TABLE 3.—*Total, I_m, and screened, I_y, I_r, solar radiation intensity measurements, obtained during December 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, 1935	Solar altitude	Air mass	I_m	I_y	I_r	$\beta_{I_{m-r}}$	$\beta_{I_{y-r}}$	β_{mean}	$\frac{I_{w-o}}{1.94}$ (Percentage of solar constant)	$\frac{I_{w-o}-I_m}{1.94}$ (Percentage of solar constant)	w	Air-mass type
1935	° ′	*m*	*gr. cal.*	*gr. cal.*	*gr. cal.*						*mm*	
Dec. 3:												
0:05 p. m.	25 44	2.30	1.235	0.867	0.712	0.062	0.056	0.059	70.2	8.3	5.4	P_c
2:19 p. m.	18 20	3.16	1.139	.837	.696	.050	.054	.052	63.1	6.0	3.3	
Dec. 4:												
1:36 p. m.	23 22	2.51	1.292	.937	.776	.050	.054	.052	68.7	4.0	2.4	P_c
2:45 p. m.	15 11	3.77	1.152	.839	.712	.039	.056	.048	61.2	3.6	2.8	
Dec. 5: 2:06 a. m.	19 12	2.99	.700	.550	.468	.163	.154	.158	45.0	9.9	5.5	P_c
Dec. 6:												
0:25 a. m.	24 57	2.36	1.351	.961	.792	.061	.046	.054	70.1	2.5	1.3	P_c
2:50 p. m.	14 35	3.84	1.109	.822	.693	.043	.052	.048	60.6	5.1	2.5	
Dec. 12: 3:12 a. m.	11 03	5.12	.818	.646	.561							P_c
Dec. 17: 2:42 p. m.	14 33	3.94	1.046	.774	.660	.048	.067	.058	57.5	5.3	3.0	P_A
Dec. 18:												
2:28 a. m.	16 21	3.53	1.002	.755	.648	.075	.087	.081	54.3	4.3	2.2	
0:03 p. m.	24 26	2.41	1.184	.848	.711	.070	.074	.072	65.6	6.5	4.0	P_F
2:36 p. m.	15 12	3.77	1.021	.762	.650	.060	.074	.067	56.5	5.6	2.8	
Dec. 21:												
2:35 a. m.	15 32	3.72	1.013	.766	.646	.062	.064	.063	57.1	6.5	3.2	P_c
0:34 p. m.	24 19	2.42	1.248	.874	.749	.060	.083	.072	65.4	3.1	2.0	
1:35 p. m.	21 04	2.76	1.179	.826	.701	.051	.095	.073	62.4	3.6	2.0	
Dec. 22:												
0:20 a. m.	24 17	2.42	1.385	.974	.799	.027	.025	.026	77.0	7.9	4.9	P_c
2:36 p. m.	15 24	3.51	1.135	.853	.712	.051	.047	.049	62.3	5.7	2.9	
Dec. 23:												
2:24 a. m.	16 33	3.49	1.067	.775	.651	.047	.049	.048	62.4	9.1	4.8	P_F above N_{Pc}
0:26 a. m.	24 04	2.44	1.191	.848	.719	.070	.102	.086	68.8	9.4	5.8	
Dec. 24:												
0:20 p. m.	24 11	2.43	1.264	.923	.744	.048	.034	.041	72.8	9.8	7.2	P_c
2:00 p. m.	18 48	3.08	1.186	.875	.729	.049	.045	.047	65.9	6.8	3.7	
Dec. 25:												
2:25 a. m.	16 27	3.51	1.208	.884	.743	.035	.047	.041	64.8	4.6	2.3	P_c
0:40 a. m.	23 23	2.51	1.361	.965	.794	.033	.041	.037	72.5	4.7	2.8	
2:48 p. m.	13 46	4.13	1.188	.866	.720	.020	.031	.026	66.7	7.5	3.5	P_c
Dec. 27:												
0:44 a. m.	24 00	2.45	1.322	.922	.768	.037	.064	.050	70.0	4.1	2.5	P_c
0:08 p. m.	24 46	2.37	1.319	.905	.770	.059	.044	.052	70.2	4.5	2.8	
1:55 p. m.	23 12	2.53	1.193	.850	.721	.045	.056	.050	70.1	8.3	5.1	
Dec. 28:												
2:35 a. m.	20 29	2.84	1.227	.895	.757	.055	.074	.064	63.9	2.7	1.4	P_c
0:51 a. m.	23 24	2.51	1.383	.973	.805	.028	.028	.028	75.3	6.4	3.9	
0:38 p. m.	23 53	2.46	1.378	.956	.805	.032	.032	.032	74.4	5.7	3.5	
2:08 p. m.	18 06	3.16	1.252	.915	.739	.026	.026	.026	70.8	8.4	4.6	
Dec. 31:												
3:05 a. m.	11 59	5.12	1.242	.880	.744							P_c
1:47 a. m.	20 20	2.86	1.358	.966	.802	.023	.040	.032	71.7	4.0	2.2	
0:49 p. m.	23 30	2.50	1.398	1.000	.840	.039	.056	.048	71.6	1.7	0.9	
3:20 p. m.			1.021	.785	.684							

Atmospheric conditions during solar radiation measurements. Harvard University Blue Hill Observatory

Date and time from apparent noon	Air temperature	Wind Beaufort	Visibility (0–10)	Sky blue	Cloudiness and remarks
December 1935	°*C.*				
3; 2:32 a. m.	−4.4	NW 4	8	7	Few Ci., few Acu.
4; 1:52 p. m.	−9.5	NW x W 7	9	8	1 Acu.
6; 1:59 a. m.	−12.3	NW 6	9	8	Few Cu. Moderate haze to north.
6; 0:12 a. m.	−9.9	NW 5	10	8	Few Cu. Light haze to north and northeast.
12; 2:54 a. m.	+1.1	NNW 3	7	7	1 Cu. Moderate haze.
17; 4:06 p. m.	−1.7	W x N 5	9	8	3 Ci., 1 Cu.
18; 2:51 a. m.	−6.7	W 5	8	8	Few Ci., few Acu., few Cu. Moderate haze to north and east.
21; 3:02 a. m.	−9.6	NW 5	8	7	3 Ci. Light haze.
21; 0:18 a. m.	−7.2	NW 5	8	7	3 Ci. Light haze.
22; 2:56 a. m.	−13.3	NW 4	9	7	Few Cu. Moderate haze to northeast.
22; 0:16 a. m.	−8.6	NW 5	9	6	No clouds. Light haze to north and east.
23; 1:40 a. m.	−7.8	N 4	7	7	1 Ci. Moderate to dense haze.
25; 0:35 a. m.	−6.7	WNW 4	9	8	Few Cu. Light water haze to south.
27; 0:23 a. m.	−9.0	WNW 5	9	6	No clouds. Light haze.
28; 0:17 p. m.	−8.2	NNW 5	9	8	Few Ci., few Frcu. Light haze.
31; 0:21 p. m.	−3.9	NW 3	9	9	No clouds. Moderate 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: Diff. in longitude	Heliographic: Longitude	Heliographic: Latitude	Area: Spot	Area: Group	Total area for each day	Observatory
1935	*h m*	°	°	°				
Nov. 1	11 25	−37.0	60.7	−24.0		25		Mt. Wilson.
		+79.0	176.7	+18.0	130		155	
Nov. 2	12 4	−23.0	61.3	−25.5		185	185	U. S. Naval.
Nov. 3	19 25	−68.0	359.0	−27.0		1,215		Mt. Wilson.
		−8.0	59.0	+13.0		27		
		−3.0	64.0	−22.0		247	1,489	
Nov. 4	13 40	−60.0	357.0	−28.0		962		Do.
		+3.0	60.0	+14.0		66		
		+8.0	65.0	−24.0		222	1,250	
Nov. 5	11 3	−53.5	351.8	−29.5		926		U. S. Naval.
		+12.0	57.3	−27.0		62		
		+15.0	60.3	+14.5		123		
		+20.5	65.8	−24.5	154		1,265	
Nov. 6	11 33	−40.0	351.8	−29.5		741		Do.
		+28.5	60.3	+14.5		154		
		+34.0	65.8	−25.0	154		1,049	

POSITIONS AND AREAS OF SUN SPOTS—Continued

Date	Eastern standard time		Heliographic			Area		Total area for each day	Observatory
			Diff. in longitude	Longitude	Latitude	Spot	Group		
1935	*h*	*m*	°	°	°				
Nov. 7	12	0	−72.0	306.4	+22.0		625		Mt. Wilson.
			−69.0	309.4	−12.0	124			
			−23.0	355.4	−28.0		986		
			+44.0	62.4	+15.0		168		
			+46.0	64.4	−22.0	199		2,102	
Nov. 8	11	13	−70.0	295.6	+25.0	15			U. S. Naval.
			−64.5	301.1	+22.0		679		
			−55.0	310.6	−15.0	62			
			−13.0	352.6	−29.5		617		
			+56.0	61.6	+15.0		123		
			+60.0	65.6	−24.5	93		1,589	
Nov. 9	10	59	−56.0	296.6	+25.0	31			Do.
			−51.0	301.6	+21.5		556		
			−41.0	311.6	−15.0	46			
			−1.0	351.6	−30.0		494		
			+70.0	62.6	+14.5	46			
			+72.0	64.6	−24.0	62		1,235	
Nov. 10	11	26	−41.0	298.1	+25.0	31			Do.
			−37.0	302.1	+21.0		586		
			−28.0	311.1	−15.0	46			
			+12.0	351.1	−30.0		494	1,157	
Nov. 11	12	6	−70.0	255.6	+25.0	93			Do.
			−27.0	298.6	+26.0		31		
			−21.0	304.6	+21.0		586		
			−19.5	306.1	−24.5		46		
			−13.5	312.1	−15.0		62		
			+25.0	350.6	−30.0		494	1,312	
Nov. 12	12	15	−78.0	234.3	+31.0		15		Mt. Wilson.
			−58.0	254.3	+24.0	167			
			−16.0	296.3	+27.0		8		
			−7.0	305.3	−25.0		82		
			−6.0	306.3	+22.0		597		
			+1.0	313.3	−15.0	24			
			+20.0	332.3	−13.0		2		
			+40.0	352.3	−30.0		598	1,493	
Nov. 13	11	25	−65.0	234.5	+31.0		29		Do.
			−51.0	248.5	+20.0		6		
			−46.0	253.5	+24.0	150			
			−2.0	297.5	+27.0		8		
			+5.0	304.5	−24.0		311		
			+7.0	306.5	+22.0		545		
			+14.0	313.5	−15.0		11		
			+36.0	335.5	−14.0		2		
			+55.0	354.5	−30.0		478	1,540	
Nov. 14	11	25	−51.0	235.3	+31.0		23		Do.
			−38.0	248.3	+20.0		13		
			−33.0	253.3	+25.0	124			
			−31.0	255.3	−14.0		8		
			+19.0	305.3	−25.0		392		
			+23.0	309.3	+21.0		426		
			+28.0	314.3	−16.0	6			
			+51.0	337.3	+30.0	6			
			+68.0	354.3	−31.0	377		1,375	
Nov. 15	11	25	−70.0	203.1	−18.0		30		Do.
			−35.0	238.1	+29.0		82		
			−24.0	249.1	+19.0		144		
			−19.0	254.1	+25.0	148			
			−16.0	257.1	−15.0		48		
			+34.0	307.1	−25.0		385		
			+38.0	311.1	+21.0		260		
			+42.0	315.1	−17.0		6		
			+64.0	337.1	+30.0	2			
			+80.0	353.1	−30.0	154		1,259	
Nov. 16	11	45	−82.0	177.8	−15.0	263			Do.
			−76.0	183.8	+22.0	37			
			−60.0	199.8	−18.0		59		
			−24.0	235.8	+28.0		95		
			−9.0	250.8	+19.0		216		
			−6.0	253.8	+24.0	147			
			−4.0	255.8	−14.0		32		
			+36.0	295.8	−25.0		7		
			+46.0	305.8	−26.0		635		
			+50.0	309.8	+20.0		266		
			+55.0	314.8	−18.0		6	1,763	

POSITIONS AND AREAS OF SUN SPOTS—Continued

Date	Eastern standard time		Heliographic			Area		Total area for each day	Observatory
			Diff. in longitude	Longitude	Latitude	Spot	Group		
1935	*h*	*m*	°	°	°				
Nov. 18	11	38	−52.0	181.6	−18.0		216		U. S. Naval.
			−48.0	185.6	+21.0		31		
			−28.0	205.6	−19.0	31			
			−2.0	231.6	+30.0	123			
			+5.0	238.6	+29.0		123		
			+17.0	250.6	+19.5		216		
			+20.0	253.6	+21.0	123			
			+28.5	262.1	−15.0	15			
			+72.0	305.6	−26.0		154		
			+77.0	310.6	+20.5	185		1,217	
Nov. 19	11	20	−36.0	184.5	−16.0		401		Do.
			−36.0	184.5	+20.5	31			
			−14.0	206.5	−19.0	31			
			+10.0	230.5	+30.0	154			
			+19.0	239.5	+29.5		93		
			+30.0	250.5	+19.0		216		
			+32.0	252.5	+21.0	123		1,049	
Nov. 20	16	25	−33.0	171.5	+21.0	2			Mt. Wilson.
			−20.0	184.5	+20.0		12		
			−17.0	187.5	−14.0		700		
			+1.0	205.5	−18.0		33		
			+27.0	231.5	+30.0		214		
			+48.0	252.5	+22.0	129			
			+50.0	254.5	+18.0		145	1,235	
Nov. 21	13	31	−8.0	185.0	−16.0		617		U. S. Naval.
			+36.0	229.0	+31.0		185		
			+46.0	239.0	+29.0	77			
			+59.0	252.0	+21.5	93			
			+62.5	255.5	+19.0	77		1,049	
Nov. 22	11	17	+5.5	186.5	−15.0		741		Do.
			+48.0	229.0	+31.0		108		
			+58.0	239.0	+29.0		62		
			+71.0	252.0	+21.5	62			
			+75.0	256.0	+18.0	93		1,066	
Nov. 23	11	40	−65.0	102.6	−16.0		6		Mt. Wilson.
			+7.0	174.6	−16.0	3			
			+20.0	187.6	−15.0		1,008		
			+65.0	232.6	+22.5	9			
			+66.0	233.6	+29.5		63		
			+86.0	253.6	+22.0	66		1,155	
Nov. 24	15	40	−85.0	67.3	−22.0	42			Do.
			−49.0	103.3	−17.0	4			
			+2.0	154.3	−20.0	4			
			+35.0	187.3	−15.0		756	806	
Nov. 25	11	46	−73.0	68.2	−24.0	46			U. S. Naval.
			+46.0	187.2	−15.0		710	756	
Nov. 26	13	41	−72.0	55.0	−28.0		93		Do.
			−59.0	68.0	−23.5	77			
			−4.0	123.0	−35.0		216		
			+61.0	188.0	−16.0		617	1,003	
Nov. 27	10	45	−59.0	56.5	−25.0		308		Harvard.
			−46.0	69.5	−22.0	75			
			+7.0	122.5	−34.0		240		
			+71.5	187.0	−17.0		549	1,172	
Nov. 28	12	15	−46.0	55.4	−26.0		1,166		Mt. Wilson.
			−32.5	68.9	−24.0	81			
			+19.0	120.4	−35.0		300		
			+80.0	181.4	−17.0		121	1,668	
Nov. 29	13	26	−31.0	56.6	−26.0		1,080		U. S. Naval.
			−19.0	68.6	−23.0	93			
			+30.0	117.6	−36.0		185		
			+39.0	126.6	−34.0	93		1,451	
Nov. 30	12	50	−18.0	56.7	−26.5		1,204		Do.
			−5.0	69.7	−23.0	93			
			+41.0	115.7	−36.0	123			
			+52.0	126.7	−33.5	62		1,482	
Mean daily area for 29 days								1,218	

POSITIONS AND AREAS OF SUN SPOTS—Continued

Date	Eastern standard time		Heliographic			Area		Total area for each day	Observatory
			Diff. in longitude	Longitude	Latitude	Spot	Group		
1935	h	m	°	°	°				
Dec. 1	11	45	−80.0	342.1	−28.0	234			Mt. Wilson.
			−6.0	56.1	−25.0		2,008		
			+7.0	69.1	−24.0	97			
			+59.0	121.1	−35.0		106		
			+64.0	126.1	+29.0		10	2,455	
Dec. 2	11	15	−67.0	342.2	−27.0	185			U. S. Naval.
			+8.0	57.2	−26.0		1,728		
			+20.0	69.2	−24.0	77			
			+68.0	117.2	−35.0	54		2,044	
Dec. 3	10	27	−56.0	340.5	−27.0	295			Harvard.
			+17.5	54.0	−24.5		1,860	2,155	
Dec. 4	11	1	−41.0	342.0	−28.0	185			U. S. Naval.
			+35.0	58.0	−26.0		1,821	2,006	
Dec. 5	11	8	−86.0	283.8	−22.0	62			Do.
			−65.0	304.8	−26.0	15			
			−30.0	339.8	−28.0	201			
Dec. 6	11	32	+48.0	57.8	−26.0		1,821	2,099	
			−85.0	271.4	−24.0	62			Do.
			−73.0	283.4	−23.0	185			
			−51.0	305.4	−27.0	31			
			−17.0	339.4	−28.0	231			
			+61.0	57.4	−27.0		1,728	2,237	
Dec. 7	11	30	−64.0	279.2	−22.0		814		Mt. Wilson.
			−39.0	304.2	−25.0	11			
			−12.0	331.2	+14.0		4		
			−9.0	334.2	−13.0		8		
			−5.0	338.2	−28.0	206			
			+3.0	346.2	+19.0		7		
			+9.0	352.2	−9.0		14		
			+70.0	53.2	−26.0		2,163	3,227	
Dec. 8	12	30	−75.0	254.5	+22.0		17		Do.
			−53.0	276.5	−22.0		756		
			−26.0	303.5	−25.0	9			
			−22.0	307.5	+32.0	2			
			+6.0	333.5	−13.0		192		
			+8.0	337.5	−28.0	184			
			+24.0	353.5	−9.0		50		
			+59.0	28.5	−28.0		16		
			+80.0	49.5	−25.0		536	1,762	
Dec. 9	11	4	−40.0	277.1	−22.5		648		U. S. Naval.
			−12.0	305.1	−26.5	15			
			+19.5	336.6	−12.0		108		
			+20.0	337.1	−28.0	185			
			+37.0	354.1	−9.0		154	1,110	
Dec. 10	11	50	−50.0	253.5	+22.0	13			Mt. Wilson.
			−27.0	276.5	−22.0		1,027		
			0.0	303.5	−26.0	4			
			+33.0	336.5	−28.0	186			
			+34.0	337.5	−13.0		194		
			+49.0	352.5	−8.0		48	1,472	
Dec. 11	13	15	−77.0	212.6	−17.0		31		U. S. Naval.
			−13.0	276.6	−23.0		772		
			+47.5	337.1	−28.0	216			
			+48.0	337.6	−13.5		185		
			+65.0	354.6	−9.5		31	1,235	
Dec. 12	16	5	−80.0	194.8	−13.0	278			Mt. Wilson.
			−67.0	207.8	−18.0		88		
			+1.0	275.8	−25.0		847		
			+63.0	337.8	−29.0	195			
			+68.0	342.8	−14.0		73		
			+72.0	346.8	+18.0	51		1,532	
Dec. 13	12	10	−70.0	193.7	−13.0	294			Do.
			−57.0	206.7	−16.0		69		
			+12.0	275.7	−24.0		810		
			+72.0	335.7	−28.0	110			
			+77.0	340.7	−14.0		40	1,323	
Dec. 14	15	5	−79.0	170.1	+14.0		25		Do
			−58.0	191.1	−12.0	339			
			−41.0	208.1	−16.0		23		
			+28.0	277.1	−23.0		669		
			+88.0	337.1	−28.0	62		1,118	
Dec. 15	11	30	−72.0	165.8	−27.0	9			Do.
			−68.0	169.8	+14.0		20		
			−63.0	174.8	+21.5	8			
			−46.0	191.8	−12.5	293			
			−31.0	206.8	−16.0		14		
			−7.0	230.8	+22.0		34		
			+39.0	276.8	−23.0		585	963	
Dec. 16	11	35	−62.0	162.6	−27.0		62		U. S. Naval.
			−33.0	191.6	−13.0	278			
			−17.0	207.6	−15.0		31		
			+6.0	230.6	+22.0		46		
			+52.0	276.6	−23.0		586	1,003	
Dec. 17	11	15	−48.0	163.6	−28.0		41		Mt. Wilson.
			−19.0	192.6	−14.0	266			
			−2.0	209.6	−16.0		12		
			+22.0	233.6	+20.0		12		
			+62.0	273.6	−22.0		420	751	
Dec. 18	11	40	−31.0	167.1	−28.0		81		Do.
			−7.0	191.1	−14.0		304		
			+11.0	209.1	−18.0		11		
			+37.0	235.1	+21.0		12		
			+68.0	266.1	−23.0		267	675	
Dec. 19	12	12	−17.5	167.2	−28.0	123			U. S. Naval.
			+8.0	192.7	−15.0	278			
			+85.0	269.7	−23.0	123		524	
Dec. 20	11	30	−80.0	91.9	+15.0	77			Do.
			−4.0	167.9	−29.0	93			
			+19.5	191.4	−12.0		31		
			+20.0	191.9	−15.0	278		479	
Dec. 21	10	57	−65.0	94.1	+15.0	123			Do.
			+9.0	168.1	−29.0	123			
			+32.5	191.6	−14.0	278		524	

POSITIONS AND AREAS OF SUN SPOTS—Continued

Date	Eastern standard time		Heliographic			Area		Total area for each day	Observatory
			Diff. in longitude	Longitude	Latitude	Spot	Group		
1935	h	m	°	°	°				
Dec. 22	11	0	−85.0	60.8	−25.0	64			Mt. Wilson.
			−53.0	92.8	+14.0		179		
			+23.0	168.8	−28.0		151		
			+45.0	190.8	+23.0		20		
			+46.0	191.8	−15.0	242		656	
Dec. 23	11	30	−75.0	57.4	−25.0		212		Do.
			−39.0	93.4	+14.0		159		
			+36.0	168.4	−28.0		203		
			+60.0	192.4	−15.0	206			
			+61.0	193.4	+23.0	5		785	
Dec. 24	11	35	−85.0	34.2	−23.0	77			U. S. Naval.
			−78.0	41.2	−30.0	93			
			−63.0	56.2	−23.0		309		
			−25.0	94.2	+15.0	154			
			+48.0	167.2	−28.0		216		
			+72.0	191.2	−13.0	123		972	
Dec. 25	14	20	−69.0	35.6	−23.0	334			Mt. Wilson.
			−67.0	37.6	+14.0		41		
			−49.0	55.6	−24.0		449		
			−11.0	93.6	+15.0	169			
			+24.0	128.6	+16.0		2		
			+62.0	166.6	−27.0		270		
			+88.0	192.6	−16.0	111		1,376	
Dec. 26	11	8	−57.0	36.1	−23.5	216			U. S. Naval.
			−55.0	38.1	+15.0		31		
			−52.0	41.1	−30.0		93		
			−37.0	56.1	−24.0		463		
			+1.0	94.1	+15.0	154			
			+75.0	168.1	−28.5		216	1,173	
Dec. 27	11	21	−44.0	35.8	−24.0	278			Do.
			−39.0	40.8	−30.0		77		
			−38.0	41.8	+15.0		31		
			−24.0	55.8	−25.0		401		
			+14.5	94.3	+15.0	123			
			+83.0	162.8	−28.0	62		972	
Dec. 28	16	40	−80.0	343.6	−12.0		72		Mt. Wilson.
			−66.0	357.6	+19.0		128		
			−44.0	19.6	−24.0	7			
			−28.0	35.6	−24.0		360		
			−23.0	40.6	+14.0		21		
			−12.0	51.6	−27.0		515		
			+30.0	93.6	+14.0	181			
			+50.0	113.6	−30.0	6		1,290	
Dec. 30	13	37	−54.0	345.1	−12.0		154		U. S. Naval.
			−41.0	358.1	+19.0	93			
			−3.0	36.1	−22.0	216			
			−1.0	38.1	−31.0	93			
			+17.0	56.1	−25.0		123		
			+55.0	94.1	+15.0	93		772	
Dec. 31	11	16	−40.0	347.2	−12.0		278		Do.
			−29.0	358.2	+19.0	62			
			+10.0	37.2	−23.0	247			
			+11.0	38.2	−31.0		62		
			+18.0	45.2	+15.0		31		
			+30.0	57.2	−25.0		62		
			+68.0	95.2	+15.0	93		835	
Mean daily area for 30 days								1,317	

PROVISIONAL SUN-SPOT RELATIVE NUMBERS FOR DECEMBER 1935

[Dependent alone on observations at Zurich and its station at Arosa]

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

December 1935	Relative numbers	December 1935	Relative numbers	December 1935	Relative numbers
1	*bd* —	11	72	21	*a* 44
2	*b* —	12	*Ebcd* 79	22	39
3	64	13	*b* —	23	*d* —
4	65	14	55	24	*d* 52
5	49	15	*Mc* 63	25	78
6	*d* 67	16	*Eac* 57	26	*a* 61 ?
7	*Mac* 77	17	—	27	73
8	*Mac* 79	18	*a* 48	28	60
9	85	19	25	29	*a* —
10	61	20	*d* —	30	*Eac* 67
				31	72

Mean, 24 days=62.2.

a=Passage of an average-sized group through the central meridian.
b=Passage of a large group or spots 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 zone.
d=Entrance of a large or average-sized center of activity on the east limb.