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	Cambridge	Twin Falls	La Jolla	New Orleans	Riverside	Blue Hill	Albuquerque	Friday Harbor	Newport
	cal.	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*
Jan. 1	182	117	132	111	160	106	147	164	220	176	191	121	279	81	161
Jan. 8	203	117	163	78	172	170	174	189	198	267	192	161	240	80	191
Jan. 15	144	109	114	97	115	182	127	146	285	263	261	119	310	87	135
Jan. 22	98	140	139	49	132	172	162	188	201	271	189	144	251	111	164
DEPARTURES FROM WEEKLY NORMALS															
Jan. 1	+13	−10	−39	+26	+51	−39	+7	+11	−9	+3	−61	−21	+28	+10	+4
Jan. 8	+52	−13	−19	−1	+63	+6	+19	+31	−46	+55	−100	+7	−27	+2	+22
Jan. 15	−12	−43	−78	−1	0	+1	−20	−24	+16	+39	−43	−44	+32	−6	−21
Jan. 22	−78	−43	−89	−68	−20	−38	−11	+5	−78	+61	−78	−20	−29	+17	−3
ACCUMULATED DEPARTURES ON JANUARY 28, 1941															
	−175	−763	−1,575	−308	+658	−490	−35	+161	−819	+1,106	−1,974	−546	+28	+161	+14

LATE DATA FOR FAIRBANKS, ALASKA

Week beginning—	Total solar radiation	Departures
Dec. 3	7	−1
Dec. 10	3	−2
Dec. 17	13	+6
Dec. 24	5	−2

Total departure for the year, +5,243; percentage departure, +6.1.

POSITIONS, AREAS, AND COUNTS OF SUN SPOTS

[Communicated by Capt. J. F. Hellweg, U. S. Navy (Ret.), Superintendent, U. S. Naval Observatory.] All measurements and spot counts were made at the Naval Observatory from plates taken 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, under longitude, latitude, area of spot or group, and spot count, are included assumed longitude of center of the disk, assumed latitude of center on 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
1941	*h m*		°	°	°	°				
Jan. 1	13 33	7096	−46	333	+2	47	6	1	G	U. S. Naval.
		7095	−43	336	+8	45	73	5		
		7094	−41	338	+15	45	66	8		
		7097	−40	339	+9	41	48	2		
		7093	−39	340	+18	44	36	1		
		7094	−38	341	+13	41	97	8		
		7092	−15	4	−8	16	145	7		
		7098	−14	5	+18	25	12	1		
				(19)	(−3)		483	33		
Jan. 2	10 47	7096	−33	334	+2	33	24	6	VG	Mt. Wilson.
		7095	−31	336	+8	33	73	7		
		7094	−29	338	+15	34	61	8		
		7097	−28	339	+9	31	48	9		
		7093	−27	340	+18	34	36	5		
		7094	−26	241	+13	31	48	16		
		7092	−3	4	−8	6	48	9		
		7098	−2	5	+18	21	12	1		
				(7)	(−3)		350	61		
Jan. 3	11 3	7095	−17	337	+8	20	121	8	VG	Do.
		7094	−16	338	+16	25	121	8		
		7097	−14	340	+9	19	97	12		
		7099	−14	340	−15	19	12	2		
		7094	−13	341	+13	20	97	13		
		7093	−13	341	+19	25	24	3		
		7092	+14	8	−8	15	24	5		
		7098	+17	11	+17	27	12	3		
				(354)	(−3)		508	54		
Jan. 4	11 14	*	−22	318	−11	23	24	3	G	U. S. Naval.
		*	−7	333	−14	13	12	2		
		7094	−4	336	+16	20	145	6		
		7095	−4	336	+9	13	73	9		
		*	−3	337	+24	27	12	4		
		7094	−2	338	+14	18	73	8		
		7097	−1	339	+9	12	48	4		
		7093	−1	339	+20	23	36	1		
		7098	+29	9	+19	36	73	4		
				(340)	(−3)		496	41		

See footnotes at end of table.

POSITIONS, AREAS, AND COUNTS OF SUN SPOTS—Con.

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
1941	*h m*		°	°	°	°				
Jan. 5	12 48	7093	+10	336	+19	25	145	8	F	U. S. Naval.
		7095	+11	337	+10	18	121	5		
		7097	+13	339	+11	20	48	5		
		7094	+15	341	+15	24	97	6		
		7092	+33	359	−8	33	194	9		
		7098	+43	9	+18	49	73	2		
				(326)	(−4)		678	35		
Jan. 6	11 56	*	−66	248	+21	70	12	1	VG	Do.
		7093	+23	337	+18	31	121	13		
		7095	+25	339	+10	29	97	8		
		7097	+27	341	+11	31	48	7		
		7094	+29	343	+15	35	97	9		
		7092	+46	0	−9	46	364	10		
		7098	+57	11	+17	60	12	1		
				(314)	(−4)		751	49		
Jan. 7	13 1	8002	−84	216	+11	84	194	1	VG	Do.
		8001	−63	237	−10	63	158	10		
		7093	+37	337	+17	42	36	4		
		8000	+39	339	+5	40	121	14		
		7095	+39	339	+10	41	36	10		
		7097	+42	342	+11	44	24	5		
		7094	+43	343	+15	47	48	6		
		7092	+61	1	−9	61	364	10		
		7098	+68	8	+17	70	12	1		
				(300)	(−4)		993	61		
Jan. 8	12 56	8002	−70	217	+11	72	170	1	G	Do.
		8001	−49	238	−10	49	170	7		
		*	+42	329	+9	44	24	7		
		8000	+52	339	+5	53	48	5		
		7095	+53	340	+10	56	12	1		
		7097	+56	343	+11	58	12	3		
		7094	+56	343	+14	59	12	3		
		7092	+75	2	−9	75	364	7		
				(287)	(−4)		812	34		
Jan. 9	12 14	8002	−56	218	+7	57	97	1	VP	Do.
		8001	−35	239	−10	36	121	3		
				(274)	(−4)		218	4		
Jan. 10	12 1	8007	−72	189	−4	72	24	3	VG	Do.
		8002	−43	218	+11	46	97	2		
		8001	−21	240	−10	22	170	17		
		*	+17	278	+19	23	12	1		
		8003	+54	315	+3	54	170	13		
				(261)	(−4)		473	36		
Jan. 11	10 32	8007	−58	191	−4	58	24	3	G	Do.
		8002	−29	220	+11	32	97	1		
		8001	−8	241	−10	11	73	9		
		8005	+6	255	−7	6	24	4		
		8004	+45	294	−10	45	12	1		
		8003	+68	317	+3	69	158	9		
				(249)	(−4)		388	27		

POSITIONS, AREAS, AND COUNTS OF SUN SPOTS—Con.

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
1941	h m			°	°	°				
Jan. 12	11 15	8007	−45	190	−3	45	24	8	VG	Mt. Wilson.
		8008	−35	200	+13	40	6	2		
		8002	−15	220	+11	21	97	1		
		8001	+3	238	−7	4	24	5		
		8001	+8	243	−9	10	48	8		
		8006	+8	243	+10	16	6	3		
		8004	+53	288	−10	53	6	1		
		8003	+82	317	+3	82	97	5		
				(235)	(−4)		308	33		
Jan. 13	11 19	8007	−31	191	−3	31	97	7	G	U. S. Naval.
		8002	−2	220	+11	15	73	1		
		8001	+21	243	−10	22	24	4		
				(222)	(−4)		194	12		
Jan. 14	12 1	8007	−18	190	−3	19	24	4	G	Mt. Wilson.
		8002	+12	220	+11	20	61	1		
		8001	+34	242	−12	36	24	4		
				(208)	(−5)		109	9		
Jan. 15	11 23	8009	−67	128	−25	68	12	1	G	Do.
		8007	−4	191	−2	5	6	3		
		8008	+5	200	+10	15	12	5		
		8002	+25	220	+11	30	61	1		
				(195)	(−5)		91	10		
Jan. 16	11 17	8010	−76	106	+14	77	145	1	F	Do.
		8008	+20	202	+10	25	24	2		
		8002	+39	221	+10	42	61	1		
				(182)	(−5)		230	4		
Jan. 17	11 25	8011	−65	104	−12	65	12	2	VG	Do.
		8010	−62	107	+14	65	194	1		
		8002	+51	220	+12	54	48	1		
				(169)	(−5)		254	4		
Jan. 18	11 5	8011	−51	105	−12	52	12	5	VG	Do.
		8010	−49	107	+13	51	194	1		
		8012	−40	116	−7	40	24	9		
		8002	+65	221	+11	67	6	2		
				(156)	(−5)		236	17		
Jan. 19	12 17	8010	−35	107	+12	40	218	7	F	U. S. Naval.
		8012	−25	117	−6	25	24	6		
				(142)	(−5)		242	13		
Jan. 20	11 2	8010	−21	109	+12	27	206	4	F	Do.
		8012	−12	118	−6	12	109	5		
				(130)	(−5)		315	9		
Jan. 21	13 21	(*)	−27	88	−22	32	12	3	VG	Do.
		(*)	−14	101	−12	15	12	2		
		8010	−9	106	+8	16	24	5		
		8010	−8	107	+12	19	206	1		
		8012	+2	117	−6	2	291	15		
				(115)	(−5)		545	26		
Jan. 22	13 17	8013	+1	103	−12	7	61	9	VG	Do.
		8010	+7	109	+12	18	194	1		
		8012	+16	118	−6	16	279	17		
				(102)	(−5)		534	27		
Jan. 23	11 6	(*)	−60	30	+9	62	12	2	G	Do.
		8013	+13	103	−12	15	121	12		
		8010	+18	108	+12	25	194	1		
		8012	+28	118	−6	28	279	17		
				(90)	(−5)		606	32		
Jan. 25	11 43	8015	−82	342	−16	82	97	4	VG	Mt. Wilson.
		8014	−73	351	+13	77	582	16		
		8013	+39	103	−12	39	48	15		
		8010	+45	109	+12	50	194	10		
		8012	+53	117	−6	53	24	8		
		8012	+60	124	−7	60	97	5		
				(64)	(−6)		1,042	58		
Jan. 27	12 30	8016	−68	329	−3	69	18	1	P	Do.
		8015	−55	342	−11	55	61	2		
		8014	−45	352	+12	50	776	15		
		8013	+66	103	−14	66	24	1		
		8010	+75	112	+12	78	194	1		
				(37)	(−6)		1,073	20		

POSITIONS, AREAS, AND COUNTS OF SUN SPOTS—Con.

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
1941	h m			°	°	°				
Jan. 28	12 56	8019	−88	295	+10	88	48	1	VG	U. S. Naval.
		8018	−83	300	−12	83	388	1		
		8016	−55	328	−2	56	133	10		
		8015	−41	342	−11	41	36	6		
		8014	−31	352	+12	36	582	45		
		8017	+17	40	−3	18	48	13		
				(23)	(−6)		1,235	76		
Jan. 29	11 58	8018	−79	292	−12	79	133	5	VG	Do.
		8019	−73	298	+11	76	97	4		
		8018	−69	302	−12	69	339	7		
		8018	−65	306	−9	65	12	1		
		8016	−43	328	−3	44	24	7		
		8016	−39	332	−2	40	145	2		
		8015	−28	343	−11	28	24	9		
		8014	−20	351	+12	26	582	42		
		8017	+30	41	−2	31	97	12		
				(11)	(−6)		1,453	89		
Jan. 30	12 9	8018	−60	298	−12	60	400	13	G	Do.
		8019	−60	298	+10	63	97	2		
		8016	−30	328	−2	31	24	3		
		8016	−27	331	−2	28	145	1		
		8015	−15	343	−11	16	12	3		
		8014	−6	352	+12	19	582	36		
		8017	+39	37	−3	40	24	5		
		8017	+48	46	−1	49	73	3		
				(358)	(−6)		1,357	66		
Jan. 31	14 36	8018	−50	293	−12	50	97	6	G	Do.
		8019	−44	299	+9	45	61	1		
		8018	−39	304	−12	40	218	3		
		8016	−10	333	−1	12	145	1		
		8015	−4	339	−10	5	12	3		
		8014	+9	352	+12	20	533	29		
		8017	+53	36	−1	54	24	3		
		8017	+64	47	−1	65	36	1		
				(343)	(−6)		1,126	47		

Mean daily area for 29 days _____ = 590.

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

PROVISIONAL RELATIVE SUNSPOT NUMBERS FOR DECEMBER 1940

Based on observations at Zurich and Locarno. Data furnished through the courtesy of Prof. W. Brunner, Eidgen. Sternwarte, Zurich

December 1940	Relative numbers	December 1940	Relative numbers	December 1940	Relative numbers
1	*a 29	11	a 157	21	*40
2	*24	12	*134	22	----------
3	*Ec 32	13	Wac 158	23	27
4	Ec 45	14	ad 149	24	Mac 58
5	*d 69	15	*a 122	25	*51
6	*63	16	----------	26	*48
7	a 89	17	67	27	*a 42
8	Eacd 82	18	60	28	d 34
9	Maacc 108	19	29	29	55
10	Ec 142	20	Ec 37	30	49
				31	*40

Mean, 29 days = 70.3

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.
* Observed at Locarno.