TABLE 3.—*Total, I_m, and screened, I_y, I_r, solar radiation intensity measurements, obtained during February 1936, 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—Continued

Date and hour angle	Solar altitude	Air mass	I_m	I_y	I_r	$\beta_{I_{m-r}}$	$\beta_{I_{y-r}}$	β_{mean}	$\frac{I_{w=0}}{1.94}$ (Percentage of solar constant)	$\frac{I_{w=0}-I_m}{1.94}$ (Percentage of solar constant)	w	Air-mass type
Feb. 19, 1936												
1:45 a. m.	30 55	1.94	1.336	0.908	0.760	0.050	0.104	0.077	69.5	2.2	1.7	P_c
0:28 p. m.	35 46	1.71	1.367	.918	.765	.027	.029	.028	81.4	12.2	9.2	
3:31 p. m.	17 11	3.35	1.152	.803	.688	.036	.072	.054	62.0	4.0	2.0	
Feb. 20, 1936												
3:06 a. m.	21 22	2.72	.980	.731	.621	.101	.142	.122	55.0	5.6	3.4	P_c
Feb. 21, 1936												
2:56 a. m.	23 12	2.52	.989	.724	.615	.148	.137	.142	58.9	6.4	4.7	N_{rc}
0:28 a. m.	36 21	1.69	1.238	.870	.725	.100	.068	.084	69.9	8.1	6.0	
0:13 p. m.	36 39	1.67	1.271	.796	.735	.093	----------	.093	70.3	7.2	5.4	
1:52 p. m.	30 52	1.94	1,127	.786	.674	.108	.183	.146	58.6	3.6	2.4	
Feb. 22, 1936												
0:06 a. m.	36 46	1.67	1.228	.870	.715	.100	.100	.100	67.2	5.2	3.8	P_c
2:53 p. m.	23 25	2.51	1.311	.934	.759	.033	.024	.028	75.2	9.1	5.6	
Feb. 23, 1936												
2:45 a. m.	25 18	2.33	1.295	.922	.778	.062	.082	.072	66.0	.6	.2	P_c
0:48 a. m.	36 18	1.69	1.495	1.033	.828	.027	.025	.026	81.8	6.3	4.7	
3:27 p. m.	19 19	3.00	1.333	.952	.775	.016	.020	.018	75.2	7.9	4.4	
Feb. 24, 1936												
2:54 a. m.	23 35	2.50	1.300	.942	.778	.046	.050	.048	70.6	5.0	3.0	P_c
Feb. 28, 1936												
1:38 a. m.	34 34	1.76	1.326	.941	.772	.024	.076	.050	76.1	9.0	6.4	P_c
0:16 p. m.	39 10	1.58	1.419	.979	.794	.059	.045	.052	77.3	5.5	4.7	
2:04 p. m.	31 55	1.89	1.402	.939	.762	.018	.055	.036	74.0	2.6	2.4	
4:23 p. m.	11 38	4.87	1.113	.805	.683	.025	.025	.025	----------	----------	----------	
Feb. 29, 1936												
1:44 a. m.	34 22	1.77	1.291	.877	.728	.071	.119	.095	68.6	3.2	2.1	N_{rc}
0:44 p. m.	38 43	1.60	1.384	.934	.752	.034	.049	.042	79.6	9.5	6.6	
2:12 p. m.	31 22	1.92	1.245	.867	.702	.061	.061	.061	73.8	10.8	7.7	
4:31 p. m.	10 32	5.35	.899	.662	.573	----------	----------	----------	----------	----------	----------	

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

Date and time from apparent noon	Air temperature	Wind, Beaufort scale	Visibility (scale 0-10)	Sky blueness	Cloudiness and remarks
February 1936	°C.				
1; 0:38 a. m.	−9.7	W 4	7	7	T Ci, mod. dense haze.
2; 0:18 a. m.	−10.6	W 5	9	6	T Cu, light haze NE, wind gusty.
3; 2:11 a. m.	−13.6	W 3	8	7	1 Ci, light haze.
3; 0:29 a. m.	−9.9	W 3	9	8	T Ci, light haze.
5; 0:05 p. m.	−3.6	WSW 5	8	6	1 Ci, mod. haze, wind gusty.
6; 1:40 a. m.	−12.8	W 4	8	4	1 Ci, mod. haze, wind gusty, Ci too near sun.
6; 0:02 p. m.	−11.1	W 4	8	4	1 Ci, mod. haze, wind gusty.
8; 2:21 a. m.	−12.7	NNW 5	9	7	No clouds, light haze.
8; 0:35 a. m.	−9.3	NNW 5	9	7	No clouds, light haze, wind gusty.
10; 0:39 a. m.	−11.1	W 5	7	7	No clouds, mod. haze.
11; 1:38 a. m.	−10.6	W 4	8	7	No clouds, light-mod. haze.
12; 0:41 a. m.	−7.2	WNW 4	9	8	No clouds, light haze NE.
19; 0:05 p. m.	−13.2	WSW 4	8	8	T Acu, light haze.
20; 3:18 a. m.	−13.3	W 3	7	7	T Ci, mod. haze, Ci increasing rapidly and obscuring sun during test.
21; 2:15 a. m.	−8.3	WNW 4	6	7	3 Ci, mod. dense haze.
21; 0:49 a. m.	−5.7	NNW 4	6	7	3 Ci, mod. dense haze.
22; 0:23 a. m.	−7.0	N 4	8	6	6 Ci, mod. haze, Ci clouds nearing sun at end of observation.
23; 1:01 a. m.	−6.7	NW 4	9	7	T Ci, light haze NE.
28; 2:24 a. m.	−2.8	W 6	9	7	T Cu, light mod. haze.
28; 0:31 a. m.	−2.2	W 5	9	8	T Ci, T Cu, light mod. haze.
29; 2:44 a. m.	−4.7	E 2	8	7	T Ci, mod. heavy haze.
29; 0:01 a. m.	−0.8	ESE 3	8	7	T Ci, T Acu, mod. haze.

POSITIONS AND AREAS OF SUN SPOTS

[Communicated by Capt. J. F. Hellweg, U. S. Navy (Ret.), 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: Diff. in longitude	Heliographic: Longitude	Heliographic: Latitude	Area: Spot	Area: Group	Total area for each day	Observatory
1936	*h m*	°	°	°				
Feb. 1	11 17	−55.0	270.8	+33.0	247	--------	--------	U. S. Naval.
		−42.0	283.8	+30.0	62	--------	--------	
		+29.0	354.8	−12.0	123	--------	--------	
		+70.0	35.8	+14.5	62	--------	494	
Feb. 2	11 17	−42.0	270.6	+32.5	247	--------	--------	Do.
		−36.0	276.6	+23.0	--------	108	--------	
		−30.0	282.6	+30.0	31	--------	--------	
		+41.0	353.6	−13.0	123	--------	509	
Feb. 3	13 15	−27.0	271.4	+34.0	--------	240	--------	Mt. Wilson.
		−24.0	274.4	−18.0	6	--------	--------	
		−19.0	279.4	+24.0	--------	98	--------	
		−14.0	284.4	+30.0	31	--------	--------	
		+41.0	339.4	−14.0	--------	9	--------	
		+56.0	354.4	−14.0	131	--------	515	
Feb. 4	13 10	−85.0	200.2	−19.0	73	--------	--------	Do.
		−16.0	269.2	+32.0	--------	209	--------	
		−9.0	276.2	−18.5	3	--------	--------	
		−8.0	277.2	+22.0	--------	170	--------	
		−3.0	282.2	+29.0	8	--------	--------	
		+53.0	338.2	−11.0	--------	82	--------	
		+68.0	353.2	−12.0	102	--------	647	

POSITIONS AND AREAS OF SUN SPOTS—Continued

Date	Eastern standard time	Heliographic: Diff. in longitude	Heliographic: Longitude	Heliographic: Latitude	Area: Spot	Area: Group	Total area for each day	Observatory
1936	*h m*	°	°	°				
Feb. 5	11 12	−75.0	198.2	−21.0	15			U. S. Naval.
		−7.0	266.2	+33.0		201		
		+4.0	277.2	+23.0		247		
		+8.0	281.2	+30.0	15			
		+60.5	333.7	−17.0		77		
		+66.0	339.2	−11.0	46			
		+81.0	354.2	−12.0	62		663	
Feb. 6	13 54	−88.0	170.5	−26.0	154			Do.
		−59.0	199.5	−19.0	15			
		+8.0	266.5	+33.0		170		
		+19.0	277.5	+23.0		278		
		+76.0	334.5	−18.0		77	694	
Feb. 7	13 5	−75.0	170.9	−27.0		934		Mt. Wilson.
		−50.0	195.9	−20.0		26		
		+21.0	266.9	+32.0		138		
		+25.0	270.9	−11.0		8		
		+35.0	280.9	+22.0		363		
		+55.0	300.9	+13.0		49		
		+85.0	330.9	−18.0	73		1,591	
Feb. 8	11 4	−66.0	167.8	−27.0		802		U. S. Naval
		+33.0	266.8	+32.0	154			
		+49.0	282.8	+21.0	247			
		+59.0	292.8	+23.0		93		
		+68.0	301.8	+12.0		309	1,605	
Feb. 9	12 0	−53.0	167.1	−28.0		863		Mt. Wilson.
		−24.0	196.1	−21.0		10		
		+42.0	262.1	+32.0	140			
		+60.0	280.1	+22.0	322			
		+68.0	288.1	+24.0		26		
		+78.0	298.1	+12.0	326		1,687	
Feb. 10	10 59	−81.0	126.5	−31.0	108			U. S. Naval.
		−43.0	164.5	−27.0		772		
		−14.0	193.5	−22.0	15			
		+59.0	266.5	+33.0	139			
		+75.0	282.5	+22.0	185		1,219	
Feb. 11	13 11	−67.0	136.1	−32.0	185			Do.
		−28.0	165.1	−27.0		802		
		+61.0	254.1	−23.0		93		
		+70.0	263.1	+33.0	93		1,173	
Feb. 12	9 22	−55.0	127.0	−29.5	149			Harvard.
		−22.5	159.5	−23.5		58		
		−22.0	160.0	−26.5		90		
		−8.0	174.0	−24.5		329	626	
Feb. 14	13 22	−29.5	124.0	−31.5	247			U. S. Naval.
		−7.0	146.5	+11.5		123		
		+11.0	164.5	−27.0		617	987	
Feb. 15	12 23	−56.0	84.9	+15.5	31			Do.
		−18.0	122.9	−32.0	247			
		+6.0	146.9	+12.0		123		
		+19.0	159.9	+19.0		46		
		+25.0	165.9	−27.0		525	972	
Feb. 18	11 15	−50.0	52.0	−17.5	185			Do.
		−49.0	53.0	+19.0		154		
		−11.0	91.0	+16.5		62		
		+19.5	121.5	−33.0	216			
		+50.0	152.0	+11.0	31			
		+59.5	161.5	−27.5		463	1,111	
Feb. 19	11 4	−38.0	50.9	−17.0	139			Do.
		−36.0	52.9	+19.0		123		
		+1.0	89.9	+13.0	23			
		+32.0	120.9	−34.0	247			
		+62.0	150.9	+11.0	31			
		+65.0	153.9	−27.0		46		
		+80.0	168.9	−26.0	154		763	
Feb. 20	12 33	−20.5	54.5	−16.0		137		Harvard.
		−19.5	55.5	+18.0	138			
		+46.0	121.0	−35.0	267		542	
Feb. 21	12 18	−74.5	347.5	−5.5	198			Do.
		−57.5	4.5	−19.0	51			
		−45.0	17.0	−28.0		202		
		−14.0	48.0	−31.0		120		
		−7.5	54.5	−16.0	105			
		−6.0	56.0	+18.0		158		
		+58.0	120.0	−35.0	340		1,174	
Feb. 22	11 14	−61.0	348.3	−8.0		123		U. S. Naval.
		−47.0	2.3	−23.0	39			
		−35.0	14.3	−31.0		216		
		−3.0	46.3	−31.5		154		
		+1.0	50.3	−18.0		108		
		+3.0	52.3	+18.0		93		
		+70.0	119.3	−33.0	93		826	

POSITIONS AND AREAS OF SUN SPOTS—Continued

Date	Eastern standard time	Heliographic: Diff. in longitude	Heliographic: Longitude	Heliographic: Latitude	Area: Spot	Area: Group	Total area for each day	Observatory
1936	*h m*	°	°	°				
Feb. 24	11 4	−70.0	313.1	+12.5	123			U.S. Naval
		−35.0	348.1	−8.5		216		
		−21.0	2.1	−22.0	15			
		−14.0	9.1	−32.0		62		
		−6.0	17.1	−31.0		123		
		+25.0	48.1	−32.0	93			
		+29.0	52.1	−19.0	139			
		+29.5	52.6	+16.0		185	956	
Feb. 25	13 0	−55.0	313.8	+13.0	123			Do.
		−22.0	346.8	−8.0		154		
		+8.5	17.3	−31.0	108			
		+39.0	47.8	−32.5	77			
		+43.0	51.8	−19.0	123			
		+43.0	51.8	+15.0		370	955	
Feb. 26	13 17	−80.0	275.5	−18.0		93		Do.
		−41.0	314.5	+12.0	139			
		−9.0	346.5	−9.0		154		
		+21.0	16.5	−30.5		62		
		+51.0	46.5	−32.0	93			
		+54.0	49.5	+16.0		370		
		+56.0	51.5	−18.0	123		1,034	
Feb. 27	15 42	−66.0	275.0	−18.0		247		Do.
		−27.0	314.0	+12.0	154			
		+6.5	347.5	−8.5		62		
		+36.0	17.0	−30.0		93		
		+65.0	46.0	−32.0	77			
		+66.0	47.0	+15.5		309		
		+71.0	52.0	−18.0	123		1,065	
Feb. 28	11 1	−63.0	267.4	+23.0	46			Do.
		−54.0	276.4	−18.0		278		
		−15.0	315.4	+12.0	154			
		+18.0	348.4	−8.5		62		
		+47.0	17.4	−30.5		77		
		+77.0	47.4	+14.0		247		
		+82.0	52.4	−18.0	77		941	
Feb. 29	10 43	−49.0	268.4	+22.5		123		Do.
		−41.0	276.4	−18.0		139		
		−2.0	315.4	+12.0	123			
		+30.5	347.9	−8.0		46		
		+60.0	17.4	−30.5		93	524	

Mean daily area for 25 days, 931.

PROVISIONAL SUN-SPOT RELATIVE NUMBERS FOR FEBRUARY 1936

[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 1936	Relative numbers	February 1936	Relative numbers	February 1936	Relative numbers
1	45	11	60	21	*Eccd*111
2	*Ec*45	12	91	22	*aaa*97
3	46	13	*b*69	23	87
4	43	14	*Mc*77	24	*d*109
5	*Wac*67	15	*a*77	25	*a*90
6	*a*56	16	*d*91	26	*d*97
7	*Wcd*61	17	*a*58	27	*a*91
8	93	18	55	28	*Ec*—
9	84	19	56	29	64
10	*a*73	20	74		

Mean, 28 days=73.8.

a=Passage of an average-sized group through the central meridian.
b=Passage of a large group or spot 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.