ON THE METHOD EMPLOYED FOR COMPUTING β AND W, SEE P. 18 OF THIS REVIEW.—ED.

TABLE 3.—*Total, I_m, and screened, I_y, I_r, solar radiation intensity measurements, obtained during January 1937 and determinations of the atmospheric turbidity factor, β, and water-vapor content, w=depth in millimeters, if precipitated*

BLUE HILL METEOROLOGICAL OBSERVATORY OF HARVARD UNIVERSITY

Date and hour angle	Solar altitude	Air mass	I_m	I_y	I_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
1937										
Jan. 1	° ′	*m*	*gr cal.*	*gr cal.*	*gr cal.*				*mm*	
1:17 a. m.	22 22	2.61	1.356	0.912	0.740	0.022	76.0	9.0	5.5	Pc
0:57 a. m.	23 28	2.50	1.384	.912	.748	.027	75.4	6.4	4.3	
Jan. 4										
2:04 a. m.	19 06	3.03	1.102	.692	.592	.023	73.2	18.6	10.8	NPC
Jan. 5										
2:42 a. m.	14 29	3.94	1.108	.764	.664	.058	66.7	11.5	5.6	NP
Jan. 6										
3:33 a. m.	8 35	8.88	.972	.692	.608					
1:17 a. m.	22 53	2.56	1.316	.876	.724	.047	68.2	2.6	.6	Pc
1:28 p. m.	22 10	2.63	1.204	.848	.696	.050	67.6	5.6	3.5	
Jan. 11										
1:56 a. m.	20 40	2.81	1.216	.792	.668	.050	66.0	15.1	9.1	NPC
Jan. 15										
2:14 a. m.	19 10	3.02	1.184	.784	.660	.056	64.0	.8	.5	
2:03 a. m.	20 14	2.88	1.208	.792	.664	.052	66.0	10.0	5.9	NP
3:37 a. m.	9 00	6.18	.980	.660	.560	.048	60.0	11.0	4.5	
Jan. 16										
3:01 p. m.	14 11	4.02	.879	.632						Pc
Jan. 27										
2:23 a. m.	21 46	2.68	1.256	.824	.685	.040	69.8	7.1	4.1	
0:40 a. m.	28 38	2.08	1.268	.800	.664	.088	66.4	1.6	1.1	Pc
3:12 p. m.	14 54	3.84	.968	.652	.576	.100	56.0	7.2	3.7	
Jan. 28										
3:32 a. m.	12 20	4.61	1.000	.680	.584	.090	65.0	12.3	5.8	Pc
Jan. 30										
1:38 a. m.	25 39	2.32	1.172	.752	.630	.105	60.8	2.2	1.5	Pc
0:35 p. m.	29 35	2.02	1.334	.848	.700	.055	71.5	4.8	3.4	

Atmospheric conditions during Smithsonian readings, Blue Hill Observatory, January 1937

Date	Time from local noon	° C.	Wind, Beaufort	Visibility	Sky blueness	Cloudiness and remarks
Jan. 1	1:32 a. m.	+4.9	WNW 3	8	10	1 Ci., Light to Moderate haze.
4	2:16 a. m.	−1.9	W 3	8	8	Few Acu., Light haze.
5	2:45 a. m.	0.0	SSW 5	7	8	Few Ci., Moderate haze.
6	3:36 a. m.	−7.7	NW 5	9	8	2 Ci., Light haze.
6	1:20 a. m.	−6.6	NW 3	9	8	1 Ci., Light haze.
6	1:35 p. m.	−3.9	NNW 1	9	7	3 Ci., Light haze.
11	1:59 a. m.	−3.9	NNE 1	6	8	1 Acu., Dense haze.
13	2:18 a. m.	+0.1	W 1	7	8	Few Ci., Moderate haze.
13	2:06 a. m.	+0.3	NW 1	7	8	Few Ci., Moderate haze.
16	2:28 p. m.	−0.8	NW 4	8	7	6 Cu., Light haze, Cu in front of sun.
16	2:59 p. m.	−0.6	NW 4	8	7	6 Cu., Light haze, Cu in front of sun.
27	2:26 a. m.	−9.1	NW 4	8	8	2 Cu., Light haze.
27	0:43 a. m.	−7.8	NW 4	8	8	Few Cu., Light haze.
28	3:34 a. m.	−9.1	NNE 3	5	8	1 Ci., Dense haze at low angle.
30	1:41 a. m.	−1.0	N 3	6	8	Few Cu., Dense haze.
30	0:31 p. m.	0.0	NE 3	8	8	Few Ci., Moderate 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*	°	°	°				
Nov. 1	11 35	−54.0	252.9	−15.0		103		Harvard.
		−36.0	270.9	−14.0		172		
		−32.5	274.4	+20.5		63		
		−24.5	282.4	+19.5		14		
		−13.0	293.9	−19.0		40		
		−4.5	302.4	+18.5		238		
		−0.5	306.4	−24.5	14			
		+3.0	309.9	−13.0	13		657	

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*	°	°	°				
Nov. 2	12 30	−68.0	225.3	+13.0	81			Mount Wilson.
		−68.0	225.3	−12.0	113			
		−50.0	243.3	−14.0		62		
		−41.0	252.3	−18.0		123		
		−24.0	269.3	−17.0		305		
		−16.0	277.3	+19.0		138		
		−2.0	291.3	−20.5	38			
		+6.0	299.3	+18.0		129		
		+14.0	307.3	−14.0		30	1,019	
Nov. 3	13 19	−56.0	223.6	+12.5	46			U. S. Naval.
		−55.0	224.6	−11.0	123			
		−37.0	242.6	−14.0		62		
		−36.0	243.6	−17.0		154		
		−25.0	254.6	−17.5		46		
		−15.0	264.6	−18.0		123		
		−8.5	271.1	−15.5		93		
		−3.0	276.6	+20.5		185		
		+11.0	290.6	−21.0	31			
		+20.0	299.6	+19.5		93		
		+29.0	308.6	−16.0		62	1,018	
Nov. 4	12 4	−83.0	184.1	+15.0	93			Do.
		−65.0	202.1	−13.0	31			
		−54.0	213.1	−14.0	15			
		−42.5	224.6	+13.0		46		
		−41.0	226.1	−11.0	123			
		−23.0	244.1	−16.5		216		
		−15.0	252.1	−17.5		93		
		−2.0	265.1	−18.0		154		
		+5.0	272.1	−15.0		93		
		+10.0	277.1	+20.0		247		
		+24.0	291.1	−21.0	31			
		+33.0	300.1	+19.0		15		
		+44.0	311.1	−15.0		31	1,188	
Nov. 5	11 22	−75.0	179.3	+14.0		309		Do.
		−62.0	192.3	−18.0		46		
		−52.0	202.3	−13.0		31		
		−39.5	214.8	−14.0	15			
		−30.0	224.3	+13.0	62			
		−29.0	225.3	−11.0	123			
		−11.0	243.3	−13.5		232		
		−9.0	245.3	−16.5		46		
		−1.0	253.3	−17.0		46		
		+10.5	264.8	−17.5		77		
		+19.0	273.3	−15.5		93		
		+20.0	274.3	+21.0		77		
		+26.5	280.8	+19.0	46		1,203	

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*	°	°	°				
Nov. 6	10 47	−69.5	172.0	+9.5		73		Harvard.
		−61.0	180.5	+15.0	219			
		−53.0	188.5	+14.5	127			
		−14.5	227.0	+13.5	53			
		−13.5	228.0	−11.0	157			
		+5.0	246.5	−12.0		153		
		+9.5	251.0	−17.0		145		
		+25.0	266.5	−17.0		57		
		+35.5	277.0	−15.0		189		
		+42.0	283.5	+18.0	34		1,207	
Nov. 7	12 15	−88.0	139.5	−20.0		429		Mount Wilson.
		−58.0	169.5	+9.0	187			
		−45.0	182.5	+14.0		445		
		−42.0	185.5	+25.0		34		
		−32.0	195.5	−16.0		51		
		−18.0	209.5	−13.0		17		
		−3.0	224.5	+14.0		56		
		0.0	227.5	−11.0	124			
		+17.0	244.5	−12.0		142		
		+21.0	248.5	−16.0		193		
		+48.0	275.5	−14.0		348		
		+53.0	280.5	+20.0	45		2,071	
Nov. 8	12 15	−44.0	170.3	+10.0	211			Harvard.
		−35.0	179.3	+15.0	191			
		−26.0	188.3	+14.5	258			
		+11.5	225.8	+13.5	49			
		+14.0	228.3	−11.0	157			
		+31.0	245.3	−12.0		44		
		+39.0	253.3	−17.0		68		
		+63.0	277.3	−14.5		294	1,272	
Nov. 9	11 6	−70.0	131.7	−10.0		494		U. S. Naval.
		−55.0	146.7	−20.5		247		
		−40.0	161.7	−20.0		247		
		−31.5	170.2	+9.0	201			
		−23.0	178.7	+13.0	93			
		−16.0	185.7	+12.0	216			
		−7.0	194.7	−17.5		15		
		+23.0	224.7	+14.0	31			
		+26.0	227.7	−11.0	77			
		+42.0	243.7	−12.0	31			
		+51.0	252.7	−18.0	31			
		+78.0	279.7	−15.0		123	1,806	
Nov. 10	11 56	−56.0	132.1	−9.0		679		Do.
		−41.0	147.1	−20.0		247		
		−26.0	162.1	−20.0		309		
		−19.0	169.1	+9.5	201			
		−10.0	178.1	+14.0	93			
		−1.0	187.1	+13.0	247			
		+28.0	216.1	−14.0	15			
		+37.0	225.1	+14.0	8			
		+39.5	227.6	−11.0	93			
		+57.0	245.1	−13.0	23			
		+65.0	253.1	−19.0	23		1,938	
Nov. 11	10 58	−43.0	132.4	−9.0		772		Do.
		−42.0	133.4	−15.0		123		
		−30.0	145.4	−20.0		247		
		−14.0	161.4	−20.0		309		
		−5.0	170.4	+9.0	154			
		+3.0	178.4	+14.0	93			
		+12.0	187.4	+13.0	247			
		+51.0	226.4	−11.0	93		2,038	
Nov. 12	12 0	−30.0	131.7	−15.0		326		Mount Wilson.
		−29.0	132.7	−8.0		917		
		−16.0	145.7	−20.0		226		
		−12.0	149.7	+12.0		4		
		+3.0	164.7	−19.0		359		
		+10.0	171.7	+10.0	150			
		+23.0	184.7	+14.0		377		
		+36.0	197.7	−15.0		118		
		+52.0	213.7	−34.0	12			
		+56.0	217.7	−12.0		8		
		+65.0	226.7	−10.0	125			
		+66.0	227.7	+23.0		8	2,630	
Nov. 13	11 5	−16.0	133.0	−9.0		617		U. S. Naval.
		−15.0	134.0	−15.0		278		
		−2.0	147.0	−20.0		185		
		+13.0	162.0	−20.0		309		
		+21.0	170.0	+10.0	154			
		+30.5	179.5	+15.0	77			
		+39.0	188.0	+13.0		247		
		+47.0	196.0	−16.0		46		
		+79.0	228.0	−11.5	62		1,975	
Nov. 14	11 16	−3.0	132.7	−9.5		494		Do.
		−2.5	133.2	−15.0		123		
		+10.0	145.7	−20.0		123		
		+25.0	160.7	−20.0		216		
		+36.0	171.7	+10.0	123			
		+45.0	180.7	+15.0	62			
		+53.0	188.7	+13.0		185		
		+58.0	193.7	+19.0		46	1,372	
Nov. 15	12 38	+8.0	129.8	−14.5	78			Harvard.
		+11.0	132.8	−6.5		356		
		+13.5	135.3	−14.0	26			
		+15.0	136.8	−9.5		65		
		+25.0	146.8	−18.5		86		
		+44.0	165.8	−19.0		223		
		+51.0	172.8	+10.5	121			
		+59.0	180.8	+14.0	50			
		+67.0	188.8	+13.0	127			
		+73.5	195.3	+20.0		96	1,228	
Nov. 16	11 51	+23.0	132.1	−15.5		77		U. S. Naval.
		+24.0	133.1	−9.5		370		
		+38.5	147.6	−20.0		154		
		+55.0	164.1	−20.5	201			
		+56.0	165.1	−29.5	46			

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*	°	°	°				
Nov. 16	11 51	+62.0	171.1	+10.5	77			
		+80.0	189.1	+11.0	62		987	
Nov. 17	11 2	−66.0	30.3	−21.0		139		U. S. Naval.
		+37.0	133.3	−9.0		432		
		+37.0	133.3	−15.0		62		
		+50.0	146.3	−20.0		93		
		+65.0	161.3	−23.0	123			
		+69.0	165.3	−20.0		154		
		+70.0	166.3	−26.5	93			
		+78.0	174.3	+10.0	46		1,142	
Nov. 18	12 2	−52.0	30.6	−21.0		309		Do.
		+50.5	133.1	−9.5		185	494	
Nov. 19	13 23	−37.0	31.7	−21.0		432		Do.
		+65.0	133.7	−9.5		185	617	
Nov. 20	13 15	−24.0	31.6	−22.0		501		Mount Wilson.
		+78.0	133.6	−7.0		130	631	
Nov. 21	12 15	−9.0	33.9	−22.0		439	439	Do.
Nov. 22	13 43	+5.0	33.9	−22.0		617	617	U. S. Naval.
Nov. 23	11 19	−78.0	299.1	+16.0	93			Do.
		+14.0	31.1	−22.0		772	865	
Nov. 24	11 39	−65.0	298.7	+15.0	185			Do.
		+27.0	30.7	−21.0		926	1,111	
Nov. 25	11 24	−51.5	299.2	−11.0		185		Do.
		−49.0	301.7	+16.5		401		
		+41.0	31.7	−21.0		988	1,574	
Nov. 26	12 30	−74.0	262.9	−13.0		1,381		Mount Wilson.
		−38.0	298.9	−11.0		602		
		−36.0	300.9	+18.0		1,025		
		−33.0	303.9	+24.0		7		
		+35.0	11.9	−9.0		8		
		+59.0	35.9	−23.0		950	3,973	
Nov. 27	13 18	−80.0	243.3	+16.0	31			U. S. Naval.
		−58.0	265.3	−15.5		1,019		
		−22.0	301.3	−11.0		741		
		−21.5	301.8	+22.0		123		
		−21.0	302.3	+17.0		1,080		
		+62.0	25.3	−24.0		62		
		+73.0	36.3	−21.0	247		3,303	
Nov. 28	12 40	−65.0	245.4	+15.0		550		Mount Wilson.
		−63.0	247.4	−18.0		45		
		−48.0	262.4	−17.0		1,860		
		−20.0	290.4	+14.0		62		
		−10.0	300.4	+16.0		1,474		
		−9.0	301.4	−12.0		659		
		−8.0	302.4	+22.0		58		
		+16.0	326.4	−18.0		7		
		+57.0	7.4	+18.0		15		
		+62.0	12.4	−8.5		37		
		+88.0	38.4	−20.5		220	4,987	
Nov. 29	12 50	−71.0	226.2	−10.5	3			Do.
		−52.0	245.2	+16.0		449		
		−49.0	248.2	−16.0		96		
		−33.0	264.2	−15.0		1,355		
		−5.0	292.2	+14.0		28		
		+3.0	300.2	+17.0		1,242		
		+5.0	302.2	−12.0		545		
		+8.0	305.2	+22.0	12			
		+70.0	7.2	+18.0		12		
		+80.0	17.2	−10.0	5		3,747	
Nov. 30	11 48	−40.0	244.6	+17.0		556		U. S. Naval.
		−35.0	249.6	−16.0		93		
		−22.0	262.6	−16.0		1,173		
		−14.0	270.6	+20.0		31		
		−10.5	274.1	−16.0		154		
		+8.0	292.6	+15.0		31		
		+18.0	302.6	−11.0		340		
		+19.0	303.6	+17.0		895	3,273	
Mean daily area for 30 days							1,681	
Dec. 1	11 10	−80.0	191.7	+21.0		247		Do.
		−80.0	191.7	+14.0	62			
		−70.0	201.7	−36.0		185		
		−69.0	202.7	−30.0	15			
		−26.0	245.7	+18.0		586		
		−20.5	251.2	−16.0		216		
		−9.0	262.7	−16.0		895		
		+3.0	274.7	−16.0		247		
		+32.0	303.7	+16.0		710		
		+36.0	307.7	−10.5		170	3,333	
Dec. 2	13 30	−61.0	196.3	+23.0	129			Mount Wilson.
		−60.0	197.3	+20.0	183			
		−60.0	197.3	+13.0		114		
		−60.0	197.3	−36.0		234		
		−43.0	214.3	−30.0		38		
		−29.0	228.3	−10.5	39			
		−10.0	247.3	+16.0		720		
		−5.0	252.3	−16.0		86		
		+6.0	263.3	−16.0		1406		
		+15.0	272.3	+18.0		6		
		+44.0	301.3	+15.0		858		
		+49.0	306.3	−12.0		215		
		+56.0	313.3	−18.0		71	4,099	
Dec. 4	13 13	−38.5	192.6	+23.5	139			U. S. Naval.
		−36.0	195.1	+20.0	93			
		−35.0	196.1	+14.0		46		
		−35.0	196.1	−36.0		123		
		−16.0	215.1	−30.0		46		
		+14.0	245.1	+17.0		494		
		+21.0	252.1	+18.0	154			
		+32.0	263.1	−16.0		679		
		+75.0	306.1	+15.5		309		
		+78.0	309.1	−11.0		93	2,176	

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	°	°	°				
Dec. 5	11 2	−25.5	193.6	+22.5	154			U. S. Naval.
		−24.0	195.1	+20.0	108			
		−22.0	197.1	−36.0		77		
		−21.0	198.1	+13.0		46		
		−4.5	214.6	−30.0		31		
		+25.0	244.1	+16.0		556		
		+34.5	253.6	+17.0	139			
		+39.5	258.6	+26.0	31			
		+44.0	263.1	−17.0		617		
		+82.0	301.1	+12.5	93		1,852	
Dec. 6	13 10	−55.0	149.6	+11.5		21		Mount Wilson.
		−28.0	176.6	+9.0	28			
		−12.0	192.6	+23.0	129			
		−11.0	193.6	+20.0	83			
		−8.0	196.6	+13.0	57			
		−8.0	196.6	−35.0		143		
		+10.0	214.6	−30.0		16		
		+17.0	221.6	+21.0		21		
		+40.0	244.6	+17.0		974		
		+48.0	252.6	−25.0		7		
		+51.0	255.6	+26.0	14			
		+52.0	256.6	−16.0		2		
		+57.0	261.6	−14.0		497	1,992	
Dec. 7	16 10	−39.0	150.8	+13.0		11		Do.
		−12.0	177.8	+10.0	6			
		+3.0	192.8	+24.0	150			
		+4.0	193.8	+21.0	66			
		+7.0	196.8	−35.0	110			
		+8.0	197.8	+13.0	21			
		+11.0	200.8	−12.0		39		
		+25.0	214.8	−28.0	6			
		+54.0	243.8	+17.0		887		
		+72.0	261.8	−14.0		332	1,628	
Dec. 8	11 19	−61.0	118.4	−21.0	15			U. S. Naval.
		−31.0	148.4	+12.0		154		
		+12.0	191.4	+23.0		123		
		+14.5	193.9	+20.5	46			
		+19.0	198.4	+13.5		31		
		+19.0	198.4	−35.5	77			
		+22.0	201.4	−11.0		46		
		+68.0	247.4	+17.0		1,049		
		+84.0	263.4	−16.0		278	1,819	
Dec. 9	14 0	−69.0	95.8	−23.0		12		Mount Wilson.
		−47.0	117.8	−21.0		104		
		−16.0	148.8	+13.0		196		
		+13.0	177.8	+13.0		6		
		+28.0	192.8	+23.0		146		
		+29.0	193.8	+21.0	79			
		+32.0	196.8	−33.0	150			
		+34.0	198.8	+16.0		66		
		+41.0	205.8	−10.0		22		
		+49.0	213.8	−28.0		6		
		+80.0	244.8	+18.0		692	1,479	
Dec. 10	13 45	−58.0	93.7	−22.0	5			Do.
		−34.0	117.7	−20.0		180		
		−3.0	148.7	+14.0		276		
		+41.0	192.7	+24.0		110		
		+43.0	194.7	+21.0	55			
		+44.0	195.7	−34.0	137			
		+48.0	199.7	+15.0	21			
		+53.0	204.7	−10.0		43		
		+68.0	219.7	+28.0		3	830	
Dec. 11	15 0	−77.0	60.9	−22.0		294		Do.
		−45.0	92.9	−22.0		3		
		−20.0	117.9	−19.0		142		
		+13.0	150.9	+15.0		147		
		+28.0	165.9	+10.0		27		
		+56.0	193.9	+24.0		123		
		+56.0	193.9	+22.0	73			
		+57.0	194.9	−34.0		122		
		+61.0	198.9	+14.0	10			
		+66.0	203.9	−11.0	4			
		+81.0	218.9	+28.0	7		952	
Dec. 12	12 0	−65.0	61.3	−22.0		368		Do.
		−5.0	121.3	−20.0		72		
		+24.0	150.3	+14.0		108		
		+41.0	167.3	+10.0		132		
		+69.0	195.3	+24.0	79			
		+69.0	195.3	+21.0	58			
		+70.0	196.3	−34.0		175	992	
Dec. 13	12 46	−83.0	29.7	−21.0	93			U. S. Naval.
		−51.0	61.7	−21.5		340		
		+4.0	116.7	−20.0		62		
		+36.0	148.7	+14.0	23			
		+41.0	153.7	+14.0	15			
		+56.0	168.7	+10.0		123		
		+80.0	192.7	+23.0	62			
		+80.0	192.7	+20.0	54			
		+83.0	195.7	−34.0	77		849	
Dec. 14	11 19	−69.5	30.8	−20.5	123			Do.
		−39.0	61.3	−21.0		370		
		+15.5	115.8	−20.5		93		
		+48.0	148.3	+14.0	31			
		+70.0	170.3	+10.0	46		663	
Dec 16	9 51	−45.0	29.8	−22.0		152		Harvard.
		−12.5	62.3	−21.0		272		
		+38.0	112.8	−20.5		117	541	
Dec. 17	11 9	−30.0	30.9	−21.0	123			U. S. Naval.
		+0.5	61.4	−21.0		278		
		+52.0	112.9	−20.5		185	586	
Dec. 18	11 40	−18.0	29.5	−21.0	123			Do.
		+13.0	60.5	−21.0		247		
		+65.0	112.5	−21.0		123	493	

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	°	°	°				
Dec. 20	11 30	−80.0	301.2	+16.0		29		Mount Wilson.
		−76.0	305.2	+20.0	13			
		−60.0	321.2	−26.0		36		
		−55.0	326.2	+24.0		194		
		−1.0	20.2	−25.0		11		
		+8.0	29.2	−23.0		164		
		+41.0	62.2	−21.0		144		
		+78.0	99.2	+12.0		130	721	
Dec. 21	11 16	−80.0	288.2	−29.0	62			U. S. Naval.
		−64.0	304.2	+19.0		370		
		−43.0	325.2	−24.0		62		
		−42.0	326.2	+25.0		432		
		+14.5	22.7	+17.5		93		
		+21.0	29.2	−21.0	123			
		+55.0	63.2	−20.5		93	1,235	
Dec. 22	11 19	−68.0	287.0	−29.5	93			Do.
		−50.0	305.0	+19.0		309		
		−31.0	324.0	−24.5		62		
		−28.0	327.0	+24.0		340		
		+21.0	16.0	−21.5		93		
		+27.0	22.0	+17.5		108		
		+34.5	29.5	−21.0	123		1,128	
Dec. 23	11 28	−80.0	261.7	−13.0	31			Do.
		−56.0	285.7	−28.5		185		
		−42.0	299.7	+36.0		108		
		−36.0	305.7	+19.0		278		
		−16.0	325.7	−23.0	31			
		−14.0	327.7	+24.5		340		
		+39.0	20.7	−24.0		93		
		+41.0	22.7	+16.0		62		
		+48.0	29.7	−21.0	123		1,251	
Dec. 24	11 20	−79.0	249.6	+18.0	185			Do.
		−66.0	262.6	+14.0	31			
		−65.0	263.6	−14.5		31		
		−42.0	286.6	−29.5	123			
		−40.5	288.1	−15.0		62		
		−36.0	292.6	+18.0	31			
		−29.0	299.6	+36.0		77		
		−29.0	299.6	+18.0	62			
		−21.0	307.6	+18.0	93			
		−1.0	327.6	+25.0		340		
		+51.0	19.6	−22.0		46		
		+61.0	29.6	−21.0	93		1,174	
Dec. 26	11 3	−50.0	252.4	+18.5	185			Do.
		−38.0	264.4	−15.0	31			
		−36.0	266.4	+13.0	31			
		−16.0	286.4	−29.5	123			
		−14.0	288.4	+19.5	77			
		−9.0	293.4	+19.0		93		
		−2.0	300.4	+19.5	62			
		+21.0	323.4	+22.5		123		
		+31.0	333.4	+21.5	123		848	
Dec. 28	11 0	−79.0	197.1	−10.0	123			Do.
		−68.0	208.1	+16.0	31			
		−23.0	253.1	+19.0		185		
		−10.5	265.6	+11.0		247		
		+9.0	285.1	−30.5		93		
		+15.0	291.1	+18.0		93		
		+21.0	297.1	+18.0	31			
		+49.0	325.1	+23.0		93		
		+59.0	335.1	+22.5	185		1,081	
Mean daily area for 23 days							1,379	

PROVISIONAL SUN-SPOT RELATIVE NUMBERS, JANUARY 1937

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

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

January 1937	Relative numbers	January 1937	Relative numbers	January 1937	Relative numbers
1	145	11	*d* 97	21	*WEEccc* 127
2	*a* 163	12	91	22	163
3	*a* 109	13	*Wc* 80	23	155
4	*Mc* 112	14	91	24	*abdd* 178
5	*a* ---	15	---	25	*Mac* 181
6	*MEcc* 82	16	*Mac* 108	26	*Ebcd* 200
7	94	17	*Eacd* 108	27	*Ec* 180
8	---	18	112	28	210
9	97	19	---	29	*Mcd* ---
10	*Mcd* 85	20	*Ec* 128	30	*ab* 233
				31	*ab* 233

Mean, 26 days = 137.0.

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 group developing into a middle-sized or large 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.