TABLE I.—*Solar radiation intensities during August, 1930*

Madison, Wis.

Date	Sun's zenith distance										
	8 a.m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.6°	70.7°	75.7°	78.7°	Noon
	75th mer. time	Air mass									Local mean solar time
		A. M.					P. M.				
	e.	5.0	4.0	3.0	2.0	1.0	2.0	3.0	4.0	5.0	e.
	mm.	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mm.*
Aug. 1	9.83				1.08						11.38
Aug. 12	8.81			0.95	1.16						8.18
Aug. 14	11.81				0.84	1.15					13.13
Aug. 15	13.13		0.66	0.78	1.01	1.22					11.38
Aug. 18	10.59		0.76	0.90	1.08	1.36					8.48
Aug. 21	11.38		0.72	0.85	1.06	1.36					10.21
Aug. 22	10.59		0.82	0.97	1.12	1.27					8.18
Aug. 23	9.83			0.70	0.92	1.17					9.47
Aug. 25	10.21				0.79	0.97					11.38
Aug. 29	11.38				1.18	1.40					7.29
Means			0.74	0.86	1.02	1.24					
Departures			−0.09	−0.07	−0.07	−0.07					

Lincoln, Nebr.

Aug. 4	11.81				1.01						21.97
Aug. 20	12.68			0.93							15.11
Aug. 25	13.13			0.59	0.77						14.10
Aug. 26	13.61			0.72	0.91	1.22	0.87	0.67	0.51	0.37	11.81
Aug. 31	13.13		0.56	0.75	0.99	1.28					14.60
Means			(0.56)	0.75	0.92	(1.25)	(0.87)	(0.67)	(0.51)	(0.37)	
Departures			−0.21	−0.15	−0.16	−0.05	−0.20	−0.22	−0.24	−0.32	

[1] Extrapolated.

TABLE 2.—*Total solar radiation (direct+diffuse) received on a horizontal surface*

[Gram-calories per square centimeter]

Week beginning	Average daily totals									
	Washington	Madison	Lincoln	Chicago	New York	Pittsburgh	Gainesville	Fresno	La Jolla	Miami
1930										
July 30	530	476	518	327	470	493	498	642	380	510
Aug. 6	483	531	379	360	399	429	482	636	286	542
Aug. 13	367	456	412	323	278	331	466	672	376	404
Aug. 20	407	450	408	372	262	295	514	556	468	471
Aug. 27	449	403	434	232	286	233	411	612	454	496
	Departures from weekly normals									
July 30	+76	+13	−4	−37	+92			−26	−26	
Aug. 6	+46	+71	−113	+6	+47			−10	−106	
Aug. 13	−61	+15	−72	−37	−49			+51	−39	
Aug. 20	−6	+14	−82	+10	−46			−47	+21	
Aug. 27	+32	−5	−20	−116	−21			+16	+50	
Accumulated departures on Sept. 2, 1930	+4,676	+343	−1,904	+665	−21			−1,709	−2,93[illegible]	

POSITIONS AND AREAS OF SUN SPOTS

[Communicated by Capt. J. F. Hellweg, Superintendent United States Naval Observatory. Data furnished by Naval Observatory, in cooperation with Harvard, Yerkes, Perkins, and Mount Wilson Observatories. The differences of longitude are measured from central meridian, positive west. The north latitudes are plus. Areas are corrected for foreshortening and are expressed in millionths of sun's visible hemisphere. The total area, including spots and groups, is given for each day in the last column]

Date	Eastern standard civil time		Heliographic			Area		Total area for each day
			Diff. long.	Longitude	Latitude	Spot	Group	
1930	*h*	*m*	°	°	°			
Aug. 1 (Naval Observatory)	10	32	−53.5	160.5	−8.5	6		
			+25.0	239.0	+1.5	12		18
Aug. 2 (Naval Observatory)	10	47	−39.5	161.1	−8.5	6		
			+39.0	239.6	+1.5	6		12
Aug. 3 (Naval Observatory)	11	42	−25.0	161.9	−9.0	6		6
Aug. 4 (Naval Observatory)	10	53	−12.5	161.6	−9.0	3		3
Aug. 5 (Naval Observatory)	10	50			No spots			
Aug. 6 (Mount Wilson)	11	40	−78.0	69.1	−8.0	333		
			−54.0	93.1	+4.0		40	373
Aug. 7 (Naval Observatory)	10	47	−61.5	73.0	−6.5	262		
			+8.0	142.5	−2.0	3		265

Positions and areas of sun spots—Continued

Date	Eastern standard civil time		Heliographic			Area		Total area for each day
			Diff. long.	Longitude	Latitude	Spot	Group	
1930	*h*	*m*	°	°	°			
Aug. 8 (Naval Observatory)	10	49	−48.0	73.2	−6.0	201		
			−25.0	96.2	+4.5	2		203
Aug. 9 (Naval Observatory)	10	46	−35.0	73.0	−6.5		231	
			−12.5	95.5	+4.5		9	240
Aug. 10 (Naval Observatory)	11	57	−20.5	73.7	−6.5	231		
			+2.5	96.7	+4.5		18	249
Aug. 11 (Naval Observatory)	11	6	−8.0	73.4	−7.0	231		
			+16.0	97.4	+3.5	6		237
Aug. 12 (Naval Observatory)	10	46	+5.5	73.9	−7.0	231		
			+29.5	97.9	+4.0	3		234
Aug. 13 (Naval Observatory)	10	46	+18.0	73.2	−7.0		278	278
Aug. 14 (Naval Observatory)	12	45	+32.5	73.3	−6.5	231		231
Aug. 15 (Naval Observatory)	10	44	+45.0	73.7	−6.5	216		216
Aug. 16 (Naval Observatory)	10	42	+58.5	74.0	−6.5	216		216
Aug. 17 (Naval Observatory)	11	19	+72.5	74.5	−7.0	216		216
Aug. 18 (Naval Observatory)	10	48	−81.0	268.0	+7.0	123		
			−77.0	272.0	−12.5	77		200
Aug. 19 (Naval Observatory)	10	46	−67.0	268.8	+6.5	108		
			−63.0	272.8	−12.0	77		
			−55.5	280.3	+10.0	9		194
Aug. 20 (Naval Observatory)	10	49	−54.5	268.1	+6.5		123	
			−49.5	273.1	−12.0	62		
			−41.5	281.1	+10.0		12	197
Aug. 21 (Naval Observatory)	10	49	−42.5	266.9	+6.5		139	
			−35.5	273.9	−12.0	40		
			−26.5	282.9	+10.0		3	182
Aug. 22 (Perkins Observatory)	15	11	−32.0	261.5	−15.0		201	
			−21.5	272.0	−6.0		155	
			−20.0	273.5	−12.5		186	542
Aug. 23 (Naval Observatory)	11	31	−16.5	266.1	+6.5		93	
			−12.0	270.6	−12.5		62	
			+6.0	288.6	+6.5	3		158
Aug. 24 (Naval Observatory)	12	10	−71.5	197.5	−11.0		62	
			−14.0	255.0	−15.0	3		
			−3.0	266.0	+6.0		62	
			+2.5	271.5	−12.5		62	
			+21.5	290.5	+7.0	6		195
Aug. 25 (Naval Observatory)	10	47	−57.5	199.1	−10.0		123	
			+10.0	266.6	+7.0		62	
			+16.5	273.1	−12.5		22	
			+32.5	289.1	+7.0		15	222
Aug. 26 (Naval Observatory)	10	44	−55.0	188.4	+6.5	18		
			−43.5	199.9	−10.5		31	
			+25.0	268.4	+5.0	37		
			+45.0	288.4	+7.0		31	117
Aug. 27 (Naval Observatory)	10	56	−83.5	146.6	+10.5	185		
			−42.0	188.1	+7.5		46	
			−30.0	200.1	−10.0		34	
			+39.0	269.1	+5.0	31		296
Aug. 28 (Naval Observatory)	10	46	−70.0	146.9	+10.0	68		
			−30.0	186.9	+7.5		170	
			−16.5	200.4	−10.5		31	
			+52.0	268.9	+5.0	18		287
Aug. 29 (Naval Observatory)	10	44	−57.0	146.7	−13.5		46	
			−56.0	147.7	+10.0	56		
			−17.5	186.2	+8.0		170	
			−3.0	200.7	−10.0		31	303
Aug. 30 (Naval Observatory)	11	7	−42.5	147.8	+9.5	56		
			−42.0	148.3	−13.5		34	
			−4.0	186.3	+7.5		77	
			+10.0	200.3	−10.5		25	192
Aug. 31 (Naval Observatory)	11	48	−28.5	148.2	+9.5	40		
			−28.0	148.7	−13.5		28	
			+10.5	187.2	+7.5		68	
			+24.0	200.7	−10.5		40	176
Mean daily area for August								202

PROVISIONAL SUN-SPOT RELATIVE NUMBERS FOR AUGUST, 1930 [1]

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

August, 1930	Relative numbers	August, 1930	Relative numbers	August, 1930	Relative numbers
1	17	11	22	21	31
2	23	12	a 21	22	28
3	7	13	23	23	38
4	7	14	13	24	a 37
5	7	15	11	25	41
6	d 17	16	10	26	Ec 35
7	19	17	10	27	37
8	13	18	d 21	28	43
9	21	19	23	29	53
10	20	20	29	30	a 50
				31	a 47

Mean, 31 days=25.0.

[1] Dependent alone on observations at Zurich and its station at Arosa.
a=Passage of an average-sized group through the central meridian.
c=New formation of a large or average-sized 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.