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[For description of tables and charts, see REVIEW, January, pp. 32 and 38]

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In the following table are given for the various sections of the climatological service of the Weather Bureau the monthly average temperature and total rainfall; the stations reporting the highest and lowest temperatures, with dates of occurrence; the stations reporting the greatest and least total precipitation; and other data as indicated by the several headings.

The mean temperature for each section, the highest and lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

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Section	Temperature								Precipitation					
	Section average	Departure from the normal	Monthly extremes						Section average	Departure from the normal	Greatest monthly		Least monthly	
			Station	Highest	Date	Station	Lowest	Date			Station	Amount	Station	Amount
	°F.	°F.		°F.			°F.		In.	In.		In.		In.
Alabama	66.1	+1.3	Brewton	95	28	2 stations	34	[1] 17	1.40	−1.62	Helena	6.72	Newton	T
Arizona	62.6	+1.0	Mohawk	105	8	Alpine	11	28	1.63	+.78	Mormon Lake	5.24	3 stations	0.00
Arkansas	65.2	+2.5	Mount Ida	95	19	2 stations	29	16	1.91	−1.19	Grannis	3.77	Corning	.45
California	60.8	+.4	2 stations	105	19	Ellery Lake	12	27	1.76	+.52	Crescent City (near)	8.33	3 stations	.00
Colorado	50.3	+3.4	Holly	90	18	Hermit	4	31	.83	−.31	Columbine	3.47	5 stations	.00
Florida	70.8	−2.2	Cedar Key	91	7	2 stations	34	19	.83	−3.36	West Palm Beach	10.40	8 stations	.00
Georgia	65.0	+.1	Fort Gaines	94	28	Clayton	29	9	.89	−1.80	Fort Valley	2.42	3 stations	.00
Idaho	49.9	+2.8	Oakley	91	13	Obsidian (near)	16	6	2.18	+.68	Deception Creek	6.01	Three Creek	.32
Illinois	60.2	+4.5	2 stations	94	13	2 stations	26	16	2.14	−.43	Millington	4.64	Benton	.26
Indiana	58.6	+3.7	Shoals	94	7	Marengo	25	[1] 17	2.23	−.53	Logansport	6.05	Evans Landing	.39
Iowa	57.8	+6.1	Thurman	90	12	Sibley	22	15	2.32	−.01	Oelwein	4.30	Clarinda	.71
Kansas	63.5	+6.2	3 stations	93	[1] 5	3 stations	23	[1] 15	1.05	−.83	Quenemo	2.80	Bucklin	.02
Kentucky	60.4	+2.1	Henderson	93	26	Clermont	25	[1] 17	.74	−1.93	Leitchfield	2.28	Winchester	.18
Louisiana	68.9	+.5	3 stations	92	[1] 6	Robeline	32	17	1.28	−1.98	DeRidder	5.07	Paradis (near)	.00
Maryland-Delaware	53.2	−3.0	2 stations	86	[1] 6	Oakland, Md	20	19	2.34	−.66	State Sanatorium, Md.	3.77	Mount Savage Summit, Md.	.77
Michigan	49.4	+.9	Monroe	86	6	Garnet	12	16	2.63	−.22	Charlotte	4.42	Channing	.50
Minnesota	51.5	+5.1	2 stations	85	[1] 11	4 stations	18	15	2.77	+.91	Gull Lake Dam	4.94	Grand Marais	1.31
Mississippi	66.1	+.7	Leaksville	92	20	2 stations	31	17	1.24	−1.33	Tupelo	6.97	Bay St. Louis	.04
Missouri	63.0	+5.4	Marble Hill	94	5	Louisiana	28	16	1.73	−1.11	Shelbina	4.48	Cape Girardeau	.16
Montana	49.6	+4.6	White Water	88	19	Babb (near)	15	28	1.37	+.29	Wyola	3.59	Lustre (near)	.11
Nebraska	58.3	+6.6	York	94	12	2 stations	21	[1] 15	1.49	+.02	Arden (near)	3.26	Mumper	.25
Nevada	53.4	+2.9	Las Vegas Airport	96	19	Eureka	6	28	.86	+.28	Orovada	3.07	Indian Springs	.00
New England	45.7	−3.7	2 stations	81	7	Somerset, Vt	8	22	1.29	−2.22	St. Albans, Vt	2.93	New Durham, N. H.	.23
New Jersey	51.0	−3.6	do	82	13	Charlotteburg	11	22	2.36	−1.25	Burlington	3.22	Atlantic City	1.48
New Mexico	55.4	+1.7	Artesia	98	5	Eagle Nest	10	29	.70	−.42	Carlsbad Caverns	4.29	12 stations	.00
New York	46.3	−3.6	Utica	85	8	Whiteface Mountain	6	[1] 19	2.17	−1.11	Whiteface Mountain	4.12	Cairo	.54
North Carolina	59.4	−.5	Fayetteville	92	26	Mount Mitchell	24	18	1.28	−2.03	Topoca	2.95	Lumberton	.14
North Dakota	50.7	+6.8	Mott	89	21	2 stations	18	17	1.56	+.54	Jamestown	3.85	Kenmare	.20
Ohio	54.8	+1.3	6 stations	87	[1] 6	do	21	22	1.63	−.90	Montpelier	3.58	Portsmouth	.38
Oklahoma	66.8	+4.3	Frederick	97	19	do	25	15	1.71	−1.17	Carter Tower	3.95	Guymon	.04
Oregon	52.2	+2.5	Riddle	90	18	Fremont	16	5	2.94	+1.02	Seaside	10.68	Lake	.40
Pennsylvania	50.0	−2.5	3 stations	85	6	Coudersport	10	20	2.03	−1.19	South Mountain	4.09	State College	.74
South Carolina	63.6	−.1	3 stations	91	[1] 14	3 stations	34	21	.93	−2.02	Landrum	4.95	Beaufort (near)	T
South Dakota	55.4	+6.7	Kennebec	92	25	La Delle	17	17	1.02	−.14	Andover (near)	3.31	Wood	.17
Tennessee	62.6	+2.9	Etowah	93	5	Waynesboro	28	17	1.91	−.91	Sewanee	4.60	Dresden	.47
Texas	69.0	+1.3	Seymour	101	19	Muleshoe	26	29	2.52	−.24	Austwell	11.16	Hereford	T
Utah	51.6	+2.5	Hurricane	90	3	Silver Lake	11	31	1.39	+.28	Monticello	3.26	St. George	.33
Virginia	56.1	−1.2	Kenbridge	88	15	Mountain Lake	23	21	1.63	−1.35	Mount Weather	3.31	Wallaceton	.39
Washington	52.7	+3.2	Wahluke (near)	90	18	Stockdill Ranch	19	27	4.85	+1.82	Mount Baker Lodge	21.74	Wapato	.82
West Virginia	54.3	−.3	3 stations	88	[1] 13	2 stations	18	[1] 21	1.80	−1.04	Kumbrabow State Forest.	4.27	Mullens	.35
Wisconsin	50.9	+2.7	Racine	82	5	Long Lake	19	24	2.13	−.31	La Crosse	3.49	Long Lake	.96
Wyoming	47.7	+4.0	Kendall	89	17	Jenkins Ranch	3	29	.97	−.11	Afton (near)	4.16	Fort Washakie	.11
Alaska (Sept.)	46.0	+2.2	Tree Point	88	8	2 stations	11	[1] 25	4.86	+1.32	Latouche	25.28	Fort Yukon	.15
Hawaii	75.1	+1.5	2 stations	93	[1] 21	Haleakala	34	31	6.86	+1.36	Pacaikou	26.60	U. S. Magnetic Observatory.	.20
Puerto Rico	78.6	+.5	Dorado (near)	99	16	Guineo Reservoir	57	27	10.67	+2.67	Toro Negro	23.56	Comerio Falls	2.34

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Missouri	63.0	+5.4	Marble Hill	94	5	Louisiana	28	16	1.73	−1.11	Shelbina	4.48	Cape Girardeau	.16
Montana	49.6	+4.6	White Water	88	19	Babb (near)	15	28	1.37	+.29	Wyola	3.59	Lustre (near)	.11
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New England	45.7	−3.7	2 stations	81	7	Somerset, Vt	8	22	1.29	−2.22	St. Albans, Vt	2.93	New Durham, N. H.	.23
New Jersey	51.0	−3.6	do	82	13	Charlotteburg	11	22	2.36	−1.25	Burlington	3.22	Atlantic City	1.48
New Mexico	55.4	+1.7	Artesia	98	5	Eagle Nest	10	29	.70	−.42	Carlsbad Caverns	4.29	12 stations	.00
New York	46.3	−3.6	Utica	85	8	Whiteface Mountain	6	[1] 19	2.17	−1.11	Whiteface Mountain	4.12	Cairo	.54
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North Dakota	50.7	+6.8	Mott	89	21	2 stations	18	17	1.56	+.54	Jamestown	3.85	Kenmare	.20
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Tennessee	62.6	+2.9	Etowah	93	5	Waynesboro	28	17	1.91	−.91	Sewanee	4.60	Dresden	.47
Texas	69.0	+1.3	Seymour	101	19	Muleshoe	26	29	2.52	−.24	Austwell	11.16	Hereford	T
Utah	51.6	+2.5	Hurricane	90	3	Silver Lake	11	31	1.39	+.28	Monticello	3.26	St. George	.33
Virginia	56.1	−1.2	Kenbridge	88	15	Mountain Lake	23	21	1.63	−1.35	Mount Weather	3.31	Wallaceton	.39
Washington	52.7	+3.2	Wahluke (near)	90	18	Stockdill Ranch	19	27	4.85	+1.82	Mount Baker Lodge	21.74	Wapato	.82
West Virginia	54.3	−.3	3 stations	88	[1] 13	2 stations	18	[1] 21	1.80	−1.04	Kumbrabow State Forest.	4.27	Mullens	.35
Wisconsin	50.9	+2.7	Racine	82	5	Long Lake	19	24	2.13	−.31	La Crosse	3.49	Long Lake	.96
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Alaska (Sept.)	46.0	+2.2	Tree Point	88	8	2 stations	11	[1] 25	4.86	+1.32	Latouche	25.28	Fort Yukon	.15
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[1] Other dates also.

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS

District and station	Elevation of instruments: Barometer above sea level	Elevation of instruments: Thermometer above ground	Elevation of instruments: Anemometer above ground	Pressure: Station, reduced to mean of 24 hours	Pressure: Sea level, reduced to mean of 24 hours	Pressure: Departure from normal	Temperature of the air: Mean max.+mean min.÷2	Temperature of the air: Departure from normal	Temperature of the air: Maximum	Temperature of the air: Date	Temperature of the air: Mean maximum	Temperature of the air: Minimum	Temperature of the air: Date	Temperature of the air: Mean minimum	Greatest daily range	Mean wet thermometer	Mean temperature of the dew-point	Mean relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Days with 0.01 inch, or more	Wind: Average hourly velocity	Wind: Prevailing direction	Wind: Maximum velocity: Miles per hour	Wind: Maximum velocity: Direction	Wind: Maximum velocity: Date	Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths	Total snowfall	Snow, sleet, and ice on ground at end of month
	Ft.	Ft.	Ft.	In.	In.	In.	°F.	°F.	°F.		°F.	°F.		°F.	°F.	°F.	°F.	%	In.	In.		Miles								0-10	In.	In.
New England							48.0	−3.1										75	1.60	−1.7										4.9		
Eastport	75	67	85	29.92	30.00	0.00	44.3	−3.2	61	12	50	27	22	38	23	41	37	79	0.97	−2.6	8	9.9	nw.	27	nw.	16	11	12	8	5.2	1.6	0.0
Greenville, Maine	1,070	6																														
Portland, Maine [2]	103	82	117	29.91	30.03	−.01	48.0	−1.9	70	12	56	29	22	40	27	40	36	75	.32	−2.8	2	8.4	n.	26	nw.	26	19	6	6	3.4	T	.0
Concord [2]	289	54	72	29.74	30.06	+.01	46.6	−3.1	80	7	58	23	29	35	39	38	35	77	.65	−2.2	6	5.5	n.	21	nw.	26	11	11	9	5.1	.5	.0
Burlington	403	11	48	29.61	30.06	+.02	44.7	−4.5	76	7	53	22	20	36	32	39	35	73	2.70	−.3	11	8.8	nw.	31	s.	23	10	6	15	6.0	T	.0
Northfield	876	12	60	29.10	30.07	+.03	42.6	−2.9	74	7	54	17	20	31	41	35	32	83	1.15	−1.7	8	7.1	sw.	23	s.	7	10	5	16	6.1	1.3	.0
Boston [1]	124	106	165		30.06	+.01	50.6	−3.0	77	13	59	28	22	42	35	43		68	.76	−2.4	9	11.4	nw.	31	nw.	15	12	13	6	4.5	T	.0
Nantucket	12	14	90	30.04	30.05	.00	51.0	−3.2	70	8	56	32	22	46	20	47	42	75	2.06	−1.3	10	15.5	n.	41	ne.	2	7	13	11	5.7	.0	.0
Block Island	26	11	46	30.03	30.06	+.01	51.0	−3.9	69	12	57	33	19	45	24	46	42	74	2.52	−1.0	12	16.2	n.	38	nw.	18	18	7	6	3.5	.0	.0
Providence [2]	159	65	25	29.90	30.07	+.02	50.4	−1.8	80	13	60	27	22	41	32	43	38	73	1.86	−1.3	9	11.4	nw.	37	nw.	15	12	10	9	4.9	.0	.0
Hartford [1]	159	122		29.90	30.08	+.02	48.0	−3.2	77	13	60	18	28	37	37	42	38	78	2.57	−1.0	7	7.8	n.	26	n.	18	11	10	10	5.3	T	.0
New Haven [2]	107	74	68	29.96	30.08	+.02	50.8	−3.0	78	13	59	27	22	42	31	44	39	72	2.05	−1.6	7	9.1	n.	27	sw.	23	12	12	7	4.7	T	.0
Middle Atlantic States							53.6	−2.8										76	1.96	−1.1										5.0		
Albany [1]	97	26	40	29.96	30.07	+.01	45.9	−6.2	74	12	56	19	29	35	38	40	36	75	.89	−1.8	7	7.7	s.	29	s.	15	13	7	11	5.2	T	.0
Binghamton	871	57	79	29.16	30.11	+.05	47.0	−3.0	78	7	58	20	29	36	36	42	38	79	2.33	−.6	9	5.3	nw.	19	sw.	7	7	7	17	6.7	T	.0
New York	314	415	454	29.73	30.07	.00	53.2	−3.1	77	13	61	30	19	45	27	46	39	64	2.67	−.9	10	13.0	n.	46	nw.	15	13	11	7	4.8	T	.0
Harrisburg [1]	374	94	104	29.70	30.11	+.03	51.6	−3.2	81	13	62	25	22	42	35	45	42	77	2.63	−.3	9	6.2	w.	25	n.	15	11	7	13	5.6	1.2	.0
Philadelphia [2]	114	174	367	29.97	30.10	+.03	54.3	−3.5	79	13	62	31	20	46	28	46	42	78	2.38	−.4	9	12.3	n.	35	n.	15	11	13	7	4.9	2.2	.0
Reading	323	47	306	29.75	30.11		51.5	−3.2	80	13	61	27	22	42	31	45	40	72	2.01	−1.1	10	8.4	n.	34	nw.	15	11	7	13	5.2	1.0	.0
Scranton	805	72	104	29.22	30.09	+.02	48.2	−3.7	80	7	58	22	22	38	34				3.14	+.1	8	5.7	n.	25	nw.	18	8	13	10	5.6	T	.0
Atlantic City	52	37	172	30.03	30.08	+.01	53.8	−3.1	72	24	61	30	22	47	22	48	44	75	1.48	−1.7	9	15.0	n.	43	ne.	1	10	12	9	5.3	T	.0
Sandy Hook	22	10	57	30.06	30.08		53.2	−3.7	76	15	60	34	19	47	27	47	42	71	2.47	−1.3	9	14.1	n.	41	n.	15	13	8	10	5.0	T	.0
Trenton	190	89	107	29.88	30.09		51.8	−3.8	79	13	60	27	22	43	32	45	40	70	2.15	−.6	8	7.9	n.	25	n.	15	11	10	10	5.4	.5	.0
Baltimore [2]	123	100	215	29.97	30.11	+.03	55.8	−2.4	83	13	64	32	20	48	30	48	43	70	2.37	−.5	9	9.2	n.	32	nw.	15	11	9	11	5.6	1.3	.0
Washington	112	62	85	29.98	30.10	+.02	55.7	−1.7	83	13	64	32	21	48	33	48	44	73	2.15	−.7	10	5.8	nw.	23	nw.	18	11	10	10	5.0	1.5	.0
Cape Henry	18	8	54	30.06	30.08		59.4	−2.7	82	7	66	42	21	53	30	54	51	79	1.52	−1.5	8	13.5	n.	41	n.	15	20	1	10	4.0	.0	.0
Lynchburg	686	144	184	29.38	30.13	+.04	57.9	−.6	84	13	70	32	21	46	41	49	46	76	.91	−2.2	7	5.6	nw.	20	nw.	18	15	7	9	4.2	T	.0
Norfolk [2]	91	80	125	30.00	30.10	+.03	59.8	−2.7	83	15	68	39	21	52	27	52	50	87	1.10	−1.9	7	9.4	n.	30	ne.	15	17	3	11	4.4	.0	.0
Richmond [2]	144	11	52	29.95	30.11	+.03	57.8	−1.8	82	13	68	30	21	47	34	49	47	87	2.02	−.9	6	7.1	ne.	24	ne.	15	18	4	9	3.8	.0	.0
Wytheville	2,304	49	55	27.71	30.12	+.03	54.8	+1.2	78	14	68	32	22	42	40	46	42	77	1.10	−1.7	5	5.5	w.	19	w.	26	18	8	5	3.5	.0	.0
South Atlantic States							64.2	0.0										81	1.07	−2.2										3.5		
Asheville	2,253	89	104	27.79	30.15	+.06	57.2	+1.9	81	28	71	35	10	44	37	48	45	77	1.12	−1.6	7	5.7	nw.	22	e.	16	20	9	2	3.2	.0	.0
Charlotte [2]	779	63	86	29.26	30.09	+.01	63.0	+1.3	87	14	75	39	21	51	31	52	48	77	1.73	−1.2	6	5.5	ne.	24	ne.	16	21	5	5	3.2	.0	.0
Greensboro [1]	886	6	56	29.18	30.12		58.4		86	26	72	28	21	45	39	50	48	84	1.06		5	6.6	ne.	30	ne.	16	15	8	8	4.0	.0	.0
Hatteras	11	5	50	30.06	30.07	+.01	62.4	−3.5	78	15	68	47	20	56	20	58	57	87	1.72	−3.2	7	11.5	ne.	34	n.	1	17	6	8	4.4	.0	.0
Raleigh [2]	376	103	146	29.70	30.10	+.03	60.9	−1.1	85	26	72	35	21	50	30	52	48	76	.44	−2.4	4	8.1	n.	27	ne.	16	17	9	5	3.6	.0	.0
Wilmington	72	73	107	30.01	30.08	+.02	63.6	−1.7	86	28	74	39	21	53	30	56	53	80	1.44	−1.8	6	7.4	n.	21	e.	28	20	3	8	3.5	.0	.0
Charleston [2]	48	11	92	30.02	30.07	+.01	66.6	−1.2	85	30	74	51	21	59	23	56	54	89	.06	−3.2	2	8.8	n.	22	ne.	21	19	5	7	3.3	.0	.0
Columbia, S. C. [2]	347	70	91	29.72	30.09	+.02	65.3	+1.0	87	28	78	42	21	53	33	55	51	76	.66	−1.9	3	6.9	n.	25	ne.	16	18	8	5	3.2	.0	.0
Greenville, S. C	1,040	70	78	29.01	30.11		64.0	+3.8	87	26	76	42	21	52	32				2.97	−.2	6	5.5	ne.	23	ne.	16	18	9	4	3.2	.0	.0
Augusta [2]	182	62	77	29.88	30.08	+.01	65.6	+.3	87	14	78	45	19	53	35	55	51	71	1.18	−1.3	5	4.2	nw.	19	ne.	16	17	6	8	3.8	.0	.0
Savannah [2]	65	73	152	30.01	30.08	+.03	69.0	+1.1	89	27	80	50	18	58	29	58	57	89	.35	−2.6	4	8.2	n.	21	e.	22	18	7	6	3.2	.0	.0
Jacksonville [2]	43	86	110	30.02	30.07	+.05	68.9	−2.2	85	20	79	51	18	59	30	60	58	87	.10	−4.4	2	6.7	ne.	18	ne.	10	18	7	6	3.6	.0	.0
Florida Peninsula							75.5	−1.3										80	1.60	−4.2										3.2		
Key West [2]	21	10	64	29.97	29.99	+.05	77.8	−1.3	86	1	82	64	21	73	16	71	68	77	1.86	−4.1	5	9.4	ne.	19	e.	5	21	8	2	3.2	.0	.0
Miami [2]	25	124	168	29.97	30.00	+.03	76.0	−1.0	86	2	82	63	20	70	19	68	66	82	2.93	−5.5	6	9.4	ne.	23	ne.	6	15	11	5	4.3	.0	.0
Tampa [2]	35	88	197	30.00	30.04	+.06	72.6	−1.7	85	22	82	55	18	63	24	64	62	80	.02	−3.1	1	10.5	ne.	25	e.	5	21	10	0	2.2	.0	.0
East Gulf States							67.8	+1.1										76	1.26	−1.6										2.9		
Atlanta [1]	1,173	5	72	28.86	30.08	+.01	64.4	+1.4	88	4	78	44	18	51	40	54	49	72	.43	−2.2	3	6.7	nw.	31	sw.	19	20	5	6	3.3	.0	.0
Macon [2]	370	79	87	29.68	30.07	+.01	66.0	+1.5	88	27	80	42	19	52	37	56	51	71	1.28	−1.1	4	4.9	n.	19	sw.	19	18	6	7	3.6	.0	.0
Thomasville	273	49	58	29.79	30.09	+.05	67.9	−.3	86	29	80	46	19	56	32				.40	−2.6	1		ne.								.0	.0
Apalachicola	35	11	51	30.02	30.06		69.8	−.8	83	21	78	52	18	62	26	63	60	80	.32	−2.9	2	7.0	n.	21	se.	6	22	4	5	2.7	.0	.0
Pensacola	56	54	79	30.02	30.08	+.05	69.8	−.1	85	13	79	51	17	60	28	61	58	75	.59	−3.6	3	6.5	n.	19	n.	15	22	9	0	2.2	.0	.0
Anniston	741	9		29.34	30.13	+.06	63.3	+.9	86	27	76	39	18	50	40				2.58	.0	4		s.				24	2	5		.0	.0
Birmingham [2]	700	11	48	29.35	30.10	+.03	67.1	+2.3	90	5	79	40	17	55	34	53	50	78	2.57	+.2	5	5.2	n.	18	w.	19	23	3	5	2.7	.0	.0
Mobile [2]	57	86	161	30.02	30.08	+.04	69.1	−.2	86	20	80	46	17	58	33	59	56	84	.57	−3.0	4	8.3	nw.	28	nw.	7	19	10	2	2.6	.0	.0
Montgomery [2]	218	92	105	29.85	30.08	+.02	68.7	+2.1	88	27	80	48	19	57	37	56	52	75	.41	−2.0	2	5.5	n.	21	w.	19	22	5	4	2.4	.0	.0
Meridian [2]	375	67	92	29.69	30.09	+.03	65.9	+1.6	87	27	80	39	17	52	39	56	54	86	2.16	−.2	5	4.1	(d.i.)*	18	sw.	19	21	4	6	3.0	.0	.0
Vicksburg	247	82	102	29.82	30.08	+.02	69.2	+2.5	88	4	80	44	16	58	27	58	53	67	2.50	−.3	5	7.4	n.	24	se.	31	16	10	5	3.4	.0	.0
New Orleans [2]	53	76	84	30.02	30.08	+.05	72.8	+1.8	86	6	81	55	17	64	23	63	60	75	1.25	−2.0	3	6.0	se.	20	n.	15	18	10	3	3.1	.0	.0
Port Eads, La	9	4	35	30.04	30.06		73.5		84	6	79	59	16	68	18				.66		2	9.3	e.	24		15				3.4	.0	.0
West Gulf States							71.1	+2.3										74	3.21	+0.1										4.3		
Shreveport [2]	249	92	227	29.81	30.07	+.02	70.1	+3.5	88	19	82	44	16	59	31	58	54	75	2.33	−.4	5	9.6	se.	26	nw.	31	18	10	3	3.2	.0	.0
Bentonville	1,303	12	51	28.72	30.08		63.9		84	4	77	35	16	51	36				1.89	−1.7	7	6.0	s.	19	sw.	4	20	4	7	3.6	.0	.0
Fort Smith	463	57	82	29.59	30.07	+.02	67.2	+4.4	88	5	80	42	16	54	36	56	50	62	2.16	−.8	6	6.0	e.	22	w.	14	20	5	6	3.2	.0	.0
Little Rock [2]	357	94	102	29.70	30.08	+.02	66.6	+3.0	88	19	78	45	16	56	32	56	53	78	1.91	−.8	4	6.8	s.	21	se.	21	18	9	4	3.6	.0	.0
Austin [2]	605	68	90	29.41	30.04		70.0	+1.7	91	6	82	44	16	58	36	61	57	74	4.82	+1.6	9	5.9	se.	21	nw.	31	10	15	6	4.5	.0	.0
Brownsville [2]	57	88	96	29.95	30.01		75.8	+.9	90	5	84	56	18	68	27	67	65	85	5.74	+2.4	10	9.5	se.	27	se.	30	6	15	10	5.9	.0	.0
Corpus Christi [2]	20	11	78	30.01	30.03	+.03	75.4	+2.2	87	5	81	54	16	69	22	67	65	86	3.49	+1.0	9	9.9	se.	28	s.	31	10	11	10	5.3	.0	.0
Dallas [1]	512	220	227	29.50	30.03		69.8		93	19	84	39	17	56	42	58	52	63	1.96	−.8	5	9.8	se.	30	se.	4	18	8	5	2.9	.0	.0
Fort Worth [1]	679	35	56	29.34	30.05	+.02	70.4	+3.7	93	19	84	43	16	57	38	58	51	59	1.47	−1.3	5	10.1	s.	39	w.	31	14	11	6	4.2	.0	.0
Galveston [2]	54	106	114	30.00	30.06	+.03	73.0	+.3	82	6	78	59	16	68	19	66	64	80	2.97	−1.4	8	9.6	se.	33	w.	31	13	12	6	4.4	.0	.0
Houston [2]	138	157	190	29.92	30.07		71.9	+1.6	90	21	82	50	16	62	28	62	60	82	4.85	+1.1	8	9.4	se.	40	nw.	31	9	11	11	5.3	.0	.0
Palestine	510	64	72	29.54	30.08	+.05	69.6	+2.4	88	5	81	44	17	58	33	60	54	67	2.26	−1.1	6	6.4	s.	19	s.	28	16	11	4	3.7	.0	.0
Port Arthur	34	59	134	30.03	30.07		71.6		85	6	80	48	17	63	28	65	62	81	3.15	−.2	5	11.2	se.	45	nw.	29	13	10	8	4.6	.0	.0
San Antonio [2]	693	111	301	29.32	30.04	+.03	72.3	+1.8	93	6	83	46	16	62	33	63	59	73	4.66	+2.4	10	10.8	e.	35	w.	31	8	16	7	5.2	.0	.0

*d. i (direction indeterminate) indicates that during the month the number of hours when the wind velocities ranged from 0 to 1 (corrected) exceeded the number of hours from any one of the 8 compass points, N., NE., E., etc.

See footnotes at end of table.

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS

District and station	Elevation of instruments: Barometer above sea level	Elevation of instruments: Thermometer above ground	Elevation of instruments: Anemometer above ground	Pressure: Station, reduced to mean of 24 hours	Pressure: Sea level, reduced to mean of 24 hours	Pressure: Departure from normal	Temperature of the air: Mean max.+mean min.÷2	Temperature of the air: Departure from normal	Temperature of the air: Maximum	Temperature of the air: Date	Temperature of the air: Mean maximum	Temperature of the air: Minimum	Temperature of the air: Date	Temperature of the air: Mean minimum	Temperature of the air: Greatest daily range	Mean wet thermometer	Mean temperature of the dew-point	Mean relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Days with 0.01 inch, or more	Wind: Average hourly velocity	Wind: Prevailing direction	Wind: Maximum velocity: Miles per hour	Wind: Maximum velocity: Direction	Wind: Maximum velocity: Date	Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths	Total snowfall	Snow, sleet, and ice on ground at end of month
	Ft.	Ft.	Ft.	In.	In.	In.	°F.	°F.	°F		°F	°F		°F	°F.	°F.	°F.	%	In.	In.		Miles								0-10	In.	In.
Ohio Valley and Tennessee							**59.6**	**+2.2**										**76**	**1.56**	**−1.1**										**4.0**		
Chattanooga [1]	762	71	214	29.28	30.10	+0.01	60.7	------	87	6	77	38	10	44	44	51	48	82	2.52	−0.5	3	3.8	n.	21	s.	29	19	4	8	3.4	0.0	0.0
Knoxville [2]	995	66	84	29.05	30.11	+.02	61.3	+1.4	85	27	74	41	22	48	34	51	47	75	2.12	−.5	6	4.0	ne.	17	sw.	19	22	5	4	2.5	.0	.0
Memphis [2]	399	78	86	29.65	30.08	+.01	67.6	+4.3	85	19	78	44	16	58	30	55	51	76	1.69	−1.0	5	6.7	sw.	25	n.	15	20	8	3	2.9	.0	.0
Nashville [2]	546	167	187	29.50	30.09	+.01	63.9	+2.9	86	5	76	40	17	52	31	53	49	71	1.30	−1.2	5	6.5	w.	26	w.	19	18	9	4	2.7	.0	.0
Lexington	989	6	----	29.05	30.12	+.04	61.0	+3.6	87	11	76	32	17	46	41	----	----	---	.55	−2.0	7	------	------	----	------	---	21	6	4	2.8	----	----
Louisville [2]	525	106	120	29.52	30.08	.00	63.2	+3.9	86	13	75	38	17	52	30	51	46	70	.54	−2.1	6	7.3	sw.	26	sw.	6	18	9	4	3.1	.0	.0
Evansville [1]	431	76	116	29.61	30.07	−.01	61.0	+1.6	87	5	76	34	17	46	38	51	46	70	1.47	−1.4	8	6.4	sw.	26	n.	15	18	9	4	3.4	.0	.0
Indianapolis [2]	823	98	129	29.19	30.07	.00	60.5	+4.8	84	5	72	37	16	50	29	50	45	72	1.15	−1.6	10	6.9	sw.	30	nw.	14	14	8	9	4.3	.0	.0
Terre Haute	575	68	149	29.46	30.08	------	61.4	------	86	6	73	38	16	49	30	50	47	78	2.07	−.7	8	8.3	sw.	28	sw.	6	16	8	7	3.9	.0	.0
Cincinnati [2]	627	11	51	29.42	30.09	+.01	59.9	+4.2	87	13	72	36	17	48	33	49	46	78	.92	−1.6	6	6.1	sw.	22	sw.	14	14	10	7	4.4	.0	.0
Columbus	822	90	110	29.21	30.10	+.02	56.9	+1.7	83	6	67	34	20	47	30	47	43	76	1.38	−1.1	7	7.4	s.	28	sw.	14	11	13	7	4.7	.0	.0
Dayton	900	186	213	29.14	30.10	------	57.6	+2.6	83	6	68	36	20	47	33	48	44	74	2.29	−.3	7	8.2	sw.	33	sw.	7	12	12	7	4.5	.0	.0
Elkins [2]	1,947	61	78	28.06	30.13	+.03	52.2	−.1	82	14	64	27	21	40	41	45	43	87	2.86	.0	12	4.5	w.	22	w.	7	8	11	12	6.5	.6	.0
Parkersburg	637	77	84	29.41	30.10	+.02	56.4	+.3	84	14	68	30	21	45	33	49	46	78	1.59	−.9	7	4.8	se.	25	w.	17	13	11	7	4.3	.0	.0
Pittsburgh [1]	842	39	54	29.20	30.10	+.02	53.0	−2.7	82	6	63	25	20	43	34	46	41	73	.88	−1.6	10	9.0	nw.	25	nw.	30	8	8	15	6.2	T	.0
Lower Lake Region							**50.4**	**−1.6**										**79**	**1.90**	**−1.0**										**6.1**		
Buffalo [2]	768	243	279	29.26	30.10	+.05	49.0	−2.9	75	6	56	28	20	42	23	42	39	81	1.15	−2.1	11	11.8	nw.	45	w.	23	8	11	12	6.0	T	1.0
Canton	448	10	61	29.59	30.07	------	43.4	−3.8	76	7	54	17	29	33	37	39	35	79	1.85	−1.2	12	7.1	w.	30	w.	7	5	8	18	6.9	.2	.0
Ithaca	836	77	100	29.17	30.09	------	47.3	−3.8	79	7	58	19	29	36	35	----	----	---	1.87	−1.1	9	7.7	nw.	22	se.	23	5	11	15	6.6	T	.0
Oswego	335	71	85	29.71	30.08	+.03	48.5	−2.7	75	7	56	25	29	41	36	44	40	74	1.21	−2.1	11	8.6	n.	27	n.	15	8	12	11	6.2	T	.0
Rochester [2]	523	86	102	29.52	30.09	+.04	47.3	−4.2	78	6	58	20	29	37	35	42	39	81	1.52	−1.1	9	7.3	sw.	26	w.	23	7	11	13	6.1	0	.0
Syracuse [2]	596	65	79	29.43	30.09	+.03	47.3	−4.3	80	7	58	18	29	36	39	41	38	79	1.89	−.9	12	8.4	sw.	31	s.	14	4	11	16	6.9	.3	.0
Erie [2]	714	57	81	29.32	30.10	+.05	51.6	−1.8	80	6	59	28	20	44	30	44	42	83	2.12	−1.6	15	7.1	se.	20	s.	7	3	15	13	6.5	.3	.0
Cleveland [2]	762	267	318	29.26	30.09	+.03	54.0	+.4	82	6	60	30	20	48	28	46	42	76	1.39	−1.4	7	13.3	s.	43	nw.	17	5	11	15	6.2	T	.0
Sandusky	629	5	67	------	------	------	54.6	+.3	85	6	63	34	22	46	33	----	----	---	2.26	−.2	9	7.8	sw.	22	ne.	15	8	12	11	5.6	T	.0
Toledo [2]	628	79	87	29.40	30.10	+.05	54.4	+1.0	84	6	63	35	16	46	31	46	44	81	1.65	−.7	9	8.3	n.	27	nw.	7	13	11	7	4.5	0	.0
Fort Wayne [2]	857	69	84	29.16	30.09	------	55.8	+2.3	83	6	66	35	16	46	33	47	43	77	3.31	+.7	8	7.5	e.	27	sw.	6	11	9	11	5.3	0	.0
Detroit [1]	730	5	78	29.31	30.10	+.05	52.2	−.3	84	6	61	30	22	43	28	47	43	78	2.55	+.2	9	8.5	nw.	30	nw.	6	6	14	11	6.1	0	.0
Upper Lake Region							**50.7**	**+2.3**										**80**	**2.40**	**−0.3**										**6.3**		
Alpena	609	13	89	29.42	30.09	+.06	48.0	+.9	77	5	55	29	16	41	28	43	40	82	1.43	−1.3	9	10.1	nw.	32	e.	29	3	14	14	6.7	0	.0
Escanaba	612	51	72	------	30.08	+.07	48.6	+2.6	73	5	55	29	18	42	----	----	----	80	3.33	+.2	12	10.1	s.	25	s.	16	4	10	17	----	0	.0
Grand Rapids [2]	707	70	214	29.31	30.08	+.04	53.0	+1.8	78	5	62	34	18	44	29	45	42	82	2.79	.0	9	9.3	e.	37	sw.	12	11	12	8	5.5	0	.0
Lansing	878	5	90	29.14	30.10	------	50.3	.0	79	6	59	30	16	42	28	45	42	83	3.58	+1.1	8	7.3	nw.	24	nw.	6	6	16	9	5.7	T	.0
Marquette	734	44	73	29.24	30.05	+.04	48.5	+1.8	71	5	55	33	27	42	27	44	40	77	1.79	−1.0	16	8.0	w.	29	sw.	22	4	12	15	7.0	T	.0
Sault Sainte Marie [2]	614	11	52	29.40	30.08	+.07	45.4	+.8	70	5	52	24	21	39	27	40	38	84	2.31	−1.4	12	7.8	nw.	26	nw.	23	7	5	19	6.9	1.6	.0
Chicago	673	7	131	29.34	30.06	+.02	57.4	+3.4	83	5	65	42	16	50	27	51	47	73	3.26	+.7	8	9.5	ne.	32	ne.	14	9	12	10	5.6	.0	.0
Green Bay	617	109	141	29.39	30.06	+.04	51.5	+3.1	76	5	58	34	18	44	25	46	42	75	1.87	−.7	10	9.5	s.	23	sw.	5	6	8	17	7.0	.0	.0
Milwaukee [2]	681	126	221	29.32	30.07	+.04	55.3	+4.2	80	5	62	40	18	49	23	48	45	80	1.48	−.9	6	12.5	n.	34	se.	28	10	8	13	5.8	.0	.0
Duluth	1,133	5	47	28.79	30.02	+.02	48.8	+4.7	73	22	57	26	15	41	31	44	40	79	2.20	−.1	9	13.0	ne.	34	ne.	28	8	6	17	6.5	.0	.0
North Dakota							**50.7**	**+6.9**										**71**	**1.87**	**+0.6**										**5.6**		
Moorhead, Minn. [2]	940	50	58	28.94	29.97	−.03	52.0	+7.5	78	11	62	31	15	42	36	44	39	69	2.22	+.5	8	9.2	se.	31	se.	4	10	10	11	5.6	.0	.0
Bismarck	1,677	4	41	28.17	29.97	−.02	50.9	+6.0	78	11	64	25	17	38	43	44	39	73	1.38	+.4	7	9.6	nw.	38	w.	4	10	8	13	5.7	.0	.0
Devils Lake	1,478	11	44	28.38	29.97	−.02	49.1	+6.7	74	1	59	28	17	39	34	43	38	74	2.21	+1.0	9	8.8	se.	27	nw.	22	9	4	18	6.5	.0	.0
Lemmon, S. Dak.	2,602	4	38	27.24	29.96	------	52.4	------	83	21	65	28	29	40	41	44	38	---	1.95	------	5	------	------	----	------	---	----	----	----	----	----	----
Grand Forks	832	12	67	29.06	29.97	------	49.6	+6.0	76	1	60	25	17	39	36	44	40	---	2.27	+.9	7	------	------	----	------	---	7	5	19	----	.0	.0
Williston	1,878	42	50	27.96	29.95	−.03	51.9	+8.5	80	21	63	27	23	41	39	45	39	69	1.28	+.4	5	6.6	se.	24	nw.	4	16	6	9	4.5	.0	.0
Upper Mississippi Valley							**58.9**	**+5.6**										**72**	**2.25**	**−0.2**										**4.4**		
Minneapolis & St. Paul, Minn. [1]	919	32	61	29.01	30.00	−.01	54.0	+5.1	77	3	64	33	15	44	35	46	41	69	1.57	−.5	10	10.3	se.	30	s.	4	8	10	13	6.0	.0	.0
Springfield, Minn [1]	1,025	4	42	28.89	29.99	------	55.6	------	81	11	68	30	15	43	39	47	41	--	2.93	------	11	------	------	----	------	5	10	16	----	----	.0	.0
La Crosse [2]	714	11	48	29.26	30.03	+.01	54.0	+3.7	78	5	64	33	16	44	31	46	43	76	3.49	+1.2	10	4.8	s.	18	se.	28	10	7	14	5.6	.0	.0
Madison [2]	974	70	78	29.01	30.07	+.04	54.5	+4.2	78	5	62	34	16	46	28	46	43	79	2.78	+.4	6	7.8	se.	29	ne.	14	8	11	12	5.6	.0	.0
Charles City	1,015	10	51	28.95	30.04	+.02	54.7	+6.1	82	22	66	33	15	44	34	47	43	75	3.02	+.7	9	5.8	se.	19	n.	14	15	9	7	4.2	.0	.0
Davenport [2]	606	66	161	29.39	30.06	+.02	59.6	+5.9	85	5	70	39	16	49	35	49	45	75	2.10	−.3	6	8.5	sw.	24	se.	28	12	11	8	4.7	.0	.0
Des Moines [2]	860	5	99	29.08	30.00	−.03	60.0	+6.6	86	22	73	36	16	47	38	49	42	62	1.75	−.8	7	8.5	se.	27	n.	14	16	10	5	3.8	.0	.0
Dubuque	699	60	79	29.29	30.05	+.01	56.4	+4.5	81	12	67	35	16	46	33	49	44	72	2.71	+.2	7	5.2	se.	18	se.	28	11	9	11	5.8	.0	.0
Keokuk	614	64	78	29.40	30.05	.00	61.8	+6.4	85	5	72	38	16	51	32	50	46	75	3.14	+.9	7	6.3	sw.	26	nw.	29	16	10	5	3.5	.0	.0
Cairo	358	87	93	29.70	30.08	+.01	64.8	+4.4	86	13	76	41	17	53	32	----	----	---	.73	−2.0	5	6.7	s.	26	n.	15	19	6	6	3.4	.0	.0
Peoria [2]	609	11	45	29.40	30.06	+.01	59.0	+7.0	88	5	71	32	16	47	35	50	46	77	3.13	+.8	9	4.9	s.	24	w.	6	21	6	4	3.0	.0	.0
Springfield, Ill. [2]	636	5	191	29.38	30.06	+.01	62.6	+6.8	86	25	74	39	16	51	32	50	45	72	1.14	−1.4	9	10.7	s.	27	w.	6	17	3	11	4.3	.0	.0
St. Louis [5]	568	179	303	29.45	30.06	.00	65.6	+6.8	90	5	76	43	16	55	30	54	46	56	1.44	−1.3	5	10.9	sw.	30	sw.	6	21	4	6	2.9	.0	.0
Missouri Valley							**61.7**	**+7.5**										**65**	**1.79**	**−0.4**										**4.2**		
Columbia, Mo. [2]	784	6	66	29.21	30.05	.00	63.6	+7.0	90	5	77	33	16	50	35	53	47	67	2.60	.0	7	6.5	s.	22	sw.	6	17	6	8	3.7	.0	.0
Kansas City [1]	963	38	76	28.99	30.02	−.02	65.4	+7.7	89	21	78	35	16	53	35	55	48	62	1.68	−1.2	6	9.6	sw.	29	sw.	4	14	6	11	4.5	.0	.0
St. Joseph [2]	967	11	49	28.98	30.01	------	64.4	+8.4	88	5	76	39	15	52	37	52	48	75	1.06	−1.6	8	7.7	s.	28	nw.	14	18	5	8	3.7	.0	.0
Springfield, Mo. [1]	1,324	5	78	28.68	30.07	+.02	62.6	+4.4	84	5	75	34	16	50	35	52	48	72	2.14	−.9	7	9.7	s.	27	sw.	6	20	3	8	3.5	.0	.0
Topeka	987	65	87	28.96	30.00	------	65.2	+8.2	92	5	78	39	13	53	38	55	48	62	2.09	−.3	7	8.4	s.	25	s.	4	14	8	9	4.5	.0	.0
Lincoln [2]	1,105	11	81	28.72	29.98	−.05	62.9	+8.7	90	12	76	35	15	50	41	50	44	64	2.63	+.8	8	9.3	s.	30	nw.	6	15	8	8	4.3	.0	.0
Omaha [1]	982	31	44	28.82	30.00	−.03	61.2	+6.9	87	25	74	35	15	48	42	51	44	64	2.53	+.4	11	9.0	se.	29	se.	3	14	9	8	4.4	.0	.0
Valentine	2,598	46	54	27.26	29.98	−.03	56.3	+7.0	87	21	71	31	17	41	40	46	38	60	.62	−.5	4	8.7	w.	30	nw.	13	14	13	4	4.0	.0	.0
Sioux City [2]	1,138	64	106	28.77	29.99	−.03	59.6	+8.7	84	26	72	31	15	47	38	49	43	66	2.13	+.4	8	8.8	s.	28	se.	3	14	8	9	4.5	.0	.0
Huron [1]	1,301	26	41	28.57	29.96	−.05	55.7	+8.0	83	11	70	28	17	42	42	46	38	60	.44	−.8	5	12.8	s.	41	s.	27	11	9	11	5.1	.0	.0
Northern Slope							**51.3**	**+6.2**										**65**	**1.01**	**0.0**										**5.5**		
Billings [1]	3,570	18	39	26.32	29.97	------	53.2	------	80	19	64	32	27	42	33	45	37	59	2.47	------	9	10.2	sw.	33	nw.	18	7	10	14	6.1	.1	.0
Havre	2,507	11	67	27.33	29.96	−.02	52.0	+7.5	82	19	64	28	14	40	39	44	37	74	2.30	+1.6	6	8.5	sw.	32	w.	18	11	10	10	5.1	.7	.0
Helena [1]	4,124	85	111	25.82	30.03	.00	49.4	+4.5	75	19	61	28	30	38	39	43	37	67	.42	−.5	5	6.9	w.	29	w.	21	7	5	19	7.0	T	.0
Missoula [2]	3,263	80	91	26.66	30.04	------	50.6	+5.8	73	19	61	33	22	40	36	45	41	76	.83	−.4	12	5.2	se.	23	ne.	14	6	9	16	7.0	.0	.0
Kalispell	2,973	48	56	26.96	30.02	+.01	48.4	+4.9	73	18	58	32	22	39	31	44	40	75	1.05	.0	13	4.9	w.	17	w.	18	3	7	21	7.6	.0	.0
Miles City [2]	2,371	48	55	27.48	29.97	−.03	53.8	+7.3	80	19	65	31	29	42	35	46	42	72	2.36	+1.5	8	5.4	s.	23	w.	4	8	9	14	6.0	.0	.0
Rapid City [2]	3,259	50	58	26.62	29.98	−.03	56.0	+7.5	81	20	68	30	31	44	36	44	35	56	.74	−.2	4	7.1	w.	29	n.	13	17	9	5	3.6	.0	.0
Cheyenne [1]	6,094	5	39	24.06	30.01	.00	50.2	+5.4	75	18	64	25	29	36	42	40	32	56	.24	−.7	3	10.3	nw.	40	w.	4	10	12	9	5.2	1.5	.0
Lander	5,352	60	68	24.69	29.99	−.05	50.0	+6.5	77	18	64	22	31	36	42	41	33	59	.32	−1.0	3	4.4	sw.	28	w.	27	12	11	8	4.6	.0	.0
Sheridan [6]	3,790	10	47	26.12	30.00	------	51.5	------	82	20	66	27	29	37	45	45	37	68	.83	−.2	8	4.1	s.	24	nw.	3	9	11	11	5.8	.0	.0
Yellowstone Park	6,241	12	46	23.95	30.12	+.10	45.2	+5.5	70	19	57	27	5	34	34	38	32	66	.49	−.9	6	7.8	sw.	24	sw.	24	8	8	15	6.0	.1	.1
North Platte [5]	2,821	11	51	27.06	29.98	−.04	57.2	+7.5	86	24	73	30	15	42	48	45	39	67	1.56	+.5	2	6.9	s.	30	n.	14	20	10	1	2.4	.0	.0

See footnotes at end of table.

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS

District and station	Elevation of instruments: Barometer above sea level	Elevation of instruments: Thermometer above ground	Elevation of instruments: Anemometer above ground	Pressure: Station, reduced to mean of 24 hours	Pressure: Sea level, reduced to mean of 24 hours	Pressure: Departure from normal	Temperature of the air: Mean max.+mean min.÷2	Temperature of the air: Departure from normal	Temperature of the air: Maximum	Temperature of the air: Date	Temperature of the air: Mean maximum	Temperature of the air: Minimum	Temperature of the air: Date	Temperature of the air: Mean minimum	Temperature of the air: Greatest daily range	Mean wet thermometer	Mean temperature of the dew-point	Mean relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Days with 0.01 inch, or more	Wind: Average hourly velocity	Wind: Prevailing direction	Wind: Maximum velocity: Miles per hour	Wind: Maximum velocity: Direction	Wind: Maximum velocity: Date	Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths	Total snowfall	Snow, sleet, and ice on ground at end of month
	Ft.	Ft.	Ft.	In.	In.	In.	°F.	°F.	°F		°F	°F		°F	°F.	°F.	°F.	%	In.	In.		Miles								0-10	In.	In.
Middle Slope							62.1	+6.2										57	0.88	−0.8										3.4		
Denver [2]	5,292	106	113	24.79	30.01	.00	55.8	+4.6	80	3	68	35	29	44	34	42	32	50	.48	−.6	2	6.6	s.	22	w.	27	18	12	1	3.0	.0	.0
Pueblo [1]	4,690	79	86	25.33	29.99	.00	56.2	+4.2	85	21	74	26	29	39	46	43	33	50	.36	−.3	2	7.6	nw.	40	n.	14	15	12	4	3.8	.0	.0
Concordia	1,392	50	58	28.53	29.99	−.04	63.6	+7.7	90	5	76	36	15	51	39	53	46	61	1.56	−.4	8	8.0	sw.	26	n.	14	15	10	6	4.0	.0	.0
Dodge City	2,509	10	86	27.40	29.98	−.04	63.4	+7.3	89	18	78	31	15	49	39	52	45	59	.12	−1.2	3	11.9	s.	34	se.	9	18	10	3	3.3	.0	.0
Wichita [2]	1,358	85	93	28.58	30.01	−.02	65.8	+7.2	87	5	78	37	15	54	34	54	47	61	1.05	−1.5	9	10.2	s.	27	s.	3	19	7	5	3.0	.0	.0
Oklahoma City [2]	1,214	10	47	28.76	30.03	.00	68.0	+6.5	88	23	80	40	15	56	37	55	48	59	1.72	−1.1	6	9.0	s.	25	sw.	18	15	12	4	3.2	.0	.0
Chadron	3,439	5	44	26.47	29.98	------	57.2	------	84	21	71	32	31	44	42	45	35	---	.64	------	4	------	------	---	------	---	---	---	---	---	---	---
Southern Slope							66.8	+3.6										57	0.68	−1.2										4.0		
Abiline [2]	1,738	10	56	28.23	30.02	+.01	69.2	+3.8	93	19	82	37	16	56	44	56	48	59	.65	−1.8	2	9.6	s.	24	s.	27	14	10	7	4.1	.0	.0
Amarillo [2]	3,676	10	49	26.31	30.00	.00	64.8	+7.1	89	9	78	37	15	51	40	49	41	55	.29	−1.4	2	9.6	s.	29	sw.	28	23	8	0	2.5	.0	.0
Del Rio	960	63	71	29.01	29.99	+.01	70.8	+.8	89	6	81	44	16	60	37	61	54	61	.79	−1.0	6	8.8	se.	23	nw.	31	7	15	9	6.0	.0	.0
Roswell	3,566	75	85	26.41	29.99	+.03	62.2	+2.7	90	5	76	37	16	48	44	50	40	53	.97	−.4	3	7.4	s.	27	sw.	27	17	10	4	3.3	.0	.0
Southern Plateau							64.7	+2.7										51	0.60	0.0										3.1		
El Paso [2]	3,778	82	101	26.22	29.96	+.04	66.0	+2.5	89	5	78	42	29	54	34	52	41	49	.82	.0	6	7.0	e.	23	ne.	10	20	8	3	2.7	.0	.0
Albuquerque [1]	4,972	5	34	25.11	29.97	------	58.8	+2.2	80	19	72	31	29	45	36	46	35	47	.36	−.4	6	7.9	se.	32	se.	10	13	11	7	3.8	.0	.0
Santa Fe	7,013	38	53	23.34	30.03	+.07	53.6	+3.2	75	19	66	29	29	42	32	43	34	56	.50	−.7	5	5.7	e.	20	w.	10	15	10	6	4.0	.0	.0
Flagstaff	6,907	10	59	------	------	------	------	------	---	---	---	---	---	---	---	---	---	---	------	------	---	------	------	---	------	---	---	---	---	---	---	---
Phoenix [2]	1,107	39	81	28.76	29.89	+.01	73.5	+2.9	96	19	87	47	28	60	37	58	49	52	1.30	+.8	4	4.9	e.	33	w.	4	20	3	8	4.9	.0	.0
Yuma	142	9	54	29.75	29.89	+.02	75.6	+2.3	98	17	90	48	30	62	34	61	51	49	.41	+.2	2	4.5	ne.	23	w.	25	27	2	2	1.5	.0	.0
Independence	3,957	5	26	25.98	29.99	+.04	60.7	+3.2	86	13	76	32	27	45	40	45	28	---	.22	−.1	1	4.2	s.	---	------	---	---	---	---	1.8	.0	.0
Middle Plateau							54.4	+4.0										54	1.33	+0.5										4.1		
Reno [2]	4,527	61	76	25.49	30.02	+.03	54.7	+3.9	82	14	68	31	30	41	41	43	33	57	.48	+.1	6	5.5	w.	25	w.	2	10	11	10	5.2	.0	.0
Tonopah	6,090	12	20	24.09	30.00	------	55.0	------	76	14	65	29	28	45	30	42	32	---	1.16	------	5	------	se.	---	------	---	---	---	---	2.7	4.0	.0
Winnemucca	4,344	18	56	25.63	30.01	−.04	52.9	+4.6	83	15	69	26	5	36	51	42	30	49	1.73	+1.1	6	6.9	sw.	24	sw.	24	9	9	13	5.5	.0	.0
Modena	5,473	10	46	------	30.00	+.04	51.2	+3.2	79	15	68	25	31	34	45	---	---	---	.93	+.2	4	9.3	w.	50	sw.	26	18	4	9	3.9	1.8	.0
Salt Lake City [2]	4,357	86	210	25.65	30.02	+.01	57.4	+4.9	82	17	69	37	29	46	33	46	38	56	2.11	+.7	8	6.6	s.	25	se.	2	16	7	8	4.0	.0	.0
Grand Junction	4,602	60	68	25.45	30.02	+.03	56.0	+3.2	78	19	68	34	31	44	33	46	37	54	1.41	+.5	5	5.3	se.	27	w.	3	18	8	5	3.3	.0	.0
Northern Plateau							53.6	+4.0										70	1.98	+0.9										6.5		
Baker [2]	3,471	36	54	26.46	30.04	+.04	50.0	+3.4	78	18	61	31	28	39	34	43	39	78	2.68	+1.8	10	5.5	s.	17	sw.	24	5	7	19	6.9	.0	.0
Boise [1]	2,739	5	49	27.18	30.01	+.05	54.4	+3.3	78	12	66	30	28	43	34	48	42	67	1.82	+.6	10	8.7	se.	32	e.	26	9	9	13	5.7	.0	.0
Pocatello [1]	4,477	5	31	25.52	30.04	.00	51.2	+2.8	78	17	65	31	5	38	42	43	37	64	1.64	+.5	5	7.6	sw.	33	sw.	2	12	6	13	5.3	.0	.0
Spokane [2]	1,929	101	110	27.97	30.00	−.06	53.0	+4.7	77	20	61	36	22	44	26	48	45	78	2.47	+1.3	15	6.0	s.	21	s.	1	2	9	20	7.5	.0	.0
Walla Walla	991	57	65	28.92	30.00	−.07	57.9	+4.4	86	18	67	42	22	49	32	---	---	---	2.42	+.9	12	5.0	s.	24	sw.	30	6	6	19	7.1	.0	.0
Yakima	1,076	58	67	28.84	29.99	------	55.4	+5.2	83	18	66	33	31	45	29	49	42	65	.85	+.2	9	4.5	nw.	18	nw.	30	5	11	15	6.6	.0	.0
North Pacific Coast Region							57.0	+4.6										81	5.95	+2.2										7.8		
North Head	211	5	56	29.74	29.96	−.09	57.0	+4.1	70	5	62	46	26	52	20	55	53	88	10.18	+5.2	21	14.9	s.	50	s.	23	2	13	16	7.6	.0	.0
Seattle [2]	125	90	321	29.84	29.98	−.07	57.1	+5.7	75	6	63	40	27	51	24	52	50	82	4.70	+1.9	20	8.2	se.	29	sw.	20	2	7	22	8.0	.0	.0
Tacoma	194	172	201	29.77	29.98	−.08	55.8	+5.3	75	6	62	37	27	50	25	---	---	---	5.10	+1.8	19	6.3	s.	24	s.	10	1	8	22	8.4	.0	.0
Tatoosh Island	86	9	61	29.85	29.94	−.07	55.6	+5.7	65	18	60	57	31	52	15	53	51	86	11.86	+3.7	22	15.4	e.	51	s.	17	3	8	20	7.6	.0	.0
Medford	1,329	29	58	28.61	30.02	------	55.8	+2.1	86	17	68	31	27	44	42	50	45	73	2.06	+.7	9	------	nw.	---	------	---	5	8	18	7.3	.0	.0
Portland, Oreg. [2]	154	68	106	29.82	29.99	−.07	58.6	+4.4	80	18	66	41	27	52	27	54	52	83	4.26	+1.1	18	5.3	se.	20	s.	30	1	6	24	8.4	.0	.0
Roseburg	510	45	76	29.45	30.00	−.08	59.0	+5.1	89	19	70	38	27	48	39	53	48	72	3.50	+.9	11	3.3	nw.	17	n.	2	1	13	17	7.4	.0	.0
Middle Pacific Coast Region							62.0	+1.7										68	2.29	+0.7										5.6		
Eureka	60	72	88	29.98	30.05	−.01	56.7	+3.1	72	19	62	43	26	51	23	54	53	85	4.03	+1.7	11	5.8	se.	25	sw.	24	4	14	13	6.8	.0	.0
Redding [1]	722	20	34	29.21	29.98	------	64.4	+.1	92	10	74	44	3	55	31	53	42	50	3.15	+1.1	7	6.8	nw.	28	sw.	24	10	3	18	6.4	.0	.0
Sacramento [2]	66	92	115	29.91	29.98	+.01	64.7	+1.8	90	12	77	43	27	53	35	54	46	58	.93	.0	3	5.7	s.	18	se.	24	17	3	11	4.3	.0	.0
San Francisco	155	112	132	29.84	30.00	+.01	62.3	+1.8	84	11	69	51	15	56	27	56	53	79	1.05	−.1	4	7.4	w.	23	w.	1	13	8	10	4.9	.0	.0
South Pacific Coast Region							66.6	+2.3										65	1.17	+0.6										3.6		
Fresno [1]	327	89	98	29.64	29.99	+.03	65.1	+1.1	91	12	79	41	27	51	41	55	46	57	.55	.0	3	4.5	nw.	20	nw.	2	17	6	8	3.9	.0	.0
Los Angeles	338	223	250	29.60	29.96	+.01	68.3	+3.0	99	19	79	49	27	58	31	58	52	63	1.47	+.8	3	6.3	w.	22	sw.	26	19	11	1	2.9	.0	.0
San Diego [1]	87	62	70	29.86	29.95	.00	66.4	+2.7	91	18	75	49	28	58	29	60	56	75	1.50	+1.0	4	6.3	w.	19	n.	27	15	10	6	3.9	.0	.0
West Indies																																
San Juan, P. R.	82	10	54	29.83	29.91	------	81.3	+1.5	92	26	87	74	23	76	16	---	---	---	2.75	−3.1	18	7.2	s.	24	e.	4	4	18	9	6.2	.0	.0
Panama Canal																																
Balboa Heights	118	6	92	------	[3]29.83	+.01	80.2	+1.0	90	16	86	71	12	74	17	---	---	[3]88	6.43	−3.7	25	6.1	nw.	23	s.	7	0	17	14	7.4	.0	.0
Cristobal	36	6	97	------	[3]29.83	.00	81.0	+1.2	90	24	86	74	20	76	14	76	74	[3]85	16.28	+.8	26	7.2	s.	27	w.	18	0	1	30	9.3	.0	.0
Alaska																																
Fairbanks	454	11	87	[4]29.12	[4]29.65	------	29.4	+3.1	55	1	37	8	12	22	27	29	24	77	.53	−.2	8	4.6	e.	20	e.	27	2	7	22	8.0	6.1	.4
Juneau	80	96	116	[4]29.64	[4]29.72	------	45.8	+2.6	58	19	50	32	31	41	16	43	40	80	9.67	−1.2	23	7.0	s.	30	e.	20	0	1	30	9.6	.0	.0
Nome	22	5	59	------	------	------	30.4	+1.4	46	1	36	12	20	25	20	29	25	75	.37	−1.0	8	9.7	n.	33	n.	27	6	8	17	7.0	1.7	.1
Hawaiian Islands																																
Honolulu	38	86	100	29.92	29.96	------	78.6	+1.8	87	3	83	70	2	---	74	14	68	71	.85	−.7	14	8.5	e.	29	e.	31	10	15	6	5.1	.0	.0

[1] Data are airport records.
[2] Barometric and hygrometric data from airport; other data city office records.
[3] Observations taken bihourly.
[4] Pressure not reduced to mean of 24 hours.
[5] Barometric, hygrometric, and temperature records from airport; other data from city office records.
[6] Wind, and clear, partly cloudy, and cloudy data, from city records; other data from airport records.
[7] Effective Oct. 14, 1940, the Portland, Oreg., airport station was moved from Swan Island airport to the Portland-Columbia airport.

NOTE.—Except as indicated by notes 1, 2, 5, and 6 data in table are city office records.

SEVERE LOCAL STORMS

[Compiled by Mary O. Souder from reports submitted by Weather Bureau officials]

[The table herewith contains such data as has been received concerning severe local storms that occurred during the month. A revised list of tornadoes will appear in the United States Meteorological Yearbook]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
Union County, N. Mex., northern portion.	1-3				$70,000	Severe rains	Considerable damage to buildings, fences, highways, bridges, and spreader dams. Loss in unthrashed alfalfa seed, $10,000; and to prospective crops, $8,000.
Clearmont, Wyo	3				25,000	Hail	Loss to crops, $10,000.
Meredosia, Ill	6				8,000	do	Property damaged.
South Holland, Ill., vicinity of.	6				170,000	Wind	Property damage, $150,000; loss to crops, $20,000. This storm covered an area of 4 miles to southwest and northeast.
El Paso, Tex.[2]	13	P. m.		0		Tornado, rain, and hail.	Funnel-cloud observed. Rain recorded at the city office of the Weather Bureau during the 24 hours ending 7 p. m. There was a brisk spatter of hail in the Country Club district and some other areas about noon.
Holdenville, Okla	28	8:12 a. m.	100	0	10,000	Tornado	Storm moved from southwest to northeast. Many homes and commercial establishments damaged. Trees blown down; communication lines disrupted. Slight crop loss due to the fact the tornado did not strike in the rural districts. A person injured; path 880 yards long.
Marshalltown, Iowa	28				1,000	Wind	Property damaged.
Lynn to Lubbock Counties, Tex.	30	2 p. m.	[1] 3		107,000	Heavy hail	This storm covered an area 3 by 25 miles along the northern edge of Lynn County and extending into extreme southeastern Lubbock County caused property damage of $85,000, and crop loss of $22,000. Most of the crop damage occurred in the vicinity of Slaton, Lubbock County.
Chambers, Hardin, Harris, Jefferson, Liberty, and Orange Counties, Tex.	31	11:30 a. m.	[1] 75	1	134,000	Straight-line-wind	Widespread damage. A man killed when blown from top of an oil derrick. Crop loss, $13,000; property damage, $121,000.
Fredericksburg, Tex., vicinity of.	31			0		Tornado	4 houses wrecked.

[1] Miles instead of yards.

[2] From press reports.

SOLAR RADIATION AND SUNSPOT DATA

SOLAR RADIATION OBSERVATIONS

By HELEN CULLINANE

Measurements of solar radiant energy received at the surface of the earth are made at 9 stations maintained by the Weather Bureau, and at 10 cooperating stations maintained by other institutions. The intensity of the total radiation from sun and sky on a horizontal surface is continuously recorded (from sunrise to sunset) at all these stations by self-registering instruments; pyrheliometric measurements of the intensity of direct solar radiation at normal incidence are made at frequent intervals on clear days at three Weather Bureau stations (Washington D. C., Madison, Wis., Lincoln, Nebr.) and at the Blue Hill Observatory at Harvard University. Occasional observations of sky polarization are taken at the Weather Bureau stations at Washington and Madison.

The geographic coordinates of the stations, and descriptions of the instrumental equipment, station exposures, and methods of observation, together with summaries of the data obtained, up to the end of 1936, will be found in the MONTHLY WEATHER REVIEW, December 1937, pp. 415 to 441; further descriptions of instruments and methods are given in Weather Bureau Circular Q.

Table 1 contains the measurements of the intensity of direct solar radiation at normal incidence, with means and their departures from normal (means based on less than 3 values are in parentheses). At Lincoln the observations are made with the Marvin pyrheliometer; at Washington, Madison, and Blue Hill they are obtained with a recording thermopile, checked by observations with a Smithsonian silver-disk pyrheliometer at Washington and Blue Hill. The table also gives vapor pressures at 7:30 a. m. and at 1:30 p. m. (75th meridian time).

Table 2 contains the average amounts of radiation received daily on a horizontal surface from both sun and sky during each week, their departures from normal and the accumulated departures since the beginning of the year. The values at most of the stations are obtained from the records of the Eppley pyrheliometer recording on either a microammeter or a potentiometer.

Owing to the transfer of the Solar Radiation Investigations Supervising Station from Washington, D. C., to Blue Hill Observatory at Milton, Mass., early in November, about which details will appear in the next issue of the REVIEW, the data for both September and October are combined in this issue.

It will be noted that measurement of normal incidence solar radiation intensities for Washington, D. C., was abandoned after September, due to the transfer mentioned above.

Direct solar radiant energy was considerably above normal at Blue Hill in October, while it was below normal during September at Madison, Blue Hill, and Washington.

During September total solar and sky radiation was considerably below normal at Miami and Lincoln, practically normal at Blue Hill, and excessive at all other stations. During October it was normal at La Jolla and Miami, and considerably excessive at Chicago, New York, and New Orleans. The equipment was broken down at Friday Harbor during September and at Lincoln during October, but has now been repaired at both stations.

Polarization observations made at Madison on 6 days give a mean of 55 percent for September, with a maximum of 71 percent on the 25th. The mean is somewhat below the September normal. Observations on 4 days in October, give a mean of 59 and a maximum of 70 on the 15th.

TABLE 1.—*Solar radiation intensities during September 1940*

[Gram=calories per minute per square centimeter of normal surface]

WASHINGTON, D. C.

Date	Sun's zenith distance										
	7:30 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70 7°	75.7°	78.7°	1:30 p. m.
	75th mer. time	Air mass									Local mean solar time
		A. M.				P. M.					
	e	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0	e
	Mm.	*Cal.*	*Cal.*	*Cal.*	*Cal.*	*Cal.*	*Cal.*	*Cal.*	*Cal.*	*Cal.*	*Mm.*
Sept. 17				0.66	0.77						
Sept. 18					.84						
Sept. 20					.74						
Sept. 22					.89						
Sept. 26						1.44					
Sept. 27					1.07	1.42					
Sept. 28					.99						
Means				(.66)	.90	(1.43)					
Departures				−.21	−.14	+.11					