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 visible hemisphere. For each day, below longitude, latitude, area of spot or group, 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.	Difference in longitude	Heliographic Longitude	Heliographic Latitude	Distance from center of disk	Area of spot or group	Spot count	Plate quality [1]	Observatory
1939	*h. m.*		°	°	°	°				
Mar. 1	11 39	6337	−80	171	+10	81	242	1	VP	U. S. Naval.
		6336	−58	193	+22	64	24	3		
		6333	−51	200	−19	52	145	1		
		6328	−6	245	−14	10	24	1		
		6334	+7	258	+22	29	48	3		
		6326	+9	260	−19	16	436	12		
		6325	+35	286	−20	38	121	1		
		6324	+38	289	+30	52	145	2		
		6320	+70	321	−7	70	242	10		
				(251)	(−7)		1,427	34		
Mar. 2	12 20	6337	−69	168	+11	71	242	3	F	Do.
		6338	−68	169	+13	70	24	2		
		6333	−38	199	−19	40	103	3		
		6328	+7	244	−14	10	24	1		
		6335	+20	257	+6	23	36	2		
		6326	+21	258	−19	24	485	15		
		6325	+48	285	−22	49	121	8		
		6324	+51	288	+30	61	145	4		
				(237)	(−7)		1,180	38		
Mar. 3	11 42	6337	−56	169	+10	59	242	15	F	Do.
		6338	−56	169	+13	60	48	3		
		6333	−24	201	−19	27	73	1		
		6326	+34	259	−19	36	388	9		
		6325	+60	285	−21	60	145	3		
		6324	+64	289	+31	71	97	2		
				(225)	(−7)		993	33		
Mar. 4	13 55	6337	−42	168	+10	46	291	12	P	Do.
		6338	−42	168	+13	46	97	8		
		6333	−9	201	−19	16	161	1		
		6326	+49	259	−19	50	291	1		
		6325	+76	286	−21	75	165	1		
		6324	+79	289	+30	86	97	1		
				(210)	(−7)		1,102	24		
Mar. 5	12 53	6337	−28	170	+10	34	218	15	F	Do.
		6338	−28	170	+13	35	73	4		
		6333	+13	221	−19	18	61	1		
		6326	+60	258	−18	60	291	8		
				(198)	(−7)		643	28		
Mar. 6	15 49	6337	−13	170	+10	22	218	15	P	Do.
		6338	−13	170	+13	24	73	2		
		6333	+19	212	−19	22	48	1		
		6326	+76	259	−18	74	291	4		
				(183)	(−7)		630	22		
Mar. 7	11 28	*	−56	116	−20	56	24	15	P	Do.
		6337	−1	171	+11	18	315	1		
		6338	+4	176	+13	21	24	1		
		6333	+30	202	−19	32	36	2		
		6339	+40	212	−10	40	61	1		
				(172)	(−7)		460	20		
Mar. 8	11 56	6341	−80	79	+12	82	194	1	P	Do.
		6337	+9	168	+10	19	388	17		
		6340	+20	179	−17	22	18	2		
		6333	+41	200	−19	42	48	1		
		6339	+53	212	−10	53	61	5		
				(159)	(−7)		709	26		
Mar. 9	10 53	6341	−65	81	+12	67	194	1	G	Do.
		6337	+21	167	+10	27	388	15		
		6340	+32	178	−17	33	121	7		
		6333	+53	199	−20	54	73	2		
		6339	+66	212	−10	66	48	3		
				(146)	(−7)		824	28		
Mar. 10	11 0	6344	−85	48	−17	84	242	1	P	Do.
		6341	−51	82	+12	55	73	1		
		6337	+33	166	+10	38	291	5		
		6340	+47	180	−17	48	97	5		
		6333	+68	201	−20	68	48	2		
				(133)	(−7)		751	14		

See footnotes at end of table.

POSITIONS AND AREAS OF SUN SPOTS—Continued

Date	Eastern standard time	Mount Wilson group No.	Difference in longitude	Heliographic Longitude	Heliographic Latitude	Distance from center of disk	Area of spot or group	Spot count	Plate quality [1]	Observatory
1939	*h. m.*		°	°	°	°				
Mar. 11	11 2	6343	−69	51	+10	71	12	1	G	Mt. Wilson.
		6344	−69	51	−17	69	291	1		
		6341	−38	82	+12	42	97	1		
		6342	+2	122	−20	13	36	7		
		6337	+47	167	+10	50	291	7		
		6340	+60	180	−17	60	61	5		
		6333	+85	205	−20	73	24	2		
				(120)	(−7)		812	24		
Mar. 12	11 22	6345	−87	19	−9	87	48	1	G	Do.
		6344	−58	48	−17	58	291	1		
		6343	−55	51	+11	58	12	2		
		6341	−24	82	+12	30	73	1		
		6342	+14	120	−20	19	48	10		
		6337	+61	167	+10	64	242	4		
		6340	+74	180	−17	74	36	3		
				(106)	(−7)		750	22		
Mar. 13	11 5	6345	−73	20	−9	73	48	1	G	U. S. Naval.
		6344	−45	48	−17	46	291	1		
		6347	−40	53	−14	40	48	1		
		6341	−10	83	+12	21	73	1		
		6342	+24	117	−20	27	6	1		
		6346	+70	163	+11	72	170	6		
		6337	+75	168	+10	77	145	3		
				(93)	(−7)		781	14		
Mar. 14	10 58	6345	−60	20	−9	60	73	1	G	Do.
		6349	−35	45	−15	36	12	1		
		6344	−32	48	−17	33	303	1		
		6347	−28	52	−14	29	48	12		
		6348	−15	65	+12	24	18	2		
		6341	+2	12	+12	19	73	1		
		6346	+82	162	+12	83	48	1		
				(80)	(−7)		575	19		
Mar. 15	10 49	6345	−48	19	−9	48	73	3	VG	Mt. Wilson.
		6349	−22	45	−15	24	48	10		
		6344	−20	47	−17	22	315	2		
		6347	−17	50	−15	19	291	27		
		6350	0	67	+27	34	24	1		
		6348	+1	68	+12	19	36	3		
		6341	+14	81	+12	23	97	2		
				(67)	(−7)		884	48		
Mar. 16	11 18	6354	−77	337	−16	76	12	1	VG	U. S. Naval.
		6353	−74	340	−6	74	6	1		
		6345	−34	20	−9	34	97	2		
		6349	−8	46	−14	11	48	12		
		6344	−6	48	−17	13	291	1		
		6347	−2	52	−14	8	291	41		
		6348	+14	68	+11	23	6	6		
		6350	+16	70	+27	38	97	17		
		6341	+30	84	+12	36	85	3		
		6351	+63	117	−20	63	24	6		
				(54)	(−7)		957	90		
Mar. 17	12 11	6354	−63	337	−16	63	12	1	F	Do.
		6352	−56	344	+17	60	6	1		
		6345	−21	19	−9	21	61	1		
		6344	+8	48	−17	13	267	1		
		6349	+9	49	−13	12	24	2		
		6347	+12	52	−13	14	242	12		
		6350	+29	69	+27	44	242	15		
		6355	+40	80	−12	40	48	8		
		6341	+43	83	+14	48	73	1		
				(40)	(−7)		975	42		
Mar. 18	10 59	6359	−61	326	+15	65	145	5	F	Do.
		6354	−49	338	−16	49	12	1		
		6345	−6	21	−9	7	73	1		
		6344	+20	47	−17	22	291	1		
		6347	+27	54	−13	28	121	8		
		6350	+42	69	+27	53	97	8		
		6357	+48	75	+13	52	48	1		
		6355	+56	83	−13	56	145	10		
		6341	+59	86	+13	61	73	1		
				(27)	(−7)		1005	36		
Mar. 19	11 37	(*)	−54	320	+3	54	12	1	P	Do.
		(*)	−50	324	+20	56	12	1		
		6359	−48	326	+15	52	388	10		
		6354	−36	338	−16	37	12	1		
		(*)	−17	357	+9	23	36	2		
		6345	+9	23	−9	10	73	1		
		6344	+33	47	−17	35	339	1		
		6347	+39	53	−13	39	121	3		
		6350	+53	67	+29	64	242	8		
		6351	+61	75	+13	65	36	1		
		6355	+68	82	−13	68	242	9		
		6341	+69	83	+13	70	61	1		
				(14)	(−7)		1574	39		

POSITIONS AND AREAS OF SUN SPOTS—Continued

Date	Eastern standard time		Mount Wilson group No.	Difference in longitude	Heliographic Longitude	Heliographic Latitude	Distance from center of disk	Area of spot or group	Spot count	Plate quality [1]	Observatory
1939	*h.*	*m.*		°	°	°	°				
Mar. 20	10	50	6362	−80	281	−23	78	24	1	G	Mt. Wilson.
			6359	−35	326	+13	40	436	15		
			6354	−23	338	−18	26	12	2		
			6353	−22	339	−7	22	48	5		
			6360	+19	20	+17	30	48	4		
			6345	+20	21	−10	21	73	1		
			6344	+46	47	−19	47	291	1		
			6347	+54	55	−13	54	145	1		
			6350	+68	69	+28	74	194	4		
			6357	+77	78	+13	78	24	1		
			6355	+81	82	−12	80	242	10		
			6341	+82	83	+12	83	48	1		
					(1)	(−7)	-------	1585	46		
Mar. 21	11	6	6364	−69	279	+31	76	48	3	P	U. S. Naval.
			6363	−66	282	−15	65	6	2		
			6362	−65	283	−23	65	36	1		
			6361	−35	313	−8	35	12	5		
			6359	−20	328	+15	30	436	13		
			6353	−9	339	−7	9	18	4		
			6360	+32	20	+17	39	12	3		
			6345	+34	22	−10	34	73	2		
			6344	+59	47	−18	58	194	1		
			6347	+65	53	−13	64	242	10		
			6350	+80	68	+27	88	145	3		
					(348)	(−7)	-------	1222	47		
Mar. 22	12	9	6364	−56	278	+30	65	48	1	F	Do.
			6367	−55	279	+2	56	6	1		
			6362	−52	282	−23	53	24	1		
			6361	−24	310	−9	24	6	1		
			6366	−8	326	−8	9	6	4		
			6359	−7	327	+15	22	436	19		
			6353	+4	338	−7	4	48	10		
			6365	+5	339	+21	29	12	2		
			6345	+49	23	−9	49	18	1		
			6344	+72	46	−17	71	388	1		
			6347	+79	53	−14	78	630	20		
					(334)	(−7)	-------	1622	61		
Mar. 23	11	8	6364	−43	278	+31	56	48	3	P	Do.
			6362	−39	282	−23	41	36	1		
			6361	−9	312	−9	10	121	12		
			6359	+6	327	+15	22	436	8		
			6353	+17	338	−7	17	73	4		
			6345	+60	21	−9	60	6	1		
			6344	+85	46	−18	81	339	1		
			6344	+85	46	−14	81	194	1		
					(321)	(−7)	-------	1253	31		
Mar. 24	11	4	6364	−31	277	+33	50	24	15	VG	Do.
			6362	−27	281	−24	32	12	2		
			6363	−27	281	−15	28	12	8		
			6361	+5	313	−9	5	97	13		
			6359	+19	327	+15	29	291	20		
			6353	+33	341	−6	33	97	13		
					(308)	(−7)	-------	533	71		
Mar. 25	11	7	6364	−19	276	+31	42	36	4	P	Mt. Wilson.
			6362	−14	281	−23	21	24	2		
			6363	−13	282	−14	16	24	5		
			6368	+11	306	+9	19	12	1		
			6361	+18	313	−9	18	73	20		
			6359	+31	326	+14	37	267	15		
			6366	+33	328	−2	34	12	1		
			6369	+41	336	−18	42	24	2		
			6353	+47	342	−6	47	36	5		
					(295)	(−7)		508	55		
Mar. 26	12	44	(*)	−35	246	−7	35	24	6	VG	U. S. Naval.
			6364	−7	274	+31	39	18	5		
			6262	−1	280	−23	17	24	2		
			6361	+33	314	−9	33	388	41		
			6359	+46	327	+15	50	242	18		
			(*)	+46	327	+21	52	6	3		
			(*)	+74	355	+12	76	36	1		
					(281)	(−7)		738	76		

POSITIONS AND AREAS OF SUN SPOTS—Continued

Date	Eastern standard time		Mount Wilson group No.	Difference in longitude	Heliographic Longitude	Heliographic Latitude	Distance from center of disk	Area of spot or group	Spot count	Plate quality [1]	Observatory
1939	*h.*	*m.*		°	°	°	°				
Mar. 28	13	50	6372	−34	220	+7	37	12	3	VG	U. S. Naval.
			6371	+13	267	+7	20	36	7		
			6361	+61	315	−9	61	242	15		
			6359	+74	328	+17	77	194	1		
					(254)	(−7)		484	26		
Mar. 29	9	43	6373	−79	164	+10	80	6	1	P	Mt. Wilson.
			6372	−21	222	+7	25	12	1		
			6371	+26	269	+7	30	24	4		
			6361	+74	317	−9	73	194	5		
					(243)	(−7)		236	11		
Mar. 30	12	23	6373	−65	163	+9	67	24	1	P	Do.
			6372	−6	222	+7	15	12	2		
			6370	+39	267	−16	39	48	3		
			6371	+43	271	+6	46	24	3		
					(228)	(−7)		108	9		
Mar. 31	11	18	6373	−51	165	+10	54	48	4	G	U. S. Naval.
			6376	−33	183	−15	35	12	6		
			6375	−2	214	−12	5	24	4		
			6374	+4	220	−13	7	36	7		
			6372	+8	224	+7	17	6	3		
					(216)	(−7)		126	24		

Mean daily area for 30 days=848.

[1] Plate quality.
*Not numbered.
VG, very good; G, good; F, fair; P, poor; VP, very poor.

PROVISIONAL SUNSPOT RELATIVE NUMBERS FOR MARCH 1939

[Dependent alone on observations at Zurich]

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

March 1939	Relative numbers	March 1939	Relative numbers	March 1939	Relative numbers
1	*ad* 102	11	49	21	*Ec* 89
2	92	12	55	22	77
3	70	13	*Ec* 55	23	*a* 74
4	79	14	*a* --	24	*a* 66
5	----------	15	58	25	48
6	----------	16	*Wac* 55	26	49
7	*a* --	17	*Wac* 83	27	----------
8	*d* 44	18	*E* 112	28	35
9	*Mc* --	19	133	29	41
10	47	20	110	30	36
				30	35

Mean, 25 days=67.8.

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.