TABLE 2.—*Average daily totals of solar radiation (direct+diffuse) received on a horizontal surface*

Week beginning—	Washington	Madison	Lincoln	Chicago	New York	Fresno	Fairbanks	Twin Falls	La Jolla	Miami	New Orleans	Riverside	Blue Hill	San Juan	Friday Harbor	Ithaca	Newport
	Gram-calories per square centimeter																
	cal.	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*
Apr. 30	488	542	394	550	446	551	472	438	587	580	392	489	533	494	514	432	605
May 7	416	456	468	468	391	678	450	590	593	468	417	618	398	690	490	214	478
May 14	288	303	369	281	325	612	463	474	331	529	458	310	446	660	698	381	495
May 21	345	497	538	418	403	713	497	666	529	478	497	646	415	704	712	425	458
May 28	439	452	536	518	598	714	432	733	523	363	530	606	616	663	644	600	682
	Departures of daily totals from normals																
Apr. 30	+21	+101	−77	+166	+40	−74	+70	−75	+16	+63	−3	−63	+30	−57	−50	+72	-------
May 7	−37	+8	+19	+68	−1	+27	−1	+2	+23	−53	+20	+62	−93	+154	−49	−198	-------
May 14	−175	−173	−147	−141	−86	−57	−4	−134	−177	+36	+52	−207	−49	+112	+143	−66	-------
May 21	−155	+5	−16	−34	−45	+37	+43	+19	+58	−23	+76	+111	−138	+153	+138	−107	-------
May 28	−91	−45	+15	+49	+131	+27	+13	+141	−11	−103	+29	+53	+50	+95	+89	+83	-------
	Accumulated departures since Jan 1																
	−8,733	−4,081	−2,534	+2,044	+763	−2,954	+3,199	−4,727	−770	−1,281	+3,913	−1,897	−1,344	+6,949	+6,923	+2,135	-------

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	Mt. Wilson group No.	Heliographic: Diff. in longitude	Heliographic: Longitude	Heliographic: Latitude	Area: Spot or group	Area: Total for each day	Spot count	Observatory
1938	*h. m.*		°	°	°				
May 1	11 29	5872	−40.0	263.9	−22.0	194	-------	5	U. S. Naval.
		5871	−35.0	268.9	+25.0	170	-------	3	
		5870	−31.0	272.9	−30.0	48	-------	3	
		5868	−24.0	279.9	−21.0	48	-------	13	
		5869	−21.0	282.9	+23.0	339	-------	8	
		(*)	−20.0	283.9	+12.0	48	-------	3	
		5867	−19.5	284.4	−29.0	485	-------	5	
		5873	−19.0	284.9	−20.0	97	-------	1	
		5865	+27.5	331.4	−19.5	61	-------	1	
		5862	+40.0	343.9	+9.0	194	-------	3	
		5864	+42.5	346.4	+12.0	315	1,999	9	
May 2	11 24	5874	−74.0	216.7	−3.5	194	-------	3	Do.
		5872	−25.0	265.7	−22.0	170	-------	6	
		5871	−21.0	269.7	+25.0	170	-------	4	
		5868	−13.0	277.7	−22.0	145	-------	15	
		5869	−8.5	282.2	+23.0	291	-------	12	
		5873	−7.0	283.7	−20.0	73	-------	1	
		(*)	−7.0	283.7	+11.0	48	-------	3	
		5867	−6.0	284.7	−29.0	339	-------	6	
		5865	+40.5	331.2	−19.5	61	-------	1	
		5862	+54.0	344.7	+9.0	194	-------	1	
		5864	+56.0	346.7	+12.0	388	2,073	8	
May 3	11 20	5874	−60.0	217.5	−3.5	97	-------	4	Do.
		5872	−12.0	265.5	−23.0	170	-------	4	
		5871	−9.0	268.5	+25.0	291	-------	8	
		5868	−3.0	274.5	−22.0	485	-------	40	
		5869	+7.0	284.5	+23.0	218	-------	6	
		5873	+7.0	284.5	−20.0	73	-------	3	
		5867	+7.0	284.5	−29.0	339	-------	10	
		(*)	+8.0	285.5	+11.0	12	-------	4	
		5865	+53.0	330.5	−20.0	48	-------	3	
		5862	+68.0	345.5	+9.0	194	-------	3	
		5864	+70.0	347.5	+12.0	145	2,072	4	
May 4	10 51	5877	−77.0	187.6	−8.0	388	-------	8	Do.
		5874	−47.5	217.1	−4.0	97	-------	7	
		5876	−29.5	235.1	−38.0	218	-------	24	
		5872	0.0	264.6	−23.0	121	-------	4	
		5871	+3.0	267.6	+25.0	194	-------	10	
		5868	+11.0	275.6	−22.0	436	-------	48	
		5869	+19.0	283.6	+23.0	194	-------	4	
		5867	+19.0	283.6	−29.0	339	-------	8	
		5873	+21.0	285.6	−20.0	61	-------	3	
		5865	+67.0	331.6	−19.5	36	-------	2	
		5875	+67.0	331.6	+20.0	48	-------	8	
		5862	+82.0	346.6	+9.0	194	-------	2	
		5864	+85.0	349.6	+12.0	97	2,423	3	
May 5	11 8	5878	−81.0	170.2	+23.5	194	-------	2	Do.
		5877	−64.0	187.2	−8.0	485	-------	30	
		5874	−33.0	218.2	−4.5	61	-------	4	
		5876	−16.0	235.2	−37.0	242	-------	20	
		5872	+13.0	264.2	−23.0	97	-------	3	
		5871	+18.0	269.2	+25.0	145	-------	7	

See footnotes at end of table.

POSITIONS AND AREAS OF SUN SPOTS—Continued

Date	Eastern standard time	Mt. Wilson group No.	Heliographic: Diff. in longitude	Heliographic: Longitude	Heliographic: Latitude	Area: Spot or group	Area: Total for each day	Spot count	Observatory
1938	*h. m.*		°	°	°				
May 5	11 8	5868	+25.0	276.2	−22.0	412	-------	22	U. S. Naval.
		5869	+32.0	283.2	+23.0	194	-------	2	
		5867	+32.0	283.2	−30.0	339	-------	14	
		5873	+35.0	286.2	−20.0	61	-------	8	
		5865	+80.0	331.2	−19.0	12	-------	1	
		5875	+80.0	331.2	+21.0	12	2,254	1	
May 6	11 17	5878	−67.5	170.4	+23.5	97	-------	1	Do.
		5877	−50.5	187.4	−8.0	533	-------	20	
		5874	−20.0	217.9	−4.5	48	-------	2	
		5876	−4.0	233.9	−37.0	291	-------	30	
		5872	+26.0	263.9	−23.0	97	-------	3	
		5871	+31.0	268.9	+25.0	121	-------	5	
		5868	+37.0	274.9	−22.0	242	-------	10	
		5869	+45.0	282.9	+23.0	194	-------	2	
		5867	+46.0	283.9	−30.0	291	-------	5	
		5873	+49.0	286.9	−20.0	48	1,962	2	
May 7	10 59	5883	−88.0	136.8	−25.0	194	-------	2	Do.
		5881	−72.0	152.8	+25.0	121	-------	5	
		5878	−53.0	171.8	+24.0	73	-------	2	
		5877	−37.0	187.8	−8.0	776	-------	20	
		5880	−19.0	205.8	+23.0	48	-------	5	
		5874	−7.0	217.8	−5.0	36	-------	3	
		5876	+9.0	233.8	−37.0	339	-------	22	
		5872	+39.0	263.8	−23.0	97	-------	4	
		5871	+45.0	269.8	+25.0	97	-------	4	
		5868	+50.0	274.8	−22.5	145	-------	8	
		5869	+58.0	282.8	+24.0	194	-------	2	
		5867	+59.5	284.3	−30.0	242	-------	4	
		5873	+60.5	285.3	−20.0	48	-------	1	
		5879	+78.0	302.8	−9.0	12	2,422	4	
May 8	10 53	5883	−75.0	136.7	−24.0	242	-------	4	Mt. Wilson.
		5881	−57.0	154.7	+24.0	194	-------	7	
		5878	−39.0	172.7	+24.0	97	-------	1	
		5884	−30.0	181.7	+18.0	73	-------	5	
		5877	−24.0	187.7	−7.0	970	-------	15	
		5880	−7.0	204.7	+24.0	73	-------	6	
		5874	+7.0	218.7	−5.0	24	-------	1	
		5876	+22.0	233.7	−37.0	339	-------	26	
		5872	+50.5	262.2	−23.0	61	-------	1	
		5871	+60.0	271.7	+25.0	97	-------	3	
		5868	+63.0	274.7	−23.0	145	-------	3	
		5869	+70.0	281.7	+24.0	242	-------	1	
		5867	+71.0	282.7	−30.0	242	-------	3	
		5873	+74.0	285.7	−20.0	48	2,847	1	
May 9	11 8	5887	−78.0	120.3	−19.0	97	-------	6	U. S. Naval.
		5886	−77.0	121.3	+17.0	97	-------	6	
		5883	−60.0	138.3	−25.0	291	-------	12	
		5885	−43.0	155.3	−13.0	12	-------	3	
		5881	−42.0	156.3	+25.0	291	-------	13	
		5878	−26.0	172.3	+24.0	97	-------	2	
		5884	−16.0	182.3	+18.5	73	-------	23	
		5877	−11.0	187.3	−7.0	1,018	-------	35	
		5880	+7.0	205.3	+25.0	73	-------	14	
		5876	+36.0	234.3	−37.0	242	-------	12	
		5872	+65.0	263.3	−22.0	73	-------	2	
		5871	+72.0	270.3	+25.0	48	-------	1	
		5868	+80.0	278.3	−21.0	73	-------	1	
		5867	+86.0	284.3	−29.0	291	-------	2	
		5869	+89.0	287.3	+24.0	145	2,921	1	

POSITIONS AND AREAS OF SUN SPOTS—Continued

Date	Eastern standard time	Mt. Wilson group No.	Heliographic: Diff. in longitude	Heliographic: Longitude	Heliographic: Latitude	Area: Spot or group	Area: Total for each day	Spot count	Observatory
1938	*h. m.*		°	°	°				
May 10	14 24	5888	−84.0	99.3	−11.5	582	-------	4	U. S. Naval.
		5887	−63.0	120.3	−20.0	121	-------	7	
		5886	−59.0	124.3	+17.0	121	-------	6	
		5883	−46.0	137.3	−25.0	242	-------	3	
		5881	−28.0	155.3	+26.0	291	-------	22	
		5878	−11.0	172.3	+25.0	73	-------	15	
		5884	−1.0	183.3	+18.0	97	-------	13	
		5877	+5.0	188.3	−7.0	921	-------	25	
		5880	+25.0	208.3	+23.0	121	-------	14	
		(*)	+38.5	221.8	−9.0	6	-------	2	
		5876	+54.0	237.3	−36.0	121	-------	5	
		5872	+81.0	264.3	−21.0	48	2,744	2	
May 11	13 25	5889	−88.0	82.6	−10.0	97	-------	2	Do.
		5888	−74.0	96.6	−11.5	776	-------	5	
		5887	−51.0	119.6	−20.5	61	-------	7	
		5886	−47.0	123.6	+17.0	97	-------	6	
		5883	−33.0	137.6	−25.0	242	-------	1	
		5881	−15.0	155.6	+24.5	582	-------	18	
		5878	+1.0	171.6	+25.0	61	-------	3	
		5884	+12.0	182.6	+18.0	97	-------	8	
		5877	+18.0	188.6	−7.0	970	-------	19	
		5880	+37.0	207.6	+23.0	194	-------	6	
		5876	+70.0	240.6	−34.0	170	3,347	2	
May 12	11 4	5889	−74.0	84.7	−10.0	242	-------	4	Do.
		5888	−60.0	98.7	−11.5	582	-------	9	
		5887	−39.0	119.7	−20.0	73	-------	5	
		5886	−33.0	125.7	+17.0	73	-------	3	
		5883	−22.0	136.7	−24.0	242	-------	2	
		5881	−3.0	155.7	+25.0	582	-------	15	
		5878	+12.0	170.7	+25.0	48	-------	2	
		5884	+25.0	183.7	+18.0	48	-------	6	
		5877	+30.0	188.7	−7.0	873	-------	14	
		5880	+46.0	204.7	+23.0	85	2,848	6	
May 13	11 24	5890	−88.0	57.3	−14.0	291	-------	1	Do.
		5889	−60.0	85.3	−10.0	291	-------	4	
		5888	−45.0	100.3	−11.5	582	-------	8	
		5887	−26.0	119.3	−20.0	48	-------	4	
		5886	−19.5	125.8	+17.0	194	-------	8	
		5883	−9.5	135.8	−24.0	242	-------	3	
		5881	+10.0	155.3	+25.0	339	-------	13	
		5878	+26.0	171.3	+24.5	48	-------	3	
		5877	+44.0	189.3	−7.0	630	-------	28	
		5880	+61.0	206.3	+24.0	194	2,859	16	
May 14	8 58	5890	−75.0	58.4	−13.5	291	-------	1	Mt. Wilson.
		5892	−70.0	63.4	−16.0	291	-------	4	
		5889	−48.0	85.4	−10.0	242	-------	5	
		5888	−34.0	99.4	−11.0	485	-------	13	
		5887	−11.0	122.4	−19.0	24	-------	7	
		5886	−7.0	126.4	+16.5	194	-------	7	
		5883	+3.0	136.4	−24.0	242	-------	1	
		5881	+22.0	155.4	+23.0	242	-------	13	
		5878	+38.0	171.4	+23.0	24	-------	1	
		5891	+39.0	172.4	+9.0	36	-------	2	
		5877	+56.0	189.4	−7.0	630	-------	22	
		5880	+75.0	208.4	+23.0	48	2,749	7	
May 15	9 0	5890	−61.0	59.1	−14.0	388	-------	1	Do.
		5892	−57.0	63.1	−15.0	291	-------	9	
		5889	−34.0	86.1	−10.0	291	-------	7	
		5888	−20.0	100.1	−11.0	630	-------	22	
		5887	+1.0	121.1	−19.5	24	-------	5	
		5886	+7.0	127.1	+16.0	121	-------	2	
		5883	+15.0	135.1	−24.0	242	-------	1	
		5881	+35.0	155.1	+23.0	170	-------	10	
		5878	+50.0	170.1	+23.0	24	-------	1	
		5877	+69.5	189.6	−8.0	485	2,666	6	
May 16	11 6	(*)	−70.0	35.7	−12.0	48	-------	4	U. S. Naval.
		5890	−45.0	60.7	−14.0	291	-------	1	
		5892	−43.0	62.7	−16.0	242	-------	18	
		5889	−19.0	86.7	−9.5	291	-------	10	
		5888	−5.0	100.7	−11.0	582	-------	14	
		5886	+21.0	126.7	+17.0	97	-------	2	
		5883	+30.0	135.7	−23.0	242	-------	2	
		5881	+47.0	152.7	+24.0	97	-------	7	
		5878	+64.0	169.7	+24.0	24	-------	1	
		5877	+84.0	189.7	−7.0	485	2,399	4	
May 17	11 4	(*)	−56.0	36.5	−12.0	97	-------	10	Do.
		5890	−32.0	60.5	−13.0	242	-------	1	
		5892	−28.0	64.5	−15.0	145	-------	12	
		5889	−7.0	85.5	−9.5	194	-------	5	
		5888	+7.0	99.5	−11.0	436	-------	4	
		5886	+35.0	127.5	+17.0	97	-------	1	
		5883	+44.0	136.5	−23.0	194	-------	1	
		5881	+60.0	152.5	+25.0	73	1,478	2	
May 18	9 14	5894	−80.0	0.3	−16.0	194	-------	2	Mt. Wilson.
		5893	−44.0	36.3	−13.5	194	-------	9	
		5890	−20.0	60.3	−13.0	242	-------	1	
		5892	−16.0	64.3	−15.0	145	-------	8	
		5889	+6.0	86.3	−10.5	194	-------	5	
		5888	+20.0	100.3	−11.0	436	-------	10	
		5886	+48.0	128.3	+17.0	73	-------	1	
		5883	+57.0	137.3	−24.0	194	1,672	2	
May 20	11 17	5896	−70.0	342.7	−31.0	6	-------	1	U. S. Naval.
		5895	−57.0	355.7	−26.0	61	-------	3	
		5894	−55.0	357.7	−16.5	630	-------	8	
		5893	−15.0	37.7	−13.5	436	-------	34	
		5890	+7.0	59.7	−13.0	206	-------	1	
		5892	+12.0	64.7	−15.0	48	-------	4	
		5889	+34.0	86.7	−10.0	194	-------	4	
		5888	+47.0	99.7	−11.0	291	-------	3	
		5886	+75.0	127.7	+17.0	97	-------	1	
		5883	+85.0	137.7	−24.0	194	2163	1	

POSITIONS AND AREAS OF SUN SPOTS—Continued

Date	Eastern standard time	Mt. Wilson group No.	Heliographic: Diff. in longitude	Heliographic: Longitude	Heliographic: Latitude	Area: Spot or group	Area: Total for each day	Spot count	Observatory
1938	*h. m.*		°	°	°				
May 21	10 21	5897	−88.0	312.0	+6.0	12	-------	1	U. S. Naval.
		5896	−58.0	342.0	−31.0	12	-------	2	
		5894	−42.0	358.0	−16.5	630	-------	13	
		5895	−42.0	358.0	−27.0	267	-------	11	
		5893	−2.0	38.0	−13.5	533	-------	28	
		5890	+20.5	60.5	−13.5	206	-------	1	
		5892	+24.0	64.0	−15.0	12	-------	4	
		5880	+47.0	87.0	−9.5	170	-------	3	
		5888	+61.0	101.0	−10.0	291	2133	3	
May 22	12 30	5897	−70.0	315.6	+7.0	36	-------	3	Do.
		5896	−44.0	341.6	−31.0	6	-------	1	
		5899	−37.5	348.1	−14.5	12	-------	1	
		5895	−29.0	356.6	−27.0	218	-------	22	
		5894	−27.5	358.1	−16.5	533	-------	23	
		5898	−17.0	8.6	+9.0	48	-------	9	
		5893	+11.0	36.6	−14.0	388	-------	28	
		5890	+33.0	58.6	−13.5	194	-------	1	
		5892	+39.5	65.1	−13.5	12	-------	3	
		5889	+61.0	86.6	−9.5	194	-------	2	
		5888	+74.0	99.6	−10.0	339	1980	2	
May 23	13 47	5903	−75.0	296.7	+11.0	194	-------	2	Do.
		5897	−56.0	315.7	+7.0	145	-------	9	
		5895	−16.0	355.7	−27.0	194	-------	15	
		5894	−15.0	356.7	−16.5	533	-------	26	
		5898	−0.5	11.2	+9.0	630	-------	35	
		5902	+9.0	20.7	−27.0	97	-------	6	
		5901	+10.0	21.7	+10.0	73	-------	5	
		5893	+26.0	37.7	−13.0	194	-------	10	
		5890	+48.0	59.7	−13.0	194	-------	1	
		5889	+75.0	86.7	−9.0	145	2399	2	
May 24	11 44	5904	−79.5	280.1	+18.0	48	-------	1	Mt. Wilson.
		5903	−63.0	296.6	+10.0	97	-------	11	
		5897	−44.0	315.6	+6.0	48	-------	5	
		5895	−2.5	357.1	−27.5	194	-------	19	
		5894	−1.0	358.6	−16.5	727	-------	40	
		5898	+12.0	11.6	+8.5	970	-------	68	
		5902	+21.0	20.6	−28.0	73	-------	12	
		5901	+23.0	22.6	+10.0	97	-------	11	
		5893	+38.0	37.6	−13.0	194	-------	22	
		5890	+60.0	59.6	−13.0	194	2642	1	
May 25	12 40	5906	−70.0	275.8	−30.0	24	-------	1	U. S. Naval.
		5905	−68.0	277.8	+21.0	97	-------	4	
		5904	−67.0	278.8	+18.0	48	-------	2	
		5903	−50.0	295.8	+10.5	73	-------	4	
		5897	−30.5	315.3	+7.0	12	-------	2	
		5895	+10.0	355.8	−26.0	121	-------	4	
		5894	+13.5	359.3	−17.0	582	-------	19	
		5898	+26.0	11.8	+9.0	1067	-------	35	
		5902	+34.0	19.8	−27.0	121	-------	6	
		5901	+37.0	22.8	+11.0	73	-------	6	
		5893	+52.0	37.8	−12.0	121	-------	9	
		5890	+74.0	59.8	−13.0	194	2533	1	
May 27	19 23	5908	−40.0	257.7	+26.0	16	-------	3	Mt. Wilson.
		5905	−34.0	281.7	+20.0	48	-------	5	
		5904	−36.0	279.7	+15.0	24	-------	3	
		5903	−19.0	296.7	+10.5	24	-------	3	
		5907	+17.0	332.7	+22.0	267	-------	20	
		5895	+40.0	355.7	−26.0	48	-------	5	
		5894	+42.0	357.7	−16.0	242	-------	10	
		5898	+58.0	13.7	+8.5	1309	-------	33	
		5901	+67.0	22.7	+23.0	12	1,990	3	
May 28	14 1	5908	−29.0	276.4	+27.0	16	-------	3	U. S. Naval.
		5904	−25.0	280.4	+17.0	12	-------	2	
		5905	−20.0	285.4	+20.0	48	-------	2	
		5903	−11.0	294.4	+11.0	12	-------	1	
		5907	+28.0	333.4	+21.0	388	-------	15	
		5895	+50.0	355.4	−25.0	48	-------	5	
		5994	+58.0	3.4	−15.0	218	-------	6	
		5898	+67.0	12.4	+9.0	1,697	2,439	25	
May 29	9 28	5911	−52.0	242.6	+29.0	12	-------	5	Mt. Wilson.
		5910	−22.0	272.6	−7.0	97	-------	10	
		5908	−16.0	278.6	+27.0	12	-------	1	
		5909	−15.0	279.6	−21.0	36	-------	4	
		5905	−8.5	286.1	+19.0	48	-------	3	
		5907	+39.0	333.6	+20.0	291	-------	21	
		5895	+60.5	355.1	−26.0	24	-------	1	
		5894	+70.0	4.6	−16.0	170	-------	3	
		5898	+79.0	13.6	+9.0	1,212	1,902	10	
May 30	8 28	5911	−40.0	242.0	+29.0	145	-------	6	Do.
		5910	−8.0	274.0	−7.0	242	-------	7	
		5909	−2.0	280.0	−21.0	97	-------	8	
		5905	+3.0	285.0	+19.0	48	-------	1	
		5912	+31.0	313.0	+9.0	61	-------	3	
		5907	+51.0	333.0	+20.0	291	-------	17	
		5895	+75.0	357.0	−26.0	12	-------	1	
		5894	+85.0	7.0	−16.0	145	-------	1	
		5898	+88.0	10.0	+9.0	485	1,526	1	
May 31	10 54	5914	−78.0	189.4	−7.0	242	-------	1	U. S. Naval.
		5913	−37.0	230.4	+4.0	24	-------	3	
		5911	−25.0	242.4	+28.0	291	-------	12	
		5910	+7.0	274.4	−7.5	145	-------	15	
		5909	+12.0	279.4	−21.0	61	-------	7	
		5905	+19.0	286.4	+20.0	24	-------	1	
		5912	+46.0	313.4	+9.5	36	-------	2	
		5907	+64.0	331.4	+20.0	194	1017	6	

Mean daily area for 29 days=2,290.
* Not numbered.