45 42	W. 107 34	4.50 a.m.	3040	927	26.87	682.5	30.00	762.0	49.5	9.7	74	4	2	2	3	2	11	4	1	1	4635	7459	3	1.13	28.7
Fort Maginnis	N. 47 12	W. 109 10	4.44 a.m.	4320	1317	25.61	650.5	29.99	761.7	46.2	7.9	76	12	16	1	.....	.....	1	.....	.....	.....	7145	11498	5	5.15	130.8
Helena	N. 46 34	W. 112 04	4.32 a.m.	4069	1240	25.88	657.3	30.01	762.2	46.2	7.9	59	.....	10	8	9	.....	1	.....	2	.....	4886	7863	2	0.50	12.7
Poplar River	N. 48 08	W. 105 10	5.00 a.m.	2002	610	27.90	708.6	30.02	762.5	45.4	7.4	84	5	3	5	2	1	2	4	3	5	4776	7686	3	0.90	22.9
Deadwood	N. 44 23	W. 103 43	5.05 a.m.	4600	1402	25.45	646.4	30.05	763.3	49.7	9.8	85	.....	1	15	7	.....	.....	2	2	3	3740	6019	3	1.75	44.4
Cheyenne	N. 41 08	W. 104 48	5.01 a.m.	6105	1861	21.12	612.6	30.02	762.5	49.1	9.5	63	2	13	4	5	3	2	.....	1	.....	7337	11808	3	1.25	31.8
North Platte	N. 41 08	W. 100 45	5.17 a.m.	2841	866	27.15	689.6	30.06	763.5	54.2	12.3	87	1	.....	8	.....	4	8	5	4	.....	6785	10919	5	5.10	129.5
Pike's Peak	N. 38 50	W. 105 02	5.01 a.m.	14134	4308	18.00	457.2	30.04	763.0	29.8	—1.2	80	4	1	14	6	1	.....	1	2	1	12892	20747	3	1.80	45.7
Denver	N. 39 45	W. 105 00	5.00 a.m.	5294	1614	24.84	630.9	29.99	761.7	51.6	10.9	77	6	4	1	2	15	.....	.....	.....	2	4990	8030	3	0.97	24.6
Concordia	N. 39 35	W. 97 41	5.29 a.m.	1384	422	28.60	726.4	30.04	763.0	59.2	15.1	84	4	2	.....	3	4	6	4	3	4	5903	9500	4	3.62	92.0
W. Las Animas	N. 38 04	W. 103 12	5.07 a.m.	3899	1188	26.11	663.2	29.97	761.2	55.9	13.3	80	3	6	3	6	.....	1	7	1	3	4599	7401	3	0.63	16.0
Dodge City	N. 37 45	W. 100 00	5.20 a.m.	2523	769	27.46	697.5	30.05	763.3	59.7	15.4	86	3	.....	.....	.....	6	11	.....	9	1	7825	12593	3	0.14	3.6
Fort Elliott	N. 35 30	W. 100 21	5.19 a.m.	2700	823	27.32	693.9	29.98	761.5	61.4	16.3	85	5	5	.....	.....	5	9	1	2	3	8207	13208	4	1.67	42.4
Fort Sill	N. 34 40	W. 98 23	5.27 a.m.	1200	366	28.81	731.8	30.03	762.7	65.2	18.4	87	9	3	.....	2	8	5	2	1	.....	7028	11310	4	5.19	131.8
Abilene	N. 32 14	W. 99 45	5.21 a.m.	1748	533	28.23	717.0	29.98	761.5	69.4	20.8	80	1	2	2	9	5	2	5	4	.....	7089	11408	5	2.64	67.0
Fort Davis	N. 30 38	W. 103 56	5.04 a.m.	4928	1502	25.25	641.3	29.98	761.5	63.0	17.2	73	3	.....	5	11	.....	.....	.....	3	8	3865	6220	5	7.08	179.8
Fort Stanton	N. 33 30	W. 105 26	4.58 a.m.	6150	1875	24.09	611.9	29.95	760.7	51.1	10.6	84	1	3	7	5	1	1	1	.....	11	2538	4084	2	4.21	106.9
Plateau region.																										
Keeler	N. 36 35	W. 117 50	4.09 a.m.	3622	1104	26.30	668.0	29.85	758.2	64.1	17.8	40	2	.....	1	.....	2	5	12	1	7	3928	6321	1	1.08	27.4
Fresno	N. 36 44	W. 119 51	4.01 a.m.	313	95	29.56	750.8	29.87	758.7	59.9	15.5	70	1	19	4	.....	3	1	2	.....	.....	3040	4892	0	0.49	12.4
Santa Fé	N. 35 41	W. 105 57	4.56 a.m.	7020	2141	23.39	594.1	30.03	762.7	53.1	11.7	78	4	1	.....	.....	2	4	8	4	7	2958	4760	4	2.41	61.0
Fort Apache	N. 33 48	W. 109 57	4.40 a.m.	5020	1835	25.10	637.5	30.01	762.2	55.8	13.2	84	1	1	4	1	2	1	15	4	1	4377	7044	3	2.23	56.6
Fort Grant	N. 32 39	W. 109 57	4.40 a.m.	4860	1482	25.24	641.1	29.94	760.5	62.2	16 8	50	7	2	3	3	.....	.....	5	9	1	4089	6580	3	4.20	106.7
Prescott	N. 34 33	W. 112 28	4.30 a.m.	5389	1643	24.79	629.7	29.98	761.5	54.0	12.2	85	1	.....	.....	4	.....	.....	.....	.....	25	3902	6278	2	4.88	124.0
Yuma	N. 32 45	W. 114 36	4.22 a.m.	141	43	29.66	753.4	29.77	756.1	72.8	22.7	77	1	.....	3	3	6	4	5	6	2	3421	5506	2	1.09	27.7
El Paso	N. 31 47	W. 106 30	4.54 a.m.	3764	1147	26.29	667.8	29.95	760.7	65.5	18.6	83	.....	2	.....	.....	1	1	12	.....	14	2404	3869	4	0.94	23.9
Fort Bridger	N. 41 28	W. 110 30	4.38 a.m.	6643	2025	23.60	599.4	30.06	763.5	38.8	3.8	56	2	5	9	4	1	1	.....	8	.....	5420	8722	4	0.41	10.4
Salt Lake City	N. 40 46	W. 111 54	4.33 a.m.	4348	1325	25.66	651.8	29.96	761.0	56.3	13.5	54	4	2	.....	.....	6	6	6	4	2	3723	5992	2	0.55	14.0
Frisco	N. 38 25	W. 113 16	4.27 a.m.	6406	1950	23.80	604.5	29.88	758.9	57.2	14.0	36	6	1	6	10	1	2	.....	4	.....	7983	12847	2	0.28	7.1
Winnemucca	N. 40 58	W. 117 43	4.09 a.m.	4358	1328	25.66	651.8	30.00	762.0	44.9	7.2	49	1	.....	3	4	5	2	12	3	.....	5219	8399	2	0.35	8.9
Montrose	N. 38 30	W. 107 56	4.48 a.m.	5780	1762	24.39	619.5	29.99	761.7	50.0	10.0	58	.....	.....	.....	3	8	16	2	.....	1	3955	6365	2	1.56	39.6
Fort Bidwell	N. 41 53	W. 120 11	3.59 a.m.	4615	1415	25.43	645.9	30.04	763.0	47.4	8.6	80	2	4	16	2	.....	.....	5	1	.....	4476	7203	1	0.05	1.3
Boisé City	N. 43 37	W. 116 08	4.16 a.m.	2750	838	27.19	690.6	30.01	762.2	50.0	10.0	67	.....	2	1	1	.....	1	.....	.....	25	739	1189	2	0.14	3.6
Spokane Falls	N. 46 28	W. 117 05	4.11 a.m.	1909	582	28.01	711.4	30.04	763.0	46.5	8.1	86	.....	1	.....	10	1	2	.....	2	14	1529	2461	3	1.29	32.8
Walla Walla	N. 46 03	W. 118 18	4.07 a.m.	1018	310	28.94	735.1	30.03	762.7	53.4	11.9	70	1	.....	.....	8	15	5	1	.....	.....	3616	5819	3	1.55	39.4
Pacific coast reg'n.																										
Astoria	N. 46 11	W. 123 42	3.45 a.m.	20	6	30.00	762.0	.....	.....	52.6	11.4	84	.....	7	5	12	.....	5	1	.....	.....	4359	7015	5	4.82	122.4
Fort Canby	N. 46 16	W. 124 04	3.44 a.m.	179	55	29.82	757.4	30.02	762.5	52.2	11.2	94	7	4	1	.....	8	2	.....	.....	8	6235	10034	4	3.63	92.2
Olympia	N. 47 03	W. 122 53	3.49 a.m.	36	11	30.01	762 2	30.05	763.3	47.7	8.7	93	2	2	1	4	6	.....	.....	3	12	1810	2913	4	3.34	84.8
Port Angeles	N. 48 07	W. 123 06	3.46 a.m.	14	4	30.01	762.2	30.03	762.7	45.7	7.6	96	.....	.....	1	3	26	.....	.....	.....	.....	3084	4963	5	1.15	29.2
Tatoosh Id	N. 48 23	W. 124 44	3.41 a.m.	86	26	29.92	760.0	30.02	762.5	50.7	10.4	94	.....	2	.....	9	1	7	10	1	.....	7206	11597	6	3.43	87.1
Portland	N. 45 32	W. 122 43	3.49 a.m.	88	27	29.95	760.7	30.04	763.0	51.8	11.0	90	1	7	.....	.....	5	5	.....	1	11	3146	4902	4	3.06	77.7
Roseburg	N. 43 13	W. 123 20	3.47 a.m.	523	159	29.48	748.8	30.04	763.0	49.4	9.7	83	.....	3	2	1	.....	.....	1	7	16	2285	3677	2	0.51	13.0
Eureka	N. 40 52	W. 123 58	3.43 a.m.	50	18	29.96	761.0	.....	.....	50.1	10.1	93	4	3	2	1	4	3	3	3	7	3960	6373	4	0.21	5.3
Red Bluff	N. 40 10	W. 122 15	3.51 a.m.	342	104	29.56	750.8	29.90	759.4	63.8	17.7	46	12	4	2	2	4	1	.....	1	4	4946	7960	1	0.06	1.5
Sacramento	N. 38 35	W. 121 30	3.54 a.m.	64	20	29.82	757.4	29.87	758.7	58.2	14.6	70	.....	3	.....	1	5	19	.....	.....	2	4052	6521	1	0.02	0.5
San Francisco	N. 37 48	W. 122 26	3.50 a.m.	60	18	29.87	758.7	29.91	759.7	54.9	12.7	88	2	2	14	8	.....	.....	.....	.....	4	6187	9957	4	0.03	0.8
Los Angeles	N. 34 03	W. 118 15	4.07 a.m.	339	103	29.55	750.6	29.88	758.9	59.5	15.3	92	5	2	13	.....	2	2	5	1	.....	3748	6032	4	0.18	4.6
San Diego	N. 32 43	W. 117 10	4.12 a.m.	66	20	29 84	757.9	29.88	758.9	62.6	17.0	90	13	2	2	3	1	.....	.....	1	8	4479	7208	7	Trap.	Trap.
Sitka	N. 57 03	W. 135 19	2.59 a m.	63	19	29.81	757.2	29.91	759.7	48.1	8.9	86	.....	.....	4	5	.....	8	3	5	5	6030	9704	8	10.55	268.0
Sub-Series.																										
Bogota	N. 4 36	W. 74 14	7.11 a.m.	8655	2638	22.05	560.2	.....	.....	52.5	11.4	75	.....	.....	.....	1	3	.....	.....	.....	26	.....	.....	8	2.18	55.3
Kingston	N. 18 01	W. 76 48	6.53 a.m.	10	3	29.90	759.4	29.90	759.4	77.7	25.4	79	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.32	84.3
Vera Cruz	N. 19 11	W. 96 09	5.35 a.m	16	5	29.88	758.9	29.90	759.4	.....	.....	.....	2	4	11	1	3	.....	1	2	6	.....	.....	2	.....	.....

RETARDED DATA FOR CAMPO.

February, 1886	N. 39 02	W. 6 59	11.32 a.m.	945	288	29.05	737.8	30.04	763.0	53.4	11.9	68	4	1	5	4	1	1	8	3	1	.....	.....	6	1.76	44.8
March, 1886	"	"	"	"	"	29.04	737.7	30.03	762 7	61.3	16.3	69	2	1	4	5	7	.....	7	3	.....	.....	.....	8	2.07	52.5

OCEAN SQUARE DATA FOR SEPTEMBER, 1887.

Location of Centre of each Square.	Barometer.		Temperature.		Wind Frequency.										Wind force 0–10.
	Inch.	Mill.	Fah.	Cent.	N.	NW.	W.	SW.	S.	SE.	E.	NE.	Calm.	Blank.	
N. 12.5° W. 37.5°	29.96	761.0	...	...	1	...	...	...	...	1	18	10	...	...	3.5
12.5 42.5	29.96	761.0	...	...	1	...	...	...	...	4	23	2	...	...	3.6
12.5 47.5	29.93	760.2	...	...	...	...	...	...	...	4	25	1	...	...	3.6
12.5 52.5	29.91	759.7	...	...	...	...	...	...	1	5	23	1	...	...	3.7
17.5 37.5	30.02	762.5	...	...	...	...	...	...	...	...	21	9	...	...	3.8
17.5 42.5	30.02	762.5	...	...	...	...	...	...	...	5	23	2	...	...	3.7
17.5 47.5	30.00	762.0	...	...	...	...	...	...	...	15	15	...	...	...	4.0
17.5 52.5	29.97	761.2	...	...	...	...	...	...	...	18	11	1	...	...	4.1
17.5 57.5	29.94	760.5	...	...	...	...	...	...	...	9	18	3	...	...	3.9
22.5 27.5	30.05	763.3	...	...	1	...	...	...	...	...	5	24	...	...	3.7
22.5 32.5	30.08	764.0	...	...	...	...	...	...	...	...	16	13	...	1	3.6
22.5 37.5	30.09	764.3	...	...	...	...	...	...	...	5	16	8	...	1	3.8
22.5 42.5	30.09	764.3	...	...	...	...	...	...	3	5	20	1	...	1	3.7
22.5 47.5	30.06	763.5	...	...	...	...	...	...	1	11	15	1	1	1	3.9
22.5 52.5	30.03	762.7	...	...	...	...	...	1	3	15	10	1	...	...	4.0
22.5 57.5	30.01	762.2	...	...	1	...	...	...	4	10	11	4	...	...	4.0
22.5 62.5	30.00	762.0	...	...	2	...	...	...	4	6	16	1	1	...	4.2
27.5 22.5	30.10	764.5	...	...	4	...	...	...	...	1	6	19	...	...	3.5
27.5 27.5	30.12	765.0	...	...	2	1	1	...	1	...	9	16	...	...	3.6
27.5 32.5	30.15	765.8	...	...	4	1	...	...	1	4	9	8	...	3	3.6
27.5 37.5	30.17	766.3	...	...	1	...	...	1	2	3	14	6	...	3	3.6
27.5 42.5	30.16	766.1	...	...	1	...	1	1	3	12	7	2	...	3	3.5
27.5 47.5	30.13	765.3	...	...	...	2	2	1	4	15	3	2	...	1	3.6
27.5 52.5	30.09	764.3	...	...	5	2	...	...	9	11	...	2	...	1	4.3
27.5 57.5	30.06	763.5	...	...	7	2	1	1	8	6	2	3	...	...	4.1
27.5 62.5	30.04	763.0	...	...	5	3	...	2	8	2	1	9	...	...	3.9
32.5 27.5	30.19	766.8	...	...	6	1	3	...	...	4	6	10	...	...	3.9
32.5 32.5	30.21	767.3	...	...	4	3	1	1	1	7	6	6	...	2	3.9
32.5 37.5	30.23	767.8	...	...	4	1	...	2	4	6	7	3	...	3	3.7
32.5 42.5	30.20	767.1	...	...	1	...	2	2	5	13	3	2	...	2	4.0
32.5 47.5	30.14	765.5	...	...	3	2	3	4	4	12	1	1	...	...	4.1
32.5 52.5	30.10	764.5	...	...	4	3	2	4	6	8	1	2	...	...	4.6
32.5 57.5	30.07	763.8	...	...	4	3	1	2	7	7	2	4	...	...	4.7
37.5 32.5	30.25	768.3	...	...	5	6	2	3	...	5	3	2	1	3	4.1
37.5 37.5	30.25	768.3	...	...	3	3	...	5	4	3	6	2	...	4	4.6
37.5 42.5	30.20	767.1	...	...	1	2	1	7	8	5	2	2	...	2	4.1
37.5 47.5	30.14	765.5	...	...	2	3	1	6	10	4	2	2	...	...	4.2
37.5 52.5	30.09	764.3	...	...	2	6	1	4	8	4	2	3	...	...	4.8
37.5 57.5	30.07	763.8	...	...	7	4	1	3	8	3	1	3	...	...	4.9
42.5 22.5	30.18	766.6	...	...	4	6	4	4	1	2	1	8	...	...	4.3
42.5 27.5	30.21	767.3	...	...	5	6	5	1	2	3	...	7	1	...	4.1
42.5 32.5	30.23	767.8	...	...	5	8	3	4	4	2	3	1	...	...	4.5
42.5 37.5	30.21	767.3	...	...	3	6	3	6	5	2	4	1	...	...	4.5
42.5 42.5	30.17	766.3	...	...	3	4	3	8	5	5	...	2	...	...	4.8
42.5 47.5	30.12	765.0	...	...	4	4	2	6	6	6	1	1	...	...	4.1
42.5 52.5	30.06	763.5	...	...	4	5	1	7	7	5	...	1	...	...	4.5
42.5 57.5	30.04	763.0	...	...	5	6	2	4	6	6	1	...	...	...	4.7
47.5 17.5	30.08	764.0	...	...	5	9	2	4	1	3	3	3	...	...	5.2
47.5 22.5	30.13	765.3	...	...	4	12	2	1	2	5	2	2	...	...	5.1
47.5 27.5	30.16	766.1	...	...	2	6	5	3	2	6	...	6	...	...	4.7
47.5 32.5	30.16	766.1	...	...	2	9	6	4	2	2	1	4	...	...	4.7
47.5 37.5	30.14	765.5	...	...	3	8	4	4	7	3	...	...	1	...	4.8
47.5 42.5	30.09	764.3	...	...	1	11	2	9	5	2	...	...	...	...	4.4
47.5 47.5	30.07	763.8	...	...	2	6	2	10	7	2	...	1	...	...	4.5
52.5 17.5	30.04	763.0	...	...	3	9	2	1	2	7	3	3	...	...	5.3
52.5 22.5	30.06	763.5	...	...	2	8	4	3	5	4	3	1	...	...	5.2
52.5 27.5	30.05	763.3	...	...	2	6	5	4	7	5	...	1	...	...	5.2
52.5 32.5	30.02	762.5	...	...	1	10	5	8	5	1	...	...	...	...	4.8
52.5 37.5	30.01	762.2	...	...	...	9	6	7	6	2	...	...	...	...	5.0
52.5 42.5	29.96	761.0	...	...	1	5	5	13	4	2	...	...	...	...	4.9
52.5 47.5	29.90	759.4	...	...	...	6	5	11	6	...	...	2	...	...	4.7
57.5 12.5	29.97	761.2	...	...	2	8	4	5	1	...	1	9	...	...	4.6
57.5 17.5	29.97	761.2	...	...	2	5	2	10	3	2	2	4	...	...	4.6
57.5 22.5	29.98	761.5	...	...	2	7	5	7	3	3	1	1	...	1	5.0
57.5 27.5	29.96	761.0	...	...	...	7	3	10	3	4	1	1	...	1	5.2
57.5 32.5	29.88	758.9	...	...	...	5	4	11	5	3	1	...	...	1	5.2
57.5 37.5	29.86	758.4	...	...	...	5	4	8	9	1	2	1	...	...	5.4
57.5 42.5	29.83	757.7	...	...	...	6	6	9	5	3	...	1	...	...	4.5
57.5 47.5	29.82	757.4	...	...	2	5	4	6	7	1	1	3	1	...	3.9

OCEAN SQUARES.—The table of ocean square data shows (1) the location of the centres of squares whose sides extend 5° each in latitude and longitude, (2) the monthly mean pressure of the air, and the mean force and total frequency of the wind at noon, Greenwich mean time, computed for the centre of each square from daily readings as obtained by interpolation between the isobars of the daily international simultaneous weather maps.

SPECIAL NOTES.

THE GRAVITY CORRECTION.

The gravity correction, reducing all barometer readings to the standard gravity at latitude 45°, has been applied to all observations not so reduced by the observers themselves.

All data referring to force, velocity, or pressure (in pounds per square foot) of the wind, are reduced to the scale of 0-10, and the approximate value is indicated by the number of feathers on the arrow (see below).

MONTHLY SUMMARY OF INTERNATIONAL SIMULTANEOUS MET'L OBSERVATIONS.

The positions of stations (latitude and longitude) are obtained from Keith Johnson's "Index Geographicus," except where more exact information is furnished. The elevations of stations are obtained either from the annual, semi-annual, and monthly publications of the various meteorological bureaus here represented, or from the original forms upon which are entered the daily observations. In the United States series the elevations are computed from the latest surveys, and are carefully revised each month, in order to note any change in the elevation of the barometer-cistern at any station. It is believed for the most part that, throughout the European and other series, the elevations as given represent the height of the barometer-cistern above sea-level; at least this should be the case. The local time, where omitted or not given correctly in the original, is carefully computed at this office. A letter placed opposite the name of a station, or some portion of the data credited thereto, indicates that a certain number of observations are missing, corresponding to the relative position in the English alphabet of the letter so used.

At Baku the barometer-cistern is below sea-level.

INTERNATIONAL CHARTS.

International chart i shows the atmospheric pressure at sea-level in English inches, the isobars being drawn for every two-tenths of an inch.

Arrows show direction of, and fly with, the wind; force is shown as follows:

Symbols.	Force.	Velocity. Miles per hour.	Velocity. Metres per second.
○	0	0	0
	1, 2	0 to 9	0 to 4
	3, 4	9.1 to 22.5	4.1 to 10.1
	5, 6	22.6 to 40.5	10.1 to 18.1
	7, 8	40.6 to 67.5	18.1 to 30.2
	9, 10	67.6 up.	30.2 and over.

International chart ii (monthly mean chart) shows the mean pressure at sea-level in English inches; the mean force and prevailing direction of the wind, as determined from observations taken at noon, Greenwich mean time.

International chart iii shows the tracks of centres of low pressure. The Arabic numerals show the location of the centres of low pressure at noon, Greenwich mean time, of that date.

In the above charts, broken lines indicate that lines so drawn are doubtful.

REVIEW.

INTERNATIONAL METEOROLOGY FOR SEPTEMBER, 1887.

[*Pressure expressed in inches and millimetres; temperature in degrees, Fahrenheit; wind-force by scale of* 0–10.]

The following refers to chart ii for the month of September, 1887. This chart continues the series of international charts begun in January, 1877, and exhibits the mean pressure and the prevailing wind-directions over the northern hemisphere, as determined from simultaneous observations taken once each day at 7 a. m., 75th meridian, or noon Greenwich, mean time:

The area of lowest mean pressure occupies the northeastern part of British India, where the values fall to 29.59 (751.6) at Allahabad. Three areas of low mean pressure, bounded by isobars of 29.80 (756.9), are located, respectively, over the Sea of Okhotsk, the Greenland Sea between Norway and Iceland, and the Gulf of California.

The area of maximum appears over the north Atlantic Ocean, where the readings rise to 30.25 (768.3) in the vicinity of the Azores. Over the east-central portion of the United States, and Siberia west of the one hundred and tenth meridian, the mean pressure ranges above 30.10 (764.5).

Over the North American continent the pressure is highest in Virginia where it rises to 30.15 (765.8) at Lynchburg, and lowest in Arizona where it falls to 29.77 (756.1) at Yuma. Over a greater part of the Saskatchewan Valley, and along the coast of Labrador, the readings are below 29.90 (759.4). Over the north Atlantic Ocean there is a gradient of more than .45 of an inch between the Azores and the region of low pressure central over the Greenland Sea. Over Europe the maximum is shown in the upper valley of the Ural River where the mean pressure exceeds 30.10 (764.5). An area of relatively high barometer is charted over France, with included values rising to 30.09 (764.3) at Besancon. Over Asia the region of maximum occupies the upper valleys of the Yenisei and Obi Rivers where the mean readings apparently vary from 30.10 (764.5) to 30.20 (767.1). Over the extreme southern part of the continent the values fall below 29.60 (751.8) in the valley of the Ganges River, and from thence eastward to the Philippine Islands there is a gradient of .13 of an inch. The highest reading noted along the east coast of Asia is 29.94 (760.5) at Miasaki, Japan, from whence the pressure decreases northward to the Sea of Okhotsk and southward to the Yellow Sea.

As compared with the chart of the preceding month a general increase in pressure is shown over the North American continent, except along the Pacific coast south of the fiftieth parallel and in the Saskatchewan Valley, where slight changes have occurred, and along the Alaskan coast where there has been a decrease. Over the north Atlantic Ocean there has been a slight increase in pressure in the vicinity of the Azores, while over the northern part of the ocean the area of low pressure which was located south of Greenland in August has apparently moved northeastward and united over the east portion of the Greenland Sea with an area of low pressure which occupied northern Scandinavia during the preceding month. Over Europe the pressure has risen, the increase being most marked over east-central Russia. Over Asia there has been a general increase, except over the China Sea and the Philippine Islands where the pressure is somewhat lower than in August.

As compared with the corresponding month of previous years the mean pressure in the United States was normal or slightly below in the lower Mississippi valley and adjacent states, along the immediate southwestern border from the mouth of the Rio Grande to the Pacific, and in northern California and southern Oregon. In all other portions of the country the mean pressure was below the normal, the departures being greatest from the upper Mississippi valley eastward to the lower lakes, where they ranged from .05 to .10 of an inch. In Canada the mean pressure was above the normal in Ontario and the western portions of Quebec, and in Manitoba and the Northwest Territory; in the Maritime Provinces it was below the normal. Over the north Atlantic in low latitudes the departures were small, while over the northern part of the ocean the pressure was above the normal. Over Europe the mean pressure was everywhere below the normal, the greatest departure, .06 of an inch, being shown in Denmark. Over British India the mean pressure corresponded with the average for the month, while over the balance of Asia it was apparently somewhat above the normal, except over the Japanese Islands where the deficiency amounted to .02 of an inch at Tokio.

In the United States the month was warmer than the average September, except over a greater part of the country east of the Misssissippi River where the mean temperature was decidedly below the normal. In Canada the average temperature was below the normal in Ontario, Quebec, and the Maritime Provinces; in Montreal and the Northwest it was above the normal. In Europe the mean pressure was below the normal, except in Russia, Sweden, and Austro-Hungary. In British India the departures from the mean temperature were unimportant.

The following table shows the deviations in pressure and temperature at isolated stations during the month of September, 1887, as compared with the means for ten years:

Stations.	Mean pressure.			Mean temperature.		
	Sept. mean of 10 (1877–'86) years.	Sept., 1887.	Departure.	Sept. mean of 10 (1877–'86) years.	Sept., 1886.	Departure.
				°	°	°
Archangel, Russia	29.96	29.96	normal	49.4	53.4	+ 4.0
Athens, Greece	29.94	29.91	— 0.03	82.7	82.2	— 0.5
Beirut, Turkey in Asia	29.83	29.86	+ 0.03	84.4	84.2	— 0.2
Barnaul, Siberia	29.94	30.01	— 0.07	56.4	59.4	+ 3.0
Bridgetown, Barbadoes	29.87	29.87	normal	83.5	85.0	+ 1.5
Ekaterinburg, Russia	29.91	30.15	+ 0.24	52.0	62.8	+10.8
Funchal, Madeira Islands	.....	30.08	.....	.....	75.2	.....
Freetown, Sierre Leone*	29.79	29 78	— 0.01	82.4	86.5	+ 4.1
Gibraltar	30.03	30.02	— 0.01	74.7	74.7	normal.
Havana, Cuba, W. I.	29.91	29.92	+ 0.01	78.9	75.9	— 3.0
Malta, Mediterranean Sea	29.96	29.89	— 0.07	80.3	80.8	+ 0.5
Melbourne, New South Wales	30.01	29.91	— 0.10	52.6	49.3	— 3.3
Mauritius, Indian Ocean	30.08	30.10	+ 0.02	72.9	71.8	— 1.1
Nassau, Bahamas, W. I.	29,93	29.91	— 0.02	82.9	82.0	— 0.9
Nikolaievsk-on-the-Amoor, Asia	.....	29.71	.....	.....	48.7	.....
Ponta Delgada, Azores	30.18	30.22	+ 0.04	73.5	72.9	— 0.6
Swanbister, Orkneys	29.90	29.86	— 0.04	54.4	53.2	— 1.2
Stykkisholm, Iceland*	29.68	29.86	+ 0.18	45.8	46.4	+ 0.6
Thorshavn, Färöe Islands*	29.83	29.85	+ 0.02	50.9	48.4	— 2.5
Tiflis, Russia	29.95	29.92	— 0.03	75.3	81 5	+ 6.2
Tokio, Japan	29.93	29.91	— 0.02	70.4	68.8	— 1.6
Yeniseisk, Siberia	30.02	30.09	+ 0.07	47.9	47.8	— 0.1
Zi-Ka-Wei, China	29.88	29.91	+ 0.03	70.5	72.0	+ 1.5

* Means for nine years only.

The following table shows the mean pressure and mean temperature for September, 1887, in the several countries of the eastern hemisphere, and the departures as compared with means determined from observations taken during the last ten years:

Countries.	Mean pressure.			Mean temperature.		
	Sept. mean of 10 (1877–'86) years.	Sept., 1887.	Departure.	Sept. mean of 10 (1877–'86) years.	Sept., 1887.	Departure.
				°	°	°
Austro-Hungary	29.96	29.95	— 0.01	66.8	68.5	+ 1.7
British Isles	29.95	29.94	— 0.01	58.4	57.1	— 1.3
Denmark	29.92	29.86	— 0.06	58.8	58.3	— 0.5
France	30.00	29.99	— 0.01	67.4	65.9	— 1.5
Germany	29.99	29.96	— 0.03	63.4	61.6	— 1.8
India	29.64	29.64	normal.	83.4	83.2	— 0.2
Italy	29.96	29.93	— 0.03	74.2	74.9	+ 0.7
Japan	.....	29.90	.....	.....	68.3	.....
Norway	29.86	29.82	— 0.04	55.3	54.3	— 1.0
Russia	29.96	29.95	— 0.01	62.0	67.5	+ 5.5
Spain*	30.01	29.98	— 0.03	72.8	71.6	— 1.2
Sweden	29.92	29.87	— 0.05	55.2	56.4	+ 1.2

* Means for nine years only.

In the United States marked deficiencies in the monthly precipitation occurred in the south Atlantic and west Gulf states. In the Rio Grande Valley, southern plateau, and northern slope the precipitation was decidedly above the average. In all other districts the rainfall was about normal. In Canada there was a marked deficiency in rainfall, the greatest defect occurring in the north and northeast sections of Ontario, where in many localities the long drought continued.

In the United States south to east winds prevailed in the

upper Mississippi and Missouri valleys, south Atlantic and east Gulf states; in New England, and at stations along Lakes Erie and Ontario, they were mostly southwest or west; in the Ohio Valley and middle Atlantic states, north and northeast; in the upper lake region and at Rocky Mountain stations, variable; and on the Pacific coast north to west winds were most frequently reported. Over the north Atlantic Ocean the winds were anti-cyclonic to the southward of the fiftieth parallel, while to the northward of that latitude they were cyclonic. Over Europe south to west winds prevailed, except in the west-central and southern countries, where they were variable. In British India the winds were westerly, save in the eastern provinces, where they were southerly. Along the eastern coast of Asia northerly winds prevailed from the latitude of Kiu-Siu to Formosa, while to the northward of the fortieth parallel they were southerly.

TRACKS OF AREAS OF LOW PRESSURE FOR SEPTEMBER, 1887.

Chart iii exhibits paths of the principal depressions that appeared in the northern hemisphere during September, 1887. This chart continues the series of international charts begun in November, 1877, and has been prepared from the following data: Chart i for each day of the month, containing the data of simultaneous observations taken once each day at noon, Greenwich mean time; abstracts of ships' logs; special reports, and other miscellaneous data on file at this office.

The paths of the centres of thirty-one areas of low pressure are shown, of which eleven are traced over the North American continent; ten over the north Atlantic Ocean; eight over Europe, and two off the eastern coast of Asia. The average number of depressions traced over the northern hemisphere for September during the last eight years, 30.2, is .8 less than the number traced for September, 1887.

The depressions traced over the North American continent are described in detail in the MONTHLY WEATHER REVIEW for September, 1887, under the heading "Areas of low pressure."

Of the storms traced over the north Atlantic Ocean, four were continuations of depressions whose paths were plotted over the North American continent; four were of tropical or sub-tropical origin; one apparently developed off the coast of Labrador, and one first appeared northeast of Bermuda. The general course of the depressions was northeastward west of the thirtieth meridian; two storms passed southeastward to the North Sea from Iceland; one moved eastward from mid-ocean to the British Isles, and one advanced southeast from the twenty-fifth meridian towards the Bay of Biscay. The severest disturbances of the month attended the passage of depression number xiii which was central about eleven degrees east-southeast of Bermuda on the 1st. From this position the storm-centre moved northwest and subsequently recurved to the northeastward and passed over the Banks of Newfoundland during the 3d, with barometric pressure falling below 29.50 (749.3). Pursuing a northeast course to the vicinity of the thirtieth meridian, where it was located during the 4th and 5th, with minimum pressure about 28.80 (731.5) on the latter date, the depression advanced to the British Isles by the 6th, and from thence is traced along the coast of Norway. Number xii was central on the 1st north of the western extremity of Cuba, from whence it moved northeastward and arrived at Iceland on the 8th, and subsequently passed slowly southeastward to the southern extremity of Norway. Number xx was a continuation of land low area number vi which first appeared over southern California on the 17th, and moved northeast from the Labrador coast during the 23d. By the 25th the centre of disturbance had advanced to Iceland, and is thence traced southeast over the North Sea where it was located on the 28th. This depression possessed marked energy during its passage over the ocean, and on the 27th a minimum pressure of 29.09 (738.9) was reported at Thorshavn, Faroe Islands. It was also remarkable by reason of the great extent of territory it traversed. Number xvii was a continuation of land low area number iii which developed in the middle plateau region on the 7th, and passed northeastward from the Labrador coast during the 11th. Advancing east-northeast to the thirtieth meridian by the 13th, the centre of depression subsequently recurved southward and southeastward and apparently dissipated northeast of the Azores after the 16th. Number xxi moved north-northeast from the vicinity of the Bahamas, and on the 25th was central over the western part of Nova Scotia, in which locality it appeared to split into two parts, one going northward and disappearing north of the Gulf of Saint Lawrence, and the other eastward and northeastward over the Banks of Newfoundland, where severe disturbances were experienced during the 29th and 30th. Depression number xvi which advanced from the vicinity of the Barbadoes to the west-central coast of the Gulf of Mexico from the 11th to the 21st, inclusive, was attended by disturbances of marked violence throughout its course, more especially over the west portion of the Gulf. The remaining depressions traced were of moderate energy and unimportant.

Of the depressions traced over Europe, three were continuations of ocean storms; one first appeared southwest of Sicily; one apparently originated over the Black Sea, and from thence moved northward and northwestward to the Baltic Sea; one passed northeast from southwest of Ireland to the north of Scandinavia, and two advanced over northern Scandinavia from the ocean. The severest storms of the month over the British Isles occurred during the 1st and 2d, attending the passage of depression number xxiii. During these dates very low barometric pressure was caused over northern Scandinavia by depression number xxii. Number xxiv was a storm of considerable strength which moved northeast from the British Isles to northern Scandinavia during the 6th and 7th, and from thence passed eastward and disappeared northeast of the White Sea. The remaining depressions were generally possessed of marked energy, and were rather evenly distributed throughout the month. The course of the depressions was diversified, and the paths predominated over the extreme northern part of Scandinavia.

Of the Asiatic depressions traced, number xxx was a typhoon of great energy which advanced from northeast of the Philippine Islands westward over the China Sea to the vicinity of Canton from the 9th to the 11th, inclusive, and afterwards disappeared over the interior of China. On the 9th and 10th the barometer fell to 29.47 (748.5) and 29.16 (740.7), respectively, at South Cape, Formosa, and on the 11th at noon, Greenwich time, a reading of 29.18 (741.2) was reported at Hong-Kong. Number xxxi was a storm of considerable severity which moved northeast from the Yellow Sea over Corea, the Sea of Japan, and northern Hondo during the 13th, 14th, and 15th, and subsequently disappeared over the ocean. On the 17th and 25th whole westerly gales prevailed along the coast of the China Sea, and on the 1st the pressure was low at Nikolaievsk; reports at hand will not, however, permit of locating well-defined depressions on those dates.

List of merchant marine steam and sailing vessels from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of September, 1887—Continued.

Name of vessel.	Captain.
UNITED STATES NAVAL—Cont'd.	
U. S. S. Monongahela	Capt. S. H Baker.
U. S. S. Omaha	Frank Courtis.
U. S. S. Ossipee	Wm. B. Hoff.
U. S. S. Palos	J. E. Craig.
U. S. S. Pensacola	Geo. Dewey.
U. S. S. Pinta	
U. S. S. Portsmouth	Edwin White.
U. S. S. Quinnebaug	W. L. Folger.
U. S. S. Ranger	F. A. Cook.
U. S. S. Richmond	Robert Boyd.
U. S. S. Saratoga	C. H. Davis.
U. S. S. Tallapoosa	F. W. Dickins.
U. S. S. Trenton	W. Farquhar.
U. S. S. Vandalia	H. L. Howison.

Name of vessel.	Captain.
UNITED STATES NAVAL—Cont'd.	
U. S. S. Yantic	Capt. F. M. Green.
BRITISH NAVAL.	
H. M. S. Alexandra	J. Fellowes, C. B.
H. M. S. Audacious	R. N. Harris.
H. M. S. Bacchante	A. U. Moore.
H. M. Dockyard, Bermuda	R. P. Donnistoun.
H. M. S. Espiegle	A. C. Clarke.
H. M. S. Flamingo	H. C Briggs.
H. M. S. Himalaya	J. E. Stokes.
H. M. S. Hyacinth	E. Bourke.
H. M. S. Icarus	W. M. Annesley.

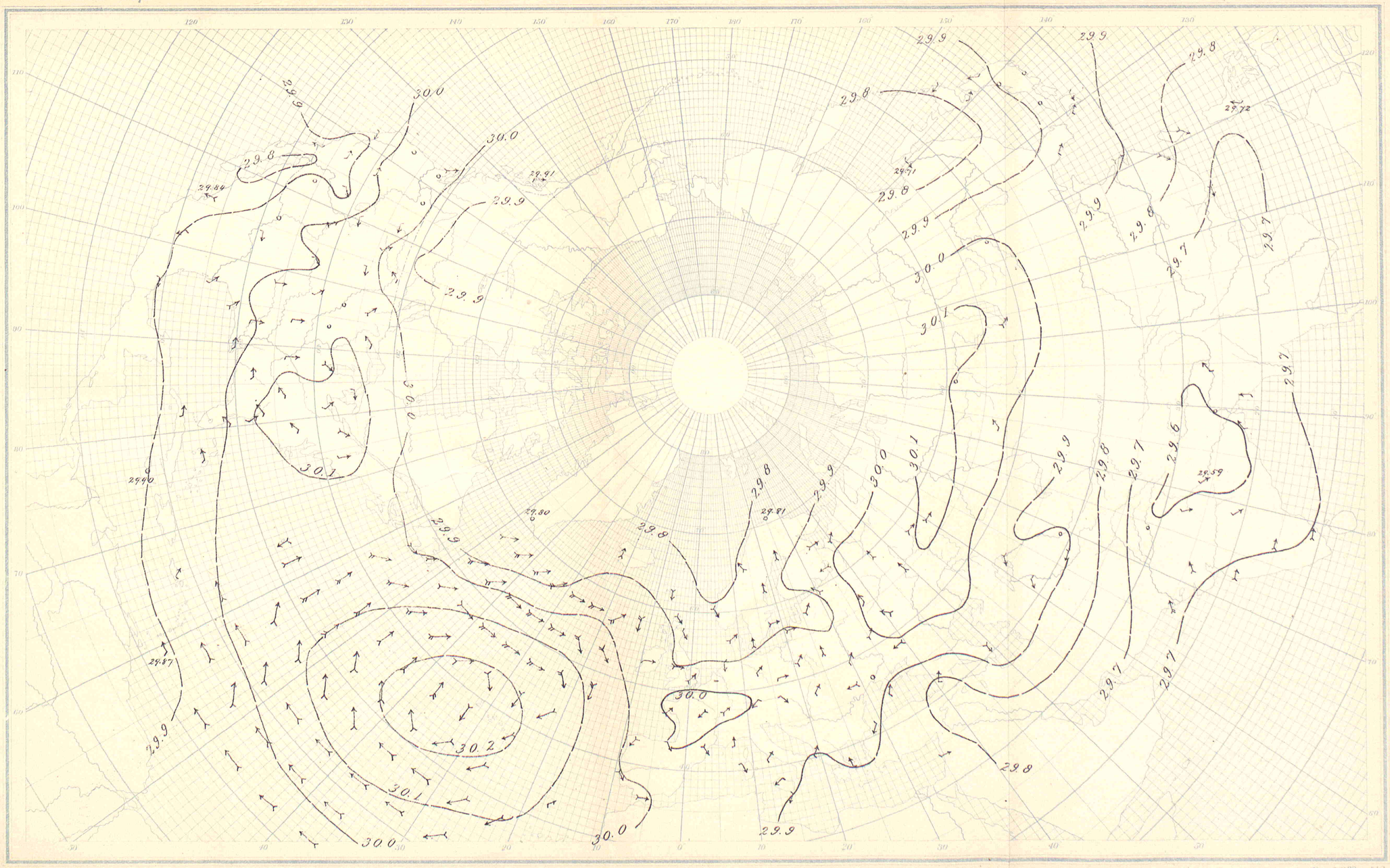
Name of vessel.	Captain.
BRITISA NAVAL—Continued.	
H. M. S. Myrmidon	Capt. R. F. Hoskyn.
H. M. S. Nelson	T. F. Hammill.
H. M. S. Penguin	Haygarth.
H. M. S. Raleigh	B. Watson.
H. M. S. Rifleman	C. Prater.
H. M. S. Royalist	G. W. Hand.
H. M. S. Ruby	W. R. Kennedy.
H. M. S. Sylvia	Dawson.
H. M. S. Torquoise	R. Woodward, C. B.
DUTCH NAVAL.	
H. D. M. S. Prinz Hendrig	
H. D. M. S. König	

List of foreign stations and observers from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of September. 1887.

Stations.	Observers.
AUSTRALIAN.	
Adelaide	Chas. Todd.
Hobart Town, Tasmania	Com. J. Shortt, R.N.
Melbourne, Victoria	R. L. J. Ellery.
AUSTRO-HUNGARIAN.	
Agram	Prof. Ivan Stozir.
Cracow, I. R. Observatory	Dr. Wierzbiski.
Eperies	Julius Mikolik.
Gratz	Andreas Rospini.
Kremsmunster Observatory	The Staff.
Lemberg	Dr. T. Stanecki.
Pola	Fr. Cœselrohe.
Szathmar	P. Tamasyanos, S. J.
Szegedin	Farkas Laszlo.
Trieste	Naval Observatory.
Vienna	I. R. Central Met. Obs'y.
BRITISH.	
Aberdeen	W. Boswell.
Bidston, Liverpool Obs'y	John Hartnup.
Bradford, Yorkshire	McLandsborough & Preston.
Bridgetown, Barbadoes, W. I.	A. T. Green.
Chatham, School M. E	Percy McHugo, R. E.
Falmouth, Observatory	The Staff.
Fort Napier, Natal	Thomas Murray, M. S. C.
Freetown, Sierra Leone	J. W. Smith.
Galway, Queen's College	Wm. Ryan.
Gibraltar, Mediterranean	T. Doolan.
Greenwich, Royal Observatory	The Staff.
Guernsey	A. Collenette, F.R.M.S.
Kew, Observatory	The Staff.
Leicester, Museum	J. C. Smith.
Malta, Mediterranean	R. R. Willan.
Nassau, Bahamas	J. A. Kerr.
Oxford, Radcliffe Observatory	The Staff.
Plymouth	John Merrifield.
Swanbister, Orkneys	W. I. Fortesque.
Scutari Cemetery, Turkey	W. H. Lyne.
Stonyhurst, Observatory	J. Roony.
Valencia, Observatory	The Meteorological Office.
Sub-series.	
Gozo, Episcopal Seminary	Rev. Algelo Lo Re, S.J., Dir.
Malacca	W. R. Angus.
Penang	F. K. Hampshire, M. D.
Singapore	T. Irvine Rowell, M. D.
CANADIAN.	
Bathurst, N. B	Miss Andrews.
Bird Rocks	T. Turbide.
Calgarry	H. S. Cayley.
Chatham, N. B	G. A. Blair.
Cornwall, Ontario	W. D. Johnston, B. A.
Dalhousie, N. B	H. A. Johnson.
Father Point, Quebec	J. McWilliams.
Fort Garry, Manitoba	T. Warburton.
Fredericton, N. B	Dr. Harrison.
Grand Manan, N. B	J. Chipman Seeley.
Halifax, N S	A. Allison.
Hamilton, Ontario	T. S. Campbell, B. A.
Kingston, Ontario	A. P. Knight, M. A.
Little Glace Bay, N. S	C. H. Rigby, C.E.
London, Ontario	E. B. Reed.
Medicine Hat, N. W. T	John Ewart.
Minnedosa, N. W. T	Rev. J. M. Wellwood.
Montreal, Quebec	C. H. McLeod, C. E.
Ottawa, Ontario	A. McGill, M. A.
Parry Sound, Ontario	Rev. R. Mosley.
Peterborough, Ontario	J. H. Long.
Port Arthur, Ontario	W. P. Cooke.
Port Dover, Ontario	H. Morgan.
Port Stanley, Ontario	M. Payne.
Qu' Appelle, N. W. T	Leslie Gordon.
Quebec, Quebec	Captain Ashe, R. N.
Rockliffe, Ontario	W. H. McIntyre.
St. Andrews, N. B	S. T. Gove, M. D.
St. John, N. B	G. Hutchinson.
Saint Pierre, N. F	The Commandant.
Saugeen, Ontario	W. K. Stewart.
Southwest Point of Anticosti	
Stratford, Ontario	W. McBride, M. A.
Sydney, C. B	T. C. Hill, C. E.
Toronto, Ontario	Magnetic Observatory.
Woodstock, Ontario	Prof. N. Wolverton, M. A.
Yarmouth, N. S	J. E. Murphy.
Sub-series.	
Saint Johns, N. F	J. Higgins.
CAPE COLONY.	
Cape St. Francis	I. Garfelt.
CHINESE.	
Foochow	A. E. Pfankuchen.
Hong Kong Observatory	The Staff.
Sub-series.	
Zi-Ka-Wei, near Shanghai	M. Marc Dechevrens, S. J.
South Cape, Formosa	G. Taylor.
DANISH.	
Copenhagen	Oversergent Fischer.
Fanöe	Overloerer Lauridsen.
Ivigtut	
Stykkisholm	A. O. Thorlacius.
Thorshavn	Overloerer Bergh.
Vestervig	Loerer Oesterbol.
FRENCH.	
Agen	M. Bousquet.
Alençon, Normal School	M. Nicot, Director.
Arras, Normal School	M. Sion, Director.
Avignon, Normal School	M. Giraud, Director.
Bar-sur-Seine	M. Saillard, Director.
Beauvais, Normal School	M. Mutelet.
Besançon, Normal School	M. Gobin, Director.
Bordeaux, Observatory	M. Rayet, Director.
Bourges, Normal School	M. Bourgoine, Director.
Brest, Naval Observatory	M. de Kermaree, Director.
FRENCH—*Continued.*	
Caen, Normal School	M. Berson, Director.
Châlons-sur-Marne, N. School	M. Mathieu, Director.
Charleville, Normal School	M. Noél, Director.
Clermont-Ferrand, Obs'y	M. Hurion, Director.
Cluny, Normal School	M. de Villemontée, Director.
Commercy	M. Vaissade.
Gap, Normal School	M. Poussel, Director.
Greasque, du Rhone	M. Kina, Director.
Grenobla	M. Ablard.
Guéret, Normal School	M. Delorme, Director.
Lescar, Normal School	M. Lefevre, Director.
Lorient, Naval Observatory	Lt. T. Carré, Director.
Lyon, St. Genis-Laval	M. André, Director.
Mans, Normal School	M. Tenot, Director.
Marseille, Observatory	M. Stephan, Director.
Montlouis	M. Cave for Dr. Fines.
Montpellier, Normal School	M. Galzin, Director.
Mont Ventoux	M. Blanc.
Nancy, Normal School	M. Hasse, Director.
Nantes, Observatory	M. Larocque, Director.
Nice, Normal School	M. Cantier.
Perpignan, Observatory	Dr. Fines, Director.
Pic-du-Midi, Summit	M. Vaussenat, Director.
Privas, Normal School	M. Curely, Director.
Puy de Dôme Obs'y, Summit	M. Hurion, Director.
Rochefort, Naval Observatory	Lt. E. Decante, Director.
Roche-sur-Yon, N. School	M. Brotier, Director.
Rouen, Normal School	M. Vieillot, Director.
Saint Brience	M. Richard.
Saint Maur, Observatory	M. Renon, Director.
Toulouse, Observatory	M. Baillaud, Director.
Tours	M. Letellier.
Sub-series.	
St. Martin du Hinx	M. Carlier, Director.
GERMAN.	
Ansbach	Prof. Jüdt.
Bamberg	Prof. Dr. Hoh.
Berlin	Meteorological Institute.
Breslau	Royal University Obs'y.
Carlsruhe	Albert Senz.
Cassel	Dr. H. Möhl.
Frankfort-on-the-Main	Physical Society.
Friedrichshafen	Wilhelm, Chief Tel.
Hamburg	Carl H. Seeman.
Kiel	Prof. Dr. G. Karsten.
Leipsic, Astronomical Obs'y	H. Leppig, Assistant.
Memel	Issermann.
Munich	Dr. C. Lang.
Neufahrwasser	A. Lothes.
Neustadt, Palatinate	Prof. Dicknether.
Stuttgart	Dr. L. Meyer.
Wustrow	Profs. Brandes & Reimer.
GREEK.	
Athens	Kokkides & Wourlisch.
INDIAN.	
Kurrachee	
Deesa	
Bombay	
Poona	
Belgaum	
Lahore	
Roorkee	
Agra	
Nagpur	
Jubulpore	
Lucknow	
Allahabad	
Patna	
Hazaribagh	
Calcutta	
Chittagong	
Cuttack	
Dhubri	
Sibsagar	
Jeypore	
Bellary	
Trichinopoly	
ITALIAN.	
Udine	Prof. Giovanni Clodig.
Milan	Prof. G. V. Schiapparelli.
Padua	Prof. Dott. Lorenzoni.
Moncalieri	Prof. P. F. Denza.
Genoa	Prof. G. M. Garibaldi.
Cuneo	
Pesaro	Prof. Luigi Guidi.
Florence	Prof. Constantino Pittei.
Leghorn	Prof. P. Monte.
Rome	Prof. P. Tacchini.
Cosenza	Prof. D. Conti.
Sassari	
Syracuse	Sig. V. Giuliano.
ITALIAN SUB-SERIES	
Stelvio	Prof. P. F. Denza.
Valdobbia	Prof. P. F. Denza.
JAPANESE.	
Akita	S. Hattori.
Awomori	K. Ogawa.
Fushiki	T. Tokuda.
Gifu	R. Ikuchi.
Hakodate	O. Endo.
Hamamatsu	Sakigawa and Miyake.
Hiroshima	Y. Okamoto.
Itsuhara	H. Tanaka.
Kanazawa	S. Kuriyama.
Kagoshima	G. Miyanohara.
Kioto	K. Nishiyama.
Kochi	K. Kusunose.
Miasaka	T. Ishitain & T. Saki.
JAPANESE—*Continued.*	
Miyako	K. Suwa.
Nagasaki	K. Yamasaki and M Chin.
Nemuro	M. Itabashi.
Niigata	M. Morita.
Numadzu	R. Kaneda.
Osaka	H. Omura.
Sakai	K. Yamawchi & P. Yoshimura
Shimonoseki	D. Kobayshi.
Tokei	The Staff.
Wakayama	K. Sakai.
MAURITIUS.	
Mauritius R. A. Observatory	The Staff.
MEXICAN.	
Guanajuato	Prof. Vicente Fernandez.
Leon	Prof. M. Leal & Espana.
Mazatlan	C. Carmina.
Mexico	The Staff.
NETHERLANDS.	
Flushing	
Groningen	
Helder	
Hellevoetsluis	
Utrecht	G. F. C. Zaalberg.
Sub.	
Batavia	Dr. I. P. v. d. Stok.
NORWEGIAN.	
Bergen	
Brono	
Christiania	
Gjæsvær	
PORTUGUESE.	
Angra	Dr. J. A. Sampaio.
Funchal, Madeira	Capt. D. A. de Cunha.
Lisbon, Observatory	The Staff.
Ponta Delgada, Azores	
San Salvador	
St. Vincent, Cape Verd	
Serra da Estrella	
RUSSIAN.	
Archangel	Capt. Sseliwerstow.
Baku	
Barnaul	Meteorological Office.
Dorpat	Blumbach.
Ekaterinburg	Meteorological Observatory.
Elisavetgrad	
Irkutsk	Ed. Stelling.
Kasalinsk	Butkewitsch.
Kasan	Observatory.
Kem	M. Kosnobr.
Kertch	E. M. Zacmsipeyz.
Kieff	Observatory.
Kischinev	
Korostishev	
Koslov	
Lgov	R. I. Ssaweljew, Engineer.
Libau	E. Quaas.
Lugan	Meteorological Observatory.
Moscow	Meteorological Observatory.
Nerchinsk	
Nikolaiev	Capt. Kurdakow.
Nikolaievsk-on-the Amoor	Schonberg.
Nikolsk	Nadeshdin.
Perm	
Petro-Alexandrovsk	Walther.
Petrozavodsk	Dr. Bergmann.
Pinsk	
Poti	
St. Petersburg	Central Physical Observatory.
Samarkand	Dresch.
Sevastopol	Colonobr.
Tashkend Laboratory	Teich, A. M.
Tiflis	Physical Observatory.
Viatka	
Warsaw	Astronomical Observatory.
Yeniseisk	Wishnewzky.
Sub-series.	
Petrowsky Academy	Bachmetieff.
SCOTCH.	
Leith	J. Bolam & Geo. Redpath.
SPANISH.	
Bilbao, Met. Observatory	Tomas Eschriche.
Burgos, Met. Observatory	Domingo Martin.
Madrid, Royal Observatory	The Staff.
Santiago, Met. Observatory	R. Gil Villanueva, Director.
Sub-series.	
Havana, Cuba	Benito Viñes, S. J.
Manilla, Philippine Islands	F. Faura, S. J.
San Fernando, Naval Obs'y	Capt. C. Pujazon, R. N.
San Juan de Porto Rico, W. I.	Enrique Gadea, Ch'f Eng'r.
SWEDISH.	
Haparanda	
Umea	
Hernosand	
Stockholm	
Wisby	
Sub-series.	
Upsala	Nils. Ekholm.
SWISS.	
Geneva	Observatory.
TURKISH.	
Constantinople	The Observatory.
Valona	A. Bertrand.
Sub-series.	
Beirut, Lee Obs'y, Syria	R. H. West, B. A., Director.
UNITED STATES SUB-SERIES.	
Bogota	J. G. Otero.
Kingston	Maxwell Hall.
Vera Cruz	Capt. Geo. E. Powell.

Form No. 106 R---1887.

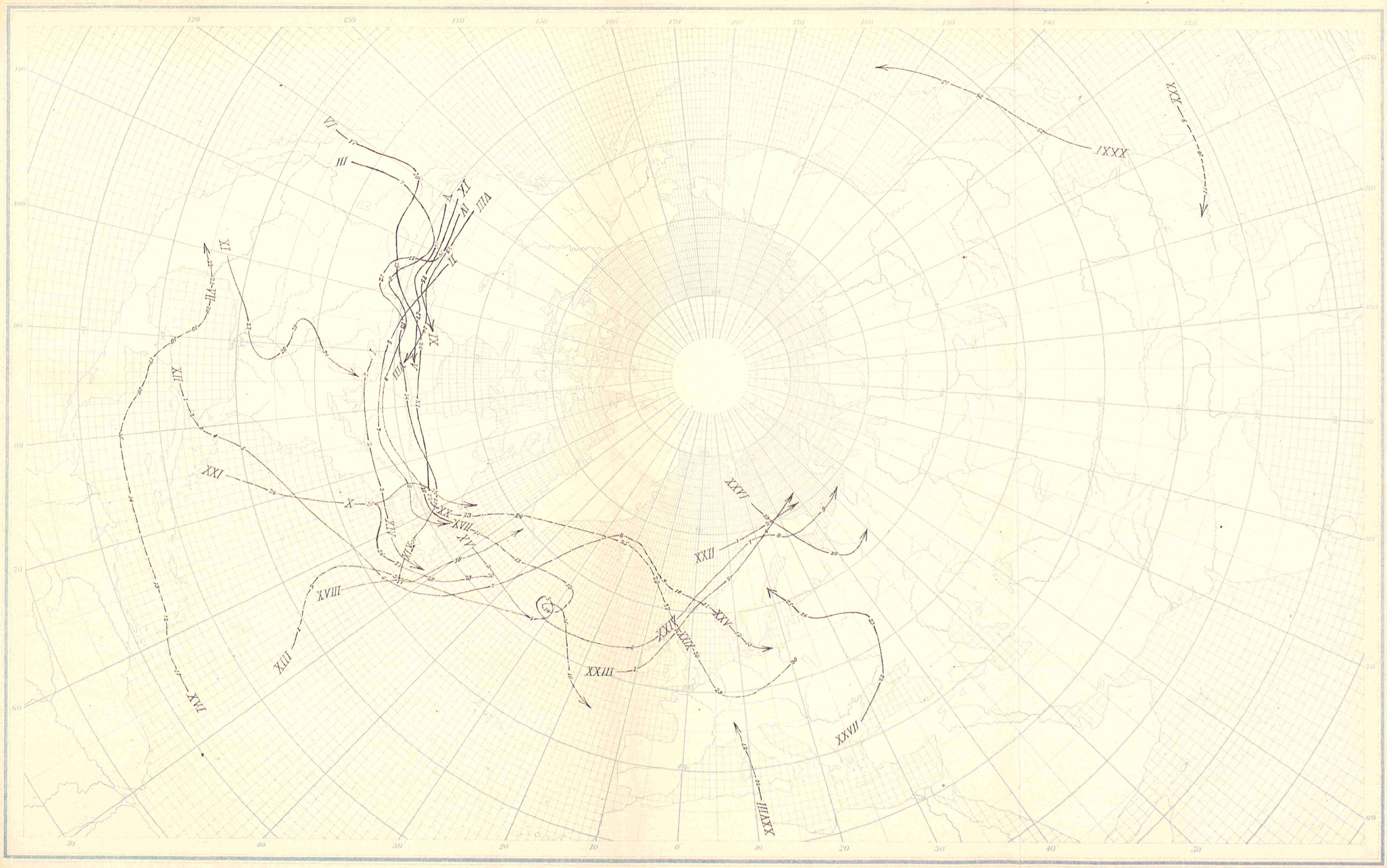
International Chart II. September, 1887. Isobars and Winds.



Signal Office Lith.

Form No. 106 R---1887.

International Chart III. September, 1887. Tracks of Areas of Low Pressure.



Signal Office Lith.

WAR DEPARTMENT.
OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY OF THE UNITED STATES.

SUMMARY AND REVIEW

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS

FOR THE MONTH OF OCTOBER, 1887.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

A. W. GREELY,
BRIGADIER GENERAL, CHIEF SIGNAL OFFICER OF THE ARMY.

PRINTED FOR EXCHANGE WITH CO-OPERATING OBSERVERS.

WASHINGTON, D. C.
NOVEMBER, 1888

List of merchant marine steam and sailing vessels from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of October, 1887.

Name of vessel.	Captain.
Am. s. s. Acapulco	Capt. J. M. Caverly.
Br. Adriatic	J. G. Cameron.
Aguan	John Adair.
Am. Alamo	Samuel Risk.
Br. Alaska	Geo. S. Murray.
Alene	E. J. Seiders.
Alexandria	D. Pert.
Ger. Aller	H. Christoffers.
Br. Alsatia	J. Brown.
Alvena	F. McKay.
Alvo	D. Williams.
Ger. Amalfi	Julius Bahr.
Br. Ambrose	E. Bisson.
Ger. America	H. Hineke.
Br. Anchoria	W. Brown.
Arabic	Geo. Burton.
Arizona	S. Brooks.
Athos	H. Low.
Am. Atlas	J. W. Tobin.
Br. Augustine	R. Harwood.
Aurania	W. H. P. Hains.
Auretta	G. W. Read, F.R.S.
Ger. Australia	G. Franck.
Br. Baltimore	J. Trenery.
Bassano	W. Rea.
Belair	G. Dunlop.
Belg. Belgenland	W. A. Beynon.
Br. Ben Ledi	S. Adamson.
Bessel	C. J. Watson.
Biela	F. Graham.
Ger. Bohemia	R. Karlowa.
Br. Bothnia	T. Dutton.
Britannic	H. Parsell.
British Crown	A. Smith
British King	John Kelly.
British Princess	E. H. Freeth.
British Queen	R. Wills.
Brooklyn City	W. Fitt.
Buenos Ayrean	J. Scott.
Buffalo	J. H. Malet.
Bulgarian	E. Parry.
Caledonia	F. Hassenstein.
Ger. California	O. Winkler.
Br. Canada	J. Robinson.
Am. Carondelet	W. F. Evans.
Br. Celtic	T. J. Irving.
Cephalonia	Henry Walker.
Cervin	S. Hughson.
Fr. Chateau Lafite	C. Ollivier.
Chateau Leoville	M. Le Chapelain.
Chateau Yquem	C. T. Journiel.
Br. Chilian	E. F. Bannister.
Am. Cienfuegos	F. M. Faircloth.
Br. Circassia	A. Campbell.
Am. City of Alexandria	J. W. Reynolds.
City of Augusta	J. W. Catherine.
Br. City of Chester	A. Lewis.
City of Chicago	Fred Watkins.
Am. City of Dallas	C. W. Read.
City of New York	R. R. Searle.
City of Para	L. Dexter
Br. City of Richmond	A. Redford.
City of Rome	H. Young.
Am. City of Washington	W. M. Rittig.
Br. Claribel	J. Evans.
Am. Colorado	J. Daniel.
Br. Counsellor	W. Lang.
Denmark	R. S. Rigby.
Belg. De Ruyter	J. J. Brarens.
Br. Devonia	W. G. Crockhart.
Gr. Donau	M. Moller.
Br. Dorian	J. McKeague.
Dorset	Ch. Off. E. Crossman.
Earnmoor	Capt. R. J. Grey.
Dtch. Edam	J. H. Taat.
Br. Edith Godden	J. H. Bennett.
Egypt	J. Sumner.
Egyptian Monarch	John Harrison.
Ger. Elder	P. H. Berdrow.
Elbe	G. Meyer.
Br. El Callao	J. Scholtz.
Span. Elcano	V. de Ispizua.
Br. Elpis	Frank Burnett.
Span. Emiliano	Don F. Bengoa.
Ger. Ems	Th. Jungst.
Br. England	A. F. Heeley.
Erin	Thos. Foote.
Ethelbald	Ch. Smith.
Ethiopia	John Wilson.
Etruria	T. Cook.
Am. Eureka	R. B. Quick.
Br. France	A. D. Hadley.
Ger. Fulda	R. Ringk.
Br. Furnessia	J. Hedderwick.
Span. Gallego	L. de Arribalzega.
Galileo	R. T. Jones.
Dan. Geiser	C. W. Moeller.
Ger. Gellert	W. Kühlewein.
Br. Germanic	B. Gleadell.
Ger. Gothia	H. Bauer.
Br. Grecian	C. E. Le Gallais.
Greece	A. J. Jeffrey.
Ger. Hammonia	C. Hebich.
Dan. Hekla	A. G. Thomsen.
Br. Helvetia	G. Cochrane.
Herschel	Ch. Off. M. Seiders.
Holland	Capt. W. Tyson.
Am. Hudson	H. R. Freeman.
Span. Hugo	A. de Mugica.
Am. Illinois	G. W. Dodge.
Br. India	John Jameson.
Ger. India	M. Hulsen.
Am. s. s. Indiana	Capt. W. J. Boggs.
It. Indipendente	Cesare Tondu.
Dan. Island	W. Skjodt.
Br. Italy	W. Pearce.
Belg. Jan Breydel	H. Meyer.
Br. Kansas	W. Gleig.
Belg. Kepler	P. H. Tanner.
Br. King's Cross	G. J. Mills.
Fr. La Bourgogne	E. Franguel.
La Bretagne	M. de Jousselin.
La Champagne	E. Traub.
La Gascogne	C. Santelli.
La Normandie	G. de Kersabiec.
Br. Lake Superior	William Stewart.
Lake Winnipeg	L. M. Framnor.
Am. Lampassas	M. B. Crowell.
Dtch. Leerdam	G. Stenger.
Ger. Lessing	H. Barends.
Br. Liscard	T. Byrne.
Lord Gough	E. M. Hughes.
Am. Lorenzo D. Baker	W. F. Wyley.
Louisiana	E. V. Gager.
Ger. Main	H. Boedeker.
Am. Manhattan	Frank Stevens.
Br. Manitoban	W. Dunlap.
Span. Manuel L. Villaverde	A. Gardon.
Ger. Marsala	N. Maass.
Br. Merchant Prince	Chas. Taylor.
Mineola	T. L. Evans.
Muriel	G. S. Locke
Nasmyth	T. T. Farrell.
Span. Navarro	S. de Aldeccocea.
Belg. Nederland	A. J. Griffin.
Fr. Neustria	P. Verries.
Br. Nevada	J. Douglas.
Am. Newport	W. G. Shackford.
Belg. Noordland	H. E. Nickels.
Br. Norseman	D. Morris.
Am. Neuces	J. Bolger.
Br. Oceanic	John Metcalf.
Ocean Prince	W. J. Milburn.
Am. Ohio	R. W. Sargent.
Br. Olbers	James Clark.
Olympia	J. Savain.
Dtch. Oranje Nassau	J. A. J. LaCrooy.
Br. Orinoco	J. S Garvin.
Otranto	W. Rippeth.
Pavonia	A. McKay.
Dtch. P. Caland	F. H. Bonjer.
Br. Peconic	G. Evans.
Belg. Pennland	Rud Weyer.
Am. Pennsylvania	A. B. Thomas.
Philadelphia	Sam. Hess.
Belg. Pieter de Connick	E. Smit.
Ger. Polaria	Johannes Schade.
Polynesia	A. Kuhn.
Br. Pomona	J. Legoe.
Ponca	W. Bowen.
Pontiac	H. W. Brown.
Port Phillip	G. Dulling.
Prydain	Moses Parry.
Ger. Rhaetia	H. Vogelgesang.
Belg. Rhynland	J. C. Jamison.
Br. Richmond Hill	A. Hyde.
Roxbury Castle	A. Turpin.
Dtch. Rotterdam	G. J. Vis.
Ger. Rugia	C. Kordell.
Saale	H. Reichter.
Br. Saint Ronans	H. Campbell.
Salerno	B. H. Rogers.
Am. San José	D S. Austin.
Br. Sarmatian	Wm. Richardson.
Scandinavian	John Park.
Dtch. Schiedam	A. Potjer.
Br. Scythia	T. Roberts.
Span. Serra	F. de Luzaraga.
Br. Servia	H. McKay.
Sidonian	B. Jamieson.
Ger. Slavonia	H Schmidt.
Br. Sorrento	F. W. Oueton.
Spain	W. A. Griffiths.
State of Georgia	G. Moodie.
State of Indiana	A. Ritchie.
State of Nebraska	A. G. Braes.
State of Nevada	J. A. Stewart.
Am. State of Texas	Gilbert Williams.
Br. Straits of Gibraltar	G. Grigs.
Strathleven	C. W. Pearson.
Ger. Suevia	C. Ludwig.
Br. Surrey	E. Griffiths.
Belg. Switzerland	J. Ueberweg.
Ger. Taormina	G. W. Koch.
Br. The Queen	T P. Heeley.
Dan. Thingvalla	S. T. H. Laub.
Br. Thornhill	James Wetherell.
Ger. Trave	W. Willigerod.
Br. Trinacria	G Mitchell.
Tyrian	A. Haig.
Umbria	W. McMickan.
Belg. Vaderland	C. H. Grant.
Am. Valencia	W. Woodrick.
Br. Vancouver	C. J. Lindall.
Vertumnus	C. E. Cook.
Viola	L. Murray.
Virginian	M. Fitt.
Belg. Waesland	H. Buschmann.
Br. Warwick	L. Morice.
Ger. Werra	R. Bussius.
Weser	H. Bruns.
Belg. Westernland	Com. W. G. Randle.
Ger. Wieland	Capt. A. Albers.
Br. Winston	J. B. Milliard.
Br. s. s. Wisconsin	Capt. Edward Bentley.
Worcester	W. Stamper.
Wylo	T. L. Rogers.
Wyoming	C. L. Rigby.
Am. Yemessee	1st Off. J. C. Norton.
N. Y. Herald Weather Service.	
Br. s. s. Ailsa	Capt. J. W. Sanson
Am. Algiers	J. B. Percy.
Atlas	J. W. Tobin.
Br. Barracouta	Robert Hubbard.
Am. Caracas	N M. Hopkins.
City of Puebla	J. Deakin.
El Monte	J. W. Hawthorne.
El Paso	H. S. Quick.
Knickerbocker	F. Remble.
Br. Lepanto	Thos. M. Irvin.
Llandaff City	T. H. Gore.
Martello	Wm. Abbott.
Nova Scotian	R. H. Hughes.
Br. Portia	Henry Dawson.
Dtch. W. A. Scholten	G. Bakker.
Sailing Vessels.	
Am. bg. Abbie Clifford	D. W. Storer.
bk. Abyssinia	B. R. Hilton.
Br. Abyssinian	J. Hughes.
bgt. Achsah	A. M. Shaw.
It. bk. Agostino Rombo	Basso Vincenzos.
Am. Alice	W. G. Kair.
It. Angelica Accame	Vincengo Niggi.
Swed. Arab Steed	C. A. Skantze.
Ger. bg. Atlantic	A. Witte.
Am. sp. Big Bonanza	C. J. Andrews.
bk. Bonny Doon	Chas. Burgess.
Ger. Bremerhaven	—— Bothe.
sp. Carl	T. Hashagen.
Br. Chas. S. Whitney	Geo. D. Spicer.
Ger. bk. Cornelius	N. Windhorst
sp. Dakota	N. E. Schaffer.
Am. bk. Ethel	W. Thompson.
Nor. bk. Grundloven	O. G. Ellingsen.
Hanna	S. Falch Muns.
Am. Henry Warner	—— Paine.
Nor. Hermon	O. Olsen.
Ger. sp. Ida	John Winters.
Am. Independence	Samuel Pavett.
bg. Jane Adeline	G. W. Cates.
John H Crandon	W. S. Richardson.
Br. bk. José E. More	A. Lenhard.
bkt. Josephine	Charles Brown.
Por. bk. Julius	F. D. Vieira.
Ger Kepler	G. Oetken.
Nor. sp. Komander Svend Foyn	J. Bryde.
It. bk. Lazzaro Bianchi	Dallorso Nicola.
Am. bg. L. F. Munson	J. V. McKowen.
sp. Light-ship No. 37	Andrew Jackson.
bg. Lillian	H. T. Schive.
L. Staples	J. P. Stowe.
Br. sp. Mabel Taylor	Chas. E. Durkee.
bk. Maduro	O. Bernier.
Nor. sp. M. D. Metcalf	E. P. Larsen.
Swed. bk. Maria Margretha	J. E. Fogman.
Nor. Martin Luther	A. O. Arnesen.
Br. Mary	Charles Acocks.
Am. Matthew Baird	J. P. Williams.
Mohican	B. F. Berry.
Br. sp. Moy	Albert Hilder.
Nebo	Eugene Chirus.
Ger. bk. Pillau	G. Gerlach.
bk. Qvos	G. Olsen.
Ger. bk. Richard	A. von Seggern.
Br. bkt. Rosebud	John Collie.
bk. Rothiemay	Ch. Off. O. M. Lund.
sp. Sapphire	Capt. G. W. Murray.
Am. bk. Sarah	L. R. Hale.
bg. Sarah Doe	B. S. Merryman.
It. bk. Teresa Accame	G. Boetto.
Am Tillie Baker	J. W. Carty.
Ger. Western Chief	Fr. Sander.
sp. Wilhelm	W. Wilmsen.
Br. Winnifred	R. MacDonald.
United States Naval.	
U. S. S. Adams	Louis Kempff.
U. S. S. Alert	J. D. Graham.
U. S. S. Alliance	C. McGregor.
U. S. S. Atlanta	F. M. Bruce.
U. S. S. Brooklyn	Byron Wilson.
U. S. S. Essex	Theo. F. Jewell.
U. S. F. C. Fish Hawk	
U. S. S. Galena	C. M. Chester.
U. S. S. Iroquois	R. P. Leary.
U. S. S. Jamestown	C. J. Nain.
U. S. S. Juniata	G. T. Davis.
U. S. S. Lancaster	S. L. Breese.
U. S. S. Marion	Merrill Miller.
U. S S. Mohican	B. F. Day.
U. S. S. Monocacy	Henry Glass.
U. S. S. Monongahela	S. H. Baker.
U. S. S. Omaha	F. V. McNair.
U. S. S. Ossipee	Wm. B. Hoff.
U. S. S. Palos	J. R. Craig.
U. S. S. Pensacola	Geo. Dewey.
U. S. S. Pinta	
U. S. S. Portsmouth	Edwin White.
U. S. S. Quinnebaug	W. L. Folger.
U. S. S. Ranger	F. A. Cook.
U. S. S. Richmond	Robert Boyd.
U. S. S. Saratoga	C. H. Davis.

SUMMARY AND REVIEW OF INTERNATIONAL METEOROLOGICAL OBSERVATIONS, OCTOBER, 1887.

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above Sea. Feet.	Metr's	Result of Simultaneous Observations for October, 1887. Mean Barometer. Actual Inch.	Mill.	Reduced. Inch.	Mill.	Mean temperature. Fah.	Cent.	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0–10	Total Precipitation. Inch.	Mill.
AUSTRALIAN.	° ′	° ′																								
Adelaide	S. 34 57	E. 138 35	9.00 p.m.	140	43	29.91	759.7	30.04	763.0	58.1	14.5	66	1	1	1	14	3	5	3	2	1	7669	12342	4	2.73	69.3
Hobart Town	S. 42 53	E. 147 20	9.00 p.m.	190	58	29.65	753.1	29.85	758.2	51.1	10.6	88	7	2	3	5	4	4	2	2	2	.....	.....	6	1.85	47.0
Melbourne	S. 37 50	E. 144 58	9.40 p.m.	91	28	29.89	759.2	29.96	761.0	54.5	12.5	81	1	3	6	2	7	6	3	3	.....	.....	.....	4	2.64	67.1
AUSTRIAN.																										
Agram	N. 45 48	E. 15 53	1.04 p.m.	535	163	29.46	748.2	29.96	761.0	52.2	11.2	69	1	3	2	3	1	4	3	4	.....	.....	.....	7	3.44	87.5
Cracow	N. 50 04	E. 20 00	1.20 p.m.	722	220	29.20	741.6	29.99	761.7	48.4	9.1	75	2	.....	13	8	1	4	1	2	.....	.....	.....	8	2.35	59.6
Eperies	N. 48 58	E. 21 15	1.25 p.m.	853	260	29.08	738.5	30.03	762.7	45.5	7.5	84	2	1	.....	.....	5	2	.....	.....	21	.....	.....	9	2.78	70.5
Gratz	N. 47 04	E. 15 28	1.02 p.m.	1171	357	28.76	730.5	30.02	762.4	50.4	10.2	81	1	3	1	6	10	4	2	4	.....	.....	.....	6	3.16	80.3
Kremsmunster	N. 48 03	E. 14 08	0.57 p.m.	1260	384	28.66	728.0	30.04	763.0	44.6	7.0	81	1	2	13	1	.....	.....	3	5	6	.....	.....	7	3.56	90.4
Lemberg	N. 49 50	E. 24 00	1.36 p.m.	978	298	28.94	735.0	30.00	762.0	48.0	8.9	76	1	19	1	4	1	4	.....	1	.....	.....	.....	8	1.80	45.8
Pola	N. 44 52	E. 13 51	0.55 p.m.	105	32	29.79	756.6	29.91	759.7	58.5	14.7	73	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	5.88	149.4
Szathmar	N. 47 46	E. 22 53	1.32 p.m.	430	131	29.56	750.7	30.02	762.5	52.7	11.5	68	.....	8	5	9	1	6	1	1	.....	.....	.....	8	3.99	101.4
Szegedin	N. 46 15	E. 20 10	1.21 p.m.	295	90	29.69	754.2	30.00	762.0	54.1	12.3	80	4	12	3	1	5	2	2	1	.....	.....	.....	7	4.11	104.5
Trieste	N. 45 39	E. 13 46	0.55 p.m.	85	26	29.90	759.5	29.98	761.5	57.0	13.9	62	.....	4	3	5	.....	3	6	8	.....	.....	.....	6	9.36	242.7
Vienna	N. 48 12	E. 16 22	1.05 p.m.	663	202	29.29	743.9	30.02	762.5	48.4	9.1	70	1	6	11	.....	3	7	1	1	1	.....	.....	8	1.94	49.4
BRITISH.																										
Aberdeen	N. 57 10	W. 2 06	11.52 a.m.	89	27	29.96	761.0	30.08	764.0	47.8	8.8	66	3	8	11	5	3	.....	.....	1	.....	9596	15443	6	2.86	72.6
Bidston	N. 53 24	W. 3 04	11.48 a.m.	197	60	29.85	758.2	30.08	764.0	45.9	7.7	90	6	6	9	5	1	1	1	2	.....	.....	.....	7	.....	.....
Bradford	N. 53 48	W. 1 47	11.53 a.m.	366	112	29.64	752.8	30.06	763.5	48.0	8.9	64	11	8	6	4	.....	.....	.....	2	.....	.....	.....	7	2.13	54.1
Bridgetown	N. 13 04	W. 59 37	8.02 a.m.	28	9	29.88	758.9	29.84	757.9	84.7	29.3	73	3	.....	.....	.....	.....	7	11	10	....	.....	.....	5	.....	.....
Chatham	N. 51 25	E. 0 33	0.02 p.m.	130	40	29.96	761.0	30.12	765.0	48.9	9.4	49	5	1	4	1	.....	.....	5	3	13	.....	.....	5	.....	.....
Falmouth	N. 50 09	W. 5 04	11.40 a.m.	183	56	29.97	761.2	30.18	766.6	51.1	10.6	69	8	4	2	3	3	3	3	5	.....	.....	.....	7	.....	.....
Freetown	N. 8 30	W. 13 14	11.07 a.m.	224	68	29.64	752.8	29.79	756.7	84.6	29.2	88	8	1	10	2	9	.....	1	.....	.....	.....	.....	6	.....	.....
Fort Napier	S. 30	E. 31	2.04 p.m.	2294	699	27.67	702.8	29.84	757.9	76.1	24.5	46	4	3	1	1	2	4	5	7	4	.....	.....	7	.....	.....
Galway	N. 53 15	W. 9 03	11.24 a.m.	32	10	30.08	764.0	30.13	765.3	50.9	10.5	83	11	3	.....	8	2	1	2	4	.....	.....	.....	6	3.49	88.6
Gibraltar	N. 36 09	W. 5 21	11.39 a.m.	50	15	30.03	762.7	30.06	763.5	65.9	18.8	73	.....	4	6	1	.....	1	16	3	.....	.....	.....	4	.....	.....
Greenwich	N. 51 29	0 00	12 m.	159	48	29.93	760.2	30.13	765.3	49.9	9.9	72	12	3	6	7	2	1	.....	.....	.....	.....	.....	7	.....	.....
Guernsey	N. 49 27	W. 2 41	11.49 a.m.	275	84	29.85	758.2	30.16	766.1	51.7	10.9	69	7	3	4	.....	2	3	1	9	2	7420	11941	6	2.58	65.5
Kew	N. 51 28	W. 0 19	11.59 a.m.	34	10	30.04	763.0	30.09	764.3	49.5	9.7	68	9	7	10	3	1	.....	.....	1	.....	.....	.....	7	.....	.....
Leicester	N. 52 39	W. 1 08	11.55 a.m.	245	75	29.82	757.4	30.11	764.8	50.5	10.3	66	9	5	3	8	.....	.....	.....	5	1	.....	.....	7	.....	.....
Malta	N. 36 00	E. 14 30	0.58 p.m.	70	21	29.91	759.7	30.00	762.0	71.3	21.8	66	4	7	2	7	.....	4	1	6	.....	.....	.....	5	.....	.....
Nassau	N. 25 04	W. 77 22	6.51 a.m.	44	13	29.93	760.2	29.92	760.0	79.9	26.6	81	3	1	.....	1	3	3	9	7	4	.....	.....	8	.....	.....
Oxford	N. 51 46	W. 1 17	11.55 a.m.	210	64	29.88	758.9	30.15	765.8	49.7	9.8	62	6	8	4	7	2	1	.....	3	.....	.....	.....	5	.....	.....
Plymouth	N. 50 22	W. 4 10	11.43 a.m.	125	38	29.99	761.7	30.14	765.5	51.2	10.7	75	4	6	1	1	1	1	4	6	7	.....	.....	7	1.54	39.1
Swanbister	N. 58 55	W. 3 05	11.46 a.m.	72	22	29.88	758.9	29.99	761.7	46.4	8.0	78	5	12	4	6	3	.....	.....	1	.....	.....	.....	8	.....	.....
Scutari Cemet'y	N 41 00	E. 29 03	1.56 p.m.	60	18	29.90	759.4	29.95	760.7	69.2	20.7	77	4	1	.....	8	6	.....	.....	6	6	.....	.....	6	.....	.....
Stonyhurst	N. 53 51	W. 2 28	11.50 a.m.	361	110	29.66	753.4	30.08	764.0	47.3	8.5	69	3	5	10	6	1	.....	2	4	.....	.....	.....	8	2.12	53.8
Valentia	N. 51 55	W. 10 18	11.19 a.m.	23	7	30.17	766.3	30.21	767.3	52.3	11.3	74	5	3	2	4	3	2	5	7	.....	.....	.....	8	.....	.....
Sub-series.																										
Gozo	N. 36 01	E. 14 16	0.57 p.m.	364	111	29.60	751.8	29.93	760.2	70.5	21.4	62	5	6	3	4	1	3	7	1	1	4655	7491	9	7.93	201.4
Malacca	N. 2 10	E. 102 14	6.49 p.m.	12	4	29.81	757.2	29.75	755.6	78.5	25.8	93	1	.....	4	2	.....	10	6	8	.....	.....	.....	8	6.84	173.7
Penang	N. 5 24	E. 100 20	6.41 p.m.	20	6	29.87	758.7	29.81	757.2	77.3	25.2	88	.....	23	.....	1	.....	4	1	2	.....	.....	.....	8	23.15	588.0
CANADIAN.																										
Bathurst	N. 47 39	W. 65 42	7.37 a.m.	35	11	29.91	759.7	29.96	761.0	39.9	4.4	85	1	2	8	6	4	2	3	.....	5	.....	.....	6	2.10	53.3
Bird Rocks	N. 47 50	W. 61 10	7.56 a.m.	.....	.....	29.80	756.9	29.92	760.0	44.5	6.9	86	7	4	6	4	1	5	.....	4	.....	.....	.....	7	3.74	95.0
Calgary	N. 50 55	W. 114 04	4.24 a.m.	?	?	26.41	670.8	30.08	764.0	31.8	— 0.1	73[b]	4	2	8	.....	.....	.....	1	.....	16	.....	.....	5	0.13	33.3
Chatham	N. 47 03	W. 65 29	7.38 a.m.	56	17	29.90	759.4	29.96	761.0	37.8	3.2	87	3	6	6	1	3	2	2	1	7	.....	.....	6	3.20	81.3
Cornwall	N. 45 01	W. 74 43	7.01 a.m.	175	53	29.71	754.6	29.90	759.4	41.8	5.4	82	5	.....	11	1	5	.....	1	3	5	.....	.....	7	2.98	75.7
Dalhousie	N. 48 04	W. 66 22	7.35 a.m.	45	14	29.88	759.0	29.93	760.2	39.0	3.9	.....	.....	2	13	.....	.....	.....	5	.....	11	.....	.....	5	2.56	65.0
Father Point	N. 48 31	W. 68 28	7.26 a.m.	20	6	29.88	758.9	29.91	759.7	36.7	2.6	87	3	6	2	6	3	1	.....	6	4	.....	.....	6	4.10	104.1
Fort Garry	N. 49 51	W. 97 07	5.32 a.m.	754	230	29.15	740.4	30.05	763.3	26.6	— 3.0	85	11	5	3	3	4	3	.....	2	.....	.....	.....	5	0.37	9.4
Fredericton	N. 45 57	W. 66 38	7.33 a.m.	164	50	29.83	757.7	30.01	762.2	39.5	4.2	84	2	8	6	.....	3	1	4	1	6	5201	8370	7	3.12	79.2
Grand Manan	N. 44 46	W. 66 45	7.33 a.m.	49	15	29.94	760.5	29.99	761.7	45.3	7.4	82	4	5	6	2	3	2	1	1	7	.....	.....	6	1.63	41.4
Halifax	N. 44 39	W. 63 36	7.46 a.m.	122	37	29.86	758.4	30.00	762.0	45.3	7.4	90	7	7	7	6	1	2	.....	.....	1	.....	.....	6	3.05	77.5
Hamilton	N. 43 16	W. 79 53	6.40 a.m.	372	113	29.63	752.6	30.05	763.3	42.0	5.6	83	1	1	13	3	7	1	3	2	.....	.....	.....	6	0.72	18.3
Kingston	N. 44 14	W. 76 30	6.54 a.m.	307	94	29.65	753.1	29.99	761.7	43.0	6.1	82	5	2	7	9	2	.....	1	5	.....	.....	.....	7	4.80	121.9
Little Glace Bay	N. 46 12	W. 59 58	8.00 a.m.	34	10	29.86	758.4	29.89	759.2	48.6	9.2	93	2	3	8	8	1	3	.....	4	2	.....	.....	8	.....	.....
London	N. 43 00	W. 81 15	6.35 a.m.	832	254	29.13	739.9	30.06	763.5	39.2	4.0	89	2	2	4	5	.....	.....	1	.....	17	4311	6938	7	0.92	23.4
Medicine Hat	N. 50 01	W. 110 37	4.38 a.m.	2136	651	27.73[a]	704.3[a]	30.08	764.0	33.1	0.6	72	2	15	6	1	1	1	.....	.....	4	.....	.....	4	0.46	11.7
Minnedosa	N. 50 13	W. 99 48	5.21 a.m.	1665	501	28.15	715.0	30.05	763.3	22.3	— 5.4	91	.....	8	.....	1	.....	1	1	2	18	.....	.....	6	0.21	5.3
Montreal	N. 45 31	W. 73 33	7.06 a.m.	187	57	29.80	756.9	30.00	762.0	40.2	4.6	80	1	.....	9	7	6	4	2	1	1	.....	.....	6	3.05	77.5
Ottawa	N. 45 26	W. 75 41	6.57 a.m.	200	61	29.73	755.1	29.95	760.7	38.5	3.6	92	3	4	9	2	5	1	7	.....	.....	3579	5760	7	5.32	135.1
Parry Sound	N. 45 19	W. 80 01	6.40 a.m.	635	194	29.25	742.9	29.96	761.0	38.5	3.6	89	5	5	3	3	1	5	7	1	1	.....	.....	8	4.66	118.4
Peterborough	N. 44 17	W. 78 18	6.47 a.m.	722	220	29.25	743.0	30.06	763.5	38.9	3.8	83	.....	2	10	.....	.....	.....	1	2	16	.....	.....	7	1.37	34.8
Port Arthur	N. 48 27	W. 89 12	6.03 a.m.	642	196	29.23	742.4	30.08	764.0	30.6	— 0.8	86	4	1	11	2	7	.....	.....	.....	6	.....	.....	6	2.51	63.8
Port Dover	N. 42 47	W. 80 13	6.39 a.m.	635	194	29.34	745.2	30.05	763.3	41.9	5.5	95	.....	2	7	5	.....	.....	1	.....	16	.....	.....	6	1.24	31.5
Port Stanley	N. 42 40	W. 81 13	6.35 a.m.	592	180	29.37	746.0	30.06	763.5	41.6	5.3	84	1	3	14	4	1	.....	4	3	1	.....	.....	6	1.30	33.0
Qu' Appelle	N. 50 44	W. 103 42	5.05 a.m.	2115	645	27.70	703.6	30.06	763.5	28.1	— 2.2	78	1	11	1	2	2	.....	2	.....	12	.....	.....	3	0.72	18.3
Quebec	N. 46 48	W. 71 12	7.15 a.m.	293	89	29.63	752.6	29.96	761.0	37.3	2.9	82	4	3	8	2	1	....	4	3	6	.....	.....	6	4.16	105.7
Rockliffe	N. 46 10	W. 77 48	6.49 a.m.	418	127	29.47	748.5	29.94	760.5	35.3	1.8	90	.....	6	4	.....	.....	2	6	.....	13	.....	.....	6	1.91	48.5
Saint Andrews	N. 45 04	W. 67 06	7.32 a.m.	47	14	29.92	760.0	29.97	761.2	41.7	5.4	86	3	10	4	2	2	3	.....	3	4	.....	.....	5	3.31	84.1
Saint John, N.B	N. 45 17	W. 66 03	7.36 a.m.	116	35	29.85	758.2	29.98	761.5	42.6	5.9	87	4	7	6	4	5	1	.....	2	2	.....	.....	6	2.73	69.4
Saint Pierre	N. 46 47	W. 56 08	8.15 a.m.	?	?	.....	.....	29.89	759.2	47.3	8.5	.....	3	4	9	4	1	6	2	2	.....	.....	.....	.....	4.02	102.2
Saugeen	N. 44 30	W. 81 21	6.35 a.m.	656	200	29.25	742.9	29.98	761.5	40.5	4.7	89	2	7	1	4	7	1	.....	1	8	.....	.....	7	3.88	98.6
S.W. Pt. Anticosti	N. 49 24	W. 63 36	7.46 a.m.	30	9	29.86	758.4	29.90	759.4	39.6	4.2	87	4	4	5	3	3	4	3	.....	5	.....	.....	6	2.53	64.3
Stratford	N. 43 23	W. 81 00	6.36 a.m.	1186	361	28.70	729.0	30.02	762.5	38.4	3.6	89	5	6	5	5	1	2	1	1	5	6215	.....	7	4.89	124.2
Swift Current	N. 50 21	W. 107 33	4.50 a.m.	2439	744	27.34	694.4	30.06	763.5	25.1	— 3.8	85	1	3	1	5	9	1	.....	1	10	.....	.....	4	0.64	16.3
Sydney	N. 46 08	W. 60 10	7.59 a.m.	37	11	29.88	758.9	29.92	760.0	46.7	8.2	87	3	.....	4	11	3	1	3	1	5	.....	.....	7	4.35	110.5
Toronto	N. 43 39	W. 79 23	6.42 a.m.	350	107	29.63	752.6	30.03	762.7	40.9	4.9	85	1	8	7	3	2	1	2	6	1	.....	.....	7	1.64	41.7
Woodstock	N. 43 08	W. 80 47	6.37 a.m.	980	299	28.97	735.8	30.05	763.3	38.6	3.7	90	.....	9	6	4	4	.....	1	1	6	.....	.....	6	2.91	74.0
Yarmouth	N. 43 50	W. 66 02	7.36 a.m.	61	19	29.92	760.0	29.98	761.5	45.4	7.4	84	7	3	1	5	3	4	2	4	2	.....	.....	7	1.30	33.0
Sub-series.																										
Saint Johns, N.F.	N. 47 34	W. 52 42	8.29 a.m.	159	48	29.73	755.1	29.92	760.0	44.5	6.9	67	1	7	3	2	8	5	1	4	.....	.....	.....	6	2.98	75.7
CAPE COLONY																										
Cape St. Francis	S. 34 10	E. 24 50	1.39 p.m.	25	8	30.02	762.5	30.01	762.2	64.0	17.8	94	.....	.....	7	13	.....	1	1	7	2	.....	.....	4	1.91	48.5
CHINESE.																										
Hong Kong	N. 22 18	E. 114 10	7.37 p.m.	110	34	29.90	759.4	29.95	760.7	76.5	24.7	64	4	1	.....	.....	1	5	10	9	1	.....	.....	2	2.03	51.6
Foochow	N. 26 08	E. 119 38	7.59 p.m.	34	10	30.00	762.0	29.98	761.5	66.8	19.3	70	.....	3	2	2	.....	4	2	18	.....	.....	.....	3	0.79	20.1
Sub-Series.																										
South Cape	N. 21 55	E. 120 51	8.04 p.m.	121	37	29.82	757.4	29.89	759.2	78.3	25.7	69	17	2	.....	.....	.....	.....	.....	11	1	.....	.....	5	1.01	25.7
Zi-Ka-Wei	N. 31 12	E. 121 26	8.06 p.m.	23	7	30.11	764.7	30.09	764.3	60.8	16.0	85	9	5	1	.....	.....	3	2	11	.....	.....	.....	3	0.64	16.3
DANISH.																										
Copenhagen	N. 55 41	E. 12 36	0.50 p.m.	43	13	29.76	755.8	29.83	757.7	47.5	8.6	78	4	5	9	5	5	1	2	.....	.....	.....	.....	8	.....	.....
Fanoe	N. 55 27	E. 8 24	0.34 p.m.	20	6	29.80	756.9	29.85	758.2	48.4	9.1	81	2	10	9	4	2	2	2	.....	.....	.....	.....	8	.....	.....

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for October, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
DANISH—Con.	° ′	° ′																								
Godthaab	N. 64 11	W. 51 46	8.33 a.m.	36	11	29.70	754.4	29.79	756.7	30.0	— 1.1	86	2	.....	1	.....	8	3	2	11	4	.....	.....	8	.....	.....
Ivigtut	N. 61 12	W. 48 00	8.48 a.m.	16	5	29.77	756.1	29.83	757.7	33.3	0.7	.....	1	.....	.....	.....	.....	7	.....	.....	23	.....	.....	6	.....	.....
Jacobshavn	N. 69 13	W. 50 55	8.36 a.m.	43	13	29.73	755.2	29.83	757.7	27.3	— 2.6	.....	1	.....	.....	4	2	3	15	.....	6	.....	.....	6	.....	.....
Upernavik	N. 72 47	W. 56 00	8.16 a.m.	39	12	29.71	754.5	29.81	757.2	25.7	— 3.5	92	2	2	.....	5	6	1	10	1	4	.....	.....	8	.....	.....
Stykkisholm	N. 65 05	W. 22 46	10.29 a.m.	30	11	29.81	757.2	29.90	759.4	38.5	3.6	80	.....	.....	4	4	6	1	9	5	2	.....	.....	7	.....	.....
Thorshavn	N. 62 02	W. 6 44	11.33 a.m.	30	9	29.85	758.1	29.92	760.0	41.9	5.5	78	13	4	7	4	1	1	.....	.....	1	.....	.....	6	.....	.....
Vestervig	N. 56 47	E. 8 20	0.33 p.m.	82	25	29.68	753.9	29.79	756.7	46.9	8.3	80	3	9	7	3	2	1	3	3	.....	.....	.....	6	.....	.....
FRENCH.																										
Agen	N. 44 12	E. 0 38	0.03 p.m.	604	184	29.47	748.4	30.11	764.8	53.1	11.7	72	5	5	5	2	2	6	4	2	.....	.....	.....	.....	.....	.....
Alençon	N. 48 26	E. 0 05	0.00 m.	476	145	29.67	753.6	30.19	766.8	49.1	9.5	75	8	1	.....	4	5	.....	2	11	.....	.....	.....	4	2.38	60.4
Arras	N. 50 18	E. 2 46	0.11 p.m.	223	68	29.84	758.0	30.09	764.3	49.6	9.8	75	3	7	5	4	2	1	.....	8	1	.....	.....	7	2.43	61.7
Avignon	N. 43 57	E. 4 49	0.19 p.m	66	20	29.97	761.2	30.04	763.0	56.3	13.5	56	17	4	.....	3	2	1	.....	4	.....	.....	.....	3	1.94	49.2
Bar-sur-Seine	N. 48 07	E. 4 22	0.17 p.m.	518	158	29.52	749.8	30.08	764.0	48.7	9.3	72	a	3	2	2	2	4	4	13	.....	.....	.....	8	3.10	78.8
Beauvais	N. 49 26	E. 2 05	0.08 p.m.	269	82	29.78	756.3	30.08	764.0	51.4	10.8	69	8	8	2	.....	.....	.....	.....	6	7	.....	.....	.....	1.67	42.5
Besançon	N. 47 13	E. 6 02	0.24 p.m.	895	273	29.13	739.9	30.11	764.8	48 4	9.1	77	a6	1	.....	4	7	2	3	7	.....	.....	.....	5	5.46	138.8
Bordeaux	N. 44 50	W. 0 32	11.58 a.m.	243	74	29.80	758.4	30.12	765.0	54.5	12.5	66	6	6	4	1	.....	2	3	9	.....	.....	.....	5	2.16	54.9
Bourges	N. 47 10	E. 2 26	0.10 p.m.	512	156	29.55	750.5	30.11	764.8	51.6	10.9	66	8	3	7	4	1	.....	1	7	.....	.....	.....	7	1.61	40.9
Brest	N. 48 24	W. 4 30	11.42 a.m.	210	64	29.93	760.3	30.16	766.1	53.2	11.8	81	5	3	4	2	.....	3	2	11	1	.....	.....	6	1.27	32.2
Caen	N. 49 11	W. 0 21	11.59 a.m.	69	21	30.02	762.4	30.09	764.3	50.7	10.4	75	6	1	2	5	.....	3	4	8	2	.....	.....	5	0.76	19.3
Châlons-sur-Marne	N. 48 57	E. 4 21	0.17 p.m.	295	90	29.79	756.6	30.11	764.8	48.2	9.0	80	7	9	.....	7	.....	3	1	4	.....	.....	.....	7	1.39	35.4
Charleville	N. 49 46	E. 4 43	0.19 p.m.	470	145	29.54	750.3	30.06	763.5	48.7	9.3	75	5	2	8	5	6	.....	1	4	.....	.....	.....	8	0.89	22.7
Clermont-Fer'and	N. 45 46	E. 3 05	0.12 p.m.	1273	388	28.72	729.6	30.10	764.6	49.1	9.5	63	8	12	8	2	.....	1	.....	.....	.....	.....	.....	7	1.54	39.0
Cluny	N. 46 26	E. 4 39	0.19 p.m.	787	240	29.22	742.2	30.08	764.0	50.0	10.0	73	.....	2	7	4	.....	1	.....	17	.....	.....	.....	7	1.46	37.1
Commercy	N. 48 46	E. 5 35	0.22 p.m.	817	249	29.17	740.8	30.06	763.5	47.7	8.7	75	4	6	6	2	2	.....	3	8	.....	.....	.....	6	2.60	66.0
Gap	N. 44 33	E. 6 05	0.24 p.m.	2424	739	27.52	698 9	30.10	764.5	53.2	11.8	50	8	.....	.....	.....	1	.....	1	1	20	.....	.....	.....	1.76	44.6
Gréasque	N. 43 25	E. 5 37	0.22 p.m.	1056	322	28.88	733 6	30.01	762.2	55.9	13.3	58	4	2	.....	2	3	7	.....	13	.....	.....	.....	4	3.13	79.4
Grenoble	N. 45 12	E. 5 43	0.23 p.m.	715	218	29.28	743.6	30.06	763.5	51.4	10.8	62	2	10	8	1	1	1	5	3	.....	.....	.....	.....	1.82	46.3
Guéret	N. 46 10	E. 1 52	0.07 p.m.	1535	468	28.50	723.9	30.09	764.3	44.6	7.0	82	3	3	7	3	1	.....	6	8	.....	.....	.....	6	1.71	43.5
Lescar	N. 43 20	W. 0 26	11.58 a.m.	525	160	29.54	750.4	30.10	764.5	57.9	14.4	66	2	8	11	1	.....	.....	1	8	.....	.....	.....	.....	3.13	79.4
Lorient	N. 47 45	W. 3 21	11.47 a.m.	85	26	30.08	764.0	30.16	766.1	55.6	13.1	86	5	4	3	.....	5	2	2	10	.....	.....	.....	6	1.52	38.5
Lyon	N. 45 41	E. 4 47	0.19 p.m.	981	299	29.01	736.9	30.07	763.8	49.6	9.8	62	10	3	5	.....	2	1	3	7	.....	.....	.....	6	0.52	13.3
Mans	N. 48 00	E. 0 12	0.01 p.m.	285	87	29.84	757.8	30.15	765.8	50.7	10.4	81	3	1	4	2	1	3	6	11	.....	.....	.....	6	1.81	45.9
Marseille	N. 43 18	E. 5 23	0.22 p.m.	246	75	29.74	755.3	30.01	762.2	58.6	14.8	56	3	7	13	5	1	1	1	.....	.....	.....	.....	5	2.72	69.0
Montlouis	N. 42 30	E. 2 07	0.08 p.m.	5202	1586	24.86	631.4	29.70	754.4	44.4	6.9	69	8	4	3	6	.....	1	7	2	.....	.....	.....	5	1.31	33.3
Montpellier	N. 43 37	E. 3 53	0.16 p.m.	102	31	29.89	759.2	29.99	761.7	60.1	15.6	50	12	10	3	3	1	2	.....	.....	.....	.....	.....	3	0.88	22.3
Mont Ventoux	N. 44 10	E. 5 16	0.21 p.m.	6234	1900	23.79	604.2	.....	.....	31.1	— 0.5	74	1	8	5	4	4	3	2	4	.....	.....	.....	2	2.92	74.1
Nancy	N. 48 42	E. 6 11	0.25 p.m.	718	219	29.23	742.4	30.02	762.5	45.3	7.4	80	4	6	4	1	.....	8	6	2	.....	.....	.....	.....	2.25	57.2
Nantes	N. 47 13	W. 1 33	11.54 a.m.	134	41	30.00	762.0	30.15	765.8	53.1	11.7	64	5	3	3	2	2	1	6	9	.....	.....	.....	6	2.03	51.6
Nice	N. 43 41	E. 7 16	0.29 p.m.	59	18	29.89	759.2	29.95	760.7	63.9	17.7	59	3	.....	9	.....	6	.....	6	.....	7	.....	.....	.....	4.35	110.5
Perpignan	N. 42 42	E. 2 53	0.12 p.m.	105	32	29.95	760.8	30.07	763.8	59.5	15.3	47	4	12	4	2	1	2	2	2	2	.....	.....	4	0.53	13.4
Pic du Midi (Sum-Privas. [mit.)	N. 42 56	W. 0 08	11.59 a.m.	9380	2859	21.17	537.6	.....	.....	36.0	2.2	56	2	.....	8	2	.....	.....	4	7	8	.....	.....	.....	3.91	99.3
Puy de Dôme	N. 44 45	E. 4 36	0.18 p.m.	997	304	29.00	736.5	30.08	764.0	51.8	11.0	67	13	.....	.....	.....	13	.....	.....	.....	2	.....	.....	5	0.16	4.0
Rochefort	N. 45 46	E. 2 58	0.12 p.m.	4813	1467	25.13	638.2	.....	.....	32.5	0.3	85	3	4	8	4	1	.....	2	9	.....	.....	.....	7	6.67	169.5
Roche-sur-Yon	N. 45 56	W. 0 58	11.56 a.m.	30	9	30.09	764.3	30.12	765.0	54.9	12.7	68	1	6	2	1	3	2	5	11	.....	.....	.....	4	3.49	88.6
Rodez	N. 46 40	W. 1 26	11.54 a.m.	259	79	29.87	758.8	30.16	766.1	52.3	11.3	66	3	3	4	.....	.....	2	6	13	.....	.....	.....	5	1.46	37.1
Rouen	N. 44 21	E. 2 34	0.10 p.m.	2050	625	28.00	711.1	30.04	763.0	49.5	9.7	69	4	6	1	1	1	8	.....	10	.....	.....	.....	2	1.34	33.9
Saint Brieuc	N. 49 26	E. 1 05	0.04 p.m.	39	12	30.08	764.0	30.12	765.0	52.2	11.2	69	8	4	4	5	.....	4	2	4	.....	.....	.....	6	2.87	72.8
Saint Maur	N. 48 37	E. 5 08	0.20 p.m.	348	106	29.78	756.4	30.17	766.3	50.7	10.4	82	3	5	1	1	2	1	4	14	.....	.....	.....	6	2.92	74.3
Toulouse	N. 48 48	E. 2 21	0.09 p.m.	161	49	29.94	760.5	30.12	765.0	49.1	9.5	70	7	2	4	3	4	1	2	6	2	.....	.....	.....	1.43	36.4
Tours	N. 43 37	E. 1 27	0.06 p.m.	636	194	29.42	747.2	30.10	764.5	56.3	13.5	64	2	17	4	.....	.....	4	2	2	.....	.....	.....	5	1.84	46.7
Sub-Series.																										
St. Martin du Hinx.	N. 47 24	E. 0 41	0.03 p.m.	171	52	29.94	760.4	30.13	765.3	55.0	12.8	69	5	2	4	4	1	.....	6	9	.....	.....	.....	.....	1.81	46.0
GERMAN.																										
Ansbach	N. 49 18	E. 10 36	0.42 p.m.	1358	414	28.58	726.0	30.07	763.8	45.5	7.5	68	1	6	6	9	2	2	1	2	2	.....	.....	8	1.03	26.1
Bamberg	N. 49 54	E. 10 54	0.44 p.m.	787	240	29.14	740.2	30.00	762.0	47.7	8.7	70	.....	3	8	11	.....	8	.....	1	.....	.....	.....	8	1.62	41.1
Berlin	N. 52 30	E. 13 19	0.53 p.m.	159	49	29.73	755.2	29.92	760.0	49.8	9.9	72	1	6	5	10	4	3	.....	1	1	.....	.....	6	2.23	56.6
Breslau	N. 51 07	E. 17 02	1.08 p.m.	482	147	29.44	747.7	29.98	761.5	47.7	8.7	64	1	6	12	5	2	4	.....	.....	1	.....	.....	8	0.90	22.8
Carlsruhe	N. 49 01	E. 8 25	0.34 p.m.	407	124	29.73	755.1	30.08	763.9	48.2	9.0	72	.....	.....	1	17	.....	.....	2	10	1	.....	.....	8	3.18	80.9
Cassel	N. 51 19	E 9 28	0.38 p.m.	669	204	29.26	743.3	30.01	762 2	46.2	7.9	75	3	9	5	6	4	2	.....	.....	2	.....	.....	7	1.75	44.5
Frankfort on M.	N. 50 08	E. 8 41	0.35 p.m.	338	103	29.66	753.3	30.04	763.0	48.7	9.3	66	3	2	10	8	3	.....	3	2	.....	.....	.....	7	1.28	32.5
Friedrichshafen	N. 47 39	E. 9 29	0.38 p.m.	1338	408	28.60	726 3	30.05	763.3	47.5	8.6	74	3	1	3	10	8	.....	1	5	.....	.....	.....	7	2.02	51.2
Hamburg	N. 53 33	E. 9 58	0.40 p.m.	85	26	29.80	756.9	29.90	759.4	47.3	8.5	78	3	8	5	9	3	.....	3	.....	.....	.....	.....	7	2.84	72.2
Kiel	N. 54 19	E. 10 04	0.40 p.m.	13	4	29.93	760.3	29.96	761.0	48.0	8.9	77	4	5	8	9	2	1	1	1	.....	.....	.....	9	3.07	78.0
Leipsic	N. 51 20	E. 12 24	0.50 p.m.	390	119	29.56	750.9	30.01	762.2	43.3	6.3	71	2	4	8	9	5	1	2	.....	.....	.....	.....	8	1.04	26.3
Memel	N. 55 43	E. 21 07	1.24 p.m.	39	12	29.78	756.3	29.85	758.2	45.9	7.7	78	5	7	3	6	7	2	1	.....	.....	.....	.....	8	.....	.....
Munich	N. 48 09	E. 11 34	0.46 p.m.	1732	528	28.19	716.1	30.07	763.8	45.7	7.6	68	2	6	8	4	1	.....	2	4	4	.....	.....	7	2.04	51.9
Neufahrwasser	N. 54 24	E. 18 40	1.15 p.m.	36	11	29.80	757.0	29.86	758.4	47.7	8.7	70	2	4	13	3	6	1	1	1	.....	.....	.....	8	3.01	76.4
Neustadt a.	N. 49 21	E. 8 08	0.33 p.m.	479	146	29.52	749.9	30.05	763.3	48.4	9.1	71	7	2	9	6	1	2	.....	1	2	.....	.....	8	1.39	35.4
Stuttgart	N. 48 47	E. 9 11	0.37 p.m.	833	254	29.12	739.7	30.03	762.7	48.0	9.0	70	3	9	5	5	1	1	2	5	.....	.....	.....	7	1.27	32.2
Wustrow	N. 54 21	E. 12 24	0.50 p.m.	23	7	29.78	756.5	29.86	757.4	47.3	8.5	78	2	4	9	8	4	3	.....	1	.....	.....	.....	8	2.56	64.9
GREEK.																										
Athens	N. 37 58	E. 23 44	1.35 p.m.	348	106	29.65	753.0	29.99	761.7	73.0	22.8	62	5	1	5	3	15	1	1	.....	.....	.....	.....	6	2.30	58.3
INDIAN.																										
Kurrachee	N. 24 47	E. 67 04	4.28 p.m.	49	15	29.81	757.2	29.81	757.2	85.0	29.4	57	.....	.....	17	14	.....	.....	.....	.....	.....	.....	.....	0	.....	.....
Deesa	N. 24 16	E. 72 14	4.49 p.m.	466	142	29.38	746.2	29.77	756.1	93.0	33.9	20	4	3	4	4	2	2	3	9	.....	.....	.....	3	.....	.....
Bombay	N. 18 54	E. 72 49	4.51 p.m.	37	11	29.81	757.1	29.79	756.7	83.3	28.5	74	7	21	3	.....	.....	.....	.....	.....	.....	.....	.....	3	2.79	70.9
Poona	N. 18 28	E. 74 10	4.57 p.m.	1849	564	28.00	711.2	29.76	755.8	82.9	28.3	45	4	4	3	.....	.....	1	3	16	.....	.....	.....	6	1.86	47.2
Belgaum	N. 15 52	E. 74 42	4.59 p.m.	2524	770	27.32	693.8	29.75	755.7	74.7	23.7	75	a2	1	1	7	1	1	4	7	6	.....	.....	7	11.86	301.2
Lahore	N. 31 34	E. 74 20	4.57 p.m.	702	214	29.13	740.0	29.81	757.2	83.9	28.8	42	.....	.....	1	1	.....	1	1	.....	27	.....	.....	1	.....	.....
Roorkee	N. 29 52	E. 77 56	5.12 p.m.	887	270	28.94	735.1	29.80	756.9	79.8	26.6	52	1	1	10	.....	.....	1	1	1	16	.....	.....	.....	0.35	8.9
Agra	N. 27 10	E. 78 05	5.12 p.m.	555	169	29.31	744.4	29.82	757.4	84.7	29.3	51	4	13	2	.....	.....	2	.....	.....	10	.....	.....	.....	.....	.....
Nagpur	N. 21 09	E. 79 11	5.17 p.m.	1025	312	28.81	731.8	29.79	756.7	83.5	28.6	49	8	.....	.....	1	1	.....	4	13	4	.....	.....	4	4.86	123.4
Jubbulpore	N. 23 09	E. 79 59	5.20 p.m.	1341	409	28 53	724.6	29.83	757.6	79.6	26.4	51	4	4	1	.....	1	.....	4	4	13	.....	.....	3	5.08	129.1
Lucknow	N. 26 50	E. 81 00	5.24 p.m.	369	112	29.49	749.0	29.81	757.2	78.4	25.8	58	7	2	2	.....	.....	1	.....	2	17	.....	.....	1	0.65	16.5
Allahabad	N. 25 26	E. 81 52	5.27 p.m.	307	94	29.55	750 4	29.81	757.2	81.0	27.2	63	3	7	3	.....	.....	.....	1	.....	17	.....	.....	2	1.31	33.3
Patna	N. 25 37	E. 85 08	5.41 p.m.	183	56	29.67	753.6	29.81	757.2	81.8	27.3	68	.....	1	9	.....	1	.....	5	.....	15	.....	.....	3	3.20	81.3
Hazaribagh	N. 24 00	E. 85 24	5.42 p.m.	2007	612	27.86	707.8	29.82	757.4	76.0	24.4	59	6	8	3	2	4	5	1	1	1	.....	.....	4	2.49	63.2
Cuttack	N. 20 29	E. 85 54	5.44 p.m.	80	24	29.79	756 7	29.81	757.2	82.8	28.2	70	.....	.....	.....	.....	1	.....	3	5	22	.....	.....	6	1.17	29.7
Calcutta	N. 22 33	E. 88 21	5.53 p.m	21	6	29.84	758.0	29.81	757.2	78.7	25.9	80	5	6	2	2	4	3	1	3	5	.....	.....	4	2.57	65.3
Dhubri	N. 26 07	E. 89 50	5.59 p.m	115	35	29.74	755.4	29.80	756.9	79.3	26.3	78	.....	.....	1	1	.....	.....	2	.....	27	.....	.....	3	2.60	66.0
Chittagong	N. 22 21	E. 91 50	6.07 p.m.	87	27	29.78	756.5	29.81	757.2	79.8	26.6	83	2	4	6	1	.....	3	.....	1	14	.....	.....	4	3.47	88.1
Sibsagar	N. 26 59	E. 94 40	6.19 p.m.	333	101	29.54	750.4	29.75	755.6	78.5	25.8	85	.....	.....	.....	2	3	3	5	16	2	.....	.....	3	3.86	98.0
Jeypore	N. 26 55	E. 75 50	5.03 p.m.	1431	436	28.44	722.3	29.81	757.1	86.6	30.3	31	7	11	2	1	.....	3	2	3	2	.....	.....	2	.....	.....
Bellary	N. 15 09	E. 76 57	5.08 p.m.	1475	449	28.35	720.1	29.76	755.8	81.2	27.3	62	4	1	.....	2	4	1	10	2	7	.....	.....	9	2.72	69.1
Trichinopoly	N. 10 50	E. 78 44	5.15 p.m.	275	84	29.56	750.7	29.76	755.9	82.9	28.3	73	1	1	2	2	1	1	4	2	17	.....	.....	8	8.20	208.3
ITALIAN.																										
Udine	N. 46 04	E. 13 13	0.53 p.m.	381	116	29.50	749.3	29.91	759.8	55.9	13.3	60	.....	2	.....	3	1	5	5	5	10	.....	.....	6	7.12	180.9
Milan	N. 45 28	E. 9 11	0.37 p.m.	482	147	29.49	749.0	30.00	762.1	55.2	12.9	62	2	2	7	3	3	5	4	5	.....	.....	.....	6	4.03	102.3
Padua	N. 45 24	E. 11 53	0.48 p.m.	102	31	29.89	759.2	29.98	761.5	55.9	13.3	61	6	6	1	.....	.....	1	2	15	.....	.....	.....	6	4.20	106.8
Moncaliera	N. 45 00	E. 7 41	0.31 p.m.	846	258	29.08	738.6	29.99	761.8	54.3	12.4	57	3	7	3	4	3	7	2	2	.....	.....	.....	5	1.30	33.0
Genoa	N. 44 24	E. 8 55	0.36 p.m.	177	54	29.76	755.9	29.95	760.8	59.7	15.4	49	13	1	.....	2	6	6	2	.....	1	.....	.....	5	6.47	164.4
Cuneo	N. 44 23	E. 7 32	0.30 p.m.	1820	555	.....	.....	29.97	761.3	52.7	11.5	48	1	1	2	3	2	1	10	11	.....	.....	.....	5	1.51	38.4
Pesaro	N. 43 55	E. 12 53	0.52 p.m.	46	14	29.92	760.0	29.98	761.4	58.1	14.5	70	5	4	2	5	4	1	4	6	.....	.....	.....	6	5.08	128.9

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for October, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent.	Mean Rel. Humidity	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
ITALIAN—Con.	°	° ′																								
Florence	N. 43 46	E. 11 15	0.45 p.m.	240	73	29.71	754.6	29.97	761.2	57.7	14.3	62	11	2	.....	12	.....	3	1	2	.....	.....	.....	7	5.55	141.0
Leghorn	N. 43 33	E. 10 18	0.41 p.m.	79	24	29.86	758.4	29.94	760.4	60.4	15.8	57	2	3	3	4	4	.....	6	9	.....	.....	.....	6	4.82	122.5
Rome	N. 41 54	E. 12 29	0.50 p.m.	164	50	29.78	756 4	29.94	760.5	63.3	17.4	55	6	2	1	5	4	1	1	3	8	.....	.....	6	6.72	170.7
Cosenza	N. 39 19	E. 16 17	1.05 p.m.	840	256	29.13	739.9	29.99	761.7	64.0	17.8	65	.....	6	14	4	2	5	.....	.....	.....	.....	.....	7	4.08	103.6
Sassari	N. 40 43	E. 8 34	0.34 p.m.	735	224	29.18	741.2	29.95	760.7	60.4	15.8	65	6	6	6	4	2	2	2	3	.....	.....	.....	7	5.19	131.9
Palermo	N. 38 07	E. 13 21	0.53 p.m.	236	72	29.76	755.9	29.99	761.7	68.9	20.5	61	5	4	1	5	1	2	.....	10	3	.....	.....	7	4.66	118.3
Syracuse	N. 37 03	E. 15 15	1.01 p.m.	72	22	29.93	760.2	29.98	761.5	71.4	21.9	68	3	.....	5	5	5	1	2	10	.....	.....	.....	7	3.99	101.4
Sub-Series.																										
Stelvio	N. 46 32	E. 10 25	0.42 p.m	8343	2543	22.07	560.6	.....	.....	27.1	— 2.7	73	.....	1	5	6	1	4	5	9	.....	.....	.....	6	1.95	49.5
Valdobbia	N. 45 47	E. 7 51	0.31 p.m.	8360	2548	22.08	560.9	.....	.....	29.7	— 1.3	54	1	3	3	11	2	4	1	6	.....	.....	.....	6	1.97	50.0
JAPANESE.																										
Akita	N. 39 42	E.140 07	9.20 p.m.	49	15	30.06	763.6	30.08	764.0	53.9	12.2	88	4	3	4	1	.....	.....	15	1	3	5772	9293	4	1.10	27.9
Awomori	N. 40 51	E.140 45	9.23 p.m.	33	10	30.07	763.7	30.09	764.4	52.0	11.1	83	4	3	3	3	9	5	3	1	.....	36710	59060	4	0.49	12.5
Erimo	N. 41 55	E.143 15	9.30 p.m.	200	61	29.87	758.7	30.08	764.0	53.7	12.0	87	.....	.....	11	..	3	.....	10	6	1	.....	.....	5	1.51	38.4
Fushiki	N. 36 47	E.137 03	10.05 p.m.	13	4	30.06	763.6	30.05	763.4	62.4	16.9	84	2	.....	.....	6	1	2	3	7	10	5638	9073	5	3.82	97.1
Gifu	N. 35 27	E.136 46	9.07 p.m.	49	15	30.02	762.5	30.04	763.0	62.2	16.8	85	5	3	.....	1	.....	2	3	4	13	1737	2796	5	3.79	248.5
Hakodate	N. 41 46	E.140 44	9.23 p.m.	10	3	30.08	764.1	30.08	764.1	51.1	10.6	86	9	4	4	1	.....	.....	9	2	2	6553	10545	4	1.62	41.0
Hamamatsu	N. 34 42	E.137 43	9.11 p.m.	92	28	29.96	761.0	30.02	762.5	62.4	16.9	86	.....	2	4	.....	1	1	9	4	10	2274	3659	5	7.68	195.0
Hiroshima	N. 34 23	E.132 27	8.50 p.m.	16	5	30.04	763.0	30.03	762.7	63.4	17.5	82	24	1	.....	.....	.....	.....	2	4	.....	4260	6854	5	5.74	145.8
Itsurhara	N. 34 12	E.129 16	8.34 p.m.	16	5	.....	.....	.....	.....	63.6	17.6	84	13	3	2	.....	.....	.....	2	3	8	3115	5014	6	10.62	269.7
Kago-hima	N. 31 35	E.130 33	8.42 p.m.	13	4	29.97	761.4	29.95	760.8	69.1	19.5	80	5	2	1	.....	.....	.....	11	4	8	3580	5762	4	10.90	276.8
Kanazawa	N. 36 33	E.136 40	9.07 p.m.	95	29	29.98	761.6	30.06	763.6	59.9	15.5	85	.....	.....	.....	1	2	7	16	1	4	2888	4647	5	4.82	122.5
Kioto	N. 35 01	E.135 46	9.03 p.m.	161	49	29.90	759.5	30.04	763.0	60.3	15.7	85	17	1	.....	.....	.....	.....	4	4	5	2390	3846	5	7.97	202.4
Kochi	N. 33 33	E.133 34	8.54 p.m.	20	6	30.02	762.0	30.01	762.2	66.8	19.3	78	9	13	.....	.....	1	1	2	5	.....	5916	9520	5	20.46	519.6
Miasaki	N. 31 56	E.131 26	8.46 p.m.	26	8	29.98	761.6	29.98	761 4	66.2	19.0	88	19	.....	2	1	2	.....	5	.....	2	4999	8048	6	26.56	674.7
Miyako	N. 39 38	E.141 59	9.28 p.m.	98	30	30.01	762.2	30.10	764.5	53.6	12.0	93	1	2	8	16	1	.....	1	1	1	2431	3917	5	2.58	65.4
Nagasaki	N. 32 44	E.129 52	8.39 p.m.	190	58	29.83	757.7	29.98	761.5	64.2	17.9	80	4	1	.....	.....	1	2	1	17	5	3539	5696	5	12.94	328.7
Niigata	N. 37 55	E.139 03	9.16 p.m.	33	10	30.06	763.5	30.07	763.8	60.9	16.1	78	5	2	1	1	1	6	5	3	7	4094	6588	5	3.10	78.8
Numadzu	N. 35 06	E.138 51	9.15 p.m.	30	9	30.04	763.0	30.02	762.2	61.7	16.5	84	1	.....	2	.....	1	.....	18	9	.....	5539	8925	6	6.82	173.1
Osaka	N. 34 42	E.135 30	9.02 p.m.	13	4	30.02	762.6	30.04	762.9	63.3	17.4	81	5	2	.....	1	.....	.....	4	11	8	5107	8220	5	8.72	221.5
Sakai	N. 35 33	E.133 14	8.53 p.m.	7	2	30.06	763.6	30.05	763.3	64.5	18.1	78	4	2	.....	1	.....	.....	3	11	10	4980	8014	7	6.97	177.1
Shimonoseki	N. 33 58	E.130 56	8.44 p.m.	161	49	29.89	759.2	30.03	762.7	64.2	17.9	81	6	1	2	.....	.....	1	14	2	5	.....	.....	5	9.01	228.9
Tokei	N. 35 41	E.139 46	9.19 p.m.	69	21	30.02	762.6	30.07	763.8	69.4	15.8	90	9	2	1	.....	3	2	7	3	4	5141	8274	5	8.80	224.0
Wakayama	N. 34 14	E.135 09	9.01 p.m.	49	15	30.00	761.9	30.02	762.5	67.2	17.9	78	9	.....	.....	.....	1	.....	2	7	12	2259	3636	5	11.71	297.5
Nemuro	N. 43 20	E.145 35	9.42 p.m.	89	27	29.99	761.7	30.08	764.0	49.9	9.9	83	7	2	1	3	10	1	5	1	1	6068	9765	4	4.04	102.5
MAURITIUS.																										
Mauritius	S. 20 06	E. 57 33	3.50 p.m.	181	55	29.90	759.4	30.03	762.7	73.6	23.1	68	1	.....	2	2	3	.....	20	3	.....	.....	.....	7	3.46	87.9
MEXICAN.																										
Guanajuato	N. 21 01	W.101 10	5.15 a m.	6762	2061	23.66	601.0	29.82	757.4	54.9	12.7	82	.....	3	.....	8	.....	3	.....	17	.....	.....	.....	6	1.87	47.5
Leon	N. 21 07	W.101 36	5.14 a.m.	5902	1799	24.34	618.2	30.00	762.0	53.6	12.0	61	2	17	3	7	.....	.....	.....	2	.....	.....	.....	6	4.19	106.3
Mazatlan *g*	N. 23 12	W.106 17	4.55 a.m.	249	76	29.63	752.6	29.84	757.9	77.5	26.0	85	3	.....	.....	.....	.....	1	9	11	.....	.....	.....	5	14.05	356.8
Mexico	N. 19 26	W. 99 00	5.24 a.m.	7490	2283	23.00	585.7	30.11	764.5	51.8	11.0	85	2	1	.....	.....	.....	.....	.....	1	27	.....	.....	8	3.64	92.4
St. Louis Potosi *c*	N. 22 09	W.100 55	5.16 a.m.	6201	1890	24.15	613.4	.....	.....	58.3	14.6	74	4	1	2	.....	1	.....	14	3	3	.....	.....	5	.....	.....
NETHERLANDS.																										
Flushing	N. 51 24	E. 3 35	0.14 p.m.	0	0	30.05	763.2	30.07	763.8	50.0	10.0	.....	7	3	8	7	3	1	.....	2	.....	.....	.....	.....	2.32	58.8
Groningen *a*	N. 53 12	E. 6 34	0.26 p.m.	60?	18?	29.89	759.3	29.97	761.2	48.2	9.2	.....	9	2	8	4	2	.....	.....	5	.....	.....	.....	.....	4.18	106.3
Helder	N. 52 58	E. 4 45	0.19 p.m.	0	0	29.96	760 9	29.98	761.5	49.3	9.6	.....	7	7	4	8	3	.....	.....	2	.....	.....	.....	.....	.....	.....
Hellevoetsluis	N. 51 49	E. 4 08	0.17 p.m.	0	0	30.02	762.5	30.04	763.0	49.8	9.9	.....	5	6	8	6	3	.....	.....	.....	3	.....	.....	.....	2.48	63.0
Utrecht	N. 52 05	E. 5 07	0.20 p.m.	43	13	29.97	761.1	30.03	762.7	49.6	9.8	.....	3	7	10	6	3	.....	.....	2	.....	.....	.....	3	3.91	99.3
Sub-Series.																										
Batavia	S. 6 11	E.106 50	7.07 p.m.	26	8	29.84	758.0	29.87	758.7	79.3	26.3	81	8	1	.....	3	5	.....	2	4	8	.....	.....	7	3.02	76.7
NORWEGIAN.																										
Bergen	N. 60 24	E. 5 20	0.21 p.m.	56	17	29.74	755.4	29.84	757.9	44.2	6.8	73	3	10	2	3	5	4	1	2	1	.....	.....	7	17.49	444.4
Brono	N. 65 28	E. 12 14	0.49 p.m.	33	10	29.52	749.7	29.60	751.8	40.8	4.9	70	5	4	4	6	3	2	6	.....	1	.....	.....	8	7.69	195.3
Christiania	N. 59 55	E. 10 45	0.43 p.m.	134	41	29.59	751 5	29.78	756.4	45.5	7.5	61	7	1	7	7	4	.....	1	.....	4	.....	.....	6	0.76	19.2
Gjæsvær	N. 71 07	E. 25 22	1.41 p.m.	23	7	29.42	747.1	29.50	749.3	34.3	1.3	.....	1	.....	5	2	6	4	4	5	4	.....	.....	7	3.34	84.8
PORTUGUESE.																										
Angra	N. 38 39	W. 27 14	10.11 a.m.	144	44	29.75	755.7	29.88	758.9	68.4	20.2	88	4	5	1	3	6	9	.....	2	1	.....	.....	6	9.39	238.5
Funchal	N. 32 38	W. 16 55	10.52 a.m.	82	25	29.97	761.3	30.02	762.5	72.9	22.7	68	.....	1	2	13	1	5	2	.....	7	.....	.....	6	4.99	126.7
Lisbon	N. 38 42	W. 9 08	11.23 a.m.	312	95	29.77	756.2	30.08	764.0	62.0	17.0	56	11	3	1	4	1	1	3	7	.....	.....	.....	5	2.63	66.7
Ponta Delgada	N. 37 45	W. 25 41	10.17 a.m.	66	20	29.87	758.7	29.92	760.0	70.3	21.3	83	2	3	4	6	8	2	.....	2	4	.....	.....	4	10.32	262.1
Saint Vincent	N. 16 37	W. 25 02	10.20 a.m.	35	11	29.92	759.9	29.89	759.2	82.0	27.8	74	10	.....	.....	1	.....	.....	3	17	.....	.....	.....	5	4.83	122.7
San Salvador	S. 6 17	E. 14 53	1.00 p.m.	1834	559	28.07	713.0	29.82	757.5	79.3	26.3	62	.....	2	7	2	.....	1	1	.....	18	.....	.....	9	1.34	34.0
RUSSIAN.																										
Archangel	N. 64 33	E. 40 32	2.42 p.m.	16	5	29.61	752.0	29.68	753.9	32.2	0.1	80	.....	3	3	6	4	8	5	1	1	.....	.....	8	.....	.....
Baku	N. 40 21	E. 49 51	3.19 p.m.	39	12	30.11	764.9	30.06	763.5	68.2	20.1	76	11	.....	.....	2	14	.....	1	1	2	.....	.....	4	0.00	0.0
Barnaul	N. 53 20	E. 83 47	5.35 p.m.	459?	140?	29.54	750.3	30.07	763.8	41.9	5.5	b71	.....	3	2	12	3	2	.....	2	7	.....	.....	8	2.24	56.7
Dorpat	N. 58 23	E. 26 43	1.47 p.m.	210	64	29.47	748.5	29.73	755.1	43.0	6.1	80	3	2	4	12	6	1	1	2	.....	.....	.....	7	2.38	60.5
Ekaterinburg	N. 56 49	E. 60 38	4.03 p.m.	928	283	28.89	733.8	30.00	762.0	34.9	1.6	.....	3	1	8	6	5	2	3	.....	3	.....	.....	9	4.24	107.8
Elisavetgrad	N. 48 31	E. 32 17	2.09 p.m.	407	124	29.58	751.3	30.03	762.7	53.1	11.7	68	1	6	7	2	2	10	2	1	.....	.....	.....	7	2.55	64.8
Irkutsk	N. 52 17	E.104 16	6.57 p.m.	1610	491	28.46	722.8	30.23	767.8	42.6	5.9	62	1	7	.....	.....	3	11	5	1	3	.....	.....	4	0.28	7.0
Kasalinsk *a*	N. 45 46	E. 62 07	4.08 p.m.	148	45	29.84	758.0	30.01	762.2	57.9	14.4	55	5	5	2	4	3	1	5	6	.....	.....	.....	6	.....	.....
Kasan	N. 55 47	E. 49 08	3.17 p.m.	230	70	29.62	752.3	29.91	759.7	40.5	4.7	76	2	2	3	10	9	2	1	1	1	.....	.....	8	0.65	16.5
Kem	N. 64 57	E. 34 39	2.19 p.m.	43	13	29.52	749.9	29.61	752.1	32.7	0.4	81	1	3	9	3	1	4	2	1	7	.....	.....	8	1.53	38.9
Kertch	N. 45 21	E. 36 29	2.26 p.m.	20?	6?	30.02	762.6	30.04	763.0	60.3	15.7	68	7	6	1	4	5	3	4	.....	1	.....	.....	6	.....	.....
Kieff	N. 50 27	E. 30 30	2.02 p.m.	600	183	29.32	744.8	29.99	761 7	47.3	8.5	73	2	2	9	5	5	5	2	.....	1	.....	.....	7	2.83	71.8
Kischinev	N. 46 59	E. 28 51	1.55 p.m.	361	110	29.63	752.6	30.02	762.5	54.9	12.7	72	8	2	4	1	8	5	2	1	.....	.....	.....	6	2.04	51.8
Korostishev	N. 50 19	E. 29 03	2.05 p.m.	?	?	29.29	744.0	.....	.....	47.5	8.6	74	.....	2	6	7	6	4	2	.....	4	.....	.....	8	2.04	51.7
Koslov	N. 52 53	E. 40 31	2.42 p.m.	512	156	29.37	746.1	29.96	761.0	44.6	7.0	79	2	2	7	4	8	2	2	.....	4	.....	.....	.....	.....	.....
Libau	N. 56 31	E. 21 01	1.24 p.m.	20	6	29.74	755.5	29.79	756.7	45.7	7.6	75	1	9	3	6	6	.....	3	3	.....	.....	.....	7	4.22	107.1
Lugan	N. 48 35	E. 39 20	2.37 p.m.	164	50	29.85	758.3	30.04	763.0	55.9	13.3	64	2	3	5	12	1	.....	7	1	.....	.....	.....	8	2.02	51.4
Moscow	N. 55 46	E. 37 40	2.31 p.m.	469	143	29.34	745.2	29.90	759.4	42.4	5.8	78	1	4	9	6	7	2	2	.....	.....	.....	.....	8	2.21	56.1
Nertchinsk	N. 51 19	E. 119 37	7.58 p.m.	2155?	657?	27.87	707.9	30.29	769.4	30.9	— 0.6	46	1	1	2	4	.....	.....	.....	.....	23	.....	.....	4	.....	.....
Nikolaiev	N. 46 58	E. 31 58	2.08 p.m.	62	19	29.97	761.1	30.03	762.7	55.4	13.0	72	4	2	2	3	2	4	1	2	11	.....	.....	7	1.74	44.2
Nikolaievsk *a*	N. 53 08	E.140 45	9.23 p.m.	82	25	29.67	753.7	29.77	756.1	34.5	1.4	78	4	5	10	.....	.....	1	5	1	4	.....	.....	4	.....	.....
Nikolsk	N. 59 32	E. 45 27	3.02 p.m.	485?	148?	29.26	743.2	29.84	757.9	35.1	1.7	78	4	5	1	5	2	7	1	5	1	.....	.....	8	1.80	45.7
Perm	N. 58 01	E. 56 16	3.45 p.m.	328?	100?	29.55	750.6	29.95	760.7	35.1	1.7	81	.....	2	5	8	6	3	1	4	2	.....	.....	10	1.09	27.7
Petro-Alexandrovsk	N. 41 28	E. 61 05	4.04 p.m.	328	100	29.84	757.9	30.17	766.3	75.6	24.2	.....	8	3	4	2	.....	4	1	6	3	.....	.....	4	.....	.....
Petrozavodsk	N. 61 47	E. 34 23	2.18 p.m.	220?	67?	29.43	747.4	29.71	754.6	36.9	2.7	80	2	12	3	5	3	2	3	1	.....	.....	.....	8	2.66	67.5
Pinsk	N. 52 07	E. 26 06	1.44 p.m.	459?	140?	29.39	746.6	29.92	760 0	46.6	8.1	73	.....	7	4	7	5	5	2	.....	1	.....	.....	8	1.73	44.0
Poti	N. 42 09	E. 41 37	2.46 p.m.	26	8	29.91	759.7	29.93	760.2	69.4	20.8	72	.....	2	3	3	2	.....	4	10	7	.....	.....	6	.....	.....
St. Petersburg	N. 59 56	E. 30 16	2.01 p.m.	20	6	29.78	756.4	29.84	757.9	40.8	4.9	74	1	6	7	6	9	.....	.....	2	.....	.....	.....	8	2.55	64.8
Samarkand	N. 39 39	E. 66 57	4.28 p.m.	2379?	725?	27.62	701.5	30.09	764.3	64.8	18.2	.....	.....	4	5	5	.....	4	7	2	4	.....	.....	4	0.39	9.9
Sevastopol	N. 44 37	E. 33 31	2.14 p.m.	187	57	29.83	757.6	30.03	762.7	67.8	19.9	62	2	7	4	2	5	3	.....	3	5	.....	.....	6	1.96	49.7
Tashkend	N. 41 20	E. 69 18	4.37 p.m.	1607?	490?	28.43	722.1	30.15	765.8	68.9	20.5	54	.....	2	3	.....	.....	1	.....	.....	25	.....	.....	4	.....	.....
Viatka	N. 58 36	E. 49 41	3.19 p.m.	581?	177?	29.17	740.9	29.87	758.7	34.7	1.5	092	4	4	4	8	5	4	1	1	.....	.....	.....	9	2.13	54.2
Warsaw	N. 52 13	E. 21 02	1.24 p.m.	390	119	29.48	748.7	29.93	760.2	47.3	8.5	73	1	8	5	7	6	3	.....	.....	1	.....	.....	8	2.14	54.4
Yeniseisk	N. 58 27	E. 92 06	6.08 p.m.	276?	84	29.77	756.1	30.11	764.8	31.1	— 0.5	88	1	2	4	3	2	2	3	.....	14	.....	.....	8	3.07	77.9
Sub-series.																										
Petrowsky Acad'y	N. 55 50	E. 37 33	2.50 p.m.	558	170	29.22	742.3	29.90	759.4	41.2	5.1	74	.....	2	5	9	9	5	.....	.....	1	.....	.....	9	2.84	72.2
SCOTTISH.																										
Leith	N. 55 59	W. 3 10	11.47 a.m.	70	21	29.96	761.0	30.06	763.5	.....	.....	.....	03	6	14	5	.....	.....	1	1	.....	.....	.....	7	1.34	34.0

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for October, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent.	Mean Rel. Humidity	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation Inch.	Mill.
SPANISH.	° ′	° ′																								
Bilbao	N. 43 15	W. 2 59	11.48 a.m.	52	16	30.07	763.7	30.12	765.0	59.5	15.3	72	3	5	1	.....	4	4	2	1	11	1417	2280	6	5.36	136.2
Burgos	N. 42 20	W. 3 46	11.45 a.m.	2821	860	27.15	689.7	30.14	765.5	48.2	9.0	62	6	2	5	1	5	1	.....	11	.....	4219	6792	4	0.74	18.7
Madrid	N. 40 25	W. 3 42	11.45 a.m.	2152	656	27.87	708.0	30.09	764.3	58.5	14.7	48	.....	2	1	4	3	1	4	5	11	5561	8950	4	1.23	31.2
Santiago	N. 42 53	W. 8 28	11.26 a.m.	863	263	29.17	740.9	30.08	764.0	63.0	17.2	56	2	4	1	5	1	2	2	8	6	6226	10018	4	2.47	62.8
Sub-Series.																										
Manilla	N. 14 35	E. 120 57	8.04 p.m.	46	14	29.86	758.4	29.84	757.9	78.9	26.1	86	1	.....	2	6	1	2	9	2	8	3196	5143	6	8.30	210.9
San Fernando	N. 36 28	W. 6 13	11.35 a.m.	95	29	30.00	762.0	30.08	764.0	07.9	19.9	54	.....	3	10	3	2	1	9	1	2	.....	.....	4	0.16	4.0
San Juan de Porto Rico	N. 18 30	W. 66 10	7.35 a.m.	82	25	29.90	759.5	29.92	760.0	79.7	26.5	84	.....	1	1	2	7	4	3	1	12	.....	.....	4	3.27	83.0
SWEDISH.																										
Haparanda	N. 65 47	E. 24 03	1.36 p.m.	30	9	29.50	749.2	29.58	751.3	33.8	1.0	77	8	2	5	3	4	2	.....	1	6	.....	.....	7	1.78	45.3
Umea	N. 63 50	E. 20 17	1.21 p.m.	39	12	29.56	750.7	29.65	753.1	37.6	3.1	75	6	7	4	1	3	.....	3	4	3	.....	.....	6	1.22	30.9
Hernosand	N. 62 32	E. 17 57	1.12 p.m.	46	14	29.56	750.8	29.65	753.1	40.6	4.8	68	6	6	5	3	4	.....	1	5	1	.....	.....	6	1.01	30.8
Stockholm	N. 59 20	E. 18 04	1.12 p.m.	144	44	29.55	750.5	29.75	755.6	43.0	6.1	67	7	4	6	5	4	.....	2	1	2	.....	.....	6	1.57	40.0
Wisby	N. 57 39	E. 18 19	1.13 p.m.	52	16	29.67	753.5	29.75	755.6	45.7	7.7	73	3	6	8	6	2	3	.....	3	.....	.....	.....	6	2.72	69.1
Sub-Series.																										
Upsala	N. 59 51	E. 17 37	1.10 p.m.	79	24	29.61	752.1	29.73	755.1	41.7	5.4	67	6	7	6	8	1	.....	1	2	.....	.....	.....	6	1.16	29.5
SWISS.																										
Geneva	N. 46 12	E. 6 08	0.25 p.m.	1338	408	28.63	727.3	30.07	763.8	49.5	9.7	65	19	2	1	1	7	.....	1	.....	.....	.....	.....	7	1.69	42.9
TURKISH.																										
Constantinople	N. 41 02	E. 28 59	1.56 p.m.	246	75	29.72	754.9	30.00	762.1	68.4	20.2	61	6	3	1	13	.....	.....	2	6	.....	.....	.....	7	3.45	87.6
Valona	N. 40 27	E. 19 27	1.18 p.m.	105	32	29.79	756.7	29.91	759.7	68.4	20.2	.....	2	4	3	10	8	3	.....	1	.....	.....	.....	5	8.62	219.0
Sub-Series.																										
Beirut	N. 33 54	E. 35 28	2.22 p.m.	112	34	29.79	756.7	29.93	760.2	82.8	28.2	63	20	....	2	7	.....	.....	.....	.....	2	.....	.....	2	.....	.....
UNITED STATES.																										
Atlantic states.																										
Eastport	N. 44 54	W. 66 59	7.32 a.m.	53	16	29.93	760.2	29.99	761.7	44.2	6.8	79	3	6	5	3	1	3	2	4	4	6273	10095	6	2.45	62.2
Portland	N. 43 39	W. 70 15	7.19 a.m.	99	30	29.89	759.2	29.99	761.7	48.8	9.3	78	6	9	6	5	3	2	.....	.....	.....	5181	8338	6	2.47	62.7
Manchester	N. 43 13	W. 73 03	7.14 a.m.	.....	.....	29.76	755.9	30.02	762.5	42.4	5.8	83	1	12	7	8	.....	.....	1	2	.....	3936	6334	4	1.98	50.3
Northfield	N. 44 08	W. 72 42	7.09 a.m.	871	266	29.05	737.9	30.01	762.2	38.6	3.7	87	2	.....	1	7	13	2	1	4	1	6108	9830	7	1.47	37.3
Boston	N. 42 21	W. 71 04	7.16 a.m.	124	38	29.90	759.4	30.03	762.7	47.0	8.3	81	5	7	9	6	1	1	1	1	.....	7474	12028	5	2.53	64.3
Nantucket	N. 41 14	W. 70 07	7.20 a.m.	14	4	30.01	762.2	30.01	762.2	52.6	11.4	80	5	3	7	3	1	1	6	5	.....	7492	12057	6	1.81	46.0
Block Id	N. 41 10	W. 71 36	7.14 a.m.	27	8	30.00	762.0	30.02	762.5	52.2	11.2	82	6	5	4	4	1	.....	.....	11	.....	10873	17498	5	2.28	57.9
New Haven	N. 41 18	W. 72 56	7.08 a.m.	107	33	29.93	760.2	30.04	763.0	46.5	8.1	78	9	4	8	2	.....	.....	.....	4	4	5321	8563	5	3.24	82.3
New London	N. 41 21	W. 72 05	7.12 a.m.	47	14	29.96a	761.0a	30.00a	762.0a	49.9	9.9	82a	a5	6	2	3	.....	.....	1	7	6	4824	7763	6a	4.28	108.7
Wood's Holl	N. 41 33	W. 70 40	7.18 a.m.	22	7	30.03	762.7	30.04	763.0	50.7	10.4	96	6	5	8	4	2	1	1	4	.....	10688b	b17200	6	2.21	56.1
Albany	N. 42 39	W. 73 45	7.05 a.m.	85	26	29.96	761.0	30.04	763.0	44.9	7.2	78	4	4	.....	2	11	5	3	2	.....	3942	6344	6	2.22	56.4
New York City	N. 40 43	W. 74 00	7.04 a.m.	185	56	29.86	758.4	30.05	763.3	50.5	10.3	73	6	7	8	4	1	.....	.....	4	1	5749	9252	5	2.36	59.9
Philadelphia	N. 39 57	W. 75 09	7.00 a.m.	117	36	29.96	761.0	30.06	763.5	50.9	10.5	76	5	5	3	4	1	.....	.....	6	7	7252	11671	6	1.68	42.7
Atlantic City	N. 39 22	W. 74 25	7.03 a.m.	13	4	30.06	763.5	30.06	763.5	52.5	11.4	92	7	5	3	5	2	1	2	2	4	5702	9176	6	3.39	86.1
Baltimore	N. 39 18	W. 76 37	6.54 a.m.	45	14	30.04	763.0	30.07	763.8	51.4	10.8	73	8	6	3	5	.....	.....	.....	5	4	4093	6587	5	1.06	26.9
Washington City	N. 38 54	W. 77 03	6.52 a.m.	106	32	29.97	761.2	30.07	763.8	50.2	10.1	76	9	5	1	1	4	.....	.....	2	9	4127	6642	5	1.82	46.2
Lynchburg	N. 37 25	W. 79 09	6.44 a.m.	652	199	29.40	746.7	30.08	764.0	48.8	9.3	88	2	1	7	4	1	.....	.....	5	11	2294	3692	5	3.31	84.1
Norfolk	N. 36 51	W. 76 17	6.55 a.m.	30	9	30.04	763.0	30.05	763.3	56.0	13.3	88	5	2	5	6	2	.....	2	9	...	5809	9348	5	6.38	162.1
Hatteras	N. 35 15	W. 75 40	6.58 a.m.	11	3	30.06	763.5	30.05	763.3	63.3	17.4	84	10	7	2	2	2	.....	1	6	1	10177	16378	5	11.07	281.2
Wilmington	N. 34 14	W. 77 57	6.48 a.m.	52	16	30.01	762.2	30.04	763.0	57.7	14.3	84	8	3	4	2	1	.....	1	10	2	4715	7588	5	6.53	165.9
Raleigh	N. 35 48	W. 78 29	6.39 a.m.	375	114	29.69	754.1	30.07	763.8	51.2	10.2	90	10	6	1	8	1	.....	.....	3	2	3773	6072	4	10.23	259.8
Charlotte	N. 35 13	W. 80 51	6.37 a.m	808	246	29.24	742.7	30.07	763.8	52.2	11.2	82	9	3	.....	4	2	.....	.....	9	4	4108	6611	4	8.04	204.2
Charleston	N. 32 47	W. 79 56	6.40 a.m	52	16	30.02	762.5	30.04	763.0	61.9	16.6	82	11	5	2	2	.....	2	.....	7	2	5882	9466	5	3.55	90.2
Augusta	N. 33 28	W. 81 54	6.32 a.m.	183	56	29.92	760.0	30.08	764.0	54.5	12.5	88	8	7	3	5	.....	.....	.....	5	3	2678	4300	4	0.58	167.1
Savannah	N. 32 05	W. 81 05	6.36 a.m.	87	27	29.98	761.5	30.04	763.0	60.5	15.8	89	13	6	.....	2	1	.....	2	4	3	5355	8618	5	4.13	104.9
Jacksonville	N. 30 20	W. 81 39	6.34 a.m.	43	13	29.99	761.7	30.00	762.0	65.9	18.8	88	6	4	5	.....	1	.....	4	9	2	5823	9371	5	1.57	39.9
Cedar Keys	N. 29 08	W. 83 02	6.28 a.m.	22	7	29.98	761.5	29.96	761.0	67.9	19.9	85	4	4	1	1	.....	2	5	14	.....	7409	11923	5	0.43	10.9
Key West	N. 24 34	W. 81 49	6.33 a.m.	22	7	29.94	760.5	29.91	759.7	78.0	25.6	84	2	1	1	1	.....	5	12	8	1	8687	13980	7	9.40	238.8
Titusville	N. 28 40	W. 80 50	6.37 a.m.	12	4	30.01	762.2	29.98	761.5	71.8	22.1	88	2	10	1	1	3	3	9	1	1	7173	11543	5	12.17	309.1
Gulf states.																										
Atlanta	N. 33 45	W. 84 23	6.23 a.m.	1129	344	28.93	734.8	30.09	764.3	53.1	11.7	79	1	8	6	.....	2	2	9	3	.....	7104	11432	4	3.28	83.3
Pensacola	N. 30 25	W. 87 13	6.11 a.m.	30	9	30.01	762.2	30.00	762.0	63.2	17.3	83	10	4	.....	.....	1	1	4	11	.....	6274	10097	5	5.52	140.2
Mobile	N. 30 41	W. 88 02	6.08 a.m.	35	11	30.03	762.7	30.03	762.7	60.1	15.6	88	12	10	.....	.....	1	.....	4	4	.....	5809	9348	5	2.45	62.2
Montgomery	N. 32 23	W. 86 18	6.15 a.m.	217	66	29.86	758.4	30.06	763.5	55.8	13.2	84	5	4	1	2	.....	2	5	9	3	4123	6635	4	2.47	62.7
Vicksburg	N. 32 22	W. 90 53	5.57 a.m.	222	68	29.88	758.9	30.09	764.3	55.2	12.9	90	5	.....	.....	.....	4	7	.....	9	6	4071	6550	4	2.99	75.9
New Orleans	N. 29 58	W. 90 04	6.00 a.m.	52	16	29.98	761.5	30.00	762.0	64.1	17.8	83	7	2	2	.....	.....	2	7	11	.....	7372	11864	4	4.71	119.6
Shreveport	N. 32 30	W. 93 40	5.46 a.m.	227	69	29.87	758.7	30.08	764.0	55.8	13.2	86	6	2	.....	1	5	4	2	6	5	3708	5967	4	3.05	77.5
Fort Smith	N. 35 22	W. 94 24	5.43 a.m.	470	143	29.62	752.3	30.10	764.5	52.0	11.1	81	3	1	1	2	6	5	9	3	3276	5272	4	3.47	88.1
Little Rock	N. 34 45	W. 92 06	5.52 a.m	309	94	29.80	756.9	30.10	764.5	52.0	11.1	78	4	2	5	1	3	.....	2	5	9	4520	7274	4	0.97	24.6
Galveston	N. 29 18	W. 94 47	5.41 a.m.	40	12	30.03	762.7	30.03	762.7	66.5	19.2	77	9	1	1	.....	4	6	.....	10	.....	8570	13792	4	4.37	110.0
San Antonio	N. 29 27	W. 98 28	5.26 a.m.	781	238	29.26	743.2	30.04	763.0	60.4	15.8	80	11	1	1	1	2	6	.....	7	2	6491	10446	6	2.17	55.1
Corpus Christi	N. 27 50	W. 97 32	5.30 a.m.	18	5	30.03	762.7	30.01	762.2	66.0	18.9	84	14	4	.....	1	.....	9	.....	3	.....	9537	15348	6	2.99	75.9
Brownsville	N. 25 53	W. 97 26	5.30 a.m.	57	17	29.97	761.2	29.98	761.5	65.8	18.8	92	16	1	.....	1	6	3	4	.....	.....	6438	10361	5	16.27	413.3
Rio Grande City	N. 26 23	W. 98 48	5.25 a.m.	230	70	29.87	758.7	30.07	763.8	63.0	17.2	87	11	7	.....	.....	6	3	.....	2	2	4304	6926	5	2.12	53.8
Palestine	N. 31 45	W. 95 40	5.38 a.m.	533	162	29.56	750.8	30.09	764.3	56.4	13.6	88	8	1	.....	.....	13	.....	1	8	.....	6945	11177	4	3.20	81.3
Ohio val. & Tenn.																										
Chattanooga	N. 35 04	W. 85 15	6.19 a.m.	783	239	29.32	744.7	30.14	765.5	50.7	10.4	86	10	3	1	5	1	2	1	8	.....	4083	6571	5	3.41	86.6
Knoxville	N. 35 56	W. 83 58	6.24 a.m.	980	299	29.12	739.6	30.14	765.5	47.9	8.8	85	2	2	2	2	.....	.....	12	10	1	3911	6294	4	2.70	68.6
Memphis	N. 35 09	W. 90 03	6.00 a.m.	320	98	29.80	756.9	30.11	764.8	51.5	10.8	86	7	7	3	.....	2	8	1	1	2	5100	8208	4	2.24	56.9
Nashville	N. 36 10	W. 86 47	6.13 a.m.	549	167	29.55	750.6	30.12	765.0	48.5	9.2	81	4	5	5	.....	3	3	2	5	4	4715	7588	4	1.92	48.8
Louisville	N. 38 15	W. 85 45	6.17 a.m.	551	168	29.55	750.6	30.13	765.3	47.4	8.6	69	8	2	1	7	6	4	1	2	.....	5743	9242	4	0.39	9.9
Indianapolis	N. 39 46	W. 86 10	6.16 a.m.	766	233	29.29	744.0	30.10	764.5	42.6	5.9	74	4	8	5	3	5	4	.....	1	1	4468	7190	4	0.55	14.0
Cincinnati	N. 39 06	W. 84 30	6.22 a.m.	628	191	29.46	748.3	30.12	765.0	45.5	7.5	69	4	5	2	3	.....	9	1	2	5	5751	9255	4	0.55	14.0
Columbus	N. 39 58	W. 83 00	6.28 a.m.	812	248	29.24	742.7	30.10	764.5	43.9	6.6	75	7	5	6	3	7	2	.....	.....	1	5922	9530	5	0.30	7.6
Pittsburg	N. 40 32	W. 80 02	6.40 a.m.	847	258	29.17	740.9	30.05	763.3	47.4	8.6	76	10	5	5	4	1	2	1	3	...	5335	8586	7	0.39	9.9
Lake region.																										
Rochester	N. 43 08	W. 77 42	6.49 a.m.	621	189	29.35	745.5	30.02	762.5	43.0	6.1	85	1	3	9	13	3	2	.....	.....	.....	8350	13438	7	1.31	33.3
Buffalo	N. 42 53	W. 78 53	6.45 a.m.	692	210	29.28	743.7	30.03	762.7	45.1	7.3	75	2	1	10	6	8	.....	1	.....	3	8685	13977	6	2.76	70.1
Oswego	N. 43 29	W. 76 35	6.54 a.m	335	102	29.64	752.8	30.01	762.2	44.1	6.7	79	1	5	3	4	9	7	.....	1	1	8347	13433	8	2.39	60.7
Erie	N. 42 07	W. 80 05	6.40 a.m.	681	208	29.30	744.2	30.03	762.7	46.1	7.8	79	2	8	2	6	9	1	1	2	.....	8365	13462	6	4.43	112.5
Sandusky	N. 41 25	W. 82 40	6.30 a.m.	638	194	29.40	746.7	30.08	764.0	44.7	7.1	74	2	5	3	11	10	.....	.....	.....	.....	9272	14922	7	0.88	22.4
Cleveland	N. 41 30	W. 81 42	6.33 a.m.	690	210	29.31	744.5	30.05	763.3	45.9	7.7	72	1	6	7	2	6	8	.....	1	.....	7773	12509	8	1.80	45.7
Toledo	N. 41 40	W. 83 34	6.26 a.m.	651	198	29.37	746.0	30.07	763.8	42.4	5.8	77	5	1	8	10	7	.....	.....	.....	.....	5917	9522	6	1.82	46.2
Detroit	N. 42 20	W. 83 03	6.28 a.m.	662	202	29.34	745.2	30.05	763.3	42.6	5.9	79	8	7	4	7	.....	2	.....	3	.....	7216	11613	8	1.49	37.8
Alpena	N. 45 05	W. 83 30	6.26 a.m.	609	186	29.31	744.5	29.98	761.5	38.4	3.6	84	1	1	14	6	4	4	1	.....	.....	8302	13360	7	3.88	98.6
Escanaba	N. 45 48	W. 87 05	6.12 a.m.	608	185	29.30	744.2	29.98	761.5	37.5	3.1	80	5	9	4	11	.....	1	1	.....	.....	7700	12392	6	3.07	78.0
Grand Haven	N. 43 05	W. 86 18	6.15 a.m.	620	189	29.36	745.7	30.04	763.0	42.2	5.7	77	4	6	3	2	4	8	3	1	.....	9952	16016	6	2.78	70.6
Lansing	N. 42 45	W. 84 33	6.22 a.m.	870	265	29.10	739.1	30.04	763.0	42.3	5.7	87	2	7	5	6	8	1	.....	1	1	5867	9442	6	2.30	58.4
Mackinaw City	N. 45 47	W. 84 39	6.22 a.m.	605	184	29.30	744.2	29.97	761.2	40.1	4.5	81	.....	8	4	7	5	3	3	1	.....	10631	17109	8	1.59	40.4
Marquette	N. 46 34	W. 87 24	6.11 a.m.	672	205	29.23	742.4	29.98	761.5	38.2	3.4	78	1	11	10	4	2	.....	2	1	.....	8772	14117	8	2.43	61.7
Port Huron	N. 43 00	W. 82 26	6.30 a.m	639	195	29.34	745.2	30.04	763.0	41.6	5.3	88	1	9	3	9	4	3	1	1	.....	9160	14741	7	1.42	36.1
Chicago	N. 41 52	W. 87 38	6.10 a.m.	715	218	29.29	744.0	30.05	763.3	41.6	5.3	82	1	9	4	11	4	1	1	.....	.....	9025	14524	6	2.03	51.6
Green Bay	N. 45 00	W. 87 30	6.08 a.m.	616	188	29.35	745.5	30.03	762.7	38.9	3.8	82	1	9	4	11	3	.....	2	1	.....	6969	11215	6	3.90	99.1
Milwaukee	N. 43 02	W. 87 54	6.09 a.m.	697	212	29.28	743.7	30.04	763.0	40.4	4.7	78	2	5	13	8	1	1	1	.....	.....	9156	14735	5	2.43	61.7
Duluth	N. 46 48	W. 92 06	5.52 a.m.	672	205	29.26	743.2	30.01	762.2	36.5	2.5	79	1	15	2	9	.....	.....	.....	4	.....	5906	9505	5	3.34	84.8
Upper Miss. val.																										
Saint Paul	N. 44 58	W. 93 03	5.48 a.m.	831	253	29.12	739.6	30.02	762.5	35.8	2.1	83	.....	6	4	3	2	6	3	.....	7	4382	7052	5	1.48	37.6
La Crosse	N. 43 49	W. 91 15	5.55 a.m.	744	227	29.27	743.4	30.08	764.0	38.0	3.3	80	1	6	4	4	14	.....	1	1	.....	7052	11349	6	1.62	41.1
Davenport	N. 41 30	W. 90 38	5.58 a.m.	615	187	29.42	747.3	30.08	764.0	41.7	5.4	78	3	10	4	6	3	2	1	2	.....	6316	10164	5	3.41	86.6

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea		Result of Simultaneous Observations for October, 1887.																			Average Cloudiness.	Total Precipitation.	
						Mean Barometer.				Mean Temperature.		Mean Rel. Humidity.	Wind.														
						Actual.		Reduced.					Directions.									Total Movement.					
				Feet.	Metr's	Inch.	Mill.	Inch.	Mill.	Fah.	Cent.		N	NW	W	SW	S	SE	E	NE	C	Miles	Kil.	0–10	Inch.	Mill.
U. STATES—Con.																											
Des Moines	N. 41 35	W. 93 37	5.46 a.m.	866	264	29.16	740.7	30.08	764.0	40.1	4.5	80	4	7	3	2	6	4	.....	1	4	5335	8586	4	1.40	35.6
Dubuque	N. 42 30	W. 90 44	5.57 a.m.	665	203	29.36	745.7	30.08	764.0	39.4	4.1	82	1	8	7	1	7	1	1	.....	5	3971	6391	4	2.22	56.4
Keokuk	N. 40 22	W. 91 26	5.54 a.m.	618	188	29.44	747.8	30.10	764.5	43.5	6.4	78	3	7	5	3	4	5	1	1	2	6349	10218	4	1.98	50.3
Cairo	N. 37 00	W. 89 10	6.04 a.m.	359	109	29.76	755.9	30.13	765.3	48.1	8.9	78	9	4	1	2	8	1	2	3	1	6347	10214	4	0.38	9.7
Springfield	N. 39 48	W. 89 39	6.02 a.m.	644	196	29.44	747.8	30.12	765.0	42.7	5.9	82	6	7	4	5	6	1	1	1	.....	6304	10145	4	0.85	21.6
Saint Louis	N. 38 38	W. 90 12	5.59 a.m.	571	174	29.51	749.5	30.11	764.8	46.8	8.2	72	5	6	4	2	7	4	.....	2	1	8316	13383	3	0.76	19.3
Missouri valley.																											
Leavenworth	N. 39 19	W. 94 57	5.40 a.m.	842	257	29.24	742.7	30.13	765.3	43.0	6.1	82	5	5	.....	.....	8	4	2	.....	7	5064	8150	4	3.87	98.3
Omaha	N. 41 16	W. 95 56	5.36 a.m.	1113	339	28.94	735.1	30.12	765.0	42.8	6.0	72	2	7	3	1	7	4	.....	.....	7	6443	10369	4	0.72	18.3
Fort Sully	N. 44 39	W. 100 39	5.17 a.m.	1600	488	28.35	720.1	30.07	763.8	37.4	3.0	78	1	2	16	.....	.....	.....	8	1	3	7228	11632	3	0.85	21.6
Huron	N. 44 21	W. 98 09	5.28 a.m.	1307	398	28.65	727.7	30.07	763.8	32.5	0.3	79	6	8	1	2	7	3	1	2	1	8976	14445	4	0.79	20.1
Yankton	N. 42 54	W. 97 28	5.30 a.m.	1234	376	28.71	729.2	30.04	763.0	38.7	3.7	82	4	12	3	7	.....	2	1	1	1	6675	10742	3	0.74	18.8
Springfield	N. 37 12	W. 93 18	5.47 a.m.	1356	414	28.69	728.7	30.11	764.8	46.3	7.9	83	6	1	2	2	3	9	5	1	2	7078	11391	2	2.08	52.8
Lamar	N. 37 32	W. 94 15	5.43 a.m.	1028	313	29.07	738.4	30.16	766.1	44.5	6.9	84	6	5	.....	3	6	4	2	4	1	6912	11114	3	1.94	49.3
Valentine	N. 42 50	W. 100 32	5.18 a.m.	2614	797	27.36	694.9	30.10	764.5	34.9	1.6	77	3	5	11	7	2	2	1	.....	.....	9169	14756	3	0.57	14.5
Moorhead	N. 46 52	W. 96 44	5.33 a.m.	926	282	29.01	736.8	30.04	763.0	30.3	—0.9	80	6	7	.....	8	4	2	.....	1	3	7753	12477	4	1.40	35.6
Saint Vincent	N. 48 56	W. 97 14	5.31 a.m.	804	245	29.13	739.9	30.04	763.0	27.4	—2.6	83	8	5	4	1	8	.....	.....	.....	5	6523	10498	6	0.16	4.1
Bismarck	N. 46 47	W. 100 38	5.16 a.m.	1681	513	28 26a	717.8a	30.10a	764.5a	a33.0	a0.6	a85	a1	9	9	2	.....	1	5	2	1	7483	12042	a4	1.15	29.2
Fort Buford	N. 48 00	W. 103 56	5.04 a.m.	1854	565	28.01	711.4	30.03	762.7	32.0	0.0	81	.....	5	10	1	6	1	2	3	3	6793	10932	4	1.43	36.3
Fort Totten	N. 47 57	W. 98 57	5.24 a.m.	1487	453	28.40	721.3	30.06	763.5	29.4	—1.4	85	4	9	7	2	3	4	.....	2	.....	10297	16571	5	0.98	24.9
Rocky Mount. reg.																											
Ft. Assinaboine	N. 48 32	W. 109 42	4.41 a.m.	2690	802	27.23	691.6	30.09	764.3	36.1	2.3	74	4	1	8	11	2	3	2	.....	.....	9937	15992	5	0.18	4.6
Fort Custer	N. 45 42	W. 107 34	4.50 a.m.	3040	927	26.94	684.3	30.13	765.3	34.7	1.5	80	6	1	3	2	.....	14	4	.....	1	4999	8045	5	1.31	33.3
Fort Maginnis	N. 47 12	W. 109 10	4.44 a.m.	4320	1317	25.63	651.0	30.09	764.3	33.7	0.9	76	4	23	.....	.....	1	1	1	1	.....	9725	15650	6	1.99	50.5
Helena	N. 46 34	W. 112 04	4.32 a.m.	4069	1240	25.93	658.6	30.13	765.3	36.6	2.6	59	1	15	6	3	.....	.....	.....	6	.....	5350	8620	4	1.01	25.7
Poplar River	N. 48 08	W. 105 10	5.00 a.m.	2002	610	27.94	709.7	30.11	764.8	28.5	—1.9	83	2	3	10	.....	1	2	3	2	8	5245	8441	4	1.37	34.8
Deadwood	N. 44 23	W. 103 43	5.05 a.m.	4600	1402	25.44	646.2	30.15	765.8	35.9	2.2	84	.....	.4	10	15	.....	.....	.....	1	1	3317	5338	6	2.05	52.1
Cheyenne	N. 41 08	W. 104 48	5.01 a.m.	6105	1861	24.08	611.6	30.13	765.3	35.1	1.7	59	6	14	3	4	1	1	.....	1	1	7832	12604	3	0.49	12.4
North Platte	N. 41 08	W. 100 45	5.17 a.m.	2841	866	27.16	689.9	30.13	765.3	35.3	1.8	83	4	8	11	1	3	4	.....	.....	.....	6879	11070	4	0.15	3.8
Pike's Peak	N. 38 50	W. 105 02	5.00 a.m.	14134	4308	17.83	452.9	30.00	762.0	20.4	—6.4	78	5	6	12	5	.....	2	.....	1	.....	15662	25205	2	0.45	11.4
Denver	N. 39 45	W. 105 00	5.00 a.m.	5294	1614	24.84	630.9	30.10	764.5	38.1	3.4	67	5	2	1	1	17	1	.....	3	1	4898	7882	3	0.97	24.6
Concordia	N. 39 35	W. 97 41	5.29 a.m.	1384	422	28.64	727.4	30.10	764.5	43.0	6.1	73	6	3	4	2	6	1	3	2	4	6013	9677	4	0.95	24.1
Las Animas	N. 38 04	W. 103 12	5.07 a.m.	3899	1188	26.13	663.7	30.08	764.0	40.1	4.5	73	6	1	13	2	1	2	3	1	2	4579	7369	3	1.10	27.9
Dodge City	N. 37 45	W. 100 00	5.20 a.m.	2523	769	27.49	698.2	30.13	765.3	43.1	6.2	81	2	1	.....	3	5	7	.....	11	2	6521	10494	2	0.48	12.2
Fort Elliott	N. 35 30	W. 100 21	5.19 a.m.	2700	823	27.34	694.4	30.05	763.3	45.0	7.2	80	8	5	.....	3	5	3	1	2	4	8662	12974	2	0.69	17.5
Fort Sill	N. 34 40	W. 98 23	5.27 a.m.	1200	366	28.87	733.3	30.11	764.8	49.9	9.9	83	18	2	.....	.....	7	1	.....	.....	3	8416	13544	2	6.20	157.4
Abilene	N. 32 14	W. 99 45	5.21 a.m.	1748	533	28.28	718.3	30.07	763.8	54.9	12.7	82	4	2	1	10	6	1	.....	7	.....	8295	13349	3	4.77	121.2
Fort Davis	N. 30 38	W. 103 56	5.04 a.m.	4928	1502	25.24	641.1	30.04	763.0	49.6	9.8	72	1	.....	1	7	1	.....	.....	4	17	4343	6989	4	0.50	12.7
Fort Stanton	N. 33 30	W. 105 26	4.58 a.m.	6150	1875	21.05	610.9	29.97	761.5	35.6	2.0	82	.....	5	2	4	2	5	1	.....	12	2662	4284	2	1.75	44.4
Plateau region.																											
Keeler	N. 36 35	W. 117 50	4.09 a.m.	3622	1104	26.38	670.0	29.98	761.5	56.7	13.7	47	5	3	.....	1	.....	5	8	3	6	4864	7828	1	0.84	21.3
Fresno	N. 36 44	W. 119 51	4.01 a.m.	313	95	29.64	752.8	29.95	760.7	54.6	12.6	66	7	7	2	.....	3	4	4	.....	4	2830	4554	1	0.15	3.8
Santa Fé	N. 35 41	W. 105 57	4.56 a.m.	7020	2141	23.33	592.6	30.04	763.0	42.5	5.8	62	4	.....	1	2	2	5	6	4	7	3328	5350	2	1.50	38.1
Fort Apache	N. 33 48	W. 109 57	4.40 a.m.	5020	1835	25.08	637.0	30.00	763.5	41.0	5.0	79	.....	.....	1	.....	1	2	24	2	1	4913	7906	2	0.55	14.0
Fort Grant	N. 32 39	W. 109 57	4.40 a.m.	4860	1482	25.20	640.1	29.95	760.7	52.8	11.6	46	8	2	3	.....	.....	3	8	5	2	5650	9093	2	0.37	9.4
Prescott	N. 34 33	W. 112 28	4.30 a.m.	5389	1643	24.76	628.9	30.02	762.5	41.6	5.3	82	1	.....	2	5	5	2	3	1	12	3995	6429	1	0.05	1.3
Yuma	N. 32 45	W. 114 36	4.22 a.m.	141	43	29.74	755.4	29.84	757.9	65.0	18.3	64	7	2	1	2	2	2	6	8	1	4291	6900	0	0.02	0.5
El Paso	N. 31 47	W. 106 30	4.54 a.m.	3764	1147	26.30	668.0	30.01	762.2	52.6	11.4	76	2	2	.....	.....	1	2	8	2	14	2033	3272	2	0.78	19.8
Fort Bridger	N. 41 28	W. 110 30	4.38 a.m.	6643	2025	23.61	599.7	30.15	765.8	31.4	—0.3	63	1	1	15	4	.....	2	1	5	2	7597	12226	4	0.48	12.2
Salt Lake City	N. 40 46	W. 111 54	4.33 a.m.	4348	1325	25.72	653.3	30.09	764.3	45.3	7.4	50	3	3	.....	.....	2	7	4	8	.....	3414	5494	2	0.30	7.6
Frisco	N. 38 25	W. 113 16	4.27 a.m	6406	1950	23.80	604.5	30.00	762.0	45.0	7.2	46	19	4	4	3	.....	.....	.....	1	.....	7466	12015	2	0.58	14.7
Winnemucca	N. 40 58	W. 117 43	4.09 a.m.	4358	1328	25.76	654.3	30.18	766.6	35.6	2.0	67	.....	2	1	3	1	1	16	7	.....	5046	8121	1	Inap.	Inap.
Montrose	N. 38 30	W. 107 56	4.48 a.m.	5780	1762	24.38	619.2	30.08	764.0	37.0	2.8	57	1	.....	.....	2	6	18	2	.....	2	3743	6024	1	1.19	30.2
Fort Bidwell	N. 41 53	W. 120 11	3.59 a.m.	4615	1415	25.52	648.2	30.19	766.8	39.9	4.4	78	1	6	14	6	.....	.....	2	2	.....	3988	6418	1	0.00	0.0
Boise City	N. 43 37	W. 116 08	4.16 a.m.	2750	838	27.32	693.9	30.19	766.8	39.9	4.4	70	.....	2	.....	1	.....	1	.....	1	26	1290	2076	2	0.03	0.8
Spokane Falls	N. 46 28	W. 117 05	4.11 a.m.	1909	582	28.15	715.0	30.21	767.3	38.0	3.3	89	.....	1	.....	4	.....	2	.....	5	19	1491	2400	4	1.04	26.4
Walla Walla	N. 46 03	W. 118 18	4.07 a.m.	1018	310	29.09	738.9	30.19	766.8	45.7	7.6	77	.....	.....	1	12	14	1	2	.....	1	3364	5414	4	1.52	38.6
Pacific coast reg'n.																											
Astoria	N. 46 11	W. 123 42	3.45 a.m.	20	6	30.11	764.8	.....	.....	49.6	9.8	87	.....	3	1	11	2	6	1	7	.....	4246	6833	9	3.66	93.0
Fort Canby	N. 46 16	W. 124 04	3.44 a.m.	179	55	29.93	760.2	30.13	765.3	50.6	10.3	92	5	2	.....	2	6	10	3	2	1	8197	13192	4	2.73	69.3
Olympia	N. 47 03	W. 122 53	3.49 a.m.	36	11	30.13	765.3	30.17	766.3	44.3	6.8	96	6	1	1	4	6	1	.....	1	11	1913	3079	4	1.51	38.4
Port Angeles	N. 48 07	W. 123 06	3.46 a.m.	14	4	30.13	765.3	30.15	765.8	41.8	5.4	98	.....	.....	1	1	26	1	1	.....	1	2757	4437	6	2.89	73.4
Tatoosh Id.	N. 48 23	W. 124 44	3.41 a.m.	86	26	30.04	763.0	30.14	765.5	48.7	9.3	91	.....	.....	2	1	4	6	15	3	.....	10653	17144	5	11.83	300.5
Portland	N. 45 32	W. 122 43	3.49 a.m	88	27	30.08	764.0	30.18	766.6	47.9	8.8	92	1	9	.....	.....	8	2	.....	.....	11	2761	4443	5	1.34	34.0
Roseburg	N. 43 13	W. 123 20	3.47 a.m.	523	159	29.63	752.6	30.20	767.1	44.7	7.1	90	4	2	2	1	.....	2	1	2	17	1900	3058	4	1.13	28.7
Eureka	N. 40 52	W. 123 58	3.43 a.m.	50	18	30.06	763.5	.....	.....	48.4	9.1	92	5	2	.....	.....	6	7	1	6	4	3328	5356	4	0.55	14.0
Red Bluff	N. 40 10	W. 122 15	3.51 a.m.	342	104	29.67	753.6	30.01	762.2	61.3	16.3	36	17	5	2	.....	1	3	.....	3	.....	6571	10575	1	0.00	0.0
Sacramento	N. 38 35	W. 121 30	3.54 a.m.	64	20	29.92	760.0	29.97	761.2	54.8	12.7	62	6	12	.....	1	.....	11	.....	.....	1	4624	7441	0	0.00	0.0
San Francisco	N. 37 48	W. 122 26	3.50 a.m.	60	18	29.94	760.5	29.98	761.5	56.9	13.8	79	2	8	6	6	1	.....	1	.....	7	5744	9244	2	Inap.	Inap.
Los Angeles	N. 34 03	W. 118 15	4.07 a.m.	339	103	29.59	751.6	29.92	760.0	56.0	13.3	81	2	1	6	.....	.....	1	10	11	.....	4219	6790	1	0.17	4.3
San Diego	N. 32 43	W. 117 10	4.12 a.m.	66	20	29.88	758.9	29.92	760.0	59.3	15.2	78	8	1	4	4	3	1	4	4	2	4020	6469	6	Inap.	Inap.
Sub-Series.																											
Bogota	N. 4 36	W. 74 14	7.11 a.m.	8655	2638	22.05	560.2	.....	.....	52.9	11.6	82	2	.....	1	1	2	.....	.....	2	23	.....	.....	8	6.08	154.4
Havana	N. 23 08	W. 82 23	6.30 a.m.	62	19	29.97	761.2	29.94	760.2	74.9	23.8	81	2	.....	.....	.....	1	6	4	3	15	.....	.....	5	5.56	141.2
Vera Cruz	N. 19 11	W. 96 09	5.35 a.m.	16	5	29.89	759.2	29.91	759.7	.....	.....	.....	13	3	8	2	.....	.....	.....	1	4	.....	.....	.....	.....	.....

OCEAN SQUARE DATA FOR OCTOBER, 1887.

Location of Centre of each Square.	Barometer.		Temperature.		Wind Frequency.										Wind force 0–10.
	Inch.	Mill.	Fah.	Cent.	N.	NW.	W.	SW.	S.	SE.	E.	NE.	Calm.	Blank.	
N. 12.5° W. 37.5°	29.93	760.2							1	2	18	7		3	3.8
12.5 42.5	29.92	760.0			1				2	2	17	4		5	4.2
12.5 47.5	29.91	759.7			4		1		1	8	11	1		5	4.0
12.5 52.5	29.88	758.9				1				11	13	5		1	3.5
17.5 37.5	29.98	761.5							2	4	17	5	2	1	3.9
17.5 42.5	29.97	761.2						2	2	3	17	4		3	4.2
17.5 47.5	29.96	761.0				2	2	1	1	8	12	2		3	4.1
17.5 52.5	29.93	760.2			2	2			2	6	13	6			4.0
17.5 57.5	29.91	759.7			3	1		1		5	11	10			3.7
22.5 27.5	29.99	761.7			8	3			1	3	4	11		1	3.7
22.5 32.5	30.02	762.5			2	1		1	1	4	5	16		1	3.7
22.5 37.5	30.02	762.5			2			3	2	6	10	8			3.8
22.5 42.5	30.02	762.5						4	3	5	17	2			4.2
22.5 47.5	29.99	761.7			1	1	1		3	9	13	3			4.2
22.5 52.5	29.98	761.5			1	2	1		2	8	10	7			4.3
22.5 57.5	29.96	761.0			2	2			1	4	15	7			4.1
22.5 62.5	29.96	761.0			2	1		1		6	12	7	2		3.8
27.5 22.5	30.01	762.2				5	7	4	2		8	5			3.1
27.5 27.5	30.01	762.2			3	9	3	2		6	2	5		1	3.8
27.5 32.5	30.04	763.0			11	4		4	5	1		6			3.7
27.5 37.5	30.06	763.5			3	2	2	4	5	1	5	8		1	4.0
27.5 42.5	30.06	763.5				2	1	5	4	4	7	6		2	4.1
27.5 47.5	30.04	763.0			3	2	2	3	3	9	5	4			4.3
27.5 52.5	30.04	763.0			6	2	1	3		9	6	3	1		4.1
27.5 57.5	30.03	762.7			2	3		2	2	9	5	8			4.1
27.5 62.5	30.02	762.5			2	4		1	6	5	7	6			4.0
32.5 27.5	29.99	761.7			6	6	7	3	6	1	1			1	3.9
32.5 32.5	30.01	762.2			7	9	4	5	1		1	3		1	4.1
32.5 37.5	30.04	763.0			3	9	3	4	2	1		6		3	4.2
32.5 42.5	30.07	763.8			3	6	5	2	2	2	3	4		4	4.4
32.5 47.5	30.04	763.0			3	2	5	3	4	6	1	6		1	4.4
32.5 52.5	30.08	764.0			4	5	2	3	7	2	2	5	1		4.2
32.5 57.5	30.06	763.5			4	4	4	4	3	4	2	5	1		4.2
37.5 32.5	29.94	760.5			2	14	4	5	3		2	1			4.6
37.5 37.5	29.99	761.7			3	12	8	4	2			1		1	5.0
37.5 42.5	30.00	762.0			5	9	7	6	1			1		2	4.9
37.5 47.5	30.02	762.5			4	6	6	8	2		1	3		1	4.5
37.5 52.5	30.03	762.7			5	4	5	8	3	2		4			4.6
37.5 57.5	30.03	762.7			6	7	4	5	5	2		2			5.0
42.5 22.5	29.99	761.7				3	3	3	7	14		1			4.7
42.5 27.5	29.91	759.7			1	3	5	2	8	8	3			1	4.4
42.5 32.5	29.85	758.2			1	6	4	4	5	4	3	4			5.1
42.5 37.5	29.87	758.7			6	7	5	1	3	2	2	5			5.2
42.5 42.5	29.92	760.0			6	12	3	4	3		1	2			5.4
42.5 47.5	29.96	761.0			3	11	1	7	1	3	3	2			4.8
42.5 52.5	29.96	761.0			2	11	4	5	5	2		2			5.0
42.5 57.5	29.96	761.0			2	8	6	7	4	1	2	1			4.9
47.5 17.5	30.12	765.0			2	2	2	2	1	18	3	1			5.1
47.5 22.5	30.05	763.3				2	4	1	5	17	1	1			5.4
47.5 27.5	29.96	761.0			1	5	2		6	14	3				5.5
47.5 32.5	29.89	759.2			2	5	2	3	4	11	4				5.5
47.5 37.5	29.86	758.4				6	2	4	3	6	6	4			5.8
47.5 42.5	29.87	758.7			5	9	2	4	2	5		4			5.2
47.5 47.5	29.90	759.4			1	16	2	3	2	5	1	1			4.6
52.5 17.5	30.13	765.3			4	3	3	3	7	6	2	3			4.9
52.5 22.5	30.07	763.8			1	2	3	2	10	7	2	4			5.5
52.5 27.5	29.99	761.7				4		4	7	13	3				5.8
52.5 32.5	29.91	759.7			2	3	2	4	6	11	2	1			5.2
52.5 37.5	29.85	758.2			2	6	1	4	1	13	3	1			5.4
52.5 42.5	29.82	757.4			2	7	3	2	5	6	2	2		2	5.4
52.5 47.5	29.80	756.9			1	11	4	2	2	7	1	1		2	5.6
57.5 12.5	30.06	763.5			4	7	2	11	1			6			5.2
57.5 17.5	30.05	763.3			6	2	4	9	3	3	1	3			5.1
57.5 22.5	30.00	762.0			2	4	2	12	4	2	2	2		1	5.6
57.5 27.5	29.95	760.7				3	4	10	4	6	2	1		1	5.4
57.5 32.5	29.92	760.0			1	5	3	3	12	4	1	1		1	5.0
57.5 37.5	29.85	758.2			1	7		4	8	6	1	1		3	5.2
57.5 42.5	29.72	754.9				5		1	5	8		1		11	5.6
57.5 47.5	29.61	752.1			2	6				7				16	5.7

OCEAN SQUARES.—The table of ocean square data shows (1) the location of the centres of squares whose sides extend 5° each in latitude and longitude, (2) the monthly mean pressure of the air, and the mean force and total frequency of the wind at noon, Greenwich mean time, computed for the centre of each square from daily readings as obtained by interpolation between the isobars of the daily international simultaneous weather maps.

REVIEW.

INTERNATIONAL METEOROLOGY FOR OCTOBER, 1887.

[*Pressure expressed in inches and millimetres; temperature in degrees, Fahrenheit; wind-force by scale of* 0–10.]

The following refers to chart ii for the month of October, 1887. This chart continues the series of international charts begun in January, 1877, and exhibits the mean pressure and the prevailing wind-directions over the northern hemisphere, as determined from simultaneous observations taken once each day at 7 a. m., 75th meridian, or noon Greenwich, mean time:

The area of lowest mean pressure occupies northern Scandinavia and Finland, where the values fall to 29.50 (749.3) at Gjæsvær, Norway. Off the southern extremity of Greenland the readings range below 29.70 (754.4). Over British India the isobar of 29.80 (756.9) incloses an area within which the barometer falls to 29.76 (755.9) at Bellary and Trichinopoly. Three areas of relatively low mean pressure, showing readings below 29.90 (759.4), are located, respectively, over the Sea of Okhotsk, the southwestern part of the North American continent, and the southern portion of the Caribbean Sea and the ocean to the eastward. At Sitka, Alaska, a reading of 29.84 (757.9) is reported.

The pressure is highest over east-central Asia, where it rises to 30.29 (769.4) at Nertschinsk, Siberia. A second area of high, bounded by the line of 30.20 (767.1), occupies a limited area over the extreme northwestern part of the United States. Over the north Atlantic Ocean the barometer is highest to the south and southwest of the British Isles, where it rises above 30.10 (764.5).

As compared with the chart of the preceding month a decided increase in pressure is shown over the extreme northwest part of the United States; over the Lake region and the Atlantic coast states there has been a decrease; in the Canadian Maritime Provinces the mean pressure is lower than in September, while in the Saskatchewan Valley there has been an increase of more than .10 of an inch. Over the north Atlantic Ocean the barometer has fallen in the vicinity of southern Greenland and off the northern coast of Norway, while over and near Iceland there has been a slight increase. The area of high located over the Azores has disappeared and the decrease in that locality amounts to about .30 of an inch. Over Europe there has been a decrease in pressure over Scandinavia, which amounts to .31 of an inch at Gjæsvær, Norway, while over the British Isles and southwestern Europe there has been an increase in localities of .10 of an inch. In British India the mean pressure averages from .10 to .20 of an inch higher than in September. There has also been an increase over Siberia and along the eastern coast of Asia from the Sea of Okhotsk to the Philippine Islands.

As compared with the corresponding month of previous years the mean pressure was above the normal over the United States west of the Mississippi River, except in California and southern Arizona, where there were small deficiencies. In some districts east of the Mississippi, notably in New England and the Canadian Maritime Provinces, the deficiencies ranged from .10 to .13 of an inch. Over the north Atlantic Ocean the pressure was below the normal, except in extreme high latitudes, where there was a marked excess. Over Europe the mean pressure was below the normal over the northern portions of the continent, the deficiencies ranging from .10 to .20 of an inch over Scandinavia. Elsewhere there was an increase, the departure being most marked over France, where it averaged .11 of an inch. In British India the pressure was somewhat above the normal, while over the balance of Asia there was apparently a general deficiency.

In the United States the mean temperature was decidedly below the normal in nearly all parts of the country east of the Rocky Mountains, the departures being greatest in the Lake region, where they amounted to from 4° to 8°. Along the Pacific coast the month was 4° to 10° warmer than the average October. In Canada the temperature was below the normal, except in the south of Nova Scotia, where it was above. On the islands of the north Atlantic Ocean from which reports have been received the departures from the normal temperature were small. In Europe the temperature was everywhere below the normal, the departures being most marked in Austro-Hungary, where they averaged 10°.8. In British India the temperature was slightly above the October normal.

The following table shows the mean pressure and mean temperature for October, 1887, in the several countries of the eastern hemisphere, and the departures as compared with means determined from observations taken during the last ten years:

Countries.	Mean pressure.			Mean temperature.		
	Oct. mean of 10 (1877–'86) years.	Oct., 1887.	Departure.	Oct. mean of 10 (1877–'86) years.	Oct., 1887.	Departure.
				°	°	°
Austro-Hungary	29.99	30.00	+ 0.01	56.5	45.7	−10.8
British Isles	29.92	30.01	+ 0.09	52.7	49.1	− 3.6
Denmark	29.89	29.82	− 0.07	49.6	47.7	− 1.9
France	29.98	30.09	+ 0.11	60.0	52.3	− 7.7
Germany	29.99	29.98	− 0.01	51.6	47.3	− 4.3
India	29.78	29.80	+ 0.02	81.4	81.8	+ 0.4
Italy	29.97	29.97	normal.	64.7	59.8	− 4.9
Japan	.....	30.04	.....	.....	60.4	.....
Norway	29.82	29.68	− 0.14	45.5	41.2	− 4.3
Russia	30.04	29.90	− 0.14	49.2	46.8	− 2.4
Spain*	30.01	30.10	+ 0.09	64.2	59.2	− 5.0
Sweden	29.89	29.68	− 0.21	43.0	40.2	− 2.8

* Means for nine years only.

The following table shows the deviations in pressure and temperature at isolated stations during the month of October, 1887, as compared with the means for ten years:

Stations.	Mean pressure.			Mean temperature.		
	Oct. mean of 10 (1877–'86) years.	Oct., 1887.	Departure.	Oct. mean of 10 (1877–'86) years.	Oct., 1887.	Departure.
				°	°	°
Archangel, Russia	29.85	29.68	− 0.17	37.7	32.2	− 5.5
Athens, Greece*	30.00	29.99	− 0.01	72.4	73.0	+ 0.6
Beirut, Turkey in Asia	29.95	29.93	− 0.02	79.0	82.8	+ 3.8
Barnaul, Siberia	30.17	30.07	− 0.10	37.4	41.9	+ 4.5
Bridgetown, Barbadoes	29.95	29.84	− 0.11	82.9	84.7	+ 1.8
Ekaterinburg, Russia	30.05	30.00	− 0.05	36.1	34.9	− 1.2
Funchal, Madeira Islands	30.12	30.02	− 0.10	72.2	72.9	+ 0.7
Gibraltar	30.05	30.06	+ 0.01	67.7	65.9	− 0.8
Havana, Cuba, W. I.	29.97	29.93	− 0.04	74.7	74.9	+ 0.2
Malta, Mediterranean Sea	.....	30.00	.....	73.6	71.3	− 2.3
Melbourne, New South Wales	29.99	29.96	− 0.03	54.1	54.5	+ 0.4
Mauritius, Indian Ocean	30.09	30.03	− 0.06	74.8	73.6	− 1.2
Nassau, Bahamas, W. I.	30.00	29.92	− 0.08	79.5	79.9	+ 0.4
Nikolaievsk-on-the-Amoor, Asia	.....	29.77	.....	.....	34.5	.....
Paramaribo, S. A*	29.97	.....	.....	81.0	.....	.....
Ponta Delgada, Azores	30.15	29.92	− 0.23	69.5	70.3	+ 0.8
Swanbister, Orkneys	29.82	29.99	+ 0.17	48.2	46.4	− 1.8
San Juan de Puerto Rico, W. I*	29.95	29.92	− 0.03	80.2	79.7	− 0.5
Stykkisholm, Iceland	29.74	29.90	+ 0.16	39.6	38.5	− 1.1
Thorshavn, Faröe Islands	29.84	29.92	+ 0.08	45.9	41.9	− 4.0
Tiflis, Russia	30.10	.....	.....	65.9	.....	.....
Tokio, Japan	30.07	30.07	normal	58.8	60.4	+ 1.6
Yeniseisk, Siberia	30.12	30.11	− 0.01	29.5	31.1	+ 1.6
Zi-Ka-Wei, China	30.14	30.09	− 0.05	61.2	60.8	− 1.4

* Means for nine years only.

In the United States the rainfall was below the average over a greater part of the country, the greatest deficiencies occurring in the central valleys. In the south Atlantic and east Gulf states, and in small areas to the west of the Mississippi, the precipitation was in excess. In Canada the rainfall fell below the average throughout the country, this being the eighth month during which a marked deficiency occurred in some parts of the Dominion.

Over the North American continent north to west winds prevailed over the Lake region, the Saint Lawrence Valley, and the Canadian Maritime Provinces; in the south Atlantic and Gulf states they were northerly; elsewhere they were variable. Over the north Atlantic Ocean the usual October wind-directions were disturbed owing to an abnormal distribution of atmospheric pressure. Over Europe the winds were mostly from south to west, except in the southwestern countries, where they were variable. In British India northerly winds were most frequently noted. Along the eastern coast of Asia, south

of the fortieth parallel, north to east winds prevailed, while to the northward of that latitude they were generally from the southwest quadrant.

TRACKS OF AREAS OF LOW PRESSURE FOR OCTOBER, 1887.

Chart iii exhibits paths of the principal depressions that appeared in the northern hemisphere during October, 1887. This chart continues the series of international charts begun in November, 1877, and has been prepared from the following data: Chart i for each day of the month, containing the data of simultaneous observations taken once each day at noon, Greenwich mean time; abstracts of ships' logs; special reports, and other miscellaneous data on file at this office.

The paths of the centres of thirty-eight areas of low pressure are shown, of which eleven are traced over the North American continent; fourteen over the north Atlantic Ocean; eight over Europe; two off the eastern coast of Asia, and three over the north Pacific Ocean in the vicinity of Sitka, Alaska. The average number of areas of low pressure traced over the northern hemisphere for October during the last eight years, 35.3, is 2.7 less than the number traced for October, 1887.

The storms that occurred over the North American continent are described in detail in the MONTHLY WEATHER REVIEW for October, 1887, under the heading "Areas of low pressure."

Of the depressions traced over the north Atlantic Ocean five were continuations of areas of low pressure whose paths are plotted over the North American continent; six were of tropical or sub-tropical origin; one first appeared off the middle Atlantic coast of the United States, and two apparently developed over the ocean north of the fiftieth parallel. The course of the storms was diversified, and their paths were unusually well distributed over the ocean. The severest storms of the month occurred over the eastern part of the ocean during the last six days of the month attending the passage of depressions numbers xxiii and xxv. On the 28th and 29th at noon, Greenwich time, the barometer readings at Thorshavn, Faroe Islands, were 28.89 (733.8) and 28.97 (735.8), respectively, and on the 31st the minimum was about 28.61 (726.7) to the westward of the British Isles. The abnormal course of depression number xii was apparently caused by an area of high barometer which occupied the ocean to the eastward during the first four days of the month, and which gradually moved northward over Iceland by the 7th, where it remained until the 10th, after which date it moved southward and deflected depression number xiii to a south-southeast course and subsequently caused its recurve to the westward over the Azores. The storms that appeared over the ocean in low latitudes and over the Caribbean Sea presented the usual characteristics of the storms of those regions, and were, as a whole, rather deficient in energy. Depression number xvi was remarkable on account of the extreme length of its path, which is traced from the Caribbean Sea to the west coast of the Gulf of Mexico, and thence northeastward over the United States to the Canadian Maritime Provinces, from whence it trends northeastward to the vicinity of Gjæsvær, Norway.

Over Europe the passage of depression number xxix from the Bay of Biscay to the Baltic Sea from the 9th to the 14th, inclusive, was attended by very low barometer readings and storms of great severity. Over Scandinavia and Finland the advance of depressions from the ocean to the northwestward caused the barometer readings to fall below 29.00 (736.6) during a considerable portion of the third decade of the month. The depressions that appeared over the Mediterranean Sea were of moderate energy and were apparently confined to the vicinity of the Italian Peninsula.

The depressions traced off the eastern coast of Asia moved northeastward from the Philippine Islands. Number xxxv exhibited central pressure falling to about 29.30 (744.2) over Kiu Siu on the 7th, after which its course cannot be traced with reports at hand. Number xxxvii possessed great energy on the 22d when central southeast of Kiu Siu, where the barometer ranged to 28.96 (735.6). The paths of the centres of three depressions which advanced eastward over the North American continent from the north Pacific Ocean are plotted in the vicinity of Sitka, Alaska.

SPECIAL NOTES.

THE GRAVITY CORRECTION.

The gravity correction, reducing all barometer readings to the standard gravity at latitude 45°, has been applied to all observations not so reduced by the observers themselves.

All data referring to force, velocity, or pressure (in pounds per square foot) of the wind, are reduced to the scale of 0-10, and the approximate value is indicated by the number of feathers on the arrow (see below).

MONTHLY SUMMARY OF INTERNATIONAL SIMULTANEOUS MET'L OBSERVATIONS.

The positions of stations (latitude and longitude) are obtained from Keith Johnson's "Index Geographicus," except where more exact information is furnished. The elevations of stations are obtained either from the annual, semi-annual, and monthly publications of the various meteorological bureaus here represented, or from the original forms upon which are entered the daily observations. In the United States series the elevations are computed from the latest surveys, and are carefully revised each month, in order to note any change in the elevation of the barometer-cistern at any station. It is believed for the most part that, throughout the European and other series, the elevations as given represent the height of the barometer-cistern above sea-level; at least this should be the case. The local time, where omitted or not given correctly in the original, is carefully computed at this office. A letter placed opposite the name of a station, or some portion of the data credited thereto, indicates that a certain number of observations are missing, corresponding to the relative position in the English alphabet of the letter so used.

At Baku the barometer-cistern is below sea-level.

INTERNATIONAL CHARTS.

International chart i shows the atmospheric pressure at sea-level in English inches, the isobars being drawn for every two-tenths of an inch.

Arrows show direction of, and fly with, the wind; force is shown as follows:

Symbols.	Force.	Velocity.	
		Miles per hour.	Metres per second.
○	0	0	0
	1, 2	0 to 9	0 to 4
	3, 4	9.1 to 22.5	4.1 to 10.1
	5, 6	22.6 to 40.5	10.2 to 18.1
	7, 8	40.6 to 67.5	18.1 to 30.2
	9, 10	67.6 up.	30.2 and over.

International chart ii (monthly mean chart) shows the mean pressure at sea-level in English inches; the mean force and prevailing direction of the wind, as determined from observations taken at noon, Greenwich mean time.

International chart iii shows the tracks of centres of low pressure. The Arabic numerals show the location of the centres of low pressure at noon, Greenwich mean time, of that date.

In the above charts, broken lines indicate that lines so drawn are doubtful.

List of merchant marine steam and sailing vessels from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of October, 1887—Continued.

Name of vessel.	Captain.
UNITED STATES NAVAL—Cont'd.	
U. S. S. Tallapoosa	Capt. F. W. Dickins.
U. S. S. Trenton	W. Farquhar.
U. S. S. Vandalia	H. L. Howison.
U. S. S. Yantic	O. Hagerman.
BRITISH NAVAL.	
H. M. S. Alexandra	J. Fellowes, C. B.
H. M. S. Audacious	R. H Harris.
H. M. S. Bacchante	A. W. Moore.
H. M. Dockyard, Bermuda	R. P. Dennistoun.
H. M. S. Dreadnought	H. F. Stephenson.
BRITISA NAVAL—Continued.	
H. M. S. Egria	Capt. P. Aldrich.
H. M. S. Espiegle	A. C. Clarke.
H. M. S. Himalaya	J. E. Stokes.
H. M. S. Hyacinth	E. Bourke.
H. M. S Icarus	W. M. Annesley.
H. M. S. Mariner	J. Dumford.
H. M. S. Myrmidon	R. F. Hoskyn.
H. M. S. Nelson	T. F. Hammill.
H. M. S Penguin	Haygarth.
H. M. S. Raleigh	B. Watson
H. M. S. Rambler	W. U. Moore.
H. M. S. Rifleman	C Prater.
BRITISH NAVAL—Continued.	
H. M. S. Ruby	Capt. W. R. Kennedy.
H. M. S. Satellite	Alington.
H. M. S. Sylvia	Dawson.
H. M. S. Torquoise.	R. Woodward, C. B.
NORWEGIAN NAVAL.	
Winona	
DUTCH NAVAL.	
H. D. M. S. Prinz Hendrig	
H. D. M. S. König	

List of foreign stations and observers from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of October. 1887.

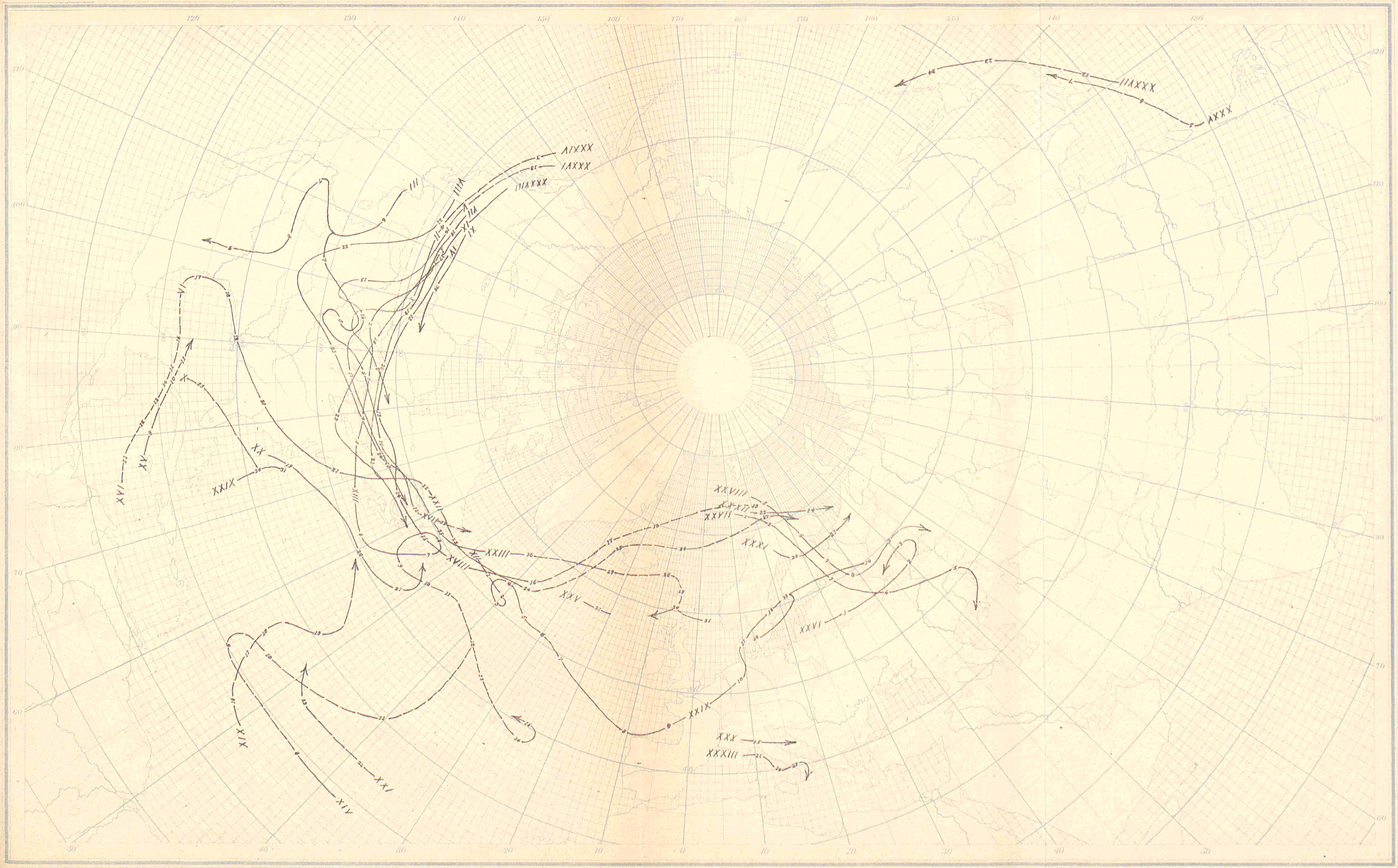
Stations.	Observers.
AUSTRALIAN.	
Adelaide	Chas. Todd.
Hobart Town, Tasmania	Com. J. Shortt, R.N.
Melbourne, Victoria	R. L. J. Ellery.
AUSTRO-HUNGARIAN.	
Agram	Prof. Ivan Stozir.
Cracow, I. R. Observatory	Dr. Wierzbiski.
Eperies	Julius Mikolik.
Gratz	Andreas Rospini.
Kremsmunster Observatory	The Staff.
Lemberg	Dr. T. Stanecki.
Pola	Fr. Ceeselrohe.
Szathmar	P. Tamasyanos, S. J.
Szegedin	Farkas Laszlo.
Trieste	Naval Observatory.
Vienna	I. R. Central Met. Obs'y.
BRITISH.	
Aberdeen	W. Boswell.
Bidston, Liverpool Obs'y	John Hartnup.
Bradford, Yorkshire	McLandsborough & Preston.
Bridgetown, Barbadoes, W. I.	A. T. Green.
Chatham, School M. E	Percy McHugo, R. E.
Falmouth, Observatory	The Staff.
Fort Napier, Natal	Thomas Murray, M. S. C.
Freetown, Sierra Leone	J. W. Smith.
Galway, Queen's College	Wm. Ryan.
Gibraltar, Mediterranean	F. Herbert.
Greenwich, Royal Observatory	The Staff.
Guernsey	A. Collenette, F.R.M.S.
Kew, Observatory	The Staff.
Leicester, Museum	J. C. Smith.
Malta, Mediterranean	R. R. Willan.
Nassau, Bahamas	J. A. Kerr.
Oxford, Radcliffe Observatory	The Staff.
Plymouth	John Merrifield.
Swanbister, Orkneys	W. I. Fortesque.
Scutari Cemetery, Turkey	W. H. Lyne.
Stonyhurst, Observatory	J. Roony.
Valentia, Observatory	The Meteorological Office.
Sub-series.	
Gozo, Episcopal Seminary	Rev. Louis Grech, S. J., Dir.
Malacca	W. R. Angus.
Penang	F. K. Hampshire, M. D.
CANADIAN.	
Bathurst, N. B	Miss Andrews.
Bird Rocks	T. Turbide.
Calgary	H. S. Cayley.
Chatham, N. B	G. A. Blair.
Cornwall, Ontario	W. D. Johnston, B. A.
Dalhousie, N. B	H. A. Johnson.
Father Point, Quebec	J. McWilliams.
Fort Garry, Manitoba	T. Warburton.
Fredericton, N. B	Dr. Harrison.
Grand Manan, N. B	J. Chipman Seeley.
Halifax, N S	A. Allison.
Hamilton, Ontario	T. S. Campbell, B. A.
Kingston, Ontario	A. P. Knight, M. A.
Little Glace Bay, N. S	C. H. Rigby, C.E.
London, Ontario	E. B. Reed.
Medicine Hat, N. W. T	John Ewart.
Minnedosa, N. W. T	Rev. J. M. Wellwood.
Montreal, Quebec	C. H. McLeod, C. E.
Ottawa, Ontario	A. McGill, M. A.
Parry Sound, Ontario	Rev. R. Mosley.
Peterborough, Ontario	J. H. Long.
Port Arthur, Ontario	W. P. Cooke.
Port Dover, Ontario	H. Morgan.
Port Stanley, Ontario	M. Payne.
Qu' Appelle, N. W. T	Leslie Gordon.
Quebec, Quebec	Captain Ashe, R. N.
Rockliffe, Ontario	W. H. McIntyre.
St. Andrews, N. B	S. T. Gove, M. D.
St. John, N. B	G. Hutchinson.
Saint Pierre, N. F	The Commandant.
Saugeen, Ontario	W. K. Stewart.
Southwest Point of Anticosti	
Stratford, Ontario	W. McBride, M. A.
Swift Current	W. G. Knight.
Sydney, C. B	T. C. Hill, C. E.
Toronto, Ontario	Magnetic Observatory.
Woodstock, Ontario	Prof. N. Wolverton, M. A.
Yarmouth, N. S	J. E. Murphy.
Sub-series.	
Saint Johns, N. F	J. Higgins.
CAPE COLONY.	
Cape St. Francis	I. Garfelt.
CHINESE.	
Foochow	A. E. Pfankuchen.
Hong Kong Observatory	The Staff.
Sub-series.	
Zi-Ka-Wei, near Shanghai	M. Marc Dechevrens, S. J.
South Cape, Formosa	G. Taylor.
DANISH.	
Copenhagen	Oversergent Fischer.
Fanöe	Overloerer Lauridsen.
Godthaab	S. Kleinschmidt.
Ivigtut	
Jacobshavn	
Stykkisholm	A. O. Thorlacius.
Thorshavn	Overloerer Bergh.
Upernavik	Loerer Oesterbol.
Vestervig	
FRENCH.	
Agen	M. Bousquet.
Alençon, Normal School	M. Nicot, Director.
Arras, Normal School	M. Sion, Director.
Avignon, Normal School	M. Liquier, Director.
Bar-sur-Seine	M. Saillard, Director.
Beauvais, Normal School	M. Mutelet.
Besançon, Normal School	M. Gobin, Director.
FRENCH—*Continued.*	
Bordeaux, Observatory	M. Rayet, Director.
Bourges, Normal School	M. Bourgoine, Director.
Brest, Naval Observatory	M. de Kermaree, Director.
Caen, Normal School	M. Berson, Director.
Châlons-sur-Marne, N. School	M. Mathieu, Director.
Charleville, Normal School	M. Noél, Director.
Clermont-Ferrand, Obs'y	M. Hurion, Director.
Cluny, Normal School	M. de Villemontée, Director.
Commercy	M. Vaissade.
Gap, Normal School	M. Poussel, Director.
Greasque, du Rhone	M. Kina, Director.
Grenoble	M. Ablard.
Guéret, Normal School	M. Delorme, Director.
Lescar, Normal School	M. Lefevre, Director.
Lorient, Naval Observatory	Lt. T. Carré, Director.
Lyon, St. Genis-Laval	M. André, Director.
Mans, Normal School	M. Tenot, Director.
Marseille, Observatory	M. Stephan, Director.
Montlouis	M. Cave for Dr. Fines.
Montpellier, Normal School	M. Galzin, Director.
Mont Ventoux	M. Blanc.
Nancy, Normal School	M. Hasse, Director.
Nantes, Observatory	M. Larocque, Director.
Nice, Normal School	M. Cantier.
Perpignan, Observatory	Dr. Fines, Director.
Pic-du-Midi, Summit	M. Vaussenat, Director.
Privas, Normal School	M. Curely, Director.
Puy de Dôme Obs'y, Summit	M. Hurion, Director.
Rochefort, Naval Observatory	Lt. E. Decante, Director.
Roche-sur-Yon, N. School	M. Brotier, Director.
Rodez	M. Richard.
Rouen, Normal School	M. Vieillot, Director.
Saint Brience	M. Richard.
Saint Maur, Observatory	M. Renon, Director.
Toulouse, Observatory	M. Baillaud, Director.
Tours	M. Letellier.
Sub-series.	
St. Martin du Hinx	M. Carlier, Director.
GERMAN.	
Ansbach	Prof. Jüdt.
Bamberg	Prof. Dr. Hoh.
Berlin	Meteorological Institute.
Breslau	Royal University Obs'y.
Carlsruhe	Albert Senz.
Cassel	Dr. H. Möhl.
Frankfort-on-the-Main	Physical Society.
Friedrichshafen	Wilhelm, Chief Tel.
Hamburg	Carl H. Seeman.
Kiel	Dr. Dr. G. Karsten.
Leipsic, Astronomical Obs'y	H. Leppig, Assistant.
Memel	Issermann.
Munich	Dr. C. Lang.
Neufahrwasser	A. Lothes.
Neustadt, Palatinate	Prof. Dicknether.
Stuttgart	Dr. L. Meyer.
Wustrow	Profs. Brandes & Reimer.
GREEK.	
Athens	Kokkides & Wourlisch.
INDIAN.	
Kurrachee	
Deesa	
Bombay	
Poona	
Belgaum	
Lahore	
Roorkee	
Agra	
Nagpur	
Jubulpore	
Lucknow	
Allahabad	
Patna	
Hazaribagh	
Calcutta	
Chittagong	
Cuttack	
Dhubri	
Sibsagar	
Jeypore	
Bellary	
Trichinopoly	
ITALIAN.	
Udine	Prof. Giovanni Clodig.
Milan	Prof. G. V. Schiapparelli.
Padua	Prof. Dott. Lorenzoni.
Moncalieri	Prof. P. F. Denza.
Genoa	Prof. G. M. Garibaldi.
Cuneo	
Pesaro	Prof. Luigi Guidi.
Florence	Prof. Constantino Pittei.
Leghorn	Prof. P. Monte.
Rome	Prof. P. Tacchini.
Cosenza	Prof. D. Conti.
Palermo	G. Cacciatori.
Syracuse	Sig. V. Giuliano.
ITALIAN SUB-SERIES	
Stelvio	Prof. P. F. Denza.
Valdobbia	Prof. P. F. Denza.
JAPANESE.	
Akita	S. Hattori.
Awomori	K. Ogawa.
Fushiki	T. Tokuda.
Gifu	R. Ikuchi.
Hakodate	O. Endo.
Hamamatsu	Y. Sekigawa and T. Ogi.
Hiroshima	Y. Okamoto.
Itsuhara	H. Tanaka.
Kanazawa	S. Kuriyama.
Kagoshima	G. Miyanohara.
JAPANESE—*Continued.*	
Kioto	K. Nishiyama.
Kochi	K. Kusunose.
Miasaka	T. Ishitain & T. Saki.
Miyako	K. Suwa.
Nagasaki	K. Yamasaki and M Chin.
Nemuro	M. Itabashi.
Niigata	M. Morita.
Numadzu	R. Kaneda.
Osaka	H. Omura.
Sakai	K. Yamawchi & P. Yoshimura
Shimonoseki	D. Kobayshi.
Tokei	The Staff.
Wakayama	K. Sakai.
MAURITIUS.	
Mauritius R. A. Observatory	The Staff.
MEXICAN.	
Guanajuato	Prof. Vicente Fernandez.
Leon	Prof. M. Leal & Espana.
Mazatlan	C. Carmina.
Mexico	The Staff.
San Louis Potosi	G. Barrocta.
NETHERLANDS.	
Flushing	
Groningen	
Helder	
Hellevoetsluis	
Utrecht	G. F. C. Zaalberg.
Sub.	
Batavia	Dr. I. P. v. d. Stok.
NORWEGIAN.	
Bergen	
Brono	
Christiania	
Gjæsvær	
PORTUGUESE.	
Angra	Dr. J. A. Sampaio.
Funchal, Madeira	Capt. D. A. de Cunha.
Lisbon, Observatory	The Staff.
San Salvador	
St. Vincent, Cape Verd	
RUSSIAN.	
Archangel	Capt. Sseliwerstow.
Baku	
Barnaul	Meteorological Office.
Dorpat	Blumbach.
Ekaterinburg	Meteorological Observatory.
Elisavetgrad	
Irkutsk	Ed. Stelling.
Kasalinsk	Butkewitsch.
Kasan	Observatory.
Kem	M. Kosnobr.
Kertch	E. M. Zacmsipeyz.
Kieff	Observatory.
Kischinev	
Korostishev	
Koslov	
Libau	E. Quaas.
Lugan	Meteorological Observatory.
Moscow	Meteorological Observatory.
Nerchinsk	
Nikolaiev	Capt. Kurdakow.
Nikolaievsk-on-the Amoor	Schonberg.
Nikolsk	Nadeshdin.
Perm	
Petro-Alexandrovsk	Walther.
Petrozavodsk	Dr. Bergmann.
Pinsk	
Poti	
St. Petersburg	Central Physical Observatory.
Samarkand	Dresch.
Sevastopol	Coionobr.
Tashkend Laboratory	Teich, A. M.
Viatka	
Warsaw	Astronomical Observatory.
Yeniseisk	Wishnewzky.
Sub-series.	
Petrowsky Academy	Bachmetieff.
SCOTCH.	
Leith	J. Bolam & Geo. Redpath.
SPANISH.	
Bilbao, Met. Observatory	Tomas Eschriche.
Burgos, Met. Observatory	Domingo Martin.
Madrid, Royal Observatory	The Staff.
Santiago, Met. Observatory	R. Gil Villanueva, Director.
Sub-series.	
Havana, Cuba	Benito Viñes, S. J.
Manilla, Philippine Islands	F. Faura, S. J.
San Fernando, Naval Obs'y	Capt. C. Pujazon, R. N.
San Juan de Porto Rico, W. I.	Enrique Gadea, Ch'f Eng'r.
SWEDISH.	
Haparanda	
Umea	
Hernosand	
Stockholm	
Wisby	
Sub-series.	
Upsala	Nils. Ekholm.
SWISS.	
Geneva	Observatory.
TURKISH.	
Constantinople	The Observatory.
Valona	A. Bertrand.
Sub-series.	
Beirut, Lee Obs'y, Syria	R. H. West, B. A., Director
UNITED STATES SUB-SERIES.	
Bogota	J. G. Otero.
Kingston	Maxwell Hall.
Vera Cruz	Capt. Geo. E. Powell.

International Chart II. October, 1887. Isobars and Winds.

Signal Office Lith.

Form No. 106 R---1887.

International Chart III. October, 1887. Tracks of Areas of Low Pressure.



Signal Office Lith.

WAR DEPARTMENT.
OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY OF THE UNITED STATES.

SUMMARY AND REVIEW

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS

FOR THE MONTH OF NOVEMBER, 1887.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

A. W. GREELY,
BRIGADIER GENERAL, CHIEF SIGNAL OFFICER OF THE ARMY.

PRINTED FOR EXCHANGE WITH CO-OPERATING OBSERVERS.

WASHINGTON, D. C.
JANUARY, 1889.

List of merchant marine steam and sailing vessels from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of November, 1887.

	Name of vessel.	Captain.
Br.	s. s. Adriatic	Capt. J. G. Cameron.
	Ailsa	J. W. Sanson.
Am.	Alamo	Samuel Risk.
Br.	Alene	E. J. Seiders.
Ger.	Aller	H. Christoffers.
Br.	Alsatia	J. Brown.
	Alvena	F. McKay.
	Alvo	D. Williams.
Ger.	Amalfi	Julius Bahr.
Br.	Ambrose	E. Bisson.
Ger.	America	H. Hincke.
Br.	Amoor	H Gasson.
	Auchoria	W. Brown.
	Arabic	Geo. Burton.
	Arizona	S. Brooks.
	Athos	H. Low.
Am.	Atlas	J. W. Tobin.
Br.	Aurania	W. H. P. Hains.
	Auretta	G. W. Read, F.R.S.
Ger.	Australia	G. Franck.
Br.	Baltimore	J. Trenery.
	Bavarian	R. Leask.
	Beechville	T. W. Watson.
Belg.	Belgenland	W. A. Beynon.
Br.	Ben Ledi	S. Adamson.
	Bessel	C. J. Watson.
Am.	Breakwater	J. E. Dole.
Br.	Britannic	H. Parsell.
	British Crown	A. Smith
	British King	John Kelly.
	British Prince	Samuel Nowell.
	British Princess	E H. Freeth.
	Brooklyn City	W. Fitt.
	Buenos Ayrean	J. Scott.
	Buffalo	J. H. Malet.
	Bulgarian	E. Parry.
	Caledonia	F. Hassenstein.
Ger.	California	O. Winkler.
Br.	Canada	J. Robinson.
Span.	Carolina	Alex. Ugalde.
Br.	Celtic	P. J. Irving.
	Cephalonia	Henry Walker.
	Cervin	S. Hughson.
Fr.	Chateau Lafitte	C. Ollivier.
	Chateau Yquem	C. F. Journiel.
Br.	Chicago	J. W. Jones.
	Chilian	E. F. Bannister.
Am.	Cienfuegos	F. M. Faircloth.
Br.	Circassia	A. Campbell.
Am.	City of Alexandria	J. W. Reynolds.
	City of Augusta	J. W. Catherine.
Br.	City of Chester	A. Lewis.
	City of Chicago	Fred Watkins.
Am.	City of Dallas	C. W. Read.
	City of New York	R. R. Searle.
	City of Para	L. Dexter
Br.	City of Richmond	A. Redford.
	City of San Antonio	J. Wilder.
	City of Savannah	H. C. Daggett.
Am.	City of Washington	W. M. Rittig.
Br.	Claribel	J. Evans.
Am.	Colon	F. Henderson.
	Colorado	J. Daniel.
Br.	Columbia	T. Mitchell.
	Counsellor	W. Lang.
	Cyprus	E. Guild.
Belg.	De Ruyter	J. J. Brarens.
Br.	Devonia	W. G. Crockhart.
Gr.	Donau	M. Moller.
Br.	Dorian	J. McKeague.
	Dorset	Ch. Off. E. Crossman.
	Duke of Buckingham	Capt. T. C. Burnside.
	Earnmoor	R. J. Grey.
Dtch.	Edam	J. H. Taat.
Br.	Egypt	J. Sumner.
	Egyptian Monarch	John Harrison.
Ger.	Elder	P. H. Berdrow.
	Elbe	G. Meyer.
Br.	El Callao	J. Scholtz.
Ger.	Ems	Th. Jungst.
Br.	England	A. F. Heeley.
	Erin	Thos. Foote.
	Ethelbald	Ch. Smith.
	Ethiopia	John Wilson.
	Etruria	T. Cook.
Am.	Eureka	R. B. Quick.
Br.	France	A. D. Hadley.
Ger.	Fulda	R. Ringk.
Br.	Furnessia	J. Hedderwick.
	Galileo	R. T. Jones.
Dan.	Geiser	C. W. Moeller.
Br.	Germanic	B. Gleadell.
	Gothenburg City	James Harrison.
Ger.	Gothia	H. Bauer.
Br.	Grecian	C. E. Le Gallais.
	Greece	A. J. Jeffrey.
	Gwendoline	Robt. Milburn.
Dan.	Hekla	A. G. Thomsen.
Br.	Helvetia	G. Cochrane.
Ger.	Hermann	A. Kohlmann.
Br.	Herschel	Ch. Off M. Seiders.
	Hibernian	Capt. J. Brown.
	Holland	W. Tyson.
Am.	Hudson	H. R. Freeman.
Span.	Hugo	A de Mugica.
Br.	India	John Jameson.
Am.	Indiana	W. J. Boggs.
	Iowa	E. W. Owens.
Dan.	Island	W. Skjodt.
Br.	Istrian	T. H. Fox.
	Italy	W. Pearce.
	Kansas	W. Gleig.
Br.	s. s. King's Cross	Capt. G. J. Mills.
Fr.	La Bourgogne	E. Franguel.
	La Bretagne	M. de Jousselin.
	La Champagne	E. Traub.
	La Gascogne	C Santelli.
	La Normandie	G. de Kersabiec.
Br.	Lake Nepigon	— Murray.
	Lake Superior	William Stewart.
Am.	Lampassas	M. B. Crowell.
Dtch.	Leerdam	G. Stenger.
Ger.	Lessing	H. Barends.
Br.	Lord Clive	P. Urquhart.
	Lord Gough	E. M. Hughes.
Am.	Lorenzo D. Baker	W. F. Wyley.
	Louisiana	E. V. Gager.
Ger.	Main	H. Boedeker.
Am.	Manhattan	Frank Stevens.
Br.	Manitoban	W. Dunlap.
Span.	Manuel L. Villaverde	A. Gardon.
Br.	Marengo	T. M. Irwin.
Ger.	Marsala	N. Maass.
Br.	Martello	Wm. Abbott.
	Mentmore	C. W. Simpson.
	Merchant Prince	Chas. Taylor.
Ger.	Moravia	O. Pezoldt.
Br.	Muriel	G. S. Locke
	Napier	J. W. W. Henderson.
	Nasmyth	T. T. Farrell.
Belg.	Nederland	A. J. Griffin.
Br.	Nessmore	Geo. Elliott.
Fr.	Neustria	P. Verries.
Br.	Nevada	J. Douglas.
Am.	New Orleans	T. P. Halsey.
	Newport	W. G. Shackford.
	New York	Geo. W. Mason.
Belg.	Noordland	H. E. Nickels.
Br.	Norseman	D. Morris.
Am.	Neuces	J. Bolger.
Br.	Oceanic	John Metcalf.
Am.	Ohio	R. W. Sargent.
Br.	Olbers	James Clark.
	Olympia	L. Swain.
Dtch.	Oranje Nassau	J. A. J. LaCrooy.
Br.	Orinoco	J. S Garvin.
	Otranto	W. Rippeth.
	Pavonia	A. McKay.
	Pawnee	John James.
Dtch.	P. Caland	F. H. Bonjer.
Belg.	Pennland	Rud Weyer.
Am.	Pennsylvania	A. B. Thomas.
Br.	Persian Monarch	Bristow.
Am.	Philadelphia	Sam. Hess.
Ger.	Polaria	Johannes Schade.
	Polynesia	A. Kuhn.
Br.	Pomona	J. Legoe.
	Ponca	W. Bowen.
	Pontiac	H. W. Brown.
	Port Phillip	G. Dulling.
Ger.	Rhaetia	H. Vogelgesang.
	Rhein	W. Topser.
Belg.	Rhynland	J. C. Jamison.
Br.	Richmond Hill	A. Hyde.
Am.	Rio Grande	Jas. F. Lewis.
Dtch.	Rotterdam	G. J. Vis.
Br.	Roxbury Castle	A. Turpin.
Ger.	Rugia	C. Kordell.
	Saale	H. Reichter.
Br.	Saint Ronans	H. Campbell.
	Salerno	B. H. Rogers.
	Santiago	R. Potter.
	Sarmatian	Wm. Richardson.
	Sarnia	Jos. Gibson.
	Scandinavian	John Park.
Dtch.	Schiedam	A. Potjer.
Br.	Scythia	T. Roberts.
Span.	Serra	F. de Luzaraga.
Br.	Servia	H. McKay.
	Siberian	R. P. Moore.
	Sidonian	B. Jamieson.
Ger.	Slavonia	H Schmidt.
Br.	Sorrento	F. W. Ouston.
	Spain	W. A. Griffiths.
	State of Georgia	G. Moodie.
	State of Indiana	A. Ritchie.
	State of Nebraska	A. G. Braes.
	State of Nevada	J. A. Stewart.
	State of Pennsylvania	A. J. A. Mann.
Am.	State of Texas	Gilbert Williams.
Belg.	Strabo	A. Matheson.
Br.	Straits of Gibraltar	G. Grigs.
	Strathleven	C. W. Pearson.
Ger.	Suevia	C. Ludwig.
Br.	Surrey	E. Griffiths.
Belg.	Switzerland	J. Ueberweg.
Br.	The Queen	T. P. Heeley.
Dan.	Thingvalla	S. T. H. Laub.
Br.	Thornhill	James Wetherell.
Ger.	Trave	W. Willigerod.
Br.	Trinacria	G Mitchell.
	Umbria	W. McMickan.
Belg.	Vaderland	C. H. Grant.
Am.	Valencia	W. Woodrick.
Br.	Vancouver	C. J. Lindall.
	Viola	L. Murray.
	Virginian	M. Fitt.
Belg.	Waesland	H. Buschmann.
Br.	Warwick	L. Morice.
Ger.	Werra	R. Bussius.
	Weser	H. Bruns.
Belg.	Westernland	Com. W. G. Randle.
Ger.	Wieland	Capt. A. Albers.
Br.	Winston	J. B. Milliard.
Br.	s. s. Wisconsin	Capt. Edward Bentley.
	Wylo	T. L. Rogers.
	Wyoming	C. L. Rigby.
Am.	Yemessee	1st Off. J. C. Norton.
	N. Y. Herald Weather Service.	
Br.	Advance	Capt. James Lord.
	Alaska	Geo. S. Murray.
Am.	Algiers	J. B. Percy.
Br.	Barracouta	Robert Hubbard.
Am.	Caracas	N M. Hopkins.
Br.	Denmark	R. S. Rigby.
Am.	El Monte	J. W. Hawthorne.
	El Paso	H. S. Quick.
	Knickerbocker	F. Remble.
Br.	Llandaff City	T. H. Gore.
	Nova Scotian	R. H. Hughes.
Br.	Portia	Henry Dawson.
	Samana	W. Taylor.
	Sailing Vessels.	
Am.	bg. Abbie Clifford	D. W. Storer.
	bk. Abyssinia	B. R. Hilton.
Br.	bgt. Achsah	A. M. Shaw.
It.	bk. Agostino Rombo	Basso Vincenzos.
Am.	Alice	W. G. Kair.
It.	Angelica Accame	Vincengo Niggi.
Swed.	Arab Steed	C. A. Skantze.
Ger.	bg. Atlantic	A. Witte.
Am.	bkt. Bonny Doon	Chas. Burgess.
Ger.	bk. Bremerhaven	H. Bothe.
Am.	schr. C B. Church	N. A. Anderson.
Br.	sp. Chas. S. Whitney	Geo. D. Spicer.
Ger.	bk. Cornelius	N. Windhorst
Br.	C. S. Parnell	McLaughlin.
Ger.	sp. Dakota	N. E. Schaffer.
Am.	E. B. Sutton	E. O. Carter.
It.	bk. Est	E. Tassino.
Am.	Evanell	Mate A. P. Goodman.
Ger.	sp. Fidelio	Capt. T. H. Schütte.
Am.	schr. Florence Rogers	J. S. F. McLeod.
Ger.	sp. Georg	G. Scholtz.
Nor.	bk. Grundloven	O. G. Ellingsen.
Dtch.	Helena	T. T. Verbeet.
Nor.	Hermon	O. Olsen.
Am	sp. Independence	Samuel Pavett.
	bg. Jane Adeline	G. W. Cates.
	John H. Crandon	W. S. Richardson.
Br.	bk. José E. More	A. Lenhard.
Por.	bk. Julius	F. D. Vieira.
Ger	Kepler	G. Atken.
It.	Lazzaro Bianchi	Dall Orso.
Ger.	Leocadia	John Stohff.
Am.	bg. L. F. Munson	J. V. McKowen.
	Lillian	H. F. Schive.
	sp. Light-ship No. 37	Andrew Jackson.
Am.	bg. Lucy W. Snow	P. F. Burgess.
Br.	sp. Mabel Taylor	Chas. E. Durkee.
	bk. Maduro	O. Bernier.
Nor.	Martin Luther	A. O. Arnesen.
Br.	Mary	Charles Acocks.
Nor.	sp. M. D. Metcalf	E. P. Larsen.
Am.	bk. Mohican	B. F. Berry.
Br.	sp Moy	Albert Hilder.
	Nebo	Eugene Chirus.
Ger.	bk. Pillan	G. Gerlach.
Nor.	Qvos	G. Olsen.
Ger.	Richard	A. von Seggern.
Br.	bkt. Rosebud	John Collie.
	sp. Sapphire	G. W. Murray.
Am.	bk. Sarah	L. R. Hale.
	bg. Sarah Doe	B. S. Merryman.
	S. R. Lyman	A. Pinkham.
It.	bk. Teresa Accame	G. Boetto.
Am	Tillie Baker	J. W. Carty.
Ger.	Western Chief	Fr. Sander.
Br.	sp. Winnifred	R. MacDonald.
	United States Naval.	
	U. S. S. Adams	Louis Kempff.
	U. S. S. Alert	J. D. Graham.
	U. S. S. Albatross	Z. L. Tanner.
	U. S. S. Alliance	C. McGregor.
	U. S. S. Atlanta	F. M. Bruce.
	U. S. S. Brooklyn	Byron Wilson.
	U. S. S. Enterprise	
	U. S. S. Essex	Theo. F. Jewell.
	U. S. F. C. Fish Hawk	
	U. S. S. Galena	C. M. Chester.
	U. S. S. Iroquois	R. P. Leary.
	U. S. S. Jamestown	C. J. Nain.
	U. S. S. Juniata	G. T. Davis.
	U. S. S. Lancaster	S. L. Breese.
	U. S. S. Marion	Merrill Miller.
	U. S S Mohican	B. F. Day.
	U. S. S. Monocacy	Henry Glass.
	U. S. S. Monongahela	S. H Baker.
	U. S. S. Omaha	F. V. McNair.
	U. S. S. Ossipee	Wm. B. Hoff.
	U. S. S. Palos	J. R. Craig.
	U. S. S. Pensacola	Geo. Dewey.
	U. S. S. Pinta	
	U. S. S. Portsmouth	Edwin White.
	U. S. S. Quinnebaug	W. L. Folger.
	U. S. S. Ranger	F. A. Cook.
	U. S. S. Richmond	Robert Boyd.
	U. S. S. Saratoga	C. H. Davis.
	U. S. S. Tallapoosa	F. W. Dickins.
	U. S. S. Trenton	W. Farquhar.

SUMMARY AND REVIEW OF INTERNATIONAL METEOROLOGICAL OBSERVATIONS, NOVEMBER, 1887.

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for November, 1887. Mean Barometer. Actual Inch.	Actual Mill.	Reduced Inch.	Reduced Mill.	Mean temperature. Fah.	Cent.	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
AUSTRALIAN.	° ′	° ′																								
Adelaide	S. 34 57	E. 138 35	9.00 p.m.	140	43	29.89	759.2	30.02	762.5	60.1	15.6	62	1	.....	1	4	8	11	2	1	2	7961	12007	4	0.94	23.9
Hobart Town	S. 42 53	E. 147 20	9.00 p.m.	190	58	29.82	757.4	30.03	762.7	51.0	10.6	89	2	2	2	6	10	2	2	3	1	.....	.....	7	1.83	46.5
Melbourne	S. 37 50	E. 144 58	9.40 p.m.	91	28	29.97	761.2	30.04	763.0	57.9	14.4	76	1	.....	.....	3	6	4	3	3	.....	.....	.....	5	3.67	93.2
AUSTRIAN.																										
Agram	N. 45 48	E. 15 53	1.04 p.m.	535	163	29.32	744.6	29.90	759.4	47.5	8.6	77	.....	.....	5	6	1	1	7	9	1	.....	.....	8	5.58	141.7
Cracow	N. 50 04	E. 20 00	1.20 p.m.	722	220	29.07	738.4	29.88	758.9	44.8	7.1	79	1	1	10	4	3	1	6	4	.....	.....	.....	7	0.79	20.0
Gratz	N. 47 04	E. 15 28	1.02 p.m.	1171	357	28.61	726.6	29.89	759.1	43.2	6.2	85	.....	2	1	10	5	5	2	5	.....	.....	.....	7	5.90	149.9
Kremsmunster	N. 48 03	E. 14 08	0.57 p.m.	1260	384	28.45	722.5	29.83	757.7	38.3	3.5	91	.....	.....	5	3	.....	.....	1	6	15	.....	.....	8	3.58	91.0
Lemberg	N. 49 50	E. 24 00	1.36 p.m.	978	298	28.87	733.3	29.94	760.5	43.3	6.3	75	.....	8	.....	3	2	13	.....	4	.....	.....	.....	6	0.62	15.8
Pola	N. 44 52	E. 13 51	0.55 p.m.	105	32	29.72	754.9	29.84	757.9	54.1	12.3	80	.....	2	6	3	3	6	5	4	1	.....	.....	6	7.68	195.1
Szathmar	N. 47 46	E. 22 53	1.32 p.m.	430	131	29 48	748.9	29.98	761.5	48.7	9.3	69	.....	2	1	5	4	10	7	1	.....	.....	.....	6	1.97	50.1
Szegedin	N. 46 15	E. 20 10	1.21 p.m.	295	90	29.57	751.0	29.89	759.2	48.6	9.2	81	2	2	6	2	12	3	2	1	.....	.....	.....	5	1.67	42.4
Trieste	N. 45 39	E. 13 46	0.55 p.m.	85	26	29.77	756.1	29.85	758.2	52.5	11.4	76	.....	1	2	3	1	2	4	4	13	.....	.....	8	5.80	147.4
Vienna	N. 48 12	E. 16 22	1.05 p.m.	663	202	29.13	739.9	29.88	758.9	42.1	5.6	82	3	3	7	.....	2	10	.....	1	4	.....	.....	8	3.71	94.3
BRITISH.																										
Aberdeen	N. 57 10	W. 2 06	11.52 a.m.	89	27	29.55	750.6	29.67	753.6	42.4	5.8	74	2	1	11	4	4	2	2	4	.....	9776	15733	7	2.62	66.5
Bidston	N. 53 24	W. 3 04	11.48 a.m.	197	60	29.46	748.3	29.70	754.4	43.0	6.1	75	3	.....	3	8	4	5	2	5	.....	.....	.....	7	.....	.....
Bradford	N. 53 48	W. 1 47	11.53 a.m.	366	112	29.28	743.7	29.71	754.6	42.5	5.8	76	6	.....	8	3	2	3	1	7	.....	.....	.....	8	2.05	52.1
Bridgetown	N. 13 04	W. 59 37	8.02 a.m.	28	9	29.88	758.9	29.84	757.9	82.4	28.0	77	.....	.....	.....	.....	.....	1	10	19	.....	.....	.....	6	.....	.....
Chatham	N. 51 25	E. 0 33	0.02 p.m.	130	40	29.58	751.3	29.75	755.6	42.3	5.7	83	.....	1	6	2	.....	.....	8	3	10	.....	.....	8	.....	.....
Falmouth	N. 50 09	W. 5 04	11.40 a.m.	183	56	29.49	749.0	29.70	754.4	46.4	8.0	76	7	3	3	4	3	2	3	5	.....	.....	.....	6	.....	.....
Freetown	N. 8 30	W. 13 14	11.07 a.m.	224	68	29.59	751.6	29.74	755.4	87.6	30.9	92	.....	3	2	13	5	2	.....	5	.....	.....	.....	4	.....	.....
Fort Napier	S. 30	E. 31	2.04 p.m.	2294	699	27.64	702.0	29.82	757.4	75.6	24.2	41	3	2	.....	2	3	6	7	5	2	.....	.....	5	.....	.....
Galway	N. 53 15	W. 9 03	11.24 a.m.	32	10	29.61	752.1	29.66	753.4	44.2	6.8	91	8	2	2	7	3	3	1	4	.....	.....	.....	7	4.50	114.3
Greenwich	N. 51 29	0 00	12 m.	159	48	29.53	750.0	29.73	755.1	43.8	6.6	84	7	.....	.....	6	5	2	4	6	.....	.....	.....	7	.....	.....
Guernsey	N. 49 27	W. 2 41	11.49 a.m.	275	84	29.42*a*	747.3*a*	29.73*a*	755.1*a*	48.3*a*	9.1*a*	82*a*	3	2	5	5	1	2	7	5	.....	.....	.....	6	7.28	184.9
Kew	N. 51 28	W. 0 19	11.59 a.m.	34	10	29.68	753.9	29.73	755.1	43.5	6.4	81	4	.....	4	6	2	1	4	9	.....	.....	.....	7	.....	.....
Leicester	N. 52 39	W. 1 08	11.55 a.m.	245	75	29.43	747.5	29.72	754.9	43.9	6.6	81	3	.....	2	12	1	.....	.....	10	2	.....	.....	6	.....	.....
Malta	N. 36 00	E. 14 30	0.58 p.m.	70	21	29.83	757.7	29.88	758.9	65.7	18.7	70	.....	5	5	11	.....	6	1	2	.....	.....	.....	5	.....	.....
Nassau	N. 25 04	W. 77 22	6.51 a.m.	44	13	29.99	761.7	29.98	761.5	75.1	23.9	71	8	3	1	.....	.....	1	3	12	2	.....	.....	7	.....	.....
Oxford	N. 51 46	W. 1 17	11.55 a.m.	210	64	29.47	748.5	29.72	754.9	42.6	5.9	82	4	.....	2	6	2	2	.....	12	2	.....	.....	6	.....	.....
Plymouth	N. 50 22	W. 4 10	11.43 a.m.	125	38	29.55	750.6	29.70	754.4	45.6	7.6	81	1	3	2	4	2	2	10	3	3	.....	.....	7	.....	.....
Swanbister	N. 58 55	W. 3 05	11.46 a.m.	72	22	29.56	750.8	29.67	753.6	44.6	7.0	78	8	3	3	4	1	4	3	4	.....	.....	.....	8	.....	.....
Scutari Cemet'y	N 41 00	E. 29 03	1.56 p.m.	60	18	29.90	759 4	29.95	760.7	58.8	14.9	73	1	1	1	10	5	2	.....	5	5	.....	.....	5	.....	.....
Stonyhurst	N. 53 51	W. 2 28	11.50 a.m.	361	110	29.25	742.9	29.68	753.9	41.5	5.3	78	6	.....	4	5	4	2	3	6	.....	.....	.....	9	2.47	62.7
Valentia	N. 51 55	W. 10 18	11.19 a.m.	23	7	29.66	753.4	29.70	754.4	46.9	8.3	78	6	5	1	4	4	2	2	6	.....	.....	.....	8	.....	.....
Sub-series.																										
Gozo	N. 36 01	E. 14 16	0.57 p.m.	364	111	29.54	750.3	29.90	759.4	64.1	17.8	70	.....	9	4	8	2	2	4	1	.....	4665	7513	6	3.08	78 2
Malacca	N. 2 10	E. 102 14	6.49 p.m.	12	4	29.81	757.2	29.74	755.4	79.3	26.3	92	3	.....	4	.....	.....	3	5	15	.....	.....	.....	3	6.76	171.7
Singapore	N. 1 17	E. 103 51	6.55 p.m.	10	3	29.90	759.4	29.83	757.7	76.7	24.8	93	3	2	1	.....	.....	.....	.....	2	22	.....	.....	5	10.28	261.1
CANADIAN.																										
Bathurst	N. 47 39	W. 65 42	7.37 a.m.	35	11	29.92	760.0	29.97	761.2	28.0	— 2.2	83	.....	4	9	4	1	.....	3	.....	9	.....	.....	7	3.22	81.8
Bird Rocks	N. 47 50	W. 61 10	7.56 a.m.	.....	.....	29.78	756.4	29.91	759 7	34.8	1.6	85	5	8	5	5	5	1	.....	1	.....	.....	.....	7	3.14	79.8
Calgary	N. 50 55	W. 114 04	4.24 a.m.	?	?	26.32	668.5	30.10	764.5	17.6	— 8.0	79*e*	1	5	7	.....	2	2	.....	.....	13	.....	.....	4	0.99	25.2
Chatham	N. 47 03	W. 65 29	7.38 a.m.	56	17	29.92	760.0	29.98	761.5	28.1	— 2.2	85	1	7	10	2	1	.....	1	1	7	.....	.....	6	5.51	140.0
Cornwall	N. 45 01	W. 74 43	7.01 a.m.	175	53	29.76	755.9	29.96	761.0	31.0	— 0.6	86	11	1	6	4	5	.....	.....	2	1	.....	.....	7	1.01	25.7
Dalhousie	N. 48 04	W. 66 22	7.35 a.m.	45	14	29.90	759.5	29.95	760.7	26.9	— 2.8	.....	.....	3	10	1	.....	.....	4	.....	7	.....	.....	7	2.19	55.6
Father Point	N. 48 31	W. 68 28	7.26 a.m.	20	6	29.90	759.4	29.93	760.2	26.7	— 2.9	86	3	9	2	4	5	2	.....	4	1	.....	.....	8	3.70	94.0
Fort Garry	N. 49 51	W. 97 07	5.32 a.m.	754	230	29.18	741.2	30.08	764.0	12.4	—10.9	91	6	3	3	2	11	4	1	.....	.....	.....	.....	6	1.03	26.2
Fredericton	N. 45 57	W. 66 38	7.33 a.m.	164	50	29.80	756.9	29.99	761.7	29.8	— 1.2	78	2	8	4	.....	.....	4	3	2	7	4294	6910	7	3.60	91.4
Grand Manan	N. 44 46	W. 66 45	7.33 a.m.	49	15	29.93	760.2	29.98	761.5	34.2	1.2	82	5	6	3	2	3	4	.....	1	6	.....	.....	6	2.77	70.4
Halifax	N. 44 39	W. 63 36	7.46 a.m.	122	37	29.87	758.7	30.01	762.2	36.0	2.2	86	3	5	6	7	2	6	.....	1	.....	.....	.....	6	5.92	150.4
Hamilton	N. 43 16	W. 79 53	6.40 a.m.	372	113	29.64	752.9	30.07	763.8	35.2	1.8	77	1	.....	13	2	11	.....	2	1	.....	.....	.....	5	2.21	56.2
Kingston	N. 44 14	W. 76 30	6.54 a.m.	307	94	29.64	752.8	29.99	761.7	33.8	1.0	81	8	2	3	9	2	2	1	3	.....	.....	.....	8	2.49	63.2
Little Glace Bay	N. 46 12	W. 59 58	8.00 a.m.	34	10	29.87	758.7	29.90	759.4	36.9	2.7	93	.....	5	3	13	4	.....	1	3	1	.....	.....	8	.....	.....
London	N. 43 00	W. 81 15	6.35 a.m.	832	254	29.11	739.4	30.06	763.5	32.3	0.2	85	3	3	4	5	3	.....	2	.....	10	5303	8534	7	3.29	83.6
Medicine Hat	N. 50 01	W. 110 37	4.38 a.m.	2136	651	27.65	702.3	30.07	763.8	21.6	— 5.8	79*f*	4	5	11	.....	1	.....	.....	1	8	.....	.....	6	0.25	6.4
Minnedosa	N. 50 13	W. 99 48	5.21 a.m.	1665	501	28.19	716.0	30.07	763.8	10.8	—11.8	90	.....	9	2	.....	1	1	3	2	12	.....	.....	4	0.96	24.4
Montreal	N. 45 31	W. 73 33	7.06 a.m.	187	57	29.78	756.4	29.99	761.7	28.8	— 1.8	79	2	2	6	9	3	2	3	3	.....	.....	.....	7	4.09	103.9
Ottawa	N. 45 26	W. 75 41	6.57 a.m.	200	61	29.70*a*	754.4*a*	29 93*a*	760.2*a*	29.7*a*	—1.3*a*	88*a*	*k*	3	6	6	1	1	2	.....	.....	.....	.....	7*a*	2.89*a*	73.4
Parry Sound	N. 45 19	W. 80 01	6.40 a.m.	635	194	29.30	744.2	30.02	762.5	28.4	— 2.0	85	9	1	3	.....	6	2	5	2	2	.....	.....	7	3.49	88.6
Peterborough	N. 44 17	W. 78 18	6.47 a.m.	722	220	29.30	744.2	30.13	765.3	29.0	— 1.7	78	.....	5	4	1	.....	1	4	.....	15	.....	.....	6	2.52	64.0
Port Arthur	N. 48 27	W. 89 12	6.03 a.m.	642	196	29.30	744.2	30.06	763.5	19.4	— 7.0	88	5	6	5	3	1	.....	2	2	6	.....	.....	5	1.15	29.2
Port Dover	N. 42 47	W. 80 13	6.39 a.m.	635	194	29.34	745.2	30.06	763.5	34.6	1.4	86	.....	4	6	6	1	.....	.....	1	12	.....	.....	5	1.93	49.0
Port Stanley	N. 42 40	W. 81 13	6.35 a.m.	592	180	29.36	745.7	30.03	762.7	32.0*a*	0.0	84	1	5	15	2	1	3	2	1	.....	.....	.....	5	3.10	78.7
Qu' Appelle	N. 50 44	W. 103 42	5.05 a.m.	2115	645	27.63	701.8	30.10	764.5	16.2	— 8.8	78*i*	.....	9	4	2	.....	1	1	.....	13	.....	.....	2	0.35	8.9
Quebec	N. 46 48	W. 71 12	7.15 a.m.	293	89	29.62	752.3	29.95	760.7	25.4	— 3.7	86	2	5	11	3	.....	.....	1	4	4	.....	.....	7	3.47	88.1
Rockliffe	N. 46 10	W. 77 48	6.49 a.m.	418	127	29.48	748.8	29.96	761.0	22.9	— 5.1	88	.....	7	1	.....	.....	4	1	1	16	.....	.....	7	1.69	42.9
Saint Andrews	N. 45 04	W. 67 06	7.32 a.m.	47	14	29.92	760.0	29.97	761.2	34.3	1.3	82	1	10	1	1	3	1	3	1	9	.....	.....	4	2.43	61.7
Saint John, N.B	N. 45 17	W. 66 03	7.36 a.m.	116	35	29.83	757.7	29.96	761.0	34.2	1.2	83	2	9	5	4	6	.....	3	.....	1	.....	.....	7	2.52	64.0
Saint Pierre	N. 46 47	W. 56 08	8.15 a.m.	?	?	.....	.....	29.89	759.2	40.6	4.8	.....	.....	8	2	9	2	5	1	3	.....	.....	.....	.....	6.58	167.0
Saugeen	N 44 30	W. 81 21	6.35 a.m.	656	200	29.21	741.9	29.96	761.0	31.9	— 0.1	85	3	2	5	4	2	2	2	2	8	.....	.....	8	2.63	66.8
S.W. Pt. Anticosti	N. 49 24	W. 63 36	7.46 a.m.	30	9	29.78	756.4	29.82	757.4	29.8	— 1.2	87	3	8	2	1	2	6	3	3	2	.....	.....	6	1.07	27.2
Stratford	N. 43 23	W. 81 00	6.36 a.m.	1186	361	28.69	728.7	30.02	762.5	30.7	— 0.7	87	3	4	6	7	1	1	3	2	3	6895	11096	6	2.80	71.1
Swift Current	N. 50 21	W. 107 33	4.50 a.m.	2439	744	27.30	693.4	30.09	764.3	15.8	— 9.0	83	.....	2	6	2	6	.....	.....	.....	14	.....	.....	3	0.11	2.8
Sydney	N. 46 08	W. 60 10	7.59 a.m.	37	11	29.89	759.2	29.93	760.2	36.8	2.7	87	.....	3	4	8	6	1	.....	.....	1	.....	.....	8	4.41	112.0
Toronto	N. 43 39	W 79 23	6.42 a.m.	350	107	29.63	752.6	30.03	762.7	32.6	0.3	80	6	4	3	8	.....	2	2	3	2	.....	.....	6	2.27	57.7
Woodstock	N. 43 08	W. 80 47	6.37 a.m.	980	299	28.96	735.6	30.07	763.8	31.6	— 0.2	85	2	6	5	7	3	1	2	1	3	.....	.....	7	3.08	78.2
Yarmouth	N. 43 50	W. 66 02	7.36 a.m.	61	19	29.92	760.0	29.98	761.5	37.7	3.2	85	7	5	1	2	4	4	2	3	2	.....	.....	6	4.41	112.0
Sub-series.																										
Saint Johns, N.F.	N. 47 34	W. 52 42	8.29 a.m.	159	48	29.79	756.7	29.97	761.2	37.4	3.0	44	1	6	3	4	11	1	.....	4	.....	.....	.....	7	4.95	125.7
CAPE COLONY																										
Cape St. Francis	S. 34 10	E. 24 50	1.39 p.m.	25	8	30.05	763.3	30.04	763.0	64.5	18.1	87	.....	.....	7	2	3	1	11	4	2	.....	.....	3	1.43	36.3
CHINESE.																										
Hong Kong	N. 22 18	E. 114 10	7.37 p.m.	110	34	29.97	761.2	29.95	760.7	69.1	20.6	67	3	1	.....	.....	.....	1	16	8	1	.....	.....	4	0.79	20.1
Foochow	N. 26 08	E. 119 38	7.59 p.m.	34	10	30.12	765.0	30.10	764.5	62.9	17.2	69	.....	.....	.....	.....	.....	.....	.....	30	.....	.....	.....	4	0.50	12.7
Sub-Series.																										
South Cape	N. 21 55	E. 120 51	8.04 p.m.	121	37	29.94	760.5	30.01	762.2	73.2	22.9	76	11	.....	.....	.....	.....	.....	.....	19	.....	.....	.....	5	0.18	4.6
Zi-Ka-Wei	N. 31 12	E. 121 26	8.06 p.m.	23	7	30.23	767.9	30.21	767.3	49.6	9.8	81	4	1	2	1	6	2	8	6	.....	.....	.....	2	0.39	10.0
DANISH.																										
Copenhagen	N. 55 41	E. 12 36	0.50 p.m.	43	13	29.72	755.0	29.79	756.7	39.9	4.4	85	7	.....	1	5	6	5	.....	6	.....	.....	.....	9	.....	.....
Fanoe	N. 55 27	E. 8 24	0.34 p.m.	20	6	29.71	754.5	29.76	755.9	41.4	5.2	92	2	2	1	6	5	5	1	8	.....	.....	.....	8	.....	.....
Godthaab	N. 64 11	W. 51 46	8.33 a.m.	36	11	29.54	750.2	29.63	752.6	26.6	— 3.0	87	1	3	.....	.....	7	6	1	12	.....	.....	.....	8	.....	.....
Ivigtut	N. 61 12	W. 48 00	8.48 a.m.	16	5	29.63	752.6	29.69	754.1	32.9	0.5	.....	3	.....	1	1	.....	10	.....	3	12	.....	.....	8	.....	.....

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for November, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation Inch.	Mill.
DANISH—Con.	° ′	° ′																								
Jacobshavn	N. 69 13	W. 50 55	8.36 a.m.	43	13	29.66	753.4	29.76	755.9	18.3	− 7.6	.....	1	.....	.....	3	.....	2	12	.....	5	.....	.....	5	.....	.....
Stykkisholm	N. 65 05	W. 22 46	10.29 a.m.	36	11	29.75	755.7	29.84	757.9	30.2	− 1.0	87	.....	.....	1	.....	4	1	8	9	7	.....	.....	7	.....	.....
Thorshavn	N. 62 02	W. 6 44	11.33 a.m.	30	9	29.03	752.7	29.70	754.4	37.8	3.2	78	4	1	3	2	2	3	.....	14	1	.....	.....	7	.....	.....
Upernavik	N. 72 47	W. 56 00	8.16 a.m.	39	12	29.67	753.7	29.77	756.1	12.2	−11.0	.....	2	1	1	1	2	1	13	1	8	.....	.....	8	.....	.....
Vestervig	N. 56 47	E. 8 20	0.33 p.m.	82	25	29.63	752.5	29.74	755.4	40.3	4.6	86	.....	1	1	3	2	7	.....	9	4	.....	.....	8	.....	.....
FRENCH.																										
Agen	N. 44 12	E. 0 38	0.03 p.m.	604	184	29.13	739.9	29.79	756.7	46.8	8.2	87	2	2	7	3	4	10	.....	2	.....	.....	.....	.....	0.56	14.1
Alençon	N. 48 26	E. 0 05	0.00 m.	476	145	29.25	743.0	29.79	756.7	42.8	6.0	85	7	2	.....	3	6	3	4	5	.....	.....	.....	7	3.54	90.0
Arras	N 50 18	E. 2 46	0.11 p.m.	223	68	29.53	750.0	29.79	756.7	43.2	6.2	84	.....	4	2	2	8	5	2	5	2	.....	.....	6	2.10	53.4
Avignon	N. 43 57	E. 4 49	0.19 p.m	66	20	29.74	755.5	29.81	757.2	51.3	10.7	75	9	6	.....	3	2	6	.....	4	.....	.....	.....	5	4.22	107.2
Bar-sur-Seine	N. 48 07	E. 4 22	0.17 p.m.	518	158	29.21	742.0	29.79	756.7	45.5	7.5	71	6	.....	.....	12	4	9	1	2	.....	.....	.....	8	2.56	65.1
Beauvais	N. 49 26	E. 2 05	0.08 p.m.	269	82	29.43	747.0	29.74	755.4	45.0	7.2	81	.....	.....	3	15	7	1	.....	2	2	.....	.....	5	2.66	67.5
Besançon	N. 47 13	E. 6 02	0.24 p.m.	895	273	28.80	731.4	29.78	756.4	45.7	7.6	86	1	.....	.....	4	14	4	2	5	.....	.....	.....	5	3.33	84.6
Bordeaux	N. 44 50	W. 0 32	11.58 a.m.	243	74	29.50	749.4	29.77	756.1	48 9	9.4	79	.....	1	3	12	2	4	4	4	.....	.....	.....	9	6.64	168.6
Bourges	N. 47 10	E. 2 26	0.10 p.m.	512	156	29.22	742.2	29.79	756.7	47.1	8.4	79	.....	1	6	9	5	1	4	4	.....	.....	.....	.....	3.15	79.9
Brest	N. 48 24	W. 4 30	11.42 a.m.	210	64	29.48	748.7	29.71	754.6	47.5	8.6	86	3	2	4	7	1	1	4	7	1	.....	.....	6	4.32	109.8
Caen	N. 49 11	W. 0 21	11.59 a.m.	69	21	29.63	752.7	29.71	754.6	.....	.....	.....	3	2	3	2	5	6	6	3	.....	.....	.....	3	3.29	83.6
Châlons-sur-Marne	N. 48 57	E. 4 21	0.17 p.m.	295	90	29.47	748.4	29.81	757.2	43.9	6.6	85	1	5	.....	12	6	4	2	.....	.....	.....	.....	7	2.32	59.0
Charleville	N. 49 46	E. 4 43	0.19 p.m.	476	145	29.21	742.0	29.75	755.6	43.5	6.4	80	2	.....	3	3	8	2	7	5	.....	.....	.....	6	1.08	27.4
Clermont-Fer'and	N. 45 46	E. 3 05	0.12 p.m.	1273	388	28.41	721.7	29.78	756.4	46.4	8.0	68	8	3	5	5	6	2	1	.....	.....	.....	.....	8	1.98	50.4
Cluny	N. 46 26	E. 4 39	0.19 p.m.	787	240	28.92	734.6	29.79	756.7	45.0	7.2	73	.....	1	9	12	...	3	.....	5	.....	.....	.....	8	2.73	69.3
Commercy	N. 48 46	E. 5 35	0.22 p m.	817	249	28.92	734.6	29 83	757.7	44.2	6.8	78	1	1	5	7	.....	9	5	2	.....	.....	.....	7	3.42	80.9
Gap	N. 44 33	E. 6 05	0.24 p.m.	2424	739	27.28	692 9	29.82	757.5	43.5	6.4	66	3	1	.....	.....	.....	.....	.....	.....	26	.....	.....	.....	7.16	181.9
Gréasque	N. 43 25	E. 5 37	0.22 p.m.	1056	322	28.67	728.2	29.80	757.0	50.4	10.2	75	.....	4	10	1	1	2	10	2	.....	.....	.....	6	6.58	167.0
Grenoble	N. 45 12	E. 5 43	0.23 p.m.	715	218	29.03	737.3	29.82	757.5	46.4	8.0	73	2	6	2	2	2	3	12	1	..	.....	.....	.....	2.76	70.1
Guéret	N. 46 10	E. 1 52	0.07 p.m.	1535	468	28.18	715.7	29.76	756.0	42.3	5.7	84	.....	1	7	6	5	3	4	3	1	.....	.....	.....	1.02	26.0
Lescar	N. 43 20	W. 0 26	11.58 a.m.	525	160	29.22	742.2	29.78	756.4	52.9	11.6	85	2	2	7	.....	1	1	9	6	3	.....	.....	.....	8.95	227.3
Lorient	N. 47 45	W. 3 21	11.47 a.m.	85	26	29.63	752.6	29 72	754.9	48.7	9.3	84	3	5	4	.....	3	2	1	6	1	.....	.....	6	3.39	86.0
Lyon	N. 45 41	E. 4 47	0.19 p.m.	981	299	28 75	730.2	29.82	757.4	44.6	7.0	75	5	4	3	.....	6	7	2	3	.....	.....	.....	7	2.93	74.5
Mans	N. 48 00	E. 0 12	0.01 p.m.	285	87	29.45	748.1	29.78	756.4	43.9	6.6	86	1	3	3	7	4	2	4	6	.....	.....	.....	6	2.41	61.3
Marseille	N. 43 18	E. 5 23	0.22 p.m.	246	75	29.52	749 7	29.79	756.7	54.7	12.6	67	1	6	7	4	1	4	5	2	.....	.....	.....	7	3.99	101.4
Montlouis	N. 42 30	E. 2 07	0.08 p.m.	5202	1586	24.61	625.2	29.46	748.3	39.4	4.1	71	2	6	11	7	.....	.....	1	3	.....	.....	.....	6	4.14	105.2
Montpellier	N. 43 37	E. 3 53	0.16 p.m.	102	31	29.65	753.0	29.75	755.6	53.8	12.1	63	9	9	4	2	.....	2	1	1	2	.....	.....	4	2.35	59.7
Mont Ventoux	N. 44 10	E. 5 16	0.21 p.m.	6234	1900	23.58	598.8	.....	.....	30.4	− 0.9	80	5	4	2	.....	11	8	.....	.....	.....	.....	.....	4	17.66	448.7
Nancy	N. 48 42	E. 6 11	0.25 p.m.	718	219	28.94	735.1	29.75	755.6	42.4	5.8	81	.....	4	9	5	5	7	.....	.....	.....	.....	.....	.....	1.61	40.9
Nantes	N. 47 13	W. 1 33	11.54 a.m.	134	41	29.60	751.7	29.75	755.6	45.3	7.4	84	3	3	5	5	3	3	4	4	.....	.....	.....	9	.....	.....
Nice	N. 43 41	E. 7 16	0.29 p.m.	59	18	29.84	757.9	29.90	759.4	58.3	14.6	74	2	.....	2	.....	2	.....	.....	.....	24	.....	.....	.....	.....	.....
Perpignan	N. 42 42	E. 2 53	0.12 p.m.	105	32	29.69	754.1	29.81	757.2	54.5	12.5	64	.....	14	6	1	1	1	1	5	1	.....	.....	7	2.37	60.3
Pic du Midi (Sum-mit.)	N. 42 56	W. 0 08	11.59 a.m.	9380	2859	20.92	531.3	.....	.....	24.3	− 4.3	78	.....	7	12	5	1	.....	.....	2	3	.....	.....	.....	6.41	162.9
Privas	N. 44 45	E. 4 36	0.18 p.m.	997	304	28.74	730.0	29.82	757.5	47.1	8.4	80	3	.....	3	1	16	.....	.....	.....	7	.....	.....	.....	6.40	162.0
Puy de Dôme	N. 45 46	E. 2 58	0.12 p.m.	4813	1467	24.84	630.9	.....	.....	31.1	− 0.5	96	1	2	6	13	5	1	1	1	.....	.....	.....	8	5.08	128.9
Rochefort	N. 45 56	W. 0 58	11.56 a.m.	30	9	29.72	754.8	29.75	755.6	49.6	9.8	80	1	2	7	6	3	2	4	5	.....	.....	.....	7	6.48	164.5
Roche-sur-Yon	N. 46 40	W. 1 26	11.54 a.m.	259	79	29.47	748.6	29.76	755 9	46.2	7.9	86	2	3	6	6	1	2	3	7	.....	.....	.....	8	3.09	78.4
Rodez	N. 44 21	E. 2 34	0.10 p.m.	2050	625	27.62	701.6	29.79	756.7	43.5	6.4	83	.....	11	2	1	4	7	1	4	.....	.....	.....	.....	4.58	116.2
Rouen	N. 49 26	E. 1 05	0.04 p.m.	39	12	29.71	754.5	29.76	755.9	45.0	7.2	79	1	1	4	6	3	5	8	2	.....	.....	.....	7	3.15	80.1
Saint Brience	N. 48 37	E. 5 08	0.20 p.m.	348	106	29.34	745.2	29.73	755.2	45.0	7.2	86	1	6	3	4	3	3	4	6	.....	.....	.....	7	4.58	116.2
Saint Maur	N. 48 48	E. 2 21	0.09 p.m.	161	49	29.59	751.6	29.78	756 4	44 1	6.7	80	a2	1	2	9	6	2	.....	7	.....	.....	.....	.....	1.87	47.4
Toulouse	N. 43 37	E. 1 27	0.06 p.m.	636	194	29.11	739.4	29.80	756.9	49.8	9.9	84	2	6	6	2	.....	10	4	.....	.....	.....	.....	8	3.98	101.2
Tours	N. 47 24	E. 0 41	0.03 p.m.	171	52	29.56	750.8	29.74	755.4	46.2	7.9	83	.....	.....	5	9	5	1	6	4	.....	.....	.....	9	4.06	103.2
Sub-Series.																										
St. Martin du Hinx.	N. 43 35	W. 1 16	11.55 a.m.	131	40	29.66	753.3	29.81	757.2	51.3	10.7	75	.....	3	12	4	.....	4	3	3	1	.....	.....	8	13.05	331.4
GERMAN.																										
Ansbach	N. 49 18	E. 10 36	0.42 p.m.	1358	414	28.43	722.0	29.86	758.4	39.4	4.1	76	1	1	3	4	4	4	2	3	8	.....	.....	7	1.18	30.1
Bamberg	N. 49 54	E. 10 54	0.44 p.m.	787	240	28.94	735.1	29.93	760.2	39.7	4.3	78	2	4	2	5	1	15	.....	1	.....	.....	.....	7	2.15	54.6
Berlin	N. 52 30	E. 13 19	0.53 p.m.	159	49	29.54	750.2	29.74	755 4	42.3	5.7	83	1	6	2	9	1	6	1	4	.....	.....	.....	8	1.63	41.5
Breslau	N. 51 07	E. 17 02	1.08 p.m.	482	147	29.32	744.7	29.88	758 9	43.3	6.3	77	2	3	4	1	10	3	6	1	.....	.....	.....	8	2.55	64.7
Carlsruhe	N. 49 01	E. 8 25	0.34 p.m.	407	124	29.37	746.0	29.84	757.9	42.6	5.9	79	.....	.....	.....	17	1	.....	2	10	.....	.....	.....	9	1.60	40.7
Cassel	N. 51 19	E. 9 28	0.38 p.m.	669	204	29.06	738.1	29.72	754.9	40.5	4.7	83	3	2	1	2	9	.....	.....	2	11	.....	.....	8	1.55	39.3
Frankfort on M.	N. 50 08	E. 8 41	0.35 p.m.	338	103	29.43	747.5	29.83	757.7	42.3	5.7	77	4	.....	1	10	4	2	4	5	.....	.....	.....	7	1.72	43.7
Friedrichshafen	N. 47 39	E. 9 29	0.38 p.m.	1338	408	28.37	720.5	29.81	757 2	40.8	4.9	83	3	3	3	9	3	4	.....	5	.....	.....	.....	7	1.80	45.6
Hamburg	N. 53 33	E. 9 58	0.40 p.m.	85	26	29.67	753.6	29.77	756.1	41.5	5.3	84	5	.....	1	10	1	4	6	3	.....	.....	.....	8	1.30	32.9
Kiel	N. 54 19	E. 10 04	0.40 p.m.	13	4	29.75	755.6	29.78	756.4	41.9	5.5	81	3	1	2	9	.....	4	3	5	3	.....	.....	8	.....	.....
Leipsic	N. 51 20	E. 12 24	0.50 p.m.	390	119	29.37	746.1	29.83	757.7	41.4	5.2	82	2	2	.....	9	6	5	.....	2	4	.....	.....	8	2.91	74.0
Memel	N. 55 43	E. 21 07	1.24 p.m.	39	12	29.82	757.3	29.89	759.2	38.3	3.5	86	1	2	5	1	3	8	5	5	.....	.....	.....	9	.....	.....
Munich	N. 48 09	E. 11 34	0.46 p.m.	1732	528	27.97	710.4	29.83	757.7	39.0	3.9	81	.....	2	5	7	1	2	3	2	8	.....	.....	7	2.86	72.7
Neufahrwasser	N. 54 24	E. 18 40	1.15 p.m.	36	11	29.76	755.8	29.82	757.4	40.3	4.6	86	1	.....	3	4	14	5	1	2	.....	.....	.....	5	1.15	29.1
Neustadt	N. 49 21	E. 8 08	0.33 p.m.	479	146	29.29	744.0	29.84	757.9	41.9	5.5	82	2	.....	6	6	6	1	1	2	6	.....	.....	8	1.87	47.6
Stuttgart	N. 48 47	E. 9 11	0.37 p.m.	833	254	28.89	733.8	29.83	757.7	41.9	5.5	79	1	3	4	6	3	1	2	7	3	.....	.....	8	1.45	36.9
Wustrow	N. 54 21	E. 12 24	0.50 p.m.	23	7	29.73	755.2	29.77	756.1	40.5	4.7	88	1	2	2	6	2	7	1	9	.....	.....	.....	9	2.54	64.6
GREEK.																										
Athens	N. 37 58	E. 23 44	1.35 p.m.	348	106	29.61	752.1	29.96	761.0	61.7	16.5	75	7	.....	5	6	10	1	1	.....	.....	.....	.....	6	5.16	131.1
INDIAN.																										
Kurrachee	N. 24 47	E. 67 04	4.28 p.m.	49	15	29.92	760.1	29.92	760.1	84.0	28.9	39	.....	.....	16	11	1	.....	2	.....	.....	.....	.....	1	.....	.....
Deesa	N. 24 16	E. 72 14	4.49 p.m.	466	142	29.48	748.8	29.89	759.2	86.6	30.3	21	13	4	.....	.....	3	1	2	7	.....	.....	.....	3	.....	.....
Bombay	N. 18 54	E. 72 49	4.51 p.m.	37	11	29.87	758.8	29.85	758.2	81.8	27.7	71	7	18	3	.....	2	.....	.....	.....	.....	.....	.....	2	1.02	25.9
Poona	N. 18 28	E. 74 10	4.57 p.m.	1849	564	28.07	712.9	29.84	757.9	81.0	27.2	42	1	.....	.....	.....	.....	4	10	15	.....	.....	.....	3	3.87	98.3
Belgaum	N. 15 52	E. 74 42	4.59 p.m.	2524	770	27.37	695.3	29.80	757.0	76.8	24.9	53	1	.....	1	.....	1	3	9	10	5	.....	.....	4	3.29	83.6
Lahore	N. 31 34	E. 74 20	4.57 p.m.	702	214	29.28	743.8	29.98	761.5	70.8	21.6	43	.....	.....	.....	.....	.....	.....	.....	.....	30	.....	.....	0	.....	.....
Roorkee	N. 29 52	E. 77 56	5.12 p.m.	887	270	29.06	738.2	29.94	760.5	70.8	21.6	47	.....	.....	7	.....	.....	.....	.....	.....	23	.....	.....	1	.....	.....
Agra	N. 27 10	E. 78 05	5.12 p.m.	555	169	29.44	747.8	29.96	761.0	73.8	23.2	47	.....	7	.....	1	.....	.....	.....	1	21	.....	.....	1	0.07	1.8
Nagpur	N. 21 09	E. 79 11	5.17 p.m.	1025	312	28.91	734.3	29.89	759.2	79.0	26.1	48	9	.....	.....	.....	.....	.....	3	12	6	.....	.....	3	1.76	44.7
Jubbulpore	N. 23 09	E. 79 59	5.20 p.m.	1341	409	28.63	727.2	29.94	760.6	73.8	23.2	47	6	2	.....	.....	.....	.....	3	7	12	.....	.....	2	0.29	7.4
Lucknow	N. 26 50	E. 81 00	5.24 p.m.	369	112	29.62	752.3	29.95	760.7	70.7	21.5	58	3	4	.....	.....	.....	.....	.....	1	22	.....	.....	2	.....	.....
Allahabad	N. 25 26	E. 81 52	5.27 p.m.	307	94	29.68	753.8	29.95	760.7	71.8	22.1	63	1	7	2	1	.....	.....	.....	.....	19	.....	.....	1	0.01	0.2
Patna	N. 25 37	E. 85 08	5.41 p.m.	183	56	29.80	756.8	29.94	760.5	75.0	23.9	63	2	6	15	.....	.....	.....	.....	3	4	.....	.....	1	.....	.....
Hazaribagh	N. 24 00	E. 85 24	5.42 p.m.	2007	612	27.96	710.1	29.95	760.7	69.1	20.6	49	15	9	1	1	1	.....	1	2	.....	.....	.....	1	.....	.....
Cuttack	N. 20 29	E. 85 54	5.44 p.m.	80	24	29.88	759.0	29.90	759.4	78.6	25.9	66	.....	.....	.....	.....	.....	.....	2	3	25	.....	.....	3	0.18	4.6
Calcutta	N. 22 33	E. 88 21	5.53 p.m.	21	6	29.94	760.4	29.91	759.7	73.4	23.0	74	10	9	2	.....	.....	1	.....	3	5	.....	.....	2	0.24	6.1
Dhubri	N. 26 07	E. 89 50	5.59 p.m	115	35	29.84	757.8	29.90	754.4	74.6	23.7	73	.....	.....	.....	.....	.....	.....	1	2	27	.....	.....	.....	.....	.....
Chittagong	N. 22 21	E. 91 50	6.07 p.m.	87	27	29.86	758.4	29.89	759.3	74.8	23.8	80	1	8	10	2	.....	2	.....	1	6	.....	.....	2	3.68	93.5
Sibsagar	N. 26 59	E. 94 40	6.19 p.m.	333	101	29.63	752.6	29.93	760.2	70.5	21.4	84	.....	.....	.....	.....	.....	.....	1	29	.....	.....	.....	2	.....	.....
Jeypore	N. 26 55	E. 75 50	5.03 p.m.	1431	436	28.56	725.3	29.96	761.0	76.2	24.6	34	9	5	3	1	2	.....	2	2	6	.....	.....	2	0.03	0.8
Bellary	N. 15 09	E. 76 57	5.08 p.m.	1475	449	28.42	721.9	29.84	757.9	79.7	26.5	56	3	.....	1	.....	.....	6	15	4	1	.....	.....	1	1.40	35.6
Trichinopoly	N. 10 50	E. 78 44	5.15 p.m.	275	84	29.63	752.6	29.84	757.9	80.5	26.9	77	.....	.....	.....	.....	.....	.....	4	10	16	.....	.....	6	5.41	137.4
ITALIAN.																										
Udine	N. 46 04	E. 13 13	0.53 p.m.	381	116	29.36	745.7	29.78	756.3	50.2	10.1	75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7	14.58	370.5
Milan	N. 45 28	E. 9 11	0.37 p.m.	482	147	29.33	745.0	29.87	758.6	44.6	7.0	86	.....	7	6	6	1	7	1	2	.....	.....	.....	8	11.48	291.7
Padua	N. 45 24	E. 11 53	0.48 p.m.	102	31	29.73	755.1	29.84	757.8	49.1	9.5	79	2	10	3	3	2	1	3	6	.....	.....	.....	7	7.39	187.6
Moncaliera	N. 45 00	E. 7 41	0.31 p.m.	846	258	28.93	734.9	29.85	758.2	45.1	7.3	79	5	5	.....	1	1	4	9	5	.....	.....	.....	6	3.65	92.8
Genoa	N. 44 24	E. 8 55	0.36 p.m.	177	54	29.69	754 1	29.80	757.0	52.0	11.1	64	11	1	.....	.....	2	6	6	4	.....	.....	.....	7	17.79	452.0
Cuneo	N. 44 23	E. 7 32	0.30 p.m.	1820	555	.....	.....	29.85	758.2	44.4	6.9	58	7	2	2	.....	7	6	.....	6	.....	.....	.....	5	3.16	80.3
Pesaro	N. 43 55	E. 12 53	0.52 p.m.	46	14	29.80	756.9	29.85	758.1	50.7	10.4	80	9	6	1	5	1	1	6	1	.....	.....	.....	7	4.00	101.7
Florence	N. 43 46	E. 11 15	0.45 p.m.	240	73	29.55	750.6	29.82	757.4	52.5	11.4	80	5	3	2	5	6	3	3	3	.....	.....	.....	8	8.43	214.1
Leghorn	N. 43 33	E. 10 18	0.41 p.m.	79	24	29.72	754.9	29.80	756.8	55.8	13.2	72	.....	1	5	2	6	2	6	8	.....	.....	.....	7	8.03	203.9

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for November, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent.	Mean Rel. Humidity	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
ITALIAN—Con.	°	° ′																								
Rome	N. 41 54	E. 12 29	0.50 p.m.	164	50	29.67	753.6	29.84	757.9	57.9	14.4	71	6	2	1	5	7	4	2	1	2	.....	.....	8	5.33	135.4
Lecce	N. 40 22	E. 18 12	1.13 p.m.	236	72	29.66	753.4	29.90	759.4	60.6	15.9	70	4	1	.....	8	8	5	2	2	.....	.....	.....	7	4.25	108.0
Cosenza	N. 39 19	E. 16 17	1.05 p.m.	840	256	29.04	737.6	29.92	760.0	57.6	14.2	65	b	4	2	.....	6	15	1	.....	.....	.....	.....	6	6.85	174.0
Sassari	N. 40 43	E. 8 34	0.34 p.m.	735	224	29.05	737.9	29.83	757.7	56.8	13.8	75	2	7	6	5	7	1	2	.....	.....	.....	.....	8	8.22	208.9
Palermo	N. 38 07	E. 13 21	0.53 p.m.	236	72	29.65	753.1	29.88	758.9	66.2	19.0	58	4	4	4	8	4	.....	.....	1	5	.....	.....	6	3.98	101.2
Syracuse	N. 37 03	E. 15 15	1.01 p.m.	72	22	29.87	758.7	29.92	760.0	65.1	18.4	66	3	2	7	6	4	3	1	4	.....	.....	.....	7	2.29	58.1
Sub-Series.																										
Stelvio	N. 46 32	E. 10 25	0.42 p.m	8343	2543	21.91	556.5	.....	.....	23.9	— 4.5	80	.....	.....	7	7	.....	4	.....	12	.....	.....	.....	7	5.22	132.6
Valdobbia	N. 45 47	E. 7 51	0.31 p.m.	8360	2548	21.92	556.7	.....	.....	25.5	— 3.6	53	1	3	6	9	1	3	6	1	.....	.....	.....	7	.....	.....
JAPANESE.																										
Akita	N. 39 42	E. 140 07	9.20 p.m.	49	15	30.01	762.2	30.05	763.2	45.9	7.7	82	.....	3	9	.....	.....	2	13	2	1	6194	9926	7	7.72	196.3
Awomori	N. 40 51	E. 140 45	9.23 p.m.	33	10	29.98	761.6	30.00	762.0	43.7	6.5	78	.....	9	4	4	8	2	2	.....	1	6068a	9764	7	5.30	134.6
Erimo	N. 41 55	E. 143 15	9.30 p.m.	200	61	29.72	754.9	29.93	760.2	45.0	7.2	80	.....	2	17	1	1	.....	3	3	3	15984	25754	6	4.95	126.0
Fushiki	N. 36 47	E. 137 03	10.05 p.m.	13	4	30.11	764.9	30.10	764.7	48.8	9.4	86	.....	1	4	19	2	1	1	.....	2	4952	7968	6	10.80	274.2
Gifu	N. 35 27	E. 136 46	9.07 p.m.	49	15	30.07	763.8	30.09	764.3	50.0	10.0	87	4	2	1	.....	.....	1	.....	7	15	1772	2853	3	2.59	66.0
Hakodate	N. 41 46	E. 140 44	9.23 p.m.	10	3	29.98	761.5	29.98	761.5	43.2	6.2	82	6	2	11	1	1	1	3	3	2	8557	13779	8	11.92	303.0
Hamamatsu	N. 34 42	E. 137 43	9.11 p.m.	92	28	29.99	761.8	30.05	763.3	51.7	10.9	80	5	1	14	.....	.....	.....	.....	4	6	3031	4878	3	3.10	78.7
Hiroshima	N. 34 23	E. 132 27	8.50 p.m.	16	5	30.15	765.8	30.14	765.5	49.7	9.8	81	27	2	1	.....	.....	.....	.....	.....	.....	3941	6341	3	2.09	53.1
Itsurhara	N. 34 12	E. 129 16	8.34 p.m.	16	5	.....	.....	.....	.....	47.7	8.7	90	1	4	4	1	.....	.....	.....	.....	20	2185	3517	2	2.03	51.5
Kagoshima	N. 31 35	E. 130 33	8.42 p.m.	13	4	30.16	766.1	30.14	765.5	52.6	11.4	83	8	5	.....	.....	.....	.....	1	1	15	1709	2751	4	1.48	37.5
Kanazawa	N. 36 33	E. 136 40	9.07 p.m.	95	29	30.03	762.7	30.11	764.8	48.2	9.0	86	.....	2	1	3	2	16	5	.....	1	4277	6882	6	14.55	369.7
Kioto	N. 35 01	E. 135 46	9.03 p.m.	161	49	29.97	761.3	30.11	764.8	47.2	8.4	87	13	2	3	2	1	1	.....	3	5	1419	2284	4	1.86	47.3
Kochi	N. 33 33	E. 133 34	8.54 p.m.	20	6	30.13	765.2	30.12	765.0	54.2	12.3	76	9	7	5	.....	.....	1	5	3	.....	4273	6876	3	5.03	127.7
Miasaki	N. 31 56	E. 131 26	8.46 p.m.	26	8	30.15	765.7	30.15	765.8	53.2	11.8	86	8	1	13	.....	3	.....	5	.....	.....	3926	6319	3	1.40	35.5
Miyako	N. 39 38	E. 141 59	9.28 p.m.	98	30	29.91	759.7	30.00	762.1	44.9	7.2	83	1	4	11	10	4	.....	.....	.....	.....	3156	5081	5	4.61	117.1
Nagasaki	N. 32 44	E. 129 52	8.39 p.m.	190	58	29.99	761.7	30.16	766.1	51.2	10.7	81	7	3	6	1	.....	2	3	1	7	2556	4113	3	1.46	37.0
Nemuro	N. 43 20	E. 145 35	9.42 p.m.	89	27	29.83	757.7	29.92	760.0	42.2	5.7	75	4	1	5	7	7	.....	4	1	1	9023	15521	6	6.06	154.0
Niigata	N. 37 55	E. 139 03	9.16 p.m.	33	10	30.06	763.5	30.07	763.8	49.8	9.9	81	4	5	2	4	3	9	.....	2	1	4939	7949	5	7.62	193.5
Numadzu	N. 35 06	E. 138 51	9.15 p.m.	30	9	30.03	762.7	30.03	762.7	52.5	11.4	83	1	1	1	3	.....	.....	11	13	.....	4814	7750	4	2.96	75.2
Osaka	N. 34 42	E. 135 30	9.02 p.m.	35	11	30.10	764.6	30.08	764.0	51.0	10.6	82	7	3	4	1	2	.....	1	12	.....	5357	8620	3	1.30	33.0
Sakai	N. 35 33	E. 133 14	8.53 p.m.	7	2	30.14	765.5	30.13	765.3	50.1	10.1	80	2	1	12	.....	3	.....	1	.....	11	2946	4741	6	4.26	108.3
Shimonoseki	N. 33 58	E. 130 56	8.44 p.m.	161	49	30.01	762.2	30.15	765.8	53.0	11.7	76	2	3	8	3	.....	3	5	3	3	.....	.....	3	2.06	82.3
Tokei	N. 35 41	E. 139 46	9.19 p.m.	69	21	29.99	761.8	30.04	763.0	51.8	11.0	81	9	6	2	.....	4	3	4	2	.....	4371	7034	4	1.26	32.0
Wakayama	N. 34 14	E. 135 09	9.01 p.m.	49	15	30.08	764.2	30.10	764.5	52.3	11.3	77	4	3	3	.....	.....	.....	2	14	4	2475	3982	4	3.44	87.3
MAURITIUS.																										
Mauritius	S. 20 06	E. 57 33	3.50 p.m.	181	55	29.86	758.4	29.98	761.5	76.9	24.9	62	.....	1	1	.....	.....	4	21	3	.....	7790	11536	6	0.60	15.2
MEXICAN.																										
Guanajuato	N. 21 01	W. 101 10	5.15 a m.	6762	2061	23.72	602.3	29.85	758.2	52.5	11.4	76	.....	.....	5	12	5	7	.....	1	.....	.....	.....	3	0.08	2.1
Leon	N. 21 07	W. 101 36	5.14 a.m.	5902	1799	24.32	617.9	30.07	763.8	48.7	9.3	90	.....	26	2	1	.....	.....	1	.....	.....	.....	.....	3	0.28	7.2
Mazatlan	N. 23 12	W. 106 17	4.55 a.m.	13	4	29.97	761.1	29.93	760.2	73.9	23.3	80	5	4	.....	.....	.....	4	5	12	.....	.....	.....	2	1.14	29.0
Mexico	N. 19 26	W. 99 00	5.24 a.m.	7490	2283	23.09	586.4	30.25	768.3	46.9	8.3	83	1	1	1	.....	.....	.....	.....	.....	27	.....	.....	4	0.74	48.7
NETHERLANDS.																										
Flushing	N. 51 24	E. 3 35	0.14 p.m.	0	0	29.74	755.3	29.76	755.9	43.9	6.6	.....	1	.....	2	7	6	2	3	9	.....	.....	.....	.....	1.41	35.9
Groningen a	N. 53 12	E. 6 34	0.26 p.m.	60?	18?	29.68	753.9	29.76	755.9	42.8	6.0	.....	2	1	1	6	6	6	4	4	.....	.....	.....	.....	1.15	29.3
Helder	N. 52 58	E. 4 45	0.19 p.m.	0	0	29.72	754.8	29.74	755.4	42.8	6.0	.....	.....	1	.....	8	3	7	3	8	.....	.....	.....	.....	1.33	33.8
Hellevoetsluis	N. 51 49	E. 4 08	0.17 p.m.	0	0	29.73	755.1	29.74	755.4	42.6	5.9	.....	.....	.....	.....	6	6	3	5	7	3	.....	.....	.....	1.59	40.3
Utrecht	N. 52 05	E. 5 07	0.20 p.m.	43	13	29.70	754.4	29.76	755.9	43.2	6.2	.....	1	1	1	2	10	4	6	5	.....	.....	.....	2	1.02	26.0
Sub-Series.																										
Batavia	S. 6 11	E. 106 50	7.07 p.m.	26	8	29.81	757.2	29.78	756.4	77.7	25.4	87	.....	4	5	5	8	1	1	.....	6	.....	.....	8	5.52	140.4
NORWEGIAN.																										
Bergen	N. 60 24	E. 5 20	0.21 p.m.	56	17	29.61	752.2	29.71	754.6	38.5	3.6	77	1	2	1	.....	6	10	2	1	7	.....	.....	5	9.76	248.0
Brono	N. 65 28	E. 12 14	0.49 p.m.	33	10	29.58	751.4	29.66	753.4	35.6	2.0	73	5	.....	3	8	4	4	2	.....	4	.....	.....	8	5.42	137.8
Christiania	N. 59 55	E. 10 45	0.43 p.m.	134	41	29.64	752.8	29.83	757.7	33.3	0.7	82	2	.....	1	1	.....	3	2	1	20	.....	.....	7	1.46	37.0
Gjæsvær	N. 71 07	E. 25 22	1.41 p.m.	23	7	29.46	748.3	29.54	750.3	28.2	— 2.1	.....	4	5	4	2	1	3	.....	5	6	.....	.....	8	2.80	71.2
PORTUGUESE.																										
Angra	N. 38 39	W. 27 14	10.11 a.m.	144	44	29.99	761.7	30.12	765.0	63.0	17.2	86	6	5	3	.....	1	2	7	5	1	.....	.....	5	4.70	119.5
Funchal	N. 32 38	W. 16 55	10.52 a.m.	82	25	29.94	760.5	29.99	761.7	69.3	20.7	62	.....	2	2	14	2	2	1	1	6	.....	.....	6	3.12	79.2
Lisbon	N. 38 42	W. 9 08	11.23 a.m.	312	95	29.56	750.9	29.88	758.9	57.9	14.4	76	4	5	3	7	3	1	4	3	.....	.....	.....	8	7.24	184.0
Ponta Delgada	N. 37 45	W. 25 41	10.17 a.m.	66	20	30.06	763.6	30.11	764.8	64.8	18.2	75	4	4	3	2	2	.....	.....	9	6	.....	.....	4	4.80	121.9
Saint Vincent	N. 16 37	W. 25 02	10.20 a.m.	35	11	29.97	761.1	29.93	760.2	78.4	25.8	73	9a	2	1	.....	1	.....	.....	16	.....	.....	.....	5	2.41	61.1
San Salvador	S. 6 17	E. 14 53	1.00 p.m.	1834	559	28.02	711.8	29.77	756.2	80.2	26.8	68	.....	4	6	4	.....	.....	.....	.....	16	.....	.....	8	2.48	63.1
RUSSIAN.																										
Archangel	N. 64 33	E. 40 32	2.42 p.m.	16	5	29.66	753.3	29.73	755.1	22.1	— 5.5	93	.....	2	3	8	10	2	1	.....	4	.....	.....	9	.....	.....
Baku	N. 40 21	E. 49 51	3.19 p.m.	39	12	30.15	765.8	30.10	764.5	57.7	— 4.3	74	11	.....	.....	6	5	4	.....	.....	4	.....	.....	5	.....	.....
Barnaul	N. 53 20	E. 83 47	5.35 p.m.	459?	140?	29.61	752.0	30.18	766.1	24.6	— 4.1	80	.....	2	2	23	1	.....	.....	1	1	.....	.....	9	2.50	63.6
Dorpat	N. 58 23	E. 26 43	1.47 p.m.	210	64	29.61	752.0	29.87	758.7	33.3	0.7	.....	1	3	2	6	7	4	3	4	.....	.....	.....	8	1.67	42.5
Ekaterinburg	N. 56 49	E. 60 38	4.03 p.m.	928	283	28.91	734.2	30.00	762.0	24.1	— 4.4	.....	2	2	10	13	.....	2	.....	1	.....	.....	.....	8	0.19	4.8
Elisavetgrad	N. 48 31	E. 32 17	2.09 p.m.	407	124	29.58	751.2	29.83	757.7	42.6	5.9	81	.....	7	1	4	3	11	2	.....	2	.....	.....	8	1.14	29.0
Irkutsk	N. 52 17	E. 104 16	6.57 p.m.	1610	491	28.41	721.6	30.29	769.4	19.4	— 7.0	79	2	6	1	.....	.....	14	4	3	.....	.....	.....	6	0.16	4.0
Kasalinsk a	N. 45 46	E. 62 07	4.08 p.m.	148	45	29.98	761.4	30.14	765.5	43.2	6.2	.....	2	3	3	3	5	3	3	6	1	.....	.....	7	.....	.....
Kasan	N. 55 47	E. 49 08	3.17 p.m.	230	70	29.72	755.0	30.01	762.2	26.6	— 3.0	82	2	3	6	6	7	4	.....	2	.....	.....	.....	8	0.12	3.1
Kem	N. 64 57	E. 34 39	2.19 p.m.	43	13	29.67	753.7	29.76	755.9	21.9	— 5.6	87	.....	10	8	6	1	1	.....	.....	4	.....	.....	7	0.79	20.1
Kertch	N. 45 21	E. 36 29	2.26 p.m.	20?	6?	30.03	762.8	30.05	763.3	49.3	9.6	82b	a	7	4	2	3	.....	6	1	6	.....	.....	7	.....	.....
Kieff	N. 50 27	E. 30 30	2.02 p.m.	600	183	29.33	744.9	30.01	762.2	39.9	4.4	82	2	4	6	.....	3	11	3	1	.....	.....	.....	8	2.50	63.4
Kischinev	N. 46 59	E. 28 51	1.55 p.m.	361	110	29.61	752.2	30.01	762.2	47.7	8.7	76	10	.....	.....	1	11	5	2	.....	1	.....	.....	7	2.35	59.8
Korostishev	N. 50 19	E. 29 03	2.05 p.m.	?	?	29.33	744.9	.....	.....	41.2	5.1	83	2	1	6	3	3	7	5	.....	3	.....	.....	9	0.46	11.7
Koslov	N. 52 53	E. 40 31	2.42 p.m.	512	156	29.48	748.7	30.08	764.0	28.9	— 1.7	90	2	3	2	3	8	3	3	1	5	.....	.....	8	.....	.....
Libau	N. 56 31	E. 21 01	1.24 p.m.	20	6	29.79	756.6	29.84	757.9	38.8	3.8	81	.....	.....	5	3	2	9	8	3	.....	.....	.....	8	2.13	54.1
Lugan	N. 48 35	E. 39 20	2.37 p.m.	164	50	29.91	759.8	30.10	764.5	41.9	5.5	80	1	3	4	5	2	2	9	4	.....	.....	.....	9	1.78	45.1
Moscow	N. 55 46	E. 37 40	2.31 p.m.	469	143	29.45	747.9	30.02	762.5	31.5	— 0.3	85	1	4	2	2	15	3	1	2	.....	.....	.....	8	0.85	21.7
Nertchinsk	N. 51 19	E. 119 37	7.58 p.m.	2155?	657?	27.71	703.8	30.25	768.3	5.4	—14.8	.....	1	2	1	2	1	.....	.....	1	22	.....	.....	2	.....	.....
Nikolaiev	N. 46 58	E. 31 58	2.08 p.m.	62	19	29.97	761.2	30.03	762.7	45.5	7.5	81	2	3	1	2	2	3	8	1	8	.....	.....	8	0.67	17.1
Nikolaievska	N. 53 08	E. 140 45	9.23 p.m.	82	25	29.65	753.2	29.75	755.6	15.3	— 9.3	77	1	4	14	1	.....	2	5	1	1	.....	.....	6	.....	.....
Nikolsk a	N. 59 32	E. 45 27	3.02 p.m.	485?	148?	29.34	745.2	29.93	760.2	31.1	— 0.5	87	1	5	2	4	5	9	1	.....	2	.....	.....	9	1.03	26.1
Perm	N. 58 01	E. 56 16	3.45 p.m.	328?	100?	29.50a	749.4a	29.91a	759.7a	22.3a	—5.4a	84a	3a	1	1	12	5	2	.....	1	4	.....	.....	8a	1.95	49.5
Petro-Alexandrovsk	N. 41 28	E. 61 05	4.04 p.m.	328	100	29.87	758.7	30.21	767.3	54.0	12.2	.....	.....	4	1	3	.....	3	2	11	6	.....	.....	4	.....	.....
Petrozavodsk	N. 61 47	E. 34 23	2.18 p.m.	220?	67?	29.57	751.0	29.86	758.4	28.2	— 2.1	83	2	10	4	6	4	1	1	1	1	.....	.....	8	2.32	59.0
Pinsk	N. 52 07	E. 26 06	1.44 p.m.	459?	140?	29.39	746.6	29.93	760.2	38.7	3.7	85	.....	2	3	3	3	12	3	2	2	.....	.....	8	2.21	56.2
Poti	N. 42 09	E. 41 37	2.46 p.m.	26	8	29.94	760.5	29.96	761.0	60.1	15.6	70	1	2	3	2	1	.....	6	7	8	.....	.....	7	.....	.....
St. Petersburg	N. 59 56	E. 30 16	2.01 p.m.	20	6	29.80	756.9	29.86	758.4	31.8	— 0.1	81	2	7	2	6	8	3	1	1	.....	.....	.....	8	1.41	35.9
Samarkand	N. 39 39	E. 66 57	4.28 p.m.	2379?	725?	27.67	702.7	30.17	766.3	55.6	13.1	.....	.....	3	2	1	2	12	3	.....	7	.....	.....	5	.....	.....
Sevastopol	N. 44 37	E. 33 31	2.14 p.m.	187	57	29.81	757.1	30.01	752.2	52.5	11.4	75	9	2	2	2	8	1	.....	3	3	.....	.....	7	2.17	55.1
Tashkend	N. 41 20	E. 69 18	4.37 p.m.	1607?	409?	28.53	724.6	30.23	767.8	55.6	13.1	45	1	3	1	1	1	1	.....	2	20	.....	.....	6	.....	.....
Tiflis	N. 41 43	E. 44 47	2.59 p.m.	1342	490	28.71	729.2	30.17	766.3	56.7	13.7	55	4	9	.....	.....	4	5	2	.....	6	.....	.....	6	1.48	37.7
Vlatka	N. 58 36	E. 49 41	3.19 p.m.	581?	177?	29.24	742.6	29.96	761.0	22.1	— 5.5	.....	.....	4	6	7	7	2	2	2	.....	.....	.....	9	1.06	26.8
Warsaw	N. 52 13	E. 21 02	1.24 p.m.	390	119	29.41	747.1	29.86	758.4	40.8	4.9	82	1	2	.....	5	8	3	4	2	3	.....	.....	8	1.26	31.9
Yeniseisk	N. 58 27	E. 92 06	6.08 p.m.	276?	84?	29.76	755.9	30.12	765.0	10.4	—12.0	.....	1	2	2	6	2	2	4	.....	11	.....	.....	8	2.39	60.7
Sub-series.																										
Petrowsky Acad'y	N. 55 50	E. 37 33	2.30 p.m.	558	170	29.34	745.2	30.01	762.2	30.6	— 0.8	81	.....	2	5	4	13	1	.....	3	2	.....	.....	8	1.04	26.4
SCOTTISH.																										
Leith	N. 55 59	W. 3 10	11.47 a.m.	70	21	29.58	751.3	29.68	753.9	.....	.....	.....	.....	2	6	8	1	3	4	4	2	.....	.....	9	3.14	79.8

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for November, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent.	Mean Rel. Humidity	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation Inch.	Mill.
SPANISH.	° ′	° ′																								
Bilbao	N. 43 15	W. 2 59	11.48 a.m.	52	16	29.73	755.2	29.78	756.4	54.7	12.6	73	.....	8	3	1	5	5	1	.....	7	1921	3091	8	6.11	155.3
Burgos	N. 42 20	W. 3 46	11.45 a.m.	2821	860	26.87	682.6	29.88	758.9	44.6	7.0	81	4	2	5	11	5	2	.....	1	.....	6257	10070	8	3.51	89.2
Santiago	N. 42 53	W. 8 28	11.26 a.m.	863	263	28.87	733.3	29.80	756.9	52.2	11.2	81	1	4	3	8	2	2	.....	7	3	6451	10383	8	12.27	311.8
Sub-Series.																										
Havana	N. 23 08	W. 82 23	6.30 a.m.	62	19	29.98	761.5	29.99	761.7	69.3	20.7	82	7	1	.....	.....	2	6	12	2	.....	.....	.....	5	3.50	88.9
Manilla	N. 14 35	E. 120 57	8.04 p.m.	46	14	29.86	758.5	29.84	757.9	78.2	25.7	88	5	.....	.....	.....	.....	2	5	6	12	2218	3568	4	5.59	141.9
San Fernando	N. 36 28	W. 6 13	11.35 a.m.	95	29	29.87	758.7	29.95	760.7	61.0	16.1	74	1	1	9	4	3	3	1	.....	8	.....	.....	7	4.16	105.7
SWEDISH.																										
Haparanda	N. 65 47	E. 24 03	1.36 p.m.	30	9	29.60	751.9	29.68	753.9	23.0	— 5.0	92	6	3	3	.....	5	2	1	.....	10	.....	.....	7	2.20	55.8
Umea	N. 63 50	E. 20 17	1.21 p.m.	39	12	29.67	753.7	29.76	755.9	26.8	— 2.9	89	13	5	1	5	2	.....	....	2	2	.....	.....	5	1.98	50.2
Hernosand	N. 62 32	E. 17 57	1.12 p.m.	46	14	29.68	753.8	29.78	756.4	30.4	— 0.9	80	4	3	2	.....	3	2	.....	2	14	.....	.....	4	1.85	46.9
Stockholm	N. 59 20	E. 18 04	1.12 p.m.	144	44	29.63	752.6	29.83	757.7	36.0	2.2	75	4	3	2	6	5	2	.....	4	4	.....	.....	7	0.40	10.2
Wisby	N. 57 39	E. 18 19	1.13 p.m.	52	16	29.73	755.1	29.81	757.2	39.9	4.4	81	1	2	5	6	5	.....	9	2	.....	.....	.....	8	2.34	59.4
Sub-Series.																										
Upsala	N. 59 51	E. 17 37	1.10 p.m.	79	24	29.70	754.4	29.82	757.4	33.3	0.7	86	3	5	4	8	2	3	1	3	1	.....	.....	6	0.68	17.4
SWISS.																										
Geneva	N. 46 12	E. 6 08	0.25 p.m.	1338	408	28.39	721.0	29.84	758.0	43.2	6.2	80	7	1	4	5	9	3	.....	1	.....	.....	.....	7	2.89	73.3
TURKISH.																										
Constantinople	N. 41 02	E. 28 59	1.56 p.m.	246	75	29.66	753.4	29.91	760.7	57.9	14.4	69	6	1	.....	11	5	1	2	4	.....	.....	.....	6	5.62	142.8
Valona	N. 40 27	E. 19 27	1.18 p.m.	105	32	29.74	755.4	29.83	757.7	61.3	16.3	.....	.....	5	.....	5	8	9	.....	3	.....	.....	.....	5	7.68	195.0
Sub-Series.																										
Beirut	N. 33 54	E. 35 28	2.22 p.m.	112	34	29.90	759.4	29.98	761.5	73.4	23.0	60	13	6	5	5	1	.....	.....	.....	.....	.....	.....	3	3.07	78.0
UNITED STATES.																										
Atlantic states.																										
Eastport	N. 44 54	W. 66 59	7.32 a.m.	53	16	29.92	760.0	29.98	761.5	36.7	2.6	75	3	9	2	7	2	3	2	1	1	7984	12849	6	2.32	58.9
Portland	N. 43 39	W. 70 15	7.19 a.m.	99	30	29.88	758.9	29.99	761.7	34.4	1.3	74	4	6	6	7	3	.....	.....	1	3	6122	9691	6	4.74	120.4
Manchester	N. 43 13	W. 73 03	7.14 a.m.	.....	.....	29.75	755.6	30.02	762.5	32.6	0.3	80	2	12	3	6	3	.....	.....	1	3	4444	7152	5	3.02	76.7
Northfield	N. 44 08	W. 72 42	7.09 a.m.	871	266	29.02	737.1	30.00	762.0	29.6	— 1.3	85	4	2	1	5	9	1	2	5	1	6621	10655	7	3.82	97.0
Boston	N. 42 21	W. 71 04	7.16 a.m.	124	38	29.88	758.9	30.02	762.5	38.1	3.4	78	6	3	10	6	3	1	1	.....	.....	8492	13666	6	2.22	56.4
Nantucket	N. 41 14	W. 70 07	7.20 a.m.	14	4	30.01	762.2	30.01	762.2	42.5	5.8	80	2	9	4	4	2	2	1	6	.....	8704	14007	5	2.54	64.5
Block Id	N. 41 10	W. 71 36	7.14 a.m.	26	8	30.00	762.0	30.02	762.5	43.7	6.5	82	1	11	3	7	1	1	1	5	.....	14054	22617	5	1.68	42.7
New Haven	N. 41 18	W. 72 56	7.08 a.m.	107	33	29.93	760.2	30.04	763.0	36.6	2.6	77	6	4	5	5	1	.....	.....	4	5	5941	9577	4	2.85	72.4
New London	N. 41 21	W. 72 05	7.12 a.m.	47	14	29.97	761.2	30.01	762.2	38.8	3.8	80	5	7	3	5	1	.....	.....	5	4	5325	8570	5	2.19	55.6
Wood's Holl	N. 41 33	W. 70 40	7.18 a.m.	22	7	30.01 *h*	762.2 *h*	30.02 *h*	762.5 *h*	41.8	5.4	96 *g*	9	4	6	4	2	4	1	2	.....	10505 *g*	16906 *g*	5 *g*	2.84 *g*	72.1
Albany	N. 42 39	W. 73 45	7.05 a.m.	85	26	29.96	761.0	30.05	763.3	35.0	1.7	75	6	6	2	1	11	3	.....	.....	1	5005	8055	7	4.36	110.7
New York City	N. 40 43	W. 74 00	7.04 a.m.	185	56	29.86	758.4	30.05	763.3	39.9	4.4	68	4	5	6	6	2	.....	2	2	3	7091	11412	5	2.04	51.8
Philadelphia	N. 39 57	W. 75 09	7.00 a.m.	117	36	29.97	761.2	30.09	764.3	41.3	5.2	72	5	4	9	3	3	.....	2	2	2	7078	11391	6	1.38	35.0
Atlantic City	N. 39 22	W. 74 25	7.03 a.m.	13	4	30.08	764.0	30.08	764.0	40.9	4.9	92	5	10	4	6	.....	3	.....	.....	2	5759	9268	5	2.58	65.5
Baltimore	N. 39 18	W. 76 37	6.54 a.m.	45	14	30.06	763.5	30.09	764.3	40.6	4.8	70	3	8	5	4	.....	1	2	4	3	3833	6168	4	2.02	51.3
Washington City	N. 38 54	W. 77 03	6.52 a.m.	106	32	30.01	762.2	30.11	764.8	39.1	3.9	74	6	8	3	2	3	.....	1	1	6	3995	6429	4	1.83	46.5
Lynchburg	N. 37 25	W. 79 09	6.44 a.m.	652	199	29.43	747.5	30.12	765.0	38.9	3.8	82	1	2	5	3	1	.....	.....	2	16	2280	3669	5	1.01	25.6
Norfolk	N. 36 51	W. 76 17	6.55 a.m.	30	9	30.09	764.3	30.10	764.5	43.9	6.6	88	6	6	2	2	6	2	.....	6	.....	5296	8517	4	1.69	42.9
Hatteras	N. 35 15	W. 75 40	6.58 a.m.	11	3	30.13	765.3	30.12	765.0	52.2	11.2	80	8	9	2	3	.....	1	3	2	2	10570	17010	4	2.87	72.9
Wilmington	N. 34 14	W. 77 57	6.48 a.m.	52	16	30.09	764.3	30.12	765.0	45.8	7.7	81	11	5	4	2	1	.....	2	3	2	3879	6242	3	1.04	26.4
Raleigh	N. 35 48	W. 78 29	6.39 a.m.	375	114	29.75	755.6	30.14	765.5	40.3	4.6	84	7	9	10	.....	.....	.....	1	3	.....	3582	5764	5	1.00	25.4
Charlotte	N. 35 13	W. 80 51	6.37 a.m.	808	246	29.26	743.2	30.13	765.3	42.1	5.6	78	6	3	1	10	3	.....	1	6	.....	3338	5372	4	0.51	13.0
Charleston	N. 32 47	W. 79 56	6.40 a.m.	52	16	30.10	764.5	30.12	765.0	50.8	10.4	85	7	6	3	.....	.....	.....	.....	12	2	5142	8275	3	0.64	16.3
Augusta	N. 33 28	W. 81 54	6.32 a.m.	183	56	29.99	761.7	30.16	766.1	43.8	6.6	86	1	3	5	1	2	2	.....	9	7	2148	3457	3	0.77	19.6
Savannah	N. 32 05	W. 81 05	6.36 a.m.	87	27	30.07	763.8	30.13	765.3	49.4	9.7	86	9	6	2	5	.....	1	6	1	.....	4192	6746	4	0.29	7.4
Jacksonville	N. 30 20	W. 81 39	6.34 a.m.	43	13	30.09	764.3	30.10	764.5	54.5	12.5	86	7	3	4	4	1	.....	2	9	.....	4997	8042	4	0.10	2.5
Cedar Keys	N. 29 08	W. 83 02	6.28 a.m.	22	7	30.09	764.3	30.07	763.8	57.3	14.1	83	7	4	.....	.....	2	1	3	13	.....	5816	9360	3	1.08	27.4
Key West	N. 24 34	W. 81 49	6.33 a.m.	22	7	30.04	763.0	30.02	762.5	71.6	22.0	82	6	3	.....	.....	.....	.....	5	16	.....	8676	13962	5	1.33	33.8
Titusville	N. 28 40	W. 80 50	6.37 a.m.	12	4	30.11	764.8	30.08	764.0	60.7	15.9	84	2	9	10	2	.....	.....	3	3	1	5945	9567	4	0.88	22.4
Gulf states.																										
Atlanta	N. 33 45	W. 84 23	6.23 a.m.	1129	344	28.98	736.1	30.15	765.8	44.9	7.2	73	.....	6	6	3	1	7	4	3	.....	6553	10546	4	0.30	7.6
Pensacola	N. 30 25	W. 87 13	6.11 a.m.	30	9	30.10	764.5	30.09	764.3	54.5	12.5	80	6	3	1	.....	.....	1	5	13	1	4322	6955	4	0.65	16.5
Mobile	N. 30 41	W. 88 02	6.08 a.m.	35	11	30.12	765.0	30.12	765.0	51.6	10.9	87	12	8	2	1	.....	3	2	2	.....	4739	7627	5	0.44	11.2
Montgomery	N. 32 23	W. 86 18	6.15 a.m.	217	66	29.94	760.5	30.15	765.8	47.3	8.5	84	2	4	1	5	1	4	3	6	4	3203	6764	4	0.79	20.1
Vicksburg	N. 32 22	W. 90 53	5.57 a.m.	222	68	29.96	761.0	30.14	765.5	49.0	9.4	84	4	.....	1	4	7	4	2	4	4	3695	5946	4	1.43	36.3
New Orleans	N. 29 58	W. 90 04	6.00 a.m.	52	16	30.08	764.0	30.10	764.5	55.8	13.2	84	6	3	2	2	1	4	2	8	2	4873	7842	4	0.52	13.2
Shreveport	N. 32 30	W. 93 40	5.46 a.m.	227	69	29.91	759.7	30.12	765.0	47.1	8.4	87	3	4	2	1	5	3	1	4	7	3166	5095	4	5.45	138.4
Fort Smith	N. 35 22	W. 94 24	5.43 a.m.	470	143	29.65	753.1	30.14	765.5	39.8	4.3	76	2	3	3	2	.....	10	4	2	4	3216	3582	3	2.23	56.6
Little Rock	N. 34 45	W. 92 06	5.52 a.m.	309	94	29.83	757.7	30.13	765.3	42.7	5.9	74	4	3	2	5	2	.....	.....	4	10	3946	6350	2	4.50	114.3
Galveston	N. 29 18	W. 94 47	5.41 a.m.	40	12	30.10	764.5	30.10	764.5	60.6	15.9	81	6	4	2	3	5	1	1	6	2	3831	6165	4	0.05	1.3
San Antonio	N. 29 27	W. 98 28	5.26 a.m.	781	238	29.32	744.7	30.11	764.8	51.7	10.9	79	12	1	2	2	3	1	1	6	2	5028	8092	6	2.44	62.0
Corpus Christi	N. 27 50	W. 97 32	5.30 a.m.	18	5	30.10	764.5	30.08	764.0	58.8	14.9	89	12	5	4	1	2	4	.....	1	1	7008	11278	5	0.66	16.8
Brownsville	N. 25 53	W. 97 26	5.30 a.m.	57	17	30.05	763.3	30.06	763.5	62.5	16.9	94	7	4	1	.....	8	1	4	4	1	4646	7477	6	1.70	43.2
Rio Grande City	N. 26 23	W. 98 48	5.25 a.m.	230	70	29.92	760.0	30.12	765.0	59.2	15.1	91	7	5	.....	1	3	4	2	4	4	3424	5510	5	2.04	51.8
Palestine	N. 31 45	W. 95 40	5.38 a.m.	533	162	29.60	751.8	30.14	765.5	48.8	9.3	79	3	3	2	3	9	2	2	5	1	5490	8835	3	1.86	47.2
Ohio val. & Tenn.																										
Chattanooga	N. 35 04	W. 85 15	6.19 a.m.	783	239	29.38	746.2	30.18	766.6	41.5	5.3	79	6	6	2	3	2	5	1	2	3	3838	6177	4	1.08	27.4
Knoxville	N. 35 56	W. 83 58	6.24 a.m.	980	299	29.15	740.4	30.19	766.8	38.0	3.3	78	2	2	2	3	.....	2	9	10	.....	3560	5729	4	0.93	23.6
Memphis	N. 35 09	W. 90 03	6.00 a.m.	320	98	29.78	756.4	30.10	764.5	43.8	6.6	74	4	3	1	4	1	5	4	6	2	4536	7300	4	4.06	103.1
Nashville	N. 36 10	W. 86 47	6.13 a.m.	549	167	29.57	751.1	30.14	765.5	40.4	4.7	76	6	3	3	1	4	3	1	2	7	4079	6564	4	2.29	58.2
Lexington	N. 38 02	W. 84 33	6.22 a.m.	.....	.....	29.08	738.6	.....	.....	37.6	3.1	71	2	1	1	6	8	7	.....	1	4	5005	8055	4	3.02	76.7
Louisville	N. 38 15	W. 85 45	6.17 a.m.	551	168	29.55	750.6	30.13	765.3	39.8	4.3	68	2	3	1	5	7	5	2	2	3	5355	8618	5	2.51	63.8
Indianapolis	N. 39 46	W. 86 10	6.16 a.m.	766	233	29.28	743.7	30.10	764.5	34.3	1.3	71	1	4	5	2	7	5	1	3	2	4343	6989	4	3.71	94.2
Cincinnati	N. 39 06	W. 84 30	6.22 a.m.	628	191	29.46	748.3	30.12	765.0	37.1	2.8	76	4	4	3	3	1	11	.....	.....	4	5117	8235	5	2.83	71.9
Columbus	N. 39 58	W. 83 00	6.28 a.m.	812	248	29.24	742.7	30.12	765.0	36.0	2.2	77	1	2	6	5	9	1	1	2	3	5373	8647	5	2.45	62.2
Pittsburg	N. 40 32	W. 80 02	6.40 a.m.	847	258	29.18	741.2	30.07	763.8	41.0	5.0	74	6	7	5	4	5	2	.....	1	.....	5650	9093	6	1.37	34.8
Lake region.																										
Rochester	N. 43 08	W. 77 42	6.49 a.m.	621	189	29.32	744.7	30.00	762.0	35.9	2.2	78	.....	7	3	12	4	2	1	1	.....	9439	15190	7	0.80	20.3
Buffalo	N. 42 53	W. 78 53	6.45 a.m.	692	210	29.28	743.7	30.03	762.7	36.2	2.3	73	2	4	4	9	7	1	2	1	.....	10039	16156	6	2.53	64.3
Oswego	N. 43 29	W. 76 35	6.54 a.m	335	102	29.64	752.8	30.01	762.2	36.4	2.4	75	2	7	2	3	7	5	1	3	.....	9918	15961	7	2.38	60.4
Erie	N. 42 07	W. 80 05	6.40 a.m.	681	208	29.31	744.5	30.05	763.3	37.7	3.2	78	4	6	3	8	4	1	4	.....	.....	8565	13784	6	4.13	104.9
Sandusky	N. 41 25	W. 82 40	6.30 a.m.	638	194	29.39	746.5	30.08	764.0	35.9	2.2	76	1	2	4	12	8	.....	2	1	.....	9574	15407	6	2.25	57.2
Cleveland	N. 41 30	W. 81 42	6.33 a.m.	690	210	29.32	744.7	30.07	763.8	36.7	2.6	72	1	2	4	10	5	5	2	1	.....	8420	13550	8	2.97	75.4
Toledo	N. 41 40	W. 83 34	6.26 a.m.	651	198	29.37	746.0	30.07	763.8	34.4	1.3	78	4	1	6	11	3	1	1	2	1	6407	10321	5	2.64	67.0
Detroit	N. 42 20	W. 83 03	6.28 a.m.	662	202	29.34	745.2	30.06	763.5	34.6	1.4	78	6	4	5	8	.....	.....	3	4	.....	7844	12623	6	2.72	69.1
Alpena	N. 45 05	W. 83 30	6.26 a.m.	609	186	29.33	745.0	30.01	762.2	31.2	— 0.4	82	4	7	3	6	4	2	2	1	1	7653	12316	8	2.71	68.8
Escanaba	N. 45 48	W. 87 05	6.12 a.m.	608	185	29.34	745.2	30.02	762.5	28.4	— 2.0	80	10	5	2	5	2	1	1	3	1	6501	10462	7	0.98	24.9
Grand Haven	N. 43 05	W. 86 18	6.15 a.m.	620	189	29.35	745.5	30.03	762.7	33.4	0.8	81	2	7	2	4	3	3	6	3	.....	9944	16003	7	1.72	43.7
Lansing	N. 42 45	W. 84 33	6.22 a.m.	870	265	29.10	739.1	30.06	763.5	34.1	1.2	86	1	7	4	4	5	2	2	5	.....	6313	10160	7	1.96	49.8
Mackinaw City	N. 45 47	W. 84 39	6.22 a.m.	605	184	29.34	745.2	30.02	762.5	31.7	— 0.2	78	4	6	3	5	4	5	2	1	.....	10393	16725	7	1.09	27.7
Marquette	N. 46 34	W. 87 24	6.11 a.m.	672	205	29.27	743.4	30.03	762.7	29.5	— 1.4	77	2	11	4	4	5	1	.....	3	.....	7103	11431	8	3.03	77.0
Port Huron	N. 43 00	W. 82 26	6.30 a.m	639	195	29.36	745.7	30.06	763.5	33.2	0.7	88	1	6	7	5	4	2	2	3	...	9216	14832	6	1.79	45.5
Chicago	N. 41 52	W. 87 38	6.10 a.m.	715	218	29.28	743.7	30.05	763.3	34.8	1.6	76	2	6	6	6	1	4	2	3	.....	7192	11574	5	2.41	61.2
Green Bay	N. 45 00	W. 87 30	6.08 a.m.	616	188	29.36	745.7	30.05	763.3	28.8	— 1.8	79	6	3	4	8	1	1	3	4	.....	6440	10364	7	1.57	39.9
Milwaukee	N. 43 02	W. 87 54	6.09 a.m.	697	212	29.28	743.7	30.04	763.0	32.6	0.3	85	4	5	4	7	.....	3	3	2	2	8938	14384	6	0.85	21.6
Duluth	N. 46 48	W. 92 06	5.52 a.m.	672	205	29.29	744.0	30.05	763.3	26.3	— 3.2	81	1	8	3	4	3	5	1	4	1	5071	8161	6	1.99	50.6
Upper Miss. val.																										
Saint Paul	N. 44 58	W. 93 03	5.48 a.m.	831	253	29.13	739.9	30.05	763.3	25.2	— 3.2	83	.....	4	4	2	.....	2	5	1	12	4222	6794	5	0.65	16.5
La Crosse	N. 43 49	W. 91 15	5.55 a.m.	744	227	29.27	743.4	30.09	764.3	27.8	— 2.3	81	5	7	1	3	9	.....	1	3	1	5755	9362	6	0.81	20.6
Davenport	N. 41 30	W. 90 38	5.58 a.m.	615	187	29.40	746.7	30.07	763.8	31.5	— 0.3	81	.....	9	2	6	3	.....	2	8	.....	6403	10306	4	1.13	28.7

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea		Result of Simultaneous Observations for November, 1887.																	Average Cloudiness.	Total Precipitation.	
						Mean Barometer.				Mean Temperature.		Mean Rel. Humidity.	Wind.												
						Actual.		Reduced.					Directions.									Total Movement.			
				Feet.	Metr's	Inch.	Mill.	Inch.	Mill.	Fah.	Cent.		N	NW	W	SW	S	SE	E	NE	C	Miles	Kil.	0-10	Inch.	Mill.
U. STATES—Con.																									
Des Moines	N. 41 35	W. 93 37	5.46 a.m.	866	264	29.16	740.7	30.09	764.3	29.8	—1.2	80	3	4	5	5	3	2	4	2	2	5615	9036	3	0.52	13.2
Dubuque	N. 42 30	W. 90 44	5.57 a.m.	665	203	29.35	745.5	30.08	764.0	28.4	—2.0	84	4	5	3	1	4	1	1	4	7	3450	5552	4	0.74	1.18
Keokuk	N. 40 22	W. 91 26	5.54 a.m.	618	188	29.42	747.3	30.08	764.0	33.7	0.9	75	4	4	4	5	4	1	2	5	1	6667	10729	4	1.18	30.0
Cairo	N. 37 00	W. 89 10	6.04 a.m.	359	109	29.76	755.9	30.13	765.3	39.9	4.4	70	8	3	1	3	7	.....	4	2	2	5423	8727	4	3.33	84.6
Springfield	N. 39 48	W. 89 39	6.02 a.m.	644	196	29.42	747.3	30.11	764.8	34.0	1.1	74	1	7	3	1	9	1	2	3	3	6445	10372	3	1.36	34.5
Saint Louis	N. 38 38	W. 90 12	5.59 a.m.	571	174	29.49	749.0	30.10	764.5	38.5	3.6	65	3	4	1	7	5	4	.....	5	1	8540	13744	3	4.61	117.1
Missouri valley.																									
Leavenworth	N. 39 19	W. 94 57	5.40 a.m.	842	257	29.24	742.7	30.14	765.5	33.8	1.0	76	11	2	1	11	1	.....	1	3	.....	5016	8072	4	1.14	29.0
Omaha	N. 41 16	W. 95 56	5.36 a.m.	1113	339	28.93	734.8	30.13	765.3	32.9	0.5	70	6	10	3	2	3	3	2	.....	1	5853	9419	4	0.89	22.6
Fort Sully	N. 44 39	W. 100 39	5.17 a.m.	1600	488	28.37	720.6	30.12	765.0	23.4	—4.8	76	.....	1	11	.....	.....	1	4	2	11	5938	9556	3	0.13	3.3
Huron	N. 44 21	W. 98 09	5.28 a.m.	1307	398	28.68	728.5	30.12	765.0	20.9	—6.2	67	5	10	3	2	3	2	3	1	1	7166	11532	2	0.25	6.4
Yankton	N. 42 54	W. 97 28	5.30 a.m.	1234	376	28.74	730.0	30.09	764.3	27.7	—2.4	75	4	10	5	5	.....	2	1	3	.....	5767	9281	3	0.57	14.5
Springfield	N. 37 12	W. 93 18	5.47 a.m.	1356	414	28.68	728.5	30.12	765.0	37.9	3.3	76	1	4	.....	3	5	13	.....	4	.....	7391	11894	4	3.27	83.1
Lamar	N. 37 32	W. 94 15	5.43 a.m.	1028	313	29.06	738.1	30.16	766.1	36.9	2.7	80	3	5	.....	3	10	4	2	3	.....	7206	11597	4	1.50	38.1
Valentine	N. 42 50	W. 100 32	5.18 a.m.	2614	797	27.34	694.4	30.12	765.0	23.4	—4.8	73	5	6	7	5	3	2	1	.....	1	7648	12308	3	0.13	3.3
Moorhead	N. 46 52	W. 96 44	5.33 a.m.	926	282	29.04	737.6	30.09	764.3	19.6	—6.9	83	6	6	2	1	7	3	.....	1	4	6747	10858	4	0.57	14.5
Saint Vincent	N. 48 56	W. 97 14	5.31 a.m.	804	245	29.15	740.7	30.08	764.0	12.5	—10.8	87	4	3	2	2	12	2	.....	2	3	6123	9854	4	0.22	5.6
Bismarck	N. 46 47	W. 100 38	5.16 a.m.	1681	513	28.25	717.5	30.12	765.0	20.6	—6.3	84	1	7	8	1	1	4	2	.....	6	6652	10705	4	0.11	2.8
Fort Buford	N. 48 00	W. 103 56	5.04 a.m.	1854	565	27.99	710.9	30.04	763.0	20.1	—6.6	81	1	3	6	3	10	2	4	.....	1	6199	9976	5	0.10	2.5
Fort Totten	N. 47 57	W. 98 57	5.24 a.m.	1487	453	28.40	721.3	30.08	764.0	18.5	—7.5	84	3	5	13	3	3	.....	2	1	.....	9023	14521	3	0.40	10.2
Rocky Mount. reg.																									
Ft. Assinaboine	N. 48 32	W. 109 42	4.41 a.m.	2690	802	27.17	690.1	30.08	764.0	24.4	—4.2	66	.....	1	6	12	3	3	2	1	2	8803	14167	6	0.29	7.4
Fort Custer	N. 45 42	W. 107 34	4.50 a.m.	3040	927	26.88	682.7	30.11	764.8	25.3	—3.7	73	1	1	2	6	.....	13	3	4	.....	4609	7417	4	0.05	1.3
Fort Maginnis	N. 47 12	W. 109 10	4.44 a.m.	4320	1317	25.56	649.2	30.06	763.5	26.9	—2.8	80	4	20	2	1	.....	.....	.....	3	.....	9781	15741	6	1.39	35.3
Helena	N. 46 34	W. 112 04	4.32 a.m.	4069	1240	25.86	656.8	30.10	764.5	29.5	—1.4	59	.....	15	8	.....	1	.....	.....	4	2	4443	7150	4	0.22	5.6
Poplar River	N. 48 08	W. 105 10	5.00 a.m.	2002	610	27.88	708.1	30.10	764.5	15.3	—9.3	84	3	1	18	1	.....	1	2	.....	4	4636	7461	3	0.39	9.9
Deadwood	N. 44 23	W. 103 43	5.05 a.m.	4600	1402	25.38	644.6	30.13	765.3	31.0	—0.6	78	.....	2	7	15	.....	.....	1	3	2	2967	4775	3	0.48	12.2
Cheyenne	N. 41 08	W. 104 48	5.01 a.m.	6105	1861	24.02	610.1	30.09	764.3	31.0	—0.6	46	5	17	4	.....	2	.....	.....	2	1	7658	12321	3	0.29	7.4
North Platte	N. 41 08	W. 100 45	5.17 a.m.	2841	866	27.15	689.6	30.15	765.8	24.9	—3.9	80	2	7	12	5	.....	.....	3	1	.....	5452	8774	3	0.19	4.8
Pike's Peak	N. 38 50	W. 105 02	5.00 a.m.	14134	4308	17.75	450.8	30.09	764.3	16.2	—8.8	59a	6	8	10	4	1	.....	.....	1	.....	16069	25860	2	0.90	22.9
Denver	N. 39 45	W. 105 00	5.00 a.m.	5294	1614	24.78	629.4	30.11	764.8	30.1	—1.1	68	5	1	1	2	21	.....	.....	.....	.....	5106	8217	2	0.22	5.6
Concordia	N. 39 35	W. 97 41	5.29 a.m.	1384	422	28.64	727.4	30.12	765.0	33.3	0.7	65	6	5	2	4	2	.....	1	4	6	5593	9001	3	1.10	27.9
Las Animas	N. 38 04	W. 103 12	5.07 a.m.	3899	1188	26.10	662.9	30.11	764.8	26.8	—2.9	60	.....	3	17	.....	.....	1	4	3	2	3591	5779	2	0.28	7.1
Dodge City	N. 37 45	W. 100 00	5.20 a.m.	2523	769	27.48	698.0	30.16	766.1	31.5	—0.3	69	3	1	.....	5	3	6	.....	12	.....	6046	9730	2	0.35	8.9
Fort Elliott	N. 35 30	W. 100 21	5.19 a.m.	2700	823	27.33	694.2	30.07	763.8	35.5	1.9	68	5	6	4	5	3	3	.....	.....	4	7052	11349	1	0.23	5.8
Fort Sill	N. 34 40	W. 98 23	5.27 a.m.	1200	366	28.88	733.5	30.13	765.3	39.0	3.9	76	14	.....	1	1	6	2	.....	2	4	6690	10766	3	0.34	8.6
Abilene	N. 32 14	W. 99 45	5.21 a.m.	1748	533	28.30	718.8	30.11	764.8	44.7	7.1	83	2	2	1	12	6	.....	.....	7	.....	6782	10914	4	0.87	22.1
Fort Davis	N. 30 38	W. 103 56	5.04 a.m.	4928	1502	25.24	641.1	30.07	763.8	44.2	6.8	64	.....	1	.....	9	1	.....	.....	6	13	4347	6996	3	1.80	45.7
Fort Stanton	N. 33 30	W. 105 26	4.58 a.m.	6150	1875	24.02	610.1	30.00	762.0	27.7	—2.4	79	2a	5	7	1	.....	.....	.....	.....	14	4028	6482	2	0.17	4.3
Plateau region.																									
Keeler	N. 36 35	W. 117 50	4.09 a.m.	3622	1104	26.38	670.0	30.04	763.0	46.8	8.2	50	1	1	.....	.....	.....	11	9	1	7	3113	5010	2	0.01	0.2
Fresno	N. 36 44	W. 119 51	4.01 a.m.	313	95	29.72	754.9	30.04	763.0	45.2	7.3	82	2	7	.....	4	1	4	5	2	5	2266	3647	1	0.32	8.1
Santa Fé	N. 35 41	W. 105 57	4.56 a.m.	7020	2141	23.32	592.3	30.10	764.5	34.4	1.3	57	1	1	.....	1	1	.....	6	13	7	3228	5195	2	0.66	16.8
Fort Apache	N. 33 48	W. 109 57	4.40 a.m.	5020	1835	25.11	637.8	30.15	765.8	32.1	0.1	78	.....	3	.....	3	.....	.....	16	8	.....	3957	6368	2	1.83	46.5
Fort Grant	N. 32 39	W. 109 57	4.40 a.m.	4860	1482	25.24	641.1	30.04	763.0	44.7	7.1	44	7	4	2	2	2	.....	4	6	3	3497	5628	3	0.28	7.1
Prescott	N. 34 33	W. 112 28	4.30 a.m.	5389	1643	24.78	629.4	30.11	764.8	32.8	0.4	84	1	.....	.....	4	5	1	3	2	14	2861	4604	2	1.57	39.9
Yuma	N. 32 45	W. 114 36	4.22 a.m.	141	43	29.84	757.9	29.96	761.0	53.6	12.0	71	7	3	1	.....	2	.....	7	10	.....	3286	5288	2	2.43	61.7
El Paso	N. 31 47	W. 106 30	4.54 a.m.	3764	1147	26.33	668.8	30.08	764.0	41.8	5.4	73	1	4	1	1	.....	.....	2	1	20	1297	2086	2	0.56	14.2
Fort Bridger	N. 41 28	W. 110 30	4.38 a.m.	6643	2025	23.56	598.4	30.17	766.3	22.6	—5.2	62	2	2	6	2	1	.....	6	10	1	5124	8246	4	0.27	6.9
Salt Lake City	N. 40 46	W. 111 54	4.33 a.m.	4348	1325	25.71	653.0	30.13	765.3	37.6	3.1	53	1	2	1	.....	2	4	11	6	3	2863	4607	3	0.25	6.4
Frisco	N. 38 25	W. 113 16	4.27 a.m.	6406	1950	23.76	603.5	30.02	762.5	38.6	3.1	47	15	3	.....	9	.....	1	.....	.....	2	6089	9799	3	0.39	9.9
Winnemucca	N. 40 58	W. 117 43	4.09 a.m.	4358	1328	25.74	653.8	30.22	767.6	23.7	—4.6	77	2	3	2	.....	2	.....	13	8	.....	4891	7871	2	0.03	0.8
Montrose	N. 38 30	W. 107 56	4.48 a.m.	5780	1762	24.37	619.0	30.15	765.8	27.9	—2.8	62	.....	1	.....	1	1	23	2	1	1	3149	5068	2	1.08	27.4
Fort Bidwell	N. 41 53	W. 120 11	3.59 a.m.	4615	1415	25.44	646.2	30.15	765.8	32.7	0.4	86	4	3	13	6	.....	.....	4	.....	.....	3199	5148	3	0.38	9.6
Boisé City	N. 43 37	W. 116 08	4.16 a.m.	2750	838	27.30	693.4	30.20	767.1	30.2	—1.0	73	1	2	1	1	1	8	2	1	13	1516	2440	4	0.04	1.0
Spokane Falls	N. 46 28	W. 117 05	4.11 a.m.	1909	582	28.09	713.5	30.17	766.3	32.0	0.0	90	.....	1	.....	8	.....	4	.....	11	6	2614	4207	5	1.22	31.0
Walla Walla	N. 46 03	W. 118 18	4.07 a.m.	1018	310	29.04	737.6	30.16	766.1	37.4	3.0	82	.....	2	.....	11	12	3	.....	.....	2	2978	4792	5	3.06	77.7
Pacific coast reg'n.																									
Astoria	N. 46 11	W. 123 42	3.45 a.m.	20	6	30.02	762.5	30.04	763.0	42.7	5.9	86	.....	1	.....	9	1	8	4	7	.....	5006	8056	7	8.11	206.0
Fort Canby	N. 46 16	W. 124 04	3.44 a.m.	179	55	29.84	757.9	30.04	763.0	44.1	6.7	92	3	2	.....	1	4	15	.....	3	2	10583	17030	5	7.25	184.2
Olympia	N. 47 03	W. 122 53	3.49 a.m.	36	11	30.04	763.0	30.10	764.5	40.2	4.6	95	2	.....	.....	3	8	.....	.....	3	14	2269	3652	7	4.94	125.5
Port Angeles	N. 48 07	W. 123 06	3.46 a.m.	14	4	30.03	762.7	30.05	763.3	38.9	3.8	93	.....	.....	1	1	25	1	.....	1	1	2739	4408	7	4.52	114.8
Tatoosh Id.	N. 48 23	W. 124 44	3.41 a.m.	86	26	29.94	760.4	30.04	763.0	45.2	7.3	88	.....	1	2	3	2	8	13	1	.....	11177	18987	6	10.15	257.8
Portland	N. 45 32	W. 122 43	3.49 a.m.	88	27	30.02	762.5	30.10	764.5	41.2	5.1	90	1	9	4	6	9	.....	.....	.....	1	3279	5277	6	3.43	87.1
Roseburg	N. 43 13	W. 123 20	3.47 a.m.	523	159	29.55	750.6	30.12	765.0	40.9	4.9	91	.....	2	6	1	2	.....	5	2	12	1525	2454	6	3.19	81.0
Eureka	N. 40 52	W. 123 58	3.43 a.m.	50	18	30.04	763.0	30.07	763.8	46.1	7.8	92	4	3	.....	2	4	11	2	2	2	.....	.....	6	2.66	67.6
Red Bluff	N. 40 10	W. 122 15	3.51 a.m.	342	104	29.72	754.9	30.06	763.5	47.3	8.5	56	22	3	1	.....	2	.....	.....	.....	2	3715	5979	3	1.52	38.6
Sacramento	N. 38 35	W. 121 30	3.54 a.m.	64	20	30.00a	762.0a	30.05a	763.3a	45.2a	7.3a	78a	2a	6	.....	.....	1	15	.....	2	3	3190	5134	1a	0.45	11.4
San Francisco	N. 37 48	W. 122 26	3.50 a.m.	60	18	30.01	762.2	30.06	763.5	51.4	10.8	89	3	2	4	6	5	3	1	3	3	4223	6796	5	0.99	25.2
Los Angeles	N. 34 03	W. 118 15	4.07 a.m.	339	103	29.67	753.6	30.00	762.0	51.6	10.9	83	6	1	.....	1	.....	1	5	15	1	3669	5905	2	0.80	20.3
San Diego	N. 32 43	W. 117 10	4.12 a.m.	66	20	29.96	761.0	30.00	762.0	53.8	12.1	82	3	3	.....	2	2	.....	.....	13	7	3296	5304	4	2.08	52.8
Sub-Series.																									
Bogota	N. 4 36	W. 74 14	7.11 a.m.	8655	2638	22.02	759.3	.....	.....	53.1	11.7	87	.....	.....	.....	.....	1	.....	.....	.....	29	.....	.....	7	6.12	155.4
Rivas	N. 11 26	W. 85 47	6.17 a.m.	250	75	29.99	761.7	30.26?	768.6?	75.5	24.2	82	.....	4	.....	1	.....	1	9	4	10	.....	.....	4	2.50	63.5
Vera Cruz	N. 19 11	W. 96 09	5.35 a.m	16	5	29.83	557.7	29.85	758.2	.....	.....	.....	6	7	7	2	2	.....	.....	2	4	.....	.....	.....	.....	.....

RETARDED DATA FROM DANISH STATIONS.

AUGUST, 1887.																											
Jacobshavn	N. 69 13	W. 50 55	8.35 a.m.	43	13	29.80	757.0	29.91	759.7	42.8	6.0	.....	1	1	3	2	1	8	4	.....	11	.....	.....	5	.....	.....
Upernavik	N. 72 47	W. 56 00	8.16 a.m.	39	12	29.82	757.3	29.92	760.0	39.6	4.2	85	4	2	.....	7	2	.....	3	2	11	.....	.....	8	.....	.....
SEPTEMBER, 1887.																											
Godthaab	N. 64 11	W. 51 46	8.33 a.m.	36	11	29.69	754.1	29.78	756.4	37.0	2.8	84	1	.....	.....	1	8	6	2	11	1	.....	.....	7	.....	.....
Jacobshavn	N. 69 13	W. 50 55	8.36 a.m.	43	13	29.74h	755.4h	29.84h	757.9h	33.8	1.0	.....	3	.....	2	1	.....	7	7	.....	10	.....	.....	8	.....	.....
Upernavikf	N. 72 47	W. 56 00	8.16 a.m.	39	12	29.74	755.3	29.84	757.9	32.0	0.0	87	3	1	1	4	1	1	9	.....	4	.....	.....	8	.....	.....

OCEAN SQUARE DATA FOR OCTOBER, 1887.

Location of Centre of each Square.	Barometer.		Temperature.		Wind Frequency.										Wind force 0–10.
	Inch.	Mill.	Fah.	Cent.	N.	NW.	W.	SW.	S.	SE.	E.	NE.	Calm.	Blank.	
N. 12.5° W. 37.5°	29.96	761.0				1					13	5		11	3.9
12.5 42.5	29.96	761.0			1					1	16			12	3.9
12.5 47.5	29.94	760.5								3	13	3		11	3.9
12.5 52.5	29.91	759.7			2					2	17	2		7	3.9
17.5 37.5	30.02	762.5					1				15	3		11	4.1
17.5 42.5	30.01	762.2				2					17			11	3.9
17.5 47.5	30.01	762.2			1	1				5	11	1		11	3.9
17.5 52.5	29.96	761.0			2					9	12	4		3	4.0
17.5 57.5	29.94	760.5			1				1	6	15	6		1	3.8
22.5 27.5	30.02	762.5			1			1	1	2	5	17		3	4.1
22.5 32.5	30.05	763.3					1	2		1	12	10		4	4.3
22.5 37.5	30.05	763.3				1		2		1	18	5		3	4.4
22.5 42.5	30.05	763.3					2		1	8	11	4		4	4.3
22.5 47.5	30.03	762.7				2			1	10	8	6		3	4.2
22.5 52.5	30.01	762.2			1	1	1		1	11	8	6		1	4.2
22.5 57.5	29.99	761.7				2	1	1		12	7	7			4.4
22.5 62.5	29.97	761.2			4	1			1	11	10	3			4.4
22.5 67.5	29.94	760.5			2	2		2	2	3	10	9			4.5
22.5 72.5	29.93	760.2			5	2	3	1	1	2	6	10			4.5
27.5 22.5	30.04	763.0			7	1	1	1		4	2	12		2	4.1
27.5 27.5	30.08	764.0			2	1		1	2	4	5	14		1	4.3
27.5 32.5	30.09	764.3			1	1	1	1	2	3	6	14		1	4.7
27.5 37.5	30.10	764.5				3	1	1	3	5	9	7		1	4.6
27.5 42.5	30.10	764.5			1	1	2	2	1	8	10	3		2	4.2
27.5 47.5	30.09	764.3			3	3	1	2	3	9	4	2		3	4.3
27.5 52.5	30.08	764.0			2	3		1	3	8	6	5		2	4.5
27.5 57.5	30.06	763.5			2	2	1	1	3	4	7	8		2	4.4
27.5 62.5	30.02	762.5			6	3		1	4	8	4	4			4.8
27.5 67.5	30.00	762.0			3	4	3	2	1	5	3	9			4.9
27.5 72.5	30.00	762.0			6	5		1	1		9	8			5.1
32.5 27.5	30.11	764.8			7	3	1	1	3	3		12			4.7
32.5 32.5	30.14	765.5			3	1	1	3	2	3	5	10	1	1	4.5
32.5 37.5	30.14	765.5			2	2	1	4		7	6	7		1	4.6
32.5 42.5	30.12	765.0			3	1	1	3	5	6	6	5			4.1
32.5 47.5	30.11	764.8			3	1	3	4	2	9	2	5		1	4.3
32.5 52.5	30.11	764.8			2	3	2	3	3	5	6	4		2	5.1
32.5 57.5	30.07	763.8			5	4	2	4	5	4	6				5.3
32.5 62.5	30.04	763.0			4	2	3	5	4	4	3	5			5.6
32.5 67.5	30.02	762.5			5	5	1	5	2	1	4	7			5.3
32.5 72.5	30.05	763.3			5	5	2	2	1	1	3	11			4.8
37.5 32.5	30.15	765.8			5	3	2	3	1	5	1	9		1	4.7
37.5 37.5	30.17	766.3			2	3	2	4	1	5	4	8			4.5
37.5 42.5	30.15	765.8			5	2	2	4	3	5	5	4			4.6
37.5 47.5	30.13	765.3			3	4	1	9		8	1	4			4.8
37.5 52.5	30.10	764.5			1	3	4	7	3	5	1	6			5.6
37.5 57.5	30.06	763.5			1	5	4	6	5	2	4	3			5.6
37.5 62.5	30.02	762.5			5	5	4	5	4	2	2	3			5.8
37.5 67.5	30.01	762.2			3	8	5	4	3	2	3	2			5.4
42.5 22.5	30.04	763.0			3	11	3	2	2	1	1	7			5.3
42.5 27.5	30.11	764.8			5	8	2	2	2	4	1	6			4.9
42.5 32.5	30.15	765.8			5	5	3	1	2	5	3	6			5.1
42.5 37.5	30.17	766.3			4	5	5	3	7	3	3	2			5.1
42.5 42.5	30.15	765.8			4	7	4	3	8	2		2			4.9
42.5 47.5	30.11	764.8			1	2	3	9	6	3	2	3	1		4.9
42.5 52.5	30.06	763.5			3	4	4	6	7	4	1	1			5.1
42.5 57.5	30.01	762.2			1	4	4	4	8	3	1	5			5.4
47.5 17.5	29.88	758.9			1	12	5	3			2	7			5.8
47.5 22.5	29.96	761.0			2	11	4	3	1	1	1	7			5.9
47.5 27.5	30.05	763.3			1	14	2	2	2	3	2	4			5.1
47.5 32.5	30.09	764.3			1	14	4	3	2	4	1	1			5.4
47.5 37.5	30.10	764.5			1	10	4	10	3	1		1			5.3
47.5 42.5	30.07	763.8			4	7	4	8	6	1					5.5
47.5 47.5	30.03	762.7			2	6	5	10	6	1					5.0
52.5 17.5	29.82	757.4			3	8	7	2	2	2	1	5			5.7
52.5 22.5	29.84	757.9			4	13	4	1	2	3		3			5.9
52.5 27.5	29.91	759.7			3	12	5	4	1	4		1			5.6
52.5 32.5	29.95	760.7			2	11	5	5	3	4					5.6
52.5 37.5	29.96	761.0			1	11	5	5	5	2		1			6.0
52.5 42.5	29.94	760.5			2	6	10	5	5	2					5.6
52.5 47.5	29.90	759.4			2	6	5	9	5	2		1			5.2
57.5 12.5	29.67	753.6			3	4	1	5		3	4	10			5.1
57.5 17.5	29.71	754.6			2	3	3	2	1	3	3	13			5.1
57.5 22.5	29.76	755.9			6	3	4	2	1	4	2	8			5.5
57.5 27.5	29.82	757.4			8	3	6	3		7	1	2			5.5
57.5 32.5	29.83	757.7			3	7	4	5	2	7		2			5.5
57.5 37.5	29.83	757.7			3	7	6	6	3	4	1				5.7
57.5 42.5	29.79	756.7			1	6	9	6	2	4	2				4.8
57.5 47.5	29.77	756.1				10	3	8	1	6	2				4.7

OCEAN SQUARES.—The table of ocean square data shows (1) the location of the centres of squares whose sides extend 5° each in latitude and longitude, (2) the monthly mean pressure of the air, and the mean force and total frequency of the wind at noon, Greenwich mean time, computed for the centre of each square from daily readings as obtained by interpolation between the isobars of the daily international simultaneous weather maps.

REVIEW.

INTERNATIONAL METEOROLOGY FOR NOVEMBER, 1887.

[*Pressure expressed in inches and millimetres; temperature in degrees, Fahrenheit; wind-force by scale of* 0–10.]

The following refers to chart ii for the month of November, 1887. This chart continues the series of international charts begun in January, 1877, and exhibits the mean pressure and the prevailing wind-directions over the northern hemisphere, as determined from simultaneous observations taken once each day at 7 a. m., 75th meridian, or noon Greenwich, mean time:

The area of lowest mean pressure occupies the northern extremity of Scandinavia and the adjacent Arctic Ocean, with readings falling to 29.54 (750.3) at Gjæsvær, Norway. From this region southwestward to the fiftieth parallel the pressure ranges between 29.60 (751.8) and 29.70 (754.4), except over the ocean between the Faræ Islands and the west coast of Norway, where it apparently rises somewhat above 29.70 (754.4). Over the southern extremity of Greenland the mean pressure falls to 29.63 (752.6) at Godthaab. Barometric values of 29.75 (755.6) and 29.72 (754.9) at Nikolaievsk-on-the-Amoor and Sitka, Alaska, respectively, show the presence over the Sea of Okhotsk and Behring Sea, and the extreme northern portion of the Pacific Ocean, of an extensive area of low pressure.

Two areas of high pressure, bounded by isobars of 30.20 (767.1), appear, one of which extends over Asia from the Yellow Sea westward to the vicinity of the Aral Sea; the other occupies a limited area over the middle plateau region of North America. Over the north Atlantic Ocean the pressure line of 30.10 (764.5) encloses an area of relatively high pressure, within which the means rise to 30.17 (767.3) somewhat to the westward of the Azores.

Over the North American continent the mean pressure rises above 30.10 (764.5) over a greater part of the west-central and southeastern parts of the United States. It is lowest along the Pacific coast of Alaska, and falls below 29.90 (759.4) over Newfoundland and the Gulf of Saint Lawrence. Over the north Atlantic Ocean there is a gradient of .51 inch between the British Isles and the centre of the high pressure area located over and west of the Azores, while from the Azores north-northwest to southern Greenland the gradient amounts to .54 inch. Over Europe the mean pressure is highest in the districts bordering on the Caspian Sea, where it rises above 30.10 (764.5), and lowest along the extreme northwest and west-central coasts. Over Asia the highest pressure reported is 30.29 (769.4) at Irkutsk, from whence a rather steep gradient is shown eastward to the Sea of Okhotsk. Over southern Asia the pressure generally falls below 29.90 (759.4) south of the twentieth parallel.

As compared with the chart of the preceding month, the changes in mean pressure over the North American continent have been almost inappreciable, except on the Pacific coast north of the fiftieth parallel, where there has been a decrease of more than .10 inch. Over the north Atlantic Ocean the changes have been general and marked. In the vicinity of the Azores the increase amounts to .25 inch, while off the west-central coast of Europe the average decrease exceeds .40 inch. Over Europe a very decided decrease has occurred over the west-central and southwestern countries; over the northern extremity of Scandinavia the mean pressure remains about the same, while over the south-central and southeastern countries there has been an increase. Over Asia there has been a general average increase of about .10 inch, except in the vicinity of the Sea of Okhotsk, where the decrease amounts to .12 inch at Nikolaievsk.

As compared with the corresponding month of previous years the mean pressure corresponded closely with the normal over the United States; the greatest deficiency, .08 inch, occurred at New London, Conn., and the largest excess, .04 inch, at La Crosse, Wis. In Canada the pressure was slightly below the normal in Ontario, Quebec, and at a few stations in the Maritime Provinces. In the Northwest and at a majority of the stations in the Maritime Provinces it was somewhat below the normal. Over the north Atlantic Ocean the pressure was generally deficient, except in high latitudes, where a marked excess occurred. The mean pressure was below the normal over Europe by amounts ranging from .03 inch in Sweden to .24 inch in Spain, except in Russia, where it averaged slightly above the normal. In British India, China, Japan, and at isolated stations in Asia the mean pressure was generally deficient.

In the United States the mean temperature was about normal east of the Mississippi River and on the north Pacific coast; in all other districts the month was decidedly warmer than the average November, the departures above the normal amounting to from 4° to 6° in the central and southern Rocky Mountain regions. In Canada the temperature was below the normal in Ontario, Quebec, and at a few stations in the Maritime Provinces. It was, however, generally above the normal in the Maritime Provinces, while in Manitoba and British Columbia it was slightly below the normal. Over Europe the month was warmer than the average November in the British Isles, Austro-Hungary, Russia, and Sweden, in all other countries in Europe the temperature was below the normal. In British India the mean temperature averaged slightly above the normal.

The following table shows the mean pressure and mean temperature for November, 1887, in the several countries of the eastern hemisphere, and the departures as compared with means determined from observations taken during the last ten years:

Countries.	Mean pressure.			Mean temperature.		
	Nov. mean of 10 (1877–'86) years.	Nov., 1887.	Departure.	Nov. mean of 10 (1877–'86) years.	Nov., 1887.	Departure.
				°	°	°
Austro-Hungary	30.03	29.89	— 0.14	44.6	46.3	+ 1.7
British Isles	29.86	29.71	— 0.15	46.2	47.4	+ 1.2
Denmark	29.84	29.76	— 0.08	41.4	40.3	— 0.9
France	30.00	29.78	— 0.22	49.3	47.3	— 2.0
Germany	29.97	29.82	— 0.15	42.2	40.9	— 1.3
India	29.94	29.91	— 0.03	75.4	76.1	+ 0.7
Italy	29.99	29.85	— 0.14	55.8	53.9	— 1.9
Japan	.....	30.07	.....	.....	49.2	.....
Norway	29.77	29.68	— 0.09	39.3	33.8	— 5.5
Russia	30.03	30.04	+ 0.01	36.1	38.0	+ 1.9
Spain*	30.06	29.82	— 0.24	57.1	51.0	— 6.1
Sweden	29.81	29.78	— 0.03	30.0	31.5	+ 1.5

* Means for nine years only.

The following table shows the deviations in pressure and temperature at isolated stations during the month of November, 1887, as compared with the means for ten years:

Stations.	Mean pressure.			Mean temperature.		
	Nov. mean of 10 (1877–'86) years.	Nov., 1887.	Departure.	Nov. mean of 10 (1877–'86) years.	Nov., 1887.	Departure.
				°	°	°
Archangel, Russia*	29.82	29.73	— 0.09	21.3	22.1	+ 0.8
Athens, Greece	30.05	29.96	— 0.09	63.2	61.7	— 1.5
Beirut, Turkey in Asia	29.99	29.98	— 0.01	71.6	73.4	+ 1.8
Barnaul, Siberia	30.34	30.18	— 0.16	17.7	24.6	+ 6.9
Bridgetown, Barbadoes	29.88	29.84	— 0.04	81.3	82.4	+ 1.1
Ekaterinburg, Russia	30.08	30.00	— 0.08	21.6	24.1	+ 2.5
Funchal, Madeira Islands	30.09	29.99	— 0.10	68.8	69.3	+ 0.5
Gibraltar*	.....	.....	.....	.....	.....	.....
Havana, Cuba, W. I.	29.99	29.99	normal	72.1	69.3	— 2.8
Malta, Mediterranean Sea	30.04	29.88	— 0.16	66.7	65.7	— 1.0
Melbourne, New South Wales	29.97	30.04	+ 0.07	57.4	57.9	+ 0.5
Mauritius, Indian Ocean	29.97	29.98	+ 0.01	77.3	76.9	— 0.4
Nassau, Bahamas, W. I.	30.02	29.98	— 0.04	75.6	75.1	— 0.5
Nikolaievsk-on-the-Amoor, Asia	29.92	29.75	— 0.17	12.7	15 3	+ 2.6
Paramaribo, S. A	.....	.....	.....	.....	.....	.....
Ponta Delgada, Azores	30.12	30.11	— 0.01	65.2	64.6	— 0.6
Swanbister, Orkneys	29.73	29.67	+ 0.06	43.4	44.6	+ 1.2
San Juan de Puerto Rico, W. I	.....	.....	.....	.....	.....	.....
Stykkisholm, Iceland	29.59	29.84	+ 0.25	32.4	30.2	— 2.2
Thorshavn, Färöe Islands	29.62	29.70	+ 0.08	41.4	37.8	— 3.6
Tiflis, Russia	30.20	30.17	— 0.03	53.8	56 7	+ 2.9
Tokio, Japan	30.05	30.04	— 0.01	48.0	51.8	+ 3.8
Yeniseisk, Siberia	30.35	30.12	— 0.25	8.5	10.4	+ 1.9
Zi-Ka-Wei, China	30.26	30.21	— 0.05	50.7	49.6	— 1.1

* Means for nine years only.

In the United States the rainfall was below the average in

all parts of the country, the deficiency being greatest in the east Gulf states where the total precipitation was only about 15 per cent. of the normal amount. In Canada the rainfall corresponded closely with the normal in all districts.

Over the North American continent northerly winds prevailed east of the one-hundredth meridian and south of the fortieth parallel; in the Lake region and Saint Lawrence Valley they were mostly westerly, while to the westward of the one-hundredth meridian they were variable. Over the north Atlantic Ocean the wind directions were dominated by the areas of high and low pressure which appear on the monthly mean chart. In Europe southerly winds prevailed, except over the British Isles and the extreme southern countries where they were variable. Over Asia, south of the thirtieth parallel, northerly winds were most frequently noted, while over and to the northward of the Japanese Islands they were westerly.

TRACKS OF AREAS OF LOW PRESSURE FOR NOVEMBER, 1887.

Chart iii exhibits paths of the principal depressions that appeared in the northern hemisphere during November, 1887. This chart continues the series of international charts begun in November, 1877, and has been prepared from the following data: Chart i for each day of the month, containing the data of simultaneous observations taken once each day at noon, Greenwich mean time; abstracts of ships' logs; special reports, and other miscellaneous data on file at this office.

The paths of the centres of thirty-one areas of low pressure have been traced, of which ten appeared over the North American continent, eleven over the north Atlantic Ocean, eight over Europe, and two over the Japanese Islands and adjacent waters. The average number of areas of low pressure traced over the northern hemisphere for November during the last eight years, 37.1, is 6.1 more than the number traced for November, 1887.

The depressions traced over the North American continent are described in the MONTHLY WEATHER REVIEW for November, 1887, under the heading of "Areas of low pressure."

Of the depressions traced over the north Atlantic Ocean number xii was the most remarkable. This storm pursued an irregular course over and west of the British Isles from the 1st to the 5th, inclusive, during which period the barometric minimum was below 29.00 (736.6) and on the 3d fell to 28.42 (721.9). Number xi developed marked energy during its advance from mid-ocean to the French coast from the 4th to the 6th. Number xvi, which moved northeast from Newfoundland to Iceland, and from thence apparently passed south-southeast to the British Isles, exhibited considerable strength during the last four days of its prevalence. Number xix apparently moved eastward from Greenland and disappeared over the Arctic Ocean north of Scandinavia after the 25th, with pressure ranging below 29.00 (736.6). Number xx was a tropical storm or marked strength whose track is plotted to the northward of the West Indies during the last three days of the month. On the 30th a depression near Iceland caused the barometric pressure to fall to 28.97 (735.8) at Stykkisholm.

November was characterized by the severe weather which prevailed along the west coast of Europe during the early portion of the month, when heavy gales, attaining hurricane force, caused great loss of life and destruction of property. The storms which traversed the continent of Europe generally possessed marked energy, notably numbers xxvii, xxviii, and xxix, and, as a rule, pursued normal paths. On the 20th a depression, showing readings ranging to 29.25 (742.9), was central over the northern parts of the Adriatic Sea; its course previous and subsequent to that date cannot, however, be determined.

The depressions traced over the Japanese Islands were unattended by noteworthy features. On the 10th and from the 26th to the 30th, inclusive, the barometric pressure was low at Nikolaievsk-on-the-Amoor; reports do not, however, show depressions with well defined movements of translation in that locality during those dates.

SPECIAL NOTES.

THE GRAVITY CORRECTION.

The gravity correction, reducing all barometer readings to the standard gravity at latitude 45°, has been applied to all observations not so reduced by the observers themselves.

All data referring to force, velocity, or pressure (in pounds per square foot) of the wind, are reduced to the scale of 0-10, and the approximate value is indicated by the number of feathers on the arrow (see below).

MONTHLY SUMMARY OF INTERNATIONAL SIMULTANEOUS MET'L OBSERVATIONS.

The positions of stations (latitude and longitude) are obtained from Keith Johnson's "Index Geographicus," except where more exact information is furnished. The elevations of stations are obtained either from the annual, semi-annual, and monthly publications of the various meteorological bureaus here represented, or from the original forms upon which are entered the daily observations. In the United States series the elevations are computed from the latest surveys, and are carefully revised each month, in order to note any change in the elevation of the barometer-cistern at any station. It is believed for the most part that, throughout the European and other series, the elevations as given represent the height of the barometer-cistern above sea-level; at least this should be the case. The local time, where omitted or not given correctly in the original, is carefully computed at this office. A letter placed opposite the name of a station, or some portion of the data credited thereto, indicates that a certain number of observations are missing, corresponding to the relative position in the English alphabet of the letter so used.

At Baku the barometer-cistern is below sea-level.

INTERNATIONAL CHARTS.

International chart i shows the atmospheric pressure at sea-level in English inches, the isobars being drawn for every two-tenths of an inch.

Arrows show direction of, and fly with, the wind; force is shown as follows:

Symbols.	Force.	Velocity.	
		Miles per hour.	Metres per second.
○	0	0	0
	1, 2	0 to 9	0 to 4
	3, 4	9.1 to 22.5	4.1 to 10.1
	5, 6	22.6 to 40.5	10.1 to 18.1
	7, 8	40.6 to 67.5	18.1 to 30.2
	9, 10	67.6 up.	30.2 and over.

International chart ii (monthly mean chart) shows the mean pressure at sea-level in English inches; the mean force and prevailing direction of the wind, as determined from observations taken at noon, Greenwich mean time.

International chart iii shows the tracks of centres of low pressure. The Arabic numerals show the location of the centres of low pressure at noon, Greenwich mean time, of that date.

In the above charts, broken lines indicate that lines so drawn are doubtful.

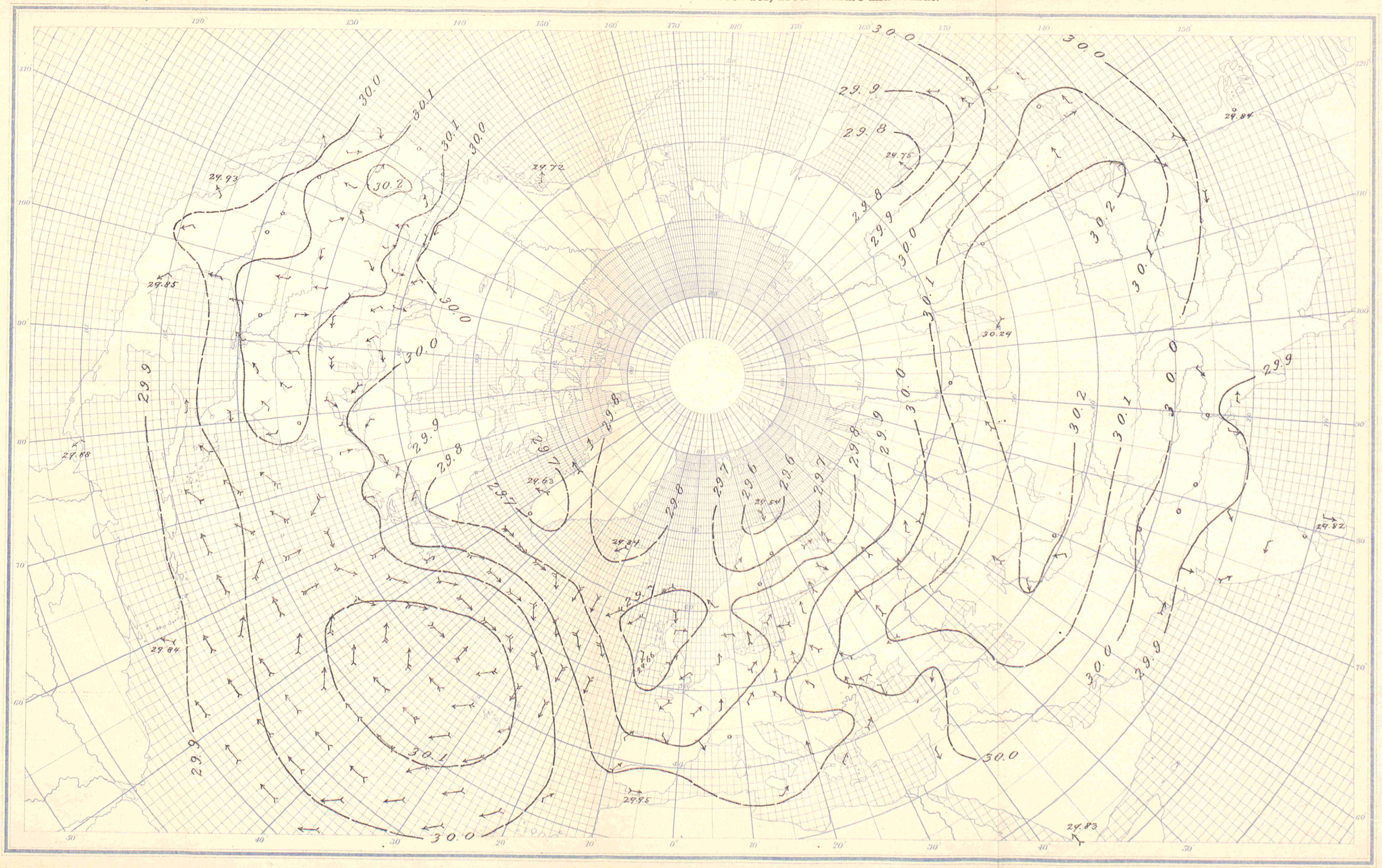
List of merchant marine steam and sailing vessels from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of November, 1887—Continued.

Name of vessel.	Captain.
UNITED STATES NAVAL—Cont'd.	
U. S. S. Thetis	W. H. Emery.
U. S. S. Vandalia	H. L. Howison.
U. S. S. Yantic	O. Hagerman.
BRITISH NAVAL.	
H. M. S. Audacious	R. H Harris.
H. M. S. Bacchante	A. W. Moore.
H. M. S. Comus	T. S. Jackson.
H. M. S. Cordelia	H H. Boys.
H. M. S. Dart	A. M. Field.
H. M. Dockyard, Bermuda	R. P. Dennistoun.
BRITISA NAVAL—Continued.	
H. M. S. Dreadnought	Capt. H. F. Stephenson.
H. M. S. Edinburgh	H. Palliser.
H. M. S. Egria	P. Aldrich.
H. M. S. Espiegle	A. C. Clarke.
H. M. S. Hyacinth	E. Bourke.
H. M. S. Myrmidon	R. F. Hoskyn.
H. M. S. Nelson	T. F. Hammill.
H. M. S Penguin	Haygarth.
H. M. S. Raleigh	B. Watson
H. M. S. Rambler	W. U. Moore.
H. M. S. Rifleman	C Prater.
H. M. S. Royalist	G. W. Hand.
BRITISH NAVAL—Continued.	
H. M. S. Ruby	Capt. W. R. Kennedy.
H. M. S. Sylvia	Dawson.
NORWEGIAN NAVAL.	
H. N. M. S. Winona	
DUTCH NAVAL.	
H. D. M. S. Prinz Hendrig	
H. D. M. S. König	

List of foreign stations and observers from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of November. 1887.

Stations.	Observers.
AUSTRALIAN.	
Adelaide	Chas. Todd.
Hobart Town, Tasmania	Com. J. Shortt, R.N.
Melbourne, Victoria	R. L. J. Ellery.
AUSTRO-HUNGARIAN.	
Agram	Prof. Ivan Stozir.
Cracow, I. R. Observatory	Dr. Wierzbiski.
Gratz	Andreas Rospini.
Kremsmunster Observatory	The Staff.
Lemberg	Dr. T. Stanecki.
Pola	Fr. Cœselrohe.
Szathmar	P. Tamasyanos, S. J.
Szegedin	Farkas Laszlo.
Trieste	Naval Observatory.
Vienna	I. R. Central Met. Obs'y.
BRITISH.	
Aberdeen	W. Boswell.
Bidston, Liverpool Obs'y	John Hartnup.
Bradford, Yorkshire	McLandsborough & Preston.
Bridgetown, Barbadoes, W. I.	A. T. Green.
Chatham, School M. E	Percy McHugo, R. E.
Falmouth, Observatory	The Staff.
Fort Napier, Natal	Thomas Murray, M. S. C.
Freetown, Sierra Leone	J. W. Smith.
Galway, Queen's College	Wm. Ryan.
Greenwich, Royal Observatory	The Staff.
Guernsey	A. Collenette, F.R.M.S.
Kew, Observatory	The Staff.
Leicester, Museum	J. C. Smith.
Malta, Mediterranean	R. R. Willan.
Nassau, Bahamas	J. A. Kerr.
Oxford, Radcliffe Observatory	The Staff.
Plymouth	John Merrifield.
Swanbister, Orkneys	W. I. Fortesque.
Scutari Cemetery, Turkey	W. H. Lyne.
Stonyhurst, Observatory	J. Roony.
Valentia, Observatory	The Meteorological Office.
Sub-series.	
Gozo, Episcopal Seminary	Rev. Louis Grech, S. J., Dir.
Malacca	W. R. Angus.
Singapore	T. Irvine Rowell, M. D.
CANADIAN.	
Bathurst, N. B	Miss Andrews.
Bird Rocks	T. Turbide.
Calgary	H. S. Cayley.
Chatham, N. B	G. A. Blair.
Cornwall, Ontario	W. D. Johnston, B. A.
Dalhousie, N. B	H. A. Johnson.
Father Point, Quebec	J. McWilliams.
Fort Garry, Manitoba	T. Warburton.
Fredericton, N. B	Dr. Harrison.
Grand Manan, N. B	J. Chipman Seeley.
Halifax, N S	A. Allison.
Hamilton, Ontario	T. S. Campbell, B. A.
Kingston, Ontario	A. P. Knight, M. A.
Little Glace Bay, N. S	C. H. Rigby, C.E.
London, Ontario	E. B. Reed.
Medicine Hat, N. W. T	John Ewart.
Minnedosa, N. W. T	Rev. J. M. Wellwood.
Montreal, Quebec	C. H. McLeod, C. E.
Ottawa, Ontario	A. McGill, M. A.
Parry Sound, Ontario	Rev. R. Mosley.
Peterborough, Ontario	J. H. Long.
Port Arthur, Ontario	W. P. Cooke.
Port Dover, Ontario	H. Morgan.
Port Stanley, Ontario	M. Payne.
Qu' Appelle, N. W. T	Leslie Gordon.
Quebec, Quebec	Captain Ashe, R. N.
Rockliffe, Ontario	W. H. McIntyre.
St. Andrews, N. B	S. T. Gove, M. D.
St. John, N. B	G. Hutchinson.
Saint Pierre, N. F	The Commandant.
Saugeen, Ontario	W. K. Stewart.
Southwest Point of Anticosti	
Stratford, Ontario	W. McBride, M. A.
Swift Current	W. G. Knight.
Sydney, C. B	T. C. Hill, C. E.
Toronto, Ontario	Magnetic Observatory.
Woodstock, Ontario	Prof. N. Wolverton, M. A.
Yarmouth, N. S	J. E Murphy.
Sub-series.	
Saint Johns, N. F	J. Higgins.
CAPE COLONY.	
Cape St. Francis	I. Garfelt.
CHINESE.	
Foochow	A. E. Pfankuchen.
Hong Kong Observatory	The Staff.
Sub-series.	
Zi-Ka-Wei, near Shanghai	M. Marc Dechevrens, S. J.
South Cape, Formosa	G. Taylor.
DANISH.	
Copenhagen	Oversergent Fischer.
Fanöe	Overloerer Lauridsen.
Godthaab	S. Kleinschmidt.
Ivigtut	
Jacobshavn	
Stykkisholm	A. O. Thorlacius.
Thorshavn	Overloerer Bergh.
Upernavik	
Vestervig	Loerer Oesterbol.
FRENCH.	
Agen	M. Bousquet.
Alençon, Normal School	M. Nicot, Director.
Arras, Normal School	M. Sion, Director.
Avignon, Normal School	M. Liquier, Director.
Bar-sur-Seine	M. Saillard, Director.
Beauvais, Normal School	M. Mutelet.
Besançon, Normal School	M. Gobin, Director.
Bordeaux, Observatory	M. Rayet, Director.
FRENCH—*Continued.*	
Bourges, Normal School	M. Bourgoine, Director.
Brest, Naval Observatory	M. de Kermaree, Director.
Caen, Normal School	M. Berson, Director.
Châlons-sur-Marne, N. School	M. Mathieu, Director.
Charleville, Normal School	M. Noél, Director.
Clermont-Ferrand, Obs'y	M. Hurion, Director.
Cluny, Normal School	M. de Villemontée, Director.
Commercy	M. Vaissade, Director.
Gap, Normal School	M. Poussel, Director.
Greasque, du Rhone	M. Kina, Director.
Grenoble	M. Ablard, Director.
Guéret, Normal School	M. Delorme, Director.
Lescar, Normal School	M. Lefevre, Director.
Lorient, Naval Observatory	Lt. T. Carré, Director.
Lyon, St. Genis-Laval	M. André, Director.
Mans, Normal School	M. Tenot, Director.
Marseille, Observatory	M. Stephan, Director.
Montlouis	M. Cave for Dr. Fines.
Montpellier, Normal School	M. Galzin, Director.
Mont Ventoux	M. Blanc, Director.
Nancy, Normal School	M. Hasse, Director.
Nantes, Observatory	M. Larocque, Director.
Nice, Normal School	M. Cantier, Director.
Perpignan, Observatory	Dr. Fines, Director.
Pic-du-Midi, Summit	M. Vaussenat, Director.
Privas, Normal School	M. Curely, Director.
Puy de Dôme Obs'y, Summit	M. Hurion, Director.
Rochefort, Naval Observatory	Lt. E. Decante, Director.
Roche-sur-Yon, N. School	M. Brotier, Director.
Rodez	M. Seger, Director.
Rouen, Normal School	M. Vieillot, Director.
Saint Brience	M. Richard, Director.
Saint Maur, Observatory	M. Renon, Director.
Toulouse, Observatory	M. Baillaud, Director.
Tours	M. Letellier, Director.
Sub-series.	
St. Martin du Hinx	M. Carlier, Director.
GERMAN.	
Ansbach	Prof. Jüdt.
Bamberg	Prof. Dr. Hoh.
Berlin	Meteorological Institute.
Breslau	Royal University Obs'y.
Carlsruhe	Albert Senz.
Cassel	Dr. H. Möhl.
Frankfort-on-the-Main	Physical Society.
Friedrichshafen	Wilhelm, Chief Tel.
Hamburg	Carl H. Seeman.
Kiel	Prof. Dr. G. Karsten.
Leipsic, Astronomical Obs'y	H. Leppig, Assistant.
Memel	Issermann.
Munich	Dr. C. Lang.
Neufahrwasser	A. Lothes.
Neustadt, Palatinate	Prof. Dicknether.
Stuttgart	Dr. L. Meyer.
Wustrow	Profs Brandes & Reimer.
GREEK.	
Athens	Kokkides & Wourlisch.
INDIAN.	
Kurrachee	
Deesa	
Bombay	
Poona	
Belgaum	
Lahore	
Roorkee	
Agra	
Nagpur	
Jubulpore	
Lucknow	
Allahabad	
Patna	
Hazaribagh	
Calcutta	
Chittagong	
Cuttack	
Dhubri	
Sibsagar	
Jeypore	
Bellary	
Trichinopoly	
ITALIAN.	
Udine	Prof. Giovanni Clodig.
Milan	Prof. G. V. Schiapparelli.
Padua	Prof. Dott. Lorenzoni.
Moncalieri	Prof. P. F. Denza.
Genoa	Prof. G. M. Garibaldi.
Cuneo	
Pesaro	Prof. Luigi Guidi.
Florence	Prof. Constantino Pittei.
Leghorn	Prof. P. Monte.
Rome	Prof. P. Tacchini.
Cosenza	Prof. D. Conti.
Palermo	G. Cacciatori.
Syracuse	Sig. V. Giuliano.
ITALIAN SUB-SERIES	
Stelvio	Prof. P. F. Denza.
Valdobbia	Prof. P. F. Denza.
JAPANESE.	
Akita	S. Hattori.
Awomori	K. Ogawa.
Fushiki	T. Tokuda.
Gifu	R. Ikuchi.
Hakodate	O. Endo.
Hamamatsu	Y. Sekigawa and T. Ogi.
Hiroshima	Y. Okamoto.
Itsuhara	H. Tanaka.
Kanazawa	S. Kuriyama.
Kagoshima	G. Miyanohara.
JAPANESE—*Continued.*	
Kioto	K. Nishiyama.
Kochi	K. Kusunose.
Miasaka	T. Ishitain & T. Saki.
Miyako	K. Suwa.
Nagasaki	K. Yamasaki and M Chin.
Nemuro	M. Itabashi.
Niigata	M. Morita.
Numadzu	R. Kaneda.
Osaka	H. Omura.
Sakai	K. Yamawchi & P. Yoshimura
Shimonoseki	D. Kobayshi.
Tokei	The Staff.
Wakayama	K. Sakai.
MAURITIUS.	
Mauritius R. A. Observatory	The Staff.
MEXICAN.	
Guanajuato	Prof. Vicente Fernandez.
Leon	Prof. M. Leal & Espana.
Mazatlan	C. Carmina.
Mexico	The Staff.
San Louis Potosi	G. Barroeta.
NETHERLANDS.	
Flushing	
Groningen	
Helder	
Hellevoetsluis	
Utrecht	G. F. C. Zaalberg.
Sub.	
Batavia	Dr. I. P. v. d. Stok.
NORWEGIAN.	
Bergen	
Brono	
Christiania	
Gjæsvær	
PORTUGUESE.	
Angra	Dr. J. A. Sampaio.
Funchal, Madeira	Capt. D. A. de Cunha.
Lisbon, Observatory	The Staff.
San Salvador	
St. Vincent, Cape Verd	
RUSSIAN.	
Archangel	Capt. Sseliwerstow.
Baku	
Barnaul	Meteorological Office.
Dorpat	Blumbach.
Ekaterinburg	Meteorological Observatory.
Elisavetgrad	
Irkutsk	Ed. Stelling.
Kasalinsk	Butkewitsch.
Kasan	Observatory.
Kem	M. Kosnobr.
Kertch	E. M. Zacmsipeyz.
Kieff	Observatory.
Kischinev	
Korostishev	
Koslov	
Libau	E. Quaas.
Lugan	Meteorological Observatory.
Moscow	Meteorological Observatory.
Nerchinsk	
Nikolaiev	Capt. Kurdakow.
Nikolaievsk-on-the Amoor	Schonberg.
Nikolsk	Nadeshdin.
Perm	
Petro-Alexandrovsk	Walther.
Petrozavodsk	Dr. Bergmann.
Pinsk	
Poti	
St. Petersburg	Central Physical Observatory.
Samarkand	Dresch.
Sevastopol	Colonobr.
Tashkend Laboratory	Teich, A. M.
Viatka	
Warsaw	Astronomical Observatory.
Yeniseisk	Wishnewzky.
Sub-series.	
Petrowsky Academy	Bachmetieff.
SCOTCH.	
Leith	J. Bolam & Geo. Redpath.
SPANISH.	
Bilbao, Met. Observatory	Tomas Eschriche.
Burgos, Met. Observatory	Domingo Martin.
Santiago, Met. Observatory	R. Gil Villanueva, Director.
Sub-series.	
Havana, Cuba	Benito Viñes, S. J.
Manilla, Philippine Islands	F. Faura, S. J.
San Fernando, Naval Obs'y	Capt. C. Pujazon, R. N.
SWEDISH.	
Haparanda	
Umea	
Hernosand	
Stockholm	
Wisby	
Sub-series.	
Upsala	Nils. Ekholm.
SWISS.	
Geneva	Observatory.
TURKISH.	
Constantinople	The Observatory.
Valona	A. Bertrand.
Sub-series.	
Beirut, Lee Obs'y, Syria	R. H. West, B. A., Director
UNITED STATES SUB-SERIES.	
Bogota	J. G. Otero.
Kingston	Maxwell Hall.
Vera Cruz	Capt. Geo. E. Powell.

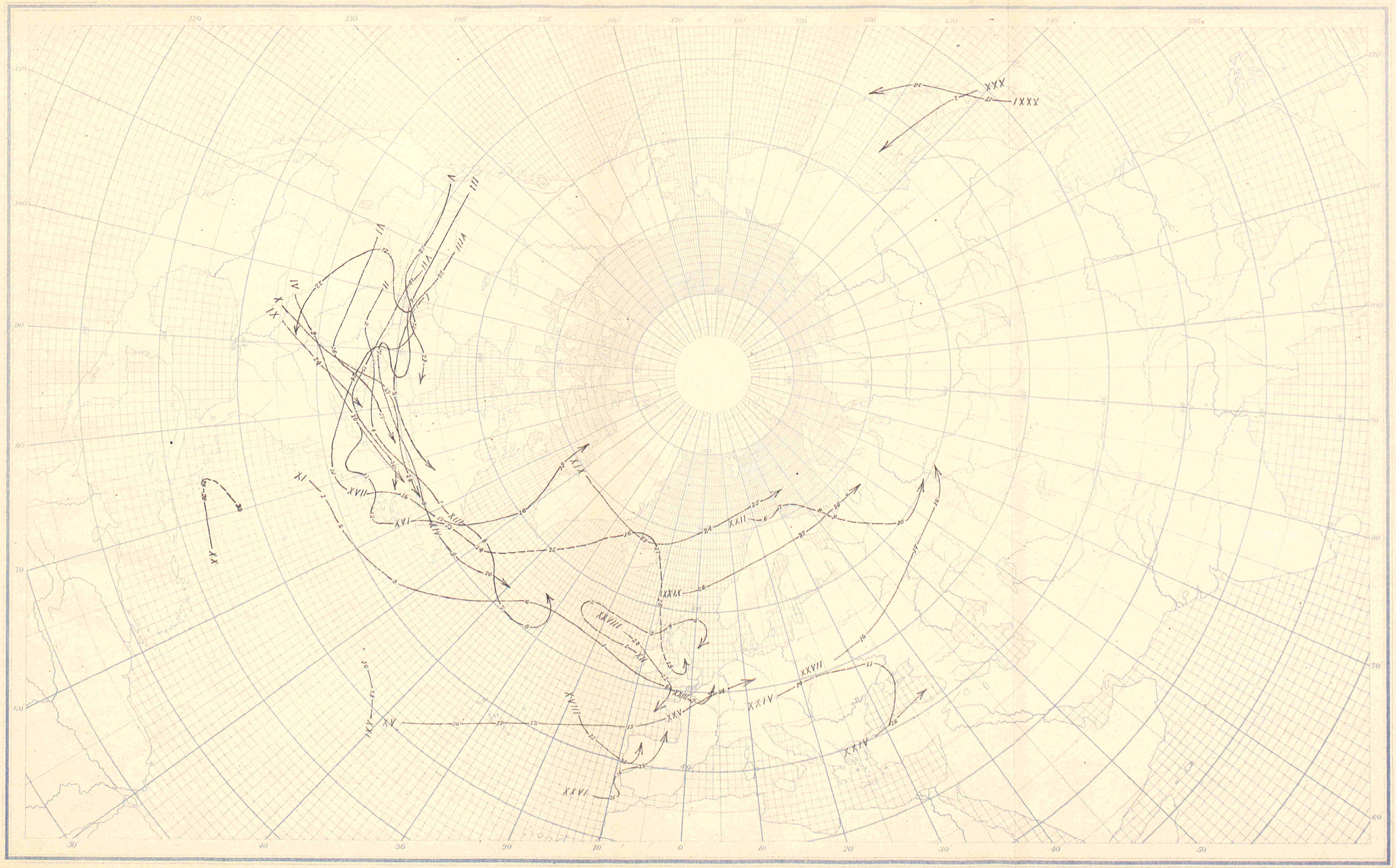
International Chart II. November, 1887. Isobars and Winds.



Signal Office Lith.

Form No. 106 R---1887.

International Chart III. November, 1887. Tracks of Areas of Low Pressure.



Signal Office Lith.

WAR DEPARTMENT.
OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY OF THE UNITED STATES.

SUMMARY AND REVIEW

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS

FOR THE MONTH OF DECEMBER, 1887.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

A. W. GREELY,
BRIGADIER GENERAL, CHIEF SIGNAL OFFICER OF THE ARMY.

PRINTED FOR EXCHANGE WITH CO-OPERATING OBSERVERS.

WASHINGTON, D. C.
JANUARY, 1889.

List of merchant marine steam and sailing vessels from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of December, 1887.

	Name of vessel.	Captain.
Br.	s. s. Adriatic	Capt. J. G. Cameron.
	Ailsa	J. W. Sanson.
Am.	Alamo	Samuel Risk.
Br.	Alexandria	David Pert.
Ger.	Aller	H. Christoffers.
Br.	Alsatia	J. Brown.
	Alvena	F. McKay.
	Alvo	D. Williams.
Ger.	Amalfi	Julius Bahr.
Br.	Ambrose	E. Bisson.
Ger.	Amerika	H. Heintze.
Br.	Arabic	Geo. Burton.
	Arizona	S. Brooks.
	Athos	H. Low.
	Atlas	J. W. Tobin.
	Auretta	G. W. Read, F. R. S.
	Aurania	W. H. P. Hains.
	Australia	A. McKitchie.
Ger.	Australia	G. Franck.
Br.	Baltimore	J. Trenery.
	Barrowmore	John Inch.
	Bassano	W. Rea.
	Basil	N. Thompson.
	Bavarian	R. Leask.
Belg.	Belgenland	W. A. Beynon.
Br.	Ben Ledi	S. Adamson.
	Bessel	C. J. Watson.
	Bohemia	R. Karlowa.
	Borderer	F. Manley.
Am.	Breakwater	J. E. Dale.
Br.	Britannic	H. Parsell.
	British King	John Kelly.
	British Prince	Samuel Nowell.
	British Princess	E. H. Freeth.
	British Queen	R. Wills.
	Buffalo	J. H. Malet.
	Bulgarian	E. Parry.
Ger.	California	O. Winkler.
Br.	Canada	J. Robinson.
Span.	Carolina	Alex. Ugalde.
Br.	Celtic	P. J. Irving.
	Cephalonia	Henry Walker.
	Cervin	S. Hughson.
Fr.	Chateau Lafitte	C. Ollivier.
	Chateau Leoville	M. Le Chapelain.
Br.	Chilian	E. F. Bannister.
Am.	City of Augusta	J. W. Catherine.
Br.	City of Chester	A. Lewis.
	City of Chicago	Fred Watkins.
Am.	City of Dallas	C. W. Read.
	City of Para	L. Dexter.
Br.	City of Richmond	A. Redford.
Am.	City of San Antonio	J. Wilder.
	City of Washington	W. M. Rittig.
Br.	Claribel	J. Evans.
Am.	Colon	F. Henderson.
	Colorado	J. Daniel.
Br.	Counsellor	W. Lang.
	Croma	W. R. Lord.
	Cyprus	E. Guild.
	Denmark	R. S. Rigby.
Belg.	De Ruyter	J. J. Brarens.
Br.	Devonia	W. G. Crockhart.
	Duke of Buckingham	T. C. Burnside.
	Earnmoor	R. Grey.
	Egypt	J. Sumner.
	Egyptian Monarch	John Harrison.
Ger.	Eider	H. Baur.
Br.	El Callao	J. Scholtz.
Span.	Elcano	Hipizug.
Ger.	Ems	Th. Jungst.
Br.	England	A. F. Heeley.
	Erin	Thos. Foote.
	Ethelbald	Ch. Smith.
	Ethiopia	John Wilson.
	Etruria	T. Cook.
Am.	Eureka	R. B. Quick.
Br.	France	A. D. Hadley.
Ger.	Fulda	R. Ringk.
Br.	Furnessia	J. Hedderwick.
	Galileo	R. T. Jones.
	Gallia	M. Murphy.
Dan.	Geiser	C. W. Moeller.
Ger.	Gluckauf	A. Buhner.
Br.	Gothenburg City	James Harrison.
Ger.	Gothia	H. Bauer.
Br.	Grecian	C. E. Le Gallais.
	Greece	A. J. Jeffrey.
	Gwendoline	Robt. Milburn.
Dan.	Hekla	A. G. Thomsen.
Br.	Helvetia	G. Cochrane.
Ger.	Hermann	A. Kohlmann.
Br.	Herschel	Geo. Braithwaite.
	Holland	W. Tyson.
Am.	Hudson	H. R. Freeman.
Br.	India	John Jameson.
Ger.	India	M. Hulsen.
Am.	Indiana	W. J. Boggs.
Br.	Iowa	E. W. Owens.
Dan.	Island	W. Skjodt.
Br.	Italy	W. Pearce.
	Kansas	W. Gleig.
Br.	King's Cross	G. J. Mills.
Fr.	La Bourgogne	E. Franguel.
	La Bretagne	M. de Jousselin.
	La Champagne	E. Traub.
	La Normandie	G. de Kersabiec.
Br.	Lake Nepigon	P. D. Murray.
Am.	Lampassas	M. B. Crowell.
Dtch.	Leerdam	G. Stenger.
Br.	Llandaff City	T. H. Gore.
Br.	Lord Clive	P. Urquhart.
Br	s. s. Lord Gough	Capt. E. M. Hughes.
Am.	Lorenzo D. Baker	W. F. Wyley.
	Louisiana	E. V. Gager.
Br.	Lydian Monarch	Thos. C. Huggett.
Am.	Manhattan	Frank Stevens.
Br.	Manitoban	W. Dunlap.
	Marengo	T. M. Irwin.
	Martello	Wm. Abbott.
	Mentmore	C. W. Simpson.
Ger.	Moravia	O. Pezoldt.
Br.	Napier	J. W. W. Henderson.
	Nasmyth	T. T. Farrell.
Belg.	Nederland	A. J. Griffin.
Br.	Neuces	Jas. Bolger.
	Nevada	J. Douglas.
Am.	New Orleans	T. P. C. Halsey.
	Newport	W. G. Shackford.
	New York	Geo. W. Mason.
Belg.	Noordland	H. E. Nickels.
Br.	Norseman	D. Morris.
	Norwegian	Robert Carruthers.
Ger.	Nurnberg	H. Engelhart.
Br.	Oceanic	John Metcalf.
	Ohio	R. W. Sargent.
Dtch.	Oranje Nassau	J. A. J. LaCrooy.
Br.	Oranmore	B. Jones.
	Palestine	Whiteway.
	Pavonia	A. McKay.
	Pawnee	John James.
Dtch.	P. Caland	F. H. Bonjer.
Belg.	Pennland	Rud Weyer.
Br.	Pennsylvania	A. B. Thomas.
	Persian Monarch	Bristow.
Am.	Philadelphia	Sam. Hess.
Belg.	Pieter de Coninck	E. Smit.
Ger.	Polaria	Johannes Schade.
	Polynesia	A. Kuhn.
Br.	Pomona	J. Legoe.
	Port Phillip	G. Dulling.
	Republic	H. Davidson.
Ger.	Rhaetia	H. Vogelgesang.
	Rhein	W. Topser.
Br.	Richmond Hill	A. Hyde.
Am.	Rio Grande	Jas. F. Lewis.
Br.	Roman	E. Maddox.
Dtch.	Rotterdam	G. J. Vis.
Br.	Roxburgh Castle	A. Turpin.
Ger.	Rugia	A. Albers.
	Saale	H. Richter.
Br.	Sacrobosco	H. Gibb.
	Samaria	J. B. Watt.
	Santiago	R. Potter.
	Scandinavian	John Park.
Dtch.	Schiedam	A. Potjer.
Span.	Serra	F de Luzaraga.
Br.	Servia	H. McKay.
	Siberian	R. P. Moore.
	Sorrento	F. W. Ouston.
	Spain	W. A. Griffiths.
	State of Georgia	G. Moodie.
	State of Indiana	A. Ritchie.
	State of Nebraska	A. G. Braes.
	State of Pennsylvania	A. J. A. Mann.
Am.	State of Texas	Gilbert Williams.
Br.	Stockholm City	W. Thompson.
Belg.	Strabo	A. Matheson.
Br.	Straits of Gibraltar	G. Grigg.
	Strathleven	C. W. Pearson.
Br.	Surrey	R. Griffiths.
Belg.	Switzerland	J. Ueberweg.
Ger.	Taormina	G. W. Koch.
Dan.	Thingvalla	S. T. H. Laub.
Span.	Tomas Brooks	E. F. Canal.
Br.	Tower Hill	F. Archer.
Ger.	Trave	P. Berdrow.
Br.	Tyrian	A. Haig.
	Umbria	W. McMickan.
Belg.	Vaderland	C. H. Grant.
Br.	Vancouver	C. J. Lindall.
	Viola	L. Murray.
	Virginian	M. Fitt.
Belg.	Waesland	H. Buschmann.
Br.	Warwick	L. Morice.
Ger.	Werra	R. Bussius.
	Weser	H. Bruns.
Belg.	Westernland	Com. W. G Randle.
Br.	Winston	Capt. J. B. Williams.
Br.	s. s. Wisconsin	Edward Bentley.
	Wylo	T. L. Rogers.
Am.	Yemessee	1st Off. J. C. Norton.
Dtch.	Zandam	Capt. W. Ponsen.
	N. Y. Herald Weather Service.	
Br.	Advance	James Lord.
	Alaska	Geo. S. Murray.
Am.	Algiers	J. B. Percy.
Br.	Barracouta	Robert Hubbard.
Am.	Caracas	N. M. Hopkins.
Am.	El Monte	J. W. Hawthorne.
	El Paso	H. S. Quick.
	Knickerbocker	F. Remble.
Br.	Llandaff City	T. H. Gore.
	Nova Scotian	R. H. Hughes.
	Orinoco	J. S Garvin.
Br	Portia	Henry Dawson.
	Samana	W. Taylor.
	Sailing Vessels.	
Am.	bg. Abbie Clifford	D. W. Storer.
Br.	bk. Abyssinia	B. R. Hilton.
Br.	bk. Achsah	R. M. Shaw.
It.	bk. Agostino Rombo	Basso Vincenzos.
	Sailing Vessels—Continued.	
Am.	bk. Alice	Capt. W. G. Kair.
Swed.	Arab Steed	C. A. Skantze.
Ger.	Arnold von Bippen	S. Moller.
Ger.	bg. Atlantic	A. Witte.
Am.	bkt. Bonny Doon	Chas. Burgess.
Br.	bk. C. S. Parnell	McLaughlin.
Ger.	sp. Dora	Myer.
Br.	bk. Dundonald	E. S. Goodall.
Am.	sp. E. B. Sutton	E. O. Carter.
It.	bk. Est	E. Tassino.
Am.	bk. Ethel	Wm. Thompson.
Ger.	sp. Fidelio	T. H. Schütte.
Am.	schr. Florence Rogers	J. S. F. McLeod.
	bkt. Harriet S. Jackson	Wm. Bacon.
Dtch.	bk. Helena	T. T. Verbeet.
Am.	bk. Henry Warner	Paine.
Am	sp. Independence	Samuel Pavett.
Br.	bk. Iodine	Adam Smith.
Am.	Jacquinne	J. Gardner.
	bg. Jane Adeline	G. W. Cates.
	schr. John J. Hanson	L. J. Stevens.
Por.	bk. Julius	F. D. Vieira.
It.	Lazzaro Bianchi	Dall Orso.
Ger.	Leocadia	John Stohff.
Am.	bg. Lillian	H. F. Schive.
	sp. Light-ship No. 37	Andrew Jackson.
Am.	bg. Lucy W. Snow	P. F. Burgess.
Br.	sp. Mabel Taylor	Chas. E. Durkee.
	bk. Maduro	O. Bernier.
Am.	bg. Manson	J. V. M. Kowen.
Nor.	bk. Martin Luther	A. O. Arnesen.
Am.	bk. Mohican	B. F. Berry.
Br.	sp. Moy	Albert Hilder.
	Nebo	Eugene Chirus.
Ger.	bk. Pillau	G. Gerlach.
Nor.	Qvos	G. Olsen.
Br.	bkt. Rosebud	John Collis.
Ger.	bk. Rothiemay	C. Olsen.
Br.	bk. Salerna	J. Peterson.
	sp. Sapphire	G. W. Murray.
Am.	bk. Sarah Doe	B. S. Merryman.
It.	bk. Teresa Accame	G. Boetto.
Br.	sp. Trojan	M. Mosher.
	Viscount	John Hay.
Am.	bk. Wildwood	Chas. A. Sawyer.
Br.	sp. Winnifred	R. MacDonald.
	United States Naval.	
U. S. S.	Adams	Louis Kempff.
U. S. S.	Alert	J. D. Graham.
U. S. S.	Alliance	C. McGregor.
U. S. S.	Atlanta	F. M. Bruce.
U. S. F. S.	Brooklyn	Byron Wilson.
U. S. S.	Enterprise	
U. S. S.	Essex	Theo. F. Jewell.
U. S. F. C.	Fish Hawk	
U. S. S.	Iroquois	R. P. Leary.
U. S. S.	Jamestown	C. J. Nain.
U. S. S.	Juniata	G. T. Davis.
U. S. S.	Lancaster	S. L. Breese.
U. S. S.	Marion	N. M. Dyer.
U. S S	Mohican	B. F. Day.
U. S. S.	Monocacy	Henry Glass.
U. S. S.	Monongahela	S. H. Baker.
U. S. S.	Nipsic	D. W. Mullan.
U. S. S.	Omaha	F. V. McNair.
U. S. S.	Ossipee	Wm. B. Hoff.
U. S. S.	Palos	J. R. Craig.
U. S. S.	Pensacola	Geo. Dewey.
U. S. S.	Pinta	
U. S. S.	Portsmouth	Edwin White.
U. S. S.	Quinnebaug	W. M. Folger.
U. S. S.	Ranger	F. A. Cook.
U. S. S.	Richmond	Robert Boyd.
U. S. S.	Saratoga	C. H. Davis.
U. S. S.	Tallapoosa	F. W. Dickins.
U. S. S.	Thetis	W. H. Emory.
U. S. S.	Trenton	W. Farquhar.
U. S. S.	Vandalia	H. L. Howison.
U. S. S.	Yantic	O. Heyermann.
	British Naval.	
H. M. S.	Active	A. H. Markham.
H. M. S.	Audacious	R. H. Harris.
H. M. S.	Bacchante	A. U. Moore.
H. M. S.	Comus	T. S. Jackson.
H. M. S.	Dart	A. M. Field.
H. M.	Dockyard, Bermuda	R. P. Dennistoun.
H. M. S.	Egria	P. Aldrich.
H. M. S.	Espiegle	A. C. Clarke.
H. M. S.	Himalaya	J. E. Stokes.
H. M. S.	Hyacinth	E. Bourke.
H. M. S.	Myrmidon	R. F. Hoskyn.
H. M. S.	Nelson	T. F. Hammill.
H. M. S.	Northumberland	Bruce.
H. M. S	Penguin	Haygarth.
H. M S.	Raleigh	B. Watson
H. M. S.	Rambler	W. U. Moore.
H. M. S.	Rifleman	C. Prater.
H. M. S.	Royalist	G. W. Hand.
H. M. S.	Ruby	W. R. Kennedy.
H. M. S.	Sylvia	Dawson.
H. M. S.	Triumph	H. Rose.
	Swedish Naval.	
H. S. M. S.	Freja	
	Norwegian Naval.	
H. N. M. S.	Winona	
	Dutch Naval.	
H. D. M. S.	Prinz Hendrig	
H. D. M. S.	König	

SUMMARY AND REVIEW OF INTERNATIONAL METEOROLOGICAL OBSERVATIONS, DECEMBER, 1887.

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for December, 1887. Mean Barometer. Actual Inch.	Actual Mill.	Reduced. Inch.	Reduced. Mill.	Mean temperature. Fah.	Cent.	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
AUSTRALIAN.	° ′	° ′																								
Adelaide	S. 34 57	E. 138 35	9.00 p.m.	140	43	29.76	755.9	29.97	761 2	57.8	14.3	83	6	5	2	6	4	3	2	1	1	.....	.....	5	1.53	38.9
Hobart Town	S. 42 53	E. 147 20	9.00 p.m.	190	58	29.99	761.7	30.06	763.5	63.5	17.5	74	5	.....	3	2	3	10	1	....	1	.....	.....	5	5.14	130.6
Melbourne	S. 37 50	E. 144 58	9.40 p.m.	91	28	29.89	759.2	30.01	762.2	67.5	19.7	55	1	.....	1	5	10	7	4	3	.....	7707	12413	2	1.86	47.2
AUSTRIAN.																										
Agram	N. 45 48	E. 15 53	1.04 p.m.	535	163	29.37	746.1	29.97	761.2	35.4	1.9	83	1	3	6	4	2	.....	2	13	.....	.....	.....	8	3.82	97.1
Cracow	N. 50 04	E. 20 00	1.20 p.m.	722	220	29.07	738.4	29.90	759.4	31.8	— 0.1	80	3	2	5	6	3	1	1	.....	.....	.....	.....	7	1.37	34.7
Gratz	N. 47 04	E. 15 28	1.02 p.m.	1171	357	28.65	727.6	29.94	760.5	33.6	0.9	76	1	4	2	6	13	2	1	1	1	.....	.....	6	1.42	36.1
Kremsmunster	N. 48 03	E. 14 08	0.57 p.m.	1260	384	28.54	724.8	29.94	760.5	30.2	— 1.0	88	.....	.....	7	7	.....	.....	.....	1	16	.....	.....	9	3.08	78.2
Lemberg	N. 49 50	E. 24 00	1.36 p.m.	978	298	28.81	731.7	29.91	759 7	32.7	0.4	77	.....	17	.....	1	.....	5	2	6	.....	.....	.....	8	1.79	45.4
Pola	N. 44 52	E. 13 51	0.55 p.m.	105	32	29.76	756.0	29.87	758.7	45.0	7.2	76	2	4	2	3	3	2	10	3	2	.....	.....	7	3.94	100.1
Szathmar	N. 47 46	E. 22 53	1.32 p.m.	430	131	29.46	748.3	29.96	761.0	32.9	0.5	87	2	3	2	7	2	6	4	5	.....	.....	.....	9	2.84	72.2
Szegedin	N. 46 15	E. 20 10	1.21 p.m.	295	90	29.59	751.5	29.92	760.0	32.2	0.1	89	5	6	3	1	10	2	1	1	2	.....	.....	6	2.45	62.3
Trieste	N. 45 39	E. 13 46	0.55 p.m.	85	26	29.82	757.4	29.90	759.4	43.3	6.3	70	.....	1	1	2	.....	5	2	12	8	.....	.....	7	4.01	101.9
Vienna	N. 48 12	E. 16 22	1.05 p.m.	663	202	29.18	741.2	29.94	760.5	32.4	0.2	80	1	1	17	.....	3	6	.....	1	2	.....	.....	8	2.47	62.7
BRITISH.																										
Aberdeen	N. 57 10	W. 2 06	11.52 a.m.	89	27	29.56	750 8	29.68	753.9	38.1	3.4	76	2	5	10	9	4	1	.....	.....	.....	9972	16048	6	3.10	78.7
Bidston	N. 53 24	W. 3 04	11.48 a.m.	197	60	29.59	751.6	29.82	757.4	39.7	4.3	78	3	5	5	9	2	5	1	1	.....	.....	.....	7	.....	.....
Bradford	N. 53 48	W. 1 47	11.53 a.m.	366	112	29.37	746.0	29.80	756.9	40.0	4.4	75	8	9	8	2	1	2	1	.....	.....	.....	.....	8	1.91	48.5
Bridgetown	N. 13 04	W. 59 37	8.02 a.m.	28	9	29.92	760.0	29.88	758.9	82.6	28.1	71	2	.....	.....	.....	.....	1	3	25	.....	.....	.....	5	.....	.....
Chatham	N. 51 25	E. 0 33	0.02 p.m.	130	40	29.73	755.1	29.89	759.2	39.3	4.1	82	2	2	10	3	.....	.....	.....	.....	14	.....	.....	7	.....	.....
Falmouth	N. 50 09	W. 5 04	11.40 a.m.	183	56	29.74	755.4	29.95	760.7	44.9	7.2	78	3	12	4	4	3	2	2	1	.....	.....	.....	7	.....	.....
Freetown	N. 8 30	W. 13 14	11.07 a.m.	224	68	29.64	752.8	29.79	756.7	85.9	29.9	86	.....	5	2	9	3	4	.....	1	7	.....	.....	4	.....	.....
Fort Napier	S. 30	E. 31	2.04 p.m.	2294	699	27.55	699.8	29.76	755.9	77.7	25.4	51	5	.....	1	.....	4	6	11	4	.....	.....	.....	5	.....	.....
Galway	N. 53 15	W. 9 03	11.24 a.m.	32	10	29.81	757.2	29.86	758.4	42.7	5.9	88	2	6	3	13	1	4	1	1	.....	.....	.....	7	3.40	86.4
Gibraltar	N. 36 09	W. 5 21	11.39 a.m.	50	15	30.00	762.0	30.03	762 7	57.0	13.9	79	.....	15	13	.....	.....	.....	3	.....	.....	.....	.....	5	.....	.....
Greenwich	N. 51 29	0 00	12 m.	159	48	29 68	753.9	29.88	758.9	39.9	4.4	83	4	3	3	11	5	1	1	3	.....	.....	.....	7	.....	.....
Guernsey	N. 49 27	W. 2 41	11.49 a.m.	275	84	29.62	752.3	29.94	760.5	44.1	6.7	83	5	4	8	6	3	.....	1	4	.....	.....	.....	7	4.20	106.7
Kew	N. 51 28	W. 0 19	11.59 a.m.	34	10	29.83	757.7	29.88	758.9	40.0	4.4	91	6	1	8	6	3	1	.....	6	.....	.....	.....	8	.....	.....
Leicester	N. 52 39	W. 1 08	11.55 a.m.	245	75	29.59	751.6	29.88	758.9	39.6	4.2	84	6	4	6	10	3	.....	.....	2	.....	.....	.....	7	.....	.....
Malta	N. 36 00	E. 14 30	0.58 p.m.	70	21	29.89	759.2	29.94	760.5	60.9	16.1	70	.....	12	4	9	.....	5	.....	1	.....	.....	.....	5	.....	.....
Nassau	N. 25 04	W. 77 22	6.51 a.m.	44	13	30.06	763.5	30.05	763.3	71.2	21.8	65	3	2	.....	1	2	3	2	11	7	.....	.....	8	.....	.....
Oxford	N. 51 46	W. 1 17	11.55 a.m.	210	64	29.62	752.3	29.87	758.7	39.4	4.1	83	6	3	4	10	2	4	.....	1	1	.....	.....	7	.....	.....
Plymouth	N. 50 22	W. 4 10	11.43 a.m.	125	38	29.76	755.9	29.91	759.7	43.0	6.1	86	.....	9	4	2	1	1	4	5	5	.....	.....	7	.....	.....
Swanbister	N. 58 55	W. 3 05	11.46 a.m.	72	22	29.52	749.8	29.63	752.6	38.9	3.8	86	4	10	7	3	5	2	.....	.....	.....	.....	.....	7	.....	.....
Scutari Cemet'y	N. 41 00	E. 29 03	1.56 p.m.	60	18	29.84	757.9	29.89	759.2	52.6	11.4	72	5	3	.....	7	5	3	.....	6	2	.....	.....	7	.....	.....
Stonyhurst	N. 53 51	W. 2 28	11.50 a.m.	361	110	29.35	745.5	29.78	756.4	37.7	3.2	81	5	3	3	9	5	.....	3	3	.....	.....	.....	8	3.06	77.7
Valentia	N. 51 55	W. 10 18	11.19 a.m.	23	7	29.91	759.7	29.95	760.7	44.0	6.7	80	7	2	7	6	3	.....	3	3	.....	.....	.....	8	.....	.....
Sub-series.																										
Gozo	N. 36 01	E. 14 16	0.57 p.m.	364	111	29.59	751.6	29.96	761.0	59.5	15.3	67	.....	15	4	5	2	2	3	.....	.....	5946	9575	7	0.88	22.4
Malta	N. 2 10	E. 102 14	6.49 p.m.	12	4	29.80	756.9	29.73	755.1	77.7	25.4	92	15	.....	.....	.....	.....	.....	12	4	.....	.....	.....	5	9.73	247.1
CANADIAN.																										
Bathurst	N. 47 39	W. 65 42	7.37 a.m.	35	11	29.95*a*	761.8*a*	30.00*a*	762.0*a*	13.4*a*	—10.3	83*o*	1*a*	3	8	3	5	.....	4	.....	6	.....	.....	6*a*	5.70*a*	144.8*a*
Bird Rocks	N. 47 50	W. 61 10	7.56 a.m.	.....	.....	29.71	754.6	29.84	757.9	23.5	— 4.7	84	10	5	6	3	.....	5	1	1	.....	.....	.....	7	4.82	122.4
Calgary	N. 50 55	W. 114 04	4.24 a.m.	?	?	26.26	667.0	30.18	766.6	4.0	—15.6	88	2	4	4	.....	2	6	2	.....	11	.....	.....	7	0.77	19.6
Chatham	N. 47 03	W. 65 29	7.38 a.m.	56	17	29.97	761.2	30.03	762.7	14.3	— 9.8	93	3	2	3	.....	1	2	1	.....	19	.....	.....	6	4.38	111.2
Cornwall	N. 45 01	W. 74 43	7.01 a.m.	175	53	29.86	758.4	30.07	763 8	17.4	— 8.1	96	13	.....	13	2	.....	.....	1	.....	2	.....	.....	8	2.72	69.1
Dalhousie	N. 48 04	W. 66 22	7.35 a.m.	45	14	29.98	761.5	30.03	762.7	18.7	— 7.4	.....	.....	1	18	.....	.....	.....	3	.....	6	.....	.....	6	2.85	72.4
Father Point	N. 48 31	W. 68 28	7.26 a.m.	20	6	30.02	762.5	30.05	763.3	13.1	—10.5	86	6	5	2	5	4	1	4	4	.....	.....	.....	8	1.87	47.5
Fort Garry	N. 49 51	W. 97 07	5.32 a.m.	754	230	29.24	742 7	30.16	766.1	—1.5	—18.6	97	8	6	1	1	6	1	.....	5	3	.....	.....	6	1.27	32.3
Fredericton	N. 45 57	W. 66 38	7.33 a.m.	164	50	29.87	758.6	30.07	763 8	17.3	— 8.2	84	1	15	3	.....	2	4	.....	4	2	5845	9406	6	4.14	105.1
Grand Manan	N. 44 46	W. 66 45	7.33 a.m.	49	15	29.98	761.5	30.03	762.7	25.0	— 3.6	86	5	9	3	3	2	1	.....	4	4	.....	.....	6	7.15	181.6
Halifax	N. 44 39	W. 63 36	7.46 a.m.	122	37	29 88	758.9	30.03	762.7	24.7	— 4.1	88	11	5	7	.....	2	4	.....	2	.....	.....	.....	6	4.12	104.6
Hamilton	N. 43 16	W. 79 53	6.40 a.m.	372	113	29.70	754.4	30.13	765.3	26.8	— 2.9	71	8	.....	11	2	5	.....	3	2	.....	.....	.....	5	1.82	46.2
Kingston	N. 44 14	W. 76 30	6.54 a.m.	307	94	29.74	755.4	30.10	764.5	21 9	— 5.6	88	4	2	4	6	1	3	1	9	1	.....	.....	8	2.96	75 2
Little Glace Bay	N. 46 12	W. 59 58	8.00 a.m.	34	10	29.87	758.7	29.90	759.4	29.4	— 1.4	91	4	1	4	8	6	1	.....	5	2	.....	.....	7	.....	.....
London	N. 43 00	W. 81 15	6.35 a.m.	832	254	29.15	740.4	30.11	764.8	26.5	— 3.1	92	.....	.....	5	2	2	.....	4	.....	18	2976	4789	8	5.68	144.2
Medicine Hat	N. 50 01	W. 110 37	4.38 a.m.	2136	651	27.67*a*	702.8*a*	30 18*a*	766.6*a*	08.2	—13.2	85*d*	3*a*	1	7	.....	.....	.....	2	1	16	.....	.....	5*a*	0.80	20.3
Minnedosa	N. 50 13	W. 99 48	5.21 a.m.	1665	501	28.15	715.0	30.14	765.5	—1.3	—18.5	89	3	6	3	.....	1	1	5	3	9	.....	.....	4	0.83	21.1
Montreal	N. 45 31	W. 73 33	7.06 a.m.	187	57	29.89	759.2	30.11	764.8	16.2	— 8.8	87	3	1	9	4	.....	4	1	9	.....	.....	.....	7	3.05	77.5
Ottawa	N. 45 26	W. 75 41	6.57 a.m.	200	61	29.84	757.9	30.08	764.0	15.3	— 9.3	91	3	11	5	1	3	.....	2	6	.....	2030	3267	7	3.22	81.8
Parry Sound	N. 45 19	W. 80 01	6.40 a.m.	635	194	29.34	745.2	30.08	764.0	20.3	— 6.5	86	4	1	3	3	1	8	7	3	1	.....	.....	8	4.72	119.9
Peterborough	N. 44 17	W. 78 18	6.47 a.m.	722	220	29.33	745.0	30.17	766.3	20.7	— 6.3	80	1	.....	9	.....	.....	.....	4	1	16	.....	.....	8	3.52	89.4
Port Arthur	N. 48 27	W. 89 12	6.03 a.m.	642	196	29.34	745.2	30.10	764.5	9.3	—12.6	93	3	8	6	2	3	1	.....	4	4	.....	.....	5	1.43	36.3
Port Dover	N. 42 47	W. 80 13	6.39 a.m.	635	194	29.39	746.5	30.11	764.8	27.6	— 2.4	95	.....	2	3	1	1	.....	1	.....	23	.....	.....	8	1.94	49.3
Port Stanley	N. 42 40	W. 81 13	6.35 a.m.	592	180	29.39	746.5	30.07	763.8	27.0	— 2.8	90	.....	2	16	2	1	2	6	1	1	.....	.....	8	3.01	76.4
Qu' Appelle	N. 50 44	W. 103 42	5.05 a.m.	2115	645	27.67	702.8	30.21	767.3	—0.1	—17.8	.....	.....	10	.....	1	1	5	2	1	11	.....	.....	5	0.55	14.0
Quebec	N. 46 48	W. 71 12	7.15 a.m.	293	89	29.78	756.1	30.13	765.3	13.5	—10.3	84	4	.....	4	4	1	.....	3	4	11	.....	.....	7	3.11	79.0
Rockliffe	N. 46 10	W. 77 48	6.49 a.m.	418	127	29.59	751.6	30.09	764.3	10.9	—11.7	91	.....	6	2	.....	.....	5	.....	.....	18	.....	.....	8	2.19	55.6
Saint Andrews	N. 45 04	W. 67 06	7.32 a.m.	47	14	29.98	761.5	30.03	762.7	21.5	— 5.8	89	3	14	1	1	3	.....	1	5	3	.....	.....	4	3.67	93.2
Saint John, N.B.	N. 45 17	W. 66 03	7.36 a.m.	116	35	29.87	758.7	30.01	762 2	20.2	— 6.6	86	2	11	1	4	1	.....	1	5	6	.....	.....	5	5.76	146.3
Saint Pierre	N. 46 47	W. 56 08	8.15 a.m.	?	?	.....	.....	29.89	759.1	32.4	0.2	.....	4	11	3	3	.....	8	.....	2	.....	.....	.....	.....	4.93	125.2
Saugeen	N. 44 30	W. 81 21	6.35 a.m.	656	200	29.30	744.2	30.05	763.3	25.9	— 3.4	92	1	2	4	4	5	5	3	2	5	.....	.....	10	5.43	137.9
S.W. Pt. Anticosti	N. 49 24	W. 63 36	7.46 a.m.	30	9	29.92	760.0	29.95	760 7	20.3	— 6.5	88	8	11	2	1	2	1	2	4	.....	.....	.....	6	2.65	67.3
Stratford	N. 43 23	W. 81 00	6.36 a.m.	1186	361	28.74	730.0	30.09	764.3	24.4	— 4.2	92	2	5	5	4	5	3	5	.....	2	5998	9653	9	4.77	121.2
Swift Current	N. 50 21	W. 107 33	4.50 a.m.	2439	744	27.32	693.9	30.15	765.8	4.2	—15.4	86	1	2	4	2	6	1	4	.....	11	.....	.....	5	0.62	15.8
Sydney	N. 46 08	W. 60 10	7.59 a.m.	37	11	29.89	759.2	29.93	760.2	25.5	— 3.6	85	2	4	8	8	6	2	1	.....	.....	.....	.....	8	3.32	84.3
Toronto	N. 43 39	W. 79 23	6.42 a.m.	350	107	29.70	754.4	30.10	764.5	25.9	— 3.4	87	2	4	8	4	3	1	3	5	1	.....	.....	8	3.10	78.7
Woodstock	N. 43 08	W. 80 47	6.37 a.m.	980	299	29.00	736.6	30.11	764.8	25.3	— 3.7	89	.....	.....	12	3	1	1	5	.....	9	.....	.....	8	3.41	86.7
Yarmouth	N. 43 50	W. 66 02	7.36 a.m.	61	19	29.95	760.7	30.01	762.2	27.6	— 2.4	85	10	3	.....	2	2	5	3	3	3	.....	.....	7	7.90	200.7
Sub-series.																										
Saint Johns, N.F.	N. 47 34	W. 52 42	8.29 a.m.	159	48	29.70	754.4	29.90	759.4	29.9	— 1.2	57	5	6	2	5	3	5	.....	5	.....	.....	.....	8	.....	.....
CAPE COLONY																										
Cape St. Francis	S. 34 10	E. 24 50	1.39 p.m.	25	8	29.96	761.0	29.95	760.7	68.0	20.0	94	.....	.....	5	14	3	1	7	1	.....	.....	.....	2	0.95	24.1
CHINESE.																										
Hong Kong	N. 22 18	E. 114 10	7.37 p.m.	110	34	30.05	763.3	30.10	764.5	63.1	17.3	64	7	.....	1	.....	.....	1	13	6	8	9234	14860	4	0.85	21.6
Foochow	N. 26 08	E. 119 38	7.59 p.m.	34	10	30.16	766.1	30.14	765.5	55.5	13.1	71	1	1	1	.....	.....	1	1	26	.....	.....	.....	3	.....	.....
Sub-Series.																										
South Cape	N. 21 55	E. 120 51	8.04 p.m.	121	37	29.98	761.5	30.04	763 0	68.3	20.2	80	3	.....	.....	.....	.....	.....	.....	28	.....	.....	.....	6	2.46	62.5
Zi-Ka-Wei	N. 31 12	E. 121 26	8.06 p.m.	23	7	30.29	769.4	30.27	768.8	41.4	5.2	69	4	7	3	2	1	4	5	4	1	.....	.....	3	0.15	3.9
DANISH.																										
Copenhagen	N. 55 41	E. 12 36	0.50 p.m.	43	13	29.62	752.3	29.69	754 1	33.8	1.0	87	7	.....	4	8	6	2	1	3	.....	.....	.....	8	.....	.....
Fanoe	N. 55 27	E. 8 24	0.34 p.m.	20	6	29.65	753.0	29.70	754.4	34.7	1.5	90	3	3	6	8	1	3	1	5	1	.....	.....	7	.....	.....
Godthaab	N. 64 11	W. 51 46	8.33 a.m.	36	11	29.69	754.1	29.78	756.4	17.4	— 8.1	87	3	3	1	1	3	4	.....	11	5	.....	.....	8	.....	.....
Ivigtut	N. 61 12	W. 48 00	8.48 a.m.	16	5	29.76	756.0	29.81	757.2	22.5	— 5.3	.....	1	.....	.....	.....	4	8	.....	2	16	.....	.....	6	.....	.....

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for December, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent	Mean Rel. Humidity.	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0–10	Total Precipitation. Inch.	Mill.
DANISH—Con.	° ′	° ′																								
Jacobshavn	N. 69 13	W. 50 55	8.36 a.m.	43	13	29.79	756.7	29.89	759.2	9.9	—12.3	.....	3	.....	.....	4	.....	6	15	.....	3	.....	.....	5	.....	.....
Stykkisholm	N. 65 05	W. 22 46	10.29 a.m.	36	11	29.66	753.3	29.75	755.6	26.1	— 3.3	87	.....	1	2	6	1	1	8	5	7	.....	.....	7	.....	.....
Thorshavn	N. 62 02	W. 6 44	11.33 a.m.	30	9	29.50	749.4	29.56	750.8	34.3	1.3	81	9	6	3	2	.....	3	.....	2	6	.....	.....	6	.....	.....
Upernavik	N. 72 47	W. 56 00	8.16 a.m.	39	12	29.84	757.9	29.94	760.5	— 4.4	—20.2	.....	5	2	1	4	2	2	8	2	5	.....	.....	7	.....	.....
Vestervig	N. 56 47	E. 8 20	0.33 p.m.	82	25	29.52	749.8	29.63	752.6	35.1	1.7	86	2	4	3	6	1	4	1	6	4	.....	.....	8	.....	.....
FRENCH.																										
Agen	N. 44 12	E. 0 38	0.03 p.m.	604	184	29.37	746.1	30.05	763.3	41.0	5.0	88	2	10	8	3	1	3	2	2	.....	.....	.....	6	0.96	24.4
Alençon	N. 48 26	E. 0 05	0.00 m.	476	145	29.49	749.0	30.03	762.7	39.4	4.1	84	a17	5	.....	.....	2	4	2	.....	.....	.....	.....	8	2.13	54.2
Arras	N 50 18	E. 2 46	0.11 p.m.	223	68	29.70	754.4	29.96	761.0	38.3	3.5	75	1	6	7	4	1	3	4	1	4	.....	.....	8	3.46	87.8
Avignon	N. 43 57	E. 4 49	0.19 p.m	66	20	29.97	761.2	30.04	763.0	43.0	6.1	79	19	.....	2	1	.....	1	.....	.....	8	.....	.....	3	2.85	72.5
Bar-sur-Seine	N. 48 07	E. 4 22	0.17 p.m.	518	158	29.40	746.7	29.99	761.7	36.5	2.5	85	1	3	2	6	7	4	3	5	.....	.....	.....	6	3.72	94.6
Beauvais	N. 49 26	E. 2 05	0.08 p.m.	269	82	29.63	752.6	29.94	760.5	40.1	4.5	85	4	15	3	6	.....	.....	.....	3	.....	.....	.....	5	2.33	59.2
Besançon	N. 47 13	E. 6 02	0.24 p.m.	895	273	29.00	736.6	30.00	762.0	35.6	2.0	79	3	1	.....	6	15	1	1	3	1	.....	.....	7	5.39	136.9
Bordeaux	N. 44 50	W. 0 32	11.58 a.m.	243	74	29.77	756 2	29.94	760.5	42.8	6.0	77	2	6	4	6	3	4	2	4	.....	.....	.....	8	3.48	88.3
Bourges	N. 47 10	E. 2 26	0.10 p.m.	512	156	29.44	747.8	30.01	762.2	39.9	4.4	83	3	7	11	7	.....	1	1	1	.....	.....	.....	3	2.42	61.5
Brest	N. 48 24	W. 4 30	11.42 a.m.	210	64	29.73	755.2	29.97	761.2	45.7	7.6	86	4	3	7	5	.....	3	1	4	4	.....	.....	7	3.12	79.2
Caen	N. 49 11	W. 0 21	11.59 a.m.	69	21	29.80	756.9	29.88	758 9	43.3	6.3	86	6	6	5	1	3	1	1	4	4	.....	.....	5	3.03	77.0
Châlons-sur-Marne	N. 48 57	E. 4 21	0.17 p.m.	295	90	29.65	753.0	29.99	761 7	36.9	2.7	90	2	4	6	14	2	.....	.....	1	2	.....	.....	3	2.49	63.2
Charleville	N. 49 46	E. 4 43	0.19 p.m.	476	145	29.39	746.4	29.93	760.2	36.3	2.4	79	3	2	4	11	6	1	1	3	.....	.....	.....	3	2.83	71.9
Clermont-Fer'and	N. 45 46	E. 3 05	0.12 p.m.	1273	388	28.63	727.1	30.03	762.7	38.8	3.8	73	9	2	3	8	4	1	2	2	.....	.....	.....	8	1.81	45.9
Cluny	N. 46 26	E. 4 39	0.19 p.m.	787	240	29.11	739.5	29.98	761.5	38.8	3.8	80	1	5	6	6	.....	2	2	9	.....	.....	.....	8	2.96	75.2
Commercy	N. 48 46	E. 5 35	0.22 p m.	817	249	29.06	738.0	29.98	761.5	39.4	f 4.1	f 79	1	5	11	11	2	1	.....	.....	.....	.....	.....	5	2.08	52.7
Gap	N. 44 33	E. 6 05	0.24 p.m.	2424	739	27 37	695 3	29.96	761.0	36.3	2.4	67	7	.....	.....	.....	.....	.....	1	1	22	.....	.....	2	2.49	63.3
Gréasque	N. 43 25	E. 5 37	0.22 p.m.	1056	322	28.78	730.9	29.93	760.2	43.5	6.4	70	2	2	.....	4	.....	2	.....	21	.....	.....	.....	4	2.42	61.4
Grenoble	N. 45 12	E. 5 43	0.23 p.m.	715	218	29.25	742.9	30.05	763.3	41.7	5.4	80	1	6	2	1	4	1	14	2	.....	.....	.....	.....	3.42	86.8
Guéret	N. 46 10	E. 1 52	0.07 p.m.	1535	468	28.37	720.5	29.99	761.8	36.3	2.4	90	1	6	8	9	.....	3	.....	2	2	.....	.....	5	5.44	138.3
Lescar	N. 43 20	W. 0 26	11.58 a.m.	525	160	29.47	748.6	30.05	763.3	46.8	8.2	79	2	5	8	1	1	.....	9	4	1	.....	.....	6	2.60	66.1
Lorient	N. 47 45	W. 3 21	11.47 a.m.	85	26	29.91	759.7	29.99	761.7	45.0	7.2	90	4	2	5	6	4	2	1	5	2	.....	.....	6	3.71	94.2
Lyon	N. 45 41	E. 4 47	0.19 p.m.	981	299	28.92	734.6	30.02	762.5	36.9	2.7	75	9	1	4	.....	7	5	4	1	.....	.....	.....	6	2.41	61.1
Mans	N. 48 00	E. 0 12	0.01 p.m.	285	87	29.69	754 1	30.02	762.5	39.6	4.2	89	.....	6	6	8	.....	.....	2	8	1	.....	.....	3	1.77	45.0
Marseille	N. 43 18	E. 5 23	0.22 p.m.	246	75	29.64	752.9	29.92	760.0	47.7	8.7	56	1	15	8	1	.....	1	4	1	.....	.....	.....	5	1.08	27.5
Montlouis	N. 42 30	E. 2 07	0.08 p.m.	5202	1586	24.72	628.0	29.57	751.0	33.6	0.9	69	5	5	5	7	.....	2	2	5	.....	.....	.....	4	4.81	122.2
Montpellier	N. 43 37	E. 3 53	0.16 p.m.	102	31	29.83	757.7	29.93	760.2	48.4	9.1	62	6	9	6	2	4	.....	1	.....	3	.....	.....	2	2.37	60.3
Mont Ventoux	N. 44 10	E. 5 16	0.21 p.m.	6234	1900	23.60	599.5	.....	.....	h26.6	— h3.0	h84	10	8	2	2	.....	5	2	2	.....	.....	.....	6	8.63	219.3
Nancy	N. 48 42	E. 6 11	0.25 p.m.	718	219	29.13	739.8	29.95	760.7	35.1	1.7	86	4	3	9	6	.....	5	3	1	.....	.....	.....	7	3.91	99.2
Nantes	N. 47 13	W. 1 33	11.54 a.m.	134	41	29.87	758.7	30.02	762.5	42.3	5.7	83	3	3	8	6	3	1	2	4	.....	.....	.....	6	.....	.....
Nice	N. 43 41	E. 7 16	0.29 p.m.	59	18	29.84	757.8	29.91	759.7	51.3	10.7	67	.....	.....	.....	.....	5	.....	5	.....	21	.....	.....	3	2.13	54.0
Perpignan	N. 42 42	E. 2 53	0.12 p.m.	105	32	29.87	758.8	29.99	761.7	48.6	9.2	60	2	18	3	3	.....	.....	1	3	1	.....	.....	5	7.63	193.7
Pic du Midi (Sum-	N. 42 56	W. 0 08	11.59 a.m.	9380	2859	21.02	533.8	.....	.....	18.9	— 7.3	67	.....	8	6	2	1	1	1	10	2	.....	.....	.....	4.26	108.3
Privas. [mit.)	N. 44 45	E. 4 36	0.18 p.m.	997	304	28.88	733.5	29.98	761.5	40.8	4.9	74	15	1	.....	.....	4	.....	.....	1	10	.....	.....	.....	1.29	32.7
Puy de Dôme	N. 45 46	E. 2 58	0.12 p.m.	4813	1467	24.96	634.0	.....	.....	24.4	— 4.2	94	5	1	9	9	.....	3	3	1	.....	.....	.....	8	10.11	256.7
Rochefort	N. 45 56	W. 0 58	11.56 a.m.	30	9	29.98	761.6	30.01	762 2	44.4	6.9	82	2	2	9	4	2	3	4	5	.....	.....	.....	6	2.92	74.1
Roche-sur-Yon	N. 46 40	W. 1 26	11.54 a.m.	259	79	29.71	754.7	30.00	762.0	40.3	4.6	85	3	1	8	9	2	1	3	4	.....	.....	.....	5	4.08	103.6
Rodez	N. 44 21	E. 2 34	0.10 p.m.	2050	625	27.70	703.6	30.00	762 0	37.8	3.2	86	7	13	.....	3	2	3	.....	3	.....	.....	.....	5	4.22	107.2
Rouen	N. 49 26	E. 1 05	0.04 p.m.	39	12	29.91	759.6	29.96	761.0	40.8	4.9	80	2	1	5	11	3	4	2	3	.....	.....	.....	7	4.02	102.2
Saint Brieuc	N. 48 37	E. 5 08	0.20 p.m.	348	106	29.63	752.6	30.03	762.7	43.0	6.1	87	2	5	7	1	6	4	6	.....	.....	.....	.....	7	3.30	83.8
Saint Maur	N. 48 48	E. 2 21	0.09 p.m.	161	49	29.78	756.4	29.97	761.2	38.5	3.6	84	4	3	2	10	6	2	1	3	.....	.....	.....	8	1.90	48.2
Toulouse	N. 43 37	E. 1 27	0.06 p.m.	636	194	29.36	745.8	30.06	763.5	42.8	6.0	86	1	8	10	1	1	5	2	3	.....	.....	.....	8	1.38	35.1
Sub-Series.																										
St. Martin du Hinx.	N. 43 35	W. 1 16	11.55 a.m.	131	40	29.92	760.0	30.07	763.8	45.3	7.4	78	2	4	8	7	.....	1	6	3	.....	.....	.....	8	4.85	123.1
GERMAN.																										
Ansbach	N. 49 18	E. 10 36	0.42 p.m.	1358	414	28.43	722.0	29.95	760.7	30.6	— 0.8	82	1	2	10	11	1	1	.....	1	4	.....	.....	7	3.06	77.7
Bamberg	N. 49 54	E. 10 54	0.44 p.m.	787	240	29.00	736.5	29.90	759.4	30.6	— 0.8	83	4	6	4	6	.....	8	1	2	.....	.....	.....	7	3.29	83.5
Breslau	N. 51 07	E. 17 02	1.08 p.m.	482	147	29.30	744.2	29.86	758.4	32.2	0.1	75	2	2	9	5	10	2	.....	.....	1	.....	.....	8	0.96	24.4
Carlsruhe	N. 49 01	E. 8 25	0.34 p.m.	407	124	29.49	749.0	29.96	761.0	34.2	1.2	83	1	1	1	21	1	.....	.....	5	1	.....	.....	8	3.01	76.4
Cassel	N. 51 19	E 9 28	0.38 p.m.	669	204	29.10	739.2	29.88	758.9	32.2	0.1	88	3	6	3	9	10	.....	.....	.....	.....	.....	.....	8	2.58	65.4
Frankfort on M.	N. 50 08	E. 8 41	0.35 p.m.	338	103	29.58	751.2	29.97	761.2	34.2	1.2	81	3	.....	2	14	5	1	2	1	3	.....	.....	8	3.17	80.5
Friedrichshafen	N. 47 39	E. 9 29	0.38 p.m.	1338	408	28.47	723.1	29.95	760.7	33.3	0.7	82	2	1	3	14	2	1	.....	8	.....	.....	.....	8	3.91	99.4
Hamburg	N. 53 33	E. 9 58	0.40 p.m.	85	26	29.78	756.3	29.88	758.9	34.2	1.2	90	3	6	1	14	2	3	1	1	.....	.....	.....	8	1.69	43.0
Kiel	N. 54 19	E. 10 04	0.40 p.m.	13	4	29.71	754.6	29.74	755.4	35.1	1.7	84	3	3	6	8	4	1	.....	3	3	.....	.....	8	2.76	70.1
Leipsic	N. 51 20	E. 12 24	0.50 p.m.	390	119	29.40	746.8	29.87	758.7	34.9	1.6	84	.....	1	8	11	10	1	.....	.....	.....	.....	.....	8	1.54	39.1
Memel	N. 55 43	E. 21 07	1.24 p.m.	39	12	29.69	754.1	29.76	755 9	31.5	— 0.3	83	2	4	5	2	6	3	5	4	.....	.....	.....	8	.....	.....
Munich	N. 48 09	E. 11 34	0.46 p.m.	1732	528	28.05	712.5	29.91	759.7	31.1	— 0.5	83	1	1	13	10	1	2	1	2	.....	.....	.....	8	3.62	92.0
Neufahrwasser	N. 54 24	E. 18 40	1.15 p.m.	36	11	29.69	754.0	29.75	755.6	32.0	0.0	86	1	1	4	3	18	3	1	.....	.....	.....	.....	9	1.27	32.3
Neustadt	N. 49 21	E. 8 08	0.33 p.m.	479	146	29.37	746.0	29.91	759.7	35.8	2.1	81	7	1	5	5	5	.....	1	.....	7	.....	.....	8	2.75	69.9
Stuttgart	N. 48 47	E. 9 11	0.37 p.m.	833	254	28.99	736.4	29.94	760.5	34.5	1.4	79	4	1	5	12	1	.....	.....	8	.....	.....	.....	7	1.91	48.4
Wustrow	N. 54 21	E. 12 24	0.50 p.m.	23	7	29.67	753.5	29.72	754.9	34.5	1.4	89	3	2	5	6	3	5	3	4	.....	.....	.....	8	2.26	57.3
GREEK.																										
Athens	N. 37 58	E. 23 44	1.35 p.m.	348	106	29.54	750.4	29.93	760.2	57.7	14.3	70	5	5	1	3	13	2	.....	2	.....	.....	.....	5	1.78	45.1
INDIAN.																										
Kurrachee	N. 24 47	E. 67 04	4.28 p.m.	49	15	29.97	761.1	29.97	761.1	76.7	24.8	41	.....	.....	6	9	1	2	5	8	.....	.....	.....	1	.....	.....
Deesa	N. 24 16	E. 72 14	4.49 p.m.	466	142	29.50	749.3	29.92	760.0	80.7	27.1	25	9	3	3	2	2	4	1	5	2	.....	.....	2	0.23	5.8
Bombay	N. 18 54	E. 72 49	4.51 p.m.	37	11	29.89	759.2	29.87	758.7	79.8	26.6	66	4	22	4	.....	.....	.....	.....	1	.....	.....	.....	2	0.16	4.1
Poona	N. 18 28	E. 74 10	4.57 p.m.	1849	564	28.08	713.3	29.86	758.5	78.5	25.8	31	.....	.....	.....	.....	.....	2	13	16	.....	.....	.....	3	0.16	4.1
Belgaum	N. 15 52	E. 74 42	4.59 p.m.	2524	770	27.38	695.5	29.82	757.4	76.1	24.5	39	.....	.....	.....	.....	.....	5	16	10	.....	.....	.....	4	.....	.....
Lahore	N. 31 34	E. 74 20	4.57 p.m.	702	214	29.32	744.8	30.03	762.7	64.0	17.8	48	.....	.....	1	.....	.....	.....	.....	2	28	.....	.....	3	.....	.....
Roorkee	N. 29 52	E. 77 56	5.12 p.m.	887	270	29.10	739.0	29.98	761.6	64.9	18.3	50	.....	1	13	.....	.....	2	.....	.....	15	.....	.....	1	0.16	4.1
Agra	N. 27 10	E. 78 05	5.12 p.m.	555	169	29.47	748.5	30.00	762.0	67.7	19.8	57	3	5	.....	.....	.....	1	.....	1	21	.....	.....	1	.....	.....
Nagpur	N. 21 09	E. 79 11	5.17 p.m.	1025	312	28.94	735.1	29.94	760.4	75.8	24.3	37	2	.....	.....	.....	.....	.....	6	10	13	.....	.....	2	0.13	3.3
Jubbulpore	N. 23 09	E. 79 59	5.20 p.m.	1341	409	28.65	727.8	29.98	761.5	70.0	21.1	45	2	2	.....	.....	.....	1	.....	7	19	.....	.....	2	0.32	8.1
Lucknow	N. 26 50	E. 81 00	5.24 p.m.	369	112	29.66	753.2	29.99	761.8	65.9	18.8	54	4	3	.....	.....	.....	.....	1	1	22	.....	.....	0	.....	.....
Allahabad	N. 25 26	E. 81 52	5.27 p.m.	307	94	29.72	754.8	29.99	761.8	67.7	19.8	61	1	5	.....	.....	.....	.....	2	.....	23	.....	.....	1	.....	.....
Patna	N. 25 37	E. 85 08	5.41 p.m.	183	56	29.84	758.0	29.98	761.5	67.5	19.7	56	1	3	21	.....	.....	.....	.....	.....	6	.....	.....	1	.....	.....
Hazaribagh	N. 24 00	E. 85 24	5.42 p.m.	2007	612	27.98	710.7	29.99	761.8	63.7	17.6	43	18	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Cuttack	N. 20 29	E. 85 54	5.44 p.m.	80	24	29.93	760.1	29.95	760.7	73.9	23.3	61	.....	.....	.....	.....	.....	.....	.....	.....	31	.....	.....	2	.....	.....
Calcutta	N. 22 33	E. 88 21	5.53 p.m.	21	6	29.98	761.6	29.95	760.8	66.8	20.4	67	10	2	.....	.....	.....	.....	.....	1	18	.....	.....	1	.....	.....
Dhubri	N. 26 07	E. 89 50	5.59 p.m	115	35	29.88	758.9	29.94	760.5	68.0	20.0	66	.....	.....	.....	.....	.....	.....	.....	1	30	.....	.....	0	.....	.....
Chittagong	N. 22 21	E. 91 50	6.07 p.m.	87	27	29.89	759.3	29.92	760 0	69.4	20.8	73	1	12	14	1	.....	.....	.....	.....	3	.....	.....	1	.....	.....
Sibsagar	N. 26 59	E. 94 40	6.19 p.m.	333	101	29.69	754.1	29.99	761.7	63.2	17.3	83	.....	.....	.....	2	1	.....	1	27	.....	.....	.....	0	.....	.....
Jeypore	N. 26 55	E. 75 50	5.03 p.m.	1431	436	28.57	725.6	29.99	761.7	70.6	21.4	41	4	9	5	3	1	2	3	1	3	.....	.....	1	0.03	0.8
Bellary	N. 15 09	E. 76 57	5.08 p.m.	1475	449	28.44	722.4	29.89	759.4	78.0	25.6	48	.....	.....	.....	.....	1	6	20	3	1	.....	.....	4	0.56	14.2
Trichinopoly	N. 10 50	E. 78 44	5.15 p.m.	275	84	29.66	753.4	29.88	758.9	77.2	25.1	83	3	1	.....	.....	.....	.....	4	15	8	.....	.....	*8	5.57	141.5
ITALIAN.																										
Udine	N. 46 04	E. 13 13	0.53 p.m.	381	116	29.42	747.3	29.85	758.1	42.1	5.6	71	.....	1	1	2	1	6	8	5	7	.....	.....	6	5.17	131.4
Milan	N. 45 28	E. 9 11	0.37 p.m.	482	147	29.41	747.0	29.95	760.6	36.0	2.2	82	1	6	13	6	2	.....	1	2	.....	.....	.....	6	2.56	65.1
Padua	N. 45 24	E. 11 53	0.48 p.m.	102	31	29.80	756.9	29.90	759.5	39.7	4.3	75	9	10	3	3	1	1	1	1	2	.....	.....	7	3.00	76.1
Moncalieri	N. 45 00	E. 7 41	0.31 p.m.	846	258	29.00	736.6	29.96	760.9	34.7	1.5	82	.....	2	.....	3	1	4	16	5	.....	.....	.....	6	1.01	25.7
Genoa	N. 44 24	E. 8 55	0.36 p.m.	177	54	29.67	753 6	29.85	758.3	46.9	8.3	58	15	1	.....	.....	1	1	4	8	1	.....	.....	6	4.19	106.5
Cuneo	N. 44 23	E. 7 32	0.30 p.m.	1820	555	.....	.....	29.93	760.2	36.9	2.7	62	10	1	1	1	7	.....	2	9	.....	.....	.....	4	1.48	37.5
Pesaro	N. 43 55	E. 12 53	0.52 p.m.	46	14	29.84	757.9	29.89	759.3	42.6	5.9	80	6	13	2	3	1	.....	2	4	.....	.....	.....	8	3.05	77.4
Florence	N. 43 46	E. 11 15	0.45 p.m.	240	73	29.61	752.1	29.88	758.9	45.0	7.2	78	7	2	.....	3	4	2	3	10	.....	.....	.....	7	6.61	167.8
Leghorn	N. 43 33	E. 10 18	0.41 p.m.	79	24	29.77	756.1	29.85	758.1	48.4	9.1	70	.....	2	7	2	2	.....	8	10	.....	.....	.....	8	6.64	168.7
Rome	N. 41 54	E. 12 29	0.50 p.m.	164	50	29.70	754.4	29.87	758.7	50.4	10.2	72	16	.....	1	3	5	3	1	2	.....	.....	.....	7	5.98	152.0
Lecce	N. 40 22	E. 18 12	1.13 p.m.	236	72	29.66	753 3	29.90	759.4	54.9	12.7	66	7	2	5	3	10	2	.....	2	.....	.....	.....	6	1.54	39.1

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Result of Simultaneous Observations for December, 1887. Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent.	Mean Rel. Humidity	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation. Inch.	Mill.
	°	° ′																								
ITALIAN—Con.																										
Cosenza	N. 39 19	E. 16 17	1.05 p.m.	840	256	29.04	737.6	29.94	760.5	52.0	11.1	65	1	3	9	1	6	11	.....	.....	.....	.....	.....	8	10.54	267.8
Sassari	N. 40 43	E. 8 34	0.34 p.m.	735	224	29.11	739.4	29.90	759.4	52.0	11.1	74	.....	3	13	7	3	2	3	.....	.....	.....	.....	7	3.07	78.0
Palermo	N. 38 07	E. 13 21	0.53 p.m.	236	72	29.71	754.6	29.94	760.5	59.9	15.5	60	.....	5	7	9	.....	.....	.....	2	8	.....	.....	7	3.28	83.2
Syracuse	N. 37 03	E. 15 15	1.01 p.m.	72	22	29.89	759.2	29.94	760.5	60.6	15.9	61	1	4	12	3	1	1	3	6	.....	.....	.....	6	0.56	14.1
Sub-Series.																										
Stelvio	N. 46 32	E. 10 25	0.42 p.m.	8343	2543	21.86	555.2	.....	.....	14.0	—10.0	78	4	.....	2	4	3	3	2	13	....	.....	.....	5	0.77	19.5
Valdobbia	N. 45 47	E. 7 51	0.31 p.m.	8360	2548	21.88	555.6	.....	.....	17.2	— 8.2	59	3	4	8	9	2	1	1	2	1	.....	.....	5	3.74	95.0
JAPANESE.																										
Akita	N. 39 42	E. 140 07	9.20 p.m.	49	15	29.87	758.7	29.91	759.8	34.8	1.5	80	2	1	15	.....	1	.....	9	2	1	11808	18244	7	6.67	169.4
Awomori	N. 40 51	E. 140 45	9.23 p.m.	33	10	29.83	757.8	29.85	758.2	31.3	— 0.4	81	2	6	7	3	12	1	.....	.....	.....	7996a	12860a	7	5.10	129.7
Fushiki	N. 36 47	E. 137 03	10.05 p.m.	13	4	30.03	762.7	30.02	762.5	39.7	4.2	83	.....	1	5	17	5	.....	.....	1	2	6130	9863	8	16.11	409.2
Gifu	N. 35 27	E. 136 46	9.07 p.m.	49	15	30.03	762.7	30.05	763.3	39.7	4.3	87	6	3	2	1	2	.....	2	6	9	2139	3444	4	3.02	76.5
Hakodate	N. 41 46	E. 140 44	9.23 p.m.	10	3	29.81	757.3	29.81	757.3	32.8	0.5	85	5	2	17	.....	2	2	.....	.....	3	10279	16543	7	3.52	89.5
Hamamatsu	N. 34 42	E. 137 43	9.11 p.m.	92	28	29.95	760.6	30.01	762.2	42.0	5.6	71	2	3	15	1	.....	.....	1	4	5	4595	7395	2	1.65	41.9
Hiroshima	N. 34 23	E. 132 27	8.50 p.m.	16	5	30.12	765.1	30.11	764.8	41.7	5.4	73	19	1	8	1	.....	.....	.....	2	.....	3389	5453	5	0.74	18.8
Kago-hima	N. 31 35	E. 130 33	8.42 p.m.	13	4	30.17	766.3	30.14	765.5	43.8	6.7	83	6	3	.....	.....	.....	.....	.....	.....	22	1326	2134	4	1.31	33.3
Kanazawa	N. 36 33	E. 136 40	9.07 p.m.	95	29	29.94	760.5	30.02	762.5	41.0	5.0	80	.....	3	4	9	2	7	3	.....	3	7339	11808	8	15.00	380.8
Kioto	N. 35 01	E. 135 46	9.03 p.m.	161	49	29.92	760.0	30.06	763.5	37.3	3.0	84	15	5	1	4	3	2	.....	1	.....	3595	5786	4	1.90	48.4
Kochi	N. 33 33	E. 133 34	8.54 p.m.	20	6	30.10	764.6	30.09	764.3	42.8	6.0	73	6	12	5	.....	.....	.....	1	6	1	4858	7818	3	0.47	12.0
Miasaki	N. 31 56	E. 131 26	8.46 p.m.	26	8	30.14	765.6	30.14	765.6	44.8	7.1	77	2	.....	22	.....	.....	2	5	.....	.....	5781	9304	2	0.16	4.1
Miyako	N. 39 38	E. 141 59	9.28 p.m.	98	30	29.76	755.9	29.85	758.2	35.9	2.1	81	1	3	6	16	3	.....	1	.....	1	5208	8386	4	2.04	51.8
Nagasaki	N. 32 44	E. 129 52	8.39 p.m.	190	58	29.98	761.5	30.16	766.1	44.2	6.8	77	10	6	3	.....	.....	1	1	7	3	3699	5953	4	2.76	70.0
Nemuro	N. 43 20	E. 145 35	9.42 p.m.	89	27	29.68	753.8	29.77	756.3	32.2	0.1	75	4	5	10	4	4	1	1	.....	2	9836	15879	6	3.08	78.0
Niigata	N. 37 55	E. 139 03	9.16 p.m.	33	10	29.95	760.7	29.96	761.1	40.8	4.9	78	1	2	14	6	1	7	.....	.....	.....	8381	13487	7	10.14	257.5
Numadza	N. 35 06	E. 138 51	9.15 p.m.	30	9	29.94	760.4	29.94	760.4	43.6	6.5	65	2	.....	1	10	.....	.....	10	8	.....	9019	14515	2	2.37	60.2
Osaka	N. 34 42	E. 135 30	9.02 p.m.	35	11	30.06	763.5	30.07	763.8	42.1	5.6	73	6	3	9	3	3	1	.....	5	1	8261	13295	3	1.46	37.1
Sakai	N. 35 33	E. 133 14	8.53 p.m.	7	2	30.08	764.1	30.07	763.8	42.9	6.0	72	1	.....	17	1	.....	.....	.....	1	11	6056	9746	6	4.93	125.2
Shimonoseki	N. 33 58	E. 130 56	8.44 p.m.	161	49	29.98	761.4	30.12	765.0	46.0	7.8	69	2	13	5	2	2	.....	5	2	.....	.....	.....	5	1.89	48.0
Tokei	N. 35 41	E. 139 46	9.19 p.m.	69	21	29.89	759.3	29.94	760.4	40.9	4.9	67	10	5	4	3	3	1	5	.....	.....	5245	8440	2	0.58	14.8
Wakayama	N. 34 14	E. 135 09	9.01 p.m.	49	15	30.05	763.3	30.07	763.8	43.7	6.5	67	5	6	5	1	1	.....	2	3	8	3162	5088	4	1.37	35.1
MAURITIUS.																										
Mauritius	S. 20 06	E. 57 33	3.50 p.m.	181	55	29.80	756.9	29.92	760.0	78.9	26.1	62	2	.....	.....	.....	.....	.....	28	1	.....	9951	16012	6	2.41	61.2
MEXICAN.																										
Guanajuato	N. 21 01	W. 101 10	5.15 a m.	6762	2061	23.67	601.2	29.80	756.9	49.3	9.6	80	1	1	5	13	6	4	1	.....	.....	.....	.....	4	0.57	14.4
Leon	N. 21 07	W. 101 36	5.14 a.m.	5902	1799	24.29	617.0	30.00	762.0	48.5	9.2	90	2	25	2	.....	.....	1	.....	1	.....	.....	.....	4	0.48	12.2
Mazatlan	N. 23 12	W. 106 17	4.55 a.m.	13	4	29.99	761.7	29.95	760.7	65.5	18.7	77	5	5	.....	.....	.....	1	9	11	.....	.....	.....	1	0.12	3.1
Mexico	N. 19 26	W. 99 00	5.24 a.m.	7490	2283	23.06	585.6	30.13	765.3	45.7	7.6	77	.....	1	.....	.....	3	.....	.....	.....	27	.....	.....	3	0.19	4.8
NETHERLANDS.																										
Flushing	N. 51 24	E. 3 35	0.14 p.m.	0	0	29.86	758.5	29.90	759.4	39.2	4.0	.....	2	2	5	9	8	1	2	2	.....	.....	.....	.....	1.24	31.5
Groningen	N. 53 12	E. 6 34	0.26 p.m.	60?	18?	29.69	754.2	29.77	756.1	36.7	2.6	.....	2	3	13	4	3	.....	1	5	.....	.....	.....	.....	1.96	49.9
Helder	N. 52 58	E. 4 45	0.19 p.m.	0	0	29.78	756.3	29.80	756.9	38.8	3.8	.....	5	4	6	8	5	.....	.....	3	.....	.....	.....	.....	2.82	71.6
Hellevoetsluis	N. 51 49	E. 4 08	0.17 p.m.	0	0	29.84	757.9	29.86	758.4	37.9	3.3	.....	1	1	11	8	3	1	.....	3	3	.....	.....	.....	0.66	16.9
Utrecht	N. 52 05	E. 5 07	0.20 p.m.	43	13	29.79	756.6	29.85	758.2	37.2	2.9	.....	2	4	6	6	9	2	1	1	.....	.....	.....	2	2.66	67.7
Sub-Series.																										
Batavia	S. 6 11	E. 106 50	7.07 p.m.	26	8	29.82	757.5	29.78	756.4	77.5	25.3	87	2	5	5	6	8	1	1	.....	3	.....	.....	9	5.16	131.2
NORWEGIAN.																										
Bergen	N. 60 24	E. 5 20	0.21 p.m.	56	17	29.51	749.5	29.61	752.1	33.4	0.8	84	3	5	2	1	4	9	1	.....	6	.....	.....	6	8.39	213.2
Brono	N. 65 28	E. 12 14	0.49 p.m.	33	10	29.49	749 0	29.57	751.1	27.3	— 2.6	70	1	.....	1	1	7	2	13	3	3	.....	.....	8	1.26	32.1
Christiania	N. 59 55	E. 10 45	0.43 p.m.	134	41	29.47	748.5	29.67	753.6	27.1	— 2.7	79	3	3	1	5	2	1	4	4	8	.....	.....	7	1.85	46.9
Gjæsvær	N. 71 07	E. 25 22	1.41 p.m.	23	7	29.57	751.0	29.63	752.6	21.0	— 6.1	.....	1	5	2	1	2	9	4	3	4	.....	.....	6	1.46	37.0
PORTUGUESE.																										
Angra	N 38 39	W. 27 14	10.11 a.m.	144	44	29.78	756.4	29.92	760.0	60.4	15.8	89	1	6	2	6	1	7	6	3	.....	.....	.....	6	12.66	321.5
Funchal	N. 32 38	W. 16 55	10.52 a.m.	82	25	29.98	761.6	30.03	762.7	65.7	18.7	63	1	.....	5	5	1	2	6	8	3	.....	.....	7	8.70	221.1
Lisbon	N. 38 42	W. 9 08	11.23 a.m.	312	95	29.73	755.1	30.04	763.5	51.3	10.7	77	13	3	2	2	2	1	4	2	.....	.....	.....	7	7.08	179.8
Ponta Delgada	N. 37 45	W. 25 41	10.17 a.m.	66	20	29.90	759.5	29.95	760.7	61.9	16.6	81	1	5	1	2	8	8	1	1	4	.....	.....	4	9.74	247.5
Saint Vincent	N. 16 37	W. 25 02	10.20 a.m.	35	11	29.98	761.6	29.95	760.7	77.0	25.0	67	16	.....	1	2	.....	.....	.....	10	2	.....	.....	3	0.00	00.0
Sao Salvador	S. 6 17	E. 14 53	1.00 p.m.	1834	559	28.06	712.6	29.81	757.2	78.4	25.8	71	.....	.....	6	4	.....	.....	.....	.....	21	.....	.....	7	1.84	46.7
RUSSIAN.																										
Archangel	N. 64 33	E. 40 32	2.42 p.m.	16	5	29.74	755.5	29.76	755.9	0.3	—17.6	85	2	1	1	4	2	3	6	5	7	.....	.....	8	.....	.....
Baku	N. 40 21	E. 49 51	3.19 p.m.	39	12	30.14	765.0	30.09	764.3	53.1	11.7	73	11	.....	.....	5	9	2	1	.....	3	.....	.....	.....	.....	.....
Barnaul	N. 53 20	E. 83 47	5.35 p.m.	459?	140?	29.72	754.9	30.29	769.4	11.3	—11.5	82	.....	1	.....	22	2	1	.....	3	2	.....	.....	7	2.52	64.0
Dorpat	N. 58 23	E. 26 43	1.47 p.m.	210	64	29.45	747.9	29.71	754.6	24.4	— 4.2	.....	2	.....	7	4	10	2	3	3	.....	.....	.....	9	2.04	51.9
Ekaterinburg	N. 56 49	E. 60 38	4.03 p.m.	928	283	28.86	733.0	29.97	761.2	15.4	— 9.2	.....	.....	2	8	11	4	3	2	.....	1	.....	.....	7	0.70	17.9
Elisavetgrad	N. 48 31	E. 32 17	2.09 p.m.	407	124	29.43	747.4	29.90	759.4	34.7	1.5	83	2	3	6	8	3	5	2	1	1	.....	.....	9	2.15	54.5
Irkutsk	N. 52 17	E. 104 16	6.57 p.m.	1610	491	28.56	725.4	30.48	774.2	3.7	—15.7	88	1	8	.....	.....	.....	7	8	1	6	.....	.....	6	0.82	20.9
Kasalinsk	N. 45 46	E. 62 07	4.08 p.m.	148	45	29.95	760.7	30.12	765.0	30.0	— 1.1	.....	5	.....	2	4	3	4	6	7	.....	.....	.....	5	.....	.....
Kasan	N. 55 47	E. 49 08	3.17 p.m.	230	70	29.61	752.0	29.90	759.4	20.5	— 6.4	91	3	.....	4	4	6	12	2	.....	.....	.....	.....	8	0.61	15.4
Kem	N. 64 57	E. 34 39	2.19 p.m.	43	13	29.67	753.5	29.76	755.9	7.3	—13.7	90	1	5	7	2	2	1	3	3	7	.....	.....	7	0.79	20.0
Kertch	N. 45 21	E. 36 29	2.26 p.m.	20?	6?	29.96	760.9	29.98	761.5	46.0	7.8	79	1	4	1	4	1	2	.....	2	16	.....	.....	7	.....	.....
Kieff	N. 50 27	E. 30 30	2.02 p.m.	600	183	29.19	741.4	29.88	758.9	31.5	— 0.3	85	2	3	10	3	4	4	2	3	.....	.....	.....	8	3.07	78.0
Korostishev	N. 50 19	E. 29 03	2.05 p.m.	?	?	29.21	742.0	.....	.....	32.0	0.0	84	1	3	3	12	1	3	1	1	6	.....	.....	8	.....	.....
Koslov a	N. 52 53	E. 40 31	2.42 p.m.	512	156	29.17	740.7	29.76	755.9	27.9	— 2.3	93	1	5	3	1	8	4	2	1	5	.....	.....	10	.....	.....
Libau	N. 56 31	E. 21 01	1.24 p.m.	20	6	29.65	753.2	29.70	754.4	31.8	— 0.1	84	1	.....	6	3	3	11	5	2	.....	.....	.....	8	2.58	65.6
Lugan	N. 48 35	E. 39 20	2.37 p.m.	164	50	29.78	756.5	29.96	761.0	39.9	4.4	78	.....	1	4	9	6	6	3	2	.....	.....	.....	8	2.04	51.9
Moscow	N. 55 46	E. 37 40	2.31 p.m.	469	143	29.26	743.2	29.83	757.7	24.1	— 4.4	92	3	6	3	2	9	1	4	3	.....	.....	.....	9	3.61	91.6
Nertchinsk	N. 51 19	E. 119 37	7.58 p.m.	2155?	657?	27.82	706.7	30.53	775.4	13.2	—25.1	.....	.....	1	4	.....	.....	.....	.....	.....	26	.....	.....	2	.....	.....
Nikolaiev	N. 46 58	E. 31 58	2.08 p.m.	62	19	29.87	758.6	29.93	760.2	38.8	3.8	87	4	.....	7	1	7	4	.....	.....	8	.....	.....	7	2.81	71.4
Nikolaievsk	N. 53 08	E. 140 45	9.23 p.m.	82	25	29.70b	754.3b	29.80b	756.9b	9.1b	—12.7b	84e	1b	.....	19	.....	.....	1	6	.....	2	.....	.....	6b	.....	.....
Nikolsk	N. 59 32	E. 45 27	3.02 p.m.	485?	148?	29.25	742.9	29.71	754.6	12.2	—11.0	93	4	4	2	2	4	10	.....	2	3	.....	.....	9	2.03	51.5
Perm	N. 58 01	E. 56 16	3.45 p.m.	328?	100?	29.45a	747.9a	29.87a	758.7a	15.1a	—9.4a	.....	.....	a	6	9	5	3	3	1	3	.....	.....	10a	2.48	63.0
Petro-Alexandrovsk	N. 41 28	E. 61 05	4.04 p.m.	328	100	29.89	759.2	30.24	768.1	41.4	5.2	.....	.....	2	.....	4	2	2	4	13	4	.....	.....	5	.....	.....
Petrozavodsk	N. 61 47	E. 34 23	2.18 p.m.	220?	67?	29.50	749.3	29.76	756.0	11.5	—11.4	84	2	7	7	5	.....	9	1	.....	.....	.....	.....	7	1.86	47.3
Pinsk	N. 52 07	E. 26 06	1.44 p.m.	459?	140?	29.30	744.1	29.88	758.9	30.0	— 1.1	86	2	.....	5	7	6	3	3	1	4	.....	.....	8	0.82	20.7
Poti	N. 42 09	E. 41 37	2.46 p.m.	26	8	29.94	760.5	29.96	761.0	56.1	13.4	64	.....	1	2	3	2	.....	6	6	11	.....	.....	6	.....	.....
St. Petersburg	N. 59 56	E. 30 16	2.01 p.m.	20	6	29.69	754.0	29.75	755.6	20.5	— 6.4	88	2	3	5	3	6	7	4	1	.....	.....	.....	8	1.81	46.0
Samarkand	N. 39 39	E. 66 57	4.28 p.m.	2379?	725?	27.67	703.8	30.23	767.8	44.8	7.1	.....	.....	4	7	5	2	11	1	.....	1	.....	.....	7	0.40	10.1
Sevastopol	N. 44 37	E. 33 31	2.14 p.m.	187	57	29.73	755.1	29.93	760.2	49.5	9.7	69	.....	4	1	5	10	.....	.....	4	7	.....	.....	8	2.56	65.0
Tashkend	N. 41 20	E. 69 18	4.37 p.m.	1607?	490	28.52	724.4	30.25	768.3	45.1	7.3	62	4	1	1	1	2	.....	.....	1	21	.....	.....	6	.....	.....
Tiflis	N. 41 43	E. 44 47	2.59 p.m.	1342	409?	28.70	729.0	30.15	765.8	50.7	10.4	51	1	8	2	.....	4	5	4	.....	7	.....	.....	5	0.10	2.5
Viatka	N. 58 36	E. 49 41	3.19 p.m.	581?	177?	29.09	738.9	29.80	756.9	12.7	—10.7	.....	.....	6	4	8	6	3	2	.....	2	.....	.....	9	.....	.....
Warsaw	N. 52 13	E. 21 02	1.24 p.m.	390	119	29.36	745.7	29.82	757.4	30.4	— 0.9	86	2	3	5	8	6	4	.....	.....	3	.....	.....	8	0.80	20.2
Yeniseisk o	N. 58 27	E. 92 06	6.08 p.m.	276?	84?	30.05	763.2	30.43	772.9	—10.8	—23.8	.....	1	.....	1	1	1	1	4	.....	7	.....	.....	5	0.70	17.8
Sub-series.																										
Petrowsky Acad'y	N. 55 50	E. 37 33	2.30 p.m.	558	170	29.15	740.5	29.85	758.2	22.8	— 5.1	86	.....	4	5	5	5	3	3	4	2	.....	.....	9	2.50	63.4
SCOTTISH.																										
Leith	N. 55 59	W. 3 10	11.47 a.m.	70	21	29.70	754.4	29.80	756.9	.....	.....	.....	2	2	17	5	4	.....	1	.....	.....	.....	.....	8	1.14	29.0
SPANISH.																										
Bilbao	N. 43 15	W. 2 59	11.48 a.m.	52	16	30.00	761.9	30.05	763.3	48 4	9.1	78	.....	7	3	.....	.....	8	1	3	9	2221	3575	7	4.73	120.1
Burgos	N. 42 20	W. 3 46	11.45 a.m.	2821	860	27.08	687.7	30.15	765.8	36.0	2.2	88	5	2	5	3	10	.....	.....	6	.....	2231	3590	8	1.52	38.6
Madrid	N. 40 25	W. 3 42	11.45 a.m.	2152	656	27.79	705.8	30.09	764.3	42.8	6.0	72	3	.....	2	1	.....	1	1	8	15	6185	9954	5	2.07	52.5
Santiago	N. 42 53	W. 8 28	11.26 a.m.	863	263	29.10	739 2	30.03	762.7	48.4	9.1	80	1	3	2	6	1	1	1	8	8	6747	10858	7	5.64	143.3

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea. Feet.	Metr's	Mean Barometer. Actual. Inch.	Mill.	Reduced. Inch.	Mill.	Mean Temperature. Fah.	Cent.	Mean Rel. Humidity	Wind. Directions. N	NW	W	SW	S	SE	E	NE	C	Total Movement. Miles	Kil.	Average Cloudiness. 0-10	Total Precipitation Inch.	Mill.
SPANISH.—Con.																										
Sub-Series.	° ′	° ′																								
Havana	N. 23 08	W. 82 23	6.30 a.m.	62	19	30.01	762.2	30.02	762 5	67.1	19.5	87	6	.....	.....	.....	2	7	15	1	.....	.....	.....	5	3.31	84.1
Manilla	N. 14 35	E.120 57	8.04 p.m.	46	14	29.90	759.4	29.88	758.9	76.7	24.8	90	4	1	.....	.....	2	3	7	9	5	1932	3110	6	4.61	117.2
San Fernando	N. 36 28	W. 6 13	11.35 a.m.	95	29	29.99	761.7	30.07	763 8	55.2	12.9	72	8	2	3	3	1	1	1	1	11	.....	.....	5	5.68	144.3
San Juan de Porto Rico	N. 18 30	W. 66 10	7.35 a.m.	82	25	29.96	760.9	29.98	761.5	75.0	23.9	82	.....	2	4	4	5	6	9	1	.....	.....	.....	4	2.28	57.8
SWEDISH.																										
Haparanda	N. 65 47	E. 24 03	1.36 p.m.	30	9	29.66	753.4	29.74	755 4	4.5	—15.3	96	6	1	2	1	2	.....	4	6	9	.....	.....	7	1.74	44.3
Umea	N. 63 50	E. 20 17	1.21 p.m.	39	12	29.62	752.3	29.71	754.6	13.8	—10.1	92	5	1	.....	2	3	.....	3	10	7	.....	.....	8	2.47	62.8
Hernosand	N. 62 32	E. 17 57	1.12 p.m.	46	14	29.59	751.6	29.69	754.1	19.2	— 7.1	90	.....	1	.....	.....	4	1	2	9	14	.....	.....	7	3.40	86.3
Stockholm	N. 59 20	E. 18 04	1.12 p.m.	144	44	29.47	748.4	29.68	753.9	28.2	— 2.1	84	4	6	6	1	2	4	.....	5	3	.....	.....	7	1.48	37.7
Wisby	N. 57 39	E. 18 19	1.13 p.m.	52	16	29.57	751.0	29.65	753.1	34.2	1.2	84	2	4	5	7	2	4	4	3	.....	.....	.....	8	3.00	76.3
Sub-Series.																										
Upsala	N. 59 51	E. 17 37	1.10 p.m.	79	24	29.53	750.0	29.65	753.1	25.5	— 3.6	93	4	4	4	6	3	4	3	1	2	.....	.....	8	2.13	54.2
SWISS.																										
Geneva	N. 46 12	E 6 08	0.25 p.m.	1338	408	28.54	725.0	30.03	762.7	36.1	2.3	71	11	1	3	2	8	.....	5	1	.....	.....	.....	8	3.95	100.3
TURKISH.																										
Constantinople	N 41 02	E. 28 59	1.56 p.m.	246	75	29.75	756.7	29.92	760.0	51.8	11.0	71	7	4	.....	6	4	4	1	5	.....	.....	.....	7	6.80	172.7
Valona	N. 40 27	E. 19 27	1.18 p.m.	105	32	29.69	754.1	29.78	756.4	54.5	12.5	.....	.....	2	1	8	6	9	.....	5	.....	.....	.....	6	8.11	206.0
Sub-Series.																										
Beirut	N. 33 54	E. 35 28	2.22 p.m.	112	34	29.95	760.7	30.01	762.2	65.7	18.7	62	11	.....	7	8	1	.....	.....	.....	4	.....	.....	5	10.17	258.3
UNITED STATES.																										
Atlantic states.																										
Eastport	N. 44 54	W. 66 59	7.32 a.m.	53	16	29.98	761.5	30.04	763.0	23.2	— 4.9	78	3	11	3	3	2	.....	4	5	.....	8978	14448	6	5.59	142.0
Portland	N. 43 39	W. 70 15	7.19 a.m.	99	30	29.94	760.5	30.05	763.3	24.1	— 4.4	79	8	10	8	2	2	.....	.....	.....	1	6024	9703	6	5.17	131.3
Manchester	N. 43 13	W. 73 03	7.14 a.m.	247	75	29.82	757.4	30.08	764.0	23.9	— 4.5	82	5	17	4	3	.....	1	.....	.....	1	4953	7971	6	3.30	83.8
Northfield	N. 44 08	W. 72 42	7.09 a.m.	871	266	29.10	739.1	30.10	764.5	18.0	— 7.8	88	5	1	1	6	8	.....	2	7	1	5971	9609	7	5.88	149.4
Boston	N. 42 21	W. 71 04	7.16 a.m.	124	38	29.93	760.2	30.06	763.5	29.6	— 1.3	81	7	10	9	.....	3	1	.....	1	.....	8313	13378	7	2.71	68.8
Nantucket	N. 41 14	W. 70 07	7.20 a.m.	14	4	30.05	763.3	30.05	763.3	35.5	1.9	81	3	10	3	.....	5	3	3	4	.....	9006	14494	7	4.60	116.8
Block Id	N. 41 10	W. 71 36	7.14 a.m.	26	8	30.04	763.0	30.06	763.5	36.1	2.3	89	6	11	2	2	1	3	1	5	.....	14227	22896	5	2.70	68.6
New Haven	N. 41 18	W. 72 56	7.08 a.m.	107	33	29.98	761.5	30.09	764.3	29.0	— 1.7	84	11	5	6	1	3	.....	.....	4	1	6460	10396	6	3.09	78.5
New London	N. 41 21	W. 72 05	7.12 a.m.	47	14	30.02	762.5	30.06	763.5	31.8	— 0.1	82	9	10	1	1	1	2	1	5	1	5717	9200	6	4.62	117.3
Wood's Holl	N. 41 33	W. 70 40	7.18 a.m.	22	7	30.07	763.8	30.08	764.0	33.3	0.7	100	3	5	8	1	1	3	3	7	.....	12336	19852	6	4.59	116.6
Albany	N. 42 39	W. 73 45	7.05 a.m.	85	26	30.04	763.0	30.13	765 3	25.5	— 3.6	85	5	9	.....	1	5	4	.....	.....	7	4328	6965	6	5.43	137.9
New York City	N. 40 43	W. 74 00	7.04 a.m.	185	56	29.92	760.0	30.11	764.8	33.0	0.6	77	3	7	4	2	1	2	.....	4	8	7546	12144	6	4.20	106.7
Philadelphia	N. 39 57	W. 75 09	7.00 a.m.	117	36	30.03	762.7	30.15	765.8	33.9	1.1	77	4	3	9	6	.....	.....	1	8	.....	7855	12641	7	5 06	128.5
Atlantic City	N. 39 22	W. 74 25	7.03 a.m.	34	10	30.12	765.0	30.14	765.5	33.6	0.9	84	7	6	8	1	2	3	1	3	.....	6030a	9704	6	4.51	114.6
Baltimore	N. 39 18	W. 76 37	6.54 a.m.	45	14	30.12	765.0	30.15	765.8	34.1	1.2	72	5	7	8	.....	.....	1	6	3	1	4176	6720	6	5.04	128.0
Washington City	N. 38 54	W. 77 03	6.52 a.m.	106	32	30.06	763.5	30.16	766.1	33.5	0.8	78	4	6	6	3	.....	2	3	4	3	4498	7239	6	4.31	109.5
Lynchburg	N. 37 25	W. 79 09	6.44 a.m.	652	199	29.45	748.0	30.14	765.5	33.5	0.8	82	2	6	1	6	1	.....	.....	3	12	2082	3351	6	4.28	108.7
Norfolk	N. 36 51	W. 76 17	6.55 a.m.	30	9	30.13	765.3	30.14	765.5	38.7	3.7	90	9	1	2	3	3	8	1	2	2	5242	8452	6	4.06	103.1
Hatteras	N. 35 15	W. 75 40	6.58 a.m.	11	3	30.17	766.3	30.16	766.1	45.9	7.7	90	10	7	4	.....	1	3	2	4	.....	10798	17377	6	6.96	176.8
Wilmington	N. 34 14	W. 77 57	6.48 a.m	52	16	30.08	764.0	30.12	765.0	43.0	6.1	80	6	4	2	1	4	1	3	9	1	4837	7784	5	4.41	112.0
Raleigh	N. 35 48	W. 78 29	6.39 a.m.	375	114	29.76	755.9	30.15	765.8	36.0	2.2	86	5	14	2	2	1	2	1	3	1	4430	7129	7	4.99	126.7
Charlotte	N. 35 13	W. 80 51	6.37 a.m.	808	246	29.30	744.2	30.15	765.8	37.3	2.9	84	5	3	2	2	2	.....	6	9	2	3972	6392	7	4.94	125.5
Charleston	N. 32 47	W. 79 56	6.40 a.m.	52	16	30.10	764.5	30.12	765.0	47.4	8.6	86	7	4	4	4	.....	.....	1	8	3	5761	9271	7	7.91	200.9
Savannah	N. 32 05	W. 81 05	6.36 a.m.	87	27	30.06	763.5	30.12	765.0	46.7	8.2	88	2	7	5	2	1	.....	2	9	3	4855	7813	7	7.99	202.9
Augusta	N. 33 28	W. 81 54	6.32 a.m.	183	56	29.98	761.5	30.15	765.8	41.8	5.4	81	5	3	8	3	1	2	1	8	.....	2872	4622	6	4.64	117.8
Jacksonville	N. 30 20	W. 81 39	6.34 a.m.	43	13	30.09	764.3	30.10	764.5	51.4	10.8	89	7	5	2	2	3	.....	2	2	8	4934	7940	7	3.70	94.0
Cedar Keys	N. 29 08	W. 83 02	6.28 a.m.	22	7	30.09	764.3	30.07	763.8	53.9	12.2	88	2	4	1	1	3	4	3	13	.....	7693	12380	6	3.64	92.5
Key West	N. 24 34	W. 81 49	6.33 a.m.	22	7	30.06	763.5	30.03	762.7	70.7	21.5	84	4	2	.....	1	2	2	7	14	.....	8084	13010	5	2.79	70.9
Titusville	N. 28 40	W. 80 50	6.37 a.m.	12	4	30.12	765.0	30.08	764.0	59.7	15.4	86	5	8	5	3	2	2	2	2	2	6188	9968	6	1.91	48.5
Gulf states.																										
Atlanta	N. 33 45	W. 84 23	6.23 a.m.	1129	344	28.96	735.6	30.15	765.8	38.3	3.5	78	.....	11	5	.....	.....	3	11	1	.....	8026	12916	6	5.79	147.1
Pensacola	N. 30 25	W. 87 13	6.11 a.m.	30	9	30.07	763.8	30.06	763.5	49.8	9.9	85	8	5	2	1	.....	2	4	9	.....	6325	10179	7	6.89	175.0
Mobile	N. 30 41	W. 88 02	6.08 a.m.	35	11	30.08	764.0	30.08	764.0	47.2	8.4	87	11	7	2	1	.....	3	3	4	.....	6528	10506	7	7.21	183.1
Montgomery	N. 32 23	W. 86 18	6.15 a.m.	217	66	29.92	760.0	30.13	765.3	43.4	6.3	82	4	5	4	3	.....	3	7	5	.....	4939	7948	8	8.25	209.6
Vicksburg	N. 32 22	W. 90 53	5.57 a.m.	222	68	29.89	759.2	30.10	764.5	42.2	5.7	87	3	3	5	1	1	6	5	6	1	4997	8042	7	7.07	179.6
New Orleans	N. 29 58	W. 90 04	6.00 a.m.	52	16	30.04	763.0	30.06	763.5	49.7	9.8	86	6	1	7	1	1	3	4	8	.....	6625	10662	7	7.56	192.0
Shreveport	N. 32 30	W. 93 40	5.46 a.m.	227	69	29.87	758.7	30.08	764.0	41.9	5.5	88	8	5	5	1	4	4	4	.....	.....	4441	7147	7	6.72	170.7
Fort Smith	N. 35 22	W. 94 24	5.43 a.m.	470	143	29.64	752.8	30.13	765.3	34.0	1.1	78	5	2	2	.....	.....	6	9	4	3	1446	7155	6	4.22	107.2
Little Rock	N. 34 45	W. 92 06	5.52 a.m.	309	94	29.80	756.9	30.11	764.8	37.4	3.0	82	10	5	4	1	2	2	4	1	2	5053	8132	6	7.14	181.4
Galveston	N. 29 18	W. 94 47	5.41 a.m.	40	12	30.06	763.5	30.06	763.5	50.5	10.3	87	5	8	.....	1	2	5	4	6	.....	8401	13520	7	10.28	261.1
San Antonio	N. 29 27	W. 98 28	5.26 a.m.	781	238	29.28	743.7	30.07	763.8	44.1	6.7	82	12	1	3	1	2	2	.....	10	.....	6717	10810	6	2.58	65.5
Corpus Christi	N. 27 50	W. 97 32	5.30 a.m.	18	5	30.08a	764.0	30.06a	763.5	a49.0	a9.4	90a	10	8	3	3	2	3	1	1	.....	8621	13874	6a	5.07	128.8
Brownsville	N. 25 53	W. 97 26	5.30 a.m.	57	17	30.04	763.0	30.05	763.3	51.6	10.9	93	9	5	2	4	4	4	1	2	.....	6042	9724	5	4.89	124.0
Rio Grande City	N. 26 23	W. 98 48	5.25 a.m.	230	70	29.91	759.7	30.12	765.0	47.2	8.4	88	13	2	2	.....	4	.....	3	.....	7	4076	6560	5	4.38	111.2
Palestine	N. 31 45	W. 95 40	5.38 a.m.	533	162	29.56	750.8	30.10	764.5	41.4	5.2	89	8	5	2	.....	5	1	3	7	.....	7533	12123	8	6.72	170.7
Ohio val. & Tenn.																										
Chattanooga	N. 35 04	W. 85 15	6.19 a.m.	783	239	29.36	745.7	30.18	766.6	36.3	2.4	83	3	8	2	2	7	.....	1	8	...	4479	7208	7	5.46	138.7
Knoxville	N. 35 56	W. 83 58	6.24 a.m.	980	299	29.14	740.1	30.18	766.6	34.1	1.2	84	2	1	5	3	1	.....	7	9	3	3846	6190	7	3.49	88.6
Memphis	N. 35 09	W. 90 03	6.00 a.m.	320	98	29.90	759.4	30.10	764.5	36.4	2.4	84	2	8	4	1	1	5	3	6	1	5141	8275	6	5.80	147.3
Nashville	N. 36 10	W. 86 47	6.13 a.m.	549	167	29.56	750.8	30.13	765 3	34.1	1.2	84	2	8	3	2	1	8	3	3	1	4897	8042	7	5.31	134.9
Lexington	N. 38 02	W. 84 33	6.22 a.m.	.....	.....	29.56	750.8	30.14	765.5	32.6	0.3	76	1	3	6	3	5	5	2	5	1	5766	9279	7	3.03	77.0
Lonisville	N. 38 15	W 85 45	6.17 a.m.	551	168	29.30	744 2	30.13	765.3	27.0	— 2.8	84	1	5	7	2	6	3	5	2	.....	4590	7387	7	4.52	114.8
Indianapolis	N. 39 46	W. 86 10	6.16 a.m.	766	233	29.47	748.5	30.15	765 8	30.7	— 0.7	77	2	6	4	2	1	10	1	3	2	5663	9114	8	1.80	45.7
Cincinnati	N. 39 06	W. 84 30	6.22 a.m.	628	191	29.25	742.9	30.14	765.5	29.4	— 1.4	79	2	2	6	6	5	6	2	2	.....	6126	9862	7	1.87	47.5
Columbus	N. 39 58	W. 83 00	6.28 a.m.	812	248	29.20	741.7	30.12	765.0	33.1	0.6	75	5	6	6	5	3	1	1	4	.....	5721	9207	7	1.99	50.5
Pittsburg	N. 40 32	W. 80 02	6.40 a.m.	847	258	29.07	738.4	.....	.....	31.1	— 0.5	81	.....	2	4	4	7	9	3	1	1	5704	9180	7	2.71	68.8
Lake region.																										
Rochester	N. 43 08	W. 77 42	6.49 a.m.	621	189	29.38	746.2	30.07	763.8	29.6	— 1.3	83	2	4	5	8	4	4	3	1	.....	8313	13056	8	1.58	40.1
Buffalo	N. 42 53	W. 78 53	6.45 a.m.	692	210	29.33	745.0	30.09	764.3	28.5	— 1.9	81	1	.....	9	2	8	1	4	6	.....	9039	14547	8	2.27	57.7
Oswego	N. 43 29	W. 76 35	6.54 a.m	335	102	29.72	754.9	30.10	764.5	26.4	— 3.1	85	2	6	3	1	3	12	2	2	.....	9475	15248	9	2.28	57.9
Erie	N. 42 07	W. 80 05	6.40 a.m.	681	208	29.33	745.0	30.08	764.0	30.0	— 1.1	82	2	4	3	7	12	1	2	.....	.....	8262	13296	8	3.13	79.5
Sandusky	N 41 25	W. 82 40	6.30 a.m.	638	194	29.43	747 5	30.13	765.3	27.3	— 2.6	84	.....	3	7	7	5	2	3	2	2	7827	12596	7	1.90	48.3
Cleveland	N. 41 30	W. 81 42	6.33 a.m.	690	210	29.34	745.2	30.10	764.5	29.0	— 1.7	79	.....	4	6	7	6	6	.....	1	1	8046	12948	8	2.06	52.3
Toledo	N. 41 40	W. 83 34	6.26 a.m.	651	198	29.40	746.7	30.11	764.8	26.1	— 3.3	85	1	2	5	10	4	4	2	3	.....	5774	9292	7	2.78	70.6
Detroit	N. 42 20	W. 83 03	6.28 a.m.	662	202	29.36	745.7	30.09	764.3	27.6	— 2.4	86	3	6	7	8	.....	3	2	2	.....	7778	12517	8	2.34	59.4
Alpena	N. 45 05	W. 83 30	6.26 a.m.	609	186	29.37	746.0	30.05	763.3	25.6	— 3.6	90	2	4	7	4	3	7	2	1	1	7789	12535	9	4.57	116.1
Escanaba	N. 45 48	W. 87 05	6.12 a.m.	608	185	29.36	745.7	30.05	763.3	23.1	— 4.9	83	7	5	3	5	1	2	.....	7	1	6695	10774	8	3.73	94.7
Grand Haven	N. 43 05	W. 86 18	6.15 a.m.	620	189	29.34	745.2	30.02	762.5	28.3	— 2.1	87	2	3	3	6	4	6	4	3	.....	9568	15398	9	3.96	100.6
Lansing	N. 42 45	W. 84 33	6.22 a.m.	870	265	29.11	739.4	30.09	764.3	24.8	— 4.0	86	2	4	1	8	7	5	3	1	.....	6335	10195	8	3.16	80.3
Mackinaw City	N. 45 47	W. 84 39	6.22 a.m.	605	184	29.37	746.0	30.05	763.3	25.5	— 3.6	86	2	5	1	5	2	7	3	4	2	10969	17652	8	1.08	27.4
Marquette	N. 46 34	W. 87 24	6.11 a.m.	672	205	29.29	744.0	30.06	763.5	23.1	— 4.9	77	1	8	6	6	3	3	.....	4	.....	7567	12178	8	2.32	58.9
Port Huron	N. 43 00	W. 82 26	6.30 a.m	639	195	29.39	746.5	30.10	764.5	27.2	— 2.7	91	.....	8	2	7	7	3	4	.....	.....	8930	14371	8	2.22	56.4
Chicago	N. 41 52	W. 87 38	6.10 a.m.	715	218	29.30	744.2	30.07	763.8	26.3	— 3.2	77	2	2	5	12	2	2	4	2	.....	.....	.....	8	3.67	93.2
Green Bay	N. 45 00	W. 87 30	6.08 a.m.	616	188	29.37	746 0	30.07	763.8	21.7	— 5.7	88	7	.....	3	10	3	2	1	5	.....	6512	10480	9	4.01	101.9
Milwaukee	N. 43 02	W. 87 54	6.09 a.m.	697	212	29.26	743.2	30.03	762.7	23.8	— 4.6	88	4	3	6	9	3	3	1	1	1	9017	14511	8	4.57	116.1
Duluth	N. 46 48	W. 92 06	5.52 a.m.	672	205	29.35	745 5	30.12	765.0	14.2	— 9.9	81	2	10	1	9	2	2	2	3	.....	6194	9968	6	2.65	67.3
Saint Paul	N. 44 58	W. 93 03	5.48 a.m.	831	253	29.12	739.6	30.06	763.5	13.8	—10.1	88	1	4	4	3	1	5	3	1	9	3704	5961	7	1.47	37.3
La Crosse	N. 43 49	W. 91 15	5.55 a.m.	744	227	29.26	743.2	30.09	764.3	18.5	— 7.5	90	4	7	2	2	12	.....	2	1	1	5928	9540	8	1.32	33.5
Davenport	N. 41 30	W. 90 38	5.58 a.m.	615	187	29.39	746.5	30.07	763.8	21.5	— 5.8	89	1	3	5	8	.....	2	4	3	5	6309	10153	5	3.26	82.8
Des Moines	N. 41 35	W. 93 37	5.46 a.m.	866	264	29.13	739 9	30.08	764.0	20.3	— 6.5	88	4	6	4	3	4	7	1	1	1	6056	9746	6	1.41	35.8
Dubuque	N. 42 30	W. 90 44	5.57 a.m.	665	203	29.34	745.2	30.08	764.0	19.3	— 7.1	83	3	2	3	4	4	3	1	.....	11	2897	4662	7	3.07	78.0
Keokuk	N. 40 22	W. 91 26	5.54 a.m.	618	188	29.40	746.7	30.07	763.8	24.6	— 4.1	84	5	5	5	4	3	5	1	2	1	7246	11661	5	2.73	69.3

STATIONS.	Latitude.	Longitude.	Local Time.	Altitude of Barometer above sea		Result of Simultaneous Observations for December, 1887.																			Average Cloudiness.	Total Precipitation.	
						Mean Barometer.				Mean Temperature.		Mean Rel. Humidity.	Wind.														
						Actual.		Reduced.					Directions.									Total Movement.					
				Feet.	Metr's	Inch.	Mill.	Inch.	Mill.	Fah.	Cent.		N	NW	W	SW	S	SE	E	NE	C	Miles	Kil.	0–10	Inch.	Mill.
U. STATES—Con.																											
Cairo	N. 37 00	W. 89 10	6.04 a.m.	359	109	29.75	755 6	30.12	765.0	32.5	0.3	78	4	7	2	3	6	1	5	3	.....	6293	10127	6	4.12	104.6
Springfield, Ill.	N. 39 48	W. 89 39	6.02 a.m.	644	196	29.42	747.3	30.12	765.0	25.0	—3.9	79	4	2	7	2	8	2	2	2	2	6893	11093	6	3.35	85.1
Saint Louis	N. 38 38	W. 90 12	5.59 a.m.	571	174	29.48	748.8	30.10	764.5	28.2	—2 1	84	2	5	5	3	4	6	1	3	2	8905	14331	6	3.54	89.9
Missouri valley.																											
Leavenworth	N. 39 19	W. 94 57	5.40 a.m.	842	257	29.21	741.9	30.12	765.0	22.6	—5.2	79	5	11	1	.....	7	3	.....	3	1	5454	8777	5	2.55	64.8
Omaha	N. 41 16	W. 95 56	5.36 a.m.	1113	339	28.89	733.8	30.11	764.8	20.2	—6.6	79	5	12	1	.....	8	3	1	.....	1	6868	11053	5	1.11	28.2
Fort Sully	N. 44 39	W. 100 39	5.17 a.m.	1600	488	28.32	719.3	30.11	764.8	9.5	-12.5	83	.....	5	11	.....	.....	.....	7	.....	8	6520	10976	5	0.50	12.7
Huron	N. 44 21	W. 98 09	5.28 a.m.	1307	398	28.65	727.7	30.12	765.0	5.7	-14.6	82	8	11	.....	.....	2	6	1	2	1	8191	13182	6	2.09	53.1
Yankton	N. 42 54	W. 97 28	5.30 a.m.	1234	376	28.70	729.0	30.08	764.0	13.9	-10.1	86	4	11	4	3	2	3	1	2	1	6423	10337	4	2.07	52.6
Springfield, Mo	N. 37 12	W. 93 18	5.47 a.m.	1356	414	28.63	727.2	30.11	764 8	26.9	—2.8	86	1	7	2	2	1	14	1	3	.....	8443	13587	5	2.39	60.7
Lamar	N. 37 32	W. 94 15	5.43 a.m.	1028	313	29.03	737.3	30.15	765.8	26.6	—3.0	81	4	6	1	4	5	6	3	2	.....	7676	12353	5	2.09	53.1
Valentine	N. 42 50	W. 100 32	5.18 a.m.	2614	797	27.28*a*	692.9*a*	30.11*a*	764.8*a*	14.7*a*	—9.6	78*a*	*a*2	9	8	5	1	1	3	.....	1	8900	14323	5	0.53	13.5
Moorhead	N. 46 52	W. 96 44	5.33 a.m.	926	282	29.05	737.9	30.13	765.3	2.7	-16.3	91	9	2	.....	1	8	2	.....	3	6	7670	12343	6	1.74	44.2
Saint Vincent	N. 48 56	W. 97 14	5.31 a.m.	804	245	29.20	741.7	30.15	765.8	—1.1	-18.4	91	9	6	1	.....	7	.....	3	1	4	7360	11845	5	0.54	13.7
Bismarck	N. 46 47	W. 100 38	5.16 a.m.	1681	513	28.22	716.8	30.13	765.3	5.7	-14.6	90	2	7	3	.....	.....	2	2	1	14	5967	9603	4	0.80	20.3
Fort Buford	N. 48 00	W. 103 56	5.04 a.m.	1854	565	27.97	710.4	30.08	764.0	5 7	-14.6	85	2	8	4	3	3	.....	7	2	2	7589	12213	5	0.18	4.6
Fort Totten	N. 47 57	W. 98 57	5.24 a.m.	1487	453	28.41	721.6	30.14	765.5	0.1	-17.7	90	9	8	1	2	3	2	2	4	.....	10397	16732	4	0.87	22.1
Rocky Mount. reg.																											
Ft. Assinaboine	N. 48 32	W. 109 42	4.41 a.m.	2690	802	27.14	689.3	30.10	764.5	10.9	-11.7	70	1	2	9	4	.....	1	5	1	8	8923	14360	6	0.63	16.0
Fort Custer	N. 45 42	W. 107 34	4.50 a.m.	3040	927	26.82	681.2	30.09	764.3	16.2	—8.8	72	6	8	2	3	.....	7	2	3	.....	4853	7810	5	0.44	11.2
Fort Maginnis	N. 47 12	W. 109 10	4.44 a.m.	4320	1317	25.39*i*	644.9*i*	29.93*i*	760.2*i*	19.1*i*	—7.2	82*i*	*i*2	12	4	.....	.....	.....	.....	3	1	6762*i*	10882*i*	*i*7	0.42*h*	*h*10.7
Helena	N. 46 34	W. 112 04	4.32 a.m.	4069	1240	25.79	655.1	30.08	764.0	20.9	—5.2	64	2	3	3	13	4	.....	.....	1	5	4238	6820	6	0.29	7.4
Poplar River	N. 48 08	W 105 10	5.00 a.m.	2002	610	27.89	708.4	30.15	765.8	—0.5	-18.1	80	7	3	8	.....	.....	.....	1	5	7	4653	7488	4	0.28	7.1
Deadwood	N. 44 23	W. 103 43	5.05 a.m.	4600	1402	25.27	641.8	30.10	764.5	19.4	—7.0	83	.....	3	6	7	.....	.....	.....	2	13	2109	3394	5	1.65	41.9
Fort McKinney	N. 43 48	W. 106 10	4.55 a.m.	5000	1524	24.90	632.4	.....	.....	19.9	—6.7	74	.....	6	10	3	3	1	4	.....	4	4356*j*	7010*j*	4	0.25	6.4
Cheyenne	N. 41 08	W. 104 48	5.01 a.m.	6105	1861	23.89	606 8	30.04	763.0	21.7	—5.7	64	5	19	3	3	1	.....	.....	.....	.....	9805	15779	3	0.35	8.9
North Platte	N. 41·08	W. 100 45	5.17 a.m.	2841	866	27.06	687.3	30.12	765.0	15.9	—8.9	80	2	8	12	1	2	4	1	.....	1	6615	10646	4	0.30	7.6
Pike's Peak	N. 38 50	W. 105 02	5.00 a.m.	14134	4308	17.49	444.2	30.12	765.0	0.7	-17.4	78	8	8	8	1	.....	.....	.....	6	.....	12131	20522	3	1.04	26.4
Denver	N. 39 45	W. 105 00	5.00 a.m.	5281	1610	24.68	626.9	30.07	763.8	20.8	—6.2	61	2	3	2	1	20	.....	.....	1	2	5186	8346	2	0.14	3.6
Concordia	N. 39 35	W. 97 41	5.29 a.m.	1384	422	28.60	726.4	30.10	764.5	21.6	—5.8	72	6	4	3	4	5	4	1	2	2	6061	9754	4	0.63	16.0
Las Animas	N. 38 04	W. 103 12	5.07 a.m.	3899	1188	26.02	660.9	30.08	764.0	18.5	—7.5	78	5	6	11	3	.....	.....	1	3	2	4354	7007	3	0.32	8.1
Dodge City	N. 37 45	W. 100 00	5.20 a.m.	2523	769	27.40	695.9	30.11	764.8	21.4	—5.9	84	5	3	.....	6	6	1	.....	10	.....	7293	11736	3	0.54	13.7
Fort Elliott	N. 35 30	W. 100 21	5.19 a.m.	2700	823	27.27	692.6	30.05	763.3	24.8	—4.0	85	2	19	.....	3	4	2	1	.....	.....	9369	15078	4	0.08	2.0
Fort Sill	N. 34 40	W. 98 23	5.27 a.m.	1200	366	28.84	732.5	30.11	764.8	31.1	—0.5	83	17	1	1	1	8	.....	1	1	1	8253	13282	4	0.91	23.1
Abilene	N. 32 14	W. 99 45	5.21 a.m.	1748	533	28.05	712.5	30.08	764.0	35.4	1.9	88	7	4	3	5	7	.....	.....	5	.....	8668	13950	5	1.58	40.1
Fort Davis	N. 30 38	W. 103 56	5.04 a.m.	4928	1502	25.15	638.8	30.05	763.3	33.4	0.8	52	.....	.....	2	11	.....	.....	.....	7	11	7255	11676	3	0.25	6.4
Fort Stanton	N. 33 30	W. 105 26	4.58 a.m.	6150	1875	23.90	607.0	29.94	760.5	21.0	—6.1	69	1	12	1	2	.....	4	.....	.....	11	6451	10382	3	0.93	23.6
Plateau region.																											
Keeler	N. 36 35	W. 117 50	4.09 a.m.	3622	1104	26.40	670.5	30.08	764.0	37.7	3.2	54	5	2	.....	.....	.....	4	9	5	6	5145	8280	2	0.48	12.2
Fresno	N. 36 44	W. 119 51	4.01 a.m.	313	95	29.83	757.7	30.15	765.8	38.9	3.8	88	4	1	2	1	6	1	5	3	8	2689	4328	4	1.16	29.5
Santa Fé	N. 35 41	W. 105 57	4.56 a.m.	7026	2141	23.19	589.0	30.09	764.3	21.5	—5.8	72	5	.....	1	.....	7	1	2	9	6	3973	6394	4	0.32	8.1
Fort Apache	N. 33 48	W. 109 57	4.40 a.m.	5020	1835	25.02	635.5	30.12	765.0	23.8	—4.6	84	.....	1	2	6	1	1	9	11	.....	4265	6864	2	0.57	14.5
Fort Grant	N. 32 39	W. 109 57	4.40 a.m.	4860	1482	25.17	639 3	30.06	763.5	31.7	—0.2	53	8	8	6	2	.....	1	3	1	2	4644	7473	2	0.21	5.3
Prescott	N. 34 33	W. 112 28	4.30 a.m.	5389	1643	24.70	627.4	30.10	764 5	23.7	—4.6	84	4	1	.....	2	6	2	1	4	11	4344	6991	1	0.82	20.8
Yuma	N. 32 45	W. 114 36	4.22 a.m.	141	43	29.93	760.2	30.05	763.3	45.2	7.3	68	15	3	.....	.....	2	1	5	5	.....	5932	9546	1	0.15	3.8
El Paso	N. 31 47	W. 106 30	4.54 a.m.	3764	1147	26.28	667.5	30.09	764.3	31.7	—0.2	76	2	7	1	.....	1	3	3	2	12	3379	5438	2	1.01	25.6
Fort Bridger	N. 41 28	W. 110 30	4.38 a.m.	6643	2025	23.48	596.4	30.20	767.1	10.2	-12.1	63	3	.....	7	4	.....	.....	2	14	1	7930	12762	6	0.70	17.8
Du Chesne	N. 40 35	W. 109 50	4.41 a.m.	4900	1494	25.12	638.0	.....	.....	1.0	-17.2	74	11	2	.....	1	.....	2	.....	3	12	.....	.....	4	0.48	12.2
Salt Lake City	N. 40 46	W. 111 54	4.33 a.m.	4348	1325	25.69	652.5	30.19	766.8	26.1	—3.3	74	2	1	3	.....	5	8	5	4	3	3406	5481	6	1.55	39.4
Frisco	N. 38 25	W. 113 16	4.27 a.m	6406	1950	23.69	601.7	30.07	763.8	23.1	—4.9	69	11	2	1	6	2	.....	.....	1	8	6795	10935	2	0.76	19.3
Winnemucca	N. 40 58	W. 117 43	4.09 a.m.	4358	1328	25.73	653 5	30.25	768.3	21.1	—6.1	90	.....	.....	11	4	2	2	7	5	.....	5764	10890	4	1.55	39.4
Montrose	N. 38 30	W. 107 56	4.48 a.m.	5780	1762	24.30	617.2	30.20	767.1	14.0	-10.0	67	.....	1	.....	3	11	8	6	2	.....	3352	5394.	2	0.35	8.9
Fort Bidwell	N. 41 53	W. 120 11	3.59 a.m.	4615	1415	25.42	645.7	30.18	766.6	27.5	—2.5	90	4	4	12	6	3	.....	1	1	.....	5052	8130	6	2.40	61.0
Boisé City	N. 43 37	W. 116 08	4.16 a.m.	2750	838	27.28	692.9	30.20	767.1	28.4	—2.0	83	.....	2	.....	1	.....	10	.....	.....	18	2917	4694	6	1.74	44.2
Spokane Falls	N. 46 28	W. 117 05	4.11 a.m.	1909	582	28.00	711.2	30.08	764.0	30.8	—0.7	87	.....	5	.....	11	1	3	.....	11	.....	4433	7134	7	2 88	73.2
Walla Walla	N. 46 03	W. 118 18	4.07 a.m.	1018	310	28.96	735.6	30.08	764.0	37.5	3.1	75	.....	1	.....	17	7	4	1	.....	.....	6054	9742	6	2.83	71.9
Pacific coast reg'n.																											
Astoria	N. 46 11	W. 123 42	3.45 a.m.	20	6	29.85	758.2	29.87	758.7	41.0	5.0	88	.....	.....	.....	13	3	8	2	5	.....	6602	10625	8	16.64	422.6
Fort Canby	N. 46 16	W. 124 04	3.44 a.m.	179	55	29.76	755.9	29.96	761.0	42.0	5.6	96	1	1	3	4	7	13	.....	.....	2	13830	22257	7	15.18	385.6
Olympia	N. 47 03	W. 122 53	3.49 a.m.	36	11	29.96	761.0	30.01	762.2	38.9	3.8	94	1	.....	1	3	15	.....	.....	2	9	3405	5480	8	15.75	400.0
Port Angeles	N. 48 07	W. 123 06	3.46 a.m.	14	4	29.91	759.7	29.93	760.2	36.6	2.6	92	.....	.....	1	3	25	1	1	.....	.....	3018	4857	7	6.07	154.2
Tatoosh Id.	N. 48 23	W. 124 44	3.41 a.m.	86	26	29.81	757.2	29.91	759.7	43.0	6.1	90	.....	.....	5	6	4	10	6	.....	.....	12229	19680	9	17.47	443.7
Portland	N. 45 32	W. 122 43	3.49 a.m	88	27	29.97	761.2	30.06	763.5	41.0	5.0	90	1	2	.....	.....	21	5	2	.....	.....	5223	8566	9	11.34	288.0
Roseburg	N. 43 13	W. 123 20	3.47 a.m.	523	159	29.56	750.8	30.13	765 3	41.1	5.1	89	2	.....	4	4	4	2	3	4	8	2783	4479	8	8.89	225.8
Eureka	N. 40 52	W. 123 58	3.43 a.m.	50	18	30.12*a*	765.0*a*	30.16*a*	766.1*a*	43.9	6.6	92	2	2	.....	.....	7	12	5	.....	3	.....	.....	8	5.43	137.9
Red Bluff	N. 40 10	W. 122 15	3.51 a.m.	342	104	29.80	756.9	30.14	765.5	44.0	6.7	76	8	2	4	.....	9	2	1	.....	5	5628	9057	5	2.32	58.9
Sacramento	N. 38 35	W. 121 30	3.54 a.m.	64	20	30.08	764.0	30.13	765 3	41.5	5.3	86	3	3	.....	.....	6	15	1	.....	3	5064	8150	4	2.09	53.1
San Francisco	N. 37 48	W. 122 26	3.50 a.m.	60	18	30.09	764.3	30.14	765.5	48.7	9.3	84	7	2	1	2	6	9	.....	1	3	5167	8315	5	3.34	84.8
Los Angeles	N. 34 03	W. 118 15	4.07 a.m.	339	103	29.74	755.4	30.07	763.8	46.4	8.0	78	3	2	.....	.....	.....	6	12	8	.....	4772	7680	2	2.68	68.1
San Diego	N. 32 43	W. 117 10	4.12 a.m.	66	20	30.03	762.7	30.07	763.8	48.9	9.4	76	.....	2	.....	.....	2	2	11	11	3	4239	6822	2	1.14	29.0
Sub-Series.																											
Bogota	N. 4 36	W. 74 14	7.11 a.m.	8655	2638	22.01	559.0	.....	.....	52.0	11.1	80	.....	.....	.....	.....	3	.....	.....	.....	28	1029	1656	8	3.33	84.6
Kingston	N. 18 01	W. 76 48	6.53 a.m.	10	3	30.01	762.2	29.96	761.0	69.1	20.6	65	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.08	2.0
Rivas	N. 11 26	W. 85 47	6.17 a.m.	250	75	29.77	756.1	30.04?	763.0?	75.0	23.9	82	.....	.....	.....	.....	.....	.....	22	9	.....	.....	.....	3	2.31	58.7
Vera Cruz	N. 19 11	W. 96 09	5.35 a.m	16	5	30.00	762.0	29.96	761.0	.....	.....	.....	11	5	4	2	4	2	.....	.....	3	.....	.....	.....	.....	.....

OCEAN SQUARE DATA FOR DECEMBER, 1887.

Location of Centre of each Square.	Barometer.		Temperature.		Wind Frequency.										Wind force 0–10.
	Inch.	Mill.	Fah.	Cent.	N.	NW.	W.	SW.	S.	SE.	E.	NE.	Calm.	Blank.	
N. 12.5° W. 37.5°	29.96	761.0			1				1	5	18	2		4	3.9
12.5 42.5	29.94	760.5			2				1	4	21	2		1	4.1
12.5 47.5	29.92	760.0			2				1	5	15	7		1	4.0
12.5 52.5	29.90	759.4							1	2	16	11		1	3.9
17.5 37.5	30.02	762.5			2				2	9	11	3		4	4.1
17.5 42.5	30.00	762.0			1			1	3	5	15	4		2	4.0
17.5 47.5	29.98	761.5			1				2	5	15	6	1	1	3.9
17.5 52.5	29.96	761.0			2		1		3	4	11	9		1	4.0
17.5 57.5	29.96	761.0			2	2	1	1	2	1	9	13			4.2
22.5 27.5	30.06	763.5			3	3	4	1	1	8	8	3			4.4
22.5 32.5	30.06	763.5			3	2	3	1	4	8	6	3		1	4.4
22.5 37.5	30.04	763.0			4	3	1	1	6	4	8	3		1	4.3
22.5 42.5	30.03	762.7			5	1	2	1	6	4	7	3		2	4.1
22.5 47.5	30.01	762.2			5	2		2	3	5	6	6		2	4.0
22.5 52.5	30.00	762.0			8	3		5	3	2	7	3			4.3
22.5 57.5	29.99	761.7			5		3	6		2	4	11			4.4
22.5 62.5	30.00	762.0			6	5	2		2	1	7	8			4.5
22.5 67.5															
22.5 72.5															
27.5 22.5	30.06	763.5				4	5	2	1	7	10	2			5.2
27.5 27.5	30.05	763.3			1	3	7	2	2	10	4	2			4.7
27.5 32.5	30.03	762.7			1	6	4	2	4	9	2	3			5.0
27.5 37.5	30.02	762.5			5	4	5	3	4	4	4	2			4.9
27.5 42.5	30.00	762.0			4	4	6	3	5	2	2	4		1	4.8
27.5 47.5	29.99	761.7			4	6	3	3	4	4	1	5		1	4.8
27.5 52.5	29.99	761.7			6	6	2	4	5	2	2	4			4.7
27.5 57.5	29.98	761.5			4	6	4	2	3	3	4	5			4.9
27.5 62.5	30.00	762.0			7	8	4	1	1	1	4	5			5.0
27.5 67.5	30.05	763.3			9	4	3	2		3	2	8			5.4
27.5 72.5	30.08	764.0			5	1	3		8	4	2	8			5.5
32.5 27.5	30.02	762.5			1	4	5	4	7	7	2	1			5.0
32.5 32.5	29.98	761.5			1	6	2	8	7	4		3			5.3
32.5 37.5	29.95	760.7			2	5	6	4	5	5	1	3			5.5
32.5 42.5	29.95	760.7			4	4	8	2	5	1	3	4			5.6
32.5 47.5	29.96	761.0			4	5	7	2	4	3	1	5			6.0
32.5 52.5	29.96	761.0			4	4	4	3	7	3	2	4			5.5
32.5 57.5	29.96	761.0			6	3	5	5	2	3	3	4			5.7
32.5 62.5	29.98	761.5			4	7	6	5			2	7			5.5
32.5 67.5	30.05	763.3			8	6	5	2		3	2	5			5.4
32.5 72.5	30.09	764.3			4	4	5	1	5	3		9			6.5
37.5 32.5	29.91	759.7			7		2	14	3	2	1	1			5.5
37.5 37.5	29.89	759.2			4	2	5	10	2	3	4	1	1		5.8
37.5 42.5	29.88	758.9			4	5	5	7	3	3	1	3			6.0
37.5 47.5	29.91	759.7			4	5	5	5	3	3	2	4			6.3
37.5 52.5	29.91	759.7			3	4	2	9	4	2	2	5			6.2
37.5 57.5	29.93	760.2			4	6	4	5	2	1	2	7			6.5
37.5 62.5	29.98	761.5			6	7	2	4	1	1	3	7			6.0
37.5 67.5	30.01	762.2			6	8	2	3	4		3	5			6.4
42.5 22.5	29.99	761.7			2	2	4	6	7	6	3	1			5.0
42.5 27.5	29.92	760.0			1	2	1	7	10	3	2	5			5.6
42.5 32.5	29.86	758.4			5	2	2	7	10		2	2		1	6.2
42.5 37.5	29.83	757.7			2	2	5	5	8	1	2	6			5.9
42.5 42.5	29.82	757.4			4	4	3	7	3	1	4	5			6.4
42.5 47.5	29.85	758.2			5	6	2	4	4	2		7		1	6.5
42.5 52.5	29.88	758.9			7	6	1	3	5	3	3	3			6.8
42.5 57.5	29.91	759.7			7	5	6	2	2	3	1	5			7.1
47.5 17.5	30.00	762.0			3	4	7	4	1	6	2	4			6.0
47.5 22.5	29.98	761.5			1	5	5	5	4	5	5	1			6.6
47.5 27.5	29.92	760.0			2	5	3	6	2	7	4	2			6.7
47.5 32.5	29.86	758.4			3	4	5	3	3	9	2	2			6.6
47.5 37.5	29.82	757.4			2	5	5	3	3	8	2	3			6.3
47.5 42.5	29.81	757.2			5	6	4	3	1	8	2	2			6.4
47.5 47.5	29.83	757.7			7	4	5	4	4	4	1	2			6.8
52.5 17.5	29.91	759.7			4	9	5	2	3	4	2	2			6.5
52.5 22.5	29.91	759.7			2	9	3	5	3	4	3	2			6.6
52.5 27.5	29.88	758.9				8	5	5	2	8		3			7.0
52.5 32.5	29.84	757.9				7	6	2	5	7	2	2			6.4
52.5 37.5	29.81	757.2			1	6	4	6	2	8	2	2			6.2
52.5 42.5	29.79	756.7			1	12	3	1	2	9	1	2			6.2
52.5 47.5	29.81	757.2			3	13	2		2	8	3				5.9
57.5 12.5	29.73	755.1			5	11	3	4	1	1	2	3	1		5.5
57.5 17.5	29.77	756.1			5	10	3	5		2	1	2	3		5.2
57.5 22.5	29.79	756.7			3	8	6	3	3	4	1	2	1		6.5
57.5 27.5	29.80	756.9			5	10	2	2	2	6	3	1			6.5
57.5 32.5	29.80	756.9			6	6	4	2	1	8	2	2			6.3
57.5 37.5	29.80	756.9			3	6	3	2	3	9	2	3			5.7
57.5 42.5	29.79	756.7			4	6	4		3	11	1	2			5.1
57.5 47.5	29.79	756.7			4	10	1		3	9	1	3			4.4

OCEAN SQUARES.—The table of ocean square data shows (1) the location of the centres of squares whose sides extend 5° each in latitude and longitude, (2) the monthly mean pressure of the air, and the mean force and total frequency of the wind at noon, Greenwich mean time, computed for the centre of each square from daily readings as obtained by interpolation between the isobars of the daily international simultaneous weather maps.

REVIEW.

INTERNATIONAL METEOROLOGY FOR DECEMBER, 1887.

[*Pressure expressed in inches and millimetres; temperature in degrees, Fahrenheit; wind-force by scale of* 0–10.]

The following refers to chart ii for the month of December 1887. This chart continues the series of international charts begun in January, 1877, and exhibits the mean pressure and the prevailing wind-directions over the northern hemisphere, as determined from simultaneous observations taken once each day at 7 a. m., 75th meridian, or noon Greenwich, mean time:

The mean pressure is lowest over the ocean north of the British Isles and thence northeastward along the Norwegian coast, where the values fall below 29.60 (752); the lowest reading, 29.55 (750.6), being noted at Thorshavn, Faröe Islands. At Sitka, Alaska, a mean reading of 29.69 (754.1) is reported. Two areas of low mean pressure, bounded by isobars of 29.80 (757), are located, respectively, over the Sea of Okhotsk and the Atlantic Ocean off the southern extremity of Greenland. Over the southern part of the Philippine Islands, southern British India, and south-central Europe the mean pressure falls below 29.90 (759).

The area of highest mean pressure occupies the interior of Asia, between the one-hundredth and one hundred and twentieth meridians, with included values rising above 30.50 (775). Over the middle plateau region of the Rocky Mountains and in the valley of the Saskatchewan River, North America, the mean pressure ranges above 30.20 (767).

In the United States the mean pressure is lowest in the extreme northwest part of Washington Territory, where it falls to 29.93 (760.3), and highest over the middle plateau, where it rises to 30.26 (768.6). Over a greater part of the country east of the Rocky Mountains the mean pressure ranges between 30.00 (762) and 30.10 (764). In Canada the means vary from about 29.90 (759) over eastern Newfoundland to above 30.20 (767) in the Saskatchewan Valley. Over the north Atlantic Ocean there is a barometric gradient of about .50 of an inch between the Faröe Islands and the twenty-fifth parallel south of the Azores. In Europe the mean pressure is lowest along the west coast of Norway, where it falls below 29.60 (752), and highest over Spain and Portugal, southwestern France, and in the vicinity of the Caspian Sea, where it rises above 30.00 (762). In Asia the mean pressure is lowest along the west coast of the Sea of Okhotsk, where it ranges below 29.80 (757), and over southern India, and thence eastward to the Philippine Islands, where it falls below 29.90 (759); it is highest over the interior of the continent, where a reading of 30.53 (775.4) is recorded at Nertchinsk, Siberia. The presence of an extensive area of low mean pressure over Behring Sea and the north Pacific Ocean is shown by the low mean readings reported over the northern part of the Japanese Islands, along the west coast of the Sea of Okhotsk, and at Sitka, Alaska.

Compared with the chart for the preceding month an increase in mean pressure is shown in the United States in the central and southern Rocky Mountain regions and thence westward to the Pacific coast, in the upper Missouri valley, and from the lower lakes and Ohio Valley eastward to the Atlantic, the increase being generally less than .05, except on the middle Pacific coast, where it amounts to .10, and in the New England and middle Atlantic states, where it ranges from .05 to .09 of an inch. In all other districts there has been a decrease in pressure which nowhere exceeds .04, except on the west Gulf coast, where it amounts to .05 of an inch. In Canada there has been a general increase in pressure, which varies from about .10 over Newfoundland to .20 of an inch in the Saskatchewan Valley; in British Columbia the changes in pressure have been small. Over the north Atlantic Ocean there has been a decrease of about .10 to the northward of the British Isles; over and off the southern extremity of Greenland there has been an increase of .10; in the vicinity of the Azores the decrease amounts to nearly .20 of an inch, while over the West Indies there has been a slight increase in mean pressure. Over the British Isles there has been an increase of more than .10; over northern Europe there has been a general increase, while over central and southern Europe slight changes are shown. Over the interior of Asia there has been an increase in mean pressure of from .20 to .30 of an inch; over British India there has been a slight increase, while over the Sea of Okhotsk and southward to the Philippine Islands the changes in mean pressure have been small.

In the United States the mean pressure was above the normal in the middle and southern Rocky Mountain districts, and thence westward to the Pacific coast, along the Atlantic coast north of the Carolinas, in the upper Ohio valley, along the northern border from Montana eastward, and in southern Florida. In all other districts the mean pressure was below the normal. The most marked excess, .10, occurred on the central Pacific coast, and the greatest deficiency, .05 of an inch, on the west Gulf coast. In Canada the pressure was above the normal in Ontario, Quebec, and the Maritime Provinces, the greatest excess, .08 of an inch, occurring at Rockliffe. Over the north Atlantic Ocean the mean pressure corresponded closely with the normal at stations in the West Indies; over the Azores it was about .20 below the normal, while in the vicinity of Iceland and southern Greenland the means for the month ranged from .20 to .30 of an inch above the normal. The mean pressure was below the normal over the entire continent of Europe, the greatest deficiency, .17, appearing over Denmark, and the least, .04 of an inch, over Spain. In British India the average pressure corresponded with the normal, while at isolated stations throughout Asia it was below the normal.

In the United States the mean temperature was below the normal, except on the north Pacific coast, in Florida, and from the upper lakes eastward to New England and middle Atlantic coasts, in which districts the month was slightly warmer than the average December. The deficiencies were greatest from the Rio Grande Valley northwestward to Arizona and Utah, where they amounted to from 4° to 8°. In Canada the mean temperature was above the normal in Ontario, Quebec, New Brunswick, and Cape Breton Island. It was below the normal in Nova Scotia, Manitoba, and the Northwest; in British Columbia it was slightly above the normal, the departures being small in all of the Provinces. Over the north Atlantic Ocean the mean temperature was somewhat below the normal at stations in the West Indies, the Azores, and at Stykkisholm, Iceland. In Europe the temperature was below the normal, except in the British Isles and Austro-Hungary, the greatest deficiencies being shown in Norway and Sweden, where they averaged about 4°. In British India the temperature was slightly above the normal, while at isolated stations in Asia it was generally above the normal, except at Yeniseisk, Siberia, where there was a marked departure below the normal.

The following table shows the mean pressure and mean temperature for December, 1887, in the several countries of the eastern hemisphere, and the departures as compared with means determined from observations taken during the last ten years:

Countries.	Mean pressure.			Mean temperature.		
	Dec. mean of 10 (1877–'86) years.	Dec., 1887.	Departure.	Dec. mean of 10 (1877–'86) years.	Dec., 1887.	Departure.
				°	°	°
Austro-Hungary	30.04	29.92	— 0.12	34.7	35.1	+ 0.4
British Isles	29.96	29.86	— 0.10	40.5	40.9	+ 0.4
Denmark	29.84	29.67	— 0.17	35.3	34.7	— 0.6
France	30.07	29.99	— 0.08	42.4	41.5	— 0.9
Germany	29.98	29.87	— 0.11	34.8	33.1	— 1.7
India	29.95	29.95	normal.	70.7	71.3	+ 0.6
Italy	30.01	29.90	— 0.11	48.1	46.9	— 1.2
Norway	29.70	29.62	— 0.08	30.9	27.2	— 3.7
Russia	30.00	29.89	— 0.11	27.8	27.1	— 0.7
Spain*	30.12	30.08	— 0.04	46.8	43.8	— 3.0
Sweden	29.77	29.69	— 0.08	25.0	20.8	— 4.2

* Means for nine years only.

The following table shows the deviations in pressure and

List of foreign stations and observers from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of December. 1887.

Stations.	Observers
AUSTRALIAN.	
Adelaide	Chas. Todd.
Hobart Town, Tasmania	Com. J. Shortt, R.N.
Melbourne, Victoria	R. L. J. Ellery.
AUSTRO-HUNGARIAN.	
Agram	Prof. Ivan Stozir.
Cracow, I. R. Observatory	Dr. Wierzbiski.
Gratz	Andreas Rospini.
Kremsmunster Observatory	The Staff.
Lemberg	Dr. T. Stanecki.
Pola	Fr. Cœseiroho.
Szathmar	P. Tamas Yanos, S. J.
Szegedin	Farkas Laszlo.
Trieste	Naval Observatory.
Vienna	I.R.Central Met. Obs'y.
BRITISH.	
Aberdeen	W. Boswell.
Bidston, Liverpool Obs'y	John Hartnup.
Bradford, Yorkshire	McLandsborough & Preston.
Bridgetown, Barbadoes, W.I.	A. T. Green.
Chatham, School M. E	Percy McHugo, R. E.
Falmouth, Observatory	The Staff.
Fort Napier, Natal	Thomas Murray, M. S. C.
Freetown, Sierra Leone	J. W. Smith.
Galway, Queen's College	Wm. Ryan.
Greenwich, Royal Observatory	The Staff.
Guernsey	A. Collenette, F.R.M.S.
Kew, Observatory	The Staff.
Leicester, Museum	J. C. Smith.
Malta, Mediterranean	R. R. Willan.
Nassau, Bahamas	J. A. Kerr.
Oxford, Radcliffe Observatory	The Staff.
Plymouth	John Merrifield.
Swanbister, Orkneys	W. I. Fortesque.
Scutari Cemetery, Turkey	W. H. Lyne.
Stonyhurst, Observatory	J. Roony.
Valentia, Observatory	The Meteorological Office.
Sub-series.	
Gozo, Episcopal Seminary	Rev. Louis Grech, S. J., Dir.
Malacca	W. R. Angus.
CANADIAN.	
Bathurst, N. B	Miss Andrews.
Bird Rocks	T. Turbide.
Calgary	H. S. Cayley.
Chatham, N. B	G. A. Blair.
Cornwall, Ontario	W. D. Johnston, B. A.
Dalhousie, N. B	H. A. Johnson.
Father Point, Quebec	J. McWilliams.
Fort Garry, Manitoba	T. Warburton.
Fredericton, N. B	Dr. Harrison.
Grand Manan, N. B	J. Chipman Seeley.
Halifax, N S	A. Allison.
Hamilton, Ontario	T. S. Campbell, B. A.
Kingston, Ontario	A. P. Knight, M. A.
Little Glace Bay, N. S	C. H. Rigby, C.E.
London, Ontario	E. B. Reed.
Medicine Hat, N. W. T	John Ewart.
Minnedosa, N. W. T	Rev. J. M. Wellwood.
Montreal, Quebec	C. H. McLeod, C. E.
Ottawa, Ontario	A. McGill, M. A.
Parry Sound, Ontario	Rev. R. Mosley.
Peterborough, Ontario	J. H. Long.
Port Arthur, Ontario	W. P. Cooke.
Port Dover, Ontario	H. Morgan.
Port Stanley, Ontario	M. Payne.
Qu' Appelle, N. W. T	Leslie Gordon.
Quebec, Quebec	Captain Ashe, R. N.
Rockliffe, Ontario	W. H. McIntyre.
St. Andrews, N. B	S. T. Gove, M. D.
St. John, N. B	G. Hutchinson.
Saint Pierre, N. F	The Commandant.
Saugeen, Ontario	W. K. Stewart.
Southwest Point of Anticosti	
Stratford, Ontario	W. McBride, M. A.
Swift Current	W. G. Knight.
Sydney, C. B	T. C. Hill, C. E.
Toronto, Ontario	Magnetic Observatory.
Woodstock, Ontario	Prof. N. Wolverton, M. A.
Yarmouth, N. S	J. E Murphy.
Sub-series.	
Saint Johns, N. F	J. Higgins.
CAPE COLONY.	
Cape St. Francis	I. Garfelt.
CHINESE.	
Foochow	A. E. Pfankuchen.
Hong Kong Observatory	The Staff.
Sub-series.	
Zi-Ka-Wei, near Shanghai	M. Marc Dechevrens, S. J.
South Cape, Formosa	G. Taylor.
DANISH.	
Copenhagen	Oversergent Fischer.
Fanöe	Overloerer Lauridsen.
Godthaab	S. Kleinschmidt.
Ivigtut	
Jacobshavn	
Stykkisholm	A. O. Thorlacius.
Thorshavn	Overloerer Bergh.
Upernavik	
Vestervig	Loerer Oesterbol.
FRENCH.	
Agen	M. Bousquet, Director.
Alençon, Normal School	M. Nicot, Director.
Arras, Normal School	M. Sion, Director.
Avignon, Normal School	M. Liquier, Director.
Bar-sur-Seine	M. Saillard, Director.
Beauvais, Normal School	M. Mutelet, Director.
Besançon, Normal School	M. Gobin, Director.
Bordeaux, Observatory	M. Rayet, Director.
FRENCH—*Continued.*	
Bourges, Normal School	M. Bourgoine, Director.
Brest, Naval Observatory	M. de Kermaree, Director.
Caen, Normal School	M. Berson, Director.
Châlons-sur-Marne, N. School	M. Mathieu, Director.
Charleville, Normal School	M. Noël, Director.
Clermont-Ferrand, Obs'y	M. Hurion, Director.
Cluny, Normal School	M. de Villemontée, Director.
Commercy	M. Valssade, Director.
Gap, Normal School	M. Poussel, Director.
Greasque, du Rhone	M. Kina, Director.
Grenoble	M. Ablard, Director.
Guéret, Normal School	M. Delorme, Director.
Lescar, Normal School	M. Lefevre, Director.
Lorient, Naval Observatory	Lt. T. Carré, Director.
Lyon, St. Genis-Laval	M. André, Director.
Mans, Normal School	M. Tenot, Director.
Marseille, Observatory	M. Stephan, Director.
Montlouis	M. Cave for Dr. Fines.
Montpellier, Normal School	M. Galzin, Director.
Mont Ventoux	M. Blanc, Director.
Nancy, Normal School	M. Hasse, Director.
Nantes, Observatory	M. Larocque, Director.
Nice, Normal School	M. Cantier, Director.
Perpignan, Observatory	Dr. Fines, Director.
Pic-du-Midi, Summit	M. Vaussenat, Director.
Privas, Normal School	M. Curely, Director.
Puy de Dôme Obs'y, Summit	M. Hurion, Director.
Rochefort, Naval Observatory	M. Corne, Director.
Roche-sur-Yon, N. School	M. Brotier, Director.
Rodez	M. Seger, Director.
Rouen, Normal School	M. Vieillot, Director.
Saint Brieuce	M. Richard, Director.
Saint Maur, Observatory	M. Renon, Director.
Toulouse, Observatory	M. Baillaud, Director.
Sub-series.	
St. Martin du Hinx	M. Carlier, Director.
GERMAN.	
Ansbach	Prof. Jüdt.
Bamberg	Prof. Dr. Hoh.
Breslau	Royal University Obs'y.
Carlsruhe	Albert Senz.
Cassel	Dr. H. Mühl.
Frankfort-on-the-Main	Physical Society.
Friedrichshafen	Wilhelm, Chief Tel.
Hamburg	Carl H. Seeman.
Kjel	Prof. Dr. G. Karsten.
Leipsic, Astronomical Obs'y	H. Leppig, Assistant.
Memel	Issermann.
Munich	Dr. C. Lang.
Neufahrwasser	A. Lothes.
Neustadt, Palatinate	Prof. Dicknether.
Stuttgart	Dr. L. Meyer.
Wustrow	Profs. Brandes & Reimer.
GREEK.	
Athens	Kokkides & Wourlisch.
INDIAN.	
Kurrachee	
Deesa	
Bombay	
Poona	
Belgaum	
Lahore	
Roorkee	
Agra	
Nagpur	
Jubulpore	
Lucknow	
Allahabad	
Patna	
Hazaribagh	
Calcutta	
Chittagong	
Cuttack	
Dhubri	
Sibsagar	
Jeypore	
Bellary	
Trichinopoly	
ITALIAN.	
Udine	Prof. Giovanni Clodig.
Milan	Prof. G. V. Schiapparelli.
Padua	Prof. Dott. Lorenzoni.
Moncalieri	Prof. P. F. Denza.
Genoa	Prof. G. M. Garibaldi.
Cuneo	
Pesaro	Prof. Luigi Guidi.
Florence	Prof. Constantino Pittel.
Leghorn	Prof. P. Monte.
Rome	Prof. P. Tacchini.
Lecce	Prof. C. de Giorgi.
Cosenza	Prof. D. Conti.
Palermo	G. Cacciatori.
Syracuse	Sig. V. Giuliano.
ITALIAN SUB-SERIES	
Stelvio	Prof. P. F. Denza.
Valdobbia	Prof. P. F. Denza.
JAPANESE.	
Akita	S. Hattori.
Awomori	K. Ogawa.
Fushiki	T. Tokuda.
Gifu	R. Ikuchi.
Hakodate	O. Endo.
Hamamatsu	Y. Sekigawa and T. Ogi.
Hiroshima	Y. Okamoto.
Kanazawa	S. Kuriyama.
Kagoshima	G. Miyanohara.
Kioto	K. Nishiyama.
JAPANESE—*Continued.*	
Kochi	K. Kusunose.
Miasaka	T. Ishitain & T. Saki.
Miyako	K. Suwa.
Nagasaki	K. Yamasaki and M Chin.
Nemuro	M. Itabashi.
Niigata	M. Morita.
Numadzu	R. Kaneda.
Osaka	H. Omura.
Sakai	K. Yamawchi & P. Yoshimura
Shimonoseki	D. Kobayshi.
Tokei	The Staff.
Wakayama	K. Sakai.
MAURITIUS.	
Mauritius R. A. Observatory	The Staff.
MEXICAN.	
Guanajuato	Prof. Vicente Fernandek.
Leon	Prof. M. Leal & Espana.
Mazatlan	C. Carmina.
Mexico	The Staff.
NETHERLANDS.	
Flushing	
Groningen	
Helder	
Hellevoetsluis	
Utrecht	G. F. C. Zaalberg.
Sub.	
Batavia	Dr. I. P. v. d. Stok.
NORWEGIAN.	
Bergen	
Bronn	
Christiania	
Gjaesvar	
PORTUGUESE.	
Angra	Dr. J. A. Sampaio.
Funchal, Madeira	Capt. D. A. de Cunha.
Lisbon, Observatory	The Staff.
San Salvador	
St. Vincent, Cape Verd	
RUSSIAN.	
Archangel	Capt. Sseliwerstow.
Baku	
Barnaul	Meteorological Office.
Dorpat	Blumbach.
Ekaterinburg	Meteorological Observatory.
Elisavetgrad	
Irkutsk	Ed. Stelling.
Kasalinsk	Butkowitsch.
Kasan	Observatory.
Kem	M. Kosnobr.
Kertch	E. M. Zacmsipoyz.
Kieff	Observatory.
Korostishev	
Koslov	
Libau	E. Quaas.
Lugan	Meteorological Observatory.
Moscow	Meteorological Observatory.
Nerchinsk	
Nikolaiev	Capt. Kurdakow.
Nikolaievsk-on-the Amoor	Schonberg.
Nikolsk	Nadeshdin.
Perm	
Petro-Alexandrovsk	Walther.
Petrozavodsk	Dr. Bergmann.
Pinsk	
Poti	
St. Petersburg	Central Physical Observatory.
Samarkand	Dresch.
Sevastopol	Colonobr.
Tashkend Laboratory	Teich, A. M.
Vlatka	
Warsaw	Astronomical Observatory.
Yeniseisk	Wishnewzky.
Sub-series.	
Petrowsky Academy	Bachmetieff.
SCOTCH.	
Leith	J. Bolam & Geo. Redpath.
SPANISH.	
Bilbao, Met. Observatory	Tomas Eschriche.
Burgos, Met. Observatory	Domingo Martin.
Madrid	The Staff.
Santiago, Met. Observatory	R. Gil Villanueva, Director.
Sub-series.	
Havana, Cuba	Benito Viñes, S. J.
Manilla, Philippine Islands	F. Faura, S. J.
San Fernando, Naval Obs'y	Capt. C. Pujazon, R. N.
San Juan	Enrique Gadea, Ch. Engineer.
SWEDISH.	
Haparanda	
Umea	
Hernosand	
Stockholm	
Wisby	
Sub-series.	
Upsala	Nils. Ekholm.
SWISS.	
Geneva	Observatory.
TURKISH.	
Constantinople	The Observatory.
Valona	A. Bertrand.
Sub-series.	
Beirut, Lee Obs'y, Syria	R. H. West, B. A., Director.
UNITED STATES SUB-SERIES.	
Bogota	J. G. Otero.
Kingston	Maxwell Hall.
Rivas	Earl Flint, M. D.
Vera Cruz	Capt. Geo. E. Powell.

List of foreign stations and observers from which International Simultaneous Meteorological reports were received at the Office of the Chief Signal Officer, U. S. Army, Washington, D. C., for the month of December. 1887.

Stations.	Observers.
AUSTRALIAN.	
Adelaide	Chas. Todd.
Hobart Town, Tasmania	Com. J. Shortt, R.N.
Melbourne, Victoria	R. L. J. Ellery.
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Agram	Prof. Ivan Stozir.
Cracow, I. R. Observatory	Dr. Wierzbiski.
Gratz	Andreas Rospini.
Kremsmunster Observatory	The Staff.
Lemberg	Dr. T. Stanecki.
Pola	Fr. Cœsetrohe.
Szathmar	P. Tamas Yanos, S. J.
Szegedin	Farkas Laszlo.
Trieste	Naval Observatory.
Vienna	I.R.Central Met. Obs'y.
BRITISH.	
Aberdeen	W. Boswell.
Bidston, Liverpool Obs'y	John Hartnup.
Bradford, Yorkshire	McLandsborough & Preston.
Bridgetown, Barbadoes, W.I.	A. T. Green.
Chatham, School M. E	Percy McHugo, R. E.
Falmouth, Observatory	The Staff.
Fort Napier, Natal	Thomas Murray, M. S. C.
Freetown, Sierra Leone	J. W. Smith.
Galway, Queen's College	Wm. Ryan.
Greenwich, Royal Observatory	The Staff.
Guernsey	A. Collenette, F.R.M.S.
Kew, Observatory	The Staff.
Leicester, Museum	J. C. Smith.
Malta, Mediterranean	R. R. Willan.
Nassau, Bahamas	J. A. Kerr.
Oxford, Radcliffe Observatory	The Staff.
Plymouth	John Merrifield.
Swanbister, Orkneys	W. I. Fortesque.
Scutari Cemetery, Turkey	W. H. Lyne.
Stonyhurst, Observatory	J. Roony.
Valentia, Observatory	The Meteorological Office.
Sub-series.	
Gozo, Episcopal Seminary	Rev. Louis Grech, S. J., Dir.
Malacca	W. R. Angus.
CANADIAN.	
Bathurst, N. B	Miss Andrews
Bird Rocks	T. Turbide.
Calgary	H. S. Cayley.
Chatham, N. B	G. A. Blair.
Cornwall, Ontario	W. D. Johnston, B. A.
Dalhousie, N. B	H. A. Johnson.
Father Point, Quebec	J. McWilliams.
Fort Garry, Manitoba	T. Warburton.
Fredericton, N. B	Dr. Harrison.
Grand Manan, N. B	J. Chipman Seeley.
Halifax, N S	A. Allison.
Hamilton, Ontario	T. S. Campbell, B. A.
Kingston, Ontario	A. P. Knight, M. A.
Little Glace Bay, N. S	C. H. Rigby, C.E.
London, Ontario	E. B. Reed.
Medicine Hat, N. W. T	John Ewart.
Minnedosa, N. W. T	Rev. J. M. Wellwood.
Montreal, Quebec	C. H. McLeod, C. E.
Ottawa, Ontario	A. McGill, M. A.
Parry Sound, Ontario	Rev. R. Mosley.
Peterborough, Ontario	J. H. Long.
Port Arthur, Ontario	W. P. Cooke.
Port Dover, Ontario	H. Morgan.
Port Stanley, Ontario	M. Payne.
Qu' Appelle, N. W. T	Leslie Gordon.
Quebec, Quebec	Captain Ashe, R. N.
Rockliffe, Ontario	W. H. McIntyre.
St. Andrews, N. B	S. T. Gove, M. D.
St. John, N. B	G. Hutchinson.
Saint Pierre, N. F	The Commandant.
Saugeen, Ontario	W. K. Stewart.
Southwest Point of Anticosti	
Stratford, Ontario	W. McBride, M. A.
Swift Current	W. G. Knight.
Sydney, C. B	T. C. Hill, C. E.
Toronto, Ontario	Magnetic Observatory.
Woodstock, Ontario	Prof. N. Wolverton, M. A.
Yarmouth, N. S	J. E Murphy.
Sub-series.	
Saint Johns, N. F	J. Higgins.
CAPE COLONY.	
Cape St. Francis	I. Garfelt.
CHINESE.	
Foochow	A. E. Pfankuchen.
Hong Kong Observatory	The Staff.
Sub-series.	
Zi-Ka-Wei, near Shanghai	M. Marc Dechevrens, S. J.
South Cape, Formosa	G. Taylor.
DANISH.	
Copenhagen	Oversergent Fischer.
Fanöe	Overloerer Lauridsen.
Godthaab	S. Kleinschmidt.
Ivigtut	
Jacobshavn	
Stykkisholm	A. O. Thorlacius.
Thorshavn	Overloerer Bergh.
Upernavik	
Vestervig	Loerer Oesterbol.
FRENCH.	
Agen	M. Bousquet, Director.
Alençon, Normal School	M. Nicot, Director.
Arras, Normal School	M. Sion, Director.
Avignon, Normal School	M. Liquier, Director.
Bar-sur-Seine	M. Saillard, Director.
Beauvais, Normal School	M. Mutelet, Director.
Besançon, Normal School	M. Gobin, Director.
Bordeaux, Observatory	M. Rayet, Director.

Stations.	Observers.
FRENCH—*Continued.*	
Bourges, Normal School	M. Bourgoine, Director.
Brest, Naval Observatory	M. de Kermaroc, Director.
Caen, Normal School	M. Berson, Director.
Châlons-sur-Marne, N. School	M. Mathieu, Director.
Charleville, Normal School	M. Noél, Director.
Clermont-Ferrand, Obs'y	M. Hurion, Director.
Cluny, Normal School	M. de Villemontée, Director.
Commercy	M. Vaissade, Director.
Gap, Normal School	M. Poussel, Director.
Grenasque, du Rhone	M. Kina, Director.
Grenoble	M. Ablard, Director.
Guéret, Normal School	M. Delorme, Director.
Lescar, Normal School	M. Lefevre, Director.
Lorient, Naval Observatory	Lt. T. Carré, Director.
Lyon, St. Genis-Laval	M. André, Director.
Mans, Normal School	M. Tenot, Director.
Marseille, Observatory	M. Stephan, Director.
Montlouis	M. Cave for Dr. Fines.
Montpellier, Normal School	M. Galzin, Director.
Mont Ventoux	M. Blanc, Director.
Nancy, Normal School	M. Hasse, Director.
Nantes, Observatory	M. Larocque, Director.
Nice, Normal School	M. Cantier, Director.
Perpignan, Observatory	Dr. Fines, Director.
Pic-du-Midi, Summit	M. Vaussenat, Director.
Privas, Normal School	M. Carely, Director.
Puy de Dôme Obs'y, Summit	M. Hurion, Director.
Rochefort, Naval Observatory	M. Corne, Director.
Roche-sur-Yon, N. School	M. Brotier, Director.
Rodez	M. Seger, Director.
Rouen, Normal School	M. Vieillot, Director.
Saint Brieuce	M. Richard, Director.
Saint Maur, Observatory	M. Renon, Director.
Toulouse, Observatory	M. Baillaud, Director.
Sub-series.	
St. Martin du Hinx	M. Carlier, Director.
GERMAN.	
Ansbach	Prof. Jüdt.
Bamberg	Prof. Dr. Hoh.
Breslau	Royal University Obs'y.
Carlsruhe	Albert Senz.
Cassel	Dr. H. Möhl.
Frankfort-on-the-Main	Physical Society.
Friedrichshafen	Wilhelm, Chief Tel.
Hamburg	Carl H. Seeman.
Kjel	Prof. Dr. G. Karsten.
Leipsic, Astronomical Obs'y	H. Leppig, Assistant.
Memel	Issermann.
Munich	Dr. C. Lang.
Neufahrwasser	A. Lothes.
Neustadt, Palatinate	Prof. Dicknether.
Stuttgart	Dr. L. Meyer.
Wustrow	Profs. Brandes & Reimer.
GREEK.	
Athens	Kokkides & Wourlisch.
INDIAN.	
Kurrachee	
Deesa	
Bombay	
Poona	
Belgaum	
Lahore	
Roorkee	
Agra	
Nagpur	
Jubulpore	
Lucknow	
Allahabad	
Patna	
Hazaribagh	
Calcutta	
Chittagong	
Cuttack	
Dhubri	
Sibsagar	
Jeypore	
Bellary	
Trichinopoly	
ITALIAN.	
Udine	Prof. Giovanni Clodig.
Milan	Prof. G. V. Schiapparelli.
Padua	Prof. Dott. Lorenzoni.
Moncalieri	Prof. P. F. Denza.
Genoa	Prof. G. M. Garibaldi.
Cuneo	
Pesaro	Prof. Luigi Guidi.
Florence	Prof. Constantino Pittei.
Leghorn	Prof. P. Monte.
Rome	Prof. P. Tacchini.
Lecce	Prof. C. de Giorgi.
Cosenza	Prof. D. Conti.
Palermo	G. Cacciatori.
Syracuse	Sig. V. Giuliano.
ITALIAN SUB-SERIES	
Stelvio	Prof. P. F. Denza.
Valdobbia	Prof. P. F. Denza.
JAPANESE.	
Akita	S. Hattori.
Awomori	K. Ogawa.
Fushiki	T. Tokuda.
Gifu	R. Ikuchi.
Hakodate	O. Endo.
Hamamatsu	Y. Sekigawa and T. Ogi.
Hiroshima	Y. Okamoto.
Kanazawa	S. Kuriyama.
Kagoshima	G. Miyanohara.
Kioto	K. Nishiyama.

Stations.	Observers.
JAPANESE—*Continued.*	
Kochi	K. Kusunose.
Miasaka	T. Ishitain & T. Saki.
Miyako	K. Suwa.
Nagasaki	K. Yamasaki and M Chin.
Nemuro	M. Itabashi.
Niigata	M. Morita.
Numadzu	R. Kaneda.
Osaka	H. Omura.
Sakai	K. Yamawchi & P. Yoshimura
Shimonoseki	D. Kobayshi.
Tokei	The Staff.
Wakayama	K. Sakai.
MAURITIUS.	
Mauritius R. A. Observatory	The Staff.
MEXICAN.	
Guanajuato	Prof. Vicente Fernandez.
Leon	Prof. M. Leal & Espana.
Mazatlan	C. Carmina.
Mexico	The Staff.
NETHERLANDS.	
Flushing	
Groningen	
Helder	
Hellevoetsluis	
Utrecht	G. F. C. Zaalberg.
Sub.	
Batavia	Dr. I. P. v. d. Stok.
NORWEGIAN.	
Bergen	
Brono	
Christiania	
Gjesvar	
PORTUGUESE.	
Angra	Dr. J. A. Sampaio.
Funchal, Madeira	Capt. D. A. de Cunha.
Lisbon, Observatory	The Staff.
San Salvador	
St. Vincent, Cape Verd	
RUSSIAN.	
Archangel	Capt. Ssellwerstow.
Baku	
Barnaul	Meteorological Office.
Dorpat	Blumbach.
Ekaterinburg	Meteorological Observatory.
Elisavetgrad	
Irkutsk	Ed. Stelling.
Kasalinsk	Butkewitsch.
Kasan	Observatory.
Kem	M. Kosnobr.
Kertch	E. M. Zacmaipeyz.
Kieff	Observatory.
Korostishev	
Koslov	
Liban	E. Quaas.
Lugan	Meteorological Observatory.
Moscow	Meteorological Observatory.
Nerchinsk	
Nikolaiev	Capt. Kurdakow.
Nikolaievsk-on-the Amoor	Schonberg.
Nikolsk	Nadeshdin.
Perm	
Petro-Alexandrovsk	Walther.
Petrozavodsk	Dr. Bergmann.
Pinsk	
Poti	
St. Petersburg	Central Physical Observatory.
Samarkand	Dresch.
Sevastopol	Colonobr.
Tashkend Laboratory	Teich, A. M.
Viatka	
Warsaw	Astronomical Observatory.
Yeniseisk	Wishnewzky.
Sub-series.	
Petrowsky Academy	Bachmetieff.
SCOTCH.	
Leith	J. Bolam & Geo. Redpath.
SPANISH.	
Bilbao, Met. Observatory	Tomas Eschriche.
Burgos, Met. Observatory	Domingo Martin.
Madrid	The Staff.
Santiago, Met. Observatory	R. Gil Villanueva, Director.
Sub-series.	
Havana, Cuba	Benito Vifies, S. J.
Manilla, Philippine Islands	F. Faura, S. J.
San Fernando, Naval Obs'y	Capt. C. Pujazon, R. N.
San Juan	Enrique Gadea, Ch. Engineer.
SWEDISH.	
Haparanda	
Umea	
Hernosand	
Stockholm	
Wisby	
Sub-series.	
Upsala	Nils. Ekholm.
SWISS.	
Geneva	Observatory.
TURKISH.	
Constantinople	The Observatory.
Valona	A. Bertrand.
Sub-series.	
Beirut, Lee Obs'y, Syria	R. H. West, B. A., Director.
UNITED STATES SUB-SERIES.	
Bogota	J. G. Otero.
Kingston	Maxwell Hall.
Rivas	Earl Flint, M. D.
Vera Cruz	Capt. Geo. E. Powell.

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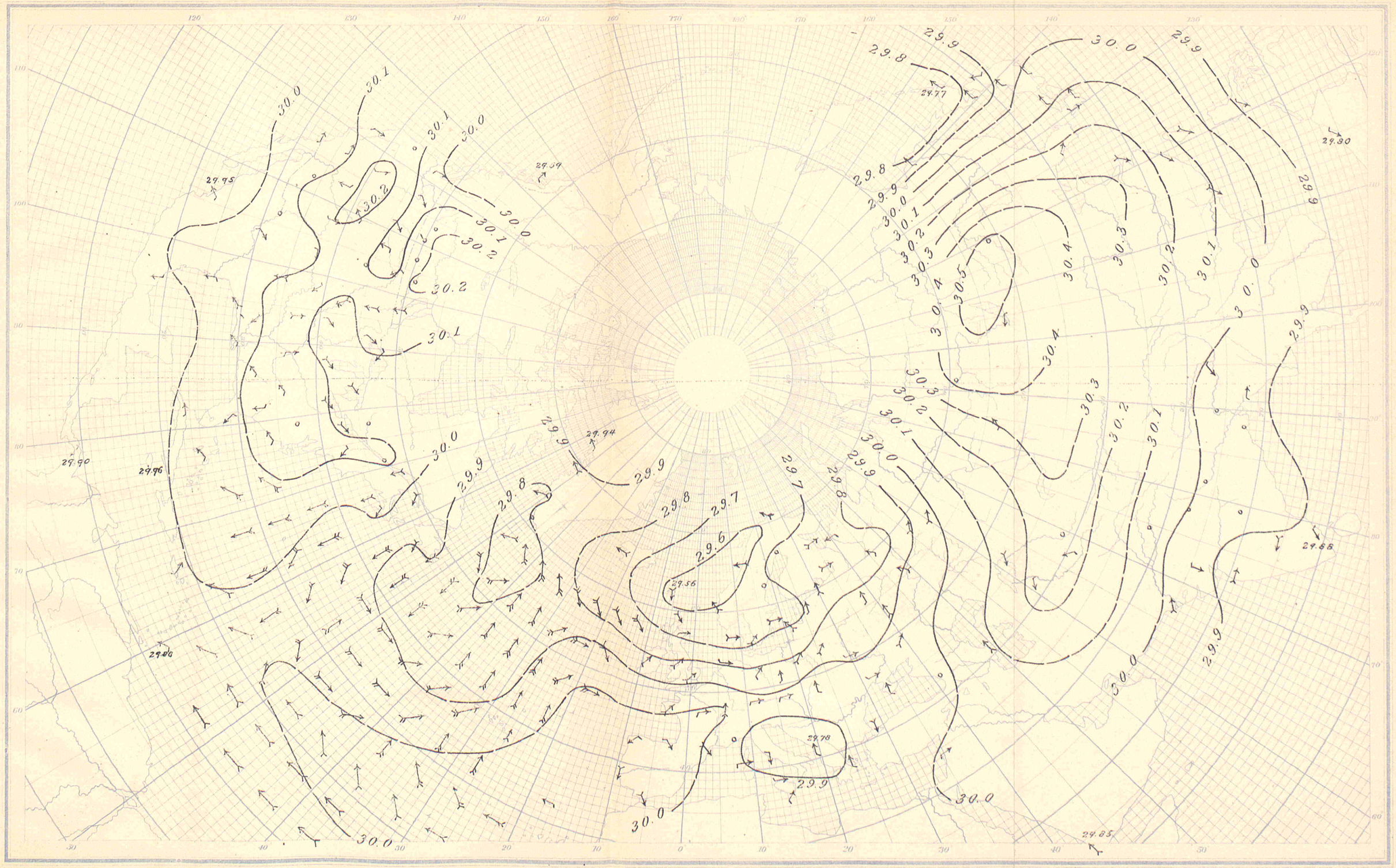
International Chart II. December, 1887. Isobars and Winds.



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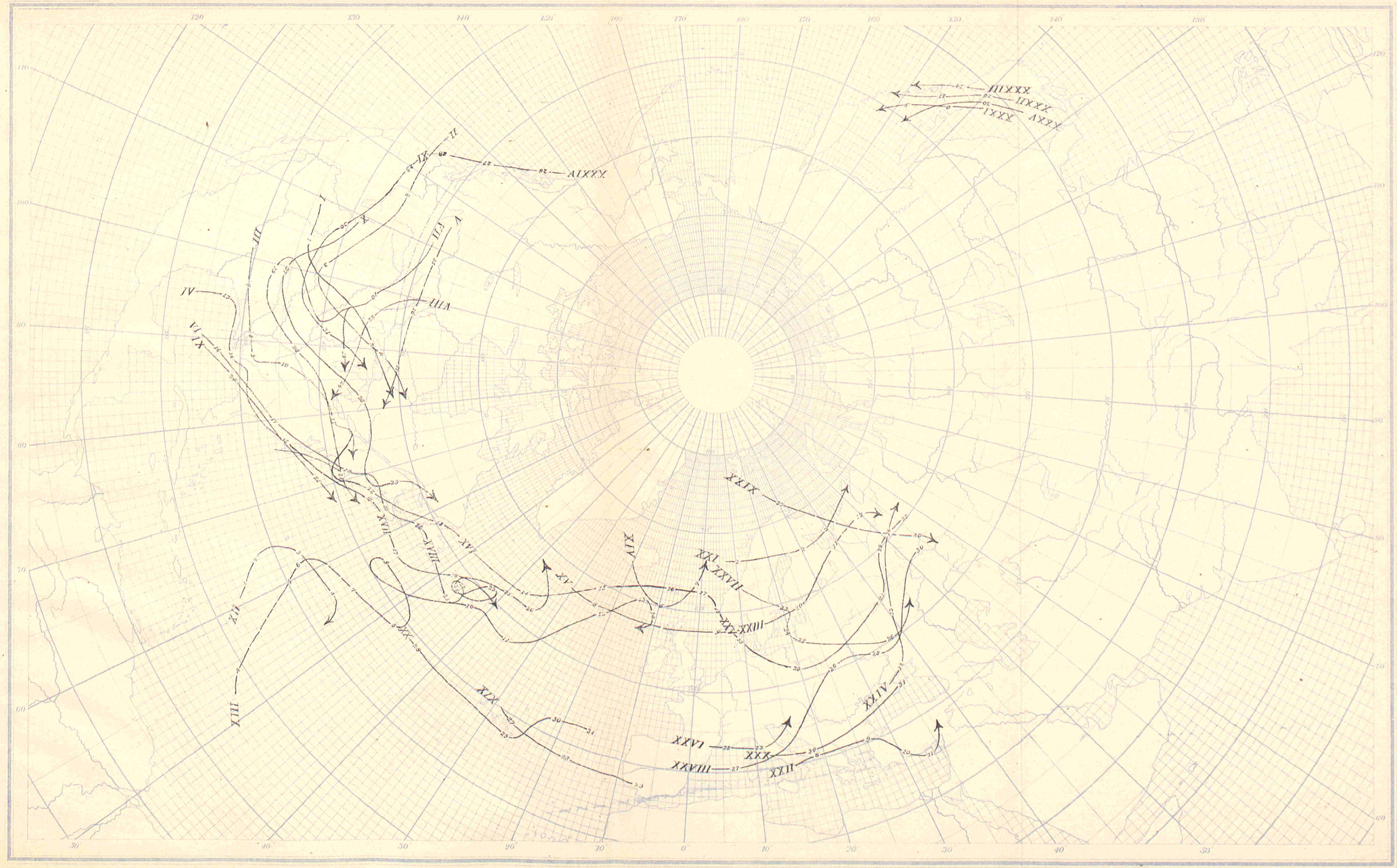
International Chart III. December, 1887. Tracks of Areas of Low Pressure.



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