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	Twin Falls	La Jolla	Miami	New Orleans	Riverside	Blue Hill	Newport	Friday Harbor	Cambridge
	cal.	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*
Jan. 29	253	152	191	79	217	140	308	37	172	210	412	308	156	265	254	145	240
Feb. 5	197	192	225	93	116	292	411	48	165	351	341	194	352	191	171	87	180
Feb. 12	249	230	220	141	229	308	422	101	175	367	408	148	360	272	272	148	271
Feb. 19	265	255	233	189	235	238	405	122	227	287	414	272	277	235	200	206	202
DEPARTURES FROM WEEKLY NORMALS																	
Jan. 29	+51	−33	−31	−38	+62	−48	-------	−8	−18	−48	+68	+78	−71	+46	+48	+41	-------
Feb. 5	−15	−10	−34	−43	−44	+28	-------	−14	−36	+45	−3	−30	+64	−37	−54	−23	-------
Feb. 12	+24	+6	−48	−6	+52	+18	-------	+18	−84	+65	+59	+93	+45	+34	+28	+13	-------
Feb. 19	+10	+3	−63	+12	+36	−14	-------	+18	−27	−79	+48	−11	−58	−26	−55	+52	-------
ACCUMULATED DEPARTURES ON FEB. 25, 1940																	
	+1,148	+427	−679	+448	+1,274	−833	-------	+133	−2,247	−1,064	+1,708	+441	−2,128	+805	+203	+679	-------

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 forshortening 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	Spot or group	Spot count	Plate quality	Observatory
1940	*h m*		°	°	°	°				
Feb. 1	10 34	6743	−56	67	−24	57	24	5	VG	U. S. Naval.
		6742	−50	73	−7	49	242	3		
		6743	−49	74	−24	19	73	2		
		(*)	−38	85	+12	42	48	2		
		6741	−9	114	+12	20	485	12		
		6741	+7	130	+11	18	679	5		
				(123)	(−6)		1,551	29		
Feb. 2	11 45	(*)	−44	65	−8	43	24	5	VG	Do.
		6742	−37	72	−7	36	339	7		
		6743	−37	72	−24	40	73	5		
		6741	+4	113	+12	17	582	15		
		6741	+20	129	+11	25	679	12		
				(109)	(−6)		1,697	44		
Feb. 3	10 32	(*)	−30	66	−8	29	24	2	F	Do.
		6742	−23	73	−7	23	339	6		
		6743	−23	73	−23	27	73	1		
		6741	+16	112	+12	17	436	7		
		6741	+31	127	+11	35	630	4		
				(96)	(−6)		1,502	20		
Feb. 4	15 14	6743	−7	74	−23	19	97	1	F	Do.
		6742	−6	75	−7	6	339	4		
		6741	+31	112	+12	35	436	3		
		6741	+48	129	+11	50	630	3		
				(81)	(−6)		1,502	11		
Feb. 5	11 14	6744	−20	50	+6	23	24	3	G	Do.
		6743	+2	72	−24	18	97	3		
		6742	+6	76	−6	6	242	9		
		6741	+41	111	+12	45	388	3		
		6741	+60	130	+11	62	630	2		
				(70)	(−6)		1,381	20		
Feb. 6	11 28	6744	−5	51	+5	12	24	4	F	Mt. Wilson.
		(*)	+3	59	−22	17	24	8		
		6743	+16	72	−24	24	97	3		
		6742	+20	76	−5	19	388	11		
		6741	+56	112	+12	59	339	4		
		6741	+73	129	+11	75	582	2		
				(56)	(−6)		1,454	32		
Feb. 7	14 48	6746	−52	349	−9	51	73	10	VG	U. S. Naval.
		6745	−51	350	+14	56	170	12		
		6743	+31	72	−25	36	97	1		
		6742	+34	75	−6	33	315	18		
		6741	+69	110	+12	70	218	1		
				(41)	(−6)		873	42		

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	Spot or group	Spot count	Plate quality	Observatory
1940	*h m*		°	°	°	°				
Feb. 8	12 0	6747	−69	321	−10	68	12	7	VG	U. S. Naval.
		(*)	−58	332	−12	57	12	6		
		6746	−40	350	−8	39	36	9		
		(*)	−40	350	−5	39	24	5		
		6745	−39	351	+15	43	218	16		
		6743	+42	72	−25	44	73	1		
		6742	+45	75	−11	44	48	6		
		6742	+47	77	−7	46	182	16		
		6741	+83	113	+12	82	218	1		
				(30)	(−6)		823	67		
Feb. 9	11 22	6747	−57	320	−10	56	73	5	G	Do.
		6748	−42	335	−13	41	24	2		
		6746	−27	350	−5	26	97	4		
		6745	−26	351	+15	32	291	8		
		6743	+55	72	−25	56	48	2		
		6742	+59	76	−11	58	97	4		
		6742	+60	77	−8	59	145	7		
				(17)	(−7)		775	32		
Feb. 10	11 4	6747	−43	321	−12	42	48	9	VG	Mt. Wilson.
		6748	−29	335	−14	29	36	16		
		6746	−15	349	−5	14	48	14		
		6745	−12	352	+15	23	303	27		
		6746	−11	353	−7	10	145	28		
		6743	+70	74	−25	69	24	2		
		6742	+72	76	−10	70	48	7		
		6742	+73	77	−8	71	121	4		
				(4)	(−7)		773	107		
Feb. 11	11 36	6749	−80	271	+10	80	388	3	VG	U. S. Naval.
		6747	−28	323	−11	28	48	10		
		6748	−18	333	−13	19	24	5		
		6746	+2	353	−6	1	242	15		
		6745	+2	353	+14	21	267	12		
				(351)	(−7)		969	45		
Feb. 12	10 56	6749	−67	271	+10	68	339	3	G	Do.
		6747	−16	322	−11	16	24	3		
		6748	−3	335	−12	7	36	4		
		6748	+2	340	−12	6	12	1		
		6745	+14	352	+14	25	194	11		
		6746	+15	353	−6	50	242	12		
				(338)	(−7)		847	34		
Feb. 13	12 0	6749	−60	264	+11	62	12	1	G	Do.
		6750	−55	269	−15	55	6	1		
		6749	−53	271	+0	55	291	5		
		6747	−3	321	−11	7	48	6		
		6748	+14	338	−13	16	97	9		
		6745	+27	351	+13	32	230	14		
		6746	+28	352	−7	27	242	7		
				(324)	(−7)		926	43		
Feb. 15	11 15	6751	−58	240	−9	57	24	1	G	Do.
		6750	−30	268	−12	30	339	15		
		6749	−28	270	+9	32	291	10		
		6748	+40	338	−13	41	339	17		
		6745	+54	352	+13	57	145	6		
		6746	+58	356	−9	57	170	3		
				(298)	(−7)		1,308	52		

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	Spot or group	Spot count	Plate quality	Observatory
1940	*h m*		°	°	°	°				
Feb. 16	11 10	6750	−16	269	−12	17	291	14	G	U. S. Naval.
		6749	−13	272	+8	20	194	8		
		6748	+54	339	−13	54	436	22		
		6745	+67	352	+13	69	48	3		
		6746	+72	357	−9	71	194	1		
				(285)	(−7)		1,163	48		
Feb. 17	10 48	6750	−7	265	−13	10	194	15	G	Do.
		6749	−1	271	+9	15	145	10		
		6750	+2	274	−13	8	194	6		
		6748	+67	339	−14	66	679	17		
		6746	+86	358	−9	87	145	1		
				(272)	(−7)		1,357	49		
Feb. 18	11 40	6752	−82	176	+12	83	24	1	P	Mt. Wilson.
		6750	+8	266	−13	10	73	3		
		6749	+12	270	+9	20	48	4		
		6750	+17	275	−12	18	145	2		
		6748	+78	336	−13	77	436	6		
				(258)	(−7)		726	16		
Feb. 19	13 41	6755	−88	156	−12	88	48	1	F	Do.
		6752	−68	176	+12	70	48	5		
		6753	−8	236	−8	7	121	13		
		6750	+22	266	−13	22	48	6		
		6749	+25	269	+7	27	24	6		
		6750	+31	275	−12	31	145	3		
				(244)	(−7)		434	34		
Feb. 20	11 2	6755	−74	158	−12	74	97	4	VG	Do.
		6752	−55	177	+12	58	48	11		
		6754	−15	217	−12	15	121	26		
		6753	+7	239	−8	6	121	17		
		6749	+38	270	+7	41	24	10		
		6750	+44	276	−14	45	145	15		
				(232)	(−7)		556	83		
Feb. 21	10 54	6755	−60	159	−12	60	109	4	G	U. S. Naval.
		6752	−41	178	+12	45	48	6		
		(*)	−5	214	−24	19	12	4		
		(*)	+14	233	−15	16	12	1		
		6753	+20	239	−9	19	97	16		
		(*)	+49	268	+11	51	36	1		
		6750	+56	275	−14	56	97	1		
				(219)	(−7)		411	33		
Feb. 22	11 4	6756	−77	129	+12	80	339	1	F	Do.
		6755	−46	160	−12	46	97	3		
		6752	−27	179	+12	32	24	4		
		6754	+12	218	−11	13	170	18		
		6753	+34	240	−9	33	48	1		
		6750	+70	276	−14	70	97	1		
				(206)	(−7)		775	28		
Feb. 23	11 27	6756	−64	129	+12	66	436	1	G	Do.
		(*)	−39	154	−15	39	12	1		
		6755	−32	161	−13	32	133	3		
		6752	−15	178	+13	24	48	4		
		6754	+26	219	−11	26	97	20		
		6750	+83	276	−14	82	97	3		
				(193)	(−7)		823	32		
Feb. 24	11 22	6756	−70	109	+13	73	6	1	G	Do.
		6756	−59	120	+13	62	6	1		
		6756	−50	129	+11	53	388	1		
		6755	−18	161	−13	19	145	3		
		6752	−2	177	+13	19	24	1		
		6754	+40	219	−11	40	97	6		
				(179)	(−7)		666	13		
Feb. 25	13 9	6756	−36	129	+11	40	388	1	P	Do.
		(*)	−35	130	−15	34	24	3		
		6755	−4	161	−12	8	97	1		
		6752	+12	177	+13	23	24	1		
		6754	+55	220	−12	55	48	2		
				(165)	(−7)		581	8		

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	Spot or group	Spot count	Plate quality	Observatory
1940	*h m*		°	°	°	°				
Feb. 26	13 13	6758	−66	86	−7	65	97	4	F	U. S. Naval.
		6756	−22	130	+11	27	388	1		
		6755	+10	162	−12	12	73	2		
		6752	+26	178	+12	30	24	1		
		6754	+70	222	−12	69	48	1		
				(152)	(−7)		630	9		
Feb. 27	11 30	6758	−52	88	−7	52	388	30	VG	Mt. Wilson.
		6759	−51	89	+11	53	12	3		
		6757	−30	110	−11	30	12	2		
		6756	−26	114	+18	35	48	6		
		6756	−10	130	+10	19	388	1		
		6755	+23	163	−13	23	48	2		
		6754	+83	223	−12	82	24	1		
				(140)	(−7)		920	45		
Feb. 28	13 10	6761	−63	63	−15	63	12	2	VG	U. S. Naval.
		6758	−37	89	−6	36	436	35		
		6757	−21	105	−11	21	12	1		
		6756	−12	114	+21	29	48	3		
		6756	+3	129	+10	17	388	1		
		6760	+9	135	+14	24	12	1		
		6755	+37	163	−13	37	48	1		
				(126)	(−7)		956	44		
Feb. 29	13 21	6761	−49	64	−15	49	48	5	G	Do.
		6758	−22	91	−5	21	485	30		
		6757	−7	106	−11	7	24	4		
		6756	−3	110	+10	16	48	4		
		6756	+3	116	+20	26	48	2		
		6756	+12	125	+13	23	24	1		
		6756	+17	130	+10	24	388	1		
		6762	+34	147	−8	33	97	12		
		6755	+51	164	−13	51	24	4		
				(113)	(−7)		1,186	63		

Mean daily area for 28 days=984.

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

PROVISIONAL SUNSPOT RELATIVE NUMBERS FOR FEBRUARY 1940

[Dependent alone on observations at Zurich]

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

February 1940	Relative numbers	February 1940	Relative numbers	February 1940	Relative numbers
1	*b* --	11	*aad* 41	21	*a* 60
2	59	12	*Mc* --	22	*d* 59
3	58	13	62	23	44
4	52	14	*Ec* 89	24	40
5	*aa* --	15	--	25	44
6	*Ec* 47	16	73	26	*Ec* --
7	*Ec?* --	17	*aa* 51	27	52
8	64	18	49	28	*a* 46
9	*Ec* 82	19	*Mcd* --	29	*Mc* 95
10	--	20	*Mac* --		

Mean, 20 days=58.4.

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 disc; 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.