

TABLE 3.—Total,  $I_m$ , and screened,  $I_v$ ,  $I_r$ , solar radiation intensity measurements, obtained during September 1935, and determinations of the atmospheric turbidity factor,  $\beta$ , and water-vapor content,  $w$  = depth in millimeters, if precipitated—Continued

BLUE HILL METEOROLOGICAL OBSERVATORY OF HARVARD UNIVERSITY—Continued

Date and hour angle, 1935	Solar altitude	Air mass mmm	$I_m$	$I_v$	$I_r$	$\beta_{I_m \rightarrow}$	$\beta_{I_v \rightarrow}$	$\beta_{mm}$	Percentage of solar constant		$w$	Air-mass type
									$\frac{I_w - o}{1.94}$	$\frac{I_w - o - I_m}{1.94}$		
<b>Sept. 22</b>												
4:31 a. m.	16 38	3.47	1.040	0.718	0.600	.0022	0.078	0.050	63.2	9.6	5.2	$N_{ps}$
2:23 a. m.	37 30	1.64	1.310	.860	.690	.021	.082	.052	76.9	9.4	7.4	
1:17 p. m.	44 50	1.42	1.340	.882	.701	.025	.082	.054	79.3	10.2	8.6	
2:25 p. m.	37 06	1.65	1.185	.795	.646	.057	.125	.091	71.8	10.7	8.4	
4:18 p. m.	19 05	3.03	.885	.657	.530	.061	.076	.068	59.0	13.4	7.8	
<b>Sept. 23</b>												
4:04 a. m.	21 48	2.68	1.285	.885	.720	.005	.049	.027	80.8	14.6	5.6	$P_o$
1:43 a. m.	41 58	1.49	1.455	.925	.785	.008	.067	.048	87.1	12.1	10.0	
0:23 p. m.	47 38	1.35	1.465	.970	.780	.012	.067	.040	81.7	6.2	5.2	
2:41 p. m.	34 13	1.78	1.372	.930	.725	.001	.026	.014	81.4	10.5	8.0	
3:53 p. m.	23 01	2.55	1.220	.846	.692	.020	.097	.058	67.0	4.1	2.6	
<b>Sept. 24</b>												
2:45 p. m.	33 35	1.80	1.195	.830	.665	.029	.065	.047	76.6	15.0	11.5	$N_{ps}, N_{tm}$ aloft.
<b>Sept. 25</b>												
2:13 a. m.	32 42	1.85	1.030	.722	.575	.084	.109	.096	67.0	13.9	10.3	$N_{ps}, N_{tm}$ aloft.
1:19 p. m.	43 34	1.45	.972	.685	.550	.150	.189	.170	62.6	12.5	10.6	
4:28 p. m.	16 21	3.53	.615	.465	.380	.103	.127	.115	39.5	7.8	4.2	
<b>Sept. 27</b>												
3:18 a. m.	28 20	2.10	1.150	.765	.600	.025	.065	.045	74.2	14.8	10.3	$N_{so}$
<b>Sept. 29</b>												
0:08 p. m.	45 31	1.39	1.428	.935	.730	-----	.038	.038	79.3	5.7	4.3	$P_o$
<b>Sept. 30</b>												
4:09 a. m.	18 18	3.16	1.200	.813	.675	.005	.057	.051	70.1	8.2	4.7	$P_o$
2:46 a. m.	31 34	1.90	1.354	.895	.704	-----	.035	.035	80.1	10.3	7.6	
0:19 a. m.	44 49	1.42	1.438	.942	.734	-----	.028	.028	79.5	5.4	4.6	
3:47 p. m.	22 02	2.65	1.126	.776	.622	.025	.057	.041	70.5	5.6	3.5	

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-blue-ness	Cloudiness and remarks
<b>September 1935</b>					
6: 5:57 p. m.	14.4	N 4	7	5	7 Ci, few Acu, dense haze.
7: 4:09 a. m.	15.0	NNW 3	8	8	3 Ci, light haze.
7: 4:34 p. m.	20.6	WSW 4	9	6	5 Ci, few Cu.
16: 5:05 p. m.	15.0	NW 4	10	8	3 Cu.
17: 2:53 a. m.	12.2	WNW 2	9	10	4 Ci, Ci moved near sun during observation.
17: 2:55 p. m.	17.8	WNW 3	9	8	2 Ci, few Acu, few Cu.
17: 4:09 p. m.	18.8	SSW 1	9	10	Few Ci, few Acu, few Cu.
20: 2:41 p. m.	21.7	W 3	8	7	7 Acu, few Ci.
20: 4:42 p. m.	21.1	NNW 5	9	6	2 Acu, few Ci, test interrupted because of Cu near sun.
22: 2:25 a. m.	16.7	SW 1	9	5	1 Ci, 1 Cu,
22: 1:47 a. m.	19.1	SW 1	9	5	1 Ci, 1 Cu,
22: 1:39 p. m.	20.7	WNW 5	9	5	Few Ci; 1 Cu; gusty wind.
22: 4:58 p. m.	20.3	WSW 3	9	6	1 Cu,
23: 1:49 a. m.	9.9	NW 5	10	10	Few Cu.
23: 10:51 p. m.	13.3	WNW 5	10	10	1 Ci.
23: 4:20 p. m.	14.8	NW 5	10	10	Few Cu.
24: 2:42 p. m.	16.4	W 1	9	5	5 Acu, few Ci.
25: 2:17 a. m.	17.2	SSW 3	7	8	1 Ci, few Acu, mod. haze.
25: 1:08 p. m.	22.6	SW 5	7	7	Zero clouds; mod. haze.
29: 1:09 p. m.	15.6	SW 2	9	6	2 Cu.
30: 2:45 a. m.	7.7	WNW 5	9	7	Few Acu.
30: 4:28 p. m.	13.9	SW 3	9	7	1 Cu.

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		
<b>1935</b>								
Sept. 1	h. m. 12 15	-59.0	123.3	+28.0	13	-----	-----	Mount Wilson.
		-36.0	146.3	+21.0	293	-----	-----	
		+19.0	201.3	+31.0	74	-----	380	
Sept. 2	12 20	-45.0	124.1	+28.0	8	-----	-----	Do.
		-22.0	147.1	+21.0	321	-----	-----	
		+32.0	201.1	+31.0	59	-----	-----	
Sept. 3	12 20	+46.0	215.1	-22.0	-----	10	398	Do.
		-32.0	123.9	+27.5	11	-----	-----	
		-8.0	147.9	+21.5	303	-----	-----	
		+29.0	184.9	-39.0	-----	7	-----	
		+44.0	199.9	+32.0	56	-----	-----	
Sept. 4	12 25	+59.0	214.9	-22.0	-----	7	384	Do.
		-18.0	124.5	+27.0	5	-----	-----	
		+4.0	146.5	+21.0	282	-----	-----	
		+25.0	167.5	+23.0	-----	16	-----	
		+41.0	183.5	-39.0	3	-----	-----	
		+58.0	200.5	+31.0	72	-----	378	

POSITIONS AND AREAS OF SUN SPOTS—Continued

Date	Eastern stand-ard time	Heliographic			Area		Total area for each day	Observatory
		Diff. in longi-tude	Longi-tude	Latitu-tude	Spot	Group		
1935—Con.								
Sept. 5	12 30	-10.0	119.3	+20.0		25		Mount Wil-son.
		-8.0	121.3	+29.0		4		
		+18.0	147.3	+20.5	307			
		+38.0	167.3	+24.0		23		
		+70.0	199.3	+31.0	33		392	
Sept. 6	11 35	+1.0	117.6	+19.0		154		U. S. Naval.
		+30.0	146.6	+20.0	247			
		+50.5	167.1	+22.0		154		
		+32.0	198.6	+30.0	31		586	
Sept. 7	9 50	+44.5	149.1	+20.0	595			Harvard.
		+63.0	167.6	+34.5		294		
		+69.5	174.1	+23.0		161	1,050	
Sept. 8	9 25	+28.0	119.4	+20.0	2			Mount Wil-son.
		+39.0	130.4	-18.0		133		
		+53.0	144.4	+20.0	251			
		+71.0	162.4	+24.0		27	413	
Sept. 9	11 6	-83.0	354.3	+30.5	31			U. S. Naval.
		+54.0	131.3	-18.0		401		
		+69.5	146.8	+20.0	185		617	
Sept. 10	11 30	-70.0	353.8	+31.0	77			Do.
		+67.0	130.8	-19.0		278		
		+82.0	145.8	+19.0	154		509	
Sept. 11	11 50	-58.0	352.5	+31.0	46			Do.
		+80.0	130.5	-19.0		31	77	
Sept. 12	9 54	-43.0	355.6	+31.5		40	40	Harvard.
Sept. 13	11 42	-58.0	326.1	+26.0		46		U. S. Naval.
		-31.5	352.6	+31.0		23		
		+5.0	29.1	+28.0		31	100	
Sept. 15	12 45	-54.0	303.1	-24.0		35		Mount Wil-son.
		-30.0	327.1	+28.0		90		
		-1.0	356.1	+27.0	2		127	
Sept. 16	13 21	-40.0	303.6	-25.0		185		U. S. Naval.
		-17.0	326.6	+28.0		123	308	
Sept. 17	11 1	-80.0	251.7	+25.0	62			Do.
		-30.0	301.7	-25.5		185		
		-6.0	325.7	+27.0		62	309	
Sept. 18	11 11	-68.0	250.4	+25.0	123			Do.
		-17.0	301.4	-26.0		31	154	
Sept. 19	11 43	-55.0	249.9	+25.0	123			Do.
		-6.0	298.9	-26.0		31		
		0.0	304.9	-25.0		31	185	
Sept. 20	10 57	-51.0	241.1	+27.0		31		Do.
		-41.0	251.1	+25.0	154		185	
Sept. 21	11 14	-35.0	243.8	+24.5	15			Do.
		-29.0	249.8	+25.0	123		138	
Sept. 22	9 36	-12.0	254.6	+25.0	169			Harvard.
		+14.0	280.6	+19.5		108		
		+73.0	339.6	-20.0	192		469	
Sept. 23	11 6	-3.0	249.4	+24.5	93			U. S. Naval.
		+13.0	265.4	+23.0		62		
		+23.5	275.9	+19.0		278		
		+48.0	300.4	+27.5		46	479	
Sept. 24	11 5	-16.0	178.3	-26.0		62		Do.
		+10.0	249.3	+24.5	123			
		+26.0	265.3	+22.0		93		
		+38.0	277.3	+18.0		432		
		+16.0	300.3	+27.0		62	772	
Sept. 25	11 22	-47.5	178.4	-26.0		185		Do.
		+23.0	248.9	+24.0		309		
		+40.0	265.9	+22.0		185		
		+50.0	275.9	+18.5		93		
		+55.5	281.4	+17.0	185			
		+80.0	305.9	+25.0	62		1,019	
Sept. 26	11 12	-83.0	129.8	-19.5	77			Do.
		-73.0	139.8	+21.5		93		
		-68.5	144.3	+22.0		15		
		-69.0	153.8	-23.5		93		
		-33.0	179.8	-26.0		247		
		+37.0	249.8	+25.0		185		

POSITIONS AND AREAS OF SUN SPOTS—Continued

Date	Eastern Stand-ard time	Heliographic			Area		Total area for each day	Observatory		
		Diff. in longi-tude	Longi-tude	Latitu-tude	Spot	Group				
1935—Con.										
Sept. 27	11 52	+53.5	266.3	+22.0		123		U. S. Naval.		
		+60.0	272.8	+19.0		62				
		+68.0	280.8	+17.5	247		1,142			
		-68.0	131.2	-20.0	131					
		-58.0	140.2	+21.0		93				
		-47.5	151.7	-25.0		31				
		-41.5	157.7	-23.0	46					
		-22.5	176.7	-27.5		123				
		-17.0	182.2	-25.0	31					
		+50.0	249.2	+24.0		185				
Sept. 28	14 30	+66.0	265.2	+22.0		340		Mount Wil-son.		
		+81.0	280.2	+17.5	123		1,103			
		-80.0	104.6	-18.0		9				
		-59.0	125.6	+23.0	6					
		-51.0	133.6	-19.0	161					
		-44.0	140.6	+22.5		90				
		-29.0	155.6	-23.0		28				
		-28.0	156.6	+29.0		8				
		-4.0	180.6	-25.0		109				
		+68.0	252.6	+24.0		13				
Sept. 29	10 58	+82.0	266.6	+22.0		414	838	U. S. Naval.		
		-40.0	133.3	-19.0	62					
		-34.0	139.3	+22.0	185					
		+2.0	175.3	-27.0		62	309			
Sept. 30	11 2	-51.0	109.1	-19.5		62			Do.	
		-27.0	133.1	-19.5	154					
		-21.0	139.1	+22.0	46					
		+16.0	176.1	-27.0		31	293			
Mean daily area for 29 days							454			

PROVISIONAL SUN-SPOT RELATIVE NUMBERS FOR SEPTEMBER 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]

September 1935	Relative numbers	September 1935	Relative numbers	September 1935	Relative numbers
1	30	11	23	21	18
2	36	12	Ec 23	22	Mc 21
3	37	13	33	23	a
4	a 47	14	Ec 29	24	Mc 56
5	48	15	26	25	Ec 59
6	47	16	33	26	d 69
7	48	17	d 34	27	d 80
8	Wc 47	18	a 33	28	71
9	d 53	19	31	29	78
10	32	20	20	30	61

Mean, 29 days=42.2.

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.