TABLE 3.—*Total, I_m and screened, I_y, I_r, solar radiation intensity measurements, obtained during October 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	βI_{m-r}	βI_{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
Oct. 21	° ′	*m*	*gr. cal.*	*gr. cal.*	*gr. cal.*						*mm*	
0:58 p. m.	35 35	1.77	1.202	0.801	0.634	0.053	0.087	0.070	73.7	12.3	9.4	N_{FA}, T_M aloft.
2:25 p. m.	28 37	2.08	1.002	.750	.600	.122	.093	.108	67.0	15.9	11.0	
Oct. 24												
3:28 a. m.	18 08	3.21	1.224	.860	.727	.034	.076	.055	65.2	2.8	1.6	N_{FC}.
1:37 a. m.	31 54	1.89	1.375	.931	.762	.034	.045	.040	73.5	3.4	2.5	
0:59 p. m.	33 42	1.80	1.375	.949	.755	.039	.055	.042	78.1	8.0	6.0	
1:56 p. m.	29 14	2.05	1.325	.900	.727	.029	.055	.042	75.5	8.0	5.6	
Oct. 25												
3:19 a. m.	19 12	3.05	1.251	.882	.720	.022	.058	.040	70.2	5.9	3.4	N_{FC}.
Oct. 27												
2:44 a. m.	23 23	2.52	1.110	.784	.640	.056	.076	.066	66.5	10.0	6.3	P_C, N_{FC} aloft.
0:33 a. m.	34 39	1.76	1.202	.824	.772	.076	.112	.094	69.5	8.5	6.4	
Oct. 28												
3:47 a. m.	14 00	4.08	0.998	.698	.575	.024	.056	.040	62.3	11.5	5.8	N_{FC}, T_G 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)	Skyblueness	Cloudiness and remarks
October 1935	°C				
1; 2:28 a. m.	14.4	S 4	8	7	1 ACu, few Ci, mod. haze.
1; 0:18 a. m.	17.3	S 4	8	7	1 ACu, few Ci, mod. haze.
1; 3:12 p.m.	15.6	S 5	9	7	1 Ci, ACu, Cu.
4; 0:30 a. m.	13.3	WSW 4	9	5	T FrCu.
4; 1:33 p. m.	14.2	WSW 3	9	5	T Cu.
4; 3.37 p. m.	13.9	WNW 1	9	5	1 Cu.
5; 4:32 a. m.	3.2	WSW 5	9	8	Mod. water haze.
7; 4:04 p. m.	7.9	NNW 4	9	5	2 Ci, ACu.
8; 2:36 a. m.	6.9	NxE 2	8	5	T Ci, Cu, mod. haze.
8; 3:11 p. m.	10.6	E 2	8	6	T Cu, mod. haze.
9; 3:05 a. m.	10.0	SE 2	8	6	1 Ci, ACu, Cu. mod-heavy haze.
9; 0:09 p. m.	12.0	SE 2	9	6	1 Ci, ACu, Cu.
10; 2:46 a. m.	10.6	SSW 1	8	6	T Ci, Cu. mod-heavy haze.
10; 0:22 p. m.	16.1	SxE 2	8	6	T Ci. mod. haze.
10; 4:08 p. m.	16.1	SxW 2	8	6	1 Ci. mod. haze.
12; 3:48 a. m.	7.8	NW 2	8	5	T ACu. mod. haze.
12; 1:11 p. m.	12.6	WNW 3	9	8	1 Cu.
12; 3:45 p. m.	13.4	NW 2	9	8	Few Cu. light haze.
13; 2:52 a. m.	8.6	W 3	8	8	Few Ci. heavy haze.
13; 1:38 p. m.	16.2	S 3	9	9	2 Ci. light haze.
14; 2:38 a. m.	14.2	SW 4	6	7	Heavy water haze.
14; 0:21 a. m.	18.9	SxW 5	7	8	Mod. water haze.
14; 3:45 p. m.	19.4	SWxS 5	7	8	Mod. to heavy water haze.
15; 1:58 p. m.	13.8	NW 6	9	10	Few Ci, Few Cu.
16; 2:30 a. m.	5.7	N 4	8	8	1 Cu. mod. haze.
16; 3:15 p. m.	10.0	ENE 2	9	8	Mod. haze.
17; 2:07 a. m.	12.7	SSW 4	7	9	Few Ci. mod-heavy haze.
17; 3:00 p. m.	15.4	SW 4	8	9	Few Ci. mod. haze.
17; 4:40 p. m.	15.4	S 4	8	9	Few Ci. mod. haze.
19; 2:27 a. m.	12.2	NW 5	8	10	Few Ci, few ACu, mod. haze.
19; 1:00 p. m.	16.1	NW 4	9	9	1 Ci. light haze.
20; 2:04 a. m.	15.8	WNW 6	8	9	Moderate haze.
20; 1:44 p. m.	18.4	WNW 5	9	9	Light haze.
21; 1:34 p. m.	16.7	SSE 3	9	8	3 Ci, few ACu. mod. haze.
21; 4:34 p. m.	13.9	S 3	8	8	1 Ci.
24; 3:45 a. m.	4.6	NW 4	9	8	1 Ci, 1 ACu, few Cu.
24; 1:37 p. m.	8.7	NW 4	10	8	Few Ci, few Cu.
24; 2:10 p. m.	8.8	NW 5	10	7	Few CiSt, few Cu.
24; 3:34 p. m.	8.7	NW 5	10	8	Few CiSt, few FrCu.
25; 3:07 a. m.	1.7	NW 2	8	7	Few Ci, few ACu, heavy haze.
25; 2:50 a. m.	1.8	NW 2	8	7	Few Ci, few ACu, heavy haze.
52; 1:23 p. m.	7.2	NW 2	8	7	Few Ci, 3 ACu, mod. haze.
28; 2:45 a. m.	13.9	SW 3	7	7	2 Ci, 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: Diff. in longitude	Heliographic: Longitude	Heliographic: Latitude	Area: Spot	Area: Group	Total area for each day	Observatory
1935	*h. m.*	°	°	°				
Oct 1	11 2	−68.0	78.9	−18.0	--------	185	--------	U. S. Naval.
		−37.0	109.9	−17.5	31	--------	--------	
		−21.0	125.9	+22.0	--------	31	--------	
		−18.0	128.9	+14.0	--------	46	--------	
		−13.0	133.9	−19.5	139	--------	--------	
		−9.0	137.9	+22.0	62	--------	--------	
		+31.0	177.9	−26.0	--------	62	556	
Oct. 2	11 52	−54.0	79.3	−17.0	--------	370	--------	Do.
		−23.0	110.3	−17.5	--------	93	--------	
		−8.5	124.8	+21.0	--------	31	--------	
		−4.5	128.8	+14.0	--------	123	--------	
		0.0	133.3	−19.5	185	--------	--------	
		+5.0	138.3	+22.5	46	--------	--------	
		+45.0	178.3	−26.0	62	--------	910	
Oct. 3	11 8	−39.5	81.0	−17.0	--------	278	--------	Do.
		−11.0	109.5	−18.5	--------	31	--------	
		+8.0	128.5	+13.0	--------	123	--------	
		+12.0	132.5	−20.0	154	--------	--------	
		+18.0	138.5	+22.5	39	--------	625	
Oct. 4	11 1	−79.0	28.3	−19.0	31	--------	--------	Do.
		−26.0	81.3	−17.0	--------	185	--------	
		+22.0	129.3	+13.0	--------	123	--------	
		+25.0	132.3	−20.0	123	--------	--------	
		+30.0	137.3	+22.0	31	--------	493	
Oct. 5	11 35	−63.0	30.8	- 19.0	--------	46	--------	Do.
		−16.0	77.8	−17.0	--------	93	--------	
		−6.0	87.8	−17.0	--------	62	--------	
		+ 3.0	96.8	−22.5	31	--------	--------	
		+36.0	129.8	+12.0	--------	123	--------	
		+40.0	133.8	−20.5	139	--------	--------	
		+44.0	137.8	+21.5	31	--------	525	
Oct. 6	13 5	−50.0	29.9	−19.0	14	--------	--------	Mt. Wilson.
		−2.0	77.9	−18.0	--------	30	--------	
		+ 8.0	87.9	−18.0	--------	15	--------	
		+16.0	95.9	−22.0	--------	14	--------	
		+51.0	130.9	+12.0	--------	22	--------	
		+55.0	134.9	−21.0	139	--------	--------	
		+58.0	137.9	+22.0	10	--------	244	

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
1935	h. m.	°	°	°				
Oct. 7	11 10	−37.0	30.7	−19.5		31		U. S. Naval.
		+13.0	80.7	−18.0		31		
		+21.0	88.7	−18.0	15			
		+29.0	96.7	−22.0		93		
		+64.0	131.7	+12.0		62		
		+67.0	134.7	−21.0	123			
		+70.0	137.7	+21.0	31		386	
Oct. 8	11 51	−22.5	31.6	−19.5	31			Do.
		+42.0	96.1	−22.5		93	124	
Oct. 9	14 9		No spots					Harvard.
Oct. 10	11 12	−80.0	308.1	+21.0	46		46	U. S. Naval.
Oct. 11	11 10	−75.0	299.9	+26.5	62			Do.
		−67.0	307.9	+20.0	31			
		−62.5	312.4	−23.0		93	186	
Oct. 12	12 10	−60.0	301.1	+26.0	24			Mt. Wilson.
		−50.0	311.1	+20.0	6			
		−50.0	311.1	−24.0		76		
		−26.0	335.1	+22.0		8		
		−24.0	337.1	−18.0	5			
		0.0	1.1	+19.0		60	179	
Oct. 13	12 15	−76.0	271.9	+25.0	163			Do.
		−47.0	300.9	+27.0		14		
		−38.0	309.9	+21.0	7			
		−38.0	309.9	−23.0		56		
		−13.0	334.9	+22.5		25		
		−12.0	335.9	−17.0	2			
		+14.0	1.9	+19.0		18	285	
Oct. 14	13 35	−64.5	269.5	+24.5	139			U. S. Naval.
		−34.0	300.0	+26.0	31			
		−24.5	309.5	+21.0		46		
		−22.5	311.5	−23.0		93		
		+3.0	337.0	+21.0		185		
		+31.0	5.0	+18.5	31		525	
Oct. 15	11 17	−75.0	247.1	+14.5	46			Do.
		−73.0	249.1	+23.0		62		
		−52.0	270.1	+25.0	139			
		−13.0	309.1	+21.5		31		
		−11.0	311.1	−22.0		62		
		+15.0	337.1	+22.0		185	525	
Oct. 16	11 20	−60.0	248.9	+13.0	31			Do.
		−59.0	249.9	+23.0		93		
		−39.5	269.4	+24.0	154			
		+0.5	309.4	+21.0	31			
		+28.0	336.9	+22.0		278	587	
Oct. 17	10 59	−46.0	249.9	+23.0		247		Do.
		−26.0	269.9	+24.5	154			
		0.0	295.9	−20.0	15			
		+13.0	308.9	−20.0	31			
		+20.5	316.4	−21.0		93		
		+41.0	336.9	+21.5		309	849	
Oct. 18	11 24	−56.0	226.4	+21.0		31		Do.
		−33.0	249.4	+23.0		432		
		−13.5	268.9	+24.0	154			
		+13.0	295.4	−20.0		93		
		+34.0	316.4	−20.0		123		
		+55.0	337.4	+21.5		340	1,173	
Oct. 19	10 59	−43.0	226.5	+21.0		123		Do.
		−17.0	252.5	+23.0		494		
		−0.5	269.0	+23.0	154			
		+26.0	295.5	−22.0		93		
		+43.0	312.5	−23.0	31			
		+51.0	320.5	−20.0		62		
		+66.0	335.5	+22.0		185	1,142	
Oct. 20	11 40	−78.0	177.8	+18.0	38			Mt. Wilson.
		−68.0	187.8	+21.0		37		
		−48.0	207.8	−19.0		17		
		−30.0	225.8	+20.0		93		
		−4.0	251.8	+21.0		461		
		+13.0	268.8	+22.0	92			
		+39.0	294.8	−21.0		36		
		+65.0	320.8	−20.0		96		
		+85.0	340.8	+21.0	114		984	
Oct. 21	11 19	−68.0	174.9	+17.0		123		U. S. Naval.
		−55.0	187.9	+20.5		93		
		−35.0	207.9	−19.0	15			
		−13.0	229.9	+19.0		77		
		+9.0	251.9	+22.0		525		
		+25.0	267.9	+22.0	123			
		+80.0	322.9	−20.0	62		1,018	
Oct. 22	12 13	−54.0	175.2	+18.0		309		Do.
		−44.0	185.2	+21.0		247		

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
1935								
Oct. 22		+1.0	230.2	+19.0	46			
		+16.0	245.2	+24.0		62		
		+23.0	252.2	+21.0		463		
		+39.5	268.7	+22.0	123		1,250	
Oct. 23	17 45	−36.0	176.9	+18.0		348		Mt. Wilson.
		−25.0	187.9	+21.0		271		
		+19.0	231.9	+19.0	40			
		+44.0	256.9	+21.0		475		
		+54.0	266.9	+22.0	130		1,264	
Oct. 24	11 6	−28.0	175.5	+19.0		340		U. S. Naval.
		−18.0	185.5	+21.0		309		
		+28.0	231.5	+19.0	46			
		+41.0	244.5	+24.0	31			
		+50.0	253.5	+20.5		463		
		+62.0	265.5	+22.0	123		1,312	
Oct. 25	11 7	−15.0	175.3	+18.5		370		Do.
		−5.0	185.3	+20.5		370		
		+41.0	231.3	+19.5	31			
		+66.0	256.3	+21.0		401		
		+76.0	266.3	+22.0	62		1,234	
Oct. 26	11 1	−2.0	175.1	+18.5		247		Do.
		+8.0	185.1	+20.5		309		
		+54.0	231.1	+19.5	31			
		+80.0	257.1	+21.0		185	772	
Oct. 27	12 55	−42.0	120.9	+17.0		7		Mt. Wilson.
		−32.0	130.9	−20.0		3		
		+13.0	175.9	+18.0		163		
		+24.0	186.9	+21.0		327		
		+68.0	230.9	+20.0	5		505	
Oct. 28	12 3	+26.5	176.7	+18.5		247		U. S. Naval.
		+34.0	184.2	+20.5		309	556	
Oct. 30	14 15	+52.0	174.6	+19.0	185			Do.
		+62.0	184.6	+20.5		154	339	
Oct. 31	13 36	+66.0	175.8	+18.5	185			Do.
		+78.0	187.8	+21.0	93		278	

Mean daily area for 30 days, 629.

PROVISIONAL SUNSPOT RELATIVE NUMBERS FOR OCTOBER 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]

October 1935	Relative numbers	October 1935	Relative numbers	October 1935	Relative numbers
1	*d*	11	*d* 25	21	
2	*Mac* 73	12	*Mc* 34	22	
3	*a* 68	13	*Mac* 60	23	
4	52	14	*a* 53	24	
5	61	15	*d* 69	25	
6	*a* 57	16	68	26	*b* 55
7	53	17	*Mcc* 95	27	
8	40	18	84	28	
9	0	19	*a* 79	29	
10	7	20	*a* 59	30	13
				31	13

Mean, 22 days=50.8.

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.