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

[Gram-calories per square centimeter]

Week beginning—	Washington	Madison	Lincoln	Chicago	New York	Fresno	Albuquerque	Fairbanks	La Jolla	Miami	New Orleans	Riverside	Blue Hill	Newport	Friday Harbor	Ithaca	Cambridge
	cal.	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*
Apr. 29	467	375	605	318	430	666	772	464	600	528	500	582	386	435	462	365	386
May 6	581	449	562	494	571	685	-------	521	555	526	565	618	595	564	519	508	610
May 13	552	370	477	321	464	651	-------	432	494	509	556	580	417	474	560	365	478
May 20	313	506	590	358	226	695	-------	458	461	495	505	532	209	244	666	453	184
May 27	498	505	636	429	413	701	785	613	598	407	509	584	439	499	576	396	468
DEPARTURES FROM WEEKLY NORMALS																	
Apr. 29	−3	−70	+125	−74	+21	+32	-------	+57	+12	+16	+88	+26	−92	−56	−79	−15	-------
May 6	+121	−2	+103	+81	+166	+36	-------	+63	−11	+11	+144	+66	+89	+45	−35	+87	-------
May 13	+77	−107	−41	−102	+39	−16	-------	−37	−18	+14	+132	+60	−97	−24	+10	−73	-------
May 20	−184	+11	+34	−95	−206	+17	-------	+8	−22	−5	+81	−18	−273	−239	+90	−29	-------
May 27	−20	+7	+103	−43	−56	+12	-------	+157	+56	−56	+24	+28	−122	−45	+18	−60	-------
ACCUMULATED DEPARTURES ON JUNE 2																	
	−742	+385	−1,526	−266	+2,590	−1,470	-------	+3,115	−1,421	+2,534	+5,124	−2,205	−1,981	−2,359	+2,849	-------	-------

LATE DATA

The mean daily total solar and sky radiation in gram-calories per square centimeter received on a horizontal surface at Fairbanks for the weeks beginning with April 1, 8, 15, and 22 are, respectively, 352, 390, 356, and 495, with corresponding departures +14, +24, −16, and +121.

POSITIONS AND AREAS OF SUN SPOTS

[Communicated by Capt. J. F. Hellweg, U. S. Navy (Ret.), Superintendent, U. S. Naval Observatory. Data from measurements at the U. S. Naval Observatory from plates obtained at the observatories indicated. Difference in longitude is measured from the central meridian, positive toward the west. Latitude is positive toward the north. Areas are corrected for foreshortening and expressed in millionths of Sun's hemisphere. For each day below longitude, latitude, area of spot or groups, and spot count, are given, respectively, the assumed longitude of the center of the disk, assumed latitude of the center of the disk, total area of spots and groups, and total spot count]

Date	Eastern standard time	Mount Wilson group No.	Heliographic: Difference in longitude	Heliographic: Longitude	Heliographic: Latitude	Heliographic: Distance from center of disk	Area of spot or group	Spot count	Plate quality	Observatory
1940	*h m*		°	°	°	°				
May 1	9 5	(*)	−48	329	−9	48	6	1	G	Mt. Wilson.
		6826	−42	335	+9	44	24	4		
		(*)	−15	2	−8	16	12	1		
		(*)	−9	8	−11	12	6	2		
		6824	+4	21	+9	12	97	7		
		6825	+15	32	−14	19	12	5		
		6818	+86	103	−3	86	97	1		
				(17)	(−4)		254	21		
2	10 46	6827	−35	328	+8	37	6	1	G	Do.
		6826	−30	333	+9	33	24	4		
		(*)	−30	333	−21	34	6	3		
		6824	+18	21	+10	23	48	7		
		6825	+30	33	−13	32	6	1		
				(3)	(−4)		90	16		
3	8 45	6826	−18	333	+9	23	12	1	G	Do.
		6824	+31	22	+10	34	73	12		
		6825	+41	32	−13	42	24	6		
				(351)	(−4)		109	19		
4	9 47	(*)	−44	293	+20	50	6	3	VG	Do.
		6827	−10	327	+10	17	24	5		
		6826	−4	333	+9	14	48	14		
		6824	+45	22	+10	47	24	11		
		6825	+56	33	−13	56	24	4		
				(337)	(−4)		119	37		
5	8 56	6826	+10	334	+9	17	97	22	G	Do.
		6824	+59	23	+10	60	24	4		
				(324)	(−4)		121	26		
6	11 30	6827	+18	327	+12	24	36	4	G	U. S. Naval.
		6826	+23	332	+12	27	206	19		
		(*)	+25	334	−14	26	6	1		
		6828	+57	6	−9	57	6	1		
				(309)	(−4)		254	25		
7	11 47	6827	+30	326	+12	33	73	8	VG	Do.
		6826	+37	333	+12	41	194	14		
				(296)	(−3)		267	22		
8	11 20	6830	−51	232	−9	52	36	7	G	Do.
		6829	−25	258	−17	32	48	8		
		6827	+46	329	+12	49	97	15		
		6826	+52	335	+12	54	97	1		
				(283)	(−3)		278	31		

POSITIONS AND AREAS OF SUN SPOTS—Continued

Date	Eastern standard time	Mount Wilson group No.	Heliographic: Difference in longitude	Heliographic: Longitude	Heliographic: Latitude	Heliographic: Distance from center of disk	Area of spot or group	Spot count	Plate quality	Observatory
1940	*h m*		°	°	°	°				
May 9	8 48	6832	−65	206	−8	65	24	1	VG	Mt. Wilson.
		6830	−37	234	−9	38	48	16		
		6831	0	271	+5	8	12	1		
		(*)	+35	306	−9	36	6	1		
		6827	+60	331	+11	62	97	12		
		6826	+65	336	+11	66	97	5		
				(271)	(−3)		284	36		
10	11 23	6832	−51	206	−9	52	145	4	G	U. S. Naval.
		6830	−23	234	−10	23	121	11		
		6827	+73	330	+11	73	73	1		
		6826	+81	338	+10	81	24	3		
				(257)	(−3)		363	19		
11	11 10	6832	−44	200	−13	46	6	4	G	Do.
		6832	−38	206	−9	40	339	27		
		6830	−9	235	−12	12	73	8		
		6827	+88	332	+11	88	48	1		
				(244)	(−3)		466	40		
12	12 8	6835	−84	146	+13	84	339	1	F	Do.
		6835	−90	150	+12	80	97	1		
		6832	−24	206	−7	24	339	14		
		6834	−14	216	−11	16	48	6		
		6830	+6	236	−9	8	97	8		
		6829	+30	260	−18	33	6	1		
		6833	+58	288	−14	60	6	2		
				(230)	(−3)		932	33		
13	11 16	6836	−83	134	+14	83	485	5	VG	Do.
		6835	−70	147	+13	70	145	1		
		6835	−67	150	+12	67	388	1		
		6832	−11	206	−8	13	291	18		
		6834	−1	216	−10	7	97	9		
		6830	+17	234	−9	18	194	16		
		6833	+72	289	−14	72	48	1		
				(217)	(−3)		1,648	51		
14	11 0	6836	−68	136	+15	68	436	4	G	Do.
		6835	−58	146	+14	60	194	1		
		6835	−54	150	+13	54	291	2		
		6938	−27	177	+9	30	48	6		
		(*)	−17	187	+9	22	24	1		
		6832	+2	206	−8	6	267	10		
		6837	+2	206	−11	9	24	2		
		6834	+11	215	−10	13	85	2		
		6834	+16	220	−11	17	12	2		
		6830	+30	234	−9	31	291	20		
				(204)	(−3)		1,672	50		
15	11 13	6836	−54	137	+15	58	436	6	VG	Do.
		6835	−44	147	+14	47	194	2		
		6835	−40	151	+12	43	267	1		
		6838	−11	180	+9	16	24	3		
		6832	+16	207	−8	17	255	20		
		6837	+16	207	−11	18	61	11		
		6834	+25	216	−9	25	48	1		
		6830	+44	235	−8	44	194	17		
				(191)	(−3)		1,479	61		

POSITIONS AND AREAS OF SUN SPOTS—Continued.

Date	Eastern standard time	Mount Wilson group No.	Heliographic: Difference in longitude	Heliographic: Longitude	Heliographic: Latitude	Heliographic: Distance from center of disk	Area of spot or group	Spot count	Plate quality	Observatory
1940	h m		°	°	°	°				
May 16	8 41	6836	−42	137	+15	45	436	13	VG	Mt. Wilson.
		6835	−29	150	+14	34	145	3		
		6835	−26	153	+13	20	291	12		
		6838	+1	180	+9	12	48	6		
		6837	+29	208	−10	30	97	18		
		6832	+30	209	−8	31	194	26		
		6834	+38	217	−9	39	24	1		
		6830	+58	237	−8	58	242	34		
				(179)	(−2)		1,477	113		
17	11 44	6836	−29	135	+15	33	388	15	G	U. S. Naval.
		6835	−17	147	+14	24	97	4		
		6835	−13	151	+12	20	291	15		
		6838	+15	179	+10	19	12	2		
		6832	+45	209	−8	45	218	16		
		6837	+45	209	−10	46	24	1		
		(*)	+51	215	−9	51	12	1		
		6839	+60	224	−14	61	12	2		
		6830	+70	234	−9	70	388	15		
				(164)	(−2)		1,442	71		
18	8 46	6836	−15	137	+16	23	436	16	VG	Mt. Wilson.
		6835	−5	147	+15	18	73	4		
		6835	−1	151	+12	14	218	8		
		6840	+19	171	+17	27	97	5		
		6832	+57	209	−7	57	97	11		
		6837	+58	210	−11	58	24	1		
		6830	+81	233	−9	81	48	3		
				(152)	(−2)		993	48		
19	11 38	6842	−25	112	−9	27	6	1	VG	U. S. Naval.
		6836	−1	136	+16	18	388	25		
		6841	+9	146	−8	11	6	1		
		6835	+10	147	+15	20	73	4		
		6835	+13	150	+13	20	194	10		
		6840	+30	167	+17	35	12	1		
		6840	+36	173	+17	41	48	10		
		6832	+71	208	−7	71	48	8		
		6837	+71	208	−11	71	6	1		
				(137)	(−2)		781	61		
20	12 2	6843	−73	51	−7	73	48	4	F	Do.
		6842	−10	114	−9	13	97	8		
		6836	+12	136	+15	21	291	11		
		6841	+22	146	−8	23	6	1		
		6835	+23	147	+15	28	48	1		
		6835	+27	151	+12	31	194	6		
		6840	+50	174	+16	53	48	10		
		6832	+82	206	−7	82	6	1		
				(124)	(−2)		738	42		
21	10 40	6845	−79	33	−12	79	6	6	VG	Do.
		6843	−59	53	−7	59	206	7		
		6842	+3	115	−10	8	97	18		
		(*)	+4	116	−25	24	6	1		
		6836	+25	137	+16	31	315	22		
		6835	+37	149	+15	41	48	1		
		6835	+40	152	+12	43	121	6		
		6840	+62	174	+16	64	48	15		
				(112)	(−2)		847	76		
22	10 53	6845	−67	31	−11	68	24	5	G	Do.
		6844	−57	41	+24	62	24	2		
		6843	−45	53	−7	46	315	15		
		6842	+17	115	−10	19	61	9		
		6836	+38	136	+16	42	291	9		
		6835	+50	148	+15	52	48	1		
		6835	+54	152	+12	55	121	4		
		6840	+75	173	+16	76	36	6		
				(98)	(−2)		920	51		
23	8 45	6847	−85	1	−10	85	582	1	VG	Mt. Wilson
		6846	−75	11	−17	76	97	8		
		6845	−56	30	−12	57	24	4		
		6844	−45	41	+23	50	61	8		
		6843	−32	54	−7	33	339	40		
		6842	+29	115	−11	31	145	21		
		6836	+51	137	+15	54	291	9		
		6835	+65	151	+14	66	24	2		
		6835	+70	156	+11	71	97	2		
		6840	+88	174	+16	88	24	4		
				(86)	(−2)		1,684	99		
24	13 5	6847	−70	0	−11	71	485	2		Do.
		6846	−60	10	−17	62	48	1	P	
		6845	−37	33	−11	38	12	1		
		6844	−31	39	+22	39	48	1		
		6843	−16	54	−7	17	145	6		
		6842	+42	112	−10	43	48	3		
		6836	+64	134	+15	66	242	1		
		6835	+81	151	+11	81	24	1		
				(70)	(−2)		1,052	16		

POSITIONS AND AREAS OF SUN SPOTS—Continued.

Date	Eastern standard time	Mount Wilson group No.	Heliographic: Difference in longitude	Heliographic: Longitude	Heliographic: Latitude	Heliographic: Distance from center of disk	Area of spot or group	Spot count	Plate quality	Observatory
1940	h m		°	°	°	°				
May 25	11 46	6847	−58	0	−10	58	388	2	P	Mt. Wilson.
		6845	−22	36	−12	23	145	12		
		6844	−15	43	+22	27	48	1		
		6843	−1	57	−7	6	145	5		
		6836	+80	138	+14	80	194	1		
				(58)	(−1)		920	21		
26	16 3	6847	−41	1	−11	42	388	10	G	U. S. Naval.
		6845	−6	36	−12	12	145	18		
		6844	−1	41	+22	23	24	7		
		6843	+11	53	−7	14	12	8		
		6843	+18	60	−6	19	97	7		
				(42)	(−1)		666	50		
27	11 14	6847	−30	2	−10	31	461	10	VG	Do.
		6845	+6	38	−12	12	194	21		
		6844	+9	41	+22	25	48	5		
		6843	+30	62	−6	31	73	3		
				(32)	(−1)		776	39		
28	11 13	6848	−75	304	−5	75	6	2	VG	Do.
		6847	−20	359	−10	22	73	18		
		6847	−12	7	−10	15	364	1		
		6845	+17	36	−12	20	242	23		
		6844	+19	38	+22	30	48	11		
		6843	+42	61	−6	43	48	10		
				(19)	(−1)		781	65		
29	11 8	6848	−62	303	−7	62	24	4	VG	Do.
		6847	−8	357	−11	13	48	11		
		6849	−6	359	+11	13	24	6		
		6847	0	5	−10	9	339	1		
		6844	+30	35	+23	37	48	15		
		6845	+30	35	−12	32	291	24		
		6843	+56	61	−6	56	12	3		
				(5)	(−1)		786	64		
30	9 3	6848	−48	305	−7	48	36	2	VG	Mt. Wilson.
		6847	+4	357	−11	11	48	13		
		6849	+8	1	+11	14	24	7		
		6847	+12	5	−10	15	315	1		
		6844	+44	37	+23	50	24	2		
		6845	+45	38	−12	46	388	35		
		6843	+70	63	−6	70	6	1		
				(353)	(−1)		841	61		
31	11 3	6848	−34	305	−6	35	48	9	VG	U. S. Naval.
		6847	+27	6	−10	28	291	1		
		6845	+59	38	−12	60	388	12		
		6844	+61	40	+22	64	48	6		
				(339)	(−1)		775	28		

Mean daily area for 31 days=768.

*=not numbered.
VG=very good; G=good; F=fair; P=poor.

PROVISIONAL SUNSPOT RELATIVE NUMBERS FOR MAY 1940

[Dependent alone on observations at Zurich, Switzerland]
[Date furnished through the courtesy of Prof. W. Brunner, Eidgen Sternwarte, Zurich, Switzerland]

May 1940	Relative numbers	May 1940	Relative numbers	May 1940	Relative numbers
1	*Eac* 26	11	36	21	*Eac* 71
2	28	21	*Macd* 53	22	86
3	23	13	*a* 62	23	*d* 85
4	25	14	*a* 93	24	67
5	*a* —	15	91	25	57
6	21	16	85	26	*a* 61
7	22	17	—	27	62
8	*Ec* 32	18	*a* 63	28	*a* —
9	*Ec* 31	19	*a* 69	29	—
10	34	20	*Mc* 61	30	54
				31	*Eac* 76

Means, 27 days=54.6

a=Passage of an average-sized group through the central meridian.
b=Passage of a large group 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.