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 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*		°	°	°	°				
Aug. 1	10 55	(*)	−64	175	−5	66	12	4	VG	U. S. Naval.
		6924	−37	202	+19	40	291	14		
		6924	−29	210	+18	31	339	12		
		6925	−13	226	−12	22	97	13		
		6923	+14	253	−9	21	194	1		
		6926	+16	255	+8	16	48	1		
		6926	+20	259	+8	20	73	3		
		6921	+39	278	−8	42	48	5		
				(239)	(+6)		1,102	53		
Aug. 2	10 59	6924	−24	201	+19	27	218	11	G	Do.
		6924	−16	209	+18	20	315	9		
		6925	0	225	−12	18	48	10		
		6923	+28	253	−9	32	218	1		
		6926	+34	259	+8	34	61	3		
		6921	+51	276	−8	54	61	6		
				(225)	(+6)		921	40		
Aug. 3	10 45	6931	−82	130	+11	82	12	1	G	Do.
		6930	−80	132	−12	80	485	4		
		6928	−68	144	+15	68	6	1		
		6929	−66	146	+1	67	12	1		
		6924	−10	202	+19	16	206	10		
		6924	−6	206	+16	11	12	1		
		6924	−2	210	+18	13	267	3		
		6927	+4	216	+9	5	24	6		
		6925	+11	223	−12	20	24	8		
		6923	+41	253	−10	45	206	2		
		6926	+48	260	+7	48	48	4		
		6921	+65	277	−7	68	24	2		
				(212)	(+6)		1,326	43		
Aug. 4	12 2	6931	−68	130	+10	68	24	1	VG	Do.
		6930	−67	131	−13	70	533	12		
		6928	−57	141	+13	57	194	13		
		6929	−50	148	+1	51	24	2		
		6935	−9	189	−19	26	6	1		
		6924	+4	202	+19	14	170	18		
		6924	+11	209	+18	16	267	5		
		6923	+56	254	−9	59	194	1		
		6933	+60	258	+8	60	61	4		
		6932	+61	259	−8	63	6	1		
		6926	+64	262	+7	64	36	4		
		6921	+77	275	−7	78	12	1		
				(198)	(+6)		1,527	63		
Aug. 5	11 27	6936	−88	97	+7	88	48	1	G	Do.
		6930	−56	129	−12	60	48	1		
		6930	−53	132	−13	56	679	18		
		6931	−53	132	+10	53	24	1		
		6928	−43	142	+13	43	242	15		
		6929	−38	147	+2	39	12	1		
		6924	+17	202	+22	23	48	10		
		6924	+18	203	+19	22	145	13		
		6924	+23	208	+18	26	218	4		
		6923	+69	254	−9	70	242	8		
		6933	+71	256	+9	71	242	5		
		6932	+75	260	−8	77	194	2		
		6926	+75	260	+8	75	194	4		
				(185)	(+6)		2,336	83		
Aug. 6	11 9	6938	−80	92	+5	80	145	9	F	Do.
		6936	−75	97	+7	75	97	1		
		(*)	−75	97	+2	76	12	1		
		6930	−39	133	−13	44	679	20		
		6931	−39	133	+11	39	24	1		
		6937	−37	135	−14	42	6	3		
		6928	−29	143	+13	30	242	19		
		6934	+20	192	+10	21	24	1		
		6924	+30	202	+20	33	218	10		
		6924	+37	209	+18	39	218	2		
		6923	+85	257	−9	85	97	2		
		6933	+88	260	+8	88	48	1		
				(172)	(+6)		1,810	70		
Aug. 7	11 22	6938	−67	92	+5	67	582	19	G	Do.
		6936	−60	99	+6	60	97	1		
		6937	−51	108	−14	56	97	1		
		6931	−26	133	+11	27	12	1		
		6930	−25	134	−13	31	727	35		
		6928	−16	143	+13	18	194	25		
		6924	+43	202	+20	45	182	7		
		6924	+50	209	+18	51	194	3		
				(159)	(+6)		2,085	92		

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
1940	*h m*		°	°	°	°				
Aug. 8	10 34	6938	−54	92	+5	54	679	21	VG	U. S. Naval.
		6936	−47	99	+6	47	97	1		
		6937	−37	109	−13	42	339	30		
		6931	−15	131	+11	16	24	6		
		6930	−12	134	−13	22	679	50		
		6928	−3	143	+13	8	145	16		
		6924	+55	201	+20	57	145	5		
		6924	+62	208	+18	63	194	2		
				(146)	(+6)		2,302	131		
Aug. 9	10 49	6938	−39	94	+5	39	727	39	VG	Do.
		6936	−33	100	+6	33	97	1		
		6937	−23	110	−13	30	388	52		
		6931	−2	131	+12	6	12	3		
		6930	+1	134	−13	19	533	40		
		6928	+11	144	+14	15	145	22		
		6924	+69	202	+20	69	121	5		
		6924	+76	209	+18	76	145	3		
				(133)	(+6)		2,168	165		
Aug. 10	10 54	6941	−86	34	+12	86	339	1	VG	Do.
		6940	−82	38	−14	83	6	1		
		6938	−25	95	+5	25	776	40		
		6936	−19	101	+6	19	97	3		
		6937	−10	110	−14	22	145	32		
		6939	−7	113	−5	13	6	4		
		6937	−5	115	−13	20	364	8		
		6930	+16	136	−12	23	242	40		
		6928	+25	145	+15	27	145	21		
		6924	+83	203	+20	83	145	1		
				(120)	(+6)		2,265	151		
Aug. 11	8 55	6942	−84	23	+17	84	48	2	VG	Mt. Wilson.
		6941	−72	35	+13	72	194	2		
		6940	−69	38	−13	71	145	14		
		6938	−12	95	+6	12	776	55		
		6936	−7	100	+6	7	61	1		
		6937	+2	109	−13	19	291	44		
		6937	+8	115	−12	20	485	10		
		6930	+29	136	−12	35	388	30		
		6928	+35	142	+18	37	24	12		
		6928	+39	146	+15	40	73	15		
				(107)	(+6)		2,485	185		
Aug. 12	15 26	6942	−70	21	+15	71	12	2	VG	U. S. Naval.
		6941	−56	35	+13	56	255	6		
		6940	−53	38	−13	56	315	16		
		6938	+3	94	+6	3	727	41		
		6936	+10	101	+6	10	48	1		
		6937	+18	109	−13	27	97	45		
		6937	+23	114	−12	30	582	5		
		6930	+43	134	−13	48	436	28		
		6928	+50	141	+17	50	133	19		
		6928	+58	149	+14	58	12	4		
				(91)	(+7)		2,617	167		
Aug. 13	10 57	6943	−79	1	−19	80	121	1	F	Do.
		6942	−59	21	+14	59	12	2		
		6941	−44	36	+13	44	242	3		
		6940	−41	39	−13	46	630	21		
		6938	+14	94	+6	14	679	26		
		6936	+20	100	+6	20	48	1		
		6937	+30	110	−13	37	97	21		
		6937	+35	115	−12	40	582	3		
		6930	+53	133	−13	57	364	13		
		6928	+61	141	+17	61	145	7		
				(80)	(+7)		2,920	98		
Aug. 14	8 44	6943	−64	4	−18	69	145	1	VG	Mt Wilson.
		6941	−31	37	+14	32	218	3		
		6940	−30	38	−13	37	727	29		
		6938	+27	95	+6	27	679	35		
		6936	+33	101	+6	33	48	1		
		6937	+43	111	−13	48	121	35		
		6937	+49	117	−12	52	533	4		
		6930	+67	135	−13	69	364	17		
		6928	+74	142	+17	74	145	14		
				(68)	(+7)		2,980	139		
Aug. 15	8 43	6943	−52	3	−18	58	145	1	VG	Do.
		6941	−19	36	+14	20	194	3		
		6940	−18	37	−13	28	727	29		
		6938	+40	95	+6	40	679	30		
		6936	+47	102	+6	47	36	1		
		6937	+56	111	−13	60	97	22		
		6937	+63	118	−12	67	533	4		
		6930	+80	135	−13	82	145	5		
		6928	+87	142	+17	87	48	3		
				(55)	(+7)		2,604	98		
Aug. 16	8 46	6946	−78	323	−10	79	48	1	VG	Do.
		6945	−58	343	+9	58	97	15		
		6943	−39	2	−18	45	194	5		

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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*		°	°	°	°				
Aug. 16	8 46	6944	−18	23	−15	29	24	7	VG	Mt. Wilson.
		6940	−10	31	−13	23	73	25		
		6941	−6	35	+14	10	194	2		
		6940	−2	39	−13	20	703	25		
		6938	+54	95	+6	54	630	30		
		6936	+59	100	+6	59	24	1		
		6937	+69	110	−13	71	97	15		
		6937	+77	118	−13	79	679	10		
				(41)	(+7)		2,763	136		
Aug. 17	10 25	6948	−68	319	−6	70	12	3	VG	U. S. Naval.
		6946	−63	324	−10	66	6	1		
		6945	−44	343	+8	44	582	35		
		6943	−23	4	−19	34	170	3		
		6943	−20	7	−17	32	6	1		
		(*)	−8	19	+12	10	6	6		
		6944	−4	23	−13	20	12	5		
		6944	+4	31	−13	20	24	13		
		6941	+4	31	+13	7	12	7		
		6941	+8	35	+13	11	194	2		
		6938	+68	95	+6	68	533	27		
		6947	+74	101	−3	75	24	4		
				(27)	(+7)		1,581	107		
Aug. 18	14 14	6948	−55	317	−5	57	36	4	P	Mt. Wilson.
		6945	−29	343	+10	29	582	22		
		6943	−10	2	−17	26	145	2		
		6941	+23	35	+13	24	194	4		
		6940	+26	38	−13	33	533	12		
		6949	+75	87	−14	78	48	3		
		6938	+86	98	+6	89	194	3		
				(12)	(+7)		1,732	50		
Aug. 19	14 42	(*)	−54	305	−19	60	6	1	VG	U. S. Naval.
		6950	−53	306	+11	57	48	3		
		6948	−41	318	−6	43	6	1		
		6945	−15	344	+9	15	727	45		
		6943	+5	4	−18	26	145	11		
		6941	+38	37	+12	38	145	1		
		6940	+40	39	−13	45	582	15		
				(359)	(+7)		1,659	77		
Aug. 20	11 34	6956	−81	266	+6	81	242	2	G	Do.
		6955	−80	267	−10	81	242	1		
		6956	−78	269	+4	78	194	5		
		6954	−42	305	−18	49	121	15		
		6950	−41	306	+11	41	36	4		
		6948	−28	319	−7	32	12	3		
		6953	−19	328	−9	25	6	2		
		6945	−4	343	+9	4	727	45		
		6943	+11	358	−20	29	12	3		
		6943	+17	4	−18	31	61	5		
		6952	+29	16	−17	38	12	4		
		6951	+38	25	+12	38	12	4		
		6941	+50	37	+12	50	194	2		
		6940	+51	38	−13	55	679	3		
				(347)	(+7)		2,550	98		
Aug. 21	11 0	6958	−77	257	+8	79	194	5	G	Do.
		6957	−75	259	−9	77	145	2		
		6956	−68	266	+6	68	145	8		
		6955	−66	268	−10	68	436	4		
		6956	−65	269	+4	65	97	5		
		6954	−28	306	−18	38	121	5		
		6950	−27	307	+12	28	24	2		
		6948	−14	320	−7	20	12	2		
		6945	+10	344	+8	10	679	45		
		6943	+30	4	−18	39	48	3		
		6952	+43	17	−16	48	24	6		
		6941	+63	37	+12	63	194	1		
		6940	+64	38	−13	68	679	3		
				(334)	(+7)		2,798	86		
Aug. 22	11 36	6957	−69	252	−11	70	12	1	G	Do.
		6958	−63	258	+8	63	97	5		
		6957	−61	260	−9	64	61	3		
		6956	−55	266	+6	55	73	4		
		6955	−51	270	−9	54	242	2		
		6956	−50	271	+4	50	73	3		
		6954	−17	304	−18	31	145	16		
		6950	−13	308	+12	14	73	19		
		6954	−12	309	−18	28	12	10		
		6948	0	321	−7	15	12	2		
		6953	+5	326	−8	16	12	4		
		6945	+25	346	+8	25	533	41		
		6943	+45	6	−17	50	24	3		
		6941	+76	37	+12	76	145	3		
		6940	+78	39	−13	80	679	3		
				(321)	(+7)		2,193	119		

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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*		°	°	°	°				
Aug. 23	11 16	6958	−49	259	+8	49	48	6	G	U. S. Naval.
		6957	−47	261	−9	50	61	1		
		6956	−41	267	+6	41	48	8		
		6955	−39	269	−10	42	291	4		
		6956	−37	271	+4	38	73	8		
		6950	−8	300	+12	10	97	15		
		6954	−3	305	−18	25	61	10		
		6950	+1	309	+12	5	48	5		
		6954	+4	312	−17	25	12	3		
		6953	+14	322	−11	23	36	7		
		6945	+37	345	+8	37	194	28		
		6945	+44	352	+5	44	291	4		
		6959	+47	355	+12	47	61	8		
		6943	+58	6	−17	62	6	1		
				(308)	(+7)		1,327	108		
Aug. 24	11 27	6958	−35	259	+8	35	12	3	G	Do.
		6957	−34	260	−9	38	61	5		
		6956	−28	266	+5	28	36	10		
		6955	−24	270	−9	25	242	4		
		6956	−24	270	+4	25	48	6		
		6954	+10	304	−17	26	24	7		
		6950	+15	309	+12	16	48	6		
		6954	+17	311	−17	31	24	4		
		6953	+30	324	−12	36	24	6		
		6945	+49	343	+9	49	97	13		
		6945	+57	351	+5	57	242	10		
		6959	+63	357	+11	63	48	1		
				(294)	(+7)		906	75		
Aug. 25	9 40	6957	−20	262	−7	25	73	1	G	Mt. Wilson.
		6958	−20	262	+8	20	36	8		
		6956	−16	266	+5	16	24	5		
		6955	−11	271	−7	18	267	5		
		6961	−7	275	+3	8	6	1		
		6960	−2	280	−15	22	12	3		
		6954	+27	309	−16	36	48	9		
		6950	+29	311	+12	30	36	3		
		6953	+45	327	−12	49	24	4		
		6945	+62	344	+7	62	97	20		
		6945	+71	353	+4	71	242	1		
		6959	+78	0	+9	78	73	4		
				(282)	(+7)		938	64		
Aug. 26	9 36	6965	−81	188	−7	82	242	6	G	Do.
		6963	−43	226	+11	43	12	1		
		6957	−6	263	−8	16	73	3		
		6956	−2	267	+9	3	73	12		
		6956	+2	271	+6	2	24	9		
		6955	+3	272	−8	16	242	5		
		6960	+12	281	−15	25	12	2		
		6954	+45	314	−17	51	73	15		
		6953	+55	324	−12	59	12	4		
		6945	+76	345	+7	76	121	16		
		6945	+85	354	+5	85	242	1		
				(269)	(+7)		1,126	74		
Aug. 27	9 49	6967	−73	182	+15	74	48	2	F	Do.
		6965	−67	188	−7	69	242	10		
		6964	−54	201	+19	54	24	2		
		6966	−43	212	+8	43	24	7		
		6957	+8	263	−8	17	73	10		
		6956	+10	265	+6	10	24	5		
		6955	+13	268	−8	20	242	13		
		6954	+58	313	−17	62	218	25		
				(255)	(+7)		895	74		
Aug. 28	9 50	6967	−60	182	+17	60	121	12	P	Do.
		6965	−53	189	−6	53	436	17		
		6966	−31	211	+8	31	24	3		
		6962	−1	241	−8	15	36	7		
		6957	+21	263	−9	26	48	3		
		6955	+29	271	−9	33	194	1		
		6954	+69	311	−17	71	194	3		
		6954	+74	316	−18	77	291	2		
				(242)	(+7)		1,344	48		
Aug. 29	9 44	6969	−81	148	+11	81	194	4	G	Do.
		6968	−78	151	+18	79	145	2		
		6967	−47	182	+16	47	242	16		
		6965	−37	192	−7	40	630	38		
		6962	+13	242	−7	20	73	12		
		6957	+37	266	−9	41	36	2		
		6955	+43	272	−8	47	194	1		
		6954	+85	314	−16	85	242	3		
				(229)	(+7)		1,756	78		

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1939	*h m*		°	°	°	°				
Aug. 30	13 47	6969	−70	144	+12	70	48	1	VG	Mt. Wilson.
		6969	−65	149	+10	65	291	8		
		6968	−61	153	+17	61	194	1		
		6967	−32	182	+15	33	291	16		
		6965	−21	193	−7	26	824	31		
		6962	+30	244	−9	34	36	9		
		6970	+39	253	−10	42	12	4		
		6957	+52	266	−9	55	48	1		
		6955	+59	273	−8	60	194	1		
				(214)	(+7)		1,938	72		
Aug. 31	11 4	6972	−81	121	−17	82	97	6	G	Do.
		6962	−62	140	−10	64	6	1		
		6969	−59	143	+12	59	24	7		
		6969	−51	151	+10	51	291	8		
		6968	−50	152	+16	50	145	1		
		6967	−19	183	+14	20	230	19		
		6965	−8	194	−7	16	873	44		
		*	+1	203	+20	13	6	4		
		6957	+64	266	−9	66	30	1		
		6955	+71	273	−8	73	194	1		
				(202)	(+7)		1,896	92		

Mean daily area for 30 days=1,898.

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

PROVISIONAL RELATIVE SUNSPOT NUMBERS

[Dependent on observations at Zurich only. Data furnished through the courtesy of Prof. W. Brunner, Eidgen. Sternwarte, Zurich]

August 1940	Relative numbers	August 1940	Relative numbers	August 1940	Relative numbers
1	69	11	*Eacd* 128	21	----------
2	60	12	*a* 124	22	126
3	*d* 67	13	*d* 162	23	*a* 116
4	*Eac* 105	14	128	24	94
5	103	15	110	25	84
6	*d* 111	16	*Eac* 98	26	*Eac* 71
7	*Ec* 121	17	*a* 109	27	*d* 75
8	*a* 119	18	114	28	76
9	*a* 129	19	*Eac* 97	29	*dd* 89
10	148	20	*Eacd* 126	30	89
				31	*a* 99

Mean 30 days=104.9

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.

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