SOLAR OBSERVATIONS

SOLAR RADIATION MEASUREMENTS DURING FEBRUARY 1935

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For a description of instruments employed and their exposures, the reader is referred to the January 1935, REVIEW, page 24.

Table 1 shows that solar radiation intensities averaged above normal for February at Washington and Madison and close to normal at Lincoln.

Table 2 shows in general an excess in the amount of total solar and sky radiation received on a horizontal surface on the Atlantic seaboard, the South and the far West, and a deficiency in the interior of this country and in Alaska. The regular publication of data from Cornell University begins with this issue. Some back data from this same station, and also from Mount Washington, are tabulated in table 2–A.

Table 3 shows low water-vapor content of the atmosphere on clear days at Washington with the exception of the 27th, when a sudden increase in water-vapor, markedly shown by the turbidity measurements, brought clouds at noon. There will be a short break in this type of measurement at Washington until the receipt and installation of a new multiple potentiometer, which, with other refinements in apparatus, should give better readings.

No polarization readings were obtained at Madison on account of continual snow and ice cover, and only one reading obtained at Washington—56 percent on the 18th. This is close to the November normal but considerably below the average maximum.

TABLE 1.—*Solar radiation intensities during February 1935*

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

WASHINGTON, D. C.

Date	Sun's zenith distance										
	8 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	Noon
	75th mer. time	Air mass									Local mean solar time
		A. M.					P. M.				
	e	5.0	4.0	3.0	2.0	[1] 1.0	2.0	3.0	4.0	5.0	e
	mm.	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mm.*
Feb. 1	1.19	------	0.79	0.99	1.09	------	------	------	------	------	1.02
Feb. 18	2.87	0.72	.83	.97	1.18	------	------	------	------	------	2.74
Feb. 19	3.81	------	------	------	------	------	1.35	------	------	------	2.62
Feb. 21	1.68	.91	1.04	1.18	1.33	------	------	------	------	------	2.13
Feb. 25	3.81	------	.92	------	------	------	------	------	------	------	4.57
Feb. 27	1.32	.75	1.04	1.06	1.36	1.66	1.38	1.16	------	------	1.24
Feb. 28	1.32	------	------	------	------	1.54	------	------	------	------	1.78
Means	------	.79	.92	1.05	1.24	(1.60)	(1.36)	(1.16)	------	------	------
Departures	------	+.06	+.09	+.04	+.04	+.04	+.16	+.16	------	------	------

[1] Extrapolated.

TABLE 1.—*Solar radiation intensities during February 1935*—Contd.

MADISON, WIS.

Date	Sun's zenith distance										
	8 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	Noon
	75th mer. time	Air mass									Local mean solar time
		A. M.					P. M.				
	e	5.0	4.0	3.0	2.0	[1] 1.0	2.0	3.0	4.0	5.0	e
	mm.	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mm.*
Feb. 19	3.15	.90	1.11	1.24	1.44	1.69	1.40	------	------	------	2.87
Feb. 20	2.26	1.00	1.19	1.33	1.49	1.58	1.44	------	------	------	1.68
Feb. 26	.74	------	------	1.33	1.49	1.62	1.52	------	------	------	1.19
Feb. 27	.81	------	------	------	------	1.60	------	------	------	------	1.32
Feb. 28	2.24	------	------	1.28	------	------	------	------	------	------	1.78
Means	------	(.95)	(1.15)	1.30	1.47	1.62	1.44	------	------	------	------
Departures	------	+.02	+.07	+.10	+.11	+.04	+.08	------	------	------	------

LINCOLN, NEBR.

Feb. 1	3.15	------	------	------	------	------	1.34	1.22	1.13	0.97	3.45
Feb. 2	2.74	0.83	1.03	1.17	1.48	------	------	------	------	------	2.87
Feb. 4	3.15	------	------	------	1.41	------	1.39	1.19	------	------	3.15
Feb. 11	3.45	.85	.99	1.11	1.42	------	1.40	1.22	1.08	.94	3.81
Feb. 12	3.98	------	.82	.99	1.24	------	------	1.08	.95	.82	4.57
Feb. 19	4.16	------	------	------	------	------	------	------	1.11	1.00	5.16
Feb. 20	2.49	1.04	1.12	1.24	1.42	------	------	------	------	------	2.49
Feb. 21	3.81	------	------	------	------	------	------	.88	.68	.54	4.75
Feb. 25	1.12	------	------	------	------	------	------	1.27	1.16	1.02	1.07
Feb. 26	1.12	1.00	1.11	1.26	1.46	------	1.45	1.23	1.15	1.04	3.45
Feb. 27	1.60	.96	1.07	1.24	1.43	------	1.34	1.10	.96	.88	3.81
Means	------	.94	1.02	1.17	1.41	------	1.38	1.15	1.03	.90	------
Departures	------	+.01	+.01	−.01	+.04	------	+.03	−.01	+.01	−.01	------

BLUE HILL, MASS.

Feb. 1	0.6	------	1.04	1.26	1.41	------	1.45	1.34	1.17	------	0.6
Feb. 6	.8	------	1.09	1.21	1.29	------	1.26	1.11	1.06	------	.9
Feb. 7	1.0	------	1.12	1.21	1.46	------	1.44	1.31	1.20	1.10	.7
Feb. 11	2.4	------	------	1.15	1.30	------	1.35	1.16	------	------	2.5
Feb. 12	1.0	------	------	1.23	1.44	------	------	------	------	------	.6
Feb. 13	2.2	------	------	.80	1.08	------	1.09	------	------	------	2.3
Feb. 15	4.4	------	------	------	1.24	------	------	------	------	------	4.6
Feb. 16	------	------	------	.80	------	------	------	------	------	------	------
Feb. 18	2.2	------	------	1.15	1.29	------	1.11	.85	------	------	2.2
Feb. 20	2.6	------	------	.94	1.18	------	1.13	------	------	------	2.4
Feb. 21	1.4	0.94	1.06	1.20	1.36	1.55	1.30	------	------	------	1.4
Feb. 22	------	------	------	------	------	------	1.26	------	------	------	------
Feb. 24	3.0	------	------	------	1.20	------	------	------	------	------	2.6
Feb. 25	------	------	------	------	1.03	------	------	------	------	------	------
Feb. 27	1.8	------	------	------	------	------	1.30	------	------	------	1.6
Feb. 28	1.1	------	------	------	------	------	1.09	------	------	------	1.2
Means	------	0.94	1.08	1.10	1.27	1.55	1.25	1.15	1.14	1.10	------

TABLE 2.—*Average daily totals of solar radiation (direct diffuse) received on a horizontal surface*

Week beginning—	Washington	Madison	Lincoln	Chicago	New York	Fresno	Fairbanks	Miami	New Orleans	Riverside	Blue Hill	Mount Washington	Friday Harbor	Ithaca
	Gram-calories per square centimeter													
1935	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*
Jan. 29	287	148	195	103	202	95	37	362	270	251	224	118	100	200
Feb. 5	244	140	344	80	158	208	30	376	208	237	247	229	207	182
Feb. 12	186	105	192	82	165	294	54	333	206	361	260	174	144	134
Feb. 19	315	228	297	167	185	367	100	411	317	400	305	122	203	193
	Departures from weekly normals													
Jan. 29	+82	−38	−28	−13	+53	−127	+6	+12	+47	−25	----	----	----	----
Feb. 5	+33	−65	+82	−51	+2	−52	−11	+16	−2	−55	----	----	----	----
Feb. 12	−39	−118	−81	−61	−7	−14	−6	−35	−12	+15	----	----	----	----
Feb. 19	+53	−25	−1	−15	−9	+19	−8	+39	+74	+96	----	----	----	----
	Accumulated departures on Feb. 25													
	+1666	−2177	−357	−763	+616	−602	−196	+630	+1617	−518	----	----	----	----

TABLE 2-A.—*Late data.—Average daily totals of solar radiation (direct+diffuse) received on a horizontal surface*

[Gram-calories per square centimeter]

Week beginning—	Mount Washington	Ithaca	Week beginning—	Mount Washington	Ithaca
1934	*Gr. cal.*	*Gr. cal.*	1934	*gr. cal.*	*gr. cal.*
Oct. 1	----	309	Dec. 3	121	79
Oct. 8	----	301	Dec. 10	138	82
Oct. 15	----	180	Dec. 17	88	85
Oct. 22	----	136	Dec. 24 [1]	85	115
Oct. 29	81	177			
Nov. 5	122	78	1935		
Nov. 12	148	111	Jan. 1	88	128
Nov. 19	122	89	Jan. 8	77	75
Nov. 26	74	64	Jan. 15	101	93
			Jan. 22	94	168

[1] 8-day mean.

TABLE 3.—*Total, I_m and screened, I_y, I_r, solar radiation intensity measurements, obtained during February 1935 and determinations of the atmospheric turbidity factor, β, and water-vapor content, w=depth in millimeters, if precipitated*

AMERICAN UNIVERSITY, WASHINGTON, D. C.

Date and hour angle	Solar altitude	Air mass	I_m	I_y	I_r	β_{I_m-r}	β_{I_y-r}	β_{mean}	$\frac{I_{w=0}}{1.94}$ (Percentage of solar constant)	$\frac{I_{w=0}-I_m}{1.94}$ (Percentage of solar constant)	w	Air-mass type
Feb. 1, 1935	° ′	*m*	*gr. cal.*	*gr. cal.*	*gr. cal.*						*mm*	
2:45 a. m.	21 52	2.67	0.988	0.752	0.659	0.104	0.138	0.121	53.9	2.6	0.3	Pc
2:01 a. m.	27 08	2.19	.977	.697	.576	.100	.146	.123	53.6	3.5	.6	
Feb. 18												
3:45 a. m.	17 11	3.35	.920	.716	.595	.078	.082	.080	55.7	7.5	1.5	[1] NPc
Feb. 21												
3:40 a. m.	18 47	3.08	1.148	.838	.712	.048	.088	.068	61.2	2.7	.3	Pc
3:31 a. m.	19 35	2.96	1.169	.839	.714	.042	.098	.070	61.8	2.4	.3	
Feb. 25												
4:13 a. m.	14 11	4.02	.916	.695	.581	.054	.068	.061	57.2	10.2	3.9	NPc
Feb. 27												
4:12 a. m.	14 52	3.85	1.149	.783	.632	.028	.038	.033	64.8	6.2	.7	Pc
3:24 a. m.	23 00	2.55	1.165	.917	.760	.082	.070	.076	63.0	3.8	.8	
3:20 a. m.	23 39	2.49	1.170	.919	.762	.087	.071	.079	63.0	3.5	.9	
2:41 a. m.	29 38	2.02	1.343	1.022	.805	.046	.016	.031	78.8	9.8	6.6	
2:37 a. m.	30 11	1.98	1.360	1.024	.807	.044	.016	.030	79.8	9.4	5.8	
0:49 a. m.	41 14	1.52	1.490	1.078	.850	.014	.014	.014	86.8	10.7	13.2	
0:44 a. m.	41 31	1.51	1.510	1.080	.852	.012	.014	.013	86.9	10.1	10.1	

Atmospheric conditions during turbidity measurements

Feb. 1: Temperature, −8° C.; wind, S. 8; no polarization measurements because of snow cover.
Feb. 18: Temperature, 2° C.; wind, SW. 12; polarization, 56 percent; blueness of sky, 6.
Feb. 21: Temperature, −2° C.; wind, NW. 12; no polarization, snow cover.
Feb. 25: Temperature, 1° C.; wind, S. 10; no polarization, light snow.
Feb. 27: Temperature, −6° C.; wind, NW. 14; no polarization, snow.

[1] Air mass changed to NPp about noon.

TABLE 3.—*Total, I_m, and screened, I_y, I_r, solar radiation intensity measurements, obtained during February 1935, and determinations of the atmospheric turbidity factor, β, and water-vapor content, w=depth in millimeters, if precipitated*—Continued

BLUE HILL METEOROLOGICAL OBSERVATORY OF HARVARD UNIVERSITY

Date and hour angle	Solar altitude	Air mass	I_m	I_y	I_r	$\beta_{I_{m-r}}$	$\beta_{I_{y-r}}$	β_{mean}	$\frac{I_{m-r}}{1.94}$	$\frac{I_{y-0_m}I_m}{1.94}$	w	Air-mass type
									Percentage of solar constant			
Feb. 1, 1935	° ′	*m*	*gr. cal.*	*gr. cal.*	*gr. cal.*						*mm*	
2:24 a. m.	21 55	2.66	1.288	0.943	0.781	0.038	0.047	0.042	70.2	5.7	4.6	Pc
1:59 a. m.	24 33	2.40	1.344	.968	.793	.031	.052	.042	71.5	4.0	4.8	
1:22 p. m.	27 38	2.15	1.403	1.001	.807	.024	.032	.028	77.8	7.6	6.2	
1:42 p. m.	26 05	2.27	1.408	1.003	.810	.019	.029	.024	78.6	8.1	6.0	
2:28 p. m.	21 29	2.71	1.375	.983	.800	.011	.039	.025	74.7	5.9	4.7	NPc
2:55 p. m.	18 12	3.18	1.335	.960	.785	.008	.025	.016	74.6	7.6	4.2	NPp, aloft
Feb. 6												
2:52 a. m.	19 49	2.93	1.213	.922	.770	.078	.059	.068	63.0	2.2	3.5	Pc
2:25 a. m.	23 06	2.54	1.272	.947	.795	.056	.071	.064	66.3	2.6	4.1	NPp, aloft
0:41 a. m.	31 17	1.92	1.292	.944	.778	.072	.096	.084	68.4	3.8	6.0	
Feb. 7												
2:52 a. m.	20 14	2.88	1.311	.978	.819	.038	.050	.044	68.0	2.3	3.6	Pc
2:29 a. m.	22 56	2.78	1.385	1.015	.834	.020	.029	.024	75.3	5.8	4.6	
1:05 a. m.	30 25	1.97	1.451	1.044	.848	.032	.036	.034	77.9	5.1	6.3	
0:45 a. m.	31 26	1.92	1.466	1.044	.843	.020	.034	.027	80.0	6.5	6.8	
0:06 a. m.	32 46	1.84	1.473	1.052	.867	.038	.057	.048	80.8	6.9	7.2	
0:13 p. m.	32 16	1.87	1.458	1.047	.852	.034	.043	.038	77.8	4.7	6.5	Pc, Tp aloft
1:41 p. m.	27 49	2.14	1.419	1.026	.835	.030	.050	.040	75.0	3.9	5.4	
Feb. 11												
0:10 p. m.	33 36	1.80	1.390	.979	.805	.049	.061	.055	75.0	5.2	6.9	NPc, NPp aloft
Feb. 12												
3:03 a. m.	19 56	2.92	1.247	.938	.792	.049	.065	.057	64.4	1.7	3.3	
2:40 a. m.	22 58	2.55	1.325	.983	.817	.043	.051	.047	68.2	1.7	3.7	Pc, TA aloft
1:20 a. m.	31 00	1.94	1.454	1.046	.853	.034	.039	.036	78.7	5.8	6.6	
Feb. 15												
1:21 a. m.	31 54	1.89	1.311	.907	.737	.040	.076	.058	73.5	7.6	7.1	NPp, TG aloft
0:51 a. m.	33 38	1.80	1.311	.924	.740	.046	.058	.052	75.6	9.2	10.0	
0:14 a. m.	34 58	1.74	1.351	.961	.764	.044	.026	.035	79.5	3.5	6.5	
Feb. 18												
2:44 a. m.	24 12	2.43	1.267	.924	.763	.037	.051	.044	71.7	7.9	5.6	Pc, NPp aloft
2:11 a. m.	28 06	2.12	1.265	.919	.756	.058	.074	.066	69.7	6.0	6.0	
2:43 p. m.	24 20	2.42	1.018	.776	.632	.097	.086	.092	61.6	11.9	5.9	NPp, Tp aloft
Feb. 20												
2:37 a. m.	25 43	2.08	1.160	.814	.682	.073	.129	.101	63.3	4.8	5.9	Tp
1:34 a. m.	32 31	1.86	1.218	.864	.719	.079	.118	.098	66.5	4.1	6.3	
1:12 a. m.	36 39	1.67	1.281	.903	.750	.078	.135	.106	70.1	5.5	7.5	
Feb. 21												
2:55 a. m.	23 32	2.50	1.283	.932	.777	.043	.068	.056	68.2	3.5	4.6	Pc
2:31 a. m.	26 58	2.20	1.343	.969	.799	.046	.074	.060	71.0	3.4	5.1	
2:08 a. m.	29 29	2.02	1.358	.974	.799	.046	.054	.050	73.8	5.3	6.2	
1:45 a. m.	31 51	1.89	1.387	.976	.798	.044	.062	.053	74.4	4.5	6.4	
0:10 a. m.	37 01	1.66	1.428	.998	.814	.040	.065	.052	76.7	5.7	7.6	
Feb. 22												
0:25 a. m.	37 08	1.65	1.345	.950	.775	.054	.081	.068	74.1	6.3	7.8	Pc, NTp aloft
0:05 a. m.	37 26	1.64	1.350	.948	.762	.050	.062	.056	76.2	8.1	8.2	
Feb. 24												
2:08 a. m.	30 21	1.98	1.200	.858	.699	.066	.088	.077	70.0	9.4	7.0	Pc
Feb. 28												
1:20 a. m.	35 23	1.72	1.230	.865	.695	.061	.083	.072	73.7	11.5	8.1	Pc, NPp aloft

Atmospheric conditions during solar radiation measurements, Blue Hill Observatory of Harvard University

Date and time from apparent noon	Air temperature	Wind (Beaufort Scale)	Visibility (scale 0–10)	Sky blueness	Cloudiness and remarks
February 1935	°C.				
1; 2:21 a. m.	−14.1	W 2	8	6	2 Ci.
1; 1:27 p. m.	−6.1	WSW 3	9	7	1 Ci.
1; 2:38 p. m.	−4.4	SWxS 3	8–9	11	Few Ci, Cist, light haze.
1; 4:01 p. m.	−4.7	SW 4	8	6	1 Ci, few Cu.
6; 2:46 a.m.	−17.2	N 5	7–9	9	Few Frcu, heavy haze; inversion.
6; 1:24 p. m.	−8.9	NNW 2	6–7	9	Few Frcu, heavy smoke.
6; 2:58 p. m.	−7.8	NNW 3	6–7	10	No clouds, heavy smoke.
7; 2:48 a. m.	−9.9	NWxW 3	8–9	12	Few Cist; inversion.
7; 1:02 a. m.	−6.7	NNW 2	8–9	8	Few Cist; inversion.
7; 0:03 a. m.	−5.6	NNW 2	8–9	8	Few Cist; inversion.
7; 1:47 p. m.	−3.2	SW 3	8	12	No clouds, light haze.
7; 3:55 p. m.	−1.7	SW 3	8	10	Few Ci.
11; 0:13 a. m.	±0.0	WNW 5	8–9	7	5 Cu.
12; 2:59 a. m.	−15.6	NNW 3	8–9	10	1 Ci, Cicu.
13; 3:10 a. m.	−5.6	N 4	6	9	3 Stcu, heavy haze over sun.
13; 0:00 m.	−2.8	NE 3	7	7	1 Acu, 1 Cu. haze.
13; 1:41 p. m.	−2.2	NE 3	7	9	Fumulus, few Cu, heavy haze.
15; 1:12 a.m.	−2.8	WxS 3	8	10	1 Cist, few Cunb, moderate haze.
18; 2:41 a.m.	−6.7	WSW 4	7–8	11	1 Ci, Cist, 2 Acu.
18; 3:31 p. m.	+0.3	SSW 5	8	4	Few Acu, haze.
20; 2:56 a. m.	−2.8	SSW 5	7	9	Few Stcu, Cu, moderate water haze.
20; 1:31 a. m.	−1.1	WxS 5	7–8	9	1 Ci, Acu, moderate water haze.
21; 3:22 a.m.	−8.9	W 4	8–9	8	Few Ci, Cist.
21; 2:04 a. m.	−8.1	WNW 4	8–9	10	1 Ci, Cist.
21; 0:05 a. m.	−6.1	WNW 4	9	10	4 Cicu, 1 Cu, few Acu, no haze.
21; 1:01 p. m.	−4.2	SW 4	8–9	11	1 Ci, 4 Cu, Stcu.
24; 2:29 a. m.	−3.9	W 4	7	10	Few Ci, Cist, moderate haze.
27; 1:41 p. m.	−7.8	WNW 5	8	11	1 Cist, few Acu, few Cu, light haze.
27; 4:24 p. m.	−5.6	NW 5	9	11	4 Stcu 5° from sun, light haze.
28; 3:17 p. m.	−3.8	WSW 5	7	8	2 Frcu, Cu, heavy water haze.

POSITIONS AND AREAS OF SUN SPOTS

[Communicated by Capt. J. F. Hellweg, U. S. Navy, Superintendent U. S. Naval Observatory. Data furnished by the U. S. Naval Observatory in cooperation with Harvard and Mount Wilson Observatories. The difference in longitude is measured from the central meridian, positive west. The north latitude is positive. Areas are corrected for foreshortening and are expressed in millionths of the sun's visible hemisphere. The total area for each day includes spots and groups]

Date	Eastern standard time		Heliographic			Area		Total area for each day	Observatory
			Diff. in longitude	Longitude	Latitude	Spot	Group		
1935	h	m	°	°	°				
Feb. 1	10	59	+51.0	154.5	+30.5	93		93	U. S. Naval.
Feb. 2	11	18	+65.0	155.2	+30.0	93		93	Do.
Feb. 4	12	7	−78.0	345.4	+23.0	31		31	Do.
Feb. 5	—	—	No spots						Harvard.
Feb. 6	13	26	−49.5	346.9	+22.5	77			U. S. Naval.
			+29.0	65.4	−16.5		370	447	
Feb. 7	11	4	−37.5	347.0	+22.5	62			Do.
			+42.5	67.0	−17.0		586	648	
Feb. 8	13	48	−23.0	346.8	+22.5	39			Do.
			+56.5	66.3	−17.5		556	595	
Feb. 9	11	10	−12.0	346.0	+22.0	12			Mt. Wilson.
			+66.0	64.0	−18.0		831	843	
Feb. 10	11	0	0.0	345.0	+22.0	8			Do.
			+74.0	59.0	−18.0		506	514	
Feb. 11	14	15	+16.5	346.6	+22.5	31		31	U. S. Naval.
Feb. 12	13	17	−79.0	238.4	+3.0	31			Do.
			+29.5	346.9	+22.5	23		54	
Feb. 13	13	58	−68.0	235.9	+3.0		123		Do.
			−23.5	280.4	+28.0		15	138	
Feb. 14	10	43	−54.5	238.0	+2.0		128	128	Harvard.
Feb. 15	10	45	−43.0	236.3	+1.5		51		Do.
			−50.0	229.3	0.0		19	70	
Feb. 16	10	26	−29.5	236.8	+2.0		15		U. S. Naval.
			+12.0	278.3	+28.5		62	77	
Feb. 17	12	3	+27.0	279.3	+29.0		31	31	Do.
Feb. 18	11	9	+41.0	280.6	+27.0	15		15	Do.
Feb. 19	11	4	No spots						Do.
Feb. 20	13	11	−62.5	149.6	+30.0	39			Do.
			+16.5	228.6	−26.5		62		
			+65.0	277.1	−14.0		62	163	
Feb. 21	11	18	−50.0	150.0	+30.5	46		46	Do.
Feb. 24	12	10	−0.5	159.5	−22.0		108	108	Do.
Feb. 25	11	12	−75.0	72.4	−18.5	123			Do.
			+14.0	161.4	−22.0		46	169	
Feb. 26	11	5	−61.0	73.3	−17.0	221			Mt. Wilson.
			+27.0	161.3	−23.0	8		229	
Feb. 27	11	5	−48.0	73.1	−18.5	185		185	U. S. Naval.
Feb. 28	11	1	−34.5	73.5	−18.5	154		154	Do.
Mean daily area for 25 days								194.	

PROVISIONAL SUN-SPOT RELATIVE NUMBERS FOR FEBRUARY 1935

(Dependent alone on observations at Zurich and its station at Arosa)

[Data furnished through the courtesy of Prof. W. Brunner, Eidgen. Sternwarte, Zurich, Switzerland]

February 1935	Relative numbers	February 1935	Relative numbers	February 1935	Relative numbers
1		11	21	21	21
2		12	*Wcd* 26	22	7?
3		13	18	23	*Mc*17
4	*Mc*	14		24	*a* 17
5	*a*	15	*Mc* 22	25	*d*
6	29	16	20	26	18?
7	46	17	10	27	20
8	29	18	7	28	20
9	23	19	*Mc* 19		
10	28?	20	28		

Mean: 21 days=21.2.

a=Passage of an average-sized group through the central meridian.
c=New formation of a center of activity: E, on the eastern part of the sun's disk; W, on the western part; M, in the central circle zone.
d=Entrance of a large or average-sized center of activity on the east limb.

AEROLOGICAL OBSERVATIONS

[Aerological Division, D. M. LITTLE, in Charge]

By L. T. SAMUELS

Free-air temperatures during February averaged mostly above normal except over Pensacola, Norfolk, and Pearl Harbor (see table 1). The largest departures occurred in the lower levels over Pensacola. Relative humidity departures were mostly positive except over Pensacola and Seattle; the largest departures occurred over Pensacola. Temperature and relative humidity departures are included only for those stations where the length of record is sufficient to obtain a fairly satisfactory normal.

The monthly free-air temperatures averaged lowest over the northeastern part of the country and highest over the Gulf coast. The free-air relative humidities averaged highest over the extreme Northwest, the Ohio Valley, and New England. The region of lowest relative humidity was the Gulf coast.

The free-air resultant winds deviated most from the normal directions over the extreme Northwest, where marked southerly components occurred as compared to the normal westerly. Elsewhere the directions were close to normal (see table 2). Free-air resultant wind velocities were mostly above normal over the southeastern part of the country and generally below normal elsewhere. In most cases the departures from normal were of only moderate magnitude.