ROYAL OBSERVATORY

ANNALS

Number 12

Photoheliographic Results 1968-1971

HERSTMONCEUX: ROYAL GREENWICH OBSERVATORY

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1978

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CONTENTS

	PAGE
Introduction	
1. General	5
2. Description	5
(i) Positions and Areas of Sunspots for each day in the year	5
(ii) General Catalogue of groups of Sunspots of:	
(a) Two or more days' duration	5
(b) One day's duration	6
(iii) Total Areas of Sunspots and Faculae	6
3. Summary of Results	6
(i) Mean Areas of Sunspots and Faculae	6
(ii) Mean Heliographic Latitude of Sunspots	6
Tables	
Positions and Areas of Sunspots for each day, 1968-1971	8
Notes on Sunspot Groups, 1968-1971	128
General Catalogue of groups of Sunspots, 1968-1971 of:	
(a) Two or more days' duration	150
(b) One day's duration	168
Total Areas of Sunspots and Faculae for each day, 1968-1971	174
Summary of Results, 1968-1971	182

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PHOTOHELIOGRAPHIC RESULTS 1968-1971

INTRODUCTION

1. GENERAL

The present volume contains photoheliographic results for the years 1968 to 1971 inclusive. During this period, the majority of the white light photographs were secured at the Royal Greenwich Observatory and at the Royal Observatory, Cape of Good Hope, the photoheliographs employed having been described in R.O. Annals No. 11 and previous Photoheliographic Results. The gaps in their observations were filled with photographs generously sent from Kodaikanal Observatory, Southern India, the Hale Observatories, California and the Heliophysical Observatory at Debrecen, Hungary.

The photoheliograms selected for measurement were supplied by the different observatories as follows:

	1968	1969	1970	1971
Herstmonceux	221	230	246	190
Cape	133	129	106	164
Kodaikanal	8	6	10	8
Hale	2	-	2	3
Debrecen	2	-	1	-
	---	---	---	---
Total	366	365	365	365

These plates were measured by P.S. Laurie, G.M. Appleby, Mrs C.M. Cully, Miss C.Y. Hohenkerk and P.J. Rudd. The methods of measurement and reduction have been fully discussed in all earlier Photoheliographic Results (see R.O. Annals 11, 1975), and are not repeated here.

2. DESCRIPTION OF TABLES

(i) Positions and Areas of Sunspots for each Day. The measured positions and areas of sunspots are given for each day in the year. The positions are referred firstly to a system of apparent polar co-ordinates on the Sun's disk and secondly to a system of heliographic co-ordinates. The table gives:

- Col. 1. The month given numerically, the date and decimal of day reckoned from midnight
- Col. 2. Position angle P of the Sun's axis from the north point
- Col. 3. Heliographic longitude L_o of the centre of the disk
- Col. 4. Heliographic latitude B_o of the centre of the disk
- Col. 5. Number of spot group in order of appearance and in continuation of the group numbers given for the previous year. Single figures (1 = leader, 2 = follower) beneath the number of a spot group indicate the principal and most stable components of that group. (The areas of such components are already included in the total area of the group.) Groups seen on one day only are distinguished by the number of the rotation during which they were observed and suffixed by a number giving the order of their appearance in the rotation.
- Col. 6. Distance of spot group from Sun's centre in units of the Sun's radius
- Col. 7. Position angle of spot group measured from the north pole of the Sun's axis in the direction N.E.S.W.N.
- Col. 8. Heliographic longitude of spot group derived from the measures
- Col. 9. Heliographic latitude of spot group similarly derived
- Col. 10. Area of umbrae corrected for foreshortening and expressed in millionths of the Sun's visible hemisphere
- Col. 11. Area of whole spots comprising the group similarly expressed

Notes on the sunspot groups are given at the end of this section.

(ii) General Catalogue of Groups of Sunspots

(a) This catalogue contains particulars of every group of sunspots which lasted for two or more days, group numbers being in continuation of those given in previous years. The table includes an indication of those groups which may be considered to be members of "recurrent" series of groups which were selected upon the following plan. If any spot when first seen was 75° or more to the east of the central meridian, the Catalogue and, if necessary, the Daily Results, were searched some fifteen to sixteen days earlier to ascertain whether a spot group of similar heliographic longitude and latitude was then near the west limb of the Sun. Similarly, if any spot group when last seen was 75° or more to the west of the central meridian, a search was made fifteen to sixteen days later. When there appeared to be a case of probable continuity between groups in consecutive rotations of the Sun, the character of the groups, their areas and their longitude and latitude were carefully compared before accepting them as a recurrent group.

It should be noted that longitudes are based on the ephemeris given in the Astronomical Ephemeris, assuming a solar rotation period constant at all latitudes. After an interval of one rotation, recurring groups will, therefore, show in general - apart from any proper motion they may have of their own - apparent drifts in longitude varying in amount according to their respective latitudes. The following table, derived from the formula $\xi = 14^\circ.37 - 2^\circ.600 \sin^2 \phi$, gives the apparent drift in longitude appropriate to different latitudes after an interval of 27 days, a drift forwards corresponding to an increase in heliographic longitude.

Latitude	..	Drift forwards	Latitude	..	Drift backwards
0°	..	5°	20°	..	3°
5°	..	4.5	25°	..	7.5
10°	..	3	30°	..	12.5
15°	..	0.5	35°	..	18

Groups lasting for two or more days are tabulated as follows:

Col. 1. Group number of sunspots
Col. 2. U.T. of the central meridian passage of each group as deduced from its mean longitude (given in Col. 10). For those groups which are in existence at the time of the central meridian passage of their longitude, the time is given to $0^{d}.01$, corresponding to $0^{\circ}.13$ of solar longitude. In other cases, in which groups disappear before or appear after the central meridian, the deduced time is given to $0^{d}.1$.
Col. 3. Duration of each group in days. Intermittent groups, i.e. groups which are not seen upon the photographs for every day between their first and last appearances, are indicated by two numbers, separated by a solidus. The first represents the number of days on which they are actually observed and the second the number of days covering the extreme limits of observation.
Col. 4. Date on which each group is first seen
Col. 5. Heliographic longitude from the meridian passing through the centre of the Sun's disk at the time of observation when the group is first seen. Longitudes west of the centre are reckoned as positive.
Col. 6. Date on which each group is last seen
Col. 7. Heliographic longitude from the meridian passing through the centre of the Sun's disk at the time of observation when the group is last seen. Longitudes west of the centre are reckoned as positive.
Col. 8. Mean area for umbrae, corrected for foreshortening and expressed in millionths of the Sun's visible hemisphere.
Col. 9. Mean area for whole spots similarly expressed
Col. 10. Mean heliographic longitude of each group
Col. 11. Mean heliographic latitude of each group
Col. 12. Reference to recurrent groups. The numeration is in continuation of the recurrent series given in Ledger I of the Greenwich Photo-Heliographic Results for 1955; bracketed numbers indicate the order of a group in the series.

When a group is 80° or more from the Sun's central meridian, or in cases of close proximity to the Sun's limb when only part of the group is visible, the measures for that day are not included in deriving the mean area or the mean longitude and latitude of the group.

(b) The second part of the catalogue contains groups of sunspots seen on one day only. These appear in the Daily Results with a distinctive numeration comprising the number of the rotation during which each was observed and a suffix giving the order of appearance in each rotation. These short-lived groups were usually composed of one or two very small spots. In this catalogue, columns 3, 4, 5, 6, 7 described above are not relevant. The date of appearance is given in column 2 and the deduced time of the central meridian passage of each spot is given in column 4.

(iii) Total Areas of Sunspots and Faculae. This table contains total areas of sunspots and faculae (the latter separated into west and east hemispheres) for each day in the year.

The place where the photograph was taken is indicated in the second column. Photographs taken at Herstmonceux are indicated by the letter H, and those taken at the Cape, Kodaikanal, Debrecen and Hale Observatories by the letters C, K, D and P respectively.

The projected areas and those corrected for foreshortening are expressed in millionths of the Sun's apparent disk and visible hemisphere, respectively.

3. SUMMARY OF RESULTS

The rotations adopted in the tables (which are in continuation of those from 1873-1967) correspond to the synodic rotation of the Sun, and the commencement of each is defined by the coincidence of the assumed prime meridian with the central meridian, the assumed prime meridian being that meridian which passed through the ascending node of the Sun's equator on the ecliptic at mean noon on 1854 January 1, and the assumed period of the Sun's sidereal rotation being 25.28 days. The numeration of the rotations is in continuation of Carrington's series (Observations of Solar Spots made at Redhill by R.C. Carrington, F.R.S.), No. 1 being the rotation commencing 1853 November 9. The dates of commencement of the rotations are given in U.T.

(i) Mean Areas of Sunspots and Faculae. These areas were calculated by taking the means of the areas for each day of observation throughout each rotation of the Sun. The projected areas and those corrected for foreshortening are expressed in millionths of the Sun's apparent disk and visible hemisphere, respectively.

(ii) Mean Heliographic Latitude of Sunspots. The heliographic latitude of each spot for each day has been multiplied by its area (corrected for foreshortening), and the sum of the products, for spots north of the equator, has been divided by the sum of the corresponding areas to form the mean heliographic latitude of spotted area north of the equator; similarly for spots south of the equator. In forming the mean heliographic latitude of entire spotted area, the algebraic sum of the products for spots north and south of the equator has been divided by the sum of the areas; for the mean distance from the equator of all spots, the numerical sum of the products, without regard to the sign of latitude, has been similarly divided.

The mean areas have been formed by dividing the sum of the daily areas (corrected for foreshortening) by the number of days of observation for each rotation of the Sun and are expressed in millionths of the Sun's visible hemisphere.

A descriptive summary of solar activity during each year concludes the results.

4. ACKNOWLEDGEMENTS

These results were compiled under the supervision of D.J. Stickland, by Mrs C.M. Cully and P.J. Rudd.

We are indebted to the directors of Kodaikanal Observatory, Southern India, the Hale Observatories, California, and the Heliophysical Observatory, Debrecen, Hungary, for their cooperation in supplying photographs to fill gaps in the Herstmonceux and Cape series.

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1977 November

PHOTOHELIOGRAPHIC RESULTS 1968-1971

TABLES

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Jan. 1.628	+ 2.2	187.2	-3.0	21448	.936	255.2	256.5	-14.9	157	1271
				21444	.894	246.2	249.4	-22.5	32	250
				2	.894	246.2	249.4	-22.5	32	250
				21454	.868	255.8	247.0	-13.8	0	10
				21449	.388	236.0	206.6	-15.3	7	66
				21451	.253	227.5	198.2	-12.8	38	270
				21450	.428	195.9	194.7	-27.2	61	420
				21456	.673	132.3	152.5	-29.4	6	34
				21457	.789	106.9	136.0	-15.2	10	58
				21458	.965	109.4	112.5	-19.5	24	134
2.495	+ 1.7	175.8	-3.1	21448	.981	255.1	254.9	-15.3	148	882
				21444	.961	247.3	249.5	-22.7	39	240
				21449	.546	245.2	206.7	-15.9	12	108
				21451	.417	245.4	198.6	-12.9	38	212
				21450	.500	215.0	194.5	-27.0	88	614
				21456	.562	142.2	152.6	-29.1	3	18
				21457	.668	110.2	135.3	-15.7	9	55
				21458	.905	110.7	111.7	-20.0	30	237
				21459	.989	113.0	94.0	-23.2	99	587
3.418	+ 1.3	163.6	-3.3	21449	.707	251.5	207.5	-15.3	12	70
				21451	.587	252.7	198.6	-12.7	45	304
				21450	.607	227.6	193.7	-26.9	76	846
				1529 05	.034	20.5	163.0	-14	1	14
				21456	.469	158.7	152.5	-29.0	5	22
				21457	.495	117.0	136.5	-15.9	7	42
				21458	.812	111.9	110.8	-19.6	47	406
				21460	.957	65.6	93.6	+22.2	0	18
				21459	.947	113.5	93.0	-23.2	181	1188
4.375	+ 0.8	151.0	-3.4	21449	.832	253.3	206.8	-15.7	14	91
				21451	.748	256.3	198.9	-12.5	26	257
				21450	.719	234.3	192.0	-27.3	82	871
				21456	.438	182.7	152.4	-29.2	2	22
				21457	.328	133.7	136.8	-16.3	8	38
				21461	.368	116.8	131.4	-12.7	2	17
				21458	.676	115.8	110.9	-19.6	39	414
				21460	.843	64.0	97.7	+19.6	22	197
				21459	.864	115.0	92.8	-23.1	146	1245
				21462	.966	118.9	76.5	-28.7	25	143
				21463	.991	80.6	69.8	+ 8.8	39	171
5.565	+ 0.2	135.4	-3.5	21449	.936	253.7	204.6	-16.5	6	47
				21451	.898	257.8	199.1	-12.5	23	122
				21450	.858	240.1	192.0	-27.2	73	573
				21456	.502	209.2	151.6	-29.3	2	10
				21457	.231	187.2	137.1	-16.7	1	6
				21461	.242	161.3	130.8	-16.7	2	27
				21458	.480	125.7	111.1	-19.4	38	446
				21460	.699	56.7	97.2	+19.7	63	487
				21459	.718	119.2	92.6	-23.0	149	1008
				1529 06	.867	127.9	79.8	-34.1	2	12
				21462	.864	119.4	78.0	-26.9	41	435
				21463	.958	76.8	63.5	+11.6	54	620

Continued

SP1

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Jan. 5.565	Continued			21464	.963	115.2	61.2	-25.1	23	137
6.396	- 0.2	124.4	-3.6	21451	.963	258.0	199.0	-12.6	20	140
				21450	.926	241.4	191.0	-27.7	56	546
				21456	.571	219.4	148.9	-29.4	3	13
				1529 07	.378	220.0	139.4	-20.2	1	20
				21457	.311	222.8	137.1	-16.7	1	7
				21458	.354	140.3	110.6	-19.2	68	365
				21460	.577	47.5	97.7	+19.6	77	450
				21459	.600	124.7	92.2	-23.0	148	1002
				21462	.771	121.9	77.6	-26.5	38	239
				21463	.889	74.6	63.5	+11.9	86	791
				21464	.905	115.8	60.9	-24.7	30	127
7.608	- 0.8	108.5	-3.7	21450	.980	241.0	187.1	-29.2	31	296
				21461	.441	245.6	132.8	-13.8	2	17
				21458	.267	188.0	110.7	-19.0	45	296
				21460	.419	22.3	98.8	+19.0	53	441
				21459	.428	141.4	91.7	-23.0	108	949
				21465	.533	66.3	79.0	+ 9.1	5	28
				21462	.611	130.2	77.2	-26.4	14	137
				21463	.742	69.8	63.2	+12.2	109	1233
				21464	.774	118.8	60.5	-24.3	21	99
				21466	.977	68.9	33.2	+19.6	65	749
8.399	- 1.1	98.0	-3.8	21450	.995	241.1	183.2	-29.1	20	184
				21458	.334	218.6	110.7	-18.8	23	216
				21460	.394	0.4	97.9	+19.3	83	458
				1529 08	.270	177.5	97.3	-19.4	0	7
				21459	.345	162.8	91.7	-23.0	115	983
				21465	.395	55.2	78.9	+ 9.4	14	102
				21462	.503	140.3	77.2	-26.3	15	136
				21463	.613	64.7	63.7	+12.0	151	1635
				21464	.667	123.2	60.4	-24.4	20	108
				21467	.879	59.3	42.1	+24.5	5	41
				21466	.928	66.9	33.2	+19.7	142	955
				1529 09	.963	78.0	24.9	+10.4	0	12
9.280	- 1.6	86.4	-3.9	21458	.479	236.8	111.3	-18.7	26	169
				21460	.443	332.7	98.8	+19.3	56	413
				21459	.343	193.6	91.5	-23.3	104	761
				21462	.398	159.2	77.5	-25.6	11	102
				21465	.287	33.4	77.3	+ 9.9	4	26
				21463	.471	54.6	63.4	+12.2	136	1420
				21464	.544	131.1	59.8	-24.4	20	127
				21467	.797	55.7	40.5	+23.9	5	31
				21466	.847	63.3	32.9	+20.0	101	1017
10.387	- 2.1	71.9	-4.0	1529 10	.825	249.4	126.5	-19.2	2	15
				21458	.672	245.9	112.2	-19.0	12	82
				21460	.581	311.8	99.0	+19.1	51	324
				21459	.461	221.6	91.4	-23.9	93	585
				21465	.240	329.5	78.9	+ 7.9	4	36
				21462	.376	196.6	78.6	-25.0	9	91

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Jan. 10.387	Continued			21463	.315	26.3	63.7	+12.3	88	1210
				21464	.408	149.9	58.9	-24.5	17	113
				21468	.354	105.8	51.8	- 9.3	8	47
				21467	.673	44.9	40.4	+25.0	3	32
				21469	.611	59.6	39.0	+14.5	12	94
				21466	.711	56.3	33.0	+20.0	130	993
				21470	.938	75.0	3.9	+12.6	0	12
11.387	- 2.6	58.7	-4.1	21458	.836	250.0	114.6	-18.9	4	28
				21460	.728	300.5	100.0	+18.6	36	277
				21459	.599	234.4	90.8	-23.9	118	627
				21462	.523	226.6	83.3	-24.7	6	63
				21463	.297	342.7	63.9	+12.3	105	1094
				21464	.349	180.2	58.8	-24.5	16	86
				21468	.136	142.5	53.9	-10.3	4	29
				21467	.571	31.6	39.5	+25.1	0	11
				21469	.456	46.0	39.0	+14.5	15	90
				21466	.576	45.8	32.8	+19.8	90	792
				21470	.832	68.0	5.7	+15.7	2	19
12.422	- 3.1	45.1	-4.2	21458	.933	252.2	114.0	-18.2	0	6
				21460	.860	294.6	100.4	+18.5	40	236
				21459	.747	241.2	90.7	-24.0	69	488
				21462	.614	232.5	77.5	-25.5	11	69
				1529 11	.660	214.5	72.7	-36.6	1	6
				21463	.439	307.5	65.8	+11.4	86	831
				1529 12	.339	271.2	64.8	- 3.6	0	3
				21464	.409	209.8	57.9	-24.8	14	100
				21468	.156	229.5	51.9	-10.0	2	16
				21469	.348	17.7	38.8	+15.0	14	95
				21466	.458	27.3	32.2	+19.8	124	778
				1529 13	.851	100.1	346.8	-10.8	0	8
13.335	- 3.5	33.0	-4.3	21460	.944	291.1	100.8	+18.2	31	212
				21459	.855	244.1	90.3	-24.3	44	452
				21462	.755	240.5	79.3	-24.8	2	6
				21463	.606	293.7	67.3	+10.5	95	897
				21464	.526	227.1	58.1	-24.8	10	88
				21468	.344	253.1	52.5	- 9.8	2	11
				21469	.350	344.1	38.7	+15.3	9	93
				21466	.407	2.7	31.9	+19.6	87	721
14.402	- 4.0	19.0	-4.5	21460	.993	288.9	100.0	+18.1	34	185
				21459	.944	245.8	89.6	-24.3	41	335
				21463	.763	288.9	66.3	+11.2	80	694
				21464	.675	237.3	57.6	-24.8	11	51
				21469	.475	313.0	40.0	+14.7	1	9
				21471	.340	310.8	34.0	+ 8.5	17	104
				21466	.457	333.2	31.6	+19.6	75	591
				21472	.963	106.8	304.2	-17.4	0	19
15.274	- 4.4	7.5	-4.5	21459	.986	246.0	88.6	-24.4	30	277
				21463	.847	287.2	63.1	+11.9	97	715
				21464	.789	241.6	57.3	-24.9	7	34
				21471	.494	295.6	34.1	+ 8.2	19	156

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Jan. 15.274	Continued			21466	.547	316.8	30.8	+19.3	62	533
				21472	.893	107.6	304.4	-17.7	5	18
16.474	- 5.0	351.7	-4.7	1530 01	.985	243.3	72.8	-27.1	0	25
				1530 02	.950	233.5	62.2	-36.0	0	14
				21463	.927	287.6	57.3	+14.3	17	200
				21464	.912	244.8	56.9	-24.9	5	31
				21471	.703	287.0	34.3	+ 8.4	21	149
				21466	.719	303.9	31.0	+20.0	75	417
				1530 03	.162	170.2	350.1	-13.8	7	49
				1530 04	.818	126.6	301.0	-32.1	4	24
17.449	- 5.4	338.9	-4.8	21463	.981	285.4	55.9	+14.1	22	132
				21471	.843	282.7	34.9	+ 8.0	24	168
				21466	.842	297.8	31.3	+20.2	84	499
				1530 05	.300	282.9	355.8	- 0.7	1	6
				21473	.651	115.0	300.3	-19.7	3	11
				21474	.900	63.7	279.2	+21.1	5	47
				21475	.979	100.0	260.2	-10.8	0	31
18.721	- 6.0	322.1	-4.9	21471	.963	279.2	35.4	+ 7.5	14	110
				21466	.953	292.9	31.1	+20.0	62	347
				21473	.460	123.8	298.3	-19.3	3	21
				21474	.752	55.7	280.4	+21.4	4	19
				21475	.927	103.8	253.8	-14.6	32	209
19.588	- 6.4	310.7	-5.0	21466	.993	290.9	31.2	+20.0	17	173
				1530 06	.482	276.5	339.2	- 1.2	1	6
				1530 07	.259	212.3	319.0	-17.5	2	13
				21473	.323	140.6	298.2	-19.2	5	16
				21475	.853	104.9	252.2	-15.2	33	281
				21476	.953	70.9	241.0	+16.5	0	18
20.290	- 6.7	301.5	-5.0	21474	.553	38.8	279.8	+20.7	2	20
				1530 08	.544	65.0	271.6	+ 8.9	1	4
				21475	.765	106.8	252.0	-16.0	23	165
				21476	.899	69.3	240.6	+16.0	2	16
				21477	.956	79.3	229.9	+ 8.6	0	21
21.285	- 7.2	288.4	-5.1	21475	.603	108.3	252.2	-15.0	13	163
				21476	.811	66.2	238.1	+15.8	4	14
				21477	.863	77.6	230.3	+ 8.0	2	16
22.437	- 7.7	273.2	-5.2	21478	.406	191.6	278.5	-28.5	3	31
				21475	.406	117.2	251.3	-15.5	11	114
				21476	.697	59.0	234.7	+16.9	4	38
				1530 09	.825	47.0	228.9	+30.4	2	17
				21477	.736	74.7	227.7	+ 7.5	5	32
				21479	.947	100.7	201.6	-11.8	3	26
23.442	- 8.2	260.0	-5.3	21474	.532	320.4	280.9	+19.1	4	17
				21478	.494	213.6	278.1	-29.3	4	28
				21475	.197	141.5	252.7	-14.1	7	67
				21476	.556	47.6	234.6	+17.2	3	20
				21477	.580	69.0	227.0	+ 7.5	3	20

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Jan. 23.442	Continued			21479	.848	100.4	201.8	-11.6	4	24
				21480	.925	51.4	201.1	+32.6	5	27
24.431	- 8.6	246.9	-5.4	21481	.813	309.0	291.9	+27.0	7	39
				21474	.656	307.8	280.1	+19.1	3	20
				21478	.604	227.3	277.2	-28.8	3	14
				21475	.187	230.0	255.3	-12.2	4	55
				21476	.429	25.0	236.0	+17.5	1	23
				1530 10	.394	154.1	235.9	-26.0	1	8
				21477	.353	54.1	230.2	+ 6.7	1	9
				21479	.730	101.0	200.1	-11.7	3	17
				21480	.859	45.8	199.8	+33.1	8	38
				21482	.987	77.3	167.6	+11.6	133	867
				21483	.986	100.1	165.8	-10.8	51	244
25.278	- 9.0	235.8	-5.5	21481	.897	304.1	292.2	+27.2	14	112
				21475	.309	244.3	252.3	-12.9	8	64
				21484	.176	323.2	241.8	+ 2.6	7	45
				21476	.388	350.3	239.7	+16.9	2	15
				21477	.233	19.9	231.2	+ 7.1	2	38
				21485	.372	118.2	216.0	-15.2	3	27
				21479	.561	102.4	201.9	-11.4	3	13
				21480	.809	40.1	197.0	+33.9	0	9
				21483	.944	99.9	164.7	-11.2	37	309
				21482	.962	75.1	163.6	+12.6	294	1794
26.592	- 9.6	218.5	-5.6	21481	.969	299.8	269.0	+27.0	13	86
				21475	.548	252.0	250.9	-14.5	3	12
				21484	.437	288.4	242.9	+ 2.8	7	36
				21477	.271	331.4	226.0	+ 8.2	1	13
				21485	.177	170.4	216.7	-15.6	3	20
				21479	.296	111.9	202.3	-11.7	1	6
				21480	.705	25.2	197.3	+34.3	0	9
				21483	.806	99.8	164.6	-11.2	48	261
				21482	.839	70.8	164.3	+12.8	329	1997
27.313	- 9.9	209.0	-5.6	21475	.684	254.0	251.7	-15.0	1	11
				21484	.611	282.1	245.5	+ 2.8	3	21
				1530 11	.092	102.5	203.8	- 6.8	1	6
				21480	.668	15.7	196.4	+34.4	0	6
				21483	.681	100.0	166.1	-10.9	32	219
				21482	.740	66.8	164.9	+12.8	333	2119
				21486	.832	103.1	152.6	-14.0	2	13
				21487	.981	66.8	133.8	+21.4	10	94
28.570	-10.4	192.4	-5.7	21475	.861	256.1	252.1	-14.8	0	11
				21484	.793	277.7	244.2	+ 2.6	9	67
				21483	.444	102.6	166.4	-10.7	42	202
				21482	.543	55.2	165.3	+12.9	346	2169
				21486	.615	104.9	154.9	-13.7	3	22
				21488	.739	64.9	149.0	+14.1	13	67
				21487	.916	63.6	130.9	+21.3	35	189
				21489	.959	100.8	118.3	-12.0	0	15
				21490	.981	63.0	117.9	+25.0	5	60
				21491	.977	76.5	116.7	+11.8	106	744

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Jan. 29.276	-10.7	183.1	-5.8	21484	.883	275.9	244.5	+ 2.4	4	33
				21483	.299	109.3	166.5	-11.2	28	182
				21482	.426	42.7	166.0	+12.7	402	2132
				21486	.468	107.7	156.0	-13.3	2	20
				21488	.621	59.2	150.0	+13.6	16	100
				21487	.854	61.0	130.2	+21.0	42	272
				21490	.943	61.1	118.0	+24.7	6	43
				21491	.934	75.1	116.3	+11.6	129	861
30.278	-11.1	170.0	-5.9	21483	.103	158.2	167.7	-11.4	32	167
				21482	.329	12.2	165.9	+12.8	434	2483
				21486	.282	117.3	155.1	-13.1	9	69
				21488	.452	42.9	151.6	+13.7	23	140
				21487	.753	54.5	128.9	+21.4	37	247
				21489	.800	101.1	116.7	-12.4	0	5
				21490	.872	56.5	116.6	+25.3	8	38
				21491	.841	72.2	115.4	+11.5	166	855
				21492	.963	68.3	99.0	+19.0	8	65
				21493	.978	82.3	93.2	+ 6.2	38	273
				21494	.991	112.9	86.2	-23.5	15	112
31.375	-11.6	155.5	-6.0	21483	.252	246.1	169.1	-11.6	18	136
				21482	.368	329.9	166.3	+12.6	400	2660
				21486	.119	182.8	155.8	-12.7	3	29
				21488	.344	9.7	152.1	+13.8	31	137
				21487	.617	42.9	128.8	+21.5	21	164
				1530 12	.609	52.4	125.4	+16.6	0	8
				21489	.604	102.1	118.5	-12.0	10	51
				21490	.758	49.0	116.4	+25.2	5	16
				21491	.694	66.3	115.2	+11.6	141	772
				1	.631	63.0	120.6	+11.7	70	318
				21492	.875	64.2	99.2	+19.1	15	77
				21493	.885	79.6	94.6	+ 6.3	22	134
				21495	.907	103.4	90.0	-14.6	17	98
				21494	.934	113.2	86.0	-23.8	17	107
				21496	.990	77.4	75.4	+11.5	21	142
Feb. 1.368	-12.0	142.4	-6.0	21483	.455	255.7	169.1	-11.8	18	137
				21482	.501	309.6	165.7	+13.0	449	3202
				21486	.247	237.7	154.8	-13.4	5	45
				21488	.369	337.2	150.9	+13.8	16	115
				21487	.518	26.7	128.0	+21.6	10	74
				21489	.418	106.1	118.3	-12.1	19	136
				21490	.652	37.8	116.3	+25.5	3	13
				21491	.537	57.1	115.2	+11.6	145	807
				1	.472	51.0	120.6	+11.6	64	337
				21492	.765	58.7	98.8	+19.0	10	73
				21493	.746	75.6	95.9	+ 6.5	20	102
				21495	.797	104.3	89.6	-15.0	30	357
				21494	.845	114.3	85.4	-23.7	14	83
				21496	.935	75.4	75.3	+11.3	15	76
2.275	-12.4	130.5	-6.1	21483	.629	258.2	169.4	-12.1	17	94
				21482	.646	298.2	166.0	+12.8	443	2789
				21486	.421	250.9	154.5	-13.5	5	37

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Feb. 2.275	Continued			21488	.485	314.9	151.2	+14.3	19	122
				21487	.457	2.6	129.2	+21.0	5	33
				21497	.489	20.9	119.8	+21.1	0	13
				21489	.231	118.9	118.6	-12.3	13	73
				21490	.575	23.2	116.0	+25.9	1	18
				21491	.395	41.1	115.2	+11.4	130	784
				1	.346	29.8	120.4	+11.4	57	347
				21498	.464	123.1	106.1	-20.2	14	73
				21492	.654	51.0	98.1	+19.1	4	25
				21493	.606	70.7	95.5	+ 6.6	13	71
				21495	.652	105.9	90.2	-14.9	60	449
				21494	.731	117.2	85.3	-23.8	18	84
				21499	.772	126.2	83.8	-31.3	2	13
				21496	.846	72.6	75.3	+11.2	12	97
3.408	-12.8	115.6	-6.2	21483	.820	257.6	170.9	-13.7	17	134
				21482	.809	290.1	166.4	+12.2	415	2640
				21500	.752	241.6	162.3	-25.2	0	10
				21488	.662	299.5	151.8	+14.0	13	102
				21487	.501	337.8	127.3	+21.5	4	23
				21497	.430	350.6	119.8	+18.8	2	12
				21489	.123	204.0	118.5	-12.6	7	33
				21491	.303	2.1	115.0	+11.4	120	797
				1	.314	344.3	120.5	+11.4	47	340
				21498	.274	149.0	107.0	-19.6	34	248
				21492	.518	34.6	97.5	+19.3	3	13
				21493	.404	56.4	95.9	+ 7.0	11	43
				21495	.448	111.9	90.2	-15.2	50	379
				21494	.568	124.1	84.8	-23.8	13	68
				21499	.629	133.9	83.8	-31.1	3	19
				21496	.707	67.1	74.1	+11.3	17	96
4.553	-13.3	100.5	-6.2	21483	.927	257.9	169.0	-13.5	6	26
				21482	.934	285.8	167.2	+12.3	355	2389
				21488	.809	293.3	150.5	+14.6	11	84
				21487	.633	315.4	128.9	+21.2	3	38
				21497	.524	321.7	120.4	+18.3	3	17
				21491	.383	321.3	114.6	+11.3	127	662
				1	.449	311.4	120.5	+11.3	46	267
				21498	.265	212.1	109.0	-19.1	34	219
				21492	.425	2.9	99.2	+18.8	1	14
				21493	.245	20.3	95.6	+ 7.0	7	30
				21495	.226	135.1	91.0	-15.3	49	367
				21494	.399	141.1	84.7	-24.0	5	24
				21496	.528	56.7	73.9	+11.3	15	102
				21501	.970	67.9	28.2	+19.6	4	35
5.403	-13.6	89.3	-6.3	21483	.980	257.4	168.8	-13.5	5	43
				21482	.979	284.4	165.4	+12.6	345	2224
				21500	.959	245.5	163.8	-25.2	2	30
				21486	.921	258.8	155.9	-12.7	2	16
				21488	.896	290.3	149.5	+15.0	17	106
				21487	.767	304.8	131.7	+21.3	3	17
				21491	.508	305.2	114.3	+11.3	119	675
				1	.585	299.8	120.3	+11.5	48	257

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Feb. 5.403	Continued			21498	.405	235.4	109.9	-19.1	31	205
				21493	.259	330.2	96.7	+ 6.7	2	18
				21495	.165	193.1	91.5	-15.5	52	295
				21494	.316	166.2	84.6	-24.1	6	22
				21496	.388	39.7	74.7	+11.2	13	81
				21501	.910	65.1	28.3	+19.5	10	42
6.347	-14.0	76.9	-6.4	21482	.987	285.8	155.2	+14.4	113	640
				21488	.963	287.6	148.5	+15.0	15	123
				21491	.656	295.3	113.9	+11.2	112	676
				1	.732	292.0	120.5	+11.3	40	240
				21498	.586	246.6	111.3	-18.7	26	173
				21493	.432	301.9	98.5	+ 7.2	3	19
				21495	.310	238.4	92.7	-15.4	42	216
				21494	.331	201.0	84.3	-24.2	2	14
				21496	.304	6.8	74.8	+11.1	9	60
				21501	.815	60.6	28.2	+19.4	11	65
7.442	-14.4	62.5	-6.4	21491	.817	288.5	114.5	+11.1	84	569
				1	.870	287.1	120.3	+11.5	35	245
				21498	.761	251.1	111.6	-18.5	20	122
				21502	.670	242.7	102.5	-22.8	3	18
				21493	.625	290.3	98.5	+ 7.3	3	17
				21495	.512	251.0	92.5	-15.1	29	213
				21494	.460	227.3	84.1	-24.1	1	7
				21496	.350	334.3	71.4	+11.9	9	74
				21501	.679	51.7	28.1	+19.5	6	21
				1530 13	.773	53.3	20.4	+22.7	0	14
8.399	-14.8	49.9	-6.5	21491	.920	285.0	114.6	+11.1	60	500
				21498	.870	252.1	110.6	-18.7	9	77
				21502	.811	246.6	103.4	-22.7	2	15
				21495	.682	255.1	92.6	-14.8	24	190
				21494	.602	234.3	82.7	-26.0	0	8
				21496	.468	310.9	71.0	+11.7	10	90
				1530 14	.355	317.2	63.9	+ 8.8	0	10
				1530 15	.240	236.3	61.7	-14.0	0	4
				1530 16	.585	3.6	47.5	+29.1	0	5
				21503	.514	27.0	35.5	+20.9	0	5
				21501	.556	38.9	28.2	+19.5	4	13
				21504	.666	50.9	16.8	+19.4	10	51
				21505	.958	74.4	338.9	+12.9	0	22
				21506	.981	70.3	334.2	+17.7	19	201
				21507	.991	105.6	326.5	-16.3	31	246
9.427	-15.2	36.3	-6.5	21498	.957	251.5	110.5	-19.6	11	63
				21491	.970	283.0	110.3	+10.8	52	280
				21495	.835	256.9	93.2	-14.5	16	126
				21496	.620	298.8	69.9	+11.9	22	144
				21503	.442	5.1	34.0	+19.5	2	11
				21501	.461	17.2	28.1	+19.5	4	16
				1530 17	.565	22.8	22.4	+24.9	3	18
				21504	.541	36.4	16.5	+19.6	8	43
				21505	.864	70.6	339.7	+13.1	4	13
				21506	.919	66.6	333.8	+18.5	97	713

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Feb. 9.427	Continued			21507	.935	104.8	326.3	-16.1	30	194
10.313	-15.5	24.7	-6.6	21495	.925	257.3	93.0	-14.2	16	87
				21496	.749	292.2	69.6	+11.8	21	118
				21503	.482	340.1	34.7	+20.4	0	4
				21501	.447	352.7	28.1	+19.6	4	12
				21504	.466	15.4	17.1	+20.1	2	24
				21506	.827	61.7	334.5	+18.9	129	1101
				21507	.845	104.5	326.7	-15.7	35	237
11.313	-15.9	11.5	-6.6	21495	.980	255.1	91.3	-15.9	0	10
				21496	.884	287.5	70.9	+12.1	7	38
				21501	.516	328.5	28.1	+19.6	0	7
				1530 18	.444	329.6	25.0	+16.0	0	4
				21504	.458	353.9	14.5	+20.3	2	22
				21506	.700	54.2	334.7	+18.8	140	1359
				21507	.701	105.5	327.2	-15.5	15	122
12.280	-16.2	358.8	-6.7	1531 01	.707	238.2	40.9	-26.8	3	18
				21504	.468	338.0	9.4	+19.0	2	12
				21506	.584	42.9	334.0	+19.2	137	1212
				21507	.536	108.6	327.1	-15.5	22	124
				21508	.948	61.0	293.1	+24.7	6	26
13.274	-16.6	345.7	-6.7	21506	.480	24.0	333.8	+19.3	129	1005
				21507	.347	117.5	327.1	-15.6	21	110
				21508	.862	56.0	294.0	+24.7	4	19
14.428	-17.0	330.5	-6.8	21506	.440	352.6	333.9	+19.0	131	812
				21507	.162	160.0	327.2	-15.5	11	64
				21509	.579	126.8	299.5	-26.1	0	9
				21508	.730	46.9	294.8	+24.4	2	18
				21510	.712	95.1	284.9	- 8.4	7	33
15.397	-17.3	317.7	-6.8	21506	.502	328.7	333.6	+18.7	71	666
				21507	.218	227.0	327.2	-15.2	7	58
				1531 02	.231	191.7	320.6	-19.9	2	11
				1531 03	.459	4.3	315.6	+20.3	2	22
				21509	.415	139.2	300.4	-24.7	10	67
				21511	.522	118.4	288.5	-20.3	0	4
				21510	.524	95.1	286.0	- 8.5	3	23
16.388	-17.6	304.7	-6.9	21506	.624	312.9	333.5	+19.1	81	616
				21507	.397	246.7	326.8	-15.4	5	26
				21509	.319	166.2	299.9	-24.8	10	56
				21511	.355	129.6	287.9	-19.6	1	12
				21512	.950	84.9	233.7	+ 2.6	7	62
				21513	.979	97.7	225.8	- 8.9	10	73
17.544	-18.0	289.4	-6.9	21506	.780	301.6	334.0	+19.2	35	243
				21507	.615	253.4	327.0	-15.6	3	14
				21509	.350	206.8	299.4	-25.0	5	33
				21511	.227	149.8	282.6	-18.1	2	27
				21512	.870	81.7	230.0	+ 3.7	11	70

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Feb. 17.544	Continued			21513	.903	96.5	224.5	- 8.8	5	68
				21514	.924	101.8	221.3	-13.5	3	22
				21515	.971	117.6	211.8	-28.4	18	116
18.499	-18.3	276.9	-7.0	21506	.889	296.8	334.3	+19.9	23	165
				21507	.761	255.2	326.5	-15.7	3	17
				21509	.475	228.4	299.8	-24.7	1	14
				21512	.743	78.3	230.2	+ 3.9	3	26
				21513	.786	96.0	224.8	- 9.0	3	35
				21514	.818	102.0	221.6	-13.8	2	11
				21515	.920	118.4	209.7	-28.8	17	135
19.276	-18.6	266.6	-7.0	21507	.915	251.4	333.6	-19.8	0	21
				21506	.941	295.6	332.0	+21.2	15	87
				21516	.498	243.5	294.6	-19.0	0	9
				21511	.401	233.8	286.7	-20.2	0	12
				1531 04	.326	210.2	276.8	-23.2	2	16
				21512	.639	75.4	228.5	+ 3.8	4	32
				21513	.658	95.5	225.3	- 8.8	6	22
				21514	.705	103.0	221.7	-14.1	1	9
				21515	.847	119.7	209.8	-28.7	16	119
20.396	-18.9	251.9	-7.0	21516	.674	250.7	293.7	-18.1	9	69
				21517	.682	322.9	279.2	+26.6	10	54
				21512	.337	61.5	234.7	+ 2.5	1	7
				21513	.490	94.9	222.4	- 8.5	5	27
				21515	.711	124.3	210.0	-28.9	15	90
				21518	.913	105.0	185.2	-16.5	3	27
				21519	.988	78.2	172.4	+10.4	56	434
21.264	-19.2	240.5	-7.0	21516	.824	253.2	296.2	-17.8	9	56
				21517	.782	313.0	280.1	+26.8	14	83
				1531 05	.337	45.6	226.5	+ 6.7	2	18
				21515	.603	131.1	209.2	-29.3	13	63
				21518	.797	105.4	187.4	-16.5	2	7
				21519	.966	75.8	167.6	+11.7	169	1043
22.282	-19.5	227.1	-7.1	21516	.936	253.6	297.4	-17.8	6	30
				21517	.898	304.1	283.0	+26.4	32	217
				21515	.471	145.1	209.1	-29.4	8	38
				21519	.898	73.2	165.9	+11.7	142	1187
				21520	.944	114.7	155.3	-25.6	0	29
23.271	-19.8	214.0	-7.1	21517	.960	300.8	281.4	+26.8	22	126
				21515	.383	169.8	209.6	-29.2	2	26
				21519	.775	68.9	166.7	+11.4	142	1060
				21520	.897	115.8	150.1	-26.2	24	128
24.289	-20.1	200.6	-7.1	21521	.848	292.5	254.6	+14.8	8	42
				21522	.414	310.6	219.1	+ 8.8	14	98
				21519	.621	61.2	167.0	+11.4	122	997
				21520	.788	118.7	150.0	-26.8	29	171
				21523	.977	74.8	125.3	+13.1	20	196

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Feb. 25.375	-20.4	186.3	-7.2	21521	.953	288.0	255.6	+14.7	21	135
				1531 06	.673	243.6	227.0	-22.8	3	21
				21522	.617	296.2	220.4	+ 9.9	36	189
				1531 07	.521	253.2	217.3	-14.8	1	6
				21524	.557	229.9	214.8	-27.3	7	40
				1531 08	.275	2.8	185.5	+ 8.7	1	19
				21519	.463	47.3	166.1	+11.5	107	968
				21520	.643	123.4	149.6	-26.5	63	338
				21523	.915	72.5	123.0	+12.8	70	635
26.388	-20.7	173.0	-7.2	21521	.994	285.5	254.1	+14.4	0	75
				21522	.784	288.4	221.8	+ 9.6	23	147
				21524	.696	237.0	214.0	-27.7	6	27
				21525	.636	317.0	200.6	+21.3	6	28
				21526	.483	203.8	186.4	-33.1	2	11
				21519	.341	19.8	166.2	+11.5	87	938
				1531 09	.334	133.4	158.0	-20.2	0	3
				21520	.493	135.0	150.1	-26.9	60	367
				21523	.794	68.4	124.0	+12.3	86	622
27.378	-20.9	159.9	-7.2	21522	.914	283.5	223.9	+ 9.2	13	70
				21524	.810	240.2	212.6	-28.1	2	11
				21525	.765	305.4	201.6	+21.0	8	37
				21526	.593	221.6	187.7	-32.6	0	3
				21519	.342	340.4	166.6	+11.6	115	884
				21520	.375	153.8	149.3	-26.7	58	314
				21523	.660	62.0	123.5	+12.2	58	595
28.381	-21.2	146.7	-7.2	21525	.861	300.0	199.7	+21.2	4	30
				1531 10	.559	322.8	167.7	+19.6	0	5
				21519	.469	312.0	167.5	+11.5	120	793
				21520	.341	183.8	148.2	-27.0	32	284
				21523	.502	50.1	123.6	+12.1	70	477
				21527	.980	112.5	66.5	-23.4	20	124
29.273	-21.4	135.0	-7.2	21526	.799	233.6	184.9	-33.0	4	28
				21519	.618	299.3	168.2	+11.5	92	626
				21520	.394	208.5	147.1	-27.2	36	248
				21528	.483	336.5	146.7	+19.1	2	24
				21523	.384	30.7	123.5	+12.2	65	518
				21527	.930	112.8	65.6	-23.8	23	115
				21529	.992	115.5	50.0	-26.1	64	303
Mar. 1.274	-21.7	121.8	-7.2	21519	.778	291.1	169.4	+11.4	92	596
				21528	.611	316.9	148.1	+19.9	3	13
				21520	.517	228.3	147.2	-26.6	16	172
				21523	.338	354.9	123.5	+12.3	42	386
				21527	.850	113.9	63.7	-24.0	16	116
				21529	.947	115.6	49.4	-26.5	52	288
2.283	-21.9	108.5	-7.2	21519	.904	286.0	170.6	+11.1	87	578
				21520	.677	238.7	148.5	-26.2	27	181
				21523	.422	321.7	124.0	+12.3	67	432
				21527	.727	117.0	63.3	-24.4	12	83
				21529	.866	116.6	48.8	-26.5	63	325

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Mar. 3.422	-22.2	93.5	-7.2	21519	.983	283.0	170.9	+11.3	47	376
				21520	.827	243.4	148.6	-26.0	14	100
				1531 11	.815	260.8	148.5	-11.7	0	15
				21523	.582	303.6	123.2	+12.5	53	300
				21530	.486	50.8	71.0	+11.1	1	15
				21527	.560	123.0	62.7	-24.0	11	58
				21529	.734	119.9	48.3	-26.6	63	302
				21531	.804	97.2	39.6	-10.1	4	28
4.438	-22.4	80.1	-7.2	21520	.938	245.6	150.8	-25.3	6	38
				21523	.732	294.5	122.9	+12.3	29	172
				21530	.353	25.4	71.3	+11.3	2	15
				21527	.410	136.0	62.0	-24.0	10	48
				21529	.594	126.0	47.7	-26.6	65	349
				21531	.667	97.6	38.0	-10.5	1	13
5.474	-22.7	66.5	-7.2	21523	.875	288.0	124.5	+11.9	11	70
				21532	.755	296.6	110.5	+14.5	2	13
				21530	.334	345.7	71.3	+11.6	2	19
				21527	.304	164.4	61.3	-24.1	5	30
				1531 12	.475	22.4	55.5	+18.8	2	15
				21529	.446	140.6	48.0	-27.0	66	333
				21533	.704	45.2	33.6	+23.6	6	42
6.324	-22.9	55.3	-7.2	21523	.941	284.0	123.3	+10.5	9	68
				21532	.872	291.7	112.1	+14.9	0	27
				1531 13	.499	345.6	62.9	+21.6	1	8
				21527	.306	195.7	60.4	-24.3	5	21
				21529	.360	162.3	48.2	-27.1	52	294
				21533	.609	33.1	34.1	+23.8	14	77
7.271	-23.1	42.8	-7.2	21532	.934	285.7	109.3	+11.8	6	41
				21530	.566	303.1	71.6	+11.6	3	15
				21527	.421	228.5	62.7	-23.0	6	56
				21529	.350	193.5	48.0	-27.0	54	320
				21534	.174	164.7	40.1	-16.8	5	32
				21533	.530	14.9	34.3	+23.5	8	40
8.273	-23.3	29.6	-7.2	21527	.575	239.4	62.0	-23.1	5	44
				21529	.442	218.5	47.5	-27.1	43	342
				21534	.246	225.2	40.1	-17.1	23	112
				1531 14	.342	192.1	34.1	-26.6	0	7
				21535	.932	100.5	320.1	-12.4	3	17
9.642	-23.6	11.6	-7.2	21529	.632	234.7	46.9	-27.3	35	265
				21534	.507	247.3	40.8	-17.6	21	70
				21536	.195	100.3	0.4	- 9.1	0	13
				21537	.505	33.2	354.7	+18.0	22	122
				21535	.813	103.0	316.8	-14.7	4	41
10.295	-23.7	2.9	-7.2	21529	.718	238.9	46.4	-27.1	53	307
				21534	.629	251.9	41.5	-16.9	3	15
				21538	.505	252.5	32.7	-15.0	2	12
				21536	.054	120.7	0.3	- 8.8	2	11
				21537	.449	17.9	354.6	+18.0	33	158

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Mar. 10.295	Continued			21535	.723	102.7	316.5	-14.1	5	52
11.363	-23.9	348.9	-7.2	21529	.842	242.6	45.6	-26.9	36	284
				21534	.791	254.4	41.4	-16.7	2	9
				21538	.684	255.3	32.0	-15.3	6	30
				21539	.696	299.3	27.5	+14.2	8	61
				21536	.236	265.3	2.5	- 8.1	7	44
				21537	.438	347.9	354.4	+18.1	24	156
				21535	.528	104.2	317.2	-13.6	8	43
				21540	.959	74.3	277.9	+12.8	23	107
12.278	-24.1	336.8	-7.2	21529	.927	243.8	45.5	-26.9	51	282
				21539	.836	292.3	29.5	+14.2	14	87
				21536	.464	266.3	4.6	- 8.1	5	26
				21537	.512	326.3	354.1	+18.2	12	79
				21535	.350	109.4	317.1	-13.4	9	41
				21540	.886	71.5	277.5	+12.7	27	151
				21541	.974	72.5	262.8	+15.1	60	287
				21542	.975	106.7	258.3	-17.8	9	94
13.644	-24.3	318.8	-7.2	21529	.996	243.5	46.2	-26.9	69	528
				21539	.951	287.1	28.0	+13.8	7	53
				21537	.686	306.9	354.0	+18.4	6	39
				21535	.117	162.9	316.8	-13.5	7	53
				21540	.715	64.5	277.5	+12.5	16	102
				21541	.868	67.6	262.6	+15.4	40	228
				21542	.875	106.4	257.3	-17.8	14	50
				21543	.974	56.7	248.9	+30.1	200	837
14.344	-24.4	309.6	-7.2	21544	.788	250.0	1.4	-20.1	2	18
				21537	.776	302.0	353.6	+19.1	0	21
				21535	.161	216.0	315.2	-14.6	2	20
				21540	.607	58.5	277.7	+12.4	19	80
				21541	.782	63.8	263.1	+15.3	39	194
				21542	.782	107.3	258.1	-18.0	11	42
				21543	.936	53.9	248.8	+30.1	102	641
15.353	-24.6	296.3	-7.2	21544	.914	251.5	3.0	-19.8	5	32
				21540	.453	43.7	277.7	+12.3	17	89
				21541	.645	55.6	262.9	+15.4	27	193
				21542	.597	110.4	260.4	-17.8	5	29
				21543	.862	48.8	248.0	+29.9	121	684
16.382	-24.7	282.7	-7.1	21540	.342	14.0	277.9	+12.2	21	79
				21541	.506	41.3	262.5	+15.6	32	203
				21542	.409	117.7	260.5	-17.5	6	21
				21543	.771	40.5	247.5	+30.0	109	704
				1532 01	.689	113.7	240.3	-21.4	0	6
17.426	-24.9	268.9	-7.1	21540	.360	334.5	278.0	+11.9	21	92
				21541	.396	9.5	265.1	+15.8	65	334
				21542	.223	141.7	260.7	-17.1	2	9
				21543	.682	28.4	247.0	+30.2	93	571

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Mar. 18.365	-25.0	256.6	-7.1	21540	.483	311.5	278.2	+12.0	13	63
				21541	.413	340.7	264.7	+15.8	45	329
				21543	.626	13.9	246.6	+30.3	88	571
				21545	.966	103.9	180.4	-15.2	0	8
19.366	-25.1	243.4	-7.0	21540	.644	298.4	278.6	+12.1	14	64
				21541	.515	318.1	264.2	+15.9	40	272
				21543	.616	356.7	245.7	+30.7	93	499
				21545	.884	103.0	180.7	-14.8	2	14
20.438	-25.3	229.2	-7.0	21540	.800	291.1	278.8	+12.2	11	38
				21541	.654	304.3	263.2	+15.8	32	189
				21543	.655	339.6	244.7	+31.0	87	507
				21545	.741	103.3	181.3	-14.5	2	7
				21546	.860	101.0	169.4	-13.0	9	58
				21547	.943	113.1	157.7	-24.0	3	29
21.385	-25.4	216.7	-7.0	21541	.778	296.8	262.8	+15.7	25	147
				21543	.725	327.8	243.6	+31.5	82	483
				21548	.307	19.8	210.7	+ 9.8	7	37
				21545	.581	104.6	181.5	-14.1	3	19
				21546	.712	101.6	171.2	-13.1	17	89
				21547	.869	114.6	156.5	-24.8	18	100
22.374	-25.5	203.7	-7.0	21541	.883	291.6	261.9	+15.3	19	154
				21543	.810	317.3	243.5	+31.2	98	439
				1532 02	.326	225.1	217.9	-20.0	0	5
				21548	.326	332.8	212.4	+ 9.9	34	193
				21549	.294	11.6	200.3	+ 9.7	0	2
				21545	.392	109.5	181.4	-13.9	1	14
				21546	.527	103.6	172.1	-13.0	18	113
				21547	.728	117.3	158.6	-24.5	8	53
				21550	.964	75.5	131.4	+11.9	8	33
23.301	-25.6	191.5	-6.9	21541	.957	288.6	261.6	+15.5	22	143
				21543	.890	311.0	243.3	+31.5	56	364
				21548	.456	309.4	212.4	+10.3	35	292
				21549	.319	329.2	201.0	+ 9.0	1	9
				21546	.335	109.6	172.7	-13.0	28	204
				21547	.594	121.6	158.0	-23.9	12	81
				21550	.890	72.8	131.4	+11.8	16	121
				21551	.967	76.4	118.4	+11.2	21	132
24.381	-25.7	177.3	-6.9	21543	.959	305.7	243.0	+31.4	72	388
				21548	.631	296.2	212.2	+10.5	36	220
				21546	.124	150.0	173.6	-13.0	59	438
				21552	.422	29.9	164.7	+14.7	2	24
				21547	.451	133.2	156.2	-24.3	10	68
				21550	.769	68.7	130.5	+11.5	20	112
				21551	.882	73.3	118.0	+11.2	23	118
				21553	.990	69.5	98.8	+19.0	36	298
25.300	-25.8	165.1	-6.8	21543	.991	302.8	241.4	+31.0	53	343
				21548	.767	290.1	212.0	+10.6	17	120
				21554	.640	239.5	202.3	-24.4	10	53

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Mar. 25.300	Continued			21546	.191	236.5	174.5	-12.8	80	410
				1532 03	.389	337.3	174.0	+14.2	1	7
				21552	.381	3.4	163.8	+15.4	2	9
				21547	.389	149.1	152.3	-26.1	3	20
				1532 04	.516	30.8	148.9	+19.6	3	20
				21550	.637	62.6	130.0	+11.4	48	313
				21551	.772	69.4	117.9	+11.1	22	135
				21553	.942	67.1	98.9	+18.8	32	265
				21555	.970	72.5	92.0	+15.1	26	147
26.391	-25.9	150.7	-6.8	21548	.894	285.7	211.7	+10.7	17	126
				21554	.787	244.2	201.6	-24.4	5	29
				21546	.425	254.1	175.4	-12.9	60	327
				21552	.437	330.2	163.7	+15.6	5	16
				21547	.312	198.8	157.0	-23.8	1	15
				21550	.474	48.4	129.6	+11.9	32	232
				21551	.615	62.7	117.1	+10.7	22	132
				21556	.695	105.8	106.9	-15.8	11	59
				21553	.848	62.8	98.2	+18.7	37	317
				21555	.890	69.0	91.5	+15.2	24	140
				21557	.912	102.4	84.3	-14.1	0	13
				21558	.956	112.3	76.8	-23.3	7	22
				21559	.987	107.1	68.5	-17.9	7	41
27.385	-26.0	137.6	-6.7	21548	.968	283.2	211.2	+10.9	9	57
				21554	.915	246.0	204.3	-24.7	8	71
				21546	.613	257.6	175.4	-12.9	73	426
				21547	.432	226.8	157.6	-23.5	1	20
				21560	.444	168.6	131.7	-32.4	0	7
				21550	.346	21.1	130.3	+12.1	26	183
				21551	.452	48.5	117.5	+11.1	17	97
				21556	.502	110.0	108.4	-15.7	5	33
				21553	.731	56.1	97.9	+18.9	49	348
				21555	.780	64.0	91.2	+15.4	21	136
				21561	.822	56.0	90.1	+22.9	2	12
				21557	.797	102.3	84.5	-13.8	7	40
				21558	.869	111.7	77.2	-22.1	7	54
				21559	.930	106.7	68.4	-17.9	12	48
28.378	-26.0	124.5	-6.7	21554	.981	246.3	205.0	-24.5	45	179
				21546	.773	258.3	175.4	-13.2	70	360
				21560	.406	201.3	134.2	-28.7	1	11
				21550	.341	340.8	131.1	+12.0	24	159
				21551	.323	21.3	117.7	+10.8	13	78
				21556	.285	121.7	110.1	-15.1	5	24
				21553	.599	45.5	97.8	+18.8	62	334
				21555	.641	56.0	91.2	+15.3	23	136
				21561	.700	47.7	90.6	+22.5	3	19
				21557	.624	103.4	86.0	-13.6	11	72
				21558	.753	113.6	76.6	-22.1	54	268
				21559	.815	108.3	70.0	-18.8	8	27
29.357	-26.1	111.6	-6.7	21546	.905	258.5	177.0	-13.2	41	236
				21550	.454	313.3	131.3	+11.8	21	136
				21551	.315	341.9	117.3	+10.7	18	96

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Mar. 29.357	Continued			21556	.173	166.6	109.2	-16.3	2	19
				1532 05	.490	8.8	107.0	+22.2	1	8
				21553	.483	28.1	97.8	+18.7	62	340
				21555	.497	42.9	91.2	+15.0	18	138
				21561	.590	35.3	90.1	+22.5	3	33
				21557	.442	107.9	86.1	-13.8	5	22
				21558	.613	116.6	76.2	-22.4	72	512
				21559	.668	112.4	70.8	-19.8	6	21
				21562	.949	104.0	39.1	-15.3	7	42
				21563	.975	106.3	33.4	-17.3	5	49
30.300	-26.1	99.2	-6.6	21546	.973	257.8	176.7	-13.3	23	147
				21564	.919	258.1	166.5	-13.5	11	76
				21550	.617	298.0	132.8	+11.3	15	95
				21551	.423	313.8	117.2	+10.7	12	76
				21556	.237	217.3	107.8	-17.4	7	36
				21553	.433	3.8	97.5	+18.9	61	350
				21555	.396	19.5	91.3	+15.3	21	134
				21561	.524	17.7	89.2	+23.3	5	32
				21557	.234	117.3	86.9	-12.6	1	13
				21558	.467	128.4	75.9	-22.9	67	514
				21559	.542	114.9	68.0	-18.8	13	53
				21562	.865	103.3	38.9	-14.7	6	30
				21563	.908	106.7	33.3	-17.9	10	49
31.300	-26.2	86.0	-6.5	21564	.980	257.4	165.5	-13.6	11	64
				21550	.775	290.0	133.7	+11.0	9	63
				21551	.581	298.3	117.2	+10.4	16	77
				21556	.435	246.6	110.4	-15.9	6	38
				21553	.471	336.0	97.6	+19.0	43	375
				21555	.378	345.5	91.6	+14.9	21	107
				21557	.158	167.2	83.9	-15.4	2	20
				21558	.327	151.2	76.2	-23.1	104	592
				21559	.364	127.7	68.3	-19.1	9	71
				21562	.721	103.0	39.8	-13.9	5	31
				21563	.781	107.6	34.8	-17.8	9	52
Apr. 1.325	-26.2	72.5	-6.5	21550	.903	285.1	134.7	+10.6	8	49
				21551	.742	290.1	117.3	+10.2	7	46
				21556	.659	253.5	113.3	-15.7	6	34
				21553	.589	316.3	97.9	+19.3	55	333
				21555	.485	317.2	92.3	+14.7	23	109
				21557	.267	236.4	85.7	-14.8	1	8
				21558	.294	190.6	75.8	-23.2	89	594
				21559	.241	162.0	68.0	-19.7	8	45
				21562	.545	106.6	40.0	-14.4	3	16
				21563	.616	110.5	35.4	-17.6	6	30
2.308	-26.3	59.5	-6.4	21550	.976	282.3	135.2	+10.4	5	24
				21551	.858	287.8	115.9	+11.7	10	52
				21556	.826	255.0	115.4	-16.0	8	36
				21553	.716	305.5	97.6	+19.5	34	268
				21555	.635	302.5	92.9	+14.6	19	109
				21558	.389	220.3	75.3	-23.4	88	599
				21559	.243	205.2	65.8	-19.1	2	16

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Apr. 2.308	Continued			21562	.343	115.5	40.9	-14.6	2	9
				21563	.441	118.1	35.5	-17.8	4	23
				21565	.976	110.1	340.8	-21.0	10	53
3.310	-26.3	46.3	-6.4	21556	.935	254.7	116.3	-16.5	6	30
				21553	.840	298.9	97.5	+20.0	24	215
				21555	.811	293.3	96.4	+14.6	22	154
				21558	.540	234.8	75.0	-23.7	88	525
				21559	.396	234.4	66.1	-19.3	5	23
				21566	.277	10.4	43.4	+ 9.4	7	27
				21562	.160	147.7	41.2	-14.1	0	7
				21563	.335	137.5	32.3	-20.5	2	16
				21565	.910	110.1	340.3	-20.9	5	31
4.463	-26.3	31.1	-6.3	21555	.945	287.7	99.2	+14.4	7	27
				21553	.942	294.1	97.1	+20.2	26	183
				21558	.714	242.5	74.7	-23.8	79	520
				21559	.595	246.1	66.0	-19.1	6	37
				21566	.367	317.7	45.5	+ 9.6	20	98
				21562	.195	221.7	38.7	-14.6	1	7
				21563	.243	188.0	33.1	-20.2	3	32
				21567	.641	49.1	0.3	+19.3	1	16
				21565	.823	112.1	336.1	-21.7	16	82
5.421	-26.3	18.4	-6.2	21553	.988	291.4	96.5	+20.0	28	165
				21558	.834	245.4	74.2	-23.8	52	494
				21559	.752	249.2	66.6	-19.7	7	47
				21566	.499	301.3	43.9	+ 9.3	26	141
				21563	.349	227.3	34.2	-19.7	2	18
				21565	.684	114.2	336.7	-20.9	24	149
6.376	-26.4	5.8	-6.2	21558	.923	246.7	73.5	-23.8	94	509
				21559	.868	250.7	66.1	-19.7	9	40
				21566	.644	291.8	42.9	+ 8.9	43	245
				1532 06	.652	309.4	37.9	+19.1	3	22
				21563	.506	242.7	34.1	-18.8	3	15
				1532 07	.423	185.6	8.6	-31.0	0	6
				21567	.440	8.9	1.7	+19.5	7	32
				21565	.538	120.2	336.1	-21.0	39	213
7.336	-26.4	353.1	-6.1	21558	.981	246.7	73.4	-23.9	44	340
				21566	.789	286.0	43.1	+ 8.6	25	146
				21563	.683	247.5	35.0	-19.7	3	15
				21567	.459	340.4	2.5	+19.5	2	15
				21565	.385	133.9	335.9	-21.3	28	183
				21568	.962	62.3	283.9	+24.5	23	141
8.550	-26.3	337.1	-6.0	21566	.915	281.6	41.8	+ 8.1	11	88
				21563	.816	254.2	31.8	-16.4	34	164
				21565	.265	173.2	335.2	-21.2	34	228
				21568	.869	57.8	283.7	+24.0	66	342
				21569	.994	66.0	257.1	+22.9	67	477

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Apr. 9.354	-26.3	326.5	-6.0	21566	.970	279.8	41.2	+ 8.0	9	45
				21563	.899	254.8	30.9	-16.3	23	111
				21570	.773	254.3	17.0	-15.9	14	91
				1533 01	.663	291.0	5.2	+ 9.1	3	12
				21571	.631	302.2	359.9	+14.6	1	9
				21565	.300	208.8	335.4	-21.1	28	229
				21568	.778	52.9	284.0	+23.5	53	296
				21569	.977	64.6	252.9	+23.2	132	906
				21572	.976	114.6	248.0	-25.3	0	10
10.342	-26.3	313.5	-5.9	21563	.972	255.0	30.8	-15.9	9	57
				21570	.901	255.2	18.1	-15.9	28	141
				21571	.824	294.9	4.5	+16.6	4	28
				21565	.435	231.0	334.7	-21.3	31	176
				1533 02	.387	2.9	312.3	+16.7	2	10
				21568	.661	43.7	283.8	+23.4	54	302
				21569	.919	61.4	252.1	+23.3	156	983
				21572	.895	114.6	250.2	-24.6	2	15
11.340	-26.3	300.3	-5.8	21570	.973	255.6	17.9	-15.3	48	260
				21571	.927	291.2	4.8	+17.1	0	18
				21565	.598	242.4	334.7	-20.9	15	90
				21568	.543	27.5	284.5	+23.1	37	254
				21569	.832	56.6	251.3	+23.5	167	1077
				21572	.784	116.0	250.1	-23.9	11	74
				21573	.978	55.1	229.0	+32.3	52	262
				21574	.962	101.6	225.6	-12.7	4	24
12.333	-26.2	287.2	-5.8	21571	.971	291.1	0.1	+18.9	0	27
				21565	.765	248.1	336.2	-20.3	3	25
				21568	.483	4.4	284.9	+22.9	30	204
				1533 03	.365	21.0	279.5	+14.1	2	20
				21575	.173	129.4	279.4	-12.0	1	14
				21576	.576	45.4	261.6	+18.6	5	23
				21572	.635	121.0	250.9	-23.7	3	17
				21569	.724	49.2	250.6	+23.5	118	941
				21573	.926	51.7	228.3	+32.1	48	267
				21574	.907	104.8	221.7	-15.9	0	18
13.384	-26.2	273.3	-5.7	21565	.876	248.5	334.3	-21.5	9	62
				21568	.511	338.4	285.0	+22.7	25	172
				21575	.173	221.6	280.1	-13.1	5	22
				21576	.448	24.3	262.2	+18.4	1	4
				21572	.467	132.0	251.2	-23.4	1	8
				21569	.602	36.4	250.4	+23.7	115	961
				21573	.843	46.3	227.8	+31.6	54	240
14.431	-26.1	259.5	-5.6	21565	.969	251.4	336.0	-19.3	0	18
				21577	.847	298.7	311.8	+20.6	13	67
				21568	.619	317.8	286.1	+22.2	23	159
				21575	.366	248.3	279.8	-13.0	13	60
				21578	.332	180.6	259.7	-24.9	2	19
				21569	.513	16.9	250.2	+23.7	127	941
				21579	.245	127.0	247.9	-13.9	3	20
				21573	.749	37.7	227.1	+31.5	47	239

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Apr. 14.431	Continued			21580	.981	101.1	180.1	-12.0	17	96
15.569	-26.1	244.5	-5.5	21577	.941	294.0	310.6	+20.3	13	98
				21568	.749	306.3	285.0	+22.1	24	130
				21575	.585	255.8	279.9	-12.8	15	73
				21578	.408	215.5	259.5	-24.6	0	1
				21569	.495	350.6	249.5	+23.6	137	760
				21579	.149	201.8	247.7	-13.4	2	10
				21573	.656	25.0	225.7	+31.1	41	255
				1533 04	.637	120.4	207.9	-23.2	6	41
				21580	.900	100.6	180.0	-11.9	15	82
				21581	.961	62.1	175.4	+24.9	8	64
				1533 05	.966	93.6	169.3	- 4.9	0	26
16.319	-26.0	234.6	-5.5	21577	.985	291.3	311.8	+19.8	0	50
				21568	.837	301.0	285.1	+22.1	32	156
				21575	.733	258.0	281.6	-12.5	13	65
				21576	.559	314.2	259.3	+17.9	3	18
				21579	.324	243.9	251.9	-13.4	1	8
				21569	.549	332.8	250.4	+23.9	141	673
				21573	.612	12.5	225.7	+31.1	49	255
				1533 06	.624	64.2	199.7	+11.2	3	28
				21580	.807	100.4	180.6	-11.6	11	66
				21581	.886	59.3	178.3	+23.9	7	30
				1533 07	.931	101.7	165.6	-12.9	0	12
17.345	-25.9	221.0	-5.4	21575	.891	259.3	284.3	-11.9	12	55
				21569	.655	317.0	250.1	+23.8	146	608
				21579	.479	246.1	248.0	-15.9	5	27
				21573	.602	354.5	224.9	+31.3	52	259
				1533 08	.359	26.1	211.7	+13.4	2	21
				21580	.657	102.1	180.2	-12.0	10	48
				21581	.772	53.0	178.8	+23.6	7	43
18.331	-25.9	208.0	-5.3	21575	.971	258.6	284.8	-12.3	9	42
				21569	.772	307.1	250.2	+23.8	97	507
				21573	.636	338.4	223.8	+31.1	42	251
				21580	.491	107.5	179.4	-13.1	10	67
				21581	.648	43.6	178.9	+23.3	3	9
19.400	-25.8	193.9	-5.2	21569	.886	300.6	250.2	+23.9	94	485
				21573	.720	324.5	223.1	+31.3	45	207
				21582	.417	351.8	197.5	+19.0	4	20
				21580	.249	117.4	180.9	-11.6	7	32
				21581	.531	26.9	178.8	+23.2	1	7
20.485	-25.6	179.5	-5.1	21569	.966	297.0	250.3	+24.3	73	466
				21573	.818	314.8	222.2	+31.5	39	216
				21582	.523	318.0	201.0	+18.0	3	18
				1533 09	.291	331.4	187.6	+ 9.7	1	6
				21580	.110	192.7	180.9	-11.3	7	25
				1533 10	.771	119.8	131.6	-25.9	0	11

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Apr. 21.314	-25.6	168.6	-5.0	21569	.996	295.6	250.1	+24.8	79	454
				21573	.888	309.9	221.6	+31.7	42	230
				21582	.639	307.7	200.7	+18.7	7	34
				21580	.255	243.6	182.0	-11.4	7	27
				21583	.483	46.4	147.5	+14.7	2	17
				1533 11	.567	62.4	138.0	+10.9	1	8
22.321	-25.4	155.3	-4.9	21573	.951	305.9	220.1	+31.9	42	222
				21582	.750	301.1	197.9	+19.1	3	30
				21580	.461	254.5	182.1	-11.4	2	17
				21584	.758	76.0	107.6	+ 7.3	2	10
23.355	-25.3	141.6	-4.8	21573	.991	303.5	219.3	+32.3	42	251
				1533 12	.224	331.3	147.8	+ 6.5	2	16
				21585	.273	350.1	144.4	+10.7	2	23
				21584	.579	70.7	108.4	+ 6.9	6	39
				21586	.946	113.7	70.5	-24.0	17	96
24.361	-25.2	128.3	-4.8	1533 13	.618	215.9	154.2	-34.2	3	23
				21585	.381	315.2	144.1	+11.1	2	21
				21587	.373	329.1	139.7	+13.9	10	54
				21584	.371	59.1	109.8	+ 6.4	4	22
				21586	.862	115.4	70.0	-24.2	13	93
25.336	-25.1	115.5	-4.7	21583	.607	301.0	147.8	+14.2	7	57
				21587	.499	313.5	137.4	+15.7	16	117
				21584	.217	23.2	110.5	+ 6.8	2	10
				21586	.748	118.6	69.6	-24.2	17	91
				21588	.978	104.5	37.1	-15.1	16	100
26.372	-24.9	101.8	-4.6	21583	.767	292.6	148.4	+13.9	5	26
				21589	.742	284.5	148.0	+ 7.5	10	55
				21587	.682	297.9	140.2	+15.0	15	89
				21586	.604	124.9	69.0	-24.0	16	88
				21588	.907	104.2	36.5	-14.8	16	91
27.388	-24.8	88.3	-4.5	21590	.906	243.5	152.4	-25.8	5	41
				21589	.893	282.0	150.2	+ 8.6	0	14
				21583	.895	291.2	148.7	+16.7	0	12
				21587	.826	292.2	140.7	+15.4	8	31
				21586	.462	138.4	68.7	-24.3	12	64
				21588	.793	105.8	36.3	-15.2	18	105
				21591	.977	70.4	13.1	+18.0	20	150
28.465	-24.6	74.1	-4.4	21590	.989	245.9	156.6	-24.4	0	60
				21589	.964	281.9	147.2	+10.2	8	67
				21587	.933	288.6	140.5	+15.6	3	19
				21586	.355	165.6	68.6	-24.4	10	68
				21592	.530	31.2	56.8	+22.7	1	8
				21593	.703	61.9	34.1	+15.9	11	47
				21588	.664	109.5	33.6	-16.1	29	143
				21591	.903	67.6	12.9	+18.0	13	68

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Apr. 29.332	-24.5	62.6	-4.3	21586	.358	194.4	68.2	-24.5	7	48
				21592	.457	9.9	57.8	+22.4	0	5
				21588	.477	114.2	36.0	-15.0	15	87
				21593	.566	53.6	34.5	+15.8	8	53
				21591	.811	64.1	12.7	+18.0	15	75
				21594	.915	77.4	358.0	+ 9.7	3	22
				21595	.995	71.4	340.6	+18.0	10	157
30.644	-24.2	45.3	-4.2	21586	.497	224.7	67.8	-24.4	5	31
				21592	.490	335.8	57.8	+22.4	1	6
				21588	.229	144.0	37.3	-14.8	14	86
				21593	.387	28.5	34.3	+15.7	12	83
				21591	.635	54.7	12.4	+18.0	9	42
				21594	.716	71.6	1.8	+10.0	2	13
				21595	.948	68.6	336.8	+18.7	85	617
				21596	.958	79.8	333.2	+ 8.5	27	225
				21597	.964	103.5	330.5	-14.1	0	8
May 1.546	-24.1	33.4	-4.1	21586	.627	234.7	67.5	-24.6	4	23
				21592	.593	317.9	58.7	+22.3	3	22
				21588	.205	203.3	38.2	-14.8	14	67
				21593	.339	0.0	33.4	+15.6	25	172
				21591	.503	42.7	12.5	+17.8	7	38
				21594	.570	66.4	1.5	+ 9.7	11	59
				21595	.871	65.7	336.6	+18.7	78	553
				21596	.877	78.1	333.5	+ 8.3	23	208
				21597	.888	104.1	330.9	-14.4	0	10
				21598	.988	69.1	314.5	+19.9	14	173
2.339	-23.9	22.9	-4.0	21586	.737	239.8	67.2	-24.5	3	17
				21592	.697	308.1	59.0	+22.2	2	11
				21588	.320	233.4	38.3	-14.8	11	50
				21593	.380	334.9	32.5	+16.1	61	350
				21591	.417	25.5	12.1	+18.1	10	29
				21594	.428	56.8	1.7	+ 9.8	19	114
				1533 14	.434	86.2	357.4	- 2.0	0	4
				21595	.790	61.7	335.6	+19.3	94	676
				21596	.781	75.6	333.2	+ 8.6	22	141
				1533 15	.858	103.1	324.0	-13.3	0	4
				21598	.973	67.6	309.0	+20.7	69	612
3.636	-23.7	5.8	-3.8	21586	.885	244.1	66.6	-24.6	0	7
				21588	.559	250.5	38.5	-14.0	10	49
				21593	.553	307.2	32.9	+16.1	86	517
				21591	.388	344.5	12.0	+18.0	4	22
				21594	.245	19.4	1.0	+ 9.5	16	117
				21595	.595	50.0	337.0	+19.0	45	423
				21596	.567	69.5	333.4	+ 8.2	8	49
				1533 16	.759	141.0	327.9	-39.1	3	14
				21598	.867	63.7	309.9	+20.4	84	712
4.394	-23.5	355.7	-3.8	21588	.690	252.6	38.4	-14.6	6	31
				21593	.668	299.5	32.8	+16.2	91	506
				21591	.456	324.5	11.8	+18.1	3	14
				1534 01	.616	340.9	9.4	+31.8	3	11

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
May 4.394	Continued			21594	.252	338.0	1.2	+ 9.7	12	82
				21595	.478	36.9	338.2	+18.8	43	326
				21596	.403	60.3	335.1	+ 7.9	1	20
				21598	.784	60.0	309.5	+20.4	97	596
5.385	-23.3	342.6	-3.7	21588	.833	254.9	38.7	-14.5	6	33
				21593	.810	293.0	33.3	+16.1	90	506
				21591	.592	308.5	11.7	+18.4	3	14
				21594	.403	304.0	2.3	+ 9.5	11	79
				21595	.378	3.9	341.1	+18.4	38	284
				21596	.239	31.2	335.5	+ 8.1	1	7
				1534 02	.414	121.6	321.2	-15.9	1	10
				21598	.646	52.3	309.8	+20.1	75	610
				21599	.813	65.7	292.0	+17.2	23	101
				21600	.959	68.9	271.6	+19.0	0	8
6.372	-23.1	329.6	-3.6	21588	.933	255.9	38.4	-14.4	6	24
				21593	.912	289.8	32.8	+16.4	70	421
				21591	.734	299.7	11.7	+18.6	2	6
				21594	.575	293.0	2.0	+ 9.9	11	67
				21601	.433	258.1	354.9	- 8.3	1	12
				21595	.432	329.8	342.8	+18.4	35	230
				21598	.523	39.2	309.0	+20.5	93	500
				21599	.663	59.1	293.3	+17.0	32	158
				21600	.859	65.2	274.2	+19.1	4	13
				21602	.979	118.3	251.4	-28.4	21	116
				21603	.997	64.9	246.6	+24.6	26	105
7.560	-22.9	313.9	-3.4	21593	.988	287.1	33.5	+16.3	54	380
				21594	.796	284.3	5.1	+ 9.1	4	45
				21601	.650	260.0	354.1	- 9.1	6	30
				21595	.589	308.0	343.0	+18.2	44	253
				21598	.423	12.7	308.2	+20.9	85	471
				21599	.483	45.1	293.1	+16.6	51	275
				21600	.697	57.9	275.4	+19.0	5	21
				21602	.911	120.0	250.1	-28.6	14	79
				21603	.951	62.5	245.9	+24.8	43	217
8.333	-22.7	303.7	-3.3	21594	.878	282.5	3.7	+ 9.3	2	32
				21601	.802	262.7	356.9	- 7.9	4	48
				21595	.704	300.3	343.3	+18.2	48	206
				21596	.516	293.5	332.2	+ 8.9	3	18
				21598	.412	348.5	308.7	+20.4	58	364
				21599	.385	27.2	293.1	+16.7	25	198
				21600	.579	50.3	275.7	+18.7	0	3
				21604	.835	33.5	265.9	+41.4	0	4
				21602	.841	122.5	249.8	-28.8	8	44
				21603	.887	60.1	246.2	+24.5	19	199
				21605	.921	52.7	243.8	+32.2	0	17
9.358	-22.4	290.1	-3.2	21601	.938	263.8	359.8	- 6.9	0	19
				21595	.834	294.1	343.0	+17.9	31	177
				21596	.682	287.1	331.2	+ 9.1	3	25
				21598	.509	322.0	309.6	+20.5	53	312
				21599	.337	355.3	291.8	+16.3	22	145

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
May 9.358	Continued			21604	.768	24.2	265.3	+41.4	0	9
				21606	.635	122.6	254.9	-22.6	1	9
				21602	.725	127.1	249.2	-28.3	7	39
				21603	.784	54.3	245.7	+24.8	29	220
				21605	.825	46.9	245.0	+31.9	2	14
				21607	.855	102.6	231.7	-12.5	4	30
10.374	-22.2	276.7	-3.1	21595	.926	291.7	341.8	+18.7	12	141
				21598	.641	308.6	309.0	+20.8	31	272
				21599	.377	331.9	287.3	+16.2	42	293
				21606	.496	131.0	253.0	-21.8	1	10
				21602	.611	136.8	248.2	-29.1	4	20
				21603	.667	46.1	244.9	+24.8	27	167
				21607	.714	104.1	231.8	-12.2	3	39
				21608	.767	71.8	228.8	+11.7	5	32
11.478	-21.9	262.1	-3.0	21598	.791	299.3	309.5	+20.7	24	189
				21599	.518	308.0	287.1	+15.8	33	238
				21606	.412	151.9	249.9	-24.2	0	7
				21602	.483	154.7	248.5	-28.7	0	6
				21603	.534	29.6	245.3	+24.7	27	148
				21605	.639	25.0	243.5	+32.4	0	10
				21607	.510	108.3	232.6	-11.8	8	37
				21608	.582	65.1	229.6	+11.6	13	64
12.371	-21.7	250.3	-2.9	21598	.887	295.8	309.0	+21.1	22	140
				21599	.653	298.5	286.7	+15.8	41	222
				21603	.471	10.6	244.8	+24.6	21	136
				1534 03	.442	165.7	243.2	-28.1	0	5
				21607	.328	118.0	233.1	-11.6	6	36
				21608	.420	53.2	230.3	+11.8	16	96
13.326	-21.4	237.6	-2.8	21598	.958	292.7	308.3	+20.8	18	121
				21599	.778	292.7	285.7	+15.6	41	209
				21603	.470	347.0	244.3	+24.4	30	187
				21607	.147	154.4	234.0	-10.4	1	10
				21608	.289	28.3	229.6	+11.9	30	187
				21609	.954	120.2	166.5	-29.6	7	58
14.340	-21.2	224.2	-2.7	21599	.886	289.6	284.3	+16.0	25	137
				21603	.548	326.0	243.8	+24.4	22	114
				21607	.216	224.8	233.1	-11.4	1	12
				21608	.262	345.0	228.2	+11.9	33	163
				21609	.874	122.7	166.7	-29.6	30	214
				21610	.919	100.6	157.7	-10.8	6	23
				21611	.990	121.6	142.2	-31.6	64	414
15.365	-20.9	210.7	-2.6	21599	.952	288.7	280.9	+16.9	15	77
				21602	.709	228.3	248.3	-30.1	3	26
				21603	.669	312.2	243.6	+24.5	21	110
				1534 04	.674	318.2	241.1	+27.8	2	12
				21607	.402	244.3	232.4	-12.4	1	7
				21608	.381	310.1	227.9	+11.7	15	113
				21612	.252	14.2	207.1	+11.5	2	12
				1534 05	.382	25.9	200.7	+17.5	2	14

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
May 15.365	Continued			21609	.753	127.9	167.9	-29.4	51	262
				21610	.794	101.5	158.6	-10.7	2	13
				21611	.948	122.2	141.1	-31.3	59	482
16.087	-20.7	201.1	-2.5	21599	.989	288.1	281.0	+17.4	7	61
				21602	.794	234.3	248.6	-29.2	0	3
				21603	.756	306.5	243.0	+24.8	13	81
				21608	.500	300.0	227.3	+12.2	5	41
				1534 06	.459	308.1	222.9	+14.1	1	14
				21612	.271	334.0	208.1	+11.6	0	2
				21609	.671	133.6	167.3	-29.5	24	161
				21610	.688	103.7	158.3	-11.2	1	6
				21611	.902	123.6	139.9	-31.1	89	521
				1	.896	124.0	140.9	-31.3	77	450
17.378	-20.3	184.1	-2.3	21603	.894	299.3	242.9	+24.7	15	78
				21608	.706	290.3	226.6	+12.4	6	33
				21613	.551	295.2	214.5	+11.5	25	132
				21609	.532	149.2	165.9	-29.3	21	149
				21611	.778	128.6	139.3	-30.6	79	577
				1	.769	129.3	140.4	-30.8	71	504
				21614	.967	67.8	111.0	+20.7	103	566
				21615	.959	105.1	110.7	-15.1	115	928
				21616	.967	75.2	110.0	+13.6	42	370
18.108	-20.1	174.4	-2.2	21603	.946	297.6	241.9	+25.1	13	60
				21608	.800	287.7	225.6	+12.6	0	12
				21613	.678	290.2	214.8	+11.8	37	256
				21609	.468	164.8	166.4	-29.0	17	103
				21617	.456	62.9	150.1	+ 9.9	1	9
				21611	.705	133.1	137.8	-30.5	93	673
				1	.686	134.7	140.0	-30.6	77	518
				21614	.919	65.9	110.6	+21.0	97	495
				21615	.905	106.2	110.2	-15.6	102	860
				21616	.915	73.6	109.8	+14.0	61	351
				21618	.972	63.7	100.7	+24.9	13	96
19.462	-19.7	156.5	-2.1	21613	.856	284.7	213.9	+11.4	42	294
				21609	.478	200.5	167.4	-28.5	15	126
				21619	.240	318.3	165.7	+ 8.2	3	24
				21617	.253	32.9	148.5	+10.1	6	41
				21611	.560	147.4	136.2	-30.0	125	736
				1	.538	151.9	139.5	-30.2	92	471
				21615	.735	108.8	110.6	-15.1	139	929
				21614	.778	60.7	110.1	+20.9	80	507
				21616	.757	68.1	110.0	+14.9	40	266
				21618	.876	58.4	100.5	+26.1	27	173
20.343	-19.4	144.8	-2.0	21613	.940	282.9	213.7	+11.4	20	182
				1534 07	.438	241.6	168.1	-13.8	3	15
				21609	.571	216.8	167.7	-28.9	19	135
				21619	.397	298.2	165.5	+ 8.9	9	57
				21617	.218	337.0	149.8	+ 9.6	16	101
				21611	.487	164.7	136.3	-29.8	133	781
				1	.481	169.9	139.3	-30.1	107	529

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
May 20.343	Continued			21615	.590	113.1	110.8	-15.0	131	846
				21614	.664	54.2	109.6	+21.1	105	546
				21616	.640	62.0	109.0	+15.8	36	309
				21618	.786	54.2	99.8	+25.9	17	164
				21620	.964	97.0	70.5	- 7.3	0	13
21.324	-19.1	131.8	-1.9	21613	.987	282.2	211.9	+11.7	0	20
				21609	.691	228.5	167.9	-28.7	15	110
				21617	.359	303.4	149.5	+ 9.6	11	65
				21611	.480	190.3	137.5	-29.9	111	614
				1	.485	192.3	138.7	-30.0	103	540
				21615	.423	124.1	110.6	-15.4	139	912
				21614	.526	42.4	109.6	+21.0	99	625
				21616	.487	50.9	108.8	+16.1	34	252
				21618	.634	43.8	102.9	+25.5	26	198
				1534 08	.641	123.0	96.6	-21.9	6	27
				21620	.876	97.7	70.9	- 7.7	11	50
22.415	-18.8	117.4	-1.7	21609	.826	235.6	168.3	-28.8	24	203
				21617	.598	289.4	152.2	+10.0	17	108
				21611	.559	211.2	136.9	-30.1	124	638
				1	.573	213.1	138.5	-30.2	108	522
				21615	.263	154.5	110.7	-15.4	143	864
				21614	.413	19.0	109.2	+21.2	126	547
				21616	.339	27.5	108.1	+15.7	59	426
				21618	.514	26.6	102.7	+25.6	43	272
				21621	.710	133.5	80.8	-30.5	11	58
				21620	.696	99.6	73.7	- 7.9	6	16
				21622	.986	73.8	38.1	+15.7	27	127
23.344	-18.5	105.1	-1.6	21609	.921	238.8	169.4	-29.2	18	128
				21617	.756	284.3	153.0	+ 9.7	23	178
				21611	.660	223.2	136.5	-30.0	118	554
				1	.675	224.4	138.1	-30.1	111	476
				21615	.255	203.2	111.1	-15.1	125	786
				21614	.394	350.8	109.0	+21.2	104	532
				21616	.301	348.6	108.7	+15.4	26	194
				21618	.462	6.5	101.8	+25.5	35	242
				21621	.613	143.2	79.9	-30.7	13	68
				21620	.512	103.9	75.1	- 8.5	4	16
				1534 09	.939	56.8	40.0	+30.2	0	13
				21622	.934	72.3	37.8	+15.9	28	132
24.345	-18.1	91.9	-1.5	21609	.986	241.0	171.5	-28.9	13	80
				21617	.881	281.8	152.7	+ 9.7	12	72
				21611	.784	232.1	137.2	-29.8	103	492
				1	.787	232.2	137.4	-29.8	100	475
				21615	.402	234.6	111.6	-14.9	122	752
				21614	.480	325.9	108.7	+21.9	116	648
				21616	.399	316.6	108.3	+15.3	24	143
				21618	.478	340.8	101.9	+25.2	38	263
				1534 10	.442	198.0	100.6	-26.2	1	8
				21621	.512	161.7	81.2	-30.4	9	45
				21620	.295	114.4	76.2	- 8.4	4	10
				21622	.832	69.7	37.9	+15.8	10	66

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
May 24.345	Continued			21623	.939	107.6	22.7	-17.0	0	10
				21624	.975	63.6	17.0	+25.2	0	10
				21625	.981	108.9	13.5	-18.8	29	137
				21626	.997	70.9	7.5	+18.8	27	135
25.319	-17.8	79.0	-1.4	21617	.967	279.8	153.6	+ 9.1	9	77
				21611	.885	236.5	137.2	-29.9	118	496
				21615	.576	246.0	111.8	-14.7	106	573
				21616	.566	300.7	109.2	+15.5	15	153
				21614	.605	310.4	108.6	+21.8	136	686
				21618	.572	321.7	102.0	+25.3	27	231
				21621	.482	186.2	82.4	-29.9	3	15
				21620	.122	166.0	77.3	- 8.2	0	4
				1534 11	.382	121.5	59.6	-12.8	1	12
				21622	.696	65.3	38.1	+15.8	6	37
				21623	.842	109.3	23.1	-16.9	0	8
				21624	.918	61.4	16.1	+25.4	6	33
				21625	.918	109.9	13.6	-18.8	11	66
				21626	.954	70.0	8.3	+18.5	18	87
26.317	-17.5	65.8	-1.3	21611	.954	239.0	136.0	-29.8	131	529
				21615	.737	251.3	111.8	-14.5	88	554
				21616	.721	293.0	109.2	+15.4	3	19
				21614	.738	302.2	108.1	+22.1	114	615
				21618	.696	309.3	102.1	+25.0	11	83
				21627	.591	328.1	86.6	+28.8	5	31
				21620	.198	235.7	75.3	- 7.7	1	8
				21628	.359	151.7	55.4	-19.6	1	6
				21622	.532	56.8	38.4	+15.7	0	5
				21624	.825	57.9	15.5	+25.1	27	193
				21625	.812	112.5	13.5	-18.8	8	47
				21626	.873	67.9	7.4	+18.5	11	68
				21629	.977	73.7	349.3	+15.6	10	71
27.410	-17.1	51.3	-1.1	21611	.996	240.1	135.6	-29.9	69	414
				21615	.884	254.6	112.6	-14.1	61	475
				21614	.868	296.5	108.1	+22.1	93	586
				21618	.783	304.7	96.7	+25.6	2	18
				21627	.718	314.3	87.2	+29.1	6	32
				21628	.330	187.3	53.9	-20.2	5	19
				21630	.449	23.9	40.0	+23.0	5	30
				1534 12	.454	116.7	26.9	-12.8	1	6
				21624	.700	50.7	14.7	+25.3	43	296
				21625	.659	117.2	13.3	-18.4	3	15
				21626	.741	63.4	7.2	+18.5	16	89
				21631	.811	72.9	358.8	+13.1	0	11
				21629	.893	71.8	349.8	+15.6	10	49
				21632	.978	101.7	333.7	-11.7	36	197
				21633	.984	122.1	332.9	-31.7	31	226
28.342	-16.8	39.0	-1.0	21615	.962	256.1	112.8	-13.7	75	490
				21614	.945	294.1	107.6	+22.3	104	565
				21627	.811	306.3	86.6	+27.9	4	16
				21628	.421	218.2	55.0	-20.2	18	109
				21630	.400	354.8	41.3	+22.3	0	2

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
May 28.342	Continued			21624	.575	40.0	15.0	+25.1	31	190
				21626	.601	56.8	7.2	+18.3	13	66
				21631	.680	69.8	358.3	+12.8	6	53
				21629	.781	69.2	350.0	+15.4	9	58
				21634	.906	78.2	335.0	+10.2	5	24
				21632	.915	102.8	333.3	-12.1	28	169
				21633	.971	125.4	325.4	-34.5	74	465
29.349	-16.4	25.7	-0.9	21614	.991	292.5	106.9	+22.2	119	525
				21628	.562	232.6	54.1	-20.7	25	179
				1534 13	.350	334.1	34.8	+17.4	2	16
				21624	.467	19.8	15.7	+25.1	31	171
				21626	.444	43.3	7.1	+17.9	13	66
				21631	.485	61.0	0.0	+12.7	9	55
				21629	.624	63.8	350.3	+15.2	9	41
				21634	.781	76.0	335.5	+10.3	11	60
				21632	.803	104.6	333.3	-12.2	42	206
				21633	.918	127.9	324.1	-34.7	92	596
				21635	.985	104.8	306.0	-14.7	13	103
30.543	-16.0	9.9	-0.8	21628	.742	242.1	54.2	-20.8	24	197
				21624	.453	346.4	16.6	+25.3	21	151
				21626	.322	8.8	6.9	+17.7	12	71
				21631	.273	33.6	1.0	+12.3	6	43
				21629	.424	49.2	350.5	+15.3	9	40
				21634	.595	71.4	335.1	+10.3	15	88
				21632	.617	109.1	333.4	-12.2	35	194
				21636	.773	54.3	325.6	+26.2	2	23
				21633	.816	133.2	323.9	-34.4	79	577
				21635	.889	105.9	308.2	-14.4	7	64
				21637	.971	73.8	294.7	+15.5	28	230
31.336	-15.7	359.4	-0.7	21628	.847	245.9	54.9	-20.6	30	237
				21624	.514	328.0	16.8	+25.1	27	119
				21626	.340	338.7	6.8	+17.7	12	65
				21631	.232	351.2	1.5	+12.5	9	78
				21629	.314	28.2	350.6	+15.3	5	24
				21634	.457	65.9	334.4	+10.1	39	190
				21632	.473	115.4	333.6	-12.3	31	216
				21636	.643	51.6	326.3	+22.9	3	21
				21633	.742	138.8	323.3	-34.4	83	575
				21635	.777	107.9	309.9	-14.2	9	55
				21637	.923	72.4	293.4	+15.9	60	325
Jun. 1.342	-15.3	346.1	-0.6	21628	.936	248.0	54.0	-20.7	22	171
				21624	.642	313.6	17.0	+25.7	22	116
				1535 01	.484	299.1	11.7	+13.1	1	8
				21626	.460	313.6	6.5	+17.9	6	27
				21631	.348	311.4	1.5	+12.7	6	43
				21629	.286	345.7	350.2	+15.5	2	12
				21634	.258	43.8	335.7	+10.1	40	285
				21632	.288	132.9	333.7	-11.8	38	188
				21633	.655	149.1	322.1	-34.6	78	550
				21635	.599	113.7	311.7	-14.4	17	80
				21637	.811	69.7	294.0	+15.9	29	249

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Jun. 2.439	-14.9	331.6	-0.4	21624	.777	304.1	16.8	+25.4	18	101
				21626	.625	300.0	6.1	+17.8	3	15
				21631	.557	294.0	2.8	+12.7	1	15
				1535 02	.273	291.9	346.2	+ 5.4	1	8
				21634	.200	335.5	336.4	+10.0	28	225
				21632	.202	190.9	333.8	-11.8	35	196
				21633	.578	165.5	321.5	-34.3	62	461
				1535 03	.453	39.5	313.8	+20.0	0	5
				21635	.406	126.8	312.0	-14.4	10	54
				21637	.648	64.5	294.3	+15.8	14	153
				21638	.974	70.3	255.8	+19.0	20	140
				21639	.984	102.9	252.3	-12.8	0	25
3.397	-14.5	318.9	-0.3	21624	.880	299.3	16.7	+25.3	22	122
				21626	.763	294.0	5.7	+17.8	4	12
				21631	.755	287.2	6.3	+12.7	2	7
				21634	.354	299.4	337.0	+ 9.7	31	205
				21632	.320	232.1	333.7	-11.6	39	201
				21633	.558	183.0	320.9	-34.0	60	465
				21635	.285	151.0	310.7	-14.7	6	61
				21637	.489	55.8	294.1	+15.6	14	175
				21638	.911	68.9	255.1	+18.9	11	85
				21639	.963	104.1	245.1	-13.6	77	544
4.335	-14.2	306.4	-0.2	21624	.950	297.0	15.9	+25.4	18	113
				21626	.874	290.6	5.5	+17.7	2	18
				21631	.855	284.6	4.1	+12.3	0	4
				21634	.551	288.4	338.4	+ 9.8	9	69
				21632	.489	246.7	333.6	-11.3	24	198
				21633	.594	200.1	320.6	-34.0	68	378
				21635	.286	200.1	312.3	-15.7	9	60
				21637	.351	35.9	294.2	+16.2	17	135
				21638	.812	66.8	254.8	+18.5	15	93
				21639	.884	105.2	245.3	-13.5	54	467
5.621	-13.7	289.4	0.0	1535 04	.906	290.1	352.7	+18.0	0	8
				21634	.747	283.2	336.9	+ 9.8	7	59
				21632	.710	254.3	333.4	-11.1	37	195
				21633	.706	215.9	319.6	-34.8	49	415
				21640	.555	212.3	308.9	-27.9	1	10
				21637	.302	343.5	294.6	+16.7	14	143
				21638	.616	59.4	255.7	+18.2	9	59
				21639	.718	108.6	245.2	-13.2	46	397
6.414	-13.3	278.9	+0.1	21634	.869	281.4	338.5	+ 9.9	7	39
				21632	.824	256.3	333.4	-11.2	40	197
				21641	.697	247.4	320.7	-15.4	3	29
				21633	.789	223.0	319.9	-35.1	81	574
				21640	.659	225.3	310.7	-27.4	6	36
				21637	.396	318.6	294.8	+17.3	7	45
				21638	.552	53.8	251.0	+19.0	22	113
				21639	.574	113.9	246.4	-13.4	44	426
				21642	.970	72.9	203.9	+16.5	83	361

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Jun. 7.281	-13.0	267.5	+0.2	21634	.957	279.2	340.2	+ 8.8	0	62
				21632	.919	257.6	333.5	-11.3	34	182
				21633	.872	227.7	319.9	-35.8	46	341
				21641	.808	251.0	319.6	-15.1	15	61
				21640	.765	232.6	310.5	-27.5	21	56
				21637	.546	306.6	295.0	+19.1	5	22
				21638	.432	39.8	250.5	+19.4	15	110
				21639	.416	124.9	247.0	-13.6	45	249
				21643	.531	68.1	237.4	+11.5	5	21
				21642	.904	71.6	204.2	+16.6	42	231
8.361	-12.6	253.2	+0.3	21632	.986	258.8	333.1	-11.0	39	210
				21641	.931	253.9	320.6	-14.8	12	88
				21633	.949	232.6	320.0	-35.1	28	260
				21640	.873	238.3	309.5	-27.1	9	50
				21637	.698	297.8	293.9	+19.1	6	29
				21638	.335	7.1	250.7	+19.6	15	106
				21639	.258	156.6	247.1	-13.3	29	231
				21643	.324	52.8	238.0	+11.5	12	94
				21642	.778	68.8	204.2	+16.5	42	275
				21644	.994	81.8	169.9	+ 8.2	38	228
9.382	-12.2	239.7	+0.4	21640	.952	241.8	309.2	-26.6	29	193
				21637	.844	292.4	295.1	+18.9	2	9
				21638	.372	330.0	251.0	+19.1	10	64
				21639	.268	206.5	246.7	-13.4	23	148
				21643	.192	7.3	238.2	+11.3	70	411
				21642	.625	63.7	204.1	+16.3	40	247
				21644	.932	81.4	171.3	+ 8.2	31	242
10.396	-11.7	226.2	+0.5	21640	.989	242.8	306.2	-26.8	8	130
				21638	.527	305.7	252.9	+18.3	3	23
				21639	.432	235.3	247.6	-13.7	18	101
				21643	.277	312.1	238.3	+11.2	68	380
				1535 05	.254	136.1	216.0	-10.0	2	12
				21642	.455	52.8	204.1	+16.4	36	226
				21645	.731	111.1	181.5	-14.8	35	168
				21644	.833	79.9	170.4	+ 8.7	48	250
11.346	-11.3	213.7	+0.7	21638	.672	295.3	253.0	+17.2	3	26
				21639	.596	245.3	247.4	-13.8	7	67
				21643	.449	293.8	238.3	+11.0	63	329
				21642	.318	30.9	203.9	+16.4	40	206
				21645	.577	117.6	181.9	-14.9	110	584
				21644	.696	77.7	170.3	+ 9.0	51	255
12.355	-10.9	200.3	+0.8	21639	.764	251.2	248.3	-13.7	7	57
				21643	.629	287.0	238.0	+11.2	52	408
				21646	.631	305.3	233.9	+22.0	6	25
				1535 06	.360	215.0	212.7	-16.3	2	14
				21642	.278	348.2	203.7	+16.5	37	213
				21645	.412	130.6	181.5	-14.8	111	717
				1535 07	.396	108.3	178.2	- 6.4	1	10
				21644	.522	73.3	170.0	+ 9.2	29	233
				21647	.971	122.2	127.3	-30.9	19	213

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Jun. 13.388	-10.5	186.6	+0.9	21639	.894	253.5	248.5	-14.3	3	20
				1535 08	.868	305.8	241.6	+30.9	0	7
				21643	.788	283.4	237.8	+11.0	54	342
				21646	.754	299.2	231.7	+22.1	5	38
				21642	.387	313.7	203.5	+16.3	30	178
				21645	.282	160.4	181.1	-14.4	105	800
				21644	.309	60.8	170.8	+ 9.5	25	156
				21647	.907	125.1	127.0	-30.9	22	216
				21648	.963	105.3	113.2	-14.4	68	409
				21649	.997	68.5	101.5	+21.5	27	162
14.350	-10.1	173.9	+1.0	21639	.971	254.9	249.1	-14.4	0	9
				21643	.897	281.8	237.1	+11.0	49	253
				21646	.862	295.3	231.0	+22.1	9	50
				21642	.543	299.7	203.2	+16.4	27	170
				1535 09	.469	311.3	195.7	+18.9	1	10
				21645	.294	204.7	181.1	-14.4	107	667
				21644	.148	13.6	171.9	+ 9.2	16	140
				1535 10	.636	41.3	145.2	+29.4	3	15
				21647	.821	129.6	126.6	-30.8	22	132
				21648	.881	107.0	113.7	-14.4	53	313
				21649	.963	67.3	100.6	+22.1	42	262
				21650	.987	75.0	93.4	+15.0	28	189
15.421	- 9.6	159.7	+1.1	21643	.978	281.1	237.4	+11.0	59	275
				21646	.953	292.7	230.8	+21.9	0	7
				21651	.860	281.6	218.5	+10.5	9	58
				21642	.712	292.0	203.0	+16.2	26	170
				21645	.443	233.3	181.1	-14.2	90	636
				21644	.265	303.3	172.6	+ 9.4	10	67
				21647	.712	137.7	126.0	-30.7	29	167
				21648	.746	110.2	113.7	-14.1	62	318
				21649	.883	65.4	99.9	+22.1	34	238
				21650	.920	74.1	93.5	+15.0	20	117
16.390	- 9.2	146.9	+1.2	21651	.962	280.5	220.7	+10.4	8	44
				21642	.844	288.8	203.1	+16.4	25	166
				21645	.603	244.1	180.8	-14.2	86	621
				21644	.470	289.0	173.6	+ 9.9	5	38
				21647	.616	148.2	124.9	-30.3	21	113
				21648	.596	116.2	113.5	-14.2	51	300
				21652	.727	135.7	111.1	-30.2	8	42
				21649	.777	61.6	99.3	+22.5	46	223
				21650	.827	73.2	92.2	+14.5	26	180
17.360	- 8.8	134.1	+1.4	21642	.938	287.1	203.0	+16.4	20	157
				21645	.758	249.6	181.0	-14.4	81	453
				21644	.670	284.6	175.2	+10.7	3	19
				21653	.391	200.6	142.4	-20.1	6	26
				21647	.548	164.2	124.1	-30.4	16	113
				21648	.433	128.4	113.6	-14.3	47	311
				21652	.623	146.5	110.8	-29.9	9	54
				21649	.647	55.5	98.9	+22.6	51	220
				21650	.701	72.8	90.8	+12.9	68	395

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Jun. 18.437	- 8.3	119.8	+1.5	21642	.992	286.1	202.6	+16.2	27	109
				21645	.891	252.8	181.2	-14.5	71	478
				21644	.834	282.7	175.7	+11.4	0	8
				21653	.513	226.5	142.9	-19.2	7	36
				21647	.531	185.5	123.2	-30.3	18	76
				21648	.292	158.3	113.4	-14.2	53	333
				21652	.536	166.9	111.8	-29.8	5	30
				1535 11	.499	146.1	102.3	-22.9	3	13
				21649	.501	42.9	98.2	+22.8	53	231
				21650	.512	66.7	91.0	+12.9	138	796
19.519	- 7.8	105.5	+1.6	21645	.975	254.9	181.4	-14.3	77	384
				21653	.707	240.5	146.0	-19.1	3	13
				21647	.588	206.5	123.1	-30.1	7	40
				21652	.530	196.2	115.2	-28.9	3	15
				21648	.304	205.2	113.1	-14.3	53	342
				21649	.387	19.0	97.6	+23.0	45	236
				21650	.309	49.5	91.6	+13.1	202	1163
20.333	- 7.5	94.7	+1.7	21653	.802	247.4	145.2	-16.9	2	12
				21647	.667	218.0	122.9	-30.1	5	25
				21652	.593	211.3	115.2	-28.8	1	6
				21648	.413	227.3	112.9	-14.6	54	324
				21649	.368	354.1	97.1	+23.1	45	242
				1535 12	.432	359.5	95.0	+27.2	1	10
				21650	.206	14.6	91.6	+13.2	217	1381
				21654	.991	78.3	12.3	+11.9	51	442
21.328	- 7.0	81.5	+1.8	21647	.766	227.4	121.9	-29.7	0	7
				21648	.574	240.7	112.6	-14.7	45	337
				21649	.441	326.8	96.7	+23.3	41	225
				21650	.260	320.7	91.2	+13.4	195	1417
				21654	.949	77.9	10.2	+12.1	71	604
22.335	- 6.6	68.2	+1.9	21648	.731	247.6	112.3	-14.7	52	336
				21649	.572	311.2	96.1	+23.8	33	220
				21650	.434	298.4	91.2	+13.7	177	1405
				21655	.777	111.0	19.7	-14.8	7	39
				21654	.858	77.2	9.6	+11.9	52	658
23.394	- 6.1	54.2	+2.1	21648	.869	251.5	112.5	-14.9	46	295
				21649	.719	302.1	95.8	+24.0	28	200
				21650	.616	289.5	90.7	+13.5	168	1270
				21656	.518	58.5	26.7	+17.5	1	11
				21655	.603	116.8	20.6	-14.0	7	53
				21654	.708	75.4	9.9	+11.7	67	608
24.333	- 5.7	41.7	+2.2	21648	.951	253.5	112.1	-14.9	51	329
				21649	.830	298.0	95.0	+24.2	31	224
				21650	.765	286.2	90.7	+13.7	208	1527
				1535 13	.680	271.5	84.4	+ 2.6	3	16
				1535 14	.430	177.0	40.3	-23.1	3	11
				21655	.440	130.0	21.4	-14.3	9	65
				21654	.549	71.2	9.7	+12.0	62	591
				1535 15	.854	66.2	345.0	+21.3	2	7

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Jun. 24.333	Continued			21657	.961	104.4	329.0	-13.2	0	16
25.335	- 5.2	28.5	+2.3	21649	.925	295.8	94.6	+24.7	29	177
				21650	.888	284.5	90.5	+13.9	180	1582
				21656	.286	11.6	25.0	+18.5	0	2
				21655	.311	161.0	22.5	-14.8	15	87
				21654	.358	61.5	9.8	+12.0	51	574
				21658	.492	130.9	5.8	-16.6	3	18
				21657	.873	106.2	329.4	-12.9	5	20
26.349	- 4.8	15.1	+2.4	21649	.981	294.9	93.5	+24.8	46	218
				21650	.969	283.9	90.8	+14.1	166	1625
				1535 16	.688	234.8	52.1	-21.4	0	5
				21655	.323	204.8	23.1	-14.6	22	127
				21654	.195	28.4	9.6	+12.2	54	477
				21658	.368	156.3	6.2	-17.2	1	5
				21659	.581	37.2	351.4	+29.7	1	11
				21657	.742	109.6	329.5	-12.7	2	9
				21660	.957	120.2	305.9	-27.9	8	31
27.335	- 4.3	2.0	+2.5	21650	.996	282.9	86.9	+13.1	46	277
				21655	.470	231.4	24.2	-14.6	28	158
				21654	.212	324.6	9.2	+12.4	41	576
				21658	.323	196.6	7.5	-15.4	8	58
				21659	.465	15.8	353.7	+29.0	21	86
				21660	.890	123.2	304.9	-27.8	0	5
28.333	- 3.9	348.8	+2.6	21655	.649	244.1	25.7	-14.3	34	228
				21654	.382	296.3	9.2	+12.2	41	595
				21658	.450	226.5	8.5	-15.5	21	111
				21659	.446	351.8	353.0	+28.7	43	243
				21661	.253	17.4	344.3	+16.6	1	12
				21660	.768	130.4	307.6	-27.8	2	9
29.382	- 3.4	334.9	+2.7	21655	.818	250.8	27.4	-13.9	54	261
				21654	.580	287.0	9.3	+12.0	35	440
				21658	.615	239.9	8.3	-15.6	9	45
				21659	.520	327.9	353.2	+28.7	40	192
				21661	.287	327.8	344.1	+16.7	0	5
				21660	.686	136.4	302.9	-27.3	2	9
30.373	- 3.0	321.8	+2.9	21655	.932	254.1	28.8	-13.6	49	323
				21654	.746	283.4	9.4	+11.8	43	377
				21658	.765	246.8	8.5	-15.5	10	59
				21662	.716	238.4	2.1	-19.8	2	8
				21659	.633	315.7	352.1	+29.3	46	283
				1536 01	.595	176.5	319.3	-33.4	1	21
				21663	.191	63.8	311.9	+ 7.6	1	7
				21660	.591	150.6	302.6	-28.2	0	6
July 1.469	- 2.5	307.3	+3.0	21655	.993	256.3	29.1	-13.2	24	119
				21658	.903	252.0	9.8	-14.8	3	16
				21654	.884	281.7	9.2	+11.7	41	273
				21662	.856	246.4	2.8	-18.3	0	13

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
July 1.469	Continued			21659	.758	307.6	350.8	+29.7	48	316
2.337	- 2.0	295.8	+3.1	21654	.960	280.9	9.6	+11.3	41	251
				21659	.851	303.4	350.5	+29.7	35	341
				21663	.311	285.6	313.3	+ 7.7	1	10
3.358	- 1.6	282.3	+3.2	21659	.945	299.9	352.0	+29.2	71	465
				21664	.766	289.8	331.1	+17.1	5	32
				1536 02	.506	120.9	256.0	-12.1	3	21
4.340	- 1.1	269.3	+3.3	21659	.967	302.1	343.7	+31.9	26	190
				21664	.890	287.6	331.6	+17.2	5	44
				21665	.997	78.7	183.6	+11.5	79	450
5.333	- 0.7	256.2	+3.4	21664	.959	287.1	329.7	+17.3	4	36
				21666	.786	208.5	285.7	-40.6	0	15
				21667	.967	106.7	182.8	-15.1	27	146
				21665	.963	78.3	181.6	+12.2	67	449
6.381	- 0.2	242.3	+3.5	21666	.896	214.8	288.4	-44.9	0	10
				21667	.887	109.8	182.4	-15.7	34	158
				21665	.870	78.3	182.0	+11.9	59	381
				21668	.985	81.3	162.0	+ 9.2	108	951
7.408	+ 0.3	228.7	+3.6	21665	.724	77.3	182.7	+11.6	60	354
				21667	.766	114.2	182.3	-15.7	18	110
				1536 03	.792	84.3	176.3	+ 6.8	0	8
				21668	.937	80.2	159.1	+10.5	185	1474
8.433	+ 0.7	215.1	+3.7	1536 04	.278	158.1	209.1	-11.2	7	26
				21665	.545	74.9	182.8	+11.3	56	306
				1	.529	75.7	183.9	+10.7	38	214
				21667	.616	122.1	182.4	-15.9	18	101
				21668	.828	79.9	159.3	+10.4	161	1300
				21669	.901	110.3	153.6	-16.4	5	24
				21670	.928	77.8	146.9	+12.7	36	175
				1536 05	.949	63.5	144.0	+26.3	0	11
9.439	+ 1.2	201.8	+3.8	1536 06	.940	286.5	271.8	+16.8	0	23
				21671	.353	358.2	202.5	+24.4	2	12
				21665	.354	68.1	182.3	+11.2	45	308
				1	.333	68.6	183.5	+10.6	34	205
				21667	.468	136.2	182.2	-16.1	14	103
				21668	.673	78.5	159.9	+10.5	155	1276
				21669	.773	114.0	154.8	-15.7	2	7
				21670	.832	77.2	145.7	+12.7	27	180
10.435	+ 1.6	188.6	+3.9	21671	.410	330.4	201.4	+24.6	0	5
				21665	.146	38.5	183.4	+10.4	35	209
				1	.140	37.0	183.8	+10.3	33	195
				21667	.359	162.0	182.0	-16.0	17	108
				21668	.490	75.4	159.9	+10.5	176	1321
				21669	.605	122.2	156.7	-15.4	1	10
				21670	.689	75.2	145.7	+13.0	13	97

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
July 10.435	Continued			21672	.981	105.2	111.6	-14.0	40	241
11.324	+ 2.0	176.9	+4.0	21665	.149	322.1	182.2	+10.7	31	270
				1	.163	311.4	184.0	+10.2	20	184
				21667	.355	193.8	181.9	-16.1	17	93
				21668	.300	68.6	160.4	+10.1	138	1244
				21669	.537	129.8	151.5	-16.4	0	5
				21670	.527	71.1	146.2	+13.2	18	108
				21673	.907	125.8	118.9	-29.9	5	54
				21672	.925	107.2	111.4	-14.2	18	206
				21674	.992	76.8	93.4	+13.6	54	272
12.354	+ 2.5	163.2	+4.1	21665	.362	287.7	183.6	+10.2	41	210
				1	.370	287.0	184.2	+10.0	37	189
				21667	.459	221.1	181.5	-16.2	16	65
				21668	.123	27.7	159.9	+10.3	146	1066
				21675	.432	16.0	155.5	+28.5	5	22
				21669	.401	152.3	152.0	-16.7	4	24
				21670	.344	61.6	145.2	+13.3	22	123
				1536 07	.725	138.9	130.1	-29.6	2	7
				21673	.814	131.5	118.9	-29.6	4	20
				21672	.818	110.8	111.3	-14.3	32	195
				21674	.940	77.1	93.1	+13.5	73	373
				21676	.969	64.1	87.5	+26.1	14	55
13.508	+ 3.0	148.0	+4.2	21665	.582	282.3	183.2	+10.6	34	232
				1	.600	281.8	184.5	+10.4	29	198
				21667	.626	238.2	181.4	-15.7	9	47
				21668	.241	296.8	160.6	+10.4	136	1106
				21675	.446	342.8	156.6	+29.3	23	118
				21669	.358	184.6	149.7	-16.6	7	59
				21670	.162	13.9	145.7	+13.2	21	80
				21673	.704	141.0	117.5	-29.4	2	10
				21672	.655	117.8	111.4	-14.3	43	216
				21674	.818	76.4	93.3	+13.5	56	394
				21676	.886	62.4	87.0	+26.3	15	79
14.475	+ 3.4	135.2	+4.3	21665	.758	280.1	184.3	+10.4	32	183
				21667	.768	245.0	181.3	-15.9	4	25
				21668	.436	286.0	160.3	+10.8	136	879
				21675	.526	324.2	155.7	+29.2	11	51
				21669	.438	214.5	150.1	-16.9	0	8
				21670	.244	309.9	146.2	+13.2	4	20
				21672	.507	128.5	111.0	-14.4	40	197
				21674	.680	75.0	92.9	+13.3	66	328
				21676	.785	59.6	86.4	+26.2	7	28
				1536 08	.875	65.4	75.2	+23.6	0	5
15.346	+ 3.8	123.6	+4.4	21665	.871	279.9	184.3	+10.8	51	205
				21667	.870	248.8	180.9	-16.0	5	19
				21668	.600	282.4	160.1	+11.0	142	865
				21675	.634	313.1	155.6	+29.4	7	42
				21670	.428	293.2	147.4	+13.7	5	25
				1536 09	.388	308.3	142.2	+18.0	0	2

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
July 15.346	Continued			1536 10	.542	184.0	126.1	-28.2	3	14
				21672	.387	146.2	110.8	-14.4	30	193
				21674	.525	72.2	92.9	+13.0	70	362
				21676	.675	55.3	85.6	+26.0	6	26
				21677	.981	82.5	44.7	+ 8.2	6	40
16.454	+ 4.3	109.0	+4.5	21665	.970	280.3	185.2	+11.1	28	139
				21667	.964	251.9	181.3	-16.1	4	17
				21668	.785	280.8	160.6	+11.2	127	747
				21675	.800	305.5	158.0	+30.6	2	13
				21669	.736	242.3	151.6	-16.6	7	47
				21670	.619	286.9	146.4	+13.9	3	20
				21678	.277	226.3	120.6	- 6.6	2	6
				1536 11	.523	345.6	118.0	+34.7	0	11
				21672	.327	184.9	110.6	-14.4	32	182
				1536 12	.437	0.7	108.6	+30.3	1	8
				21674	.317	61.2	92.5	+13.1	52	320
				1536 13	.384	44.9	92.3	+20.0	0	5
				21676	.524	43.9	85.2	+26.2	3	12
				21679	.505	69.7	79.9	+14.0	0	5
				21677	.881	83.1	47.2	+ 8.2	7	29
				21680	.968	108.5	35.9	-16.6	36	175
17.418	+ 4.7	96.2	+4.6	21668	.899	280.2	160.4	+11.2	99	631
				21669	.854	247.1	151.3	-16.8	20	119
				21678	.452	246.5	120.7	- 6.2	3	17
				21672	.404	216.3	110.5	-14.5	38	186
				21674	.159	23.2	92.6	+12.9	43	372
				1536 14	.297	38.9	85.0	+17.8	0	7
				21676	.446	24.4	84.2	+28.3	3	18
				21679	.299	56.2	81.5	+14.0	7	37
				21677	.702	82.9	51.7	+ 8.3	2	21
				21680	.897	111.5	35.7	-16.9	36	199
18.382	+ 5.2	83.5	+4.7	21668	.974	280.6	160.8	+11.3	69	456
				21669	.950	250.8	152.6	-16.6	4	36
				21678	.636	254.7	121.4	- 5.9	1	13
				21672	.543	234.2	110.4	-14.2	33	175
				21674	.214	314.2	92.5	+13.2	40	321
				21679	.154	11.3	81.7	+13.3	1	19
				21681	.626	128.6	52.4	-18.9	3	13
				21680	.789	115.7	35.6	-16.8	39	239
				21682	.976	79.9	5.5	+10.9	16	120
19.323	+ 5.6	71.0	+4.8	21668	.997	282.1	157.1	+12.5	27	326
				21678	.778	255.7	120.4	- 7.9	0	15
				21683	.713	285.5	116.0	+14.4	3	23
				21672	.689	243.3	110.3	-14.3	38	174
				1536 15	.471	246.0	96.5	- 6.7	0	12
				21674	.389	292.4	92.5	+12.9	66	269
				1536 16	.355	326.2	83.2	+21.7	0	5
				21679	.239	323.1	79.5	+15.7	0	4
				1536 17	.318	160.2	64.7	-12.6	0	9
				21681	.496	144.5	53.3	-19.2	3	12
				21680	.659	122.4	35.6	-16.7	40	190

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
July 19.323	Continued			21682	.904	80.9	6.2	+10.3	46	182
				21684	.953	73.3	358.3	+17.4	12	75
20.500	+ 6.1	55.4	+4.9	21683	.871	282.7	116.1	+13.5	0	5
				21672	.848	249.3	110.4	-14.6	42	208
				21674	.609	284.8	92.4	+12.8	46	270
				21681	.407	176.1	53.8	-18.9	1	10
				21680	.497	137.8	35.1	-16.9	56	245
				21685	.788	116.6	8.0	-17.3	5	34
				21682	.754	81.0	6.5	+10.0	28	175
				21684	.823	72.1	0.5	+17.5	12	78
21.393	+ 6.5	43.6	+5.0	21672	.932	252.5	110.0	-14.3	38	176
				21674	.756	282.9	92.5	+12.9	39	214
				21681	.359	196.7	49.8	-15.1	1	10
				21680	.396	159.1	35.2	-16.7	46	207
				21685	.657	125.2	9.4	-18.1	27	128
				21682	.586	81.2	7.9	+ 9.2	21	128
				21684	.692	70.4	0.8	+17.0	6	43
22.442	+ 6.9	29.7	+5.1	21672	.989	254.6	109.5	-14.4	22	164
				21674	.888	282.1	92.6	+13.1	15	121
				21680	.385	194.1	35.3	-16.8	35	181
				21685	.510	138.8	9.2	-17.7	39	235
				21682	.381	77.4	7.7	+ 9.5	13	103
				21684	.476	64.5	3.3	+16.3	3	35
23.326	+ 7.3	18.1	+5.1	21674	.959	282.1	92.1	+13.1	8	48
				21681	.613	232.4	48.5	-17.4	20	129
				21680	.462	217.5	35.1	-16.5	36	196
				21685	.402	158.2	9.1	-16.8	66	445
				21682	.180	68.8	8.3	+ 8.8	11	78
				21684	.339	53.4	1.6	+16.6	2	29
24.481	+ 7.8	2.8	+5.2	21681	.781	242.5	49.2	-17.5	60	331
				21680	.621	234.5	34.5	-16.6	34	170
				21686	.680	223.3	33.7	-25.1	0	3
				21685	.384	194.5	8.5	-16.5	114	669
				21682	.120	313.3	7.9	+ 9.9	2	31
				21684	.240	22.8	357.2	+17.9	5	29
				21687	.991	74.8	279.6	+15.7	39	475
25.336	+ 8.1	351.5	+5.3	21681	.883	246.9	49.6	-17.5	93	460
				21680	.743	241.9	34.4	-16.6	33	179
				21686	.771	229.2	31.9	-26.2	2	14
				21682	.338	279.4	11.1	+ 8.1	14	84
				21685	.467	217.1	8.5	-16.7	108	664
				21684	.263	328.7	359.7	+18.2	1	36
				21687	.955	75.4	278.2	+15.5	95	735
26.363	+ 8.6	337.9	+5.4	21681	.966	249.9	50.0	-17.8	94	781
				21688	.891	301.7	39.3	+30.5	10	58
				21680	.870	247.4	34.6	-16.6	32	153
				21686	.872	237.6	31.8	-24.7	0	19
				21682	.575	276.5	13.0	+ 8.1	25	142

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
July 26.363	Continued			21685	.619	233.8	9.3	-16.8	108	579
				1537 01	.565	207.4	354.5	-24.8	6	22
				1537 02	.183	347.7	340.2	+15.6	0	1
				1537 03	.834	108.4	284.1	-12.1	0	8
				21687	.865	75.1	277.9	+15.6	75	594
27.351	+ 9.0	324.8	+5.5	21681	.994	249.0	45.6	-20.0	38	266
				21688	.962	300.4	39.3	+30.7	4	28
				21680	.956	250.5	34.8	-16.8	37	153
				21682	.756	275.7	14.0	+ 7.9	34	192
				21685	.759	241.9	9.1	-17.0	99	570
				1537 04	.582	227.4	351.5	-18.2	0	5
				21689	.304	287.9	341.8	+10.6	12	63
				21690	.408	6.2	321.9	+29.3	4	18
				21687	.725	74.1	278.7	+15.3	70	468
				21691	.772	86.2	274.1	+ 6.4	0	5
28.403	+ 9.4	310.9	+5.5	21680	.997	253.2	34.2	-16.2	26	132
				21682	.897	276.1	14.9	+ 8.0	35	210
				21685	.886	247.3	9.5	-17.1	67	556
				21689	.516	280.5	341.8	+10.2	26	140
				21690	.440	339.3	321.2	+29.7	10	63
				21687	.540	70.8	279.2	+14.9	51	307
				21691	.541	85.5	278.1	+ 7.1	24	107
29.345	+ 9.8	298.4	+5.6	21682	.965	276.8	13.6	+ 8.0	52	342
				21685	.958	250.4	8.9	-16.9	102	526
				1537 05	.949	256.4	8.3	-11.0	0	14
				21689	.697	279.5	342.6	+10.6	22	145
				21690	.546	320.0	322.2	+29.8	7	51
				1537 06	.186	282.4	308.9	+ 7.8	1	12
				21691	.330	84.7	279.2	+ 7.1	39	264
				21687	.368	63.1	278.7	+14.8	62	330
30.348	+10.2	285.2	+5.7	21682	.996	279.2	10.5	+ 9.7	24	367
				21685	.986	250.2	2.8	-18.4	6	115
				21689	.843	279.3	342.9	+10.9	19	104
				21690	.691	307.6	323.9	+29.3	6	51
				21691	.115	77.3	278.7	+ 7.1	73	425
				21687	.197	37.0	278.1	+14.7	69	345
				21692	.960	67.0	210.6	+23.7	8	57
31.355	+10.6	271.9	+5.8	21689	.947	279.9	343.5	+11.2	10	60
				21690	.788	303.6	320.7	+29.7	11	60
				21691	.149	279.0	280.3	+ 7.0	61	381
				21687	.192	323.5	278.6	+14.6	41	231
				1537 07	.061	67.3	268.6	+ 7.1	0	9
				21692	.885	66.4	209.9	+23.5	7	59
Aug. 1.099	+10.9	262.0	+5.8	21690	.856	301.6	319.0	+29.8	4	35
				21691	.331	274.5	281.3	+ 7.0	35	295
				21687	.315	297.3	278.7	+13.9	31	214
				21692	.806	66.1	209.2	+22.6	7	39

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Aug. 2.538	+11.5	243.0	+5.9	21691	.632	274.0	282.3	+ 7.1	67	340
				21687	.593	284.2	279.0	+13.2	54	304
				21693	.609	221.3	268.5	-21.8	6	38
				1537 08	.230	324.5	251.0	+16.6	2	14
				21692	.596	62.0	208.8	+21.1	3	19
				21694	.940	84.3	172.7	+ 7.4	7	37
				21695	.994	78.3	158.7	+12.2	39	370
3.358	+11.8	232.1	+6.0	21691	.772	274.8	282.8	+ 7.5	59	340
				21696	.740	290.0	279.2	+18.7	5	23
				21687	.716	283.0	277.8	+13.4	61	316
				21693	.711	230.7	268.4	-21.9	19	80
				21692	.435	53.6	210.3	+20.5	0	2
				21694	.859	85.0	172.7	+ 7.4	9	65
				21695	.960	79.4	157.8	+11.8	133	632
				21697	.989	77.8	149.6	+12.9	0	37
4.333	+12.2	219.2	+6.0	21691	.895	275.4	282.9	+ 7.5	68	376
				21696	.868	288.1	279.6	+18.7	0	16
				21687	.863	282.1	279.2	+13.5	28	167
				21693	.835	238.7	269.3	-21.9	20	127
				21698	.476	99.0	191.3	+ 1.1	3	24
				21694	.719	85.6	173.2	+ 7.4	13	70
				21695	.873	79.8	158.1	+11.8	122	720
				21697	.934	78.3	149.6	+13.0	3	15
5.324	+12.6	206.1	+6.1	21691	.978	276.6	284.6	+ 7.7	49	293
				21696	.963	286.0	281.5	+17.1	0	8
				21687	.957	282.7	280.1	+13.9	10	95
				21693	.943	244.6	272.1	-21.4	17	99
				1537 09	.303	185.4	207.8	-11.3	4	22
				21698	.254	109.5	192.4	+ 1.1	5	13
				21694	.541	86.0	173.3	+ 7.3	8	51
				21695	.743	79.6	158.0	+11.8	137	729
				21697	.839	78.2	148.9	+13.2	8	17
				21699	.960	86.5	132.2	+ 5.1	0	32
6.416	+13.0	191.7	+6.2	21693	.996	248.5	273.4	-20.6	0	23
				21700	.564	246.2	223.0	- 7.8	3	21
				21698	.076	193.4	192.7	+ 2.0	12	83
				21694	.311	85.6	173.5	+ 7.2	9	35
				21695	.557	78.0	158.0	+11.8	138	748
				21697	.686	77.1	148.4	+13.3	0	6
				21699	.856	87.2	132.7	+ 5.6	9	55
7.629	+13.4	175.7	+6.3	21700	.787	254.1	225.4	- 8.4	4	33
				21701	.438	287.6	200.9	+13.2	3	11
				21698	.294	258.5	192.4	+ 2.6	29	175
				21694	.036	67.5	173.7	+ 7.1	9	30
				21702	.159	28.1	171.3	+14.3	2	16
				21695	.312	72.2	158.1	+11.4	157	780
				21699	.680	89.2	132.8	+ 5.2	3	34
				21703	.941	108.4	108.4	-14.9	17	104

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Aug. 8.612	+13.8	162.7	+6.3	21700	.925	258.9	228.8	- 7.7	6	30
				21701	.631	283.4	201.6	+13.3	7	32
				21698	.499	264.2	192.3	+ 2.6	25	172
				1537 10	.416	278.0	187.2	+ 9.1	0	9
				21694	.195	275.2	173.9	+ 7.2	4	19
				21702	.209	310.3	172.1	+14.0	8	41
				21695	.129	40.9	157.7	+11.9	107	825
				1537 11	.574	126.8	134.4	-14.5	0	3
				21704	.521	111.6	133.6	- 5.5	3	21
				21699	.504	86.5	132.3	+ 7.2	9	56
				1537 12	.551	79.3	129.3	+11.1	0	3
				1537 13	.764	53.5	116.8	+31.4	2	14
				21703	.848	111.5	108.3	-14.4	13	88
9.361	+14.1	152.8	+6.4	21701	.756	282.4	202.0	+13.5	5	38
				21698	.641	266.5	192.5	+ 2.7	21	121
				21694	.363	273.6	174.1	+ 7.2	2	15
				21702	.343	295.7	171.3	+14.6	2	17
				21695	.135	315.8	158.3	+11.9	125	735
				21704	.374	122.7	134.4	- 5.6	1	9
				21699	.378	86.6	130.5	+ 7.2	1	7
				21703	.755	115.4	108.2	-14.4	10	66
10.365	+14.4	139.5	+6.4	21701	.912	283.5	205.8	+14.9	6	32
				21698	.814	267.2	193.7	+ 1.4	2	30
				21694	.568	273.2	174.2	+ 7.1	3	15
				21702	.519	287.2	170.2	+14.3	0	3
				21695	.340	287.6	158.8	+11.9	104	700
				1537 14	.371	67.3	118.9	+14.2	0	2
				21703	.612	123.7	107.9	-14.3	11	59
				21705	.992	108.4	59.6	-17.2	17	165
11.440	+14.8	125.3	+6.5	21701	.991	284.0	208.9	+14.7	0	25
				21698	.941	268.9	195.3	+ 1.1	0	23
				21694	.754	273.7	174.4	+ 7.0	3	14
				1537 15	.802	237.4	171.5	-21.1	6	31
				21695	.547	281.2	158.4	+11.5	124	849
				21704	.266	231.9	137.3	- 3.1	2	17
				21699	.152	280.9	133.9	+ 8.0	2	21
				21703	.457	140.1	107.7	-14.3	5	22
				21706	.436	66.6	100.8	+15.8	5	19
				21707	.483	67.4	97.7	+16.4	0	8
				21705	.940	110.8	58.7	-17.0	37	163
12.344	+15.1	113.3	+6.5	21698	.990	268.7	195.0	- 0.4	0	16
				21694	.875	274.4	174.7	+ 7.0	0	7
				21695	.709	280.1	158.6	+11.8	117	817
				21704	.437	250.5	137.5	- 2.4	10	53
				21699	.368	280.1	134.8	+ 9.8	2	32
				21703	.367	164.6	107.6	-14.1	2	15
				21706	.248	49.9	102.0	+15.6	12	52
				21707	.320	54.2	97.7	+17.0	5	29
				21705	.859	114.5	58.6	-17.1	31	151
				21708	.979	107.3	37.8	-15.4	158	1148

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Aug. 13.326	+15.5	100.3	+6.6	21694	.959	277.2	174.3	+ 8.7	0	27
				21695	.850	279.8	158.9	+11.8	104	798
				21709	.829	230.9	146.4	-27.0	2	28
				21704	.628	258.4	138.2	- 2.0	48	321
				21710	.737	228.7	137.5	-23.8	2	11
				21699	.568	277.3	135.0	+ 9.5	8	38
				21703	.372	198.4	107.3	-14.1	2	10
				21706	.165	342.1	103.3	+15.5	25	117
				21707	.188	15.4	97.4	+17.0	9	43
				21705	.746	120.6	58.1	-17.4	22	133
				21708	.914	110.2	37.7	-15.4	145	1005
				21711	.989	83.9	18.2	+ 7.0	89	533
14.399	+15.9	86.2	+6.6	21712	.961	284.4	161.0	+15.7	29	184
				21695	.952	280.3	158.9	+11.8	122	825
				21709	.927	237.6	147.1	-26.6	0	6
				21704	.808	262.9	139.3	- 1.8	83	650
				21710	.860	234.5	137.1	-25.9	4	45
				21699	.768	276.2	136.5	+ 9.0	2	18
				21713	.551	243.0	115.8	- 8.7	1	16
				21703	.491	225.1	107.1	-14.0	3	8
				21706	.341	297.3	104.4	+15.3	18	93
				21707	.229	320.0	94.9	+16.6	6	32
				21705	.602	131.3	57.9	-17.5	19	119
				21708	.811	114.3	36.3	-15.2	166	1121
				21714	.811	52.3	35.6	+34.0	0	6
				21715	.935	104.3	19.2	-10.8	6	32
				21711	.927	85.2	17.9	+ 6.9	66	481
				21716	.974	107.9	12.0	-15.7	20	110
				21717	.977	103.1	10.5	-11.2	55	362
15.297	+16.2	74.3	+6.7	21712	.992	286.6	158.7	+17.3	0	36
				21695	.992	282.2	158.3	+12.9	63	577
				21709	.981	241.4	147.9	-26.2	11	57
				21704	.913	264.8	139.6	- 2.0	76	672
				21699	.878	276.7	136.1	+ 9.0	0	24
				21710	.926	238.8	135.5	-25.5	24	174
				21713	.702	250.2	116.1	- 8.7	11	67
				21703	.622	237.4	106.8	-13.9	3	20
				21706	.521	289.1	104.9	+15.6	13	104
				21707	.397	295.8	96.0	+16.1	20	103
				21705	.491	146.5	57.9	-17.7	18	110
				21708	.696	119.9	35.8	-15.0	183	1297
				21715	.841	107.5	19.7	-10.8	4	19
				21711	.828	86.6	18.2	+ 6.5	89	434
				21716	.909	110.4	12.4	-15.4	5	62
				21717	.917	105.8	10.2	-11.6	77	609
16.363	+16.5	60.2	+6.7	21704	.978	265.8	137.6	- 2.7	26	278
				21710	.985	242.3	135.5	-25.7	22	299
				21713	.852	255.3	116.5	- 8.8	5	22
				21703	.772	246.3	106.6	-13.4	2	9
				21706	.709	285.0	105.3	+15.3	19	74
				21707	.599	288.2	96.4	+16.2	6	46
				21718	.508	249.1	88.5	- 4.5	1	5

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Aug. 16.363	Continued			21705	.419	173.4	57.3	-17.8	16	106
				21708	.536	131.9	36.0	-14.8	202	1288
				21715	.692	113.1	20.0	-10.6	3	9
				21711	.668	87.8	18.2	+ 6.5	64	426
				21716	.790	115.3	12.6	-15.2	6	35
				21717	.794	109.7	10.8	-11.2	100	581
17.317	+16.8	47.6	+6.8	21706	.847	284.0	105.9	+15.5	12	64
				21703	.863	249.5	103.7	-13.8	9	43
				21707	.760	285.4	97.0	+16.1	7	54
				21718	.677	255.6	88.6	- 4.6	2	15
				21705	.441	200.8	57.0	-17.6	22	136
				1537 16	.482	175.4	45.2	-21.8	3	11
				21708	.414	151.3	35.8	-14.6	155	1188
				21714	.488	27.7	32.1	+32.1	3	13
				21715	.536	122.0	20.2	-10.4	3	10
				21711	.481	88.7	18.8	+ 6.6	61	356
				21716	.664	121.7	11.9	-14.9	3	18
				21717	.650	115.7	11.1	-10.9	80	602
18.396	+17.2	33.3	+6.8	21706	.955	283.9	107.0	+15.3	4	27
				21703	.961	253.4	104.7	-13.8	4	33
				21707	.903	283.5	98.5	+15.1	5	79
				21718	.861	261.1	91.6	- 4.1	4	20
				21705	.557	223.4	56.9	-17.5	19	104
				21708	.371	188.0	36.4	-14.6	163	995
				21715	.354	147.2	22.1	-10.6	0	5
				21711	.246	89.2	19.0	+ 6.8	54	322
				21717	.481	129.2	11.1	-11.3	93	813
				21719	.785	60.4	343.3	+27.2	13	59
19.358	+17.5	20.6	+6.9	21707	.969	284.3	97.3	+15.5	9	81
				21718	.955	263.0	92.4	- 4.6	0	15
				21705	.683	235.3	56.5	-17.3	14	90
				21708	.461	218.4	37.8	-14.6	98	799
				21711	.025	83.4	19.2	+ 7.0	57	345
				21717	.358	152.0	10.8	-11.6	114	953
				21719	.638	54.5	345.0	+27.3	15	80
				1537 17	.683	83.2	337.3	+ 9.6	2	5
20.328	+17.8	7.8	+6.9	21705	.807	242.4	56.2	-17.4	15	90
				21708	.610	235.2	38.8	-14.4	85	642
				21720	.593	211.0	27.2	-23.9	3	16
				21711	.200	271.9	19.4	+ 7.1	41	285
				21717	.324	189.7	11.0	-11.6	128	827
				21719	.479	42.6	346.6	+27.0	6	28
				21721	.883	115.5	310.8	-18.6	7	40
				21722	.970	83.2	291.2	+ 8.3	5	27
				21723	.977	76.3	289.1	+14.8	0	10
21.447	+18.2	353.0	+6.9	21705	.918	247.8	55.6	-17.1	11	85
				21708	.775	244.0	39.0	-15.0	74	606
				21711	.450	272.2	19.8	+ 7.2	51	277
				21717	.440	225.6	11.6	-11.3	111	822
				21719	.369	16.0	346.4	+27.6	1	10

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Aug. 21.447	Continued			1538 01	.597	87.4	316.2	+ 7.1	3	11
				21721	.758	121.8	310.4	-18.4	45	338
				21722	.880	84.4	291.0	+ 8.2	5	24
				21723	.899	78.3	288.3	+13.5	0	8
22.360	+18.4	340.9	+7.0	21705	.974	250.5	54.7	-17.2	20	89
				1538 02	.876	255.8	39.9	- 8.9	0	9
				21708	.883	248.5	39.1	-15.3	72	488
				21720	.825	234.2	28.0	-24.2	8	32
				21711	.623	273.0	19.6	+ 7.3	42	275
				21717	.589	240.3	12.2	-11.0	91	649
				21719	.357	356.3	342.4	+27.7	32	195
				21721	.632	130.5	310.7	-18.2	48	384
				21724	.833	136.5	298.5	-32.0	2	12
				21722	.760	85.5	291.2	+ 8.0	7	31
				21723	.827	74.5	284.9	+16.7	2	12
23.326	+18.7	328.2	+7.0	21708	.960	251.6	38.8	-15.4	89	602
				21720	.914	240.0	27.9	-23.8	8	47
				21711	.784	273.6	20.0	+ 7.1	48	267
				21717	.747	248.7	13.1	-10.8	73	524
				21719	.418	327.3	342.8	+27.3	34	224
				21721	.493	148.4	312.5	-18.0	47	257
				21724	.739	146.5	299.6	-31.8	7	37
				21722	.602	86.4	291.0	+ 7.8	6	31
24.343	+19.0	314.7	+7.0	21708	.997	254.9	37.9	-14.3	27	189
				21720	.977	243.4	27.7	-24.1	16	106
				21711	.909	274.4	20.4	+ 6.9	46	261
				21717	.898	254.8	16.2	-10.3	54	393
				1538 03	.774	281.8	5.7	+13.5	2	9
				21719	.565	309.5	344.0	+27.2	44	233
				21721	.427	173.9	312.0	-18.0	35	253
				21724	.663	160.0	299.3	-31.6	1	21
				21722	.406	85.9	290.7	+ 8.1	5	33
25.418	+19.4	300.5	+7.1	21711	.984	275.4	20.7	+ 6.6	25	143
				21717	.983	258.2	18.2	-10.2	37	244
				21719	.708	302.2	342.8	+27.4	34	192
				21721	.461	203.0	311.4	-18.1	36	203
				21722	.154	84.8	291.7	+ 7.8	3	18
26.390	+19.6	287.7	+7.1	21719	.846	297.6	344.8	+27.0	19	127
				21725	.569	298.4	320.1	+21.7	4	26
				21721	.568	223.6	311.9	-17.7	33	232
				21726	.420	307.1	308.7	+21.2	3	14
				21724	.650	193.0	297.6	-32.1	1	12
				21722	.078	281.1	292.1	+ 7.9	2	11
				21727	.974	101.7	212.5	- 9.6	0	15
27.403	+19.9	274.3	+7.1	21719	.943	295.9	345.9	+26.7	7	41
				21725	.748	293.5	321.9	+22.2	0	14
				21721	.698	235.5	311.3	-17.6	25	179
				1538 04	.889	207.9	311.1	-46.1	0	12
				21726	.527	295.8	304.4	+19.4	1	16

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Aug. 27.403	Continued			21724	.704	207.4	296.7	-32.0	0	3
				21722	.308	273.7	292.3	+ 7.9	2	10
				21728	.105	321.9	278.1	+11.8	0	25
				1538 05	.737	101.7	228.2	- 3.7	0	8
				21727	.926	104.6	208.7	-10.6	27	137
28.348	+20.2	261.8	+7.1	21725	.851	290.4	320.3	+21.0	0	11
				21721	.812	242.8	310.7	-17.2	19	107
				21722	.508	273.2	292.5	+ 7.8	0	4
				21728	.300	284.1	279.0	+11.0	1	5
				21727	.835	107.9	208.1	-10.6	21	127
				21729	.972	79.2	184.5	+12.1	10	48
29.329	+20.4	248.9	+7.2	21725	.950	290.0	321.8	+21.1	4	35
				21721	.912	247.4	310.5	-17.2	16	85
				21724	.879	227.4	298.4	-31.9	0	18
				1538 06	.678	292.4	290.7	+20.3	3	10
				1538 07	.550	296.4	280.4	+20.2	1	7
				21730	.315	147.2	238.9	- 8.3	3	17
				21727	.701	112.7	207.9	-10.3	15	123
				21729	.893	80.3	185.0	+11.8	61	362
30.446	+20.7	234.1	+7.2	21725	.989	290.9	317.7	+21.6	0	22
				21721	.988	251.0	312.3	-17.5	0	14
				1538 08	.450	234.4	255.7	- 8.5	1	5
				21730	.298	202.7	240.8	- 8.8	3	23
				21727	.509	124.4	208.9	-10.2	9	41
				21729	.741	79.4	186.0	+12.7	64	437
				21731	.996	94.1	150.1	- 3.3	46	205
31.554	+21.0	219.5	+7.2	21730	.443	227.4	238.8	-10.6	2	12
				21727	.309	157.4	212.6	- 9.4	2	17
				21729	.529	77.3	187.6	+12.8	41	362
				21732	.958	120.0	152.3	-26.0	8	38
				21731	.939	96.4	150.5	- 3.4	22	139
Sept. 1.103	+21.2	212.2	+7.2	1538 09	.592	248.2	245.7	- 6.6	1	5
				21729	.425	74.4	187.5	+13.1	50	297
				21732	.923	122.1	152.0	-26.0	5	24
				21731	.892	97.2	150.1	- 3.1	25	109
				21733	.987	119.4	137.0	-27.4	12	100
2.422	+21.5	194.8	+7.2	21729	.152	47.4	188.3	+13.0	57	331
				21734	.525	133.7	171.8	-14.6	40	288
				21735	.544	70.0	162.7	+16.8	5	27
				21732	.804	130.3	151.9	-26.1	4	19
				21731	.711	101.2	150.7	- 2.7	19	119
				21733	.924	124.0	135.2	-27.6	12	76
3.335	+21.7	182.7	+7.2	21736	.864	285.1	243.1	+16.6	2	13
				21737	.865	242.8	237.1	-19.2	18	110
				21738	.591	279.8	219.1	+11.6	3	22
				21729	.156	312.3	189.5	+13.2	57	323
				21734	.413	155.0	172.4	-14.8	74	538
				21735	.367	62.3	163.0	+16.6	1	11

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Sept. 3.335	Continued			21732	.712	139.0	151.5	-26.3	5	23
				21731	.547	106.1	151.1	- 2.5	18	127
				21733	.861	128.6	133.4	-27.8	9	82
4.322	+21.9	169.7	+7.2	21736	.958	284.9	244.2	+16.3	4	31
				21737	.947	246.6	236.6	-19.4	28	181
				1538 10	.784	294.4	220.6	+23.5	2	18
				21738	.762	278.0	219.7	+10.8	2	16
				21729	.360	287.5	190.2	+13.0	47	345
				21734	.388	189.5	173.5	-15.2	113	858
				21735	.168	45.5	162.6	+13.9	2	13
				21731	.349	116.3	151.5	- 2.0	21	137
				21732	.611	152.1	151.2	-25.7	4	17
				21733	.756	137.0	134.2	-27.6	7	24
				21739	.651	77.0	129.1	+13.9	0	6
				21740	.985	106.2	92.2	-14.4	0	19
5.406	+22.2	155.4	+7.2	21737	.998	250.1	238.6	-19.1	16	129
				21729	.584	281.9	191.1	+12.8	47	305
				21734	.499	219.9	174.7	-15.6	115	804
				21735	.149	314.6	161.6	+13.2	0	5
				21731	.171	158.2	151.8	- 1.8	16	117
				21732	.553	172.1	150.6	-25.9	1	14
				21733	.659	149.8	133.4	-27.9	6	21
				21740	.921	108.6	91.5	-14.0	0	12
				21741	.923	71.0	87.2	+20.3	0	23
6.444	+22.4	141.7	+7.2	21729	.759	280.5	191.4	+12.6	54	275
				21734	.652	235.8	175.5	-15.5	108	684
				21731	.239	228.8	152.0	- 1.9	20	107
				21732	.559	193.3	149.8	-25.6	1	7
				1538 11	.103	316.8	145.8	+11.5	1	9
				21733	.588	166.9	133.0	-27.7	3	17
				21740	.763	116.4	96.9	-14.7	5	31
				21741	.807	69.9	87.9	+20.5	4	19
7.314	+22.6	130.2	+7.2	21729	.874	280.2	191.7	+12.4	58	269
				21734	.772	243.2	175.6	-15.3	111	614
				21731	.404	248.0	152.1	- 2.0	17	99
				21732	.616	208.8	149.3	-25.7	1	6
				21733	.583	184.0	132.8	-28.1	3	14
				21740	.611	127.4	100.0	-15.5	0	11
				21742	.744	124.5	89.8	-19.4	15	83
8.310	+22.8	117.0	+7.2	21729	.959	280.6	191.4	+12.1	30	198
				21734	.896	248.7	176.9	-15.4	70	554
				21731	.594	256.4	152.1	- 2.1	16	122
				21739	.232	293.2	129.6	+12.3	2	11
				21743	.132	52.6	110.9	+11.8	3	18
				1538 12	.335	36.0	104.8	+22.8	0	8
				21740	.461	142.0	100.1	-14.3	0	6
				21742	.607	136.9	91.0	-19.8	15	117
				21744	.761	112.8	71.4	-12.0	8	54

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Sept. 9.338	+23.1	103.5	+7.2	21734	.977	252.6	178.4	-15.2	84	578
				21731	.764	261.2	152.3	- 1.9	24	121
				21732	.855	228.9	151.0	-29.4	7	52
				1538 13	.679	222.8	133.6	-23.5	2	9
				21739	.468	283.0	131.2	+12.4	3	18
				21743	.138	300.8	110.4	+11.2	11	68
				21742	.495	156.7	91.5	-19.8	23	138
				21745	.534	138.7	82.0	-16.8	1	13
				21744	.600	121.8	72.2	-12.2	7	45
				21746	.951	116.9	36.8	-22.8	22	116
				21747	.978	112.4	29.5	-20.0	0	26
				21748	.989	104.3	24.3	-12.9	61	530
				21749	.986	85.5	22.7	+ 5.6	27	146
10.338	+23.3	90.2	+7.2	21732	.949	240.0	155.6	-25.4	0	28
				21731	.889	263.8	152.2	- 2.1	15	108
				21739	.675	279.1	132.9	+11.5	0	3
				21743	.368	282.1	111.7	+11.1	5	16
				21742	.464	180.6	90.6	-20.3	35	210
				21745	.448	161.3	81.6	-17.9	13	68
				21744	.457	136.7	71.6	-12.5	8	48
				21746	.873	121.1	36.4	-22.6	5	25
				21750	.857	109.7	34.6	-12.8	4	15
				21747	.907	115.3	30.1	-19.3	3	24
				1538 14	.895	77.3	26.0	+14.5	0	10
				21748	.931	106.7	24.4	-12.7	88	700
				21749	.927	86.6	22.0	+ 5.8	18	120
				21751	.932	83.2	21.0	+ 8.9	6	34
				21752	.936	76.1	20.0	+15.5	0	13
				21753	.985	102.1	12.1	-10.5	0	38
11.596	+23.5	73.7	+7.2	21731	.982	266.5	152.1	- 2.0	23	81
				21742	.535	211.6	91.0	-20.1	36	251
				21745	.443	196.2	81.1	-17.9	13	92
				21744	.332	177.8	72.9	-12.1	7	55
				21746	.744	129.7	35.5	-22.6	2	20
				21750	.686	117.7	35.3	-12.9	12	71
				21747	.768	123.1	30.8	-19.5	4	25
				21748	.798	111.9	24.5	-12.6	54	602
				21749	.781	88.3	22.2	+ 5.9	18	120
				21751	.798	84.8	20.4	+ 8.5	19	153
				21753	.902	105.0	11.6	-10.1	5	23
12.322	+23.6	64.1	+7.2	21743	.738	279.3	111.9	+11.7	0	7
				21754	.708	240.1	103.4	-15.1	6	32
				21742	.618	224.0	91.1	-19.9	35	263
				21745	.506	214.3	81.4	-17.7	20	137
				21744	.369	210.3	75.0	-11.4	8	58
				1538 15	.610	132.6	36.0	-17.9	1	7
				21750	.590	123.7	34.0	-12.8	18	98
				21748	.698	116.7	24.5	-12.7	61	687
				21749	.666	89.3	22.2	+ 5.9	23	124
				21751	.692	85.8	20.0	+ 8.1	20	139
				21753	.823	107.5	11.4	- 9.9	4	32

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Sept. 13.335	+23.8	50.7	+7.2	21743	.863	280.7	111.0	+12.8	2	9
				21754	.842	247.3	103.9	-14.7	4	31
				21742	.754	235.6	91.9	-19.7	22	153
				1538 16	.652	281.7	91.5	+13.1	0	6
				21745	.634	231.0	81.6	-17.3	12	74
				21744	.501	232.5	74.5	-11.1	39	176
				21750	.419	145.5	36.6	-13.1	2	25
				21746	.567	152.2	34.0	-23.1	1	5
				21748	.544	128.1	24.7	-13.1	59	476
				21749	.475	90.7	22.3	+ 6.0	21	113
				21752	.501	70.4	21.4	+16.0	0	5
				21751	.492	85.9	21.1	+ 8.3	8	57
				21753	.687	113.7	11.1	-10.4	3	19
				21755	.962	69.9	335.3	+21.3	4	16
14.314	+24.0	37.8	+7.2	21742	.864	241.6	91.6	-20.0	35	199
				1538 17	.706	271.8	82.8	+ 6.4	3	18
				21745	.760	239.8	81.1	-17.2	22	151
				21744	.666	244.0	75.2	-11.2	23	149
				21750	.348	174.0	35.6	-13.0	2	21
				21748	.416	148.0	24.7	-13.6	57	375
				21751	.263	83.7	22.5	+ 8.6	8	45
				21749	.267	93.2	22.3	+ 6.1	16	95
				21752	.306	58.8	22.0	+16.0	0	7
				21753	.530	123.7	11.2	-10.6	1	5
				21755	.878	69.4	335.9	+21.5	5	20
15.124	+24.1	27.1	+7.2	21742	.951	246.8	94.7	-19.4	40	159
				21745	.861	245.6	81.8	-16.7	20	103
				21744	.789	250.3	76.0	-10.7	29	131
				21748	.362	175.5	25.4	-13.9	32	252
				21751	.075	70.3	23.0	+ 8.6	4	19
				21749	.088	100.8	22.1	+ 6.2	17	89
				21752	.225	24.2	21.5	+18.9	3	17
				21753	.424	136.5	9.8	-11.0	0	3
				21755	.795	68.2	334.7	+21.6	7	20
16.345	+24.4	10.9	+7.2	21745	.951	248.9	79.2	-17.4	0	18
				21744	.928	255.4	76.8	-10.7	33	174
				21747	.555	212.8	29.7	-20.9	1	11
				21748	.442	214.7	26.0	-14.3	35	231
				21751	.199	282.3	22.3	+ 9.5	18	101
				21749	.194	264.8	22.1	+ 6.1	18	96
				21755	.617	63.9	334.5	+21.5	6	34
				21756	.951	75.3	297.9	+16.1	29	137
17.399	+24.5	357.0	+7.2	21744	.990	258.3	76.9	-10.4	0	51
				21748	.590	232.9	26.0	-14.5	39	199
				21751	.435	275.5	22.9	+ 8.8	2	40
				21749	.416	268.9	21.7	+ 6.0	17	105
				21755	.439	54.1	334.7	+21.5	5	33
				21756	.860	75.3	297.2	+16.3	38	199

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Sept. 18.610	+24.7	341.1	+7.1	21747	.816	238.2	28.7	-20.7	18	104
				21748	.769	243.3	26.2	-15.2	24	154
				21751	.669	274.6	23.2	+ 8.4	2	15
				21749	.651	270.5	21.7	+ 5.8	16	108
				21755	.274	22.6	334.6	+21.7	5	21
				21756	.695	73.4	297.2	+16.6	25	118
				21757	.950	89.4	269.4	+ 2.8	19	110
				21758	.992	74.2	256.9	+16.5	66	561
19.383	+24.8	330.8	+7.1	21747	.925	242.8	33.0	-21.7	6	64
				21748	.864	247.9	26.6	-15.0	36	164
				21749	.774	272.0	21.7	+ 6.0	18	89
				21755	.257	347.0	334.4	+21.6	1	9
				21759	.519	81.0	299.5	+10.7	3	16
				21756	.568	70.7	296.9	+16.7	22	126
				1539 01	.796	105.7	280.4	- 7.9	2	11
				21757	.882	90.1	268.9	+ 3.3	12	69
				21758	.974	74.2	252.8	+16.9	77	674
20.329	+24.9	318.4	+7.1	21748	.947	251.1	26.4	-15.3	15	104
				21749	.893	273.0	21.8	+ 5.9	17	89
				21759	.324	76.2	299.7	+11.1	1	14
				21756	.397	62.9	296.8	+17.0	20	127
				21757	.754	91.3	269.5	+ 3.7	9	48
				21758	.906	74.4	252.6	+17.1	99	736
				21760	.983	75.9	237.7	+15.1	0	12
21.426	+25.1	303.9	+7.1	21748	.997	257.0	27.3	-12.2	0	53
				21749	.974	274.5	21.2	+ 6.0	25	98
				21756	.217	35.3	296.4	+17.1	20	116
				21757	.537	95.1	271.6	+ 3.3	23	153
				21758	.782	73.6	252.4	+17.2	64	671
				21760	.909	77.2	237.9	+14.5	3	43
				21761	.945	73.3	232.0	+18.0	3	34
22.382	+25.2	291.3	+7.0	21762	.416	228.9	309.7	- 9.1	7	34
				21756	.198	336.6	296.0	+17.4	18	137
				21757	.307	102.1	273.8	+ 3.0	12	117
				21758	.643	71.2	251.8	+17.4	82	571
				21760	.789	77.7	238.9	+14.0	4	24
				21761	.851	71.8	232.6	+19.2	2	17
				21763	.991	80.0	207.8	+10.8	17	108
23.325	+25.3	278.8	+7.0	21762	.608	244.7	312.5	- 9.2	4	14
				21756	.344	303.6	296.2	+17.6	22	105
				21757	.097	142.9	275.5	+ 2.6	8	61
				21764	.550	136.2	255.4	-16.9	9	46
				21758	.482	66.2	251.4	+17.4	85	548
				21760	.635	76.0	239.5	+14.3	4	20
				21761	.729	71.1	232.3	+18.5	2	11
				1539 02	.764	75.5	228.9	+15.6	0	10
				21763	.935	80.8	209.0	+11.1	22	128
				21765	.982	72.1	198.3	+18.9	0	23
				21766	.986	78.8	197.4	+12.2	20	119
				21767	.996	77.3	192.9	+13.3	23	139

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Sept. 24.335	+25.4	265.5	+7.0	21768	.555	299.4	296.7	+21.7	13	89
				21756	.526	292.8	296.0	+17.7	18	108
				21757	.189	243.8	275.2	+ 2.1	5	38
				21764	.434	158.2	255.8	-16.8	10	52
				21758	.301	52.7	251.0	+17.2	90	501
				21760	.439	71.5	240.1	+14.3	4	12
				21761	.573	67.9	231.6	+18.2	1	8
				21769	.599	81.8	228.6	+10.5	6	22
				21770	.672	70.2	223.8	+18.4	9	54
				21763	.823	80.8	209.7	+11.5	20	122
				21765	.901	72.9	200.6	+18.4	5	26
				21766	.919	79.9	198.0	+12.0	11	76
				21767	.947	78.1	193.4	+13.4	48	234
25.331	+25.6	252.3	+6.9	21762	.878	254.6	311.4	- 9.9	5	45
				21768	.722	293.9	297.5	+21.9	26	183
				21756	.691	288.8	295.6	+18.0	21	112
				21757	.403	260.3	275.7	+ 2.5	2	13
				21764	.407	189.3	256.3	-16.6	4	17
				21758	.185	11.8	250.1	+17.3	82	538
				21760	.231	62.5	240.3	+12.9	3	20
				21761	.396	59.1	231.5	+18.2	1	9
				21769	.398	78.8	229.0	+10.8	9	41
				21770	.482	65.1	225.1	+17.9	17	116
				21763	.672	79.7	210.0	+12.1	26	142
				21766	.795	80.8	199.4	+11.5	23	155
				21765	.813	71.1	198.0	+19.3	2	11
				21767	.853	78.2	193.4	+13.6	37	283
				21771	.970	108.2	179.5	-15.7	52	271
26.326	+25.7	239.2	+6.9	21762	.952	258.5	309.7	- 8.6	3	17
				21768	.854	291.6	297.9	+22.0	14	101
				21756	.826	287.1	295.1	+18.0	27	130
				21758	.260	314.4	250.4	+17.2	69	519
				21760	.147	350.8	240.6	+15.2	15	123
				21769	.187	68.9	229.0	+10.6	11	78
				21770	.282	47.9	226.6	+17.6	9	77
				21763	.465	75.7	211.8	+12.7	51	329
				21766	.637	80.2	199.6	+11.6	21	112
				21765	.683	71.5	196.6	+17.6	0	4
				21767	.713	77.7	193.6	+13.6	32	255
				21771	.897	111.7	179.3	-16.0	53	252
27.341	+25.7	225.8	+6.8	21768	.957	290.4	300.0	+21.4	8	53
				21756	.925	286.9	294.2	+18.2	23	90
				21764	.642	234.4	258.6	-16.1	0	6
				21758	.433	296.7	249.6	+17.5	37	321
				21760	.293	303.4	240.5	+15.8	39	229
				21770	.181	343.5	228.9	+16.8	15	79
				21769	.085	328.3	228.4	+11.0	12	62
				1539 03	.383	156.7	216.8	-13.8	1	6
				21763	.248	67.2	212.3	+12.2	53	361
				21766	.434	78.5	200.3	+11.1	6	32
				21767	.538	75.2	193.6	+13.7	32	220
				21771	.786	116.7	179.0	-16.0	31	246

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Sept. 28.359	+25.8	212.4	+6.8	21756	.987	287.2	294.7	+18.0	14	102
				21758	.630	289.5	250.7	+17.5	44	261
				21760	.500	289.8	241.5	+15.7	33	206
				21769	.273	289.0	227.6	+11.7	13	101
				21770	.312	305.9	227.6	+17.1	19	108
				21763	.089	359.6	212.4	+11.9	75	374
				1539 04	.122	92.2	205.4	+ 6.5	1	7
				21766	.233	63.5	200.1	+12.6	5	37
				21767	.338	67.5	193.7	+13.9	45	232
				21771	.648	124.6	178.8	-15.9	48	301
29.397	+25.9	198.7	+6.8	21758	.794	286.9	251.3	+17.5	26	171
				1539 05	.763	256.6	246.8	- 5.7	3	14
				21760	.687	286.2	241.8	+16.0	15	83
				21772	.680	233.0	233.5	-18.6	2	5
				21769	.484	282.7	227.4	+12.0	6	38
				21770	.483	295.1	225.9	+17.8	27	142
				21763	.262	291.1	213.1	+11.9	37	262
				21766	.106	338.7	200.9	+12.4	5	37
				21767	.157	33.3	193.6	+14.2	40	220
				1539 06	.242	84.8	184.7	+ 7.8	1	7
				21771	.502	138.6	178.6	-15.7	49	350
				1539 07	.549	117.6	169.3	- 8.8	3	16
30.417	+26.0	185.2	+6.7	21758	.907	286.1	250.9	+17.4	11	74
				21760	.850	284.3	243.8	+15.7	4	38
				21772	.807	241.1	233.2	-18.5	0	8
				21769	.689	278.9	228.9	+11.0	2	22
				21770	.659	289.6	225.8	+17.9	21	136
				21763	.489	281.0	214.4	+11.2	28	159
				21766	.266	290.5	199.9	+11.8	3	23
				21767	.194	313.4	193.5	+14.3	35	221
				21771	.398	163.1	178.3	-15.6	54	293
Oct. 1.424	+26.1	171.9	+6.7	21758	.966	287.4	248.1	+18.5	0	25
				21760	.954	283.7	245.4	+15.1	0	15
				21772	.914	246.2	233.7	-18.5	0	8
				21769	.823	279.0	227.7	+11.2	0	14
				21770	.813	286.5	226.5	+17.2	12	69
				21763	.670	279.7	214.2	+11.4	24	145
				21766	.485	283.3	200.7	+12.3	3	20
				21767	.386	291.1	193.7	+14.2	27	193
				21771	.395	195.2	178.1	-15.7	44	264
				21773	.959	73.8	97.5	+17.4	8	58
				21774	.994	72.1	86.8	+18.4	19	162
2.378	+26.1	159.3	+6.6	21770	.923	285.0	227.4	+16.3	11	52
				21763	.817	279.1	214.5	+11.2	29	138
				1539 08	.792	240.6	205.8	-18.3	2	22
				21767	.569	285.3	193.7	+14.1	22	206
				21771	.485	219.5	177.9	-15.6	53	282
				1539 09	.838	120.7	108.9	-21.1	0	4
				21773	.877	73.5	97.6	+17.6	16	111
				21774	.950	72.1	86.7	+19.0	21	151

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Oct. 3.310	+26.2	147.0	+6.6	21763	.918	279.6	214.2	+11.4	16	94
				21767	.728	283.0	193.8	+14.0	25	172
				21771	.614	233.3	177.7	-15.8	44	302
				21775	.343	346.5	152.1	+26.0	8	42
				21776	.551	73.1	114.2	+14.7	9	50
				21777	.714	88.7	101.4	+ 5.5	12	68
				21773	.777	73.2	96.1	+17.2	41	205
				21774	.858	72.5	87.6	+18.3	21	134
4.460	+26.2	131.9	+6.5	21763	.989	281.3	214.4	+12.1	0	37
				21767	.882	282.5	194.2	+14.0	33	171
				21771	.774	243.5	177.7	-15.7	51	283
				21775	.451	319.4	150.9	+26.1	30	171
				21776	.334	63.2	114.0	+14.9	9	59
				21777	.490	90.5	102.5	+ 5.5	30	170
				21773	.583	70.2	97.0	+16.7	36	227
				21774	.697	70.5	88.3	+18.2	19	122
5.313	+26.3	120.6	+6.5	21767	.955	282.3	194.2	+13.7	22	180
				21771	.873	247.7	177.5	-15.8	48	254
				21775	.579	305.6	151.9	+25.2	34	193
				21776	.198	41.2	112.9	+14.9	4	33
				21777	.296	94.1	103.5	+ 5.0	56	372
				21773	.427	63.7	97.1	+16.8	35	172
				21774	.561	67.6	87.7	+17.8	6	36
6.506	+26.3	104.9	+6.4	21771	.964	252.0	176.7	-15.4	58	329
				21775	.751	298.7	151.6	+25.6	22	93
				21776	.200	321.4	112.3	+15.3	10	41
				21777	.029	166.1	104.5	+ 4.8	91	508
				21773	.210	32.2	98.2	+16.5	11	112
				21774	.370	53.7	86.6	+18.7	7	86
7.393	+26.3	93.2	+6.3	21775	.850	296.5	150.6	+25.8	13	66
				21776	.356	297.4	112.3	+15.4	10	53
				21777	.219	262.8	105.7	+ 4.6	76	533
				1539 10	.303	205.9	100.9	- 9.5	1	8
				21773	.211	323.9	100.6	+16.1	7	34
				21778	.292	169.2	90.0	-10.3	2	12
				21774	.246	26.6	86.5	+18.9	25	172
				21779	.991	103.1	12.7	-12.0	65	324
8.538	+26.3	78.1	+6.3	21775	.979	292.5	157.6	+23.2	5	21
				21776	.597	286.4	114.3	+14.7	7	41
				21777	.504	268.2	108.3	+ 4.5	60	453
				21773	.394	298.0	99.3	+16.5	5	36
				21774	.275	329.0	86.7	+19.8	13	85
				21779	.941	106.1	10.3	-12.8	80	487
9.078	+26.3	71.0	+6.2	21776	.682	285.1	113.7	+14.8	8	36
				21777	.605	269.1	108.2	+ 4.4	62	408
				21773	.489	294.9	98.5	+17.4	5	34
				21774	.339	312.5	86.2	+19.2	12	75
				1539 11	.575	122.3	41.2	-12.4	2	15
				21779	.902	107.1	9.1	-12.5	62	341

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Oct. 10.402	+26.4	53.5	+6.2	21777	.845	271.5	111.2	+ 4.6	66	428
				21773	.739	287.8	100.8	+17.2	0	3
				21778	.646	245.4	90.0	-10.6	6	32
				21774	.580	293.2	87.5	+18.3	8	61
				1539 12	.568	226.3	78.9	-17.5	0	7
				21779	.742	113.8	9.5	-13.0	54	344
11.306	+26.3	41.5	+6.1	21777	.940	273.0	111.7	+ 4.9	78	424
				21773	.857	286.2	100.6	+17.0	0	12
				21778	.786	252.3	90.8	- 9.9	3	14
				21774	.738	288.7	88.6	+17.8	3	29
				21780	.638	229.4	72.3	-19.3	3	20
				1539 13	.108	189.7	42.6	0.0	2	12
				21781	.467	66.7	15.2	+16.1	2	10
				21779	.602	120.8	9.7	-12.7	40	291
				21782	.994	70.9	316.5	+19.6	36	258
12.360	+26.3	27.6	+6.0	21777	.994	274.6	111.4	+ 5.2	20	258
				1539 14	.972	251.4	101.4	-16.4	15	63
				21773	.951	285.0	100.4	+16.1	0	14
				21778	.901	253.6	89.5	-11.9	12	83
				21774	.855	284.7	86.6	+15.6	0	8
				21780	.787	239.7	73.5	-19.2	5	17
				1539 15	.489	215.5	44.9	-17.6	2	12
				21781	.268	44.8	16.3	+16.8	1	13
				21779	.439	136.8	9.8	-12.9	31	241
				21782	.941	71.2	316.7	+19.7	57	339
13.449	+26.3	13.3	+6.0	21774	.966	284.4	89.1	+15.4	0	17
				21778	.970	255.7	87.3	-12.3	5	45
				21780	.908	246.5	74.5	-18.4	0	8
				21779	.325	172.9	10.9	-12.8	29	152
				21783	.602	133.2	345.7	-19.0	1	8
				21782	.845	69.8	315.9	+20.2	94	629
				1539 16	.913	60.8	307.8	+29.0	0	5
				21784	.983	74.0	292.8	+16.8	6	24
14.331	+26.3	1.7	+5.9	21779	.352	203.7	10.0	-12.9	17	107
				1539 17	.400	165.8	355.8	-16.9	2	15
				21783	.528	143.2	342.2	-19.4	1	8
				21782	.719	67.0	316.9	+20.5	99	569
				21785	.914	87.6	295.5	+ 4.6	3	27
				21784	.934	74.1	292.0	+16.9	3	19
15.331	+26.2	348.5	+5.8	21779	.484	230.0	10.7	-12.7	13	76
				21783	.451	166.8	342.2	-20.2	10	61
				21782	.554	61.4	317.3	+20.3	98	621
				21785	.787	88.5	296.5	+ 4.8	4	25
				21784	.835	73.8	291.8	+16.6	2	12
16.428	+26.2	334.0	+5.7	21779	.668	244.1	11.8	-12.4	9	39
				21783	.453	201.2	343.9	-19.2	16	102
				21782	.377	44.9	317.5	+20.9	91	572
				1540 01	.717	62.7	290.2	+23.3	0	6

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Oct. 17.307	+26.2	322.4	+5.7	21779	.800	249.4	12.4	-12.7	7	18
				21783	.542	218.9	343.5	-19.6	19	97
				21782	.270	15.5	318.0	+20.6	88	538
				21786	.976	76.4	244.3	+14.5	101	736
18.240	+26.1	310.1	+5.6	21783	.663	231.3	343.3	-19.8	1	30
				21782	.296	333.5	318.2	+20.8	81	475
				21786	.928	75.8	241.6	+15.2	144	690
19.303	+26.0	296.1	+5.5	21787	.800	286.5	349.0	+16.4	5	43
				21783	.811	240.5	344.5	-19.9	7	47
				21782	.451	306.3	318.8	+20.5	60	406
				21788	.294	182.4	296.8	-11.5	2	11
				21786	.809	75.0	242.2	+15.3	142	990
				21789	.996	109.4	213.7	-18.6	22	224
20.510	+25.9	280.1	+5.4	21787	.938	285.7	350.3	+16.5	25	101
				21783	.937	247.6	346.1	-18.7	3	19
				21782	.671	294.9	320.5	+20.5	39	254
				21788	.421	225.7	298.0	-11.9	2	19
				21786	.627	71.6	242.2	+15.6	144	1099
				21789	.943	111.9	213.1	-18.5	42	190
21.382	+25.9	268.6	+5.3	21787	.979	284.9	347.6	+15.7	11	42
				21782	.802	292.2	321.0	+20.9	40	302
				21788	.576	241.8	299.7	-11.2	3	15
				21786	.469	66.6	242.2	+15.5	173	1171
				21789	.866	114.9	213.0	-18.4	33	228
				1540 02	.850	76.5	210.3	+14.2	0	8
				21790	.963	76.1	193.7	+14.8	8	53
22.377	+25.8	255.5	+5.2	21782	.905	290.6	320.3	+20.8	41	240
				21788	.697	246.4	296.2	-12.2	5	31
				21786	.292	50.1	242.1	+15.8	162	1124
				21789	.746	120.0	212.9	-18.0	43	254
				21790	.882	75.8	193.5	+15.0	9	61
				21791	.991	106.2	175.2	-15.2	82	451
23.503	+25.7	240.7	+5.1	21782	.981	289.9	320.5	+20.5	49	228
				21788	.869	253.9	298.8	-11.2	13	47
				21786	.187	349.5	242.7	+15.7	113	805
				1540 03	.249	85.7	226.3	+ 6.0	2	7
				21789	.579	131.2	213.5	-17.8	39	222
				21790	.738	74.5	193.5	+14.8	6	19
				21791	.927	109.1	175.5	-15.5	102	742
24.701	+25.6	224.9	+5.0	21788	.982	257.8	302.6	-10.9	7	72
				21792	.702	258.0	268.3	- 4.7	47	234
				21786	.357	300.9	243.3	+15.3	73	498
				21789	.433	153.1	213.1	-17.7	37	191
				21791	.808	113.3	174.7	-15.4	97	513
				21793	.941	64.1	154.7	+26.0	12	73

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Oct. 25.417	+25.5	215.4	+5.0	21792	.807	260.7	268.3	- 4.5	46	320
				21786	.484	293.3	242.8	+15.4	79	666
				21794	.217	300.6	226.3	+11.2	7	31
				21789	.387	173.8	212.9	-17.6	39	266
				1540 04	.426	58.5	193.2	+17.4	0	7
				21791	.717	117.6	174.3	-15.6	122	853
				21793	.885	62.9	154.2	+26.2	27	136
				21795	.931	119.8	152.3	-25.4	3	17
26.326	+25.4	203.4	+4.9	21792	.917	262.8	269.1	- 4.6	43	275
				21786	.662	287.2	244.2	+15.0	45	391
				21794	.437	286.2	228.7	+11.4	2	19
				21789	.416	201.0	212.4	-18.0	38	240
				21791	.586	124.8	173.6	-15.2	113	947
				21795	.824	125.8	155.8	-25.5	2	15
				21793	.789	60.2	153.9	+26.2	17	86
				21796	.992	85.8	120.7	+ 4.8	32	160
27.340	+25.2	190.1	+4.8	21792	.987	264.3	270.2	- 4.8	13	72
				21786	.825	284.5	245.5	+14.6	45	362
				21789	.527	222.7	212.1	-18.3	23	195
				21791	.441	140.8	173.4	-15.3	114	862
				21793	.661	53.2	153.7	+27.1	28	106
				21795	.766	133.6	151.2	-28.1	0	7
				21796	.938	86.5	120.3	+ 4.9	27	140
				21797	.980	106.4	113.5	-15.0	49	211
28.355	+25.1	176.7	+4.7	21786	.925	284.6	244.5	+15.2	34	250
				21789	.664	233.9	211.1	-19.1	49	258
				21791	.352	170.7	173.3	-15.6	137	948
				21793	.525	41.4	153.8	+27.4	18	105
				21796	.829	87.3	120.7	+ 4.8	18	124
				21797	.923	108.8	112.0	-15.3	56	269
29.371	+24.9	163.3	+4.6	21786	.990	284.4	245.9	+14.8	46	365
				21789	.800	241.8	211.4	-19.1	44	214
				21791	.378	204.6	172.7	-15.5	180	1153
				21793	.417	20.8	153.7	+27.4	17	85
				21796	.669	87.6	121.3	+ 5.0	13	98
				21797	.821	112.7	111.7	-15.6	46	261
30.422	+24.8	149.4	+4.5	21739	.914	247.7	212.1	-18.2	21	137
				1540 05	.748	287.2	197.1	+15.8	2	7
				21791	.504	229.4	172.7	-14.9	163	1213
				21793	.398	349.3	154.2	+27.4	10	34
				21796	.467	87.4	121.6	+ 5.2	7	82
				21797	.673	119.1	112.0	-15.5	43	226
31.406	+24.6	136.5	+4.4	21789	.979	250.4	212.3	-18.2	21	127
				1540 06	.893	282.7	199.7	+13.3	0	10
				21791	.661	241.5	173.3	-14.9	194	1268
				21793	.451	328.1	151.8	+26.6	7	46
				21796	.247	88.0	122.2	+ 4.7	19	95
				21797	.519	129.6	112.1	-15.2	27	201

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Nov. 1.399	+24.5	123.4	+4.3	21791	.799	248.2	173.2	-14.4	159	1401
				21793	.585	312.1	152.3	+26.8	0	14
				21796	.034	55.2	121.8	+ 5.4	18	97
				21797	.390	149.2	111.5	-15.3	45	287
				21798	.979	82.8	44.9	+ 7.9	47	243
2.378	+24.3	110.5	+4.2	21791	.899	251.1	171.9	-14.9	176	1336
				21796	.201	277.7	121.9	+ 5.6	13	90
				21797	.329	182.7	111.4	-14.9	66	376
				21798	.912	83.4	44.6	+ 7.7	37	283
3.465	+24.1	96.1	+4.1	21791	.977	254.1	172.1	-14.5	141	1011
				21796	.462	274.6	123.5	+ 5.7	9	43
				21797	.420	218.8	111.9	-15.1	75	443
				21798	.781	83.7	44.8	+ 7.5	35	269
				21799	.965	119.1	25.5	-26.6	5	54
4.412	+23.9	83.6	+4.0	21796	.649	274.6	124.1	+ 6.0	6	26
				21797	.564	235.5	112.3	-15.1	44	433
				21800	.300	165.5	79.2	-12.9	3	25
				21798	.629	82.9	44.8	+ 7.6	32	283
				21799	.910	121.5	23.9	-26.4	5	21
5.513	+23.7	69.1	+3.9	1540 07	.836	284.2	125.6	+14.0	4	24
				21796	.825	274.7	124.7	+ 6.1	8	25
				21797	.730	244.4	112.0	-15.5	62	412
				21800	.330	206.7	77.8	-13.3	15	63
				21798	.409	80.5	45.2	+ 7.4	31	236
				21801	.552	122.7	40.7	-13.9	5	29
				21799	.806	127.1	23.5	-26.3	4	17
				21802	.993	72.4	345.5	+17.9	9	44
6.298	+23.5	58.8	+3.8	21797	.835	248.4	112.3	-15.6	38	313
				21803	.845	229.8	107.1	-30.5	12	55
				21800	.438	228.2	78.3	-13.4	18	94
				21798	.240	74.1	45.4	+ 7.4	37	242
				21801	.420	134.1	40.8	-13.3	15	49
				21799	.720	133.1	23.0	-26.3	3	15
				21804	.841	126.5	9.2	-27.5	0	4
				21802	.958	71.9	345.4	+18.4	18	181
7.325	+23.3	45.2	+3.7	21797	.937	251.2	112.5	-16.1	43	240
				21803	.933	236.0	108.0	-29.8	0	12
				21800	.614	243.2	79.3	-13.0	21	91
				21798	.072	1.4	45.1	+ 7.8	50	256
				21801	.304	167.0	41.2	-13.5	7	38
				21799	.608	145.1	22.4	-26.4	0	7
				21804	.738	133.7	8.3	-27.6	5	22
				21802	.870	70.1	345.5	+19.1	34	173
8.318	+23.1	32.1	+3.5	21797	.985	253.1	110.4	-15.9	31	215
				21800	.772	249.9	80.0	-13.0	7	32
				21798	.246	289.5	45.6	+ 8.1	37	229
				21801	.347	212.7	43.2	-13.4	0	3
				1540 08	.200	214.0	38.6	- 6.0	0	6

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Nov. 8.318	Continued			21802	.730	67.5	346.9	+18.7	46	484
				21805	.777	116.9	345.5	-18.1	2	12
				21806	.967	70.5	316.8	+19.7	8	41
				21807	.976	104.0	316.1	-12.8	19	124
9.499	+22.8	16.6	+3.4	21800	.936	254.8	84.3	-12.9	6	25
				21808	.889	283.6	79.1	+13.6	5	43
				21798	.499	280.1	46.2	+ 8.0	40	247
				21809	.597	225.5	43.7	-21.6	11	61
				21802	.551	60.3	346.3	+18.8	84	765
				21805	.641	127.4	343.9	-20.0	3	14
				21807	.897	105.8	314.7	-12.5	20	113
				21806	.891	70.2	314.2	+19.1	4	38
				21810	.994	81.1	292.8	+ 9.3	0	38
10.301	+22.6	6.0	+3.3	21800	.986	257.4	85.0	-11.8	0	18
				21808	.966	282.7	81.2	+13.1	37	162
				21811	.771	312.6	48.9	+33.8	2	13
				21798	.649	278.0	46.3	+ 7.7	47	237
				21809	.702	233.6	43.3	-21.9	27	138
				21802	.421	49.4	346.3	+19.0	84	677
				21806	.778	67.1	316.6	+19.8	7	27
				21807	.793	108.7	315.9	-12.5	16	88
				21812	.899	104.0	303.5	-11.0	0	14
				21810	.960	81.4	292.1	+ 9.1	23	142
11.293	+22.4	352.9	+3.2	21811	.871	306.4	49.3	+32.9	4	26
				21798	.802	277.1	46.1	+ 7.6	56	260
				21809	.837	239.5	44.4	-23.1	11	98
				21802	.303	23.7	345.5	+19.2	64	694
				21807	.639	114.2	316.4	-12.6	14	90
				21806	.644	61.6	315.9	+20.3	8	33
				21812	.791	107.7	302.8	-11.8	3	27
				21810	.872	81.2	292.3	+ 9.3	19	139
12.449	+22.1	337.7	+3.1	21798	.935	277.2	46.9	+ 7.8	30	183
				21809	.939	244.8	44.2	-22.3	3	19
				21802	.308	335.5	345.4	+19.3	86	671
				21807	.444	127.1	316.5	-12.6	5	22
				21806	.461	49.4	315.9	+20.2	2	10
				21812	.629	112.7	301.5	-11.5	3	20
				21810	.722	80.4	291.7	+ 9.0	16	96
13.552	+21.8	323.1	+3.0	21798	.996	277.6	48.0	+ 7.8	22	255
				21802	.450	310.1	344.5	+19.5	75	686
				21807	.293	156.0	316.1	-12.5	4	21
				21806	.330	22.2	315.5	+20.6	0	4
				21812	.459	126.8	301.1	-13.1	1	6
				21810	.524	75.8	292.2	+ 9.9	15	92
14.457	+21.6	311.2	+2.9	21802	.601	299.4	344.8	+19.5	106	861
				21807	.280	197.6	316.2	-12.5	5	26
				21806	.316	349.5	314.7	+20.8	2	16
				21812	.305	151.3	302.6	-12.6	1	16
				21810	.343	70.3	292.2	+ 9.3	13	57

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Nov. 14.457	Continued			21813	.799	81.3	258.4	+ 8.6	2	22
				21814	.943	74.4	240.8	+15.6	16	88
15.418	+21.3	298.5	+2.7	21802	.744	294.0	344.5	+19.5	65	773
				21807	.393	229.1	316.1	-12.3	7	24
				1541 01	.419	358.0	299.5	+27.4	1	5
				21810	.163	46.0	291.8	+ 9.2	11	75
				21813	.643	80.8	258.8	+ 8.0	9	54
				21814	.854	75.5	240.4	+13.7	25	107
16.274	+21.1	287.3	+2.6	21802	.851	291.1	344.3	+19.3	68	717
				21807	.535	242.1	316.1	-12.1	5	22
				21810	.167	315.8	294.0	+ 9.4	3	18
				21813	.474	77.9	259.4	+ 8.0	12	53
				21814	.732	73.9	241.1	+13.5	20	144
17.294	+20.8	273.8	+2.5	21802	.946	289.6	344.4	+19.4	55	736
				21807	.702	249.6	316.0	-12.2	6	18
				21810	.374	289.6	294.6	+ 9.5	2	14
				21815	.404	313.2	291.8	+18.4	3	18
				21813	.234	68.5	261.2	+ 7.4	6	35
				21814	.543	71.5	242.2	+12.0	35	361
18.297	+20.5	260.6	+2.4	21802	.991	289.5	342.9	+19.7	53	722
				21807	.834	251.3	314.9	-14.1	4	21
				21810	.554	285.1	293.4	+10.3	1	8
				21815	.565	299.3	291.7	+18.0	8	60
				21813	.099	340.5	262.5	+ 7.7	4	18
				21814	.355	60.2	242.3	+12.4	49	451
				1541 02	.854	102.5	203.2	- 9.4	0	4
19.308	+20.2	247.3	+2.3	21815	.728	292.5	292.0	+17.8	20	221
				21813	.290	290.6	263.1	+ 8.0	3	22
				21814	.197	29.2	241.7	+12.1	108	525
				21816	.976	105.0	171.0	-14.1	65	561
20.487	+19.8	231.7	+2.1	21815	.883	289.6	292.6	+18.2	18	173
				1541 03	.862	238.9	286.2	-25.2	4	34
				21813	.530	282.1	263.1	+ 8.2	1	13
				1541 04	.495	292.9	259.5	+13.0	0	9
				21814	.241	315.9	241.6	+12.0	66	465
				21817	.862	115.2	175.7	-20.3	0	19
				21816	.900	107.8	169.5	-14.9	100	658
21.464	+19.5	218.8	+2.0	21815	.959	288.3	292.0	+18.1	35	137
				21814	.424	295.1	241.9	+12.2	56	341
				21817	.730	120.0	176.8	-19.9	3	21
				21816	.788	110.7	169.3	-14.8	83	486
22.372	+19.2	206.9	+1.9	21814	.592	287.8	241.9	+12.0	52	318
				21817	.648	130.6	174.6	-23.3	1	8
				21816	.662	115.2	168.8	-14.8	78	429
				1541 05	.872	114.1	149.2	-19.8	2	9

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Nov. 23.356	+18.9	193.9	+1.8	21814	.751	283.8	241.8	+11.5	22	178
				21816	.499	124.3	168.8	-14.7	53	458
				21818	.811	100.1	140.6	- 7.1	7	61
24.501	+18.5	178.8	+1.6	21814	.901	282.4	242.6	+11.9	15	65
				21816	.326	147.8	168.5	-14.3	60	374
				21818	.607	105.4	142.7	- 7.9	33	164
25.292	+18.2	168.4	+1.5	21814	.963	281.8	242.5	+11.8	0	11
				1541 06	.530	295.2	197.9	+14.3	1	11
				21817	.416	193.3	174.3	-22.2	21	95
				21816	.267	179.9	168.3	-13.9	41	326
				21818	.443	112.1	144.0	- 8.1	56	359
26.299	+17.8	155.1	+1.4	21819	.943	247.6	223.5	-20.6	13	81
				21817	.506	219.1	175.1	-21.7	19	141
				21816	.346	220.4	168.4	-13.9	39	278
				21818	.260	129.0	143.4	- 8.0	97	717
27.321	+17.5	141.7	+1.3	21819	.995	247.3	224.7	-22.4	20	111
				21817	.644	234.6	175.7	-20.8	14	78
				21816	.504	239.6	168.1	-13.6	44	257
				21818	.167	186.1	142.7	- 8.2	93	880
				21820	.818	103.6	87.9	-10.3	11	44
28.510	+17.0	126.0	+1.1	21817	.801	242.3	175.3	-21.1	2	16
				21816	.697	249.7	167.9	-13.1	44	221
				21818	.332	241.2	143.0	- 8.1	81	615
				21820	.615	105.9	89.3	- 8.7	4	17
29.301	+16.7	115.5	+1.0	21816	.801	252.5	167.0	-13.3	35	234
				21818	.491	251.1	143.4	- 8.2	82	656
				21820	.466	110.7	89.5	- 8.5	1	7
30.301	+16.4	102.4	+0.9	21816	.911	255.0	166.8	-13.2	25	191
				21821	.757	241.1	147.3	-20.7	2	10
				21818	.677	256.7	143.9	- 8.3	66	452
				21822	.912	104.8	37.8	-13.1	0	18
				21823	.958	76.8	29.5	+12.9	13	97
Dec. 1.317	+16.0	89.0	+0.8	21816	.978	256.5	166.3	-13.0	30	169
				21821	.860	245.9	145.5	-20.1	12	67
				21818	.822	259.4	143.5	- 8.3	54	398
				1541 07	.394	229.6	106.9	-14.0	1	5
				21820	.224	160.9	84.7	-11.4	1	9
				21822	.795	107.3	38.0	-13.2	17	107
				21823	.873	75.8	29.0	+12.7	56	280
2.450	+15.5	74.0	+0.6	21821	.959	249.0	146.0	-19.9	0	23
				21818	.942	261.2	143.9	- 8.1	45	336
				21824	.347	113.3	55.4	- 7.3	12	39
				21822	.611	112.0	38.7	-12.7	58	413
				21823	.727	73.4	28.7	+12.4	93	743
				21825	.947	116.3	5.4	-24.5	17	73

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Dec. 3.322	+15.2	62.5	+0.5	21818	.992	262.3	144.8	- 7.5	40	237
				21820	.528	243.4	91.4	-13.2	2	15
				21824	.195	136.5	54.8	- 7.6	3	19
				21822	.452	119.2	38.8	-12.2	60	427
				21823	.583	68.9	28.9	+12.5	86	717
				21825	.879	118.0	4.5	-24.0	18	66
				21826	.988	70.6	342.2	+19.2	26	260
4.380	+14.7	48.6	+0.4	1541 08	.849	276.2	106.4	+ 5.5	4	16
				1541 09	.193	258.4	59.5	- 1.8	3	22
				21822	.271	141.9	38.8	-11.9	65	468
				21823	.395	57.9	28.7	+12.4	102	1123
				21827	.558	112.7	17.0	-12.0	5	33
				21825	.760	123.0	4.5	-24.1	13	61
				21826	.932	69.2	341.3	+19.4	43	240
5.288	+14.4	36.6	+0.3	1541 10	.386	280.4	58.9	+ 4.2	1	8
				21822	.220	191.1	39.1	-12.1	54	350
				21823	.248	30.9	29.2	+12.5	142	1031
				21827	.385	125.3	17.9	-12.5	16	87
				21825	.640	130.5	4.5	-24.2	3	14
				21826	.842	67.0	341.6	+19.3	35	210
6.522	+13.9	20.4	+0.1	21822	.376	234.6	38.6	-12.4	40	322
				21823	.261	324.1	29.4	+12.3	153	1141
				21827	.227	169.2	17.9	-12.7	9	38
				21825	.492	148.3	4.0	-24.6	1	9
				21826	.677	60.8	341.8	+19.3	23	196
7.513	+13.5	7.3	0.0	21822	.557	246.7	38.8	-12.7	35	287
				21823	.435	299.7	30.0	+12.4	143	1165
				21827	.288	221.0	18.5	-12.5	5	28
				1541 11	.266	193.1	10.9	-15.0	2	6
				21828	.324	26.1	358.8	+16.8	1	9
				21826	.527	50.7	341.8	+19.4	32	204
				21829	.976	122.7	292.4	-31.8	9	47
8.274	+13.1	357.3	-0.1	21822	.682	251.1	38.6	-12.8	37	271
				21823	.578	293.1	30.2	+12.9	181	1458
				21827	.410	237.6	18.0	-12.8	2	15
				21826	.415	37.3	341.9	+19.1	44	221
				21829	.935	123.7	292.1	-31.2	29	157
				21830	.934	79.1	288.8	+10.2	3	20
9.313	+12.7	343.6	-0.3	21822	.826	254.4	38.2	-12.9	36	163
				21823	.753	288.3	30.8	+13.5	162	1619
				21828	.404	317.9	0.0	+17.1	1	9
				21826	.331	3.4	342.4	+18.9	33	222
				21829	.862	127.8	290.4	-32.0	41	281
				21830	.819	78.7	289.4	+ 9.1	13	80
10.300	+12.3	330.6	-0.4	21822	.938	256.8	39.6	-12.5	25	251
				21823	.884	286.0	31.5	+13.9	163	1814
				21831	.632	244.1	6.8	-16.2	1	9
				21826	.387	329.1	342.7	+18.9	27	181

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Dec. 10.300	Continued			21830	.642	74.5	291.9	+ 9.5	14	46
				21829	.756	133.5	290.7	-31.6	46	474
11.319	+11.8	317.2	-0.5	21822	.995	258.2	41.1	-11.8	0	59
				21823	.968	284.6	31.7	+14.0	226	1792
				21831	.777	243.1	4.9	-20.9	7	53
				21828	.736	294.3	1.6	+17.2	2	12
				21826	.527	309.2	342.7	+18.9	17	123
				21830	.449	67.8	292.4	+ 9.3	1	7
				21829	.649	144.3	290.7	-32.1	69	716
				1542 01	.704	58.8	277.2	+20.9	0	7
12.462	+11.3	302.1	-0.7	21823	.998	287.0	27.8	+16.9	109	797
				21831	.915	248.6	6.8	-19.8	5	32
				21828	.851	292.2	358.1	+18.4	10	66
				21826	.697	298.1	342.4	+18.6	17	114
				21830	.235	44.3	292.6	+ 9.0	0	2
				21829	.556	160.8	289.7	-32.2	111	807
				21832	.967	112.9	228.2	-22.2	17	125
13.094	+11.0	293.8	-0.7	21831	.967	249.2	8.1	-20.3	0	8
				21828	.927	289.7	0.1	+17.9	15	65
				21826	.790	294.4	343.0	+18.6	18	67
				21829	.530	173.2	289.5	-32.3	104	610
				21832	.919	113.5	228.9	-21.7	15	82
14.299	+10.5	277.9	-0.9	21828	.965	287.3	351.4	+16.4	0	23
				21826	.912	289.9	341.8	+17.7	8	50
				21829	.551	197.1	288.9	-32.5	118	824
				21832	.798	117.7	228.3	-22.3	32	248
15.301	+10.0	264.7	-1.0	21833	.624	309.6	295.9	+22.5	11	67
				21829	.634	213.6	289.3	-32.6	124	752
				21832	.658	123.6	228.6	-22.1	29	262
				21834	.811	86.8	210.8	+ 2.0	5	32
16.435	+ 9.5	249.8	-1.2	21833	.789	298.6	297.7	+21.4	19	123
				21829	.755	226.3	289.8	-32.2	102	623
				21832	.498	137.1	228.4	-22.4	16	136
				21834	.621	85.0	211.7	+ 2.2	0	14
				1542 02	.890	107.3	188.0	-15.8	0	23
17.331	+ 9.1	238.0	-1.3	21833	.904	294.4	299.8	+21.3	40	198
				21829	.867	232.7	292.5	-32.3	59	417
				21832	.397	154.2	227.3	-22.1	5	28
18.288	+ 8.7	225.4	-1.4	21833	.975	293.0	300.6	+22.0	96	564
				21829	.938	235.7	291.9	-32.4	59	412
				21832	.361	191.0	229.6	-22.0	10	54
				21835	.535	9.1	219.8	+30.4	16	64
				21836	.396	140.7	210.0	-19.1	24	104
				21837	.976	95.3	148.0	- 5.5	28	156

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Dec. 19.478	+ 8.1	209.7	-1.5	21829	.991	237.9	291.1	-32.0	77	567
				21832	.482	222.7	230.2	-22.1	14	121
				21838	.281	233.6	222.9	-11.0	21	132
				21835	.550	345.4	218.9	+30.5	13	93
				21836	.306	179.0	209.4	-19.3	28	263
				21837	.884	95.6	147.7	- 5.7	28	179
20.285	+ 7.7	199.1	-1.6	1542 03	.900	261.3	262.9	- 8.6	0	9
				21832	.604	234.0	230.7	-22.1	18	86
				21838	.434	247.6	223.1	-11.0	21	147
				21835	.607	330.4	219.3	+30.2	8	47
				21836	.342	208.2	208.9	-19.1	38	246
				21837	.783	95.7	147.8	- 5.4	23	169
				1542 04	.918	59.2	136.8	+27.3	0	5
				21839	.912	72.9	134.9	+14.8	0	5
21.475	+ 7.2	183.4	-1.8	1542 05	.980	286.8	260.7	+16.1	5	43
				21832	.769	241.8	230.4	-22.5	14	68
				21838	.662	256.0	224.0	-10.6	16	88
				21836	.521	234.7	210.0	-19.0	34	233
				21837	.589	97.0	147.6	- 5.6	27	152
				21839	.785	70.7	133.8	+13.8	16	47
				21840	.947	113.8	113.3	-23.1	13	40
				21841	.981	71.5	105.9	+17.7	110	559
22.513	+ 6.7	169.7	-1.9	21832	.893	245.9	231.2	-22.2	16	143
				21838	.816	258.5	223.9	-10.5	7	33
				21836	.690	244.1	210.6	-18.9	33	283
				1542 06	.421	212.3	183.8	-22.6	0	7
				21837	.374	99.8	148.1	- 5.4	27	187
				21839	.626	65.1	134.1	+13.7	18	124
				21840	.856	116.2	113.2	-23.2	17	71
				21841	.943	69.8	101.2	+18.2	134	1225
				21842	.985	117.4	90.1	-27.3	74	383
23.319	+ 6.3	159.1	-2.0	21832	.934	247.8	227.1	-21.4	3	23
				21838	.917	259.2	225.3	-10.7	3	21
				21836	.803	247.8	210.7	-18.8	28	195
				21843	.303	235.3	173.8	-11.9	2	15
				21837	.205	106.3	147.8	- 5.3	22	104
				21839	.490	55.3	134.7	+14.3	13	96
				21844	.663	98.5	117.9	- 7.1	1	11
				21840	.765	119.0	112.7	-23.1	6	31
				21841	.888	68.0	99.1	+18.4	188	1229
				21842	.943	118.3	90.3	-27.3	37	204
24.435	+ 5.8	144.4	-2.2	21836	.923	250.6	210.9	-18.7	22	128
				21843	.512	249.3	173.6	-12.3	42	227
				21837	.094	227.6	148.4	- 5.8	22	106
				21839	.325	29.4	135.0	+14.3	6	31
				21844	.449	102.7	118.3	- 7.6	1	12
				21840	.607	128.2	113.1	-23.8	3	19
				21841	.731	62.9	101.4	+17.8	119	891
				21842	.840	121.6	90.9	-27.4	26	187

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968	°	°	°			°	°	°		
Dec. 25.333	+ 5.3	132.6	-2.3	21836	.985	251.6	212.4	-18.5	12	47
				21843	.672	254.5	173.8	-12.0	72	420
				21837	.276	258.5	148.3	- 5.3	18	91
				21839	.295	351.5	135.1	+14.6	4	22
				21844	.266	109.4	118.0	- 7.3	4	15
				21845	.549	131.4	106.1	-23.2	7	25
				21841	.592	54.9	102.1	+17.9	106	809
				21842	.743	125.8	90.0	-27.4	38	259
26.572	+ 4.7	116.2	-2.4	21843	.854	258.0	174.5	-11.5	126	666
				21837	.532	264.1	148.2	- 5.2	23	116
				1542 07	.323	321.5	128.1	+12.2	0	9
				21846	.297	220.0	127.6	-15.5	2	18
				21844	.132	225.1	121.7	- 7.8	3	20
				21840	.377	165.8	110.5	-23.7	1	19
				21841	.405	34.1	102.6	+17.1	133	959
				21842	.595	136.6	88.9	-27.6	35	264
				21847	.985	74.0	37.4	+15.3	37	279
				21848	.984	79.0	37.3	+10.4	30	180
27.509	+ 4.3	103.9	-2.5	21843	.945	258.5	174.6	-11.7	55	384
				21837	.703	265.0	148.4	- 5.3	15	100
				21846	.485	240.5	129.9	-16.0	2	12
				21844	.323	255.6	122.2	- 7.0	1	16
				21845	.347	184.5	105.6	-22.7	8	48
				21841	.346	4.3	102.4	+17.6	97	1157
				21842	.477	150.4	88.7	-26.8	35	332
				21847	.930	72.1	37.3	+15.6	23	204
				21848	.927	77.6	37.1	+10.5	23	148
28.477	+ 3.8	91.2	-2.6	21843	.984	259.8	171.1	-10.5	12	48
				21837	.837	265.6	147.8	- 5.1	23	94
				21839	.766	291.7	138.3	+14.6	5	45
				21846	.647	249.2	129.8	-15.3	8	53
				21845	.399	213.6	104.9	-21.9	4	30
				21841	.397	332.2	102.3	+17.9	91	1031
				21842	.412	177.3	89.9	-26.8	29	248
				1542 08	.816	109.4	37.6	-17.3	0	6
				21848	.827	74.5	37.0	+11.2	27	152
				21847	.840	69.2	36.7	+15.8	16	112
				21849	.945	106.8	20.6	-16.7	13	71
29.310	+ 3.4	80.2	-2.7	21837	.926	265.4	148.0	- 5.3	5	44
				21839	.878	288.6	139.4	+14.8	0	35
				21841	.513	311.5	103.8	+17.3	102	899
				21842	.437	198.1	88.9	-27.2	27	199
				21847	.729	65.2	36.9	+15.8	18	112
				21848	.714	71.2	36.8	+11.3	25	127
				21850	.800	94.7	27.2	- 5.4	0	7
				21849	.874	106.3	19.9	-15.5	13	110
				21851	.969	71.4	6.3	+17.2	8	42
30.454	+ 2.9	65.1	-2.9	21841	.698	297.9	105.0	+16.8	159	1001
				21842	.549	221.4	89.0	-26.9	21	192
				21852	.493	193.5	72.8	-31.4	1	17

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1968/9	°	°	°			°	°	°		
Dec. 30.454	Continued			21848	.528	63.0	36.6	+11.3	23	148
				21847	.561	56.1	36.3	+15.6	21	134
				21850	.616	97.3	27.3	- 6.8	3	16
				21849	.749	108.6	17.7	-15.7	13	103
				21851	.882	68.7	6.0	+17.1	14	62
31.402	+ 2.4	52.6	-3.0	21845	.824	244.2	106.0	-22.8	10	34
				21841	.829	292.8	105.4	+16.9	147	1034
				21842	.678	232.4	89.5	-26.8	21	154
				21852	.578	214.8	75.2	-31.0	1	21
				21848	.367	48.4	36.4	+11.2	22	122
				21847	.425	40.3	36.1	+15.9	22	147
				21850	.433	103.4	27.5	- 8.5	1	11
				21849	.597	113.1	18.0	-15.9	11	72
				21851	.775	64.7	5.6	+17.2	14	72
Jan. 1.519	+ 1.8	37.9	-3.1	21841	.940	289.3	105.8	+16.9	102	773
				21842	.814	239.0	89.1	-26.7	17	121
				21848	.249	6.4	36.3	+11.2	23	120
				21847	.333	6.0	35.9	+16.1	17	105
				21849	.393	124.0	18.2	-15.6	9	51
				21851	.616	55.8	5.7	+17.6	12	59
2.483	+ 1.4	25.2	-3.2	21841	.990	288.4	105.2	+17.7	145	741
				21842	.909	241.8	88.9	-26.8	21	100
				21848	.312	322.6	36.3	+11.1	17	128
				21847	.381	332.4	35.8	+16.4	9	93
				21849	.262	150.0	17.4	-16.3	1	26
				21851	.475	41.4	6.0	+17.7	10	51
				21853	.990	66.5	305.8	+22.7	104	712
3.288	+ 1.0	14.6	-3.3	21842	.962	242.4	88.2	-27.4	15	83
				21848	.438	304.4	36.1	+11.2	16	126
				21847	.484	314.7	35.6	+16.7	20	97
				21849	.240	192.2	17.6	-16.9	2	18
				21851	.400	23.5	5.0	+18.2	6	34
				21853	.962	64.3	303.8	+23.6	128	939
4.288	+ 0.5	1.4	-3.4	21848	.611	292.9	36.3	+10.9	14	92
				21847	.633	301.9	35.4	+16.6	11	64
				21851	.374	348.9	5.8	+18.0	4	18
				21853	.897	61.1	302.4	+23.9	143	1084
				21854	.935	84.5	292.9	+ 3.9	9	35
				21855	.977	122.2	284.0	-32.2	29	328
				21856	.987	98.3	280.7	- 8.7	50	280
				21857	.996	68.5	278.6	+21.0	44	329
5.300	0.0	348.1	-3.6	21848	.769	287.0	36.4	+10.6	23	143
				21847	.778	295.0	35.4	+16.7	7	59
				21851	.469	321.2	6.1	+18.0	2	12
				21853	.782	55.7	303.4	+23.5	109	782
				21854	.814	82.0	294.4	+ 4.4	36	396
				21855	.914	123.6	284.6	-31.9	35	289
				21856	.918	98.4	281.4	- 9.1	68	380
				21857	.959	66.8	277.5	+21.0	62	377

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Jan. 6.392	- 0.5	333.7	-3.7	21848	.900	284.1	36.2	+11.0	14	90
				21847	.901	290.9	35.1	+17.0	12	57
				21851	.620	305.5	5.7	+17.9	1	21
				21853	.651	46.1	303.1	+23.6	112	838
				21854	.642	78.5	294.8	+ 4.5	132	727
				21855	.819	126.9	283.5	-31.8	36	275
				21856	.790	98.5	281.7	- 9.0	69	352
				21857	.879	63.4	276.5	+21.2	43	426
				21858	.968	102.7	258.0	-13.2	37	156
7.458	- 1.0	319.7	-3.8	21848	.976	282.4	35.8	+11.2	19	88
				21847	.977	288.2	35.3	+16.9	5	30
				21853	.528	31.2	302.5	+23.1	85	565
				21854	.427	71.6	295.8	+ 4.2	138	731
				21855	.708	133.7	282.6	-32.2	21	197
				21856	.616	99.6	282.0	- 8.9	49	295
				21857	.762	58.1	276.0	+20.9	50	344
				1543 01	.824	131.8	270.7	-35.7	2	11
				21858	.894	103.2	256.5	-13.4	88	480
8.427	- 1.5	306.9	-3.9	21853	.460	8.8	302.6	+23.0	63	461
				21854	.243	53.9	295.6	+ 4.4	103	646
				21855	.606	143.8	281.9	-32.7	15	103
				21856	.432	102.5	281.8	- 8.9	41	287
				21857	.636	49.7	275.8	+20.9	59	317
				21858	.783	104.5	255.8	-13.7	100	589
9.483	- 2.0	293.0	-4.0	21853	.485	342.8	302.0	+23.5	81	403
				21854	.156	344.3	295.5	+ 4.6	89	533
				21856	.229	112.0	280.7	- 8.8	37	263
				21855	.532	157.6	279.0	-33.3	13	82
				21857	.503	34.0	275.6	+20.7	60	351
				21858	.616	107.7	256.0	-14.0	143	796
10.448	- 2.5	280.3	-4.1	21853	.568	323.8	301.6	+23.3	83	479
				21854	.308	299.0	295.9	+ 4.6	75	521
				21856	.078	189.0	281.0	- 8.5	46	229
				21855	.478	180.1	280.4	-32.6	16	92
				21857	.429	10.7	275.5	+20.7	66	349
				21858	.446	114.2	255.6	-14.3	176	1094
11.521	- 3.0	266.2	-4.2	21853	.694	310.1	301.3	+23.0	62	339
				21854	.514	286.0	295.8	+ 4.4	56	366
				21856	.270	252.8	281.3	- 8.7	41	219
				21855	.517	200.3	278.5	-33.0	13	52
				21857	.444	341.0	275.1	+20.5	55	346
				21859	.309	24.6	258.7	+12.1	4	11
				21858	.257	133.6	255.2	-14.3	148	1052
12.103	- 3.3	258.5	-4.3	21853	.765	306.8	300.5	+24.0	78	296
				21854	.625	283.5	296.0	+ 5.0	58	276
				1543 02	.432	242.5	281.9	-15.4	2	10
				21856	.396	258.6	281.6	- 8.4	37	170
				21855	.560	212.3	279.1	-32.2	8	32
				21857	.498	328.5	274.6	+20.9	68	286

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Jan. 12.103	Continued			21859	.283	357.5	259.3	+12.1	1	5
				21858	.184	163.9	255.5	-14.4	167	843
				21860	.989	102.6	176.5	-13.1	26	130
13.472	- 3.9	240.5	-4.4	1543 03	.949	282.6	310.6	+10.5	3	17
				21853	.907	298.2	300.7	+23.2	61	264
				21854	.838	278.4	296.6	+ 4.5	25	211
				21856	.652	262.2	281.1	- 8.4	41	205
				21855	.696	225.9	276.7	-32.5	1	16
				21857	.671	308.1	274.7	+20.7	52	285
				21859	.380	316.1	256.0	+11.6	0	2
				21858	.295	234.7	254.8	-14.1	107	692
				21860	.903	102.1	175.8	-12.8	20	125
14.456	- 4.4	227.6	-4.5	21853	.969	295.6	299.5	+23.4	60	282
				21854	.939	276.1	296.7	+ 4.1	30	171
				21856	.808	262.6	281.5	- 8.7	29	166
				21857	.795	300.5	274.4	+20.6	32	280
				21859	.562	297.7	257.9	+11.2	5	42
				21858	.486	247.6	255.1	-14.7	103	830
				21861	.260	342.3	232.1	+ 9.8	2	8
				1543 04	.605	71.0	192.4	+ 7.6	1	18
				21860	.786	102.9	175.9	-12.9	19	132
				21862	.973	74.8	152.8	+13.6	50	284
15.292	- 4.8	216.5	-4.6	21853	.998	294.2	300.2	+23.7	15	122
				21854	.975	276.8	293.0	+ 5.5	9	60
				21856	.907	262.3	281.7	- 8.9	20	204
				21857	.884	296.2	274.2	+20.5	38	244
				21859	.720	291.5	259.5	+11.9	30	142
				21858	.635	251.9	255.0	-14.9	113	748
				21861	.436	306.2	237.4	+10.5	6	39
				21860	.656	104.6	176.1	-13.0	17	127
				21862	.922	72.8	151.6	+13.9	43	243
				21863	.988	74.0	137.4	+15.0	19	71
				21864	.992	107.1	133.1	-17.5	0	32
16.456	- 5.3	201.2	-4.7	21856	.983	262.5	281.0	- 8.2	35	226
				21857	.968	292.9	273.4	+20.7	34	211
				21859	.875	285.9	260.2	+11.4	31	242
				21858	.808	255.5	254.9	-14.5	85	618
				21860	.445	110.6	176.0	-13.3	23	128
				21862	.798	68.6	151.5	+13.8	57	274
				21863	.907	71.4	138.8	+14.6	33	307
				21864	.919	105.8	134.2	-16.4	14	63
				21865	.973	64.6	128.3	+23.3	0	18
17.283	- 5.7	190.3	-4.8	21859	.950	283.1	260.5	+10.8	39	289
				21858	.907	256.4	255.6	-14.4	75	467
				21860	.288	123.5	176.1	-13.8	17	89
				21862	.682	63.7	151.4	+13.8	43	225
				21863	.817	68.6	138.8	+14.3	33	283
				21864	.836	107.0	133.9	-16.8	23	134
				21865	.910	61.2	130.1	+23.7	28	177

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Jan. 18.420	- 6.2	175.3	-4.9	21858	.985	255.5	256.2	-15.1	37	186
				21860	.159	186.6	176.4	-13.9	13	91
				21862	.511	51.6	151.0	+14.0	25	273
				21863	.665	61.5	138.4	+14.5	26	185
				21864	.678	109.6	133.7	-16.8	12	52
				21865	.795	55.0	130.2	+23.7	24	185
				21866	.957	69.5	105.1	+17.9	44	266
19.337	- 6.7	163.3	-5.0	21860	.274	233.9	176.4	-14.1	20	102
				21862	.383	32.2	151.2	+13.9	50	233
				21863	.512	50.2	139.4	+14.5	22	158
				21864	.493	116.6	135.9	-17.1	6	22
				21865	.696	47.4	129.3	+23.9	38	153
				21866	.894	67.6	103.5	+17.4	38	211
20.147	- 7.0	152.6	-5.1	21860	.424	247.6	176.3	-13.9	16	83
				21862	.331	3.6	151.4	+14.1	34	205
				21863	.400	34.4	139.2	+14.3	15	95
				21865	.599	36.7	129.6	+23.9	13	96
				21866	.806	63.3	103.7	+17.9	32	159
21.485	- 7.6	135.0	-5.2	21860	.668	254.5	176.4	-14.1	9	59
				21862	.425	318.9	151.6	+13.6	38	225
				21863	.330	342.6	140.8	+13.1	16	112
				21864	.200	195.7	138.2	-16.2	2	15
				21865	.504	13.5	127.6	+24.1	15	118
				21866	.631	52.9	103.2	+17.9	24	132
				21867	.824	73.3	81.8	+10.6	4	15
22.298	- 8.0	124.3	-5.3	21860	.790	256.1	176.3	-14.2	14	82
				21862	.550	305.2	151.7	+13.7	33	218
				21863	.421	317.2	141.3	+12.9	21	142
				1543 05	.322	344.2	129.4	+12.7	0	4
				21865	.505	358.0	125.4	+24.9	7	46
				21866	.514	40.8	103.7	+17.9	22	169
				21867	.687	67.2	84.2	+11.4	6	83
23.293	- 8.4	111.2	-5.4	21860	.904	256.6	176.1	-14.3	10	58
				1543 06	.811	291.6	162.0	+14.0	0	14
				21862	.702	295.6	151.6	+13.6	32	216
				21863	.595	298.5	143.4	+11.9	20	122
				21865	.555	336.1	125.5	+25.2	5	28
				21866	.422	19.6	102.7	+18.0	18	160
				21867	.514	57.6	85.0	+11.1	12	73
24.403	- 8.9	96.6	-5.5	21860	.980	256.5	176.0	-14.3	5	21
				21862	.851	290.1	151.8	+13.9	32	151
				21863	.747	293.0	141.3	+13.1	14	76
				21866	.416	344.9	103.1	+18.2	14	74
				21867	.351	36.9	84.2	+10.9	17	106
25.500	- 9.4	82.1	-5.5	21862	.950	286.8	151.5	+14.0	17	113
				21863	.869	288.4	139.8	+13.0	16	83
				1543 07	.856	301.1	134.6	+22.9	2	39
				21866	.521	319.9	102.7	+18.2	11	63

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Jan. 25.500	Continued			21867	.282	352.0	84.4	+10.6	90	419
				21868	.512	52.4	57.6	+13.1	3	8
				21869	.734	60.2	40.5	+17.2	19	48
26.332	- 9.8	71.2	-5.6	21862	.989	284.9	150.6	+13.7	7	41
				21863	.950	285.2	140.8	+12.5	20	113
				21866	.630	307.3	102.8	+17.6	13	62
				21867	.354	319.9	84.5	+10.2	109	625
				21868	.389	32.3	58.9	+13.6	1	5
				21869	.616	52.4	40.6	+17.2	4	21
27.442	-10.3	56.6	-5.7	21863	.979	286.0	132.6	+14.3	8	73
				21866	.781	298.3	102.6	+17.7	7	34
				21867	.540	298.5	85.2	+ 9.9	107	773
				21868	.350	348.5	60.7	+14.3	0	1
				21869	.488	36.9	36.8	+17.5	2	10
				21870	.993	53.7	339.3	+34.9	77	566
28.080	-10.5	48.2	-5.8	21866	.854	295.0	102.3	+17.8	4	21
				21867	.640	293.2	84.7	+10.0	90	568
				21869	.432	21.7	38.5	+17.9	2	9
				21870	.963	50.9	342.3	+35.1	29	128
29.417	-11.1	30.6	-5.9	21866	.968	289.1	103.2	+16.7	17	140
				21867	.835	286.0	84.9	+ 9.9	84	720
				21868	.587	302.9	60.9	+13.5	9	57
				21871	.469	111.5	3.8	-15.1	5	24
				21870	.883	44.5	341.5	+35.2	51	337
30.283	-11.5	19.2	-5.9	21867	.940	282.6	87.5	+ 9.7	72	575
				21868	.737	294.7	62.5	+13.6	31	108
				21871	.280	125.2	5.5	-15.0	11	46
				21870	.815	37.8	341.5	+35.4	43	174
31.421	-11.9	4.2	-6.0	21867	.974	282.7	79.3	+10.9	38	164
				21868	.887	289.4	63.6	+14.1	39	248
				21872	.769	303.8	47.2	+20.9	3	17
				21871	.167	195.8	6.9	-15.2	6	15
				21870	.729	26.1	341.1	+35.2	24	169
				21873	.964	62.2	294.4	+24.7	49	154
				21874	.985	95.5	283.7	- 6.5	19	87
Feb. 1.543	-12.4	349.4	-6.1	21868	.977	286.4	64.7	+14.5	31	174
				21872	.692	298.2	47.0	+21.8	14	50
				21871	.340	240.6	7.2	-15.4	2	9
				21870	.673	9.0	342.0	+35.5	21	141
				21873	.882	57.7	294.4	+24.7	32	146
				21875	.863	86.2	290.2	+ 0.1	6	30
				21874	.910	94.9	283.6	- 7.0	26	106
				21876	.988	79.1	269.7	+ 9.8	13	97
2.436	-12.7	337.6	-6.2	21872	.957	294.6	46.7	+21.3	15	119
				21871	.509	251.1	7.4	-14.8	5	15
				21870	.673	354.1	342.5	+35.7	32	147
				21873	.793	51.8	294.4	+24.9	25	142

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Feb. 2.436	Continued			21875	.730	86.2	291.0	- 1.4	25	98
				21874	.809	93.8	283.5	- 6.7	18	114
				21877	.936	61.5	273.6	+23.9	3	18
				21876	.931	77.5	270.9	+ 9.2	15	91
				21878	.978	76.5	261.6	+11.7	10	82
				1544 01	.978	103.2	258.8	-14.1	0	10
3.290	-13.1	326.4	-6.2	21870	.713	339.5	344.3	+35.9	18	116
				21873	.702	44.1	293.9	+25.0	23	148
				21875	.579	82.8	291.5	- 1.0	30	216
				21874	.680	93.3	283.5	- 6.8	14	93
				21877	.862	58.0	273.7	+23.5	0	10
				21876	.827	74.1	272.8	+ 9.4	19	63
				21878	.929	75.5	260.2	+11.0	17	107
				21879	.987	73.3	248.2	+15.3	0	13
4.531	-13.6	310.1	-6.3	21870	.800	325.0	344.4	+35.7	22	112
				21873	.579	25.7	294.0	+25.3	31	124
				21875	.313	71.5	292.9	- 0.3	34	178
				21874	.443	92.8	283.7	- 6.9	15	82
				21876	.631	67.1	274.2	+ 9.1	6	22
				21878	.808	69.9	259.3	+12.1	42	116
				21879	.927	69.3	245.6	+16.4	11	57
5.297	-13.9	300.0	-6.3	21870	.852	318.9	343.2	+35.3	12	70
				21875	.156	38.8	294.4	+ 0.6	46	208
				21873	.537	10.9	293.5	+25.4	17	123
				21874	.285	93.5	283.4	- 7.1	13	92
				21876	.511	59.8	273.5	+ 9.2	2	22
				21880	.628	47.4	270.7	+19.6	1	4
				1544 02	.516	107.4	269.6	-14.3	1	10
				21878	.678	64.8	261.4	+11.8	17	87
				21879	.874	66.3	243.3	+17.1	21	96
6.300	-14.3	286.8	-6.4	1544 03	.930	242.2	355.5	-28.2	0	6
				21870	.922	312.7	342.7	+35.2	5	24
				21875	.206	308.6	296.0	+ 1.0	63	354
				21873	.537	349.2	293.2	+25.4	25	124
				21874	.062	104.4	283.3	- 7.3	15	88
				21880	.492	30.7	271.5	+18.8	1	10
				1544 04	.328	126.7	270.8	-17.4	2	19
				21878	.503	55.0	262.1	+10.9	9	58
				21879	.742	60.8	244.5	+16.4	28	134
7.356	-14.7	272.9	-6.5	21875	.412	286.9	296.0	+ 0.9	67	681
				21873	.606	329.9	292.5	+25.4	30	132
				21874	.178	266.1	283.1	- 7.1	13	80
				21881	.249	324.2	281.3	+ 5.2	7	43
				21878	.371	34.6	260.5	+11.4	6	45
				21882	.310	132.6	259.0	-18.3	5	21
				21879	.596	50.9	244.1	+16.3	20	122
8.533	-15.1	257.4	-6.5	21875	.656	278.7	297.6	+ 0.7	90	542
				21883	.612	252.8	294.6	-15.6	0	7
				21873	.724	315.4	291.6	+25.6	22	114

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Feb. 8.533	Continued			21874	.431	267.3	282.9	- 7.1	10	74
				21884	.359	326.8	268.9	+11.0	2	19
				21882	.200	183.7	258.1	-18.0	11	50
				21878	.328	358.4	257.9	+12.5	15	81
				21879	.484	31.0	242.2	+18.1	16	61
9.432	-15.4	245.5	-6.6	21875	.807	275.9	298.8	+ 0.8	90	499
				21883	.759	253.1	294.7	-17.1	7	37
				21873	.818	308.0	291.1	+25.6	15	94
				21881	.639	285.0	283.6	+ 4.4	3	8
				21874	.605	267.7	282.9	- 6.7	11	59
				21884	.508	307.0	269.9	+11.8	5	20
				21878	.388	326.1	258.3	+12.3	16	84
				21882	.288	226.5	258.2	-17.8	1	10
				21879	.421	7.5	242.2	+18.0	11	42
10.443	-15.8	232.2	-6.6	21875	.921	273.9	298.7	+ 0.9	77	453
				21883	.892	253.9	295.9	-17.3	17	81
				21873	.907	302.0	290.3	+25.3	18	143
				21881	.786	281.3	282.7	+ 4.6	4	33
				21874	.768	267.2	282.5	- 6.4	7	56
				21884	.681	294.9	271.1	+11.5	0	10
				21878	.544	305.7	259.0	+12.6	13	47
				21882	.465	243.3	258.0	-18.0	0	5
				21879	.452	338.4	242.3	+18.2	5	28
11.299	-16.1	220.9	-6.7	21875	.979	272.5	298.7	+ 1.0	63	568
				21883	.951	254.3	293.8	-17.0	17	141
				21873	.960	298.5	289.2	+24.9	37	148
				21874	.880	266.3	282.8	- 6.4	9	37
				21884	.792	292.0	269.7	+12.9	17	98
				21878	.678	296.5	259.2	+12.4	4	23
				21879	.532	319.5	242.1	+17.5	4	21
12.294	-16.5	207.8	-6.7	21883	.993	252.2	292.5	-18.4	8	68
				21874	.963	265.3	282.5	- 6.4	8	38
				21884	.902	287.7	269.4	+12.8	46	254
13.451	-16.9	192.6	-6.8	21884	.970	285.6	266.0	+13.2	52	236
				21885	.414	7.3	189.4	+17.4	21	135
				21886	.563	101.1	158.4	-11.8	4	47
				21887	.924	102.5	124.4	-14.1	11	101
14.424	-17.2	179.8	-6.8	21885	.433	337.2	189.8	+16.7	36	273
				21887	.821	102.5	124.3	-14.1	38	184
				1544 05	.914	63.1	119.0	+21.2	0	16
15.311	-17.5	168.1	-6.9	21888	.466	303.0	191.3	+ 8.3	4	20
				21885	.521	318.6	189.1	+16.5	46	377
				21889	.472	12.7	161.8	+20.5	0	6
				1544 06	.580	52.3	139.9	+14.7	0	6
				21887	.685	103.7	124.9	-14.3	65	379

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Feb. 16.299	-17.8	155.1	-6.9	21888	.660	290.0	193.7	+ 7.7	1	6
				21885	.657	305.5	188.9	+16.7	73	378
				21889	.446	348.2	160.6	+18.9	0	4
				1544 07	.472	13.4	148.4	+20.4	1	10
				1544 08	.362	30.4	144.4	+11.3	0	5
				21887	.532	105.8	123.4	-14.2	47	348
				1544 09	.719	41.6	122.9	+26.6	3	14
				21890	.697	104.6	110.9	-15.1	3	12
				21891	.837	77.0	100.0	+ 6.9	4	27
17.404	-18.2	140.6	-6.9	21885	.811	296.4	189.7	+16.7	37	199
				21892	.531	279.2	172.1	- 1.0	5	26
				21886	.321	257.3	159.1	-10.6	9	71
				1544 10	.134	239.6	147.3	-10.8	0	3
				21887	.320	114.9	123.2	-14.3	36	255
				21890	.498	108.9	111.4	-15.3	5	23
				21891	.660	68.1	102.5	+ 8.8	0	14
				21893	.770	70.4	93.2	+10.3	4	51
				21894	.965	73.7	68.4	+13.6	57	281
18.297	-18.5	128.8	-7.0	21885	.904	291.8	189.6	+16.3	22	125
				21892	.720	275.3	174.4	- 1.1	3	9
				21886	.510	261.3	159.5	-10.4	17	103
				21887	.171	141.0	122.4	-14.5	30	219
				21890	.313	119.3	112.4	-15.5	2	11
				21891	.523	59.7	101.7	+ 9.1	6	22
				21893	.655	64.5	92.0	+10.8	0	3
				21894	.927	71.7	63.9	+14.1	126	672
19.415	-18.8	114.1	-7.0	21885	.986	287.5	191.5	+15.9	6	55
				21886	.715	261.9	160.0	-10.7	12	68
				21887	.201	227.8	122.9	-14.7	47	196
				21891	.334	37.5	102.3	+ 8.5	6	33
				21895	.719	54.3	76.0	+19.3	11	67
				21896	.709	101.8	68.8	-13.3	3	24
				21894	.807	66.7	64.4	+14.1	109	683
				21897	.934	73.0	47.7	+13.1	18	120
20.559	-19.2	99.0	-7.0	21886	.867	261.9	159.6	-10.5	18	83
				21887	.425	250.4	123.3	-14.6	29	126
				21898	.491	340.4	109.1	+20.5	14	68
				21891	.283	342.8	103.8	+ 8.6	3	25
				21893	.347	22.8	91.1	+11.6	2	20
				21899	.458	146.4	82.2	-29.1	0	22
				21895	.576	41.0	75.5	+19.2	16	61
				21896	.472	104.2	71.2	-12.9	12	78
				21894	.639	58.7	65.0	+13.5	88	669
				21897	.806	67.4	49.3	+13.5	31	190
21.540	-19.5	86.1	-7.1	21887	.619	256.7	124.2	-13.7	18	152
				21898	.566	323.4	107.1	+20.4	9	45
				21891	.396	316.3	102.1	+ 9.8	5	31
				21893	.316	346.5	90.4	+10.8	12	83
				21895	.469	22.0	75.4	+18.7	16	94
				21896	.281	113.2	70.8	-13.1	35	124

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Feb. 21.540	Continued			21894	.500	46.9	64.2	+13.4	91	565
				21897	.683	61.1	48.3	+13.7	62	425
22.561	-19.8	72.6	-7.1	21887	.791	258.5	125.3	-13.4	18	99
				21898	.705	310.5	107.6	+21.4	2	14
				21893	.468	312.5	93.2	+11.7	20	95
				21899	.400	206.6	84.3	-27.8	13	50
				21895	.453	356.6	74.3	+19.7	6	38
				21896	.126	153.3	69.3	-13.5	22	118
				21894	.351	12.4	68.2	+12.9	111	638
				21900	.263	140.3	62.5	-18.6	1	7
				21897	.523	48.7	48.9	+13.6	69	581
23.424	-20.0	61.3	-7.1	21887	.893	258.0	125.2	-13.9	7	77
				21893	.614	299.7	94.1	+11.7	54	420
				21899	.496	224.7	84.3	-27.1	7	55
				21895	.488	336.4	73.2	+19.5	2	19
				21896	.165	229.4	68.6	-13.2	24	146
				21894	.359	342.0	67.8	+12.8	87	807
				21901	.526	20.6	49.8	+22.4	0	10
				21897	.411	30.8	48.8	+13.7	72	588
				21902	.970	107.8	344.0	-18.9	44	261
24.532	-20.4	46.7	-7.2	21887	.965	258.9	122.5	-12.6	0	8
				21893	.775	291.2	94.0	+11.4	60	336
				21899	.663	237.0	85.1	-26.8	28	140
				21895	.606	315.3	73.4	+19.1	4	22
				21894	.495	312.5	68.6	+12.8	127	936
				21896	.377	252.1	68.2	-13.3	12	101
				21897	.365	354.2	48.9	+14.1	67	361
				21901	.521	358.4	47.6	+24.1	0	10
				21902	.895	107.6	342.5	-18.9	72	439
				21903	.944	103.1	335.0	-14.6	26	112
25.298	-20.6	36.6	-7.2	21893	.870	287.9	94.2	+11.7	57	314
				21899	.776	239.5	85.6	-27.9	49	237
				21895	.741	303.2	77.3	+18.5	3	30
				21894	.614	301.7	68.9	+12.7	129	987
				21896	.518	255.8	67.6	-13.4	14	95
				1544 11	.598	320.6	60.5	+20.9	3	12
				21900	.436	239.1	59.9	-19.5	7	28
				21897	.418	329.8	49.1	+14.1	54	308
				21902	.805	106.9	342.8	-17.8	119	735
				21903	.874	102.6	335.1	-14.4	17	91
26.290	-20.8	23.5	-7.2	21893	.954	284.8	93.8	+11.7	49	266
				21899	.899	240.8	87.4	-29.3	21	139
				21895	.829	298.8	73.5	+19.0	2	19
				21894	.767	293.3	69.5	+12.7	110	1035
				21896	.693	257.1	67.5	-14.1	12	56
				21900	.631	248.0	61.7	-19.3	4	12
				21897	.555	310.0	49.5	+14.4	32	193
				21902	.658	108.3	342.8	-17.4	112	771
				21903	.748	102.8	334.9	-14.3	22	106
				21904	.775	116.0	333.7	-24.6	0	13

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Feb. 26.290	Continued			21905	.992	86.6	301.5	+ 2.4	32	263
				21906	.989	101.8	301.1	-12.7	7	48
27.425	-21.1	8.6	-7.2	21893	.992	283.5	89.1	+12.2	16	82
				21899	.977	241.8	88.1	-29.0	17	120
				21894	.901	288.0	69.8	+12.8	103	909
				21896	.855	257.4	67.9	-14.4	2	17
				21900	.805	251.0	62.2	-19.5	4	7
				21897	.743	296.8	51.6	+14.3	30	130
				21902	.462	115.2	342.6	-17.8	150	990
				21903	.562	105.1	334.7	-14.4	12	88
				21904	.631	124.0	332.9	-26.5	1	8
				21907	.909	106.1	302.5	-17.6	5	21
				21905	.928	85.2	301.2	+ 1.7	46	217
				21906	.936	102.7	298.4	-14.3	6	58
28.292	-21.4	357.2	-7.2	21894	.966	285.5	69.8	+12.8	57	562
				21900	.900	251.3	62.0	-20.0	2	10
				21897	.841	292.8	50.3	+14.8	20	139
				21902	.312	128.1	342.3	-18.0	127	901
				21903	.394	110.2	334.8	-14.5	7	63
				21904	.467	131.9	334.7	-24.8	5	34
				21905	.833	83.2	301.6	+ 1.6	30	164
				21907	.828	106.5	301.0	-17.7	6	32
				21906	.843	101.3	299.2	-13.4	8	47
				21908	.959	71.3	286.9	+15.6	11	70
				21909	.991	73.8	277.5	+14.9	30	181
Mar. 1.313	-21.6	343.7	-7.2	21894	.981	284.4	60.4	+12.6	27	129
				21897	.945	287.7	51.7	+14.0	26	135
				21902	.191	171.5	342.0	-18.1	129	989
				21904	.329	159.2	336.4	-25.0	3	21
				21903	.198	129.5	334.7	-14.3	9	64
				21905	.684	79.9	301.5	+ 1.5	35	148
				21907	.699	108.5	299.7	-18.0	6	46
				21906	.705	102.0	298.7	-13.6	6	36
				21908	.873	67.6	287.0	+15.6	26	103
				21909	.941	71.4	276.6	+14.7	16	114
2.303	-21.9	330.7	-7.2	21897	.992	285.6	50.8	+14.3	24	232
				21902	.262	220.8	341.0	-18.5	126	839
				21904	.322	196.0	336.3	-25.2	2	13
				21903	.142	208.5	334.6	-14.3	4	29
				21905	.506	74.2	301.6	+ 1.6	27	135
				21907	.521	111.3	300.3	-17.1	5	29
				21906	.531	102.5	298.7	-12.7	2	18
				21908	.749	61.1	287.9	+15.9	10	54
				21909	.846	67.5	277.0	+14.7	18	105
3.297	-22.1	317.6	-7.2	21902	.423	240.3	340.3	-18.7	96	746
				21904	.429	220.7	335.6	-25.8	2	8
				21903	.299	241.2	333.2	-15.2	0	4
				21905	.318	61.3	301.4	+ 1.8	31	148
				21907	.369	121.0	298.2	-17.7	11	72
				21908	.596	51.1	288.9	+15.6	11	61

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Mar. 3.297	Continued			21909	.719	61.3	277.0	+14.7	9	44
				21910	.864	72.6	260.7	+11.1	12	52
4.326	-22.4	304.0	-7.2	21902	.604	248.3	340.2	-18.7	96	822
				21905	.167	15.6	301.5	+ 2.0	20	125
				21907	.204	157.9	299.4	-18.1	8	45
				21908	.471	35.8	287.5	+15.4	14	96
				21909	.574	50.7	276.8	+14.8	5	17
				21910	.729	67.3	261.0	+11.1	11	46
5.608	-22.6	287.1	-7.2	21902	.792	251.0	339.5	-19.4	76	678
				21905	.296	302.9	301.4	+ 2.2	21	135
				21907	.277	233.0	300.4	-16.6	10	65
				21908	.390	0.3	287.0	+15.6	10	76
				21911	.082	83.4	282.4	- 6.7	1	9
				21909	.415	25.7	276.4	+14.8	2	10
				21912	.453	36.2	271.1	+14.4	4	23
				21910	.511	54.5	262.2	+10.7	15	76
				21913	.936	70.3	221.2	+15.5	0	6
6.309	-22.8	277.9	-7.2	21902	.874	251.7	339.3	-19.5	55	625
				21905	.433	291.1	301.6	+ 2.3	26	137
				21907	.416	244.6	300.9	-16.9	9	57
				21908	.407	334.2	288.4	+14.3	4	37
				21911	.087	278.4	282.8	- 6.5	3	21
				21909	.376	4.8	276.0	+14.7	2	9
				21912	.380	19.0	270.6	+13.8	23	96
				21910	.403	41.0	262.4	+10.6	9	44
				21913	.868	67.6	221.8	+15.3	4	21
				21914	.983	80.3	199.8	+ 8.1	23	195
7.340	-23.0	264.3	-7.2	21902	.958	251.5	339.0	-19.7	69	523
				21905	.624	283.0	301.6	+ 2.3	22	140
				21907	.601	249.8	300.5	-17.8	7	41
				1545 01	.423	316.3	281.5	+10.8	2	17
				21912	.370	342.2	270.9	+13.4	35	268
				21910	.324	9.4	261.2	+11.3	5	44
				21913	.721	60.6	223.9	+15.2	0	13
				21915	.859	63.6	210.3	+18.2	13	55
				21914	.919	78.1	199.3	+ 7.9	28	141
8.438	-23.3	249.8	-7.2	21902	.998	250.6	338.2	-19.8	32	221
				21905	.798	278.9	301.8	+ 2.6	22	120
				21907	.750	255.9	298.6	-15.4	0	7
				21916	.660	294.7	287.2	+10.2	6	26
				21912	.484	314.2	270.6	+12.9	76	439
				21910	.359	333.1	259.4	+11.5	2	20
				21913	.607	52.0	220.2	+15.6	0	6
				21915	.726	56.5	210.5	+18.0	24	153
				21914	.798	74.6	199.1	+ 7.7	27	136
				21917	.960	54.8	184.0	+30.9	0	12
				21918	.973	98.1	172.6	- 9.5	32	190

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Mar. 9.388	-23.4	237.3	-7.2	21905	.910	276.4	302.0	+ 2.8	10	66
				21916	.804	288.6	287.9	+10.3	21	96
				21912	.653	300.1	272.7	+13.2	76	479
				21910	.494	309.9	260.0	+11.7	10	70
				21913	.475	33.6	221.5	+16.2	2	19
				21915	.597	45.3	210.9	+18.3	15	87
				21914	.653	69.3	199.4	+ 7.7	17	114
				21917	.901	50.6	183.4	+30.7	34	187
				21918	.896	96.7	173.3	- 9.3	9	128
				21919	.953	98.2	164.2	-10.0	3	35
10.523	-23.7	222.4	-7.2	21905	.985	274.1	301.9	+ 2.7	6	37
				21916	.922	284.3	287.3	+10.2	22	104
				21912	.825	291.7	274.1	+13.3	60	352
				21910	.677	296.7	260.4	+12.0	22	142
				21915	.472	23.3	211.0	+18.5	15	70
				21914	.455	57.0	199.8	+ 7.6	17	122
				21917	.808	42.8	182.7	+30.8	49	238
				21918	.749	96.1	173.5	- 9.3	18	114
				21919	.847	97.5	164.1	-10.2	2	10
11.309	-23.8	212.0	-7.2	21916	.978	282.5	287.9	+10.6	4	69
				21912	.898	288.1	272.8	+12.7	68	352
				21910	.783	291.8	259.9	+12.1	19	85
				21915	.438	2.9	210.7	+18.6	12	76
				21914	.332	38.6	200.0	+ 7.9	18	120
				21917	.743	35.7	181.8	+30.9	29	238
				21918	.619	96.0	173.6	- 9.4	15	87
				21919	.749	97.6	163.1	-10.5	3	16
				21920	.964	105.3	136.3	-16.6	8	39
				21921	.994	105.3	126.9	-16.0	9	74
12.507	-24.0	196.2	-7.2	21912	.980	284.1	272.4	+12.2	68	489
				21910	.927	287.6	261.3	+13.4	11	88
				21915	.494	333.1	209.8	+19.1	7	49
				21914	.263	346.2	199.8	+ 7.5	23	122
				21917	.658	20.5	180.7	+30.9	27	192
				21918	.387	97.2	173.4	- 9.4	12	77
				21920	.865	104.9	135.8	-16.5	8	80
				21921	.930	104.2	127.0	-15.9	11	52
13.350	-24.2	185.1	-7.2	21912	.985	282.3	263.4	+10.7	18	135
				21910	.977	286.5	260.2	+14.3	0	20
				21915	.592	316.3	210.6	+18.8	5	26
				21914	.364	314.2	200.3	+ 7.7	18	96
				21917	.628	6.6	180.2	+31.3	23	160
				21918	.208	100.8	173.2	- 9.3	13	66
				1545 02	.312	110.4	167.7	-13.1	2	13
				21922	.739	49.0	147.9	+23.3	3	21
				21920	.756	106.0	135.9	-16.8	7	34
				21921	.833	104.5	128.3	-16.1	37	177
				21923	.852	100.9	126.2	-13.0	2	18
				21924	.888	106.5	121.9	-17.9	2	14
				21925	.990	73.8	105.9	+14.8	58	332

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Mar. 14.309	-24.4	172.5	-7.2	21915	.714	304.7	210.6	+18.3	5	15
				21914	.526	297.9	200.3	+ 7.9	10	60
				21917	.633	350.8	179.2	+31.4	25	153
				21918	.028	204.1	173.1	- 8.7	11	44
				21919	.155	105.5	163.8	- 9.5	1	10
				21920	.602	108.4	136.0	-16.7	3	11
				21921	.683	105.5	129.5	-15.8	23	147
				21923	.714	100.6	126.7	-12.5	3	18
				21924	.779	106.7	121.2	-17.4	2	12
				21925	.939	71.1	105.8	+14.9	86	494
15.312	-24.5	159.3	-7.2	21915	.838	297.1	210.8	+18.1	4	10
				21914	.696	289.1	200.7	+ 7.8	9	47
				21917	.684	335.5	178.6	+31.6	10	51
				21918	.232	263.1	172.7	- 8.6	4	20
				1545 03	.083	196.1	160.6	-11.7	0	2
				21922	.502	16.1	150.7	+21.6	2	11
				21920	.413	115.1	136.3	-16.7	4	14
				21926	.580	54.6	130.3	+13.3	13	50
				21921	.517	109.6	128.9	-16.2	14	84
				21923	.539	101.3	126.7	-12.1	0	5
				21924	.624	109.9	121.4	-17.9	0	5
				21925	.856	67.1	104.6	+15.4	76	391
				21927	.945	75.0	90.8	+11.6	91	361
				21928	.956	117.3	85.0	-28.2	7	36
16.355	-24.7	145.5	-7.1	21914	.841	284.2	200.7	+ 7.8	2	10
				21917	.763	323.5	177.6	+31.7	7	26
				21918	.460	263.0	173.0	- 9.5	4	19
				21922	.505	354.8	148.4	+22.9	41	204
				21920	.228	137.4	136.3	-16.7	3	15
				21926	.429	36.4	130.4	+13.2	14	66
				21921	.324	120.0	128.6	-16.1	7	40
				21923	.332	106.3	126.6	-12.1	3	20
				21924	.412	123.3	124.1	-19.7	0	6
				21925	.718	61.4	105.0	+14.7	74	407
				21927	.849	71.0	90.5	+12.0	72	547
				21928	.874	118.3	85.1	-28.1	2	9
				21929	.918	74.4	81.4	+11.3	0	11
				21930	.980	67.4	71.0	+20.4	80	609
				21931	.984	103.5	64.4	-14.5	24	202
17.485	-24.9	130.6	-7.1	21922	.574	326.6	150.4	+21.8	28	154
				21920	.192	210.1	136.3	-16.6	1	8
				21921	.140	166.7	128.7	-14.9	10	49
				21926	.369	6.4	128.2	+14.3	0	8
				21923	.107	135.3	126.2	-11.4	2	9
				21925	.544	49.0	105.6	+14.4	75	446
				1545 04	.444	91.7	104.1	- 7.1	2	17
				21927	.702	64.2	90.4	+12.3	83	580
				21928	.748	121.5	84.5	-27.9	2	10
				21929	.806	70.2	80.1	+11.3	7	33
				21932	.829	116.9	75.4	-26.2	8	41
				21930	.922	64.1	68.5	+20.5	159	1093
				21931	.910	102.4	64.3	-14.2	42	270

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Mar. 17.485	Continued			21933	.944	121.4	59.2	−32.0	3	13
				21934	.946	106.4	58.5	−17.8	14	91
18.449	−25.0	117.9	−7.1	21922	.679	313.2	150.0	+21.7	36	224
				21926	.416	329.0	130.6	+13.9	5	31
				21921	.247	238.3	130.4	−14.3	6	38
				21923	.166	245.9	126.7	−10.9	2	10
				21925	.416	31.4	105.1	+13.8	94	544
				21927	.547	54.1	91.0	+12.3	93	539
				21929	.676	64.2	79.6	+11.5	6	29
				1545 05	.639	113.2	79.3	−20.1	3	11
				21932	.712	119.7	74.7	−25.8	23	199
				21930	.843	60.4	66.7	+20.2	215	1493
				21931	.802	102.4	64.3	−14.1	39	250
				21935	.846	104.7	59.6	−16.2	2	20
				21933	.874	122.4	58.0	−31.6	9	33
				21934	.886	108.9	55.1	−20.0	16	76
				21936	.967	66.4	47.0	+20.6	8	54
19.090	−25.1	109.5	−7.1	21922	.758	306.1	150.3	+21.2	28	144
				21921	.392	249.3	131.6	−14.5	2	13
				21926	.480	317.5	128.9	+14.0	2	9
				21923	.302	254.3	126.6	−11.4	3	19
				21937	.237	4.4	108.4	+ 6.5	4	27
				21925	.363	12.7	104.8	+13.6	101	431
				21927	.446	42.6	91.5	+12.4	102	432
				21929	.576	56.3	80.2	+12.4	6	26
				21932	.621	123.8	74.5	−26.0	36	200
				21930	.771	56.8	66.3	+19.9	272	1272
				21931	.712	103.1	64.0	−14.2	47	211
				21935	.764	105.5	59.5	−16.3	3	25
				21933	.799	125.0	59.2	−31.8	10	37
				21934	.820	110.0	54.4	−20.4	3	28
				21936	.926	64.9	46.4	+20.1	5	27
20.313	−25.2	93.3	−7.0	21922	.899	296.7	152.0	+20.3	10	39
				21921	.574	254.6	128.0	−14.6	14	54
				21937	.374	312.4	109.4	+ 7.8	2	14
				21925	.406	330.8	105.0	+13.8	63	341
				21927	.330	3.7	92.1	+12.1	104	608
				21932	.432	140.4	75.6	−26.1	31	159
				21930	.615	43.3	66.8	+20.2	200	1362
				21931	.496	105.8	64.0	−13.9	47	205
				21933	.653	131.5	58.5	−31.4	7	24
				21935	.573	108.0	58.9	−16.0	3	18
				21934	.626	113.2	55.8	−19.9	7	27
				21933	.653	131.5	58.5	−31.4	7	24
				21936	.810	58.6	46.0	+20.2	5	36
				1545 06	.779	84.6	42.7	− 0.3	2	17
				21938	.860	74.7	36.4	+ 9.3	0	4
21.624	−25.4	76.0	−7.0	21921	.818	258.7	131.4	−13.2	15	96
				1545 07	.700	297.2	115.6	+13.2	0	5
				21937	.579	295.7	107.8	+ 8.6	3	18
				21925	.583	305.7	105.1	+13.7	54	308

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Mar. 21.624	Continued			21927	.421	318.9	92.4	+11.7	93	610
				21932	.331	181.0	76.4	−26.3	23	131
				21930	.475	17.6	67.3	+19.9	216	1606
				21931	.236	122.1	64.2	−14.0	43	209
				21935	.297	125.7	61.5	−16.7	2	14
				21933	.515	145.7	56.2	−31.6	46	364
				21934	.456	124.0	52.2	−21.1	2	22
				21936	.639	47.3	46.3	+19.5	9	21
22.509	−25.5	64.4	−7.0	21939	.944	262.8	135.7	− 9.1	11	80
				21921	.919	259.0	131.9	−12.8	11	50
				21925	.715	297.0	105.2	+13.7	52	344
				21927	.559	303.0	92.9	+11.6	77	554
				1545 08	.466	207.2	78.7	−31.1	0	5
				21932	.391	210.8	77.2	−26.4	14	95
				21930	.458	352.7	67.9	+20.0	249	1839
				21931	.127	175.3	63.8	−14.2	41	232
				21933	.445	161.6	54.9	−31.7	53	420
				21936	.531	33.5	46.3	+19.6	3	14
23.450	−25.6	52.0	−6.9	21939	.992	261.7	135.2	− 9.1	0	25
				21925	.839	291.5	105.3	+13.8	67	319
				21927	.711	293.8	93.4	+11.4	93	548
				21932	.517	227.8	77.2	−26.5	18	116
				21930	.520	330.4	67.8	+20.1	213	1632
				21931	.235	235.7	63.5	−14.4	45	225
				21933	.420	184.7	54.3	−31.6	82	398
				21934	.248	180.3	52.0	−21.2	1	17
				21936	.461	12.4	46.0	+19.8	2	10
				1545 09	.936	117.1	342.0	−27.7	0	12
24.390	−25.7	39.6	−6.9	21925	.933	287.7	105.6	+13.7	55	330
				21927	.836	288.5	93.3	+11.4	76	516
				21932	.666	237.0	78.1	−26.7	15	95
				21930	.633	314.7	68.1	+20.3	214	1638
				21931	.423	250.9	63.8	−14.2	46	237
				21933	.467	204.8	52.8	−31.7	78	380
				1545 10	.528	344.7	48.3	+23.7	1	13
				1545 11	.810	105.0	345.3	−16.1	2	4
				21940	.952	112.3	326.2	−23.3	0	7
25.403	−25.8	26.2	−6.8	21925	.989	285.3	105.5	+13.9	45	357
				21927	.927	285.1	91.8	+11.2	77	419
				21932	.802	241.4	78.1	−26.9	15	85
				21930	.761	304.7	68.0	+20.6	188	1503
				21931	.613	255.4	63.8	−14.3	44	223
				21933	.565	219.5	51.2	−32.0	32	294
				21941	.400	255.8	49.4	−11.9	2	17
				21942	.307	103.0	8.6	−10.5	0	2
				21943	.808	97.6	332.0	−10.1	2	11
				21944	.850	74.6	330.3	+ 9.2	4	17
				21940	.854	114.2	327.8	−24.1	2	13
				1545 12	.858	108.5	326.8	−19.3	2	9
				1545 13	.909	122.9	321.4	−32.6	5	19
				21945	.987	66.4	309.2	+21.9	41	340

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Mar. 26.310	-25.9	14.2	-6.8	21927	.965	283.4	86.9	+10.9	40	321
				21932	.898	243.3	78.1	-26.9	19	87
				21930	.860	298.6	67.7	+20.3	206	1741
				21931	.754	256.6	63.3	-14.5	41	254
				21941	.597	259.3	50.9	-11.8	3	16
				21933	.669	228.3	50.2	-31.9	26	158
				21942	.132	120.8	7.6	-10.6	13	65
				21944	.693	71.2	332.9	+ 7.8	0	1
				21945	.949	63.6	307.7	+22.4	48	345
				21946	.962	112.9	299.0	-23.8	0	15
27.360	-25.9	0.4	-6.8	21932	.971	243.2	78.1	-27.5	14	60
				21930	.941	294.8	66.0	+20.6	200	1729
				21931	.891	257.2	64.0	-14.4	49	228
				21941	.780	259.5	52.0	-12.4	4	21
				21933	.780	232.9	47.9	-32.6	9	97
				21942	.145	244.4	8.0	-10.3	29	139
				21944	.569	61.2	330.1	+10.0	5	19
				21945	.866	59.4	306.9	+22.2	41	283
				21946	.875	113.2	299.3	-23.5	0	9
				21947	.990	80.1	279.8	+ 8.7	109	524
28.334	-26.0	347.6	-6.7	21931	.966	257.2	63.5	-14.1	59	229
				21930	.982	292.8	62.8	+20.8	168	1251
				1546 01	.921	258.4	55.2	-13.3	0	6
				21933	.874	236.3	46.9	-32.5	7	36
				21938	.772	289.6	35.1	+10.4	10	42
				21942	.362	258.7	8.6	-10.3	16	93
				1546 02	.520	337.5	359.9	+22.0	3	13
				1546 03	.175	231.1	355.6	-12.9	2	23
				21943	.278	103.4	331.7	-10.1	0	3
				21944	.404	45.3	330.7	+10.0	10	34
				21945	.761	53.0	306.7	+22.1	36	241
				1546 04	.799	108.9	294.6	-19.1	0	7
				21947	.955	77.7	276.7	+ 9.6	256	1700
				21948	.997	65.3	265.9	+23.8	0	53
29.313	-26.1	334.6	-6.7	21933	.952	237.9	47.5	-32.6	3	35
				21938	.880	286.5	33.8	+11.1	2	9
				21949	.764	295.7	19.8	+14.6	0	5
				21942	.558	261.5	8.6	-10.3	12	104
				21944	.296	7.7	332.3	+10.3	7	27
				21943	.073	138.9	331.9	- 9.8	15	83
				21945	.637	42.4	307.1	+22.1	25	161
				21947	.868	75.3	276.6	+ 9.2	224	1773
				21948	.982	69.0	259.1	+19.1	66	551
30.330	-26.1	321.2	-6.6	21949	.881	291.0	19.4	+15.0	2	14
				21942	.724	261.7	7.8	-10.5	9	53
				21944	.352	325.1	333.0	+10.2	5	21
				21943	.204	257.1	332.8	- 9.1	13	97
				21945	.530	25.9	306.8	+22.0	24	145
				21947	.731	71.2	276.9	+ 8.9	215	2036
				21948	.926	65.7	257.9	+19.5	54	442

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Mar. 31.636	-26.2	304.0	-6.5	21942	.895	260.9	8.0	-11.0	5	35
				21944	.570	299.3	334.2	+10.5	1	8
				21943	.488	260.9	333.2	-10.1	25	143
				21945	.488	354.4	307.0	+22.4	20	117
				21950	.125	201.2	306.6	-13.2	2	68
				21951	.628	1.9	302.6	+32.2	1	11
				21947	.514	61.1	277.0	+ 8.5	225	1926
				21948	.789	59.0	258.3	+19.4	87	503
Apr. 1.405	-26.2	293.9	-6.5	21943	.640	262.6	333.8	- 9.7	20	97
				21950	.243	238.9	306.1	-13.5	1	7
				21945	.534	339.1	305.8	+23.5	29	148
				21951	.638	347.4	303.2	+32.0	1	7
				21947	.386	48.6	276.9	+ 8.5	227	1881
				21948	.693	53.3	258.0	+19.2	84	533
				21952	.834	57.6	244.4	+22.3	4	18
2.346	-26.3	281.4	-6.5	21943	.781	262.7	333.0	- 9.7	14	155
				1546 05	.436	262.5	307.3	- 9.1	1	7
				21945	.628	321.9	306.4	+23.6	24	120
				21951	.695	332.7	303.5	+32.0	2	5
				21947	.276	16.0	277.0	+ 8.9	236	1605
				21948	.564	41.5	258.2	+19.0	72	490
				21952	.706	50.6	245.8	+21.4	31	130
3.322	-26.3	268.6	-6.4	21943	.895	262.3	332.4	- 9.7	24	149
				21945	.740	310.6	306.3	+23.7	19	126
				1546 06	.438	309.3	288.6	+10.1	2	13
				21947	.304	329.7	277.4	+ 8.8	197	1526
				21948	.460	20.7	258.7	+19.1	50	427
				21952	.575	37.2	246.8	+21.2	28	191
				21953	.965	79.0	195.4	+ 8.8	72	568
				21954	.994	108.7	183.4	-19.2	9	56
4.408	-26.3	254.2	-6.3	21943	.979	261.9	332.9	- 9.2	21	149
				21945	.859	301.5	306.7	+22.9	7	39
				21947	.459	304.2	276.7	+ 9.0	201	1448
				21948	.435	351.7	258.0	+19.1	61	402
				21952	.480	16.2	246.0	+21.1	28	158
				1546 07	.725	46.2	219.2	+24.9	2	13
				21953	.879	76.3	194.6	+ 8.8	88	596
				21954	.952	108.6	181.3	-19.6	11	57
5.311	-26.3	242.3	-6.3	21945	.940	297.3	307.2	+23.0	3	23
				21947	.627	293.0	277.9	+ 9.0	189	1299
				21948	.503	328.1	258.6	+19.2	54	337
				21952	.464	352.3	246.1	+21.0	16	93
				21953	.760	73.0	195.2	+ 8.6	94	573
				21954	.850	109.1	184.1	-19.5	15	65
6.367	-26.4	228.4	-6.2	21945	.993	294.2	307.8	+22.9	9	62
				21947	.789	287.1	278.0	+ 9.4	177	1238
				21948	.637	311.0	258.9	+19.3	48	262
				21952	.535	332.2	243.9	+22.1	5	48
				21953	.597	66.1	195.0	+ 8.8	86	572

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Apr. 6.367	Continued			21954	.679	112.0	186.7	-19.3	20	146
7.319	-26.4	215.8	-6.2	21947	.901	283.6	278.1	+ 9.4	160	1094
				21948	.763	301.9	259.0	+19.3	41	204
				21953	.426	53.6	195.6	+ 8.8	79	496
				21954	.496	118.7	188.5	-19.2	18	107
8.331	-26.3	202.4	-6.1	21947	.976	281.6	278.4	+ 9.9	102	773
				21948	.882	295.6	259.6	+19.2	26	163
				21953	.296	24.9	195.2	+ 9.5	85	521
				21954	.323	135.0	188.5	-19.1	17	95
				21955	.450	106.3	176.3	-12.7	4	50
				21956	.770	75.0	154.0	+ 7.4	2	7
				21957	.998	96.0	115.8	- 6.4	32	225
9.331	-26.3	189.3	-6.0	21948	.961	291.8	259.6	+19.0	16	103
				21953	.283	337.3	195.6	+ 9.1	76	461
				21954	.229	173.0	187.6	-19.1	16	86
				21955	.256	117.9	175.9	-12.7	5	28
				21956	.619	69.6	153.6	+ 7.5	3	17
				1546 08	.799	76.5	137.9	+ 7.0	2	19
				21958	.927	102.7	120.7	-14.0	9	47
				21957	.971	95.7	112.8	- 7.0	53	267
10.421	-26.3	174.9	-5.9	21953	.440	306.1	195.9	+ 9.4	74	421
				21954	.311	221.1	187.3	-19.3	13	78
				21955	.142	198.5	177.5	-13.6	2	11
				21958	.804	103.9	121.3	-14.7	22	104
				21957	.878	94.8	113.3	- 7.0	56	406
				21959	.951	71.6	105.7	+15.4	17	97
11.613	-26.3	159.1	-5.8	21953	.642	291.9	196.1	+ 9.2	76	475
				21954	.503	240.9	186.7	-19.3	17	85
				1546 09	.368	214.6	172.2	-23.3	1	14
				21958	.586	107.1	123.9	-14.7	28	138
				21957	.717	94.5	113.2	- 7.3	51	379
				21959	.842	67.8	105.5	+15.1	19	103
				21960	.955	76.7	88.3	+10.8	37	260
12.385	-26.2	148.9	-5.8	21953	.761	287.1	196.2	+ 9.0	69	334
				21954	.628	246.3	186.3	-19.2	16	75
				21958	.445	111.4	123.7	-14.6	34	199
				21957	.573	94.2	114.0	- 7.1	60	329
				21959	.752	63.9	104.7	+15.1	14	91
				21960	.895	74.7	87.6	+10.9	30	175
				21961	.995	104.2	63.8	-14.7	21	167
13.349	-26.2	136.2	-5.7	21953	.882	283.2	196.3	+ 8.8	64	336
				21954	.774	250.1	186.3	-18.9	11	57
				21962	.733	296.8	178.7	+15.1	7	30
				21958	.251	128.8	124.6	-14.6	26	156
				21957	.380	94.5	113.9	- 7.0	52	282
				21959	.609	56.2	104.8	+14.9	14	99
				21960	.778	70.5	88.0	+11.2	32	235

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Apr. 13.349	Continued			21963	.835	62.0	84.9	+19.5	12	93
				21961	.956	103.5	62.6	-14.6	23	118
				21964	.984	65.1	60.2	+23.2	37	210
14.335	-26.1	123.2	-5.6	21953	.962	280.8	195.9	+ 8.8	48	339
				21954	.892	251.8	186.4	-18.7	15	54
				21962	.841	291.8	176.9	+14.8	2	14
				1546 10	.355	212.6	135.1	-22.8	2	17
				21958	.156	189.3	124.7	-14.5	22	139
				21957	.161	97.2	114.0	- 6.7	69	381
				21959	.460	41.4	104.9	+14.7	14	86
				21965	.598	69.8	88.9	+ 7.2	10	45
				21960	.633	64.9	87.6	+10.9	36	234
				21963	.703	54.0	86.1	+19.8	66	329
				21961	.867	103.8	62.9	-14.7	18	121
				21964	.927	62.2	60.4	+23.0	50	213
15.360	-26.1	109.7	-5.6	21954	.968	252.2	185.9	-18.6	9	35
				21958	.309	238.0	125.3	-14.7	21	140
				21957	.066	244.9	113.1	- 7.1	85	453
				21959	.362	13.7	104.6	+15.0	22	101
				21965	.395	57.8	90.1	+ 6.9	19	129
				21960	.465	53.4	87.4	+10.9	40	285
				21963	.572	42.7	85.4	+19.7	39	269
				21961	.738	105.3	62.4	-15.0	23	114
				21964	.831	58.1	60.1	+22.4	46	288
				1546 11	.863	127.5	53.3	-34.8	2	4
				1546 12	.859	101.2	50.2	-12.4	2	20
16.408	-26.0	95.8	-5.5	21958	.508	250.3	125.3	-14.6	22	123
				21957	.299	264.4	113.2	- 6.9	68	514
				21959	.388	337.8	104.5	+15.5	10	54
				21965	.232	24.6	90.3	+ 6.7	18	126
				21966	.197	145.9	89.3	-14.8	7	39
				21960	.315	26.8	87.5	+10.9	34	253
				21963	.459	21.9	85.4	+19.7	32	188
				21961	.564	108.7	62.4	-15.0	14	113
				21964	.706	50.3	60.0	+22.3	35	251
17.337	-25.9	83.5	-5.4	21958	.666	254.1	124.8	-14.6	24	107
				21957	.486	264.7	112.6	- 7.3	53	373
				21959	.496	314.5	105.0	+15.2	6	32
				21966	.198	218.0	90.7	-14.3	28	140
				21965	.242	332.0	90.1	+ 6.9	39	266
				21960	.295	345.6	87.8	+11.2	41	219
				21963	.431	355.2	85.7	+19.9	25	157
				21961	.393	116.1	62.2	-14.9	24	100
				21967	.453	126.1	60.7	-20.4	1	10
				21964	.588	39.2	60.0	+22.1	58	288
18.326	-25.9	70.5	-5.3	21958	.829	255.3	126.5	-15.2	8	45
				21957	.681	264.7	113.5	- 7.5	40	236
				21959	.638	301.3	104.7	+14.9	3	14
				21966	.379	243.7	91.0	-14.6	25	151
				21965	.382	301.9	89.5	+ 6.6	26	153

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Apr. 18.326	Continued			21960	.407	313.1	88.1	+11.0	29	201
				21963	.491	330.3	85.4	+20.0	13	66
				21961	.225	139.7	61.9	-15.1	18	96
				21967	.306	148.1	60.6	-20.2	13	69
				21964	.499	20.6	59.6	+22.5	45	231
				21968	.670	45.6	39.2	+23.3	6	40
19.401	-25.8	56.3	-5.2	21958	.939	256.0	126.7	-14.9	6	32
				21957	.838	264.8	113.4	- 7.2	33	205
				21965	.600	287.2	91.3	+ 5.9	17	104
				21966	.586	251.2	91.3	-15.1	43	291
				21960	.589	296.7	88.6	+10.9	33	161
				21963	.627	312.6	85.7	+20.5	4	39
				21961	.198	207.5	61.7	-15.3	21	105
				21967	.278	192.6	60.0	-20.9	11	68
				21964	.460	354.0	59.3	+21.9	49	420
				21968	.529	28.7	40.4	+22.5	8	44
20.329	-25.7	44.0	-5.1	21958	.974	256.5	121.5	-14.3	0	9
				21957	.938	264.8	113.9	- 6.7	31	199
				21965	.757	281.6	92.0	+ 5.3	10	62
				21966	.745	254.0	91.8	-15.3	68	343
				21960	.739	290.0	88.8	+11.0	31	171
				21963	.742	305.1	84.5	+21.3	6	31
				21961	.341	238.1	61.4	-15.3	16	100
				21967	.375	223.0	59.9	-20.8	8	31
				21964	.517	331.7	59.3	+22.0	59	395
				21968	.467	1.3	43.4	+22.6	2	10
				21969	.111	152.7	41.1	-10.8	2	9
21.547	-25.6	27.9	-5.0	21966	.907	255.6	93.3	-15.1	42	252
				21965	.908	278.3	92.1	+ 5.3	5	45
				21960	.891	284.7	88.9	+10.6	32	176
				21963	.892	297.5	86.2	+21.7	29	163
				21961	.565	250.3	61.3	-15.2	19	95
				21967	.561	238.8	58.8	-21.2	3	14
				21964	.649	313.1	58.6	+21.9	84	533
				21968	.494	331.2	42.6	+20.7	1	15
				21969	.263	246.3	42.1	-10.9	41	151
22.313	-25.5	17.8	-5.0	21966	.970	256.0	94.4	-14.8	32	271
				21965	.965	276.9	91.8	+ 5.3	0	13
				21960	.955	282.7	89.0	+10.5	34	154
				21963	.950	295.0	85.6	+21.8	21	121
				21961	.694	253.2	61.1	-15.2	19	98
				21964	.740	306.4	57.8	+22.2	60	439
				21969	.422	254.5	42.2	-11.0	37	189
				21970	.757	76.0	330.2	+ 7.2	7	29
23.594	-25.3	0.9	-4.8	21961	.867	255.1	61.0	-15.3	18	90
				21964	.881	298.8	57.3	+22.5	33	288
				21969	.670	258.9	42.8	-11.0	24	112
				21970	.534	67.6	331.2	+ 7.5	8	31

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Apr. 24.315	-25.2	351.4	-4.8	21961	.935	255.6	60.9	-15.1	9	67
				21964	.941	296.4	57.3	+22.8	29	211
				21969	.799	260.4	44.4	-10.5	13	80
				1547 01	.575	304.0	20.8	+14.6	0	5
				21970	.405	57.9	331.2	+ 7.9	5	23
				21971	.858	74.2	294.3	+10.9	4	30
				21972	.910	78.4	287.3	+ 8.4	3	16
				21973	.972	81.1	276.1	+ 7.4	27	382
25.368	-25.1	337.5	-4.7	21961	.991	255.5	60.7	-15.0	8	42
				21964	.993	293.3	57.6	+22.4	18	89
				21969	.926	261.2	45.4	-10.0	14	80
				21970	.244	28.5	330.8	+ 7.7	2	15
				21971	.701	68.2	296.1	+11.6	16	60
				21972	.808	73.9	285.6	+10.1	2	19
				21973	.892	79.2	275.6	+ 7.4	50	393
				21974	.911	96.7	271.6	- 8.0	3	16
26.329	-25.0	324.8	-4.6	21969	.990	262.0	46.8	- 8.6	7	44
				21975	.328	321.2	336.8	+10.3	9	42
				21976	.315	212.6	335.1	-19.9	5	18
				21971	.539	59.5	296.6	+11.8	20	69
				21972	.645	68.4	287.4	+10.1	0	6
				21973	.771	76.2	275.9	+ 7.6	53	366
				21974	.788	96.8	272.7	- 8.2	4	11
27.332	-24.8	311.5	-4.5	21975	.501	298.9	337.9	+ 9.9	15	84
				21976	.447	231.6	333.4	-20.3	1	10
				21971	.381	42.8	296.3	+11.8	35	209
				21972	.468	60.8	287.2	+ 9.0	1	11
				21973	.609	71.2	276.1	+ 7.6	28	354
				21974	.615	97.2	273.7	- 8.0	0	6
28.302	-24.7	298.7	-4.4	1547 02	.878	259.0	0.2	-11.8	2	16
				21975	.653	290.6	336.9	+ 9.8	33	151
				21971	.285	6.9	296.7	+12.0	9	67
				21972	.345	41.6	285.3	+10.6	0	17
				21973	.435	61.0	276.2	+ 8.1	40	299
				21977	.970	69.7	225.4	+18.5	0	18
29.348	-24.5	284.9	-4.3	21975	.817	284.1	338.0	+ 8.9	16	84
				21976	.758	244.8	332.3	-21.7	2	7
				21971	.354	321.0	298.0	+11.7	5	19
				21972	.275	348.9	288.0	+11.3	0	5
				21973	.261	36.2	276.0	+ 7.8	41	279
				21977	.885	66.4	226.3	+18.5	20	73
30.347	-24.3	271.7	-4.2	21975	.930	281.0	338.8	+ 8.6	9	61
				21971	.496	303.7	296.5	+12.1	9	56
				21972	.396	311.0	289.3	+11.0	1	14
				21973	.218	340.1	276.0	+ 7.6	51	402
				21977	.760	60.8	227.3	+18.7	16	64
				21978	.966	79.8	197.7	+ 8.7	17	139

Date	P	L_o	B_o	Group No.	Rad. Dist.	Pos. Angle	Long.	Lat.	Umb.	Whole Spots
				Measures			Position		Area	
1969	°	°	°			°	°	°		
May 1.460	-24.1	257.0	-4.1	21979	.708	281.2	301.0	+ 5.0	3	22
				21971	.708	294.1	298.5	+13.7	5	29
				1547 03	.449	245.1	281.7	-14.6	4	25
				21973	.401	301.9	277.0	+ 8.3	32	369
				21977	.573	48.1	230.3	+18.8	3	21
				21978	.866	77.8	198.4	+ 8.4	23	99
				21980	.991	102.1	174.0	-12.6	50	251
2.401	-24.0	244.5	-4.0	1547 04	.878	284.6	304.2	+10.7	0	5
				21979	.833	279.0	300.1	+ 5.2	4	12
				21973	.565	290.4	276.8	+ 7.9	69	464
				1547 05	.448	232.5	266.6	-19.5	3	13
				21977	.449	30.5	230.7	+18.8	5	18
				21978	.745	75.6	198.0	+ 7.9	10	51
				21980	.944	101.9	173.7	-12.5	48	301
3.431	-23.8	230.9	-3.9	21979	.942	276.2	300.7	+ 4.5	3	13
				21973	.737	284.8	276.8	+ 8.1	52	464
				21977	.395	0.2	230.8	+19.3	5	15
				21978	.576	70.2	197.9	+ 8.0	11	46
				21980	.851	102.7	172.7	-12.9	104	534
				21981	.957	114.6	157.9	-24.6	0	8
4.622	-23.5	215.2	-3.8	21973	.895	281.3	277.5	+ 8.4	48	290
				21982	.615	242.1	250.3	-19.7	3	11
				21977	.474	327.3	230.9	+19.8	6	19
				1547 06	.309	322.6	226.1	+10.4	0	5
				21978	.352	55.2	198.3	+ 7.9	12	31
				21980	.684	105.6	172.7	-13.3	102	624
				1	.636	107.1	176.6	-13.7	45	245
				21981	.871	116.5	156.3	-24.8	0	14
				21983	.977	101.5	137.2	-12.0	16	73
				21984	.990	121.4	132.5	-31.6	8	56
5.298	-23.4	206.2	-3.7	21973	.953	280.2	277.5	+ 8.5	41	322
				21982	.735	246.2	251.7	-19.8	2	7
				21977	.557	315.8	230.5	+20.1	4	14
				21978	.250	34.4	198.1	+ 8.2	6	23
				21980	.562	108.5	173.2	-13.3	72	526
				1	.513	111.0	176.8	-13.8	42	240
				21983	.937	101.6	136.7	-12.2	30	154
				21984	.967	121.0	131.6	-30.9	13	101
6.478	-23.1	190.6	-3.6	1547 07	.900	253.6	254.4	-16.2	0	15
				21977	.717	303.2	230.3	+20.3	2	6
				21978	.245	324.3	198.9	+ 7.9	2	8
				21980	.327	123.3	174.4	-13.7	64	408
				1	.295	128.5	177.0	-14.0	37	228
				21981	.598	127.1	159.2	-24.1	6	23
				21983	.811	102.7	136.8	-12.3	31	168
				21984	.887	123.0	131.0	-30.6	12	49
7.325	-23.0	179.4	-3.5	21978	.389	300.6	199.1	+ 8.1	1	9
				21980	.191	158.1	175.3	-13.6	53	338
				1	.184	167.3	177.1	-13.8	40	240

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Rad. Dist.	Pos. Angle	Long.	Lat.	Umb.	Whole Spots
				Measures			Position		Area	
1969	°	°	°			°	°	°		
May 7.325	Continued			21981	.487	137.4	158.3	-24.2	3	13
				21983	.665	104.8	138.4	-12.4	15	90
				21984	.801	125.7	130.8	-30.1	9	34
8.348	-22.7	165.9	-3.4	21980	.257	221.2	175.9	-14.4	58	355
				1	.265	226.7	177.3	-13.7	48	288
				21981	.391	158.5	156.9	-24.5	0	6
				21983	.516	109.1	136.1	-12.6	24	135
				21984	.681	131.8	130.3	-29.7	3	26
				1547 08	.856	96.5	107.1	- 7.3	0	9
				21985	.876	78.9	105.9	+ 8.0	0	9
				21986	.937	107.0	96.6	-17.1	3	22
				21987	.979	79.6	88.8	+ 9.4	5	22
9.298	-22.5	153.3	-3.3	21980	.413	240.4	175.0	-14.8	59	391
				1	.437	244.7	177.2	-13.7	45	283
				21983	.330	119.2	136.3	-12.4	10	93
				21984	.573	143.0	130.0	-30.1	1	12
				21988	.793	95.8	101.0	- 6.6	2	11
				21986	.863	109.1	94.4	-18.1	2	22
				21987	.913	78.1	88.6	+ 9.4	3	17
				21989	.966	99.7	78.2	-10.2	35	226
10.297	-22.3	140.2	-3.2	21980	.607	249.9	176.1	-14.6	57	308
				1	.622	251.7	177.4	-13.8	49	259
				21983	.190	158.7	136.1	-13.3	12	106
				21988	.623	96.5	101.8	- 6.5	1	6
				1547 09	.705	106.3	96.2	-13.6	2	12
				21986	.756	112.4	92.7	-18.8	0	3
				21987	.803	75.5	88.3	+ 9.6	4	11
				21989	.880	99.3	78.6	- 9.7	18	134
				21990	.933	74.9	72.9	+12.8	3	12
11.441	-22.0	125.0	-3.0	21980	.791	254.8	176.6	-13.9	60	277
				1	.800	255.2	177.6	-13.6	56	250
				21983	.251	222.5	135.0	-13.6	6	42
				21985	.401	63.8	103.8	+ 7.3	10	68
				21988	.442	97.8	99.0	- 6.1	8	33
				21986	.542	117.1	94.9	-16.9	3	13
				21987	.629	71.0	88.1	+ 9.3	3	12
				21991	.739	64.6	81.1	+16.2	27	148
				21989	.729	100.5	78.5	- 9.7	16	104
				21990	.847	73.4	69.1	+12.3	23	123
				21992	.882	68.5	66.0	+17.3	2	19
12.298	-21.8	113.7	-2.9	21980	.905	256.5	178.2	-13.5	48	278
				21983	.398	242.1	134.8	-13.4	4	24
				21985	.238	41.8	104.5	+ 7.2	16	73
				21988	.229	104.9	100.9	- 6.2	25	149
				21986	.385	128.2	95.4	-16.5	11	48
				21987	.477	63.8	88.1	+ 9.5	3	10
				21991	.617	57.9	80.8	+16.6	43	309
				21989	.589	102.7	78.1	- 9.8	24	111
				21990	.741	70.2	68.3	+12.4	29	127
				21992	.841	65.6	59.9	+18.5	13	63

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
May 13.339	-21.5	99.9	-2.8	21980	.979	256.9	178.1	-13.4	38	249
				21983	.622	253.2	137.4	-12.6	12	84
				21985	.196	334.3	104.8	+ 7.3	9	64
				21988	.057	207.2	101.4	- 5.7	35	224
				21986	.239	165.5	96.4	-16.1	11	59
				21987	.297	43.8	87.9	+ 9.6	1	6
				21991	.459	42.4	81.1	+17.1	47	321
				21989	.397	108.5	77.6	- 9.8	20	87
				21990	.573	62.9	68.5	+12.7	13	88
				21992	.698	59.1	60.8	+18.8	10	78
14.324	-21.2	86.9	-2.7	21983	.780	255.6	137.5	-12.9	16	100
				1547 10	.527	240.3	115.5	-17.4	3	16
				21985	.382	296.9	106.9	+ 7.4	13	76
				21988	.274	257.2	102.4	- 6.1	37	205
				21993	.416	332.6	98.5	+18.9	8	56
				21986	.291	216.6	97.2	-16.1	7	25
				21987	.267	334.1	93.7	+11.2	12	61
				21991	.352	16.0	81.1	+17.0	45	255
				21989	.195	129.0	78.1	- 9.7	21	119
				21990	.396	47.1	69.6	+13.0	6	35
				21992	.525	47.0	63.1	+18.5	13	61
15.473	-20.9	71.7	-2.6	21983	.900	256.7	135.5	-13.0	3	21
				21985	.600	285.1	107.3	+ 6.9	14	72
				21988	.520	262.4	102.8	- 6.2	20	149
				21993	.562	309.3	98.9	+18.5	38	258
				21986	.462	240.1	96.2	-15.6	3	20
				21987	.452	301.0	94.8	+11.0	51	187
				21994	.586	329.7	91.2	+27.9	1	6
				21991	.372	335.9	80.8	+17.2	43	223
				21989	.175	222.6	78.6	- 9.9	16	108
				21990	.264	1.9	71.2	+12.7	5	28
				21992	.374	19.1	64.4	+18.1	10	45
16.306	-20.7	60.7	-2.5	21985	.746	282.7	107.8	+ 7.7	7	32
				21988	.674	264.4	102.8	- 5.6	23	157
				21993	.694	299.4	100.0	+17.9	41	246
				21986	.630	249.1	98.0	-14.9	1	15
				21987	.606	291.8	95.5	+10.9	27	192
				21991	.468	315.8	80.6	+17.2	39	221
				21989	.334	247.2	78.8	- 9.7	13	80
				21990	.312	328.1	70.4	+12.8	6	54
				21992	.366	339.6	68.3	+17.5	11	78
17.340	-20.4	47.0	-2.4	21985	.903	281.3	110.5	+ 9.1	8	48
				21988	.846	264.3	104.6	- 6.1	25	153
				21993	.844	292.2	101.6	+17.2	37	185
				21987	.795	287.0	97.8	+11.9	49	216
				21994	.803	307.8	92.6	+27.7	4	11
				21991	.614	300.6	80.3	+16.2	53	272
				21989	.549	254.9	79.5	-10.2	3	29
				21990	.484	301.7	71.9	+12.5	11	62
				21992	.487	313.8	68.6	+17.4	10	47
				21995	.368	10.5	43.0	+18.8	5	24

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
May 17.340	Continued			21996	.998	104.9	320.5	-15.0	32	239
18.188	-20.2	35.8	-2.3	21985	.978	281.0	113.0	+10.2	5	20
				21988	.933	263.9	104.6	- 6.5	26	80
				21993	.931	288.4	102.5	+16.1	20	161
				21987	.906	283.9	99.4	+11.5	29	195
				21991	.748	294.4	80.8	+16.3	42	205
				21990	.621	293.6	71.3	+12.5	11	104
				21992	.621	301.4	69.3	+16.9	5	40
				21995	.365	343.7	42.0	+18.2	7	29
				21997	.863	105.0	336.8	-14.0	0	10
				21996	.973	105.5	319.3	-15.6	81	502
19.327	-19.8	20.7	-2.1	21988	.996	264.3	105.3	- 5.9	12	117
				21993	.993	286.8	102.5	+16.4	18	162
				21987	.982	283.1	98.8	+12.4	6	41
				21991	.881	290.4	80.1	+16.8	39	222
				21989	.834	259.0	76.8	-10.3	0	8
				21990	.826	287.5	74.5	+13.1	4	24
				21992	.789	294.5	69.4	+17.7	13	85
				21995	.477	316.0	41.0	+18.0	4	21
				21997	.706	107.8	337.1	-14.0	10	29
				21998	.789	79.4	329.5	+ 7.0	0	11
				21996	.888	107.3	318.9	-16.3	112	756
				21999	.949	80.6	310.0	+ 8.2	50	419
				22000	.994	78.3	298.1	+11.3	19	135
20.524	-19.4	4.9	-2.0	21991	.975	288.0	80.6	+17.1	21	172
				21990	.923	283.9	71.0	+11.9	3	12
				21992	.918	290.9	69.1	+18.2	14	91
				21997	.486	114.0	337.9	-13.1	59	348
				21998	.640	69.9	327.3	+11.1	10	53
				21996	.733	110.4	319.4	-16.1	65	658
				21999	.819	78.5	310.9	+ 8.2	55	431
				22000	.933	76.9	297.2	+11.4	16	113
				22001	.984	77.2	286.1	+12.1	0	12
21.406	-19.2	353.2	-1.9	21990	.975	282.8	69.5	+12.0	10	51
				22002	.205	204.9	358.3	-12.6	5	30
				22003	.279	351.1	355.8	+14.0	5	51
				21997	.318	128.0	338.4	-13.1	125	690
				22004	.440	145.7	337.6	-23.1	1	8
				21998	.490	63.3	326.8	+11.0	18	183
				21996	.589	115.8	319.8	-16.4	87	657
				21999	.683	75.8	311.4	+ 8.2	70	404
				22000	.841	75.2	297.4	+11.3	17	92
				22001	.935	75.8	285.3	+12.5	6	38
				22005	.981	77.6	275.4	+11.8	23	109
22.324	-18.9	341.1	-1.8	22002	.349	238.0	358.6	-12.3	2	11
				22003	.362	319.5	355.1	+14.2	7	34
				22004	.321	178.4	340.5	-20.4	17	76
				21997	.202	168.4	338.7	-13.2	148	766
				21998	.330	48.1	326.7	+10.9	32	211

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
May 22.324	Continued			21996	.433	125.7	319.7	-16.3	96	567
				21999	.516	71.8	311.6	+ 7.7	65	293
				22000	.708	72.4	297.8	+11.0	18	98
				22001	.842	74.0	285.4	+12.4	8	29
				22005	.919	76.6	275.5	+11.5	11	100
23.332	-18.6	327.7	-1.7	22002	.540	249.7	358.8	-12.2	0	3
				22003	.524	300.7	355.3	+14.0	10	52
				22004	.391	212.6	340.7	-20.8	35	207
				21997	.284	223.5	339.3	-13.5	89	643
				22006	.448	195.2	335.3	-27.1	9	31
				21998	.220	1.8	327.3	+11.0	32	200
				21996	.289	152.3	319.7	-16.4	83	516
				21999	.314	57.7	312.3	+ 8.0	67	420
				22000	.529	65.9	298.4	+11.0	18	71
				22007	.593	60.8	295.4	+15.4	3	15
				22001	.724	71.0	283.4	+12.4	2	13
				22005	.809	74.4	275.3	+11.5	8	79
24.551	-18.2	311.6	-1.5	22003	.715	292.6	354.5	+14.8	5	31
				22008	.613	280.3	348.7	+ 5.0	17	95
				22004	.567	234.0	340.9	-20.7	58	428
				21997	.512	245.7	340.2	-13.5	94	557
				22006	.565	218.0	334.7	-27.7	11	72
				21998	.354	306.5	328.4	+10.6	15	110
				21996	.292	207.8	319.7	-16.4	74	452
				21999	.170	347.1	313.8	+ 8.0	49	340
				22000	.301	44.3	299.3	+10.9	11	56
				22007	.394	40.0	296.4	+16.0	2	10
				22001	.509	64.7	283.8	+11.2	8	46
				22005	.627	68.9	275.0	+11.8	12	67
25.404	-17.9	300.3	-1.4	22003	.825	289.2	353.9	+14.8	4	16
				22008	.762	278.4	349.4	+ 5.5	24	104
				22004	.689	240.7	340.1	-20.7	83	624
				21997	.653	251.3	339.6	-13.2	102	552
				22006	.665	228.4	334.2	-27.3	14	64
				21998	.501	294.9	327.8	+10.8	12	82
				21996	.405	231.3	319.4	-15.9	57	434
				21999	.284	305.0	313.8	+ 7.9	68	324
				22000	.212	5.9	299.1	+10.7	12	63
				22007	.328	17.4	294.5	+16.7	1	7
				22001	.327	44.5	286.8	+12.0	27	87
				22005	.488	61.7	274.4	+12.1	5	35
26.375	-17.5	287.5	-1.3	22003	.930	286.7	354.5	+15.0	3	12
				22008	.902	277.2	351.4	+ 5.9	11	53
				21997	.819	254.8	341.5	-13.1	86	496
				22004	.823	244.8	340.3	-21.2	126	808
				22006	.794	234.8	334.6	-28.0	8	24
				21998	.680	286.8	328.7	+10.3	14	62
				21996	.576	243.5	319.8	-15.9	55	311
				21999	.494	288.9	315.5	+ 8.0	38	265
				22000	.306	308.5	301.5	+ 9.7	10	36
				22001	.234	1.2	287.2	+12.2	19	90

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
May 26.375	Continued			22005	.322	43.0	274.5	+12.3	8	19
				22009	.988	84.6	206.7	+ 5.2	66	364
27.328	-17.2	274.9	-1.2	22008	.981	276.2	353.2	+ 5.8	0	11
				21997	.926	256.5	342.1	-12.9	48	374
				22004	.916	247.4	339.6	-21.1	84	866
				22006	.895	241.6	335.6	-25.7	10	49
				21998	.853	281.5	332.4	+ 9.1	6	30
				21996	.731	248.7	319.9	-16.2	32	292
				21999	.691	283.1	317.5	+ 8.1	35	208
				22000	.478	297.2	300.5	+11.5	5	21
				22001	.319	316.7	287.7	+12.2	12	51
				22005	.241	1.4	274.5	+12.7	3	18
				22009	.918	82.9	208.7	+ 6.1	27	184
28.324	-16.9	261.7	-1.1	21997	.987	257.1	342.0	-12.9	63	344
				22004	.974	248.4	337.8	-21.2	60	740
				22006	.960	241.6	333.5	-27.4	4	32
				21996	.867	252.2	320.6	-15.9	53	311
				21999	.838	281.3	317.8	+ 8.8	35	239
				22000	.655	289.3	300.7	+11.6	3	12
				22001	.505	297.0	289.0	+12.3	8	50
				22005	.323	318.2	274.4	+12.8	4	12
				22009	.795	80.7	209.7	+ 6.7	40	251
				1	.768	78.5	212.4	+ 8.1	20	153
				22010	.900	71.5	199.3	+16.1	3	10
				22011	.992	104.6	179.0	-14.6	36	190
29.332	-16.5	248.3	-0.9	21996	.955	254.1	320.4	-15.4	54	236
				21999	.937	280.1	317.2	+ 9.1	42	259
				22000	.803	285.4	300.3	+11.7	2	8
				22001	.676	289.7	288.8	+12.4	19	73
				22005	.491	298.9	274.4	+12.8	3	13
				22009	.621	76.5	211.0	+ 7.6	35	190
				1	.601	74.6	212.7	+ 8.4	26	146
				22010	.805	68.6	197.1	+16.5	4	19
				22011	.940	105.2	179.0	-14.6	17	109
30.472	-16.1	233.3	-0.8	21996	.998	255.7	319.3	-14.3	16	65
				21999	.991	279.9	315.2	+ 9.7	42	322
				22000	.927	283.1	300.3	+11.8	0	9
				22001	.854	284.3	290.7	+11.7	9	57
				1548 01	.808	247.8	285.0	-18.2	4	15
				22005	.693	289.1	275.2	+12.4	2	10
				22009	.396	67.8	211.7	+ 7.8	31	177
				1	.382	65.3	212.8	+ 8.4	25	144
				22010	.593	61.2	200.7	+15.9	0	6
				22011	.824	107.3	179.1	-14.6	16	101
31.361	-15.8	221.5	-0.7	22001	.956	282.0	293.6	+11.2	4	15
				1548 02	.869	247.6	279.8	-19.7	0	7
				22009	.227	50.4	211.4	+ 7.6	27	190
				1	.218	43.4	212.8	+ 8.4	23	146
				22011	.699	110.3	179.1	-14.5	25	99

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Jun. 1.358	-15.4	208.3	-0.6	22009	.168	332.8	212.7	+ 7.9	26	149
				1	.172	331.8	213.0	+ 8.1	23	140
				22011	.537	117.5	178.9	-14.8	12	49
				22012	.593	107.3	173.3	-10.6	6	46
2.328	-15.0	195.5	-0.5	22009	.327	297.1	212.5	+ 8.1	18	119
				1	.334	297.0	212.9	+ 8.2	17	107
				22011	.379	131.4	178.4	-14.9	4	32
				22012	.402	115.7	173.9	-10.4	9	50
				22013	.774	100.2	145.3	- 8.2	4	18
				22014	.970	78.1	120.2	+11.4	4	60
3.432	-14.6	180.8	-0.3	22009	.542	285.4	212.6	+ 8.0	14	101
				22011	.264	170.6	178.3	-15.4	2	12
				22012	.229	143.3	172.9	-10.9	4	13
				22013	.552	105.6	148.4	- 8.8	3	8
				22014	.893	76.3	118.5	+12.1	25	139
				22015	.946	79.8	110.3	+ 9.5	0	11
				22016	.952	106.2	109.5	-15.5	0	11
				22017	.973	73.8	105.0	+15.6	20	137
				22018	.980	82.1	102.8	+ 7.7	39	246
4.347	-14.3	168.7	-0.2	22009	.697	282.0	212.1	+ 8.1	13	70
				22012	.198	203.4	173.3	-10.6	5	18
				22013	.359	116.3	149.8	- 9.3	1	20
				22014	.772	74.0	119.5	+12.1	13	69
				22016	.863	107.1	110.4	-14.8	0	9
				22017	.906	72.5	105.1	+15.7	22	119
				22018	.916	81.4	102.9	+ 7.7	46	273
				22019	.975	105.5	92.2	-15.1	20	194
5.333	-13.9	155.7	-0.1	22009	.836	279.4	211.8	+ 7.7	6	29
				22012	.345	238.3	173.0	-10.5	0	2
				22013	.215	155.4	150.5	-11.3	5	28
				22014	.604	69.6	120.5	+12.0	9	60
				22015	.662	75.0	115.4	+ 9.8	11	59
				22016	.740	111.4	110.2	-15.7	0	17
				22017	.795	69.8	105.1	+15.8	11	109
				22018	.803	79.9	102.9	+ 8.0	44	230
				22019	.922	107.0	89.6	-15.6	102	644
				22020	.935	77.1	87.2	+11.9	93	532
				22021	.984	73.2	76.7	+16.5	125	850
6.333	-13.5	142.4	0.0	22009	.940	278.5	212.0	+ 8.0	3	20
				1548 03	.818	281.6	196.6	+ 9.4	4	26
				22011	.637	244.0	178.9	-16.2	6	24
				22012	.511	247.3	171.1	-11.3	0	5
				22013	.231	217.9	150.7	-10.4	4	30
				22014	.395	60.5	122.0	+11.2	1	7
				22015	.460	70.3	116.5	+ 8.9	21	147
				22016	.576	116.5	110.4	-14.8	6	62
				22017	.644	65.1	105.2	+15.7	15	108
				22018	.639	77.7	103.5	+ 7.8	31	216
				22019	.809	109.4	90.3	-15.5	158	1037
				22020	.815	76.3	88.9	+11.1	80	648

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Jun. 6.333	Continued			22021	.920	72.2	76.8	+16.3	174	906
7.468	-13.0	127.4	+0.1	22011	.805	251.1	179.3	-15.0	0	4
				22012	.707	252.9	170.9	-11.8	3	19
				22013	.416	247.0	150.2	- 9.2	2	12
				22015	.260	51.0	115.7	+ 9.5	41	293
				22016	.348	134.0	112.6	-13.8	5	15
				22017	.457	53.2	105.2	+15.9	20	101
				22018	.425	70.8	103.6	+ 8.1	34	207
				22019	.633	115.0	91.0	-15.3	163	985
				22020	.626	72.1	90.2	+11.2	97	587
				22021	.797	69.5	76.6	+16.2	158	857
8.336	-12.7	116.0	+0.3	22012	.814	254.1	169.1	-12.7	0	8
				22013	.561	251.5	148.5	-10.0	1	5
				22015	.162	3.8	115.3	+ 9.5	71	501
				22016	.243	169.5	113.3	-13.5	2	9
				22017	.330	33.5	105.1	+16.2	15	87
				22018	.242	55.6	104.4	+ 8.1	33	162
				22019	.492	122.9	90.7	-15.2	198	1342
				22020	.468	65.5	90.3	+11.4	112	565
				22021	.674	65.9	76.3	+16.1	142	871
9.333	-12.3	102.8	+0.4	22015	.270	307.5	115.3	+ 9.8	47	365
				22016	.299	219.9	114.0	-12.8	1	7
				22017	.280	352.2	105.0	+16.4	6	67
				22018	.142	346.1	104.7	+ 8.3	21	159
				22020	.268	44.9	91.7	+11.2	88	546
				22019	.331	142.6	90.8	-14.8	259	1427
				22021	.514	57.6	76.0	+16.3	127	817
10.339	-11.8	89.4	+0.5	22015	.457	291.3	115.0	+10.0	84	433
				22016	.385	231.0	107.3	-13.5	5	16
				22017	.377	317.5	104.8	+16.5	5	41
				22018	.296	298.0	104.7	+ 8.5	25	149
				22020	.193	344.7	92.4	+11.2	82	482
				22019	.261	186.0	91.1	-14.5	295	1846
				22021	.359	40.2	75.5	+16.3	134	898
				22022	.941	87.7	19.5	+ 2.4	0	10
11.349	-11.4	76.1	+0.6	22015	.662	284.3	116.5	+ 9.8	40	259
				22016	.575	247.2	108.8	-12.3	17	80
				22018	.500	286.8	104.9	+ 8.8	16	130
				22017	.540	301.0	104.8	+16.6	1	11
				22020	.340	302.8	92.9	+11.2	87	441
				22019	.364	225.5	91.5	-14.1	258	2144
				22021	.273	3.5	75.1	+16.4	98	864
				22022	.861	87.5	16.8	+ 2.4	2	18
				22023	.994	81.6	352.8	+ 8.4	39	273
12.337	-11.0	63.0	+0.7	22015	.820	281.2	117.4	+ 9.6	39	232
				22016	.744	253.6	109.6	-11.6	10	51
				22018	.680	282.5	105.0	+ 9.0	25	112
				22017	.692	293.7	104.2	+16.7	3	16

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Jun. 12.337	Continued			22020	.531	290.5	93.3	+11.3	84	564
				22019	.529	241.2	91.4	-14.0	273	2022
				22021	.336	324.5	74.7	+16.5	91	758
				22023	.942	81.4	352.9	+ 8.4	23	125
				22024	.971	104.4	347.7	-13.8	9	52
13.346	-10.6	49.6	+0.9	22015	.943	279.6	119.8	+ 9.3	26	113
				22016	.877	256.5	109.9	-11.4	9	42
				22018	.830	280.5	105.2	+ 9.2	22	104
				22017	.832	290.0	104.2	+17.0	0	4
				22020	.718	285.2	94.5	+11.4	86	472
				22019	.695	248.6	91.3	-14.0	281	2136
				22021	.492	304.2	74.7	+16.7	99	683
				22023	.840	80.2	353.0	+ 8.6	18	121
				22024	.898	105.9	347.0	-13.8	15	81
				22025	.987	78.3	329.1	+11.7	136	665
14.499	-10.1	34.4	+1.0	22016	.953	256.9	105.8	-12.1	4	22
				22018	.947	279.1	105.4	+ 8.9	28	128
				22020	.874	282.1	94.7	+11.0	85	463
				22019	.859	252.4	92.0	-14.5	276	2089
				22021	.678	293.8	74.6	+16.6	83	641
				22026	.279	23.1	27.9	+15.8	28	121
				22023	.664	78.5	353.4	+ 8.3	14	80
				22024	.761	109.5	346.9	-14.0	7	44
				22025	.914	78.5	328.8	+10.9	90	550
				22027	.953	107.5	323.4	-16.3	11	97
15.396	- 9.7	22.5	+1.1	22018	.992	278.9	105.3	+ 9.0	18	154
				22020	.954	281.0	94.6	+10.8	72	460
				22019	.949	254.3	93.0	-14.5	224	2080
				22021	.809	290.2	74.8	+16.9	93	525
				22026	.275	341.5	27.7	+16.1	44	238
				22028	.393	357.9	23.4	+24.1	2	15
				22023	.498	74.7	353.5	+ 8.5	8	61
				22024	.615	116.0	347.8	-14.7	9	42
				22029	.692	120.6	343.4	-19.7	5	19
				22025	.809	77.3	329.2	+10.9	95	472
				22027	.873	109.3	323.6	-16.2	9	61
				22030	.933	81.7	313.8	+ 8.1	0	6
				1548 04	.952	78.1	310.8	+11.6	0	18
16.663	- 9.2	5.7	+1.2	22020	.998	283.6	91.9	+13.6	16	66
				22019	.993	254.5	88.0	-15.3	39	465
				22021	.933	287.7	73.8	+16.9	76	440
				22026	.460	303.0	29.2	+15.6	18	100
				22028	.509	317.6	27.6	+23.1	5	19
				22023	.249	59.6	353.2	+ 8.4	6	24
				22024	.419	136.2	348.2	-16.3	11	71
				22029	.500	136.5	344.3	-20.0	3	40
				22025	.610	73.8	329.3	+10.8	94	450
				1548 05	.660	107.4	326.1	-10.4	2	6
				22031	.656	79.7	325.3	+ 7.7	3	18
				22027	.718	114.3	322.9	-16.2	0	3

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Jun. 17.348	- 8.9	356.7	+1.3	22021	.976	287.1	73.7	+16.9	68	428
				22026	.572	296.8	28.6	+16.0	10	87
				22028	.607	307.9	27.9	+22.9	6	20
				22023	.138	25.9	353.2	+ 8.4	6	27
				22024	.336	152.9	347.5	-16.0	15	94
				22029	.426	150.5	343.8	-20.4	6	32
				22025	.484	69.4	329.3	+11.0	82	453
				22031	.534	78.6	325.0	+ 7.2	3	16
				22027	.589	120.6	324.9	-16.2	6	30
				22032	.661	126.3	321.8	-21.8	0	6
18.346	- 8.4	343.4	+1.4	22026	.734	290.3	28.9	+15.7	8	41
				22028	.717	301.3	25.0	+22.9	13	64
				22023	.209	306.5	353.2	+ 8.5	6	16
				22024	.309	195.8	348.4	-15.8	7	50
				22029	.364	181.4	344.0	-19.8	2	32
				1549 01	.456	161.9	334.6	-24.1	3	17
				22025	.289	55.4	329.5	+10.8	84	435
				22031	.346	71.1	324.2	+ 7.8	12	85
				22027	.424	130.6	324.1	-14.6	8	38
				22030	.547	76.8	311.0	+ 8.4	1	11
19.320	- 8.0	330.6	+1.6	22026	.853	287.3	28.1	+15.5	6	57
				22028	.857	296.3	27.0	+23.1	11	53
				22023	.402	286.9	353.3	+ 8.1	5	18
				22029	.421	211.2	343.9	-19.5	1	33
				22025	.157	5.6	329.7	+10.5	84	434
				22031	.126	38.0	326.1	+ 7.2	50	242
				22027	.302	156.7	323.5	-14.5	4	34
				22030	.283	73.3	314.8	+ 6.1	0	10
20.333	- 7.6	317.1	+1.7	22026	.959	285.4	30.2	+15.2	0	8
				22028	.948	294.5	27.4	+23.7	17	90
				22023	.600	281.0	353.5	+ 7.9	1	10
				22025	.265	305.0	329.8	+10.3	85	448
				22031	.187	299.5	326.5	+ 6.9	57	350
				22027	.311	201.0	323.7	-15.1	2	12
				22030	.130	30.3	313.4	+ 8.1	2	21
				1549 02	.929	79.4	249.2	+10.5	3	18
21.351	- 7.1	303.7	+1.8	22023	.772	278.6	353.9	+ 7.8	2	14
				22033	.765	286.3	352.5	+13.6	2	16
				22025	.460	289.5	329.7	+10.4	82	358
				22031	.397	282.6	326.5	+ 6.6	60	438
				22027	.462	228.9	324.8	-15.9	5	20
22.342	- 6.7	290.6	+1.9	22033	.886	283.9	352.3	+13.1	5	17
				22025	.638	284.1	329.3	+10.4	84	389
				22031	.600	278.5	327.1	+ 6.6	36	349
				22027	.623	240.6	324.8	-16.2	1	9
				1549 03	.432	56.3	268.7	+15.6	1	15
23.375	- 6.2	276.9	+2.0	22033	.964	283.4	351.2	+13.5	0	12
				22025	.803	281.3	329.8	+10.3	67	358
				22031	.778	277.1	327.7	+ 6.8	50	294

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Jun. 23.375	Continued			22032	.779	240.0	323.1	-21.4	2	11
				22027	.741	250.1	322.4	-13.1	3	20
				1549 04	.460	305.4	299.9	+17.3	1	5
24.422	- 5.7	263.0	+2.2	22025	.923	279.6	330.1	+ 9.7	46	350
				22031	.912	276.1	328.7	+ 6.5	32	291
				22032	.896	245.2	323.3	-21.0	15	90
				22027	.879	251.8	322.6	-14.8	2	9
				22034	.449	77.7	236.9	+ 7.4	6	22
25.391	- 5.3	250.2	+2.3	22025	.983	279.5	329.6	+ 9.8	48	262
				22031	.980	276.5	328.6	+ 6.8	38	361
				22032	.969	248.1	323.6	-20.5	17	93
				22027	.960	253.2	322.4	-15.4	4	24
				22034	.236	68.4	237.5	+ 7.2	7	32
				22035	.973	102.1	174.4	-11.2	5	43
26.322	- 4.9	237.9	+2.4	22034	.088	341.8	239.4	+ 7.1	7	34
				1549 05	.700	77.8	194.0	+10.2	2	13
				22036	.829	113.6	185.1	-17.9	2	12
				22035	.898	102.9	175.2	-10.4	10	67
27.383	- 4.4	223.8	+2.5	1549 06	.528	230.2	248.9	-17.4	1	11
				22034	.307	283.5	241.2	+ 6.5	9	35
				22035	.749	106.3	177.0	-10.4	15	74
28.346	- 4.0	211.1	+2.6	22034	.503	278.9	241.0	+ 6.7	4	21
				22037	.216	359.0	211.3	+15.0	4	31
				22035	.583	111.3	177.8	-10.0	25	170
				22038	.995	75.0	126.8	+15.2	11	85
29.378	- 3.5	197.4	+2.7	22034	.715	277.0	242.9	+ 6.9	3	19
				22037	.330	310.1	212.5	+14.9	1	11
				22035	.392	123.6	178.1	- 9.9	66	367
				22038	.949	74.3	126.0	+15.7	11	98
				1549 07	.961	61.5	124.5	+28.1	0	16
30.335	- 3.1	184.8	+2.8	22034	.852	276.5	243.1	+ 7.0	2	13
				22037	.483	298.2	210.9	+15.7	7	43
				22035	.254	151.5	177.7	-10.0	65	411
				22039	.625	59.5	149.7	+20.8	12	43
				22038	.861	73.5	126.0	+15.6	16	117
				22040	.888	82.1	122.3	+ 8.3	5	25
				22041	.980	81.0	106.3	+ 9.4	11	39
				22042	.992	104.4	103.0	-13.9	0	18
July 1.443	- 2.6	170.1	+3.0	22034	.960	276.8	243.8	+ 7.3	0	12
				22037	.680	290.0	211.5	+15.6	3	15
				22035	.263	210.2	177.8	-10.1	49	420
				22039	.422	44.6	151.8	+20.2	7	43
				22038	.720	70.4	125.4	+16.1	21	128
				22040	.716	82.0	124.6	+ 7.8	6	48
				22041	.911	81.8	104.5	+ 8.7	22	113
				22043	.964	78.5	95.5	+11.9	50	297
				22042	.975	106.8	94.6	-15.6	110	1051

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
July 2.339	- 2.2	158.2	+3.0	22037	.835	282.8	214.4	+12.3	2	14
				22036	.511	224.2	180.2	-18.6	0	6
				22035	.396	235.6	177.5	-10.0	50	332
				22039	.309	21.0	151.5	+19.7	9	39
				22038	.559	65.4	126.4	+16.0	13	110
				22040	.533	81.2	126.3	+ 7.3	3	5
				22041	.819	82.3	103.4	+ 8.1	15	141
				22043	.892	78.2	95.3	+11.9	44	304
				22042	.912	108.8	94.7	-15.7	125	934
3.416	- 1.7	144.0	+3.2	22037	.926	284.7	211.7	+14.8	12	70
				22036	.695	239.3	182.8	-18.3	19	136
				22035	.582	247.9	177.0	-10.0	59	544
				1549 08	.430	218.6	160.1	-16.5	0	1
				22039	.307	334.0	152.1	+19.1	5	33
				22038	.366	52.1	126.6	+16.0	15	116
				22044	.675	156.8	125.1	-35.2	14	101
				22040	.366	77.9	122.9	+ 7.3	2	15
				22041	.661	81.2	102.9	+ 8.2	24	138
				22043	.753	76.9	95.6	+11.9	44	254
				22042	.797	112.7	94.3	-15.8	144	928
				22045	.978	82.1	65.8	+ 8.4	11	104
4.428	- 1.2	130.6	+3.3	22036	.831	246.3	183.3	-17.5	44	289
				22035	.758	253.8	178.0	- 9.9	54	373
				22039	.452	307.7	152.7	+19.0	3	10
				22038	.229	16.2	126.8	+15.9	17	94
				22040	.140	57.9	123.7	+ 7.5	1	9
				22044	.638	171.1	123.6	-35.7	24	124
				22041	.471	79.2	102.9	+ 7.9	14	125
				22043	.589	74.0	95.4	+12.0	48	251
				22042	.655	119.1	94.2	-15.9	141	907
				22045	.907	82.2	65.5	+ 8.4	19	101
				22046	.945	119.6	64.1	-26.5	7	21
5.382	- 0.8	118.0	+3.4	22036	.929	249.3	183.6	-17.8	37	290
				22035	.881	257.0	178.3	- 9.7	37	246
				22038	.263	326.4	126.6	+15.9	20	96
				22040	.189	310.8	126.3	+10.4	0	2
				22044	.643	189.1	125.2	-35.9	13	50
				22041	.263	72.4	103.4	+ 7.8	17	109
				22043	.415	67.3	95.0	+12.3	47	238
				22042	.516	129.8	93.7	-16.1	143	945
				22045	.809	81.7	64.1	+ 8.7	21	89
				22046	.875	123.4	63.2	-26.8	5	18
6.342	- 0.3	105.2	+3.5	22036	.987	250.9	184.1	-18.2	27	226
				22035	.968	259.1	179.5	- 9.6	44	188
				22047	.821	300.8	157.3	+27.0	0	8
				22038	.420	301.5	127.0	+15.9	21	108
				22044	.700	205.2	126.8	-35.9	9	37
				22040	.359	290.5	125.2	+10.5	1	7
				22041	.078	16.9	103.9	+ 7.7	8	61
				22043	.238	47.9	94.9	+12.5	51	263
				22042	.381	150.7	94.1	-15.9	131	832

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
July 6.342	Continued			22045	.650	80.6	65.0	+ 8.7	12	85
				22046	.772	129.3	63.5	-26.6	0	9
				22048	.918	76.3	38.7	+13.9	8	45
				22049	.997	105.7	21.2	-15.3	13	53
7.458	+ 0.2	90.5	+3.6	22047	.938	297.8	159.1	+27.3	0	7
				22038	.607	292.5	126.1	+16.3	19	104
				22044	.787	216.7	126.0	-36.1	6	19
				22041	.237	289.8	103.4	+ 8.1	5	30
				1549 09	.123	275.6	97.5	+ 4.3	0	3
				22043	.169	335.6	94.6	+12.4	39	253
				22042	.339	189.2	93.7	-15.8	115	685
				22045	.445	76.9	64.5	+ 9.0	13	69
				22048	.826	76.3	35.1	+13.4	20	114
				22049	.979	108.0	14.2	-16.8	67	410
8.407	+ 0.6	77.9	+3.7	22038	.762	288.4	126.6	+16.3	21	110
				22044	.863	223.8	125.4	-36.0	2	16
				22041	.456	279.6	104.8	+ 7.6	3	15
				22043	.327	298.4	95.0	+12.4	43	240
				22042	.411	216.8	92.7	-15.6	91	703
				22045	.246	68.8	64.6	+ 8.7	9	55
				22048	.672	73.5	36.6	+13.8	15	115
				22049	.910	110.5	15.1	-16.9	41	296
9.436	+ 1.1	64.3	+3.8	22038	.885	286.6	126.2	+16.5	15	103
				22041	.618	275.5	102.4	+ 6.4	2	16
				22043	.522	287.7	94.8	+12.4	32	239
				22042	.558	235.0	92.5	-15.2	86	767
				22045	.086	359.9	64.3	+ 8.7	9	40
				22048	.469	68.0	37.8	+13.5	13	58
				22049	.792	114.5	15.7	-16.7	38	284
				22050	.782	68.4	14.2	+19.1	0	4
10.333	+ 1.5	52.4	+3.9	22038	.958	285.8	126.0	+16.3	16	95
				22041	.799	274.1	105.4	+ 5.6	0	4
				22043	.683	284.1	95.0	+12.5	41	227
				22042	.700	243.4	92.7	-15.3	57	598
				22045	.197	299.1	62.4	+ 9.3	6	47
				22048	.280	53.4	39.1	+13.4	10	55
				22051	.327	127.7	37.4	- 7.7	1	7
				22049	.654	120.8	16.7	-16.4	23	272
				22052	.976	84.3	334.8	+ 6.4	16	109
				22053	.984	80.3	332.5	+10.2	13	88
11.452	+ 2.0	37.6	+4.0	22043	.845	282.0	95.2	+12.3	34	188
				22042	.843	248.6	92.0	-15.6	77	580
				22054	.815	256.0	90.6	- 8.9	2	16
				22045	.456	282.6	64.3	+ 9.3	3	14
				22048	.176	344.8	40.3	+13.7	11	47
				22051	.198	181.9	38.0	- 7.3	1	12
				22049	.474	135.8	17.6	-16.0	38	259
				22055	.730	115.2	354.6	-15.1	10	55
				22052	.894	85.3	334.3	+ 6.0	13	107
				22053	.914	80.5	331.5	+10.3	22	129

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
July 12.320	+ 2.4	26.1	+4.1	22043	.932	281.8	95.0	+12.5	38	220
				22042	.924	251.6	91.3	-15.2	77	627
				22054	.901	258.9	89.2	- 8.1	5	42
				22045	.615	280.1	63.8	+ 9.4	1	10
				1549 10	.385	323.1	40.5	+21.8	0	4
				22048	.260	312.5	37.5	+14.1	8	29
				22049	.371	157.5	17.7	-15.9	35	206
				22050	.383	41.1	10.6	+20.6	0	5
				22055	.601	122.9	354.6	-15.5	16	71
				22052	.788	85.6	334.1	+ 6.0	15	104
				22053	.815	80.1	331.6	+10.4	32	126
13.353	+ 2.8	12.5	+4.2	22043	.991	281.7	95.4	+12.1	17	153
				22042	.990	254.2	92.6	-15.0	68	478
				22054	.984	261.6	91.2	- 7.5	0	13
				1549 11	.742	227.5	50.1	-26.7	3	22
				22048	.458	293.1	38.1	+14.1	7	25
				22049	.355	197.7	18.9	-15.5	22	136
				22050	.276	12.7	8.8	+19.7	22	108
				22055	.445	139.4	355.1	-15.7	5	31
				22052	.615	85.5	334.6	+ 6.1	15	66
				22053	.652	79.2	332.1	+10.2	23	113
14.328	+ 3.3	359.6	+4.3	22048	.664	286.3	40.4	+14.0	3	25
				22049	.467	224.4	19.3	-15.4	20	125
				22050	.310	330.8	8.8	+19.9	59	330
				22055	.329	176.8	358.5	-14.8	2	10
				22052	.422	84.3	334.7	+ 6.3	10	64
				22053	.470	76.3	332.0	+10.2	25	110
15.433	+ 3.7	344.9	+4.4	22048	.823	283.9	40.1	+13.9	10	39
				22049	.637	240.0	19.6	-14.9	13	88
				22050	.477	304.9	9.4	+19.8	46	340
				22055	.399	214.4	358.4	-14.8	1	5
				1550 01	.456	179.3	344.6	-22.6	0	8
				22052	.179	79.0	334.8	+ 6.3	11	48
				22053	.242	65.5	332.1	+10.0	14	115
				1550 02	.879	60.6	285.1	+27.7	0	5
16.452	+ 4.2	331.4	+4.5	22048	.927	283.0	39.6	+13.8	18	133
				22049	.785	246.0	19.4	-15.6	15	96
				22050	.652	296.1	9.8	+20.2	34	260
				22055	.522	231.4	356.3	-14.8	1	17
				22052	.070	298.3	335.0	+ 6.4	12	45
				22053	.094	353.6	332.1	+ 9.9	18	106
17.351	+ 4.6	319.6	+4.6	22049	.889	251.1	19.6	-14.5	15	55
				22050	.806	292.9	12.1	+21.0	39	163
				22056	.544	293.0	350.8	+16.1	3	33
				1550 03	.622	232.2	350.6	-18.4	0	4
				22052	.269	277.5	335.1	+ 6.4	6	32
				22053	.237	295.3	332.1	+10.3	23	128
				22057	.992	78.3	236.1	+12.2	34	667

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
July 18.320	+ 5.0	306.7	+4.7	22049	.963	253.8	19.1	-14.2	4	42
				22050	.914	291.4	12.5	+21.4	17	112
				22056	.710	288.0	351.2	+16.0	3	16
				22052	.480	275.0	335.4	+ 6.5	3	13
				22053	.440	284.1	332.3	+10.3	20	128
				22058	.348	354.2	309.0	+24.8	10	61
				22057	.937	78.4	236.9	+12.5	40	423
19.333	+ 5.5	293.3	+4.8	22050	.985	291.7	14.3	+22.2	13	38
				22052	.669	273.9	335.4	+ 6.2	3	12
				22053	.631	280.7	332.3	+10.4	20	122
				22058	.424	325.7	308.6	+25.0	15	70
				22057	.824	78.0	237.8	+12.6	46	369
20.427	+ 5.9	278.9	+4.9	22052	.841	274.1	336.1	+ 6.0	6	32
				22053	.809	279.7	332.8	+10.7	19	103
				22058	.568	309.0	307.9	+25.1	10	53
				22059	.516	227.0	301.9	-16.1	3	13
				22057	.655	76.4	238.3	+12.5	55	283
21.340	+ 6.3	266.8	+4.9	22052	.938	274.5	336.5	+ 5.9	3	19
				22053	.912	279.2	332.8	+10.4	16	92
				22058	.694	301.6	307.4	+25.1	8	32
				22059	.641	237.7	300.9	-15.9	10	61
				22057	.480	73.4	238.8	+12.2	41	206
22.463	+ 6.8	251.9	+5.0	22053	.985	280.1	332.5	+10.8	6	39
				22059	.807	246.2	301.8	-15.8	14	74
				1550 04	.750	293.8	299.0	+21.0	0	3
				22057	.243	60.0	239.6	+11.9	25	130
				22060	.743	79.8	204.0	+11.0	7	24
				1550 05	.887	69.2	189.7	+20.8	0	12
				22061	.939	109.3	184.9	-16.1	3	23
23.329	+ 7.2	240.5	+5.1	22059	.905	250.0	302.3	-15.7	6	54
				22057	.125	9.6	239.3	+12.2	10	63
				22060	.563	78.6	206.4	+10.6	7	33
				22061	.862	112.4	184.5	-16.3	2	18
24.337	+ 7.6	227.1	+5.2	22059	.981	252.8	303.7	-15.7	0	11
				22057	.224	303.4	238.1	+12.2	6	47
				22060	.345	73.0	207.6	+10.7	6	27
				22061	.733	118.0	184.9	-16.2	2	10
				22062	.974	106.9	152.5	-15.1	46	363
25.323	+ 8.0	214.1	+5.3	22057	.409	289.9	237.2	+12.8	5	48
				22060	.163	55.3	206.3	+10.5	5	29
				22061	.581	128.2	185.7	-16.3	3	15
				22062	.900	110.2	153.0	-15.6	86	375
26.415	+ 8.5	199.6	+5.4	1550 06	.966	278.1	274.9	+ 9.2	4	35
				22057	.634	283.8	238.7	+12.9	12	56
				22060	.177	292.0	209.2	+ 9.1	1	8
				22063	.558	129.5	173.2	-15.9	0	3
				22062	.783	114.9	152.3	-15.6	65	374

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
July 26.415	Continued			22064	.966	98.8	125.9	- 7.0	17	96
27.358	+ 8.9	187.2	+5.5	22057	.786	282.1	239.0	+12.9	4	34
				1550 07	.279	170.4	184.5	-10.5	0	2
				22062	.662	121.8	151.5	-15.9	60	437
				22064	.897	100.8	124.8	- 7.2	35	269
28.382	+ 9.3	173.6	+5.5	22057	.896	284.7	237.5	+15.6	5	39
				22065	.330	183.8	174.9	-13.6	4	27
				22063	.378	169.2	169.4	-16.2	9	52
				22062	.514	135.3	151.6	-16.2	49	434
				22064	.777	104.1	124.3	- 7.3	74	539
29.397	+ 9.7	160.2	+5.6	22065	.418	218.6	175.7	-13.6	5	38
				22063	.401	202.6	169.4	-16.1	10	60
				22062	.408	157.6	150.9	-16.5	49	296
				22066	.599	64.7	125.3	+19.4	3	9
				22064	.616	109.2	124.4	- 7.1	100	646
				22067	.862	111.0	104.1	-14.9	4	22
30.327	+10.1	147.9	+5.7	1550 08	.613	302.5	182.2	+23.9	0	3
				22065	.571	235.2	176.7	-14.0	1	20
				22063	.519	224.3	170.0	-16.5	3	30
				22062	.385	186.9	150.6	-16.7	30	211
				22066	.428	55.6	126.0	+19.2	0	10
				22064	.446	119.3	124.9	- 7.3	114	860
				22067	.733	116.9	105.4	-15.2	3	13
				22068	.993	103.5	66.5	-12.6	9	56
31.535	+10.6	131.9	+5.8	22069	.861	298.6	190.1	+27.4	7	43
				22065	.744	246.9	176.3	-12.8	14	51
				22063	.717	238.1	171.5	-17.8	2	18
				22062	.487	218.9	150.5	-16.7	25	147
				22064	.254	152.7	125.2	- 7.3	128	1003
				22070	.286	67.8	116.3	+11.7	2	12
				22067	.549	129.8	106.1	-15.3	3	12
				1550 09	.486	88.2	102.8	+ 5.9	0	13
				22068	.932	104.8	65.2	-11.5	42	422
				22071	.946	82.6	60.4	+ 8.8	11	32
Aug. 1.545	+11.0	118.6	+5.8	22069	.947	297.1	190.2	+27.5	7	46
				22065	.867	251.4	175.8	-12.9	16	142
				22072	.640	282.5	158.2	+12.5	3	21
				22062	.630	234.6	150.8	-16.4	35	159
				22064	.269	205.7	125.3	- 8.2	212	1390
				22070	.129	25.2	115.4	+12.5	5	32
				22073	.080	101.8	114.1	+ 4.9	5	53
				22067	.420	150.7	106.3	-15.7	0	5
				1550 10	.517	126.5	93.5	-12.6	0	5
				22068	.822	108.7	66.1	-11.7	105	819
				22071	.833	83.4	61.9	+ 8.7	6	27

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Aug. 2.335	+11.3	108.1	+5.9	22069	.981	298.0	188.2	+28.6	0	23
				22065	.927	254.2	173.8	-12.2	6	45
				22072	.765	282.1	158.1	+13.0	4	25
				22062	.738	241.6	150.5	-16.2	17	129
				22064	.382	231.8	125.7	- 8.0	157	1392
				22070	.185	309.1	116.5	+12.5	34	140
				22073	.098	257.6	113.6	+ 4.7	13	62
				22067	.369	173.7	105.7	-15.5	0	7
				22068	.711	112.8	66.3	-11.6	123	1025
				22071	.791	82.8	55.7	+ 9.3	17	86
				22074	.902	119.0	49.4	-22.9	2	24
3.588	+11.8	91.5	+6.0	22062	.889	248.2	150.6	-16.2	14	82
				22064	.599	247.9	125.5	- 8.0	149	1190
				22070	.446	286.5	117.4	+12.6	55	355
				22073	.430	269.6	117.0	+ 5.2	2	17
				22067	.391	206.1	101.7	-14.6	2	19
				22068	.514	124.8	66.2	-11.6	134	948
				22071	.596	82.0	54.9	+ 9.6	29	170
				22074	.770	126.9	49.6	-23.1	10	42
				22075	.940	71.6	20.9	+19.3	0	13
4.335	+12.1	81.7	+6.0	22062	.946	250.8	149.8	-15.9	14	66
				22064	.721	252.8	125.6	- 8.0	134	1237
				22070	.600	283.2	118.3	+12.7	97	497
				22073	.530	269.6	113.7	+ 4.9	3	18
				22068	.357	148.5	70.7	-11.7	108	793
				22071	.439	80.9	55.7	+ 9.4	26	134
				22074	.675	133.4	49.7	-22.4	37	169
				1550 11	.597	113.4	48.1	- 8.7	1	17
				22075	.911	70.8	15.7	+19.9	6	28
				22076	.925	76.3	13.5	+14.9	3	12
				22077	.994	74.1	357.0	+16.4	10	39
5.332	+12.5	68.5	+6.1	22062	.995	253.1	150.2	-16.0	11	85
				22064	.857	256.6	125.6	- 8.1	108	1147
				1550 12	.814	270.4	123.0	+ 3.9	0	4
				22070	.761	281.4	118.2	+12.6	65	495
				22068	.309	175.2	67.0	-11.8	94	649
				22071	.226	75.6	55.7	+ 9.2	21	126
				22074	.547	149.7	51.2	-22.2	39	205
				22075	.806	70.3	15.2	+19.4	12	46
				22076	.818	75.5	13.5	+15.3	20	83
				22077	.937	74.9	358.4	+16.2	3	16
6.333	+12.8	55.2	+6.2	22064	.949	258.9	125.4	- 8.5	128	1270
				22070	.891	280.9	118.6	+12.5	53	446
				22068	.371	214.3	67.5	-11.7	80	596
				22071	.053	346.1	56.0	+ 9.1	16	92
				22074	.482	172.4	51.3	-22.3	41	228
				22075	.663	66.9	15.0	+19.7	6	37
				22076	.660	74.1	14.3	+15.1	20	87
				22077	.837	74.6	358.3	+16.2	4	21

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Aug. 7.323	+13.2	42.1	+6.2	22064	.992	260.5	123.5	- 8.6	67	628
				22070	.974	281.5	119.9	+12.6	48	335
				22068	.520	235.6	68.0	-11.4	67	411
				22071	.245	281.6	56.2	+ 8.9	11	64
				22078	.397	207.3	53.0	-14.5	6	35
				22074	.500	198.1	51.7	-22.1	33	162
				1550 13	.503	148.0	25.8	-19.2	0	3
				22075	.498	59.0	15.2	+20.4	5	16
				22076	.473	69.5	14.9	+15.0	16	59
				1550 14	.692	79.4	358.3	+11.8	0	3
				22077	.708	73.4	357.4	+16.1	6	32
8.332	+13.6	28.8	+6.3	22068	.687	245.6	68.4	-11.6	38	300
				22071	.474	275.2	57.2	+ 8.0	10	49
				22078	.524	227.7	52.3	-14.8	5	26
				22074	.576	215.6	49.9	-22.0	25	178
				22075	.299	36.0	18.1	+20.1	0	4
				22076	.293	56.6	14.2	+15.3	10	41
				22079	.705	148.4	3.3	-31.1	8	29
				22077	.534	69.9	357.5	+15.9	3	14
9.321	+14.0	15.7	+6.3	22068	.823	251.2	68.2	-11.5	32	249
				22071	.728	275.6	62.6	+ 8.4	33	143
				22078	.674	239.3	52.4	-15.0	8	39
				22074	.704	230.1	51.1	-21.7	23	127
				22076	.146	5.0	15.0	+14.7	1	14
				22079	.643	162.1	2.4	-31.4	13	82
				22077	.391	60.7	355.0	+16.9	0	7
				1550 15	.586	68.0	341.1	+17.9	3	11
				22080	.955	107.4	305.7	-14.5	4	15
10.517	+14.4	359.9	+6.4	22068	.945	255.1	68.6	-11.8	35	166
				22071	.896	276.1	63.9	+ 8.3	26	159
				22081	.864	282.3	60.1	+13.8	9	45
				22078	.828	246.5	51.7	-15.3	0	6
				22074	.824	239.0	48.9	-20.9	30	147
				1551 01	.257	319.8	9.9	+17.6	1	9
				22079	.619	185.8	4.1	-31.4	44	188
				22080	.887	110.2	300.8	-14.6	5	35
				22082	.951	82.6	287.5	+ 9.0	22	110
11.391	+14.7	348.4	+6.5	22068	.991	257.1	69.0	-11.8	34	169
				22071	.958	277.1	62.2	+ 8.6	16	110
				22081	.932	282.3	57.8	+13.8	0	3
				22074	.898	243.1	47.1	-20.7	31	241
				1551 02	.455	270.9	15.5	+ 6.2	1	5
				22079	.659	201.7	4.9	-31.4	50	303
				22080	.782	114.7	301.3	-14.7	7	38
				22082	.873	83.3	287.2	+ 9.0	16	86
12.364	+15.1	335.5	+6.5	22074	.969	246.6	47.2	-20.7	53	232
				1551 03	.884	281.8	38.1	+13.5	5	15
				22076	.601	286.1	12.0	+14.9	1	11
				22079	.734	215.0	4.9	-31.2	52	280
				22083	.238	64.8	322.8	+12.2	0	5

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Aug. 12.364	Continued			22080	.648	121.8	301.0	−14.6	6	29
				22082	.747	83.6	287.0	+ 9.1	17	75
				22084	.990	106.7	256.0	−15.5	0	16
13.370	+15.4	322.2	+6.6	22079	.830	225.1	5.5	−31.1	39	226
				22083	.103	347.9	323.5	+12.3	1	9
				22080	.458	136.2	303.3	−13.0	5	25
				22082	.576	83.4	286.9	+ 9.2	11	62
				22084	.937	108.7	255.7	−14.9	19	66
14.333	+15.7	309.5	+6.6	22079	.916	232.1	6.6	−30.8	23	192
				22077	.739	284.5	357.2	+15.1	0	12
				22085	.589	285.6	345.2	+14.5	3	13
				1551 04	.167	314.9	316.4	+13.3	0	3
				22080	.377	158.7	301.4	−13.9	4	27
				22082	.385	82.3	286.9	+ 9.1	15	69
				22084	.865	110.9	253.2	−14.4	23	131
15.507	+16.1	294.0	+6.7	22079	.980	236.4	5.8	−31.0	39	201
				22085	.764	288.9	343.5	+18.7	2	7
				22082	.129	69.9	287.0	+ 9.2	16	88
				22084	.727	116.6	252.0	−14.0	42	232
16.360	+16.4	282.7	+6.7	22082	.090	301.0	287.2	+ 9.4	13	73
				22084	.587	124.7	253.0	−13.6	45	222
17.336	+16.8	269.8	+6.8	22082	.297	278.2	287.0	+ 8.9	11	56
				22084	.451	141.2	252.9	−14.0	37	152
18.317	+17.1	256.8	+6.8	22083	.904	281.3	322.2	+13.1	0	11
				22082	.510	277.0	287.6	+ 9.4	5	35
				22084	.355	170.3	253.3	−13.6	12	73
				1551 05	.483	149.0	241.7	−17.8	0	3
19.378	+17.4	242.8	+6.8	22082	.704	276.6	287.8	+ 9.5	5	24
				22084	.394	210.5	254.6	−13.0	12	58
20.372	+17.7	229.7	+6.9	22082	.848	276.8	288.0	+ 9.4	4	15
				22084	.501	226.4	251.5	−13.8	15	60
21.327	+18.1	217.0	+6.9	22082	.941	277.7	287.8	+ 9.6	3	7
				22084	.626	236.6	249.6	−14.3	6	45
				22086	.996	77.6	131.2	+12.9	0	23
22.421	+18.4	202.6	+7.0	22084	.764	243.4	247.4	−15.0	2	12
				1551 06	.477	298.6	228.8	+19.4	1	8
				22087	.430	153.7	191.2	−15.7	8	31
				1551 07	.907	97.4	138.5	− 3.7	0	5
				22086	.965	79.9	127.0	+11.5	80	919
23.374	+18.7	190.0	+7.0	1551 08	.806	243.8	238.7	−16.2	0	2
				22087	.375	187.4	192.9	−14.7	2	11
				22088	.100	20.9	187.9	+12.3	2	22
				22086	.888	80.7	126.8	+11.4	77	788

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Aug. 24.378	+19.0	176.7	+7.0	22087	.461	217.8	193.6	−14.6	3	10
				22088	.201	301.6	186.8	+12.9	2	19
				22089	.708	106.0	133.7	− 6.1	2	6
				22086	.754	81.3	127.5	+11.2	108	925
				22090	.979	101.1	100.3	− 9.3	11	87
25.346	+19.3	163.9	+7.0	22088	.441	287.4	189.5	+13.9	3	19
				22089	.558	114.0	133.2	− 7.1	3	11
				22086	.589	80.7	127.8	+11.2	104	889
				22091	.842	119.2	112.7	−19.9	8	42
				22090	.907	103.2	100.9	− 8.8	16	70
				22092	.933	115.5	100.0	−20.7	0	6
				22093	.995	85.3	79.5	+ 5.4	11	63
26.350	+19.6	150.7	+7.1	1551 09	.561	290.3	183.9	+17.1	1	12
				22089	.376	127.8	133.3	− 6.5	4	25
				22086	.391	78.7	127.8	+10.9	119	856
				1551 10	.627	129.1	120.1	−17.1	0	6
				22091	.741	125.4	110.8	−19.9	0	3
				22090	.777	107.2	102.2	− 8.6	14	101
				22093	.972	86.9	74.0	+ 4.7	30	264
				22094	.976	81.2	72.4	+10.1	10	73
27.460	+19.9	136.0	+7.1	22089	.247	169.1	133.3	− 6.9	0	5
				22086	.157	64.1	127.8	+11.0	156	911
				22091	.633	135.1	107.7	−20.3	1	6
				22090	.596	115.1	103.1	− 8.7	22	98
				22095	.733	111.5	92.2	−10.4	2	16
				22093	.871	88.2	75.3	+ 5.1	74	441
				22094	.903	81.7	70.9	+10.5	23	162
				22096	.976	87.9	58.6	+ 3.6	0	10
28.325	+20.1	124.6	+7.1	22086	.087	321.2	127.8	+11.0	137	811
				22089	.238	187.9	126.5	− 6.4	0	3
				22090	.465	124.2	101.8	− 8.5	32	169
				22095	.595	119.3	92.8	−10.9	3	18
				22093	.745	88.8	76.3	+ 5.7	69	469
				22094	.807	82.1	70.4	+10.6	22	128
				22096	.893	90.4	61.4	+ 2.9	19	111
				22097	.947	83.3	52.7	+ 8.6	0	14
29.433	+20.4	109.9	+7.2	22089	.468	239.8	133.9	− 7.0	1	7
				22086	.314	283.9	127.9	+11.1	88	629
				22090	.311	152.6	101.6	− 8.9	21	173
				22095	.418	135.6	92.7	−10.5	2	15
				22093	.543	90.1	77.0	+ 6.0	55	381
				22094	.629	81.5	70.8	+10.9	13	110
				22096	.732	93.2	63.1	+ 2.6	5	26
				22097	.835	84.8	53.0	+ 8.3	0	8
				22098	.896	112.6	50.5	−16.6	5	25
30.395	+20.7	97.2	+7.2	22086	.502	280.1	127.3	+11.3	79	579
				22090	.301	196.4	102.1	− 9.5	27	136
				22092	.458	187.5	100.9	−19.8	1	7
				1551 11	.131	347.3	98.9	+14.5	1	8

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Aug. 30.395	Continued			22095	.309	165.3	92.7	-10.2	1	12
				22093	.329	91.4	78.0	+ 6.3	44	340
				22094	.460	81.7	69.8	+10.2	11	81
				22096	.566	95.4	63.0	+ 2.9	7	37
				22098	.692	118.3	58.6	-13.6	2	8
				22097	.638	79.4	57.5	+12.2	1	17
31.371	+20.9	84.3	+7.2	22086	.682	278.8	127.6	+11.2	79	516
				22090	.433	228.3	103.4	- 9.9	28	136
				22093	.102	97.5	78.5	+ 6.4	43	303
				22094	.252	71.3	70.3	+11.6	1	9
				22097	.367	82.9	62.8	+ 9.3	2	19
				22096	.377	100.2	62.6	+ 2.9	2	15
				22098	.664	126.3	50.4	-17.1	3	15
				1551 12	.895	78.4	20.2	+13.6	0	20
Sept. 1.367	+21.2	71.2	+7.2	22086	.832	278.9	127.9	+11.3	55	391
				22090	.600	242.1	103.7	-10.2	28	192
				22093	.121	264.4	78.1	+ 6.5	32	181
				1551 13	.147	329.0	75.6	+14.4	1	11
				22094	.049	9.6	70.7	+10.0	8	37
				22098	.519	141.7	51.6	-17.2	3	16
				22099	.836	72.7	14.1	+18.3	0	39
2.315	+21.4	58.6	+7.2	22086	.928	279.2	127.5	+11.2	37	390
				22090	.745	248.6	103.4	-10.7	31	215
				22095	.626	244.0	93.3	-10.0	6	31
				22093	.358	269.2	79.7	+ 6.4	17	120
				22094	.212	288.6	70.4	+10.9	2	20
				22100	.578	150.4	40.6	-23.2	4	50
				22101	.695	76.1	14.6	+14.8	2	6
3.322	+21.6	45.4	+7.2	22086	.983	280.4	125.8	+11.5	18	177
				22090	.864	252.3	102.3	-11.3	22	179
				22095	.768	250.2	92.4	-10.2	9	60
				22093	.590	270.7	81.6	+ 6.2	14	86
				22098	.441	192.8	51.3	-18.2	5	25
				22100	.536	171.0	40.1	-24.6	3	10
				22101	.503	72.9	15.7	+14.8	3	6
				22102	.889	73.3	342.0	+18.2	9	48
4.385	+21.9	31.3	+7.2	22090	.947	255.3	100.2	-11.3	34	271
				22095	.897	254.8	92.6	-10.2	33	185
				22093	.798	271.5	84.4	+ 5.6	32	200
				22103	.439	281.5	57.3	+11.5	6	25
				22102	.737	71.7	344.0	+18.3	10	50
5.334	+22.1	18.8	+7.2	22090	.991	257.3	99.3	-11.5	34	202
				22095	.968	257.4	92.2	-10.2	31	240
				22093	.919	272.9	85.7	+ 5.5	57	257
				22103	.613	279.3	56.7	+11.4	4	29
				22099	.192	27.7	13.4	+17.0	1	7
				22102	.589	68.6	343.6	+18.3	3	15
				22104	.655	63.0	339.6	+22.9	4	23
				22105	.957	105.3	308.1	-12.3	4	15

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Sept. 6.276	+22.3	6.3	+7.2	22093	.983	274.1	86.0	+ 5.4	11	121
				22103	.787	279.1	58.6	+11.6	25	120
				22106	.245	306.3	18.1	+15.4	2	27
				22099	.208	327.7	13.0	+17.3	2	17
				22104	.466	53.7	342.4	+22.6	13	41
				22102	.448	63.3	341.5	+18.2	1	15
				22107	.683	101.0	324.4	- 2.1	3	17
				22105	.883	108.3	307.4	-12.4	2	11
7.357	+22.6	352.1	+7.2	22103	.919	279.4	59.5	+11.5	46	314
				1552 01	.573	269.1	27.0	+ 5.4	0	1
				22104	.309	30.0	342.5	+22.6	31	168
				22107	.472	108.7	325.6	- 2.2	1	8
				1552 02	.693	144.4	325.0	-27.8	2	5
				22108	.735	148.4	325.0	-32.2	8	47
				22105	.740	113.8	308.4	-12.2	3	13
8.332	+22.8	339.2	+7.2	22103	.983	280.6	59.4	+11.7	37	197
				1552 03	.942	254.1	47.1	-12.3	6	40
				22106	.606	286.3	16.2	+15.6	3	9
				22104	.272	348.4	342.6	+22.6	22	116
				22108	.671	161.6	324.7	-32.4	44	226
				1552 04	.430	67.2	314.9	+16.2	3	6
				22105	.591	123.9	309.1	-12.9	1	11
9.544	+23.1	323.2	+7.2	22104	.422	310.7	343.4	+22.7	16	87
				22108	.643	181.1	324.0	-32.6	74	380
				22109	.982	110.8	247.5	-18.7	46	205
10.322	+23.2	312.9	+7.2	22104	.559	300.6	344.2	+22.7	11	52
				22108	.662	194.3	324.1	-32.6	59	385
				22109	.939	113.2	247.4	-18.8	26	153
				22110	.978	78.3	234.0	+12.9	0	11
11.312	+23.4	299.9	+7.2	22104	.713	294.8	344.2	+22.6	9	40
				22108	.730	209.5	325.0	-32.8	59	363
				1552 05	.036	357.6	299.9	+ 9.3	2	11
				22109	.849	117.2	247.3	-18.5	39	127
				22110	.913	77.5	233.1	+14.3	8	37
12.309	+23.6	286.7	+7.2	22104	.841	292.4	343.9	+22.7	8	29
				22108	.810	220.2	324.9	-32.5	57	387
				22109	.733	123.8	246.9	-18.5	42	131
				22111	.734	109.7	242.4	- 9.1	2	8
				22110	.804	76.9	232.8	+14.8	15	76
				22112	.917	94.8	220.8	- 1.5	11	73
13.333	+23.8	273.2	+7.2	22104	.935	291.4	343.4	+22.5	0	12
				22108	.894	228.0	325.0	-32.4	66	364
				22109	.602	134.1	246.2	-18.3	27	157
				22111	.556	116.2	243.0	- 7.9	42	192
				22110	.620	75.2	235.0	+14.8	49	245
				22112	.788	97.8	222.0	- 1.6	14	57
				22113	.819	100.6	219.6	- 4.4	6	27

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Sept. 14.321	+24.0	260.1	+7.2	22108	.968	234.5	327.7	-31.7	73	421
				22114	.015	41.3	259.6	+ 7.8	3	16
				22109	.484	152.6	246.6	-18.4	32	105
				22111	.376	133.9	244.3	- 8.1	21	187
				22110	.418	70.5	236.2	+14.6	57	319
				22112	.627	102.0	222.5	- 1.8	10	56
				22113	.694	105.2	218.0	- 5.1	14	106
				22115	.988	109.2	182.0	-17.7	7	42
15.347	+24.1	246.6	+7.2	22108	.970	232.3	314.0	-33.9	5	37
				22114	.257	270.5	261.5	+ 7.1	14	103
				22109	.432	180.8	246.9	-18.3	31	135
				22111	.284	175.8	245.4	- 9.2	24	101
				22110	.213	54.9	236.3	+14.1	65	322
				22112	.457	108.2	220.9	- 1.7	15	69
				22113	.531	112.6	217.2	- 5.5	32	161
				22115	.929	112.6	182.5	-17.8	6	18
				22116	.975	90.4	169.5	+ 1.3	5	20
16.637	+24.4	229.5	+7.2	22114	.542	271.9	262.4	+ 7.1	31	143
				22109	.511	213.7	246.9	-18.2	31	110
				22111	.420	223.3	246.5	-10.8	12	55
				1552 06	.442	212.1	243.6	-14.9	4	26
				22110	.167	314.5	236.6	+13.8	52	299
				22112	.233	145.3	221.9	- 3.9	22	96
				22113	.327	133.2	215.7	- 5.9	25	143
				22115	.797	118.3	182.4	-17.4	4	13
				22116	.872	92.5	169.1	+ 1.3	5	11
17.385	+24.5	219.7	+7.2	22114	.685	272.9	263.0	+ 7.2	40	212
				22109	.607	226.8	247.3	-18.2	21	118
				22111	.515	236.5	245.4	-10.0	11	49
				22110	.318	292.1	237.3	+13.7	50	242
				1552 07	.434	321.8	237.1	+26.7	1	10
				1552 08	.207	262.7	231.5	+ 5.5	1	7
				22112	.203	199.3	223.5	- 3.9	20	85
				22113	.236	166.0	216.4	- 6.0	15	102
				22117	.267	134.8	208.8	- 3.8	1	6
				1552 09	.309	133.2	206.7	- 5.2	2	9
				22115	.701	124.4	182.5	-17.6	3	13
				22116	.773	94.4	169.4	+ 1.2	0	7
				22118	.837	119.6	169.1	-19.9	2	10
				22119	.929	79.7	150.7	+12.2	3	12
18.311	+24.6	207.4	+7.1	22114	.828	273.8	263.6	+ 7.1	52	233
				22109	.730	236.7	247.2	-18.2	23	79
				22111	.684	245.6	246.7	-10.9	6	22
				22110	.514	284.5	238.1	+13.5	32	187
				1552 10	.513	230.2	231.1	-12.6	0	3
				22112	.352	236.7	224.5	- 4.3	22	92
				22113	.280	216.8	217.1	- 5.9	19	94
				22120	.316	195.3	212.3	-10.5	5	23
				22117	.185	191.2	209.5	- 3.3	1	5
				22116	.618	96.9	169.7	+ 1.4	1	9
				22118	.745	125.2	167.2	-20.0	0	3

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Sept. 18.311	Continued			22119	.825	80.1	151.4	+12.2	6	30
19.411	+24.8	192.9	+7.1	22114	.943	275.2	263.9	+ 7.3	20	171
				22109	.864	243.8	247.5	-18.3	13	58
				22111	.838	252.1	247.0	-10.8	2	10
				22110	.714	282.1	238.6	+13.6	29	155
				22112	.551	253.5	224.7	- 2.9	8	35
				22113	.470	243.9	217.9	- 5.4	8	43
				22120	.434	227.2	211.7	-10.3	0	6
				22117	.317	245.2	209.6	- 0.8	0	12
				22119	.668	79.0	150.9	+12.7	3	44
20.443	+24.9	179.3	+7.1	22109	.949	247.4	246.8	-18.8	4	18
				22110	.851	281.3	238.1	+13.3	30	189
				22112	.746	258.6	226.2	- 3.7	13	76
				22113	.650	254.4	218.1	- 4.5	7	43
				22119	.441	75.2	153.5	+12.9	4	28
				22121	.931	124.1	118.5	-28.1	0	3
				22122	.972	101.3	104.5	- 9.1	9	38
21.416	+25.1	166.4	+7.1	22110	.950	281.7	239.1	+13.3	28	185
				22112	.891	261.4	228.3	- 4.3	5	30
				22113	.842	258.9	222.3	- 5.4	30	177
				22121	.869	129.6	116.5	-29.2	5	25
				22123	.863	88.2	106.7	+ 5.1	4	20
				22122	.896	104.0	105.0	- 9.2	5	20
				22124	.976	86.0	88.9	+ 5.4	45	351
				22125	.996	104.6	83.9	-13.8	23	70
22.485	+25.2	152.3	+7.0	22110	.997	283.1	239.0	+13.6	40	239
				22113	.933	262.7	220.3	- 4.2	6	55
				22126	.068	122.1	149.1	+ 5.0	11	68
				22121	.769	137.2	115.9	-28.7	2	21
				22123	.672	89.6	110.0	+ 5.5	2	11
				22122	.772	108.3	104.6	- 9.3	0	9
				1552 11	.886	92.7	90.3	+ 0.9	2	14
				22124	.889	87.6	89.5	+ 5.4	41	257
				22125	.950	106.9	83.3	-13.6	28	177
				22127	.997	79.7	66.0	+10.8	53	212
23.669	+25.3	136.7	+7.0	22113	.989	263.9	217.4	- 5.0	7	30
				22126	.237	262.4	150.3	+ 5.0	37	226
				1552 12	.247	69.4	123.1	+11.8	1	7
				22123	.500	90.5	106.7	+ 5.8	5	30
				22128	.685	112.3	96.8	- 9.7	3	25
				22124	.744	87.8	88.5	+ 6.3	47	245
				22129	.781	80.5	85.0	+11.8	0	11
				22125	.851	110.6	81.9	-13.4	26	128
				22127	.942	80.6	65.6	+11.2	30	219
24.452	+25.4	126.4	+7.0	22126	.409	266.6	150.5	+ 5.0	71	398
				22123	.324	93.4	107.5	+ 5.5	2	21
				22128	.535	120.9	98.7	- 9.7	23	63
				22124	.601	88.4	89.4	+ 6.6	45	212

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Sept. 24.452	Continued			22129	.657	79.5	85.2	+12.2	4	40
				22125	.750	115.0	82.2	-13.5	23	149
				22127	.860	80.9	66.5	+11.4	34	191
25.367	+25.5	114.3	+6.9	22126	.591	269.1	150.6	+ 5.0	103	576
				22123	.094	101.5	109.0	+ 5.8	5	25
				22128	.374	138.7	99.9	- 9.5	44	215
				22124	.410	88.2	90.0	+ 7.0	37	259
				22129	.499	78.1	84.5	+11.9	8	39
				22125	.626	122.6	81.6	-13.8	29	176
				22127	.735	80.6	66.8	+11.6	23	165
26.330	+25.6	101.6	+6.9	22126	.757	271.0	150.9	+ 5.3	62	543
				22123	.119	260.0	108.3	+ 5.7	2	20
				22128	.284	173.4	99.7	- 9.4	40	210
				22124	.195	88.6	90.3	+ 7.0	27	206
				22129	.309	71.7	84.2	+12.1	5	25
				22125	.476	135.3	81.6	-13.2	20	148
				22127	.574	79.5	66.6	+11.7	25	152
27.299	+25.7	88.8	+6.9	22126	.892	271.7	152.0	+ 4.7	73	500
				22123	.323	267.1	107.6	+ 5.6	0	3
				22128	.337	213.4	99.6	- 9.5	35	242
				22124	.017	274.3	89.8	+ 6.9	24	126
				22129	.134	29.0	85.0	+13.6	3	25
				22125	.365	159.6	81.3	-13.1	24	127
				22127	.399	77.4	65.6	+11.3	35	142
				22130	.617	120.3	55.9	-12.3	29	113
				1552 13	.987	105.3	10.2	-13.8	7	27
28.372	+25.8	74.7	+6.8	22126	.981	273.3	153.6	+ 4.6	73	371
				22128	.500	237.2	99.8	- 9.5	30	171
				22124	.268	271.2	90.2	+ 6.9	31	103
				22125	.361	198.7	81.4	-13.1	22	116
				22129	.144	307.2	81.3	+11.7	2	17
				1552 14	.495	2.6	73.1	+36.3	1	5
				22127	.169	61.7	66.0	+11.3	22	109
				22130	.445	136.9	56.6	-12.4	34	214
				1552 15	.384	64.1	53.7	+16.0	0	4
				22131	.837	111.0	21.4	-13.4	6	28
				22132	.937	108.6	8.2	-14.8	10	38
29.316	+25.9	62.2	+6.8	22128	.663	247.3	100.4	- 9.5	26	133
				22124	.483	272.9	91.1	+ 7.4	28	149
				22125	.467	223.9	81.5	-13.2	17	100
				22127	.115	316.9	66.8	+11.5	13	81
				22130	.339	164.2	56.8	-12.2	34	236
				22131	.696	116.7	22.7	-13.0	3	21
				22132	.819	110.1	10.5	-12.2	13	52
30.331	+26.0	48.8	+6.7	22128	.804	252.9	99.8	- 9.4	13	94
				22124	.668	274.7	90.9	+ 8.2	21	186
				22125	.619	238.5	81.5	-13.2	9	87
				22127	.316	286.6	66.7	+11.6	7	70
				22130	.352	204.0	57.2	-12.0	22	167

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Sept. 30.331	Continued			1552 16	.593	178.4	47.7	-29.4	1	11
				22131	.532	127.0	23.1	-12.6	5	21
				22132	.686	116.7	10.0	-12.7	23	137
Oct. 1.508	+26.1	33.3	+6.7	22128	.936	257.1	100.7	- 9.6	29	163
				22124	.843	275.6	91.0	+ 8.3	21	95
				22125	.792	246.9	81.7	-13.7	20	98
				22127	.557	281.2	67.1	+11.8	11	46
				22130	.510	232.3	57.5	-12.1	19	114
				1552 17	.398	279.6	56.6	+ 9.9	2	29
				22131	.366	153.7	23.7	-12.5	5	17
				22132	.490	131.6	11.3	-12.7	41	278
2.470	+26.1	20.6	+6.6	22128	.984	258.4	98.6	-10.1	6	49
				22124	.942	276.6	91.3	+ 8.4	10	53
				22125	.902	251.3	82.0	-13.7	10	77
				22127	.728	280.4	67.5	+12.1	3	20
				22130	.660	242.9	57.3	-12.2	18	95
				22131	.337	190.1	24.0	-12.7	5	14
				22132	.364	155.4	11.7	-12.7	84	553
				1552 18	.439	39.8	2.4	+25.9	0	5
				22133	.739	73.0	333.1	+17.0	25	126
				22134	.970	64.4	303.2	+26.4	18	164
3.301	+26.2	9.6	+6.6	22125	.964	253.6	81.5	-13.8	8	79
				22127	.841	279.8	67.2	+11.8	2	16
				22130	.785	248.9	57.9	-12.0	7	49
				22135	.498	285.4	39.0	+13.3	2	14
				22131	.410	216.2	23.9	-12.9	4	17
				22132	.334	189.6	12.8	-12.6	88	513
				1552 19	.222	31.8	2.6	+17.4	0	2
				22133	.585	69.9	334.7	+17.0	26	169
				22134	.915	63.9	303.2	+26.4	47	244
4.341	+26.2	355.9	+6.5	22130	.903	254.9	58.1	-10.6	5	37
				22135	.715	283.0	41.5	+13.8	5	22
				22131	.561	235.2	24.0	-12.9	1	9
				22132	.435	223.6	13.7	-12.1	89	453
				22133	.409	63.3	333.6	+16.6	24	165
				22134	.823	62.6	301.6	+26.1	26	188
				22136	.989	105.4	276.8	-14.0	35	160
5.414	+26.2	341.7	+6.5	22130	.981	256.5	58.5	-11.8	0	34
				22135	.870	281.9	42.6	+13.5	4	22
				22131	.738	245.3	25.1	-13.2	3	10
				22132	.611	241.2	14.7	-11.7	65	395
				22133	.223	37.4	333.6	+16.6	63	337
				22134	.677	57.7	302.2	+26.2	29	200
				22136	.926	108.4	276.9	-14.2	29	158
6.341	+26.3	329.5	+6.4	22135	.960	282.7	44.0	+14.0	0	16
				22132	.754	248.0	14.9	-11.9	74	422
				22133	.204	339.3	333.8	+17.3	109	639
				22134	.550	50.5	301.4	+26.1	24	187
				22137	.704	62.4	286.7	+23.7	0	3

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Oct. 6.341	Continued			22136	.838	111.8	276.3	-14.3	33	155
				22138	.965	80.8	254.1	+10.5	8	76
7.340	+26.3	316.3	+6.4	22132	.889	252.7	16.4	-12.2	43	324
				22133	.361	303.8	334.6	+17.6	108	664
				22134	.420	35.2	300.8	+26.1	22	139
				22137	.540	54.6	287.7	+23.8	5	29
				22136	.706	117.8	276.4	-14.3	28	191
				22138	.882	81.1	254.1	+10.9	49	239
8.424	+26.3	302.0	+6.3	22132	.975	255.8	17.0	-12.3	58	253
				22133	.586	290.9	336.9	+17.2	116	648
				22139	.409	241.8	323.1	- 5.2	2	15
				22134	.345	4.5	300.3	+26.3	21	169
				22136	.543	129.1	276.3	-14.3	29	165
				22138	.732	81.1	254.8	+10.8	69	402
				1	.723	81.2	255.6	+10.7	45	308
9.348	+26.3	289.8	+6.2	22133	.727	288.1	336.0	+17.4	146	972
				22139	.593	253.3	324.4	- 4.7	3	22
				22134	.381	334.6	300.3	+26.2	12	69
				1553 01	.358	356.7	291.2	+27.1	1	17
				22136	.417	146.6	276.2	-14.2	29	175
				22138	.576	79.7	254.7	+11.0	53	438
				1	.563	79.8	255.6	+10.9	46	334
10.467	+26.4	275.1	+6.2	22133	.872	286.9	336.0	+17.7	176	945
				22139	.769	257.9	323.9	- 5.3	7	24
				22134	.513	314.0	299.3	+26.4	14	93
				22136	.351	182.6	276.0	-14.3	27	164
				22138	.350	74.5	255.0	+11.2	51	373
				1	.339	74.7	255.7	+10.9	41	294
11.440	+26.3	262.2	+6.1	22133	.949	287.1	334.6	+18.2	143	1107
				1553 02	.721	254.3	306.4	- 6.9	0	5
				22134	.655	304.7	299.2	+26.7	6	34
				22136	.419	213.5	276.0	-14.4	32	152
				22138	.149	53.6	255.2	+11.1	56	341
				1	.140	53.0	255.7	+10.9	52	289
12.307	+26.3	250.8	+6.0	22133	.984	288.5	331.7	+19.3	59	516
				22134	.764	299.9	298.3	+26.5	3	20
				22136	.538	230.2	276.0	-14.6	23	157
				22138	.120	317.9	255.5	+11.1	51	321
				1	.122	314.9	255.8	+10.9	48	282
				1553 03	.696	92.1	206.8	+ 2.9	0	6
13.501	+26.3	235.0	+6.0	22140	.948	251.6	303.8	-15.3	3	38
				22136	.717	243.1	276.2	-14.4	32	138
				22138	.357	285.2	255.5	+10.9	55	322
				1	.361	284.7	255.8	+10.8	50	292
				22141	.215	189.6	237.1	- 6.2	11	52
				22142	.947	89.0	163.8	+ 2.9	7	44

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Oct. 14.464	+26.3	222.3	+5.9	22140	.989	253.3	301.7	-15.5	0	30
				1553 04	.840	298.1	278.1	+26.7	0	4
				22136	.844	248.5	276.4	-14.6	29	137
				22138	.556	280.5	256.0	+10.7	47	263
				1553 05	.454	241.1	245.8	- 7.2	2	15
				22141	.335	233.2	237.9	- 5.9	21	110
				22142	.849	89.9	164.3	+ 3.2	2	21
15.349	+26.3	210.7	+5.8	22136	.930	251.7	276.3	-14.6	18	191
				22138	.713	279.3	256.2	+10.7	47	260
				22141	.520	249.0	239.7	- 5.6	32	170
				22142	.693	91.0	166.9	+ 3.5	6	29
16.358	+26.2	197.4	+5.7	22136	.988	253.7	276.4	-15.1	28	156
				22138	.854	279.1	256.3	+10.7	45	212
				22141	.706	257.1	240.9	- 4.9	31	172
				22142	.471	92.9	169.4	+ 3.7	3	10
				22143	.907	64.1	132.6	+25.9	3	21
17.438	+26.2	183.1	+5.7	22138	.955	279.3	256.2	+10.6	37	235
				22141	.875	262.0	243.3	- 4.2	14	61
				22144	.623	198.6	196.4	-30.6	3	14
				22143	.789	60.7	133.1	+26.3	0	4
18.494	+26.1	169.2	+5.6	22141	.966	264.2	243.5	- 4.1	8	51
				22144	.700	214.8	196.6	-30.1	3	25
				1553 06	.224	65.3	157.3	+10.8	1	9
				1553 07	.428	53.0	147.9	+20.1	1	7
				22145	.985	80.6	88.5	+10.2	76	498
19.310	+26.1	158.4	+5.5	22144	.788	224.6	197.9	-29.9	10	49
				1553 08	.172	216.4	164.3	- 2.5	0	8
				22142	.107	247.7	164.1	+ 3.2	0	9
				22145	.934	81.0	89.1	+10.4	59	396
				22146	.996	80.4	73.0	+10.1	22	67
20.365	+26.0	144.5	+5.4	1553 09	.956	290.2	218.0	+20.9	0	15
				22144	.887	232.5	198.3	-29.5	10	62
				1553 10	.228	232.0	154.8	- 2.7	0	8
				1553 11	.150	263.2	153.0	+ 4.4	2	11
				22147	.282	164.9	140.3	-10.3	2	12
				1553 12	.474	35.0	126.7	+27.9	0	8
				1553 13	.509	70.5	114.9	+14.5	3	23
				22145	.826	81.5	88.6	+10.1	78	423
				22146	.967	80.7	68.8	+10.3	249	1759
21.373	+25.9	131.2	+5.3	22144	.951	236.7	196.9	-29.4	4	25
				1553 14	.092	295.2	136.0	+ 7.5	0	3
				22148	.671	146.0	106.0	-28.9	18	71
				22145	.677	81.2	88.6	+ 9.8	70	391
				22146	.907	80.5	65.9	+10.9	311	2274
				22149	.961	105.0	59.3	-12.8	35	197

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Oct. 22.527	+25.8	116.0	+5.2	22150	.861	285.4	175.4	+15.9	0	4
				22147	.490	235.5	140.2	-11.3	6	38
				22148	.585	163.9	105.3	-28.9	14	82
				1553 15	.314	110.2	98.9	- 1.2	1	21
				22145	.461	78.5	88.8	+ 9.9	58	338
				22146	.761	79.9	66.4	+11.1	275	2145
				22149	.864	107.9	58.9	-12.5	43	224
23.374	+25.7	104.8	+5.2	22150	.956	285.3	178.2	+16.1	7	37
				22147	.636	245.1	140.7	-11.3	9	49
				1553 16	.509	248.1	133.1	- 6.4	1	15
				22148	.557	182.0	106.1	-28.5	8	43
				1553 17	.212	168.4	102.4	- 6.8	1	5
				22145	.281	70.8	89.3	+10.2	74	326
				22146	.620	78.5	66.7	+11.1	261	2127
				22149	.755	111.5	59.0	-12.5	20	99
24.408	+25.6	91.2	+5.1	22147	.779	251.6	139.8	-10.9	5	32
				22148	.591	200.3	104.6	-28.6	7	40
				22145	.097	19.7	89.3	+10.3	64	325
				22151	.103	83.0	85.3	+ 5.8	4	21
				22146	.397	74.2	68.4	+10.9	285	2022
				22149	.591	118.8	59.4	-12.2	23	112
				22152	.971	104.5	17.0	-12.7	18	99
25.306	+25.5	79.3	+5.0	22147	.869	253.7	137.5	-11.5	0	26
				22148	.669	215.5	105.5	-28.4	6	31
				22145	.187	298.3	88.9	+10.0	49	344
				22151	.113	274.7	85.8	+ 5.5	11	56
				22146	.212	59.9	68.6	+11.0	220	1826
				22149	.429	131.7	60.3	-11.8	16	78
				22152	.901	106.5	17.3	-12.5	15	92
				22153	.897	69.2	15.8	+20.8	0	10
26.388	+25.4	65.1	+4.9	22148	.780	227.0	105.3	-28.3	0	7
				22145	.413	284.1	89.0	+10.3	65	403
				22151	.373	272.5	87.0	+ 5.5	18	102
				22146	.128	324.7	69.4	+10.9	218	1804
				22149	.287	167.5	61.4	-11.3	20	108
				22152	.775	110.8	17.3	-12.7	14	95
				22153	.804	68.4	12.5	+20.2	4	13
				22154	.920	97.8	359.1	- 5.2	6	33
27.397	+25.3	51.8	+4.8	22148	.852	231.9	101.4	-28.5	2	31
				22145	.604	280.7	88.7	+10.3	56	315
				22151	.585	272.9	87.6	+ 5.6	20	111
				22146	.328	290.1	70.0	+11.0	217	1621
				22149	.327	213.2	62.3	-11.1	17	90
				22155	.640	123.1	17.9	-16.4	3	11
				22152	.617	116.5	17.6	-12.0	22	134
				22154	.809	99.3	358.7	- 4.7	4	22
				1553 18	.824	62.3	358.1	+25.3	0	10
				22156	.939	73.2	341.6	+17.4	16	133

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Oct. 28.401	+25.1	38.5	+4.7	22145	.774	279.2	89.3	+10.1	52	271
				22151	.761	273.6	88.1	+ 5.8	17	93
				22146	.522	283.6	69.5	+11.0	218	1552
				22149	.463	234.0	60.9	-11.4	12	97
				22152	.456	129.4	17.5	-12.3	17	89
				22155	.505	135.8	17.0	-16.8	0	3
				22154	.644	103.7	359.8	- 5.1	3	14
				22156	.839	71.8	341.9	+17.8	16	145
				22157	.947	106.7	329.4	-14.1	7	37
29.388	+25.0	25.5	+4.6	22145	.898	278.7	89.5	+ 9.8	25	223
				22151	.892	274.2	88.6	+ 5.8	10	51
				22146	.711	281.2	70.7	+11.2	202	1430
				22149	.639	246.7	62.1	-10.9	9	46
				22158	.324	192.1	29.5	-13.8	3	21
				22152	.322	158.2	18.5	-12.7	16	81
				22154	.463	110.6	359.8	- 5.2	2	10
				22156	.705	69.4	341.8	+17.7	12	105
				22157	.859	109.4	329.1	-14.0	4	30
				22159	.847	70.0	328.2	+19.3	2	12
30.543	+24.8	10.3	+4.5	22145	.981	278.6	89.4	+ 9.3	55	377
				22151	.981	274.7	89.2	+ 5.5	0	22
				22146	.876	280.0	71.5	+11.0	230	1443
				22149	.809	253.1	62.1	-10.8	4	24
				22158	.457	224.5	29.5	-14.7	7	53
				22152	.331	204.6	18.4	-13.0	19	100
				22156	.507	62.3	342.3	+17.6	15	83
				22157	.717	115.0	328.3	-14.3	3	16
				22160	.869	69.2	310.6	+20.2	2	13
31.351	+24.7	359.6	+4.4	22146	.952	280.1	72.0	+11.0	184	1260
				22158	.602	237.1	31.1	-15.3	6	33
				22152	.430	226.1	18.1	-13.1	13	106
				22154	.192	180.2	359.7	- 6.6	0	4
				22156	.365	50.0	342.6	+17.7	12	69
				22159	.501	59.8	332.6	+18.5	0	10
				22157	.594	121.1	328.2	-14.0	1	8
				22160	.757	67.3	311.8	+19.9	12	71
Nov. 1.495	+24.5	344.5	+4.3	22146	.997	280.9	70.5	+11.2	13	288
				22158	.771	245.7	31.2	-15.5	2	10
				22152	.605	240.9	17.3	-13.4	10	69
				22154	.321	237.7	0.3	- 5.7	2	7
				22156	.235	8.8	342.4	+17.6	8	49
				22159	.326	38.0	332.4	+19.0	0	5
				22157	.420	137.8	327.7	-13.9	1	7
				22161	.442	46.6	324.4	+21.7	0	5
				22160	.572	60.8	312.6	+19.8	17	82
				22162	.991	77.6	261.5	+12.8	25	163
2.301	+24.4	333.9	+4.2	22158	.839	248.4	27.8	-15.4	2	14
				22152	.720	246.2	16.5	-13.7	6	49
				22156	.273	331.9	341.7	+18.1	10	44
				22159	.271	5.3	332.4	+19.8	0	11

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Nov. 2.301	Continued			22160	.441	50.5	312.8	+20.2	18	70
				22162	.946	78.6	262.6	+12.1	13	81
3.549	+24.1	317.5	+4.1	22158	.957	253.3	28.6	-14.7	0	15
				22152	.879	251.8	16.6	-13.9	11	46
				22156	.476	300.5	342.8	+17.6	7	20
				22161	.298	333.0	325.7	+19.4	5	28
				22160	.285	17.6	312.2	+19.8	13	93
				22163	.436	65.4	293.4	+14.2	2	22
				22164	.681	121.5	280.1	-17.5	0	6
				22162	.822	78.5	262.3	+11.8	15	129
				22165	.997	73.6	231.3	+16.7	13	118
4.305	+24.0	307.5	+4.0	22152	.946	254.1	16.7	-13.6	19	52
				22161	.402	312.0	325.9	+19.3	1	9
				22160	.279	344.4	312.0	+19.5	20	112
				22163	.331	49.5	292.4	+16.3	2	6
				22162	.711	77.5	262.6	+11.7	12	72
				22166	.862	76.0	248.2	+14.1	4	12
				22165	.977	68.7	229.4	+21.6	78	461
				22167	.988	82.8	226.3	+ 7.7	20	131
5.390	+23.8	293.2	+3.9	22161	.554	304.9	322.3	+21.8	0	16
				22160	.409	312.4	311.8	+19.6	12	89
				22163	.207	3.4	292.4	+15.8	7	37
				22168	.060	116.4	290.1	+ 2.4	4	24
				22164	.424	149.8	280.3	-17.6	0	7
				22169	.435	113.6	269.6	- 6.4	0	2
				22162	.517	76.0	262.6	+10.5	8	36
				22166	.712	74.3	248.5	+13.8	3	20
				22165	.909	67.8	228.4	+21.7	71	461
				22167	.927	83.4	225.2	+ 7.6	20	127
				22170	.977	70.6	215.2	+19.7	5	25
6.296	+23.6	281.2	+3.8	22161	.684	297.4	321.8	+21.2	3	26
				22160	.551	301.4	311.1	+19.9	10	52
				22163	.284	318.3	292.5	+15.9	3	21
				22168	.163	261.2	290.5	+ 2.3	6	30
				22164	.377	177.5	280.3	-18.2	2	16
				22162	.336	70.5	262.6	+10.0	3	34
				22165	.829	66.2	226.7	+21.7	93	569
				22167	.826	83.2	225.6	+ 7.8	15	93
				22170	.912	69.0	215.9	+20.7	20	251
7.399	+23.4	266.7	+3.7	22160	.743	293.4	312.9	+19.7	3	27
				22168	.386	267.4	289.3	+ 2.4	1	7
				22169	.182	201.4	270.5	- 6.1	12	65
				22162	.171	41.8	260.1	+10.9	2	24
				22167	.647	82.1	226.5	+ 7.9	7	46
				22165	.689	61.4	226.1	+22.0	89	612
				22170	.807	66.3	214.5	+21.1	23	173
8.498	+23.1	252.2	+3.6	22169	.388	245.5	272.9	- 5.9	5	19
				22171	.390	320.5	267.5	+20.9	1	7
				22162	.220	309.3	262.2	+11.5	4	26

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Nov. 8.498	Continued			22165	.521	51.4	226.2	+22.1	84	607
				22167	.455	79.8	225.4	+ 7.8	5	34
				22170	.651	61.5	214.6	+20.9	27	175
				1554 01	.756	116.6	207.4	-17.2	2	10
				22172	.988	111.0	173.1	-20.1	7	28
9.447	+22.9	239.7	+3.5	22169	.510	254.0	269.0	- 5.0	0	15
				22171	.516	306.6	265.9	+20.9	5	24
				22162	.407	284.5	263.1	+ 9.0	1	10
				22165	.389	33.9	226.2	+22.1	97	526
				22167	.297	74.4	223.0	+ 7.9	2	37
				22170	.513	52.5	213.9	+21.2	19	117
				22173	.945	106.5	170.6	-14.3	3	13
				22172	.961	110.0	168.0	-18.1	15	86
10.394	+22.7	227.2	+3.3	22171	.679	297.4	267.2	+20.7	12	94
				22162	.543	288.7	258.9	+12.9	0	5
				22165	.319	3.3	226.1	+21.8	83	493
				22167	.115	44.1	222.6	+ 8.1	2	22
				22170	.373	35.2	214.0	+20.9	16	105
				22173	.846	109.6	172.0	-14.6	2	12
				22172	.881	113.0	168.7	-18.4	21	99
11.510	+22.4	212.5	+3.2	22171	.830	292.8	267.1	+20.6	8	72
				22174	.384	307.4	230.9	+16.5	5	21
				22167	.268	286.4	227.5	+ 7.4	2	16
				22165	.386	326.0	225.9	+21.7	81	404
				22170	.310	357.4	213.4	+21.2	7	60
				22173	.714	116.8	171.1	-16.3	0	6
				22172	.762	117.6	167.3	-18.4	8	42
12.488	+22.2	199.6	+3.1	22171	.928	291.9	267.0	+21.4	12	70
				22167	.469	279.8	227.3	+ 7.3	2	22
				22165	.522	308.1	225.7	+21.5	58	358
				22170	.380	320.9	214.3	+20.1	2	9
				22172	.646	123.2	165.1	-18.1	6	44
				22175	.843	74.3	142.7	+14.8	4	36
13.475	+21.9	186.6	+3.0	22171	.975	292.3	263.6	+22.4	0	24
				22174	.718	292.5	230.6	+18.0	2	9
				22167	.660	277.7	227.7	+ 7.3	4	23
				22165	.673	299.6	225.4	+21.7	47	351
				22170	.508	307.9	211.9	+20.8	1	8
				22172	.474	137.7	167.1	-17.6	4	42
				22175	.699	72.2	143.3	+14.5	5	27
14.523	+21.6	172.8	+2.9	22174	.867	287.3	232.2	+16.4	70	505
				22167	.839	276.9	229.6	+ 7.3	2	10
				22165	.809	295.2	224.7	+21.8	62	322
				22172	.377	162.8	166.1	-18.2	1	15
				22175	.538	66.9	142.1	+14.6	8	47
15.614	+21.3	158.4	+2.7	22174	.965	286.5	233.0	+16.6	120	623
				22165	.924	292.7	224.9	+21.9	93	403
				1554 02	.325	201.8	165.5	-14.7	1	12

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Nov. 15.614	Continued			22175	.337	50.6	142.9	+14.9	7	69
				22176	.954	84.0	86.0	+ 6.6	50	461
				22177	.994	78.0	74.7	+12.2	113	847
16.289	+21.1	149.5	+2.7	22174	.991	286.5	231.9	+16.7	63	362
				22165	.968	292.1	224.7	+22.0	61	473
				22178	.693	233.1	186.2	-22.4	1	12
				22175	.239	24.9	143.6	+15.1	2	11
				22176	.897	84.3	85.9	+ 6.3	91	515
				22177	.966	78.1	74.5	+12.2	152	770
17.293	+20.8	136.3	+2.5	22165	.997	292.2	222.1	+22.3	13	76
				22178	.838	240.6	188.4	-22.7	12	97
				22176	.794	83.5	83.8	+ 6.7	130	911
				22177	.875	76.9	75.6	+12.7	180	1730
18.430	+20.5	121.3	+2.4	22178	.950	244.7	190.0	-23.0	11	79
				22176	.592	82.6	85.3	+ 6.3	116	876
				22177	.716	74.1	76.5	+13.0	274	1814
19.485	+20.2	107.4	+2.3	22176	.376	79.2	85.7	+ 6.1	124	929
				1554 03	.442	118.8	84.3	-10.2	2	12
				22177	.539	70.0	76.2	+12.5	280	1737
				22179	.682	74.6	65.3	+12.1	3	9
				22180	.887	77.1	45.2	+12.5	5	28
				22181	.951	104.6	36.6	-13.2	25	125
20.442	+19.9	94.8	+2.2	22182	.869	289.9	153.9	+18.3	13	55
				22176	.168	67.0	85.8	+ 5.9	118	899
				22177	.367	59.3	76.0	+12.8	269	1576
				22179	.506	70.7	65.7	+11.5	1	10
				22180	.781	76.5	44.1	+11.9	26	184
				22181	.865	106.4	36.6	-13.0	4	39
21.299	+19.6	83.5	+2.1	22182	.952	289.3	155.1	+19.0	0	20
				22183	.558	242.2	113.8	-13.2	5	28
				22176	.080	329.1	85.8	+ 6.0	136	879
				22177	.222	36.0	75.8	+12.4	291	1663
				22179	.343	62.6	65.5	+11.0	0	2
				22180	.638	73.3	44.9	+12.2	38	350
				22181	.783	108.6	34.0	-13.1	10	47
22.324	+19.3	70.0	+1.9	22183	.721	249.5	113.7	-13.2	6	36
				22176	.290	284.6	86.3	+ 6.0	146	826
				22177	.211	331.2	75.9	+12.5	249	1555
				22180	.443	66.1	45.6	+12.0	56	334
				22181	.669	112.3	30.7	-13.2	0	6
				22184	.982	104.9	351.8	-14.3	6	22
23.298	+19.0	57.1	+1.8	22176	.494	279.5	86.3	+ 6.2	107	869
				22177	.365	301.5	75.6	+12.6	246	1537
				22180	.257	45.9	46.3	+12.0	50	318
				22184	.922	106.0	351.4	-14.0	5	21
				22185	.967	93.0	342.2	- 2.5	24	110

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Nov. 24.424	+18.6	42.3	+1.7	22183	.953	254.7	113.3	-14.0	4	18
				22176	.703	277.9	86.6	+ 6.7	132	874
				22177	.569	291.1	75.2	+13.2	255	1559
				22180	.199	340.1	46.2	+12.4	52	335
				22184	.799	108.8	351.3	-13.8	2	9
				22185	.874	93.8	341.7	- 2.5	18	149
25.455	+18.2	28.7	+1.5	22176	.854	276.9	87.1	+ 6.6	109	751
				22177	.747	286.8	75.8	+13.5	307	1599
				22186	.570	313.6	55.5	+24.4	3	13
				22180	.364	300.8	47.3	+12.2	43	337
				22181	.280	205.6	35.8	-13.1	2	32
				22185	.730	94.4	342.1	- 2.1	25	152
				22187	.960	104.7	316.0	-13.6	69	376
26.444	+17.9	15.7	+1.4	22176	.947	276.4	86.7	+ 6.5	40	612
				1554 04	.887	254.7	76.8	-12.8	7	44
				22177	.873	285.4	75.6	+14.1	235	1715
				22180	.563	290.0	48.3	+12.3	37	261
				22181	.423	235.4	36.4	-12.5	1	8
				22185	.555	95.6	342.2	- 1.9	21	151
				22188	.809	75.7	322.5	+12.3	4	18
				22187	.875	106.9	316.3	-14.0	71	415
				22189	.957	107.3	303.9	-16.1	22	185
27.523	+17.5	1.4	+1.3	22176	.996	275.4	86.0	+ 5.5	23	317
				22177	.967	284.3	76.3	+14.1	192	1705
				22186	.834	299.0	54.5	+24.6	4	29
				22180	.748	285.5	48.8	+12.4	22	160
				22190	.442	145.7	346.1	-20.1	6	29
				22185	.336	100.1	342.2	- 2.2	30	129
				22188	.635	71.6	323.4	+12.5	3	22
				22187	.731	111.3	316.9	-14.5	89	460
				22191	.743	62.1	316.8	+21.2	8	36
				22189	.866	109.4	303.4	-16.0	22	177
28.428	+17.1	349.5	+1.2	22177	.995	283.3	73.5	+13.3	102	794
				22180	.881	283.9	50.5	+12.8	12	52
				1555 01	.722	291.5	33.7	+16.1	3	17
				1555 02	.637	312.0	21.2	+26.1	1	11
				22190	.376	170.4	345.6	-20.5	5	25
				22185	.137	115.0	342.4	- 2.1	14	103
				22188	.471	64.9	323.7	+12.5	5	44
				22187	.575	117.4	317.8	-14.3	64	404
				22191	.609	55.6	317.0	+21.0	3	22
				22189	.751	112.6	303.5	-15.9	26	161
				22192	.950	110.4	279.5	-18.9	15	100
29.494	+16.8	335.4	+1.0	22180	.978	283.4	53.1	+13.4	5	41
				22185	.138	245.3	342.6	- 2.3	13	129
				22188	.290	47.3	322.9	+12.3	8	42
				22187	.386	133.1	318.7	-14.2	52	402
				22191	.465	39.5	316.9	+21.9	15	88
				22189	.591	119.3	303.2	-15.9	36	161
				22192	.832	112.9	281.9	-18.2	14	70

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Nov. 29.494	Continued			22193	.884	63.7	275.8	+23.5	2	18
30.457	+16.4	322.8	+0.9	22185	.349	261.8	342.9	− 2.0	19	102
				22188	.195	11.6	320.5	+11.9	9	67
				22187	.266	167.2	319.3	−14.0	69	373
				22191	.367	13.4	317.5	+21.7	27	159
				22189	.430	131.9	303.4	−15.7	27	173
				22192	.699	117.4	282.2	−18.0	8	56
				22194	.842	114.8	268.5	−20.1	2	20
Dec. 1.440	+16.0	309.8	+0.8	22185	.553	265.6	343.1	− 1.8	16	119
				22187	.312	213.7	320.0	−14.2	50	328
				22188	.251	322.7	318.7	+12.3	2	18
				22191	.383	339.5	318.1	+21.7	20	128
				22189	.304	158.4	303.1	−15.6	25	125
				22192	.532	128.6	283.9	−18.6	5	23
				22194	.711	119.4	268.8	−19.8	3	15
				22195	.949	73.9	238.9	+15.5	3	27
2.461	+15.6	296.3	+0.7	22185	.737	267.2	343.6	− 1.6	13	116
				22191	.520	311.9	320.7	+20.8	13	97
				22187	.473	236.8	320.3	−14.3	48	299
				22188	.425	299.6	318.5	+12.7	1	12
				22189	.303	201.6	303.0	−15.7	25	106
				22192	.366	151.9	285.9	−18.1	5	27
				22193	.502	40.4	275.7	+23.0	3	23
				22194	.580	128.1	267.3	−20.3	48	232
				22196	.659	107.8	256.8	−11.1	4	29
				22195	.856	72.0	238.9	+15.7	4	27
				22197	.965	73.3	222.2	+16.3	29	181
3.494	+15.2	282.7	+0.5	22185	.876	268.0	343.6	− 1.5	18	89
				22191	.680	300.6	321.3	+20.6	37	239
				22187	.650	247.4	320.8	−14.0	51	265
				22189	.438	229.5	302.9	−16.0	12	75
				22192	.346	188.9	286.0	−19.4	2	23
				22193	.413	19.8	274.0	+23.3	1	6
				22194	.443	144.9	267.0	−20.6	29	225
				22196	.452	113.5	258.0	− 9.9	6	29
				22195	.717	68.4	239.1	+15.6	3	14
				22197	.878	71.4	222.8	+16.5	22	142
4.291	+14.9	272.2	+0.4	22185	.951	268.1	343.9	− 1.7	3	23
				22191	.789	296.7	321.1	+21.0	68	365
				22187	.774	251.3	321.1	−14.0	48	299
				22189	.577	239.7	303.4	−16.5	9	85
				22192	.389	214.6	285.6	−18.2	8	50
				22194	.375	167.4	267.2	−21.0	20	158
				22196	.299	126.0	258.1	− 9.7	12	48
				22195	.593	63.6	238.9	+15.6	3	13
				22197	.779	68.9	223.1	+16.5	23	140

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Dec. 5.478	+14.4	256.6	+0.3	22191	.920	292.5	321.7	+20.7	79	525
				22188	.909	283.8	321.1	+12.6	10	47
				22187	.910	254.3	320.9	−14.1	90	314
				22189	.760	247.7	303.6	−16.5	10	138
				22192	.590	237.1	287.9	−18.4	6	27
				22198	.406	285.9	279.6	+ 6.6	7	41
				22194	.412	207.1	268.1	−21.2	16	153
				22196	.176	187.4	257.9	− 9.7	4	28
				22195	.393	48.2	238.9	+15.4	1	5
				22197	.604	61.8	222.9	+16.8	24	141
6.290	+14.1	245.9	+0.2	22191	.976	291.4	322.3	+20.8	81	546
				22187	.968	255.5	320.6	−13.9	41	280
				22189	.871	250.6	304.7	−16.7	2	13
				22198	.580	281.2	280.7	+ 6.6	4	21
				22194	.511	224.0	268.2	−21.3	35	185
				22196	.280	229.8	258.4	−10.2	7	38
				22197	.471	53.0	222.9	+16.6	17	127
7.310	+13.6	232.4	0.0	1555 03	.840	243.8	286.4	−21.7	0	4
				22194	.667	236.9	269.1	−21.3	34	157
				22196	.483	247.6	259.4	−10.5	5	43
				1555 04	.244	352.0	234.4	+14.0	2	19
				22197	.333	29.5	222.6	+16.8	17	137
				1555 05	.432	145.4	217.3	−20.7	0	5
8.471	+13.2	217.2	−0.1	22194	.820	243.7	269.0	−21.3	13	109
				22196	.705	254.3	260.7	−11.0	0	6
				22199	.645	281.8	256.5	+ 7.5	6	44
				22197	.300	345.6	221.6	+16.7	26	139
				1555 06	.428	178.1	216.2	−25.3	0	5
				1555 07	.410	11.2	212.2	+23.5	2	27
9.299	+12.8	206.2	−0.2	22194	.903	246.4	268.6	−21.2	36	147
				22199	.781	279.6	256.9	+ 7.3	3	17
				22200	.453	221.6	224.8	−19.9	26	108
				22197	.390	319.0	221.7	+16.8	23	120
10.284	+12.4	193.3	−0.3	22194	.970	247.8	268.0	−21.5	13	127
				22199	.906	279.2	257.6	+ 8.2	7	44
				22200	.604	235.7	225.2	−20.1	31	187
				1555 08	.622	315.6	222.1	+26.0	0	4
				22197	.544	303.6	221.5	+17.2	16	96
				22201	.387	95.6	170.7	− 2.5	0	5
11.283	+11.9	180.1	−0.5	22199	.990	278.3	261.5	+ 8.1	0	14
				22200	.759	243.9	226.3	−19.8	21	96
				22197	.702	295.8	221.4	+17.4	18	114
12.297	+11.5	166.7	−0.6	22200	.877	248.0	226.1	−19.4	4	30
				22197	.837	291.7	221.2	+17.6	19	97
				22202	.972	84.2	90.8	+ 5.5	24	177
				22203	.981	101.8	88.2	−11.7	52	682

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Dec. 13.633	+10.9	149.1	-0.8	22197	.949	289.1	219.3	+17.8	14	91
				22201	.354	263.8	169.7	- 2.9	0	12
				22204	.642	106.2	110.4	-10.9	6	32
				22202	.861	82.2	90.2	+ 6.3	26	166
				22203	.871	102.4	89.3	-11.2	83	617
				22205	.885	72.5	88.5	+15.0	2	17
				22206	.946	75.3	79.2	+13.6	47	216
				22207	.995	77.1	65.6	+12.7	42	280
14.306	+10.6	140.3	-0.9	22197	.988	288.5	220.2	+18.1	6	78
				22201	.495	265.8	169.8	- 2.8	2	19
				22204	.505	111.0	111.7	-11.1	2	12
				22202	.774	81.2	90.2	+ 6.2	20	128
				22203	.793	104.0	88.7	-11.6	61	470
				22205	.810	70.6	88.2	+15.0	2	14
				22206	.889	74.7	78.8	+13.1	43	235
				22207	.964	76.6	66.5	+12.6	23	170
15.574	+10.0	123.6	-1.0	1555 09	.924	288.8	189.4	+16.9	0	8
				22201	.746	266.9	171.6	- 3.0	10	37
				1555 10	.470	7.4	119.7	+26.7	0	4
				22204	.273	134.5	112.1	-12.0	5	27
				22202	.560	76.1	90.5	+ 6.9	21	162
				22203	.595	108.5	88.5	-11.7	46	392
				22205	.625	63.6	88.3	+15.3	3	11
				22208	.640	87.2	84.0	+ 1.0	0	8
				22206	.730	70.9	78.7	+13.0	39	228
				22207	.867	74.8	64.8	+12.6	50	251
16.474	+ 9.6	111.7	-1.1	1555 11	.988	289.0	191.6	+18.5	6	95
				22201	.883	266.8	173.5	- 3.4	0	5
				22204	.193	190.0	113.7	-12.0	7	30
				22202	.385	70.0	90.5	+ 6.5	12	100
				22205	.456	51.6	90.1	+15.3	2	19
				22203	.423	116.0	89.0	-11.7	54	418
				22206	.574	66.1	79.3	+12.5	37	174
				22209	.679	130.0	76.3	-26.7	0	7
				22207	.761	72.4	63.9	+12.5	49	285
17.281	+ 9.2	101.1	-1.2	22204	.305	232.8	115.4	-11.8	2	8
				22205	.336	29.8	91.1	+15.7	0	6
				22202	.227	54.1	90.4	+ 6.4	13	76
				22203	.281	132.2	88.9	-12.0	57	457
				22206	.424	57.1	79.8	+12.1	18	152
				22207	.637	68.7	63.8	+12.4	85	531
18.419	+ 8.7	86.1	-1.4	22204	.518	249.5	115.6	-11.6	1	5
				1555 12	.401	243.3	107.4	-11.6	0	5
				22205	.279	340.3	91.6	+13.8	1	16
				22202	.159	332.2	90.3	+ 6.7	20	75
				22203	.187	193.4	88.6	-11.8	51	340
				22206	.254	26.8	79.4	+11.7	21	144
				22209	.457	162.0	77.0	-27.0	0	7
				22207	.449	57.7	63.3	+12.6	83	406
				1555 13	.459	120.3	62.0	-14.6	2	10

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Dec. 18.419	Continued			22210	.976	78.4	9.5	+11.0	43	233
19.285	+ 8.3	74.7	-1.5	22202	.302	298.4	90.1	+ 6.8	7	51
				22203	.315	234.6	89.8	-11.9	45	263
				22208	.166	289.2	83.6	+ 1.6	2	10
				22206	.248	339.5	79.7	+11.9	19	124
				22207	.297	35.2	64.6	+12.5	74	344
				22211	.260	128.7	62.8	-10.8	11	49
				22210	.916	77.8	9.0	+10.6	49	245
20.285	+ 7.8	61.5	-1.6	22212	.630	226.5	92.3	-27.0	5	27
				22203	.509	248.0	90.3	-12.4	38	166
				22202	.497	286.8	90.0	+ 6.8	5	17
				22208	.395	277.4	84.5	+ 1.4	2	9
				22206	.381	307.0	79.5	+11.6	18	114
				1555 14	.387	320.2	76.4	+15.7	0	9
				22207	.259	346.3	65.1	+12.9	66	350
				22211	.169	200.4	64.9	-10.7	40	171
				22210	.810	75.2	8.8	+10.9	42	223
				22213	.828	104.5	6.4	-12.9	15	61
21.324	+ 7.3	47.8	-1.7	22212	.757	234.6	91.6	-27.2	5	22
				22203	.699	253.8	91.1	-12.5	22	169
				22202	.682	281.5	89.9	+ 6.5	3	11
				22206	.562	293.6	79.4	+11.4	19	99
				22211	.335	244.0	65.5	-10.1	40	240
				22207	.388	310.2	65.4	+12.8	65	333
				22210	.653	71.0	9.0	+10.9	34	176
				22213	.668	107.4	7.2	-12.8	47	298
				1555 15	.758	93.5	358.7	- 3.8	0	10
				22214	.893	91.6	344.7	- 2.2	9	46
22.285	+ 6.9	35.1	-1.9	22212	.852	239.0	90.1	-27.1	4	24
				22203	.823	255.6	89.8	-12.9	20	68
				22202	.821	279.1	89.6	+ 6.4	0	7
				22206	.721	287.6	79.4	+11.2	21	93
				22211	.536	255.1	66.7	- 9.5	38	219
				22207	.557	296.4	65.8	+12.7	43	265
				22210	.486	62.9	9.1	+11.1	28	143
				22213	.497	112.7	7.2	-12.6	88	591
				22214	.772	91.6	344.8	- 2.4	8	47
				22215	.961	79.5	322.0	+ 9.5	30	130
				22216	.961	105.3	321.5	-15.2	22	186
				22217	.971	66.7	321.1	+22.1	43	207
23.401	+ 6.4	20.4	-2.0	22203	.935	258.1	89.4	-11.8	9	60
				22206	.883	283.0	81.3	+10.5	25	149
				22211	.767	260.3	70.2	- 8.7	34	175
				22207	.745	289.1	66.4	+12.7	39	246
				22210	.292	36.4	10.3	+11.6	15	91
				22213	.288	130.0	7.4	-12.6	77	695
				22214	.581	90.4	345.1	- 1.9	27	136
				22215	.856	77.7	322.7	+ 9.4	23	129
				22216	.863	106.6	321.6	-15.3	34	137

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969	°	°	°			°	°	°		
Dec. 23.401	Continued			22217	.892	63.9	320.8	+22.0	29	160
24.279	+ 6.0	8.9	-2.1	22206	.958	281.8	81.2	+10.6	21	115
				22211	.885	261.1	70.9	- 8.9	31	194
				22207	.866	286.1	67.2	+12.7	52	230
				22218	.805	253.7	61.6	-14.3	2	17
				22210	.237	355.4	10.0	+11.5	13	72
				22213	.190	173.8	7.7	-13.0	104	685
				22219	.444	139.1	350.7	-21.5	1	16
				22214	.393	89.8	345.8	- 1.9	31	109
				22216	.749	109.1	321.8	-15.6	22	138
				22215	.750	75.0	321.8	+ 9.7	24	155
				22217	.802	60.2	320.3	+22.0	35	181
25.498	+ 5.4	352.8	-2.3	22211	.981	261.4	71.7	- 8.8	33	164
				22207	.971	284.2	67.7	+13.2	40	150
				22218	.960	254.8	66.3	-15.2	15	87
				22210	.375	309.0	10.0	+11.4	12	77
				22213	.316	233.3	7.8	-13.0	94	625
				22220	.151	226.4	359.2	- 8.2	5	31
				1556 01	.325	0.8	352.5	+16.6	2	14
				22219	.331	175.8	351.3	-21.5	45	187
				1556 02	.461	9.1	348.2	+24.7	0	12
				22214	.097	92.1	347.3	- 2.4	27	173
				22216	.550	114.9	321.8	-15.3	22	130
				22215	.565	69.2	320.6	+ 9.6	26	127
				22217	.652	51.0	319.7	+22.2	31	176
				1556 03	.785	56.7	307.2	+23.9	0	28
				22221	.766	110.5	304.4	-17.0	0	10
				1556 04	.843	116.5	297.8	-23.4	2	8
26.306	+ 5.0	342.2	-2.4	22210	.513	296.5	10.0	+11.1	33	90
				22213	.475	246.2	8.6	-13.1	83	602
				22220	.315	250.7	359.6	- 8.2	2	24
				22219	.359	203.3	350.9	-21.5	57	341
				22214	.120	265.6	349.0	- 2.9	15	98
				22216	.409	124.4	321.8	-15.5	23	132
				22215	.416	61.0	320.7	+ 9.4	8	53
				22217	.548	40.4	319.7	+22.4	35	201
				22222	.969	75.7	267.7	+13.2	4	25
27.447	+ 4.4	327.1	-2.5	22210	.713	288.0	10.7	+10.9	22	83
				22213	.681	253.1	9.0	-13.2	83	505
				1556 05	.569	269.4	1.7	- 2.4	0	10
				1556 06	.513	271.0	357.9	- 1.6	3	13
				22219	.502	230.1	351.4	-21.0	45	252
				22223	.394	245.3	348.5	-11.8	8	49
				22214	.357	267.7	348.0	- 3.1	19	132
				22224	.133	224.4	332.5	- 7.9	1	8
				22216	.245	158.9	321.9	-15.6	23	107
				22215	.245	31.3	319.8	+ 9.6	18	75
				22217	.439	16.9	319.3	+22.2	34	154
				22225	.682	117.7	287.2	-20.4	18	81
				22222	.892	74.0	265.8	+13.0	5	28

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1969/70	°	°	°			°	°	°		
Dec. 28.297	+ 4.0	316.0	-2.6	22210	.832	284.8	10.7	+10.7	19	84
				22213	.808	255.4	9.2	-13.3	76	415
				22219	.634	239.1	351.4	-21.0	26	198
				22214	.539	268.0	348.5	- 3.2	14	77
				22223	.550	252.7	348.2	-11.6	5	51
				22216	.244	202.5	321.5	-15.5	14	97
				22215	.218	338.7	320.5	+ 9.1	4	37
				22217	.425	353.7	318.8	+22.3	39	198
				22225	.538	124.7	288.0	-20.1	32	197
				22226	.952	76.6	245.1	+11.9	3	20
29.294	+ 3.5	302.8	-2.7	22210	.935	282.8	10.7	+10.9	14	61
				22213	.918	256.9	9.2	-13.1	58	354
				22227	.846	263.6	0.5	- 6.8	6	37
				22219	.785	245.2	352.4	-21.0	23	137
				22214	.725	268.1	349.2	- 3.2	15	63
				22224	.508	259.4	332.9	- 7.7	17	71
				22216	.382	233.5	321.4	-15.7	20	97
				22217	.491	328.6	318.8	+22.0	21	131
				22215	.339	312.4	317.5	+10.5	8	22
				22221	.262	190.0	305.5	-17.6	1	6
				22225	.392	141.5	287.8	-20.4	64	320
				22222	.640	66.1	266.1	+12.8	3	9
				22226	.872	74.8	243.7	+11.8	52	305
				22228	.951	81.1	231.7	+ 7.6	3	27
30.281	+ 3.0	289.8	-2.8	22213	.989	256.1	11.6	-14.2	109	646
				22210	.989	281.3	10.2	+10.8	7	61
				22227	.952	263.8	1.9	- 6.8	3	27
				22219	.897	247.7	352.4	-21.2	24	133
				22214	.863	267.8	349.3	- 3.4	13	57
				22224	.678	261.5	332.2	- 7.8	39	199
				22216	.554	245.1	321.2	-15.8	25	120
				22217	.607	312.7	318.4	+21.7	24	123
				22215	.509	296.1	317.4	+10.4	2	12
				22221	.362	225.2	305.4	-17.4	2	29
				22225	.298	176.2	288.6	-20.1	67	406
				22222	.475	55.7	266.1	+12.9	1	6
				22226	.735	70.9	244.8	+11.9	64	367
				22228	.865	80.4	230.8	+ 6.8	25	124
31.284	+ 2.6	276.6	-3.0	22219	.971	248.9	352.7	-21.1	35	129
				22214	.963	266.8	350.9	- 3.8	0	15
				22224	.826	263.1	332.2	- 7.4	28	196
				22216	.716	250.5	321.0	-15.9	12	98
				22217	.738	303.4	317.9	+21.7	22	108
				22215	.682	288.4	317.6	+10.2	3	11
				22225	.356	213.5	288.6	-20.1	63	479
				22226	.585	65.0	244.0	+11.8	80	581
				22228	.724	77.8	231.4	+ 6.7	9	101
				22229	.986	70.5	198.2	+18.6	18	133
Jan. 1.497	+ 2.0	260.6	-3.1	22224	.946	263.8	331.7	- 6.9	27	152
				22216	.875	253.6	321.1	-15.8	18	100
				22217	.877	296.3	317.9	+21.2	22	125

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Jan. 1.497	Continued			22225	.537	236.6	289.0	-19.8	80	631
				1556 07	.554	314.9	285.2	+20.1	1	8
				22222	.290	340.4	266.3	+12.7	2	19
				22226	.364	45.2	245.4	+11.8	79	594
				22228	.523	70.9	230.9	+ 7.1	10	58
				22229	.905	67.3	198.9	+18.9	10	53
2.462	+ 1.5	247.9	-3.2	22224	.990	263.2	329.7	- 7.2	0	29
				22216	.960	254.6	321.7	-15.7	15	107
				22217	.956	293.6	317.9	+21.4	15	62
				22221	.859	250.5	306.2	-18.3	0	11
				22225	.695	244.1	289.5	-20.0	93	500
				22222	.399	310.4	265.9	+11.9	0	5
				22226	.261	7.0	246.1	+11.7	104	560
				22228	.328	56.6	232.0	+ 7.3	5	35
				22229	.805	63.2	198.6	+19.1	11	60
				22230	.955	102.2	175.1	-12.6	4	22
3.316	+ 1.1	236.7	-3.3	22225	.809	247.6	289.2	-19.9	56	458
				22226	.303	328.2	246.0	+11.6	73	526
				22228	.215	27.2	231.0	+ 7.7	2	16
				22229	.687	57.7	199.0	+18.9	13	77
				22231	.930	78.7	169.4	+ 9.2	5	39
4.491	+ 0.5	221.2	-3.4	22225	.932	250.2	289.6	-19.7	59	380
				22226	.481	300.9	246.0	+11.1	93	509
				22229	.518	42.6	199.5	+19.1	9	58
				22230	.730	103.5	174.8	-12.2	2	6
				22231	.782	76.0	171.3	+ 8.7	7	29
				22232	.924	59.4	158.7	+26.5	6	33
5.446	+ 0.1	208.6	-3.5	22225	.987	250.5	289.9	-19.8	50	325
				22226	.633	292.5	245.0	+11.1	118	616
				22229	.411	21.6	199.4	+18.9	12	50
				22231	.618	70.9	172.6	+ 8.8	5	22
				22230	.619	105.3	171.2	-12.2	1	10
				22232	.838	55.2	158.6	+26.2	4	24
6.504	- 0.5	194.7	-3.7	22226	.801	286.3	246.0	+10.7	46	479
				22229	.398	348.2	199.6	+19.2	12	27
				22233	.090	43.9	191.2	0.0	2	9
				22232	.731	48.4	157.4	+26.1	3	13
7.504	- 0.9	181.5	-3.8	22226	.920	283.9	246.9	+11.2	49	328
				22229	.491	324.8	199.0	+20.0	9	30
8.465	- 1.4	168.9	-3.9	22226	.988	281.7	248.8	+10.9	35	177
				22229	.617	309.9	199.0	+19.9	5	32
				22231	.224	349.6	171.2	+ 8.8	1	6
				22234	.819	101.5	114.1	-11.6	4	14
				22235	.951	99.8	96.8	-10.5	3	20
9.283	- 1.8	158.1	-4.0	22229	.732	302.7	199.0	+20.3	3	24
				22236	.513	211.8	176.1	-29.5	23	126
				22230	.299	231.3	172.0	-14.6	2	18
									Continued	

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Jan. 9.283	Continued			22234	.703	102.2	113.8	-11.3	4	26
				22235	.887	99.5	95.6	-10.2	9	45
				22237	.991	97.8	75.7	- 8.3	22	194
10.323	- 2.3	144.4	-4.1	22236	.635	225.0	175.6	-30.1	51	336
				22230	.515	248.0	173.8	-14.6	4	24
				22234	.499	106.2	115.2	-11.5	2	25
				22235	.755	99.2	95.5	- 9.6	41	223
				22237	.935	97.4	75.0	- 8.4	18	88
				22238	.964	102.9	69.5	-13.5	4	31
11.463	- 2.9	129.4	-4.2	22233	.888	270.0	191.8	- 2.0	2	28
				22236	.774	234.1	175.5	-29.9	82	712
				22230	.708	253.7	173.8	-14.5	3	15
				1556 08	.445	251.1	154.8	-12.0	1	7
				22234	.307	112.9	112.7	-10.8	16	92
				1556 09	.571	66.5	97.5	+ 9.5	3	20
				22235	.545	102.8	96.8	-10.5	49	334
				22237	.813	97.6	75.0	- 8.7	18	99
				22238	.865	103.9	69.6	-14.1	2	26
				22239	.961	74.6	57.3	+13.5	7	42
				22240	.969	104.9	53.3	-15.5	20	184
				22241	.987	99.5	48.4	-10.0	60	468
12.575	- 3.4	114.8	-4.3	22236	.893	238.0	175.9	-30.4	140	779
				22234	.120	165.1	113.0	-10.9	30	182
				22235	.339	110.5	96.0	-10.9	74	432
				22242	.414	127.0	94.4	-18.4	2	12
				22243	.667	68.5	75.7	+10.8	3	12
				22244	.650	105.2	74.8	-13.1	13	81
				22237	.644	98.4	74.8	- 8.7	17	101
				22238	.747	106.3	67.0	-15.0	3	47
				22239	.877	71.9	55.9	+13.6	30	125
				22240	.881	105.1	53.1	-15.3	55	172
				22241	.922	99.4	47.4	-10.3	52	519
				22245	.995	95.8	30.3	- 6.2	93	637
13.572	- 3.9	101.6	-4.4	22236	.965	239.1	176.2	-30.9	53	456
				22234	.254	243.5	114.9	-10.8	30	229
				22235	.140	143.0	96.7	-10.8	60	472
				22242	.285	153.5	93.9	-19.1	2	13
				22243	.481	62.2	76.2	+ 8.9	1	12
				22237	.448	100.4	75.3	- 8.6	14	72
				22244	.470	108.7	74.6	-12.6	7	61
				22238	.610	115.1	66.1	-18.5	3	11
				22239	.706	65.6	60.4	+13.6	15	63
				22240	.746	106.7	54.0	-15.3	14	119
				22241	.805	99.7	48.0	-10.4	56	475
				22245	.945	94.5	30.7	- 5.7	44	441
14.305	- 4.2	92.0	-4.5	22236	.997	239.4	178.8	-30.8	122	468
				22234	.407	254.3	115.3	-10.4	32	147
				22235	.149	217.6	97.3	-11.2	54	434
				22246	.377	352.6	94.9	+17.4	1	14
				22242	.259	183.4	92.9	-19.4	8	37
									Continued	

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Jan. 14.305	Continued			22237	.295	105.0	75.3	- 8.7	13	47
				22244	.340	114.7	73.6	-12.4	14	80
				22239	.615	61.5	58.4	+13.3	14	45
				22240	.631	108.9	53.9	-15.3	27	93
				22241	.698	100.2	47.9	-10.3	62	405
				22245	.880	94.6	30.2	- 6.2	37	342
				22247	.967	73.5	18.8	+14.7	0	8
				22248	.989	100.4	10.2	-10.9	0	27
15.281	- 4.7	79.1	-4.6	22234	.576	259.9	114.1	- 9.5	18	82
				22235	.351	249.9	98.6	-11.2	87	495
				22246	.470	324.7	95.7	+18.1	2	20
				22242	.347	222.7	93.5	-19.2	9	47
				22243	.254	11.7	76.1	+ 9.7	0	6
				22237	.100	136.3	75.1	- 8.7	5	17
				22244	.168	148.6	74.0	-12.8	17	96
				22239	.428	44.9	61.1	+13.2	8	39
				22240	.455	114.5	53.8	-15.0	14	89
				22241	.524	102.9	48.0	-10.6	84	477
				22245	.752	94.7	30.4	- 6.6	39	298
				22247	.912	71.1	15.9	+15.1	16	119
				22248	.947	99.5	7.6	-10.5	13	51
16.285	- 5.1	65.9	-4.7	22234	.759	259.7	115.2	-10.9	6	61
				22235	.562	256.4	99.6	-11.5	72	423
				22246	.626	308.0	97.1	+18.6	0	8
				22242	.525	238.8	94.3	-19.9	13	76
				22244	.218	228.4	75.5	-12.9	15	92
				22237	.177	244.9	75.2	- 8.9	2	6
				22239	.311	9.5	62.9	+13.1	4	20
				22240	.248	138.1	56.1	-15.2	17	85
				22241	.319	109.4	48.2	-10.5	66	423
				22245	.578	95.1	30.7	- 6.8	44	291
				22247	.800	66.8	16.4	+15.3	23	128
				22248	.852	99.7	7.4	-10.7	8	46
17.337	- 5.6	52.0	-4.8	22234	.913	259.1	118.2	-11.9	5	20
				22235	.750	258.9	100.5	-11.5	74	366
				22242	.697	244.5	94.2	-21.0	40	245
				22244	.435	251.2	76.9	-12.4	17	94
				22237	.397	258.0	75.1	- 9.1	2	10
				22239	.361	326.8	63.7	+12.8	7	25
				22240	.196	201.2	56.3	-15.3	11	39
				22241	.125	143.3	47.7	-10.5	40	319
				22249	.257	127.8	40.1	-13.7	0	6
				22245	.363	97.4	30.9	- 7.1	40	279
				1556 10	.550	96.0	18.7	- 7.3	0	7
				22247	.648	60.4	16.6	+14.7	39	191
				22248	.699	100.6	7.9	-10.8	10	35
				1556 11	.821	102.8	357.0	-13.2	4	22
				22250	.983	91.5	332.8	- 2.4	33	312
18.338	- 6.1	38.9	-4.9	22235	.891	259.7	102.1	-11.4	50	256
				22242	.826	247.5	93.6	-21.3	40	192
				22246	.851	295.3	92.9	+18.4	8	16

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Jan. 18.338	Continued			22244	.647	257.2	78.9	-12.0	22	127
				22239	.514	305.3	64.3	+12.8	1	9
				22240	.348	237.5	56.5	-15.4	4	16
				22241	.191	236.3	48.1	-10.9	52	285
				22249	.161	195.0	41.3	-13.8	5	19
				22245	.137	109.0	31.4	- 7.4	35	235
				22247	.467	46.1	18.6	+14.2	53	306
				22248	.511	102.6	8.5	-10.6	4	17
				22250	.914	90.3	333.0	- 2.2	36	237
19.286	- 6.5	26.4	-5.0	22235	.962	259.8	101.0	-11.1	34	181
				22242	.924	249.2	93.9	-21.1	19	119
				22244	.809	258.9	80.3	-11.9	18	56
				22237	.745	264.0	74.6	- 7.8	3	12
				22240	.500	243.6	54.2	-17.2	5	46
				22241	.367	252.6	47.2	-10.9	32	193
				22249	.300	238.1	41.5	-13.9	27	94
				22245	.105	238.6	31.5	- 8.1	31	132
				22247	.354	21.3	18.8	+14.2	86	477
				1556 12	.528	47.1	2.7	+16.4	5	29
				22250	.799	88.9	333.5	- 2.1	26	247
20.285	- 7.0	13.2	-5.1	22242	.989	250.0	95.7	-20.5	0	20
				22244	.912	259.2	79.3	-11.9	5	50
				22241	.544	254.6	45.6	-12.6	51	275
				22249	.473	248.3	40.2	-14.6	24	146
				22245	.323	260.2	31.9	- 8.0	15	97
				22247	.348	341.6	19.7	+14.1	69	456
				22248	.171	150.9	8.4	-13.6	1	14
				22250	.640	87.3	333.6	- 2.2	45	246
				1	.627	86.6	334.7	- 1.8	33	176
				22251	.977	107.4	294.7	-18.0	48	357
21.290	- 7.4	0.0	-5.2	22252	.885	246.8	61.8	-22.8	36	170
				22239	.839	288.1	54.5	+12.1	4	23
				22241	.719	256.9	45.8	-13.0	46	415
				22249	.649	253.4	39.9	-14.6	41	186
				22245	.514	259.5	30.7	- 9.8	5	27
				22247	.463	313.6	20.1	+13.7	48	336
				22248	.235	223.0	9.5	-14.9	2	9
				22253	.278	100.8	344.1	- 7.9	0	9
				22250	.449	85.5	333.5	- 2.6	35	230
				1	.431	84.4	334.7	- 2.3	23	160
				22251	.924	107.9	292.2	-18.5	58	347
22.439	- 8.0	344.9	-5.3	22252	.972	247.7	62.0	-22.8	32	239
				22239	.947	285.3	54.0	+12.6	7	33
				22241	.870	257.6	45.4	-13.3	59	400
				22249	.815	256.4	39.4	-14.1	41	245
				22247	.647	298.1	20.6	+13.4	41	272
				22248	.428	251.8	9.4	-12.4	1	12
				22253	.046	183.3	345.0	- 7.9	0	17
				22250	.197	76.1	333.9	- 2.5	40	236
				1	.177	73.2	335.1	- 2.3	29	160
				22251	.807	109.4	291.6	-18.7	57	295

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Jan. 22.439	Continued			22254	.923	78.2	279.0	+ 8.8	3	22
				22255	.983	91.6	265.4	- 2.6	23	151
23.523	- 8.4	330.6	-5.4	22252	.996	245.2	57.0	-25.1	68	406
				22241	.962	257.4	45.4	-13.5	47	278
				22249	.931	257.3	39.6	-13.7	15	97
				22247	.809	289.9	21.6	+12.6	44	245
				22253	.251	257.4	344.9	- 8.3	1	9
				22250	.081	303.5	334.5	- 2.8	38	222
				1	.100	297.2	335.7	- 2.7	28	157
				22251	.654	112.8	291.2	-18.8	41	293
				22254	.806	74.7	278.9	+ 8.9	4	24
				22255	.933	91.6	261.7	- 3.4	46	291
24.483	- 8.9	317.9	-5.4	22249	.987	258.1	39.6	-12.6	7	40
				22247	.919	285.9	22.5	+12.2	51	219
				22250	.301	278.2	335.2	- 2.7	35	208
				1	.319	277.8	336.3	- 2.7	30	157
				22256	.432	111.9	293.6	-14.2	2	17
				22257	.431	100.4	292.6	- 9.4	2	16
				22251	.495	119.2	290.9	-18.8	43	253
				1557 01	.611	105.1	280.7	-13.5	3	11
				22254	.656	68.8	279.8	+ 9.4	3	14
				22255	.822	90.6	262.7	- 3.6	50	289
25.319	- 9.2	306.9	-5.5	22247	.975	283.8	22.4	+12.1	37	186
				22250	.479	274.3	335.4	- 2.8	25	172
				1	.493	274.2	336.3	- 2.7	18	134
				22257	.198	108.2	296.0	- 8.9	47	205
				22256	.269	125.6	293.9	-14.4	26	93
				22251	.351	131.6	290.9	-18.7	42	243
				22255	.691	89.9	263.3	- 3.9	48	287
				22258	.835	69.0	253.6	+14.1	4	13
26.499	- 9.7	291.4	-5.6	22250	.709	271.8	336.4	- 2.7	30	158
				22257	.118	234.8	297.0	- 9.5	49	259
				22256	.166	193.0	293.6	-14.9	74	435
				22251	.240	174.9	290.1	-19.4	40	222
				22259	.378	92.0	269.2	- 6.0	35	314
				22255	.493	87.3	262.0	- 3.6	27	203
				22260	.542	94.0	258.6	- 6.9	3	33
				22261	.930	75.2	225.0	+11.5	6	49
27.437	-10.2	279.1	-5.7	22250	.843	270.4	336.4	- 2.7	26	152
				1557 02	.819	245.9	333.1	-22.9	2	9
				22257	.313	255.8	296.9	- 9.8	47	253
				22256	.293	234.0	293.2	-15.4	104	753
				22251	.305	217.8	290.4	-19.5	32	192
				22259	.149	94.4	270.5	- 6.3	50	281
				22255	.279	80.8	263.1	- 2.9	27	178
				22260	.346	96.4	258.8	- 7.5	16	76
				22262	.428	89.0	253.7	- 4.7	5	37
				22263	.532	116.5	249.0	-18.6	1	9
				22261	.833	71.9	225.3	+11.6	14	78

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Jan. 28.503	-10.6	265.0	-5.8	22250	.952	269.0	337.1	- 2.7	30	121
				22257	.531	260.2	297.0	-10.1	31	185
				22256	.497	247.5	293.4	-16.0	99	955
				22251	.476	238.0	290.3	-19.8	21	157
				22259	.110	262.4	271.3	- 6.6	30	237
				22255	.049	15.9	264.3	- 3.1	15	143
				22260	.110	110.5	259.1	- 7.9	12	80
				22262	.174	82.1	255.1	- 4.3	11	77
				22261	.688	66.4	225.1	+11.5	14	81
29.280	-10.9	254.8	-5.8	22250	.992	267.7	337.5	- 3.0	0	40
				22257	.680	261.0	297.7	-10.4	19	141
				22256	.632	252.4	293.4	-15.6	175	1393
				22251	.611	244.9	290.7	-19.7	28	164
				22259	.298	267.3	272.1	- 6.4	33	191
				22255	.183	286.3	264.9	- 2.8	23	136
				22260	.108	251.3	260.7	- 7.8	20	106
				22262	.033	344.2	255.3	- 4.0	17	93
				22261	.560	59.3	225.5	+11.5	23	126
				22264	.986	121.7	172.9	-32.2	18	97
30.280	-11.3	241.6	-5.9	22257	.838	261.0	298.8	-10.8	15	94
				22256	.787	254.4	293.4	-15.9	209	1347
				22251	.768	249.3	291.1	-19.6	23	137
				22259	.509	268.0	272.3	- 6.1	18	140
				22255	.413	276.4	265.8	- 2.8	21	129
				22260	.319	259.4	260.1	- 9.0	30	143
				22262	.274	278.4	257.3	- 3.4	15	94
				22261	.422	45.7	223.7	+11.5	21	118
				22264	.939	122.3	171.9	-32.3	18	97
31.488	-11.8	225.7	-6.0	22257	.957	260.1	299.5	-11.1	7	44
				22256	.925	254.8	293.9	-16.3	173	1435
				22251	.911	251.3	291.8	-19.4	16	99
				22259	.733	266.9	273.0	- 6.4	13	76
				22255	.650	272.9	266.1	- 2.7	14	111
				22260	.577	262.5	261.0	- 9.2	30	264
				22262	.497	272.0	255.5	- 4.2	5	36
				22263	.444	243.7	250.2	-16.7	7	37
				22261	.301	8.2	223.2	+11.3	14	125
				22264	.845	124.7	170.8	-32.3	24	108
				22265	.876	106.9	164.4	-17.6	2	13
Feb. 1.296	-12.2	215.1	-6.0	22256	.975	254.3	293.3	-16.6	119	1708
				22251	.966	251.4	291.1	-19.5	24	167
				22259	.846	266.6	273.0	- 6.1	8	47
				22255	.783	271.4	266.5	- 2.7	17	107
				22260	.744	263.1	263.3	- 9.2	44	274
				22262	.694	269.1	259.1	- 5.0	3	22
				22258	.677	297.1	253.2	+13.2	1	11
				22263	.559	250.1	248.1	-16.0	11	55
				22261	.331	335.4	223.1	+11.4	11	85
				22266	.482	99.4	186.4	- 9.8	2	14
				22264	.760	128.3	170.3	-32.4	10	64
				22265	.762	108.5	165.8	-17.9	3	32

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Feb. 2.292	-12.6	202.0	-6.1	22259	.943	266.0	272.8	- 5.8	3	16
				22255	.909	269.8	267.2	- 2.8	20	119
				22260	.893	263.2	265.6	- 8.8	25	139
				22263	.744	252.3	249.7	-17.2	11	53
				22267	.665	307.2	235.9	+18.6	34	199
				22261	.452	312.5	221.8	+11.9	5	38
				22264	.643	135.4	169.8	-32.4	10	46
				22265	.613	111.0	165.3	-17.6	13	65
				22268	.827	99.1	145.9	-10.9	4	13
3.431	-13.1	187.0	-6.2	22260	.983	263.1	266.7	- 7.9	28	183
				22255	.983	268.1	266.5	- 3.1	12	70
				22263	.889	257.4	250.2	-14.0	0	9
				22267	.803	298.2	235.0	+18.1	42	223
				22261	.630	297.5	221.7	+11.8	3	20
				22269	.111	324.7	190.6	- 1.0	2	9
				22266	.067	192.2	187.8	- 9.9	18	74
				22264	.518	149.9	169.2	-32.4	8	38
				1557 03	.583	34.7	165.9	+22.8	0	7
				22265	.413	122.4	165.5	-18.5	7	76
				22268	.680	99.9	144.1	-11.3	3	13
				22270	.905	101.2	121.7	-12.7	0	8
4.441	-13.4	173.7	-6.3	22267	.906	293.1	234.6	+17.8	20	117
				22261	.775	290.5	221.3	+11.5	0	3
				22269	.355	282.7	193.9	- 1.4	0	13
				22266	.271	253.6	188.9	-10.4	16	102
				22264	.450	170.7	168.8	-32.5	5	27
				22265	.237	148.9	166.3	-17.9	6	33
				1557 04	.409	33.3	160.4	+13.8	1	7
				22268	.433	101.7	148.3	-10.7	1	6
				22270	.779	100.8	122.3	-12.3	2	21
				1557 05	.868	101.9	113.1	-13.4	0	13
5.509	-13.9	159.6	-6.3	22267	.971	290.3	232.5	+17.9	18	75
				1557 06	.749	282.1	206.8	+ 4.7	0	11
				22266	.492	259.7	189.0	-10.5	14	85
				22265	.251	215.9	168.5	-17.9	3	22
				22264	.470	193.9	167.4	-33.3	2	18
				1557 07	.564	86.2	125.5	- 3.1	3	28
				22271	.693	97.8	115.6	- 9.9	1	12
				22272	.959	69.5	89.4	+17.5	7	34
6.452	-14.2	147.2	-6.4	22266	.661	260.6	188.7	-11.0	4	29
				22265	.400	236.4	167.7	-18.7	6	28
				22264	.541	212.2	167.3	-33.1	1	10
				22268	.075	203.7	149.0	-10.3	2	9
				22273	.210	24.5	142.2	+ 4.6	2	9
				22274	.174	129.8	139.4	-12.7	48	167
				22271	.488	99.3	118.0	-10.1	5	27
				1557 08	.639	101.6	107.5	-12.3	0	6
				22272	.871	65.4	91.2	+17.7	13	53
				22275	.976	101.6	69.0	-12.7	5	29
				22276	.976	108.5	68.6	-19.4	49	322

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Feb. 7.315	-14.6	135.8	-6.4	22265	.561	246.8	168.5	-18.2	1	8
				22264	.636	223.5	167.2	-33.0	3	8
				22268	.234	253.2	148.9	-10.1	2	9
				22273	.226	334.7	141.4	+ 5.3	1	9
				22274	.122	214.4	139.9	-12.2	52	388
				22271	.298	103.8	118.8	-10.2	4	34
				22277	.602	105.7	99.3	-14.5	1	22
				22272	.764	60.8	91.7	+17.3	6	34
				22278	.864	100.3	75.6	-12.1	8	41
				22276	.921	108.4	68.2	-19.4	43	293
				22275	.921	101.3	68.2	-12.9	5	37
				22279	.974	104.4	57.9	-15.4	0	23
8.405	-15.0	121.5	-6.5	22266	.915	262.5	188.1	- 9.4	19	109
				22274	.333	252.8	140.4	-11.8	66	344
				22277	.385	112.6	100.1	-14.5	9	36
				1557 09	.453	68.9	96.6	+ 3.5	2	16
				22272	.636	50.8	90.4	+18.0	45	266
				22278	.720	101.0	75.3	-12.4	9	76
				22276	.807	109.7	67.9	-19.7	46	267
				22275	.805	101.6	67.6	-13.2	4	13
				22279	.890	104.0	58.1	-15.4	5	17
9.447	-15.4	107.8	-6.6	22266	.989	261.0	189.9	- 9.8	34	269
				22265	.857	252.2	167.0	-18.6	2	38
				22274	.541	258.3	140.4	-11.8	73	393
				1557 10	.439	183.8	109.7	-32.4	0	7
				22277	.163	142.0	101.9	-13.9	8	36
				22272	.513	35.0	89.8	+18.5	92	634
				22278	.511	102.0	77.2	-11.7	4	29
				22275	.645	103.7	67.7	-13.8	3	14
				22276	.662	112.8	67.5	-19.8	42	284
				22279	.762	104.5	58.1	-15.2	3	18
10.288	-15.7	96.7	-6.6	22273	.767	282.8	145.2	+ 5.4	7	29
				22274	.701	259.6	141.3	-12.0	47	256
				22271	.400	262.1	120.3	- 9.2	7	31
				22277	.177	225.5	104.1	-13.6	2	12
				22280	.158	135.5	90.2	-13.0	2	21
				22272	.443	16.2	89.2	+18.5	143	959
				22278	.351	108.8	76.9	-12.7	2	22
				22275	.481	107.2	68.5	-14.0	5	25
				22276	.530	118.1	66.9	-20.2	51	290
				22279	.633	105.0	57.7	-14.5	1	20
				22281	.923	100.3	28.8	-12.0	0	8
11.428	-16.1	81.7	-6.7	22273	.921	278.5	147.5	+ 5.1	3	36
				22274	.877	260.2	143.4	-11.7	27	180
				22271	.603	262.3	118.9	-10.0	3	11
				22277	.405	250.9	104.8	-13.7	1	6
				1557 11	.305	240.5	97.6	-15.0	0	6
				22272	.442	341.4	90.2	+18.0	177	1308
				22280	.190	224.3	89.5	-14.4	4	33
				22278	.073	142.0	79.1	-10.0	1	4
				22275	.243	123.5	69.7	-14.2	45	261

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Feb. 11.428	Continued			22276	.334	135.3	67.2	-20.2	46	277
				22279	.412	111.2	58.4	-14.7	7	38
				22281	.816	100.9	26.7	-12.7	7	28
				22282	.982	100.5	1.8	-11.5	62	304
12.286	-16.4	70.4	-6.7	22274	.962	260.6	145.2	-10.9	15	122
				22272	.527	322.1	90.2	+18.2	137	1416
				22280	.354	248.0	90.1	-13.9	2	9
				22275	.134	173.4	69.5	-14.3	99	628
				22276	.242	166.8	67.0	-20.3	43	253
				22279	.247	127.4	58.7	-15.2	2	20
				22283	.445	32.3	56.2	+15.5	0	7
				22281	.673	100.2	27.9	-11.8	1	9
				22282	.923	100.5	2.4	-12.3	32	272
				22284	.991	111.6	346.4	-22.2	45	519
13.428	-16.8	55.4	-6.8	22272	.684	306.0	90.8	+18.2	153	1166
				22275	.282	242.1	70.2	-14.1	86	582
				22276	.303	217.9	66.8	-20.4	32	257
				22283	.356	352.4	58.1	+13.8	1	16
				22285	.285	188.0	57.8	-23.0	2	16
				22281	.480	101.2	26.8	-11.3	2	10
				1557 12	.606	57.4	23.9	+13.2	1	11
				22282	.794	100.6	2.5	-12.5	47	218
				22286	.879	93.7	353.6	- 6.5	2	9
				22284	.957	111.1	341.1	-22.1	154	971
14.429	-17.1	42.2	-6.8	22272	.818	297.9	91.5	+18.1	126	1099
				22275	.472	252.5	69.7	-14.2	84	561
				22276	.458	237.3	66.3	-20.5	34	255
				22283	.438	323.0	57.8	+13.8	2	14
				22285	.346	209.4	52.9	-24.2	1	14
				1557 13	.413	187.6	45.8	-30.8	0	10
				22281	.287	108.6	26.1	-11.8	2	14
				22282	.643	101.8	2.1	-12.8	37	186
				22286	.752	91.8	353.3	- 5.9	0	10
				22284	.881	111.1	340.2	-21.7	134	1045
15.432	-17.5	29.0	-6.8	22272	.925	292.7	92.6	+17.9	176	953
				22275	.658	256.9	70.1	-13.7	105	524
				22276	.624	245.8	66.1	-20.3	36	216
				22283	.603	305.5	59.3	+14.5	1	11
				22281	.095	157.5	26.8	-11.9	0	9
				22282	.448	105.9	2.8	-13.2	43	208
				22284	.755	113.0	340.7	-21.8	177	984
				22287	.994	104.0	304.1	-14.6	37	224
16.390	-17.8	16.4	-6.9	22272	.989	289.1	94.9	+17.6	191	887
				1557 14	.908	298.0	75.9	+21.8	3	13
				22275	.809	257.9	70.7	-13.8	78	484
				22276	.765	249.0	65.8	-20.4	27	172
				22283	.743	296.7	59.4	+14.4	3	52
				22285	.635	239.7	53.1	-24.2	0	6
				1557 15	.259	266.0	31.4	- 7.7	0	11
				22281	.199	245.0	26.9	-11.6	1	10

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Feb. 16.390	Continued			22282	.254	115.6	2.8	-13.0	28	211
				22284	.615	116.8	340.3	-21.7	148	912
				22287	.964	104.0	300.7	-15.3	139	566
				22288	.994	108.4	291.1	-19.0	15	226
17.443	-18.1	2.5	-6.9	22272	.997	296.1	84.2	+25.2	26	224
				22275	.943	258.4	73.8	-13.2	66	625
				22276	.886	250.7	65.3	-20.2	23	216
				22283	.866	291.2	58.8	+14.4	6	52
				1557 16	.600	256.1	39.2	-13.8	3	11
				22289	.642	316.6	30.7	+21.6	7	40
				22282	.113	177.2	2.2	-13.4	26	259
				22284	.443	127.3	340.2	-22.0	126	839
				22287	.876	103.9	300.8	-15.5	105	666
				22288	.936	107.7	292.2	-19.0	27	324
18.371	-18.4	350.3	-7.0	22275	.966	257.4	66.2	-13.9	28	232
				22276	.958	250.8	64.8	-20.3	11	180
				22283	.941	287.0	57.7	+13.4	3	67
				1558 01	.754	274.5	38.8	- 1.2	2	26
				22289	.755	306.2	30.9	+21.2	20	133
				22282	.235	240.4	2.3	-13.5	28	280
				22284	.315	147.4	339.8	-22.2	119	757
				22287	.758	104.4	300.9	-15.5	79	633
				22288	.850	109.7	291.9	-20.3	33	348
				22290	.948	86.1	279.5	+ 1.4	3	20
				22291	.982	97.5	270.5	- 8.7	51	329
19.381	-18.7	336.9	-7.0	22276	.998	250.1	65.3	-20.2	16	268
				22289	.882	298.4	33.0	+20.9	37	203
				22282	.497	254.5	6.3	-13.7	43	238
				22284	.271	191.0	340.1	-22.3	95	672
				22287	.590	106.4	301.2	-15.3	91	567
				1	.552	104.8	303.8	-14.0	55	290
				22288	.718	111.1	291.7	-19.9	29	213
				22290	.846	83.2	280.0	+ 1.9	6	39
				22291	.916	96.4	270.1	- 8.7	57	291
				22292	.972	92.5	260.5	- 4.1	49	385
				22293	.987	98.6	255.3	- 9.6	0	13
20.404	-19.1	323.5	-7.0	22289	.965	294.5	33.8	+21.4	26	168
				22282	.675	257.0	5.9	-13.9	30	208
				22284	.375	223.0	339.5	-22.6	91	596
				22287	.397	112.5	301.2	-15.2	88	539
				1	.352	111.5	303.8	-14.0	54	275
				22288	.557	116.3	291.5	-20.2	16	112
				22290	.677	78.7	282.0	+ 2.4	9	33
				22291	.801	95.7	269.9	- 8.7	47	308
				22294	.912	66.1	262.2	+18.4	21	90
				22292	.894	91.1	260.1	- 4.2	66	348
				22293	.924	97.6	255.5	- 9.7	3	20
21.322	-19.4	311.4	-7.1	22282	.831	257.2	8.1	-14.5	17	87
				22284	.519	237.2	339.4	-22.6	65	473
				22295	.301	357.0	312.3	+10.3	4	23

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Feb. 21.322	Continued			22287	.213	131.2	301.9	-15.0	87	493
				1	.172	134.9	304.2	-14.0	56	294
				22288	.401	124.9	291.0	-19.8	8	60
				22296	.588	40.7	287.4	+19.9	1	12
				22290	.498	73.8	282.9	+ 1.8	9	49
				22291	.660	95.3	269.9	- 8.8	46	307
				22294	.817	61.9	262.3	+18.1	35	296
				22292	.779	89.5	260.3	- 4.1	56	378
				22297	.985	73.0	234.0	+15.2	37	364
22.347	-19.7	297.9	-7.1	22282	.958	256.5	12.2	-15.0	0	11
				22284	.680	243.9	339.2	-22.8	52	401
				22295	.377	321.5	311.6	+10.2	8	41
				22287	.159	207.9	302.3	-15.1	81	495
				1	.168	223.1	304.6	-14.1	63	298
				22298	.099	131.1	293.6	-10.8	2	15
				22288	.251	152.3	290.8	-19.8	12	81
				22296	.507	19.7	287.4	+21.4	2	26
				22290	.284	60.7	283.6	+ 1.1	15	53
				22291	.465	95.5	270.1	- 8.8	42	269
				22294	.687	53.9	262.3	+18.1	70	442
				22292	.613	87.7	260.1	- 4.2	50	372
				22297	.916	70.0	235.0	+15.1	69	498
				22299	.985	61.8	223.1	+26.1	0	12
23.413	-20.0	283.9	-7.1	22284	.819	247.0	338.5	-22.9	36	355
				22295	.552	301.6	312.3	+10.5	12	74
				22287	.343	246.7	302.8	-14.5	82	441
				1	.367	250.4	304.6	-13.7	62	312
				22298	.205	244.4	294.7	-12.1	1	13
				22288	.243	208.8	290.9	-19.3	11	77
				22296	.477	350.5	288.6	+20.8	19	89
				22290	.125	348.1	285.3	- 0.1	10	35
				1558 02	.199	38.4	276.8	+ 1.9	3	19
				22291	.235	98.3	270.3	- 8.9	43	240
				22294	.544	39.8	262.5	+18.0	55	603
				22292	.397	84.1	260.7	- 4.2	67	380
				22297	.794	64.4	236.1	+15.3	74	782
				22299	.929	58.0	222.7	+26.2	6	41
24.376	-20.2	271.2	-7.1	22284	.925	247.5	339.6	-23.4	39	265
				22295	.720	292.1	313.7	+10.4	9	46
				22287	.538	254.5	303.4	-14.3	65	349
				1	.556	255.6	304.7	-13.9	56	279
				22298	.406	254.4	294.7	-12.8	1	5
				22288	.363	233.2	289.0	-19.3	5	36
				22296	.549	329.0	288.8	+21.2	25	131
				22290	.279	294.3	285.9	- 0.3	2	14
				22291	.025	151.3	270.5	- 8.4	55	262
				22294	.444	17.9	263.0	+17.8	90	607
				22292	.185	73.6	261.0	- 4.0	58	318
				22297	.663	57.1	236.1	+15.2	90	709
				22299	.853	53.1	221.9	+26.2	4	20
				22300	.991	104.8	187.6	-15.6	0	15

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Feb. 25.363	-20.5	258.2	-7.2	22284	.985	247.1	340.0	-23.7	39	287
				22295	.821	287.9	310.5	+10.3	2	8
				22287	.716	257.4	304.1	-14.0	59	326
				1	.722	257.7	304.6	-13.8	54	303
				22288	.561	243.8	290.5	-20.4	3	20
				22296	.654	314.9	287.8	+21.2	23	223
				22290	.479	282.3	286.0	- 0.5	2	11
				22291	.225	266.2	271.2	- 7.8	66	579
				22294	.433	350.1	262.6	+18.0	67	625
				22292	.079	314.6	261.4	- 4.0	55	301
				22297	.517	43.2	236.7	+15.4	63	565
				22299	.754	45.6	221.4	+26.1	7	23
				22301	.842	49.2	211.9	+28.4	8	40
				22300	.942	103.3	186.8	-14.9	0	10
26.392	-20.8	244.6	-7.2	22287	.852	257.7	303.6	-14.2	54	304
				1	.857	257.9	304.2	-14.0	51	279
				22296	.775	305.2	287.3	+21.3	26	163
				22290	.643	278.6	283.9	0.0	3	11
				22291	.445	266.5	271.2	- 8.0	92	540
				22294	.512	325.3	262.4	+18.0	82	560
				22292	.296	280.1	261.5	- 3.9	47	278
				22297	.399	18.9	237.0	+15.0	93	600
				22299	.659	35.0	219.8	+26.1	3	17
				22301	.732	40.4	212.3	+27.8	3	18
				22302	.845	90.1	187.0	- 4.0	20	94
				22300	.847	103.6	186.3	-15.3	4	29
				22303	.962	79.4	172.0	+ 8.1	8	48
27.292	-21.1	232.8	-7.2	22287	.943	257.4	304.2	-14.2	54	280
				22296	.866	299.7	286.3	+21.2	13	51
				22291	.622	266.2	271.4	- 8.0	70	489
				22294	.625	310.6	262.5	+17.7	73	457
				22292	.485	274.7	261.6	- 4.1	44	269
				22304	.411	318.4	248.8	+10.9	2	12
				22297	.383	348.3	237.3	+14.8	84	495
				22299	.580	21.6	219.1	+25.5	3	18
				22301	.625	28.2	213.5	+26.5	0	3
				22302	.705	88.8	188.0	- 4.3	25	128
				22300	.724	104.1	186.2	-15.1	3	18
				22303	.888	77.6	171.9	+ 7.5	14	60
				22305	.970	82.8	157.9	+ 5.2	4	30
28.402	-21.3	218.1	-7.2	22287	.997	256.0	305.0	-14.4	52	444
				22296	.940	295.9	283.1	+21.4	0	13
				22291	.795	265.3	271.1	- 8.1	54	356
				22294	.769	300.7	262.0	+17.9	70	465
				22292	.690	271.4	261.8	- 4.2	48	252
				22304	.597	300.0	249.8	+11.2	5	34
				1558 03	.534	290.9	248.0	+ 4.7	0	6
				22297	.484	319.4	237.0	+14.7	51	465
				22299	.539	357.7	219.5	+25.3	1	8
				22302	.480	85.7	189.6	- 4.3	26	155
				22303	.755	72.9	171.6	+ 7.9	10	50
				22305	.893	79.7	156.4	+ 5.8	62	517

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Mar. 1.569	-21.6	202.8	-7.2	22291	.928	264.3	271.3	- 7.9	63	309
				22294	.899	293.3	262.4	+17.3	55	368
				22292	.855	269.3	261.6	- 4.4	38	223
				22306	.808	297.6	251.1	+17.2	2	13
				22304	.755	291.4	248.3	+11.0	2	10
				22297	.643	303.2	236.4	+14.6	60	460
				22302	.204	78.0	191.3	- 4.7	16	92
				22303	.530	62.2	174.6	+ 7.9	3	21
				22305	.749	75.7	156.1	+ 5.7	107	759
				22307	.988	100.6	120.8	-11.5	50	266
2.427	-21.9	191.5	-7.2	22291	.982	262.9	271.1	- 8.3	33	293
				22294	.970	289.2	264.2	+16.6	46	294
				22292	.942	267.9	261.9	- 4.4	32	238
				22306	.894	293.5	250.4	+17.2	2	17
				22304	.865	288.0	248.4	+11.5	2	30
				22297	.764	296.2	236.4	+14.6	65	494
				22308	.240	235.5	203.2	-14.9	1	7
				22302	.041	348.8	191.9	- 5.0	13	57
				22303	.382	47.4	175.1	+ 8.0	2	14
				22305	.599	70.5	157.0	+ 5.5	92	691
				22307	.933	99.4	121.8	-11.3	30	208
3.373	-22.1	179.0	-7.2	22292	.991	266.7	261.3	- 4.3	46	356
				22297	.872	291.1	235.9	+14.4	36	458
				22308	.422	249.8	203.1	-15.0	12	64
				22302	.250	278.2	193.3	- 5.0	11	58
				22303	.275	14.5	175.0	+ 8.2	1	9
				22305	.420	59.9	157.7	+ 5.4	98	592
				22307	.834	98.9	122.1	-11.4	33	182
				22309	.995	70.7	97.9	+18.2	62	349
				22310	.987	101.1	97.1	-12.0	0	13
4.571	-22.4	163.2	-7.2	22297	.972	286.9	236.9	+14.4	45	383
				22308	.670	255.2	205.2	-15.2	23	122
				22302	.513	272.4	194.1	- 5.0	6	30
				22305	.222	18.5	159.2	+ 4.9	78	528
				22311	.640	90.6	123.4	- 5.9	3	11
				22307	.655	99.3	122.1	-11.6	25	130
				22309	.939	67.4	97.5	+18.3	37	254
				22310	.917	99.1	96.1	-11.2	11	48
				22312	.968	103.9	86.7	-15.2	79	634
5.370	-22.5	152.7	-7.2	22308	.799	256.4	206.0	-15.2	14	147
				22302	.663	270.9	194.2	- 4.8	3	18
				22305	.247	329.1	160.0	+ 5.0	82	473
				22311	.490	88.5	123.3	- 5.6	0	5
				22307	.505	100.4	122.4	-11.5	18	102
				22313	.726	102.5	106.0	-14.1	0	6
				22309	.869	63.8	97.6	+18.4	57	251
				22310	.840	99.2	95.1	-11.7	12	85
				22312	.911	103.5	86.3	-15.2	76	765
				22314	.996	76.1	70.1	+13.0	0	46

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Mar. 6.361	-22.8	139.6	-7.2	22308	.922	256.6	207.7	-15.2	17	73
				22302	.804	270.2	193.2	- 4.2	4	22
				22305	.406	300.8	160.1	+ 5.2	86	483
				1558 04	.368	138.9	124.5	-23.0	2	14
				22311	.275	88.1	123.6	- 6.4	2	16
				22307	.307	105.8	122.2	-11.7	16	69
				22313	.576	105.3	104.7	-14.7	16	58
				22309	.756	57.9	97.4	+18.3	40	241
				22310	.690	98.7	95.7	-11.2	15	59
				22312	.809	103.6	85.3	-15.2	122	797
				22314	.951	73.5	70.5	+13.2	10	56
7.324	-23.0	127.0	-7.2	1558 05	.944	250.0	198.8	-21.2	6	38
				22305	.587	289.0	160.7	+ 4.9	93	506
				22307	.113	131.4	122.0	-11.5	9	68
				22313	.370	109.3	106.0	-13.8	10	60
				22309	.634	48.7	97.0	+18.4	41	254
				22310	.498	98.9	97.0	-10.7	9	51
				22312	.674	104.4	84.6	-15.0	92	827
				22314	.864	70.2	70.6	+13.1	8	33
8.380	-23.2	113.0	-7.2	22305	.756	283.2	160.5	+ 5.0	63	411
				22307	.187	241.3	122.7	-12.3	17	105
				22313	.168	135.7	106.1	-14.1	15	69
				22310	.250	107.4	99.0	-11.3	0	4
				22309	.509	31.5	96.8	+18.7	35	222
				22312	.487	108.5	84.5	-15.3	106	802
				22314	.731	64.2	70.6	+13.2	9	40
9.367	-23.4	100.0	-7.2	22305	.886	279.6	161.1	+ 5.0	71	392
				22315	.720	253.8	146.0	-16.6	6	41
				22307	.392	254.5	122.7	-12.7	17	141
				22313	.166	222.9	106.7	-14.1	10	58
				22310	.083	183.3	100.3	-12.0	0	3
				22309	.439	6.7	97.0	+18.5	32	233
				22312	.302	118.8	84.2	-15.3	117	786
				22314	.587	54.8	70.6	+13.4	8	30
				1558 06	.703	59.4	61.3	+15.3	0	12
				22316	.766	95.8	49.7	- 9.1	3	15
				22317	.922	99.8	32.1	-11.8	6	31
10.350	-23.6	87.1	-7.2	22305	.965	277.1	160.9	+ 4.9	66	357
				22315	.865	254.5	147.5	-17.0	11	52
				22307	.584	258.8	122.8	-12.4	16	106
				22313	.373	248.9	108.0	-14.4	13	83
				22309	.459	343.4	95.0	+18.8	30	215
				22312	.148	159.3	84.0	-15.2	114	704
				22314	.440	38.7	70.7	+13.1	5	20
				22316	.595	95.0	50.4	- 8.8	7	27
				22317	.813	99.6	32.3	-12.0	6	26
11.299	-23.8	74.6	-7.2	22315	.953	254.3	148.1	-17.1	14	84
				22307	.744	259.8	123.0	-12.4	6	43
				22313	.571	255.3	109.2	-14.3	19	123
				22309	.553	321.2	96.0	+18.7	33	199

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Mar. 11.299	Continued			22312	.208	228.6	83.8	-15.0	129	763
				22314	.354	10.8	70.7	+13.1	2	14
				22316	.389	95.2	51.6	- 8.7	2	9
				22317	.674	100.0	32.0	-12.0	6	20
12.399	-24.0	60.1	-7.2	22313	.778	258.7	111.5	-13.3	37	203
				22310	.617	261.8	98.3	-10.7	1	8
				22309	.697	307.3	95.9	+19.1	25	184
				22312	.403	250.1	83.0	-14.5	114	886
				1558 07	.264	97.1	44.8	- 8.8	0	2
				22317	.474	102.4	32.0	-12.2	5	9
				22318	.710	61.9	20.0	+14.0	6	27
13.329	-24.1	47.8	-7.2	22313	.910	258.8	114.1	-13.1	27	149
				22309	.807	300.2	95.3	+19.1	41	208
				22312	.578	255.0	82.9	-14.5	103	840
				1558 08	.360	8.0	44.9	+13.6	0	5
				22317	.288	109.6	31.7	-12.5	2	9
				22318	.567	52.0	20.5	+14.0	4	19
				22319	.499	79.6	18.6	- 1.1	6	36
				22320	.910	64.4	347.4	+19.7	8	58
14.337	-24.3	34.5	-7.2	22313	.984	258.2	115.5	-12.8	18	107
				22309	.912	294.8	95.5	+19.1	21	191
				22312	.754	256.5	83.7	-14.8	95	600
				22317	.104	155.6	32.0	-12.6	1	6
				22318	.405	28.5	23.1	+13.7	1	8
				22319	.278	69.3	19.5	- 1.3	19	110
				22320	.797	59.2	348.3	+19.2	9	49
15.519	-24.5	18.9	-7.2	22309	.986	291.0	96.0	+19.2	39	222
				22312	.909	256.9	85.0	-14.9	75	427
				22317	.224	247.7	31.1	-11.9	1	14
				22319	.110	353.3	19.7	- 0.9	27	130
				22320	.651	48.3	348.1	+19.5	10	45
				22321	.960	103.6	304.2	-15.0	23	159
16.306	-24.6	8.6	-7.1	22312	.969	255.8	85.5	-15.4	85	411
				1558 09	.922	251.0	76.7	-20.2	0	8
				22319	.239	298.2	20.7	- 0.5	18	111
				22320	.531	34.9	349.9	+18.9	5	20
				22321	.897	103.2	304.1	-15.0	29	142
17.398	-24.8	354.2	-7.1	22319	.467	282.7	21.1	- 0.5	35	174
				22320	.445	7.4	350.7	+19.0	2	10
				22321	.764	103.7	304.2	-15.0	17	119
18.323	-24.9	342.0	-7.1	22319	.653	278.3	22.1	0.0	28	182
				22321	.616	105.6	304.2	-15.1	21	135
				22322	.983	93.4	262.3	- 4.7	24	154
				22323	.994	72.8	261.1	+16.1	9	47
19.342	-25.1	328.6	-7.1	22319	.814	274.8	22.6	- 0.3	25	188
				22324	.406	341.3	336.3	+15.5	4	24
				22321	.436	110.7	303.7	-15.2	25	129

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Mar. 19.342	Continued			22322	.916	92.0	262.2	- 4.6	27	180
				22323	.940	70.4	261.9	+15.7	10	58
				22325	.959	67.7	259.0	+19.0	0	15
20.416	-25.2	314.4	-7.0	22319	.937	272.2	23.5	- 0.4	25	197
				22324	.524	317.4	336.0	+16.1	13	65
				22321	.231	128.9	303.7	-15.2	16	108
				22322	.793	90.1	261.9	- 4.4	31	141
				22323	.865	66.3	258.9	+16.4	39	217
				22325	.897	63.9	255.8	+19.7	19	72
				22326	.882	74.2	255.0	+10.3	9	47
				22327	.910	62.3	254.5	+21.6	11	42
				22328	.974	73.6	240.1	+14.2	28	201
21.348	-25.3	302.1	-7.0	22319	.991	270.5	24.0	- 0.5	30	183
				22324	.649	305.4	335.4	+16.2	23	148
				22321	.149	191.9	303.9	-15.3	24	127
				22329	.416	86.3	277.6	- 4.9	5	25
				22322	.648	88.3	261.8	- 4.3	37	152
				22323	.755	61.2	258.7	+16.3	33	238
				22325	.789	58.7	256.7	+19.3	24	148
				22327	.822	56.5	254.4	+22.3	4	23
				22326	.785	69.6	253.7	+11.3	12	83
				22328	.906	70.5	240.5	+14.4	20	118
22.335	-25.4	289.1	-7.0	22324	.785	297.4	335.5	+16.4	36	263
				22321	.282	238.0	303.4	-15.3	19	118
				22329	.175	80.1	279.2	- 5.2	2	11
				22322	.459	86.0	261.9	- 4.4	25	122
				22323	.619	52.4	258.5	+16.1	48	301
				22325	.666	50.8	256.1	+19.0	18	107
				22326	.637	62.4	254.1	+11.4	26	115
				22327	.710	49.4	253.7	+21.8	8	63
				22328	.798	66.3	240.4	+14.1	18	86
				22330	.960	64.0	220.2	+22.5	4	24
23.391	-25.6	275.2	-6.9	22324	.905	291.8	336.1	+16.4	55	370
				22321	.483	250.7	303.3	-15.3	15	96
				22329	.030	290.1	276.8	- 6.3	16	73
				22322	.238	79.5	261.6	- 4.2	24	128
				22323	.479	36.0	258.2	+16.1	42	202
				22325	.554	37.6	254.3	+19.5	12	61
				22326	.464	50.1	254.0	+10.8	27	169
				22327	.590	36.4	253.1	+21.8	5	33
				22328	.661	59.8	239.3	+13.8	18	144
				22330	.877	59.3	220.6	+22.7	4	41
				22331	.962	105.5	200.0	-16.7	0	12
24.303	-25.6	263.1	-6.9	22324	.962	289.0	334.1	+16.1	41	390
				22321	.650	254.1	303.4	-15.5	11	97
				22329	.227	270.3	276.3	- 6.6	11	73
				22322	.053	26.4	261.8	- 4.2	23	168
				22323	.401	11.8	258.3	+16.1	29	214
				22326	.335	24.5	255.1	+10.9	19	179
				22325	.466	16.9	254.9	+19.5	12	68

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Mar. 24.303	Continued			22327	.509	19.0	252.9	+21.8	7	60
				22328	.540	49.7	238.1	+14.1	48	345
				22330	.736	53.6	224.0	+20.5	9	41
				22332	.975	90.4	186.1	- 2.0	5	19
25.576	-25.8	246.4	-6.8	22321	.835	255.7	303.4	-15.7	20	80
				22329	.483	269.9	275.3	- 6.0	13	58
				22322	.288	282.8	262.6	- 2.9	36	266
				22323	.435	334.2	257.7	+16.2	20	103
				22326	.341	332.7	255.5	+10.8	26	144
				22325	.448	343.6	254.0	+18.6	2	15
				22327	.496	349.2	252.1	+22.2	4	25
				22328	.401	22.0	237.4	+14.9	51	440
				22330	.565	35.6	225.8	+20.9	3	16
				22332	.856	88.0	187.7	- 1.8	4	38
				22333	.994	85.2	163.6	+ 4.0	76	454
26.328	-25.8	236.4	-6.8	22321	.916	255.8	303.6	-15.7	17	77
				22329	.621	269.0	275.0	- 5.9	3	23
				22322	.437	276.3	262.1	- 3.4	31	179
				1559 01	.465	228.0	258.7	-24.4	0	5
				22323	.521	318.0	257.7	+16.3	13	78
				22326	.445	311.0	256.3	+10.5	28	149
				22325	.506	327.9	252.9	+18.7	3	53
				22327	.534	333.4	251.3	+21.8	3	13
				22328	.370	358.9	236.9	+14.8	55	485
				22330	.496	19.3	226.4	+21.1	9	64
				22332	.746	86.1	188.5	- 1.7	5	23
				22333	.966	84.0	162.3	+ 3.9	59	381
27.333	-25.9	223.2	-6.8	22322	.628	272.5	262.0	- 3.7	21	160
				22323	.653	305.1	256.9	+16.4	7	33
				22326	.600	298.5	255.6	+10.9	28	180
				22325	.663	311.4	255.1	+20.2	4	42
				22328	.432	327.3	237.1	+14.6	56	450
				22330	.473	357.8	224.3	+21.3	31	171
				22332	.565	82.9	189.2	- 1.6	5	42
				22333	.885	81.9	162.0	+ 3.9	44	326
28.387	-26.0	209.3	-6.7	22322	.796	270.8	262.0	- 3.5	24	126
				22323	.821	296.2	259.5	+17.0	4	12
				22326	.772	290.3	256.6	+11.0	17	96
				22325	.805	300.9	256.3	+19.8	0	7
				1559 02	.629	315.0	237.5	+20.4	0	7
				22328	.568	307.8	236.8	+14.3	32	322
				22334	.352	263.1	229.9	- 8.7	4	21
				22330	.534	331.4	225.2	+21.4	13	78
				22332	.341	75.9	190.1	- 1.6	6	25
				22333	.745	78.5	162.4	+ 4.0	40	287
29.309	-26.1	197.1	-6.7	22322	.905	269.3	262.0	- 3.5	20	128
				22326	.893	286.3	257.8	+11.2	10	67
				22323	.888	292.3	255.9	+16.2	0	9
				22328	.707	298.0	237.1	+14.3	30	280
				22334	.548	264.0	230.5	- 8.9	37	164

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Mar. 29.309	Continued			22330	.638	315.8	225.5	+21.3	18	87
				22332	.195	64.7	187.0	- 1.8	8	48
				22335	.442	62.7	174.0	+ 5.5	4	30
				22333	.593	74.0	162.4	+ 3.9	41	249
				22336	.718	109.0	151.7	-18.2	0	5
				22337	.975	101.2	119.1	-12.3	5	19
30.325	-26.1	183.7	-6.6	22322	.978	267.9	261.8	- 3.4	15	101
				22326	.975	282.9	259.0	+11.0	0	10
				22328	.840	291.3	237.2	+13.9	24	221
				22334	.716	264.8	229.6	- 8.3	22	189
				22330	.753	306.7	224.1	+21.7	12	77
				22331	.310	225.1	197.1	-19.0	1	11
				22332	.091	327.2	186.5	- 2.3	12	102
				22335	.235	31.4	176.7	+ 4.9	2	13
				22333	.399	63.6	162.8	+ 4.0	39	215
				22337	.842	97.9	126.0	-10.2	0	4
31.355	-26.2	170.1	-6.6	22328	.942	287.0	237.8	+13.5	13	65
				22334	.865	264.3	230.3	- 8.2	26	135
				22330	.868	299.7	224.2	+21.7	7	47
				22331	.502	243.5	198.3	-18.7	1	8
				22332	.304	285.2	187.1	- 1.7	13	67
				22335	.239	331.4	176.7	+ 5.6	2	21
				22333	.234	36.3	162.2	+ 4.3	44	254
				22337	.743	100.6	122.0	-12.2	2	7
				22338	.986	100.3	88.9	-11.2	33	157
				22339	.993	103.3	86.0	-13.9	35	230
Apr. 1.319	-26.2	157.4	-6.5	22328	.994	284.8	238.8	+13.8	10	48
				22334	.965	264.3	232.6	- 7.2	12	75
				22330	.940	296.3	222.6	+22.0	14	85
				22332	.519	277.3	188.3	- 1.8	8	39
				1559 03	.422	256.0	182.0	-11.8	2	11
				22335	.354	303.5	174.6	+ 5.0	12	60
				22333	.204	340.1	161.4	+ 4.5	47	291
				1559 04	.324	3.8	156.2	+12.3	1	13
				22336	.231	145.8	149.6	-17.4	1	9
				1559 05	.899	72.2	96.2	+12.8	0	15
				22338	.922	99.8	89.7	-11.5	29	223
				22339	.952	101.9	84.6	-13.3	77	423
2.333	-26.3	144.1	-6.5	22330	.978	294.8	217.8	+22.5	5	36
				22340	.798	257.3	197.2	-14.0	2	7
				22335	.540	289.7	174.6	+ 4.9	13	109
				22333	.359	299.7	162.2	+ 4.0	43	310
				22336	.229	216.6	152.2	-16.9	0	9
				1559 06	.336	95.4	124.4	- 7.9	0	7
				22338	.806	100.5	90.1	-12.3	23	233
				22339	.860	101.7	84.3	-13.3	65	457
				22341	.972	60.0	73.1	+27.2	9	61
				22342	.994	102.7	59.5	-13.3	67	324

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Apr. 3.309	-26.3	131.2	-6.4	1559 07	.948	282.5	200.8	+ 9.6	0	7
				22340	.904	257.0	196.3	-14.5	0	18
				22335	.709	283.5	174.8	+ 4.9	15	67
				22333	.556	286.8	163.3	+ 3.8	32	182
				22336	.392	237.8	151.5	-18.0	0	9
				1559 08	.256	75.8	116.8	- 2.6	0	4
				1559 09	.524	107.6	100.2	-14.6	0	3
				22338	.631	102.2	92.1	-12.6	28	205
				22343	.711	62.2	90.8	+14.4	0	14
				22339	.730	102.4	84.2	-13.4	66	420
				1	.721	103.6	85.1	-14.2	44	246
				22341	.924	57.5	70.6	+26.7	28	191
				22342	.969	102.2	54.6	-13.4	206	1043
				22344	.977	125.6	52.2	-36.1	6	45
4.412	-26.3	116.6	-6.3	22335	.859	279.6	174.6	+ 4.8	8	74
				22333	.732	281.7	162.4	+ 4.1	29	158
				22338	.409	107.3	93.1	-12.8	31	190
				22339	.539	105.5	84.4	-13.7	62	328
				1	.531	106.9	85.1	-14.3	41	222
				22341	.837	51.1	69.6	+27.4	35	201
				22342	.881	101.0	54.4	-12.7	226	1227
				1	.842	101.6	58.9	-13.2	111	612
				22345	.912	74.1	53.2	+11.6	0	13
				22344	.917	126.8	51.5	-36.1	11	44
				22346	.910	109.0	50.6	-19.9	5	27
5.337	-26.3	104.4	-6.3	22335	.940	277.5	173.4	+ 4.8	3	29
				22333	.863	278.9	163.0	+ 4.4	24	149
				22338	.216	119.2	93.3	-12.2	29	201
				22339	.364	112.5	84.2	-13.9	59	371
				1	.356	114.5	85.0	-14.4	36	236
				22341	.751	43.9	68.5	+27.6	30	192
				22345	.775	71.0	56.4	+10.4	39	172
				22347	.749	97.8	55.7	-10.0	17	106
				22342	.776	101.5	53.4	-12.8	212	1391
				1	.713	102.3	58.9	-13.2	114	619
				22344	.870	128.8	47.1	-36.5	4	13
				22348	.968	89.5	29.1	- 1.1	18	88
6.462	-26.3	89.6	-6.2	22333	.962	277.7	162.6	+ 5.6	31	187
				22338	.126	210.1	93.2	-12.4	16	131
				22343	.380	356.9	90.8	+16.0	11	61
				22339	.166	147.8	84.3	-14.2	45	284
				1	.165	149.9	84.7	-14.4	38	240
				22341	.638	29.9	68.6	+27.7	25	134
				22347	.539	98.7	57.0	- 9.9	10	75
				22345	.604	63.3	56.4	+10.5	53	250
				22342	.594	103.0	53.3	-12.7	227	1386
				1	.520	104.9	58.7	-13.0	129	623
				22348	.876	87.7	28.7	- 1.1	18	103
7.309	-26.3	78.4	-6.2	22338	.275	245.4	93.2	-12.5	15	105
				22343	.449	331.9	91.1	+17.2	19	128
				22339	.174	212.2	83.9	-14.6	62	263
				1	.180	214.8	84.5	-14.6	52	214

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Apr. 7.309	Continued			22341	.583	16.9	67.4	+27.7	16	134
				22347	.348	101.9	58.3	- 9.9	11	56
				22345	.455	52.9	56.9	+10.1	51	325
				22342	.430	106.5	53.5	-12.6	202	1288
				1	.354	110.3	58.6	-12.8	110	599
				1559 10	.700	107.7	34.5	-16.7	0	2
				22348	.763	86.2	29.0	- 1.1	14	104
				22349	.987	72.0	0.1	+16.6	0	14
				22350	.984	102.6	357.7	-13.5	0	18
8.332	-26.3	64.9	-6.1	22338	.479	254.3	93.0	-12.8	11	69
				22351	.506	298.7	91.4	+ 8.6	21	113
				22343	.577	314.5	90.5	+18.3	30	176
				22339	.358	244.1	84.2	-14.7	45	222
				1	.360	244.0	84.4	-14.8	43	208
				22341	.553	354.2	68.5	+27.1	9	52
				22347	.147	116.7	57.3	- 9.8	18	90
				22345	.314	27.6	56.4	+10.0	51	411
				22342	.227	122.1	53.6	-12.9	218	1278
				1	.158	136.6	58.5	-12.6	122	665
				22346	.373	136.9	49.1	-21.6	1	5
				22344	.580	154.3	46.6	-37.2	1	8
				22348	.587	83.6	29.4	- 1.2	17	96
				22349	.905	68.7	3.7	+16.3	21	115
				22350	.918	102.1	357.7	-13.5	6	28
9.334	-26.3	51.7	-6.0	22338	.669	257.7	93.5	-12.7	8	26
				22351	.688	289.5	92.5	+ 8.7	73	401
				22343	.712	303.4	90.3	+18.4	50	249
				22339	.544	251.8	83.8	-14.8	37	195
				22341	.621	334.0	69.6	+28.1	7	34
				22347	.133	243.9	58.6	- 9.3	19	59
				22345	.292	343.1	56.6	+10.2	73	437
				22342	.126	192.3	53.2	-13.1	211	1153
				1	.169	226.3	58.8	-12.6	116	590
				22346	.312	161.6	45.5	-23.1	1	9
				22348	.388	79.1	29.3	- 1.4	11	78
				22349	.793	63.6	4.0	+16.6	67	301
				22350	.813	102.2	357.1	-13.4	4	19
10.358	-26.3	38.1	-6.0	22351	.846	284.9	93.9	+ 9.2	77	360
				22338	.823	258.1	93.7	-13.1	2	12
				22343	.840	296.8	90.3	+18.6	35	222
				22339	.722	254.5	84.1	-15.3	34	202
				22352	.569	241.1	70.3	-21.0	3	11
				22353	.539	290.3	68.6	+ 5.6	0	3
				22347	.322	259.7	56.8	- 8.9	50	299
				22345	.415	312.0	56.3	+10.4	75	563
				22342	.290	243.0	53.5	-13.3	186	1115
				1	.374	250.3	59.2	-12.8	111	604
				22348	.170	63.6	29.4	- 1.6	13	80
				22349	.637	55.2	5.3	+16.3	72	509
				22350	.653	103.5	357.6	-13.3	1	6
				22354	.987	97.7	316.8	- 8.5	0	14

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Apr. 11.573	-26.3	22.1	-5.9	22351	.965	281.3	95.5	+ 9.2	53	381
				22343	.942	294.0	88.4	+20.2	20	164
				22339	.880	255.6	84.0	-15.5	33	199
				22353	.765	280.9	70.8	+ 4.4	3	26
				22352	.725	244.3	66.9	-22.5	3	24
				22347	.582	262.7	57.7	- 9.0	72	605
				22345	.605	295.1	55.8	+10.0	77	679
				22342	.523	253.7	53.1	-13.4	183	1220
				1	.609	256.2	59.3	-13.0	120	611
				22348	.144	300.6	29.2	- 1.6	14	72
				22349	.464	35.5	5.9	+16.5	61	510
				22350	.443	109.1	356.7	-13.6	0	15
				22355	.715	72.0	338.9	+ 8.5	0	6
				22354	.894	95.9	318.5	- 7.9	5	37
12.090	-26.3	15.3	-5.8	22351	.988	280.7	94.9	+ 9.5	32	243
				22343	.971	292.2	87.9	+19.8	4	25
				22339	.926	255.7	83.6	-15.5	38	177
				22353	.838	279.3	71.1	+ 4.5	7	30
				22352	.809	246.8	68.5	-22.1	2	10
				22347	.679	263.3	58.1	- 8.8	100	643
				22345	.692	291.9	55.9	+10.5	106	578
				22342	.619	255.8	53.2	-13.3	194	1082
				1	.698	257.5	59.4	-12.9	122	538
				22348	.250	286.8	29.1	- 1.5	14	71
				22349	.411	22.5	5.9	+16.5	109	578
				22350	.387	110.8	353.5	-13.3	0	3
				22355	.620	69.1	339.7	+ 8.0	3	18
				22354	.835	95.7	318.5	- 8.0	4	26
13.302	-26.2	359.3	-5.7	22339	.993	255.0	83.3	-15.5	27	213
				22352	.966	248.8	75.1	-21.9	12	60
				22353	.940	278.6	68.3	+ 6.1	0	13
				22347	.859	263.1	58.7	- 8.9	97	655
				22345	.858	285.8	56.2	+10.4	63	633
				22342	.814	257.6	53.9	-13.4	162	976
				1	.866	258.5	59.5	-12.8	116	565
				22348	.504	277.1	29.1	- 1.4	13	78
				22349	.393	342.4	6.3	+16.2	101	761
				22355	.427	55.0	338.6	+ 8.8	2	9
				22354	.649	96.5	318.7	- 8.6	15	97
				22356	.976	94.8	281.8	- 6.0	60	336
14.337	-26.2	345.6	-5.7	22347	.956	262.3	59.0	- 9.0	73	569
				22345	.954	282.7	56.5	+10.3	71	423
				22342	.928	257.7	54.3	-13.5	167	971
				22348	.691	274.0	29.0	- 1.4	12	84
				22349	.504	317.3	6.4	+16.4	102	718
				22354	.446	97.8	319.2	- 8.5	18	93
				22356	.901	93.9	281.2	- 5.9	54	378
				22357	.959	70.1	275.2	+17.2	12	62
				22358	.969	95.9	269.7	- 7.1	18	161

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Apr. 15.320	-26.1	332.6	-5.6	22347	.994	261.6	56.7	- 9.0	28	206
				22345	.992	280.9	53.8	+10.0	8	82
				22342	.958	256.6	46.5	-14.4	41	258
				22348	.833	272.2	28.8	- 1.3	20	82
				22349	.645	303.3	6.6	+16.0	94	725
				22354	.240	103.5	319.1	- 8.6	7	39
				22356	.783	93.7	281.0	- 6.4	38	370
				22357	.884	67.0	274.4	+17.3	14	88
				22358	.891	95.9	269.4	- 7.8	33	181
				22359	.938	70.7	265.8	+15.9	0	12
16.317	-26.0	319.5	-5.5	22342	.997	255.6	45.9	-14.7	26	208
				22348	.937	270.6	28.8	- 1.3	12	74
				22349	.793	295.0	7.7	+15.9	118	830
				1560 01	.565	308.5	346.7	+15.7	0	8
				22360	.318	342.8	325.0	+12.1	2	16
				22354	.052	168.4	318.9	- 8.4	2	11
				22356	.619	93.5	281.2	- 6.5	61	349
				22357	.766	62.4	274.5	+16.8	13	88
				22358	.772	95.1	268.8	- 7.4	26	184
				1560 02	.843	90.7	262.1	- 3.6	0	4
17.322	-26.0	306.2	-5.4	22349	.908	290.6	8.3	+16.1	139	904
				1560 03	.444	256.6	332.2	-10.8	0	5
				22360	.422	313.6	324.3	+11.7	29	135
				22356	.425	94.6	281.0	- 6.8	34	342
				22357	.626	54.2	274.3	+16.8	8	64
				22358	.592	94.2	269.9	- 6.8	20	158
18.410	-25.9	291.8	-5.3	22349	.979	287.2	7.7	+15.6	173	1376
				22360	.603	297.9	324.7	+11.9	20	109
				22356	.187	98.9	281.2	- 6.9	48	317
				22357	.476	36.6	274.6	+17.3	8	36
				22358	.361	94.1	270.6	- 6.5	16	142
				22359	.540	50.2	266.4	+15.4	0	1
				22361	.945	66.5	224.7	+20.1	3	14
19.402	-25.8	278.7	-5.2	22349	.986	289.3	356.6	+18.0	13	139
				22360	.742	291.6	323.5	+12.1	13	47
				22356	.049	235.4	281.0	- 6.8	43	271
				22357	.390	9.9	274.7	+17.3	5	22
				22358	.145	100.8	270.5	- 6.7	25	118
				22359	.433	32.3	264.8	+16.3	9	35
				22361	.883	63.3	221.5	+20.5	12	71
20.331	-25.7	266.5	-5.2	22360	.858	287.0	323.1	+11.7	4	17
				22356	.253	261.7	281.0	- 7.1	35	251
				22357	.410	345.9	272.5	+18.2	1	7
				22358	.067	243.8	269.9	- 6.8	21	125
				22359	.377	4.2	264.8	+16.8	12	39
				22362	.594	97.8	230.1	- 8.8	0	13
				22361	.796	59.1	219.8	+20.6	25	102

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Apr. 21.315	-25.6	253.5	-5.1	22360	.952	282.0	324.1	+ 9.8	0	14
				22356	.466	264.8	281.2	- 6.9	44	236
				22363	.427	287.2	277.5	+ 2.6	6	46
				22358	.288	261.4	270.1	- 7.3	11	56
				22359	.421	331.8	265.4	+16.7	2	25
				22362	.392	101.7	230.7	- 9.2	12	57
				22361	.663	51.0	220.3	+20.4	20	92
22.663	-25.5	235.7	-5.0	22356	.715	264.7	281.3	- 7.3	42	236
				22363	.680	278.7	277.8	+ 2.2	49	308
				22358	.560	263.5	269.6	- 7.8	8	41
				22362	.109	130.8	230.9	- 9.0	39	171
				22361	.488	30.0	220.7	+20.1	8	41
				22364	.596	37.8	212.3	+23.4	0	4
				22365	.705	70.2	193.5	+10.1	0	8
23.657	-25.4	222.5	-4.9	22356	.854	264.3	281.3	- 7.4	28	203
				22363	.829	276.4	277.8	+ 2.5	36	305
				22358	.734	263.7	269.7	- 8.0	5	30
				22362	.167	244.7	231.3	- 8.9	23	167
				22361	.424	4.5	220.5	+20.0	2	12
				22364	.535	24.4	208.5	+24.3	0	7
24.433	-25.3	212.3	-4.8	22356	.933	264.1	281.3	- 7.3	34	222
				22363	.921	275.1	278.7	+ 2.8	75	660
				22358	.841	263.7	269.6	- 7.9	4	21
				1560 04	.843	241.8	267.9	-26.1	0	12
				22359	.808	293.6	262.4	+15.7	0	4
				22366	.410	306.3	231.8	+ 9.5	5	20
				22362	.330	257.9	231.2	- 8.5	33	193
				22361	.444	342.8	220.3	+20.2	3	10
				22365	.421	49.9	193.2	+11.1	1	10
				22367	.985	70.0	134.8	+18.7	0	19
25.342	-25.1	200.3	-4.7	22356	.985	263.0	280.7	- 7.7	19	149
				22363	.969	276.0	275.3	+ 4.6	31	261
				22358	.934	263.1	269.5	- 8.1	0	12
				22366	.571	293.7	232.1	+ 9.2	8	36
				22362	.508	261.6	230.7	- 8.3	37	263
				22365	.301	25.1	192.8	+11.1	1	14
				22367	.942	68.5	133.0	+18.4	7	42
				22368	.977	97.4	122.2	- 8.2	36	303
26.438	-25.0	185.8	-4.6	22359	.988	286.6	265.0	+15.6	8	71
				22366	.755	286.6	232.7	+ 9.3	5	32
				22362	.700	263.0	230.2	- 8.2	34	237
				22365	.298	334.4	193.3	+10.9	6	25
				22369	.169	350.0	187.5	+ 4.9	0	7
				22367	.839	64.4	133.1	+18.4	10	62
				22370	.874	75.3	126.7	+10.5	5	28
				22368	.889	97.3	122.9	- 8.6	30	235
				22371	.964	100.1	110.8	-11.0	16	146

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Apr. 27.343	-24.9	173.8	-4.5	22366	.856	283.1	231.1	+ 8.8	9	52
				22362	.835	263.2	230.5	- 8.1	33	127
				22365	.426	307.7	193.8	+10.8	6	35
				22369	.292	298.9	188.6	+ 3.7	1	7
				1560 05	.410	173.0	170.6	-28.4	0	9
				22372	.399	35.4	160.1	+14.5	0	9
				1560 06	.507	112.8	145.0	-15.2	0	5
				22367	.722	58.6	133.4	+18.6	8	42
				22370	.754	71.7	127.3	+10.6	7	27
				22368	.783	97.1	122.3	- 8.4	44	298
				22371	.890	100.6	110.8	-11.5	27	207
28.346	-24.7	160.6	-4.4	22362	.947	262.5	232.1	- 8.6	7	66
				22366	.946	281.1	230.4	+ 9.0	10	55
				22365	.604	294.8	194.4	+11.0	3	25
				22373	.275	313.4	172.1	+ 6.5	1	5
				22374	.183	180.7	160.7	-14.9	7	35
				22375	.241	11.7	157.7	+ 9.2	0	2
				22367	.561	45.8	135.5	+18.9	11	87
				22370	.575	64.6	128.8	+10.5	3	23
				22368	.633	97.8	121.4	- 8.4	41	326
				22371	.772	101.1	110.2	-11.4	29	259
				22376	.985	105.2	79.9	-15.7	26	154
29.361	-24.5	147.2	-4.3	22365	.745	287.1	193.2	+ 9.6	2	10
				22373	.459	292.6	172.3	+ 6.2	1	5
				22374	.287	230.6	160.4	-14.7	12	78
				1560 07	.283	357.1	148.0	+12.0	0	5
				22367	.438	26.2	135.4	+18.8	28	137
				22370	.394	50.1	129.3	+10.4	6	42
				22368	.424	100.9	122.4	- 8.5	41	275
				22371	.616	103.3	109.6	-11.5	50	312
				22376	.916	105.1	80.8	-15.6	11	103
				22377	.960	110.1	73.3	-20.5	24	213
				22378	.999	102.4	59.2	-12.6	22	44
30.341	-24.4	134.2	-4.2	22365	.870	287.2	192.4	+12.7	0	18
				22374	.478	246.8	161.1	-14.6	21	109
				22367	.393	355.6	136.0	+18.7	34	209
				22370	.257	16.0	130.1	+10.0	2	11
				22368	.212	112.1	122.8	- 8.7	39	247
				22371	.427	109.0	109.9	-11.8	31	217
				22376	.811	106.5	80.4	-15.8	15	85
				22377	.884	111.5	72.7	-20.9	29	192
				22378	.961	102.2	60.1	-12.9	60	424
				22379	.979	77.3	57.5	+11.5	65	377
May 1.369	-24.2	120.6	-4.1	22374	.662	253.0	161.2	-14.3	30	145
				22367	.454	328.2	135.2	+18.6	45	306
				22368	.087	207.1	122.9	- 8.5	33	250
				22371	.224	127.2	110.1	-11.8	30	198
				22380	.425	110.1	96.6	-12.1	1	11
				22376	.661	109.4	80.4	-15.8	12	59
				22377	.765	114.2	72.4	-21.0	28	161
				22378	.872	102.4	60.0	-12.8	69	450

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
May 1.369	Continued			22379	.912	75.1	56.6	+11.8	66	406
				1560 08	.919	71.2	56.4	+15.4	0	6
2.099	-24.1	111.0	-4.0	22374	.775	254.6	161.2	-14.5	21	114
				22375	.703	288.6	153.4	+ 9.9	6	33
				22367	.553	313.5	135.9	+18.6	52	272
				22368	.218	248.3	122.8	- 8.6	38	252
				22371	.138	176.7	110.5	-11.9	21	191
				22380	.266	119.0	97.3	-11.3	1	11
				22376	.537	113.0	80.2	-15.5	7	33
				22377	.665	117.0	71.9	-20.6	29	155
				22378	.783	102.6	59.7	-12.3	61	387
				22379	.838	72.3	56.4	+12.4	56	333
3.393	-23.8	93.9	-3.9	22372	.947	287.6	162.9	+15.3	3	24
				22374	.911	256.3	159.5	-14.0	3	34
				22375	.872	284.9	152.7	+10.9	11	80
				22367	.758	298.8	138.2	+18.6	47	323
				22368	.497	260.4	123.4	- 8.2	33	214
				22371	.318	243.4	110.7	-11.9	23	118
				22380	.149	204.6	97.5	-11.7	0	2
				22381	.138	164.8	91.8	-11.5	1	10
				22376	.306	132.2	80.3	-15.6	9	40
				22377	.465	130.2	71.6	-21.1	27	177
				22378	.567	106.7	60.2	-12.6	69	407
				22379	.651	66.0	56.5	+12.2	63	358
				22382	.986	73.0	15.2	+16.0	19	234
4.421	-23.6	80.3	-3.8	22374	.990	256.2	162.8	-14.2	8	32
				22375	.974	282.9	155.8	+11.7	5	59
				22367	.885	293.1	139.1	+18.3	56	394
				22368	.688	262.1	123.6	- 8.2	26	217
				22371	.522	252.8	110.8	-12.1	13	94
				22380	.371	247.8	100.7	-11.6	2	11
				1560 09	.408	310.5	98.7	+11.7	0	5
				22381	.237	242.0	92.5	-10.1	0	9
				22376	.209	178.8	80.0	-15.8	6	18
				22377	.339	153.7	71.0	-21.4	24	154
				22378	.373	115.3	60.1	-12.7	49	396
				22379	.480	55.8	56.4	+12.1	54	350
				22382	.951	71.2	10.6	+16.5	74	565
				22383	.977	74.8	4.4	+13.9	5	41
5.329	-23.4	68.3	-3.7	22367	.958	290.5	139.0	+18.4	46	514
				22368	.819	263.1	123.2	- 7.8	28	279
				22371	.681	256.2	110.6	-12.0	11	71
				22380	.485	251.5	96.2	-12.1	9	41
				22381	.355	253.2	88.4	- 9.4	0	7
				22376	.284	222.1	79.6	-15.7	4	17
				22377	.307	187.7	70.8	-21.4	24	152
				22378	.211	137.8	60.0	-12.6	49	359
				22379	.344	36.6	56.2	+12.3	62	343
				22382	.870	68.6	10.9	+16.5	62	575
				22383	.920	73.4	3.4	+13.6	3	11

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
May 6.336	-23.2	55.0	-3.6	22367	.988	291.4	133.9	+20.5	29	180
				22368	.925	263.0	122.6	- 7.8	43	346
				22371	.825	258.3	110.3	-11.7	10	84
				22380	.674	257.6	96.9	-11.0	2	9
				22381	.555	255.4	88.0	-11.0	0	12
				22376	.456	241.8	79.5	-15.7	4	15
				22377	.400	219.4	70.7	-21.4	22	166
				22384	.220	251.4	67.1	- 7.5	0	7
				22378	.188	209.9	60.4	-12.9	49	342
				22379	.280	355.6	56.2	+12.5	50	329
				1560 10	.301	142.0	43.8	-17.2	0	5
				22382	.741	64.2	11.1	+16.2	68	526
				22383	.798	70.1	4.7	+13.4	6	43
7.338	-23.0	41.7	-3.5	22368	.985	262.4	121.9	- 8.1	78	527
				22371	.933	258.4	110.6	-12.1	12	100
				22380	.806	256.9	95.1	-12.6	2	8
				22376	.629	248.9	79.1	-15.8	1	4
				22377	.553	235.3	70.8	-21.3	22	149
				22384	.425	263.7	66.7	- 5.8	1	8
				22378	.355	242.0	60.4	-12.9	55	299
				22379	.368	319.3	55.9	+12.7	59	374
				22382	.595	56.3	10.8	+16.2	73	508
				22383	.663	65.3	3.6	+13.3	24	153
8.410	-22.8	27.5	-3.4	22380	.919	257.3	94.2	-13.0	11	71
				22377	.714	243.6	70.6	-21.0	23	185
				22378	.554	252.1	60.1	-12.7	41	338
				22379	.534	300.6	55.5	+12.7	57	367
				22385	.169	271.2	37.3	- 3.1	2	22
				22382	.436	40.7	10.4	+16.0	45	591
				22383	.498	54.7	2.9	+13.6	8	78
9.354	-22.6	15.1	-3.3	22376	.888	253.8	77.2	-15.8	0	7
				22377	.836	247.1	70.4	-20.9	27	177
				22378	.716	255.5	60.1	-12.7	36	355
				22379	.687	293.4	55.3	+13.2	50	330
				22385	.363	269.7	36.3	- 3.2	2	12
				22382	.347	13.8	10.1	+16.3	79	545
				22383	.359	34.6	3.0	+13.9	5	54
				22386	.978	69.1	299.5	+19.6	38	324
10.282	-22.3	2.8	-3.2	22377	.928	248.5	70.3	-21.1	24	147
				22378	.849	257.1	60.6	-12.6	46	297
				1560 11	.865	304.2	56.1	+27.2	2	13
				22379	.822	288.5	55.8	+13.2	58	328
				22387	.494	217.6	22.3	-25.9	8	42
				22382	.359	338.8	10.5	+16.3	44	405
				22383	.294	356.8	3.7	+13.8	2	14
				22388	.195	151.7	357.4	-13.0	6	29
				22389	.742	73.5	316.7	+ 9.9	7	28
				22386	.918	66.7	299.3	+19.8	47	321
				22390	.963	88.6	288.6	+ 0.5	4	57
				22391	.989	97.3	281.0	- 7.7	30	148

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
May 11.092	-22.1	352.1	-3.1	22377	.976	248.7	69.6	-21.4	14	95
				22378	.926	257.5	59.8	-12.7	38	276
				22379	.906	286.1	55.2	+13.2	58	287
				22387	.603	228.5	22.2	-26.1	1	16
				22382	.441	318.8	9.6	+16.4	53	344
				22383	.349	327.0	3.3	+13.9	1	3
				22388	.190	203.3	356.5	-13.1	6	30
				22389	.607	68.9	317.1	+10.1	5	25
				22392	.771	98.9	301.8	- 8.9	8	37
				22386	.844	63.5	298.7	+20.2	41	318
				22390	.904	87.0	287.7	+ 1.3	3	58
				22391	.947	96.9	280.9	- 7.6	19	102
				22393	.975	101.3	274.7	-11.7	19	83
12.351	-21.8	335.4	-3.0	22378	.993	258.6	58.6	-11.7	27	207
				22379	.986	285.2	54.5	+14.4	53	327
				22382	.627	301.2	9.3	+16.4	35	258
				22388	.325	239.1	352.0	-12.4	0	5
				1561 01	.297	177.4	334.6	-20.2	0	5
				22389	.336	53.4	319.7	+ 8.6	4	14
				22392	.542	103.7	303.2	- 9.8	30	204
				22386	.688	57.7	297.6	+19.2	50	294
				22390	.740	87.2	288.0	+ 0.1	8	44
				22391	.816	98.6	280.9	- 8.7	18	118
				22393	.879	102.8	274.2	-12.7	19	152
				22394	.978	73.4	259.1	+15.5	121	877
				22395	.978	106.7	257.5	-17.0	5	21
13.531	-21.5	319.8	-2.8	22382	.795	292.3	9.5	+15.7	34	195
				22389	.208	357.4	320.4	+ 9.1	2	7
				22392	.290	112.6	304.2	- 9.1	79	561
				22386	.524	44.4	297.1	+19.3	32	211
				22390	.501	82.5	290.2	+ 1.3	3	18
				22391	.629	99.1	281.1	- 7.9	12	105
				22393	.722	103.5	274.3	-11.7	20	125
				22394	.911	70.0	256.6	+16.9	203	1587
				22395	.905	108.4	255.6	-17.8	5	43
				22396	.907	101.4	255.0	-11.5	0	11
14.335	-21.3	309.2	-2.7	22382	.894	289.2	10.2	+15.8	34	205
				22397	.326	244.3	326.5	-10.7	1	19
				22389	.282	316.2	320.5	+ 9.0	1	7
				22392	.136	144.7	304.6	- 9.1	138	967
				22386	.424	28.9	296.7	+19.0	30	218
				22390	.344	82.7	289.3	- 0.1	2	21
				22391	.477	101.8	281.2	- 8.0	15	105
				22393	.585	106.1	274.3	-11.6	19	126
				22396	.785	101.2	257.8	-10.4	0	25
				22394	.821	67.4	257.0	+16.6	222	1870
				22395	.816	110.1	255.7	-17.9	6	25
15.408	-21.0	295.0	-2.6	22382	.980	286.4	11.9	+15.5	13	97
				1561 02	.530	290.5	325.0	+ 8.4	0	3
				22397	.470	256.2	322.4	- 8.7	1	3
				22392	.202	239.8	305.1	- 8.4	119	1089

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
May 15.408	Continued			22398	.237	201.8	300.2	-15.3	1	7
				22386	.372	355.6	296.7	+19.0	20	154
				22390	.145	61.9	287.7	+ 1.3	4	36
				22391	.258	112.4	281.1	- 8.2	10	85
				22393	.382	114.7	274.3	-11.6	20	128
				22394	.678	61.4	256.7	+16.8	212	1850
				22396	.646	106.3	255.8	-12.5	1	17
				22395	.668	113.4	255.2	-17.4	3	10
16.345	-20.8	282.6	-2.5	22392	.404	255.3	305.7	- 8.2	135	1268
				22398	.382	234.0	301.2	-15.3	0	4
				22386	.432	328.4	296.4	+19.1	23	124
				22399	.259	224.8	293.4	-13.0	0	7
				22390	.131	294.4	289.4	+ 0.6	2	16
				22391	.103	163.4	280.9	- 8.2	8	96
				22393	.212	141.0	274.8	-11.9	18	111
				22395	.479	128.2	259.2	-19.5	1	11
				22394	.533	51.7	256.8	+17.0	222	1897
				22396	.464	112.4	256.7	-12.4	2	12
				22400	.990	75.7	201.7	+13.8	23	125
17.339	-20.5	269.5	-2.4	22392	.595	259.7	305.6	- 8.0	120	1087
				22398	.555	245.7	300.9	-15.2	6	30
				22386	.582	308.4	298.2	+19.0	14	83
				22399	.385	240.8	289.6	-13.1	0	5
				22390	.314	282.7	287.2	+ 1.7	4	22
				22391	.215	242.2	280.5	- 8.1	8	89
				22393	.192	207.7	274.7	-12.1	9	116
				1561 03	.241	344.0	273.4	+11.0	0	9
				22395	.353	144.5	257.0	-19.0	5	49
				22394	.392	32.5	256.8	+16.9	150	1798
				22401	.501	105.3	240.2	- 9.6	5	55
				22402	.841	100.1	212.5	- 9.8	0	17
				22400	.940	73.6	201.0	+14.5	59	324
18.363	-20.2	255.9	-2.3	1561 04	.901	292.9	317.4	+19.4	0	5
				22392	.762	261.1	305.2	- 8.2	101	775
				22398	.741	251.9	302.5	-14.8	10	37
				22386	.725	299.8	297.6	+19.4	16	74
				22390	.544	276.4	288.5	+ 1.5	3	16
				22391	.424	256.1	280.4	- 7.9	13	81
				22393	.367	240.3	274.9	-12.6	12	83
				22395	.272	190.4	258.9	-17.8	0	12
				22394	.331	356.4	257.2	+16.9	184	1420
				22401	.308	116.8	239.8	-10.1	8	48
				22402	.724	100.3	210.0	- 9.0	10	43
				22400	.840	70.7	201.0	+14.8	33	255
19.335	-19.9	243.1	-2.2	22392	.892	262.2	305.9	- 7.9	60	523
				22398	.877	254.2	303.7	-14.8	45	311
				22386	.850	294.2	298.0	+19.1	13	77
				22390	.721	274.2	288.9	+ 1.5	0	8
				22391	.607	259.6	280.0	- 8.0	10	77
				22393	.553	250.1	275.1	-12.6	14	72
				22395	.385	226.7	260.1	-17.3	0	15

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
May 19.335	Continued			22394	.402	324.0	257.3	+16.8	129	1444
				22401	.145	162.3	240.5	-10.1	6	33
				22402	.563	102.9	209.5	- 9.0	6	32
				22403	.676	122.5	205.0	-22.9	0	3
				22400	.710	66.6	200.9	+14.7	31	238
				22404	.976	74.3	166.8	+14.8	11	57
20.455	-19.6	228.3	-2.0	22398	.965	255.0	302.7	-15.0	75	432
				22392	.958	262.1	301.5	- 8.1	20	165
				22386	.949	291.0	297.7	+19.1	7	39
				22391	.788	261.6	279.9	- 7.9	13	66
				22393	.742	255.5	275.3	-12.0	9	71
				22394	.568	304.4	257.4	+16.9	171	1230
				22401	.252	233.0	240.0	-10.7	12	94
				22405	.227	58.3	217.1	+ 4.8	2	11
				22402	.330	111.4	210.2	- 8.8	7	46
				22403	.537	131.9	202.6	-22.8	0	4
				22400	.533	57.8	200.6	+14.6	31	258
				22404	.896	72.6	166.4	+14.5	8	38
				22406	.990	72.7	147.5	+16.8	8	48
21.325	-19.3	216.7	-1.9	22398	.989	255.5	298.3	-14.6	30	174
				22391	.893	262.1	279.7	- 7.9	10	75
				22393	.860	257.0	275.5	-12.1	5	53
				22394	.709	296.5	258.2	+17.0	105	1058
				22407	.549	314.7	241.3	+20.9	0	14
				22401	.432	250.9	241.1	- 9.9	15	89
				22408	.424	348.7	221.9	+22.5	0	8
				22405	.119	350.7	217.8	+ 4.8	2	9
				22402	.167	137.7	210.2	- 9.0	5	20
				22400	.393	43.3	200.6	+14.7	30	208
				22404	.809	70.8	165.0	+14.2	10	64
				22406	.944	71.6	147.7	+16.7	7	27
22.336	-19.0	203.4	-1.8	22391	.970	262.4	279.1	- 7.8	9	74
				22394	.846	291.7	258.5	+17.1	105	956
				22401	.630	256.7	241.6	- 9.7	26	191
				22409	.617	262.9	241.2	- 5.8	1	6
				22408	.507	323.0	222.5	+22.1	0	5
				22402	.184	226.0	211.0	- 9.1	0	6
				22400	.287	8.4	200.9	+14.6	27	148
				22403	.353	171.8	200.2	-22.2	1	2
				22404	.654	65.9	165.6	+14.0	10	53
				22406	.851	69.2	147.5	+16.6	6	43
				22410	.969	69.2	129.5	+19.6	5	18
				22411	.970	97.5	127.6	- 7.7	9	83
23.328	-18.6	190.2	-1.7	22394	.948	288.8	260.0	+17.2	97	762
				22401	.795	258.9	242.4	- 9.8	16	88
				22407	.826	297.9	241.7	+21.6	0	4
				22409	.764	261.2	239.7	- 7.8	2	7
				22402	.382	249.0	211.3	- 9.4	2	11
				22400	.330	327.5	200.7	+14.4	13	132
				22404	.502	55.8	164.9	+14.8	9	72
				22412	.567	113.8	158.0	-14.6	3	17

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
May 23.328	Continued			22406	.724	65.0	147.2	+16.5	3	22
				22410	.898	67.4	129.0	+19.3	0	5
				22411	.885	97.4	128.2	- 7.3	17	107
24.343	-18.3	176.8	-1.6	22394	.993	288.4	258.8	+18.0	39	405
				22401	.920	260.3	243.4	- 9.5	8	72
				22409	.903	263.1	241.1	- 6.9	5	32
				22402	.579	257.1	211.5	- 8.7	15	98
				22413	.516	310.9	201.0	+18.2	1	11
				22400	.477	302.9	201.0	+13.5	14	97
				22404	.367	36.1	163.9	+15.6	14	99
				22412	.388	125.8	157.9	-14.6	15	90
				22406	.567	57.8	146.9	+16.2	1	7
				22411	.746	97.8	128.9	- 6.9	27	148
25.421	-17.9	162.6	-1.4	22401	.986	261.9	242.9	- 8.3	0	20
				22409	.982	263.3	241.5	- 6.9	11	115
				22402	.791	260.2	214.4	- 8.6	22	101
				22400	.666	293.0	201.6	+13.9	16	95
				22413	.680	300.1	200.8	+18.7	6	48
				1561 05	.612	315.5	190.6	+24.5	0	13
				22404	.303	357.4	163.4	+16.1	12	76
				22412	.234	166.2	159.3	-14.5	16	107
				22411	.547	99.8	129.8	- 6.6	45	490
				1561 06	.952	73.7	91.6	+15.0	4	14
				22414	.950	78.5	91.5	+10.5	4	28
26.376	-17.6	149.9	-1.3	22402	.908	261.5	214.8	- 8.2	16	129
				22400	.804	287.5	201.7	+13.2	6	48
				22413	.799	295.0	199.6	+18.8	0	19
				22404	.367	321.2	163.6	+15.2	7	51
				22412	.261	204.1	156.2	-15.0	53	301
				22411	.353	106.1	130.0	- 6.8	73	547
				22414	.856	76.8	92.1	+10.5	4	35
				1561 07	.934	71.0	82.6	+17.1	0	13
				22415	.984	98.8	70.4	- 8.9	12	87
				22416	.994	110.0	66.6	-20.0	19	155
27.347	-17.3	137.1	-1.2	22402	.981	262.4	215.6	- 7.7	17	126
				22400	.894	283.9	199.3	+11.8	0	15
				22404	.529	301.2	164.8	+14.7	7	35
				22412	.405	233.4	156.7	-15.1	46	309
				22417	.349	354.3	139.2	+19.0	0	7
				22411	.147	132.8	130.8	- 6.9	68	498
				22418	.319	119.7	120.8	-10.2	0	12
				22414	.714	73.7	93.0	+10.6	3	20
				22415	.930	99.5	69.0	- 9.3	18	138
				22416	.953	110.5	65.7	-19.8	22	126
				22419	.979	103.1	59.1	-13.1	22	187
				22420	.990	74.0	56.0	+15.7	16	96
28.337	-16.9	124.0	-1.1	22404	.711	289.2	167.3	+12.7	3	23
				22412	.600	246.4	158.5	-14.8	20	295
				22417	.467	317.9	143.3	+19.2	1	18
				22410	.378	339.5	132.0	+19.6	0	5

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
May 28.337	Continued			22411	.164	232.5	131.5	- 6.8	36	431
				22418	.171	158.5	120.3	-10.2	1	14
				1561 08	.345	29.5	113.8	+16.3	1	7
				22414	.540	67.9	93.5	+10.8	5	22
				22415	.824	100.4	69.0	- 9.2	20	228
				22416	.875	112.1	64.7	-19.7	14	132
				22419	.914	104.0	58.5	-13.2	34	207
				22420	.941	72.7	55.2	+15.8	20	124
29.374	-16.6	110.2	-1.0	1561 09	.877	293.6	168.9	+20.0	5	23
				22404	.839	287.7	165.6	+14.2	8	45
				22412	.769	251.4	158.9	-14.8	29	225
				22417	.602	304.4	141.8	+19.0	0	10
				22411	.404	255.2	133.3	- 6.8	98	552
				22421	.402	325.2	124.2	+18.3	2	12
				22418	.221	231.4	120.2	- 8.8	0	6
				22414	.340	53.6	94.1	+10.7	6	24
				22422	.405	64.5	88.6	+ 9.1	1	7
				22415	.667	103.2	69.2	- 9.5	28	175
				22416	.745	115.9	65.1	-19.6	20	109
				22419	.793	105.9	58.8	-13.2	33	180
				22420	.833	70.3	55.9	+15.7	22	124
30.340	-16.2	97.5	-0.9	22404	.943	284.7	167.0	+13.6	7	34
				22412	.902	253.8	161.0	-14.9	21	169
				22411	.604	259.9	134.1	- 6.8	104	764
				22421	.526	307.8	123.3	+18.0	18	108
				22418	.408	247.9	119.9	- 9.6	0	5
				22414	.204	14.4	94.5	+10.5	5	38
				22422	.253	51.5	86.0	+ 8.2	4	26
				22415	.492	107.6	69.2	- 9.3	26	184
				22416	.609	122.6	64.5	-19.8	17	105
				22419	.653	109.3	58.3	-13.1	33	191
				22420	.701	66.3	55.8	+15.7	16	93
31.543	-15.8	81.5	-0.7	22412	.984	255.2	160.9	-14.7	24	171
				1561 10	.957	293.5	152.6	+22.2	4	30
				22411	.808	262.7	135.1	- 6.3	93	605
				22421	.716	297.0	123.8	+18.4	38	301
				22414	.298	311.2	94.7	+10.6	5	21
				22422	.193	328.5	87.4	+ 8.7	10	57
				22415	.248	124.3	69.6	- 8.7	16	173
				22416	.427	139.3	64.5	-19.5	15	125
				22419	.446	119.1	58.1	-13.1	21	200
				22420	.510	55.7	55.7	+16.0	9	93
Jun. 1.296	-15.5	71.6	-0.6	22411	.907	263.1	136.3	- 6.5	72	473
				22421	.820	293.2	123.9	+18.4	38	224
				22414	.438	296.6	95.0	+10.7	5	23
				22422	.346	297.5	89.5	+ 8.5	18	130
				22415	.142	167.5	69.8	- 8.6	16	146
				22416	.345	159.5	64.2	-19.4	21	113
				22419	.313	133.1	58.0	-12.9	22	195
				22420	.397	42.2	55.5	+16.4	5	38

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Jun. 2.340	-15.1	57.7	-0.5	22411	.987	263.3	138.4	- 6.7	64	495
				22421	.932	289.8	124.8	+18.1	25	260
				22414	.627	287.8	95.0	+10.6	3	13
				22422	.537	286.4	89.0	+ 8.2	24	155
				22415	.252	236.1	69.9	- 8.5	15	114
				22416	.346	197.1	63.9	-19.7	9	86
				22419	.212	179.5	57.6	-12.7	26	227
				22420	.321	7.2	55.3	+18.0	1	17
				22423	.506	49.9	33.8	+18.5	3	9
3.341	-14.7	44.5	-0.4	22421	.990	288.4	125.5	+18.2	38	243
				22414	.788	283.8	95.5	+10.6	4	19
				22422	.701	283.0	88.1	+ 8.8	35	191
				22415	.445	251.5	69.6	- 8.4	13	73
				22416	.454	223.5	63.8	-19.5	13	77
				22419	.318	227.7	58.4	-12.7	27	161
				1561 11	.686	105.0	2.3	-10.5	3	16
4.358	-14.3	31.1	-0.3	22414	.905	281.7	95.1	+10.5	0	8
				22422	.837	280.2	87.2	+ 8.4	22	129
				22415	.634	257.3	69.6	- 8.2	9	32
				22416	.604	237.0	63.4	-19.4	13	71
				22419	.498	244.2	58.3	-12.7	23	149
				22420	.507	307.5	55.9	+17.7	0	1
				22424	.996	105.5	306.7	-15.5	46	254
5.337	-14.0	18.1	-0.1	1561 12	.963	283.0	91.9	+12.4	0	17
				22422	.940	278.6	87.6	+ 8.0	17	86
				22415	.756	262.4	66.8	- 5.8	2	44
				22416	.750	244.2	63.5	-19.1	7	42
				22419	.667	250.8	58.1	-12.8	22	148
				22420	.641	300.1	53.8	+18.5	0	12
				1561 13	.273	98.0	2.5	- 2.3	0	14
				22425	.881	97.5	316.8	- 6.6	2	10
				22424	.957	106.3	305.9	-15.6	39	242
6.428	-13.5	3.6	0.0	22422	.994	278.1	86.8	+ 8.1	10	68
				22416	.880	248.1	63.2	-19.1	5	14
				22419	.823	254.3	57.8	-12.8	20	145
				22423	.606	304.1	35.8	+19.8	0	3
				22425	.733	99.0	317.0	- 6.6	2	3
				22426	.785	67.7	314.3	+17.2	2	9
				22424	.860	108.3	305.9	-15.7	31	222
				22427	.958	73.9	291.1	+15.4	4	28
7.351	-13.2	351.4	+0.1	22416	.957	250.0	63.2	-19.1	4	20
				22419	.920	255.9	57.5	-12.9	29	152
				1562 01	.612	256.7	28.2	- 8.0	1	4
				22425	.611	104.3	314.8	- 8.5	1	6
				22424	.744	111.5	305.6	-15.7	27	223
				22427	.906	71.5	287.8	+16.7	13	54
				22428	.996	75.6	267.2	+14.4	71	378

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Jun. 8.344	-12.8	338.3	+0.2	22419	.985	256.7	57.8	-13.1	26	233
				22429	.321	225.7	351.8	-12.7	1	7
				22425	.409	104.8	315.0	- 5.8	0	5
				22430	.506	61.4	311.2	+14.1	1	9
				22424	.590	117.6	305.5	-15.6	27	213
				22427	.775	68.9	289.6	+16.3	11	102
				22428	.971	72.9	262.8	+16.6	57	847
9.324	-12.4	325.3	+0.3	22426	.351	31.4	314.3	+17.7	2	11
				1562 02	.325	125.1	309.7	-10.4	1	5
				22424	.428	129.6	305.4	-15.4	25	161
				22427	.621	63.3	290.1	+16.4	28	194
				22428	.893	71.7	263.5	+16.4	77	661
10.333	-11.9	312.0	+0.5	22429	.682	249.0	352.8	-13.7	5	36
				22425	.157	206.6	316.0	- 7.6	2	14
				22430	.243	352.7	313.8	+14.3	0	1
				22424	.301	157.1	305.0	-15.5	31	193
				1562 03	.226	90.9	299.0	+ 0.2	0	2
				1562 04	.302	130.9	298.6	-10.9	1	10
				22427	.463	53.9	289.1	+16.2	48	267
				1562 05	.464	99.6	284.8	- 4.0	0	3
				22428	.760	68.9	264.6	+16.2	85	574
				22431	.954	73.5	240.3	+15.9	8	30
11.399	-11.5	297.9	+0.6	22429	.842	253.8	353.8	-13.2	8	37
				22424	.301	203.4	304.9	-15.4	27	142
				22427	.312	28.5	288.9	+16.4	37	210
				22428	.593	62.8	264.7	+16.2	82	592
				22432	.763	67.0	248.7	+18.1	0	4
				22431	.855	72.0	240.5	+15.6	33	192
				22433	.968	71.1	223.3	+18.4	65	481
12.503	-11.1	283.2	+0.7	22429	.955	256.7	355.1	-12.4	8	37
				22430	.558	295.1	314.6	+14.3	7	31
				22424	.455	231.8	305.0	-15.6	23	148
				22427	.282	342.8	288.2	+16.3	16	105
				22428	.400	48.4	265.2	+16.0	57	567
				22432	.565	60.5	252.5	+16.7	1	15
				22431	.697	67.9	241.2	+15.7	45	275
				22433	.875	69.5	223.8	+18.2	128	989
13.335	-10.7	272.2	+0.8	22429	.987	256.8	352.3	-12.9	7	41
				22430	.667	292.3	311.8	+15.3	10	61
				22424	.592	241.9	304.9	-15.4	19	139
				22427	.393	313.9	289.3	+16.5	5	32
				22428	.292	24.4	265.1	+16.2	97	701
				22432	.453	44.4	252.7	+19.6	3	14
				22431	.564	62.7	241.0	+15.6	42	236
				22433	.772	67.4	224.0	+17.7	158	1079
				22434	.893	107.2	210.5	-14.9	2	20
14.363	-10.3	258.6	+0.9	1562 06	.989	284.7	339.9	+14.6	8	23
				22430	.828	286.4	313.4	+14.1	20	172
				22424	.751	248.3	304.8	-15.5	17	132

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Jun. 14.363	Continued			22427	.555	300.3	288.6	+17.0	4	29
				22428	.290	334.0	266.2	+16.0	130	791
				22435	.204	154.1	253.4	- 9.6	2	9
				22432	.351	15.0	253.1	+20.7	0	5
				22431	.388	49.9	240.8	+15.3	29	349
				22433	.619	62.4	223.7	+17.4	176	1271
				22434	.776	110.9	210.0	-15.4	4	33
				22436	.964	100.7	184.6	-10.0	26	163
15.351	- 9.8	245.5	+1.1	22430	.942	283.4	315.5	+13.0	20	95
				22424	.873	251.6	304.6	-15.4	16	115
				22427	.704	293.7	287.8	+17.2	2	6
				22428	.429	307.1	266.3	+16.0	111	759
				22435	.236	216.2	253.6	- 9.9	0	5
				22432	.342	352.8	248.2	+20.8	1	21
				22431	.260	17.9	240.8	+15.3	38	284
				22433	.460	52.0	223.3	+17.4	196	1445
				22434	.631	116.6	209.9	-15.5	3	22
				1562 07	.787	129.4	201.6	-29.1	2	7
				22436	.879	101.7	184.9	- 9.8	24	168
				22437	.989	69.8	164.4	+20.1	23	138
16.345	- 9.4	232.4	+1.2	22424	.959	253.5	304.7	-15.4	16	120
				22428	.594	295.6	266.1	+15.8	118	672
				22432	.436	314.3	251.5	+18.7	0	9
				22435	.347	241.7	250.3	- 8.3	0	4
				22431	.286	330.1	240.9	+15.5	38	221
				22433	.318	28.0	223.4	+17.4	179	1415
				22434	.415	128.5	212.9	-13.8	1	18
				22436	.753	103.8	184.7	- 9.5	28	152
				22437	.941	68.9	163.4	+20.2	27	141
17.538	- 8.9	216.6	+1.3	22428	.786	289.3	266.8	+15.8	110	712
				22431	.464	302.2	240.5	+15.5	18	120
				22433	.306	340.2	222.9	+18.0	171	1474
				22434	.297	166.8	212.6	-15.4	1	12
				22436	.555	109.8	184.8	- 9.7	28	158
				1562 08	.693	120.5	177.4	-19.5	0	6
				22437	.828	66.1	162.9	+20.3	14	166
				22438	.958	95.5	143.8	- 4.9	15	138
18.328	- 8.6	206.1	+1.4	22428	.881	287.0	266.9	+15.6	92	614
				22431	.613	293.9	241.6	+15.5	12	67
				22433	.410	314.0	224.1	+17.8	159	1232
				22434	.317	203.1	213.5	-15.5	1	22
				22436	.413	117.1	184.4	- 9.5	29	172
				22439	.709	113.1	163.8	-15.0	2	10
				22437	.728	63.1	162.6	+20.2	20	137
				22440	.786	108.3	156.2	-13.3	4	19
				22441	.824	66.4	152.8	+20.0	0	2
				22438	.885	96.1	144.4	- 4.8	20	133
				22442	.988	72.2	125.2	+17.8	7	29

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Jun. 19.349	- 8.1	192.6	+1.5	22428	.966	285.0	267.2	+14.9	47	467
				22431	.778	288.8	242.3	+15.5	5	26
				22433	.590	298.6	225.4	+17.6	106	1012
				22436	.234	143.8	184.6	- 9.3	15	142
				22439	.551	121.4	163.6	-15.3	1	17
				22437	.573	56.3	162.3	+19.8	15	136
				22440	.632	114.1	156.3	-13.7	4	25
				22438	.747	97.8	144.9	- 4.8	16	119
				22442	.932	71.2	124.7	+18.0	6	19
20.677	- 7.5	175.1	+1.7	22431	.911	288.9	239.7	+17.9	0	6
				22433	.810	290.5	227.6	+17.4	71	753
				22436	.252	221.7	184.8	- 9.1	23	148
				1562 09	.258	25.6	168.4	+15.1	2	12
				22439	.347	146.8	163.8	-15.1	1	16
				22437	.377	35.0	161.8	+19.5	15	127
				22438	.507	101.8	145.3	- 4.5	16	136
				22443	.647	58.9	138.8	+20.8	0	5
				22442	.795	67.7	124.3	+18.6	4	27
				22444	.978	79.7	97.1	+10.4	42	371
21.345	- 7.2	166.2	+1.8	22433	.889	288.8	227.9	+17.5	101	715
				22436	.366	239.2	184.7	- 9.1	25	137
				22437	.309	13.9	161.7	+19.1	17	136
				22440	.296	154.4	158.7	-13.6	6	45
				22441	.412	31.2	152.9	+22.3	0	5
				22438	.366	106.9	145.7	- 4.4	19	123
				22442	.711	64.4	123.6	+19.1	3	16
				22444	.932	79.9	97.7	+10.0	34	286
				22445	.959	68.0	93.6	+21.5	19	112
22.345	- 6.8	153.0	+1.9	22433	.969	287.7	228.3	+17.6	97	645
				22436	.551	250.7	184.6	- 8.9	22	146
				22437	.334	334.9	161.6	+19.4	18	119
				22440	.297	202.2	159.6	-14.0	16	94
				22441	.344	7.3	150.3	+21.7	0	10
				22438	.161	131.4	146.0	- 4.2	16	97
				22442	.549	58.3	123.6	+18.4	1	10
				22444	.829	79.1	97.4	+10.0	47	279
				22445	.889	65.7	92.1	+22.3	24	157
23.376	- 6.3	139.3	+2.0	22436	.727	255.5	184.6	- 9.0	22	140
				22437	.469	309.1	161.9	+19.0	14	104
				22440	.462	232.5	161.5	-14.4	8	66
				22438	.162	229.4	146.4	- 4.0	7	70
				22442	.387	40.9	123.9	+18.9	1	5
				22444	.658	77.7	98.8	+ 9.6	43	250
				22445	.764	61.9	92.7	+22.4	28	116
24.106	- 6.0	129.7	+2.1	22436	.827	257.6	184.3	- 9.0	17	119
				22440	.591	241.6	162.0	-14.5	8	62
				22437	.587	300.4	161.9	+19.0	21	98
				22441	.452	325.1	146.0	+23.7	0	2
				22438	.290	249.8	145.4	- 3.7	9	69
				22443	.335	342.0	136.0	+20.6	2	11

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Jun. 24.106	Continued			1562 10	.166	204.7	133.7	- 6.6	1	6
				1562 11	.432	114.6	106.4	- 8.4	0	7
				22444	.537	75.1	98.0	+ 9.7	33	179
				22445	.644	57.0	94.1	+22.2	23	122
25.321	- 5.5	113.6	+2.2	1562 12	.954	273.4	185.9	+ 4.0	4	30
				22436	.947	259.9	184.0	- 8.9	14	114
				22440	.780	250.6	162.6	-13.5	7	53
				22437	.766	293.5	161.5	+19.2	14	100
				22438	.558	259.0	146.7	- 4.2	11	80
				22443	.484	311.7	136.3	+20.8	1	8
				22442	.310	327.0	123.7	+17.2	0	2
				22446	.250	191.3	116.4	-11.9	17	63
				22444	.256	62.8	100.3	+ 8.9	17	166
				22445	.451	39.4	95.6	+22.4	12	63
				22447	.904	98.4	49.6	- 6.6	5	45
				22448	.966	67.9	39.1	+21.9	8	88
26.333	- 5.0	100.2	+2.4	22436	.995	260.8	183.5	- 8.9	0	11
				22440	.906	254.2	163.5	-13.2	3	51
				22437	.886	290.8	161.4	+19.4	10	109
				22438	.713	263.1	145.1	- 3.2	3	21
				22446	.367	227.6	116.2	-12.0	5	20
				22444	.115	351.7	101.1	+ 8.9	10	56
				22445	.364	14.5	94.5	+22.9	14	66
				22449	.260	53.4	88.0	+11.2	1	26
				22450	.438	86.3	74.3	+ 3.7	1	19
				22447	.797	101.4	48.4	- 7.6	8	53
				22448	.889	66.2	39.0	+22.1	58	370
27.425	- 4.5	85.7	+2.5	22440	.976	253.8	161.8	-15.2	27	42
				22437	.969	289.3	161.1	+19.3	9	82
				22438	.863	264.8	145.0	- 3.2	4	34
				22444	.288	292.4	101.3	+ 8.7	11	67
				22445	.388	332.9	96.7	+22.5	3	28
				22449	.167	337.1	89.5	+11.3	1	37
				22450	.209	80.4	73.9	+ 4.4	5	33
				22447	.627	104.6	48.2	- 7.1	21	168
				22448	.753	62.6	39.8	+22.0	73	671
				22451	.968	93.2	10.7	- 2.5	5	45
				22452	.998	99.1	0.2	- 8.9	49	312
28.383	- 4.1	73.0	+2.6	22446	.763	250.5	120.4	-13.0	2	21
				22444	.533	280.5	104.8	+ 7.7	1	13
				22445	.531	309.7	99.1	+22.1	3	18
				22449	.318	304.6	88.5	+12.8	2	15
				22450	.050	293.8	75.7	+ 3.7	7	59
				22447	.448	110.6	48.2	- 6.7	11	79
				22448	.608	56.6	40.1	+21.7	88	821
				22451	.880	94.3	11.8	- 2.6	9	63
				22452	.962	99.7	359.8	- 8.6	64	475
29.315	- 3.6	60.7	+2.7	22445	.676	301.0	99.4	+22.4	3	19
				22450	.268	276.4	76.1	+ 4.3	5	29
				22453	.252	157.1	55.0	-10.7	1	19

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Jun. 29.315	Continued			22447	.268	126.2	48.2	- 6.5	10	72
				22448	.455	43.4	41.1	+21.8	81	696
				22451	.756	95.7	12.1	- 2.5	14	102
				1562 13	.861	72.4	2.1	+16.4	0	2
				22454	.868	83.6	0.6	+ 6.9	4	32
				22452	.887	100.9	359.2	- 8.3	71	528
				1562 14	.947	79.3	349.5	+10.9	4	14
30.399	- 3.2	46.4	+2.8	22445	.824	295.8	99.7	+22.6	0	4
				22450	.519	272.2	77.6	+ 3.5	4	24
				22453	.271	208.2	53.8	-11.0	5	30
				22447	.180	190.7	48.3	- 7.3	6	39
				22448	.346	15.7	40.6	+22.2	92	564
				22451	.552	100.1	13.5	- 3.2	28	188
				22454	.710	83.0	1.3	+ 6.9	26	168
				22452	.750	103.7	359.2	- 8.3	115	704
				1562 15	.772	111.6	358.7	-14.5	0	5
July 1.362	- 2.7	33.6	+2.9	1562 16	.969	254.3	107.7	-14.4	5	18
				22450	.688	271.7	77.0	+ 3.3	2	10
				22453	.432	238.7	55.5	-10.2	10	52
				22447	.296	234.0	47.5	- 7.2	4	24
				22448	.353	340.4	40.9	+22.2	61	540
				22451	.344	107.7	14.5	- 3.2	41	268
				22454	.523	80.9	2.4	+ 7.2	23	187
				22452	.603	108.4	358.4	- 8.6	95	845
				22455	.818	74.6	339.4	+14.2	0	6
				22456	.971	100.0	318.3	- 9.0	24	143
				22457	.983	80.0	314.2	+10.3	12	122
2.335	- 2.3	20.7	+3.0	22450	.822	271.8	75.9	+ 3.2	16	96
				22453	.648	249.0	58.6	-11.0	3	15
				22458	.609	288.9	56.9	+13.8	7	38
				22447	.485	248.8	47.7	- 7.4	8	54
				22448	.472	315.3	41.6	+22.3	64	464
				22451	.140	143.6	16.0	- 3.4	34	272
				22454	.314	73.1	3.1	+ 8.1	26	229
				22452	.424	117.7	358.5	- 8.5	91	852
				1562 17	.849	110.9	325.4	-15.9	2	23
				22456	.924	101.3	314.4	- 9.2	44	287
				22457	.937	80.0	311.2	+10.4	18	146
3.432	- 1.8	6.2	+3.1	22450	.941	272.6	76.4	+ 3.5	10	47
				22453	.801	254.3	57.7	-10.5	2	11
				22458	.777	284.9	56.6	+13.5	7	31
				22447	.670	255.2	46.8	- 7.4	8	46
				22448	.634	302.0	41.5	+22.1	56	377
				22451	.215	236.1	16.5	- 3.8	34	229
				22454	.098	28.8	3.5	+ 8.1	37	271
				22452	.238	146.2	358.6	- 8.2	142	911
				22455	.514	66.0	337.3	+14.8	16	67
				22456	.778	105.4	316.9	- 9.8	43	376
				22457	.821	79.0	311.3	+10.8	16	88

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
July 4.686	- 1.2	349.6	+3.3	22458	.928	282.7	57.7	+13.0	6	18
				22447	.840	258.8	45.6	- 7.5	0	17
				22448	.828	294.1	43.8	+21.6	49	334
				22451	.477	256.4	17.2	- 3.5	49	298
				22454	.266	288.8	4.3	+ 8.1	33	200
				22452	.252	217.5	358.5	- 8.2	134	902
				22459	.396	185.4	351.9	-19.8	3	26
				22455	.270	43.2	338.7	+14.5	14	77
				22456	.599	110.7	315.1	- 9.5	60	617
				22457	.635	77.9	310.6	+10.2	3	40
				22460	.992	73.7	266.3	+16.6	18	109
5.515	- 0.8	338.6	+3.4	22458	.974	282.8	55.8	+13.3	5	40
				22448	.922	291.9	45.3	+21.4	53	399
				22451	.636	260.0	17.4	- 3.7	37	359
				22454	.439	281.6	4.3	+ 8.1	37	251
				22452	.396	239.5	358.7	- 8.4	103	801
				1563 01	.407	220.8	354.6	-14.7	0	3
				22459	.457	210.7	352.9	-19.8	4	13
				22461	.460	193.7	345.4	-23.1	1	13
				22455	.197	2.6	338.1	+14.7	9	66
				22456	.433	121.2	316.7	- 9.8	79	566
				22457	.487	75.9	310.2	+ 9.8	7	34
				22460	.959	73.9	265.1	+16.4	36	220
6.434	- 0.4	326.5	+3.5	22448	.980	291.1	45.1	+21.4	34	365
				22451	.780	262.3	17.1	- 3.8	29	314
				1563 02	.723	283.3	12.3	+12.0	0	3
				22454	.618	279.0	4.4	+ 8.3	31	263
				22452	.566	249.5	358.7	- 8.5	119	733
				22459	.586	227.5	353.8	-20.1	6	53
				22461	.540	213.4	345.3	-23.4	5	38
				22455	.285	316.6	338.1	+15.3	5	41
				22456	.272	150.3	318.7	-10.2	54	568
				22457	.316	62.7	309.9	+11.6	4	58
				22460	.881	73.0	265.2	+16.6	24	179
7.337	0.0	314.5	+3.6	22451	.886	264.5	16.4	- 3.2	39	368
				22454	.764	277.7	4.2	+ 8.1	35	256
				22452	.720	254.3	358.8	- 8.6	91	654
				22459	.704	236.9	353.2	-19.8	5	32
				22461	.644	226.3	344.9	-23.3	2	18
				22455	.423	298.3	337.1	+14.8	5	30
				22456	.255	198.9	319.3	-10.3	77	532
				22457	.158	31.4	309.7	+11.3	7	47
				22460	.773	71.4	264.9	+16.6	43	246
				22462	.996	73.7	229.3	+16.5	12	71
8.413	+ 0.5	300.3	+3.7	22451	.974	266.1	16.8	- 3.0	59	531
				22454	.904	276.9	5.0	+ 7.8	24	118
				22452	.865	257.5	358.8	- 8.9	87	576
				22459	.864	243.0	355.7	-21.0	0	7
				22455	.610	289.3	336.7	+14.6	1	15
				1563 03	.485	270.4	329.2	+ 3.4	4	16
				22456	.402	234.1	319.5	-10.1	80	484

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
July 8.413	Continued			22457	.194	314.7	308.3	+11.4	2	19
				22460	.607	67.2	264.7	+16.5	32	227
				22462	.947	73.8	229.0	+16.5	28	153
9.585	+ 1.0	284.8	+3.8	22454	.981	276.7	3.6	+ 7.3	34	138
				22452	.961	259.4	357.6	- 9.1	82	493
				22456	.619	248.6	320.4	- 9.9	63	410
				22457	.430	293.4	308.6	+13.3	3	25
				22460	.406	55.8	264.3	+16.7	36	211
				22463	.631	86.2	245.7	+ 5.3	3	18
				22462	.834	72.6	228.8	+16.6	19	154
				22464	.981	73.2	205.7	+17.2	6	75
10.396	+ 1.4	274.1	+3.9	22452	.998	260.4	359.3	- 9.3	49	393
				22456	.749	253.5	320.7	- 9.6	68	436
				22457	.578	287.5	308.4	+13.2	4	31
				22460	.285	36.8	263.8	+17.0	31	234
				22463	.460	87.1	246.7	+ 4.8	3	13
				22462	.719	70.8	229.1	+16.4	13	132
				22464	.949	72.4	202.3	+17.9	21	137
				22465	.994	106.8	192.3	-16.2	10	39
11.490	+ 1.9	259.6	+4.0	22456	.895	257.2	321.6	- 9.6	66	388
				22457	.776	283.9	310.1	+13.3	2	11
				22460	.231	341.6	263.9	+16.6	35	262
				22466	.344	15.6	253.8	+23.2	0	6
				22462	.538	65.5	229.0	+16.3	14	83
				22464	.842	71.8	202.9	+17.4	24	214
				22465	.931	110.2	193.7	-17.1	35	169
12.341	+ 2.3	248.3	+4.1	22456	.970	259.5	323.1	- 9.1	62	387
				22457	.871	283.7	308.7	+13.9	2	14
				22460	.339	310.9	263.7	+16.7	35	209
				22467	.267	336.0	254.8	+18.1	0	8
				22466	.391	348.0	253.5	+26.5	0	10
				22462	.372	53.4	230.2	+16.6	7	82
				22464	.730	69.3	202.7	+17.8	30	215
				22465	.830	113.5	195.8	-16.8	29	198
13.377	+ 2.7	234.6	+4.2	22457	.963	283.2	309.2	+13.8	4	34
				22468	.725	293.9	279.3	+20.0	2	7
				22460	.513	296.1	263.2	+16.7	40	201
				22467	.431	303.7	256.6	+17.6	0	5
				22462	.242	22.3	229.1	+17.0	12	78
				22464	.560	64.1	202.9	+17.7	33	220
				22465	.693	119.6	195.8	-16.7	34	259
				22469	.866	74.7	174.8	+15.3	2	16
14.641	+ 3.3	217.9	+4.3	22460	.723	289.3	263.1	+16.8	28	189
				22462	.262	325.7	226.7	+16.7	6	61
				22464	.321	44.0	204.4	+17.5	12	109
				22465	.493	138.2	197.8	-17.4	21	157
				22470	.589	104.8	183.1	- 5.1	0	7
				22469	.669	72.6	176.7	+14.7	0	6
				22471	.871	108.1	159.8	-13.4	2	9

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
July 15.317	+ 3.6	208.9	+4.4	22468	.925	289.6	276.4	+19.8	0	6
				22460	.817	287.6	263.2	+16.9	18	179
				22462	.349	311.1	224.8	+17.4	7	58
				22464	.251	20.5	203.7	+17.9	12	89
				22465	.414	153.2	197.7	-17.3	28	167
				22470	.459	108.7	183.2	- 4.5	0	3
				22471	.798	111.5	159.2	-14.2	8	30
				22472	.953	75.5	136.4	+15.1	3	15
16.324	+ 4.0	195.6	+4.5	22460	.920	286.4	262.6	+16.8	23	163
				22462	.568	294.1	228.3	+17.1	6	33
				22464	.270	332.1	203.2	+18.2	12	67
				22465	.387	189.6	199.5	-17.9	25	106
				22471	.688	117.4	156.5	-14.9	0	9
				22472	.830	74.4	139.8	+15.4	2	10
17.551	+ 4.6	179.4	+4.6	22460	.991	286.6	262.6	+17.1	17	238
				22473	.858	272.7	238.5	+ 4.7	2	13
				22462	.763	288.8	228.3	+17.2	7	89
				1563 04	.619	287.6	216.8	+14.4	0	12
				22464	.468	300.4	204.3	+17.8	9	63
				22465	.499	220.2	199.1	-18.0	16	122
				22474	.402	206.5	190.1	-16.5	0	3
				22472	.723	73.0	133.8	+15.4	3	13
				22475	.996	82.5	94.4	+ 7.9	24	142
18.399	+ 5.0	168.1	+4.7	22473	.944	273.7	238.9	+ 5.1	0	10
				22462	.878	287.6	229.3	+17.6	9	77
				22464	.631	292.9	205.7	+17.9	10	73
				22465	.619	231.8	198.9	-18.4	13	114
				22474	.490	225.6	189.4	-15.6	0	5
				22471	.372	153.3	158.2	-14.8	1	5
				1563 05	.771	115.5	121.9	-16.1	0	7
				22475	.974	82.7	91.1	+ 8.1	72	689
19.531	+ 5.5	153.2	+4.8	22462	.966	286.2	228.6	+16.8	0	17
				22464	.795	289.7	205.1	+18.4	8	47
				22465	.774	241.3	198.7	-18.4	14	105
				22476	.253	190.6	155.8	- 9.6	2	13
				22472	.335	56.0	136.5	+15.3	10	54
				22477	.578	115.5	121.3	-10.3	1	14
				22478	.749	116.0	108.9	-15.7	5	40
				22475	.886	83.3	90.7	+ 8.1	103	924
20.308	+ 5.8	142.9	+4.8	22464	.866	289.1	202.5	+18.9	11	87
				22465	.862	245.2	198.3	-18.4	18	95
				22476	.343	222.6	156.4	- 9.9	5	24
				22472	.212	29.9	136.6	+15.3	12	68
				22477	.413	123.0	122.5	- 8.4	5	25
				22478	.623	122.9	110.1	-15.7	1	13
				22475	.790	83.3	90.7	+ 8.2	134	1028
21.401	+ 6.3	128.4	+4.9	22464	.946	287.3	199.9	+17.9	14	137
				22465	.956	248.8	198.3	-18.5	23	116
				1563 06	.932	270.5	197.1	+ 2.3	0	6

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
July 21.401	Continued			22476	.525	241.9	156.4	- 9.9	9	42
				1563 07	.411	328.7	142.0	+25.3	0	3
				22472	.246	320.2	137.8	+15.7	7	33
				22477	.253	162.8	124.1	- 9.0	1	7
				22478	.433	141.0	112.1	-14.9	1	8
				22475	.606	83.4	91.1	+ 7.9	156	1155
				22479	.982	72.4	48.7	+18.2	12	47
				22480	.992	68.3	44.3	+22.1	82	272
22.328	+ 6.7	116.2	+5.0	22465	.995	250.6	197.9	-18.6	11	75
				22464	.986	287.0	197.4	+17.6	13	81
				22476	.689	250.2	157.1	- 9.6	3	29
				22472	.405	298.2	137.8	+15.7	3	25
				22477	.268	206.1	123.0	- 8.9	0	2
				22478	.344	164.9	110.9	-14.3	1	11
				22475	.422	82.4	91.3	+ 7.7	124	1170
				22481	.549	76.8	83.3	+11.4	7	36
				22479	.931	72.8	47.3	+17.9	15	88
				22482	.950	106.1	46.5	-13.6	11	80
				22480	.954	68.0	43.3	+22.4	38	311
				22483	.975	112.8	42.3	-20.8	6	41
23.326	+ 7.1	103.0	+5.1	1563 08	.907	246.5	164.3	-18.8	0	8
				22472	.622	290.1	140.3	+16.4	1	6
				22477	.400	230.9	121.3	- 9.7	0	5
				22478	.385	190.5	107.2	-17.1	0	5
				22475	.201	75.5	91.7	+ 7.9	116	940
				22481	.349	69.6	83.5	+11.7	12	69
				22479	.827	71.8	47.5	+17.9	8	45
				22482	.860	108.7	46.4	-13.2	40	200
				22483	.900	116.1	43.3	-20.8	5	37
				22480	.870	66.7	43.2	+22.7	51	350
24.292	+ 7.5	90.2	+5.2	22472	.779	291.8	140.3	+20.1	0	13
				1563 09	.811	245.5	140.2	-16.3	0	2
				22475	.052	327.5	91.8	+ 7.7	93	827
				22481	.152	38.1	84.7	+12.0	6	47
				22482	.743	113.1	45.7	-13.2	29	207
				22479	.717	69.3	45.4	+18.3	10	66
				22480	.759	63.9	42.6	+23.0	28	292
				22483	.821	120.8	41.1	-21.4	8	50
				1563 10	.877	65.8	29.5	+23.6	0	12
				22484	.932	94.3	21.9	- 2.1	3	13
25.315	+ 7.9	76.7	+5.3	22475	.267	279.6	92.0	+ 7.6	68	645
				22481	.196	313.6	85.0	+13.0	5	45
				22482	.591	121.3	45.5	-13.3	29	221
				22479	.562	65.3	44.3	+18.0	45	240
				22480	.614	58.9	42.0	+22.8	31	332
				22483	.697	128.0	40.7	-21.1	3	32
				22484	.823	95.7	21.8	- 1.7	4	30
				22485	.906	77.9	11.4	+13.2	0	3
				22486	.973	81.7	359.6	+ 9.3	5	39
				22487	.984	100.5	358.3	- 9.3	57	301

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
July 26.370	+ 8.4	62.7	+5.3	22475	.492	277.2	92.1	+ 8.2	65	449
				22481	.396	290.0	85.0	+12.7	13	57
				22482	.440	137.6	45.0	-13.8	19	172
				22479	.380	54.7	43.7	+17.7	26	206
				22480	.449	45.5	42.4	+23.3	27	248
				22483	.596	138.4	37.6	-21.6	0	5
				22488	.632	87.1	23.5	+ 6.0	22	126
				22484	.676	97.7	20.8	- 1.2	3	18
				22486	.883	83.1	0.5	+ 8.6	0	4
				22487	.913	102.5	358.4	- 9.1	26	254
27.656	+ 8.9	45.7	+5.5	1563 11	.788	279.3	97.8	+10.7	0	4
				22475	.735	275.1	93.1	+ 7.5	56	390
				22481	.653	283.1	86.2	+12.6	14	150
				22482	.328	176.8	44.6	-13.6	17	170
				22479	.215	6.1	44.3	+17.7	29	243
				22480	.316	9.5	42.4	+23.5	28	219
				22488	.355	89.4	24.9	+ 5.3	77	626
				22484	.404	103.8	22.7	- 0.5	3	8
				22485	.545	77.0	13.0	+11.6	4	22
				22486	.715	82.3	359.9	+ 9.3	7	54
				22487	.766	106.4	357.8	- 8.8	36	270
				22489	.971	100.8	330.9	- 9.1	19	118
28.603	+ 9.3	33.1	+5.5	22475	.868	275.0	93.5	+ 7.1	43	379
				22481	.808	281.2	87.2	+12.3	17	159
				22482	.382	210.3	44.5	-13.7	19	99
				22479	.281	319.6	44.1	+17.8	25	164
				22480	.350	335.0	42.4	+23.9	33	176
				22490	.222	1.0	32.9	+18.3	1	8
				22488	.145	92.7	24.8	+ 5.1	88	638
				22484	.213	121.7	22.8	- 0.9	2	39
				22491	.316	45.2	19.5	+18.2	5	17
				1563 12	.452	76.5	6.7	+11.0	0	1
				22486	.550	79.5	0.0	+10.4	10	52
				22487	.625	111.8	357.3	- 8.9	51	280
				22489	.896	102.7	331.2	- 8.8	26	128
29.320	+ 9.6	23.7	+5.6	22475	.938	275.3	93.5	+ 6.9	42	318
				22481	.895	280.8	87.5	+12.2	21	162
				22492	.740	278.5	71.4	+10.0	3	12
				22479	.405	302.2	44.6	+17.6	13	88
				22482	.477	226.7	44.5	-13.8	17	98
				22480	.435	318.2	42.1	+24.1	19	158
				22490	.280	323.9	33.6	+18.5	1	8
				22488	.017	248.2	24.5	+ 5.2	87	611
				22484	.155	177.1	23.2	- 3.3	1	9
				22491	.232	15.9	19.8	+18.4	2	13
				22486	.419	79.0	359.1	+ 9.6	4	23
				22487	.507	118.7	357.0	- 9.0	41	269
				22489	.813	105.3	331.3	- 9.0	18	116
30.365	+10.0	9.8	+5.7	22475	.994	276.1	93.9	+ 6.7	30	313
				22481	.976	281.3	88.0	+12.2	16	99
				22492	.840	280.2	67.2	+11.6	0	4

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
July 30.365	Continued			22479	.612	290.6	46.5	+16.9	19	112
				22482	.640	241.0	44.8	-13.4	16	70
				22480	.593	304.9	42.0	+24.6	20	138
				22490	.427	301.4	32.3	+18.0	0	3
				22488	.258	269.7	24.8	+ 5.4	100	641
				22484	.240	243.6	22.2	- 0.6	2	22
				22485	.114	352.0	10.8	+12.1	6	47
				22486	.223	66.9	357.8	+10.5	2	33
				22487	.332	136.9	356.7	- 8.5	40	311
				22489	.653	110.2	331.7	- 8.6	11	94
				22493	.958	77.6	295.9	+13.5	0	4
31.328	+10.4	357.1	+5.7	22479	.763	289.2	46.3	+18.3	4	28
				22482	.787	248.9	45.8	-12.7	6	28
				22480	.732	298.7	41.9	+24.7	22	168
				22488	.472	270.7	25.3	+ 5.4	88	577
				22484	.466	254.6	23.7	- 2.0	0	3
				1564 01	.231	283.6	10.2	+ 8.7	0	5
				22486	.091	341.8	358.8	+10.6	1	13
				22487	.253	176.5	356.2	- 8.8	24	219
				22489	.486	119.6	331.9	- 8.7	13	106
				22493	.866	78.2	296.9	+13.1	2	18
Aug. 1.385	+10.8	343.1	+5.8	22480	.863	295.4	42.0	+24.7	20	147
				22488	.676	271.6	25.7	+ 5.4	64	489
				22484	.625	264.0	21.4	+ 0.8	0	6
				22486	.325	285.9	1.6	+10.6	1	15
				22487	.338	219.6	355.7	- 9.4	27	188
				22489	.312	141.9	331.9	- 8.4	12	77
				22493	.710	77.7	298.0	+12.8	3	15
				22494	.994	73.5	258.4	+17.0	10	29
2.369	+11.2	330.1	+5.9	22480	.946	294.3	41.7	+24.9	21	116
				22488	.835	272.3	26.8	+ 5.1	56	450
				22486	.527	279.1	1.8	+ 9.8	1	30
				22487	.494	237.3	355.0	-10.1	15	96
				22489	.253	187.3	332.0	- 8.6	14	92
				22493	.570	75.6	295.8	+13.0	7	52
				22494	.946	74.1	258.4	+16.9	7	35
3.351	+11.6	317.1	+6.0	22480	.991	293.8	41.2	+24.3	8	110
				22488	.942	273.7	27.7	+ 5.5	45	283
				22487	.661	247.7	355.3	- 9.8	15	76
				22489	.356	225.3	331.9	- 8.7	17	81
				22493	.379	70.9	295.7	+12.7	7	47
				22494	.856	73.9	258.1	+16.8	11	44
				22495	.984	74.0	236.4	+16.8	0	25
4.337	+12.0	304.1	+6.0	22488	.996	274.8	29.0	+ 5.3	47	213
				22487	.802	252.0	354.8	-10.5	2	19
				22489	.518	243.2	331.8	- 8.1	9	78
				1564 02	.252	2.5	303.4	+20.5	0	5
				22493	.201	49.1	295.1	+13.5	25	206
				22494	.729	72.5	257.7	+16.8	10	60
				22495	.928	73.8	235.4	+17.2	43	241

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Aug. 5.332	+12.4	290.9	+6.1	22487	.913	255.3	354.7	-10.7	3	11
				22489	.685	251.1	331.7	- 8.2	9	61
				22493	.152	332.0	295.1	+13.7	16	127
				1564 03	.284	358.9	291.3	+22.5	0	2
				22494	.560	68.9	258.0	+16.7	26	65
				1564 04	.565	93.1	256.7	+ 3.3	3	14
				22495	.828	73.0	235.1	+17.4	86	638
6.441	+12.8	276.3	+6.2	22489	.843	255.8	331.8	- 8.5	11	66
				22493	.344	295.9	294.8	+14.5	7	55
				22494	.358	58.2	257.8	+16.7	7	32
				22496	.512	115.1	248.6	- 7.0	4	15
				22495	.673	70.8	234.7	+17.4	78	549
				22497	.796	73.0	223.6	+17.2	2	6
7.424	+13.2	263.3	+6.2	22489	.941	258.6	331.9	- 8.5	13	57
				22493	.544	287.0	295.6	+14.4	8	66
				22494	.202	26.2	258.0	+16.6	4	13
				22496	.344	130.1	247.9	- 6.8	32	155
				22495	.501	65.6	234.8	+17.4	82	597
				22497	.647	70.1	223.8	+17.5	0	3
8.440	+13.6	249.8	+6.3	22493	.706	285.1	294.5	+15.1	8	47
				22494	.224	324.1	257.7	+16.6	2	13
				22496	.230	178.0	249.4	- 7.0	35	180
				22495	.330	52.6	233.9	+17.5	58	492
				22498	.775	69.3	199.5	+20.0	20	139
9.454	+13.9	236.4	+6.3	22494	.390	297.9	257.4	+16.4	0	5
				22496	.308	223.8	248.7	- 6.6	35	242
				22495	.196	2.4	235.9	+17.6	68	480
				22499	.502	58.4	209.3	+20.9	1	8
				22498	.618	65.3	199.9	+20.1	77	498
10.634	+14.4	220.8	+6.4	22494	.587	291.4	255.6	+17.6	0	4
				22496	.506	245.1	248.2	- 6.6	36	161
				22495	.338	305.7	237.5	+17.5	48	496
				22499	.284	35.7	210.7	+19.6	4	43
				22498	.424	54.6	199.3	+20.2	77	479
11.328	+14.6	211.7	+6.5	22496	.631	251.0	248.4	- 6.7	16	110
				22495	.473	295.0	238.2	+17.3	36	487
				22499	.238	7.1	209.9	+20.0	1	14
				22498	.318	40.3	199.1	+20.3	46	380
				22500	.806	85.2	157.7	+ 7.7	0	13
12.328	+15.0	198.4	+6.5	22496	.789	256.2	248.7	- 6.7	7	39
				22495	.663	288.9	239.3	+17.3	73	551
				22499	.308	322.2	210.0	+20.4	5	29
				22498	.248	355.2	199.7	+20.8	45	342
				22501	.407	131.4	180.5	- 9.4	1	9
13.344	+15.3	185.0	+6.6	22496	.915	259.3	249.8	- 7.0	3	14
				22495	.824	286.5	240.6	+17.2	93	910
				22499	.439	304.5	207.6	+20.4	14	84

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Aug. 13.344	Continued			22498	.326	322.0	197.4	+21.2	42	254
				22501	.285	169.4	182.0	- 9.6	1	6
				22500	.463	86.0	157.3	+ 7.7	0	6
				22502	.962	103.7	112.9	-11.2	3	41
14.319	+15.7	172.1	+6.6	22495	.929	285.9	241.1	+17.2	168	1774
				22499	.602	295.1	207.5	+20.1	13	94
				22498	.478	302.9	197.4	+21.0	34	309
				22503	.520	139.5	151.5	-17.1	1	4
				22502	.876	107.0	113.7	-11.4	7	28
				22504	.979	82.6	93.3	+ 8.6	78	621
15.414	+16.0	157.6	+6.7	22495	.983	286.5	238.3	+17.4	97	1396
				22499	.771	292.3	207.5	+21.3	12	62
				22498	.657	294.8	197.2	+21.1	32	260
				22501	.469	235.9	180.7	- 9.1	27	141
				22505	.377	219.6	171.7	-10.4	1	12
				22503	.405	167.4	152.4	-16.5	25	127
				22502	.746	111.2	112.7	-10.9	8	50
				22504	.895	84.0	93.8	+ 8.3	78	653
16.368	+16.4	145.0	+6.7	22499	.883	290.4	207.3	+21.2	5	58
				22498	.784	292.4	196.1	+21.6	22	187
				22501	.627	245.7	180.3	- 9.5	40	377
				22505	.532	238.4	172.3	-10.1	3	16
				22503	.414	198.2	152.8	-16.4	40	366
				22502	.608	117.4	111.9	-10.6	6	56
				22504	.777	84.4	93.8	+ 8.6	61	550
17.312	+16.7	132.6	+6.7	22498	.897	290.9	196.7	+21.7	28	195
				22501	.778	251.7	180.9	- 9.7	55	469
				22503	.509	220.6	152.6	-16.3	53	371
				22502	.444	131.2	112.8	-10.6	4	24
				22504	.628	84.8	93.5	+ 8.5	57	456
				22506	.973	78.1	54.9	+13.1	5	19
18.313	+17.0	119.3	+6.8	22498	.974	291.1	197.8	+22.0	55	410
				22501	.899	255.6	181.1	- 9.7	46	505
				22507	.740	244.6	162.6	-13.6	3	17
				22503	.647	234.3	152.4	-16.4	60	386
				1564 05	.328	317.6	132.9	+20.6	0	1
				22502	.308	166.7	115.2	-10.6	4	23
				1564 06	.382	107.2	98.0	- 0.1	1	6
				22504	.436	84.1	93.4	+ 8.7	48	423
				22506	.907	79.0	53.7	+12.8	11	46
19.319	+17.3	106.0	+6.8	22501	.978	256.6	182.3	- 9.6	92	631
				22507	.871	249.2	163.0	-14.3	9	47
				22503	.792	243.5	153.4	-16.1	62	421
				22502	.334	206.2	114.6	-10.6	0	8
				22504	.229	80.6	92.9	+ 8.8	51	390
				22508	.474	114.4	80.5	- 5.1	3	16
				22509	.585	62.0	72.4	+21.6	1	7
				22506	.790	79.4	53.5	+12.5	11	61
				22510	.815	102.8	53.1	- 6.3	0	4

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Aug. 19.319	Continued			1564 07	.960	111.9	36.1	-18.7	4	12
				22511	.973	85.9	29.2	+ 5.6	19	140
20.319	+17.6	92.8	+6.9	22501	.996	259.3	175.9	- 9.9	12	118
				22507	.953	251.8	162.1	-15.0	18	148
				22503	.896	247.5	152.4	-16.6	33	258
				22502	.435	219.7	109.3	-12.9	1	6
				22504	.032	351.6	93.1	+ 8.7	39	370
				22508	.299	136.9	81.0	- 5.8	6	31
				22509	.416	51.0	72.6	+21.6	11	123
				22506	.624	78.9	54.1	+12.3	4	25
				22510	.674	107.0	52.5	- 6.1	2	15
				22512	.788	71.4	40.9	+18.8	11	72
				22511	.893	87.5	29.4	+ 5.4	15	118
				22513	.912	73.3	26.3	+18.0	0	8
21.580	+18.1	76.1	+6.9	22503	.980	252.3	152.0	-15.7	28	210
				22504	.289	276.6	92.9	+ 8.5	43	289
				22508	.228	201.6	80.9	- 5.3	11	57
				22509	.265	12.9	72.5	+21.7	39	240
				22510	.442	119.5	53.5	- 6.2	1	5
				22506	.397	73.6	53.3	+12.8	14	53
				22512	.602	67.5	40.3	+18.9	26	131
				22511	.734	89.6	28.8	+ 5.0	23	99
				22513	.807	72.7	22.2	+18.0	0	2
				22514	.987	80.2	354.5	+10.8	42	285
22.376	+18.3	65.6	+7.0	22504	.463	275.3	93.3	+ 8.6	31	239
				22508	.352	233.5	82.1	- 5.4	9	62
				22509	.281	335.6	72.8	+21.6	31	277
				22510	.293	140.8	54.9	- 6.3	0	1
				22506	.213	62.0	54.6	+12.5	5	25
				22512	.443	59.7	41.8	+19.2	20	144
				22511	.591	91.3	29.4	+ 4.8	17	121
				22513	.651	70.2	25.7	+18.1	0	3
				1564 08	.641	78.5	25.7	+12.6	0	10
				22514	.943	80.8	354.4	+11.0	34	224
23.333	+18.6	53.0	+7.0	1564 09	.758	277.8	102.6	+10.5	0	3
				22504	.643	275.2	93.2	+ 8.7	37	214
				22508	.536	247.8	82.8	- 5.6	31	222
				22509	.406	308.3	72.8	+21.1	67	271
				22506	.096	349.3	54.0	+12.4	1	6
				22512	.280	40.2	42.0	+19.2	29	162
				22511	.404	94.2	29.3	+ 4.7	17	107
				22514	.851	80.9	354.2	+11.4	35	242
				22515	.936	83.1	343.1	+ 8.9	3	19
				22516	.968	98.8	338.9	- 6.7	0	4
24.434	+18.9	38.4	+7.0	22504	.816	275.5	93.4	+ 8.5	20	226
				22508	.725	255.1	83.1	- 5.7	27	232
				22509	.590	296.8	72.7	+21.2	38	284
				22512	.225	342.4	42.6	+19.4	28	130
				22517	.119	31.5	34.8	+12.8	3	14
				22511	.161	103.9	29.5	+ 4.7	24	117

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Aug. 24.434	Continued			22514	.695	80.0	354.2	+12.0	25	274
				22515	.819	84.0	343.1	+ 8.9	0	8
				22516	.884	105.5	338.7	-10.2	10	46
				22516	.882	102.7	338.4	- 7.7	7	72
				22519	.968	79.5	322.2	+11.9	4	22
25.574	+19.2	23.4	+7.0	22504	.937	276.1	93.4	+ 8.2	26	238
				22508	.886	259.4	84.2	- 6.0	17	161
				22509	.775	291.1	73.8	+20.8	18	122
				22512	.383	304.1	42.9	+19.0	17	98
				22517	.248	294.1	36.7	+12.6	1	5
				22511	.117	249.4	29.7	+ 4.7	14	103
				22514	.484	76.5	354.6	+12.6	29	229
				22518	.729	111.7	340.0	-10.5	13	124
				22516	.718	107.6	339.9	- 7.4	13	86
				1564 10	.744	87.6	335.2	+ 6.5	2	14
				22519	.851	79.1	324.5	+12.9	0	9
26.313	+19.5	13.6	+7.1	22504	.981	277.3	92.9	+ 8.6	29	131
				22508	.954	261.4	84.9	- 6.0	27	121
				22509	.880	289.1	75.7	+20.2	7	64
				1564 11	.904	220.1	62.1	-39.1	3	13
				22512	.510	295.5	42.6	+18.9	20	122
				22517	.408	285.6	37.2	+12.8	0	4
				22511	.278	262.7	29.6	+ 4.8	21	97
				22514	.328	70.9	355.1	+12.8	33	223
				22518	.605	118.0	340.8	-10.5	14	100
				22516	.602	112.6	339.6	- 7.5	13	61
				22519	.780	79.4	322.0	+12.7	13	76
27.364	+19.8	359.7	+7.1	22509	.969	289.0	76.8	+20.1	5	36
				22512	.693	289.7	43.0	+18.7	17	114
				22511	.497	267.4	29.5	+ 4.9	14	108
				22514	.118	33.0	356.0	+12.7	37	260
				22516	.382	128.6	342.3	- 7.0	5	38
				22518	.427	133.0	341.3	-10.2	15	114
				22519	.612	78.4	322.0	+12.7	22	162
				1565 01	.924	106.9	295.0	-12.6	0	6
				22520	.996	70.5	273.1	+19.9	12	35
28.326	+20.0	347.0	+7.1	1565 02	.915	273.0	53.5	+ 5.6	0	6
				22512	.824	288.0	42.7	+18.8	10	76
				22511	.676	269.6	29.5	+ 5.0	14	89
				22521	.652	223.8	16.0	-21.8	1	9
				22514	.188	302.4	356.3	+12.8	23	183
				22515	.050	39.1	345.2	+ 9.3	2	21
				22518	.308	163.6	342.0	-10.0	14	115
				22516	.257	158.8	341.6	- 6.7	4	25
				22519	.418	75.2	322.6	+12.6	14	83
				22520	.956	71.6	272.8	+19.6	57	288
				1	.948	71.8	274.6	+19.5	42	204
29.361	+20.3	333.3	+7.1	22512	.932	287.3	43.0	+18.6	3	53
				22511	.830	270.9	29.5	+ 4.7	20	108
				22521	.786	235.0	17.0	-21.7	13	88

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Aug. 29.361	Continued			22522	.565	273.7	7.9	+ 8.0	0	6
				22514	.398	285.6	356.4	+12.7	24	159
				22515	.228	277.5	346.5	+ 8.7	1	25
				22518	.334	208.3	342.5	-10.0	10	107
				22516	.277	212.7	341.9	- 6.3	5	24
				22519	.196	59.7	323.4	+12.7	23	93
				22520	.855	70.7	274.2	+20.2	80	409
				1	.847	70.5	275.2	+20.3	68	321
				22523	.920	99.5	267.7	- 5.8	8	49
				22524	.914	70.8	266.5	+20.4	14	70
				22525	.995	74.2	247.7	+16.4	63	411
30.499	+20.6	318.3	+7.2	22511	.945	272.6	29.5	+ 4.8	21	127
				22521	.895	240.9	15.7	-22.0	10	58
				22522	.788	274.4	10.6	+ 7.9	4	24
				22514	.611	281.6	356.0	+12.8	16	110
				22516	.470	242.4	343.0	- 6.0	3	14
				22518	.489	235.6	342.3	- 9.4	16	105
				22519	.132	321.0	323.2	+13.0	13	75
				22520	.699	67.5	274.8	+20.7	60	372
				1	.694	67.2	275.2	+20.9	53	335
				22523	.809	102.9	266.0	- 6.0	12	69
				22524	.804	69.8	264.8	+20.5	4	17
				22525	.952	74.6	245.1	+16.8	119	931
31.588	+20.9	303.9	+7.2	22511	.997	273.6	29.5	+ 4.2	27	268
				22521	.966	243.3	13.8	-23.4	9	56
				22522	.922	274.7	11.5	+ 7.1	3	9
				22514	.794	280.9	356.9	+13.0	15	80
				22518	.671	247.4	342.7	- 9.3	15	79
				22516	.652	251.5	342.2	- 6.3	4	22
				22519	.404	286.7	327.2	+13.2	6	46
				22520	.518	60.5	275.2	+21.1	64	356
				1	.515	60.2	275.4	+21.1	58	337
				22526	.542	93.9	271.2	+ 4.0	1	9
				22523	.632	110.5	267.5	- 7.0	1	32
				22524	.662	67.1	263.5	+20.4	3	18
				22525	.856	74.5	244.6	+17.0	170	1083
Sept. 1.322	+21.1	294.2	+7.2	22514	.879	281.7	356.3	+13.7	12	59
				22516	.777	255.7	343.3	- 6.3	2	9
				22518	.779	252.1	342.7	- 9.1	11	81
				22519	.607	282.2	331.6	+13.1	1	10
				22520	.396	50.9	275.0	+21.2	47	315
				1	.395	50.7	275.1	+21.3	46	308
				22526	.383	97.4	271.9	+ 3.8	2	18
				1565 03	.596	139.1	269.8	-20.2	1	8
				22523	.513	115.0	266.5	- 6.1	8	42
				22524	.583	65.0	260.1	+20.2	3	18
				22525	.766	74.0	244.1	+16.9	129	1125
2.365	+21.4	280.4	+7.2	22514	.965	281.7	356.1	+13.2	4	21
				22518	.900	256.1	342.4	- 9.1	13	72
				22520	.263	20.1	274.9	+21.4	49	290
				1	.263	20.1	274.9	+21.4	49	290

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Sept. 2.365	Continued			22526	.141	116.9	273.3	+ 3.5	1	13
				22523	.347	127.4	264.5	- 5.2	8	42
				22524	.381	56.3	260.9	+19.0	4	29
				22525	.596	71.2	244.5	+16.9	109	1002
				22527	.968	69.9	203.6	+21.2	27	226
3.322	+21.6	267.8	+7.2	22515	.976	277.6	346.0	+ 9.0	0	5
				22518	.974	258.8	343.1	- 9.1	5	25
				22528	.705	280.7	312.9	+12.6	3	16
				22520	.270	336.5	274.4	+21.4	38	250
				1	.271	336.3	274.5	+21.5	38	245
				22526	.128	235.1	273.8	+ 3.0	1	6
				22523	.219	157.5	263.0	- 4.4	3	23
				22524	.226	23.8	262.3	+19.0	9	79
				22525	.422	65.6	244.3	+16.6	110	1034
				22527	.900	69.8	203.1	+21.3	28	232
				22529	.966	102.7	194.8	-10.2	0	4
				22530	.962	82.0	193.1	+ 9.6	37	151
				22531	.966	68.9	191.4	+22.2	17	86
4.461	+21.9	252.8	+7.2	1565 04	.933	253.8	319.0	-12.2	0	3
				22528	.861	280.4	312.8	+12.6	5	22
				22520	.423	307.5	273.8	+21.6	31	176
				1	.429	307.6	274.1	+21.9	30	155
				22532	.419	214.9	266.9	-13.0	5	27
				22523	.308	224.1	265.1	- 5.7	2	19
				22524	.249	323.9	261.6	+18.7	20	95
				22525	.226	42.2	243.7	+16.7	130	1205
				22527	.771	68.2	202.8	+21.3	32	188
				22530	.858	82.8	193.2	+ 9.8	28	125
				22531	.880	68.3	190.7	+22.5	7	59
5.422	+22.1	240.1	+7.2	22528	.943	280.7	311.5	+12.5	3	10
				22520	.584	297.9	273.7	+21.9	32	187
				1	.585	298.0	273.8	+22.0	32	180
				22532	.545	230.9	265.7	-13.5	3	18
				22523	.457	243.3	264.2	- 5.2	1	18
				22524	.389	301.1	260.6	+18.3	19	119
				22525	.178	340.5	243.6	+16.8	123	1248
				22527	.626	64.3	202.9	+21.5	36	241
				22533	.738	106.3	194.7	- 6.9	3	12
				22530	.726	83.5	193.3	+ 9.7	25	140
				22531	.766	65.5	190.9	+23.3	7	54
6.370	+22.3	227.6	+7.2	22520	.730	293.8	273.5	+22.2	28	180
				22532	.686	242.6	266.1	-12.8	2	9
				22523	.598	254.5	262.7	- 3.2	1	16
				22524	.566	292.0	261.0	+18.3	22	114
				22534	.655	210.0	249.2	-27.7	6	37
				22525	.311	302.0	243.4	+16.4	130	1231
				22535	.529	208.8	243.3	-20.6	9	47
				22527	.462	56.7	203.1	+21.3	38	208
				22530	.557	83.3	193.5	+ 9.7	20	129
				22533	.604	109.2	192.7	- 5.5	1	4
				22531	.628	62.5	190.6	+22.6	10	73

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Sept. 6.370	Continued			22529	.662	118.7	191.2	-12.7	5	27
				22536	.698	115.6	187.7	-12.0	3	14
				22537	.975	108.1	153.3	-15.8	5	66
7.343	+22.5	214.7	+7.2	22520	.854	292.1	273.4	+22.6	19	171
				22523	.849	256.3	270.8	- 7.6	22	105
				22532	.836	250.7	268.2	-11.8	0	10
				22524	.741	287.9	262.4	+18.1	22	150
				22534	.742	222.2	248.7	-27.3	3	24
				22525	.498	290.5	243.7	+16.4	95	1055
				22535	.638	225.0	243.4	-20.4	6	22
				22527	.307	37.0	203.3	+21.2	29	213
				22533	.377	126.7	197.1	- 6.1	5	22
				22530	.364	81.3	193.4	+ 9.9	18	131
				22529	.489	130.7	192.5	-11.8	9	38
				22531	.476	52.7	190.4	+23.4	10	57
				22536	.574	123.3	185.4	-12.0	3	18
				22537	.920	111.3	151.6	-16.3	17	138
				22538	.946	99.9	145.1	- 6.8	7	14
8.360	+22.7	201.3	+7.2	22523	.961	259.6	273.5	- 7.9	20	145
				22520	.945	291.8	273.2	+22.9	20	180
				22524	.863	286.8	261.4	+18.1	30	145
				22525	.675	285.7	243.6	+15.9	101	936
				1565 05	.316	346.8	205.8	+25.1	1	8
				22527	.241	353.1	203.0	+21.0	28	196
				22533	.254	155.6	195.3	- 6.1	2	13
				22529	.356	160.9	194.4	-12.4	4	17
				22530	.143	70.0	193.5	+10.0	14	101
				22531	.330	32.2	190.3	+23.3	5	28
				22536	.427	139.4	184.9	-11.9	3	30
				22537	.806	116.3	152.7	-16.2	15	108
				22538	.876	103.6	142.1	- 8.2	2	9
9.103	+22.9	191.4	+7.2	22520	.985	292.7	273.3	+23.5	17	127
				22524	.939	287.5	262.4	+18.9	19	120
				22525	.789	285.0	243.8	+16.3	75	879
				22527	.308	324.4	202.5	+21.6	30	179
				22533	.237	199.3	195.9	- 5.6	2	15
				22529	.345	191.0	195.3	-12.5	3	15
				22530	.062	327.3	193.4	+10.2	15	108
				22531	.258	0.7	191.3	+22.1	2	10
				22536	.345	161.8	185.2	-11.8	2	20
				22537	.714	121.9	152.4	-16.6	18	112
				22539	.676	91.9	149.0	+ 4.1	22	87
				22538	.792	107.7	141.7	- 9.3	2	14
				22540	.987	101.5	112.6	-10.0	12	50
10.452	+23.2	173.6	+7.2	22525	.932	284.2	243.3	+15.8	31	554
				22527	.511	300.8	201.7	+21.6	29	134
				22529	.510	231.0	197.4	-12.0	5	29
				22530	.342	280.5	193.5	+10.4	16	74
				22533	.416	233.7	193.3	- 7.4	4	35
				22531	.380	321.6	188.6	+24.3	2	16
				22536	.327	207.1	182.3	- 9.7	2	19

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Sept. 10.452	Continued			22537	.519	139.8	153.3	-16.5	11	42
				22539	.389	96.6	150.9	+ 4.1	12	59
				22540	.887	105.4	113.5	-10.1	12	139
				22541	.922	79.5	105.7	+12.4	3	6
				22542	.963	103.2	101.4	-10.6	8	37
11.601	+23.4	158.5	+7.2	22525	.992	284.3	242.7	+15.1	61	563
				22527	.692	293.4	201.3	+21.3	28	122
				22529	.648	243.3	194.5	-11.0	1	19
				22530	.577	278.2	193.9	+10.6	19	92
				22543	.639	234.5	191.1	-15.6	4	22
				22531	.541	303.2	187.9	+23.5	1	19
				22537	.413	166.3	152.7	-16.4	5	42
				22539	.129	116.4	151.8	+ 3.9	11	51
				22540	.731	112.4	115.2	-10.9	16	130
				22541	.799	80.2	105.1	+12.2	0	4
				22542	.859	106.7	101.9	-10.3	4	20
12.585	+23.6	145.5	+7.2	22527	.825	291.0	201.1	+21.4	18	99
				22530	.745	278.0	194.0	+10.8	13	115
				22529	.780	248.3	193.1	-11.9	13	61
				22543	.781	242.8	191.6	-15.9	13	72
				22537	.424	198.4	153.5	-16.5	4	14
				22539	.133	243.0	152.3	+ 3.7	6	28
				22540	.569	122.3	116.2	-11.3	19	94
				22541	.635	80.1	105.9	+11.9	0	3
				22542	.729	111.7	102.1	-10.4	2	8
13.426	+23.8	134.4	+7.2	22527	.911	290.4	200.7	+21.5	3	14
				22543	.895	249.4	194.2	-14.7	0	5
				22530	.857	278.2	193.9	+10.8	15	87
				22529	.869	252.5	191.9	-11.3	9	59
				22536	.741	249.6	179.0	- 9.8	2	12
				22537	.505	219.2	153.7	-16.1	4	14
				22539	.275	259.6	150.0	+ 4.1	2	25
				22540	.429	135.1	116.5	-10.7	11	107
				22541	.479	78.2	105.8	+11.9	4	15
				22542	.598	117.7	102.0	-10.0	1	6
				22544	.823	123.5	86.7	-22.2	8	77
14.088	+23.9	125.6	+7.2	22527	.959	290.9	200.5	+22.0	4	25
				22530	.923	279.5	193.6	+11.5	16	79
				22529	.935	255.3	192.6	-10.9	9	49
				22537	.595	230.6	154.1	-15.8	3	14
				22539	.457	264.9	152.7	+ 4.1	2	12
				22540	.340	155.2	117.3	-10.8	13	66
				22541	.340	75.1	106.1	+11.8	10	39
				22542	.493	125.1	101.6	- 9.8	0	7
				22544	.741	128.7	87.2	-22.0	11	52
15.448	+24.1	107.7	+7.2	22536	.955	256.6	178.4	-10.4	3	30
				22537	.783	243.1	154.0	-15.8	2	9
				22540	.356	211.2	118.4	-10.6	5	41
				22541	.087	9.5	106.8	+12.1	18	79
				22542	.317	162.6	102.2	-10.4	0	14
									Continued	

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Sept. 15.448	Continued			22544	.580	145.4	87.0	-21.7	14	83
				22545	.961	109.9	37.2	-16.8	13	140
				22546	.979	87.2	29.4	+ 4.2	5	22
16.353	+24.3	95.7	+7.2	22537	.883	248.0	153.7	-15.5	5	21
				22540	.484	231.5	118.3	-10.9	10	63
				22541	.200	296.5	106.2	+12.1	9	58
				22542	.318	201.5	102.5	-10.0	0	1
				22544	.504	165.1	87.7	-21.9	12	82
				22545	.883	113.0	38.0	-16.4	14	79
				22546	.917	88.7	29.2	+ 4.0	3	17
				22547	.967	71.9	19.1	+19.3	9	57
17.317	+24.4	83.0	+7.2	22537	.962	251.2	153.9	-15.8	0	4
				22540	.653	243.8	119.5	-11.0	4	16
				22541	.394	283.6	105.9	+11.9	7	47
				22548	.270	276.9	98.7	+ 8.8	0	9
				22544	.491	188.4	87.4	-21.8	12	68
				22545	.778	117.9	37.4	-16.4	16	57
				22546	.810	90.5	29.0	+ 3.8	4	23
				22547	.885	71.6	20.1	+19.6	26	140
18.319	+24.6	69.8	+7.2	22540	.798	250.3	119.5	-11.0	6	19
				22541	.578	282.5	105.0	+13.0	11	55
				22548	.487	275.4	99.0	+ 8.9	0	1
				22549	.550	230.0	95.4	-14.2	3	9
				22544	.562	211.1	87.9	-21.8	7	30
				22545	.613	127.8	39.7	-15.8	10	48
				22546	.660	92.3	28.6	+ 3.9	3	9
				22547	.767	70.6	19.9	+19.4	48	332
19.408	+24.7	55.4	+7.1	22540	.916	254.5	119.3	-11.0	0	14
				22541	.783	280.2	107.3	+12.4	25	142
				22549	.726	242.8	97.0	-14.1	10	52
				22544	.682	226.2	87.4	-22.1	6	20
				22545	.502	143.2	37.2	-16.8	12	56
				22546	.433	93.0	29.8	+ 5.1	4	16
				22547	.591	66.3	20.5	+19.6	95	439
				22550	.939	78.3	344.7	+13.4	3	16
20.327	+24.9	43.3	+7.1	22541	.896	280.8	107.6	+12.8	21	129
				22549	.845	248.1	97.1	-14.2	12	101
				22544	.794	234.1	87.3	-22.6	4	15
				22551	.427	308.5	64.3	+22.0	9	65
				22545	.389	167.2	38.2	-15.1	2	17
				22546	.222	98.1	30.6	+ 5.1	2	14
				22547	.427	57.7	20.8	+19.7	92	567
				1565 06	.604	126.7	13.3	-15.0	0	4
				22552	.697	92.5	359.2	+ 3.4	14	85
				22550	.849	78.8	344.7	+13.2	4	23
				22553	.97[illegible]	79.4	326.2	+12.0	5	74
21.401	+25.0	29.1	+7.1	22541	.982	282.0	109.2	+13.0	6	64
				22549	.953	252.9	98.7	-13.9	32	147
				22544	.900	240.6	87.0	-22.6	0	5
									Continued	

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Sept. 21.401	Continued			22551	.606	297.9	64.3	+22.3	41	234
				22546	.044	213.6	30.5	+ 5.0	0	18
				22547	.255	28.8	21.6	+19.9	86	544
				22552	.499	95.6	359.4	+ 3.4	8	61
				22550	.691	78.6	345.3	+13.0	5	14
				22554	.835	92.7	332.7	+ 1.7	4	12
				22553	.892	79.9	325.4	+12.2	17	156
22.380	+25.1	16.2	+7.0	22551	.772	293.3	66.1	+22.3	30	266
				22555	.472	272.9	44.5	+ 7.6	28	101
				22545	.522	228.1	39.7	-13.9	0	5
				1565 07	.577	209.0	33.9	-23.4	0	4
				22547	.248	336.1	22.3	+20.1	69	518
				22552	.285	101.8	0.0	+ 3.5	1	14
				1565 08	.287	77.9	359.7	+10.2	1	8
				22550	.507	77.1	345.8	+12.6	1	5
				22554	.682	95.5	333.6	+ 1.5	2	6
				22553	.781	79.9	324.5	+12.3	37	255
				1565 09	.968	75.7	299.6	+15.5	0	4
23.349	+25.3	3.4	+7.0	22551	.886	291.0	66.2	+21.8	33	199
				22555	.641	273.4	43.4	+ 7.6	44	236
				22547	.401	306.2	23.5	+20.2	70	477
				22552	.141	124.3	356.7	+ 2.4	0	2
				22550	.227	72.8	350.7	+10.7	2	16
				22553	.623	79.6	324.8	+11.9	40	368
				22556	.988	98.2	283.4	- 7.0	57	401
24.353	+25.4	350.1	+7.0	22551	.970	290.2	67.5	+21.2	32	247
				22555	.800	274.3	43.5	+ 7.6	43	276
				22547	.585	295.6	24.2	+20.4	70	467
				22550	.153	35.2	344.9	+14.1	1	2
				22553	.411	75.3	326.2	+12.4	43	339
				22557	.629	131.4	320.4	-18.5	4	20
				22558	.559	60.6	318.6	+21.9	7	53
				22559	.892	76.5	286.4	+15.2	0	5
				22556	.929	100.4	283.4	- 6.9	69	426
				22560	.971	76.4	272.8	+14.8	0	9
				22561	.979	67.5	270.3	+23.4	5	16
25.337	+25.5	337.1	+7.0	22555	.917	275.2	44.0	+ 7.6	22	241
				22547	.765	291.6	26.5	+20.9	60	414
				22553	.195	61.9	327.1	+12.1	45	322
				22557	.503	147.6	320.7	-18.4	7	27
				22558	.390	48.0	319.0	+21.7	27	121
				22559	.792	76.6	284.5	+14.8	2	22
				22556	.828	103.6	283.2	- 7.1	68	428
				22560	.895	77.3	273.0	+14.4	0	2
				22561	.919	67.5	269.7	+23.4	6	23
26.413	+25.6	322.9	+6.9	22555	.982	275.6	42.5	+ 6.8	0	17
				22547	.903	289.5	28.0	+20.6	70	353
				22553	.112	325.3	326.7	+12.2	57	338
				22558	.267	1.4	322.5	+22.3	29	166
				22557	.432	178.3	322.2	-18.5	2	16

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Sept. 26.413	Continued			22559	.581	71.8	288.0	+16.1	0	7
				22556	.674	108.4	283.0	- 7.0	75	447
				22560	.762	78.1	273.1	+13.5	2	12
				22561	.812	66.2	269.2	+23.3	2	13
				22562	.977	75.2	244.1	+15.9	20	90
27.431	+25.7	309.5	+6.9	22547	.975	289.9	28.2	+20.9	44	404
				22553	.312	288.0	327.1	+12.1	46	318
				22558	.353	322.1	323.1	+22.8	34	202
				22559	.396	62.3	288.1	+17.0	1	6
				22556	.511	116.7	282.2	- 7.1	73	432
				22561	.674	62.5	269.0	+23.4	2	8
				22562	.904	75.3	244.2	+16.2	26	122
28.329	+25.8	297.7	+6.8	22553	.491	282.8	326.9	+12.2	51	343
				22558	.495	306.2	323.3	+23.1	34	183
				22559	.220	36.4	289.8	+16.9	5	22
				22556	.351	132.4	282.6	- 7.0	78	437
				22561	.538	56.2	268.7	+23.3	1	8
				22562	.801	75.2	244.2	+15.9	21	107
29.391	+25.9	283.6	+6.8	22553	.690	280.4	327.4	+12.1	33	269
				22558	.676	297.3	324.3	+23.2	23	156
				22559	.211	327.3	290.4	+16.9	3	15
				22556	.243	174.5	282.3	- 7.1	54	422
				22561	.380	39.9	268.3	+23.4	2	10
				22562	.641	74.9	244.0	+14.8	10	58
30.657	+26.0	266.9	+6.7	22553	.863	279.6	327.1	+11.7	49	264
				22558	.837	293.1	323.5	+22.9	30	126
				22556	.349	228.4	282.1	- 6.9	91	454
				22561	.292	356.8	267.9	+23.6	1	8
				22562	.409	65.5	244.3	+16.0	1	29
Oct. 1.331	+26.0	258.0	+6.7	22553	.921	279.9	325.7	+11.7	34	269
				22558	.905	291.8	323.3	+22.5	19	108
				22556	.468	241.3	282.3	- 6.8	65	420
				22561	.334	331.8	267.9	+23.7	0	6
				22562	.274	52.8	245.0	+16.0	2	20
				22563	.912	72.4	191.7	+18.8	3	32
				22564	.982	102.8	180.9	-11.1	0	41
2.383	+26.1	244.2	+6.7	22553	.991	280.6	327.2	+11.4	29	224
				22558	.976	291.7	322.9	+22.5	3	34
				22556	.651	251.4	282.4	- 6.7	54	358
				1566 01	.363	316.4	259.7	+21.6	1	6
				22562	.159	2.1	243.8	+15.7	1	12
				1566 02	.242	10.1	241.6	+20.4	0	4
				22563	.809	71.7	190.2	+18.7	5	27
				22564	.909	105.1	181.1	-10.7	16	98
3.432	+26.1	230.3	+6.6	22556	.807	257.0	282.4	- 6.5	43	348
				22562	.315	307.5	245.4	+17.4	13	71
				22563	.645	68.5	191.1	+18.8	0	7
				22564	.791	108.7	180.8	-10.4	24	153

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Oct. 4.334	+26.2	218.4	+6.5	22559	.946	286.3	290.4	+17.5	7	30
				22556	.909	259.9	282.4	- 6.3	41	306
				22562	.475	295.4	245.1	+17.6	21	123
				22565	.376	131.7	202.0	- 8.2	1	12
				22564	.649	114.8	181.8	-10.5	52	396
5.334	+26.2	205.2	+6.5	22559	.992	286.8	289.2	+17.4	8	48
				22556	.980	262.3	282.7	- 6.1	59	277
				22562	.638	290.3	244.0	+17.8	10	106
				22565	.254	168.6	202.3	- 7.9	0	9
				22564	.481	126.7	182.2	-10.7	63	530
				22566	.987	74.5	123.1	+16.3	0	27
6.466	+26.3	190.3	+6.4	1566 03	.908	258.3	253.9	- 7.8	0	5
				22562	.819	287.5	245.3	+18.0	15	98
				22564	.322	156.1	182.7	-10.7	53	485
				22566	.930	74.2	121.2	+17.0	46	270
7.337	+26.3	178.8	+6.4	22562	.925	286.8	247.1	+18.0	6	26
				22564	.305	195.8	183.6	-10.7	55	425
				22566	.834	73.9	122.1	+16.9	29	228
				22567	.961	105.3	107.2	-12.7	4	20
8.308	+26.3	166.0	+6.3	22562	.993	286.3	250.4	+16.9	65	449
				22564	.414	226.0	183.5	-10.6	86	597
				22568	.260	314.5	177.1	+16.7	1	7
				22566	.685	72.4	123.2	+16.6	26	208
				22567	.859	108.3	109.7	-12.2	8	50
9.310	+26.3	152.8	+6.3	22564	.575	242.0	183.7	-10.3	97	1044
				22566	.502	66.3	124.1	+17.1	49	230
				22569	.615	119.6	119.7	-12.4	1	12
				22567	.746	112.3	108.1	-12.0	13	76
10.616	+26.3	135.5	+6.2	22564	.786	251.1	184.5	-10.7	101	791
				22566	.287	44.7	123.4	+17.8	44	325
				22569	.423	137.1	118.5	-12.1	11	58
				22567	.550	125.0	108.1	-12.8	3	19
				22570	.993	84.4	52.2	+ 6.3	18	124
11.520	+26.3	123.6	+6.1	22564	.900	254.7	185.6	-10.9	59	636
				22566	.206	357.7	124.1	+17.9	40	298
				22569	.332	163.0	117.9	-12.4	9	71
				22570	.942	85.4	53.0	+ 6.4	10	62
12.315	+26.3	113.1	+6.1	22564	.965	257.0	186.2	-10.8	101	928
				22566	.268	320.2	123.5	+17.8	40	319
				22569	.325	195.2	118.1	-12.2	21	114
				22570	.848	87.2	55.0	+ 5.6	18	115
				22571	.909	82.4	47.3	+ 9.4	5	21
				22572	.980	72.7	33.5	+18.1	43	240
13.381	+26.3	99.1	+6.0	22564	.994	261.1	181.4	- 8.1	9	56
				22568	.974	284.7	176.8	+15.6	0	9
				22566	.473	296.3	125.3	+17.4	35	196

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Oct. 13.381	Continued			22569	.438	223.2	116.9	-12.8	17	69
				22570	.650	89.9	58.6	+ 4.6	58	281
				22571	.791	82.7	46.6	+ 9.4	0	2
				22573	.853	109.9	43.7	-13.5	12	51
				22572	.911	72.9	33.1	+18.0	18	165
14.508	+26.3	84.2	+5.9	22566	.706	288.3	128.5	+17.0	12	117
				22569	.619	239.5	117.3	-13.3	5	30
				22574	.285	193.5	88.0	-10.1	1	9
				22570	.414	91.6	59.8	+ 4.7	37	423
				1566 04	.493	116.9	58.0	- 7.6	0	6
				1566 05	.582	121.9	53.9	-12.8	1	7
				22571	.588	80.2	48.2	+10.5	12	77
				22573	.699	116.0	44.2	-13.3	3	19
				22572	.784	71.7	32.9	+18.0	36	160
15.555	+26.3	70.4	+5.8	22566	.856	286.8	129.3	+17.4	21	107
				22569	.772	248.1	117.5	-12.7	0	7
				22574	.399	231.4	88.7	- 8.8	0	5
				22570	.168	95.2	60.8	+ 4.9	45	320
				22571	.377	76.7	48.6	+10.4	23	162
				22573	.525	127.2	45.1	-13.2	3	29
				22572	.631	68.8	32.4	+17.8	23	140
16.356	+26.2	59.8	+5.8	22566	.937	286.7	130.0	+17.6	16	98
				22569	.873	251.5	117.8	-13.0	2	25
				22574	.560	243.9	90.3	- 9.3	3	15
				22570	.035	241.3	61.6	+ 4.8	47	234
				22571	.197	66.6	49.3	+10.2	32	204
				22573	.400	143.6	45.8	-13.1	7	44
				22572	.490	63.9	32.4	+17.6	19	119
				22575	.467	80.1	32.1	+ 9.7	1	10
				22576	.979	80.5	341.1	+10.5	21	154
17.369	+26.2	46.5	+5.7	22566	.961	286.1	121.2	+17.0	5	24
				22569	.960	254.9	118.1	-12.7	23	117
				22574	.711	252.1	89.4	- 8.4	2	6
				22570	.275	268.1	62.4	+ 4.9	24	150
				22571	.098	322.3	49.9	+10.1	29	151
				22573	.324	176.1	45.2	-13.1	5	33
				22575	.246	71.2	32.9	+10.1	6	35
				22572	.319	48.7	32.0	+17.6	20	138
				1	.315	48.4	32.2	+17.5	19	129
				22577	.360	40.7	31.9	+21.3	0	2
				22576	.902	80.3	341.7	+11.2	18	165
				22578	.969	78.6	330.1	+12.4	18	89
18.433	+26.1	32.4	+5.6	22570	.493	269.9	61.9	+ 4.8	10	70
				22573	.422	223.6	49.7	-12.4	1	4
				22571	.303	285.8	49.6	+10.1	22	143
				22575	.075	348.2	33.3	+ 9.8	23	173
				22572	.206	4.3	31.5	+17.4	24	153
				1	.209	2.5	31.9	+17.6	18	130
				22577	.272	8.0	30.1	+21.2	0	5
				22576	.760	80.2	342.9	+11.1	25	161

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Oct. 18.433	Continued			22578	.881	78.8	330.4	+12.5	14	105
19.418	+26.1	19.4	+5.5	22574	.955	259.1	90.7	- 8.7	3	55
				22570	.690	270.9	63.1	+ 4.7	2	18
				22571	.501	280.6	49.3	+10.1	17	113
				22573	.570	238.2	49.1	-12.6	0	5
				22575	.327	284.9	38.1	+10.0	21	175
				22572	.287	316.8	31.3	+17.4	21	140
				1	.291	316.7	31.5	+17.6	19	128
				22576	.600	78.7	342.7	+11.2	21	247
				22578	.764	77.9	329.7	+12.8	10	58
				22579	.978	77.4	300.8	+13.5	20	182
20.364	+26.0	7.0	+5.5	22571	.669	279.0	48.9	+10.1	10	58
				22575	.451	280.4	33.6	+ 9.5	32	240
				22572	.447	298.7	31.1	+17.3	15	130
				1	.449	298.9	31.2	+17.5	15	123
				22576	.396	73.9	344.2	+11.3	31	207
				22578	.602	76.2	330.3	+12.6	7	71
				22579	.917	77.7	300.1	+13.5	41	256
				22580	.994	97.2	284.4	- 6.5	0	28
21.302	+25.9	354.6	+5.4	22571	.803	278.5	48.1	+10.0	4	14
				22575	.642	277.9	34.5	+ 9.2	26	179
				22572	.614	292.0	31.1	+17.6	15	108
				22576	.186	54.5	345.7	+11.5	25	141
				22578	.424	71.1	330.4	+12.8	5	46
				22579	.820	76.9	299.4	+13.8	56	358
				22580	.950	98.8	283.9	- 6.6	7	41
22.411	+25.8	340.0	+5.3	22571	.928	278.8	48.4	+10.1	0	3
				22575	.807	277.7	33.9	+ 9.3	19	103
				22572	.784	288.4	31.1	+17.6	20	126
				22576	.154	316.9	346.1	+11.7	24	169
				22578	.212	47.0	330.8	+13.5	2	17
				22579	.658	74.7	299.2	+14.0	43	373
				22580	.840	101.2	284.2	- 6.4	6	28
				22581	.988	113.9	262.0	-22.6	7	21
				22582	.987	77.5	258.6	+13.2	32	258
23.525	+25.7	325.3	+5.2	22575	.935	277.3	34.8	+ 8.6	12	62
				22572	.912	287.1	31.3	+17.7	13	104
				22576	.382	289.1	346.9	+12.0	27	146
				22578	.162	326.2	330.6	+12.9	0	3
				22583	.086	7.5	324.6	+10.1	0	3
				22579	.454	70.0	299.3	+13.6	59	353
				1567 01	.633	53.8	290.7	+26.2	1	4
				22580	.682	105.3	284.0	- 6.4	5	6
				22581	.921	116.8	262.9	-22.1	3	11
				22582	.914	77.6	258.8	+13.4	43	590
				22584	.956	72.8	251.9	+18.0	4	41
				22585	.983	72.5	244.9	+18.1	62	493
				22586	.997	67.0	238.3	+23.3	0	66

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Oct. 24.307	+25.6	314.9	+5.1	22575	.975	279.4	32.5	+10.3	15	103
				22572	.969	286.8	31.3	+17.5	25	119
				22576	.547	284.1	347.7	+11.9	18	111
				22578	.331	291.5	333.2	+11.8	0	2
				22583	.186	295.8	324.7	+ 9.7	1	4
				22579	.309	61.2	298.8	+13.5	58	364
				22580	.548	110.2	283.9	- 6.5	1	8
				22581	.851	120.0	262.4	-22.0	2	10
				22582	.828	77.4	259.1	+13.3	72	571
				22584	.892	72.6	251.8	+17.8	2	9
				22585	.941	72.6	244.4	+18.1	86	694
				22586	.969	67.4	238.5	+23.1	21	154
25.399	+25.5	300.6	+5.0	22576	.761	281.5	350.0	+12.0	10	44
				1567 02	.390	304.8	320.1	+17.5	1	10
				22587	.301	301.6	315.8	+13.9	1	10
				22579	.158	12.9	298.5	+13.8	59	394
				22580	.348	124.5	283.9	- 6.5	2	9
				22581	.726	127.8	262.3	-22.4	2	8
				22582	.665	75.4	259.3	+13.4	78	673
				22584	.771	70.5	250.8	+18.2	2	10
				22585	.844	71.6	243.3	+18.2	98	980
				22586	.888	66.8	238.4	+22.9	17	117
26.432	+25.4	286.9	+4.9	22576	.899	281.5	351.2	+12.5	10	65
				22587	.495	288.8	315.6	+13.5	10	53
				1567 03	.469	299.9	312.1	+17.9	4	17
				22579	.247	310.3	298.1	+14.0	57	330
				22580	.204	164.9	283.9	- 6.4	1	7
				22581	.602	138.6	261.5	-22.3	0	4
				22582	.466	69.0	260.4	+14.0	91	667
				22584	.603	67.1	251.5	+17.6	3	28
				22585	.681	70.4	245.0	+16.8	92	743
				22586	.759	66.0	239.0	+21.2	75	601
27.089	+25.3	278.3	+4.8	22576	.961	281.5	352.5	+12.4	15	61
				22587	.607	286.0	315.0	+13.5	5	43
				22579	.373	297.0	298.2	+14.3	46	280
				22580	.214	206.7	283.8	- 6.2	1	3
				22581	.520	153.8	263.9	-23.0	2	14
				22582	.339	60.1	260.7	+14.3	89	532
				22584	.485	61.5	251.8	+17.7	7	49
				22585	.568	66.8	245.3	+17.0	109	587
				22586	.674	62.7	238.3	+21.7	47	405
				22588	.992	102.9	197.1	-12.1	8	54
28.330	+25.2	261.9	+4.7	22587	.797	283.4	314.5	+13.5	5	42
				22579	.600	287.2	298.0	+14.0	36	260
				1567 04	.428	304.6	283.6	+18.4	4	18
				22582	.169	3.3	261.3	+14.4	81	520
				22584	.270	35.2	252.6	+17.4	10	49
				22585	.344	50.1	245.9	+17.2	74	433
				22586	.479	50.3	238.5	+22.1	51	361
				22588	.923	104.7	196.4	-11.6	22	151

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Oct. 29.460	+25.0	247.0	+4.6	22587	.926	283.0	315.1	+13.8	23	160
				22579	.777	284.0	297.7	+13.8	44	246
				22589	.591	245.0	279.8	-10.5	4	30
				22590	.319	263.1	265.4	+ 2.2	45	248
				22582	.277	307.2	260.1	+14.1	39	392
				22584	.240	337.9	252.4	+17.4	3	28
				22585	.223	9.0	244.9	+17.3	69	413
				22586	.338	24.0	238.5	+22.5	43	360
				22588	.800	108.1	196.3	-11.4	46	188
30.496	+24.9	233.3	+4.5	22587	.988	283.8	314.9	+14.3	0	26
				22579	.904	283.4	298.1	+14.0	42	170
				22589	.775	252.6	281.9	-10.4	8	35
				22590	.541	267.4	266.0	+ 2.4	51	307
				22582	.478	291.8	260.5	+14.2	31	274
				22585	.298	319.5	245.0	+17.5	71	425
				22586	.334	345.0	238.7	+23.3	30	190
				22588	.631	113.6	197.4	-10.9	14	127
				22591	.891	124.8	177.5	-28.0	0	7
				22592	.838	69.9	177.1	+19.2	2	6
				22593	.978	67.7	154.7	+22.7	20	141
31.424	+24.7	221.1	+4.4	22579	.975	283.0	298.7	+13.6	19	132
				22589	.890	255.9	282.2	-10.3	5	46
				22590	.708	269.6	266.1	+ 2.8	43	306
				22582	.641	286.4	260.3	+13.8	16	240
				22585	.443	300.4	244.5	+17.0	62	352
				22586	.439	319.6	239.1	+23.7	30	140
				22588	.470	123.3	197.6	-10.8	23	141
				22591	.799	130.1	177.6	-27.7	0	4
				22592	.720	68.3	176.4	+18.6	0	12
				22593	.917	67.0	155.1	+22.8	24	103
Nov. 1.311	+24.6	209.4	+4.3	22589	.967	258.0	283.2	-10.4	8	66
				22590	.838	270.8	266.2	+ 3.1	42	281
				22582	.781	284.3	260.4	+13.8	24	193
				22585	.603	292.6	244.8	+16.9	44	341
				22586	.567	307.3	238.8	+23.8	17	94
				22588	.328	143.0	197.8	-10.9	24	163
				22593	.830	65.3	154.7	+22.8	27	139
2.076	+24.4	199.3	+4.3	22590	.929	271.6	267.5	+ 3.1	24	164
				22582	.880	283.4	260.9	+13.8	10	76
				22585	.727	289.2	244.9	+16.8	42	325
				22586	.677	300.7	238.5	+23.5	8	69
				22588	.260	175.6	198.1	-10.7	28	177
				22593	.736	62.5	154.4	+22.9	18	99
3.524	+24.2	180.2	+4.1	22585	.905	286.1	244.9	+16.3	61	304
				22586	.859	295.9	238.0	+24.3	2	19
				1567 05	.532	245.4	209.4	- 9.1	1	8
				22588	.400	231.7	198.7	-10.4	23	182
				22591	.523	182.8	181.8	-27.2	5	37
				22594	.227	359.3	180.4	+17.2	2	21
				22593	.523	51.8	153.9	+22.5	18	123

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Nov. 3.524	Continued			22595	.778	70.2	130.2	+17.9	0	14
				22596	.810	103.5	127.7	- 8.4	13	97
				22597	.865	111.0	123.4	-15.8	0	4
				22598	.871	105.2	121.5	-11.0	13	82
4.315	+24.0	169.8	+4.0	22585	.964	285.6	244.6	+16.1	39	329
				22588	.533	242.8	198.5	-10.5	37	217
				22591	.539	206.2	185.0	-24.9	5	28
				22594	.298	322.0	180.8	+17.5	1	8
				22592	.278	338.0	176.1	+18.9	1	12
				22593	.412	40.9	153.0	+21.9	22	140
				22596	.686	106.4	128.3	- 8.1	15	83
				22597	.783	113.8	121.9	-15.7	3	26
				22598	.774	107.2	121.2	-10.5	3	45
5.392	+23.8	155.6	+3.9	22588	.710	251.5	198.6	-10.1	39	263
				22599	.556	240.2	185.1	-12.6	0	11
				22591	.649	219.4	182.9	-26.5	4	16
				22593	.308	8.9	152.7	+21.5	22	79
				22600	.182	160.8	152.2	- 5.9	2	15
				22595	.462	66.7	129.8	+14.0	0	9
				22596	.484	114.1	129.2	- 7.9	9	43
				22597	.632	121.9	121.8	-16.2	20	88
				22598	.604	115.2	121.8	-11.6	6	41
6.293	+23.6	143.7	+3.8	22588	.838	255.2	198.9	-10.2	31	238
				22591	.755	230.0	183.7	-26.1	3	26
				22599	.666	248.2	182.7	-11.3	1	11
				22600	.233	221.0	152.5	- 6.3	8	55
				22593	.328	335.0	152.2	+21.0	15	93
				22601	.209	72.2	132.2	+ 7.4	2	9
				22596	.325	129.6	129.1	- 8.2	6	54
				22595	.365	51.0	126.5	+16.9	1	6
				22597	.462	136.8	124.6	-16.0	12	63
				22598	.452	124.4	121.5	-11.2	6	68
7.272	+23.4	130.8	+3.7	22588	.941	257.6	199.6	-10.3	28	213
				22591	.867	236.5	184.4	-26.4	6	36
				22602	.750	256.3	178.0	- 7.7	3	21
				22599	.742	252.9	176.7	-10.0	5	33
				22600	.415	245.9	153.1	- 6.3	9	41
				22593	.456	312.5	151.9	+21.3	7	39
				1567 06	.207	200.9	135.1	- 7.4	0	1
				22601	.054	351.4	131.3	+ 6.8	1	13
				22596	.222	173.9	129.5	- 9.0	4	27
				22595	.247	17.9	126.3	+17.2	2	30
				22597	.358	158.7	123.1	-15.7	24	140
				22598	.274	149.9	122.8	-10.0	9	61
				22603	.985	77.4	50.6	+13.1	6	18
8.522	+23.2	114.3	+3.6	22591	.965	241.6	185.3	-26.1	8	37
				22602	.921	260.8	180.5	- 7.0	3	14
				22600	.667	255.9	154.8	- 6.6	9	51
				22593	.647	301.3	151.0	+22.5	6	20
				22596	.352	234.9	131.2	- 8.2	5	15

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Nov. 8.522	Continued			22595	.332	316.5	128.1	+17.4	1	7
				22597	.363	205.6	123.7	-15.5	15	131
				22598	.277	207.1	121.7	-10.7	2	41
				22603	.885	77.4	52.2	+12.8	5	16
9.424	+23.0	102.4	+3.5	22602	.978	260.9	179.5	- 8.1	5	15
				22600	.816	259.4	156.0	- 6.6	19	106
				22593	.780	296.5	151.4	+22.7	3	26
				22604	.756	288.1	150.6	+15.9	8	53
				22596	.473	243.7	127.7	- 8.9	2	16
				22597	.466	225.4	122.5	-15.8	11	83
				22603	.788	76.4	50.9	+12.8	5	34
				22605	.915	74.6	36.4	+15.4	3	13
10.344	+22.7	90.3	+3.4	22600	.940	261.3	159.5	- 7.0	21	166
				22593	.882	294.1	151.0	+22.7	4	13
				22604	.875	286.0	150.9	+15.6	17	115
				22596	.656	251.8	129.3	- 9.2	1	8
				22597	.616	239.5	123.6	-15.3	9	58
				22606	.208	160.4	86.3	- 7.9	3	35
				22603	.676	72.2	48.8	+14.4	7	34
				22605	.839	74.8	33.7	+14.5	48	280
11.313	+22.5	77.5	+3.3	22600	.992	262.0	159.4	- 7.5	8	48
				22604	.962	285.0	151.7	+15.3	3	65
				1567 07	.906	291.3	141.7	+20.6	0	5
				22597	.781	247.4	125.7	-15.2	0	7
				22607	.481	121.4	52.8	-11.5	5	31
				22603	.524	66.0	47.9	+15.1	1	10
				22605	.694	73.0	34.5	+14.1	51	473
				22608	.976	101.0	1.3	-10.0	28	184
				22609	.981	82.3	358.5	+ 8.2	11	97
12.383	+22.2	63.4	+3.1	22604	.993	285.0	146.9	+15.2	0	34
				22607	.330	140.5	51.1	-11.6	6	38
				22605	.514	67.7	34.2	+14.0	93	741
				22608	.909	103.3	359.5	-10.7	49	269
				22609	.920	83.1	356.5	+ 7.6	52	286
13.413	+22.0	49.8	+3.0	22605	.320	50.9	35.0	+14.5	141	1012
				22610	.539	145.5	30.5	-23.4	4	29
				22608	.761	106.5	2.1	-10.5	46	224
				22609	.804	82.7	356.4	+ 7.7	48	297
				22611	.908	83.7	344.7	+ 7.0	8	49
				22612	.953	87.8	337.6	+ 3.0	18	189
14.396	+21.7	36.9	+2.9	22605	.213	7.0	35.3	+15.1	195	1587
				22610	.456	166.3	30.2	-23.3	0	7
				22608	.589	112.0	3.3	-10.3	40	192
				22613	.598	66.5	2.2	+16.2	0	4
				22609	.644	81.0	357.1	+ 8.0	37	221
				22611	.779	82.6	345.9	+ 7.6	10	44
				22612	.859	86.0	337.7	+ 4.9	70	320

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Nov. 15.320	+21.5	24.7	+2.8	22606	.876	258.1	84.7	- 9.0	2	33
				22605	.283	320.3	35.4	+15.3	237	1912
				22608	.426	122.0	3.3	-10.4	48	339
				22613	.460	62.9	359.8	+14.6	1	6
				22609	.466	78.8	357.3	+ 7.7	31	199
				22611	.627	82.1	346.1	+ 7.1	5	28
				22612	.729	86.7	338.0	+ 4.4	56	518
16.553	+21.1	8.4	+2.7	22614	.749	259.6	56.0	- 5.9	2	13
				22605	.486	297.6	34.8	+15.4	208	2411
				22608	.245	159.0	3.4	-10.5	57	356
				22613	.273	37.8	358.5	+15.0	4	34
				22609	.207	63.8	357.7	+ 7.8	21	168
				22611	.385	78.3	346.3	+ 6.9	8	41
				22612	.508	86.4	338.0	+ 4.1	49	448
17.432	+20.9	356.9	+2.6	22614	.886	259.5	58.3	- 8.0	2	47
				22605	.630	291.9	34.1	+15.6	289	2511
				22608	.258	210.3	4.4	-10.3	59	370
				22613	.212	349.2	359.2	+14.5	10	71
				22609	.102	337.8	359.1	+ 8.0	14	149
				22611	.208	67.5	345.7	+ 7.1	4	17
				22612	.319	86.9	338.3	+ 3.4	46	450
				22615	.816	76.2	302.7	+12.7	0	8
18.719	+20.5	339.9	+2.4	22605	.821	287.4	34.1	+15.6	297	1961
				22608	.457	240.4	3.7	-10.8	68	353
				22613	.403	303.8	0.1	+15.1	63	244
				22609	.330	290.5	358.0	+ 8.9	24	131
				22611	.123	327.7	343.7	+ 8.3	14	86
				22612	.028	33.2	339.0	+ 3.7	91	482
				22616	.944	86.9	269.2	+ 3.7	8	54
				22617	.969	79.5	264.2	+10.8	6	17
19.576	+20.2	328.6	+2.3	22605	.910	286.6	33.6	+16.0	206	1974
				22608	.638	250.8	6.2	-10.3	31	150
				22613	.545	294.9	359.3	+15.2	51	309
				22609	.513	281.5	359.0	+ 7.8	10	87
				22611	.281	292.6	343.8	+ 8.4	25	132
				22612	.210	275.0	340.7	+ 3.3	53	431
				22616	.854	87.8	270.2	+ 3.1	12	71
				22617	.911	79.9	263.1	+10.1	55	265
				1	.893	79.6	265.6	+10.3	31	151
20.380	+20.0	318.0	+2.2	22605	.967	286.1	33.0	+16.1	142	1620
				22608	.773	254.9	7.1	-10.1	34	175
				22613	.705	290.0	1.3	+15.5	34	267
				22609	.651	280.4	358.2	+ 8.4	6	68
				22611	.446	284.8	343.7	+ 8.5	29	247
				22612	.404	272.0	341.8	+ 2.8	45	372
				22616	.744	87.9	270.1	+ 3.0	11	78
				22617	.820	79.1	263.3	+10.2	31	193
				1	.788	78.6	266.5	+10.3	17	104
				22618	.970	72.8	242.3	+17.2	34	239

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Nov. 21.293	+19.7	306.0	+2.1	22605	.993	286.6	29.1	+16.8	85	594
				22608	.893	258.1	8.2	- 9.6	14	86
				22613	.847	287.0	3.0	+15.5	61	323
				22609	.805	278.3	359.3	+ 7.9	7	30
				22611	.630	281.0	344.5	+ 8.5	46	281
				22612	.582	271.7	341.5	+ 2.7	67	492
				22616	.587	88.0	270.2	+ 2.9	10	60
				1568 01	.657	62.3	268.1	+19.4	0	3
				22617	.679	78.0	263.8	+ 9.7	20	144
				1	.639	77.1	267.0	+ 9.8	12	81
				22618	.907	72.1	241.6	+17.1	32	214
22.426	+19.3	291.0	+1.9	22608	.979	259.6	8.5	- 9.8	5	58
				22613	.960	285.3	4.5	+15.2	52	339
				22611	.816	279.1	345.4	+ 8.5	35	300
				22612	.784	272.6	342.5	+ 3.3	45	513
				22619	.366	290.7	311.3	+ 9.2	4	16
				1568 02	.356	311.3	307.1	+15.4	1	10
				22615	.254	324.9	299.7	+13.9	0	6
				22616	.360	87.0	270.0	+ 2.9	7	58
				22617	.452	72.5	265.2	+ 9.6	13	122
				1	.426	71.4	267.0	+ 9.6	10	88
				22618	.786	69.6	240.8	+17.1	42	238
				1568 03	.859	79.8	232.2	+ 9.8	0	6
23.691	+18.9	274.4	+1.8	22613	.989	284.1	355.9	+14.2	19	102
				22620	.962	282.8	348.3	+12.8	10	60
				22611	.948	278.2	345.6	+ 8.3	35	125
				22612	.936	273.8	343.5	+ 4.2	64	360
				22619	.637	282.0	313.3	+ 9.0	22	67
				22621	.379	199.4	282.0	-19.1	12	24
				22616	.077	77.3	270.1	+ 2.8	11	26
				22617	.199	48.1	265.8	+ 9.4	27	89
				1	.184	43.7	267.0	+ 9.4	21	72
				22618	.599	63.5	240.4	+16.9	55	191
				22622	.950	101.7	203.4	-10.5	35	207
24.449	+18.6	264.4	+1.7	22620	.984	282.9	344.1	+12.9	12	72
				22612	.974	275.0	341.0	+ 5.2	36	267
				22619	.763	280.5	313.6	+ 9.1	13	80
				1568 04	.634	239.0	299.0	-17.6	1	10
				22621	.460	219.4	282.3	-19.1	10	48
				22616	.106	279.0	270.4	+ 2.6	5	22
				22617	.136	344.4	266.5	+ 9.2	22	94
				1	.140	340.0	267.1	+ 9.2	20	83
				22618	.474	55.9	240.2	+16.9	41	231
				22622	.880	102.9	203.9	-10.5	23	211
25.288	+18.4	253.3	+1.6	22619	.880	279.8	314.5	+ 9.4	4	29
				22621	.575	231.9	281.9	-19.3	4	27
				22616	.294	273.8	270.3	+ 2.7	6	18
				22617	.264	300.9	266.5	+ 9.3	14	90
				1	.273	299.3	267.2	+ 9.2	13	78
				22623	.226	22.0	248.3	+13.6	4	30
				22618	.351	39.6	239.8	+17.2	29	215

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Nov. 25.288	Continued			22622	.774	105.0	204.1	-10.5	17	169
26.434	+18.0	238.2	+1.4	22619	.972	279.5	314.4	+ 9.6	0	9
				22621	.750	242.5	282.8	-19.1	0	7
				22616	.535	272.8	270.4	+ 2.7	4	17
				22617	.498	286.2	267.1	+ 9.3	9	74
				22623	.268	320.2	248.3	+13.2	15	72
				22618	.274	355.7	239.4	+17.2	35	196
				22622	.585	110.5	204.5	-10.6	17	114
				22624	.983	73.0	159.0	+16.9	64	442
27.435	+17.6	225.0	+1.3	22616	.717	272.4	270.6	+ 2.6	3	17
				22617	.684	282.4	267.5	+ 9.4	6	51
				22625	.572	249.1	257.8	-10.6	1	15
				22623	.441	299.1	248.3	+13.6	13	90
				22618	.365	319.7	239.3	+17.4	26	219
				22622	.405	120.6	204.3	-10.6	9	57
				22626	.701	109.2	182.5	-12.3	0	6
				22624	.919	72.5	159.1	+16.6	79	541
				22627	.981	74.6	146.5	+15.4	6	28
				22628	.988	68.1	144.1	+21.8	28	223
28.317	+17.3	213.4	+1.2	22616	.825	273.7	268.8	+ 3.8	0	2
				22617	.807	280.7	266.6	+ 9.3	7	32
				22625	.720	253.2	257.8	-11.1	5	27
				22623	.604	290.8	248.7	+13.3	12	67
				22618	.499	303.9	239.0	+17.2	31	221
				1568 05	.469	323.1	231.1	+23.1	1	6
				22622	.254	142.4	204.4	-10.4	5	48
				22626	.565	115.8	182.0	-13.1	1	14
				22624	.835	70.3	158.3	+17.0	74	479
				22627	.926	73.7	146.3	+15.5	8	33
				22628	.943	67.3	144.1	+21.7	30	212
				1	.938	67.3	145.0	+21.6	30	186
				22629	.991	104.3	132.0	-14.0	7	60
				22630	.997	107.2	128.8	-17.0	0	51
29.303	+16.9	200.4	+1.1	22625	.873	260.1	260.4	- 8.1	0	2
				22623	.774	286.5	249.9	+13.4	13	81
				22618	.659	295.1	238.9	+17.0	24	202
				22622	.213	197.7	204.2	-10.6	5	31
				22626	.385	128.3	182.4	-12.7	2	16
				22624	.710	66.2	157.6	+17.4	59	481
				22627	.832	72.1	145.4	+15.4	2	6
				22628	.860	64.8	143.6	+22.0	36	249
				1	.853	64.7	144.4	+22.0	34	224
				22631	.934	83.6	131.7	+ 6.3	3	12
				22629	.940	104.9	131.4	-13.6	3	9
				22630	.949	107.9	130.3	-16.5	10	79
				22632	.964	99.6	126.4	- 8.9	8	51
				22633	.993	101.8	117.9	-11.5	25	160

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Nov. 30.481	+16.5	184.9	+0.9	22623	.885	285.9	246.2	+14.5	9	46
				22634	.877	277.3	245.8	+ 6.9	11	47
				22618	.822	290.3	238.5	+17.1	34	186
				22622	.383	233.6	203.2	-12.2	7	45
				22626	.215	151.5	178.9	- 9.9	0	3
				22624	.536	59.3	156.2	+16.7	68	472
				22628	.713	59.6	143.5	+21.8	25	256
				1	.705	59.3	144.3	+21.7	20	228
				22631	.783	83.8	133.7	+ 5.4	4	14
				22629	.818	107.8	131.7	-13.9	0	4
				22630	.827	111.2	131.5	-16.8	8	77
				22632	.858	100.7	126.6	- 8.7	6	34
				22633	.936	103.1	116.4	-11.9	58	366
				22635	.993	100.6	102.4	-10.4	9	61
Dec. 1.366	+16.1	173.2	+0.8	22623	.961	284.7	246.6	+14.3	4	43
				22634	.957	277.8	246.1	+ 7.7	3	45
				22618	.915	288.4	238.3	+17.1	32	194
				22622	.537	245.9	203.2	-11.9	1	18
				22624	.393	45.9	156.1	+16.6	54	423
				22628	.595	52.5	142.8	+21.9	39	237
				1	.581	51.6	144.0	+21.8	38	204
				22631	.643	81.7	133.6	+ 5.9	4	50
				22630	.706	115.6	131.6	-17.1	6	57
				22632	.738	103.3	126.7	- 9.1	5	15
				22633	.848	104.4	116.4	-11.7	65	423
				22635	.956	101.2	101.0	-10.4	15	92
2.440	+15.7	159.1	+0.7	22618	.982	287.4	237.7	+17.2	28	192
				22624	.279	8.1	156.7	+16.7	53	320
				22636	.298	69.6	142.8	+ 6.6	2	17
				22628	.451	36.0	142.5	+22.0	33	228
				1	.440	34.7	143.5	+21.8	31	202
				22631	.441	76.8	133.6	+ 6.4	5	34
				22630	.541	124.5	131.3	-17.2	4	25
				22632	.552	107.6	127.0	- 9.0	1	7
				22633	.691	107.6	117.0	-11.5	48	395
				22635	.856	102.6	101.1	-10.3	17	86
3.362	+15.3	146.9	+0.6	22624	.317	329.5	156.5	+16.3	49	288
				22636	.122	28.7	143.6	+ 6.7	1	11
				22628	.370	9.2	143.2	+21.9	20	185
				1	.370	9.2	143.2	+21.9	20	185
				22631	.221	68.1	135.1	+ 5.3	8	67
				22630	.422	139.1	130.1	-17.9	7	61
				22632	.372	116.9	127.4	- 9.1	2	15
				22633	.525	112.3	117.4	-10.9	41	328
				22635	.732	105.4	101.2	-10.8	14	97
4.573	+14.9	130.9	+0.4	22624	.494	302.8	156.5	+15.8	47	335
				22628	.408	335.5	141.4	+22.1	36	249
				1	.416	332.1	143.0	+21.9	27	179
				22631	.138	305.2	137.4	+ 5.0	2	12
				22630	.317	179.6	130.8	-18.0	13	139
				22632	.147	168.7	129.3	- 7.8	0	10

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Dec. 4.573	Continued			22633	.298	129.9	117.6	-10.6	44	385
				22635	.522	112.6	101.7	-11.2	10	75
				22637	.953	101.7	59.3	-11.0	14	67
5.490	+14.5	118.9	+0.3	22624	.642	295.1	155.9	+16.0	63	270
				22628	.513	316.7	141.1	+22.1	29	207
				1	.523	315.2	142.2	+22.0	27	166
				22631	.275	290.9	133.8	+ 5.9	0	7
				22632	.290	233.0	132.4	- 9.7	1	5
				22630	.372	213.7	131.3	-17.6	24	106
				22633	.188	174.1	117.7	-10.4	37	290
				22635	.337	126.6	102.9	-11.2	7	62
				22637	.883	102.8	57.7	-11.1	22	105
				22638	.989	75.5	37.6	+14.4	65	406
6.309	+14.2	108.1	+0.2	22624	.768	290.9	156.2	+16.0	44	299
				22628	.638	305.8	141.9	+22.0	18	122
				22630	.484	230.4	131.0	-17.7	19	143
				22632	.363	246.1	127.6	- 8.2	1	5
				22633	.251	222.5	118.0	-10.4	49	287
				22635	.212	157.0	103.2	-11.0	9	56
				22637	.776	104.5	58.3	-11.0	18	126
				22638	.962	74.9	34.6	+14.6	86	762
7.383	+13.7	93.9	+0.1	22624	.897	287.8	156.4	+15.9	44	373
				22628	.785	298.7	141.8	+22.1	9	84
				22630	.655	242.6	131.3	-17.4	17	136
				22633	.442	246.8	118.2	- 9.9	49	311
				22635	.251	218.7	103.1	-11.2	7	29
				22637	.666	106.9	53.6	-11.1	37	222
				22638	.870	73.8	34.7	+14.1	91	820
				22639	.996	75.8	9.6	+14.1	23	295
8.433	+13.3	80.1	-0.1	22624	.973	286.0	156.0	+15.6	49	246
				22628	.895	294.9	141.1	+22.1	9	51
				22630	.801	247.6	130.9	-17.7	5	23
				22633	.632	253.1	117.9	-10.6	34	237
				22635	.388	240.8	100.2	-10.9	1	16
				22637	.485	112.4	53.1	-10.7	33	172
				22638	.736	69.9	34.7	+14.5	85	661
				22639	.963	76.4	6.4	+13.1	81	467
9.363	+12.9	67.8	-0.2	22628	.965	293.2	141.1	+22.3	0	21
				22633	.778	256.5	117.9	-10.5	21	259
				22640	.283	110.2	52.4	- 5.8	2	11
				22637	.325	124.7	52.1	-10.8	32	221
				22638	.601	64.7	33.8	+14.7	106	980
				22639	.895	75.9	5.3	+12.5	65	533
10.285	+12.5	55.7	-0.3	22633	.886	257.5	117.3	-11.2	29	206
				22640	.091	162.2	54.1	- 5.3	6	25
				22637	.189	157.4	51.5	-10.3	13	87
				22638	.448	53.3	33.9	+15.2	87	727
				22639	.787	73.6	5.2	+12.6	91	599
				22641	.932	86.8	347.3	+ 2.9	8	83

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Dec. 11.284	+12.0	42.5	-0.4	22633	.968	258.5	117.6	-11.3	25	214
				22640	.226	248.2	54.7	- 5.2	10	68
				22637	.227	221.2	51.2	-10.2	13	95
				22638	.305	27.1	34.3	+15.3	80	567
				22639	.637	69.4	5.0	+12.6	138	740
				22642	.786	97.5	351.2	- 6.1	0	19
				22641	.848	85.9	344.8	+ 3.2	8	43
				22643	.894	101.0	339.7	-10.0	2	19
12.330	+11.6	28.7	-0.6	22640	.461	259.9	55.7	- 5.1	18	97
				22637	.439	248.1	53.0	- 9.9	17	112
				22638	.286	340.7	34.3	+15.0	59	420
				22639	.454	60.8	4.9	+12.2	62	509
				22644	.566	79.8	354.9	+ 5.3	1	5
				22641	.709	84.5	343.9	+ 3.5	6	28
				22642	.712	97.4	343.8	- 5.7	0	4
				22643	.769	103.7	339.4	-10.8	0	2
13.431	+11.1	14.2	-0.7	22637	.690	256.5	56.9	- 9.8	1	10
				22640	.678	263.3	56.6	- 5.0	50	363
				22638	.434	307.9	34.9	+14.7	43	285
				22639	.271	35.0	5.1	+12.1	46	401
				22641	.446	81.8	348.1	+ 3.0	0	2
				22645	.990	71.5	293.5	+18.2	29	351
14.453	+10.6	0.8	-0.8	22640	.830	264.4	56.6	- 5.1	50	430
				22638	.609	295.8	35.1	+14.6	36	269
				22639	.246	341.6	5.3	+12.6	35	269
				22644	.156	49.1	354.0	+ 5.0	1	5
				22646	.906	98.4	296.2	- 8.0	3	25
				22645	.937	70.1	292.9	+18.3	55	354
				22647	.987	76.3	280.9	+13.3	107	626
15.285	+10.3	349.8	-0.9	22640	.923	264.8	56.9	- 5.1	45	404
				22638	.749	291.0	36.0	+14.9	39	164
				22639	.371	311.6	6.3	+13.3	17	151
				22644	.104	26.0	347.2	+ 4.4	1	9
				22646	.828	97.0	294.2	- 6.3	0	32
				22645	.862	67.5	292.7	+18.7	50	283
				22647	.941	75.2	280.6	+13.5	63	727
16.491	+ 9.7	333.9	-1.1	22640	.984	264.3	53.6	- 5.8	24	132
				22638	.895	287.3	35.9	+14.9	24	130
				22648	.669	252.4	14.5	-12.4	6	41
				22639	.566	293.7	5.8	+12.2	15	83
				22645	.713	61.9	292.5	+18.7	49	275
				22647	.817	73.6	280.7	+12.6	80	683
17.283	+ 9.3	323.5	-1.2	22638	.960	285.8	36.1	+14.8	22	140
				22648	.788	255.2	14.5	-12.4	5	29
				22639	.715	290.8	6.8	+13.8	6	33
				22645	.596	54.8	292.6	+19.0	61	306
				22647	.701	70.3	281.1	+12.7	86	703

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1970	°	°	°			°	°	°		
Dec. 18.315	+ 8.9	309.9	-1.3	22648	.903	256.2	13.8	-13.0	0	5
				1569 01	.421	243.0	332.4	-12.2	1	8
				22649	.160	159.6	306.7	- 9.9	10	68
				22645	.452	39.4	292.3	+19.1	34	291
				22650	.508	34.1	291.8	+23.5	1	7
				22647	.520	62.7	281.7	+12.6	71	620
				22651	.973	69.1	234.8	+19.9	4	18
				22652	.997	98.9	224.5	- 9.0	25	189
19.303	+ 8.4	296.9	-1.5	22648	.983	257.8	16.0	-12.3	0	11
				22639	.924	283.0	3.4	+11.4	0	11
				22649	.226	228.7	306.7	-10.0	12	57
				22646	.115	184.8	297.4	- 8.0	0	1
				22650	.440	8.1	293.0	+24.3	28	156
				22645	.360	13.2	291.9	+19.0	42	277
				22647	.341	45.8	282.4	+12.3	70	511
				22653	.526	106.0	266.1	- 9.6	11	83
				1569 02	.683	110.1	255.5	-14.6	2	11
				22654	.732	72.1	251.7	+11.9	1	15
				22651	.902	67.0	235.1	+19.9	12	84
				22652	.941	99.3	226.8	- 9.2	12	79
20.519	+ 7.8	280.9	-1.6	22649	.459	250.1	306.7	-10.4	11	57
				22650	.486	334.5	294.1	+24.4	64	466
				22645	.395	332.6	291.9	+18.8	56	282
				22647	.249	350.4	283.3	+12.5	55	341
				22653	.286	119.9	266.4	- 9.7	2	25
				22654	.534	62.1	252.0	+13.0	0	2
				22651	.775	63.5	233.8	+19.0	0	3
				22652	.838	100.6	224.4	- 9.7	33	150
				22655	.919	68.3	216.4	+19.1	3	13
21.502	+ 7.4	267.9	-1.7	22650	.602	316.8	294.7	+24.4	69	813
				22645	.519	312.5	291.6	+18.9	54	298
				22647	.365	314.6	283.3	+13.1	43	374
				22653	.132	158.9	265.2	- 8.8	2	54
				22651	.640	58.2	233.1	+18.2	0	22
				22652	.670	103.0	226.6	- 9.9	28	205
				22655	.829	66.1	215.0	+18.5	19	115
22.500	+ 6.9	254.7	-1.9	22650	.732	306.3	294.9	+24.2	110	696
				22645	.667	301.6	291.5	+18.9	38	240
				22647	.553	298.1	284.7	+13.4	52	234
				22653	.229	237.2	265.9	- 8.9	6	30
				22656	.542	30.7	236.9	+25.9	1	12
				22651	.503	46.1	232.4	+18.6	0	10
				22652	.468	107.3	227.9	- 9.6	22	144
				22655	.701	60.7	214.7	+18.6	23	120
23.103	+ 6.6	246.8	-1.9	22650	.805	302.1	294.9	+24.0	68	506
				22645	.753	297.5	291.6	+18.9	31	202
				1569 03	.638	256.9	285.7	- 9.8	0	5
				22647	.662	292.9	285.5	+13.4	34	233
				22653	.351	248.4	266.0	- 9.2	1	10
				22656	.499	18.0	236.9	+26.3	2	11

Continued

Date	P	L_o	B_o	Group No.	Rad. Dist.	Pos. Angle	Long.	Lat.	Umb.	Whole Spots
				Measures			Position		Area	
1970	°	°	°			°	°	°		
Dec. 23.103	Continued			22651	.413	30.5	234.1	+18.9	1	11
				22652	.341	113.1	228.3	- 9.5	14	80
				22655	.618	55.5	214.4	+18.8	18	93
24.526	+ 5.9	228.1	-2.1	22650	.944	295.3	295.8	+23.0	101	526
				22645	.914	292.2	291.6	+19.2	37	180
				22647	.870	286.6	286.8	+13.3	44	286
				22656	.478	342.8	237.0	+25.0	0	20
				22652	.124	175.6	227.5	- 9.2	19	92
				22655	.414	31.8	214.8	+18.4	7	39
				1569 04	.509	149.3	211.0	-27.8	0	4
				22657	.966	73.9	154.5	+15.0	65	258
25.335	+ 5.6	217.4	-2.2	22650	.994	292.0	299.4	+21.6	36	372
				22645	.972	290.3	292.0	+19.2	48	229
				22647	.942	284.7	286.5	+13.0	52	303
				22656	.548	328.6	235.8	+25.7	6	40
				22652	.221	233.0	227.7	- 9.8	11	73
				22655	.360	7.8	214.5	+18.6	8	49
				22658	.835	75.9	162.2	+10.4	0	2
				22657	.904	72.3	154.7	+14.9	27	182
26.299	+ 5.1	204.7	-2.3	22647	.997	282.9	289.3	+12.7	25	251
				22656	.655	317.3	234.4	+26.7	10	67
				22652	.374	249.6	225.4	- 9.6	3	29
				22655	.385	336.3	214.0	+18.3	2	12
				22659	.436	57.3	182.8	+11.4	1	12
				1569 05	.500	135.4	182.4	-22.9	2	17
				22658	.702	72.7	162.0	+10.3	10	50
				22657	.798	69.1	154.3	+15.0	28	176
27.390	+ 4.6	190.3	-2.5	22652	.592	255.8	225.9	-10.3	4	21
				22659	.241	27.0	184.0	+ 9.9	0	5
				22658	.505	65.2	162.7	+10.0	16	67
				22657	.643	63.6	154.0	+14.6	41	157
				22660	.866	66.1	133.5	+19.1	2	9
28.374	+ 4.1	177.4	-2.6	22652	.751	257.9	225.5	-10.8	2	11
				22659	.291	334.4	184.8	+12.6	0	5
				22658	.330	49.1	162.8	+ 9.9	26	140
				22657	.486	53.3	153.8	+14.4	27	189
				22660	.807	61.6	128.2	+20.8	4	12
				22661	.985	68.3	99.4	+20.8	23	163
29.388	+ 3.6	164.0	-2.7	22652	.889	260.8	226.6	- 9.4	0	2
				1569 06	.842	264.9	221.3	- 5.7	0	2
				1569 07	.832	258.4	220.0	-11.1	2	6
				22659	.454	306.4	186.0	+13.1	1	4
				22662	.362	235.6	181.9	-14.3	18	101
				22658	.216	358.9	164.3	+ 9.7	21	93
				22657	.339	30.3	153.9	+14.3	28	166
				22660	.671	54.6	128.4	+20.6	3	11
				22663	.906	101.2	99.3	-11.3	0	2
				22661	.927	65.9	99.1	+21.1	14	116

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Rad. Dist.	Pos. Angle	Long.	Lat.	Umb.	Whole Spots
				Measures			Position		Area	
1970/1	°	°	°			°	°	°		
Dec. 30.399	+ 3.1	150.7	-2.8	22659	.569	293.1	182.7	+10.5	6	41
				22662	.547	247.5	182.0	-14.5	43	227
				22658	.306	315.8	163.1	+ 9.8	30	178
				22657	.295	349.9	153.7	+14.0	17	154
				22660	.533	41.7	128.5	+20.7	1	9
				22661	.835	61.7	98.7	+21.5	17	134
				22663	.812	103.3	96.9	-12.4	0	2
				22664	.896	84.2	87.6	+ 3.9	12	49
31.503	+ 2.6	136.2	-3.0	22659	.760	286.7	183.7	+10.6	5	35
				22662	.745	254.0	183.5	-13.8	80	417
				22658	.517	294.8	164.5	+ 9.9	37	185
				22657	.411	313.1	154.0	+13.4	30	205
				22660	.410	19.5	127.8	+19.7	2	19
				22661	.696	54.6	98.8	+21.3	22	133
				22664	.760	82.7	87.3	+ 3.6	45	283
Jan. 1.469	+ 2.1	123.4	-3.1	22662	.878	255.9	184.5	-13.9	52	366
				22658	.690	287.5	165.2	+ 9.6	34	201
				22657	.574	298.4	154.5	+13.2	24	191
				22661	.566	43.7	98.7	+21.3	13	108
				22664	.597	80.0	87.5	+ 3.5	50	349
2.295	+ 1.7	112.6	-3.2	22662	.949	256.1	184.1	-14.1	43	426
				22658	.813	284.6	165.4	+ 9.9	30	216
				22657	.713	291.9	155.2	+13.1	21	157
				22665	.402	12.5	107.3	+19.9	1	7
				22661	.473	28.1	98.8	+21.5	11	128
				22664	.437	75.7	87.6	+ 3.3	60	329
3.288	+ 1.2	99.5	-3.3	22662	.978	255.2	177.8	-15.2	15	109
				22658	.922	282.0	165.5	+ 9.7	40	206
				22657	.846	287.7	155.1	+13.1	10	94
				22665	.416	333.8	110.6	+18.6	5	20
				22661	.420	1.7	98.7	+21.4	9	110
				22664	.224	59.9	88.4	+ 3.2	30	244
4.323	+ 0.7	85.9	-3.4	22658	.988	280.5	165.9	+ 9.8	52	214
				22657	.944	285.4	154.8	+13.3	10	62
				22665	.548	315.2	110.0	+19.7	2	14
				22661	.470	335.7	97.9	+22.0	18	86
				22664	.124	337.2	88.6	+ 3.1	26	209
				22666	.984	78.1	7.4	+11.0	0	23
				22667	.985	95.4	5.6	- 5.9	186	1392
5.370	+ 0.2	72.1	-3.5	22661	.584	317.0	97.4	+22.0	12	82
				22664	.208	292.2	83.1	+ 1.0	26	212
				22666	.918	76.4	6.9	+11.0	5	29
				22667	.922	94.8	4.9	- 5.7	212	1664
6.316	- 0.3	59.6	-3.6	22661	.703	306.5	96.9	+21.7	10	83
				22664	.490	284.1	87.9	+ 3.7	23	158
				22666	.817	73.6	6.8	+11.1	11	59
				22667	.806	94.8	5.9	- 6.0	195	1477

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Jan. 7.328	- 0.7	46.3	-3.7	22661	.820	300.0	96.0	+21.8	9	85
				22664	.676	279.0	88.1	+ 3.3	13	118
				22666	.675	69.1	6.5	+11.0	7	60
				22667	.650	95.2	5.8	- 6.2	169	1347
8.440	- 1.3	31.6	-3.9	22661	.929	295.4	96.2	+21.8	17	81
				22664	.843	276.5	88.4	+ 3.3	20	144
				1569 01	.325	55.8	16.0	+ 6.8	1	13
				22667	.421	96.4	6.9	- 6.2	165	1327
				22666	.494	56.8	6.8	+12.1	7	45
9.410	- 1.7	18.9	-4.0	22661	.981	293.3	94.7	+21.8	21	125
				22664	.935	274.9	87.6	+ 3.2	15	120
				22667	.217	100.2	6.5	- 6.0	153	1030
				22666	.348	39.7	5.8	+11.6	6	22
				22668	.748	101.4	330.7	-11.1	8	39
				22669	.992	69.5	298.4	+19.7	39	174
10.420	- 2.2	5.6	-4.1	22664	.993	273.4	88.3	+ 2.9	8	48
				22670	.323	210.1	15.5	-20.1	0	12
				22667	.067	238.8	8.9	- 6.0	171	844
				22666	.274	354.5	7.1	+11.7	2	13
				22668	.556	103.8	332.3	-11.0	12	45
				22669	.937	67.2	299.2	+19.7	28	139
11.474	- 2.7	351.7	-4.2	22670	.468	234.1	15.3	-19.7	2	10
				22667	.295	262.1	8.7	- 6.3	126	788
				1570 01	.110	306.4	356.8	- 0.4	1	5
				22668	.342	110.8	332.8	-10.9	15	59
				22669	.845	63.7	298.4	+19.5	36	171
				22671	.911	67.5	289.3	+18.4	3	13
				22672	.949	100.2	279.8	-11.0	10	48
12.287	- 3.1	341.0	-4.3	22673	.545	281.9	13.1	+ 2.8	2	20
				22667	.468	264.6	8.8	- 6.3	143	822
				22668	.190	128.5	332.3	-11.0	9	38
				1570 02	.424	43.7	323.5	+13.7	1	3
				22674	.632	109.0	302.9	-15.2	9	55
				22669	.742	58.8	298.9	+19.4	28	141
				22671	.826	62.5	290.1	+19.7	4	13
				22672	.865	100.0	281.1	-10.8	6	35
13.478	- 3.7	325.3	-4.4	22675	.816	244.0	18.2	-23.6	2	9
				22673	.761	277.5	14.2	+ 2.8	3	13
				22667	.697	265.1	9.5	- 6.6	150	761
				22668	.172	225.2	332.4	-11.3	1	11
				22674	.406	118.7	303.8	-15.3	12	60
				22669	.579	46.9	298.8	+19.3	24	149
				22671	.686	52.7	289.6	+21.0	0	9
				22672	.685	101.4	282.3	-11.0	4	34
				22676	.917	74.1	260.9	+12.7	3	13
14.447	- 4.2	312.5	-4.5	22675	.929	246.6	20.5	-23.3	6	49
				22673	.903	275.4	16.5	+ 3.0	0	5
				22667	.838	265.2	9.5	- 6.5	154	797

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Jan. 14.447	Continued			22668	.392	253.8	334.9	-10.4	1	8
				22677	.278	328.6	320.9	+ 9.2	8	45
				22674	.242	142.0	303.7	-15.3	6	56
				22669	.461	29.3	298.7	+19.3	29	163
				22672	.490	104.7	283.8	-11.0	2	14
				22676	.815	70.7	260.7	+12.8	2	6
				22678	.995	72.1	230.4	+17.2	61	446
15.080	- 4.5	304.2	-4.5	22675	.971	247.2	20.8	-23.2	4	33
				22667	.908	265.1	9.5	- 6.4	108	621
				1570 03	.757	255.2	353.0	-14.1	0	3
				22677	.378	310.8	321.0	+ 9.9	8	44
				22674	.190	168.5	302.0	-15.2	2	13
				22669	.419	12.8	298.6	+19.5	21	142
				1570 04	.394	34.6	290.9	+14.4	0	5
				22672	.366	109.5	283.7	-11.2	0	2
				22676	.725	67.8	260.9	+12.5	3	11
				22678	.982	71.6	227.4	+17.0	88	567
16.344	- 5.0	287.6	-4.7	22667	.991	264.2	10.2	- 6.4	119	681
				22677	.604	292.8	321.8	+ 9.7	4	51
				22669	.449	335.6	298.8	+19.5	16	146
				22678	.916	67.9	224.5	+18.0	148	1474
				22679	.974	71.0	213.0	+17.2	0	9
17.296	- 5.5	275.0	-4.8	22677	.785	286.9	324.5	+10.1	2	12
				22669	.555	316.6	298.8	+19.4	26	98
				22676	.424	42.5	258.0	+13.6	0	2
				22678	.829	64.1	223.5	+18.3	156	1491
				22679	.940	69.0	208.1	+17.8	0	3
				22680	.993	80.1	193.0	+ 9.2	0	25
				22681	.992	101.7	191.8	-12.2	0	32
18.288	- 6.0	262.0	-4.9	22677	.909	283.0	325.6	+ 9.7	0	5
				22669	.687	305.4	298.3	+19.5	19	121
				22682	.337	312.9	276.4	+ 8.5	2	12
				22678	.697	57.5	223.9	+18.1	169	1399
				22679	.824	64.3	210.9	+17.9	9	75
				22681	.946	102.3	190.6	-13.2	22	178
				22680	.958	78.0	190.2	+10.0	29	617
19.434	- 6.5	246.9	-5.0	22669	.834	297.5	298.4	+19.5	23	162
				22682	.537	294.4	276.3	+ 8.5	9	50
				22678	.539	44.7	223.5	+17.9	142	1413
				22679	.700	58.1	208.4	+17.8	2	14
				22681	.831	102.9	190.7	-13.4	72	614
				22680	.851	75.2	190.5	+ 9.8	41	362
				22683	.983	74.6	169.3	+14.1	17	93
20.327	- 6.9	235.1	-5.0	22669	.921	294.1	298.3	+19.8	19	141
				22682	.666	288.3	274.6	+ 8.1	1	10
				22676	.531	304.1	261.8	+12.7	1	21
				22678	.438	25.9	223.5	+18.1	132	1186
				22679	.542	44.2	211.8	+18.1	7	40
				22681	.698	103.7	191.2	-13.1	90	805

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Jan. 20.327	Continued			22680	.729	71.0	190.8	+10.1	49	346
				22683	.929	72.7	169.2	+14.0	14	73
				22684	.976	75.9	159.4	+12.6	5	19
21.400	- 7.4	221.0	-5.2	22669	.984	291.2	297.7	+19.7	17	119
				22678	.393	355.0	223.0	+17.8	186	1196
				22679	.439	24.9	209.8	+18.3	16	63
				1570 05	.396	121.2	200.4	-16.6	1	8
				22681	.507	107.2	191.3	-13.1	106	743
				22680	.552	63.1	191.1	+ 9.9	54	355
				22683	.818	69.4	169.2	+13.6	13	56
				22684	.903	73.3	158.8	+12.7	7	41
22.287	- 7.8	209.3	-5.2	22678	.446	331.2	222.3	+17.8	162	1236
				22679	.398	1.2	208.8	+18.1	30	242
				22680	.386	49.5	192.0	+ 9.5	38	267
				22681	.326	115.4	191.8	-13.0	79	695
				22683	.695	65.0	169.2	+13.1	9	68
				22684	.799	69.6	159.4	+12.8	5	24
23.326	- 8.2	195.6	-5.3	22676	.919	285.3	260.2	+11.8	11	66
				22678	.570	312.3	221.8	+17.7	176	1227
				22679	.444	332.0	208.2	+17.8	25	180
				22680	.259	10.2	193.0	+ 9.4	34	195
				22681	.144	154.3	192.0	-12.7	97	774
				22683	.530	54.6	169.4	+13.0	10	47
				22684	.650	63.8	159.1	+12.3	4	29
24.397	- 8.7	181.5	-5.4	22676	.978	284.1	257.6	+12.5	5	51
				1570 06	.708	251.2	225.8	-17.0	0	8
				22678	.717	301.2	221.4	+17.6	158	1052
				22679	.578	313.0	207.9	+18.3	25	153
				22685	.283	303.5	195.1	+ 3.7	0	5
				22680	.325	319.2	193.9	+ 8.9	22	125
				22681	.215	233.3	191.7	-12.7	123	756
				22683	.376	33.1	169.4	+13.0	7	32
				22686	.983	102.1	101.4	-12.9	120	934
25.549	- 9.2	166.4	-5.5	22687	.940	295.7	232.0	+21.8	3	19
				22678	.857	294.1	221.2	+17.4	111	1011
				22679	.738	301.4	207.8	+18.5	11	108
				22685	.507	286.4	195.4	+ 3.4	1	6
				22680	.529	295.9	195.0	+ 8.5	11	81
				22681	.449	252.3	192.3	-12.8	97	640
				22683	.318	351.8	169.0	+12.7	6	34
				22688	.805	93.6	112.6	- 6.2	2	7
				22686	.902	101.2	101.6	-12.5	93	820
26.372	- 9.6	155.5	-5.6	22687	.978	293.3	230.1	+21.3	5	59
				22678	.936	290.6	221.7	+17.0	107	969
				22679	.839	296.4	207.8	+18.5	11	103
				22680	.668	290.0	194.8	+ 8.8	6	31
				22681	.615	256.2	193.2	-12.8	79	662
				22683	.392	323.3	169.4	+12.8	3	30
				22689	.645	78.1	116.5	+ 3.3	1	7

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Jan. 26.372	Continued			22686	.809	101.4	101.4	-12.5	112	1028
27.561	-10.1	139.9	-5.7	22678	.989	288.9	218.8	+17.7	63	447
				22679	.943	292.7	206.7	+19.1	6	38
				22680	.835	284.4	194.6	+ 8.7	4	37
				22681	.814	258.3	194.5	-12.8	46	404
				22690	.787	289.7	188.9	+11.7	5	19
				22683	.572	302.8	169.3	+13.0	1	12
				22691	.425	10.9	135.0	+18.9	2	24
				22689	.409	68.6	117.5	+ 3.3	5	44
				22688	.445	95.4	113.5	- 7.5	1	12
				22686	.619	102.6	101.8	-12.3	113	736
				22692	.966	81.7	65.9	+ 6.4	94	633
28.471	-10.5	127.9	-5.7	22679	.990	290.4	206.8	+19.1	15	116
				22681	.920	258.4	195.2	-12.9	50	401
				22680	.928	281.6	194.5	+ 8.5	0	20
				22690	.886	286.3	187.9	+11.5	2	32
				22691	.427	345.6	134.3	+18.6	8	50
				22689	.214	43.3	119.5	+ 3.2	13	61
				22686	.443	105.8	102.2	-12.1	96	753
				22693	.658	69.4	89.5	+ 8.9	3	17
				22692	.884	79.6	67.1	+ 6.4	102	847
29.448	-10.9	115.0	-5.8	22681	.984	258.0	195.5	-12.8	42	353
				22691	.516	324.1	133.6	+19.1	5	25
				22689	.172	339.6	118.4	+ 3.4	7	46
				22686	.243	117.5	102.4	-12.1	67	567
				22693	.476	58.7	90.8	+ 9.0	9	61
				22692	.766	76.6	66.7	+ 6.4	128	1132
				22694	.970	65.7	43.0	+21.8	4	26
30.385	-11.3	102.7	-5.9	22691	.626	310.9	132.6	+19.0	3	15
				22689	.347	297.5	120.5	+ 3.6	2	13
				22686	.111	170.2	101.6	-12.1	66	571
				22693	.328	41.0	90.2	+ 8.5	12	83
				22692	.632	72.1	65.6	+ 6.5	114	1210
				1	.543	71.5	71.7	+ 4.8	36	251
				22695	.961	110.7	27.9	-21.5	0	7
31.544	-11.8	87.4	-6.0	22689	.586	283.8	122.0	+ 3.1	3	13
				22686	.277	248.4	102.6	-11.6	62	451
				22693	.265	343.8	91.7	+ 8.7	34	180
				22692	.401	59.4	67.2	+ 6.1	110	1097
				1	.304	54.0	73.2	+ 4.5	33	238
				22695	.879	111.1	25.9	-21.3	11	78
				22696	.957	94.6	14.1	- 6.1	43	277
Feb. 1.298	-12.1	77.5	-6.0	22689	.674	282.3	118.7	+ 3.7	1	7
				22686	.431	256.5	102.7	-11.2	55	456
				22693	.343	317.3	91.1	+ 8.7	24	230
				22692	.279	40.9	66.9	+ 6.2	128	1117
				1	.195	22.7	73.2	+ 4.3	18	197
				22695	.779	112.5	27.2	-21.2	8	65

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Feb. 1.298	Continued			22696	.895	94.0	13.8	- 6.2	26	278
2.466	-12.6	62.1	-6.1	22686	.650	259.8	102.7	-11.2	61	347
				22693	.548	295.8	91.9	+ 8.4	12	132
				22692	.232	335.3	67.7	+ 6.0	143	1215
				1	.261	312.6	73.2	+ 4.1	38	242
				22695	.594	118.4	28.1	-21.4	1	12
				22696	.752	93.0	13.3	- 6.3	51	337
3.313	-12.9	51.0	-6.2	22686	.788	260.5	103.2	-11.3	43	327
				22693	.702	288.0	93.2	+ 8.0	13	91
				22692	.356	305.5	67.8	+ 6.0	121	1268
				1	.417	293.6	73.4	+ 3.9	29	189
				22694	.503	15.5	42.6	+22.8	0	6
				22695	.452	126.9	28.2	-21.4	0	4
				22696	.605	92.2	13.7	- 6.3	57	309
4.292	-13.3	38.1	-6.2	22686	.905	260.8	103.4	-11.0	44	296
				22693	.882	281.3	98.4	+ 6.9	2	24
				22692	.531	291.9	67.6	+ 6.0	160	1399
				1	.599	284.9	73.4	+ 3.7	29	217
				22697	.556	333.7	53.7	+23.8	0	8
				22695	.257	144.6	29.1	-18.2	1	8
				22696	.408	91.3	14.0	- 6.2	51	292
5.307	-13.7	24.7	-6.3	22686	.980	260.0	104.1	-11.0	31	387
				22692	.706	285.4	67.8	+ 6.2	148	1405
				22697	.647	320.1	51.6	+24.1	4	23
				22695	.222	179.0	24.5	-19.1	0	4
				22696	.191	90.5	13.7	- 6.3	60	312
6.333	-14.1	11.2	-6.4	22692	.851	281.1	68.1	+ 5.9	158	1375
				22697	.763	309.6	51.2	+24.2	31	143
				22696	.045	264.0	13.8	- 6.6	49	300
				22698	.495	60.1	345.6	+ 8.5	1	5
				22699	.705	141.1	336.9	-38.5	1	16
				22700	.974	69.3	297.5	+18.5	9	59
7.301	-14.5	358.5	-6.4	22692	.952	278.4	69.4	+ 5.9	201	1265
				22701	.849	256.7	56.9	-14.7	0	8
				22697	.881	302.8	53.0	+24.8	58	386
				1571 01	.488	272.5	27.6	- 4.4	0	5
				22696	.270	269.6	14.1	- 6.3	47	279
				22698	.309	40.6	346.8	+ 7.2	1	6
				22699	.610	150.8	336.3	-38.0	1	12
				22702	.549	49.9	332.8	+14.9	3	11
				22703	.743	71.9	313.0	+ 8.8	2	20
				22700	.909	66.1	297.4	+18.6	10	53
8.604	-15.0	341.3	-6.5	22692	.990	279.2	61.7	+ 8.0	7	102
				22701	.953	256.7	54.5	-14.7	0	7
				22697	.973	297.7	52.9	+25.0	152	539
				1571 02	.556	256.9	14.9	-12.7	0	8
				22696	.543	268.6	14.3	- 6.2	54	283

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Feb. 8.604	Continued			22702	.388	23.7	332.1	+14.3	11	49
				22703	.498	62.3	315.0	+ 7.5	0	4
				22700	.768	58.9	297.5	+18.7	7	44
9.306	-15.2	332.1	-6.5	22697	.981	298.1	46.0	+25.9	21	144
				22696	.672	267.7	14.4	- 6.4	45	266
				22704	.647	242.5	10.3	-22.5	1	7
				22702	.359	359.5	332.3	+14.4	11	62
				22700	.676	52.8	297.5	+18.7	7	43
10.422	-15.6	317.4	-6.6	22696	.837	266.8	14.4	- 6.3	57	284
				22704	.805	248.8	10.6	-20.9	7	29
				1571 03	.564	330.9	334.6	+23.1	0	4
				22702	.433	325.2	332.1	+14.4	18	59
				1571 04	.382	30.9	305.8	+12.6	0	5
				22700	.530	37.3	297.6	+18.6	6	27
11.476	-16.0	303.5	-6.7	22696	.945	265.8	14.6	- 6.1	42	262
				22704	.912	249.3	9.7	-21.6	0	13
				1571 05	.753	247.5	351.6	-21.2	2	5
				22705	.740	256.2	351.2	-14.7	2	6
				22702	.587	306.0	332.7	+14.3	9	47
				1571 06	.302	222.5	315.9	-19.3	1	3
				22706	.061	212.7	305.4	- 9.6	2	10
				22700	.440	12.9	297.6	+18.7	4	15
				22707	.994	73.2	222.4	+15.8	19	159
12.326	-16.3	292.3	-6.7	22696	.990	264.5	14.4	- 6.4	43	300
				22704	.966	244.6	8.6	-26.2	0	4
				22705	.861	256.8	352.1	-14.7	8	35
				22702	.725	298.1	333.6	+14.9	5	34
				22706	.205	252.8	303.7	-10.0	0	2
				22700	.435	348.5	297.5	+18.5	2	11
				22707	.959	71.3	221.8	+15.7	22	117
				22708	.984	68.7	216.1	+19.4	34	182
13.408	-16.7	278.1	-6.7	22705	.959	256.4	352.6	-15.0	7	49
				22702	.845	291.7	332.0	+14.2	20	127
				1571 07	.490	277.0	307.0	- 2.5	1	24
				22700	.525	323.3	297.3	+18.4	3	10
				22709	.280	8.9	275.6	+ 9.2	1	10
				22710	.405	28.3	266.7	+14.2	11	70
				22707	.866	67.7	222.0	+15.5	13	108
				22708	.914	65.5	216.5	+19.1	21	210
				22711	.971	102.5	201.0	-13.7	22	106
14.406	-17.0	264.9	-6.8	22702	.942	288.3	332.3	+14.6	51	318
				22700	.657	309.1	297.3	+18.7	0	3
				22709	.310	315.2	277.5	+ 6.0	0	2
				22710	.364	353.7	267.2	+14.3	8	53
				22707	.750	62.0	221.6	+15.6	11	87
				22708	.817	60.4	216.2	+19.3	32	193
				22711	.894	101.5	200.9	-13.3	19	113
				22712	.982	103.0	184.7	-14.0	0	23

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Feb. 15.453	-17.4	251.1	-6.8	1571 08	.765	290.7	297.7	+11.0	2	10
				22710	.453	319.8	268.5	+13.6	33	225
				22707	.614	52.5	220.8	+16.0	10	101
				22708	.697	52.7	215.2	+19.4	27	170
				22711	.768	101.8	200.7	-13.4	15	105
				22712	.906	101.8	185.5	-13.6	15	79
16.391	-17.7	238.8	-6.9	22710	.608	303.2	270.2	+13.5	36	284
				22707	.474	38.0	221.2	+15.3	17	135
				22708	.571	40.5	215.7	+19.3	36	179
				22711	.608	102.9	201.4	-13.3	19	118
				22712	.795	102.5	185.8	-14.1	11	70
17.326	-18.0	226.5	-6.9	22710	.757	294.8	271.3	+13.6	32	306
				22707	.385	12.2	221.6	+15.1	22	113
				22708	.477	21.4	215.9	+19.4	26	167
				22711	.426	106.7	201.8	-13.3	12	101
				22712	.634	102.6	187.1	-13.3	15	84
				22713	.990	106.3	143.3	-17.1	68	484
18.309	-18.3	213.5	-7.0	22710	.881	290.0	271.8	+13.9	44	367
				22707	.403	342.3	220.8	+15.6	9	52
				22708	.447	355.7	215.5	+19.4	28	165
				22711	.230	120.4	201.8	-13.5	15	111
				22712	.446	106.7	187.6	-13.6	15	102
				22713	.947	105.5	141.3	-16.9	105	740
				22714	.994	96.4	129.4	- 7.2	46	274
19.299	-18.6	200.5	-7.0	22710	.966	286.5	272.8	+13.8	44	309
				22715	.676	312.1	232.9	+21.0	1	7
				22707	.507	319.1	220.6	+15.9	10	48
				22708	.503	331.0	215.4	+19.2	32	165
				22711	.115	192.8	202.0	-13.4	17	98
				22716	.303	359.7	200.6	+10.5	0	11
				22712	.254	117.8	187.2	-13.6	13	84
				22713	.861	105.8	140.6	-17.2	75	692
				22714	.957	95.1	126.9	- 6.9	87	488
20.403	-19.0	185.9	-7.0	22715	.810	302.2	233.0	+20.8	11	68
				22707	.661	304.0	220.5	+15.9	11	46
				22708	.632	312.8	215.3	+19.3	27	154
				22711	.296	246.5	202.1	-13.5	14	109
				22716	.395	319.9	200.9	+10.7	0	11
				22712	.119	189.3	187.1	-13.7	14	68
				1571 09	.430	17.2	178.3	+17.2	0	2
				22713	.719	106.9	140.2	-17.0	73	519
				22714	.853	94.1	127.2	- 7.2	68	568
				22717	.979	98.2	106.9	- 9.4	26	179
21.387	-19.3	173.0	-7.1	22715	.906	297.2	232.5	+20.9	15	120
				22707	.794	296.4	220.5	+15.9	5	32
				22708	.758	303.1	215.1	+19.2	17	162
				22711	.491	255.3	202.1	-13.3	15	90
				22712	.294	247.4	189.1	-13.3	7	46
				22713	.559	110.5	139.9	-17.2	62	549

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Fe . 21.387	Continued			22714	.710	93.4	127.5	- 7.4	77	419
				22717	.910	97.2	107.0	- 9.5	21	162
22.337	-19.6	160.5	-7.1	22715	.968	293.8	231.6	+20.8	30	218
				22707	.894	292.2	219.8	+16.2	2	12
				22708	.864	297.0	214.8	+19.0	23	168
				22711	.662	258.2	202.0	-13.1	13	87
				22712	.487	256.7	189.4	-12.6	5	34
				1571 10	.506	299.0	186.9	+ 7.8	0	15
				22713	.388	118.5	139.6	-17.2	94	585
				22714	.543	92.8	127.4	- 7.5	66	377
				22717	.800	96.4	107.0	- 9.3	17	135
23.401	-19.9	146.4	-7.1	22708	.956	292.7	215.3	+19.2	37	231
				22711	.820	258.9	201.9	-13.2	11	89
				22712	.635	257.3	185.9	-13.5	7	42
				22713	.206	150.4	140.3	-17.3	93	725
				22714	.325	92.8	127.4	- 7.6	68	389
				22717	.631	96.5	107.1	- 9.6	14	148
				22718	.972	81.1	71.3	+ 6.8	60	414
24.293	-20.1	134.7	-7.1	22708	.993	290.5	214.5	+19.2	17	170
				1571 11	.932	268.0	203.6	- 4.5	0	12
				22711	.917	258.8	202.0	-13.0	16	92
				22712	.778	258.5	186.1	-13.4	5	30
				22719	.289	316.8	146.1	+ 5.1	6	36
				22713	.198	206.9	140.0	-17.2	78	559
				22714	.123	95.6	127.7	- 7.8	52	311
				22717	.464	97.1	107.0	- 9.6	19	111
				22718	.902	78.4	71.9	+ 7.2	51	431
25.449	-20.5	119.5	-7.2	22711	.990	257.8	202.3	-13.1	29	147
				22712	.894	257.8	183.5	-14.1	2	19
				1571 12	.673	287.0	159.6	+ 5.8	1	4
				22719	.525	291.3	148.8	+ 4.7	3	12
				22713	.384	242.0	140.2	-17.1	62	349
				22714	.141	264.6	127.6	- 7.8	60	336
				1571 13	.193	77.1	108.7	- 4.6	2	11
				22717	.216	103.1	107.2	- 9.8	18	133
				22718	.756	74.5	72.5	+ 6.8	57	436
				22720	.970	61.9	49.1	+25.0	40	184
26.430	-20.7	106.6	-7.2	22712	.969	257.5	183.2	-13.8	0	9
				22719	.702	284.5	149.4	+ 4.9	0	6
				22713	.582	250.1	141.4	-17.3	43	279
				22714	.354	266.4	127.4	- 8.0	57	348
				22717	.050	203.0	107.7	- 9.8	18	108
				22718	.595	68.3	72.9	+ 6.7	56	413
				22720	.908	58.0	48.5	+25.0	26	191
				22721	.963	79.4	33.8	+ 8.1	43	192
27.548	-21.1	91.8	-7.2	22713	.772	253.5	142.4	-17.2	31	220
				22714	.575	266.1	127.1	- 8.1	56	361
				22717	.281	259.7	108.0	- 9.8	18	136
				22718	.398	53.7	73.1	+ 6.7	45	319

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Feb. 27.548	Continued			22720	.803	51.5	48.2	+24.8	31	181
				22721	.863	76.0	34.3	+ 8.2	30	213
28.307	-21.2	81.8	-7.2	22713	.865	254.5	142.2	-17.0	24	159
				22714	.709	265.9	127.2	- 8.0	58	343
				22722	.557	283.6	114.5	+ 1.5	4	18
				22717	.440	262.6	108.0	- 9.7	15	125
				1571 14	.443	254.5	107.7	-13.3	2	13
				22718	.284	31.9	73.2	+ 6.8	41	316
				22720	.722	44.7	47.9	+24.9	24	157
				22721	.766	73.1	34.3	+ 8.0	35	261
Mar. 1.419	-21.5	67.2	-7.2	22713	.945	254.6	139.0	-16.9	49	350
				22714	.867	265.2	127.6	- 7.7	59	303
				22722	.779	277.5	117.5	+ 1.2	3	10
				22717	.651	263.6	108.0	- 9.6	10	68
				22718	.263	334.9	73.6	+ 6.5	26	213
				22720	.609	30.5	47.4	+24.7	22	145
				22721	.586	65.4	34.8	+ 8.0	35	179
				22723	.989	101.5	344.4	-12.4	7	74
2.567	-21.8	52.1	-7.2	22713	.988	253.6	134.9	-17.2	14	98
				22714	.965	263.9	127.4	- 7.7	41	272
				1571 15	.889	262.4	115.3	-10.0	0	12
				22722	.891	274.8	114.4	+ 0.9	2	7
				22717	.823	263.3	107.8	- 9.6	11	50
				1571 16	.727	256.2	98.9	-15.0	0	3
				22718	.435	301.9	73.8	+ 6.5	22	217
				22724	.167	216.0	57.9	-14.9	11	73
				22720	.534	8.3	47.2	+24.6	28	177
				22721	.394	47.9	34.9	+ 8.3	29	181
				22725	.585	84.0	16.6	- 2.4	3	12
				22723	.923	100.1	343.9	-12.1	6	39
3.303	-22.0	42.4	-7.2	22714	.994	262.8	126.6	- 7.9	64	275
				22717	.907	262.6	108.0	- 9.7	5	15
				22718	.574	292.1	74.6	+ 6.3	24	256
				22724	.297	242.2	58.1	-14.9	17	59
				22720	.536	352.2	46.9	+24.8	18	147
				22721	.295	25.4	35.0	+ 8.2	28	172
				22725	.427	81.1	17.5	- 2.8	4	28
				22726	.771	65.0	356.5	+14.0	2	5
				22723	.850	100.0	343.6	-12.3	8	36
4.342	-22.2	28.7	-7.2	22717	.979	261.5	107.8	- 9.8	0	5
				22718	.752	285.3	75.4	+ 6.5	22	131
				22724	.527	252.6	60.0	-15.2	13	76
				22727	.605	322.3	52.1	+21.8	1	9
				22720	.594	332.4	46.3	+24.8	18	138
				22721	.289	337.0	35.2	+ 8.2	17	142
				22725	.187	66.2	18.9	- 2.8	2	16
				22726	.632	56.5	355.9	+14.3	1	12
				22723	.712	100.1	343.0	-12.2	5	15

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Mar. 5.340	-22.5	15.5	-7.2	22718	.875	281.6	74.9	+ 6.5	20	169
				22724	.715	256.2	61.3	-14.9	11	72
				22727	.713	309.7	51.5	+21.2	0	2
				22720	.690	318.2	45.8	+24.6	32	153
				22721	.420	307.6	35.1	+ 7.9	24	155
				22725	.099	322.5	19.0	- 2.8	7	42
				22723	.539	102.0	343.0	-12.5	3	10
6.308	-22.7	2.8	-7.2	22718	.960	279.2	75.1	+ 6.7	15	112
				22724	.869	257.5	63.7	-14.4	9	36
				22720	.798	309.0	45.8	+24.9	19	165
				22721	.591	294.9	35.4	+ 8.3	13	150
				22725	.325	282.4	21.2	- 2.9	2	18
				1571 17	.234	110.8	350.0	-11.8	0	4
				22723	.345	108.5	343.2	-13.1	1	10
7.306	-22.9	349.6	-7.2	22724	.956	257.3	63.4	-14.2	7	25
				22720	.896	302.9	45.6	+25.2	26	138
				22721	.747	288.1	35.3	+ 8.4	21	142
				22723	.187	116.4	339.8	-11.9	1	11
				22728	.992	105.3	265.5	-16.1	48	416
8.323	-23.1	336.2	-7.2	22720	.963	298.9	44.7	+25.3	19	136
				22721	.874	283.7	35.1	+ 8.2	15	118
				1572 01	.579	282.8	10.5	+ 1.4	0	4
				22723	.092	216.4	339.4	-11.5	1	11
				22729	.698	94.2	291.8	- 8.1	6	28
				22728	.948	104.4	263.7	-15.9	70	504
9.483	-23.4	320.9	-7.2	22721	.971	281.0	35.3	+ 8.7	13	72
				22729	.452	94.0	294.0	- 8.3	11	49
				22728	.840	104.4	263.3	-16.0	54	441
10.355	-23.6	309.5	-7.2	22729	.243	95.0	295.3	- 8.2	9	78
				22728	.717	105.7	263.6	-16.2	50	408
				22730	.953	67.6	241.2	+18.7	7	50
11.424	-23.7	295.4	-7.2	22729	.019	217.8	296.1	- 8.1	12	88
				22728	.541	109.1	263.3	-16.3	46	352
				22730	.861	62.6	241.5	+19.1	19	62
				22731	.986	93.5	214.6	- 4.7	32	234
12.419	-23.9	282.2	-7.2	1572 02	.437	274.7	308.1	- 4.5	7	34
				22729	.273	265.1	298.1	- 8.3	7	47
				22728	.353	118.5	263.4	-16.5	52	289
				22730	.745	56.2	241.5	+19.0	13	105
				22731	.922	91.7	214.9	- 4.4	28	169
				22732	.964	67.6	211.6	+19.2	0	8
				22733	.961	80.0	209.7	+ 7.5	47	252
13.506	-24.1	267.9	-7.2	22729	.497	263.7	297.8	- 9.4	9	61
				22734	.259	255.6	282.6	-10.6	1	3
				22728	.186	156.5	263.5	-17.0	54	317
				22730	.599	44.8	241.6	+18.7	21	112
				22731	.797	90.2	215.1	- 4.5	27	178

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Mar. 13.506	Continued			22732	.885	63.6	210.9	+19.3	5	21
				22733	.859	77.1	210.6	+ 7.2	30	160
14.346	-24.3	256.9	-7.2	22729	.680	265.0	300.0	- 8.7	6	36
				22734	.437	260.0	282.7	-10.8	2	11
				22728	.212	212.5	263.7	-17.4	35	276
				22730	.500	29.3	241.9	+18.8	15	102
				22731	.669	88.6	214.9	- 4.4	26	182
				22733	.734	73.2	211.9	+ 7.1	16	113
				22732	.799	59.1	210.5	+19.3	2	18
15.451	-24.5	242.3	-7.2	22729	.865	264.2	302.6	- 8.6	4	17
				22734	.632	260.9	281.6	-11.3	4	19
				1572 03	.598	309.5	270.9	+16.0	3	13
				22728	.403	241.3	264.0	-17.8	38	232
				22730	.441	0.8	241.9	+18.9	11	90
				22731	.455	86.2	215.3	- 4.7	24	161
				22733	.567	66.3	210.9	+ 7.0	13	75
				22732	.661	49.5	210.2	+19.4	1	6
16.347	-24.6	230.5	-7.2	22729	.953	263.7	303.3	- 8.2	4	14
				22734	.745	257.4	278.8	-14.1	0	5
				22728	.565	249.0	263.9	-17.6	33	219
				1572 04	.581	332.5	247.5	+24.0	1	7
				22735	.276	253.8	246.1	-11.3	6	28
				22730	.473	337.4	241.5	+18.8	16	95
				22736	.017	50.1	229.7	- 6.5	1	11
				22731	.266	81.7	215.2	- 4.7	21	132
				22733	.411	55.0	210.8	+ 6.9	12	67
				22737	.588	116.7	196.3	-21.2	5	19
				1572 05	.780	109.9	179.4	-19.9	0	5
17.305	-24.7	217.9	-7.1	22728	.721	251.6	263.7	-18.1	32	209
				22735	.468	258.0	245.7	-11.9	4	18
				22730	.572	318.8	241.2	+18.8	17	90
				22738	.363	272.8	239.1	- 5.6	21	125
				22736	.215	272.1	230.3	- 6.5	0	4
				22731	.052	41.5	215.9	- 4.9	15	127
				22733	.262	24.7	211.6	+ 6.6	3	24
				22732	.493	19.2	207.9	+20.6	0	2
				22739	.230	94.7	204.5	- 8.0	1	7
				22737	.437	123.2	195.0	-20.3	0	10
				22740	.830	63.5	167.0	+17.2	2	10
18.485	-24.9	202.3	-7.1	22728	.878	252.8	264.2	-18.4	27	217
				22735	.647	258.8	242.7	-12.6	1	12
				22730	.721	305.0	240.8	+18.9	19	122
				22738	.609	271.5	239.8	- 4.8	39	262
				22731	.230	279.8	215.4	- 4.7	14	100
				22733	.288	327.6	211.2	+ 7.0	1	12
				22739	.054	251.8	205.2	- 8.0	0	2
				22737	.251	159.9	197.1	-20.6	1	2
				22740	.669	54.1	167.8	+17.2	1	6
				22741	.743	104.3	154.2	-15.4	0	2
				22742	.964	97.5	127.1	- 9.1	29	176

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Mar. 19.318	-25.0	191.3	-7.1	22728	.948	252.7	263.8	-18.6	31	207
				22730	.821	298.8	240.6	+18.8	19	132
				22738	.745	269.7	239.5	- 5.0	41	298
				22731	.415	273.6	215.8	- 4.9	10	68
				22733	.407	299.3	212.1	+ 4.8	0	1
				22740	.555	43.6	167.8	+17.2	3	29
				22741	.612	105.8	153.9	-15.2	6	29
				22742	.902	96.8	126.5	- 9.2	28	191
20.358	-25.2	177.6	-7.0	22728	.995	252.0	263.5	-18.6	20	232
				22730	.923	293.7	240.6	+18.6	28	133
				22738	.883	268.0	239.7	- 5.1	41	261
				22731	.612	271.5	215.3	- 4.7	5	41
				22741	.418	111.1	153.9	-15.1	5	24
				22742	.777	95.8	126.4	- 8.9	22	166
21.429	-25.3	163.5	-7.0	22738	.982	266.6	242.8	- 4.7	33	277
				22730	.990	290.3	242.0	+18.8	7	65
				22731	.803	269.6	216.9	- 4.5	9	38
				22741	.212	134.0	154.4	-15.4	15	126
				22742	.584	95.5	127.6	- 8.9	16	146
22.399	-25.4	150.7	-7.0	22731	.906	267.8	215.8	- 4.9	5	36
				22741	.163	196.3	153.4	-15.9	22	132
				22743	.455	0.9	150.3	+19.9	1	6
				22744	.698	27.5	128.5	+31.7	5	20
				22742	.412	95.8	126.3	- 8.7	38	124
23.346	-25.5	138.2	-6.9	22731	.975	266.6	215.5	- 4.8	5	29
				22741	.279	236.9	152.2	-15.5	13	88
				22743	.489	336.3	150.2	+19.7	0	15
				22744	.648	15.0	126.9	+31.8	1	10
				22742	.204	98.2	126.5	- 8.5	18	115
				22745	.953	102.3	64.9	-13.7	22	98
24.590	-25.6	121.8	-6.9	22741	.522	250.8	152.5	-15.8	5	39
				22742	.088	252.2	126.6	- 8.4	19	114
				22745	.842	101.7	64.0	-13.6	32	200
25.443	-25.7	110.6	-6.9	22742	.281	263.5	126.9	- 8.4	15	90
				22745	.713	102.9	65.0	-14.0	25	203
				22746	.969	61.5	40.2	+25.4	13	75
				22747	.975	107.8	32.0	-18.8	39	301
26.392	-25.8	98.0	-6.8	22743	.831	298.9	148.3	+19.4	0	10
				22742	.477	265.2	126.6	- 8.3	11	92
				22745	.540	106.0	65.8	-14.3	13	126
				22746	.910	57.8	39.6	+25.5	11	74
				22747	.910	107.7	31.9	-18.9	53	315
27.335	-25.9	85.6	-6.8	22742	.654	265.3	126.7	- 8.2	10	67
				1572 06	.412	305.8	105.2	+ 7.5	1	5
				22745	.363	111.9	65.4	-14.1	13	117
				22746	.824	52.5	39.3	+25.5	10	76
				22747	.802	109.1	32.4	-19.3	54	339

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Mar. 28.525	-26.0	69.9	-6.7	22742	.835	264.7	126.9	- 8.1	8	52
				22745	.132	158.9	67.1	-13.8	9	75
				22746	.698	42.1	38.8	+25.4	9	65
				22747	.615	112.9	33.2	-19.2	55	356
29.312	-26.0	59.5	-6.7	22742	.921	263.8	127.0	- 8.3	8	30
				22745	.183	226.6	67.4	-13.8	12	62
				22746	.620	31.9	38.3	+25.4	7	49
				22747	.477	118.4	33.3	-19.1	55	409
30.367	-26.1	45.6	-6.6	22742	.986	262.9	126.6	- 8.1	0	13
				22745	.387	249.5	67.4	-13.9	10	60
				1572 07	.317	12.8	41.5	+11.3	0	2
				22746	.547	13.0	37.8	+25.5	7	37
				22747	.297	138.4	33.6	-19.3	42	344
				22748	.336	117.3	27.7	-15.2	1	12
				22749	.720	64.2	4.0	+13.3	8	49
31.374	-26.2	32.3	-6.6	22745	.581	255.6	67.6	-13.7	12	76
				22746	.537	351.8	37.2	+25.4	4	20
				22747	.224	183.2	33.1	-19.5	64	460
				22748	.169	150.3	27.4	-15.0	2	10
				22749	.553	54.4	5.0	+12.9	8	36
Apr. 1.521	-26.2	17.2	-6.5	22745	.772	257.3	67.9	-13.9	12	63
				22747	.343	228.1	32.8	-19.5	79	473
				22748	.218	240.8	28.4	-12.5	0	3
				22750	.095	214.5	20.3	-11.0	0	4
				22749	.387	31.7	5.2	+12.8	21	105
				22751	.979	75.1	301.2	+13.0	11	32
2.513	-26.3	4.1	-6.5	22745	.892	257.7	67.7	-13.9	12	69
				22747	.503	242.3	32.2	-19.2	68	490
				22748	.418	253.1	28.3	-12.9	0	4
				22750	.279	253.0	19.8	-10.9	0	6
				22749	.331	356.9	5.2	+12.8	11	66
				22752	.449	120.4	340.1	-19.0	9	49
				22751	.914	72.8	300.8	+12.9	3	33
3.339	-26.3	353.2	-6.4	22745	.957	257.6	67.2	-13.7	4	40
				22747	.644	247.7	32.1	-19.1	56	384
				22749	.379	328.6	4.8	+12.5	7	49
				22752	.322	134.7	339.2	-19.3	7	39
				22751	.813	68.9	302.3	+13.0	2	13
				22753	.992	74.2	272.9	+14.7	32	227
4.306	-26.3	340.5	-6.4	22747	.786	250.3	31.9	-19.4	44	350
				22754	.734	252.7	27.4	-17.0	3	27
				22750	.667	256.5	22.2	-13.7	1	10
				22749	.522	304.7	6.3	+11.5	9	39
				22752	.234	171.2	338.3	-19.7	1	4
				22751	.675	63.1	302.5	+12.7	1	10
				1573 01	.871	63.5	285.0	+19.3	0	9
				22753	.945	71.9	272.5	+14.7	26	241
				22755	.971	103.1	263.5	-14.2	22	168

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Apr. 4.306	Continued			22756	.979	107.7	261.0	-18.6	0	16
5.315	-26.3	327.1	-6.3	22747	.899	251.7	31.5	-19.2	29	208
				22754	.843	253.4	24.8	-17.4	2	24
				22749	.662	293.8	5.0	+10.5	4	24
				22757	.313	340.5	333.2	+10.8	1	8
				22758	.594	45.9	300.5	+18.7	0	11
				22753	.854	68.2	272.2	+14.9	19	209
				22755	.894	102.3	263.4	-13.8	12	129
				22756	.911	107.8	261.0	-18.8	0	13
				22759	.989	93.2	245.7	- 4.2	0	21
6.316	-26.3	313.9	-6.2	22747	.972	252.2	31.4	-18.8	4	54
				22754	.943	253.6	25.3	-17.5	3	29
				22749	.822	287.5	6.6	+10.6	2	11
				22757	.426	314.9	331.8	+11.5	2	16
				22751	.379	38.2	300.2	+11.2	2	15
				22753	.728	62.7	272.1	+14.8	22	193
				22755	.772	102.6	263.3	-13.7	15	125
				22756	.805	109.1	260.6	-19.1	2	9
				22759	.926	91.7	246.1	- 4.0	11	77
7.550	-26.3	297.6	-6.2	22757	.652	295.0	334.5	+11.1	29	147
				22751	.343	3.6	296.4	+13.8	0	2
				22753	.549	49.7	272.0	+15.1	20	171
				22755	.571	105.3	263.3	-13.8	7	76
				22759	.784	90.2	246.1	- 4.0	7	36
8.326	-26.3	287.4	-6.1	22757	.774	289.5	335.2	+10.9	48	399
				22758	.447	336.3	298.3	+18.1	1	8
				1573 02	.094	248.8	292.5	- 8.0	1	5
				22760	.437	354.1	290.1	+19.5	0	4
				22753	.450	35.7	271.6	+15.5	29	188
				22755	.429	109.2	262.9	-13.7	12	77
				22759	.665	89.0	245.8	- 3.9	9	33
9.319	-26.3	274.3	-6.0	22757	.897	285.3	335.8	+10.8	51	356
				22760	.492	328.7	289.9	+19.0	0	7
				22753	.374	7.3	271.5	+15.6	18	142
				22755	.247	126.3	262.5	-14.3	10	34
				22756	.388	135.9	257.5	-21.9	0	17
				22759	.473	86.9	246.2	- 3.9	2	12
10.408	-26.3	259.9	-6.0	22757	.976	282.8	335.7	+11.1	58	386
				22753	.411	334.0	270.7	+15.7	23	151
				22755	.153	191.1	261.7	-14.6	5	20
				22759	.282	81.4	243.8	- 3.3	1	14
				22761	.981	85.7	181.8	+ 3.0	28	180
				22762	.996	95.5	174.9	- 6.0	23	208
11.394	-26.3	246.9	-5.9	22753	.524	313.3	270.2	+15.6	15	110
				22755	.289	238.2	261.6	-14.4	2	15
				22759	.071	47.5	243.9	- 3.2	4	17
				22761	.929	83.9	179.5	+ 3.4	54	340
				1	.908	84.1	182.4	+ 2.8	33	190

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Apr. 11.394	Continued			22762	.952	94.6	174.5	- 6.2	35	224
12.508	-26.2	232.2	-5.8	22753	.685	300.5	269.9	+15.7	10	98
				22755	.489	251.2	260.6	-14.2	0	2
				22759	.205	283.8	243.6	- 2.9	1	12
				1573 03	.092	246.2	237.1	- 7.9	1	9
				22763	.467	89.8	204.3	- 5.1	23	147
				22761	.816	81.5	178.4	+ 3.5	45	354
				1	.774	81.5	182.4	+ 2.9	21	166
				22762	.845	93.4	174.4	- 6.0	46	291
				22764	.972	68.5	159.1	+19.2	23	113
				22765	.965	78.7	158.8	+ 9.3	57	312
				22766	.989	109.1	149.6	-19.7	7	42
13.314	-26.2	221.6	-5.8	22753	.796	295.0	270.0	+15.8	14	104
				22755	.646	251.8	261.1	-16.1	4	16
				22767	.152	72.0	213.3	- 3.0	0	2
				22763	.275	86.9	205.6	- 4.7	36	201
				22761	.692	79.7	178.8	+ 2.9	41	280
				1	.646	78.7	182.3	+ 2.8	21	159
				22762	.732	93.0	174.4	- 6.1	40	239
				22764	.917	65.7	159.4	+19.5	27	162
				22765	.901	76.8	159.0	+ 9.2	47	322
				1	.900	76.7	159.3	+ 9.3	42	274
				22768	.957	78.1	150.1	+ 9.6	4	33
				22766	.956	107.8	147.9	-18.7	26	157
				22769	.977	68.7	147.1	+19.3	0	25
14.472	-26.2	206.3	-5.7	22753	.919	289.6	270.1	+15.5	17	73
				22755	.821	253.1	261.3	-17.1	0	4
				22767	.152	283.6	214.8	- 3.6	24	101
				22763	.022	344.9	206.6	- 4.5	35	248
				22770	.362	116.8	186.9	-14.7	2	14
				22761	.469	73.0	179.7	+ 2.8	46	240
				1	.424	71.2	182.7	+ 2.6	27	146
				22762	.517	92.8	175.1	- 6.3	47	273
				22765	.755	72.9	159.6	+ 8.9	53	287
				1	.753	72.9	159.7	+ 8.9	46	261
				22764	.794	61.0	159.3	+18.8	13	92
				22768	.847	75.7	150.3	+ 8.9	6	67
				22766	.839	108.3	149.4	-18.4	17	123
				22769	.899	64.8	146.7	+19.6	18	81
15.316	-26.1	195.1	-5.6	22753	.975	287.1	269.9	+15.3	14	72
				22767	.365	273.2	216.5	- 4.0	27	135
				22763	.215	275.4	207.5	- 4.3	42	289
				22770	.208	139.5	187.2	-14.6	3	15
				22761	.291	61.9	180.3	+ 2.4	31	204
				1	.256	57.4	182.7	+ 2.4	19	141
				22762	.341	92.9	175.2	- 6.3	40	264
				22765	.620	67.8	159.8	+ 8.9	46	271
				1	.618	67.7	159.9	+ 9.0	43	257
				22764	.689	54.3	158.9	+19.1	14	101
				22766	.720	109.7	149.9	-18.0	20	101

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Apr. 15.316	Continued			22768	.741	72.8	149.6	+ 8.7	13	39
				22769	.821	60.4	145.8	+20.3	9	95
16.588	-26.0	178.3	-5.5	22767	.634	269.9	217.7	- 4.3	16	91
				22763	.495	272.0	208.0	- 3.8	32	222
				22770	.178	222.6	185.4	-13.0	0	3
				22761	.142	345.8	180.3	+ 2.4	28	204
				1	.156	330.3	182.8	+ 2.3	20	134
				22762	.064	98.3	174.7	- 6.0	44	205
				22765	.401	52.3	159.7	+ 8.9	50	278
				22764	.516	36.1	159.6	+19.3	9	76
				22766	.491	116.0	150.9	-17.3	12	68
				22768	.541	64.0	149.0	+ 8.9	5	28
				22769	.627	49.6	148.1	+19.2	27	173
17.344	-26.0	168.3	-5.4	22767	.757	268.4	217.5	- 4.8	19	104
				22763	.651	270.8	208.9	- 3.6	38	220
				22761	.267	299.7	181.7	+ 2.3	27	175
				1	.282	297.4	182.8	+ 2.1	22	145
				22762	.121	264.6	175.3	- 6.0	43	294
				22765	.289	31.4	159.6	+ 8.8	52	251
				22764	.451	20.6	158.7	+19.5	15	83
				22766	.357	126.7	151.0	-17.5	7	43
				22768	.406	53.4	149.2	+ 8.8	7	44
				22769	.532	39.3	147.5	+19.1	29	273
18.365	-25.9	154.9	-5.3	22767	.891	267.5	217.9	- 4.7	5	27
				22771	.865	295.4	210.3	+18.8	0	9
				22763	.817	270.0	209.6	- 3.1	39	206
				22761	.474	284.9	182.0	+ 2.2	27	150
				1	.484	284.3	182.7	+ 2.1	23	133
				22762	.355	267.1	175.7	- 6.0	35	289
				22765	.256	341.6	159.5	+ 8.7	33	264
				22764	.427	352.6	158.2	+19.6	12	92
				22766	.223	165.1	151.4	-17.7	5	25
				22768	.274	18.1	149.9	+ 9.7	7	28
				22769	.433	16.2	147.6	+19.2	24	268
				22772	.974	99.6	77.4	-10.5	15	98
19.337	-25.8	142.0	-5.3	22771	.948	292.1	210.0	+18.9	7	51
				22763	.923	268.6	209.4	- 3.3	37	192
				22761	.663	279.2	182.8	+ 2.1	25	125
				22762	.551	267.1	175.5	- 6.0	39	279
				22773	.361	237.0	160.3	-16.3	1	8
				22765	.379	308.4	159.4	+ 8.6	41	287
				22764	.501	327.4	158.6	+19.8	4	38
				22768	.303	324.6	152.2	+ 9.0	1	7
				22766	.270	215.2	151.4	-17.9	3	11
				22769	.426	344.7	148.8	+18.9	36	308
				22774	.404	44.2	125.4	+11.7	6	30
				22772	.907	99.6	76.7	-10.9	15	85
20.347	-25.7	128.7	-5.2	22763	.988	267.3	209.9	- 3.4	43	215
				22761	.816	276.4	182.7	+ 2.2	23	130
				22762	.729	267.4	175.5	- 5.4	31	314

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Apr. 20.347	Continued			22773	.547	251.9	161.0	-14.1	0	13
				22765	.559	294.2	159.6	+ 8.8	46	284
				22764	.635	310.4	159.5	+19.8	1	12
				22768	.449	304.4	150.7	+ 9.9	1	30
				22766	.415	234.8	149.6	-18.7	5	25
				22769	.525	321.2	149.0	+19.2	62	370
				22774	.300	10.2	125.6	+11.9	7	28
				22772	.782	99.8	77.2	-10.9	11	41
21.314	-25.6	115.9	-5.1	22761	.923	274.3	182.8	+ 2.0	20	127
				22762	.865	266.6	175.8	- 5.5	45	279
				22764	.777	296.9	162.2	+17.1	9	61
				22765	.721	287.0	160.0	+ 8.5	49	269
				22768	.645	291.8	153.2	+ 9.8	6	33
				22769	.657	307.6	149.3	+19.3	42	264
				22775	.387	257.2	138.3	- 9.6	1	8
				22774	.329	330.2	125.5	+11.5	1	10
				22772	.627	101.5	77.3	-11.2	4	24
22.364	-25.5	102.1	-5.0	22761	.987	273.1	182.4	+ 2.2	34	179
				22762	.955	265.7	175.0	- 5.6	30	222
				22764	.893	293.2	161.5	+18.1	20	139
				22765	.858	283.3	159.5	+ 8.7	48	260
				22769	.793	299.3	149.0	+19.4	26	175
				22766	.735	250.6	148.5	-17.6	0	3
				22775	.593	261.0	138.3	- 9.3	8	40
				22774	.473	309.4	124.0	+12.8	0	10
				22772	.453	104.8	75.7	-11.1	0	4
				22776	.929	108.1	33.6	-18.7	3	18
23.313	-25.4	89.5	-4.9	22764	.964	289.6	161.5	+17.4	45	253
				22765	.954	280.8	160.7	+ 8.7	47	309
				22777	.922	277.1	155.9	+ 4.5	14	90
				22769	.902	294.2	150.0	+19.3	13	73
				22775	.750	261.6	138.1	- 9.5	8	45
				22776	.831	109.6	33.9	-19.0	2	10
24.385	-25.3	75.4	-4.8	22777	.996	274.5	159.5	+ 4.0	11	80
				22769	.979	289.5	151.1	+17.9	0	26
				22775	.895	262.6	139.1	- 8.8	2	19
				22778	.521	103.4	44.4	-11.0	12	67
				22779	.674	102.7	33.2	-12.1	4	24
				22780	.748	76.8	28.4	+ 6.6	2	23
25.720	-25.1	57.7	-4.7	22778	.247	114.8	44.6	-10.5	19	91
				22781	.322	56.6	42.1	+ 5.6	1	7
				22779	.406	110.6	34.9	-12.5	10	127
				22780	.512	68.6	29.2	+ 6.6	9	51
				22782	.957	93.6	344.6	- 4.8	19	111
26.085	-25.1	52.9	-4.7	22778	.189	124.0	43.8	-10.6	13	78
				22781	.261	47.2	41.9	+ 5.6	0	2
				22779	.353	114.3	33.7	-12.7	11	76
				22780	.449	65.7	28.7	+ 6.4	14	89
				22782	.928	93.2	344.8	- 4.7	19	98
				1	.923	93.1	345.6	- 4.6	19	85

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Apr. 27.360	-24.9	36.1	-4.5	22778	.159	228.0	42.9	-10.6	16	77
				22779	.168	147.6	30.8	-12.7	6	25
				22780	.247	35.5	27.8	+ 7.0	54	266
				22782	.775	92.7	345.3	- 5.0	24	175
				1	.757	92.4	346.9	- 4.8	16	133
28.320	-24.7	23.4	-4.5	22778	.348	250.0	42.7	-11.0	8	54
				22779	.192	222.8	31.0	-12.5	5	25
				22780	.227	334.8	28.9	+ 7.4	35	247
				22782	.607	92.8	346.0	- 5.2	28	162
				1	.583	92.6	347.8	- 5.2	22	125
29.315	-24.6	10.2	-4.4	22778	.538	255.1	42.2	-11.6	6	18
				22779	.389	247.6	31.7	-12.6	1	7
				22780	.370	302.7	28.4	+ 7.3	41	222
				22782	.413	92.5	345.8	- 5.0	31	163
				1	.389	92.8	347.4	- 5.1	25	126
				22783	.961	105.2	295.9	-15.8	0	8
30.323	-24.4	356.9	-4.3	22778	.694	257.2	40.5	-11.9	3	11
				22780	.565	289.5	29.2	+ 7.2	22	162
				22782	.186	95.9	346.2	- 5.3	21	146
				1	.175	95.8	346.9	- 5.2	21	130
				22783	.858	104.0	297.9	-14.2	2	15
May 1.337	-24.2	343.5	-4.2	22778	.844	259.2	41.0	-11.3	4	19
				22780	.732	283.9	29.0	+ 7.2	23	103
				22782	.047	250.3	346.0	- 5.1	16	132
				1	.053	251.8	346.4	- 5.1	14	121
				22784	.522	42.7	321.6	+18.6	8	33
				22783	.715	105.9	298.5	-14.3	2	5
2.336	-24.1	330.3	-4.1	22780	.900	279.3	33.4	+ 6.5	7	28
				22782	.275	265.2	346.2	- 5.2	18	130
				1	.284	265.5	346.7	- 5.2	18	117
				22784	.416	22.1	320.8	+18.6	2	23
				22785	.895	72.8	269.0	+13.4	5	24
				22786	.975	77.6	254.6	+11.1	29	145
3.324	-23.9	317.2	-4.0	22780	.978	276.9	34.4	+ 5.9	0	15
				22782	.497	266.7	347.0	- 5.1	19	130
				22784	.389	348.9	321.7	+18.4	0	8
				22785	.782	68.3	268.9	+14.2	24	114
				22786	.906	75.9	253.9	+11.0	21	150
				22787	.953	100.3	244.8	-11.0	4	25
4.328	-23.7	304.0	-3.9	22782	.688	266.7	347.4	- 5.1	17	126
				22785	.607	62.0	270.7	+13.3	52	343
				22786	.792	73.0	253.7	+10.9	26	139
				22788	.814	69.5	252.3	+14.2	2	10
				1574 01	.804	104.3	250.8	-13.8	2	8
				1574 02	.862	77.7	245.8	+ 8.6	2	9
				22787	.853	100.6	245.6	-11.0	2	13

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
May 5.298	-23.5	291.1	-3.7	22782	.835	266.4	347.8	- 5.1	23	138
				22785	.435	49.5	271.4	+12.8	106	588
				22786	.645	68.3	253.7	+10.8	22	163
				22788	.718	63.9	249.3	+15.6	2	5
				22787	.711	102.2	246.2	-11.3	3	16
6.368	-23.3	277.0	-3.6	22782	.944	265.8	347.8	- 5.2	27	116
				22785	.298	21.0	270.8	+12.4	151	1018
				22786	.459	57.9	253.8	+10.7	20	157
7.320	-23.1	264.4	-3.5	22782	.994	265.2	348.0	- 5.2	9	113
				22785	.294	339.2	270.5	+12.4	145	1134
				22786	.308	36.4	253.8	+10.8	20	135
				22789	.957	84.2	192.0	+ 4.5	0	7
				22790	.979	85.3	186.8	+ 3.9	11	132
8.344	-22.8	250.9	-3.4	22785	.422	309.8	270.2	+12.4	185	1287
				22786	.252	349.0	253.7	+10.9	25	165
				22789	.860	81.8	192.3	+ 5.2	4	21
				22790	.905	83.6	186.7	+ 4.3	13	84
9.369	-22.6	237.3	-3.3	22785	.597	296.8	270.3	+12.8	150	1179
				22786	.371	311.5	253.7	+11.0	24	172
				22789	.713	79.0	192.8	+ 5.4	8	45
				22790	.779	82.4	186.8	+ 3.8	13	83
				22791	.982	86.1	158.7	+ 3.2	23	117
10.335	-22.4	224.6	-3.2	22785	.754	290.0	271.0	+12.7	148	1165
				22786	.535	296.6	253.6	+11.0	28	158
				22789	.537	74.8	193.3	+ 5.3	4	30
				22790	.625	79.7	186.7	+ 3.9	10	55
				22791	.913	85.2	159.2	+ 3.0	11	85
11.340	-22.1	211.3	-3.1	22785	.883	286.1	271.4	+12.6	117	932
				22786	.704	289.3	253.7	+11.2	20	135
				22789	.343	63.8	193.3	+ 5.7	1	8
				22790	.434	74.2	186.6	+ 3.9	7	53
				22791	.808	84.3	157.8	+ 2.7	11	75
				22792	.987	85.1	131.0	+ 4.3	52	415
12.349	-21.9	197.9	-3.0	22785	.971	284.1	272.6	+12.9	148	900
				22786	.842	285.6	253.5	+11.4	21	151
				22789	.172	29.2	193.1	+ 5.6	2	9
				22790	.233	58.7	186.5	+ 4.0	7	39
				22791	.651	82.8	157.8	+ 2.4	13	66
				22792	.929	83.8	130.2	+ 4.6	58	420
13.327	-21.6	185.0	-2.9	22785	.994	281.4	267.6	+11.0	28	170
				22786	.942	283.1	254.1	+11.3	16	124
				22793	.392	339.8	193.2	+18.6	10	46
				22789	.196	316.8	192.7	+ 5.3	2	10
				22790	.122	345.9	186.7	+ 3.9	3	12
				1574 03	.114	154.6	182.2	- 8.8	1	4
				22794	.373	58.9	166.2	+ 8.3	0	10
				22791	.468	78.0	157.8	+ 3.0	9	41

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
May 13.327	Continued			22792	.821	81.7	130.6	+ 5.1	54	399
14.420	-21.4	170.5	-2.8	22786	.996	281.6	254.3	+11.2	23	211
				22795	.745	279.6	217.8	+ 5.3	20	98
				22793	.538	313.5	194.8	+19.2	9	77
				22789	.404	289.3	192.9	+ 5.1	1	9
				22790	.308	293.0	186.9	+ 4.2	2	14
				22794	.204	17.2	167.0	+ 8.4	1	10
				22791	.242	66.0	157.8	+ 2.9	12	66
				22792	.643	79.0	131.4	+ 4.9	41	377
15.398	-21.1	157.6	-2.6	22795	.892	276.8	220.1	+ 4.8	7	44
				22793	.698	300.9	196.7	+18.9	6	26
				22796	.527	263.0	189.2	- 5.9	1	13
				22790	.504	282.9	187.0	+ 4.1	0	6
				22794	.230	337.4	162.7	+ 9.5	0	8
				22791	.104	2.8	157.3	+ 3.3	3	24
				22797	.351	42.3	143.7	+12.4	15	68
				22792	.459	73.1	131.5	+ 5.3	26	219
16.523	-20.8	142.7	-2.5	22795	.986	275.7	222.6	+ 5.1	7	40
				22793	.847	294.8	197.1	+19.3	4	21
				22797	.261	352.5	144.7	+12.4	15	64
				22792	.226	54.9	132.0	+ 5.0	12	166
				22798	.448	120.6	119.2	-15.5	3	17
				22799	.995	73.4	59.9	+16.2	21	127
17.341	-20.5	131.9	-2.4	22793	.910	291.3	194.9	+18.2	5	32
				22796	.846	264.6	189.5	- 5.9	6	41
				22791	.430	285.9	156.3	+ 4.5	0	6
				22797	.332	319.3	144.6	+12.2	6	40
				22792	.131	0.3	131.9	+ 5.1	15	145
				22798	.322	135.3	118.3	-15.5	2	12
				22799	.964	71.9	59.0	+16.7	8	57
18.335	-20.2	118.7	-2.3	22796	.940	265.5	188.8	- 5.0	0	20
				22797	.506	299.0	145.6	+12.1	4	24
				22792	.272	297.8	132.7	+ 5.0	15	149
				22799	.884	70.0	58.9	+16.4	12	73
				22800	.987	75.2	39.1	+14.1	7	49
19.332	-20.0	105.6	-2.2	22797	.700	291.3	147.4	+13.1	2	10
				1574 04	.555	277.7	138.8	+ 2.4	[illegible]	11
				22792	.480	284.9	133.2	+ 5.1	10	117
				22799	.770	66.3	58.5	+16.5	14	102
				22800	.926	73.8	39.3	+14.1	3	21
				22801	.970	82.5	30.3	+ 6.8	0	14
20.330	-19.7	92.4	-2.1	22792	.665	280.0	133.3	+ 5.0	15	89
				22799	.623	59.6	58.4	+16.6	12	54
				22800	.870	73.3	33.7	+13.4	7	46
				22801	.891	81.5	30.1	+ 6.6	2	7

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
May 21.330	-19.4	79.1	-2.0	22792	.821	278.1	133.7	+ 5.5	8	66
				22799	.461	46.5	58.8	+16.6	5	24
				22800	.750	70.7	32.7	+12.9	12	66
				22801	.760	80.2	30.5	+ 6.2	0	5
22.328	-19.0	65.9	-1.8	22792	.930	276.3	133.8	+ 5.1	9	54
				22799	.340	19.0	59.3	+16.9	4	14
				22800	.606	65.6	31.6	+12.9	8	35
23.532	-18.6	50.0	-1.7	22799	.347	334.5	58.9	+16.5	2	11
24.332	-18.4	39.4	-1.6	1574 05	.857	273.8	98.0	+ 2.4	4	18
				22802	.897	76.5	336.8	+11.3	5	41
25.378	-18.0	25.6	-1.5	1574 06	.064	28.1	23.8	+ 1.8	0	12
				22802	.760	73.6	337.7	+11.4	44	316
26.319	-17.7	13.1	-1.4	1574 07	.161	168.8	11.3	-10.4	1	3
				22802	.604	69.4	338.1	+11.1	62	434
27.340	-17.4	359.6	-1.2	22803	.460	255.1	26.2	- 7.9	27	154
				22802	.409	59.0	338.8	+10.9	68	330
28.326	-17.0	346.6	-1.1	22803	.658	259.3	27.1	- 7.8	80	514
				22802	.235	30.9	339.6	+10.4	55	342
				22804	.398	58.9	326.3	+10.8	3	11
				22805	.960	76.0	273.7	+13.1	8	57
				22806	.983	80.7	267.8	+ 8.9	6	36
29.331	-16.7	333.3	-1.0	22803	.829	260.6	28.7	- 8.4	48	376
				22802	.229	329.6	340.0	+10.3	49	309
				22804	.222	27.3	327.3	+10.3	15	98
				22805	.873	74.1	273.8	+13.3	9	59
				22806	.913	79.6	268.0	+ 9.1	3	14
30.626	-16.2	316.1	-0.9	22803	.960	261.4	29.6	- 8.5	62	298
				22807	.906	247.6	19.3	-20.6	5	32
				22802	.440	295.6	339.8	+10.1	59	384
				22804	.278	312.8	328.0	+10.0	13	75
				22805	.699	69.8	273.9	+13.3	3	21
				22806	.763	77.0	267.4	+ 9.3	2	9
31.344	-15.9	306.6	-0.8	22803	.980	263.4	24.9	- 6.6	16	76
				22807	.961	248.7	19.4	-20.7	8	32
				22802	.568	290.1	339.4	+10.6	58	358
				22804	.421	296.0	329.1	+ 9.9	6	48
				22805	.592	65.0	273.2	+13.8	1	10
				22806	.648	74.8	267.5	+ 9.2	1	9
				22808	.963	83.2	232.7	+ 6.4	0	8
				22809	.997	90.8	221.4	- 0.8	13	53
Jun. 1.369	-15.6	293.1	-0.7	22802	.742	284.6	339.7	+10.3	42	346
				22804	.613	286.8	329.5	+ 9.7	10	44
				22805	.383	51.9	275.1	+13.0	6	37

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Jun. 1.369	Continued			22806	.460	68.5	267.5	+ 9.1	3	13
				22808	.883	84.1	231.5	+ 4.9	0	5
				22809	.952	90.0	221.2	- 0.2	26	258
2.346	-15.2	280.1	-0.5	22802	.878	281.7	340.7	+ 9.9	33	268
				22804	.784	282.2	330.9	+ 9.2	9	37
				22805	.258	23.7	274.1	+13.1	5	40
				22810	.378	17.7	273.1	+20.5	0	5
				22806	.277	51.3	267.5	+ 9.4	0	5
				22808	.822	80.3	225.6	+ 7.6	2	16
				22809	.860	89.9	221.1	- 0.2	33	228
				22811	.986	95.6	200.0	- 5.6	27	141
3.347	-14.8	266.9	-0.4	22802	.968	279.7	341.8	+ 9.3	45	281
				22804	.907	280.1	331.3	+ 9.0	5	30
				1575 01	.737	294.0	311.5	+17.1	0	3
				22805	.252	331.8	273.9	+12.4	0	21
				22810	.306	355.1	268.4	+17.3	0	4
				22806	.165	7.0	265.7	+ 9.0	2	14
				22808	.668	78.6	225.7	+ 7.3	0	11
				22809	.716	90.0	221.4	- 0.3	26	214
				22811	.921	95.8	200.2	- 5.5	17	128
4.422	-14.4	252.7	-0.3	22804	.984	278.6	332.0	+ 8.4	0	12
				22806	.277	305.1	265.9	+ 8.9	2	12
				22809	.525	90.0	221.2	- 0.2	24	166
				22812	.675	94.0	210.4	- 2.9	3	18
				22811	.802	96.8	199.7	- 5.6	24	162
5.427	-14.0	239.4	-0.2	22805	.656	288.2	278.7	+11.7	1	4
				22806	.473	290.4	265.9	+ 9.3	1	9
				22809	.313	89.8	221.2	- 0.1	28	140
				22812	.465	96.4	211.9	- 3.1	5	26
				22811	.645	98.4	199.7	- 5.5	25	159
6.454	-13.6	225.8	0.0	22809	.081	92.3	221.1	- 0.2	19	145
				22812	.265	101.0	210.7	- 2.9	1	12
				22811	.449	102.6	199.8	- 5.6	27	167
7.330	-13.3	214.2	+0.1	22809	.126	269.5	221.4	0.0	23	140
				22812	.066	135.3	211.5	- 2.6	2	20
				22811	.268	112.4	199.8	- 5.8	27	162
8.526	-12.8	198.3	+0.2	22813	.480	304.6	222.5	+15.9	5	51
				22809	.396	270.3	221.6	+ 0.3	19	119
				22812	.224	259.4	211.0	- 2.1	0	11
				22811	.107	193.6	199.8	- 5.7	20	158
9.372	-12.4	187.1	+0.3	22813	.618	295.5	222.4	+15.6	4	18
				22809	.571	269.9	221.8	+ 0.2	23	118
				22811	.248	244.5	200.1	- 5.8	24	154
10.335	-12.1	174.4	+0.4	22809	.737	270.1	221.7	+ 0.3	26	135
				22813	.754	291.2	221.3	+16.0	0	5
				22811	.449	255.5	200.2	- 6.1	26	155

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Jun. 11.462	-11.6	159.5	+0.6	22809	.889	269.8	222.0	+ 0.1	22	142
				22811	.666	259.8	200.6	- 6.3	21	127
				22814	.370	46.0	143.5	+15.4	6	27
12.355	-11.2	147.7	+0.7	22809	.966	269.8	222.4	0.0	17	85
				22811	.805	261.7	200.7	- 6.2	21	122
				22814	.250	13.5	144.2	+14.7	13	52
13.325	-10.8	134.8	+0.8	22811	.917	262.9	200.9	- 6.2	20	123
				22814	.286	328.3	143.7	+14.8	10	58
14.083	-10.5	124.8	+0.9	22811	.969	263.4	200.1	- 6.2	8	84
				1575 02	.923	284.2	191.4	+13.4	5	22
				22814	.404	305.6	144.5	+14.4	3	18
				22815	.258	176.2	123.8	-14.0	0	7
15.530	- 9.9	105.6	+1.1	22815	.409	231.5	124.8	-13.7	9	39
				22816	.940	99.3	36.3	- 8.3	3	20
16.342	- 9.5	94.9	+1.1	22815	.536	241.1	123.6	-14.0	1	14
				22817	.362	129.3	78.3	-12.1	2	11
				22818	.357	109.0	75.1	- 5.6	1	9
				22816	.861	100.4	36.2	- 8.3	2	9
				22819	.975	95.1	18.1	- 4.7	0	51
17.369	- 9.1	81.3	+1.3	22815	.738	249.7	126.6	-13.9	5	31
				22820	.721	286.0	126.3	+12.4	17	61
				22817	.223	175.4	80.2	-11.5	1	4
				22818	.159	145.7	76.1	- 6.2	2	9
				22816	.748	103.3	34.0	- 9.0	0	10
				22819	.888	95.4	19.1	- 4.2	5	22
18.156	- 8.7	70.9	+1.4	22815	.866	252.4	129.2	-14.4	4	21
				22820	.834	283.9	126.6	+12.3	4	51
				22818	.160	213.4	75.9	- 6.3	4	43
19.320	- 8.2	55.5	+1.5	22820	.945	282.7	126.0	+12.5	3	34
				22815	.946	254.7	125.3	-13.9	3	10
				22818	.387	248.5	76.6	- 6.7	8	44
				22821	.940	81.0	345.8	+ 8.9	6	39
20.553	- 7.7	39.1	+1.6	22817	.685	251.0	80.4	-11.6	2	6
				22818	.596	258.2	74.9	- 5.7	3	20
				22816	.238	163.3	35.2	-11.5	4	17
				1575 03	.137	147.4	34.9	- 5.0	0	2
				22822	.768	116.9	352.9	-19.1	2	12
				22821	.843	79.1	342.1	+10.0	23	172
21.330	- 7.3	28.9	+1.7	22817	.828	254.0	83.2	-12.1	2	29
				22822	.676	121.8	351.5	-19.4	6	61
				22821	.730	77.8	342.6	+10.0	20	116
22.332	- 6.9	15.6	+1.9	22817	.941	256.5	84.6	-12.0	26	164
				22823	.363	101.6	354.8	- 2.4	0	2
				22822	.540	131.6	350.4	-19.2	10	56

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Jun. 22.332	Continued			22821	.557	74.5	342.7	+10.1	12	76
				22824	.997	76.9	290.2	+13.2	0	27
23.352	- 6.4	2.1	+2.0	22817	.989	257.7	82.6	-11.8	7	52
				22823	.158	128.8	355.0	- 3.7	2	13
				22822	.386	154.6	352.1	-18.4	5	36
				22821	.361	66.1	342.6	+10.2	6	48
				1575 04	.763	75.7	313.1	+12.1	0	4
				22824	.929	76.8	294.2	+13.0	3	22
24.425	- 6.0	347.9	+2.1	22823	.139	235.4	354.4	- 2.4	1	10
				22822	.400	182.1	348.8	-21.4	28	162
				22821	.174	33.9	342.3	+10.3	6	48
				22825	.456	134.3	328.1	-16.5	3	35
				22824	.818	73.5	293.9	+14.6	20	101
25.328	- 5.6	335.9	+2.2	22822	.451	205.4	347.9	-21.8	39	264
				22821	.214	311.3	345.3	+10.3	1	9
				22825	.355	154.9	327.0	-16.5	7	38
				22826	.567	68.0	303.3	+14.1	1	12
				22824	.684	70.9	294.2	+14.6	32	195
26.335	- 5.1	322.6	+2.3	1576 01	.781	275.7	13.8	+ 5.9	2	7
				22822	.570	224.7	348.1	-21.7	25	130
				22821	.412	296.4	344.8	+12.6	1	11
				22825	.326	198.3	328.7	-15.6	6	36
				22827	.295	26.1	314.8	+17.6	1	6
				22826	.384	55.2	303.7	+14.8	8	52
				22824	.510	63.7	294.5	+15.0	42	210
				22828	.991	97.1	240.7	- 6.7	33	242
27.385	- 4.6	308.7	+2.4	22822	.703	235.1	346.9	-21.7	32	136
				22821	.586	290.0	343.1	+13.5	0	6
				22825	.447	224.2	327.6	-16.3	6	30
				22827	.284	333.4	316.3	+17.1	0	4
				22826	.232	24.3	303.1	+14.6	14	66
				22824	.336	49.8	293.4	+14.8	45	205
				22828	.945	98.9	238.6	- 7.5	74	492
				22829	.984	104.7	230.2	-14.0	19	113
				22830	.981	73.7	230.0	+16.4	29	167
28.344	- 4.2	296.0	+2.5	22822	.828	241.9	347.5	-21.3	8	72
				22821	.686	281.1	338.8	+ 9.4	13	71
				22825	.630	241.8	331.0	-15.1	1	10
				22826	.238	333.6	302.3	+14.8	8	40
				22824	.219	13.7	293.0	+14.8	26	182
				22828	.849	100.5	238.9	- 7.5	79	537
				22830	.919	73.3	229.7	+16.3	20	151
				22831	.931	102.7	228.7	-10.8	6	28
				22829	.942	106.3	227.3	-14.4	66	423
29.501	- 3.7	280.7	+2.7	22821	.872	280.2	341.2	+10.2	7	54
				22826	.443	297.3	304.6	+14.1	1	8
				22824	.329	311.7	295.4	+15.2	45	258
				22832	.535	82.2	248.6	+ 6.4	3	12

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Jun. 29.501	Continued			22828	.674	104.2	239.7	- 7.4	74	502
				22830	.791	71.4	229.5	+16.3	24	159
				22829	.820	110.4	228.3	-15.0	60	484
				22831	.827	105.0	226.5	-10.8	24	153
				22833	.878	104.3	220.8	-11.2	10	64
30.334	- 3.3	269.7	+2.8	22821	.957	280.1	342.8	+10.5	12	55
				22826	.588	291.1	304.1	+14.5	0	3
				22824	.468	298.1	294.9	+15.2	56	380
				1576 02	.292	217.3	280.0	-10.6	1	4
				22832	.377	78.9	247.9	+ 6.7	24	122
				22828	.525	108.7	239.7	- 7.3	61	434
				22830	.672	68.3	229.2	+16.5	22	131
				22829	.698	114.3	228.8	-14.6	66	525
				22831	.698	108.6	227.5	-10.8	23	150
				22833	.771	106.3	221.1	-10.7	11	60
July 1.554	- 2.7	253.5	+2.9	22824	.687	289.5	295.5	+15.4	50	330
				22832	.101	51.5	249.0	+ 6.5	29	174
				22828	.289	128.5	240.4	- 7.5	67	377
				22829	.495	126.6	229.4	-14.4	84	628
				22830	.464	58.7	229.2	+16.5	23	138
				22831	.472	120.7	229.2	-11.2	31	206
				22833	.582	113.6	220.8	-11.0	9	49
				22834	.753	105.5	206.4	- 9.6	5	35
2.377	- 2.4	242.6	+3.0	22824	.807	287.0	295.6	+15.4	31	206
				22832	.136	297.6	249.6	+ 6.6	17	126
				22828	.188	171.3	241.0	- 7.7	56	358
				22829	.365	143.7	229.8	-14.1	103	615
				22831	.333	137.9	229.5	-11.3	28	170
				22830	.325	43.9	229.1	+16.4	24	144
				22833	.431	124.9	221.6	-11.4	8	34
				22834	.632	109.1	205.5	- 9.5	5	51
3.492	- 1.9	227.9	+3.1	22824	.931	285.9	296.3	+15.9	22	147
				22832	.402	279.7	251.3	+ 6.7	14	65
				22828	.305	232.3	241.9	- 7.7	41	300
				22829	.294	188.0	230.3	-13.7	102	715
				22831	.245	187.5	229.7	-10.9	19	113
				22830	.229	355.3	229.0	+16.3	19	123
				22833	.261	151.9	220.8	-10.1	1	14
				1576 03	.432	45.0	208.9	+20.7	0	5
				22834	.386	122.9	208.8	- 9.1	1	7
				1576 04	.443	75.4	202.3	+ 9.2	1	9
4.388	- 1.4	216.0	+3.2	22824	.985	286.0	296.3	+16.3	20	124
				22832	.567	277.2	250.3	+ 6.7	4	31
				22828	.472	246.7	241.9	- 7.8	35	300
				22829	.378	219.4	230.3	-13.8	116	841
				22831	.339	225.6	230.3	-10.5	20	106
				22830	.314	317.0	228.9	+16.4	19	114
				22833	.243	199.2	220.7	-10.0	0	6
				22835	.606	116.0	182.2	-12.6	4	20

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
July 5.335	- 1.0	203.5	+3.3	22836	.713	284.1	248.4	+12.3	2	14
				22828	.643	253.9	241.9	- 7.6	37	273
				22829	.530	236.6	230.5	-13.9	133	943
				22831	.501	242.2	230.2	-10.5	10	80
				22830	.476	299.5	228.9	+16.5	18	115
				22833	.424	236.8	224.5	-10.3	2	25
				22835	.435	129.5	183.4	-12.9	4	34
				22837	.971	98.2	128.0	- 7.1	32	265
6.335	- 0.6	190.2	+3.4	22836	.859	281.2	249.3	+11.3	0	11
				22828	.794	257.6	241.5	- 7.7	34	196
				22829	.698	245.6	231.0	-14.2	122	917
				22831	.671	250.5	230.0	-10.3	6	43
				22830	.647	292.1	228.8	+16.7	18	101
				22833	.625	247.9	226.2	-10.8	0	4
				22835	.283	162.0	185.1	-12.1	1	5
				22837	.903	99.1	126.7	- 6.7	28	152
7.343	- 0.1	176.9	+3.5	22828	.913	259.9	241.7	- 7.7	31	182
				22829	.838	250.8	231.4	-13.9	103	814
				22831	.818	255.0	230.1	-10.1	8	36
				22830	.794	288.5	228.6	+16.8	13	100
				22837	.780	101.6	126.8	- 6.8	35	168
				22838	.996	102.4	93.4	-12.0	47	284
8.335	+ 0.3	163.8	+3.6	22828	.978	261.9	241.0	- 7.2	33	153
				22829	.936	253.8	231.2	-13.8	104	778
				22831	.926	257.9	230.2	- 9.8	0	3
				22830	.906	287.0	228.5	+16.9	11	84
				22837	.627	105.0	126.4	- 6.4	28	151
				22838	.948	103.8	93.8	-11.8	18	108
9.335	+ 0.8	150.6	+3.7	22829	.987	255.5	229.9	-13.6	84	464
				22830	.975	286.5	228.0	+16.9	20	113
				22837	.459	113.4	125.6	- 7.1	28	172
				22838	.864	106.2	92.8	-11.9	20	123
10.508	+ 1.3	135.0	+3.9	22837	.247	141.5	126.1	- 7.3	24	164
				22838	.702	111.1	93.2	-11.7	15	89
				22839	.974	76.2	57.9	+14.3	33	259
11.394	+ 1.7	123.3	+4.0	22837	.211	194.4	126.3	- 7.8	25	166
				22838	.557	117.1	93.1	-11.2	12	90
				22839	.897	75.3	59.6	+14.9	36	247
12.333	+ 2.1	110.9	+4.0	22837	.325	233.3	126.0	- 7.3	50	278
				22838	.401	132.0	93.2	-11.7	8	36
				22839	.773	73.6	60.8	+15.2	48	239
				1	.756	73.3	62.5	+15.2	44	191
				22840	.985	85.4	30.9	+ 5.2	50	354
13.440	+ 2.6	96.2	+4.2	22837	.524	248.2	125.5	- 7.5	38	224
				22838	.285	169.3	93.1	-12.0	5	21
				22839	.584	69.4	61.8	+15.2	23	209
				1	.578	69.3	62.3	+15.2	20	195

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
July 13.440	Continued			22840	.928	85.3	28.0	+ 5.9	120	765
14.433	+ 3.1	83.1	+4.2	22837	.691	254.7	125.1	- 7.3	26	185
				22838	.329	213.3	93.7	-11.7	2	11
				22839	.402	61.3	61.7	+15.0	34	188
				1	.397	60.9	62.1	+15.0	33	177
				22840	.820	85.7	28.0	+ 6.0	108	710
				22841	.947	80.7	11.6	+10.2	7	45
15.432	+ 3.5	69.9	+4.3	22837	.835	258.0	125.1	- 7.5	26	129
				22839	.247	41.8	60.1	+14.8	37	272
				22840	.659	86.1	28.7	+ 5.8	93	631
				22842	.690	107.7	28.4	- 8.8	3	18
				22841	.851	80.9	11.5	+10.0	11	72
				22843	.917	98.3	4.2	- 5.8	6	28
16.425	+ 4.0	56.7	+4.4	22837	.936	260.4	124.9	- 7.4	19	126
				22839	.186	344.6	59.6	+14.7	40	221
				1	.200	332.4	62.2	+14.6	19	115
				22840	.464	86.5	29.1	+ 5.5	98	624
				22842	.512	114.5	28.7	- 8.3	3	11
				22844	.753	116.7	12.4	-16.6	4	24
				22841	.706	80.8	12.0	+ 9.7	10	65
				22843	.808	99.9	3.9	- 5.3	12	62
17.344	+ 4.4	44.5	+4.5	22837	.988	262.4	124.9	- 6.7	0	36
				1576 05	.822	257.4	98.4	- 7.6	4	27
				22839	.320	304.2	60.4	+14.7	38	200
				1	.346	301.4	62.2	+14.7	26	127
				22840	.255	86.0	29.8	+ 5.4	104	642
				22842	.357	127.9	28.1	- 8.3	1	10
				22844	.604	125.4	13.8	-16.5	4	17
				22841	.542	78.7	12.1	+ 9.9	9	59
				22843	.667	103.2	4.0	- 5.3	4	35
18.334	+ 4.8	31.5	+4.6	22839	.511	291.1	60.9	+14.6	34	185
				1	.530	290.6	62.2	+14.7	26	140
				22840	.028	67.1	30.0	+ 5.2	110	563
				22844	.462	138.8	13.1	-15.9	3	16
				22841	.339	74.0	12.2	+ 9.7	10	52
				22843	.477	110.6	4.9	- 5.5	3	14
				22845	.680	75.7	349.1	+13.1	8	40
				22846	.844	108.9	336.6	-13.2	2	10
19.323	+ 5.2	18.4	+4.7	22839	.681	286.6	60.7	+14.7	27	152
				22840	.226	272.6	31.4	+ 5.2	78	451
				22841	.075	16.5	17.1	+ 8.8	17	102
				22847	.320	78.0	0.0	+ 8.3	2	18
				22845	.485	71.6	350.3	+13.0	32	245
				22846	.695	114.1	338.0	-12.8	0	14
				22848	.750	104.4	331.4	- 7.6	0	3
				22849	.967	76.7	302.8	+14.0	0	9

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
July 20.337	+ 5.7	5.0	+4.8	22839	.844	284.9	62.4	+15.1	19	85
				22840	.423	273.1	30.0	+ 5.7	75	452
				22841	.194	293.1	15.3	+ 9.1	19	130
				22847	.096	57.6	0.3	+ 7.7	10	60
				22845	.277	58.6	351.0	+12.9	33	169
				22849	.887	75.6	302.4	+15.0	0	10
21.333	+ 6.1	351.8	+4.9	22839	.939	284.3	61.9	+15.1	22	74
				22840	.627	272.7	30.6	+ 5.5	81	436
				22841	.407	282.2	15.4	+ 9.4	20	110
				22847	.169	286.1	1.2	+ 7.5	8	36
				22845	.148	10.0	350.3	+13.2	20	104
				22850	.298	52.9	337.6	+15.1	2	8
				22849	.731	79.1	304.9	+11.3	2	10
				22851	.862	74.7	292.3	+15.7	0	4
22.342	+ 6.6	338.4	+5.0	22839	.990	284.9	61.2	+15.5	24	136
				22840	.799	273.6	31.5	+ 5.8	57	389
				22841	.595	279.5	14.8	+ 9.7	14	67
				22847	.395	278.1	1.6	+ 7.8	5	25
				22852	.297	250.5	354.6	- 0.9	4	17
				22845	.292	299.6	353.5	+13.1	39	196
				22846	.337	180.7	338.7	-14.6	9	38
				22850	.179	1.4	338.2	+15.2	6	27
				22848	.243	167.5	335.4	- 8.7	1	4
				22849	.542	77.9	305.9	+10.7	3	8
				22853	.665	68.0	298.1	+18.2	3	8
23.348	+ 7.0	325.1	+5.1	22840	.930	274.2	33.7	+ 5.8	59	345
				22841	.744	278.8	13.2	+ 9.9	10	55
				22854	.615	233.2	356.1	-17.2	3	13
				22845	.494	288.3	353.8	+13.3	60	335
				22850	.299	307.2	339.3	+15.3	2	16
				22846	.404	214.6	338.8	-14.4	11	66
				22849	.341	72.2	305.9	+10.8	0	1
				22853	.481	52.5	301.0	+21.6	0	4
				22855	.992	97.8	243.6	- 7.0	17	116
24.419	+ 7.5	310.9	+5.2	22840	.990	275.3	32.9	+ 6.0	70	419
				22841	.881	278.3	12.9	+ 9.8	5	19
				22854	.776	241.9	356.8	-17.8	16	91
				22845	.676	284.5	353.1	+13.5	111	608
				22850	.499	292.0	339.5	+15.3	3	20
				22846	.565	235.0	339.4	-14.3	4	31
				22849	.111	29.0	307.8	+10.7	20	102
				22853	.317	36.5	299.5	+19.7	11	52
				22856	.859	112.1	255.3	-15.9	5	22
				22855	.934	99.6	243.0	- 7.1	22	96
				22857	.990	105.2	230.9	-14.2	64	284
25.349	+ 7.8	298.6	+5.2	22841	.964	278.8	13.6	+ 9.8	4	12
				22854	.886	246.9	357.3	-17.6	2	31
				22845	.817	283.1	353.4	+13.7	122	619
				22846	.718	245.1	340.6	-13.7	3	10
				22850	.663	287.2	339.5	+15.2	1	10

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
July 25.349	Continued			22849	.196	303.7	308.2	+11.4	32	230
				22853	.260	357.7	299.3	+20.2	9	49
				22851	.219	33.2	291.5	+15.7	1	3
				22856	.737	117.0	255.8	-15.7	0	7
				22855	.843	102.0	242.6	- 7.1	19	109
				22857	.943	107.2	230.5	-14.2	40	243
				1577 01	.949	74.6	226.5	+16.3	4	14
26.310	+ 8.2	285.9	+5.3	22854	.953	247.2	354.7	-19.7	0	7
				22845	.925	282.9	354.0	+14.0	77	505
				22852	.919	265.0	352.1	- 2.5	0	6
				22850	.809	285.1	339.8	+15.3	0	2
				22849	.402	286.4	309.0	+11.4	53	268
				22853	.351	319.2	300.1	+20.5	5	20
				22858	.365	145.1	273.7	-12.1	4	17
				22855	.709	105.7	242.7	- 7.2	18	99
				22857	.855	110.6	230.3	-14.5	51	305
27.435	+ 8.7	271.1	+5.4	22845	.992	283.7	354.8	+14.2	43	293
				22849	.626	281.9	309.6	+11.6	47	287
				22853	.534	300.3	300.4	+20.3	1	5
				22851	.392	297.3	292.2	+15.4	1	7
				22858	.314	190.1	274.3	-12.5	4	20
				22855	.518	113.5	242.6	- 7.1	14	101
				22857	.709	116.3	230.3	-14.2	39	261
				22859	.953	80.9	198.2	+10.3	4	29
				22860	.990	83.5	188.6	+ 7.2	31	172
28.334	+ 9.1	259.2	+5.5	22849	.790	280.7	311.4	+11.8	34	204
				22853	.664	299.7	297.9	+23.5	3	13
				22858	.398	218.5	273.8	-12.8	7	38
				22855	.359	126.9	242.4	- 7.2	18	104
				22857	.574	124.0	229.9	-13.8	52	327
				1577 02	.930	71.9	190.4	+18.8	0	3
				22860	.935	84.7	189.7	+ 6.9	12	97
29.343	+ 9.5	245.8	+5.6	22849	.924	281.3	313.7	+12.6	36	206
				22858	.564	236.2	274.5	-13.4	3	15
				22855	.229	165.0	242.4	- 7.2	17	87
				1577 03	.490	155.6	233.3	-21.0	1	9
				22857	.419	141.5	230.3	-13.7	35	261
				1577 04	.493	107.8	217.8	- 3.7	1	5
				22860	.836	85.5	189.0	+ 6.8	17	83
30.333	+ 9.9	232.7	+5.6	22849	.989	282.7	315.1	+13.4	30	168
				22861	.881	297.4	293.6	+26.7	5	34
				22858	.707	246.4	274.1	-12.2	10	66
				22855	.279	217.0	242.4	- 7.3	17	104
				22857	.339	171.6	229.8	-13.9	35	245
				22862	.423	58.9	210.5	+17.8	1	3
				22859	.585	80.9	197.0	+ 9.9	6	31
				22860	.674	86.1	190.3	+ 6.8	11	92

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
July 31.383	+10.3	218.8	+5.7	22861	.977	296.1	297.7	+26.6	5	11
				22858	.874	252.0	277.1	-12.7	9	47
				22855	.455	241.5	242.5	- 7.3	14	82
				22857	.375	208.9	229.5	-13.5	35	245
				22859	.360	77.6	198.0	+ 9.8	5	22
				22860	.475	85.2	190.4	+ 7.3	9	52
				22863	.920	121.5	158.2	-26.0	6	35
Aug. 1.428	+10.7	205.0	+5.8	22858	.969	254.8	278.5	-13.1	5	32
				22855	.636	250.7	242.1	- 7.5	9	62
				22857	.507	230.2	228.5	-13.6	36	210
				22862	.230	343.2	209.0	+18.5	2	15
				22859	.107	56.1	199.9	+ 9.2	2	13
				22860	.243	85.6	190.9	+ 6.7	7	46
				22863	.830	126.7	157.5	-25.8	16	78
				22864	.954	98.5	133.6	- 6.3	4	30
2.350	+11.1	192.8	+5.9	22855	.778	254.9	241.9	- 7.9	9	47
				22857	.646	240.6	228.1	-13.7	39	222
				22862	.352	307.1	209.9	+17.8	0	1
				22859	.097	335.1	195.2	+10.9	2	14
				22860	.050	53.4	190.5	+ 7.5	5	32
				22863	.727	134.7	157.9	-25.9	7	63
				22864	.855	101.3	135.4	- 6.5	2	13
3.348	+11.5	179.6	+5.9	22855	.896	258.1	241.7	- 7.9	2	12
				22857	.789	248.0	228.2	-13.3	22	181
				22862	.529	302.8	208.1	+21.8	0	11
				22860	.186	278.2	190.3	+ 7.3	6	28
				22863	.618	147.8	158.2	-25.9	11	45
				22864	.733	105.3	134.4	- 7.0	2	5
				22865	.989	99.7	99.3	- 8.6	30	239
4.328	+11.9	166.7	+6.0	22855	.971	259.4	241.4	- 8.7	0	14
				1577 05	.888	260.8	228.1	- 5.3	2	5
				22857	.901	251.9	228.1	-13.4	29	137
				22860	.424	271.9	191.8	+ 6.3	3	24
				22863	.546	165.6	158.0	-25.9	1	18
				22864	.567	110.1	134.4	- 6.1	3	31
				22865	.934	101.4	99.1	- 8.4	45	291
5.329	+12.3	153.4	+6.1	22857	.972	255.0	227.7	-13.0	24	158
				22860	.633	273.5	192.7	+ 6.9	4	25
				22863	.525	187.5	157.8	-25.2	4	28
				22864	.394	123.3	134.1	- 6.7	5	30
				22865	.832	104.5	99.1	- 8.5	41	261
				22866	.915	105.3	89.5	-11.4	3	34
6.329	+12.7	140.2	+6.1	22860	.820	272.2	195.4	+ 5.3	2	10
				22865	.689	110.1	99.4	- 9.0	41	244
				22866	.789	109.5	91.1	-11.3	25	157
7.387	+13.1	126.2	+6.2	1577 06	.896	248.7	186.2	-15.9	3	8
				22864	.275	212.3	134.7	- 7.2	0	2
				22867	.163	46.0	119.3	+12.6	5	23

Continued

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Aug. 7.387	Continued			22865	.506	119.3	99.8	- 8.7	41	268
				22866	.627	116.4	91.5	-11.0	21	150
				22868	.811	108.4	74.8	-11.0	0	8
8.343	+13.4	113.6	+6.3	22869	.590	280.0	149.7	+11.0	7	45
				22867	.176	307.0	121.8	+12.2	16	107
				22865	.351	137.2	99.6	- 8.8	43	264
				22866	.487	127.5	90.4	-11.4	35	317
				1577 07	.612	64.2	77.7	+20.5	1	4
9.328	+13.8	100.5	+6.3	22869	.763	279.4	150.4	+11.3	19	82
				22867	.395	286.4	123.3	+12.2	33	166
				22865	.262	176.6	99.7	- 8.8	38	278
				22866	.350	150.0	90.3	-11.4	37	284
				22868	.506	124.7	75.6	-11.0	0	1
10.502	+14.2	85.0	+6.4	22869	.886	279.0	147.8	+10.9	2	19
				22867	.624	281.8	123.6	+12.4	38	235
				22865	.360	224.1	99.6	- 8.7	49	241
				22866	.318	195.4	89.9	-11.4	39	265
				22868	.323	155.4	77.2	-10.7	2	18
				22870	.705	67.5	41.3	+20.3	2	9
11.356	+14.5	73.7	+6.4	22867	.772	280.3	124.5	+12.0	36	176
				22865	.502	239.7	99.6	- 8.8	34	213
				22866	.411	222.2	90.0	-11.5	34	232
				22868	.304	190.3	76.9	-10.9	0	2
				22870	.563	62.9	41.6	+20.3	4	25
				22871	.979	77.2	354.6	+13.8	22	126
12.328	+14.9	60.9	+6.5	22867	.905	280.5	126.2	+12.3	8	122
				22865	.667	249.5	99.9	- 8.4	58	226
				22866	.554	236.8	89.0	-11.9	13	107
				22870	.397	50.2	41.9	+20.8	10	57
				22872	.429	72.8	36.1	+13.2	6	36
				22871	.916	77.9	354.0	+13.7	25	132
13.347	+15.2	47.4	+6.5	22867	.977	280.4	126.0	+11.5	21	122
				22865	.813	254.7	99.6	- 8.4	45	234
				22866	.709	244.8	88.3	-12.6	5	44
				22870	.271	18.0	42.3	+21.4	1	9
				22872	.214	55.4	37.0	+13.4	2	14
				1577 08	.673	83.2	4.9	+ 9.4	2	8
				22871	.803	77.9	353.7	+13.6	13	73
14.497	+15.6	32.2	+6.6	22865	.937	258.1	100.0	- 8.7	42	194
				22866	.882	252.3	91.3	-12.2	7	75
				22870	.307	326.8	42.5	+21.3	0	4
				22872	.194	308.1	41.2	+13.3	2	15
				1577 09	.389	5.8	29.6	+29.3	0	2
				22873	.440	144.4	16.9	-14.5	1	4
				22871	.624	76.0	353.8	+13.9	9	41
				22874	.759	77.0	342.7	+14.2	0	3
				22875	.962	78.8	317.2	+12.6	29	211

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Aug. 15.346	+15.9	21.0	+6.7	22865	.984	260.0	99.2	- 8.6	44	224
				22872	.382	287.6	42.8	+12.8	1	11
				22871	.464	73.1	354.0	+13.7	5	21
				22874	.620	75.9	342.8	+13.9	7	42
				22875	.893	79.1	317.2	+12.7	20	161
16.338	+16.3	7.9	+6.7	1577 10	.966	288.5	83.9	+19.6	4	22
				22873	.397	202.0	16.7	-14.9	7	35
				22871	.264	61.6	354.1	+13.7	5	15
				22874	.432	72.5	342.9	+13.5	9	28
				22875	.774	78.9	317.0	+12.8	27	178
				22876	.959	74.4	293.3	+16.8	20	64
17.376	+16.6	354.2	+6.7	22873	.511	225.4	16.2	-14.7	3	32
				22871	.120	359.6	354.2	+13.6	4	16
				22874	.228	52.2	343.5	+14.6	2	26
				22875	.604	78.0	317.1	+12.6	25	178
				22876	.871	74.7	293.1	+16.6	13	76
				22877	.995	103.3	272.0	-12.4	62	310
18.381	+16.9	340.9	+6.8	22873	.661	238.2	16.3	-14.8	6	40
				22871	.254	298.6	354.1	+13.6	1	5
				22874	.145	338.2	344.0	+14.5	1	16
				22875	.410	74.2	317.1	+12.6	32	168
				22876	.743	73.0	293.0	+17.1	7	33
				22877	.967	105.2	268.0	-12.8	172	1423
19.326	+17.2	328.4	+6.8	22873	.804	246.0	17.6	-14.7	8	40
				22874	.287	297.3	343.6	+14.1	1	8
				1578 01	.292	349.0	331.9	+23.4	1	4
				22875	.212	61.4	317.4	+12.5	34	162
				22876	.585	70.7	293.3	+16.7	1	10
				22877	.891	107.6	268.3	-12.3	239	1884
20.324	+17.6	315.2	+6.9	22873	.890	248.5	14.3	-15.5	5	58
				22874	.485	286.9	343.7	+14.1	3	13
				22875	.109	338.9	317.5	+12.7	26	152
				22878	.393	54.3	295.4	+19.7	1	17
				22876	.401	63.8	293.3	+16.5	2	12
				22877	.772	111.8	268.2	-12.0	235	2241
21.403	+17.9	300.9	+6.9	22875	.296	291.7	317.3	+12.9	20	172
				22878	.258	23.0	294.8	+20.5	2	26
				22876	.211	35.3	293.7	+16.7	1	9
				22877	.595	120.3	269.4	-11.5	249	2330
				22879	.931	98.1	233.5	- 4.9	24	129
22.349	+18.2	288.4	+6.9	22875	.489	284.4	317.4	+13.0	24	148
				22878	.264	326.6	297.3	+19.5	2	10
				22876	.193	332.9	293.7	+16.8	1	3
				22877	.444	135.1	269.8	-11.7	250	2213
				22879	.837	100.5	232.9	- 4.8	28	218

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Aug. 23.376	+18.5	274.9	+7.0	22875	.674	282.0	317.3	+13.2	22	162
				22878	.416	306.4	295.8	+20.8	1	9
				22880	.231	295.2	287.2	+12.4	2	11
				22877	.340	164.6	269.6	-12.1	289	2127
				22879	.683	105.9	233.7	- 5.5	46	242
				22881	.732	100.4	228.9	- 2.7	3	10
24.526	+18.9	259.7	+7.0	22875	.839	281.1	317.2	+13.1	19	131
				22880	.485	283.7	288.4	+12.7	9	48
				22877	.372	210.1	270.6	-11.8	357	2128
				22879	.475	115.4	234.3	- 5.4	30	206
				22881	.525	105.3	229.4	- 1.9	0	4
25.330	+19.1	249.0	+7.0	22875	.923	281.4	317.1	+13.2	21	135
				22880	.631	281.3	288.2	+12.6	15	85
				1578 02	.606	292.2	285.3	+18.9	1	7
				22877	.491	229.5	271.4	-12.0	260	1965
				22879	.333	130.8	234.4	- 5.7	25	190
26.409	+19.4	234.8	+7.1	22875	.987	282.4	316.7	+13.3	14	160
				22880	.797	280.0	288.0	+12.3	7	49
				22877	.667	242.5	271.9	-12.3	222	1824
				22879	.221	176.8	234.1	- 5.6	28	181
27.350	+19.7	222.3	+7.1	22877	.799	248.8	271.8	-12.2	192	1595
				22879	.292	222.9	233.8	- 5.3	32	207
28.344	+20.0	209.2	+7.1	22877	.910	253.2	271.9	-12.0	148	1391
				22879	.459	246.0	234.0	- 4.2	27	206
29.510	+20.3	193.8	+7.1	22877	.984	256.0	271.2	-12.3	181	1000
				22879	.676	256.3	234.8	- 3.8	36	186
30.392	+20.5	182.2	+7.2	22877	.994	254.8	263.3	-14.1	19	97
				22879	.812	260.4	235.2	- 3.5	31	165
31.513	+20.8	167.3	+7.2	22879	.935	263.6	235.6	- 3.4	25	164
				1578 03	.936	257.2	234.7	- 9.3	0	3
				22882	.925	103.1	101.7	- 9.2	0	3
Sept. 1.318	+21.0	156.7	+7.2	22879	.984	264.9	235.7	- 3.7	37	176
				22883	.670	107.2	116.8	- 5.9	1	12
				22882	.849	105.4	100.9	- 9.0	2	8
2.334	+21.3	143.3	+7.2	22883	.489	114.9	116.9	- 5.4	9	56
				22882	.710	111.2	101.3	- 9.5	0	5
3.556	+21.6	127.2	+7.2	22883	.265	148.0	119.1	- 5.8	32	194
				22884	.495	67.1	98.7	+17.4	7	26
4.386	+21.8	116.2	+7.2	22883	.240	196.4	120.1	- 6.1	25	194
				22884	.340	58.1	98.7	+17.2	2	13

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Sept. 5.411	+22.0	102.7	+7.2	22883	.389	233.9	121.0	- 6.3	37	251
				22884	.183	18.8	99.1	+17.2	3	20
6.330	+22.2	90.5	+7.2	22885	.625	264.5	128.9	+ 2.2	32	171
				22883	.584	247.6	123.3	- 6.8	64	394
				22886	.393	238.0	110.0	- 5.1	6	21
				22884	.219	321.9	98.6	+17.1	8	42
				1578 04	.288	39.6	79.3	+19.9	0	2
7.409	+22.5	76.3	+7.2	22885	.786	267.3	127.9	+ 2.4	37	381
				22883	.755	254.5	123.2	- 6.7	87	525
				22886	.573	253.1	109.5	- 3.5	0	6
				22884	.377	298.1	96.6	+17.0	10	45
				22887	.241	332.7	83.0	+19.5	0	3
				22888	.474	98.8	48.4	+ 2.3	4	28
8.330	+22.7	64.1	+7.2	22885	.911	269.6	129.6	+ 2.6	85	545
				22883	.891	258.6	125.5	- 6.7	81	618
				22884	.541	290.9	95.9	+17.3	3	15
				22887	.384	303.4	83.8	+19.0	1	6
				22888	.251	108.2	50.3	+ 2.6	4	19
9.325	+22.9	51.0	+7.2	22885	.979	271.4	129.3	+ 2.9	41	420
				22883	.967	260.9	124.9	- 6.8	146	576
				22884	.709	287.5	95.9	+17.5	2	11
				1578 05	.475	73.3	23.1	+14.2	0	4
				1578 06	.802	108.9	0.7	-10.4	2	11
10.331	+23.1	37.7	+7.2	22883	.998	262.1	122.7	- 7.3	16	146
				22884	.839	286.6	95.1	+17.8	2	10
				22889	.977	78.3	319.1	+13.0	21	134
11.440	+23.3	23.0	+7.2	22884	.961	286.5	98.1	+17.8	4	20
				22889	.895	79.2	318.9	+12.9	15	78
12.330	+23.5	11.3	+7.2	22884	.988	287.0	94.1	+17.8	14	58
				22890	.430	156.2	0.9	-16.0	4	34
				22889	.791	79.4	318.7	+12.8	15	77
				22891	.983	78.3	290.8	+12.8	0	6
13.333	+23.7	358.1	+7.2	22890	.389	187.8	1.2	-15.3	16	90
				22889	.629	78.9	319.0	+12.6	13	80
				22891	.917	79.3	290.9	+12.7	3	8
				22892	.977	87.3	280.3	+ 4.2	36	201
				22893	.990	104.2	278.2	-12.9	8	63
14.338	+23.9	344.8	+7.2	22890	.473	218.2	2.3	-14.9	15	68
				22889	.442	76.4	318.8	+12.4	8	63
				22891	.804	79.1	290.9	+13.0	0	4
				22892	.906	88.8	279.7	+ 4.1	29	199
				22893	.932	106.0	278.7	-12.1	43	287
				22894	.975	103.4	269.7	-11.3	20	95

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Sept. 15.513	+24.1	329.3	+7.2	1579 01	.819	271.4	24.4	+ 5.3	2	12
				22890	.624	233.2	0.4	−15.7	9	68
				22889	.201	63.3	318.7	+12.2	13	53
				22891	.617	77.7	291.2	+13.2	0	3
				22892	.761	90.5	279.8	+ 4.3	40	174
				22893	.806	110.4	279.0	−11.7	49	361
				22894	.878	107.1	270.6	−11.2	23	143
16.339	+24.2	318.4	+7.2	22890	.746	241.6	1.1	−15.5	14	66
				22889	.089	356.6	318.7	+12.2	8	43
				22891	.466	75.1	290.9	+13.3	0	1
				22892	.626	91.9	279.6	+ 4.4	23	148
				22893	.690	115.5	279.0	−11.7	48	325
				22894	.780	110.6	270.5	−11.2	18	98
				22895	.975	94.2	241.8	− 2.4	5	20
17.347	+24.4	305.1	+7.2	22890	.873	247.6	1.8	−15.5	9	48
				− 22889	.248	291.5	318.6	+12.2	8	45
				22891	.254	66.2	291.3	+12.8	2	13
				22892	.424	94.6	280.1	+ 4.6	30	142
				22893	.528	126.9	279.6	−12.0	44	251
				22894	.608	118.8	272.3	−11.0	17	97
				22895	.898	96.1	242.0	− 2.2	3	10
18.318	+24.5	292.2	+7.2	22890	.952	250.6	1.0	−16.0	7	60
				22889	.451	282.7	318.8	+12.1	4	15
				22891	.106	3.2	291.9	+13.2	4	15
				22892	.214	100.6	280.1	+ 4.7	27	167
				22893	.387	147.5	280.0	−12.0	36	222
				22894	.430	133.6	273.8	−10.4	8	51
				22895	.778	98.5	242.1	− 2.0	3	12
				22896	.902	99.8	229.2	− 5.6	3	18
19.376	+24.7	278.3	+7.1	22889	.649	280.3	318.8	+12.1	3	10
				22891	.267	295.3	292.6	+13.4	4	18
				22892	.052	225.8	280.4	+ 5.0	24	124
				22893	.336	185.9	280.3	−12.3	32	221
				22894	.292	169.1	275.1	− 9.5	5	24
				22895	.598	103.3	242.8	− 2.1	3	8
				22896	.749	105.6	231.9	− 6.7	2	3
20.359	+24.9	265.3	+7.1	22889	.798	279.9	318.6	+12.1	0	4
				22891	.471	284.5	293.1	+13.0	6	41
				22892	.269	263.8	280.8	+ 5.2	21	97
				22893	.414	217.8	280.3	−12.2	24	161
				22894	.345	221.0	278.4	− 8.1	2	16
				22895	.407	111.4	243.1	− 2.0	1	4
21.335	+25.0	252.4	+7.1	22897	.841	280.8	310.1	+12.9	4	25
				22891	.663	280.9	294.0	+12.5	30	186
				22892	.479	267.5	281.0	+ 5.0	15	91
				22893	.553	235.1	280.0	−12.1	22	111
				22894	.488	234.1	276.0	−10.1	1	8
				22895	.226	135.1	243.3	− 2.2	0	2
				22898	.882	79.9	190.0	+12.2	0	7

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Sept. 22.353	+25.1	239.0	+7.0	22897	.956	280.6	312.6	+12.2	4	26
				22891	.826	279.9	295.1	+12.1	36	284
				22893	.722	247.4	281.6	−10.9	6	45
				22892	.672	269.4	281.2	+ 4.8	12	77
				22896	.274	143.3	229.5	− 5.7	4	22
				22899	.815	114.0	188.8	−14.9	10	58
23.763	+25.3	220.4	+7.0	22891	.972	281.2	297.7	+12.4	18	97
				22892	.877	271.5	281.8	+ 4.7	18	57
				22896	.296	222.2	231.8	− 5.7	3	30
				22899	.613	124.8	189.2	−14.4	18	80
24.396	+25.4	212.0	+7.0	22891	.985	282.8	293.2	+13.8	0	13
				22892	.937	272.5	281.8	+ 4.8	6	32
				22896	.373	244.2	231.6	− 2.7	1	10
				22899	.496	133.9	190.5	−13.5	23	133
				22900	.988	98.0	132.0	− 6.8	86	472
25.350	+25.5	199.4	+7.0	22898	.153	46.8	192.9	+12.9	5	22
				22899	.380	158.5	191.2	−13.7	21	155
				22900	.932	100.4	132.2	− 7.0	79	460
26.335	+25.6	186.4	+6.9	22899	.368	195.2	192.1	−13.8	18	129
				22900	.830	103.2	132.2	− 6.9	84	462
27.367	+25.7	172.8	+6.9	22899	.475	221.7	191.8	−14.2	34	197
				22900	.678	107.8	132.4	− 6.7	84	449
				22901	.835	101.3	117.7	− 5.5	21	136
28.326	+25.8	160.1	+6.8	22899	.620	236.2	192.1	−14.3	21	171
				22900	.513	115.6	132.5	− 6.7	78	453
				22901	.687	105.9	118.7	− 5.7	32	255
				22902	.984	80.8	79.6	+10.2	98	640
29.418	+25.9	145.7	+6.8	22899	.764	244.6	191.0	−14.3	21	137
				22900	.316	134.2	132.6	− 6.1	98	452
				22901	.459	114.7	121.1	− 4.8	16	115
				22902	.921	80.8	78.1	+11.1	82	642
30.326	+25.9	133.7	+6.8	22899	.874	249.1	191.0	−14.5	7	32
				22898	.831	281.0	190.3	+12.8	0	4
				1579 02	.323	182.0	134.4	−12.0	1	4
				22900	.224	175.0	132.6	− 6.1	82	442
				22901	.309	129.9	120.0	− 4.8	28	175
				22902	.819	81.4	78.4	+10.9	72	637
				22903	.902	102.3	71.1	− 8.0	0	5
Oct. 1.347	+26.0	120.3	+6.7	22899	.958	253.1	190.8	−14.0	4	31
				22900	.307	225.4	132.9	− 5.9	73	428
				22901	.202	178.3	119.9	− 4.9	21	111
				22902	.656	81.6	79.1	+10.6	70	540
				22904	.695	73.8	76.5	+16.0	2	9
				22903	.796	105.1	69.6	− 7.7	2	11

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Oct. 2.309	+26.1	107.6	+6.7	22900	.470	244.3	132.7	- 5.7	90	433
				22901	.291	228.1	120.1	- 4.6	16	70
				22902	.465	79.7	79.9	+10.7	65	404
				22904	.547	70.7	75.2	+16.0	1	17
3.321	+26.1	94.2	+6.6	22900	.653	253.2	133.0	- 5.7	64	441
				22901	.465	245.9	119.4	- 4.9	9	48
				22902	.253	71.4	80.2	+11.0	49	349
				22904	.333	61.2	76.7	+15.5	0	2
4.376	+26.2	80.3	+6.6	22900	.813	258.1	133.2	- 5.7	78	393
				22901	.626	254.0	117.3	- 4.7	3	29
				22902	.075	352.9	80.8	+10.8	45	269
5.482	+26.2	65.7	+6.5	22900	.917	260.5	130.8	- 6.0	54	433
				22901	.773	259.4	115.1	- 4.0	2	14
				1579 03	.540	294.9	96.7	+18.7	1	10
				22902	.232	289.1	78.6	+10.7	54	287
				22903	.294	198.7	71.2	- 9.6	5	25
6.300	+26.3	54.9	+6.5	22900	.983	262.7	133.4	- 5.9	58	481
				22902	.431	281.8	80.2	+10.9	43	353
				22905	.335	271.1	74.6	+ 6.5	2	21
				22903	.404	230.6	73.2	- 8.7	7	47
7.326	+26.3	41.4	+6.4	22902	.630	279.1	80.5	+10.7	54	282
				22905	.541	272.3	74.2	+ 6.6	1	3
				22903	.584	244.6	73.5	- 9.0	5	31
				22906	.426	53.6	20.0	+20.5	1	8
				1579 04	.812	106.6	349.5	- 9.5	0	7
				22907	.989	79.9	319.3	+10.9	7	35
8.305	+26.3	28.5	+6.3	22902	.790	278.3	80.9	+10.4	39	264
				22903	.752	250.8	74.5	- 9.9	5	20
				22908	.112	58.9	22.9	+ 9.6	2	17
				22906	.274	25.7	21.2	+20.5	2	15
				22907	.930	80.4	319.5	+11.3	6	29
9.351	+26.3	14.7	+6.3	22902	.912	278.6	80.8	+10.4	36	228
				22903	.908	255.5	77.8	-10.3	0	15
				22908	.149	291.4	22.7	+ 9.3	7	37
				22907	.822	80.3	319.1	+11.6	4	17
10.401	+26.3	0.8	+6.2	22902	.980	279.7	80.0	+10.7	33	229
				22908	.363	282.4	21.8	+10.2	2	15
				22907	.662	79.4	319.3	+11.7	3	13
11.363	+26.3	348.1	+6.1	22908	.536	279.9	20.5	+10.4	3	9
				22907	.493	75.2	319.0	+12.6	2	25
				22909	.777	79.7	297.0	+11.8	14	53
12.313	+26.3	335.6	+6.1	22908	.703	279.9	20.4	+11.2	2	9
				22910	.346	159.4	328.4	-12.8	5	20
				22907	.296	69.3	319.3	+11.8	2	11
				22909	.638	78.6	296.0	+11.9	8	45

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Oct. 13.511	+26.3	319.8	+6.0	22910	.359	207.2	329.4	-12.6	7	38
				22907	.102	14.7	318.3	+11.6	0	4
				22909	.422	75.1	295.3	+11.7	4	11
14.378	+26.3	308.3	+5.9	22910	.477	229.2	330.0	-12.6	8	40
15.320	+26.3	295.9	+5.9	22910	.626	241.3	330.0	-12.6	6	34
16.351	+26.2	282.3	+5.8	22910	.788	249.6	331.2	-12.1	2	17
				22909	.293	294.2	298.1	+12.4	0	3
				22911	.945	83.2	211.0	+ 8.3	29	143
17.349	+26.2	269.2	+5.7	22912	.096	296.5	274.1	+ 8.1	4	28
				22911	.851	83.3	210.7	+ 8.7	45	303
18.301	+26.1	256.6	+5.6	22912	.307	280.0	274.4	+ 8.4	2	9
				1580 01	.175	262.7	266.6	+ 4.3	1	4
				22911	.722	83.8	210.3	+ 8.4	98	778
19.302	+26.1	243.4	+5.6	22911	.556	83.4	209.6	+ 8.3	130	963
				22913	.822	72.8	188.3	+17.3	2	6
20.302	+26.0	230.2	+5.5	1580 02	.710	272.3	275.5	+ 5.5	3	15
				22911	.352	79.9	209.7	+ 8.7	141	1312
				22914	.522	123.2	203.9	-11.7	5	31
				22913	.693	69.0	187.4	+18.4	10	62
21.437	+25.9	215.2	+5.4	22911	.104	59.5	210.0	+ 8.4	222	1477
				22914	.356	147.5	204.0	-12.1	2	13
				22913	.512	62.9	186.7	+18.2	3	26
				22915	.992	95.8	133.5	- 5.0	49	419
22.368	+25.9	203.0	+5.3	22911	.129	295.3	209.7	+ 8.4	223	1653
				22914	.305	185.5	204.7	-12.3	0	6
				22913	.340	48.2	187.6	+18.1	6	35
				22915	.944	97.1	133.1	- 4.9	50	324
23.294	+25.8	190.7	+5.2	22911	.339	280.4	210.4	+ 8.4	238	1637
				22913	.224	7.0	189.1	+18.0	13	75
				22915	.855	99.2	133.1	- 5.1	53	268
24.303	+25.7	177.4	+5.1	22911	.549	277.8	210.7	+ 8.6	213	1631
				22913	.306	319.6	189.5	+18.4	82	383
				22915	.710	102.0	133.5	- 4.8	64	302
				22916	.749	77.8	129.1	+12.5	6	68
25.376	+25.6	163.3	+5.0	22911	.741	277.2	211.2	+ 8.7	212	1472
				22913	.485	300.1	189.5	+18.5	70	404
				22915	.531	107.9	133.0	- 5.0	47	294
				22916	.572	75.2	128.9	+12.5	12	93
				1580 03	.842	69.8	106.4	+19.6	0	4
				22917	.990	79.6	81.0	+11.0	51	311

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Oct. 26.373	+25.4	150.2	+5.0	22911	.877	277.2	211.6	+ 8.6	181	1274
				22913	.661	292.3	190.1	+18.3	41	300
				22915	.341	120.4	133.1	- 5.1	58	282
				22916	.371	70.0	129.4	+11.9	9	62
				22917	.934	79.8	80.8	+11.3	59	289
27.515	+25.3	135.1	+4.8	22911	.977	277.4	213.0	+ 8.2	196	1243
				22913	.824	288.7	190.1	+18.1	28	207
				22915	.182	164.3	132.3	- 5.2	52	340
				22916	.129	35.0	130.8	+10.8	5	43
				22917	.816	79.5	80.4	+11.4	33	291
				22918	.959	97.8	62.6	- 6.0	18	118
28.299	+25.2	124.7	+4.8	22911	.985	277.8	205.3	+ 8.5	49	269
				22913	.916	287.5	191.2	+17.9	31	193
				22915	.221	217.0	132.4	- 5.4	56	309
				22916	.154	317.1	130.8	+11.2	6	37
				22919	.566	114.7	93.5	- 9.6	0	14
				22917	.703	78.5	80.3	+11.4	48	281
				1580 04	.780	97.0	74.1	- 2.4	0	7
				22918	.886	98.8	63.4	- 5.5	11	48
29.415	+25.1	110.0	+4.7	22913	.988	287.3	192.0	+17.8	22	148
				22915	.423	246.4	132.8	- 5.4	49	315
				22916	.337	292.6	128.5	+11.8	1	16
				22919	.465	126.1	87.6	-11.6	6	55
				22917	.502	75.3	80.5	+11.3	44	281
				22918	.733	101.6	64.0	- 5.3	2	19
30.307	+24.9	98.3	+4.6	22915	.591	253.5	132.8	- 5.8	59	297
				22916	.489	288.5	126.5	+12.9	1	6
				22919	.365	145.7	86.1	-13.0	14	67
				22917	.326	68.5	80.3	+11.2	43	280
				22918	.622	107.1	61.6	- 6.8	0	4
31.415	+24.7	83.7	+4.5	22915	.771	258.4	132.9	- 6.0	50	337
				22919	.290	194.8	88.0	-11.8	12	76
				22917	.130	25.1	80.4	+11.2	45	273
				22920	.991	100.8	2.8	-10.1	85	372
				22921	.997	110.0	0.4	-19.4	13	52
Nov. 1.518	+24.6	69.1	+4.3	22915	.907	261.0	133.2	- 6.3	54	251
				22919	.442	235.6	90.8	-10.4	17	119
				22917	.227	301.8	80.4	+11.1	59	262
				22922	.494	117.9	43.0	- 9.4	3	13
				22923	.749	78.0	20.9	+11.8	2	7
				22920	.925	102.6	2.9	- 9.9	69	345
				22921	.951	111.9	0.3	-19.2	17	98
				22924	.944	79.6	358.2	+11.2	0	13
2.403	+24.4	57.4	+4.3	22915	.973	262.7	133.2	- 6.1	60	288
				22919	.602	245.4	91.2	-11.0	26	199
				22917	.408	288.0	80.6	+11.1	41	271
				22922	.338	134.3	43.3	- 9.5	0	2
				22920	.830	105.2	3.2	-10.0	51	356

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Nov. 2.403	Continued			22921	.873	115.1	0.7	-19.4	16	109
				22924	.851	80.0	359.1	+10.7	2	15
3.292	+24.3	45.7	+4.2	22919	.741	251.1	91.1	-10.9	35	243
				22917	.573	283.5	80.2	+11.1	56	299
				22920	.705	108.5	3.1	- 9.9	55	377
				22921	.771	119.4	0.5	-19.3	18	102
				22924	.745	79.5	357.7	+10.6	9	41
4.389	+24.1	31.3	+4.0	22919	.879	256.5	91.2	- 9.8	36	179
				22917	.756	281.3	80.1	+11.1	43	280
				22923	.244	55.5	19.5	+11.9	1	2
				22920	.521	116.2	3.0	- 9.7	63	384
				22921	.617	128.8	0.8	-19.2	10	97
				22924	.546	76.5	358.7	+10.7	21	107
5.403	+23.9	17.9	+4.0	22919	.955	258.6	89.3	- 9.7	53	385
				22917	.883	280.6	79.9	+11.2	53	279
				22923	.134	357.1	18.3	+11.6	2	23
				22920	.342	132.5	3.1	- 9.5	57	382
				22921	.479	144.3	0.8	-19.1	11	82
				22924	.335	69.1	359.4	+10.6	17	124
6.444	+23.7	4.2	+3.8	22919	.995	259.9	87.3	- 9.6	20	82
				22917	.970	280.6	80.2	+11.3	57	255
				22923	.313	295.1	20.9	+11.3	0	2
				22920	.234	175.7	3.1	- 9.6	70	391
				22924	.136	27.5	0.5	+10.7	11	61
				22921	.397	170.9	0.4	-19.1	5	55
7.479	+23.4	350.5	+3.7	22920	.315	223.4	3.1	- 9.5	54	362
				22921	.418	202.1	0.0	-19.0	10	65
				22924	.188	308.7	359.0	+10.4	4	32
				22925	.434	114.9	327.2	- 7.1	0	4
				22926	.444	76.5	324.7	+ 9.3	2	17
8.308	+23.3	339.6	+3.6	22920	.448	240.1	2.7	- 9.5	52	351
				22924	.392	289.0	1.7	+10.7	2	10
				22921	.503	220.6	359.7	-18.9	6	38
				22926	.271	67.7	325.0	+ 9.4	8	50
				22925	.345	124.8	323.1	- 7.8	1	9
9.295	+23.0	326.6	+3.5	22920	.624	250.0	2.9	- 9.5	42	313
				22924	.600	283.4	2.9	+10.8	1	4
				22921	.638	234.4	359.7	-18.8	3	23
				22926	.108	7.9	325.7	+ 9.6	5	35
				22925	.196	172.9	325.2	- 7.6	1	5
				22927	.557	100.4	293.4	- 2.8	4	18
				22928	.791	112.6	277.6	-15.4	3	21
10.401	+22.8	312.0	+3.4	22920	.793	255.6	2.9	- 9.2	38	366
				22921	.789	242.8	359.6	-18.8	2	25
				22926	.315	290.5	329.3	+ 9.6	0	3
				22927	.322	108.0	294.2	- 2.5	3	25

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Nov. 11.390	+22.6	298.9	+3.3	1581 01	.955	277.0	11.7	+ 7.6	4	51
				22920	.908	258.3	2.9	- 9.2	49	328
				22921	.895	247.0	359.3	-18.8	5	39
				22927	.122	150.9	295.6	- 2.8	2	10
				22929	.983	83.6	219.4	+ 6.9	12	94
12.338	+22.3	286.4	+3.2	22920	.975	259.4	2.7	- 9.6	61	394
				1581 02	.913	249.9	349.9	-16.9	0	3
				1581 03	.690	275.1	329.9	+ 5.8	0	4
				1581 04	.280	185.3	288.0	-13.0	1	8
				22928	.339	156.6	278.5	-14.9	1	9
				22930	.528	127.0	260.6	-15.6	4	17
				22929	.912	83.2	220.7	+ 7.5	10	74
13.318	+22.1	273.5	+3.1	1581 05	.372	266.1	295.2	+ 1.4	1	5
				1581 06	.381	245.4	293.9	- 6.2	1	6
				22928	.311	192.9	277.6	-14.5	0	1
				22930	.381	147.6	261.3	-15.7	1	8
				22929	.816	83.1	219.0	+ 7.4	9	49
				22931	.989	103.6	193.4	-13.0	68	437
14.273	+21.8	260.9	+3.0	1581 07	.363	272.0	282.1	+ 3.5	2	9
				22929	.704	81.4	216.4	+ 8.2	1	4
				22931	.935	104.8	193.3	-12.7	91	516
15.424	+21.5	245.8	+2.8	22929	.406	78.2	222.2	+ 7.3	1	4
				22931	.820	108.1	192.8	-13.0	95	545
				1581 08	.847	84.0	188.0	+ 6.6	0	2
				1581 09	.929	71.5	178.0	+18.2	0	3
16.309	+21.3	234.1	+2.7	1581 10	.612	52.3	202.1	+24.2	0	5
				22931	.697	111.7	192.7	-12.9	76	482
				22932	.908	126.3	175.6	-31.1	0	3
17.427	+20.9	219.4	+2.6	22933	.683	249.7	260.1	-11.7	5	25
				22934	.177	310.0	227.2	+ 9.1	1	11
				22931	.512	121.4	192.8	-13.1	75	454
				22932	.807	133.4	175.9	-31.7	4	18
				22935	.996	96.2	135.2	- 5.9	46	205
18.508	+20.6	205.1	+2.5	22933	.859	255.5	262.8	-11.1	8	38
				22934	.399	288.7	227.6	+ 9.6	6	20
				22936	.180	320.8	211.7	+10.4	1	13
				22931	.342	141.6	192.6	-13.1	75	410
				22935	.951	97.1	133.8	- 5.9	38	215
19.520	+20.3	191.8	+2.3	22933	.959	257.0	264.2	-11.7	19	132
				22934	.612	281.3	229.0	+ 8.7	1	9
				22936	.358	285.9	212.0	+ 7.8	0	3
				22931	.270	181.2	192.1	-13.2	77	482
				22935	.856	98.3	133.6	- 5.8	36	203
20.423	+20.0	179.9	+2.2	22933	.988	258.2	260.3	-11.3	7	42
				22937	.422	232.8	199.9	-12.7	2	17
				22931	.338	218.5	192.3	-13.1	81	494

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Nov. 20.423	Continued			22938	.291	27.1	171.9	+17.2	2	14
				22935	.733	100.4	133.6	- 6.0	37	186
21.080	+19.8	171.2	+2.1	22934	.820	279.5	225.9	+ 9.0	0	7
				22937	.550	242.6	201.1	-12.8	2	17
				22931	.435	232.5	191.9	-13.3	72	445
				22938	.267	1.7	170.7	+17.6	0	12
				22935	.627	102.4	133.4	- 6.0	31	176
22.517	+19.4	152.3	+2.0	22937	.796	253.1	203.2	-12.1	2	14
				22931	.683	247.7	192.7	-13.5	71	516
				22935	.352	112.7	133.3	- 5.9	28	198
				22939	.908	101.1	88.0	- 9.2	10	80
				22940	.925	109.5	86.6	-17.2	20	102
				22941	.953	75.6	80.2	+14.3	113	627
23.540	+19.0	138.8	+1.9	22937	.911	255.9	203.2	-12.0	0	10
				22931	.834	252.2	193.4	-13.7	90	614
				22935	.167	145.1	133.3	- 6.0	35	183
				22942	.393	57.1	119.0	+14.0	1	6
				22943	.366	69.0	118.6	+ 9.3	1	6
				22939	.782	103.3	88.5	- 9.1	14	52
				22940	.815	112.6	87.1	-17.0	11	78
				22941	.857	74.6	80.6	+14.1	87	644
24.444	+18.7	126.9	+1.7	22931	.922	253.8	192.6	-14.2	100	624
				22935	.174	219.6	133.2	- 5.9	29	170
				22943	.217	58.7	116.1	+ 8.2	0	9
				22939	.634	106.3	89.0	- 8.9	11	80
				22940	.710	116.7	85.4	-17.2	11	71
				22944	.717	104.4	82.4	- 9.0	3	31
				22941	.736	72.4	80.8	+14.0	56	619
25.519	+18.4	112.7	+1.6	22931	.981	254.8	190.6	-14.5	43	439
				22935	.374	249.5	133.2	- 6.0	21	159
				22939	.400	115.4	91.4	- 8.3	10	39
				22940	.495	128.6	89.0	-16.5	19	141
				22944	.552	111.0	81.3	-10.0	1	5
				22941	.554	66.9	81.2	+13.9	78	618
26.417	+18.1	100.9	+1.5	22935	.545	256.6	132.9	- 6.0	26	183
				22942	.399	302.0	121.1	+13.5	2	25
				22939	.234	140.9	92.3	- 9.0	13	71
				22940	.365	148.8	89.5	-16.6	49	338
				22944	.362	120.5	82.5	- 9.1	24	127
				22941	.398	57.6	80.7	+13.7	58	545
27.566	+17.6	85.7	+1.4	22935	.742	261.0	133.0	- 5.8	22	173
				22942	.614	290.4	121.8	+13.4	0	5
				22939	.223	212.5	92.6	- 9.4	4	31
				22940	.317	189.2	88.7	-16.8	64	579
				22944	.191	169.2	83.6	- 9.4	14	79
				22941	.228	19.8	81.2	+13.7	52	352
				1581 11	.444	57.8	63.0	+14.9	0	6
				22945	.823	110.2	32.6	-15.6	0	9

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Nov. 28.372	+17.4	75.1	+1.2	22935	.852	262.3	133.0	- 5.9	24	169
				22942	.729	286.5	120.7	+12.7	0	6
				22939	.358	237.0	92.8	-10.0	17	143
				22940	.392	218.2	89.7	-16.7	64	644
				22944	.245	221.8	84.6	- 9.3	11	41
				22941	.234	337.7	80.3	+13.7	33	310
				22945	.705	113.3	33.1	-15.2	9	38
				22946	.953	101.6	3.6	-10.7	3	10
29.463	+16.9	60.7	+1.1	22935	.954	263.5	132.8	- 5.9	21	158
				22939	.572	250.7	93.8	- 9.9	16	74
				22940	.562	236.9	90.1	-16.8	96	725
				22944	.446	246.5	85.1	- 9.2	7	26
				22941	.376	304.1	79.3	+13.2	34	187
				22945	.528	122.7	33.3	-15.5	5	23
				22946	.849	103.2	3.7	-10.6	2	8
30.458	+16.6	47.6	+1.0	22935	.996	264.0	132.0	- 5.9	23	192
				22939	.740	255.5	94.1	-10.0	8	45
				22940	.721	245.2	90.6	-16.8	88	692
				22944	.601	251.7	82.9	-10.0	3	24
				22941	.554	292.5	79.2	+13.1	22	113
				22945	.371	139.2	33.1	-15.3	1	11
				22946	.709	105.9	3.9	-10.5	2	6
Dec. 1.322	+16.2	36.2	+0.9	22939	.852	257.5	93.7	-10.1	10	82
				22940	.836	249.0	90.7	-16.9	80	664
				22944	.752	257.6	84.0	- 8.7	8	49
				22941	.689	288.0	78.3	+12.9	14	81
				22947	.230	179.6	36.1	-12.4	0	2
				22946	.585	109.2	2.2	-10.3	1	4
				22948	.965	95.2	321.8	- 4.8	4	16
2.290	+15.9	23.5	+0.8	22939	.949	259.3	94.4	- 9.9	10	56
				22940	.935	252.0	91.3	-16.5	69	757
				22944	.883	259.6	84.7	- 8.8	5	49
				22941	.837	284.1	79.3	+12.2	15	132
				22947	.312	220.6	35.4	-12.9	2	14
				22948	.871	94.6	323.2	- 3.7	30	173
3.474	+15.4	7.9	+0.6	22941	.964	281.7	82.0	+11.4	37	214
				1581 12	.526	287.1	38.3	+ 9.4	1	9
				22947	.506	243.7	35.4	-12.4	20	109
				22948	.708	96.6	323.2	- 4.2	35	204
				22949	.955	105.9	296.2	-14.9	0	14
4.347	+15.1	356.4	+0.5	22947	.680	251.9	37.5	-11.8	10	58
				22945	.639	245.3	33.1	-15.0	1	10
				22948	.556	98.7	323.0	- 4.4	52	354
				22949	.895	105.1	294.0	-13.3	0	5
5.310	+14.7	343.7	+0.4	22947	.833	255.1	38.8	-12.1	6	24
				22950	.158	330.8	348.1	+ 8.3	13	55
				22948	.369	103.8	322.7	- 4.7	72	554
				22951	.583	71.7	309.5	+10.8	1	10

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Dec. 5.310	Continued			22952	.715	110.7	300.2	-14.3	3	24
6.313	+14.3	330.5	+0.2	22947	.928	256.4	37.7	-12.5	6	42
				22945	.916	252.4	35.4	-15.9	8	39
				22950	.345	293.2	349.0	+ 8.0	13	139
				22948	.165	120.9	322.3	- 4.6	73	614
				22951	.402	62.5	309.3	+10.8	3	30
				22952	.540	116.7	300.8	-13.8	6	39
				22953	.984	93.7	251.2	- 3.6	23	159
7.286	+13.9	317.6	+0.1	22945	.984	254.2	36.5	-15.5	11	45
				22950	.528	286.0	348.3	+ 8.4	7	51
				22948	.118	225.1	322.4	- 4.7	66	620
				22951	.212	34.9	310.6	+10.1	10	47
				22952	.360	130.6	301.4	-13.4	7	38
				22953	.918	93.7	251.3	- 3.4	24	128
				22954	.969	80.4	242.4	+ 9.3	5	25
8.492	+13.3	301.7	-0.1	22950	.702	283.5	345.4	+ 9.4	2	9
				22948	.367	258.3	322.8	- 4.3	71	569
				22951	.246	319.5	311.1	+10.7	8	40
				22952	.230	185.7	303.1	-13.2	4	27
				22955	.279	67.6	286.7	+ 6.0	7	35
				22953	.771	94.4	251.5	- 3.5	15	142
				22954	.888	79.5	239.7	+ 9.3	16	80
9.503	+12.9	288.4	-0.2	22950	.900	281.2	351.9	+10.0	5	29
				22956	.733	248.5	333.3	-15.7	2	22
				22948	.574	262.2	323.1	- 4.6	66	579
				1582 01	.639	305.0	322.4	+21.3	3	12
				22951	.434	295.3	311.8	+10.5	8	48
				22952	.346	229.7	304.1	-13.0	3	15
				22955	.102	11.7	287.2	+ 5.5	17	109
				22957	.129	164.9	286.5	- 7.3	3	22
				22953	.608	95.1	251.2	- 3.2	24	169
				22954	.726	77.7	242.8	+ 8.8	18	85
10.440	+12.5	276.1	-0.3	22950	.975	279.6	352.7	+ 9.3	14	81
				22956	.848	251.3	332.5	-15.9	4	33
				22948	.744	264.4	323.8	- 4.3	68	459
				22951	.607	286.7	312.1	+ 9.8	5	26
				1582 02	.510	262.4	306.4	- 4.1	1	8
				22955	.239	296.3	288.4	+ 5.8	15	66
				22957	.215	235.0	286.3	- 7.4	6	19
				22953	.426	97.2	251.1	- 3.3	14	122
				22954	.567	74.2	242.7	+ 8.6	29	166
				22958	.975	71.5	200.0	+18.0	19	162
11.568	+12.0	261.2	-0.4	22956	.956	253.6	333.4	-15.8	0	7
				22948	.884	265.3	323.1	- 4.4	60	409
				22951	.787	283.2	312.1	+10.0	2	9
				22952	.699	251.6	303.9	-13.0	0	3
				22955	.455	284.9	287.3	+ 6.3	6	39
				22957	.425	253.2	285.3	- 7.4	4	10

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Dec. 11.568	Continued			22953	.199	103.2	250.1	- 3.0	14	102
				22954	.370	64.7	241.5	+ 8.6	34	284
				22958	.931	70.1	194.3	+18.3	66	481
				22959	.957	104.8	188.7	-14.2	22	133
12.718	+11.5	246.1	-0.6	22948	.980	265.3	324.3	- 4.7	68	367
				22951	.871	282.3	305.7	+10.4	3	20
				22952	.809	252.9	298.7	-14.1	7	47
				22955	.713	279.9	290.9	+ 6.6	2	10
				22953	.092	245.6	250.8	- 2.8	28	93
				22954	.176	20.0	242.6	+ 8.9	62	302
				22958	.812	66.3	194.5	+18.6	106	465
				22959	.856	105.7	188.3	-13.7	21	91
				22960	.923	76.6	179.6	+12.1	4	14
13.820	+11.0	231.5	-0.7	22952	.953	256.4	303.3	-13.2	9	32
				22953	.338	264.4	251.1	- 2.6	28	88
				22954	.250	313.2	242.1	+ 9.1	52	241
				22961	.224	131.7	221.8	- 9.3	3	11
				1582 03	.571	113.8	199.1	-13.9	0	3
				22958	.666	60.6	194.0	+18.4	104	476
				22959	.708	109.4	188.2	-14.1	20	86
				22960	.793	74.5	180.4	+11.8	7	39
14.411	+10.8	223.7	-0.8	22953	.466	266.3	251.3	- 2.4	21	109
				22954	.361	297.6	242.5	+ 8.8	35	311
				22961	.144	164.3	221.5	- 8.7	1	7
				22958	.569	55.2	194.4	+18.2	55	448
				22959	.609	111.9	188.3	-13.7	15	98
				22960	.710	72.3	180.2	+11.8	9	55
15.288	+10.4	212.2	-0.9	22953	.640	267.4	251.8	- 2.3	16	84
				22954	.512	289.9	241.3	+ 9.2	35	253
				22958	.443	42.7	193.8	+18.1	36	279
				22959	.451	119.4	188.5	-13.6	6	56
				22960	.542	65.5	182.0	+12.1	5	29
				22962	.959	80.2	139.3	+ 9.1	12	51
				22963	.979	94.5	134.1	- 4.6	15	102
16.472	+ 9.8	196.6	-1.1	22953	.826	267.8	252.1	- 2.4	11	99
				22954	.692	284.9	239.1	+ 9.4	33	158
				22964	.335	227.4	211.3	-14.1	2	16
				22958	.329	5.7	194.6	+17.9	33	203
				22959	.258	147.9	188.5	-13.6	4	35
				22960	.331	47.8	182.2	+11.7	9	53
				22962	.860	78.8	138.2	+ 9.0	19	116
				22963	.890	94.8	134.0	- 4.7	14	117
				22965	.992	104.4	114.2	-14.4	16	162
17.282	+ 9.5	185.9	-1.2	22953	.919	267.9	252.5	- 2.4	13	76
				22954	.812	282.6	239.2	+ 9.5	32	191
				22964	.469	241.2	210.9	-14.1	0	24
				22958	.358	337.3	194.2	+18.0	25	179
				22959	.220	190.2	188.2	-13.6	6	30
				22960	.246	21.6	180.6	+12.0	30	167

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Dec. 17.282	Continued			22962	.748	76.8	138.6	+ 9.0	14	116
				22963	.792	94.5	133.8	- 4.3	22	121
				22965	.963	104.7	112.0	-14.5	72	460
				22966	.985	95.5	106.2	- 5.7	0	18
18.542	+ 8.9	169.3	-1.3	22954	.944	280.4	239.2	+ 9.4	32	194
				22958	.525	307.8	195.0	+17.5	17	96
				22959	.377	235.8	187.9	-13.4	4	16
				22960	.305	319.2	181.0	+12.0	55	333
				22967	.153	208.5	173.6	- 9.0	1	8
				22962	.513	70.0	140.2	+ 8.9	11	61
				22963	.582	95.9	133.9	- 4.5	21	124
				22965	.862	106.4	110.7	-14.7	93	688
				22966	.895	95.6	106.1	- 5.6	5	26
				22968	.962	106.5	95.7	-16.2	24	180
19.335	+ 8.5	158.9	-1.4	22954	.987	279.9	238.9	+ 9.5	25	237
				22958	.661	298.3	196.2	+17.1	8	54
				22959	.515	245.8	187.6	-13.4	0	2
				22960	.440	302.5	181.1	+12.3	38	297
				22967	.286	241.6	173.6	- 9.2	7	35
				22962	.358	58.8	140.9	+ 9.3	4	20
				22963	.424	97.5	134.1	- 4.5	15	125
				22965	.760	107.9	110.7	-14.4	63	506
				22966	.796	95.4	106.3	- 5.1	2	10
				22968	.898	106.2	95.8	-15.1	33	285
				22969	.940	100.1	89.2	-10.0	0	6
20.501	+ 8.0	143.5	-1.6	22958	.821	292.0	196.0	+16.9	4	25
				22960	.652	290.7	182.0	+12.0	50	311
				22967	.537	254.4	175.0	- 9.6	2	22
				22962	.172	6.5	142.4	+ 8.2	2	17
				22963	.176	109.2	133.9	- 4.9	17	116
				22965	.567	113.5	111.2	-14.3	65	505
				22966	.611	96.6	106.1	- 5.3	1	5
				22968	.759	109.1	95.6	-15.4	38	390
				22969	.848	100.7	86.0	- 9.9	16	61
21.287	+ 7.6	133.2	-1.7	22958	.902	290.0	195.4	+17.2	5	17
				22960	.783	287.0	183.0	+12.1	37	231
				22967	.693	258.9	176.4	- 8.9	1	7
				22962	.244	316.5	142.9	+ 8.5	0	3
				22963	.057	196.1	134.1	- 4.8	20	95
				22965	.414	121.7	112.0	-14.1	49	472
				22968	.634	112.2	95.9	-15.2	42	464
				22969	.722	102.4	87.6	-10.0	6	48
22.346	+ 7.1	119.2	-1.8	22958	.974	288.1	194.8	+17.2	0	14
				22960	.909	284.2	183.4	+12.1	37	224
				22963	.262	257.1	134.0	- 5.1	14	106
				22965	.244	151.1	112.3	-14.1	47	429
				22968	.450	121.6	95.9	-15.2	57	474
				22969	.553	106.9	86.8	-10.8	9	63

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Dec. 23.450	+ 6.6	104.7	-1.9	22960	.990	283.2	185.5	+12.8	28	142
				22963	.498	263.2	134.3	- 5.0	17	93
				22965	.247	213.8	112.8	-13.7	35	405
				22968	.268	148.1	96.3	-15.0	47	468
				22969	.369	117.3	85.2	-11.5	2	22
				22970	.514	119.4	77.0	-16.3	6	24
				1582 04	.535	64.3	75.3	+11.7	1	6
				22971	.863	103.6	45.6	-12.7	0	4
24.157	+ 6.2	95.4	-2.0	22963	.633	264.8	134.5	- 4.9	10	56
				22965	.355	234.4	112.6	-13.8	52	330
				22968	.227	181.3	95.7	-15.1	52	530
				22969	.232	131.0	85.1	-10.7	2	23
				22970	.401	129.9	76.7	-16.8	5	42
				22971	.788	105.0	44.2	-13.0	0	3
25.188	+ 5.7	81.8	-2.2	22963	.798	265.7	134.5	- 4.8	10	73
				22965	.542	248.2	112.8	-13.4	33	286
				22968	.327	227.8	96.2	-14.7	53	419
				22969	.158	205.1	85.7	-10.3	1	6
				22970	.269	160.6	76.4	-16.8	5	26
				22971	.617	108.0	44.9	-12.7	0	3
26.526	+ 5.1	64.2	-2.3	22963	.944	265.1	134.7	- 5.4	19	74
				22965	.774	254.1	114.0	-13.7	33	220
				22968	.566	246.1	96.4	-15.2	45	341
27.310	+ 4.7	53.8	-2.4	22963	.986	265.2	134.0	- 5.2	12	48
				22965	.867	255.8	113.4	-13.5	25	196
				22972	.834	290.2	107.9	+15.3	2	8
				22968	.701	251.2	97.0	-14.8	37	249
				22969	.613	256.4	90.9	-10.2	3	13
				22970	.461	237.5	77.6	-16.5	1	4
				22971	.256	139.3	44.0	-13.5	13	53
				1582 05	.529	63.7	25.0	+11.4	0	2
				22973	.993	67.9	332.5	+21.6	17	84
				22974	.996	93.8	329.1	- 4.0	22	264
28.425	+ 4.2	39.1	-2.5	22965	.965	256.6	113.7	-13.6	32	173
				22972	.939	288.4	107.1	+16.3	0	3
				22968	.864	254.8	98.3	-14.4	24	120
				22969	.810	259.9	92.9	- 9.6	2	9
				1582 06	.778	243.3	87.5	-22.1	0	9
				22971	.217	206.5	44.8	-13.7	13	57
				22975	.666	97.8	357.6	- 7.1	0	7
				22973	.943	66.1	331.5	+21.4	10	93
				22974	.942	93.4	328.9	- 4.1	32	162
29.503	+ 3.7	24.9	-2.7	1582 07	.996	260.0	109.8	-10.2	0	90
				22968	.950	253.1	96.4	-16.9	28	144
				22971	.384	240.5	44.9	-13.4	5	38
				22975	.453	101.7	358.5	- 7.7	7	63
				22973	.844	61.9	331.9	+21.7	10	72
				22974	.830	92.8	329.0	- 3.9	23	181

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	P	L_o	B_o	Group No.	Measures Rad. Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umb.	Area Whole Spots
1971	°	°	°			°	°	°		
Dec. 30.286	+ 3.3	14.6	-2.8	22968	.978	250.5	92.7	-19.6	0	15
				22976	.682	252.3	56.5	-14.0	4	26
				22971	.584	251.6	49.2	-12.9	1	6
				22975	.278	107.8	359.2	- 7.5	13	98
				22973	.754	57.3	331.6	+21.9	9	60
				22974	.712	92.5	329.3	- 3.7	22	182
				1582 08	.766	98.9	324.9	- 8.6	0	3
				22977	.902	74.7	311.9	+12.5	0	7
31.287	+ 2.8	1.4	-2.9	22976	.836	255.3	57.6	-13.9	19	85
				22971	.755	254.6	49.7	-13.5	2	6
				22975	.086	169.9	0.6	- 7.7	16	154
				22973	.622	48.4	331.5	+21.8	8	48
				22974	.532	92.7	329.4	- 3.9	25	164
				22978	.855	108.8	303.6	-17.5	4	24

Group	1968	
21458	Jan 1-12	Several scattered spots developing into a compact stream which fades rapidly after Jan 9.
21459	Jan 2-15	Two large spots with several smaller companions. The umbra of the following spot subdivides on Jan 11.
21460	Jan 3-14	A rapidly-developing stream until Jan 5 after which the following components disperse and fade to leave a single spot on Jan 13.
21461	Jan 4 - 7	Intermittent, scattered spots.
21462	Jan 4-13	Spots showing rapid development between Jan 4 and 5, followed by a slow decline. A single spot remains on Jan 13.
21463	Jan 4-17	A large, persistent, complex group which starts to disperse on Jan 12. The leading component becomes more prominent on the following day.
21464	Jan 5-16	A single spot with an intermittent, following companion.
21465	Jan 7-10	Several scattered spots, appearing abnormally strong on Jan 8.
21466	Jan 7-19	A large, irregular component with abundant, variable companions, all of which starts to decay on Jan 14.
21467	Jan 8-11	Scattered spots.
21468	Jan 10-13	Several small spots.
21469	Jan 10-14	A compact cluster of spots which decays rapidly after Jan 13.
21470	Jan 10-11	A single spot on Jan 10; two small spots on Jan 11.
21471	Jan 14-18	A compact stream exhibiting rapid growth and decay.
21472	Jan 14-15	Several compact spots.
21473	Jan 17-19	Variable spots.
21474	Jan 17-24	Intermittent, scattered spots.
21475	Jan 17-28	Numerous, very scattered spots. The leaders gradually fade to leave several tiny spots on Jan 28.
21476	Jan 19-25	A single spot with variable, intermittent companions.
21477	Jan 20-26	A single spot until Jan 22 when a small follower appears, which alone remains on Jan 26.
21478	Jan 22-24	A few scattered spots.
21479	Jan 22-26	A single spot on all days except Jan 24 when a faint companion is visible.
21480	Jan 23-27	Two spots until Jan 25 when only the follower remains.
21481	Jan 24-26	Scattered spots.
21482	Jan 24-Feb 6	Two large irregular spots, the follower of which partially disintegrates after Jan 27 while the leader elongates and its umbra fragments. On Jan 31 the following spot again develops and later disperses to leave scattered spots by Feb 5.
21483	Jan 24-Feb 5	A stream comprising a single leader and scattered followers which gradually decay to leave a diminished leader and companion on Feb 4.
21484	Jan 25-29	A single spot with variable, intermittent companions.
21485	Jan 25-26	Scattered spots.
21486	Jan 27-Feb 5	A cluster of numerous, variable spots. Not seen on Feb 3 or 4, a single spot is visible on the following day.
21487	Jan 27-Feb 5	A compact cluster of irregular spots which gradually disperse after Jan 31 to leave a single spot with a minute companion on Feb 5.
21488	Jan 28-Feb 6	Developing spots until Feb 1 when a single composite spot with companions is seen.
21489	Jan 28-Feb 3	A single, intermittent spot until Jan 31 when two components are seen, with intermittent companions.
21490	Jan 28-Feb 2	A single spot on all days except Jan 31 when a compact cluster of four spots is visible.
21491	Jan 28-Feb 9	Two moderate-sized spots, both of which develop companions by Feb 2. The follower becomes deformed by Feb 7 and divides on the following day.
21492	Jan 30-Feb 4	A single spot with occasional companions.
21493	Jan 30-Feb 7	Two diminishing spots with occasional companions until Feb 5 when only the leader, with minute companions, remains.
21494	Jan 30-Feb 8	A single, diminishing spot with intermittent companions.
21495	Jan 31-Feb 11	An elongated irregular spot which forms two composite spots with companions from Feb 2. The leader becomes symmetrical while the following spots gradually fade, and disappear completely by Feb 10.
21496	Jan 31-Feb 11	A single spot until Feb 3 when companions appear. The followers of these develop slightly after Feb 6 but soon decay to leave several scattered spots on Feb 11.
21497	Feb 2 - 4	Scattered spots.
21498	Feb 2 - 9	Numerous scattered spots until Feb 4 when a single leader with following companions is formed. The followers fade to leave two small spots on Feb 9.
21499	Feb 2 - 3	Scattered spots.
21500	Feb 3 - 5	Intermittent spots.
21501	Feb 4-11	A single spot.
21502	Feb 7 - 8	Two single spots.
21503	Feb 8-10	A single spot on Feb 8 and 10; two spots on Feb 9.
21504	Feb 8-12	A single spot with variable companions, only one of which remains on Feb 12.
21505	Feb 8 - 9	A single spot.
21506	Feb 8-19	A large irregular spot with multiple leading companions. The complex follower begins to disperse after Feb 11 while the leading companions form an irregular spot with companions. The follower further diminishes by Feb 17 and only a single spot remains on the next day.
21507	Feb 8-19	A diminishing spot with an intermittent companion.
21508	Feb 12-14	A single spot with intermittent companions.
21509	Feb 14-18	A stream of spots exhibiting rapid growth and decay.
21510	Feb 14-15	Two small spots.
21511	Feb 15-19	A few small, intermittent spots.
21512	Feb 16-20	A small spot with faint companions. On Feb 19 the companions strengthen while the main spot fades and is not seen on the following day.
21513	Feb 16-20	A pair of small spots, only one of which is visible on Feb 18.
21514	Feb 17-19	A single, small spot.
21515	Feb 17-23	At first a pair of spots. By Feb 20 the following spot has disappeared and on subsequent days the remaining spot diminishes and disperses.
21516	Feb 19-22	A small cluster of spots.
21517	Feb 20-23	An irregular spot with intermittent companions.
21518	Feb 20-21	A single, small spot.
21519	Feb 20-Mar 3	Two spots, the leader of which comprises two umbral regions surrounded by a few small spots. The following spot, also beginning as two distinct parts, on Feb 26 begins to break up into a number of small components which fade rapidly after Feb 28.
21520	Feb 22-Mar 4	An extensive cluster of small spots developing rapidly between Feb 24 and 25.

Group	1968	
21521	Feb 24-26	Several small spots extending rapidly as they pass round the west limb.
21522	Feb 24-27	Commencing as a tight group of small spots which develop steadily, by Feb 25 two substantial spots with surrounding companions are formed, all of which fade rapidly thereafter.
21523	Feb 24-Mar 6	A large, compact cluster of spots slowly developing into a stream.
21524	Feb 25-27	Several small, diminishing spots.
21525	Feb 26-28	Two small spots, the follower of which fades after the first day.
21526	Feb 26-29	Three small spots, diminishing after the first day and absent altogether on Feb 28; two small spots are visible on Feb 29.
21527	Feb 28-Mar 8	Several small spots which become one by Mar 2. On Mar 6, the spot disintegrates into several small components.
21528	Feb 29-Mar 1	A cluster of tiny spots.
21529	Feb 29-Mar 13	A single moderate-sized spot with small intermittent companions between Mar 3 and 9.
21530	Mar 3 - 7	A few tiny spots most apparent on Mar 5, but not visible on the following day.
21531	Mar 3 - 4	A small spot with a tiny companion.
21532	Mar 5 - 7	A single, indistinct spot.
21533	Mar 5 - 7	A short steam of small spots.
21534	Mar 7-11	A compact cluster of small spots which fades rapidly between Mar 9 and 10.
21535	Mar 8-14	A small group of fluctuating spots.
21536	Mar 9-12	At first a knot of small spots, joined by a leading spot on Mar 11 which becomes the most dominent feature by the next day.
21537	Mar 9-14	Initially two distinct spots, each with small companions. By Mar 11 the following spot has dispersed into smaller components and the whole group fades rapidly after Mar 12.
21538	Mar 10-11	Two small spots becoming three by Mar 11.
21539	Mar 11-13	A stream of small spots.
21540	Mar 11-20	A single spot with a small, close, following companion from Mar 13 to 15, after which it is absorbed into the main spot.
21541	Mar 12-23	A prominent single spot until Mar 17 when it is replaced by three components, the leader of which is diffuse, and disappears after Mar 19. From Mar 20 the new leading component subdivides and fades.
21542	Mar 12-17	Two spots until Mar 14 when the following spot disappears.
21543	Mar 13-25	A large penumbral region containing a moderate-sized spot and one smaller spot accompanied by several intermittent, following spots.
21544	Mar 14-15	A single, small spot.
21545	Mar 18-22	A small indistinct spot associated with faculae on the first two days.
21546	Mar 20-30	A steadily developing stream of spots with a prominent leader. The following spots condense into two compact spots by Mar 27 and fade.
21547	Mar 20-27	A thin, variable stream of small spots.
21548	Mar 21-27	A semi-circle of small spots developing rapidly into a small cluster, the outer components of which fade gradually thereafter.
21549	Mar 22-23	A single, tiny spot.
21550	Mar 22-Apr 2	A cluster of spots for the first two days, growing into a stream with two main condensations. The following component begins to fade on Mar 29.
21551	Mar 23-Apr 2	A single spot with some small following spots on Mar 26.
21552	Mar 24-26	A small, diffuse, mainly penumbral region.
21553	Mar 24-Apr 5	One moderate-sized spot of variable structure followed by a few intermittent, small spots.
21554	Mar 25-28	A cluster of small spots attended by faculae on Mar 27 and 28.
21555	Mar 25-Apr 4	A single prominent spot until Apr 1 when it diminishes somewhat and is joined by a small leading spot which develops until Apr 3.
21556	Mar 26-Apr 3	A scattered cluster of small, variable spots.
21557	Mar 26 Apr 1	A small group of spots attended by faculae on Mar 26 and fading rapidly, particularly after Mar 29.
21558	Mar 26-Apr 7	A prominent stream of rapidly-developing spots with striking leading and following main components.
21559	Mar 26-Apr 6	A scattered cluster of small, variable spots closely following group 21558.
21560	Mar 27-28	Two small, indistinct spots.
21561	Mar 27-30	A cluster of small spots.
21562	Mar 29-Apr 4	A group of small spots fading gradually after Mar 31.
21563	Mar 29-Apr 10	Two small spots until Apr 2 when the leader begins to disappear. The small, following component exhibits a variable structure until Apr 8 when both spots appear greatly increased in size.
21564	Mar 30-31	A small cluster of spots seen near to the limb.
21565	Apr 2-14	A developing cluster of small spots until Apr 8 when two subgroups of three spots each appear, and begin to fade on Apr 10.
21566	Apr 3 - 9	A rapidly-developing stream of spots until Apr 6 when it divides into two tight clusters and fades.
21567	Apr 4 - 7	A single spot, not seen on Apr 5, which attains maximum area on Apr 6.
21568	Apr 7-16	Two spots, the following part of which diminishes greatly after Apr 11. The remaining component gradually decays as it nears the west limb.
21569	Apr 8-21	A large leading spot followed by an irregular subgroup of small spots which disperse and diminish after Apr 15, while the leading spot persists to the west limb.
21570	Apr 9-11	A small cluster of spots.
21571	Apr 9-12	A single spot on all days except Apr 10 when a few scattered spots are seen.
21572	Apr 9-13	Variable scattered spots.
21573	Apr 11-23	A single symmetrical spot with a companion on Apr 12.
21574	Apr 11-12	A few scattered spots.
21575	Apr 12-18	A small stream, of which the following components decay by Apr 18.
21576	Apr 12-16	A single spot on Apr 12 and 13, not seen again until Apr 16 when two spots are visible.
21577	Apr 14-16	Two main components forming scattered spots, partially obscured by faculae on Apr 16.
21578	Apr 14-15	Three small spots on Apr 14; a single spot on Apr 15.
21579	Apr 14-17	Two small spots with occasional companions until Apr 17 when only a single spot is seen.

Group	1968	
21580	Apr 14-22	A single spot until Apr 17 when variable scattered spots develop and subsequently decay to leave only the original spot on Apr 21.
21581	Apr 15-19	A single spot on all days except Apr 15 and 17 when a small companion is visible.
21582	Apr 19-22	Scattered spots.
21583	Apr 21-27	Intermittent, scattered spots.
21584	Apr 22-25	A single spot on all days except Apr 23 when two spots and companions are seen.
21585	Apr 23-24	Scattered spots.
21586	Apr 23-May 3	A single diminishing spot with intermittent companions.
21587	Apr 24-28	A small stream, of which only a diminishing leading component with variable companions remains after Apr 26.
21588	Apr 25-May 6	A single spot until Apr 28 when a small stream forms, the following components of which decay to leave a single spot with variable companions after Apr 30.
21589	Apr 26-28	Scattered spots on Apr 26; a single spot on the other days.
21590	Apr 27-28	Four spots on Apr 27; a single spot on Apr 28.
21591	Apr 27-May 6	A slowly-diminishing symmetrical spot with occasional companions.
21592	Apr 28-May 2	A single spot until May 1 when several compact spots appear.
21593	Apr 28-May 7	A few scattered spots which develop rapidly after Apr 30 to form a complex stream, the intermediate spots of which gradually fade.
21594	Apr 29-May 8	Two small spots, growing after May 1 into a small stream of which the followers are more persistent. Both leading and following components diminish after May 5 and widely scattered spots are seen on May 8.
21595	Apr 29-May 10	Several irregular spots, forming an elongated stream on May 1. The following spots diminish to a single spot by May 9 while the leader, with its multiple companions, slowly fades.
21596	Apr 30-May 9	Two main components until May 2 when the follower disintegrates and the remaining spot and companions gradually fade. Nothing is seen on May 6 or 7.
21597	Apr 30-May 1	A single spot.
21598	May 1-13	Two main components, the follower of which is initially complex, but by May 4 has divided into two irregular spots with companions. These continue to elongate, and divide by May 5, thereafter slowly disintegrating. The companions around the leader decay by May 10, leaving a single spot.
21599	May 5-16	Two spots and companions, the follower of which fragments by May 7. After May 9, two prominent following spots appear and these alone remain from May 13.
21600	May 5 - 8	A single spot.
21601	May 6 - 9	Several scattered spots.
21602	May 6-16	An intermittent spot with occasional companions.
21603	May 6-18	A single spot, with scattered companions from May 9 to 13.
21604	May 8 - 9	A single spot.
21605	May 8-11	A single, intermittent spot.
21606	May 9-11	A single, variable spot.
21607	May 9-15	A small stream fading to a single spot by May 15.
21608	May 10-18	Three spots developing to form a small stream of which the follower is most prominent. This fades rapidly after May 15, leaving a single spot by May 18.

Group	1968	
21609	May 13-24	Initially a rapidly developing stream which fragments by May 19 to leave scattered spots.
21610	May 14-16	A single spot, observed with a companion after the first day.
21611	May 14-27	A moderate-sized spot with occasional companions, and variable followers which decay by May 25.
21612	May 15-16	Two spots on May 15; a single spot on May 16.
21613	May 17-21	A compact, complex stream.
21614	May 17-29	A single spot, with occasional companions forming after May 20.
21615	May 17-28	A compact stream with a moderate-sized leader, smaller follower and several intermediate spots. After May 22 the followers gradually fade, to leave a single spot by May 26 which in turn has disappeared on May 28, leaving only the leader at the west limb.
21616	May 17-26	Scattered spots which form an irregular stream by May 21, and begin to decay soon after.
21617	May 18-25	Scattered spots, forming a stream by May 20 which fluctuates and finally decays after May 23, leaving a single spot on May 25.
21618	May 18-27	Widely scattered spots, some composite in nature, which form a stream by May 25. The leader however decays after May 26 to leave a single spot on the following day.
21619	May 19-20	Two spots.
21620	May 20-26	Two spots until May 21 when the follower dies out, leaving a single spot on all days except May 26 when two spots are seen.
21621	May 22-25	Scattered spots forming a compact, decaying stream.
21622	May 22-26	A single rapidly-developing spot with occasional companions.
21623	May 24-25	A single spot.
21624	May 24-Jun 4	Two spots, developing rapidly after May 25 to form a stream by May 28, after which the followers disappear to leave a single spot with occasional companions from May 31.
21625	May 24-27	A single spot, seen with a companion on May 27.
21626	May 24-Jun 4	A single gradually diminishing spot with occasional companions.
21627	May 26-28	Two spots.
21628	May 26-Jun 1	Two spots until May 27 when, after rapid development, a stream is formed which decays after May 31.
21629	May 26-Jun 1	A single spot.
21630	May 27-28	Scattered spots on May 27; a single spot on the following day.
21631	May 27-Jun 4	Variable scattered spots until May 30 when a compact stream is formed, of which only the leader survives.
21632	May 27-Jun 8	A single spot with infrequent companions.
21633	May 27-Jun 8	Two main components with intermediate companions which develop rapidly after Jun 4. The follower subsequently diminishes and the two remaining major components disintegrate by Jun 8.
21634	May 28-Jun 7	A single spot with rapidly developing companions forming a stream by Jun 1. The followers then fade quickly to leave a single spot and occasional companions.
21635	May 29-Jun 4	Two spots with companions, forming a stream by Jun 1 and dispersing into very scattered spots.
21636	May 30-31	Scattered spots.
21637	May 30-Jun 9	A single spot with variable companions. On Jun 5 several more-northerly spots develop briefly while the original spots fade.

Group	1968	
21638	Jun 2-11	A single spot with occasional companions until Jun 6 when several followers appear. These soon disintegrate to leave a few faint spots on Jun 11.
21639	Jun 2-14	A leader and follower combination of which the follower is the more prominent. This irregular spot fragments after Jun 5 and starts to decay shortly afterwards, the leader having diminished by Jun 11.
21640	Jun 5-10	A single spot developing into a variable stream.
21641	Jun 6 - 8	Two spots with attendant and following companions.
21642	Jun 6-18	A single spot with southerly companions until Jun 12 when only occasional companions are visible.
21643	Jun 7-15	Two main composite spots which quickly form a stream with a symmetrical leader and follower and intermediate companions. The companions gradually fade, as does the leader after Jun 11.
21644	Jun 8-18	A single spot with following companions which gradually fade after Jun 12 to leave a single spot from Jun 17.
21645	Jun 10-19	Initially two irregular spots with companions. These develop rapidly to form two very close, moderate-sized components. After Jun 12 the follower elongates, its umbra fragmenting, while the leader assumes a regular configuration seen with occasional companions.
21646	Jun 12-15	Two spots on Jun 12; a single spot thereafter.
21647	Jun 12-21	A single spot with occasional companions.
21648	Jun 13-24	A regular spot with occasional companions.
21649	Jun 13-26	A single spot with a companion from Jun 14 to 16.
21650	Jun 14-27	A single spot until Jun 16 when a follower and companion appear. The whole group then develops rapidly into a stream by Jun 18. The following components combine to form a very complex elongated structure which later becomes an irregular spot, part of which breaks away from the main component to produce a complex, intermediate spot between leader and follower.
21651	Jun 15-16	Three spots on Jun 15; a single spot on the following day.
21652	Jun 16-20	A small stream until Jun 19 when only the leader is visible.
21653	Jun 17-20	A single spot with several following companions, decaying to leave a single spot on Jun 19.
21654	Jun 20-Jul 2	A moderate-sized irregular spot with scattered following companions which gradually fade. The leader, after becoming more irregular, diminishes after Jun 28.
21655	Jun 22-Jul 1	Scattered spots, gradually developing into a stream, the following components of which slowly fade.
21656	Jun 23-25	Two single spots on Jun 23; a tiny spot when next seen on Jun 25.
21657	Jun 24-26	A single spot.
21658	Jun 25-Jul 1	A few variable scattered spots until Jun 28 when a small diminishing stream is formed.
21659	Jun 26-Jul 4	Rapidly developing scattered spots forming a stream by Jun 28.
21660	Jun 26-30	A variable spot.
21661	Jun 28-29	A single spot.
21662	Jun 30-Jul 1	A single spot.
21663	Jun 30-Jul 2	Intermittent. A single spot, seen with companions on Jun 30.
21664	Jul 3 - 5	Two small spots with companions.
21665	Jul 4-16	Two components slowly forming a stream by Jul 8. The followers gradually fade and the leader alone remains after Jul 14.
21666	Jul 5 - 6	Two spots on Jul 5; a single spot on Jul 6.
21667	Jul 5-16	A single, slowly diminishing spot.
21668	Jul 6-19	Two main complex components, only partially visible on Jul 6 and 19, the leader of which divides by Jul 11. Numerous companions are observed from Jul 10, but these gradually fade to leave three main components with occasional companions by Jul 15.
21669	Jul 8-18	A single spot with occasional companions until Jul 12 when intermittent scattered spots appear.
21670	Jul 8-16	A variable compact stream of spots which fades slowly after Jul 12 to leave only a few scattered spots by Jul 16.
21671	Jul 9-10	Three spots on Jul 9; a single spot on Jul 10.
21672	Jul 10-22	A single spot throughout.
21673	Jul 11-13	Scattered spots until Jul 12 when a single spot remains.
21674	Jul 11-23	A single irregular spot until Jul 15 when companions appear. The main spot begins to fade after Jul 17 and splits into several components on Jul 21.
21675	Jul 12-16	A small stream of spots, developing until Jul 13, after which rapid decay occurs.
21676	Jul 12-17	A single spot on all days except Jul 17 when scattered spots are observed.
21677	Jul 15-17	A single spot on Jul 15; three spots on the other days.
21678	Jul 16-19	One or two small spots.
21679	Jul 16-19	A single spot on Jul 16 and 19; scattered spots on the other days.
21680	Jul 16-28	A spot with occasional companions.
21681	Jul 18-27	A spot with occasional companions, not seen on Jul 22. The group reappears on the following day as a small cluster of spots which grows steadily into a stream.
21682	Jul 18-30	A stream of small spots, of which the extreme followers fade while a new leading component emerges after Jul 24.
21683	Jul 19-20	Three spots on Jul 19; a single spot on the following day.
21684	Jul 19-25	A variable stream of small spots.
21685	Jul 20-30	Scattered spots growing rapidly to form numerous very scattered spots on Jul 22 and later a stream with a complex follower and multiple intermediate companions which gradually fade, leaving the leader the most prominent component on Jul 29.
21686	Jul 24-26	A single spot on Jul 24; two spots on the other days.
21687	Jul 24-Aug 5	A regular spot with scattered companions which divides on Jul 28 when further companions appear, to form a loose stream of widely scattered spots. This soon decays to leave three main components.
21688	Jul 26-27	Two spots with companions.
21689	Jul 27-31	Multiple scattered spots forming a compact stream by Jul 28.
21690	Jul 27-Aug 1	Variable scattered spots forming a loose stream.
21691	Jul 27-Aug 5	Two close spots developing very rapidly into two complex leading components with scattered companions by Jul 29. The foremost leader assumes a regular configuration while the second spot disintegrates and the subsequent companions fade slowly to leave the leader and several small followers on Aug 5.
21692	Jul 30-Aug 3	Two spots on all days except Aug 3 when only one remains.
21693	Aug 2 - 6	Two spots with variable companions.
21694	Aug 2-13	A single spot throughout until Aug 13 when two spots are visible.

Group	1968	
21695	Aug 2-15	A single spot with multiple umbrae and associated companions, which divides on Aug 11 to form two irregular complex structures.
21696	Aug 3 - 5	Two spots on Aug 3; a single spot thereafter.
21697	Aug 3 - 6	A single spot.
21698	Aug 4-12	A single spot, developing into a stream by Aug 6 of which the follower is the most prominent. Rapid decay occurs after Aug 9.
21699	Aug 5-15	A small stream of variable spots, diminishing rapidly after Aug 8 to leave a single spot on the following day. The group reappears on Aug 11 as widely scattered spots.
21700	Aug 6 - 8	Two spots until Aug 8 when only the leader remains.
21701	Aug 7-11	Scattered spots decaying to a single spot on Aug 11.
21702	Aug 7-10	Several spots diminishing rapidly after Aug 8 to leave a single spot on the following day.
21703	Aug 7-18	A single spot with occasional companions. Short-lived following companions appear on Aug 17.
21704	Aug 8-16	A single diminishing spot, not seen on Aug 10 after which the group reappears as a small, compact stream which elongates and grows rapidly into single leading and following components with intermediate northerly companions.
21705	Aug 10-22	A single spot with two prominent companions until Aug 15, after which only occasional companions are observed.
21706	Aug 11-18	A single irregular spot, seen with a companion on Aug 17.
21707	Aug 11-19	A single spot forming an irregular structure by Aug 12, which thereafter fluctuates in area.
21708	Aug 12-24	An extended stream comprising an irregular leader and companions with two main following components, all of which gradually decay after Aug 16. By Aug 22 only a diminished regular spot with northerly companions remains.
21709	Aug 13-15	Several variable spots.
21710	Aug 13-16	Two single spots until Aug 15 when the follower develops to form an irregular spot. The leader also grows as the group passes round the west limb.
21711	Aug 13-25	A regular spot whose umbra elongates and divides by Aug 16. The spot divides on Aug 22 and the smaller component formed decays to leave a single spot by Aug 25.
21712	Aug 14-15	Two rapidly-developing spots, only partially visible on Aug 15.
21713	Aug 14-16	Two spots with companions.
21714	Aug 14-17	A single spot seen only on Aug 14 and 17.
21715	Aug 14-18	A single spot.
21716	Aug 14-17	A single spot which slowly divides and rapidly decays.
21717	Aug 14-25	A leader and follower with intermediate companions. The follower forms a complex structure by Aug 19 and thereafter disperses and dies while the leader and intermediate followers assume regular configurations.
21718	Aug 16-19	A single spot with an occasional companion on all days except Aug 18 when scattered spots are seen.
21719	Aug 18-27	A single spot with variable companions until Aug 22 when dramatic development occurs and an elongated stream is formed, which disperses soon after.
21720	Aug 20-24	Intermittent scattered spots.
21721	Aug 20-30	A rapidly-developing stream which gradually fades after Aug 22 to leave scattered spots by Aug 28.
21722	Aug 20-28	A single spot, seen with following companions on Aug 23, and diminishing after the following day.

Group	1968	
21723	Aug 20-22	A single spot.
21724	Aug 22-29	Variable intermittent spots.
21725	Aug 26-30	Several scattered spots.
21726	Aug 26-27	Very scattered spots.
21727	Aug 26-31	An orderly stream of small spots, the followers of which fade rapidly after Aug 30.
21728	Aug 27-28	Two spots on Aug 27; a single spot on the following day.
21729	Aug 28-Sep 8	A compact stream attaining maximum development on Aug 30, after which the complex follower disintegrates and slowly fades, leaving only the regular leader by Sep 5.
21730	Aug 29-31	Scattered spots.
21731	Aug 30-Sep 11	A single spot which dies out completely on Sep 8, the position thereafter represented by scattered spots.
21732	Aug 31-Sep 10	A single spot, not seen on Sep 8, after which two widely separated spots represent the position, the leader alone surviving to the west limb.
21733	Sep 1 - 7	A slowly diminishing spot with occasional companions.
21734	Sep 2 - 9	An exceptionally rapidly-developing stream with multiple companions between complex leader and follower. The latter decays steadily after Sep 4 while the leader assumed a regular outline with a northerly companion apparent from Sep 8.
21735	Sep 2 - 5	Wildly variable, scattered spots.
21736	Sep 3 - 4	A single spot on Sep 3; two spots on the following day.
21737	Sep 3 - 5	A spot with companions separated mainly in latitude.
21738	Sep 3 - 4	A single spot.
21739	Sep 4-10	A single spot on Sep 4, not seen again until Sep 8 when diminishing scattered spots are visible.
21740	Sep 4 - 8	A single spot until Sep 6 when several leading companions appear. The original spot dies out on the following day.
21741	Sep 5 - 6	Two spots.
21742	Sep 7-15	Irregular spots with companions, forming a stream by Sep 9. After Sep 12 the following components diminish.
21743	Sep 8-13	A small developing stream until Sep 10 when decay occurs and only intermittent spots are seen.
21744	Sep 8-17	A slowly developing stream with growth after Sep 12 when only a single leader and follower are seen.
21745	Sep 9-16	A steadily growing, irregular stream until Sep 12 when a single leader and follower gradually emerge.
21746	Sep 9-13	A diminishing spot, not seen on Sep 12, after which two tiny spots are visible.
21747	Sep 9-19	Intermittent. Variable scattered spots with a sudden, short-lived development on Sep 18.
21748	Sep 9-21	A compact cluster with extensive complex followers and a regular leader. The former gradually disperses after Sep 12 to leave a regular spot with companions from Sep 18.
21749	Sep 9-21	A spot with occasional companions.
21750	Sep 10-14	A small, variable stream.
21751	Sep 10-18	A spot and companions developing rapidly into a short stream by Sep 11. The followers momentarily fade, to reappear strongly on Sep 16 but eventually die, leaving only the diminishing leader.
21752	Sep 10-15	A single intermittent spot until Sep 14, after which a short-lived burst of activity occurs and a loose stream of tiny spots is formed.
21753	Sep 10-15	Spots with variable companions, breaking up by Sep 14 to leave one spot visible on the following day.
21754	Sep 12-13	Two spots.

Group	1968	
21755	Sep 13-19	A spot with occasional companions.
21756	Sep 16-28	A spot with occasional companions.
21757	Sep 18-25	A variable stream.
21758	Sep 18-Oct 1	Two irregular components with companions. The follower distorts and disintegrates after Sep 22, leaving multiple irregular spots by Sep 25, which decay while the leader also slowly diminishes.
21759	Sep 19-20	Two spots.
21760	Sep 20-Oct 1	At first a single spot with occasional companions. On Sep 25 a southerly spot appears and the group then develops rapidly into a compact cluster by Sep 27 and decays, leaving a diminished leader on Oct 1.
21761	Sep 21-25	A single, fluctuating spot with occasional companions.
21762	Sep 22-26	Intermittent. Variable scattered spots.
21763	Sep 22-Oct 4	Two small spots until Sep 24 when a third, following component is seen. The group then develops to reach a maximum area on Sep 28, by which time the irregular follower has disintegrated and rapidly faded, leaving a single leader and several following companions from Sep 30.
21764	Sep 23-27	A simple stream not seen on Sep 26. Only the original leader reappears on the following day.
21765	Sep 23-26	Variable spots.
21766	Sep 23-Oct 1	An irregular spot with leading companions which decay by Sep 28. By this time the follower has dispersed into variable scattered spots.
21767	Sep 23-Oct 5	A single spot with occasional companions.
21768	Sep 24-27	Multiple irregular spots, decaying after maximum development on Sep 25.
21769	Sep 24-Oct 1	Two small, close spots forming a compact complex stream by Sep 26 which begins to disintegrate two days later.
21770	Sep 24-Oct 2	A single irregular leader with widely scattered following companions which rapidly disperse after Sep 25, only to reform and develop but again decay after Sep 30.
21771	Sep 25-Oct 6	A single spot with occasional companions.
21772	Sep 29-Oct 1	A single spot.
21773	Oct 1-12	Several scattered spots developing rapidly after Oct 2 to form a disorderly stream by Oct 5, after which the followers gradually fade to leave a single spot from Oct 10.
21774	Oct 1-13	Scattered spots, forming a compact cluster by Oct 6 after a temporary collapse on the previous day. Dispersing and fading after maximum development on Oct 7, a single spot remains by Oct 12.
21775	Oct 3 - 8	A small stream, of which the followers develop rapidly by Oct 4, but decay again soon afterwards to leave only the original leader at the west limb.
21776	Oct 3 - 9	A variable stream of scattered spots.
21777	Oct 3-12	Two single spots with many irregular, intermediate companions. By Oct 5 the followers amalgamate, to form a complex irregular structure on the following day. The leader enlarges while the follower disintegrates and fades rapidly after Oct 9.
21778	Oct 7-13	A single spot on Oct 7, not seen again until Oct 10 when two variable spots are visible.
21779	Oct 7-17	Two main components. The leading spot is attended by several more northerly companions which, together with the follower, fade by Oct 17, leaving only the original leader and a single, trailing companion.
21780	Oct 11-13	A single, diminishing spot with a faint companion on the first day.
21781	Oct 11-12	A single spot on Oct 11; two spots on Oct 12.
21782	Oct 11-23	A stream comprising an irregular leader and multiple companions which gradually fade after Oct 16, leaving only the original leader with occasional scattered companions from Oct 21.
21783	Oct 13-20	A single spot on Oct 13, becoming scattered spots which develop into a small stream by Oct 16 and thereafter fading to leave a single spot on the last day.
21784	Oct 13-15	A single spot.
21785	Oct 14-15	Scattered spots.
21786	Oct 17-29	A complex stream with an irregular leader. The followers amalgamate by Oct 21, but disperse, together with the following region of the leader to form extensive scattered spots by Oct 23. The extreme followers then decay while the leader and an intermediate component continue to the limb.
21787	Oct 19-21	Several small spots.
21788	Oct 19-24	A spot with various following companions, dispersing into scattered spots by Oct 23.
21789	Oct 19-31	A single spot with attendant companions which have generally decayed by Oct 27, to be replaced by a thin stream of diminishing, following companions which have died out by Oct 31.
21790	Oct 21-23	A single spot, seen with faint companions on Oct 21.
21791	Oct 22-Nov 3	A regular spot with multiple companions deforming to produce a southerly loop, prominent from Oct 26. The northerly companions grow rapidly on Oct 30, one of which becomes attached to the penumbra of the original spot two days later.
21792	Oct 24-27	A very rapidly forming stream with a regular leader, appearing well past the central meridian.
21793	Oct 24-Nov 1	A single spot until Oct 27 when several developing, northerly spots are seen which produce scattered spots by Oct 29.
21794	Oct 25-26	Two spots on Oct 25; a small spot with companions on Oct 26.
21795	Oct 25-27	Scattered spots until Oct 27 when only one remains.
21796	Oct 26-Nov 5	A spot with intermittent following companions.
21797	Oct 27-Nov 8	Two leaders, separated mainly in latitude, with following companions which develop slightly on Nov 2 as does the northernmost leader. The followers subsequently decay and die and the two leaders merge.
21798	Nov 1-13	A spot with an occasional companion.
21799	Nov 3 - 7	Two spots on Nov 3, a variable spot on the other days.
21800	Nov 4-10	A developing stream, decaying after Nov 6.
21801	Nov 5 - 8	A small developing stream which decays after Nov 6 to leave a single spot by Nov 8.
21802	Nov 5-18	Slowly increasing spots until Nov 8 when extensive development occurs and a single, complex structure with occasional companions and filiamentary umbrae is formed by Nov 10. Small leading companions are seen between Nov 10 and 12, and again on Nov 14.
21803	Nov 6 - 7	A single spot, with two following companions on Nov 6 of which only the leader remains on Nov 7.
21804	Nov 6 - 7	A single spot on Nov 6; two spots on Nov 7.
21805	Nov 8 - 9	A single spot on Nov 8; scattered spots on Nov 9.

Group	1968	
21806	Nov 8-14	A single spot on all days until Nov 14 when two small spots are seen.
21807	Nov 8-18	Two single spots until Nov 12 when only the leader remains. This disintegrates by Nov 18.
21808	Nov 9-10	Scattered spots, enlarging as they pass round the west limb.
21809	Nov 9-12	A compact cluster of spots, of which the leader develops rapidly by Nov 10, the followers dying out on the next day. Only two spots are visible on Nov 12.
21810	Nov 9-18	A spot with a single follower, which diminishes slowly after maximum area on Nov 10. Scattered, northerly spots are seen from Nov 13, thereafter the group further fades to leave a single spot after Nov 16.
21811	Nov 10-11	A single spot on Nov 10; four scattered spots on Nov 11.
21812	Nov 10-14	Variable scattered spots.
21813	Nov 14-20	A single spot with a companion from Nov 15 to 18, when the spot slowly dies out.
21814	Nov 14-25	Developing, scattered spots forming a compact stream by Nov 19, after which the leader disintegrates and the group rapidly fades, leaving a single spot on Nov 25.
21815	Nov 17-21	Two spots developing rapidly into a stream by Nov 19, after which it gradually fades.
21816	Nov 19-Dec 1	A scattered stream of irregular spots. One of the followers assumes a regular configuration by Nov 23 with numerous scattered companions which fade rapidly, together with the leaders, to leave only the regular spot by Nov 29.
21817	Nov 20-28	A few scattered spots, not seen on Nov 23 or 24, reappearing as rapidly fading, irregular spots.
21818	Nov 23-Dec 3	Two spots rapidly-developing into a stream. The following components develop further to form a complex, irregular structure with following companions, but begin to break up by Nov 27 and slowly fade.
21819	Nov 26-27	A single, developing spot appearing near the west limb.
21820	Nov 27-Dec 3	Intermittent spots with occasional companions.
21821	Nov 30-Dec 2	Variable, scattered spots.
21822	Nov 30-Dec 11	Scattered spots developing rapidly into a stream with a regular leader and follower and intermediate companions, decaying appreciably after Dec 6.
21823	Nov 30-Dec 12	A simple stream developing steadily until Dec 4 when the following region coalesces to produce a very extensive composite structure by Dec 10.
21824	Dec 2 - 3	Two spots on Dec 2; a single spot with faint companions on Dec 3.
21825	Dec 2 - 6	A spot with variable, following companions until Dec 5 when only the leader remains.
21826	Dec 3-14	A single spot with occasional companions after Dec 9 when the group steadily fades.
21827	Dec 4 - 8	Two spots with occasional companions.
21828	Dec 7-14	An intermittent spot, growing slightly after reappearing on Dec 11.
21829	Dec 7-19	A rapidly-developing stream comprising a single leader with companions and complex scattered followers, by Dec 12. The followers decay rapidly after Dec 14 to leave only the now regular leader by the west limb.
21830	Dec 8-12	Scattered spots until Dec 10 when only one remains.
21831	Dec 10-13	A single spot on Dec 10 and 13; scattered spots on the other days.

Group	1968/1969	
21832	Dec 12-23	A developing, simple stream with a prominent, irregular follower which disintegrates after Dec 15, leaving scattered spots with subsequent sporadic outbursts of activity.
21833	Dec 15-18	Rapidly-developing scattered spots appearing west of the central meridian.
21834	Dec 15-16	A few scattered spots.
21835	Dec 18-20	A stream of scattered spots.
21836	Dec 18-25	A rapidly forming stream, of which the following spots die out by Dec 25.
21837	Dec 18-29	A single spot with occasional companions.
21838	Dec 19-23	Two irregular components which disintegrate to leave only the leader on Dec 23.
21839	Dec 20-29	A small stream of gradually diminishing spots, not seen on Dec 26 or 27. The group reappears on the following day as several close spots.
21840	Dec 21-26	A single spot until Dec 23, after which intermittent, scattered spots are seen.
21841	Dec 21-Jan 2	A complex stream with multiple leaders and companions, and numerous followers after the maximum development on Dec 23. After Dec 26 the leaders merge to form an irregular spot, while the followers continue to disperse and fade.
21842	Dec 22-Jan 3	A single spot which breaks up after Dec 23 into an oval cluster of small spots. The following components gradually fade, leaving a persistant leader on Jan 3.
21843	Dec 23-28	Rapidly-developing spots forming a stream with an irregular leader and complex follower by Dec 25, after which the following components disintegrate and the leader assumes a regular configuration.
21844	Dec 23-27	Variable scattered spots, of which only one remains on Dec 27.
21845	Dec 25-31	Variable intermittent spots.
21846	Dec 26-28	Scattered spots on Dec 26 and 28; a single spot in between.
21847	Dec 26-Jan 7	A single spot with variable companions.
21848	Dec 26-Jan 7	A single spot with variable companions.
21849	Dec 28-Jan 3	A single spot disintegrating into scattered spots by Dec 31.
21850	Dec 29-31	A single spot on the first and last days; two small spots in the middle.
21851	Dec 29-Jan 6	A single spot with casual companions, slowly diminishing after Dec 31.
21852	Dec 30-31	Faint spots.
21853	Jan 2-15	A complex cluster comprising three main components, the two followers of which steadily decay to leave a single, elongated spot with sporadic leading companions after Jan 13.
21854	Jan 4-15	A single spot, developing dramatically by Jan 7 to form two main, complex components with intermittent companions. The whole group subsequently diminishes.
21855	Jan 4-13	A diminishing irregular spot with a fluctuating companion.
21856	Jan 4-16	A single spot with occasional companions.
21857	Jan 4-16	A single regular spot, deforming and dividing by Jan 13 to leave one or two diminishing spots.
21858	Jan 6-18	A single spot with rapidly-developing following components, the majority of which coalesce with the leader to form a single extensive region by Jan 10, whereupon gradual decay occurs throughout and a single spot is left at the west limb.

Group	1969	
21859	Jan 11-17	A single spot until Jan 13, after which rapidly-developing companions appear.
21860	Jan 12-24	A single spot, with a companion on Jan 16.
21861	Jan 14-15	Two small spots on Jan 14. Widely-scattered companions appear on the following day.
21862	Jan 14-26	A single spot with an occasional companion.
21863	Jan 15-27	A regular spot with several moderate-sized leading companions which disperse by Jan 20, when further companions, well in advance of the original spot, appear.
21864	Jan 15-21	Variable intermittent spots.
21865	Jan 16-23	Two single spots rapidly developing into a compact stream by Jan 18 and subsequently fading to leave a single irregular spot on Jan 22.
21866	Jan 18-29	A single spot with variable companions which fade to leave only the original spot by Jan 26. A leading companion is seen on Jan 29.
21867	Jan 21-31	Several compact, irregular spots until Jan 24, after which rapid growth takes place and a complex stream is formed by Jan 27, which slowly fades after Jan 29.
21868	Jan 25-Feb 1	A single diminishing spot, not seen on Jan 28, after which two developing spots with occasional companions are visible.
21869	Jan 25-28	Two single spots, the leader of which has died out by Jan 27.
21870	Jan 27-Feb 6	Initially two main spots separated widely in longitude, the follower of which decays after Feb 2, leaving a single diminishing spot with an occasional companion.
21871	Jan 29-Feb 2	Several spots until Jan 30, after which only one remains.
21872	Jan 31-Feb 2	Variable scattered spots.
21873	Jan 31-Feb 11	A single symmetrical spot.
21874	Jan 31-Feb 12	A single spot with occasional companions.
21875	Feb 1-11	Several spots developing steadily to form an intricate stream by Feb 7, thereafter the leader assumes a regular configuration while the followers slowly diminish.
21876	Feb 1 - 5	Variable spots.
21877	Feb 2 - 3	A single spot.
21878	Feb 2-11	Several irregular spots forming a small stream which experiences a secondary, short-lived development on Feb 8 and 9 and fades rapidly thereafter.
21879	Feb 3-11	Widely-scattered spots forming a short-lived irregular stream and fading quickly after Feb 7, leaving a single spot after the following day.
21880	Feb 5 - 6	Two spots.
21881	Feb 7-10	Variable intermittent spots.
21882	Feb 7-10	A diminishing spot, with following companions on Feb 8 only.
21883	Feb 8-12	A single spot on the first and last days; a simple stream in between.
21884	Feb 8-13	Very variable spots.
21885	Feb 13-19	A steadily-enlarging stream until Feb 14. The group fades after the following day.
21886	Feb 13-20	Two intermittent spots with occasional companions, reaching maximum development on Feb 18, after which the group disintegrates.
21887	Feb 13-24	A developing stream until Feb 15, after which the leaders fade to leave a single irregular spot with occasional companions, which in turn disintegrates on Feb 20 and slowly-diminishing, scattered spots remain.

Group	1969	
21888	Feb 15-16	Several scattered spots on Feb 15; a single spot on the following day.
21889	Feb 15-16	A single spot.
21890	Feb 16-18	A single spot, seen with a companion on Feb 17.
21891	Feb 16-21	Several variable spots.
21892	Feb 17-18	Two spots on Feb 17; a single spot on Feb 18.
21893	Feb 17-27	Intermittent spots developing strongly to form a compact, complex stream by Feb 23, after which a slow decay occurs.
21894	Feb 17-Mar 1	An extensive complex stream of composite components which gradually coalesce to form three main structures by Feb 26.
21895	Feb 19-26	Several variable spots in stream formation.
21896	Feb 19-27	Several spots developing into a stream with maximum area on Feb 23, after which the leader fades and the followers disintegrate.
21897	Feb 19-Mar 2	Rapidly-developing spots forming a compact, complex stream by Feb 22. The stream elongates and disintegrates after attaining maximum area and the followers fade to leave a a single leader and companion from Feb 28.
21898	Feb 20-22	Two spots with variable companions.
21899	Feb 20-27	Intermittent spots which develop into a compact cluster by Feb 24; the companions of the main spot fade by Feb 27.
21900	Feb 22-28	A single intermittent spot, seen with a companion on Feb 25.
21901	Feb 23-24	A single spot.
21902	Feb 23-Mar 8	Several complex scattered components, the most northerly of which develop strongly to form a composite stream by Feb 27. Deterioration of the leaders ensues and the complex follower of the stream and a southerly regular spot amalgamate to form a single, complex structure by Mar 3, which slowly fades.
21903	Feb 24-Mar 3	A single spot, deforming and diminishing after Feb 26.
21904	Feb 26-Mar 3	A single spot until Feb 28 when variable spots are seen.
21905	Feb 26-Mar 10	A single spot with an occasional companion.
21906	Feb 26-Mar 2	Two spots with occasional companions.
21907	Feb 27-Mar 8	Variable scattered spots.
21908	Feb 28-Mar 6	A small irregular stream of variable spots.
21909	Feb 28-Mar 6	A single diminishing spot with occasional companions.
21910	Mar 3-13	Variable scattered spots.
21911	Mar 5 - 6	A single spot.
21912	Mar 5-13	Two small spots rapidly developing into a stream by Mar 8 and thereafter decaying gradually.
21913	Mar 5 - 9	One or two variable spots.
21914	Mar 6-16	A single diminishing spot.
21915	Mar 7-15	A single spot with an occasional following companion, slowly diminishing after Mar 8.
21916	Mar 8-11	Two variable irregular spots with occasional companions.
21917	Mar 8-16	A rapidly-developing simple stream with a single, gradually diminishing leader and variable following companions.
21918	Mar 8-16	A single spot which divides on Mar 10, after which the two resulting spots rapidly separate and the leader fades by Mar 16.
21919	Mar 9-14	A single intermittent spot with occasional companions.
21920	Mar 11-17	A single fluctuating spot.
21921	Mar 11-22	Variable developing, scattered spots until Mar 13 when they slowly fade.

Group	1969	
21922	Mar 13-20	One or two intermittent spots rapidly forming a compact stream by Mar 16 and gradually dispersing thereafter.
21923	Mar 13-19	A single spot until Mar 18 when several small spots appear.
21924	Mar 13-16	A single spot.
21925	Mar 13-25	A single spot with a small, following companion. On Mar 17 the follower begins to fade and multiple, variable companions appear around the original spot.
21926	Mar 15-19	Variable spots.
21927	Mar 15-26	Two irregular components developing into a stream of complex components by Mar 20. The leaders gradually fade while the principal follower assumes a regular configuration.
21928	Mar 15-17	A single spot.
21929	Mar 16-19	Several variable, compact spots.
21930	Mar 16-28	Multiple irregular components developing gradually into an extended, composite stream by Mar 22, with irregular leaders and a large, complex follower.
21931	Mar 16-28	A single symmetrical spot with occasional following companions.
21932	Mar 17-27	A small stream reaching maximum area on Mar 19, after which the followers gradually diminish to leave a single spot from Mar 24.
21933	Mar 17-29	Several small spots developing dramatically after Mar 20 to form a stream comprising multiple slowly-fading, irregular leaders and a moderate-sized, complex follower which alone remains on Mar 28.
21934	Mar 17-23	Intermittent spots.
21935	Mar 18-21	Several variable, compact spots.
21936	Mar 18-23	A single spot.
21937	Mar 19-21	Variable spots.
21938	Mar 20-29	Intermittent spots.
21939	Mar 22-23	Two spots.
21940	Mar 24-25	A single spot on Mar 24; two small spots on the following day.
21941	Mar 25-27	Variable spots.
21942	Mar 25-31	Initially a single spot. Two irregular components are seen from Mar 26, the leader of which slowly disintegrates.
21943	Mar 25-Apr 4	An intermittent spot developing into an irregular stream by Mar 29 and subsequently decaying.
21944	Mar 25-31	A variable spot with an occasional companion.
21945	Mar 25-Apr 6	An irregular spot with fading companions, deforming by Mar 29 into multiple, slowly-decaying, irregular spots.
21946	Mar 26-27	A single spot.
21947	Mar 27-Apr 8	A very extensive complex structure comprising multiple closely-packed components.
21948	Mar 28-Apr 9	Several slowly-fading, irregular spots.
21949	Mar 29-30	One or two small spots.
21950	Mar 31-Apr 1	Variable spots.
21951	Mar 31-Apr 2	A single spot.
21952	Apr 1 - 6	Two small spots rapidly forming into a small stream and decaying steadily after maximum development on Apr 3.
21953	Apr 3-14	A spot with multiple umbrae. Small, variable companions are visible from Apr 8.
21954	Apr 3-15	A spot with occasional scattered companions.
21955	Apr 8-10	Variable scattered spots.
21956	Apr 8 - 9	A single spot.
21957	Apr 8-20	A compact stream with a complex leader and intermediate companions which amalgamate by Apr 16 to form a highly-irregular leader with simple following companions.
21958	Apr 9-20	Two small spots steadily developing to form a compact stream with multiple components by Apr 12 and thereafter gradually fading to leave two diminishing spots on Apr 18.
21959	Apr 10-18	A single spot, seen with following companions on Apr 15 and 16.
21960	Apr 11-22	A single spot with variable companions.
21961	Apr 12-25	A regular spot.
21962	Apr 13-14	Four spots on Apr 13; a single spot on the following day.
21963	Apr 13-22	A compact stream of variable, complex components which decays after Apr 14 and undergoes a secondary development from Apr 21.
21964	Apr 13-25	A single spot, with variable companions which have all disintegrated by Apr 23.
21965	Apr 14-22	Scattered spots forming a compact stream on Apr 17, the followers of which diminish rapidly after Apr 18 to leave two small spots by Apr 21.
21966	Apr 16-22	A slowly-developing stream comprising multiple irregular components, the followers of which decay rapidly after maximum development on Apr 20 to leave a few scattered spots on the following days.
21967	Apr 17-21	Variable irregular spots.
21968	Apr 18-21	Variable spots.
21969	Apr 20-26	A rapidly-developing compact stream, steadily diminishing after Apr 22.
21970	Apr 22-25	Variable spots.
21971	Apr 24-May 1	A simple variable stream, decaying after Apr 27.
21972	Apr 24-30	A few variable spots.
21973	Apr 24-May 5	An irregular spot with companions.
21974	Apr 25-27	A single spot.
21975	Apr 26-30	Variable scattered spots.
21976	Apr 26-29	Intermittent spots.
21977	Apr 28-May 6	A simple stream of which the followers die out by May 1.
21978	Apr 30-May 7	Several spots until May 2 when only one remains.
21979	May 1 - 3	Several small spots.
21980	May 1-13	An extended stream of complex components, the followers of which gradually fade after May 4.
21981	May 3 - 8	Variable intermittent spots.
21982	May 4 - 5	Two small spots on May 4; a single spot on the following day.
21983	May 4-15	A simple stream until May 8 when it disperses and subsequently diminishes, experiencing a short-lived, secondary development after May 12.
21984	May 4 - 9	Scattered spots.
21985	May 8-18	Intermittent spots forming a small stream by May 12 which gradually fades after maximum development on May 14.
21986	May 8-16	Several small spots until May 12 when a small stream is formed, which subsequently fades.
21987	May 8-19	A single spot until May 14 when leading spots appear and develop into a compact stream, after which the followers slowly decay.
21988	May 9-19	A single spot forming an irregular stream by May 13, after which the followers slowly die.

Group	1969	
21989	May 9-19	A single spot with variable, leading companions, which forms a slowly fading stream, not seen on May 18, after the followers' disintegration on May 16.
21990	May 10-21	An irregular stream of variable spots.
21991	May 11-20	An irregular spot with variable following companions.
21992	May 11-20	A simple variable stream.
21993	May 14-19	An extended stream with an irregular leader and followers, decaying after May 15.
21994	May 15-17	A single intermittent spot.
21995	May 17-19	Variable spots.
21996	May 17-30	A single irregular spot with variable, following companions, which begins to disintegrate on May 25.
21997	May 18-28	Three small spots undergoing a massive development from May 19, rapidly forming a stream with an irregular leader and follower and variable intermediate spots.
21998	May 19-27	Compact irregular spots, only one of which is visible on May 19, which elongate to form a decaying stream after May 22.
21999	May 19-30	An irregular spot with variable companions.
22000	May 19-30	A diminishing spot with an intermittent companion.
22001	May 20-31	Two small spots until May 23, after which a small, variable stream forms.
22002	May 21-23	Variable spots.
22003	May 21-26	Variable decaying spots.
22004	May 21-28	A rapidly-developing complex stream, with a highly intricate follower by May 26.
22005	May 21-30	A spot with an occasional companion.
22006	May 23-28	Variable scattered spots.
22007	May 23-25	One or two scattered spots.
22008	May 24-27	A simple stream, decaying to leave a single spot from May 26.
22009	May 26-Jun 6	A simple stream with slowly fading followers.
22010	May 28-30	A single spot, with a distant follower on May 29.
22011	May 28-Jun 7	A single diminishing spot, disintegrating after Jun 1 to leave intermittent, fluctuating spots.
22012	Jun 1 - 8	Variable compact spots.
22013	Jun 2 - 8	Variable scattered spots.
22014	Jun 2 - 6	A small stream of variable spots.
22015	Jun 3-13	A single spot, not seen on Jun 4, reappearing as a group of developing, scattered spots forming two complex components with irregular, northerly, intermediate companions, which gradually fade.
22016	Jun 3-14	Variable spots.
22017	Jun 3-13	A slowly diminishing spot.
22018	Jun 3-15	A regular spot with occasional companions.
22019	Jun 4-16	A rapidly-developing complex stream, coalescing on Jun 11 to form a single extensive structure.
22020	Jun 5-16	An irregular extended stream of which the followers gradually fade.
22021	Jun 5-17	A large irregular spot with multiple, variable companions.
22022	Jun 10-11	One or two small spots.
22023	Jun 11-21	A slowly-fading spot with occasional companions.
22024	Jun 12-18	A spot with occasional companions until Jun 16 when several, more southerly components appear.
22025	Jun 13-25	A single spot with occasional companions.
22026	Jun 14-20	A compact stream appearing near the central meridian, rapidly increasing in area until Jun 15 and subsequently fading.
22027	Jun 14-25	Variable spots.
22028	Jun 15-20	Variable spots.
22029	Jun 15-19	Variable spots.
22030	Jun 15-20	Intermittent spots.
22031	Jun 16-25	Scattered spots, rapidly developing after Jun 17 into a compact stream. After maximum development on Jun 21, the followers fade.
22032	Jun 17-25	A single intermittent spot until Jun 24 when two components are seen.
22033	Jun 21-23	A single spot.
22034	Jun 24-Jul 1	A simple stream, decaying after Jun 27.
22035	Jun 25-Jul 6	A compact developing stream, decaying after Jul 3.
22036	Jun 26-Jul 6	An intermittent spot, developing after its reappearance on Jul 2 into a simple stream of which the followers decay after Jul 4.
22037	Jun 28-Jul 3	Variable spots.
22038	Jun 28-Jul 10	A single spot with an occasional following companion.
22039	Jun 30-Jul 4	A simple stream.
22040	Jun 30-Jul 6	Variable spots.
22041	Jun 30-Jul 10	Multiple spots, decaying after Jul 4.
22042	Jun 30-Jul 13	A large irregular spot with leading companions which die out by Jul 8, by which time multiple, slowly-fading companions are formed.
22043	Jul 1-13	A spot with occasional companions.
22044	Jul 3 - 8	A simple stream with two regular components and occasional intermediate spots, which decays after Jul 5, leaving a single, diminishing spot.
22045	Jul 3-12	A spot with occasional companions.
22046	Jul 4 - 6	A single spot.
22047	Jul 6 - 7	A single spot.
22048	Jul 6-16	A small stream rapidly increasing in area as it passes round the west limb.
22049	Jul 6-18	A simple stream of which the followers decay by Jul 15.
22050	Jul 9-19	An intermittent spot, rapidly developing after its reappearance on Jul 12, to form a diverging stream of scattered spots.
22051	Jul 10-11	A single spot.
22052	Jul 10-21	A single diminishing spot.
22053	Jul 10-22	A single spot with occasional companions.
22054	Jul 11-13	A small cluster of spots.
22055	Jul 11-16	A small stream on all days except Jul 14 and 15 when only a single spot is visible.
22056	Jul 17-18	Two spots.
22057	Jul 17-28	A simple diminishing stream until Jul 24, and variable spots thereafter.
22058	Jul 18-21	A simple stream.
22059	Jul 20-24	Variable spots.
22060	Jul 22-26	Variable scattered spots.
22061	Jul 22-25	A single spot.
22062	Jul 24-Aug 5	An irregular cluster of diminishing spots.
22063	Jul 26-31	Intermittent, variable spots.
22064	Jul 26-Aug 7	A rapidly-developing irregular spot with multiple companions which strengthen considerably by Jul 31 and form a single highly complex structure with an accompanying southerly stream on Aug 2, after which both structures disintegrate and fade.
22065	Jul 28-Aug 2	Variable spots.
22066	Jul 29-30	A single spot on Jul 29; two spots on the following day.

Group	1969	
22067	Jul 29-Aug 3	A single spot with an occasional companion, seen with following companions on the last day.
22068	Jul 30-Aug 11	A rapidly-developing stream comprising two main complex structures which gradually disintegrate and fade after Aug 2 to leave one of the original leaders with a companion by the west limb.
22069	Jul 31-Aug 2	Several small spots appearing near the west limb.
22070	Jul 31-Aug 7	A small developing stream.
22071	Jul 31-Aug 11	Several spots. The leaders fade completely by Aug 2, while the remaining components strengthen to form a small stream, the followers of which disappear by Aug 8 when a secondary development of the original leaders occurs.
22072	Aug 1 - 2	Two spots on Aug 1; three spots on Aug 2.
22073	Aug 1 - 4	Variable spots.
22074	Aug 2-12	Scattered spots on the first and last days; a small stream in between.
22075	Aug 3 - 8	Variable spots.
22076	Aug 4-12	A small stream dissolving into intermittent scattered spots by Aug 8.
22077	Aug 4-14	Intermittent variable spots.
22078	Aug 7-10	Slowly decaying, variable spots.
22079	Aug 8-15	A developing stream until Aug 11 when the followers gradually fade, leaving the original leader alone from Aug 14.
22080	Aug 9-14	Two gradually separating spots with occasional companions.
22081	Aug 10-11	Decaying spots.
22082	Aug 10-21	A spot with occasional companions.
22083	Aug 12-18	Several intermittent spots.
22084	Aug 12-22	A developing stream of multiple small components, slowly fading after Aug 15.
22085	Aug 14-15	Decaying spots.
22086	Aug 21-Sep 3	A large complex structure with simple leaders, fading appreciably after Aug 27.
22087	Aug 22-24	A single spot seen with following companions on Aug 22.
22088	Aug 23-25	Variable spots.
22089	Aug 24-29	Several variable spots.
22090	Aug 24-Sep 5	A single spot with following companions forming a small stream by Aug 28. The following components develop rapidly from Sep 4.
22091	Aug 25-27	Variable decaying spots.
22092	Aug 25-30	An intermittent spot.
22093	Aug 25-Sep 6	A complex stream, fading noticeably after Aug 31 and developing strongly again from Sep 4.
22094	Aug 26-Sep 2	A cluster of variable spots.
22095	Aug 27-Sep 5	Intermittent. Variable spots with rapid development after Sep 3.
22096	Aug 27-31	Variable spots.
22097	Aug 28-31	Very variable spots.
22098	Aug 29-Sep 3	A spot with occasional companions.
22099	Sep 1 - 6	Variable intermittent spots.
22100	Sep 2 - 3	Variable spots.
22101	Sep 2 - 3	A single spot.
22102	Sep 3 - 6	A simple variable stream.
22103	Sep 4 - 8	A developing stream.
22104	Sep 5-13	A compact developing stream, the following components of which gradually fade after Sep 7.
22105	Sep 5 - 8	One or two spots.
22106	Sep 6 - 8	Intermittent spots.
22107	Sep 6 - 7	Two spots on Sep 6; a single spot on the following day.
22108	Sep 7-15	A compact irregular stream with steadily diverging components.
22109	Sep 9-20	A single spot with occasional companions, diminishing significantly after Sep 15.
22110	Sep 10-22	Two small spots forming a stream by Sep 15, after which the followers gradually fade.
22111	Sep 12-19	Initially a single spot. A variable, diminishing stream is seen from Sep 13.
22112	Sep 12-21	A single spot with occasional companions which become widespread and variable after Sep 15.
22113	Sep 13-23	A single spot developing into an irregular stream, disintegrating after Sep 16 and fading, with the exception of Sep 21 when scattered spots are apparent.
22114	Sep 14-19	A small developing, compact stream.
22115	Sep 14-17	A single spot until Sep 17 when several close spots are seen.
22116	Sep 15-18	A single spot.
22117	Sep 17-19	Variable spots.
22118	Sep 17-18	A single spot on Sep 17; three spots on Sep 18.
22119	Sep 17-20	A simple stream of variable spots.
22120	Sep 18-19	A compact decaying stream.
22121	Sep 20-22	A single spot on the first and last days; two spots in between.
22122	Sep 20-22	A single spot.
22123	Sep 21-27	A small stream of variable spots.
22124	Sep 21-Oct 2	Two spots, disintegrating after Sep 22 and developing to form a complex cluster by Sep 25, after which gradual decay occurs until a secondary, short-lived development takes place on Sep 29.
22125	Sep 21-Oct 3	A fluctuating regular spot with occasional companions.
22126	Sep 22-28	A complex stream reaching maximum development on Sep 25 after which the group decays.
22127	Sep 22-Oct 3	A spot with occasional variable followers.
22128	Sep 23-Oct 2	A simple developing stream until Sep 27 when gradual decay occurs.
22129	Sep 23-28	Variable scattered spots.
22130	Sep 27-Oct 5	Two close components with occasional companions, the follower of which disintegrates after Oct 1 and fades to leave the original leader on the last day.
22131	Sep 28-Oct 5	A diminishing spot with an occasional companion.
22132	Sep 28-Oct 8	A rapidly-developing complex stream. The mid-sections fade after the maximum area on Oct 2.
22133	Oct 2-12	Scattered spots rapidly developing into an extensive stream of complex components in a 'v' formation by Oct 6, after which both tails of the stream combine to form a more compact structure.
22134	Oct 2-12	A diminishing spot with occasional following companions.
22135	Oct 3 - 6	A single spot.
22136	Oct 4-16	A single spot with occasional companions.
22137	Oct 6 - 7	A single spot on Oct 6; scattered spots on the following day.
22138	Oct 6-17	A single spot with close, following companions, fading by Oct 16.
22139	Oct 8-10	A single spot on Oct 8; two spots on the other days.
22140	Oct 13-14	Two spots.
22141	Oct 13-18	A variable stream.

Group	1969	
22142	Oct 13-19	One or two close spots until Oct 15 when a leading spot and companions are seen. The following spots die out by the next day and nothing more is seen until Oct 19 when two close spots represent the position.
22143	Oct 16-17	A single spot.
22144	Oct 17-21	Two spots on Oct 17; a single variable spot thereafter.
22145	Oct 18-30	A spot with moderate-sized variable companions which decay to leave a single spot by Oct 30.
22146	Oct 19-Nov 1	A large multiple-umbraed leader with irregular composite followers which disintegrate on Oct 24 and slowly fade, to leave a large distorted spot by Oct 31.
22147	Oct 20-25	Variable intermittent spots.
22148	Oct 21-27	Diminishing spots with occasional following companions.
22149	Oct 21-30	Two irregular spots, the follower of which disintegrates and fades to leave only the original leader by Oct 29.
22150	Oct 22-23	Two small spots on Oct 22; a single developing spot on the following day.
22151	Oct 24-30	A developing cluster of irregular spots, fading after Oct 27 to leave a single spot.
22152	Oct 24-Nov 4	A single spot with occasional companions, developing a persistent leader from Oct 29 to Nov 1, after which only the original leader remains.
22153	Oct 25-26	One or two small spots.
22154	Oct 26-Nov 1	An intermittent spot with an occasional companion.
22155	Oct 27-28	A single spot.
22156	Oct 27-Nov 3	A single spot with an occasional southerly or following companion.
22157	Oct 28-Nov 1	A single diminishing spot.
22158	Oct 29-Nov 3	Variable diminishing spots.
22159	Oct 29-Nov 2	Variable intermittent spots.
22160	Oct 30-Nov 7	Two spots, developing slightly and separating to form a simple stream.
22161	Nov 1 - 6	Variable intermittent spots.
22162	Nov 1-10	Variable scattered spots, diminishing after Nov 3.
22163	Nov 3 - 6	Two variable spots with occasional companions.
22164	Nov 3 - 6	A single intermittent spot, with a following companion on Nov 6.
22165	Nov 3-17	A single spot and developing companion, with further intermediate companions from Nov 6.
22166	Nov 4 - 5	Two spots, with a companion on Nov 5.
22167	Nov 4-14	Gradually decaying, scattered spots.
22168	Nov 5 - 7	Two irregular spots of which only one remains on Nov 7.
22169	Nov 5 - 9	Variable intermittent spots.
22170	Nov 5-13	Rapidly-developing compact spots, decaying appreciably after Nov 10 and becoming more variable.
22171	Nov 8-13	A small stream.
22172	Nov 8-14	A simple stream.
22173	Nov 9-11	A single spot.
22174	Nov 11-16	Several intermittent spots exhibiting exceptional development after Nov 13, forming two irregular components, separated principally in latitude, with several intermediate companions.
22175	Nov 12-16	Variable spots.
22176	Nov 15-27	A single irregular spot with enlarging, complex companions which fade slowly after Nov 19.

Group	1969/1970	
22177	Nov 15-28	An irregular spot with developing, complex, northerly companions which gradually merge with the main spot to form a highly irregular structure with variable, leading companions.
22178	Nov 16-18	Two spots.
22179	Nov 19-21	A single spot.
22180	Nov 19-29	A variable stream.
22181	Nov 19-26	A few intermittent spots.
22182	Nov 20-21	Two spots.
22183	Nov 21-24	Two spots on Nov 21 and 22; not seen on the following day, a single spot is visible on Nov 24.
22184	Nov 22-24	A single spot on Nov 22; two small spots thereafter.
22185	Nov 23-Dec 4	A single spot with an occasional companion.
22186	Nov 25-27	An intermittent spot.
22187	Nov 25-Dec 6	A single spot with occasional companions.
22188	Nov 26-Dec 5	Variable intermittent spots.
22189	Nov 26-Dec 6	A single spot with occasional companions, gradually deforming after Nov 29 and disintegrating by Dec 3 to produce variable spots.
22190	Nov 27-28	Scattered spots.
22191	Nov 27-Dec 6	A steadily developing stream.
22192	Nov 28-Dec 5	Variable scattered spots.
22193	Nov 29-Dec 3	Intermittent spots.
22194	Nov 30-Dec 10	A single spot, developing rapidly after Dec 1 to form a compact stream, the followers of which fade completely by Dec 7.
22195	Dec 1 - 5	A single spot.
22196	Dec 2 - 8	A variable stream.
22197	Dec 2-14	A single spot, seen with variable companions on Dec 8 and 9.
22198	Dec 5 - 6	A small cluster of spots.
22199	Dec 8-11	Several small spots.
22200	Dec 9-12	A diminishing irregular spot with variable, following companions.
22201	Dec 10-16	Intermittent variable spots.
22202	Dec 12-22	A single, diminishing spot with occasional companions. 11th appearance of this group, recurrent group 2053 is a revival of 2028 returning after an interval of one rotation.
22203	Dec 12-23	A slowly decaying, irregular stream.
22204	Dec 13-18	Variable spots.
22205	Dec 13-18	Variable spots.
22206	Dec 13-24	A single spot with occasional companions.
22207	Dec 13-25	An extended variable stream.
22208	Dec 15-20	An intermittent spot.
22209	Dec 16-18	An intermittent spot.
22210	Dec 18-30	Two components, the follower of which disintegrates after Dec 21 and fades to leave only the original leader from Dec 25.
22211	Dec 19-25	A developing stream until Dec 21, after which the followers rapidly fade.
22212	Dec 20-22	Several small spots.
22213	Dec 20-30	A rapidly-developing complex structure, slowly disintegrating after Dec 23 to leave a stable leader and fading companions.
22214	Dec 21-31	A variable stream of spots.
22215	Dec 22-31	A variable stream of spots.
22216	Dec 22-Jan 2	A regular spot.

Group	1969/1970		
22217	Dec 22-Jan	2	A single spot with following companions until Dec 28, after which the spot divides to form two small spots by Dec 31.
22218	Dec 24-25		Two spots appearing near the west limb.
22219	Dec 24-31		A rapidly-developing stream fading steadily after Dec 26.
22220	Dec 25-26		Variable spots.
22221	Dec 25-Jan	2	Intermittent spots
22222	Dec 26-Jan	2	A single spot until Dec 30, reappearing two days later as scattered spots.
22223	Dec 27-28		Variable spots.
22224	Dec 27-Jan	2	A single spot, not seen on Dec 28, forming an irregular stream from Dec 29 which gradually decays as it passes from view.
22225	Dec 27-Jan	5	A complex irregular stream.
22226	Dec 28-Jan	8	A developing complex stream.
22227	Dec 29-30		Several small spots.
22228	Dec 29-Jan	3	Variable scattered spots.
22229	Dec 31-Jan	9	Spots with occasional companions.
22230	Jan 2-11		One or two intermittent spots.
22231	Jan 3 - 8		One or two intermittent spots.
22232	Jan 4 - 6		A single spot on Jan 4 and 5; two spots on Jan 6.
22233	Jan 6-11		Two spots on Jan 6; a single spot when next seen on Jan 11.
22234	Jan 8-17		A variable scattered stream.
22235	Jan 8-19		A developing complex stream.
22236	Jan 9-14		A compact complex stream.
22237	Jan 9-19		A single irregular spot with occasional companions, not seen on Jan 18.
22238	Jan 10-13		Scattered spots.
22239	Jan 11-22		A simple variable stream and intermittent spots, decaying to leave a single intermittent, variable spot by Jan 16.
22240	Jan 11-19		A simple, gradually-decaying stream.
22241	Jan 11-23		A compact stream with a dominant complex follower.
22242	Jan 12-20		Several small spots which develop and disperse to form widely scattered spots by Jan 17.
22243	Jan 12-15		A single, intermittent spot.
22244	Jan 12-20		Variable scattered spots.
22245	Jan 12-21		Two principal components separated mainly in latitude, the upper component of which has faded by Jan 21.
22246	Jan 14-18		One or two intermittent spots.
22247	Jan 14-25		A steadily developing stream until Jan 19, decaying thereafter to leave only the original leader on Jan 25.
22248	Jan 14-22		Two small spots until Jan 18, reappearing as a single spot on Jan 20 and 21 and two small spots on the following day.
22249	Jan 17-24		A single spot developing to form a complex component by Jan 20 which decays steadily after Jan 22.
22250	Jan 17-29		A single spot, with a following companion on all days except Jan 28 and 29.
22251	Jan 20-Feb	1	A spot with a following companion until Jan 31 when only the leader remains.
22252	Jan 21-23		Two spots, rapidly increasing in area as they pass round the west limb.
22253	Jan 21-23		One or two small spots.
22254	Jan 22-24		A single spot on Jan 22 and 24; seen with a following companion on Jan 23.
22255	Jan 22-Feb	3	A simple stream of which the following components decay to leave only the leader from Feb 1.

Group	1970		
22256	Jan 24-Feb	1	A rapidly-developing complex stream.
22257	Jan 24-31		A simple stream, having a rapid initial development and gradually fading to leave only the leader by Jan 31.
22258	Jan 25-Feb	1	Intermittent spots.
22259	Jan 26-Feb	2	A simple stream which, after its sudden appearance on Jan 26, continues to steadily decline.
22260	Jan 26-Feb	3	Variable scattered spots, forming a stream by Jan 31.
22261	Jan 26-Feb	4	Scattered spots on initial and final days; a compact stream in between.
22262	Jan 27-Feb	1	Variable scattered spots.
22263	Jan 27-Feb	3	Variable intermittent spots.
22264	Jan 29-Feb	7	A single spot, seen with a companion on Feb 5.
22265	Jan 31-Feb	9	Intermittent. Variable compact spots.
22266	Feb 1 - 9		A simple, intermittent, variable stream.
22267	Feb 2 - 5		A compact stream, diminishing after Feb 3.
22268	Feb 2 - 7		Variable intermittent spots.
22269	Feb 3 - 4		Two spots.
22270	Feb 3 - 4		A single spot.
22271	Feb 5-11		A small, intermittent stream.
22272	Feb 5-17		Initially a single spot. Multiple scattered spots appear by Feb 8 and quickly develop and amalgamate to form a complex stream by Feb 10, which steadily declines after attaining maximum area two days later.
22273	Feb 6-11		One or two intermittent spots.
22274	Feb 6-12		A complex cluster which gradually fades after Feb 7.
22275	Feb 6-18		Several variable spots until Feb 10, after which steady development occurs and an extended stream with a dominant follower is formed.
22276	Feb 6-19		A single spot with occasional companions.
22277	Feb 7-11		A small variable stream.
22278	Feb 7-11		Variable spots.
22279	Feb 7-12		A few single spots.
22280	Feb 10-12		Variable spots.
22281	Feb 10-16		One or two small spots.
22282	Feb 11-22		An irregular extended stream.
22283	Feb 12-18		Several small spots.
22284	Feb 12-25		A simple stream with an irregular leader and several companions which disintegrate after Feb 18.
22285	Feb 13-16		Variable intermittent spots.
22286	Feb 13-14		A single spot.
22287	Feb 15-28		A simple stream having equally-sized leading and following components, the latter of which diminishes after Feb 19, leaving a single, symmetrical spot on Feb 27.
22288	Feb 16-25		A variable cluster of small spots.
22289	Feb 17-20		Two spots.
22290	Feb 18-26		A small equatorial spot with occasional companions.
22291	Feb 18-Mar	2	A single spot with occasional trailing companions. A complex component appears above the main spot and gradually drifts in front of it.
22292	Feb 19-Mar	3	An irregular spot with multiple companions and a single slowly-fading follower.
22293	Feb 19-20		A single spot.
22294	Feb 20-Mar	2	A simple stream exhibiting rapid initial growth, consisting of two main complex structures with variable intermediate companions.
22295	Feb 21-25		A small, variable stream.
22296	Feb 21-28		A simple stream showing gradual growth and decay.

Group	1970	
22297	Feb 21-Mar 4	A highly-irregular complex stream, the following components of which coalesce after Feb 28 to form a single, composite structure with severely diminished leaders.
22298	Feb 22-24	A few small spots.
22299	Feb 22-28	A few variable spots.
22300	Feb 24-27	Several variable spots.
22301	Feb 25-27	Variable spots.
22302	Feb 26-Mar 6	A simple stream with gradually fading followers.
22303	Feb 26-Mar 3	Several small spots, only one of which survives beyond Feb 28.
22304	Feb 27-Mar 2	Several small, slowly-fading spots.
22305	Feb 27-Mar 10	Two close spots, the follower of which develops northerly, complex companions by Mar 1 which gradually drift from the parent spot to form an extended stream by Mar 3, thereafter the followers gradually fade and the irregular leader assumes a regular configuration.
22306	Mar 1 - 2	Two small spots.
22307	Mar 1-11	A variable cluster of irregular spots.
22308	Mar 2 - 6	A single spot on the first and last days; a simple stream in between.
22309	Mar 3-15	A regular spot with occasional companions.
22310	Mar 3-12	Variable intermittent spots.
22311	Mar 4 - 6	Gradually dispersing spots.
22312	Mar 4-16	A complex leader with multiple following companions.
22313	Mar 5-14	A simple stream.
22314	Mar 5-11	A single spot.
22315	Mar 9-11	A compact stream.
22316	Mar 9-11	A single spot on Mar 9 and 11; a small, compact stream on Mar 10.
22317	Mar 9-15	A single spot until Mar 15 when several very small spots are seen.
22318	Mar 12-14	A small decaying stream.
22319	Mar 13-21	Two spots, the follower of which disintegrates after Mar 14 and rapidly fades to leave the original leader and occasional companions.
22320	Mar 13-17	A small stream until Mar 15, after which only a single spot remains.
22321	Mar 15-26	A single spot with occasional companions.
22322	Mar 18-30	A single regular spot, with multiple leading companions suddenly appearing on Mar 25 and steadily fading to leave only the original spot by Mar 29.
22323	Mar 18-29	A stream of irregular spots.
22324	Mar 19-24	A steadily-developing stream with a dominant complex follower.
22325	Mar 19-28	A compact stream of spots, disintegrating after Mar 23 into variable small spots.
22326	Mar 20-30	A small stream.
22327	Mar 20-26	A compact cluster of variable spots.
22328	Mar 20-Apr 1	A spot, with a following companion which develops strongly after Mar 22, forming an irregular structure which alone survives to the west limb.
22329	Mar 21-26	A variable stream of small spots.
22330	Mar 22-Apr 2	A spot and neighbouring companions, with following companions appearing after Mar 26.
22331	Mar 23-31	Intermittent spots.
22332	Mar 24-Apr 1	A single spot with a close companion on Mar 25 and 26, which forms a fluctuating stream after Mar 27.
22333	Mar 25-Apr 6	An irregular spot with scattered companions which develop significantly after Mar 30 to form multiple northerly components.
22334	Mar 28-Apr 1	A variable compact stream.
22335	Mar 29-Apr 5	A compact group of variable spots.
22336	Mar 29-Apr 3	Several small, intermittent spots.
22337	Mar 29-31	One or two variable scattered spots.
22338	Mar 31-Apr 10	An irregular spot with occasional companions. The spot itself subdivides after umbral division on Apr 7, to leave three close spots.
22339	Mar 31-Apr 13	A regular spot with slowly-fading northerly companions.
22340	Apr 2 - 3	A single spot on Apr 2; two small spots on the following day.
22341	Apr 2 - 9	A slowly-diminishing simple stream.
22342	Apr 2-16	A large symmetrical leader and an irregular follower with an inter-connecting chain of multiple, northerly spots.
22343	Apr 3-12	Variable intermittent spots.
22344	Apr 3 - 8	Intermittent spots.
22345	Apr 4-15	A compact stream which gradually condenses by Apr 9 to form a complex, irregular structure with variable companions.
22346	Apr 4 - 9	Variable intermittent spots.
22347	Apr 5-15	A single spot, progressively developing into a compact, complex stream by Apr 10.
22348	Apr 5-16	A single spot with occasional following companions.
22349	Apr 7-19	An extended stream.
22350	Apr 7-12	One or two small spots.
22351	Apr 8-12	A compact stream.
22352	Apr 10-13	Variable spots.
22353	Apr 10-13	A single spot, seen with companions on Apr 12.
22354	Apr 10-16	A slowly-developing stream, fading rapidly after Apr 14.
22355	Apr 11-13	A single spot on the first and last days; two small spots on Apr 12.
22356	Apr 13-25	A single spot with an occasional following companion.
22357	Apr 14-20	A single spot on all days except Apr 20 when two small spots are seen.
22358	Apr 14-25	A spot with variable scattered companions.
22359	Apr 15-26	Variable intermittent spots.
22360	Apr 16-21	A single diminishing spot after Apr 17 with rapidly-fading, leading companions.
22361	Apr 18-24	A simple stream, decaying after Apr 20.
22362	Apr 20-28	A fluctuating, compact stream of complex components.
22363	Apr 21-25	A simple stream with a dominant, asymmetrical follower and several irregular leaders.
22364	Apr 22-23	A variable spot.
22365	Apr 22-30	Intermittent spots.
22366	Apr 24-28	A compact stream, dispersing and enlarging after Apr 26.
22367	Apr 24-May 6	An erratically-developing stream of very irregular complex components, the majority of which either fade or assume a more regular profile by May 4.
22368	Apr 25-May 7	A regular leader with variable extended followers which undergo selective development on May 5.
22369	Apr 26-27	A single spot.
22370	Apr 26-30	Two spots with companions.
22371	Apr 26-May 7	A simple stream with gradually-fading, following components.
22372	Apr 27-May 3	A single spot on Apr 27; not seen again until May 3 when two spots are visible.
22373	Apr 28-29	One or two small spots.

Group	1970	
22374	Apr 28-May 4	A short stream of multiple components.
22375	Apr 28-May 4	Intermittent scattered spots.
22376	Apr 28-May 9	A single intermittent spot with an occasional companion.
22377	Apr 29-May 11	A regular spot throughout.
22378	Apr 29-May 12	A single spot, seen with companions between May 3 and 6.
22379	Apr 30-May 12	A single symmetrical spot with variable companions after May 4.
22380	May 1 - 8	Variable scattered spots.
22381	May 3 - 6	Several small, diffuse spots.
22382	May 3-15	A short stream comprising multiple complex components, fading uniformly after May 8.
22383	May 4-11	A variable stream with maximum development on May 7.
22384	May 6 - 7	A single faint spot.
22385	May 8 - 9	Several small spots.
22386	May 9-20	A simple stream, the follower of which fades after May 14 to leave only the original leader by May 19.
22387	May 10-11	A small cluster of spots.
22388	May 10-12	Variable spots.
22389	May 10-14	Two spots, the follower of which has decayed by May 12, leaving a single, diminishing spot.
22390	May 10-19	Variable equatorial spots.
22391	May 10-22	A single spot.
22392	May 11-20	A very complex extended stream exhibiting rapid growth and decay.
22393	May 11-21	A regular spot with occasional following companions.
22394	May 12-24	An extensive stream comprising composite leading and following structures which decay uniformly after May 17.
22395	May 12-19	Variable scattered spots.
22396	May 13-16	A few variable spots.
22397	May 14-15	Two spots on May 14; a single spot on the following day.
22398	May 15-21	Several scattered spots developing strongly after May 18.
22399	May 16-17	A single faint spot.
22400	May 16-27	A single spot with variable associated companions, all of which disperse and diminish after May 24.
22401	May 17-25	A variable cluster of small spots.
22402	May 17-27	Variable fluctuating spots.
22403	May 19-22	One or two small, intermittent spots.
22404	May 19-30	A simple variable stream of small spots.
22405	May 20-21	Two spots.
22406	May 20-24	A single spot.
22407	May 21-23	A single intermittent spot.
22408	May 21-22	A single spot.
22409	May 22-25	A single spot, increasing in area as it passes from view.
22410	May 22-28	A single intermittent spot.
22411	May 22-Jun 2	Initially a single spot and companion, developing strongly into a complex cluster by May 25, thereafter elongating to form an extended stream.
22412	May 23-31	A simple variable stream.
22413	May 24-26	A single spot.
22414	May 25-Jun 4	A single spot seen with a following companion on May 29.
22415	May 26-Jun 5	A single spot with a following companion on May 27, which disintegrates after an umbral division on Jun 4.
22416	May 26-Jun 7	A single spot with short-lived companions after May 30.
22417	May 27-29	A few scattered spots.
22418	May 27-30	A few scattered spots.
22419	May 27-Jun 8	A single spot with occasional companions.
22420	May 27-Jun 5	A single spot, with leading companions developing and subsequently disintegrating, which becomes intermittent.
22421	May 29-Jun 3	A compact variable stream.
22422	May 29-Jun 6	Developing scattered spots forming a ragged stream by Jun 1, after which gradual decay occurs and the follower alone remains by Jun 5.
22423	Jun 2 - 6	A few intermittent spots.
22424	Jun 4-16	A single spot with occasional companions.
22425	Jun 5-10	Intermittent spots.
22426	Jun 6 - 9	Intermittent spots.
22427	Jun 6-15	A complex stream, decaying after Jun 11.
22428	Jun 7-19	An extended stream with an irregular leader and gradually fading followers.
22429	Jun 8-13	A small cluster of variable intermittent spots.
22430	Jun 8-15	Variable intermittent spots.
22431	Jun 10-20	A steadily-forming stream of irregular spots fading appreciably after Jun 16.
22432	Jun 11-16	Widely-scattered variable spots.
22433	Jun 11-22	A very elongated stream of complex components, the following regions of which fade dramatically after Jun 18.
22434	Jun 13-18	Variable scattered spots.
22435	Jun 14-16	A few spots.
22436	Jun 14-26	A spot with variable companions.
22437	Jun 15-27	A single spot with infrequent companions.
22438	Jun 17-27	A single spot with occasional short-lived companions until Jun 24 when more persistent spots are seen.
22439	Jun 18-20	Variable spots.
22440	Jun 18-27	Several small spots which appear, after a day's absence on Jun 20, as a single spot with following companions, the latter having faded by Jun 23 after which the remaining spot disintegrates.
22441	Jun 18-24	Variable intermittent spots.
22442	Jun 18-25	Several variable intermittent spots.
22443	Jun 20-25	Several intermittent spots.
22444	Jun 20-28	A small stream, the followers of which fade rapidly after Jun 27.
22445	Jun 21-30	A small stream of which only the leader remains after Jun 27.
22446	Jun 25-28	A decaying stream.
22447	Jun 25-Jul 4	A compact stream, disintegrating after Jun 28.
22448	Jun 25-Jul 6	An extended complex stream, of which the followers gradually fade.
22449	Jun 26-28	Variable spots.
22450	Jun 26-Jul 3	A short, variable stream.
22451	Jun 27-Jul 8	Multiple spots forming a diffuse stream.
22452	Jun 27-Jul 10	A single irregular spot with variable companions.
22453	Jun 29-Jul 3	Variable spots.
22454	Jun 29-Jul 9	A spot with variable, scattered companions.
22455	Jul 1 - 8	An intermittent stream, decaying after Jul 4.
22456	Jul 1-12	An extended stream of small, isolated components.
22457	Jul 1-13	Variable spots.
22458	Jul 2 - 5	A few variable spots.
22459	Jul 4 - 8	Variable spots.
22460	Jul 4-17	A single spot with variable, scattered companions.
22461	Jul 5 - 7	A few variable spots.
22462	Jul 7-19	A single irregular spot with variable, scattered companions.
22463	Jul 9-10	Two spots.
22464	Jul 9-22	A simple variable stream.
22465	Jul 10-22	A simple stream, of which the followers disintegrate after Jul 13.

Group	1970	
22466	Jul 11-12	One or two small spots.
22467	Jul 12-13	A single faint spot.
22468	Jul 13-15	An intermittent spot.
22469	Jul 13-14	A few faint spots.
22470	Jul 14-15	A single spot.
22471	Jul 14-18	Intermittent spots.
22472	Jul 15-24	A single spot, reappearing after Jul 18 as a compact, decaying, variable stream.
22473	Jul 17-18	A single spot.
22474	Jul 17-18	A few faint spots.
22475	Jul 17-30	A compact, highly-complex stream, dispersing and fading after Jul 22.
22476	Jul 19-22	Several closely-associated spots.
22477	Jul 19-23	Several variable spots.
22478	Jul 19-23	One or two variable spots.
22479	Jul 21-31	Several small spots developing rapidly after Jul 24 into an irregular cluster, which proceeds to fade erratically.
22480	Jul 21-Aug 3	Two close spots with occasional companions which gradually separate as the follower slowly diminishes.
22481	Jul 22-30	A compact cluster of irregular components which amalgamate after Jul 25.
22482	Jul 22-31	A simple stream.
22483	Jul 22-26	Several small spots.
22484	Jul 24-Aug 1	Variable equatorial spots.
22485	Jul 25-30	Variable intermittent spots.
22486	Jul 25-Aug 2	Variable spots.
22487	Jul 25-Aug 5	A slowly disintegrating spot with varying companions.
22488	Jul 26-Aug 4	A uniform stream, exhibiting rapid initial growth and gradual decay in the following components.
22489	Jul 27-Aug 7	A single spot with occasional companions.
22490	Jul 28-30	A few spots.
22491	Jul 28-29	A few spots.
22492	Jul 29-30	Decaying spots.
22493	Jul 30-Aug 8	A single spot, becoming an erratic stream after Aug 1.
22494	Aug 1-10	A single spot.
22495	Aug 3-15	An extended stream comprising several complex components and variable associated companions, the leading sections of which undergo progressive secondary development after Aug 12.
22496	Aug 6-13	A compact stream with multiple fading, following companions.
22497	Aug 6 - 7	A single spot.
22498	Aug 8-18	A pair of spots with maximum area on Aug 9. The leading spot breaks up thereafter into a chain of spots which disperses after Aug 12. The following spot remains stable until Aug 17, but appears to have increased in size upon reaching the limb.
22499	Aug 9-16	A few unimpressive spots with maximum area on Aug 14.
22500	Aug 11-13	Three tiny spots; scattered on Aug 11, absent on Aug 12 and forming a small cluster on the following day.
22501	Aug 12-20	A small spot on Aug 12, decreasing and disappearing altogether on Aug 14; reappearing as two sizeable spots which increase in area as they progress towards the limb.
22502	Aug 13-20	A stream of small spots, decreasing rapidly after Aug 18.
22503	Aug 14-21	A single small spot which develops into a pair of larger spots by Aug 15 and continues to grow for a further four days, accompanied by a few small companions from Aug 17.
22504	Aug 14-26	A large spot with several companions, decreasing after Aug 15.
22505	Aug 15-16	A small chain of tiny spots.
22506	Aug 17-23	A variable stream of small spots with a strong leading component.
22507	Aug 18-20	An elongated cluster of small spots, growing as it passes round the limb.
22508	Aug 19-26	Two spots attended by a few small companions, growing until Aug 24.
22509	Aug 19-27	Two spots with several companions, increasing rapidly in area until Aug 22, and fading steadily after Aug 24.
22510	Aug 19-22	A minute spot, accompanied by a smaller companion on Aug 20.
22511	Aug 19-31	A single, stable, regular spot.
22512	Aug 20-29	A variable stream of spots following a persistent leader.
22513	Aug 20-22	A very small, single spot.
22514	Aug 21-Sep 2	A large single spot which breaks up and develops small companions after Aug 25.
22515	Aug 23-Sep 3	An intermittent group of small spots.
22516	Aug 23-Sep 1	A small pair of spots with a stable leader and disintegrating follower.
22517	Aug 24-26	A single spot which appears quite suddenly and declines.
22518	Aug 24-Sep 3	A stable spot with variable following companions.
22519	Aug 24-Sep 1	A long stream of small spots.
22520	Aug 27-Sep 9	A large stable spot followed by a diminishing number of small companions.
22521	Aug 28-31	Small spots.
22522	Aug 29-31	A small, single spot.
22523	Aug 29-Sep 8	An undistinguished stream of small spots.
22524	Aug 29-Sep 9	A long chain of spots, growing to maximum area on Sep 7.
22525	Aug 29-Sep 11	A very large complex spot with many smaller companions.
22526	Aug 31-Sep 3	A small cluster of little spots.
22527	Sep 2-14	A close pair of stable spots, preceeded by small companions on Sep 8 and 9.
22528	Sep 3 - 5	A small group of undistinguished spots.
22529	Sep 3-14	A small single spot, not seen on Sep 4 or 5.
22530	Sep 3-14	A single spot, seen with following companions on Sep 7.
22531	Sep 3-11	A spot with occasional companions.
22532	Sep 4 - 7	Several decaying spots.
22533	Sep 5-10	Variable spots.
22534	Sep 6 - 7	Two spots with companions.
22535	Sep 6 - 7	A small decaying stream.
22536	Sep 6-15	Variable intermittent spots.
22537	Sep 6-17	A small variable stream.
22538	Sep 7 - 9	Two small spots.
22539	Sep 9-14	A small variable stream.
22540	Sep 9-19	An irregular spot with occasional following companions.
22541	Sep 10-21	A single fading spot, regenerating after Sep 12 to form a variable stream.
22542	Sep 10-16	A single fading spot.
22543	Sep 11-13	Variable spots.
22544	Sep 13-21	A fading stream.
22545	Sep 15-22	A dispersing stream, not seen on Sep 21.
22546	Sep 15-21	A single spot, disintegrating after Sep 18.
22547	Sep 16-27	A complex stream, slowly fading after Sep 20.
22548	Sep 17-18	A single spot.
22549	Sep 18-21	A developing simple stream.

Group	1970	
22550	Sep 19-24	A single spot on all days except Sep 23 when a leading component is visible.
22551	Sep 20-24	A simple stream exhibiting rapid initial growth.
22552	Sep 20-23	Decaying spots.
22553	Sep 20-Oct 2	A simple stream.
22554	Sep 21-22	A few spots.
22555	Sep 22-26	A compact complex stream.
22556	Sep 23-Oct 5	A single spot, seen with following companions between Sep 27 and Oct 1. The principal spot's umbral division heralds the disintegration of the spot after Oct 3.
22557	Sep 24-26	Variable spots.
22558	Sep 24-Oct 2	An extended stream populated by irregular components which fade uniformly after Sep 27.
22559	Sep 24-Oct 5	A small group of spots which is completely invisible from Sep 30 to Oct 3.
22560	Sep 24-26	A pair of very small spots.
22561	Sep 24-Oct 1	A single spot.
22562	Sep 26-Oct 8	A variable cluster of spots which continually changes in size.
22563	Oct 1 - 3	A small pair of spots declining in size.
22564	Oct 1-13	A large, extremely complex group of spots, growing steadily to achieve maximum area on Oct 9.
22565	Oct 4 - 5	An indistinct cluster of small spots.
22566	Oct 5-17	A pair of spots which disperses after Oct 8 to form an elongated stream, and fades away after Oct 13.
22567	Oct 7-10	A stream of small spots.
22568	Oct 8-13	A small intermittent spot.
22569	Oct 9-17	A single spot which develops rapidly into a stream, of which only the following components remain by Oct 14.
22570	Oct 10-19	A complex chain of spots with a variable number of components.
22571	Oct 12-22	A complex elongated cluster of spots, decreasing noticeably after Oct 18.
22572	Oct 12-24	A stable regular spot, accompanied by small, following companions after Oct 16.
22573	Oct 13-19	A small stream of variable spots.
22574	Oct 14-19	A small single spot, absent on Oct 18; two spots are seen on Oct 19.
22575	Oct 16-24	A complex cluster which develops rapidly until Oct 20 and decreases slowly thereafter.
22576	Oct 16-27	A striking, single spot which develops following companions on Oct 19 and begins to break up, diminishing appreciably after Oct 24.
22577	Oct 17-18	A tiny single spot.
22578	Oct 17-24	A single spot with occasional, small companions.
22579	Oct 19-31	A close pair of moderate-sized spots with occasional companions.
22580	Oct 20-27	A single spot with a companion on Oct 24 only.
22581	Oct 22-27	A small single spot until Oct 27 when three spots are visible.
22582	Oct 22-Nov 2	A large complex cluster which steadily grows until Oct 25 and slowly decays.
22583	Oct 23-24	A tiny spot.
22584	Oct 23-29	A single spot developing into a small stream by Oct 26 and dispersing after Oct 28.
22585	Oct 23-Nov 4	A large spot, accompanied by many companions which fade after Oct 31.
22586	Oct 23-Nov 3	An irregular cluster of spots.
22587	Oct 25-30	A small chain of spots.
22588	Oct 27-Nov 7	A single spot, developing multiple, variable companions.
22589	Oct 29-Nov 1	Two spots.
22590	Oct 29-Nov 2	A compact stream, gradually decreasing after Oct 30.
22591	Oct 30-Nov 8	An intermittent spot with occasional companions.
22592	Oct 30-Nov 4	A single intermittent spot.
22593	Oct 30-Nov 10	A single, gradually fading spot with multiple, intermittent, variable companions.
22594	Nov 3 - 4	A single faint spot.
22595	Nov 3 - 8	A few intermittent variable spots.
22596	Nov 3-10	A variable cluster of small spots.
22597	Nov 3-11	An irregular stream of small, highly irregular spots.
22598	Nov 3 - 8	A dispersing cluster of faint spots.
22599	Nov 5 - 7	Several variable spots.
22600	Nov 5-11	A small variable stream.
22601	Nov 6 - 7	A single spot.
22602	Nov 7 - 9	A single spot.
22603	Nov 7-11	Several variable spots.
22604	Nov 9-12	A small compact stream.
22605	Nov 9-21	A rapidly-developing, extensive, composite structure with maximum area on Nov 17.
22606	Nov 10-15	Intermittent, faint, irregular spots.
22607	Nov 11-12	A simple stream.
22608	Nov 11-22	A uniform stream of mainly irregular components.
22609	Nov 11-21	A simple stream with gradually fading followers.
22610	Nov 13-14	Variable spots.
22611	Nov 13-23	A single spot with occasional companions which develop strongly after Nov 18 to form a compact, irregular cluster.
22612	Nov 13-24	A large cluster of variable, irregular spots, gradually elongating after Nov 18.
22613	Nov 14-23	A single small spot developing into a simple stream by Nov 18, of which only the leader and principal follower remain by Nov 22.
22614	Nov 16-17	One or two small spots.
22615	Nov 17-22	One or two intermittent spots.
22616	Nov 18-28	A single spot which fades slowly after Nov 20.
22617	Nov 18-28	A stable leading spot followed by a smaller, variable group of spots.
22618	Nov 20-Dec 2	A regular stable spot, preceeded by small spots on Nov 23.
22619	Nov 22-26	A small single spot followed by smaller, variable companions.
22620	Nov 23-24	A small stream of spots.
22621	Nov 23-26	A pair of small spots.
22622	Nov 23-Dec 1	A moderate-sized spot which breaks up and fades appreciably after Nov 26.
22623	Nov 25-Dec 1	A stream of smallish spots.
22624	Nov 26-Dec 8	A large double spot followed by several small companions from Nov 30, which fade by Dec 6.
22625	Nov 27-29	A pair of small spots of which only one remains on Nov 29.
22626	Nov 27-30	An indistinct group of tiny spots.
22627	Nov 27-29	A small, undistinguished spot.
22628	Nov 27-Dec 9	A single stable spot followed by variable spots.
22629	Nov 28-30	A single diminishing spot.
22630	Nov 28-Dec 8	A fuzzy penumbral region which disperses into a number of spots on Dec 3.
22631	Nov 29-Dec 5	A few variable spots.
22632	Nov 29-Dec 6	A single spot which becomes indistinct after Dec 1.

Group	1970/1971	
22633	Nov 29-Dec 11	A close pair of moderate-sized spots with occasional following companions; the smaller of the pair weakens after Dec 6.
22634	Nov 30-Dec 1	Two small spots.
22635	Nov 30-Dec 8	A single spot led by variable small companions.
22636	Dec 2 - 3	A pair of small spots.
22637	Dec 4-13	A diffuse cluster of spots.
22638	Dec 5-17	A large scattered cluster which fades steadily after Dec 9.
22639	Dec 7-19	A complex elongated group of spots which decreases after Dec 11 and is absent altogether on Dec 18.
22640	Dec 9-16	A steadily-increasing diffuse group which merges to become a pair of moderate-sized spots by Dec 14.
22641	Dec 10-13	A widely-scattered group of very small spots.
22642	Dec 11-12	Three tiny spots on Dec 11, only one of which remains on Dec 12.
22643	Dec 11-12	A close pair of small spots, fading to one on Dec 12.
22644	Dec 12-15	A small, intermittent spot, joined by a companion on Dec 15.
22645	Dec 13-25	A largish single spot with occasional following companions.
22646	Dec 14-19	A few intermittent spots, of which only one is visible on Dec 19.
22647	Dec 14-26	A large spot and companion, which breaks up into a number of smaller spots.
22648	Dec 16-19	A small cluster of spots which fades as it approaches the limb.
22649	Dec 18-20	A short stream of spots which appears and disappears suddenly.
22650	Dec 18-25	A very rapidly developing, elongated group of spots, coalescing after Dec 22 into two components.
22651	Dec 18-23	A small, indistinct grouping of spots, apart from a temporary increase in size on Dec 19.
22652	Dec 18-29	A scattered stream of spots, declining to a single spot by Dec 29.
22653	Dec 19-23	A compact group of small spots.
22654	Dec 19-20	A variable group of tiny spots.
22655	Dec 20-26	A pair of spots which breaks up and fades after Dec 22.
22656	Dec 22-26	An indistinct group of small spots which becomes more marked on Dec 26.
22657	Dec 24-Jan 4	A single moderate-sized spot which breaks up on Dec 30 and is thereafter preceeded by several small companions.
22658	Dec 25-Jan 4	A rapidly-developing stream, the leading constituents of which coalesce into a single, regular spot on Dec 31. The following components fade thereafter.
22659	Dec 26-31	A small single spot with occasional, variable companions.
22660	Dec 27-31	A single small spot which disperses on Dec 31.
22661	Dec 28-Jan 9	A single stable, regular spot with a minute companion on Jan 2 and 3.
22662	Dec 29-Jan 3	A rapidly-growing group of spots appearing west of the central meridian.
22663	Dec 29-30	A single, extremely small spot.
22664	Dec 30-Jan 10	A pair of spots, the following component of which disintegrates after Jan 1.
22665	Jan 2 - 4	A few variable spots.
22666	Jan 4-10	A single spot, with occasional companions after Jan 6.
22667	Jan 4-16	A large irregular leader with extensive, complex, irregular followers which fade gradually after Jan 5.
22668	Jan 9-14	A small variable stream of irregular spots.
22669	Jan 9-21	A single regular spot, seen with a following companion on Jan 11.

Group	1971	
22670	Jan 10-11	Two spots.
22671	Jan 11-13	One or two small spots.
22672	Jan 11-15	A simple compact stream of which only the leader remains on Jan 15.
22673	Jan 12-14	Variable spots.
22674	Jan 12-15	Variable irregular spots.
22675	Jan 13-15	A single irregular spot, with following companions on Jan 14.
22676	Jan 13-24	One or two close, intermittent spots.
22677	Jan 14-18	A compact cluster of irregular spots forming a variable, decaying stream.
22678	Jan 14-27	A complex extended stream with composite, irregular followers which gradually merge to form more compact components.
22679	Jan 16-28	A few small spots developing strongly after Jan 21 to form a diminishing irregular spot.
22680	Jan 17-28	A compact, irregular stream, fading steadily after Jan 18.
22681	Jan 17-29	A simple stream comprising a gradually elongating, multiple-umbraed leader with multiple irregular fading followers.
22682	Jan 18-20	A few variable spots.
22683	Jan 19-27	A single spot, seen with occasional companions after Jan 24.
22684	Jan 20-23	A few small spots.
22685	Jan 24-25	A single spot.
22686	Jan 24-Feb 5	An irregular leader with associated companions and quickly diminishing followers. The leader evolves to form a more stable, regular configuration.
22687	Jan 25-26	Two spots on Jan 25; a single spot on the following day.
22688	Jan 25-27	A few intermittent spots.
22689	Jan 26-Feb 1	A simple stream decaying to leave the leader alone by Jan 30. This in turn develops a small leading companion on Feb 1.
22690	Jan 27-28	A few scattered spots.
22691	Jan 27-30	Variable decaying spots.
22692	Jan 27-Feb 8	An extended stream of multiple irregular components, the followers of which coalesce after Jan 31 to form two highly-complex structures.
22693	Jan 28-Feb 4	A simple variable stream.
22694	Jan 29-Feb 3	A single, intermittent spot.
22695	Jan 30-Feb 5	Decaying variable spots.
22696	Jan 31-Feb 12	A single spot with variable scattered companions, gradually assuming a regular configuration. The umbra is seen to elongate and divide after Feb 9.
22697	Feb 4 - 9	A steadily developing stream.
22698	Feb 6 - 7	A single spot on Feb 6; two close spots on the following day.
22699	Feb 6 - 7	A few small spots.
22700	Feb 6-14	A single spot.
22701	Feb 7 - 8	A single spot.
22702	Feb 7-14	A developing stream which condenses to form a compact cluster.
22703	Feb 7 - 8	A single spot.
22704	Feb 9-12	A few variable diminishing spots.
22705	Feb 11-13	Two variable spots.
22706	Feb 11-12	Two small spots on Feb 11; a single spot on the following day.
22707	Feb 11-22	A single spot seen with southerly companions from Feb 16-18.
22708	Feb 12-24	A single symmetrical spot.

Group	1971	
22709	Feb 13-14	A variable spot.
22710	Feb 13-19	A developing stream with an enlarging and gradually fading following component.
22711	Feb 13-25	A single spot.
22712	Feb 14-26	A variable stream.
22713	Feb 17-Mar 2	An extensive stream possessing many irregular leaders and large, complex followers which decay after Feb 23, but undergo a secondary development on Mar 1, while most of the leaders disperse to leave a single spot by Feb 28.
22714	Feb 18-Mar 3	A single spot with penumbral deformation on the trailing edge which separates from the main spot on Feb 20 and forms variable following companions.
22715	Feb 19-22	A compact cluster of spots.
22716	Feb 19-20	A few variable spots.
22717	Feb 20-Mar 4	A single spot with an occasional companion.
22718	Feb 23-Mar 6	A compact cluster of irregular spots gradually elongating to form a stream, and thereafter steadily decaying.
22719	Feb 24-26	Variable spots.
22720	Feb 25-Mar 8	A single spot with fading southerly companions on Mar 2 and 3.
22721	Feb 26-Mar 9	A single spot with occasional following companions.
22722	Feb 28-Mar 2	A small cluster of spots on Feb 28; a single spot thereafter.
22723	Mar 1 - 8	A few small, variable spots.
22724	Mar 2 - 7	A short variable stream.
22725	Mar 2 - 6	A small variable stream.
22726	Mar 3 - 4	A single spot on Mar 3; a simple stream on the following day.
22727	Mar 4 - 5	A few variable spots.
22728	Mar 7-20	A compact stream consisting of a single leader with occasional companions and an irregular follower which gradually disintegrates and disperses.
22729	Mar 8-16	A small variable stream.
22730	Mar 10-21	A single spot with occasional companions.
22731	Mar 11-23	A single spot with a fluctuating umbra and occasional scattered companions.
22732	Mar 12-17	A single, intermittent spot.
22733	Mar 12-19	A simple diminishing stream.
22734	Mar 13-16	Several scattered spots.
22735	Mar 16-18	Variable scattered spots.
22736	Mar 16-17	Two small spots.
22737	Mar 16-18	Two spots.
22738	Mar 17-21	Multiple compact spots forming a tight stream.
22739	Mar 17-18	A single spot.
22740	Mar 17-19	A single spot.
22741	Mar 18-24	A developing stream which decays noticeably after Mar 22.
22742	Mar 18-30	A single spot with an occasional companion.
22743	Mar 22-26	A few intermittent spots.
22744	Mar 22-23	A few spots.
22745	Mar 23-Apr 3	A simple stream, decaying to leave only the original leader by Mar 31.
22746	Mar 25-31	A single spot.
22747	Mar 25-Apr 6	A compact cluster, the primary components of which are two irregular structures separated mainly in latitude, which develop and eventually join from Mar 31 to Apr 2, after which they separate once more and fade.
22748	Mar 30-Apr 2	A few diminishing spots.
22749	Mar 30-Apr 6	A variable, compact, simple stream.
22750	Apr 1 - 4	A single intermittent spot.
22751	Apr 1 - 7	One or two small, irregular, intermittent spots.
22752	Apr 2 - 4	A decaying compact stream.
22753	Apr 3-15	A variable spot with occasional companions.
22754	Apr 4 - 6	Two spots until Apr 6 when a third is seen.
22755	Apr 4-14	An irregular diminishing spot with occasional following companions.
22756	Apr 4 - 9	A single spot at first; not seen on Apr 7 or 8, several minute spots are visible on the following day.
22757	Apr 5-10	A few static spots until Apr 7 when sudden development occurs and a simple stream is formed.
22758	Apr 5 - 8	A small, intermittent spot.
22759	Apr 5-12	A single irregular spot, seen with a companion from Apr 10.
22760	Apr 8 - 9	A single faint spot.
22761	Apr 10-22	A regular spot with variable following companions which weaken on Apr 18 and have disappeared by the following day.
22762	Apr 10-22	A circular spot with two umbral regions which have grown more complex by Apr 17, accompanied by occasional following companions.
22763	Apr 12-20	A complex variable group attaining maximum area on Apr 15, thereafter the following components diminish to leave a regular spot by Apr 19.
22764	Apr 12-23	A regular spot until Apr 15 when it is joined by a following companion. From Apr 18 the spot divides into a number of components which grow as the group nears the limb.
22765	Apr 12-23	A regular stable component, followed by a small companion until Apr 16.
22766	Apr 12-22	A fairly complex group of which the extreme leader and follower are widely separated in latitude. The followers have dispersed by Apr 16.
22767	Apr 13-18	A stream of small spots with a prominent leading component which grows rapidly between Apr 13 and 14.
22768	Apr 13-21	An irregular cluster of small spots.
22769	Apr 13-24	An irregular group of spots growing rapidly to become a large, complex stream by Apr 20.
22770	Apr 14-16	A single spot which becomes a cluster of minute spots on Apr 15, of which only one remains on the following day.
22771	Apr 18-19	A single spot, becoming a cluster of spots by Apr 19.
22772	Apr 18-22	A pair of small spots which fades rapidly after Apr 20.
22773	Apr 19-20	A single, faint spot.
22774	Apr 19-22	A small variable cluster, appearing suddenly on Apr 19.
22775	Apr 21-24	A small group of spots.
22776	Apr 22-23	A single small spot.
22777	Apr 23-24	A pair of spots on Apr 23 of which only the leader is visible on the following day.
22778	Apr 24-May 1	A pair of spots developing into a stream which fades after Apr 28.
22779	Apr 24-29	Two clusters of spots which grow rapidly at first. The leading component has disappeared by Apr 27.
22780	Apr 24-May 3	A complex cluster and a following spot with variable companions. The group grows rapidly between Apr 26 and 27 and fades appreciably after May 1.
22781	Apr 25-26	A single small spot.
22782	Apr 25-May 7	A regular leading spot with several small, following companions which have disappeared by May 3.
22783	Apr 29-May 1	A single spot.

Group	1971	
22784	May 1 - 3	A single small spot with faint following companions.
22785	May 2-13	A large, complex chain of spots, the following parts of which are variable in structure.
22786	May 2-14	A stable regular spot with occasional small, following companions. The umbra of the spot divides into two on May 10.
22787	May 3 - 5	A single small spot.
22788	May 4 - 5	A tiny cluster of faint spots.
22789	May 7-14	A single regular spot, joined by a faint companion on May 10 only.
22790	May 7-15	A single spot with a companion on May 8. The umbra breaks up into three parts on May 11.
22791	May 9-17	A scattered cluster of small spots which fades on May 15, is absent on May 16, but reappears on the following day.
22792	May 11-22	A complex cluster of spots which becomes rather compact after May 15.
22793	May 13-17	A pair of spots, the following component of which has disappeared by May 15.
22794	May 13-15	A faint cluster of spots which disappears after May 15.
22795	May 14-16	Appearing suddenly on May 14, a pair of spots which diminishes as it approaches the limb.
22796	May 15-18	A small group of spots which is faint on May 15 and absent altogether on May 16.
22797	May 15-19	A leading spot followed by several small, variable spots which disappear by May 17.
22798	May 16-17	A pair of small spots.
22799	May 16-23	A single spot which breaks into two on May 20. These components drift apart and the fainter one has disappeared by May 22.
22800	May 18-22	A thin stream of small spots.
22801	May 19-21	A single small spot.
22802	May 24-Jun 3	A rapidly-developing group led by a large spot. The smaller, following spots are variable in distribution.
22803	May 27-31	A complex group of spots appearing suddenly on May 27.
22804	May 28-Jun 4	A small, variable group of spots.
22805	May 28-Jun 5	A small group of spots which disperses on May 31 and is absent on Jun 4.
22806	May 28-Jun 5	A single small spot.
22807	May 30-31	A pair of spots.
22808	May 31-Jun 3	One or two faint spots.
22809	May 31-Jun 12	A single equatorial spot resulting from the merging of two umbral regions by Jun 6, and thereafter appearing to be quite regular.
22810	Jun 2 - 3	A single, very faint spot.
22811	Jun 2-14	A regular, very stable spot.
22812	Jun 4 - 8	A scattered group of small spots.
22813	Jun 8-10	A close pair of spots with occasional faint companions.
22814	Jun 11-14	A variable stream of small spots.
22815	Jun 14-19	A variable stream of small spots.
22816	Jun 15-20	A single spot on Jun 15 and 16; two spots on the following day. The group reappears on Jun 20 as a small, compact cluster.
22817	Jun 16-23	A small, variable cluster of spots not seen at all on Jun 18 or 19; reappearing on Jun 20, the group grows rapidly as it passes from view.
22818	Jun 16-20	A small, variable cluster of spots.
22819	Jun 16-17	A small group of spots embedded in faculae.

Group	1971	
22820	Jun 17-19	A single small spot with companions.
22821	Jun 19-30	A scattered group of small spots which is faint from Jun 24 to 27 and strengthens again on Jun 28.
22822	Jun 20-28	A stream of faint spots which develops rapidly on Jun 24 into an elongated cluster.
22823	Jun 22-24	A compact cluster of faint spots.
22824	Jun 22-Jul 4	A complex cluster showing variable structure which declines after Jun 30 to leave a single spot by Jul 3.
22825	Jun 24-28	A thin stream of small spots.
22826	Jun 25-30	A variable group of small spots.
22827	Jun 26-27	A small spot.
22828	Jun 26-Jul 8	A regular spot followed by numerous smaller spots which fade noticeably by Jul 3.
22829	Jun 27-Jul 9	A large stream of spots with a large, complex, variable, leading component.
22830	Jun 27-Jul 9	A very regular, stable spot.
22831	Jun 28-Jul 8	A single irregular spot.
22832	Jun 29-Jul 4	A pair of spots with occasional faint companions.
22833	Jun 29-Jul 6	An irregular cluster of variable spots.
22834	Jul 1 - 3	A single spot on Jul 1, with a companion on Jul 2 and 3.
22835	Jul 4 - 6	A small, variable group of spots.
22836	Jul 5 - 6	A single small spot.
22837	Jul 5-17	A large scattering of spots which becomes more compact after Jul 9. Fainter components gradually fade until Jul 16 when only a single spot is left.
22838	Jul 7-14	A close pair of spots which breaks up after Jul 12.
22839	Jul 10-22	A simple stream with a regular leader which alone survives after Jul 19.
22840	Jul 12-24	A simple stream initially consisting of a single leader and irregular following companions, the latter of which gradually disintegrate and fade.
22841	Jul 14-25	A single spot with an occasional following companion until Jul 19 when leading irregular spots appear which gradually condense to leave a single, diminishing spot.
22842	Jul 15-17	A single spot seen with a small, leading companion on Jul 16.
22843	Jul 15-18	A single spot with occasional following companions.
22844	Jul 16-18	A few spots.
22845	Jul 18-27	A stream of complex, irregular spots, the leading parts of which coalesce to form a regular leader with the followers developing into a few irregular spots with associated companions.
22846	Jul 18-25	One or two small spots seen as a simple, compact stream after reappearing on Jul 22.
22847	Jul 19-22	A small, variable stream.
22848	Jul 19-22	One or two small, intermittent spots.
22849	Jul 19-30	A few variable spots developing strongly after Jul 23 to form a simple stream.
22850	Jul 21-26	A single spot on all days except Jul 22 when three distinct spots are seen.
22851	Jul 21-27	An intermittent spot disintegrating by Jul 27.
22852	Jul 22-26	A few intermittent spots.
22853	Jul 22-28	A few erratic variable spots.
22854	Jul 23-26	A few variable compact spots.
22855	Jul 23-Aug 4	A regular spot, diminishing after Jul 30 when its umbra is seen to distort and divide.
22856	Jul 24-25	Two spots.

Group	1971	
22857	Jul 24-Aug 5	An irregular spot with a double umbra and variable associated companions. The spot finally divides after Jul 31 to leave two approximately equal, separating spots.
22858	Jul 26-Aug 1	A very small, compact, variable stream.
22859	Jul 27-Aug 2	An intermittent variable stream.
22860	Jul 27-Aug 6	A thinly populated, simple stream.
22861	Jul 30-31	Two spots on Jul 30; a single spot on the following day.
22862	Jul 30-Aug 3	A few intermittent, variable spots.
22863	Jul 31-Aug 5	A compact cluster of spots.
22864	Aug 1 - 7	A few faint, intermittent spots.
22865	Aug 3-15	A spot with multiple, variable companions.
22866	Aug 5-14	A small stream of irregular spots, the following regions of which develop to form a single, irregular structure with occasional companions which disintegrates and disperses after Aug 11.
22867	Aug 7-13	A compact stream with diminishing followers.
22868	Aug 7-11	One or two intermittent spots.
22869	Aug 8-10	A small cluster of spots fading rapidly after Aug 9.
22870	Aug 10-14	A variable spot and companions.
22871	Aug 11-18	A spot with a southerly companion which fades by Aug 14 to leave the principal spot.
22872	Aug 12-15	A spot with intermittent following companions.
22873	Aug 14-20	A small, intermittent stream.
22874	Aug 14-20	A spot with intermittent, northerly companions.
22875	Aug 14-26	A single spot gradually attaining a regular configuration.
22876	Aug 16-22	A single spot with an occasional companion.
22877	Aug 17-30	An immense, extensive stream consisting of a large, highly-irregular, multiple-umbraed leader with several moderate-sized, irregular followers and intermediate companions. The following regions are in an advanced state of decay at the west limb.
22878	Aug 20-23	One or two small spots.
22879	Aug 21-Sep 1	A compact stream with fading, irregular components and a single leader which becomes regular in outline after Aug 23.
22880	Aug 23-26	A compact cluster of small, intermittent spots.
22881	Aug 23-24	A few decaying spots.
22882	Aug 31-Sep 2	A single spot for the first two days; two small spots on Sep 2.
22883	Sep 1-10	A steadily developing stream.
22884	Sep 3-12	Two spots with occasional companions, the leader of which fades after Sep 7 to leave a single, irregular spot.
22885	Sep 6 - 9	A complex irregular stream exhibiting rapid initial growth.
22886	Sep 6 - 7	A few decaying spots.
22887	Sep 7 - 8	A single spot.
22888	Sep 7 - 8	Two spots, with companions on Sep 7.
22889	Sep 10-20	A spot with occasional companions.
22890	Sep 12-18	A simple stream of small irregular spots.
22891	Sep 12-24	A quiescent spot with several small companions after Sep 16, the whole of which develops rapidly after Sep 19 to form two irregular structures with intermediate companions.
22892	Sep 13-24	A spot with occasional companions.
22893	Sep 13-22	An intricate cluster of irregular spots dispersing slowly after Sep 13 and decaying thereafter.
22894	Sep 14-21	Variable scattered spots.
22895	Sep 16-21	A single spot.
22896	Sep 18-24	A few variable intermittent spots.
22897	Sep 21-22	Two spots.
22898	Sep 21-30	Intermittent spots.
22899	Sep 22-Oct 1	A spot with variable following companions which disintegrates and subsequently fades after Sep 28.
22900	Sep 24-Oct 6	A single regular spot with variable associated companions.
22901	Sep 27-Oct 5	A cluster of irregular spots quickly forming a simple stream which gradually decays after Sep 28.
22902	Sep 28-Oct 10	A highly-irregular spot with a small following companion, the latter of which decays by Oct 4 while the spot becomes more regular in outline.
22903	Sep 30-Oct 9	A small, intermittent, variable stream.
22904	Oct 1 - 3	Variable spots.
22905	Oct 6 - 7	Variable spots.
22906	Oct 7 - 8	A few scattered spots.
22907	Oct 7-13	A spot with an occasional companion.
22908	Oct 8-12	A simple stream, decaying after maximum development on Oct 9.
22909	Oct 11-16	Several intermittent decaying spots.
22910	Oct 12-16	A small, variable stream.
22911	Oct 16-28	A rapidly-developing complex stream of irregular components with scattered, intermediate companions.
22912	Oct 17-18	Two decaying spots.
22913	Oct 19-29	A few small spots developing quickly after Oct 23 to form a simple stream with three main components.
22914	Oct 20-22	Decaying spots.
22915	Oct 21-Nov 2	A single regular spot with variable companions after Oct 25.
22916	Oct 24-30	A cluster of small spots elongating to form a gradually fading, simple stream.
22917	Oct 25-Nov 6	A regular spot with variable companions.
22918	Oct 27-30	A spot with variable companions.
22919	Oct 28-Nov 6	A stream of numerous variable small spots.
22920	Oct 31-Nov 12	A single spot. Variable companions appear on Nov 3.
22921	Oct 31-Nov 11	A single regular spot.
22922	Nov 1 - 2	A single, very small spot.
22923	Nov 1 - 6	Occasional small spots.
22924	Nov 1 - 9	A short stream of small spots, the leader of which is prominent on Nov 4 and 5.
22925	Nov 7 - 9	A single tiny spot.
22926	Nov 7-10	Several small spots collecting into two clusters on Nov 8 and 9.
22927	Nov 9-11	A small spot with a tiny companion on Nov 9.
22928	Nov 9-13	Two or three very small, intermittent spots.
22929	Nov 11-15	A small cluster of spots.
22930	Nov 12-13	A small spot with tiny following companions on Nov 12.
22931	Nov 13-25	A large stable spot with occasional small companions.
22932	Nov 16-17	A small cluster of tiny spots.
22933	Nov 17-20	A variable stream of small spots.
22934	Nov 17-21	Intermittent, scattered small spots.
22935	Nov 17-30	A regular stable spot with small companions on Nov 23 and 24.
22936	Nov 18-19	Tiny scattered spots.
22937	Nov 20-23	A small cluster of spots.
22938	Nov 20-21	A single small spot.
22939	Nov 22-Dec 2	An irregular cluster of small spots.
22940	Nov 22-Dec 2	A scattered cluster of spots developing into a large and yet compact stream by Nov 26.

Group	1971/1972	
22941	Nov 22-Dec 3	A large compact cluster of spots which breaks up and fades after Nov 29.
22942	Nov 23-28	Intermittent, very small spots.
22943	Nov 23-24	A few very small spots.
22944	Nov 24-Dec 2	Scattered small spots.
22945	Nov 27-Dec 7	An intermittent spot with occasional companions.
22946	Nov 28-Dec 1	A single spot.
22947	Dec 1 - 6	A compact variable stream.
22948	Dec 1-12	A developing stream until Dec 7, after which the followers gradually fade.
22949	Dec 3 - 4	A single faint spot.
22950	Dec 5-10	A very variable stream.
22951	Dec 5-12	Variable spots.
22952	Dec 5-13	An intermittent spot with occasional companions.
22953	Dec 6-17	A single spot with an occasional companion.
22954	Dec 7-19	A developing stream consisting of variable irregular leaders with a stable following, regular spot.
22955	Dec 8-12	A variable, decaying stream.
22956	Dec 9-11	A few spots.
22957	Dec 9-11	Variable scattered spots.
22958	Dec 10-22	Two similar spots the follower of which disintegrates after Dec 13. The whole group then steadily decays.
22959	Dec 11-19	Two close spots, the more southerly of which fades and disperses by Dec 16 to leave a single diminishing spot with three companions on Dec 17.
22960	Dec 12-23	A few small spots developing strongly after Dec 16 to form a simple stream.
22961	Dec 13-14	A spot with a companion.
22962	Dec 15-21	A simple decaying stream.
22963	Dec 15-27	A single spot, seen with two close, following companions on Dec 18.
22964	Dec 16-17	A few decaying spots.
22965	Dec 16-28	A moderate-sized stream consisting of two irregular components with intermediate companions, the leader of which disintegrates and fades after Dec 21.
22966	Dec 17-20	A single spot.
22967	Dec 18-21	Two variable spots and companions.
22968	Dec 18-30	A developing, highly-irregular cluster which elongates after Dec 22 to form a complex stream which subsequently fades.
22969	Dec 19-28	Variable intermittent spots.
22970	Dec 23-27	A small, decaying, intermittent stream.
22971	Dec 23-31	Intermittent small spots, reappearing as a variable decaying stream on Dec 27.
22972	Dec 27-28	Two small spots on Dec 27; a single spot on the following day.
22973	Dec 27-Jan 5	A single spot with occasional companions.
22974	Dec 27-Jan 9	A single spot.
22975	Dec 28-Jan 5	A developing disorderly stream of spots, decaying appreciably after Jan 1.
22976	Dec 30-Jan 2	A small cluster of spots.
22977	Dec 30-Jan 9	A single spot, reappearing on Jan 4 and thereafter developing to form widely-scattered variable spots.
22978	Dec 31-Jan 1	A single spot.

GENERAL CATALOGUE OF SUNSPOTS

No. of Group	U.T. of C.M.P.	Duration	First Seen Date	First Seen Long. from C.M.	Last Seen Date	Last Seen Long. from C.M.	Corrected Mean Area Umb.	Corrected Mean Area Whole Spots	Mean Position Long.	Mean Position Lat.	Ref.
	1968	d	1968	°	1968	°			°	°	
21458	Jan 7.36	12	Jan 1	-75	Jan 12	+69	30	233	111.8	-19.2	
9	8.69	14	2	-82	15	+81	110	802	91.5	-23.5	1993(1)
21460	8.37	12	3	-70	14	+81	47	319	98.4	+19.4	1994(1)
1	5.84	3/ 4	4	-20	7	+24	2	15	131.7	-14.4	
2	9.90	10	4	-75	13	+46	17	142	78.3	-26.0	
3	10.96	14	4	-81	17	+77	99	1013	64.3	+11.8	
4	11.36	12	5	-74	16	+65	16	92	59.0	-24.7	
21465	9.88	4	7	-30	10	+ 7	7	48	78.5	+ 9.1	
6	13.41	13	7	-75	19	+81	91	699	32.1	+19.8	1990(2)
7	12.8	4	8	-56	11	-19	3	29	40.6	+24.6	
8	11.85	4	10	-20	13	+19	4	26	52.5	- 9.9	
9	12.87	5	10	-33	14	+21	10	76	39.1	+14.8	
21470	15.5	2	10	-68	11	-53	1	16	4.8	+14.1	
1	13.2	5	14	+15	18	+73	19	137	34.5	+ 8.1	
2	20.1	2	14	-75	15	-63	3	19	304.3	-17.6	
3	20.5	3	17	-39	19	-13	4	16	298.9	-19.4	
4	21.91	5/ 8	17	-60	24	+33	2	15	280.1	+20.3	
21475	24.01	12	17	-79	28	+60	12	105	252.4	-14.5	1991(2)
6	25.12	7	19	-70	25	+ 4	2	21	237.8	+16.7	
7	25.79	7	20	-72	26	+ 8	2	21	228.9	+ 7.7	
8	22.1	3	22	+ 5	24	+30	3	24	277.9	-28.9	
9	27.9	5	22	-72	26	-16	3	17	201.5	-11.6	1992(2)
21480	28.1	5	23	-59	27	-13	3	18	198.3	+33.7	
1	21.1	3	24	+45	26	+71	11	79	291.0	+27.1	
2	30.61	14	24	-79	Feb 6	+78	379	2383	165.6	+12.7	1995(1)
3	30.45	13	24	-81	5	+79	25	159	167.7	-11.9	
4	24.7	5	25	+ 6	Jan 29	+61	6	40	243.8	+ 2.6	
21485	26.8	2	25	-20	26	- 2	3	24	216.3	-15.4	
6	31.41	8/10	27	-56	Feb 5	+68	3	25	155.1	-13.3	
7	Feb 2.36	10	27	-75	5	+42	18	117	129.3	+21.3	
8	Jan 31.76	10	28	-43	6	+72	17	110	150.5	+14.2	
9	Feb 3.20	6/ 7	28	-74	3	+ 3	7	45	118.1	-12.2	
21490	3.3	6	28	-75	2	-15	5	31	116.9	+25.3	
1	3.44	13	28	-76	9	+74	120	725	115.1	+11.4	
2	4.7	6	30	-71	4	- 1	7	45	98.6	+19.1	1994(2)
3	4.89	9	30	-77	7	+36	13	79	96.0	+ 6.8	
4	5.75	10	30	-84	8	+33	8	46	84.7	-24.2	1993(2)
21495	5.24	12	31	-66	11	+80	32	232	91.5	-15.0	
6	6.65	12	31	-80	11	+59	14	89	72.8	+11.5	
7	3.07	3	Feb 2	-11	4	+20	2	14	120.0	+19.4	
8	3.87	8	2	-24	9	+74	22	148	109.5	-19.2	
9	5.8	2	2	-47	3	-32	3	16	83.8	-31.2	

GENERAL CATALOGUE OF SUNSPOTS

No. of Group	U.T. of C.M.P.	Duration	First Seen Date	First Seen Long. from C.M.	Last Seen Date	Last Seen Long. from C.M.	Corrected Mean Area Umb.	Corrected Mean Area Whole Spots	Mean Position Long.	Mean Position Lat.	Ref.
	1968	d	1968	°	1968	°			°	°	
21500	Jan 30.8	2/ 3	Feb 3	+47	Feb 5	+75	3	13	163.1	-25.2	
1	Feb 10.04	8	4	-72	11	+17	5	26	28.2	+19.5	1990(3)
2	4.4	2	7	+40	8	+54	3	17	103.0	-22.7	
3	9.55	3	8	-14	10	+10	1	7	34.7	+20.3	
4	11.05	5	8	-33	12	+11	5	30	14.9	+19.7	
21505	13.7	2	8	-71	9	-57	2	18	339.3	+13.0	
6	14.17	12	8	-76	19	+65	90	725	333.8	+19.3	
7	14.65	12	8	-83	19	+67	14	90	327.5	-16.0	
8	17.2	3	12	-66	14	-36	4	21	294.0	+24.6	
9	16.76	5	14	-31	18	+23	5	36	299.8	-25.1	
21510	17.8	2	14	-46	15	-32	5	28	285.4	- 8.5	
1	17.77	4/ 5	15	-29	19	+20	1	11	286.4	-19.6	
2	21.9	5	16	-71	20	-17	5	39	231.4	+ 3.3	
3	22.5	5	16	-79	20	-30	6	45	224.6	- 8.8	
4	22.7	3	17	-68	19	-45	2	14	221.5	-13.8	
21515	23.6	7	17	-78	23	- 4	12	79	209.6	-29.0	
6	17.1	4	19	+28	22	+70	6	41	295.5	-18.2	
7	18.2	4	20	+27	23	+67	20	120	280.9	+26.6	
8	25.4	2	20	-67	21	-53	3	17	186.3	-16.5	
9	26.79	13	20	-80	Mar 3	+77	105	818	167.7	+11.4	1995(2)
21520	28.20	12	22	-72	4	+71	33	213	149.0	-26.5	
1	20.2	3	24	+54	Feb 26	+81	15	89	255.1	+14.7	
2	22.7	4	24	+19	27	+64	22	126	221.3	+ 9.4	
3	Mar 1.14	12	24	-75	Mar 6	+68	51	389	123.5	+12.1	1996(1)
4	Feb 23.3	3	25	+29	Feb 27	+53	5	26	213.8	-27.7	
21525	24.3	3	26	+28	28	+53	6	32	200.6	+21.2	
6	25.4	3/ 4	26	+13	29	+50	2	11	186.3	-32.9	
7	Mar 5.76	10	28	-80	Mar 8	+32	10	63	62.6	-23.9	
8	Feb 28.3	2	29	+12	1	+26	3	19	147.4	+19.5	
9	Mar 6.91	14	29	-85	13	+87	53	308	47.5	-26.9	
21530	5.11	4/ 5	Mar 3	-23	7	+29	2	13	71.3	+11.4	
1	7.6	2	3	-54	4	-42	3	21	38.8	-10.3	
2	2.1	3	5	+44	7	+67	3	27	110.6	+13.7	
3	7.9	3	5	-33	7	- 9	9	53	34.0	+23.6	
4	7.43	5	7	- 3	11	+53	11	48	40.8	-17.0	
21535	13.77	7	8	-69	14	+ 6	5	38	317.1	-13.8	
6	10.37	4	9	-11	12	+28	4	24	1.9	- 8.5	
7	10.96	6	9	-17	14	+44	16	96	354.2	+18.3	
8	8.1	2	10	+30	11	+43	4	21	32.4	-15.2	
9	8.4	3	11	+39	13	+69	10	67	28.3	+14.1	
21540	16.74	10	11	-71	20	+50	18	87	278.0	+12.3	
1	17.87	12	12	-74	23	+70	37	223	263.1	+15.5	
2	18.2	6	12	-79	17	- 8	8	41	259.2	-17.7	
3	19.20	13	13	-70	25	+76	96	541	245.5	+30.7	
4	10.4	2	14	+52	15	+67	4	25	2.2	-20.0	

No.of Group	U.T.of C.M.P.	Duration	First Seen Date	First Seen Long. from C.M.	Last Seen Date	Last Seen Long. from C.M.	Corrected Mean Area Umb.	Corrected Mean Area Whole Spots	Mean Position Long.	Mean Position Lat.	Ref.
	1968	d	1968	°	1968	°			°	°	
21545	Mar 24.1	5	Mar 18	-76	Mar 22	-22	2	12	181.1	-14.5	
6	24.63	11	20	-60	30	+78	43	255	173.9	-13.0	
7	25.93	8	20	-72	27	+20	7	48	156.7	-24.4	
8	21.76	7	21	- 6	27	+74	22	149	211.8	+10.4	
9	22.61	2	22	- 3	23	+10	1	6	200.7	+ 9.3	
21550	27.82	12	22	-72	Apr 2	+76	19	127	131.8	+11.5	1996(2)
1	28.92	11	23	-73	2	+56	16	94	117.4	+10.9	
2	25.38	3	24	-13	Mar 26	+13	3	16	164.1	+15.2	
3	30.41	13	24	-79	Apr 5	+78	42	293	97.8	+19.2	
4	22.5	4	25	+37	Mar 28	+80	8	51	202.7	-24.5	
21555	30.78	11	25	-73	Apr 4	+68	20	122	92.8	+15.0	
6	29.41	9	26	-44	3	+70	6	35	110.9	-16.0	
7	31.35	7	26	-67	1	+13	4	27	85.3	-14.0	
8	Apr 1.09	13	26	-74	7	+80	67	434	75.6	-23.1	1997(1)
9	1.69	12	26	-82	6	+60	8	39	67.6	-19.2	
21560	Mar 27.74	2	27	- 6	Mar 28	+10	1	9	132.9	-30.5	
1	31.0	4	27	-48	30	-10	3	24	90.0	+22.8	
2	Apr 3.80	7	29	-73	Apr 4	+ 8	3	20	39.8	-14.5	
3	4.28	13	29	-78	10	+77	9	49	33.4	-18.1	
4	Mar 25.2	2	30	+67	Mar 31	+80	11	70	166.0	-13.6	
21565	Apr 8.61	13	Apr 2	-79	Apr 14	+77	19	118	336.3	-21.0	
6	3.55	7	3	- 3	9	+75	20	113	43.1	+ 8.8	
7	6.70	3/ 4	4	-31	7	+ 9	3	16	1.5	+19.4	
8	12.53	10	7	-69	16	+51	37	216	284.6	+23.0	
9	15.10	14	8	-80	21	+82	125	776	250.7	+23.7	1998(1)
21570	5.5	3	9	+51	11	+78	30	164	17.7	-15.7	
1	6.6	4	9	+33	12	+73	1	21	2.3	+16.8	
2	15.1	5	9	-79	13	-22	3	25	250.1	-24.2	
3	17.08	13	11	-71	23	+78	46	243	224.5	+31.6	
4	17.1	2	11	-75	12	-66	2	21	223.6	-14.3	
21575	12.77	7	12	- 8	18	+77	10	47	281.4	-12.5	
6	14.31	3/ 5	12	-26	16	+25	2	9	261.0	+18.3	
7	10.5	3	14	+52	16	+77	9	72	311.4	+20.2	1999(1)
8	14.4	2	14	0	15	+15	1	10	259.6	-24.7	
9	15.23	4	14	-12	17	+27	3	16	248.9	-14.2	
21580	20.40	9	14	-79	22	+27	10	51	180.7	-11.8	
1	20.6	5	15	-69	19	-15	5	31	178.0	+23.8	
2	19.0	4	19	+ 4	22	+43	4	26	199.3	+18.7	
3	22.86	4/ 7	21	-21	27	+60	2	16	148.1	+14.9	
4	25.8	4	22	-48	25	- 5	4	20	109.1	+ 6.8	
21585	23.2	2	23	+ 3	24	+16	2	22	144.3	+10.9	
6	28.89	11	23	-71	May 3	+61	9	57	68.5	-24.3	1997(2)
7	23.5	5	24	+11	Apr 28	+66	10	62	139.7	+15.1	
8	May 1.25	12	25	-78	May 6	+69	13	72	37.3	-14.8	
9	Apr 22.8	3	26	+46	Apr 28	+73	6	45	148.5	+ 8.8	

GENERAL CATALOGUE OF SUNSPOTS

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	1968	d	1968	°	1968	°			°	°	
21590	Apr 22.5	2	Apr 27	+64	Apr 28	+83	5	41	152.4	-25.8	
1	May 3.14	10	27	-75	May 6	+42	9	46	12.3	+18.1	
2	Apr 29.68	5	28	-17	2	+36	1	10	58.0	+22.4	
3	May 1.54	10	28	-40	7	+80	50	295	33.4	+16.0	2000(1)
4	3.93	10	29	-65	8	+60	9	63	1.8	+ 9.6	
21595	5.59	12	29	-82	10	+65	50	353	339.9	+18.6	
6	6.09	8/10	30	-72	9	+41	9	69	333.4	+ 8.4	
7	6.3	2	30	-75	1	-63	0	9	330.7	-14.2	
8	7.92	13	May 1	-79	13	+71	59	408	309.1	+20.6	1999(2)
9	9.51	12	5	-51	16	+80	30	176	288.0	+16.5	
21600	10.6	4	5	-71	8	-28	2	11	274.2	+18.9	
1	4.3	4	6	+25	9	+70	3	27	356.4	- 8.1	
2	12.45	8/11	6	-78	16	+47	5	30	249.3	-28.9	
3	12.82	13	6	-83	18	+68	23	143	244.4	+24.7	1998(2)
4	11.2	2	8	-38	9	-25	0	7	265.6	+41.4	
21605	12.8	3/ 4	8	-60	11	-19	1	10	244.1	+32.2	
6	12.2	3	9	-35	11	-12	1	9	252.6	-22.9	
7	13.70	7	9	-58	15	+22	3	24	232.7	-11.8	
8	14.04	9	10	-48	18	+51	14	82	228.2	+12.0	
9	18.61	12	13	-71	24	+80	21	144	167.7	-29.1	
21610	19.3	3	14	-67	16	-43	3	14	158.2	-10.9	
1	20.89	14	14	-82	27	+84	107	591	137.7	-30.2	2001(1)
2	15.60	2	15	- 4	16	+ 7	1	7	207.6	+11.5	
3	15.1	5	17	+30	21	+80	31	216	214.2	+11.5	
4	23.04	13	17	-73	29	+81	106	577	109.2	+21.4	2002(1)
21615	22.88	12	17	-73	28	+74	112	747	111.3	-14.9	2003(1)
6	23.05	10	17	-74	26	+43	34	248	109.1	+15.2	
7	19.86	8	18	-24	25	+75	12	81	151.2	+ 9.7	
8	23.65	10	18	-74	27	+45	24	174	101.1	+25.5	
9	18.8	2	19	+ 9	20	+21	6	41	165.6	+ 8.5	
21620	25.69	7	20	-74	26	+10	4	17	74.1	- 8.0	
1	25.17	4	22	-37	25	+ 3	9	47	81.1	-30.4	
2	28.4	5	22	-79	26	-27	14	73	38.1	+15.8	2000(2)
3	29.6	2	24	-69	25	-56	0	9	22.9	-16.9	
4	30.07	12	24	-75	June 4	+70	22	135	16.2	+25.3	
21625	30.3	4	24	-78	May 27	-38	13	66	13.5	-18.7	
6	30.78	12	24	-84	June 4	+59	10	53	6.8	+18.0	
7	24.7	3	26	+21	May 28	+48	5	26	86.8	+28.6	
8	27.17	7	26	-10	June 1	+68	18	131	54.5	-20.4	
9	June 1.04	7	26	-77	1	+ 4	8	42	350.1	+15.4	
21630	May 28.22	2	27	-11	May 28	+ 2	3	16	40.6	+22.6	
1	31.17	9	27	-53	June 4	+58	4	34	1.6	+12.6	
2	June 2.29	13	27	-78	8	+80	35	196	333.5	-11.7	
3	3.18	13	27	-78	8	+67	67	471	321.8	-34.6	
4	2.05	11	28	-64	7	+73	17	119	336.6	+ 9.9	

GENERAL CATALOGUE OF SUNSPOTS

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	1968	d	1968	°	1968	°			°	°	
21635	June 4.07	7	May 29	-80	June 4	+6	10	68	310.1	-14.6	
6	2.9	2	30	-44	May 31	-33	3	22	325.9	+24.5	
7	5.25	11	30	-75	June 9	+55	18	138	294.4	+16.9	
8	8.37	10	June 2	-76	11	+39	12	82	253.1	+18.7	
9	8.83	13	2	-79	14	+75	29	226	247.0	-13.7	
21640	4.1	6	5	+20	10	+80	13	69	309.8	-27.3	2004(1)
1	3.3	3	6	+42	8	+67	10	59	320.3	-15.1	
2	12.10	13	6	-75	18	+83	37	217	203.7	+16.4	
3	9.52	9	7	-30	15	+78	48	279	237.8	+11.2	
4	14.48	11	8	-83	18	+56	22	141	172.2	+ 9.5	
21645	13.79	10	10	-45	19	+76	87	551	181.3	-14.5	2005(1)
6	10.0	4	12	+34	15	+71	5	30	231.8	+22.0	
7	18.07	10	12	-73	21	+40	16	110	124.7	-30.4	2001(2)
8	18.95	12	13	-73	24	+70	53	329	113.0	-14.5	2003(2)
9	20.15	14	13	-85	26	+78	40	224	97.2	+23.3	2002(2)
21650	20.59	14	14	-81	27	+85	147	1072	91.3	+13.7	2006(1)
1	10.9	2	15	+59	16	+74	9	51	219.6	+10.4	
2	18.97	5	16	-36	20	+21	5	29	112.8	-29.5	
3	16.6	4	17	+ 8	20	+51	5	22	144.1	-18.8	
4	26.77	13	20	-82	July 2	+74	50	502	9.6	+11.9	
21655	25.65	10	22	-49	1	+82	25	146	24.2	-14.2	2007(1)
6	25.5	2/ 3	23	-28	June 25	- 4	0	4	25.8	+18.0	
7	29.8	3	24	-73	26	-46	2	15	329.3	-12.9	
8	26.89	7	25	-23	July 1	+63	8	45	7.8	-15.8	
9	28.08	9	26	-24	4	+74	38	242	352.1	+29.2	
21660	July 1.7	5	26	-69	June 30	-19	2	12	304.8	-27.8	2004(2)
1	June 28.68	2	28	- 5	29	+ 9	1	9	344.2	+16.6	
2	27.3	2	30	+40	July 1	+56	1	11	2.4	-19.1	
3	July 1.07	2/ 3	30	-10	2	+18	1	6	312.6	+ 7.6	
4	June 29.7	3	July 3	+49	5	+74	5	37	330.8	+17.2	
21665	July 10.85	13	4	-86	16	+76	45	271	183.1	+11.0	
6	3.0	2	5	+30	6	+46	0	13	287.0	-42.7	
7	10.95	12	5	-73	16	+72	15	83	181.9	-15.9	2005(2)
8	12.59	14	6	-80	19	+86	139	1030	160.1	+10.7	2008(1)
9	13.17	10/11	8	-62	18	+69	5	31	152.4	-16.4	
21670	13.65	9	8	-68	16	+38	17	92	146.2	+13.2	
1	9.4	2	9	+ 1	10	+13	1	9	201.9	+24.5	
2	16.32	13	10	-77	22	+80	34	193	110.7	-14.3	2003(3)
3	15.7	3	11	-58	13	-31	4	28	118.4	-29.6	
4	17.69	13	11	-84	23	+74	48	283	92.7	+13.1	2006(2)
21675	12.88	5	12	- 8	16	+49	10	49	156.3	+29.4	
6	18.2	6	12	-76	17	-12	8	36	86.0	+26.5	2002(3)
7	21.1	3	15	-79	17	-45	5	30	47.9	+ 8.2	
8	15.6	4	16	+12	19	+49	2	13	120.8	- 6.7	
9	18.60	4	16	-29	19	+ 9	2	16	80.7	+14.2	

GENERAL CATALOGUE OF SUNSPOTS

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	1968	d	1968	°	1968	°			°	°	
21680	July 22.03	13	July 16	-73	July 28	+83	38	191	35.1	-16.7	2007(2)
1	20.85	9/10	18	-31	27	+81	31	194	50.8	-17.8	
2	23.96	13	18	-78	30	+85	25	149	9.7	+ 9.1	
3	15.9	2	19	+45	20	+61	2	14	116.0	+13.9	
4	24.68	7	19	-73	25	+ 8	6	46	0.2	+17.3	
21685	24.01	11	20	-47	30	+78	74	441	8.9	-17.1	2009(1)
6	22.2	3	24	+31	26	+54	1	12	32.5	-25.3	
7	30.84	13	24	-83	Aug 5	+74	54	342	278.7	+14.4	
8	21.7	2	26	+61	July 27	+75	7	43	39.3	+30.6	
9	26.0	5	27	+17	31	+72	18	102	342.5	+10.7	
21690	27.60	6	27	- 3	Aug 1	+57	7	46	321.5	+29.6	
1	30.70	10	27	-51	5	+78	48	283	280.4	+ 7.2	2010(1)
2	Aug 5.1	5	30	-75	3	-22	5	35	209.8	+22.3	
3	July 31.5	5	Aug 2	+26	6	+82	16	86	269.6	-21.7	
4	Aug 7.78	12	2	-70	13	+74	6	32	173.7	+ 7.3	
21695	8.94	14	2	-84	15	+84	124	763	158.3	+11.8	2008(2)
6	July 30.7	3	3	+47	5	+75	2	16	280.1	+18.2	
7	Aug 9.7	4	3	-83	6	-43	4	13	149.0	+13.2	
8	6.33	9	4	-28	12	+82	12	80	192.8	+ 1.8	
9	10.80	10/11	5	-74	15	+62	3	29	133.7	+ 7.6	
21700	3.8	3	6	+31	8	+66	4	28	225.7	- 8.0	
1	5.6	5	7	+25	11	+84	5	28	202.6	+13.7	
2	7.96	4	7	- 4	10	+31	3	19	171.2	+14.3	
3	12.82	12	7	-67	18	+71	7	40	107.0	-14.1	2003(4)
4	10.54	8/ 9	8	-29	16	+77	28	218	137.1	- 3.2	
21705	16.58	13	10	-80	22	+74	20	119	57.3	-17.4	
6	13.03	8	11	-24	18	+74	14	69	104.2	+15.5	
7	13.58	9	11	-28	19	+77	7	53	97.0	+16.2	
8	18.09	13	12	-76	24	+83	133	932	37.4	-15.0	2007(3)
9	9.8	3	13	+46	15	+74	4	30	147.1	-26.6	
21710	10.6	4	13	+37	16	+75	13	132	136.4	-25.2	
1	19.47	13	13	-82	25	+80	56	339	19.1	+ 6.9	
2	8.7	2	14	+75	15	+84	29	184	161.0	+15.7	
3	12.1	3	14	+30	16	+56	6	35	116.1	- 8.7	
4	18.4	2/ 4	14	-51	17	-16	1	5	33.9	+33.0	
21715	19.4	5	14	-67	18	-11	3	15	20.2	-10.6	
6	20.0	4	14	-74	17	-36	9	56	12.2	-15.3	2009(2)
7	19.99	12	14	-76	25	+78	84	615	12.2	-11.1	
8	14.1	4	16	+28	19	+72	2	14	90.3	- 4.5	
9	22.10	10	18	-50	27	+72	21	119	344.4	+27.2	
21720	18.8	4/ 5	20	+19	24	+73	7	40	27.7	-24.0	
1	24.60	11	20	-57	30	+78	28	190	311.3	-17.9	
2	26.10	9	20	-77	28	+31	4	21	291.5	+ 8.0	2010(2)
3	26.4	3	20	-79	22	-56	1	10	287.4	+15.0	
4	25.58	6/ 8	22	-43	29	+50	1	13	298.4	-31.9	

No. of Group	U.T. of C.M.P.	Duration	First Seen Date	First Seen Long. from C.M.	Last Seen Date	Last Seen Long. from C.M.	Corrected Mean Area Umb.	Corrected Mean Area Whole Spots	Mean Position Long.	Mean Position Lat.	Ref.
	1968	d	1968	°	1968	°			°	°	
21725	Aug 23.9	5	Aug 26	+33	Aug 30	+84	2	22	321.0	+21.5	
6	25.0	2	26	+21	27	+30	2	15	306.5	+20.3	
7	Sept 1.3	6	26	-75	31	- 7	15	89	209.2	-10.2	
8	Aug 27.1	2	27	+ 4	28	+17	1	15	278.6	+11.4	
9	Sept 2.86	12	28	-77	Sept 8	+74	51	319	189.1	+12.7	2011(1)
21730	Aug 30.04	3	29	-10	Aug 31	+19	3	17	239.5	- 9.2	
1	Sept 5.70	13	30	-84	Sept 11	+79	20	116	151.5	- 2.3	
2	5.70	10/11	31	-67	10	+65	3	21	151.5	-26.2	
3	7.02	7	Sept 1	-75	7	+ 3	7	48	134.1	-27.7	
4	3.93	8	2	-23	9	+75	89	615	174.9	-15.2	2012(1)
21735	4.87	4	2	-32	5	+ 6	2	14	162.5	+15.1	
6	Aug 29.7	2	3	+60	4	+75	3	22	243.6	+16.4	
7	30.2	3	3	+54	5	+83	23	146	236.8	-19.3	
8	31.6	2	3	+36	4	+50	3	19	219.4	+11.2	
9	Sept 7.28	4/ 7	4	-41	10	+43	1	5	130.7	+12.5	
21740	9.9	5	4	-78	8	-17	1	16	96.1	-14.6	
1	10.5	2	5	-68	6	-54	2	21	87.5	+20.4	
2	10.25	9	7	-40	15	+68	28	175	91.5	-19.8	
3	8.75	5/ 6	8	- 6	13	+60	4	20	111.2	+11.7	
4	11.57	10	8	-46	17	+80	18	99	74.0	-11.5	
21745	11.02	8	9	-22	16	+68	13	82	81.2	-17.4	
6	14.5	4/ 5	9	-67	13	-17	6	33	35.7	-22.8	
7	14.88	6/11	9	-74	19	+62	3	23	30.3	-20.4	
8	15.26	13	9	-79	21	+84	47	373	25.3	-13.8	
9	15.51	13	9	-81	21	+77	19	104	21.9	+ 6.0	
21750	14.5	5	10	-56	14	- 2	8	46	35.2	-12.9	
1	15.52	9	10	-69	18	+42	10	67	21.8	+ 8.6	
2	15.6	4/ 6	10	-70	15	- 6	1	7	21.2	+16.6	
3	16.3	6	10	-78	15	-17	2	20	11.2	-10.4	
4	9.3	2	12	+39	13	+53	5	32	103.7	-14.9	
21755	19.08	7	13	-75	19	+ 4	5	22	334.9	+21.5	
6	22.00	13	16	-73	28	+82	24	125	296.3	+17.2	
7	23.81	8	18	-72	25	+23	11	76	272.4	+ 2.9	
8	25.41	14	18	-84	Oct 1	+76	64	465	251.3	+17.3	
9	21.7	2	19	-31	Sept 20	-19	2	15	299.6	+10.9	
21760	26.20	12	20	-81	Oct 1	+74	11	74	240.9	+14.9	2013(1)
1	26.9	5	21	-72	Sept 25	-21	2	16	232.0	+18.4	
2	20.9	4/ 5	22	+18	26	+71	4	22	310.8	- 9.2	
3	28.36	13	22	-83	Oct 4	+83	35	205	212.3	+11.7	
4	25.01	4/ 5	23	-23	Sept 27	+33	5	24	256.5	-16.6	
21765	29.4	4	23	-81	26	-43	2	14	198.4	+18.4	
6	29.31	9	23	-81	Oct 1	+29	10	62	199.9	+11.9	
7	29.77	13	23	-86	5	+74	33	216	193.7	+13.9	2011(2)
8	21.9	4	24	+31	Sept 27	+74	15	107	298.0	+21.7	
9	27.15	8	24	-37	Oct 1	+56	7	47	228.3	+11.1	

GENERAL CATALOGUE OF SUNSPOTS

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	1968	d	1968	°	1968	°			°	°	
21770	Sept 27.30	9	Sept 24	-42	Oct 2	+68	16	93	226.4	+17.4	
1	30.94	12	25	-73	6	+72	49	286	178.3	-15.7	2012(2)
2	26.8	3	29	+35	1	+62	1	7	233.5	-18.5	
3	Oct 6.98	12	Oct 1	-75	12	+73	14	85	98.6	+16.9	
4	7.83	13	1	-85	13	+76	11	81	87.3	+18.1	
21775	2.9	6	3	+ 5	8	+80	19	98	152.5	+25.3	
6	5.86	7	3	-33	9	+43	8	45	113.4	+15.0	
7	6.40	10	3	-46	12	+84	59	374	106.3	+ 4.9	
8	7.67	5/ 7	7	- 3	13	+74	4	27	89.5	-11.0	
9	13.67	11	7	-81	17	+50	34	210	10.4	-12.7	
21780	8.9	3	11	+31	13	+61	3	15	73.4	-19.0	
1	13.3	2	11	-26	12	-11	2	12	15.7	+16.4	
2	17.60	13	11	-85	23	+80	70	431	318.5	+20.5	2014(1)
3	15.68	8	13	-28	20	+66	7	47	343.9	-19.5	
4	19.6	3	13	-81	15	-57	4	18	292.2	+16.8	
21785	19.3	2	14	-66	15	-52	4	26	296.0	+ 4.7	
6	23.32	13	17	-78	29	+83	105	731	243.0	+15.3	2013(2)
7	15.3	3	19	+53	21	+79	14	62	349.0	+16.2	2015(1)
8	19.1	6	19	+ 1	24	+78	5	33	298.7	-11.5	
9	25.64	13	19	-82	31	+76	36	210	212.5	-18.2	
21790	27.1	3	21	-75	23	-47	8	44	193.6	+14.9	2011(3)
1	28.60	13	22	-80	Nov 3	+76	142	1021	173.4	-15.1	2012(3)
2	21.4	4	24	+43	Oct 27	+80	45	276	268.6	- 4.6	
3	30.10	9	24	-70	Nov 1	+29	15	76	153.6	+26.8	
4	24.5	2	25	+11	Oct 26	+25	5	25	227.5	+11.3	
21795	30.1	3	25	-63	27	-39	2	13	153.1	-26.3	
6	Nov 1.49	11	26	-83	Nov 5	+56	14	82	122.2	+ 5.3	
7	2.26	13	27	-77	8	+78	48	299	112.0	-15.4	
8	7.30	13	Nov 1	-78	13	+85	40	247	45.5	+ 7.7	
9	9.0	5	3	-71	7	-23	3	23	23.7	-26.4	
21800	4.65	7	4	- 4	10	+79	10	50	80.6	-12.9	
1	7.61	4	5	-29	8	+11	7	30	41.5	-13.5	
2	11.87	14	5	-84	18	+82	65	618	345.3	+19.1	2015(2)
3	2.6	2	6	+48	7	+63	6	34	107.5	-30.2	
4	10.1	2	6	-50	7	-37	3	13	8.7	-27.6	
21805	11.9	2	8	-47	9	-33	3	13	344.7	-19.1	
6	14.11	7	8	-75	14	+ 4	4	24	315.7	+20.1	2014(2)
7	14.10	11	8	-76	18	+54	9	45	315.9	-12.6	
8	4.7	2	9	+63	10	+75	21	103	80.1	+13.3	
9	7.4	4	9	+27	12	+67	13	79	43.9	-22.2	
21810	15.86	10	9	-84	18	+33	11	71	292.7	+ 9.4	
1	7.0	2	10	+43	11	+56	3	20	49.1	+33.3	
2	15.1	5	10	-63	14	- 9	2	17	302.3	-12.0	
3	18.27	7	14	-53	20	+31	5	31	260.9	+ 8.0	
4	19.73	12	14	-70	25	+74	39	255	241.7	+12.6	2013(3)

GENERAL CATALOGUE OF SUNSPOTS

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	1968/9	d	1968/9	°	1968/9	°			°	°	
21815 Nov	15.9	5	Nov 17	+18	Nov 21	+73	17	122	292.0	+18.1	
6	25.31	13	19	-76	Dec 1	+77	53	340	168.1	-14.0	2012(4)
7	24.76	7/ 9	20	-56	Nov 28	+49	7	42	175.4	-21.3	
8	27.21	11	23	-53	Dec 3	+82	61	464	143.1	- 8.0	2016(1)
9	21.1	2	26	+68	Nov 27	+83	13	81	223.5	-20.6	
21820 Dec	1.35	5/ 7	27	-54	Dec 3	+29	3	13	88.6	-10.4	
1 Nov	27.0	3	30	+45	2	+72	5	33	146.3	-20.2	
2 Dec	5.14	12	30	-65	11	+84	39	280	38.6	-12.6	
3	5.81	13	30	-73	12	+86	127	1082	29.8	+12.9	2017(1)
4	3.9	2	Dec 2	-19	3	- 8	8	29	55.1	- 7.5	
21825	7.7	5	2	-69	6	-16	10	45	4.6	-24.3	
6	9.42	12	3	-80	14	+64	27	166	342.1	+18.9	2015(3)
7	6.71	5	4	-32	8	+21	7	40	17.9	-12.5	
8	8.20	6/ 8	7	- 9	14	+74	4	23	358.3	+17.3	
9	13.33	13	7	-75	19	+81	73	510	290.7	-32.1	2018(1)
21830	13.3	5	8	-69	12	-10	6	31	291.0	+ 9.4	
1	7.6	4	10	+36	13	+74	3	26	6.7	-19.3	
2	18.00	12	12	-74	23	+68	16	115	229.1	-22.1	
3	12.7	4	15	+31	18	+75	42	238	298.5	+21.8	2019(1)
4	19.4	2	15	-54	16	-38	3	23	211.2	+ 2.1	
21835	18.75	3	18	- 6	20	+20	12	68	219.3	+30.4	
6	19.43	8	18	-15	25	+80	27	187	210.4	-18.9	
7	24.16	12	18	-77	29	+68	22	125	148.0	- 5.4	2016(2)
8	18.4	5	19	+13	23	+66	14	84	223.8	-10.8	
9	25.10	8/10	20	-64	29	+59	6	41	135.7	+14.4	
21840	26.8	5/ 6	21	-70	26	- 6	7	30	112.6	-23.4	
1	27.59	13	21	-78	Jan 2	+80	125	1001	102.8	+17.5	2020(1)
2	28.61	13	22	-80	3	+74	30	210	89.4	-27.1	
3	22.2	6	23	+15	Dec 28	+80	59	342	174.1	-11.9	2021(1)
4	26.31	5	23	-41	27	+18	2	15	119.6	- 7.4	
21845	27.38	4/ 7	25	-27	31	+53	4	20	105.6	-22.6	
6	25.6	3	26	+11	28	+39	4	28	129.1	-15.6	
7 Jan	1.66	13	26	-79	Jan 7	+76	17	115	36.1	+16.2	2017(2)
8	1.62	13	26	-79	7	+76	21	128	36.5	+11.0	
9	2.99	7	28	-71	3	+ 3	9	64	18.5	-16.1	
21850	2.3	3	29	-53	Dec 31	-25	1	11	27.3	- 6.9	
1	3.95	9	29	-74	Jan 6	+32	8	41	5.8	+17.7	
2 Dec	29.8	2	30	+ 8	Dec 31	+23	1	19	74.0	-31.2	
3 Jan	8.80	14	Jan 2	-79	Jan 15	+84	89	561	301.9	+23.4	2019(2)
4	9.30	12	4	-69	15	+76	68	419	295.5	+ 4.4	
21855	10.39	10	4	-78	13	+36	19	147	281.0	-32.4	2018(2)
6	10.37	13	4	-81	16	+80	43	250	281.4	- 8.7	2022(1)
7	10.83	13	4	-83	16	+72	52	318	275.3	+20.8	2023(1)
8	12.32	13	6	-76	18	+81	112	697	255.7	-14.2	
9	12.08	7	11	- 8	17	+70	16	105	258.9	+11.6	2024(1)

GENERAL CATALOGUE OF SUNSPOTS

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	1969	d	1969	°	1969	°			°	°	
21860 Jan	18.36	13	Jan 12	-82	Jan 24	+79	15	91	176.1	-13.7	2021(2)
1	13.9	2	14	+ 5	15	+21	4	24	234.7	+10.2	
2	20.23	13	14	-75	26	+79	35	208	151.5	+13.8	
3	21.11	13	15	-79	27	+76	21	146	140.0	+13.6	
4	21.46	6/ 7	15	-84	21	+ 3	10	48	135.2	-16.7	
21865	21.99	8	16	-73	23	+14	16	103	128.2	+24.1	
6	23.90	12	18	-70	29	+73	20	124	103.2	+17.8	2020(2)
7	25.31	11	21	-53	31	+75	59	396	84.6	+10.4	
8	27.09	7/ 8	25	-25	Feb 1	+75	14	75	61.3	+13.8	2025(1)
9	28.7	4	25	-42	Jan 28	-10	7	22	39.6	+17.4	
21870 Feb	2.08	11	27	-77	Feb 6	+56	30	180	342.3	+35.4	
1 Jan	31.27	5	29	-27	2	+30	6	22	6.2	-15.1	
2	28.2	3	31	+43	2	+69	11	62	47.0	+21.3	
3 Feb	5.85	12	31	-70	11	+68	27	133	292.7	+25.2	2019(3)
4	6.58	13	31	-81	12	+75	13	77	283.1	- 6.8	2022(2)
21875	5.67	11	Feb 1	-59	11	+78	54	348	295.1	+ 0.3	2026(1)
6	7.4	5	1	-80	5	-26	11	59	272.2	+ 9.3	
7	7.3	2	2	-64	3	-53	2	14	273.6	+23.7	2023(2)
8	8.33	10	2	-76	11	+38	15	73	259.9	+11.9	2024(2)
9	9.60	9	3	-78	11	+21	15	70	243.3	+17.2	
21880	7.5	2	5	-29	6	-15	1	7	271.1	+19.2	
1	6.6	3/ 4	7	+ 8	10	+51	4	21	282.5	+ 4.7	
2	8.46	4	7	-14	10	+26	4	22	258.3	-18.0	
3	5.7	5	8	+37	12	+85	10	67	294.7	-16.7	
4	7.6	6	8	+12	13	+73	20	106	269.2	+12.2	
21885	13.68	7	13	- 3	19	+78	34	220	189.7	+16.6	
6	15.98	5/ 8	13	-34	20	+61	8	47	159.3	-10.8	
7	18.67	12	13	-68	24	+76	29	179	123.8	-14.0	2027(1)
8	13.5	2	15	+23	16	+39	3	13	192.5	+ 8.0	
9	15.84	2	15	- 6	16	+ 6	0	5	161.2	+19.7	
21890	19.6	3	16	-44	18	-16	3	15	111.6	-15.3	
1	20.32	6	16	-55	21	+16	4	25	102.1	+ 8.6	
2	14.9	2	17	+32	18	+46	4	18	173.2	- 1.1	
3	21.03	10/11	17	-47	27	+81	26	159	92.9	+11.3	2028(1)
4	22.97	13	17	-72	Mar 1	+77	103	769	67.3	+13.1	2025(2)
21895	22.40	8	19	-38	Feb 26	+50	8	44	74.8	+19.1	
6	22.85	9	19	-45	27	+59	15	84	68.9	-13.5	
7	24.32	12	19	-66	Mar 2	+80	44	288	49.5	+13.9	
8	19.9	3	20	+10	Feb 22	+35	8	42	107.9	+20.8	
9	21.61	7/ 8	20	-17	27	+80	17	95	85.3	-28.1	2029(1)
21900	23.40	5/ 7	22	-10	28	+65	3	9	61.7	-19.4	
1	24.38	2	23	-12	24	+ 1	0	10	48.7	+23.2	
2 Mar	1.50	14	23	-77	Mar 8	+88	102	755	341.2	-18.5	
3	2.00	8	24	-72	3	+16	12	70	334.6	-14.5	
4	1.98	6	26	-50	3	+18	2	16	334.9	-25.3	

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	1969	d	1969	°	1969	°			°	°	
21905	Mar 4.51	13	Feb 26	-82	Mar 10	+80	25	131	301.6	+ 2.1	2026(2)
6	4.7	5	26	-82	2	-32	6	40	298.7	-13.5	
7	4.62	10	27	-66	8	+49	7	42	300.1	-17.3	
8	5.56	7	28	-70	6	+11	12	71	287.7	+15.4	
9	6.4	7	28	-80	6	- 2	12	69	276.8	+14.8	
21910	7.61	11	Mar 3	-57	13	+75	11	62	260.8	+11.8	
1	5.95	2	5	- 5	6	+ 5	2	15	282.6	- 6.6	
2	6.77	9	5	-16	13	+78	51	312	271.9	+13.2	
3	10.6	5	5	-66	9	-16	1	13	221.7	+15.6	
4	12.22	11	6	-78	16	+55	17	106	199.9	+ 7.8	
21915	11.42	9	7	-54	15	+52	11	60	210.6	+18.4	
6	5.6	4	8	+37	11	+76	13	74	287.6	+10.3	2030(1)
7	13.67	9	8	-66	16	+32	23	140	180.9	+31.1	
8	14.25	9	8	-77	16	+28	13	83	173.2	- 9.2	
9	15.0	4/ 6	9	-73	14	- 9	2	12	163.8	-10.1	
21920	17.06	7	11	-76	17	+ 6	5	29	136.1	-16.7	
1	17.57	12	11	-85	22	+68	14	73	129.5	-14.9	2027(2)
2	16.02	7/ 8	13	-37	20	+59	19	100	150.0	+21.8	
3	17.79	7	13	-59	19	+17	2	14	126.5	-11.9	
4	18.1	4	13	-63	16	-21	1	9	122.2	-18.2	
21925	19.41	13	13	-79	25	+79	70	393	105.2	+14.1	2031(1)
6	17.55	5	15	-29	19	+19	7	33	129.7	+13.7	
7	20.43	12	15	-69	26	+73	87	519	91.8	+11.8	2028(2)
8	20.9	3	15	-74	17	-46	4	18	84.9	-28.1	2029(2)
9	21.3	4	16	-64	19	-29	5	25	80.3	+11.6	
21930	22.28	13	16	-75	28	+75	212	1537	67.4	+20.2	2032(1)
1	22.55	13	16	-81	28	+76	45	231	63.9	-14.2	2033(1)
2	21.58	11	17	-55	27	+78	20	115	76.7	-26.5	
3	23.33	13	17	-71	29	+73	28	176	53.6	-31.9	
4	23.24	6/ 7	17	-72	23	0	6	37	54.7	-20.1	
21935	22.8	4	18	-58	21	-15	3	19	59.9	-16.3	
6	23.9	6	18	-71	23	- 6	5	27	46.3	+20.0	
7	19.16	3	19	- 1	21	+32	3	20	108.5	+ 7.6	
8	24.73	3/10	20	-57	29	+59	1	6	35.1	+10.3	
9	17.1	2	22	+71	23	+83	11	80	135.7	- 9.1	
21940	29.9	2	24	-73	25	-58	1	10	327.0	-23.7	
1	23.5	3	25	+23	27	+52	3	18	50.8	-12.0	
2	26.77	7	25	-18	31	+64	12	70	8.2	-10.5	
3	29.47	9/11	25	-54	Apr 4	+79	12	81	332.6	- 9.7	
4	29.52	7	25	-56	Mar 31	+30	5	18	331.9	+ 9.7	
21945	31.42	13	25	-77	Apr 6	+79	24	151	306.9	+22.7	
6	Apr 1.0	2	26	-75	Mar 27	-61	0	12	299.1	-23.7	
7	2.66	13	27	-81	Apr 8	+76	201	1525	277.3	+ 9.1	2030(2)
8	4.07	13	28	-82	9	+70	55	368	258.7	+19.2	
9	Mar 25.9	2	29	+45	Mar 30	+58	1	10	19.6	+14.8	

GENERAL CATALOGUE OF SUNSPOTS

No. of Group	U.T. of C.M.P.	Duration	First Seen Date	First Seen Long. from C.M.	Last Seen Date	Last Seen Long. from C.M.	Corrected Mean Area Umb.	Corrected Mean Area Whole Spots	Mean Position Long.	Mean Position Lat.	Ref.
	1969	d	1969	°	1969	°			°	°	
21950	Mar 31.5	2	Mar 31	+ 3	Apr 1	+12	2	38	306.4	-13.3	
1	31.70	3	31	- 1	2	+22	1	8	303.1	+32.1	
2	Apr 5.07	6	Apr 1	-49	6	+16	19	106	245.5	+21.5	
3	8.85	12	3	-73	14	+73	76	474	195.6	+ 9.0	2034(1)
4	9.55	13	3	-85	15	+76	15	78	186.3	-19.1	
21955	10.29	3	8	-26	10	+ 3	4	30	176.6	-13.0	
6	12.0	2	8	-48	9	-36	3	12	153.8	+ 7.5	
7	15.08	13	8	-87	20	+70	54	335	113.4	- 7.1	
8	14.27	12	9	-69	20	+78	19	103	124.1	-14.6	
9	15.72	9	10	-69	18	+34	13	75	104.9	+15.1	2031(2)
21960	16.99	12	11	-71	22	+71	34	210	88.1	+10.9	2028(3)
1	18.98	14	12	-85	25	+83	19	101	61.8	-15.1	2033(2)
2	10.2	2	13	+42	14	+54	5	22	177.8	+14.9	
3	17.19	10	13	-51	22	+68	25	146	85.5	+20.4	
4	19.18	13	13	-76	25	+80	49	314	59.2	+22.4	2032(2)
21965	16.80	9	14	-34	22	+74	16	105	90.7	+ 6.2	
6	16.72	7	16	- 7	22	+77	35	212	91.7	-14.9	2035(1)
7	19.12	5	17	-23	21	+31	7	38	60.0	-20.7	
8	20.53	4	18	-31	21	+15	4	27	41.4	+22.3	
9	20.41	7	20	- 3	26	+82	22	104	43.0	-10.7	
21970	25.9	4	22	-48	25	- 7	6	25	330.9	+ 7.6	
1	28.46	8	24	-57	May 1	+42	13	67	296.6	+11.9	
2	29.18	7	24	-64	Apr 30	+18	1	13	287.2	+10.1	
3	29.99	12	24	-75	May 5	+71	44	365	276.5	+ 7.9	2030(3)
4	30.3	3	25	-66	Apr 27	-38	2	11	272.7	- 8.1	
21975	25.3	5	26	+12	30	+67	16	84	337.7	+ 9.5	
6	25.7	3/ 4	26	+10	29	+47	2	9	333.6	-20.6	
7	May 3.57	9	28	-73	May 6	+40	7	28	229.2	+19.2	
8	5.90	8	30	-74	7	+20	10	51	198.3	+ 8.1	2034(2)
9	Apr 28.2	3	May 1	+44	3	+70	3	16	300.6	+ 4.9	
21980	May 7.65	13	1	-83	13	+78	64	382	175.2	-13.7	2036(1)
1	9.0	5/ 6	3	-73	8	- 9	2	11	157.7	-24.4	
2	1.9	2	4	+35	5	+45	3	9	251.0	-19.7	
3	10.58	12	4	-78	15	+64	15	91	136.5	-12.7	
4	11.0	6	4	-83	9	-23	8	44	130.7	-30.3	
21985	12.79	9/11	8	-60	18	+77	7	42	107.2	+ 7.9	2037(1)
6	13.66	9	8	-69	16	+37	5	25	95.8	-16.7	2035(2)
7	13.90	12	8	-77	19	+78	16	81	92.5	+10.5	2028(4)
8	13.17	11	9	-52	19	+85	20	117	102.1	- 6.2	
9	14.98	10/11	9	-75	19	+56	15	91	78.3	- 9.9	
21990	15.55	12	10	-67	21	+76	10	60	70.7	+12.6	
1	14.79	10	11	-44	20	+76	40	235	80.7	+16.8	2038(1)
2	15.91	10	11	-59	20	+64	10	61	65.9	+17.9	
3	13.3	6	14	+12	19	+82	29	181	100.3	+17.7	2039(1)
4	13.9	2/ 3	15	+20	17	+46	2	6	91.9	+27.8	

GENERAL CATALOGUE OF SUNSPOTS

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	1969	d	1969	°	1969	°			°	°	
21995	May 17.72	3	May 17	– 4	May 19	+20	5	25	42.0	+18.3	
6	23.94	14	17	–87	30	+86	71	474	319.7	–16.1	2040(1)
7	22.47	11	18	–59	28	+80	76	447	339.2	–13.4	2041(1)
8	23.29	9	19	–51	27	+58	15	105	328.3	+10.2	
9	24.39	12	19	–71	30	+82	52	327	313.8	+ 8.2	2042(1)
22000	25.48	12	19	–83	30	+67	10	53	299.3	+11.1	
1	26.39	12	20	–79	31	+72	10	47	287.3	+12.0	
2	21.0	3	21	+ 5	23	+31	2	15	358.6	–12.4	
3	21.3	6	21	+ 3	26	+67	6	33	354.8	+14.5	
4	22.42	8	21	–16	28	+76	58	470	339.7	–21.1	
22005	27.33	10	21	–78	30	+42	8	46	274.9	+12.2	2030(4)
6	22.8	6	23	+ 8	26	+72	9	45	334.7	–27.2	
7	25.8	3	23	–32	25	– 6	2	11	295.4	+16.0	
8	21.6	4	24	+37	27	+78	13	66	350.7	+ 5.5	2043(1)
9	June 1.12	12	26	–81	June 6	+70	22	135	211.5	+ 7.6	
22010	2.1	3	28	–62	May 30	–33	2	12	199.0	+16.2	
1	3.59	9/11	28	–83	June 7	+52	8	43	178.9	–15.0	2036(2)
2	4.09	8	June 1	–35	8	+53	3	20	172.2	–11.1	
3	5.84	7	2	–50	8	+33	3	17	149.1	– 9.6	
4	8.0	5	2	–75	6	–20	10	67	120.1	+11.8	
22015	8.35	10/11	3	–71	13	+70	35	219	115.7	+ 9.6	2037(2)
6	8.77	12	3	–71	14	+71	5	28	110.1	–13.5	
7	9.17	11	3	–76	13	+55	11	73	104.9	+16.2	2039(2)
8	9.23	13	3	–78	15	+83	30	176	104.2	+ 8.3	2044(1)
9	10.21	13	4	–77	16	+82	226	1614	91.2	–14.7	2045(1)
22020	10.15	12	5	–69	16	+86	88	524	91.9	+11.2	2028(5)
1	11.41	13	5	–79	17	+77	113	734	75.3	+16.5	2038(2)
2	15.7	2	10	–70	11	–59	1	14	18.1	+ 2.4	
3	17.60	11	11	–83	21	+50	9	50	353.3	+ 8.3	2043(2)
4	18.04	7	12	–75	18	+ 5	10	62	347.6	–14.9	2041(2)
22025	19.40	13	13	–81	25	+79	78	413	329.5	+10.5	2046(1)
6	14.93	7	14	– 7	20	+73	16	93	28.7	+15.7	
7	19.85	12	14	–71	25	+72	5	30	323.6	–15.4	2040(2)
8	15.1	6	15	+ 1	20	+70	9	44	26.4	+23.3	
9	18.32	5	15	–39	19	+13	3	31	343.9	–19.9	
22030	20.6	4/ 6	15	–69	20	– 4	1	8	313.2	+ 7.7	2042(2)
1	19.62	10	16	–41	25	+78	34	244	326.6	+ 7.0	2047(1)
2	19.89	4/ 9	17	–35	25	+73	4	22	322.9	–21.2	
3	17.7	3	21	+49	23	+74	2	15	352.0	+13.4	
4	26.10	8	24	–26	July 1	+74	5	24	240.7	+ 7.0	
22035	30.89	12	25	–76	6	+74	40	270	177.4	–10.1	
6	30.45	6/11	26	–53	6	+79	12	87	183.2	–18.1	2048(1)
7	28.3	6	28	0	3	+68	5	31	212.0	+14.7	
8	July 4.75	13	28	–84	10	+74	17	107	126.3	+16.0	
9	2.85	5	30	–35	4	+22	7	34	151.6	+19.8	

GENERAL CATALOGUE OF SUNSPOTS

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	1969	d	1969	°	1969	°			°	°	
22040	July 4.89	7	June 30	–63	July 6	+20	3	16	124.5	+ 8.4	
1	6.44	11	30	–78	10	+53	11	72	103.9	+ 7.8	2044(2)
2	7.24	14	30	–82	13	+80	108	796	93.4	–15.6	2045(2)
3	7.11	13	July 1	–75	13	+83	43	248	95.1	+12.2	2028(6)
4	4.82	6	3	–19	8	+48	11	58	125.3	–35.8	
22045	9.43	10	3	–78	12	+38	10	61	64.4	+ 8.9	
6	9.5	3	4	–67	6	–42	4	16	63.6	–26.6	
7	2.3	2	6	+52	7	+69	0	8	158.2	+27.1	
8	11.39	11	6	–67	16	+68	11	62	38.5	+13.8	
9	12.95	13	6	–84	18	+72	28	189	17.7	–15.7	
22050	13.48	9/11	9	–50	19	+81	22	132	10.8	+20.2	
1	11.45	2	10	–15	11	0	1	10	37.7	– 7.5	
2	16.18	12	10	–78	21	+70	9	54	335.1	+ 6.2	2047(2)
3	16.40	13	10	–80	22	+81	20	113	332.2	+10.3	2046(2)
4	7.5	3	11	+53	13	+79	2	24	90.3	– 8.2	
22055	14.58	6	11	–43	16	+25	6	32	356.3	–15.1	
6	15.0	2	17	+31	18	+44	3	25	351.0	+16.1	
7	23.49	12	17	–84	28	+64	23	154	238.3	+12.8	
8	18.2	4	18	+ 2	21	+41	11	54	308.2	+25.0	
9	18.7	5	20	+23	24	+77	7	43	302.1	–15.8	2049(1)
22060	25.89	5	22	–48	26	+10	5	24	206.7	+10.4	
1	27.5	4	22	–67	25	–28	3	17	185.0	–16.2	2048(2)
2	30.08	13	24	–75	Aug 5	+82	41	256	151.2	–16.1	
3	28.60	5/ 6	26	–27	July 31	+40	4	27	170.7	–16.5	
4	Aug 1.04	13	26	–74	Aug 7	+81	113	920	125.2	– 7.7	
22065	July 28.2	6	28	+ 1	2	+66	8	54	175.5	–13.2	
6	Aug 1.0	2	29	–35	July 30	–22	2	10	125.6	+19.3	
7	2.58	6	29	–56	Aug 3	+10	2	13	104.9	–15.2	
8	5.41	13	30	–81	11	+81	78	580	67.5	–11.6	
9	July 27.1	3	31	+58	2	+80	7	45	190.1	+27.4	
22070	Aug 1.62	8	31	–16	7	+78	45	289	117.6	+12.5	2050(1)
1	6.09	12	31	–72	11	+74	19	99	58.5	+ 8.9	2051(1)
2	July 29.5	2	Aug 1	+40	2	+50	4	23	158.1	+12.7	
3	Aug 1.84	4	1	– 5	4	+32	6	38	114.6	+ 4.9	
4	6.75	11	2	–59	12	+72	29	160	49.7	–21.9	
22075	9.3	6	3	–71	8	–11	5	24	16.7	+19.8	
6	9.46	7/ 9	4	–68	12	+37	8	34	13.9	+15.0	
7	10.72	7/11	4	–85	14	+48	2	10	357.3	+16.1	
8	6.5	4	7	+11	10	+52	5	27	52.4	–14.9	
9	10.15	8	8	–26	15	+72	34	188	4.7	–31.2	
22080	14.9	6	9	–70	14	– 8	5	28	302.3	–14.2	2049(2)
1	6.0	2	10	+60	11	+70	5	24	58.9	+13.8	
2	16.01	12	10	–72	21	+71	12	58	287.3	+ 9.2	
3	13.32	3/ 7	12	–13	18	+65	0	4	322.8	+12.5	
4	18.63	11	12	–80	22	+45	19	97	252.7	–14.2	

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	1969	d	1969	°	1969	°			°	°	
22085	Aug 11.7	2	Aug 14	+36	Aug 15	+50	3	10	344.3	+16.6	
6	28.10	14	21	-86	Sept 3	+80	93	717	127.6	+11.2	2050(2)
7	23.18	3	22	-11	Aug 24	+17	4	17	192.6	-15.0	
8	23.52	3	23	- 2	25	+26	2	20	188.1	+13.0	
9	27.74	6	24	-43	29	+24	2	10	132.3	- 6.7	
22090	30.04	13	24	-76	Sept 5	+81	25	156	101.9	- 9.8	2052(1)
1	29.4	3	25	-51	Aug 27	-28	3	17	110.4	-20.0	
2	30.15	2/ 6	25	-64	30	+ 4	0	2	100.5	-20.2	
3	31.73	13	25	-84	Sept 6	+80	40	264	79.5	+ 5.8	2053(1)
4	Sept 1.40	8	26	-78	2	+12	11	78	70.7	+10.6	
22095	Aug 30.74	8/10	27	-44	5	+74	9	58	92.6	-10.3	
6	Sept 2.1	5	27	-77	Aug 31	-22	7	40	61.7	+ 3.0	
7	2.5	4	28	-72	31	-22	1	15	56.5	+ 9.6	2051(2)
8	2.78	5/ 6	29	-59	Sept 3	+ 6	3	15	52.5	-16.5	
9	5.73	3/ 6	Sept 1	-57	6	+ 7	1	11	13.5	+17.5	
22100	3.7	2	2	-18	3	- 5	4	30	40.4	-23.9	
1	5.6	2	2	-44	3	-30	3	6	15.1	+14.8	
2	8.1	4	3	-63	6	-25	6	32	342.8	+18.2	
3	2.4	5	4	+26	8	+80	20	122	58.0	+11.5	2054(1)
4	8.05	9	5	-39	13	+70	13	63	342.9	+22.7	
22105	10.7	4	5	-71	8	-30	3	13	308.3	-12.5	
6	5.5	2/ 3	6	+12	8	+37	2	12	17.1	+15.5	
7	9.4	2	6	-42	7	-27	2	13	325.0	- 2.2	
8	9.40	9	7	-27	15	+67	55	322	325.0	-32.4	
9	15.31	12	9	-76	20	+68	28	116	247.0	-18.4	
22110	16.13	13	10	-79	22	+87	35	189	236.3	+13.9	
1	15.46	8	12	-44	19	+54	15	78	245.1	- 9.6	
2	17.09	10	12	-66	21	+62	14	67	223.5	- 3.0	
3	17.49	11	13	-54	23	+81	16	95	218.3	- 5.2	
4	14.15	6	14	- 1	19	+71	27	146	262.3	+ 7.3	
22115	20.2	4	14	-78	17	-37	5	22	182.3	-17.6	
6	21.2	4	15	-77	18	-38	3	12	169.4	+ 1.3	
7	18.17	3	17	-11	19	+17	1	8	209.3	- 2.6	
8	21.3	2	17	-51	18	-40	1	7	168.1	-19.9	
9	22.5	4	17	-69	20	-26	4	29	151.6	+12.5	
22120	18.0	2	18	+ 5	19	+19	3	15	212.0	-10.4	
1	25.2	3	20	-61	22	-36	2	16	117.0	-28.7	
2	26.1	3	20	-75	22	-48	5	22	104.7	- 9.2	2052(2)
3	25.85	7	21	-60	27	+19	3	19	108.0	+ 5.6	
4	27.20	12	21	-78	Oct 2	+71	31	187	90.1	+ 7.0	2053(2)
22125	27.83	13	21	-83	3	+72	20	122	81.8	-13.4	
6	22.59	7	22	- 3	Sept 28	+79	61	383	151.0	+ 4.9	
7	28.98	12	22	-86	Oct 3	+58	19	110	66.6	+11.6	2054(2)
8	26.49	10	23	-40	2	+78	27	146	99.5	- 9.5	
9	27.65	6	23	-52	Sept 28	+ 7	4	26	84.2	+12.2	

GENERAL CATALOGUE OF SUNSPOTS

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	1969	d	1969	°	1969	°			°	°	
22130	Sept 29.69	9	Sept 27	-33	Oct 5	+77	19	118	57.3	-12.0	2055(1)
1	Oct 2.25	8	28	-53	5	+43	4	17	23.5	-12.9	
2	3.06	11	28	-67	8	+75	53	311	12.8	-12.5	2056(1)
3	5.95	11	Oct 2	-48	12	+81	94	577	334.7	+17.3	2057(1)
4	8.51	11	2	-77	12	+48	20	137	300.9	+26.3	
22135	Sept 30.9	4	3	+29	6	+75	3	19	41.8	+13.7	
6	Oct 10.37	13	4	-79	16	+79	29	161	276.3	-14.4	
7	9.5	2	6	-43	7	-29	3	16	287.2	+23.7	
8	11.97	12	6	-75	17	+73	47	290	255.3	+10.8	2058(1)
9	6.8	3	8	+21	10	+49	4	20	323.8	- 5.1	
22140	8.3	2	13	+69	14	+79	3	38	303.8	-15.3	
1	13.1	6	13	+ 2	18	+74	20	103	240.4	- 5.1	
2	18.76	5/ 7	13	-71	19	+ 6	3	16	165.7	+ 3.3	
3	21.2	2	16	-65	17	-50	2	13	132.8	+26.1	
4	16.4	5	17	+13	21	+66	6	35	197.2	-29.9	
22145	24.57	13	18	-81	30	+79	59	344	89.0	+10.0	2053(3)
6	26.09	14	19	-85	Nov 1	+86	239	1772	69.0	+11.0	2059(1)
7	20.73	5/ 6	20	- 4	Oct 25	+58	4	26	139.7	-11.1	
8	23.37	7	21	-25	27	+50	8	44	104.9	-28.6	
9	26.73	10	21	-72	30	+52	20	108	60.6	-11.7	2055(2)
22150	17.9	2	22	+59	23	+73	4	21	176.8	+16.0	
1	24.70	7	24	- 6	30	+79	11	65	87.4	+ 5.6	
2	30.00	12	24	-74	Nov 4	+69	15	84	17.4	-13.0	2056(2)
3	30.2	2	25	-64	Oct 26	-53	2	12	14.2	+20.5	
4	31.35	6/ 7	26	-66	Nov 1	+16	2	13	359.6	- 5.4	
22155	30.0	2	27	-34	Oct 28	-22	2	7	17.4	-16.6	
6	Nov 1.68	8	27	-70	Nov 3	+25	12	81	342.1	+17.7	2057(2)
7	2.7	5	28	-69	1	-17	3	20	328.5	-14.1	
8	Oct 29.1	6	29	+ 4	3	+71	3	24	29.6	-14.9	
9	Nov 2.5	4/ 5	29	-57	2	- 2	0	8	331.4	+19.1	
22160	3.96	9	30	-60	7	+46	12	68	312.0	+19.8	
1	3.05	5/ 6	Nov 1	-20	6	+41	2	14	324.0	+20.7	
2	7.76	10	1	-83	10	+32	6	46	261.9	+11.2	2058(2)
3	5.43	4	3	-24	6	+11	4	22	292.7	+15.5	
4	6.4	3/ 4	3	-37	6	- 1	1	7	280.2	-17.8	
22165	10.49	15	3	-86	17	+86	77	465	225.9	+21.8	
6	8.8	2	4	-59	5	-45	4	16	248.3	+13.9	
7	10.48	11	4	-81	14	+57	6	43	226.0	+ 7.6	
8	5.63	3	5	- 3	7	+23	4	20	290.0	+ 2.4	
9	7.11	4/ 5	5	-24	9	+29	3	20	270.5	- 5.9	
22170	11.38	9	5	-78	13	+25	13	103	214.2	+20.7	
1	7.4	6	8	+15	13	+77	8	53	266.9	+20.9	
2	15.0	7	8	-79	14	- 7	9	55	167.1	-18.1	
3	14.6	3	9	-69	11	-41	2	10	171.2	-15.1	
4	10.1	5/ 6	11	+19	16	+82	39	232	231.7	+16.9	2060(1)

GENERAL CATALOGUE OF SUNSPOTS

No. of Group	U.T. of C.M.P.	Duration	First Seen Date	First Seen Long. from C.M.	Last Seen Date	Last Seen Long. from C.M.	Corrected Mean Area Umb.	Corrected Mean Area Whole Spots	Mean Position Long.	Mean Position Lat.	Ref.
	1969	d	1969	°	1969/70	°			°	°	
22175	Nov 16.8	5	Nov 12	-57	Nov 16	- 6	5	38	142.9	+14.8	
6	21.11	13	15	-72	27	+85	108	784	85.9	+ 6.3	2053(4)
7	21.88	14	15	-84	28	+84	244	1580	75.7	+13.0	2059(2)
8	13.4	3	16	+37	18	+69	8	63	188.2	-22.7	
9	22.7	3	19	-42	21	-18	1	7	65.5	+11.5	
22180	24.04	11	19	-62	29	+78	31	218	47.3	+12.4	
1	24.97	6/ 8	19	-71	26	+21	5	32	35.0	-13.0	
2	15.9	2	20	+59	21	+72	7	38	154.5	+18.6	
3	19.0	3/ 4	21	+30	24	+71	4	21	113.6	-13.5	
4	28.3	3	22	-78	24	-51	4	17	351.5	-14.0	
22185	28.94	12	23	-75	Dec 4	+72	18	114	342.7	- 2.0	
6	23.5	2/ 3	25	+27	Nov 27	+53	2	14	55.0	+24.5	
7	30.74	12	25	-73	Dec 6	+75	62	351	319.1	-14.1	2061(1)
8	30.56	8/10	26	-53	5	+65	4	27	321.4	+12.4	
9	Dec 1.92	11	26	-72	6	+59	20	127	303.5	-16.1	
22190	Nov 28.7	2	27	-15	Nov 28	- 4	6	27	345.9	-20.3	
1	30.72	10	27	-45	Dec 6	+76	35	221	319.3	+21.1	2062(1)
2	Dec 3.39	8	28	-70	5	+31	8	47	284.1	-18.5	
3	4.1	3/ 5	29	-60	3	- 9	1	9	275.2	+23.3	
4	4.60	11	30	-54	10	+75	23	139	268.2	-20.9	
22195	6.8	5	Dec 1	-71	5	-18	3	17	238.9	+15.6	2060(2)
6	5.33	7	2	-40	8	+44	5	32	258.5	-10.3	
7	8.12	13	2	-74	14	+80	20	123	221.8	+17.0	
8	3.7	2	5	+23	6	+35	6	31	280.1	+ 6.6	
9	5.5	4	8	+39	11	+81	5	35	257.0	+ 7.7	
22200	7.8	4	9	+19	12	+59	21	105	225.6	-19.8	
1	11.97	5/ 7	10	-23	16	+62	2	11	171.1	- 2.9	
2	18.10	11	12	-76	22	+54	14	88	90.2	+ 6.5	2053(5)
3	18.17	12	12	-79	23	+69	45	342	89.3	-11.9	2063(1)
4	16.36	6	13	-39	18	+30	4	19	113.1	-11.6	
22205	18.14	6	13	-61	18	+ 6	2	14	89.6	+15.0	
6	18.91	12	13	-70	24	+72	27	154	79.6	+11.9	2059(3)
7	20.00	13	13	-84	25	+75	59	308	65.3	+12.7	2064(1)
8	18.57	3/ 6	15	-40	20	+23	1	5	84.0	+ 1.3	
9	19.1	2/ 3	16	-36	18	- 9	0	5	76.6	-26.9	
22210	24.21	13	18	-77	30	+80	27	132	9.8	+11.0	
1	19.83	7	19	-12	25	+79	32	173	67.5	- 9.6	2065(1)
2	18.0	3	20	+31	22	+55	5	24	91.3	-27.1	
3	24.35	11	20	-55	30	+82	73	483	8.0	-13.0	2066(1)
4	25.90	11	21	-63	31	+74	16	87	347.5	- 2.8	
22215	27.98	10	22	-73	31	+41	15	75	320.1	+ 9.7	
6	27.87	12	22	-74	Jan 2	+74	21	121	321.5	-15.6	2061(2)
7	28.05	12	22	-74	2	+70	29	152	319.2	+21.9	2062(2)
8	20.1	2	24	+53	Dec 25	+73	9	52	64.0	-14.7	2067(1)
9	25.59	8	24	-18	31	+76	32	174	351.6	-21.2	

GENERAL CATALOGUE OF SUNSPOTS

No. of Group	U.T. of C.M.P. 1969/70	Duration	First Seen Date 1969/70	First Seen Long. from C.M.	Last Seen Date 1969/70	Last Seen Long. from C.M.	Corrected Mean Area Umb.	Corrected Mean Area Whole Spots	Mean Position Long.	Mean Position Lat.	Ref.
		d		°		°			°	°	
22220	Dec 25.0	2	Dec 25	+ 6	Dec 26	+17	4	28	359.4	- 8.2	
1	29.10	4/ 9	25	-48	Jan 2	+58	0	6	305.4	-17.6	
2	Jan 1.06	6/ 8	26	-75	2	+18	2	12	266.3	+12.7	
3	Dec 25.8	2	27	+21	Dec 28	+32	7	50	348.3	-11.7	
4	27.1	6/ 7	27	+ 5	Jan 2	+82	19	104	332.3	- 7.5	
22225	30.37	10	27	-40	5	+81	59	384	288.6	-20.1	2068(1)
6	Jan 2.65	12	28	-71	8	+80	76	487	245.4	+11.5	
7	Dec 24.9	2	29	+58	Dec 30	+72	5	32	1.2	- 6.8	
8	Jan 3.7	6	29	-71	Jan 3	- 6	9	60	231.3	+ 7.2	
9	6.17	10	31	-78	9	+41	10	54	199.0	+19.3	
22230	8.11	6/10	Jan 2	-73	11	+44	2	10	173.5	-13.5	
1	8.29	4/ 6	3	-67	8	+ 2	3	16	171.1	+ 8.9	
2	9.3	3	4	-63	6	-37	4	23	158.2	+26.3	
3	6.75	2/ 6	6	- 4	11	+62	1	6	191.5	- 1.0	
4	12.58	10	8	-55	17	+66	15	88	114.7	-11.0	
22235	13.84	12	8	-72	19	+75	51	307	98.0	-10.9	2063(2)
6	7.9	6	9	+18	14	+87	70	482	175.9	-30.2	2069(1)
7	15.59	10/11	9	-82	19	+48	9	45	75.0	- 8.6	2065(2)
8	16.1	4	10	-75	13	-36	3	29	68.0	-15.3	2067(2)
9	16.79	10/12	11	-72	22	+69	8	35	59.2	+13.1	2064(2)
22240	17.14	9	11	-76	19	+28	19	94	54.6	-15.5	
1	17.72	13	11	-81	23	+75	54	372	47.1	-11.4	
2	14.17	9	12	-20	20	+82	17	93	93.8	-19.9	
3	15.5	3/ 4	12	-39	15	- 3	1	8	76.0	+ 9.8	
4	15.49	9	12	-40	20	+66	14	82	76.4	-12.4	
22245	18.94	10	12	-85	21	+31	32	238	30.9	- 7.3	
6	14.1	4/ 5	14	+ 3	18	+54	2	12	95.2	+18.1	
7	19.82	12	14	-73	25	+75	42	245	19.3	+13.9	
8	20.65	8/ 9	14	-82	22	+25	5	23	8.4	-11.9	2066(2)
9	18.23	8	17	-12	24	+82	22	113	40.3	-14.1	
22250	23.22	13	17	-79	29	+83	33	212	334.6	- 2.5	
1	26.53	13	20	-79	Feb 1	+76	35	214	291.0	-19.2	2068(2)
2	16.6	3	21	+62	Jan 23	+86	34	205	61.9	-22.8	2070(1)
3	22.45	3	21	-16	23	+14	0	12	344.7	- 8.0	
4	27.4	3	22	-66	24	-38	3	20	279.2	+ 9.0	
22255	28.54	13	22	-79	Feb 3	+80	27	172	264.5	- 3.1	2071(1)
6	26.34	9	24	-24	1	+78	109	904	293.5	-15.5	2072(1)
7	26.08	8	24	-25	Jan 31	+74	27	150	296.9	-10.0	
8	29.38	2/ 8	25	-53	Feb 1	+38	1	3	253.4	+13.6	
9	27.99	8	26	-22	2	+71	24	163	271.8	- 6.2	
22260	28.77	9	26	-33	3	+80	23	144	261.5	- 8.2	2073(1)
1	31.65	10	26	-66	4	+48	11	72	223.6	+11.6	
2	29.19	6	27	-25	1	+44	9	60	256.0	- 4.3	
3	29.69	5/ 8	27	-30	3	+63	4	20	249.4	-16.5	
4	Feb 4.78	10	29	-82	7	+31	9	46	169.2	-32.6	2069(2)

No. of Group	U.T. of C.M.P.	Duration	First Seen Date	First Seen Long. from C.M.	Last Seen Date	Last Seen Long. from C.M.	Corrected Mean Area Umb.	Corrected Mean Area Whole Spots	Mean Position Long.	Mean Position Lat.	Ref.
	1970	d	1970	°	1970	°			°	°	
22265	Feb 4.98	9/10	Jan 31	-61	Feb 9	+59	4	32	166.6	-18.1	
6	3.34	7/ 9	Feb 1	-29	9	+82	9	52	188.2	-10.2	
7	Jan 30.8	4	2	+34	5	+73	29	154	234.5	+18.1	2074(1)
8	Feb 6.44	5/ 6	2	-56	7	+13	2	8	147.2	-10.7	
9	3.0	2	3	+ 4	4	+20	1	11	192.3	- 1.2	
22270	8.4	2	3	-65	4	-51	1	15	122.0	-12.5	
1	8.64	5/ 7	5	-44	11	+37	3	16	118.3	- 9.9	
2	10.72	13	5	-70	17	+82	106	734	91.0	+18.0	2075(1)
3	6.69	4/ 6	6	- 5	11	+66	2	14	144.1	+ 5.1	2076(1)
4	6.90	7	6	- 8	12	+75	47	264	141.4	-11.9	
22275	12.35	13	6	-78	18	+76	49	315	69.6	-13.7	
6	12.56	14	6	-79	19	+88	37	252	66.8	-20.1	2070(2)
7	9.88	5	7	-37	11	+23	4	22	102.0	-14.0	
8	11.8	5	7	-60	11	- 3	5	34	76.8	-11.8	
9	13.2	6	7	-78	12	-12	3	23	58.1	-15.1	
22280	10.80	3	10	- 7	12	+20	3	21	89.9	-13.8	
1	15.56	7	10	-68	16	+11	2	13	27.1	-11.9	
2	17.30	12	11	-80	22	+74	33	207	4.3	-13.3	
3	13.22	7	12	-14	18	+68	2	31	58.2	+14.3	
4	19.16	14	12	-84	25	+82	103	689	339.9	-22.3	
22285	13.5	3/ 4	13	+ 3	16	+37	1	9	54.6	-23.8	
6	18.1	2	13	-62	14	-49	1	10	353.4	- 6.2	
7	22.01	14	15	-85	28	+87	82	472	302.3	-14.8	2072(2)
8	22.86	10	16	-85	25	+32	16	141	291.1	-19.8	2068(3)
9	15.2	4	17	+28	20	+70	23	136	32.1	+21.3	
22290	23.46	9	18	-71	26	+39	7	29	283.2	+ 0.9	
1	24.41	13	18	-80	Mar 2	+80	55	352	270.7	- 8.4	2073(2)
2	25.14	13	19	-76	3	+82	51	312	261.0	- 4.2	2071(2)
3	25.6	2	19	-82	Feb 20	-68	3	20	255.5	- 9.7	
4	25.03	11	20	-61	Mar 2	+73	60	437	262.6	+17.8	2077(1)
22295	21.3	5	21	+ 1	Feb 25	+52	7	38	312.1	+10.3	
6	23.17	8	21	-24	28	+65	14	89	287.1	+21.1	
7	27.03	12	21	-77	Mar 4	+74	64	523	236.2	+14.9	2074(2)
8	22.62	3	22	- 4	Feb 24	+24	1	11	294.3	-11.9	
9	28.17	7	22	-75	28	+ 1	3	20	221.1	+25.9	
22300	Mar 2.8	4	24	-84	27	-47	2	19	186.4	-15.1	
1	Feb 28.8	3	25	-46	27	-19	4	20	212.6	+27.6	
2	Mar 2.43	9	26	-58	Mar 6	+54	14	73	191.4	- 4.6	
3	3.8	6	26	-73	3	- 4	6	34	173.4	+ 7.9	
4	Feb 26.1	4	27	+16	2	+57	3	22	248.8	+11.1	
22305	Mar 4.89	12	27	-75	10	+74	75	478	159.0	+ 5.2	2076(2)
6	Feb 25.9	2	Mar 1	+48	2	+59	2	15	250.7	+17.2	
7	Mar 7.67	11	1	-82	11	+48	19	115	122.4	-11.9	
8	1.4	5	2	+12	6	+68	13	83	205.0	-15.1	
9	9.64	13	3	-81	15	+77	36	223	96.4	+18.7	2075(2)

GENERAL CATALOGUE OF SUNSPOTS

No. of Group	U.T. of C.M.P.	Duration	First Seen Date	First Seen Long. from C.M.	Last Seen Date	Last Seen Long. from C.M.	Corrected Mean Area Umb.	Corrected Mean Area Whole Spots	Mean Position Long.	Mean Position Lat.	Ref.
	1970	d	1970	°	1970	°			°	°	
22310	Mar 9.57	8/10	Mar 3	-82	Mar 12	+38	5	29	97.4	-11.3	
1	7.6	3	4	-40	6	-16	2	11	123.4	- 6.0	
2	10.55	13	4	-77	16	+77	102	717	84.4	-15.0	2078(1)
3	8.76	10	5	-47	14	+81	16	90	108.0	-14.0	
4	11.6	7	5	-83	11	- 4	7	32	70.6	+13.2	
22315	5.8	3	9	+46	11	+74	10	59	147.2	-16.9	
6	13.1	3	9	-50	11	-23	4	17	50.6	- 8.9	
7	14.53	7	9	-68	15	+12	4	16	31.9	-12.1	
8	15.3	3	12	-40	14	-11	4	18	21.2	+13.9	
9	15.37	9	13	-29	21	+82	23	141	21.0	- 0.6	2079(1)
22320	17.8	5	13	-60	17	- 4	7	36	348.9	+19.3	
1	21.22	12	15	-75	26	+67	20	116	303.8	-15.3	2072(3)
2	24.39	13	18	-80	30	+78	26	154	262.0	- 3.9	2071(3)
3	24.66	12	18	-81	29	+59	22	133	258.4	+16.3	2077(2)
4	18.8	6	19	+ 8	24	+71	29	210	335.6	+16.1	
22325	24.88	10	19	-70	28	+47	9	59	255.5	+19.3	
6	24.87	11	20	-59	30	+75	18	113	255.7	+10.9	
7	25.06	7	20	-60	26	+15	6	37	253.1	+21.9	
8	26.19	13	20	-74	Apr 1	+81	33	263	238.2	+14.2	2074(3)
9	23.28	6	21	-25	Mar 26	+39	8	44	276.7	- 5.8	
22330	27.28	12	22	-69	Apr 2	+74	11	66	223.9	+21.6	2080(1)
1	29.21	3/ 9	23	-75	Mar 31	+28	0	3	198.5	-18.1	
2	30.01	9	24	-77	Apr 1	+31	7	45	187.8	- 1.8	
3	31.94	13	25	-83	6	+73	39	249	162.4	+ 4.2	2076(3)
4	26.8	5	28	+21	1	+75	20	117	230.6	- 8.3	
22335	30.99	8	29	-23	5	+69	7	50	174.9	+ 5.0	
6	Apr 1.79	4/ 6	29	-45	3	+20	0	5	151.2	-17.6	
7	4.0	3	29	-78	Mar 31	-48	2	10	122.4	-11.6	
8	6.24	11	31	-81	Apr 10	+56	19	140	92.5	-12.5	
9	6.87	14	31	-84	13	+84	52	295	84.1	-14.3	2078(2)
22340	Mar 29.3	2	Apr 2	+53	3	+65	1	13	196.7	-14.2	
1	Apr 7.98	8	2	-71	9	+18	20	125	69.5	+27.4	
2	9.18	15	2	-85	16	+87	200	1178	53.7	-13.1	2081(1)
3	6.43	8/10	3	-40	12	+73	17	104	90.0	+17.9	
4	9.5	4/ 6	3	-79	8	-18	4	18	49.4	-36.5	
22345	9.00	12	4	-63	15	+81	60	408	56.1	+10.4	2082(1)
6	9.6	3/ 6	4	-66	9	- 6	1	7	48.4	-21.5	
7	8.87	11	5	-49	15	+84	47	316	57.7	- 9.3	
8	11.04	12	5	-75	16	+69	15	84	29.1	- 1.3	2079(2)
9	12.82	13	7	-78	19	+78	88	612	5.7	+16.2	2083(1)
22350	13.5	6	7	-81	12	-22	2	14	356.5	-13.4	
1	6.2	5	8	+27	12	+80	51	300	93.6	+ 9.0	
2	7.9	4	10	+32	13	+76	5	26	70.2	-21.9	2084(1)
3	8.0	4	10	+30	13	+69	3	18	69.7	+ 5.1	
4	16.4	7	10	-81	16	- 1	9	51	318.8	- 8.3	

GENERAL CATALOGUE OF SUNSPOTS

No. of Group	U.T. of C.M.P.	Duration	First Seen Date	First Seen Long. from C.M.	Last Seen Date	Last Seen Long. from C.M.	Corrected Mean Area Umb.	Corrected Mean Area Whole Spots	Mean Position Long.	Mean Position Lat.	Ref.
	1970	d	1970	°	1970	°			°	°	
22355	Apr 14.8	3	Apr 11	-43	Apr 13	-21	2	11	339.1	+ 8.4	
6	19.21	13	13	-78	25	+80	43	293	281.2	- 6.8	2085(1)
7	19.74	7	14	-70	20	+ 6	9	52	274.3	+17.3	
8	20.08	12	14	-76	25	+69	16	102	269.8	- 7.4	
9	20.45	7/12	15	-67	26	+79	3	16	264.9	+16.1	2086(1)
22360	16.0	6	16	+ 6	21	+71	11	56	324.1	+11.5	
1	23.77	7	18	-67	24	+ 8	10	49	221.1	+20.3	2080(2)
2	23.03	9	20	-36	28	+72	24	144	230.9	- 8.6	
3	19.5	5	21	+24	25	+75	42	330	277.9	+ 2.5	
4	24.6	2	22	-23	23	-14	0	6	210.4	+23.8	
22365	25.87	8/ 9	22	-42	30	+58	2	16	193.3	+10.9	
6	23.0	5	24	+20	28	+70	7	39	231.6	+ 9.2	
7	30.23	13	24	-77	May 6	+79	29	201	135.7	+18.6	2087(1)
8	May 1.21	13	25	-78	7	+80	36	270	122.7	- 8.3	2088(1)
9	Apr 26.3	2	26	+ 2	Apr 27	+15	1	7	188.0	+ 4.3	
22370	30.8	5	26	-59	30	- 4	5	26	128.4	+10.4	
1	May 2.14	12	26	-75	May 7	+69	23	166	110.4	-11.7	
2	Apr 28.27	2/ 7	27	-14	3	+69	0	5	161.5	+14.9	2089(1)
3	27.5	2	28	+12	Apr 29	+25	1	5	172.2	+ 6.3	
4	28.3	7	28	0	May 4	+83	16	86	160.7	-14.5	
22375	28.77	4/ 7	28	- 3	4	+76	3	25	154.9	+10.4	
6	May 4.46	11/12	28	-81	9	+62	6	35	79.8	-15.7	2078(3)
7	5.10	13	29	-74	11	+78	24	163	71.2	-21.1	2084(2)
8	5.95	14	29	-88	12	+83	52	361	60.1	-12.7	2081(2)
9	6.26	13	30	-77	12	+79	58	347	56.0	+12.6	2082(2)
22380	3.17	8	May 1	-24	8	+67	4	21	96.8	-11.9	
1	3.67	4	3	- 2	6	+33	0	10	90.2	-10.5	
2	9.71	13	3	-79	15	+77	51	401	10.4	+16.2	2083(2)
3	10.22	8	4	-76	11	+11	7	50	3.6	+13.7	
4	5.4	2	6	+12	7	+25	1	8	66.9	- 6.7	
22385	7.7	2	8	+10	9	+21	2	17	36.8	- 3.2	
6	15.20	12	9	-76	20	+69	28	186	297.8	+19.3	
7	8.8	2	10	+20	11	+30	5	29	22.2	-26.0	
8	10.85	3	10	- 5	12	+17	4	21	355.3	-12.8	
9	13.61	5	10	-46	14	+11	4	16	318.9	+ 9.3	
22390	15.90	10	10	-74	19	+46	3	30	288.6	+ 1.0	
1	16.51	13	10	-82	22	+76	12	89	280.5	- 8.0	2085(2)
2	14.70	10	11	-50	20	+73	81	668	304.3	- 8.6	
3	16.94	11	11	-77	21	+59	15	102	274.7	-12.1	
4	18.23	13	12	-76	24	+82	160	1396	257.6	+16.8	2086(2)
22395	18.26	8	12	-78	19	+17	3	23	257.4	-18.0	
6	18.3	4	13	-65	16	-26	1	16	256.3	-11.7	
7	13.2	2	14	+17	15	+27	1	11	324.4	- 9.7	
8	14.9	7	15	+ 5	21	+82	23	137	301.9	-15.1	2090(1)
9	15.7	2	16	+11	17	+20	0	6	291.5	-13.1	

GENERAL CATALOGUE OF SUNSPOTS

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	1970	d	1970	°	1970	°			°	°	
22400	May 22.53	12	May 16	-81	May 27	+62	24	165	200.8	+14.1	
1	19.48	9	17	-29	25	+80	12	84	241.1	- 9.9	
2	21.69	11	17	-57	27	+79	9	57	211.9	- 8.8	
3	22.4	3/ 4	19	-38	22	- 3	0	2	202.6	-22.6	
4	25.21	12	19	-76	30	+70	9	54	165.4	+14.5	2089(2)
22405	21.27	2	20	-11	21	+ 1	2	10	217.4	+ 4.8	
6	26.6	5	20	-81	24	-30	4	25	147.3	+16.5	2087(2)
7	19.4	2/ 3	21	+25	23	+52	0	6	241.5	+21.2	
8	20.9	2	21	+ 5	22	+19	0	7	222.2	+22.3	
9	19.5	4	22	+38	25	+79	5	40	240.9	- 6.8	
22410	27.88	3/ 7	22	-74	28	+ 8	1	4	130.2	+19.5	
1	27.78	12	22	-76	June 2	+81	58	427	131.4	- 6.9	2088(2)
2	25.72	9	23	-32	May 31	+79	25	187	158.6	-14.8	
3	22.5	3	24	+24	26	+50	2	26	200.5	+18.6	
4	30.60	11	25	-71	June 4	+64	4	23	94.0	+10.6	2091(1)
22415	June 1.47	11	26	-80	5	+49	16	127	69.3	- 8.6	
6	1.86	13	26	-83	7	+72	13	85	64.1	-19.5	2084(3)
7	May 27.0	3	27	+ 2	May 29	+32	0	12	141.4	+19.1	
8	28.61	4	27	-16	30	+23	0	9	120.3	- 9.7	
9	June 2.31	13	27	-78	June 8	+80	26	183	58.2	-12.9	2081(3)
22420	2.52	9/10	27	-81	5	+36	8	56	55.4	+16.7	2082(3)
1	May 28.3	6	29	+14	3	+81	24	181	124.0	+18.2	2092(1)
2	31.06	9	29	-22	6	+83	16	98	87.9	+ 8.5	
3	June 4.07	2/ 5	June 2	-24	6	+32	1	2	34.8	+19.1	
4	10.85	13	4	-84	16	+72	25	171	305.2	-15.5	2090(2)
22425	10.04	5/ 6	5	-61	10	+ 4	1	6	315.9	- 7.0	
6	10.2	2/ 4	6	-49	9	-11	1	5	314.3	+17.4	
7	12.07	10	6	-73	15	+42	17	103	289.1	+16.4	
8	13.85	13	7	-84	19	+75	89	663	265.4	+16.0	2086(3)
9	7.2	5/ 6	8	+14	13	+80	5	26	353.2	-13.0	
22430	10.22	6/ 8	8	-27	15	+70	7	46	313.4	+14.2	2093(1)
1	15.71	11	10	-72	20	+65	24	164	240.9	+15.8	
2	14.93	6	11	-49	16	+19	1	11	251.1	+19.1	
3	16.92	12	11	-75	22	+75	134	1043	224.8	+17.7	2094(1)
4	17.93	6	13	-62	18	+ 7	2	21	211.6	-15.1	
22435	14.83	3	14	- 5	16	+18	1	6	252.4	- 9.3	
6	19.96	13	14	-74	26	+83	23	147	184.6	- 9.3	
7	21.66	13	15	-81	27	+75	16	121	162.0	+19.5	
8	22.92	11	17	-73	27	+59	12	93	145.3	- 4.2	2088(3)
9	21.5	3	18	-42	20	-11	1	14	163.7	-15.1	
22440	21.79	9/10	18	-50	27	+76	8	46	160.2	-13.9	
1	22.53	4/ 7	18	-53	24	+16	0	3	150.5	+21.9	
2	24.54	7/ 8	18	-81	25	+10	2	11	124.0	+18.4	2092(2)
3	23.55	3/ 6	20	-36	25	+23	1	4	137.0	+20.7	
4	26.38	9	20	-78	28	+32	26	185	99.6	+ 9.3	2091(2)

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	1970	d	1970	°	1970	°			°	°	
22445	June 26.67	10	June 21	-73	June 30	+53	13	71	95.8	+22.3	
6	25.0	3/ 4	25	+ 3	28	+47	6	26	117.7	-12.3	
7	30.29	10	25	-64	July 4	+56	8	60	47.9	- 7.1	
8	30.77	12	25	-74	6	+79	60	474	41.5	+21.9	2095(1)
9	27.20	3	26	-12	June 28	+16	1	26	88.7	+11.8	
22450	28.17	8	26	-26	July 3	+70	6	40	75.9	+ 3.7	
1	July 2.77	12	27	-75	8	+77	32	253	15.0	- 3.2	2096(1)
2	4.00	14	27	-86	10	+85	100	706	358.7	- 8.5	2097(1)
3	June 29.66	5	29	- 6	3	+51	4	25	56.1	-10.7	
4	July 3.65	11	29	-60	9	+79	28	192	3.3	+ 7.7	2098(1)
22455	5.57	7/ 8	July 1	-54	8	+36	6	38	337.9	+14.7	
6	7.02	12	1	-75	12	+75	60	433	318.7	- 9.7	2099(1)
7	7.70	13	1	-79	13	+75	6	46	309.7	+11.9	2093(2)
8	June 29.6	4	2	+36	5	+77	6	32	56.7	+13.4	
9	July 4.4	5	4	+ 2	8	+55	4	26	353.5	-20.1	
22460	11.16	14	4	-83	17	+83	32	210	264.0	+16.7	2086(4)
1	5.0	3	5	+ 7	7	+30	3	23	345.2	-23.3	
2	13.84	13	7	-85	19	+75	11	85	228.4	+16.8	2094(2)
3	12.5	2	9	-39	10	-27	3	16	246.2	+ 5.0	
4	15.74	14	9	-79	22	+81	16	122	203.3	+17.9	2100(1)
22465	16.17	13	10	-82	22	+82	23	146	197.6	-17.7	
6	11.94	2	11	- 6	12	+ 5	0	8	253.7	+24.8	
7	11.8	2	12	+ 7	13	+22	0	7	255.7	+17.9	
8	10.1	2/ 3	13	+45	15	+68	1	4	277.8	+19.9	
9	17.8	2	13	-60	14	-41	1	11	175.7	+15.0	
22470	17.3	2	14	-35	15	-26	0	5	183.1	- 4.8	
1	19.1	4/ 5	14	-58	18	-10	2	11	158.4	-14.3	
2	20.70	9/10	15	-73	24	+50	4	24	137.7	+16.0	
3	13.1	2	17	+59	18	+71	1	12	238.7	+ 4.9	
4	16.8	2	17	+11	18	+21	0	4	189.7	-16.1	
22475	24.16	14	17	-85	30	+84	89	743	91.9	+ 7.7	2101(1)
6	19.3	4	19	+ 3	22	+41	5	27	156.4	- 9.7	
7	21.85	5	19	-32	23	+18	1	11	122.4	- 9.3	
8	22.81	5	19	-44	23	+ 4	2	15	109.8	-15.5	
9	27.66	11	21	-80	31	+49	19	121	45.7	+17.8	
22480	27.91	14	21	-84	Aug 3	+84	28	221	42.3	+23.7	2095(2)
1	24.63	9	22	-33	July 30	+78	12	92	85.6	+12.2	
2	27.68	10	22	-70	31	+49	20	135	45.3	-13.4	
3	28.0	5	22	-74	26	-25	4	33	41.0	-21.1	
4	29.43	9	24	-68	Aug 1	+38	2	16	22.3	- 1.3	2096(2)
22485	30.23	3/ 6	25	-65	July 30	+ 1	2	12	11.7	+12.3	
6	31.12	9	25	-77	Aug 2	+32	3	29	359.9	+ 9.9	2098(2)
7	31.38	12	25	-78	5	+64	28	191	356.4	- 9.4	2097(2)
8	29.19	10	26	-39	4	+85	70	493	25.3	+ 5.4	2102(1)
9	Aug 2.25	12	27	-75	7	+69	14	90	331.7	- 8.7	2099(2)

GENERAL CATALOGUE OF SUNSPOTS

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	1970	d	1970	°	1970	°			°	°	
22490	July 28.62	3	July 28	0	July 30	+23	1	6	32.9	+18.3	
1	29.6	2	28	-14	29	- 4	4	15	19.6	+18.3	
2	25.9	2	29	+48	30	+57	2	8	69.3	+10.8	
3	Aug 4.97	10	30	-74	Aug 8	+45	8	64	295.7	+13.6	
4	7.85	10	Aug 1	-85	10	+35	7	30	257.6	+16.8	2086(5)
22495	9.41	13	3	-81	15	+81	76	656	237.0	+17.4	2094(3)
6	8.52	8	6	-28	13	+65	21	115	248.7	- 6.8	
7	10.4	2	6	-53	7	-39	1	5	223.7	+17.3	
8	12.35	11	8	-50	18	+78	43	314	198.2	+20.9	2100(2)
9	11.55	8	9	-27	16	+62	7	49	208.7	+20.5	
22500	15.4	2/ 3	11	-54	13	-28	0	6	157.5	+ 7.7	
1	13.63	8/ 9	12	-18	20	+83	33	267	181.1	- 9.5	
2	18.80	8	13	-72	20	+17	4	30	112.9	-11.1	
3	15.80	8	14	-21	21	+76	38	268	152.4	-16.4	2103(1)
4	20.28	13	14	-79	26	+79	46	369	93.3	+ 8.6	2101(2)
22505	14.3	2	15	+14	16	+27	2	14	172.0	-10.2	
6	23.26	7	17	-78	23	+ 1	7	34	54.0	+12.6	
7	15.0	3	18	+43	20	+69	10	71	162.6	-14.3	
8	21.10	8	19	-26	26	+71	16	113	82.4	- 5.6	
9	21.77	9	19	-34	27	+77	24	158	73.6	+21.1	
22510	23.3	4	19	-53	22	-11	1	6	53.5	- 6.2	
1	25.12	13	19	-77	31	+86	18	111	29.4	+ 4.9	2102(2)
2	24.15	10	20	-52	29	+70	18	110	42.2	+18.9	
3	25.5	3	20	-67	22	-40	0	4	24.7	+18.0	
4	27.68	13	21	-82	Sept 2	+76	24	172	355.5	+12.6	
22515	28.50	5/12	23	-70	3	+78	1	7	344.8	+ 9.0	
6	28.77	10	23	-74	1	+49	6	36	341.1	- 6.8	2099(3)
7	24.60	3	24	- 4	Aug 26	+24	1	8	36.2	+12.7	
8	28.73	11	24	-60	Sept 3	+75	12	88	341.7	- 9.8	
9	30.05	9	24	-76	1	+37	11	64	324.3	+12.8	
22520	Sept 2.85	14	27	-87	9	+82	44	265	274.1	+21.4	2104(1)
1	Aug 26.2	4	28	+29	Aug 31	+70	8	53	15.6	-22.2	
2	26.6	3	29	+35	31	+68	2	13	10.0	+ 7.7	
3	Sept 3.42	11	29	-66	Sept 8	+72	8	51	266.5	- 5.8	
4	3.74	12	29	-67	9	+71	14	81	262.3	+19.2	
22525	5.13	14	29	-86	11	+84	110	1024	244.0	+16.5	2094(4)
6	2.96	4	31	-33	3	+ 6	1	12	272.6	+ 3.6	
7	8.28	13	Sept 2	-77	14	+75	25	160	202.3	+21.4	2100(3)
8	Aug 30.9	3	3	+45	5	+71	4	16	312.4	+12.6	
9	Sept 8.93	10/12	3	-73	14	+67	5	27	193.8	-11.7	
22530	8.95	12	3	-75	14	+68	20	111	193.5	+10.2	
1	9.20	9	3	-76	11	+30	7	45	190.2	+23.0	
2	3.4	4	4	+14	7	+54	3	16	266.7	-12.8	
3	8.85	6	5	-45	10	+20	3	17	194.8	- 6.3	
4	4.7	2	6	+22	7	+34	5	31	248.9	-27.5	

GENERAL CATALOGUE OF SUNSPOTS

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	1970	d	1970	°	1970	°			°	°	
22535	Sept 5.2	2	Sept 6	+16	Sept 7	+29	8	35	243.3	-20.5	
6	9.72	7/10	6	-40	15	+71	2	14	183.3	-11.1	
7	12.00	12	6	-74	17	+71	7	49	153.2	-16.1	2103(2)
8	12.8	3	7	-70	9	-50	4	12	143.0	- 8.1	
9	12.16	6	9	-42	14	+27	9	44	151.1	+ 4.0	
22540	14.75	11	9	-79	19	+64	10	67	116.9	-10.8	
1	15.57	12	10	-68	21	+80	10	52	106.1	+12.2	
2	15.88	7	10	-72	16	+ 7	2	13	102.0	-10.2	
3	9.0	3	11	+33	13	+60	6	33	192.3	-15.4	
4	16.99	9	13	-48	21	+58	8	48	87.3	-22.1	
22545	20.71	7/ 8	15	-71	22	+24	8	50	38.2	-15.9	
6	21.36	7	15	-78	21	+ 1	3	17	29.6	+ 4.4	2102(3)
7	21.87	12	16	-77	27	+79	62	393	22.9	+20.1	2105(1)
8	16.1	2	17	+16	18	+29	0	5	98.8	+ 8.8	
9	16.3	4	18	+26	21	+70	14	77	97.0	-14.1	
22550	24.7	6	19	-71	24	- 5	3	13	346.0	+12.8	
1	18.6	5	20	+21	24	+77	29	202	65.7	+21.9	
2	23.7	4	20	-44	23	- 7	6	41	358.8	+ 3.2	
3	26.16	13	20	-77	Oct 2	+83	38	276	326.3	+12.1	2106(1)
4	25.6	2	21	-56	Sept 22	-43	3	9	333.1	+ 1.6	
22555	20.3	5	22	+28	26	+80	34	214	43.8	+ 7.6	2107(1)
6	29.47	13	23	-80	Oct 5	+78	64	397	282.6	- 6.8	2108(1)
7	26.6	3	24	-30	Sept 26	- 1	4	21	321.1	-18.5	
8	26.46	9	24	-32	Oct 2	+79	23	128	322.3	+22.5	
9	29.04	8/12	24	-64	5	+84	2	10	288.2	+16.3	
22560	30.2	3	24	-77	Sept 26	-50	1	8	273.0	+14.2	
1	30.51	8	24	-80	Oct 1	+10	2	12	268.9	+23.4	2104(2)
2	Oct 2.34	13	26	-79	8	+84	12	72	244.7	+16.6	2094(5)
3	6.4	3	Oct 1	-66	3	-39	3	22	191.0	+18.8	
4	7.01	13	1	-77	13	+82	59	510	183.0	-10.7	2109(1)
22565	5.6	2	4	-16	5	- 3	1	11	202.2	- 8.1	
6	11.44	13	5	-82	17	+75	30	202	124.7	+17.3	
7	12.7	4	7	-72	10	-27	7	41	108.3	-12.4	
8	7.5	2/ 6	8	+11	13	+78	0	3	176.9	+16.1	
9	11.95	9	9	-33	17	+72	10	56	118.0	-12.6	
22570	16.37	10	10	-83	19	+44	28	186	59.6	+ 5.0	
1	17.21	11	12	-66	22	+69	14	86	48.6	+10.0	2107(2)
2	18.47	13	12	-80	24	+76	22	142	31.9	+17.7	2105(2)
3	17.39	7	13	-55	19	+30	4	26	46.1	-13.0	
4	14.1	5/ 6	14	+ 4	19	+71	2	15	89.4	- 9.1	
22575	18.32	9	16	-28	24	+76	17	120	34.0	+ 9.6	
6	21.95	12	16	-79	27	+74	20	139	346.1	+11.6	
7	18.5	2	17	-15	18	- 2	0	4	31.0	+21.2	
8	23.11	8	17	-76	24	+18	7	49	330.7	+12.7	2106(2)
9	25.53	13	19	-79	31	+78	45	284	298.8	+13.8	

GENERAL CATALOGUE OF SUNSPOTS

No. of Group	U.T. of C.M.P.	Duration	First Seen Date	First Seen Long. from C.M.	Last Seen Date	Last Seen Long. from C.M.	Corrected Mean Area Umb.	Corrected Mean Area Whole Spots	Mean Position Long.	Mean Position Lat.	Ref.
	1970	d	1970	°	1970	°			°	°	
22580	Oct 26.66	8	Oct 20	-83	Oct 27	+ 6	3	15	283.9	- 6.4	2108(2)
1	28.3	6	22	-78	27	-14	3	11	262.5	-22.4	
2	28.46	12	22	-81	Nov 2	+62	52	430	260.2	+13.9	
3	23.57	2	23	- 1	Oct 24	+10	1	4	324.6	+ 9.9	
4	29.09	7	23	-73	29	+ 5	4	31	251.8	+17.7	
22585	29.63	13	23	-80	Nov 4	+75	71	494	244.8	+17.1	2094(6)
6	30.10	12	23	-87	3	+58	31	228	238.6	+22.9	
7	24.3	6	25	+15	Oct 30	+82	9	62	315.2	+13.6	
8	Nov 2.18	12	27	-81	Nov 7	+69	29	187	198.0	-10.7	2109(2)
9	Oct 26.8	4	29	+33	1	+74	6	44	281.8	-10.4	
22590	28.0	5	29	+18	2	+68	41	261	266.2	+ 2.7	2110(1)
1	Nov 3.37	8/10	30	-56	8	+71	3	19	182.3	-26.6	
2	3.80	3/ 6	30	-56	4	+ 6	1	5	176.5	+18.9	
3	5.59	12	30	-79	10	+61	16	85	153.0	+22.3	
4	3.5	2	Nov 3	0	4	+11	2	15	180.6	+17.3	
22595	7.47	5/ 6	3	-50	8	+14	1	11	128.2	+16.7	
6	7.41	8	3	-53	10	+39	7	43	129.0	- 8.5	
7	7.84	9	3	-57	11	+48	10	67	123.4	-15.7	
8	7.96	6	3	-59	8	+ 7	7	56	121.7	-10.8	
9	3.4	3	5	+30	7	+46	2	18	181.5	-11.3	
22600	5.46	7	5	- 3	11	+82	11	72	154.7	- 6.4	
1	7.20	2	6	-12	7	+ 1	2	11	131.7	+ 7.1	
2	3.6	3	7	+47	9	+77	4	17	179.3	- 7.6	
3	13.4	5	7	-80	11	-30	5	24	49.9	+13.8	
4	5.7	4	9	+48	12	+83	9	78	151.1	+15.6	2111(1)
22605	14.58	13	9	-66	21	+83	159	1375	34.5	+15.1	2105(3)
6	10.71	2/ 6	10	- 4	15	+60	1	11	85.5	- 8.5	
7	13.3	2	11	-25	12	-12	6	35	51.9	-11.6	
8	16.85	12	11	-76	22	+78	41	234	4.5	-10.3	
9	17.35	11	11	-79	21	+53	25	164	357.9	+ 8.0	
22610	14.9	2	13	-19	14	- 7	2	18	30.3	-23.4	
1	18.33	11	13	-65	23	+71	20	123	345.0	+ 7.8	
2	18.71	12	13	-72	24	+77	53	404	340.0	+ 3.7	2112(1)
3	17.13	10	14	-35	23	+82	31	177	0.9	+15.2	2113(1)
4	12.9	2	16	+48	17	+61	2	30	57.1	- 7.0	
22615	21.65	2/ 6	17	-54	22	+ 9	0	2	301.2	+13.3	
6	24.02	11	18	-71	28	+55	7	38	270.0	+ 3.0	2110(2)
7	24.37	11	18	-76	28	+53	19	106	265.4	+ 9.7	
8	26.32	13	20	-76	Dec 2	+79	34	211	239.7	+17.1	2094(7)
9	20.7	5	22	+20	Nov 26	+76	9	40	313.4	+ 9.3	
22620	18.2	2	23	+74	24	+80	11	66	346.2	+12.8	
1	23.1	4	23	+ 8	26	+45	7	27	282.2	-19.2	
2	29.03	9	23	-71	Dec 1	+30	13	100	203.9	-10.9	2109(3)
3	25.69	7	25	- 5	1	+73	10	61	248.0	+13.7	
4	Dec 2.60	13	26	-79	8	+76	57	382	157.0	+16.4	2114(1)

No. of Group	U.T. of C.M.P.	Duration	First Seen Date	First Seen Long. from C.M.	Last Seen Date	Last Seen Long. from C.M.	Corrected Mean Area Umb.	Corrected Mean Area Whole Spots	Mean Position Long.	Mean Position Lat.	Ref.
	1970/1	d	1970/1	°	1970/1	°			°	°	
22625	Nov 24.9	3	Nov 27	+33	Nov 29	+60	2	15	258.7	- 9.9	
6	30.7	4	27	-43	30	- 6	1	10	181.4	-12.0	
7	Dec 3.4	3	27	-79	29	-55	5	22	146.1	+15.4	2111(2)
8	3.71	13	27	-81	Dec 9	+73	24	175	142.3	+22.0	
9	4.5	3	28	-81	Nov 30	-53	2	7	131.5	-13.7	
22630	4.57	11	28	-85	Dec 8	+51	11	85	131.0	-17.4	
1	4.33	7	29	-69	5	+15	4	28	134.1	+ 5.7	
2	4.80	8	29	-74	6	+20	3	18	127.9	- 8.8	
3	5.60	13	29	-83	11	+75	42	308	117.5	-10.9	
4	Nov 25.9	2	30	+61	1	+73	7	46	245.9	+ 7.3	
22635	Dec 6.78	9	30	-83	8	+20	10	64	101.8	-10.9	
6	3.6	2	Dec 2	-16	3	- 3	2	14	143.2	+ 6.6	
7	10.36	10	4	-72	13	+43	20	122	54.7	-10.6	
8	11.86	13	5	-81	17	+73	63	494	34.9	+14.8	2105(4)
9	14.10	12/13	7	-84	19	+67	46	316	5.4	+12.6	2113(2)
22640	10.32	8	9	-15	16	+80	26	200	55.3	- 5.2	
1	15.6	4	10	-68	13	-26	6	39	346.0	+ 3.1	2112(2)
2	15.5	2	11	-51	12	-45	0	12	347.5	- 5.9	
3	16.1	2	11	-63	12	-49	1	11	339.5	-10.4	
4	15.1	3/ 4	12	-34	15	- 3	1	5	352.0	+ 4.9	
22645	19.67	13	13	-81	25	+75	46	268	292.1	+18.9	2115(1)
6	19.37	3/ 6	14	-65	19	+ 1	1	10	295.9	- 7.4	
7	20.34	13	14	-80	26	+85	63	470	283.1	+13.0	
8	13.4	4	16	+41	19	+79	3	22	14.7	-12.5	
9	18.56	3	18	- 3	20	+26	11	61	306.7	-10.1	
22650	19.51	8	18	-18	25	+82	63	453	294.2	+24.0	
1	24.1	6	18	-75	23	-13	3	25	233.9	+19.1	2094(8)
2	24.64	12	18	-85	29	+63	13	81	226.6	- 9.7	
3	21.65	5	19	-31	23	+19	4	40	265.9	- 9.2	
4	22.7	2	19	-45	20	-29	1	9	251.8	+12.4	
22655	25.53	7	20	-65	26	+ 9	11	63	214.8	+18.6	
6	23.91	5	22	-18	26	+30	4	30	236.2	+25.9	
7	30.12	12	24	-74	Jan 4	+69	27	166	154.4	+14.0	2114(2)
8	29.39	11	25	-55	4	+80	27	141	164.0	+ 9.9	2116(1)
9	27.87	6	26	-22	Dec 31	+48	2	17	184.0	+11.3	
22660	Jan 1.0	5	27	-57	31	- 8	2	12	129.3	+20.2	
1	3.41	13	28	-78	Jan 9	+76	15	110	97.9	+21.5	
2	Dec 27.9	6	29	+18	3	+78	47	307	183.2	-14.1	
3	Jan 3.4	2	29	-65	Dec 30	-54	0	2	98.1	-11.9	
4	4.16	12	30	-63	Jan 10	+83	29	202	88.1	+ 3.4	
22665	2.54	3	Jan 2	- 5	4	+24	3	14	109.3	+19.4	
6	10.32	7	4	-79	10	+ 2	5	36	6.8	+11.4	2113(3)
7	10.26	13	4	-80	16	+83	159	1043	7.7	- 6.2	2117(1)
8	12.92	6	9	-48	14	+22	8	33	332.6	-11.0	
9	15.51	13	9	-81	21	+77	24	141	298.6	+19.5	2115(2)

GENERAL CATALOGUE OF SUNSPOTS

No. of Group	U.T. of C.M.P.	Duration	First Seen Date	First Seen Long. from C.M.	Last Seen Date	Last Seen Long. from C.M.	Corrected Mean Area Umb.	Corrected Mean Area Whole Spots	Mean Position Long.	Mean Position Lat.	Ref.
	1971	d	1971	°	1971	°			°	°	
22670	Jan 9.7	2	Jan 10	+10	Jan 11	+24	1	11	15.4	-19.9	
1	16.2	3	11	-62	13	-36	2	12	289.7	+19.7	
2	16.7	5	11	-72	15	-21	4	27	282.1	-11.0	
3	9.7	3	12	+32	14	+64	2	13	14.6	+ 2.9	
4	15.2	4	12	-38	15	- 2	7	46	303.1	-15.2	
22675	9.3	3	13	+53	15	+77	4	30	19.8	-23.4	
6	18.43	7/12	13	-64	24	+76	2	14	260.0	+12.7	
7	13.7	5	14	+ 8	18	+64	4	31	322.8	+ 9.7	
8	21.23	14	14	-82	27	+79	145	1185	223.1	+17.7	2118(1)
9	22.32	13	16	-75	28	+79	12	88	208.9	+18.2	2119(1)
22680	23.54	12	17	-82	28	+67	26	221	192.8	+ 9.3	
1	23.58	13	17	-83	29	+81	78	607	192.2	-13.0	2120(1)
2	17.2	3	18	+14	20	+40	4	24	275.8	+ 8.4	
3	25.32	9	19	-78	27	+29	9	49	169.3	+13.3	2116(2)
4	26.1	4	20	-76	23	-37	5	28	159.2	+12.6	2114(3)
22685	23.4	2	24	+14	25	+29	1	6	195.3	+ 3.5	
6	30.40	13	24	-80	Feb 5	+79	70	562	102.5	-11.7	2121(1)
7	20.6	2	25	+66	Jan 26	+75	4	39	231.0	+21.6	
8	29.6	2/ 3	25	-54	27	-26	1	6	113.0	- 6.9	
9	29.14	7	26	-39	Feb 1	+41	5	27	119.0	+ 3.4	
22690	23.9	2	27	+49	Jan 28	+60	4	26	188.4	+11.6	
1	28.02	4	27	- 5	30	+30	5	29	133.9	+18.9	
2	Feb 2.07	13	27	-74	Feb 8	+80	134	1164	67.3	+ 6.2	2122(1)
3	Jan 31.19	8	28	-38	4	+60	14	102	92.1	+ 8.4	
4	Feb 3.9	2/ 6	29	-72	3	- 8	1	5	42.8	+22.3	
22695	5.1	7	30	-75	5	0	3	25	27.3	-20.6	
6	6.12	13	31	-73	12	+82	49	290	14.0	- 6.3	2117(2)
7	3.2	6	Feb 4	+16	9	+74	49	220	52.5	+24.4	2123(1)
8	8.2	2	6	-26	7	-12	1	6	346.2	+ 7.9	
9	9.0	2	6	-34	7	-22	1	14	336.6	-38.2	
22700	11.93	9	6	-74	14	+32	5	29	297.5	+18.6	2115(3)
1	3.0	2	7	+58	8	+73	0	8	55.7	-14.7	
2	9.28	8	7	-26	14	+67	16	88	332.5	+14.5	
3	10.7	2	7	-45	8	-26	1	12	314.0	+ 8.2	
4	6.4	4	9	+38	12	+76	2	13	9.8	-22.8	
22705	7.8	3	11	+48	13	+75	6	30	352.0	-14.8	
6	11.4	2	11	+ 2	12	+11	1	6	304.5	- 9.8	
7	17.74	12	11	-81	22	+59	12	77	221.0	+15.7	2118(2)
8	18.16	13	12	-76	24	+80	27	178	215.5	+19.3	2119(2)
9	13.52	2	13	- 3	14	+13	1	6	276.6	+ 7.6	
22710	14.04	7	13	-11	19	+72	30	231	269.8	+13.8	
1	19.21	13	13	-77	25	+83	16	102	201.6	-13.3	2120(2)
2	20.36	13	14	-80	26	+77	9	56	186.5	-13.6	
3	23.84	14	17	-83	Mar 2	+83	66	477	140.6	-17.1	
4	24.85	14	18	-84	3	+84	62	376	127.4	- 7.6	2124(1)

GENERAL CATALOGUE OF SUNSPOTS

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	1971	d	1971	°	1971	°			°	°	
22715	Feb 16.9	4	Feb 19	+32	Feb 22	+71	14	103	232.5	+20.9	
6	19.3	2	19	0	20	+15	0	11	200.8	+10.6	
7	26.36	13	20	-79	Mar 4	+79	15	106	107.5	- 9.6	2121(2)
8	28.94	12	23	-75	6	+72	37	286	73.5	+ 6.7	2122(2)
9	23.3	3	24	+11	Feb 26	+43	3	18	148.1	+ 4.9	
22720	Mar 2.95	12	25	-70	Mar 8	+69	25	159	47.0	+24.9	2123(2)
1	3.87	12	26	-73	9	+74	25	165	34.9	+ 8.2	
2	Feb 25.8	3	28	+33	2	+62	3	12	115.5	+ 1.2	
3	Mar 7.86	8	Mar 1	-83	8	+ 3	4	19	342.3	-12.2	
4	1.9	6	2	+ 6	7	+74	11	57	60.7	-14.7	2125(1)
22725	5.10	5	2	-36	6	+18	4	23	18.6	- 2.7	
6	6.8	2	3	-46	4	-33	2	9	356.2	+14.2	
7	2.6	2	4	+23	5	+36	1	6	51.8	+21.5	
8	13.83	14	7	-84	20	+86	42	300	263.7	-17.3	2126(1)
9	11.25	9	8	-45	16	+73	8	46	297.7	- 8.4	
22730	15.52	12	10	-68	21	+79	16	97	241.4	+18.8	
1	17.48	13	11	-81	23	+77	16	105	215.5	- 4.7	
2	17.9	5/ 6	12	-71	17	-10	1	9	210.2	+19.6	2119(3)
3	17.81	8	12	-73	19	+21	15	88	211.1	+ 6.8	
4	12.5	4	13	+15	16	+48	2	10	281.4	-11.7	
22735	15.3	3	16	+16	18	+40	4	19	244.8	-11.9	
6	16.38	2	16	- 1	17	+12	1	8	230.0	- 6.5	
7	19.0	3	16	-34	18	- 5	2	10	196.1	-20.7	
8	15.6	5	17	+21	21	+79	35	245	240.2	- 5.0	2127(1)
9	18.29	2	17	-13	18	+ 3	1	5	204.8	- 8.0	
22740	21.1	3	17	-51	19	-24	2	15	167.5	+17.2	
1	22.18	7	18	-48	24	+31	9	63	153.5	-15.5	
2	24.21	13	18	-75	30	+81	19	114	126.8	- 8.6	2124(2)
3	22.48	3/ 5	22	0	26	+50	0	6	149.6	+19.7	
4	24.1	2	22	-22	23	-11	3	15	127.7	+31.7	
22745	28.79	12	23	-73	Apr 3	+74	15	99	66.5	-13.9	2125(2)
6	30.89	7	25	-70	Mar 31	+ 5	9	57	38.7	+25.4	2123(3)
7	31.37	13	25	-79	Apr 6	+78	49	345	32.4	-19.2	2128(1)
8	31.71	4	30	-18	2	+24	1	7	27.9	-13.9	
9	Apr 2.43	8	30	-42	6	+53	9	47	5.3	+12.1	
22750	1.3	3/ 4	Apr 1	+ 3	4	+42	0	5	20.8	-11.9	
1	7.3	6/ 7	1	-76	7	- 1	3	15	300.6	+12.8	
2	4.4	3	2	-24	4	- 2	6	31	339.2	-19.3	
3	9.56	13	3	-80	15	+75	19	146	271.1	+15.4	2129(1)
4	Mar 31.9	3	4	+47	6	+71	3	27	25.8	-17.3	
22755	Apr 10.23	11	4	-77	14	+55	8	61	262.3	-14.5	
6	10.4	4/ 6	4	-80	9	-17	0	9	260.0	-19.6	2126(2)
7	4.8	6	5	+ 6	10	+76	32	219	334.4	+11.0	
8	7.42	2/ 4	5	-27	8	+11	0	5	299.4	+18.4	
9	11.53	8	5	-81	12	+11	5	29	245.1	- 3.6	2127(2)

GENERAL CATALOGUE OF SUNSPOTS

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	1971	d	1971	°	1971	°			°	°	
22760	Apr 8.1	2	Apr 8	+ 3	Apr 9	+16	0	6	290.0	+19.2	
1	16.39	13	10	-78	22	+80	33	209	180.9	+ 2.6	2130(1)
2	16.83	13	10	-85	22	+73	39	263	175.1	- 5.9	
3	14.38	9	12	-28	20	+81	35	216	207.5	- 4.1	
4	18.00	12	12	-73	23	+72	16	102	159.7	+18.9	
22765	18.01	12	12	-73	23	+71	47	283	159.6	+ 8.8	
6	18.73	10/11	12	-83	22	+47	10	56	150.0	-18.0	
7	13.71	6	13	- 8	18	+63	15	77	216.3	- 4.1	
8	18.70	9	13	-72	21	+37	6	34	150.5	+ 9.3	
9	18.86	12	13	-75	24	+76	24	178	148.3	+19.2	
22770	15.97	3	14	-19	16	+ 7	2	11	186.5	-14.1	
1	14.2	2	18	+55	19	+68	4	30	210.2	+18.8	
2	24.3	5	18	-77	22	-26	9	50	76.9	-10.9	
3	17.9	2	19	+18	20	+32	1	11	160.7	-15.2	
4	20.62	4	19	-17	22	+22	4	20	125.1	+12.0	
22775	19.6	4	21	+22	24	+64	5	28	138.5	- 9.3	
6	27.5	2	22	-68	23	-56	3	14	33.7	-18.9	2128(2)
7	18.3	2	23	+66	24	+84	14	90	155.9	+ 4.5	2131(1)
8	26.85	8	24	-31	May 1	+58	10	52	42.8	-11.1	
9	27.63	6	24	-42	Apr 29	+22	6	47	32.5	-12.5	
22780	27.84	10	24	-47	May 3	+77	21	121	29.7	+ 6.8	2132(1)
1	26.9	2	25	-16	Apr 26	-11	1	5	42.0	+ 5.6	
2	May 1.13	13	25	-73	May 7	+84	22	136	346.2	- 5.1	
3	4.8	3	29	-74	1	-45	1	9	297.4	-14.8	
4	3.01	3	May 1	-22	3	+ 5	3	21	321.4	+18.5	
22785	6.85	12	2	-61	13	+83	112	789	270.6	+12.9	2129(2)
6	8.12	13	2	-76	14	+84	23	150	253.8	+11.0	
7	8.8	3	3	-73	5	-45	3	18	245.5	-11.1	
8	8.4	2	4	-52	5	-42	2	8	250.8	+14.9	
9	12.74	8	7	-73	14	+22	3	17	192.8	+ 5.3	
22790	13.20	9	7	-78	15	+29	7	53	186.7	+ 4.0	2130(2)
1	15.38	8/ 9	9	-79	17	+24	9	53	157.8	+ 3.1	2131(2)
2	17.32	12	11	-80	22	+68	24	200	132.2	+ 5.1	
3	12.5	5	13	+ 8	17	+63	7	40	195.3	+18.8	
4	14.82	3	13	-19	15	+ 5	0	9	165.3	+ 8.7	
22795	10.7	3	14	+47	16	+80	11	61	220.2	+ 5.1	
6	13.0	3/ 4	15	+32	18	+70	2	19	189.2	- 5.6	
7	16.33	5	15	-14	19	+42	8	41	145.2	+12.4	
8	18.3	2	16	-24	17	-14	3	15	118.7	-15.5	
9	22.87	8	16	-83	23	+ 9	8	48	58.8	+16.6	
22800	24.7	5	18	-80	22	-34	7	43	35.3	+13.5	
1	25.0	3	19	-75	21	-49	1	9	30.3	+ 6.5	2132(2)
2	28.87	11	24	-63	June 3	+75	47	310	339.3	+10.5	2133(1)
3	25.2	5	27	+27	May 31	+78	54	336	27.9	- 8.2	
4	29.63	8	28	-20	June 4	+79	8	44	329.3	+ 9.7	

No. of Group	U.T. of C.M.P.	Duration	First Seen Date	First Seen Long. from C.M.	Last Seen Date	Last Seen Long. from C.M.	Corrected Mean Area Umb.	Corrected Mean Area Whole Spots	Mean Position Long.	Mean Position Lat.	Ref.
	1971	d	1971	°	1971	°			°	°	
22805	June 2.77	8/ 9	May 28	-73	June 5	+39	4	28	274.6	+13.0	2129(3)
6	3.34	9	28	-79	5	+27	2	13	267.0	+ 9.1	
7	May 25.8	2	30	+63	May 31	+73	7	32	19.3	-20.7	
8	June 6.2	4	31	-74	June 3	-41	1	10	228.9	+ 6.5	
9	6.78	13	31	-85	12	+75	24	158	221.5	- 0.0	
22810	3.06	2	June 2	- 7	3	+ 2	0	5	270.7	+18.9	
1	8.39	13	2	-80	14	+75	22	142	200.1	- 5.9	
2	7.57	5	4	-42	8	+13	2	17	211.1	- 2.7	
3	6.7	3	8	+24	10	+47	3	25	222.1	+15.8	
4	12.63	4	11	-16	14	+20	8	39	144.0	+14.8	
22815	14.02	6	14	- 1	19	+70	4	20	125.5	-14.0	
6	20.8	4/ 6	15	-69	20	- 4	2	9	35.4	- 9.3	
7	17.36	6/ 8	16	-17	23	+81	5	31	81.3	-11.9	
8	17.79	5	16	-20	20	+36	4	25	75.7	- 6.1	
9	22.1	2	16	-77	17	-62	3	37	18.6	- 4.5	
22820	14.0	3	17	+45	19	+71	8	49	126.3	+12.4	
1	24.81	12	19	-70	30	+73	9	59	342.8	+10.5	2133(2)
2	24.30	9	20	-46	28	+51	17	103	349.6	-20.4	
3	23.91	3	22	-21	24	+ 7	1	8	354.7	- 2.8	
4	28.45	13	22	-85	July 4	+80	34	203	294.6	+14.9	
22825	25.89	5	24	-20	June 28	+35	5	30	328.5	-16.0	
6	27.78	6	25	-33	30	+34	5	30	303.5	+14.5	
7	26.87	2	26	- 8	27	+ 8	1	5	315.6	+17.4	
8	July 2.52	13	26	-82	July 8	+77	52	342	240.7	- 7.6	2134(1)
9	3.34	13	27	-79	9	+79	89	635	229.9	-14.1	2135(1)
22830	3.41	13	27	-79	9	+78	20	126	229.0	+16.5	
1	3.39	11	28	-67	8	+67	16	99	229.3	-10.6	
2	1.86	6	29	-32	4	+34	15	88	249.5	+ 6.6	
3	3.94	8	29	-60	6	+36	5	32	222.1	-10.7	
4	5.1	3	July 1	-47	3	-19	4	31	206.9	- 9.4	
22835	6.8	3	4	-34	6	- 5	3	20	183.6	-12.5	
6	1.9	2	5	+45	6	+59	1	13	248.8	+11.8	
7	11.19	13	5	-76	17	+60	30	182	126.0	- 7.2	
8	13.67	8	7	-84	14	+11	11	68	93.3	-11.7	
9	16.13	13	10	-77	22	+83	33	194	60.6	+14.9	
22840	18.44	13	12	-80	24	+82	89	546	30.1	+ 5.6	
1	19.69	12	14	-71	25	+75	11	66	13.5	+ 9.7	
2	18.6	3	15	-42	17	-17	2	13	28.4	- 8.5	
3	20.4	4	15	-66	18	-27	6	35	4.2	- 5.5	
4	19.7	3	16	-44	18	-18	4	19	13.1	-16.3	
22845	21.31	10	18	-42	27	+84	56	313	352.1	+13.3	2136(1)
6	22.32	6/ 8	18	-55	25	+42	4	21	338.7	-13.8	
7	20.65	4	19	-18	22	+23	6	35	0.8	+ 7.8	
8	22.7	2/ 4	19	-47	22	- 3	0	2	333.4	- 8.2	
9	24.69	12	19	-76	30	+82	21	121	307.4	+11.9	2137(1)

GENERAL CATALOGUE OF SUNSPOTS

No. of Group	U.T. of C.M.P.	Duration	First Seen Date	First Seen Long. from C.M.	Last Seen Date	Last Seen Long. from C.M.	Corrected Mean Area Umb.	Corrected Mean Area Whole Spots	Mean Position Long.	Mean Position Lat.	Ref.
	1971	d	1971	°	1971	°			°	°	
22850	July 22.30	6	July 21	-14	July 26	+54	2	14	339.0	+15.2	
1	25.85	3/ 7	21	-60	27	+21	0	2	292.0	+15.6	
2	21.2	2/ 5	22	+16	26	+66	1	5	353.4	- 1.7	
3	25.29	7	22	-40	28	+39	5	22	299.5	+20.6	
4	21.0	4	23	+31	26	+69	5	36	356.2	-18.1	
22855	29.61	13	23	-82	Aug 4	+75	13	76	242.3	- 7.5	2134(2)
6	28.6	2	24	-56	July 25	-43	3	15	255.6	-15.8	
7	30.59	13	24	-80	Aug 5	+74	39	237	229.4	-13.8	2135(2)
8	27.12	7	26	-12	1	+74	6	34	275.1	-12.7	2138(1)
9	Aug 1.99	5/ 7	27	-73	2	+ 2	3	16	197.7	+10.0	
22860	2.48	11	27	-82	6	+55	8	49	191.1	+ 6.8	
1	July 25.6	2	30	+61	July 31	+79	5	23	295.6	+26.6	
2	Aug 1.10	4/ 5	30	-22	Aug 3	+29	1	6	209.4	+19.0	
3	4.99	6	31	-61	5	+ 4	8	45	157.9	-25.8	
4	6.77	6/ 7	Aug 1	-71	7	+ 9	2	16	134.4	- 6.6	
22865	9.40	13	3	-80	15	+78	43	245	99.5	- 8.7	2139(1)
6	10.12	10	5	-64	14	+59	22	167	90.1	-11.6	
7	7.59	7	7	- 7	13	+79	22	136	123.5	+12.2	
8	11.18	4/ 5	7	-51	11	+ 3	0	6	76.1	-10.9	
9	5.6	3	8	+36	10	+63	9	49	149.3	+11.1	
22870	13.76	5	10	-44	14	+10	3	21	41.9	+20.8	
1	17.39	8	11	-79	18	+13	11	54	354.1	+13.7	2136(2)
2	13.96	4	12	-25	15	+22	3	19	39.3	+13.2	
3	15.70	6/ 7	14	-15	20	+59	4	30	16.3	-14.8	
4	18.20	7	14	-50	20	+29	3	19	343.3	+14.1	
22875	20.17	13	14	-75	26	+82	25	163	317.2	+12.8	2137(2)
6	21.98	7	16	-75	22	+ 5	6	30	293.3	+16.7	
7	23.73	14	17	-82	30	+81	233	1843	270.2	-12.1	2138(2)
8	21.79	4	20	-20	23	+21	2	16	295.8	+20.1	
9	26.44	12	21	-68	Sept 1	+79	31	189	234.3	- 4.7	2140(1)
22880	22.4	4	23	+12	Aug 26	+53	8	48	287.9	+12.5	
1	26.8	2	23	-46	24	-30	2	7	229.2	- 2.3	
2	Sept 5.5	3	31	-66	Sept 2	-42	1	5	101.3	- 9.2	2139(2)
3	4.01	10	Sept 1	-40	10	+85	54	313	121.2	- 6.3	2141(1)
4	5.81	10	3	-29	12	+83	5	22	97.4	+17.4	
22885	3.4	4	6	+38	9	+78	49	379	128.9	+ 2.5	
6	4.9	2	6	+20	7	+33	3	14	109.7	- 4.3	
7	6.9	2	7	+ 7	8	+20	1	5	83.4	+19.2	
8	9.4	2	7	-28	8	-14	4	24	49.3	+ 2.4	
9	16.31	11	10	-79	20	+53	10	55	318.8	+12.4	2137(3)
22890	13.09	7	12	-10	18	+69	11	62	1.2	-15.6	
1	18.28	13	12	-80	24	+81	9	61	292.7	+12.9	
2	19.20	12	13	-78	24	+70	23	126	280.6	+ 4.6	
3	19.26	10	13	-80	22	+43	34	220	279.8	-11.9	
4	19.75	8	14	-75	21	+24	12	67	273.3	-10.3	2138(3)

GENERAL CATALOGUE OF SUNSPOTS

No. of Group	U.T. of C.M.P.	Duration	First Seen Date	First Seen Long. from C.M.	Last Seen Date	Last Seen Long. from C.M.	Corrected Mean Area Umb.	Corrected Mean Area Whole Spots	Mean Position Long.	Mean Position Lat.	Ref.
	1971	d	1971	°	1971	°			°	°	
22895	Sept 22.1	6	Sept 16	-77	Sept 21	- 9	3	9	242.5	- 2.1	2140(2)
6	22.97	5/ 7	18	-63	24	+20	2	12	230.8	- 5.3	
7	16.9	2	21	+58	22	+74	4	26	311.4	+12.5	
8	25.98	3/10	21	-62	30	+57	1	3	191.1	+12.6	
9	26.00	10	22	-50	Oct 1	+71	18	112	190.8	-14.2	
22900	30.42	13	24	-80	6	+79	78	446	132.5	- 6.2	2141(2)
1	Oct 1.46	9	27	-55	5	+49	16	106	118.8	- 4.9	
2	4.41	13	28	-81	10	+79	54	374	79.8	+10.7	2142(1)
3	4.93	7/10	30	-63	9	+63	2	15	73.0	- 9.0	
4	4.7	3	Oct 1	-44	3	-18	1	9	76.1	+15.8	
22905	4.8	2	6	+20	7	+33	2	12	74.4	+ 6.5	
6	8.9	2	7	-21	8	- 7	2	12	20.6	+20.5	
7	13.6	7	7	-82	13	- 2	3	17	319.1	+11.8	
8	8.82	5	8	- 6	12	+45	3	17	21.7	+10.1	
9	15.27	4/ 6	11	-51	16	+16	4	19	296.6	+11.9	
22910	12.75	5	12	- 7	16	+49	6	30	329.8	-12.5	
1	21.78	13	16	-71	28	+81	161	1157	210.7	+ 8.5	2143(1)
2	17.0	2	17	+ 5	18	+18	3	19	274.2	+ 8.2	
3	23.43	11	19	-55	29	+82	29	169	188.9	+18.1	
4	22.27	3	20	-26	22	+ 2	2	17	204.2	-12.0	
22915	27.68	13	21	-82	Nov 2	+76	54	301	133.0	- 5.4	2141(3)
6	27.96	7	24	-48	Oct 30	+28	6	46	129.1	+11.9	
7	31.67	13	25	-82	Nov 6	+76	48	278	80.3	+11.2	2142(2)
8	Nov 2.0	4	27	-73	Oct 30	-37	8	47	62.9	- 5.9	
9	Oct 30.94	10	28	-31	Nov 6	+83	22	149	89.9	-10.9	2144(1)
22920	Nov 6.53	13	31	-81	12	+76	55	362	3.0	- 9.6	2145(1)
1	6.75	12	31	-83	11	+60	9	67	0.2	-19.1	
2	3.5	2	Nov 1	-26	2	-14	2	8	43.1	- 9.5	
3	5.25	4/ 6	1	-48	6	+17	1	6	19.9	+11.7	
4	6.78	9	1	-71	9	+36	7	45	359.7	+10.7	
22925	9.4	3	7	-23	9	- 1	1	6	325.2	- 7.5	
6	9.32	4	7	-26	10	+17	4	26	326.2	+ 9.5	
7	11.7	3	9	-33	11	- 3	3	18	294.4	- 2.7	
8	12.98	3/ 5	9	-49	13	+ 4	1	6	277.9	-14.9	
9	17.4	5	11	-80	15	-24	7	45	219.5	+ 7.5	2143(2)
22930	14.3	2	12	-26	13	-12	3	13	260.9	-15.7	
1	19.45	13	13	-80	25	+78	82	507	192.7	-13.3	2146(1)
2	20.7	2	16	-59	17	-43	2	11	175.7	-31.4	
3	14.2	4	17	+41	20	+80	11	65	262.4	-11.5	
4	16.8	4/ 5	17	+ 8	21	+55	2	9	227.4	+ 9.1	
22935	23.96	14	17	-84	30	+84	29	181	133.3	- 5.9	2141(4)
6	18.0	2	18	+ 7	19	+20	1	8	211.8	+ 9.1	
7	18.8	4	20	+20	23	+64	2	15	201.8	-12.4	
8	21.1	2	20	- 8	21	- 1	1	13	171.3	+17.4	
9	27.10	11	22	-64	Dec 2	+71	11	68	91.9	- 9.4	2144(2)

GENERAL CATALOGUE OF SUNSPOTS

No. of Group	U.T. of C.M.P.	Duration	First Seen Date	First Seen Long. from C.M.	Last Seen Date	Last Seen Long. from C.M.	Corrected Mean Area Umb.	Corrected Mean Area Whole Spots	Mean Position Long.	Mean Position Lat.	Ref.
	1971/2	d	1971	°	1971/2	°			°	°	
22940	Nov 27.32	11	Nov 22	-66	Dec 2	+68	52	436	89.0	-16.8	2147(1)
1	27.98	12	22	-72	3	+74	50	370	80.3	+13.3	2142(3)
2	24.92	4/ 6	23	-20	Nov 28	+46	1	7	120.6	+13.4	
3	25.2	2	23	-20	24	-11	1	8	117.3	+ 8.7	
4	27.74	9	24	-45	Dec 2	+61	8	48	83.5	- 9.3	
22945	Dec 1.50	7/11	27	-53	7	+79	3	16	33.9	-15.4	
6	3.8	4	28	-72	1	-34	2	7	3.4	-10.5	2145(2)
7	1.28	6	Dec 1	0	6	+67	7	42	36.8	-12.4	
8	6.88	12	1	-74	12	+78	55	410	323.0	- 4.5	2148(1)
9	9.0	2	3	-72	4	-62	0	10	295.1	-14.1	
22950	4.9	6	5	+ 5	10	+77	9	61	349.2	+ 8.9	
1	7.85	8	5	-34	12	+60	5	29	310.3	+10.4	
2	8.48	8/ 9	5	-43	13	+72	4	25	301.9	-13.5	
3	12.32	12	6	-79	17	+67	19	114	251.3	- 2.9	
4	13.10	13	7	-75	19	+80	31	194	241.1	+ 9.1	
22955	9.53	5	8	-15	12	+45	9	52	288.1	+ 6.0	
6	6.1	3	9	+45	11	+72	2	21	333.1	-15.8	
7	9.68	3	9	- 2	11	+24	4	17	286.0	- 7.4	
8	16.61	13	10	-76	22	+76	38	228	194.8	+17.8	
9	17.10	9	11	-73	19	+29	11	61	188.2	-13.7	2146(2)
22960	17.62	12	12	-67	23	+81	26	159	181.4	+12.0	
1	14.6	2	13	-10	14	- 2	2	9	221.7	- 9.0	
2	20.74	7	15	-73	21	+10	9	55	140.4	+ 8.9	
3	21.21	13	15	-78	27	+80	16	100	134.2	- 4.8	2141(5)
4	15.4	2	16	+15	17	+25	1	20	211.1	-14.1	
22965	22.87	13	16	-82	28	+75	50	389	112.3	-14.0	
6	23.3	4	17	-80	20	-37	2	15	106.2	- 5.4	
7	18.1	4	18	+ 4	21	+43	3	18	174.6	- 9.2	
8	24.09	13	18	-74	30	+78	40	339	96.3	-15.3	2147(2)
9	24.73	9/10	19	-70	28	+54	4	25	87.7	-10.3	2144(3)
22970	25.55	4/ 5	23	-28	27	+24	3	19	76.9	-16.6	
1	27.91	8/ 9	23	-59	31	+48	4	19	45.9	-13.2	
2	23.2	2	27	+54	28	+68	1	6	107.5	+15.8	
3	Jan 2.57	10	27	-81	Jan 5	+32	6	44	331.3	+21.7	
4	2.74	14	27	-85	9	+83	24	152	329.2	- 4.0	2148(2)
22975	Dec 31.27	9	28	-42	5	+66	7	57	1.7	- 7.6	
6	27.1	4	30	+42	2	+86	17	90	57.3	-13.9	
7	Jan 3.65	7/11	30	-63	9	+71	4	30	317.2	+10.3	
8	4.7	2	31	-58	1	-45	3	15	303.4	-17.5	

GENERAL CATALOGUE OF SUNSPOTS SEEN ON ONE DAY ONLY

No. of Group	Date 1968		Longitude from C.M. °	U.T. of C.M.P. 1968		Area Corrected for Foreshortening: Umbrae	Area Corrected for Foreshortening: Whole Spots	Position of Group: Long. °	Position of Group: Lat. °
1529 05	Jan	3	- 0.7	Jan	3.5	1	14	163.0	- 1.4
06		5	-55.6		9.8	2	12	79.8	-34.1
07		6	+14.9		5.3	1	20	139.4	-20.2
08		8	- 0.7		8.5	0	7	97.3	-19.4
09		8	-73.1		13.9	0	12	24.9	+10.4
10		10	+54.7		6.2	2	15	126.5	-19.2
11		12	+27.6		10.3	1	6	72.7	-36.6
12		12	+19.8		10.9	0	3	64.8	- 3.6
13		12	-58.3		16.8	0	8	346.8	-10.8
1530 01		16	+81.1		10.3	0	25	72.8	-27.1
02		16	+70.5		11.1	0	14	62.2	-36.0
03		16	- 1.6		16.6	7	49	350.1	-13.8
04		16	-50.7		20.3	4	24	301.0	-32.1
05		17	+16.9		16.2	1	6	355.8	- 0.7
06		19	+28.5		17.4	1	6	339.2	- 1.2
07		19	+ 8.3		19.0	2	13	319.0	-17.5
08		20	-29.8		22.6	1	4	271.6	+ 8.9
09		22	-44.3		25.8	2	17	228.9	+30.4
10		24	-11.0		25.3	1	8	235.9	-26.0
11		27	- 5.2		27.7	1	6	203.8	- 6.8
12		31	-30.1	Feb	2.7	0	8	125.4	+16.6
13	Feb	7	-42.1		10.6	0	14	20.4	+22.7
14		8	+14.1		7.3	0	10	63.9	+ 8.8
15		8	+11.8		7.5	0	4	61.7	-14.0
16		8	- 2.4		8.6	0	5	47.5	+29.1
17		9	-13.9		10.5	3	18	22.4	+24.9
18		11	+13.5		10.3	0	4	25.0	+16.0
1531 01		12	+42.2		9.1	3	18	40.9	-26.8
02		15	+ 2.8		15.2	2	11	320.6	-19.9
03		15	- 2.1		15.6	2	22	315.6	+20.3
04		19	+10.2		18.5	2	16	276.8	-23.2
05		21	-14.0		22.3	2	18	226.5	+ 6.7
06		25	+40.6		22.3	3	21	227.0	-22.8
07		25	+31.0		23.0	1	6	217.3	-14.8
08		25	- 0.8		25.4	1	19	185.5	+ 8.7
09		26	-14.9		27.5	0	3	158.0	-20.2
10		28	+20.9		26.8	0	5	167.7	+19.6
11	Mar	3	+55.0		28.3	0	15	148.5	-11.7
12		5	-11.0	Mar	6.3	2	15	55.5	+18.8
13		6	+ 7.7		5.7	1	8	62.9	+21.6
14		8	+ 4.6		7.9	0	7	34.1	-26.6
1532 01		16	-42.4		19.6	0	6	240.3	-21.4
02		22	+14.2		21.3	0	5	217.9	-20.0
03		25	+ 8.9		24.6	1	7	174.0	+14.2
04		25	-16.2		26.5	3	20	148.9	+19.6
05		29	- 4.6		29.7	1	8	107.0	+22.2
06	Apr	6	+32.1	Apr	3.9	3	22	37.9	+19.1
07		6	+ 2.8		6.2	0	6	8.6	-31.0
1533 01		9	+38.7		6.4	3	12	5.2	+ 9.1
02		10	- 1.2		10.4	2	10	312.3	+16.7
03		12	- 7.7		12.9	2	20	279.5	+14.1

GENERAL CATALOGUE OF SUNSPOTS SEEN ON ONE DAY ONLY

No. of Group	Date 1968		Longitude from C.M. °	U.T. of C.M.P. 1968		Area Corrected for Foreshortening: Umbrae	Area Corrected for Foreshortening: Whole Spots	Position of Group: Long. °	Position of Group: Lat. °
1533 04	Apr	15	-36.6	Apr	18.3	6	41	207.9	-23.2
05		15	-75.1		21.3	0	26	169.3	- 4.9
06		16	-34.8		19.0	3	28	199.7	+11.2
07		16	-69.0		21.5	0	12	165.6	-12.9
08		17	- 9.3		18.1	2	21	211.7	+13.4
09		20	+ 8.1		19.9	1	6	187.6	+ 9.7
10		20	-47.9		24.1	0	11	131.6	-25.9
11		21	-30.6		23.6	1	8	138.0	+10.9
12		23	+ 6.2		22.9	2	16	147.8	+ 6.5
13		24	+25.9		22.4	3	23	154.2	-34.2
14	May	2	-25.5	May	4.3	0	4	357.4	- 2.0
15		2	-58.9		6.8	0	4	324.0	-13.3
16		3	-37.9		6.5	3	14	327.9	-39.1
1534 01		4	+13.7		3.4	3	11	9.4	+31.8
02		5	-21.4		7.0	1	10	321.2	-15.9
03		12	- 7.1		12.9	0	5	243.2	-28.1
04		15	+30.4		13.1	2	12	241.1	+27.8
05		15	-10.0		16.1	2	14	200.7	+17.5
06		16	+21.8		14.4	1	14	222.9	+14.1
07		20	+23.3		18.6	3	15	168.1	-13.8
08		21	-35.2		24.0	6	27	96.6	-21.9
09		23	-65.2		28.3	0	13	40.0	+30.2
10		24	+ 8.7		23.7	1	8	100.6	-26.2
11		25	-19.4		26.8	1	12	59.6	-12.8
12		27	-24.5		29.3	1	6	26.9	-12.8
13		29	+ 9.2		28.7	2	16	34.8	+17.4
1535 01	June	1	+25.6		30.4	1	8	11.7	+13.1
02		2	+14.6	June	1.3	1	8	346.2	+ 5.4
03		2	-17.8		3.8	0	5	313.8	+20.0
04		5	+63.2	May	31.8	0	8	352.7	+18.0
05		10	-10.2	June	11.2	2	12	216.0	-10.0
06		12	+12.4		11.4	2	14	212.7	-16.3
07		12	-22.1		14.0	1	10	178.2	- 6.4
08		13	+55.0		9.2	0	7	241.6	+30.9
09		14	+21.8		12.7	1	10	195.7	+18.9
10		14	-28.7		16.5	3	15	145.2	+29.4
11		18	-17.5		19.8	3	13	102.3	-22.9
12		20	+ 0.3		20.3	1	10	95.0	+27.2
13		24	+42.7		21.1	3	16	84.4	+ 2.6
14		24	- 1.4		24.4	3	11	40.3	-23.1
15		24	-56.8		28.6	2	7	345.0	+21.3
16		26	+37.0		23.5	0	5	52.1	-21.4
1536 01		30	- 2.5		30.6	1	21	319.3	-33.4
02	July	3	-26.3	July	5.4	3	21	256.0	-12.1
03		7	-52.3		11.4	0	8	176.3	+ 6.8
04		8	- 6.0		8.9	7	26	209.1	-11.2
05		8	-71.1		13.8	0	11	144.0	+26.3
06		9	+70.0		4.1	0	23	271.8	+16.8
07		12	-33.1		14.9	2	7	130.1	-29.6
08		14	-60.0		19.0	0	5	75.2	+23.6
09		15	+18.6		13.9	0	2	142.2	+18.0
10		15	+ 2.4		15.2	3	14	126.1	-28.2

No. of Group	Date		Longitude from C.M.	U.T. of C.M.P.		Area Corrected for Foreshortening: Umbrae	Area Corrected for Foreshortening: Whole Spots	Position of Group: Long.	Position of Group: Lat.
	1968		°	1968				°	°
1536 11	July	16	+ 9.1	July	15.8	0	11	118.0	+34.7
12		16	- 0.3		16.5	1	8	108.6	+30.3
13		16	-16.7		17.7	0	5	92.3	+20.0
14		17	-11.2		18.3	0	7	85.0	+17.8
15		19	+25.5		17.4	0	12	96.5	- 6.7
16		19	+12.2		18.4	0	5	83.2	+21.7
17		19	- 6.3		19.8	0	9	64.7	-12.6
1537 01		26	+16.6		25.1	6	22	354.5	-24.8
02		26	+ 2.3		26.2	0	1	340.2	+15.6
03		26	-53.8		30.4	0	8	284.1	-12.1
04		27	+26.7		25.3	0	5	351.5	-18.2
05		29	+69.8		24.1	0	14	8.3	-11.0
06		29	+10.5		28.6	1	12	308.9	+ 7.8
07		31	- 3.2		31.6	0	9	268.6	+ 7.1
08	Aug	2	+ 8.0	Aug	1.9	2	14	251.0	+16.6
09		5	+ 1.6		5.2	4	22	207.8	-11.3
10		8	+24.6		6.8	0	9	187.2	+ 9.1
11		8	-28.2		10.8	0	3	134.4	-14.5
12		8	-33.4		11.1	0	3	129.3	+11.1
13		8	-45.9		12.1	2	14	116.8	+31.4
14		10	-20.6		11.9	0	2	118.9	+14.2
15		11	+46.2		7.9	6	31	171.5	-21.1
16		17	- 2.4		17.5	3	11	45.2	-21.8
17		19	-43.3		22.6	2	5	337.3	+ 9.6
1538 01		21	-36.8		24.2	3	11	316.2	+ 7.1
02		22	+59.0		17.9	0	9	39.9	- 8.9
03		24	+51.0		20.5	2	9	5.7	+13.5
04		27	+36.8		24.6	0	12	311.1	-46.1
05		27	-46.1		30.9	0	8	228.2	- 3.7
06		29	+41.8		26.2	3	10	290.7	+20.3
07		29	+31.5		26.9	1	7	280.4	+20.2
08		30	+21.6		28.8	1	5	255.7	- 8.5
09	Sept	1	+33.5		29.6	1	5	245.7	- 6.6
10		4	+50.9		31.5	2	18	220.6	+23.5
11		6	+ 4.1	Sept	6.1	1	9	145.8	+11.5
12		8	-12.3		9.2	0	8	104.8	+22.8
13		9	+30.1		7.1	2	9	133.6	-23.5
14		10	-64.3		15.2	0	10	26.0	+14.5
15		12	-28.1		14.4	1	7	36.0	-17.9
16		13	+40.8		10.2	0	6	91.5	+13.1
17		14	+45.1		10.9	3	18	82.8	+ 6.4
1539 01		19	-50.5		23.2	2	11	280.4	- 7.9
02		23	-50.0		27.1	0	10	228.9	+15.6
03		27	- 9.0		28.0	1	6	216.8	-13.8
04		28	- 7.0		28.9	1	7	205.4	+ 6.5
05		29	+48.1		25.8	3	14	246.8	- 5.7
06		29	-14.0		30.5	1	7	184.7	+ 7.8
07		29	-29.4	Oct	1.6	3	16	169.3	- 8.8
08	Oct	2	+46.5	Sept	28.9	2	22	205.8	-18.3
09		2	-50.4	Oct	6.2	0	4	108.9	-21.1
10		7	+ 7.7		6.8	1	8	100.9	- 9.5
11		9	-29.7		11.3	2	15	41.2	-12.4

GENERAL CATALOGUE OF SUNSPOTS SEEN ON ONE DAY ONLY

No. of Group	Date		Longitude from C.M.	U.T. of C.M.P.		Area Corrected for Foreshortening: Umbrae	Area Corrected for Foreshortening: Whole Spots	Position of Group: Long.	Position of Group: Lat.
	1968/9		°	1968/9				°	°
1539 12	Oct	10	+25.4	Oct	8.5	0	7	78.9	-17.5
13		11	+ 1.0		11.2	2	12	42.6	0.0
14		12	+73.7		6.8	15	63	101.4	-16.4
15		12	+17.3		11.1	2	12	44.9	-17.6
16		13	-65.5		18.4	0	5	307.8	+29.0
17		14	- 5.9		14.8	2	15	355.8	-16.9
1540 01		16	-43.8		19.7	0	6	290.2	+23.3
02		21	-58.3		25.8	0	8	210.3	+14.2
03		23	-14.4		24.6	2	7	226.3	+ 6.0
04		25	-22.3		27.1	0	7	193.2	+17.4
05		30	+47.7		26.8	2	7	197.1	+15.8
06		31	+63.3		26.6	0	10	199.7	+13.3
07	Nov	5	+56.4	Nov	1.2	4	24	125.6	+14.0
08		8	+ 6.4		7.8	0	6	38.6	- 6.0
1541 01		15	+ 0.9		15.3	1	5	299.5	+27.4
02		18	-57.4		22.6	0	4	203.2	- 9.4
03		20	+54.5		16.4	4	34	286.2	-25.2
04		20	+27.8		18.4	0	9	259.5	+13.0
05		22	-57.6		26.7	2	9	149.2	-19.8
06		25	+29.5		23.1	1	11	197.9	+14.3
07	Dec	1	+18.0		30.0	1	5	106.9	-14.0
08		4	+57.8		30.0	4	16	106.4	+ 5.5
09		4	+10.8	Dec	3.6	3	22	59.5	- 1.8
10		5	+22.3		3.6	1	8	58.9	+ 4.2
11		7	+ 3.6		7.2	2	6	10.9	-15.0
1542 01		11	-39.9		14.3	0	7	277.2	+20.9
02		16	-61.8		21.1	0	23	188.0	-15.8
03		20	+63.8		15.4	0	9	262.9	- 8.6
04		20	-62.3		25.0	0	5	136.8	+27.3
05		21	+77.3		15.6	5	43	260.7	+16.1
06		22	+14.0		21.4	0	7	183.8	-22.6
07		26	+11.8		25.7	0	9	128.1	+12.2
08		28	-53.5	Jan	1.5	0	6	37.6	-17.3
1543 01	Jan	7	-49.0		11.2	2	11	270.7	-35.7
02		12	+23.3		10.3	2	10	281.9	-15.4
03		13	+70.1		8.2	3	17	310.6	+10.5
04		14	-35.1		17.1	1	18	192.4	+ 7.6
05		22	+ 5.1		21.9	0	4	129.4	+12.7
06		23	+50.8		19.4	0	14	162.0	+14.0
07		25	+52.5		21.5	2	39	134.6	+22.9
1544 01	Feb	2	-78.8	Feb	8.4	0	10	258.8	-14.1
02		5	-30.4		7.6	1	10	269.6	-14.3
03		6	+68.7		1.1	0	6	355.5	-28.2
04		6	-15.9		7.5	2	19	270.8	-17.4
05		14	-60.8		19.0	0	16	119.0	+21.2
06		15	-28.2		17.4	0	6	139.9	+14.7
07		16	- 6.7		16.8	1	10	148.4	+20.4
08		16	-10.7		17.1	0	5	144.4	+11.3
09		16	-32.2		18.7	3	14	122.9	+26.6
10		17	+ 6.7		16.9	0	3	147.3	-10.8

GENERAL CATALOGUE OF SUNSPOTS SEEN ON ONE DAY ONLY

No. of Group	Date		Longitude from C.M.	U.T. of C.M.P.		Area Corrected for Foreshortening: Umbrae	Area Corrected for Foreshortening: Whole Spots	Position of Group: Long.	Position of Group: Lat.
	1969		°	1969				°	°
1544 11	Feb	25	+23.9	Feb	23.5	3	12	60.5	+20.9
1545 01	Mar	7	+17.2	Mar	6.0	2	17	281.5	+10.8
02		13	-17.4		14.7	2	13	167.7	-13.1
03		15	+ 1.3		15.2	0	2	160.6	-11.7
04		17	-26.5		19.5	2	17	104.1	- 7.1
05		18	-38.6		21.4	3	11	79.3	-20.1
06		20	-50.6		24.1	2	17	42.7	- 0.3
07		21	+39.6		18.6	0	5	115.6	+13.2
08		22	+14.4		21.4	0	5	78.7	-31.1
09		23	-70.0		28.7	0	12	342.0	-27.7
10		24	+ 8.7		23.7	1	13	48.3	+23.7
11		24	-54.3		28.5	2	4	345.3	-16.1
12		25	-59.4		29.9	2	9	326.8	-19.3
13		25	-64.8		30.3	5	19	321.4	-32.6
1546 01		28	+67.7		23.2	0	6	55.2	-13.3
02		28	+12.3		27.4	3	13	359.9	+22.0
03		28	+ 8.0		27.7	2	23	355.6	-12.9
04		28	-52.9	Apr	1.3	0	7	294.6	-19.1
05	Apr	2	+25.9	Mar	31.4	1	7	307.3	- 9.1
06		3	+20.1	Apr	1.8	2	13	288.6	+10.1
07		4	-35.1		7.1	2	13	219.2	+24.9
08		9	-51.3		13.2	2	19	137.9	+ 7.0
09		11	+13.1		10.6	1	14	172.2	-23.3
10		14	+11.9		13.4	2	17	135.1	-22.8
11		15	-56.3		19.6	2	4	53.3	-34.8
12		15	-59.4		19.9	2	20	50.2	-12.4
1547 01		24	+29.4		22.1	0	5	20.8	+14.6
02		28	+61.5		23.6	2	16	0.2	-11.8
03	May	1	+24.8		29.6	4	25	281.7	-14.6
04		2	+59.7		27.9	0	5	304.2	+10.7
05		2	+22.1		30.7	3	13	266.6	-19.5
06		4	+11.0	May	3.8	0	5	226.1	+10.4
07		6	+63.8		1.6	0	15	254.4	-16.2
08		8	-58.8		12.8	0	9	107.1	- 7.3
09		10	-44.0		13.6	2	12	96.2	-13.6
10		14	+28.6		12.2	3	16	115.5	-17.4
1548 01		30	+51.8		26.6	4	15	285.0	-18.2
02		31	+58.3		26.9	0	7	279.8	-19.7
03	June	6	+54.2	June	2.2	4	26	196.6	+ 9.4
04		15	-71.7		20.8	0	18	310.8	+11.6
05		16	-39.7		19.7	2	6	326.1	-10.4
1549 01		18	- 8.9		19.0	3	17	334.6	-24.1
02		20	-68.0		25.5	3	18	249.2	+10.5
03		22	-21.8		24.0	1	15	268.7	+15.6
04		23	+23.0		21.6	1	5	299.9	+17.3
05		26	-43.8		29.6	2	13	194.0	+10.2
06		27	+25.1		25.5	1	11	248.9	-17.4
07		29	-72.9	July	4.9	0	16	124.5	+28.1
08	July	3	+16.2		2.2	0	1	160.1	-16.5
09		7	+ 7.0		6.9	0	3	97.5	+ 4.3

GENERAL CATALOGUE OF SUNSPOTS SEEN ON ONE DAY ONLY

No. of Group	Date		Longitude from C.M.	U.T. of C.M.P.		Area Corrected for Foreshortening: Umbrae	Area Corrected for Foreshortening: Whole Spots	Position of Group: Long.	Position of Group: Lat.
	1969		°	1969				°	°
1549 10	July	12	+14.3	July	11.2	0	4	40.5	+21.8
11		13	+37.6		10.5	3	22	50.1	-26.7
1550 01		15	- 0.3		15.5	0	8	344.6	-22.6
02		15	-59.8		20.0	0	5	285.1	+27.7
03		17	+31.1		15.0	0	4	350.6	-18.4
04		22	+47.1		18.9	0	3	299.0	+21.0
05		22	-62.2		27.2	0	12	189.7	+20.8
06		26	+75.3		20.7	4	35	274.9	+ 9.2
07		27	- 2.7		27.6	0	2	184.5	-10.5
08		30	+34.3		27.7	0	3	182.2	+23.9
09		31	-29.1	Aug	2.7	0	13	102.8	+ 5.9
10	Aug	1	-25.1		3.4	0	5	93.5	-12.6
11		4	-33.5		6.9	1	17	48.1	- 8.7
12		5	+54.5		1.2	0	4	123.0	+ 3.9
13		7	-16.3		8.6	0	3	25.8	-19.2
14		7	-43.8		10.6	0	3	358.3	+11.8
15		9	-34.7		11.9	3	11	341.1	+17.9
1551 01		10	+10.0		9.8	1	9	9.9	+17.6
02		11	+27.1		9.3	1	5	15.5	+ 6.2
03		12	+62.6		7.6	5	15	38.1	+13.5
04		14	+ 7.0		13.8	0	3	316.4	+13.3
05		18	-15.1		19.5	0	3	241.7	-17.8
06		22	+26.2		20.4	1	8	228.8	+19.4
07		22	-64.1		27.3	0	5	138.5	- 3.7
08		23	+48.7		19.7	0	2	238.7	-16.2
09		26	+33.3		23.8	1	12	183.9	+17.1
10		26	-30.5		28.7	0	6	120.1	-17.1
11		30	+ 1.7		30.3	1	8	98.9	+14.5
12		31	-64.2	Sept	5.2	0	20	20.2	+13.6
13	Sept	1	+ 4.5		1.0	1	11	75.6	+14.4
1552 01		7	+35.0		4.7	0	1	27.0	+ 5.4
02		7	-27.0		9.4	2	5	325.0	-27.8
03		8	+67.9		3.2	6	40	47.1	-12.3
04		8	-24.3		10.2	3	6	314.9	+16.2
05		11	+ 0.1		11.3	2	11	299.9	+ 9.3
06		16	+14.0		15.6	4	26	243.6	-14.9
07		17	+17.4		16.1	1	10	237.1	+26.7
08		17	+11.8		16.5	1	7	231.5	+ 5.5
09		17	-13.0		18.4	2	9	206.7	- 5.2
10		18	+23.7		16.5	0	3	231.1	-12.6
11		22	-62.1		27.2	2	14	90.3	+ 0.9
12		23	-13.6		24.7	1	7	123.1	+11.8
13		27	-78.6	Oct	3.3	7	27	10.2	-13.8
14		28	- 1.6	Sept	28.5	1	5	73.1	+36.3
15		28	-21.0		30.0	0	4	53.7	+16.0
16		30	- 1.1		30.4	1	11	47.7	-29.4
17	Oct	1	+23.4		29.7	2	29	56.6	+ 9.9
18		2	-18.1	Oct	3.8	0	5	2.4	+25.9
19		3	- 7.0		3.8	0	2	2.6	+17.4
1553 01		9	+ 1.3		9.2	1	17	291.2	+27.1
02		11	+44.2		8.1	0	5	306.4	- 6.9

No. of Group	Date	Longitude from C.M.	U.T. of C.M.P.	Area Corrected for Foreshortening: Umbrae	Area Corrected for Foreshortening: Whole Spots	Position of Group: Long.	Position of Group: Lat.
	1969/70	°	1969/70			°	°
1553 03	Oct 12	-44.0	Oct 15.6	0	6	206.8	+ 2.9
04	14	+55.7	10.2	0	4	278.1	+26.7
05	14	+23.5	12.7	2	15	245.8	- 7.2
06	18	-11.9	19.4	1	9	157.3	+10.8
07	18	-21.3	20.1	1	7	147.9	+20.1
08	19	+ 5.8	18.9	0	8	164.3	- 2.5
09	20	+73.5	14.8	0	15	218.0	+20.9
10	20	+10.3	19.6	0	8	154.8	- 2.7
11	20	+ 8.5	19.7	2	11	153.0	+ 4.4
12	20	-17.8	21.7	0	8	126.7	+27.9
13	20	-29.6	22.6	3	23	114.9	+14.5
14	21	+ 4.8	21.0	0	3	136.0	+ 7.5
15	22	-17.1	23.8	1	21	98.9	- 1.2
16	23	+28.3	21.2	1	15	133.1	- 6.4
17	23	- 2.5	23.6	1	5	102.4	- 6.8
18	27	-53.7	31.5	0	10	358.1	+25.3
1554 01	Nov 8	-44.9	Nov 11.9	2	10	207.4	-17.2
02	15	+ 7.1	15.1	1	12	165.5	-14.7
03	19	-23.1	21.2	2	12	84.3	-10.2
04	26	+61.1	21.8	7	44	76.8	-12.8
1555 01	28	+44.2	25.1	3	17	33.7	+16.1
02	28	+31.7	26.0	1	11	21.2	+26.1
03	Dec 7	+54.0	Dec 3.2	0	4	286.4	-21.7
04	7	+ 2.0	7.2	2	19	234.4	+14.0
05	7	-15.2	8.5	0	5	217.3	-20.7
06	8	- 0.9	8.5	0	5	216.2	-25.3
07	8	- 5.0	8.8	2	27	212.2	+23.5
08	10	+28.8	8.1	0	4	222.1	+26.0
09	15	+65.8	10.6	0	8	189.4	+16.9
10	15	- 3.9	15.9	0	4	119.7	+26.7
11	16	+79.9	10.4	6	95	191.6	+18.5
12	18	+21.3	16.8	0	5	107.4	-11.6
13	18	-24.1	20.2	2	10	62.0	-14.6
14	20	+14.9	19.2	0	9	76.4	+15.7
15	21	-49.1	25.0	0	10	358.7	- 3.8
1556 01	25	- 0.3	25.5	2	14	352.5	+16.6
02	25	- 4.6	25.8	0	12	348.2	+24.7
03	25	-45.6	29.0	0	28	307.2	+23.9
04	25	-55.0	29.7	2	8	297.8	-23.4
05	27	+34.5	24.8	0	10	1.7	- 2.4
06	27	+30.8	25.1	3	13	357.9	- 1.6
07	Jan 1	+24.6	30.6	1	8	285.2	+20.1
08	11	+25.4	Jan 9.5	1	7	154.8	-12.0
09	11	-31.9	13.9	3	20	97.5	+ 9.5
10	17	-33.3	19.9	0	7	18.7	- 7.3
11	17	-55.1	21.5	4	22	357.0	-13.2
12	19	-23.7	21.1	5	29	2.7	+16.4
1557 01	24	-37.2	27.3	3	11	280.7	-13.5
02	27	+54.0	23.3	2	9	333.1	-22.9
03	Feb 3	-21.1	Feb 5.0	0	7	165.9	+22.8
04	4	-13.3	5.4	1	7	160.4	+13.8

GENERAL CATALOGUE OF SUNSPOTS SEEN ON ONE DAY ONLY

No. of Group	Date	Longitude from C.M.	U.T. of C.M.P.	Area Corrected for Foreshortening: Umbrae	Area Corrected for Foreshortening: Whole Spots	Position of Group: Long.	Position of Group: Lat.
	1970	°	1970			°	°
1557 05	Feb 4	-60.5	Feb 9.0	0	13	113.1	-13.4
06	5	+47.1	1.9	0	11	206.8	+ 4.7
07	5	-34.1	8.1	3	28	125.5	- 3.1
08	6	-39.7	9.5	0	6	107.5	-12.3
09	8	-24.9	10.3	2	16	96.6	+ 3.5
10	9	+ 1.9	9.3	0	7	109.7	-32.4
11	11	+15.9	10.2	0	6	97.6	-15.0
12	13	-31.5	15.8	1	11	23.9	+13.2
13	14	+ 3.6	14.2	0	10	45.8	-30.8
14	16	+59.5	11.9	3	13	75.9	+21.8
15	16	+15.1	15.2	0	11	31.4	- 7.7
16	17	+36.7	14.7	3	11	39.2	-13.8
1558 01	18	+48.5	14.7	2	26	38.8	- 1.2
02	23	- 7.1	23.9	3	19	276.8	+ 1.9
03	28	+29.9	26.1	0	6	248.0	+ 4.7
04	Mar 6	-15.2	Mar 7.5	2	14	124.5	-23.0
05	7	+71.9	1.9	6	38	198.8	-21.2
06	9	-38.7	12.3	0	12	61.3	+15.3
07	12	-15.3	13.6	0	2	44.8	- 8.8
08	13	- 3.0	13.5	0	5	44.9	+13.6
09	16	+68.1	11.1	0	8	76.7	-20.2
1559 01	26	+22.2	24.6	0	5	258.7	-24.4
02	28	+28.2	26.2	0	7	237.5	+20.4
03	Apr 1	+24.6	30.5	2	11	182.0	-11.8
04	1	- 1.3	Apr 1.4	1	13	156.2	+12.3
05	1	-61.2	6.0	0	15	96.2	+12.8
06	2	-19.6	3.8	0	7	124.4	- 7.9
07	3	+69.6	Mar 29.0	0	7	200.8	+ 9.6
08	3	-14.3	Apr 4.4	0	4	116.8	- 2.6
09	3	-31.0	5.7	0	3	100.2	-14.6
10	7	-43.9	10.6	0	2	34.5	-16.7
1560 01	16	+27.2	14.3	0	8	346.7	+15.7
02	16	-57.4	20.7	0	4	262.1	- 3.6
03	17	+26.0	15.4	0	5	332.2	-10.8
04	24	+55.6	20.2	0	12	267.9	-26.1
05	27	- 3.2	27.6	0	9	170.6	-28.4
06	27	-28.9	29.5	0	5	145.0	-15.2
07	29	+ 0.8	29.3	0	5	148.0	+12.0
08	May 1	-64.3	May 6.2	0	6	56.4	+15.4
09	4	+18.4	3.0	0	5	98.7	+11.7
10	6	-11.1	7.2	0	5	43.8	-17.2
11	10	+53.3	6.2	2	13	56.1	+27.2
1561 01	12	- 0.8	12.4	0	5	334.6	-20.2
02	15	+30.0	13.1	0	3	325.0	+ 8.4
03	17	+ 3.9	17.0	0	9	273.4	+11.0
04	18	+61.5	13.7	0	5	317.4	+19.4
05	25	+28.1	23.3	0	13	190.6	+24.5
06	25	-70.9	30.8	4	14	91.6	+15.0
07	26	-67.3	31.5	0	13	82.6	+17.1
08	28	-10.2	29.1	1	7	113.8	+16.3
09	29	+58.6	24.9	5	23	168.9	+20.0

GENERAL CATALOGUE OF SUNSPOTS SEEN ON ONE DAY ONLY

No. of Group	Date	Longitude from C.M.	U.T. of C.M.P.	Area Corrected for Foreshortening: Umbrae	Area Corrected for Foreshortening: Whole Spots	Position of Group: Long.	Position of Group: Lat.
	1970	°	1970			°	°
1561 10	May 31	+71.1	May 26.2	4	30	152.6	+22.2
11	June 3	-42.2	June 6.5	3	16	2.3	-10.5
12	5	+73.8	May 30.7	0	17	91.9	+12.4
13	5	-15.6	June 6.5	0	14	2.5	- 2.3
1562 01	7	+36.8	4.6	1	4	28.2	- 8.0
02	9	-15.6	10.5	1	5	309.7	-10.4
03	10	-13.0	11.3	0	2	299.0	+ 0.2
04	10	-13.4	11.3	1	10	298.6	-10.9
05	10	-27.2	12.4	0	3	284.8	- 4.0
06	14	+81.3	8.2	8	23	339.9	+14.6
07	15	-43.9	18.7	2	7	201.6	-29.1
08	17	-39.2	20.5	0	6	177.4	-19.5
09	20	- 6.6	21.2	2	12	168.4	+15.1
10	24	+ 4.0	23.8	1	6	133.7	- 6.6
11	24	-23.3	25.9	0	7	106.4	- 8.4
12	25	+72.3	19.8	4	30	185.9	+ 4.0
13	29	-58.6	July 3.8	0	2	2.1	+16.4
14	29	-71.2	4.7	4	14	349.5	+10.9
15	30	-47.7	4.0	0	5	358.7	-14.5
16	July 1	+74.1	June 25.7	5	18	107.7	-14.4
17	2	-55.3	July 6.5	2	23	325.4	-15.9
1563 01	5	+15.9	4.3	0	3	354.6	-14.7
02	6	+45.8	3.0	0	3	12.3	+12.0
03	8	+28.9	6.2	4	16	329.2	+ 3.4
04	17	+37.4	14.7	0	12	216.8	+14.4
05	18	-46.2	21.9	0	7	121.9	-16.1
06	21	+68.6	16.2	0	6	197.1	+ 2.3
07	21	+13.6	20.4	0	3	142.0	+25.3
08	23	+61.3	18.7	0	8	164.3	-18.8
09	24	+50.0	20.5	0	2	140.2	-16.3
10	24	-60.7	28.9	0	12	29.5	+23.6
11	27	+52.1	23.7	0	4	97.8	+10.7
12	28	-26.5	30.6	0	1	6.7	+11.0
1564 01	31	+13.1	30.3	0	5	10.2	+ 8.7
02	Aug 4	- 0.7	Aug 4.4	0	5	303.4	+20.5
03	5	+ 0.3	5.3	0	2	291.3	+22.5
04	5	-34.3	7.9	3	14	256.7	+ 3.3
05	18	+13.6	17.3	0	1	132.9	+20.6
06	18	-21.3	19.9	1	6	98.0	- 0.1
07	19	-69.9	24.6	4	12	36.1	-18.7
08	22	-39.9	25.4	0	10	25.7	+12.6
09	23	+49.6	19.6	0	3	102.6	+10.5
10	25	-48.2	29.2	2	14	335.2	+ 6.5
11	26	+48.5	22.6	3	13	62.1	-39.1
1565 01	27	-64.7	Sept 1.3	0	6	295.0	-12.6
02	28	+66.5	Aug 23.3	0	6	53.5	+ 5.6
03	Sept 1	-24.5	Sept 3.2	1	8	269.8	-20.2
04	4	+66.2	Aug 30.4	0	3	319.0	-12.2
05	8	+ 4.6	Sept 8.0	1	8	205.8	+25.1
06	20	-30.0	22.6	0	4	13.3	-15.0
07	22	+17.7	21.0	0	4	33.9	-23.4

GENERAL CATALOGUE OF SUNSPOTS SEEN ON ONE DAY ONLY

No. of Group	Date	Longitude from C.M.	U.T. of C.M.P.	Area Corrected for Foreshortening: Umbrae	Area Corrected for Foreshortening: Whole Spots	Position of Group: Long.	Position of Group: Lat.
	1970/1	°	1970/1			°	°
1565 08	Sept 22	-16.5	Sept 23.6	1	8	359.7	+10.2
09	22	-76.6	28.2	0	4	299.6	+15.5
1566 01	Oct 2	+15.5	Oct 1.2	1	6	259.7	+21.6
02	2	- 2.6	2.6	0	4	241.6	+20.4
03	6	+63.6	1.6	0	5	253.9	- 7.8
04	14	-26.2	16.5	0	6	58.0	- 7.6
05	14	-30.3	16.8	1	7	53.9	-12.8
1567 01	23	-34.6	26.1	1	4	290.7	+26.2
02	25	+19.5	23.9	1	10	320.1	+17.5
03	26	+25.2	24.5	4	17	312.1	+17.9
04	28	+21.7	26.7	4	18	283.6	+18.4
05	Nov 3	+29.2	Nov 1.3	1	8	209.4	- 9.1
06	7	+ 4.3	6.9	0	1	135.1	- 7.4
07	11	+64.2	6.5	0	5	141.7	+20.6
1568 01	21	-37.9	24.2	0	3	268.1	+19.4
02	22	+16.0	21.2	1	10	307.1	+15.4
03	22	-58.8	26.9	0	6	232.2	+ 9.8
04	24	+34.6	21.8	1	10	299.0	-17.6
05	28	+17.7	27.0	1	6	231.1	+23.1
1569 01	Dec 18	+22.5	Dec 16.6	1	8	332.4	-12.2
02	19	-41.3	22.4	2	11	255.5	-14.6
03	23	+38.9	20.2	0	5	285.7	- 9.8
04	24	-17.0	25.8	0	4	211.0	-27.8
05	26	-22.3	28.0	2	17	182.4	-22.9
06	29	+57.2	25.0	0	2	221.3	- 5.7
07	29	+55.9	25.1	2	6	220.0	-11.1
08	Jan 8	-15.6	Jan 9.6	1	13	16.0	+ 6.8
1570 01	11	+ 5.1	11.1	1	5	356.8	- 0.4
02	12	-17.5	13.6	1	3	323.5	+13.7
03	15	+48.8	11.4	0	3	353.0	-14.1
04	15	-13.3	16.1	0	5	290.9	+14.4
05	21	-20.6	23.0	1	8	200.4	-16.6
06	24	+44.3	21.0	0	8	225.8	-17.0
1571 01	Feb 7	+29.1	Feb 5.1	0	5	27.6	- 4.4
02	8	+33.6	6.1	0	8	14.9	-12.7
03	10	+17.3	9.1	0	4	334.6	+23.1
04	10	-11.6	11.3	0	5	305.8	+12.6
05	11	+48.1	7.8	2	5	351.6	-21.2
06	11	+12.4	10.5	1	3	315.9	-19.3
07	13	+29.0	11.2	1	24	307.0	- 2.5
08	15	+46.6	11.9	2	10	297.7	+11.0
09	20	- 7.6	21.0	0	2	178.3	+17.2
10	22	+26.4	20.3	0	15	186.9	+ 7.8
11	24	+68.9	19.1	0	12	203.6	- 4.5
12	25	+40.1	22.4	1	4	159.6	+ 5.8
13	25	-10.8	26.3	2	11	108.7	- 4.6
14	28	+25.9	26.3	2	13	107.7	-13.3
15	Mar 2	+63.2	25.8	0	12	115.3	-10.0
16	2	+46.8	27.0	0	3	98.9	-15.0

No. of Group	Date	Longitude from C.M.	U.T. of C.M.P.	Area Corrected for Foreshortening: Umbrae	Area Corrected for Foreshortening: Whole Spots	Position of Group: Long.	Position of Group: Lat.
	1971	°	1971			°	°
1571 17	Mar 6	-12.8	Mar 7.3	0	4	350.0	-11.8
1572 01	8	+34.3	5.7	0	4	10.5	+ 1.4
02	12	+25.8	10.5	7	34	308.1	- 4.5
03	15	+28.6	13.3	3	13	270.9	+16.0
04	16	+17.0	15.1	1	7	247.5	+24.0
05	16	-51.0	20.2	0	5	179.4	-19.9
06	27	+19.6	25.8	1	5	105.2	+ 7.5
07	30	- 4.1	30.7	0	2	41.5	+11.3
1573 01	Apr 4	-55.5	Apr 8.5	0	9	285.0	+19.3
02	8	+ 5.1	7.9	1	5	292.5	- 8.0
03	12	+ 4.8	12.1	1	9	237.1	- 7.9
1574 01	May 4	-53.2	May 8.4	2	8	250.8	-13.8
02	4	-58.2	8.7	2	9	245.8	+ 8.6
03	13	- 2.8	13.5	1	4	182.2	- 8.8
04	19	+33.3	16.8	1	11	138.8	+ 2.4
05	24	+58.6	19.9	4	18	98.0	+ 2.4
06	25	- 1.7	25.5	0	12	23.8	+ 1.8
07	26	- 1.8	26.5	1	3	11.3	-10.4
1575 01	June 3	+44.6	31.0	0	3	311.5	+17.1
02	14	+66.7	June 9.0	5	22	191.4	+13.4
03	20	- 4.2	20.9	0	2	34.9	- 5.0
04	23	-49.0	27.1	0	4	313.1	+12.1
1576 01	26	+51.2	22.5	2	7	13.8	+ 5.9
02	30	+10.3	29.6	1	4	280.0	-10.6
03	July 3	-19.0	July 4.9	0	5	208.9	+20.7
04	3	-25.6	5.4	1	9	202.3	+ 9.2
05	17	+53.9	13.3	4	27	98.4	- 7.6
1577 01	25	-72.1	30.8	4	14	226.5	+16.3
02	28	-68.8	Aug 2.5	0	3	190.4	+18.8
03	29	-12.5	July 30.3	1	9	233.3	-21.0
04	29	-28.0	31.5	1	5	217.8	- 3.7
05	Aug 4	+61.5	30.7	2	5	228.1	- 5.3
06	7	+60.0	Aug 2.8	3	8	186.2	-15.9
07	8	-35.8	11.1	1	4	77.7	+20.5
08	13	-42.5	16.6	2	8	4.9	+ 9.4
09	14	- 2.6	14.7	0	2	29.6	+29.3
10	16	+76.1	10.6	4	22	83.9	+19.6
1578 01	19	+ 3.5	19.1	1	4	331.9	+23.4
02	25	+36.2	22.6	1	7	285.3	+18.9
03	31	+67.4	26.4	0	3	234.7	- 9.3
04	Sept 6	-11.2	Sept 7.2	0	2	79.3	+19.9
05	9	-27.9	11.4	0	4	23.1	+14.2
06	9	-50.3	13.1	2	11	0.7	-10.4
1579 01	15	+55.1	11.3	2	12	24.4	+ 5.3
02	30	+ 0.6	30.3	1	4	134.4	-12.0
03	Oct 5	+31.0	Oct 3.1	1	10	96.7	+18.7
04	7	-51.9	11.3	0	7	349.5	- 9.5

GENERAL CATALOGUE OF SUNSPOTS SEEN ON ONE DAY ONLY

No. of Group	Date	Longitude from C.M.	U.T. of C.M.P.	Area Corrected for Foreshortening: Umbrae	Area Corrected for Foreshortening: Whole Spots	Position of Group: Long.	Position of Group: Lat.
	1971	°	1971/2			°	°
1580 01	Oct 18	+10.0	Oct 17.5	1	4	266.6	+ 4.3
02	20	+45.3	16.9	3	15	275.5	+ 5.5
03	25	-56.9	29.7	0	4	106.4	+19.6
04	28	-50.6	Nov 1.1	0	7	74.1	- 2.4
1581 01	Nov 11	+72.7	5.9	4	51	11.7	+ 7.6
02	12	+63.5	7.5	0	3	349.9	-16.9
03	12	+43.5	9.0	0	4	329.9	+ 5.8
04	12	+ 1.5	12.2	1	8	288.0	-13.0
05	13	+21.7	11.7	1	5	295.2	+ 1.4
06	13	+20.3	11.8	1	6	293.9	- 6.2
07	14	+21.2	12.7	2	9	282.1	+ 3.5
08	15	-57.7	19.8	0	2	188.0	+ 6.6
09	15	-67.7	20.6	0	3	178.0	+18.2
10	16	-32.0	18.7	0	5	202.1	+24.2
11	27	-22.8	29.3	0	6	63.0	+14.9
12	Dec 3	+30.5	Dec 1.2	1	9	38.3	+ 9.4
1582 01	9	+34.0	6.9	3	12	322.4	+21.3
02	10	+30.3	8.1	1	8	306.4	- 4.1
03	13	-32.5	16.3	0	3	199.1	-13.9
04	23	-29.4	25.7	1	6	75.3	+11.7
05	27	-28.8	29.5	0	2	25.0	+11.4
06	28	+48.4	24.8	0	9	87.5	-22.1
07	29	+84.9	23.1	0	90	109.8	-10.2
08	30	-49.7	Jan 3.1	0	3	324.9	- 8.6

TOTAL AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR

Date and Place		Projected Area Umb.	Projected Area Whole Spots	Projected Area Faculae West	Projected Area Faculae East	Corrected Area Umb.	Corrected Area Whole Spots	Corrected Area Faculae West	Corrected Area Faculae East
1968 JANUARY									
1	C	377	2727	1117	1273	335	2513	1278	1393
2	H	395	2602	1073	1210	466	2953	1339	1506
3	H	411	3338	724	929	374	2910	1116	1200
4	H	435	4005	968	1254	405	3466	998	1546
5	C	566	4584	1518	1257	477	3930	1710	1623
6	H	703	4727	1384	2356	528	3700	2032	3040
7	H	631	5611	955	2172	453	4245	1408	2632
8	H	846	7077	663	1708	588	4837	885	1880
9	C	758	6543	751	1459	463	4066	729	1587
10	H	713	6137	764	905	429	3634	992	1162
11	H	669	5324	1231	663	396	3116	1548	827
12	H	582	4293	1387	942	361	2636	1574	1250
13	C	415	3707	1032	1063	280	2480	1225	1147
14	C	321	2511	2466	1075	259	1988	2781	1587
15	C	259	2075	2319	1483	220	1733	2506	1862
16	H	168	1115	1940	1018	129	909	2331	1198
17	H	136	857	1137	1005	139	894	1466	1318
18	P	81	494	1350	1666	115	706	1775	2001
19	H	54	416	770	1052	58	507	1072	1181
20	C	37	280	635	1428	28	226	801	1452
21	C	27	295	866	1553	19	193	993	1688
22	C	43	399	899	1432	28	258	1016	1759
23	C	43	321	1014	993	30	203	1056	1128
24	H	105	704	1632	1754	215	1334	1779	2032
25	C	249	1687	1044	1305	370	2426	1123	1556
26	H	459	2702	865	2055	405	2440	1165	2050
27	C	517	3298	972	1557	382	2489	1112	1555
28	H	770	4729	1688	1384	559	3546	1731	1822
29	C	959	5355	1832	1319	629	3643	1934	1575
30	C	1204	6870	1319	1864	770	4454	1825	2120
31	C	1173	7396	1075	1222	721	4531	1388	1500
1968 APRIL									
1	H	354	2197	1294	991	206	1264	1675	1170
2	C	279	1864	1703	776	182	1189	2188	952
3	C	235	1487	1199	744	159	1028	1500	1105
4	H	209	1311	825	924	159	1002	1020	1122
5	H	161	1164	1225	881	139	1034	1531	932
6	H	236	1299	980	736	198	1082	1163	843
7	C	120	778	1474	576	125	840	1804	824
8	H	195	1153	1377	1007	212	1299	1667	1196
9	H	229	1475	1194	1205	263	1709	1534	1623
10	H	304	1761	1458	1268	286	1712	1769	1495
11	H	336	2122	697	2203	334	2059	940	2471
12	C	277	2052	596	1323	210	1556	781	1562
13	H	307	2216	1100	931	210	1469	1261	1096
14	H	375	2491	1092	1214	245	1619	1398	1516
15	H	396	2272	629	1345	261	1540	787	1665
16	C	395	2013	882	1394	260	1361	979	1737
17	C	353	1598	774	1198	234	1061	850	1355
18	H	215	1186	1303	1968	161	876	1624	2428
19	H	173	852	1957	1721	151	751	2214	1979
20	H	102	598	1303	1280	123	742	1659	1618
21	C	84	447	720	1276	138	770	1129	1380
22	C	36	223	1090	1078	49	279	1398	1184
23	H	41	271	676	1228	69	425	749	1337
24	H	49	309	1242	961	32	213	1295	1145
25	H	73	478	1195	1117	58	375	1479	1280
26	H	83	457	1435	1164	62	349	1632	1468
27	C	66	403	1246	1322	63	417	1486	1542
28	H	97	549	1366	925	75	480	1852	1007
29	H	77	481	1097	1242	56	447	1342	1444
30	H	147	1004	1053	939	155	1111	1296	1330
1968 FEBRUARY									
1	H	1243	8627	1288	1595	754	5220	1367	1887
2	C	1183	7556	940	1723	756	4775	1095	1902
3	H	999	6593	1724	2061	709	4617	1947	2580
4	H	720	4595	2243	1823	620	4007	2427	1975
5	H	556	3460	1486	802	614	3774	2102	1024
6	C	376	2243	1796	695	333	1986	2164	790
7	H	210	1431	1240	533	155	1055	1372	651
8	H	147	1244	1196	565	169	1437	1498	889
9	H	217	1410	1000	566	249	1621	1170	799
10	C	232	1791	1392	942	207	1583	1554	960
11	C	229	2217	1273	1241	164	1562	1443	1279
12	C	273	2240	893	694	170	1392	1056	889
13	C	271	1986	1589	738	154	1134	1844	893
14	C	269	1669	1041	1178	151	936	1252	1333
15	H	164	1494	960	927	95	851	1255	1035
16	H	165	1208	457	1068	114	845	627	1439
17	H	87	643	1231	1371	82	593	1261	1635
18	H	51	395	967	1282	52	403	1055	1353
19	C	48	365	1216	454	44	327	1554	543
20	H	80	527	873	1811	99	708	1216	2206
21	C	144	851	897	1109	209	1270	900	1391
22	C	170	1347	1058	2137	188	1501	1135	2307
23	C	220	1571	749	1182	190	1340	953	1163
24	C	267	2075	910	1036	193	1504	1063	1090
25	H	430	3269	724	1217	309	2351	942	1564
26	H	422	3459	972	1103	270	2218	1426	1310
27	H	435	3251	945	737	254	1914	1048	942
28	H	404	2845	648	1111	246	1713	759	1314
29	C	373	2635	784	794	286	1862	835	1028
1968 MAY									
1	H	220	1498	1390	1459	179	1325	1763	1762
2	H	370	2344	1477	1580	291	2008	1881	1946
3	H	372	2707	735	1278	256	1910	807	1440
4	H	375	2347	1086	1233	256	1586	1218	1363
5	H	351	2410	1193	1068	248	1652	1337	1206
6	C	370	2090	1111	979	301	1652	1283	1243
7	H	390	2193	1319	953	306	1771	1616	1291
8	C	257	1693	1056	990	167	1133	1196	1155
9	H	225	1457	1068	1283	152	999	1294	1356
10	H	196	1464	1102	1352	125	974	1309	1581
11	H	166	1098	1000	751	105	699	1249	910
12	H	160	955	1368	1265	106	635	1578	1446
13	C	178	1076	1134	1098	127	772	1280	1168
14	H	178	1000	991	1717	181	1077	1351	2117
15	H	196	1209	911	1788	173	1128	1188	2090
16	K	144	929	1267	1328	140	890	1632	1977
17	C	339	2332	1328	1799	406	2833	1484	2460
18	K	445	3049	1106	2459	434	2915	1477	3102
19	C	669	4292	1147	1347	477	3096	1372	1416
20	H	779	4910	892	1394	489	3149	1019	1605
21	C	776	4920	1379	1026	452	2873	1774	1074
22	H	984	5540	1334	1550	580	3259	1685	1979
23	H	815	4701	2105	1555	494	2843	2356	2046
24	H	732	4221	1326	1406	508	2871	1702	1883
25	C	612	3420	1308	1507	456	2478	1584	1748
26	C	443	2512	1551	942	410	2229	1584	1069
27	C	319	2067	1897	1699	381	2463	2250	2210
28	H	298	1816	1466	1387	367	2207	1964	1831
29	H	326	1886	1515	1548	366	2018	2099	1763
30	H	311	2142	1372	1325	238	1678	1564	1538
31	H	424	2620	1251	1182	308	1905	1437	1301
1968 MARCH									
1	C	275	2103	922	1314	221	1571	928	1670
2	C	316	1988	1519	1275	256	1599	1559	1464
3	H	229	1325	1428	715	193	1194	1681	780
4	H	173	960	1242	770	113	635	1417	804
5	H	158	860	1219	440	94	522	1607	561
6	H	137	798	1275	698	81	495	1763	777
7	C	145	890	670	414	82	504	812	555
8	C	133	931	363	480	74	522	434	564
9	H	131	817	825	902	82	511	980	1007
10	C	153	848	683	373	98	555	765	404
11	H	145	950	1122	627	114	734	1274	859
12	C	158	885	1024	640	187	1047	1142	937
13	H	207	1108	819	806	359	1890	1151	865
14	H	172	970	1159	1857	175	1016	1390	2298
15	H	210	1226	1313	1106	175	1027	1429	1232
16	C	245	1449	909	644	168	1013	1086	681
17	H	300	1641	1102	308	181	1006	1283	344
18	H	241	1606	729	596	146	971	854	988
19	H	239	1365	611	1385	149	849	801	1913
20	H	207	1189	484	1805	144	828	593	1945
21	H	203	1180	662	1424	152	875	745	1699
22	H	245	1353	1718	1308	186	1006	2125	1599
23	C	228	1651	955	880	191	1346	1073	984
24	C	293	1941	862	1109	258	1666	1274	1411
25	C	361	2149	775	1013	297	1842	1071	1102
26	H	319	2004	501	1079	228	1469	534	1473
27	H	339	2181	800	1055	237	1532	956	1059
28	H	424	2311	1379	1177	319	1667	1508	1272
29	H	394	2495	1769	1022	261	1652	1896	1431
30	C	395	2515	1058	767	252	1607	1396	1090
31	C	401	2560	1317	1263	235	1490	1563	1268
1968 JUNE									
1	H	408	2625	1366	1019	261	1729	1453	1169
2	H	305	2181	1340	825	192	1398	1738	1224
3	H	343	2462	965	839	266	1877	1089	1130
4	C	298	2074	854	1076	216	1535	1067	1136
5	H	238	1883	1832	1190	163	1286	1972	1299
6	H	333	2214	1926	1171	293	1820	1992	1369
7	D	279	1582	3881	1629	228	1335	3877	1670
8	C	227	1618	1804	1092	230	1571	2212	1337
9	H	305	1901	1826	1423	205	1314	2466	1871
10	H	340	1923	1256	1714	218	1290	1830	2009
11	H	456	2447	1378	1801	274	1467	1595	2180
12	H	439	3010	1358	886	264	1890	1411	1107
13	H	441	3093	1987	1355	339	2328	2154	1972
14	H	451	2814	1565	1669	357	2210	2145	2048
15	H	422	2669	1199	2578	339	2053	1657	2701
16	C	390	2465	927	1271	276	1727	1137	1316
17	H	439	2515	1095	1267	301	1748	1227	1432
18	H	559	3143	1751	921	375	2110	1988	1225
19	H	625	3577	1623	1254	390	2193	2078	1480
20	H	632	3939	1566	1048	376	2442	1861	1235
21	H	569	4084	1185	1358	352	2590	1376	1843
22	C	505	4080	1416	1463	321	2658	1466	1597
23	H	458	3539	2336	1739	317	2437	2721	2308
24	H	470	3594	1921	1519	369	2786	2204	1910
25	C	320	2894	1584	1281	283	2460	2143	1562
26	H	263	2136	1208	1554	300	2508	1701	2074
27	C	192	1723	937	1408	144	1160	1075	1607
28	C	245	2114	739	1343	142	1198	853	1508
29	C	204	1440	691	1249	140	952	750	1497
30	C	184	1322	1495	1573	152	1084	1759	1827

TOTAL AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR

Date and Place		Projected Area Umb.	Projected Area Whole Spots	Projected Area Faculae West	Projected Area Faculae East	Corrected Area Umb.	Corrected Area Whole Spots	Corrected Area Faculae West	Corrected Area Faculae East
1968 JULY									
1	H	108	728	1783	1337	116	737	2098	1435
2	H	62	518	1411	964	77	602	1782	1041
3	H	60	383	1431	1175	79	518	1673	1449
4	C	30	214	1563	938	110	684	1852	1175
5	H	53	359	1312	921	98	646	1603	1220
6	C	127	868	1385	1339	201	1500	1719	1821
7	H	233	1682	783	1795	263	1946	996	2077
8	H	348	2345	565	1428	283	1943	758	1669
9	H	375	2895	967	1129	245	1909	1200	1306
10	H	445	3179	610	1219	282	1991	742	1635
11	H	419	3544	622	1255	281	2252	784	1743
12	H	552	3475	438	2225	359	2160	528	2732
13	H	571	3945	403	1576	346	2341	518	1758
14	H	490	2853	587	909	300	1724	787	1157
15	H	496	2770	1198	1049	325	1793	1428	1412
16	H	384	2270	2154	1313	304	1736	2528	1766
17	H	320	2108	1497	1071	251	1607	1760	1288
18	H	231	1582	2062	1220	206	1392	2833	1488
19	H	298	1418	1971	2294	235	1296	2498	2609
20	C	277	1460	1150	1093	190	1025	1378	1206
21	H	251	1270	1498	1105	178	906	1783	1295
22	C	181	1153	1507	1082	127	839	1799	1220
23	H	247	1603	1279	519	143	925	1517	755
24	C	362	2169	1304	881	254	1708	1484	1309
25	C	412	2534	1282	1181	346	2172	1355	1477
26	H	388	2420	1497	1300	350	2357	1859	1536
27	C	332	1978	813	969	298	1768	912	1025
28	C	288	1778	1434	722	239	1515	1618	913
29	H	313	1921	1606	586	285	1684	2102	620
30	H	323	1849	2354	818	205	1464	3200	993
31	H	229	1391	1301	414	130	800	1408	471
1968 AUGUST									
1	K	137	1045	1047	868	77	583	1445	1060
2	H	224	1247	806	829	178	1122	995	909
3	C	279	1463	1343	1190	286	1495	1311	1559
4	C	255	1521	944	1290	257	1515	943	1452
5	H	263	1418	1911	1277	238	1359	2354	1633
6	C	286	1585	1032	1354	171	971	1502	1456
7	H	402	2091	1282	1752	224	1183	1540	2153
8	H	333	2395	1033	2407	184	1313	1376	2766
9	H	314	1869	574	1238	167	1008	761	1449
10	C	227	1550	765	932	143	1006	882	1201
11	H	271	1773	1067	1434	184	1192	1348	1912
12	H	323	2141	1776	1399	337	2320	2184	1953
13	C	450	2961	1364	1697	456	3064	1683	2083
14	H	563	3841	2133	1835	600	4108	2462	2329
15	H	650	4486	1370	1713	597	4365	1978	2021
16	H	667	4209	1577	1875	472	3178	2314	2201
17	C	598	4231	1385	1541	360	2510	1645	1759
18	H	632	4267	1423	901	359	2457	2040	993
19	H	552	4193	1197	524	309	2368	1684	624
20	C	498	3375	920	642	290	1965	1045	996
21	H	463	3315	1139	1265	301	2181	1241	1492
22	H	445	3054	1699	1231	324	2176	1960	1296
23	H	372	2363	1984	946	312	1989	2125	908
24	H	249	1587	2597	698	230	1498	3146	837
25	H	142	810	1961	707	135	800	2581	895
26	H	94	634	1204	897	62	437	1542	1231
27	H	68	528	1114	989	62	445	1242	1200
28	H	53	316	1022	1000	51	302	1176	1142
29	C	105	673	1034	1199	103	657	1226	1354
30	C	119	762	1187	1251	123	747	1615	1639
31	C	97	789	1274	1592	75	568	1542	2238
1968 SEPTEMBER									
1	K	125	697	822	1684	93	535	1207	2333
2	H	231	1438	771	1700	137	860	886	1816
3	H	319	2126	1111	1418	187	1249	1284	1784
4	H	381	2759	1043	1247	230	1665	1484	1540
5	H	319	2226	1131	1186	201	1430	1332	1324
6	H	292	1724	871	1129	196	1149	1120	1347
7	H	257	1385	1201	930	205	1096	1430	1184
8	C	150	1140	1287	752	144	1088	1565	962
9	H	202	1272	1780	1790	272	1860	2179	2655
10	H	218	1455	2159	2726	200	1460	2720	3406
11	H	248	1972	1308	1823	193	1493	1722	2000
12	H	300	2389	1513	1083	196	1584	1866	1321
13	H	286	1872	1526	1493	177	1165	1570	1845
14	C	261	1681	1496	1408	172	1085	1744	1863
15	K	196	1116	1487	1254	152	793	1868	1625
16	H	189	1101	1575	1532	140	802	2000	1896
17	C	145	865	1232	1438	101	627	1552	1734
18	H	152	932	1570	998	175	1191	1691	1220
19	H	156	974	2309	1756	177	1222	2530	2100
20	H	157	1104	1735	1103	161	1130	2129	1482
21	H	172	1436	1727	1400	138	1168	2279	1711
22	H	207	1505	1144	2119	142	1008	1601	2636
23	H	263	1605	1290	1473	199	1224	1487	2025
24	H	347	1979	1559	1536	240	1342	1860	1925
25	C	433	2752	1000	1749	310	1956	1233	2109
26	C	466	3152	844	1050	305	1997	1044	1262
27	H	425	2849	848	1576	257	1705	987	1819
28	H	512	2921	1237	1239	297	1729	1528	1447
29	H	367	2329	896	795	214	1345	1092	986
30	H	269	1641	1484	690	158	974	1756	1013
1968 OCTOBER									
1	H	190	1291	1023	1392	137	973	1238	1765
2	H	203	1268	1415	2574	154	966	1637	3185
3	C	237	1446	1176	1714	176	1067	1311	1690
4	H	304	1790	1267	878	208	1240	1549	1109
5	C	306	1819	1314	829	205	1240	1653	1072
6	H	297	1772	722	1246	199	1169	970	1427
7	H	264	1732	1463	1718	199	1202	1767	1894
8	H	205	1421	666	2064	170	1123	870	2359
9	K	199	1221	225	1573	151	909	241	1733
10	H	166	1085	1200	700	134	875	1235	711
11	C	148	956	1281	785	167	1070	1364	1195
12	C	128	914	1148	719	143	1048	1344	856
13	H	163	1027	899	1430	135	888	1255	1643
14	H	179	1067	1035	1127	125	745	1143	1256
15	H	211	1320	489	567	127	795	554	621
16	H	210	1307	1152	699	116	719	1321	995
17	C	255	1548	1252	1317	215	1389	1437	1750
18	K	263	1470	769	1236	226	1195	925	1497
19	C	299	2064	1125	1433	238	1721	1416	1721
20	H	335	2340	606	1269	255	1682	706	1697
21	H	401	2740	750	1256	268	1819	913	1576
22	H	441	2919	1739	1484	342	2161	1924	2161
23	C	408	2680	951	1592	324	2070	1319	1775
24	P	395	2292	1166	1237	273	1581	1351	1388
25	C	476	3441	1350	2203	323	2296	1619	2546
26	C	387	2984	1428	1236	292	2133	1487	1417
27	C	379	2668	1598	1141	299	1955	1835	1418
28	H	451	2881	1644	1723	312	1954	1945	2126
29	H	503	3098	1497	1939	346	2176	1833	2134
30	H	397	2759	1243	1518	246	1699	1422	1712
31	H	398	2577	1309	1287	268	1747	1537	1393
1968 NOVEMBER									
1	H	327	2535	1276	1056	269	2042	1453	1439
2	H	338	2301	1275	737	292	2085	1667	943
3	H	258	1684	1315	1129	265	1820	1857	1302
4	H	143	1263	968	1298	90	788	1141	1485
5	H	198	1248	1493	1085	138	850	1625	1305
6	C	201	1265	1577	1110	141	953	1704	1249
7	C	216	1115	1289	867	160	839	1497	1074
8	C	168	1334	1481	1078	150	1146	1917	1269
9	H	260	2029	939	853	173	1344	1124	1091
10	C	323	2131	825	1300	243	1516	1136	1420
11	C	264	2129	844	1216	179	1367	850	1312
12	H	227	1640	1340	949	145	1021	1635	1005
13	C	172	1492	1226	571	117	1064	1649	803
14	H	222	1683	589	1330	145	1086	660	1463
15	H	163	1433	1377	1256	118	1038	1515	1515
16	C	134	1121	1194	1396	108	954	1450	1551
17	C	126	1241	888	791	107	1182	943	1054
18	C	133	1222	1415	1373	119	1284	1692	1598
19	C	274	1623	1077	1130	196	1329	1248	1373
20	H	239	1737	1330	1003	189	1371	1591	1296
21	H	228	1325	1143	1176	177	985	1587	1286
22	C	206	1180	841	1074	133	764	1122	1301
23	C	130	1102	1157	1051	82	697	1211	1254
24	H	178	1026	1296	1896	108	603	1656	2357
25	C	221	1468	735	1060	119	802	947	1127
26	C	303	2205	956	1503	168	1217	1206	1741
27	C	296	2373	871	924	182	1370	1189	1078
28	H	224	1523	847	805	131	869	940	1053
29	C	187	1437	1593	964	118	897	1897	1222
30	C	127	910	1173	1392	106	768	1435	1635
1968 DECEMBER									
1	C	167	1025	766	964	171	1035	906	1048
2	H	284	2038	1261	1065	225	1627	1429	1291
3	C	292	2199	1467	1170	235	1741	1796	1596
4	C	380	3331	1048	1332	235	1963	1349	1563
5	C	452	3100	891	1362	251	1700	1034	1451
6	H	422	3172	1115	715	226	1706	1364	936
7	C	389	3021	700	1212	227	1746	906	1361
8	C	454	3333	1142	1006	296	2142	1190	1183
9	C	376	3132	1444	1069	286	2374	1458	1204
10	C	300	2921	1768	1005	276	2775	1947	1037
11	C	255	2335	1068	764	322	2769	1489	1108
12	H	247	1775	1450	692	269	1943	1797	938
13	K	222	1232	593	455	152	832	702	597
14	C	242	1725	1072	908	158	1145	1544	1105
15	C	257	1696	700	783	169	1113	986	979
16	H	184	1246	1586	928	137	919	1746	1109
17	D	103	640	1809	921	104	643	2216	1187
18	C	191	1013	1365	1188	233	1354	1559	1477
19	H	189	1450	1267	1159	181	1355	1697	1436
20	C	180	1167	918	1231	108	714	1273	1460
21	H	215	1186	844	1223	235	1230	1022	1550
22	H	279	2166	950	1555	326	2456	1033	1786
23	C	318	1996	1376	1471	303	1929	1632	1602
24	H	338	2228	1017	1201	241	1601	1468	1287
25	C	393	2575	1168	865	261	1688	1390	993
26	H	505	3352	941	833	390	2530	1005	1026
27	H	355	3548	561	1026	259	2401	721	1331
28	H	331	3000	825	1491	228	1890	982	1867
29	C	303	2432	988	986	198	1575	1141	1047
30	H	374	2476	1428	1157	255	1673	1500	1418
31	H	322	2176	1667	1024	249	1667	1946	1223

TOTAL AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR

Date and Place		Projected Area Umb.	Projected Area Whole Spots	Projected Area Faculae West	Projected Area Faculae East	Corrected Area Umb.	Corrected Area Whole Spots	Corrected Area Faculae West	Corrected Area Faculae East
1969 JANUARY									
1	H	203	1288	1129	892	180	1229	1607	1026
2	H	158	1071	1047	1305	307	1851	1553	1630
3	C	159	1063	977	1436	187	1297	1203	1864
4	C	222	1566	1143	1967	304	2230	1383	2697
5	C	338	2476	1051	1611	342	2438	1200	1835
6	C	586	3790	959	1896	456	2942	1082	2180
7	H	661	3973	1048	2050	457	2741	1359	2274
8	H	627	3979	966	1431	381	2403	1152	1508
9	H	742	4269	1640	1672	423	2428	1850	1897
10	H	831	4988	1668	909	462	2764	1862	977
11	C	680	4304	854	719	379	2385	958	824
12	K	733	3398	453	650	445	2048	412	675
13	H	447	2658	2752	1015	310	1817	2901	1124
14	H	368	2660	2678	1307	331	2213	3043	1647
15	C	350	2286	2181	1064	310	2032	2613	1416
16	H	308	2041	2505	1900	312	2087	2759	2098
17	C	270	1704	1295	1588	258	1664	1585	1818
18	H	192	1452	1605	1507	181	1238	1878	1863
19	C	265	1348	1059	1894	174	879	1203	2022
20	K	183	1055	513	1224	110	638	534	1381
21	H	183	1164	832	1815	108	676	1021	2021
22	C	168	1221	911	1448	103	744	993	1792
23	C	147	1033	764	1495	97	671	862	1710
24	C	110	600	869	492	82	428	995	686
25	H	250	1183	1618	1079	158	773	1946	1261
26	C	248	1388	1450	772	154	867	1929	918
27	H	219	1530	1655	985	201	1457	1976	1272
28	K	161	980	697	607	125	726	752	826
29	H	172	1319	1211	888	166	1278	1433	1070
30	C	161	830	1365	1248	157	903	1773	1502
31	H	135	701	1229	1197	178	854	1559	1442
1969 APRIL									
1	H	630	4684	1091	691	366	2691	1305	823
2	H	676	4480	1372	614	380	2512	1424	680
3	C	601	4623	874	540	401	3056	1006	787
4	H	623	4303	1932	937	419	2862	2083	1118
5	H	559	3609	2042	1427	371	2390	2307	1640
6	H	473	3162	2668	842	345	2328	3008	912
7	H	369	2305	2217	1085	298	1901	2485	1308
8	H	279	1799	2049	1600	268	1834	2502	1835
9	H	235	1379	1616	1784	180	1028	2057	2240
10	C	252	1502	1261	1653	184	1117	1656	1898
11	H	306	1928	906	1757	229	1454	1105	1756
12	H	324	1763	1167	1941	244	1370	1373	2400
13	H	330	1956	1515	1471	278	1616	1517	1754
14	H	473	2647	1335	2792	352	1972	1616	3240
15	H	513	3060	906	2351	308	1838	1119	2738
16	H	427	2971	787	1943	240	1661	958	2054
17	H	534	3029	1125	1414	299	1692	1431	1585
18	C	387	2244	1199	1134	226	1302	1447	1246
19	H	359	2364	1876	820	225	1469	2071	1005
20	C	331	1910	1515	621	233	1360	1950	783
21	H	340	1873	1630	651	256	1444	1779	796
22	H	235	1423	1510	1218	210	1314	1781	1618
23	H	100	584	1660	1885	83	521	2028	2466
24	C	70	567	1180	2361	90	814	1459	2917
25	H	95	604	1537	1649	113	714	1992	1884
26	C	133	733	1005	1266	98	556	1477	1379
27	C	138	1141	286	1054	80	674	418	1234
28	H	142	952	1751	1266	84	568	2175	1810
29	H	126	758	1643	1926	84	467	2009	2172
30	H	154	1108	1096	1130	103	736	1300	1347

Date and Place		Projected Area Umb.	Projected Area Whole Spots	Projected Area Faculae West	Projected Area Faculae East	Corrected Area Umb.	Corrected Area Whole Spots	Corrected Area Faculae West	Corrected Area Faculae East
1969 FEBRUARY									
1	H	122	633	1125	2001	145	753	1486	2551
2	H	170	872	867	1885	148	836	1241	2428
3	C	162	1029	955	2413	121	766	1418	2860
4	H	235	1039	1185	2153	161	691	1398	2465
5	C	211	1149	994	1298	130	712	1080	1377
6	C	258	1434	1276	962	148	817	1379	1070
7	H	262	2009	972	1025	148	1124	1417	1232
8	H	268	1516	1161	411	166	948	1505	488
9	H	217	1139	1935	359	159	853	2223	503
10	H	135	818	2101	402	141	856	2253	516
11	C	98	636	1996	757	151	1036	2328	978
12	C	46	259	1365	1008	62	360	1630	1155
13	H	81	519	1663	837	88	519	2143	956
14	H	109	716	959	980	74	473	1048	1110
15	C	176	1254	852	1398	115	788	1029	1573
16	C	208	1265	1021	1538	132	804	1161	1873
17	H	182	1178	840	1483	153	923	955	1683
18	C	218	1299	812	1468	206	1164	925	1675
19	C	284	1582	1122	2211	212	1246	1208	2322
20	H	324	2045	1406	829	213	1342	1470	826
21	H	416	2529	2160	840	248	1519	2416	963
22	H	465	2896	1385	446	262	1640	1620	584
23	H	471	3868	1462	753	297	2383	1739	1187
24	H	572	3642	1669	1222	396	2465	2125	1494
25	C	623	3964	1680	1268	452	2837	1966	1384
26	C	476	3462	1860	1406	403	2921	2176	1575
27	H	478	3207	1705	1474	392	2647	2158	1923
28	C	378	2696	2129	2142	303	2203	2675	2556
1969 MAY									
1	H	120	996	1763	927	120	816	1973	1175
2	H	178	1110	1734	1008	139	864	1931	1227
3	H	208	1308	1605	1165	175	1080	1943	1424
4	H	241	1354	2130	1519	195	1123	2706	2145
5	H	192	1306	1136	1261	168	1147	1494	1618
6	H	183	1088	966	1728	117	677	1228	2269
7	H	145	877	842	1388	81	484	1102	1848
8	H	161	1009	669	1611	93	584	844	2126
9	H	151	1075	704	1943	112	772	1004	2295
10	C	142	878	539	1564	97	592	613	1949
11	H	212	1138	749	1723	158	839	957	2392
12	H	313	1725	1024	2253	216	1192	1302	2887
13	H	299	1918	830	1581	196	1260	952	1934
14	C	328	1834	951	618	181	1009	1090	707
15	H	360	1960	2135	1341	204	1117	2448	1565
16	H	271	1748	2424	1308	168	1075	2778	1636
17	C	277	1429	1973	965	237	1286	2179	1318
18	K	195	1151	1095	792	226	1346	1216	970
19	H	226	1524	2129	1786	287	2030	2531	2109
20	H	305	2334	2256	1995	243	1890	2692	2358
21	H	572	3648	2102	2159	367	2313	2631	2615
22	H	729	3900	1360	1749	404	2185	1584	1980
23	C	661	4189	999	1198	356	2250	1250	1225
24	H	630	4023	888	1229	356	2264	1009	1286
25	H	672	3908	1904	1288	409	2392	2114	1439
26	H	531	3032	1844	756	444	2540	2051	1007
27	C	276	2083	1896	544	262	2104	2236	719
28	H	228	1539	1355	677	309	2191	1820	796
29	H	167	862	1307	906	176	907	1399	997
30	H	104	644	1606	642	120	762	2082	793
31	C	91	527	1568	611	56	311	1756	775

Date and Place		Projected Area Umb.	Projected Area Whole Spots	Projected Area Faculae West	Projected Area Faculae East	Corrected Area Umb.	Corrected Area Whole Spots	Corrected Area Faculae West	Corrected Area Faculae East
1969 MARCH									
1	C	408	2757	1533	1545	283	1785	2200	1929
2	C	351	2260	711	2240	218	1454	1113	2582
3	C	301	2003	649	1581	172	1135	879	1734
4	C	256	1909	848	1538	154	1151	1185	1716
5	H	208	1567	1371	528	139	1078	1416	734
6	C	204	1441	1488	626	158	1242	1742	845
7	H	200	1388	1748	836	181	1242	2211	1152
8	H	256	1513	2352	1330	221	1330	2461	1570
9	C	261	1663	1895	1532	197	1281	2063	1831
10	C	258	1487	1429	949	211	1189	1676	1008
11	C	211	1325	1377	1067	185	1156	1551	1227
12	C	175	1138	1216	1013	167	1149	1394	1241
13	C	190	1083	1209	1826	188	1112	1668	2026
14	C	188	1082	1056	1589	169	964	1191	1795
15	C	239	1149	651	1668	234	1087	699	1906
16	C	362	2196	555	1732	333	2191	582	2140
17	H	509	3249	663	1989	436	2822	860	2243
18	C	761	4770	738	2397	557	3551	751	2714
19	K	930	4288	263	1073	624	2901	254	1089
20	C	849	4921	1094	1522	502	2932	1271	1541
21	H	887	5947	1614	993	506	3404	1907	1141
22	H	866	6172	1606	588	511	3633	1772	744
23	H	838	5324	2032	971	521	3302	2409	1148
24	H	706	4608	1697	1299	487	3220	1983	1532
25	H	484	3529	2179	1422	459	3309	2497	1718
26	C	407	2983	1948	1206	396	3003	2067	1460
27	H	337	2320	2525	2000	460	3109	2783	2411
28	H	371	2365	1601	1601	567	3731	2088	1942
29	C	362	2663	1476	1575	354	2748	1886	1835
30	C	426	3683	1393	1427	322	2808	1488	1549
31	H	586	4579	1187	1533	366	2811	1382	1802
1969 JUNE									
1	H	81	450	1068	1022	44	244	1417	1303
2	H	64	430	666	1309	39	279	820	1554
3	H	88	537	803	1630	107	678	942	2175
4	H	109	678	635	1716	120	772	742	2117
5	H	305	1902	620	1856	406	2560	712	2233
6	H	560	3712	736	2135	503	3236	871	2436
7	C	790	4681	800	1801	523	3080	895	2062
8	C	994	6124	849	1082	574	3550	1007	1242
9	H	1022	6300	1012	552	549	3388	1192	778
10	H	1195	7343	816	1044	630	3875	935	1220
11	H	960	7327	1564	1116	558	4220	1849	1379
12	H	898	6446	1469	1344	557	3932	1619	1854
13	C	825	5584	1037	1060	692	4421	1177	1417
14	H	667	4561	2093	2185	626	4235	2467	2450
15	H	547	3581	1858	2069	579	4151	2432	2386
16	H	302	1655	1162	1633	273	1702	1575	1828
17	H	264	1531	1325	1289	202	1193	1678	1473
18	H	266	1440	796	1646	144	789	946	1921
19	H	302	1628	1082	1372	161	881	1271	1465
20	C	299	1706	1103	1248	167	957	1464	1471
21	C	268	1513	1420	795	151	846	1639	924
22	C	196	1215	1006	414	127	779	1051	510
23	C	151	856	1853	648	123	700	2065	679
24	C	89	642	1619	503	101	762	1893	640
25	C	60	388	1530	1438	119	815	1955	1724
26	H	27	159	1776	1475	21	126	2024	1859
27	C	40	183	1353	861	25	120	1597	999
28	H	58	392	888	967	44	307	1047	1282
29	C	134	794	741	1513	81	511	838	1872
30	H	183	1116	1491	1468	118	709	1958	1876

TOTAL AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR

Date and Place		Projected Area Umb.	Projected Area Whole Spots	Projected Area Faculae West	Projected Area Faculae East	Corrected Area Umb.	Corrected Area Whole Spots	Corrected Area Faculae West	Corrected Area Faculae East
1969 JULY									
1	C	245	1895	1194	1407	268	2127	1304	1680
2	C	301	2116	759	1818	261	1885	911	2140
3	H	472	3305	840	2117	349	2440	938	2298
4	H	533	3321	1521	1718	372	2304	1697	2039
5	C	514	3103	1184	1575	340	2083	1303	1659
6	C	467	2800	1412	1210	325	1922	1643	1455
7	H	414	2469	1047	1024	284	1694	1199	1180
8	H	358	2444	1370	1610	225	1550	1642	2128
9	H	300	2339	2033	1424	195	1511	2428	1775
10	H	229	1952	964	816	183	1502	1288	1108
11	H	261	1721	1947	1359	211	1407	2155	1664
12	H	255	1539	1807	1842	227	1444	2193	2077
13	H	192	1052	1406	1153	182	1145	2196	1402
14	H	220	1212	1025	1222	119	664	1238	1510
15	C	162	1121	891	825	95	648	1194	973
16	H	145	946	1194	929	98	657	1413	1105
17	H	130	789	1072	610	120	1082	1289	878
18	H	111	805	1210	553	97	795	1471	674
19	C	120	768	927	603	97	611	1287	693
20	H	134	695	1636	530	93	484	1958	732
21	C	113	591	1682	501	78	410	1838	647
22	H	77	418	1549	826	55	305	1784	976
23	H	40	243	1003	589	25	168	1243	732
24	C	46	327	904	915	60	458	1186	1278
25	H	99	499	973	999	99	467	1228	1333
26	H	112	644	737	1498	99	572	923	1902
27	C	126	942	934	1245	99	742	1053	1427
28	H	207	1609	1059	1277	141	1091	1200	1876
29	H	284	1776	987	1718	171	1071	1290	2171
30	H	271	2066	1095	2130	160	1203	1325	2348
31	H	364	2732	875	1404	234	1753	915	1676
1969 OCTOBER									
1	H	202	1183	1997	994	148	840	2211	1198
2	H	258	1607	1230	1074	179	1156	1459	1262
3	C	273	1616	962	756	184	1103	1184	919
4	C	256	1455	1187	1111	185	1034	1412	1368
5	H	298	1746	905	1149	193	1156	1150	1343
6	H	389	2340	962	907	248	1498	1057	1086
7	H	377	2336	768	1347	255	1586	858	1658
8	H	402	2338	1112	2112	295	1652	1148	2495
9	H	369	2568	1560	1658	244	1693	1705	1677
10	H	357	2128	2049	1047	275	1599	2137	1172
11	H	267	1713	1678	623	237	1639	2081	649
12	C	166	1124	1411	506	136	1020	1693	597
13	H	174	950	1332	1064	108	594	1369	1251
14	H	155	856	1020	809	101	580	1169	996
15	H	144	841	1077	943	103	650	1165	1141
16	H	106	551	1200	866	110	571	1325	973
17	H	39	228	986	899	54	314	1109	1147
18	H	39	268	931	1120	89	590	1159	1488
19	C	60	392	396	1318	91	529	508	1624
20	H	238	1566	711	1717	344	2321	896	2069
21	H	418	2742	342	1490	438	2961	441	1896
22	H	548	3852	529	1876	397	2852	594	1955
23	H	624	4288	864	963	381	2701	986	905
24	H	726	4722	705	407	406	2651	876	610
25	C	599	4643	457	404	317	2463	437	566
26	H	647	4872	572	825	345	2565	720	995
27	H	620	4305	1023	1552	357	2478	1082	1884
28	H	540	3651	1474	1519	342	2301	1646	1679
29	H	392	2733	1430	1419	285	2009	1560	1604
30	H	330	2051	1528	979	335	2131	1746	1059
31	H	187	1291	881	770	228	1561	957	927

Date and Place		Projected Area Umb.	Projected Area Whole Spots	Projected Area Faculae West	Projected Area Faculae East	Corrected Area Umb.	Corrected Area Whole Spots	Corrected Area Faculae West	Corrected Area Faculae East
1969 AUGUST									
1	H	631	4282	1447	2044	394	2699	1700	2234
2	H	608	4801	987	953	373	2958	1087	1062
3	C	645	4643	1137	1292	395	2836	1242	1565
4	H	667	4626	1388	1146	439	3010	1665	1445
5	H	520	3838	1298	1344	373	2856	1536	1616
6	H	424	3109	1512	873	348	2777	1797	1071
7	H	291	1677	1239	1401	259	1748	1726	1834
8	H	157	1009	1157	1479	99	641	1323	1769
9	H	156	913	1100	885	117	687	1317	1145
10	H	179	887	1913	1363	172	865	2136	1599
11	H	148	923	1512	1227	155	955	2070	1484
12	H	137	688	1100	894	134	663	1548	1054
13	C	86	463	931	687	75	388	1239	975
14	H	80	510	1266	618	68	447	1567	707
15	H	107	583	711	459	99	528	854	546
16	H	98	505	1017	605	58	295	1243	756
17	H	87	379	1130	456	48	208	1442	614
18	H	32	209	1079	585	17	122	1117	738
19	H	30	141	1097	629	17	82	1241	708
20	C	31	120	944	422	19	75	1047	457
21	H	11	81	854	1150	9	75	992	1300
22	H	61	581	1082	1002	91	975	1104	1251
23	C	81	796	1001	1840	81	823	1081	2115
24	H	160	1317	763	1467	126	1047	1170	1703
25	H	203	1615	342	1139	145	1100	533	1363
26	H	265	1940	468	1756	178	1340	625	2155
27	C	440	2574	594	1738	278	1649	663	2076
28	C	470	2837	704	1980	282	1723	965	2235
29	C	336	2438	440	1738	190	1374	694	2072
30	C	310	2196	495	1287	174	1225	737	1459
31	C	267	1725	858	1462	158	1033	1013	1661
1969 NOVEMBER									
1	H	76	487	1011	1199	78	685	1363	1423
2	C	69	367	574	723	49	269	636	865
3	H	81	535	935	1254	66	477	1165	1517
4	C	118	633	977	1084	156	855	1025	1389
5	H	137	909	1430	1001	130	844	1555	1108
6	C	190	1269	1079	1045	155	1092	1222	1263
7	C	201	1387	1262	1122	137	954	1444	1112
8	H	219	1484	942	932	135	906	1084	999
9	H	238	1382	1420	1081	142	828	1500	1356
10	H	233	1426	627	857	136	830	779	968
11	H	195	1075	875	765	111	621	1051	857
12	H	128	826	979	566	84	539	1253	691
13	H	95	705	642	760	63	484	819	906
14	H	161	1004	892	675	143	899	1098	952
15	H	208	1277	1473	1287	384	2415	1794	1754
16	C	219	1242	748	1115	370	2143	1042	1478
17	C	352	2915	465	983	335	2814	630	1074
18	H	577	4004	719	1112	401	2769	915	1430
19	H	726	4789	717	663	439	2840	888	887
20	H	784	5044	860	719	431	2763	1170	973
21	C	919	5653	655	389	480	2989	806	523
22	C	878	5284	643	643	463	2779	819	1022
23	C	757	5062	1135	735	432	2855	1365	1057
24	H	731	4635	815	1012	463	2944	1029	1259
25	H	688	4052	1653	1141	558	3260	1683	1350
26	H	449	3360	1409	1355	438	3409	1595	1602
27	H	362	2375	1564	1140	399	3064	2099	1362
28	H	237	1562	1532	1773	250	1733	1864	2078
29	H	241	1608	848	1284	145	951	1211	1623
30	H	296	1755	882	1558	161	950	1112	1738

Date and Place		Projected Area Umb.	Projected Area Whole Spots	Projected Area Faculae West	Projected Area Faculae East	Corrected Area Umb.	Corrected Area Whole Spots	Corrected Area Faculae West	Corrected Area Faculae East
1969 SEPTEMBER									
1	H	190	1269	1099	794	127	867	1254	942
2	C	121	982	1473	748	99	832	1785	928
3	C	88	580	1012	803	83	591	1237	953
4	H	115	696	938	1163	115	731	1049	1239
5	H	93	509	1193	476	138	788	1450	577
6	K	74	413	1021	435	59	369	1131	570
7	H	115	675	1307	467	91	556	1438	525
8	H	140	702	918	770	116	605	1132	896
9	C	161	819	682	671	136	672	778	910
10	H	124	771	880	1109	96	601	912	1335
11	C	147	740	558	873	117	578	606	930
12	H	161	824	1557	1670	135	704	1710	1714
13	C	272	1389	1124	534	204	1054	1295	563
14	C	282	1606	992	569	217	1252	1303	723
15	H	346	1704	916	531	197	966	1188	609
16	H	338	1651	599	1073	186	896	700	1201
17	H	293	1512	879	1108	170	882	845	1179
18	H	251	1187	1267	950	167	780	1327	1228
19	H	104	638	1511	1352	83	534	1598	1467
20	H	73	446	1258	1449	67	395	1576	1738
21	H	97	570	1114	1114	145	878	1410	1438
22	H	104	669	582	2017	185	1063	904	2240
23	H	199	1172	550	1224	156	921	726	1522
24	C	317	1665	316	1326	202	1074	326	1679
25	H	412	2419	706	1244	249	1455	868	1326
26	C	297	2113	900	651	181	1304	912	835
27	C	346	1902	953	835	230	1305	983	1018
28	H	303	1565	1499	1646	231	1176	1580	1933
29	C	229	1333	1212	347	134	772	1422	402
30	H	158	1224	1456	750	101	773	1746	939
1969 DECEMBER									
1	H	225	1409	1038	1298	124	783	1161	1451
2	H	291	1709	1210	1263	193	1149	1385	1598
3	H	266	1641	846	1029	181	1107	861	1149
4	C	271	1657	1374	985	194	1181	1503	977
5	C	257	1584	1172	793	247	1419	1281	851
6	C	166	1045	1344	861	187	1210	1738	1114
7	C	93	619	997	987	58	365	1195	1191
8	H	78	526	1631	1102	47	330	1985	1295
9	C	123	561	1025	606	88	392	1263	682
10	C	89	574	1293	626	67	463	1637	934
11	C	52	292	803	742	39	224	956	884
12	C	59	489	616	814	99	986	745	1151
13	H	169	1128	846	1882	220	1431	1202	2309
14	C	165	1143	313	980	159	1126	471	1108
15	H	239	1610	901	1661	174	1128	1084	1861
16	H	264	1735	648	1256	167	1133	877	1459
17	C	301	2145	722	670	175	1230	914	764
18	H	355	1999	671	748	222	1241	947	914
19	C	343	1802	857	688	207	1086	1066	921
20	C	391	1947	762	1034	231	1147	1013	1234
21	C	397	2284	669	647	244	1404	837	751
22	C	452	2666	2026	952	345	1980	2064	1220
23	H	429	2883	2014	1365	312	1978	2520	1626
24	C	485	2820	1156	1689	336	1912	1497	1979
25	H	523	3071	799	1316	354	1999	1167	1497
26	C	458	2780	582	1154	260	1566	746	1384
27	H	455	2458	1167	1381	279	1497	1449	1517
28	C	344	2073	712	1035	232	1374	673	1187
29	C	407	2131	968	1206	305	1640	991	1271
30	C	452	2581	1226	1000	405	2310	1433	1159
31	C	366	2615	1461	1151	270	1851	1586	1314

TOTAL AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR

Date and Place		Projected Area: Whole Spots Umb.	Projected Area: Whole Spots	Projected Area: Faculae West	Projected Area: Faculae East	Corrected Area: Whole Spots Umb.	Corrected Area: Whole Spots	Corrected Area: Faculae West	Corrected Area: Faculae East
1970 JANUARY									
1	H	369	2684	2274	1342	249	1740	2504	1604
2	H	377	2078	1283	1443	247	1391	1533	1692
3	C	233	1716	1403	1237	149	1116	1588	1401
4	H	237	1341	1357	1046	176	1015	1560	1264
5	H	233	1227	833	281	190	1047	1025	313
6	H	86	660	878	412	63	528	1084	518
7	H	54	311	617	476	58	358	807	670
8	C	26	149	926	1031	48	249	1134	1413
9	C	68	417	627	899	63	433	780	1136
10	C	158	979	522	1076	120	727	698	1330
11	H	288	2147	797	2111	263	2027	1175	2544
12	H	530	3079	1314	1745	512	3099	1473	2067
13	C	388	3025	573	760	299	2424	790	826
14	C	443	2679	880	1288	384	2147	1185	1499
15	C	513	2985	396	834	312	1836	606	988
16	C	455	2799	606	585	270	1659	753	781
17	C	471	2826	967	1019	322	1970	901	1372
18	C	451	2534	867	774	310	1715	1059	926
19	C	442	2394	1345	937	286	1586	1678	1186
20	C	381	2364	1477	551	258	1661	1993	797
21	C	370	2401	1628	867	275	1752	1946	1138
22	H	346	2175	1404	1673	304	1922	1947	2167
23	H	284	1736	822	605	304	1865	1053	908
24	H	258	1452	735	562	196	1067	951	680
25	C	355	1850	522	439	229	1199	680	604
26	H	485	3054	734	377	264	1673	1036	499
27	H	585	3664	615	313	324	2018	737	508
28	C	432	3504	556	535	263	2036	672	741
29	C	565	3906	461	388	356	2487	695	622
30	C	508	3153	566	692	370	2299	783	987
31	H	308	2409	747	401	305	2348	1007	430
1970 APRIL									
1	H	224	1371	848	1105	213	1292	1134	1411
2	H	220	1668	1104	1238	227	1553	1439	1446
3	C	336	2045	1235	1168	381	2208	1381	1359
4	H	475	2646	1002	1705	407	2262	1267	1956
5	H	588	3681	837	1529	435	2712	951	1552
6	C	686	4092	737	879	436	2611	959	943
7	H	705	4318	909	1009	390	2437	1170	1345
8	H	815	4843	737	836	449	2663	917	958
9	H	963	5133	1838	909	561	2961	1835	1049
10	H	894	5607	1324	964	548	3396	1469	1281
11	H	762	5822	1869	1086	524	3938	2194	1176
12	K	883	4997	1299	727	613	3484	1523	780
13	H	617	4395	1884	706	552	3831	2296	948
14	H	488	3285	1011	987	527	3459	1441	1419
15	C	304	2214	609	1034	283	2043	780	1240
16	C	311	2063	1143	1339	260	1772	1323	1732
17	C	275	1987	783	828	230	1608	898	840
18	H	241	1711	1109	1189	268	1995	1445	1407
19	H	195	1057	509	824	120	703	554	909
20	H	169	981	1066	1088	98	554	1216	1372
21	C	169	906	805	707	95	526	862	705
22	H	236	1282	1206	924	146	809	1264	1048
23	H	127	960	824	509	94	724	845	534
24	H	165	1163	1988	910	155	1171	2229	1168
25	C	119	889	1677	676	139	1080	2076	847
26	H	122	857	1465	1171	114	843	1671	1471
27	H	157	969	1264	1434	135	818	1431	1834
28	H	164	1273	1131	1811	138	1037	1571	2378
29	H	266	1706	496	1139	197	1224	738	1451
30	H	343	2167	722	1571	296	1889	916	2005
1970 FEBRUARY									
1	C	219	1861	1319	849	253	2586	1449	1003
2	C	155	862	1256	355	125	688	1389	409
3	H	140	807	1009	564	123	730	1308	646
4	H	73	501	901	962	51	342	1008	1195
5	H	54	358	488	1116	48	285	562	1444
6	H	169	741	759	1333	135	689	810	1504
7	C	179	1287	954	890	126	906	962	1088
8	H	304	1697	585	1161	205	1144	751	1312
9	H	386	2478	954	964	261	1722	1054	1041
10	C	452	2859	1325	1503	267	1673	1337	1661
11	H	582	3904	1175	1338	383	2492	1390	1604
12	C	568	4643	800	1097	376	3255	941	1210
13	H	608	4238	1000	868	480	3256	1223	1062
14	H	548	4088	1151	943	420	3208	1210	1061
15	H	664	3601	1988	1143	575	3129	2357	1327
16	H	551	3387	1250	653	633	3550	1601	968
17	H	498	3676	934	923	415	3256	1123	1209
18	H	496	3795	1461	1494	377	3005	1813	1850
19	H	562	3610	872	1701	423	2889	1123	2085
20	H	558	3494	1036	1264	397	2422	1454	1454
21	C	533	3536	772	1025	365	2542	881	1254
22	C	622	4094	695	464	403	2716	793	549
23	H	694	4959	641	641	419	3149	832	816
24	C	733	4502	654	454	443	2777	786	574
25	H	626	4860	769	549	394	3018	987	689
26	H	697	4312	1012	715	435	2662	1096	948
27	C	567	3436	1114	531	389	2310	1190	659
28	H	452	3180	1264	670	379	2765	1552	817
1970 MAY									
1	H	427	2747	907	1610	314	1992	1125	2031
2	K	433	2675	207	1156	292	1781	264	1210
3	C	463	2851	891	660	308	2021	1153	825
4	H	410	2977	961	1536	322	2345	1356	2123
5	H	417	3061	1270	1440	298	2369	1385	1755
6	H	392	2870	1885	1624	283	2064	2441	1695
7	H	443	2842	1433	751	327	2130	1562	852
8	H	306	2744	1459	882	187	1652	1571	1001
9	H	331	2465	1376	591	237	1804	1420	749
10	C	303	2097	1422	551	278	1829	1564	777
11	K	281	1790	728	1030	266	1674	1075	1166
12	H	316	2108	1595	1843	370	2526	2126	2413
13	H	483	3413	1344	1731	390	2863	1466	2006
14	C	693	5171	803	968	468	3588	979	1093
15	C	663	5709	386	850	404	3479	504	1059
16	C	735	6281	688	377	434	3671	827	529
17	H	602	6131	547	855	380	3684	690	1234
18	H	631	4617	912	1253	390	2849	964	1425
19	H	453	4263	1502	1298	325	2890	1625	1586
20	H	463	3335	1048	1050	363	2502	1419	1386
21	H	283	2397	1162	1161	219	1799	1592	1494
22	H	246	1850	798	614	199	1585	941	809
23	C	152	1167	1210	477	162	1227	1347	526
24	H	163	1094	1175	1220	139	1059	1657	1430
25	C	196	1609	966	1333	136	1107	1514	1716
26	H	290	2004	811	1115	190	1385	984	1555
27	H	285	2023	881	1292	219	1569	1099	1787
28	H	202	2117	643	1113	155	1506	974	1390
29	C	381	2241	1466	1210	252	1492	1728	1298
30	H	385	2615	1137	781	251	1717	1382	1101
31	C	314	2446	1500	889	235	1776	1824	1328
1970 MARCH									
1	H	429	2830	979	726	396	2521	1153	936
2	H	345	2518	846	704	318	2343	1088	887
3	H	322	2154	637	781	299	2081	848	996
4	C	335	2195	629	737	307	2140	833	1027
5	H	345	2302	583	2736	262	1898	856	3477
6	H	463	2629	429	1859	330	1888	501	2051
7	C	413	2833	318	741	268	1837	436	855
8	C	404	2726	542	1264	245	1653	670	1367
9	H	427	2830	749	1100	270	1742	763	1319
10	H	401	2449	1013	935	268	1590	1245	1239
11	C	374	2209	566	800	211	1255	709	957
12	H	308	2211	1067	803	188	1319	1215	980
13	H	266	1910	1598	954	191	1324	1816	1492
14	C	198	1287	1762	672	164	1071	1852	771
15	H	158	880	2198	1180	175	997	2502	1320
16	C	112	587	1656	695	137	692	1891	898
17	H	88	481	1442	1255	54	303	1785	1627
18	H	86	559	1342	1929	82	518	1602	2240
19	H	109	690	939	1599	91	594	1108	2032
20	H	198	1089	710	1273	191	1090	937	1552
21	C	264	1530	569	1192	212	1245	813	1342
22	H	306	1813	878	1468	204	1210	1116	1635
23	H	334	1951	1154	843	218	1329	1323	1126
24	C	328	2442	1009	483	215	1654	1197	646
25	H	327	2206	355	597	255	1639	409	718
26	H	310	2185	544	769	226	1530	580	1033
27	C	299	2140	798	335	196	1404	944	483
28	H	201	1440	1833	787	140	981	2160	996
29	C	250	1550	1069	712	173	1086	1292	981
30	C	178	1303	1141	873	127	943	1410	1015
31	H	181	1023	1026	681	176	991	1207	913
1970 JUNE									
1	H	272	1885	1382	1175	197	1342	1720	1462
2	H	189	1509	1175	772	170	1376	1463	867
3	H	169	964	1078	412	133	780	1452	453
4	C	106	620	779	400	113	644	989	726
5	H	80	601	1015	772	89	615	1223	1157
6	H	68	462	1245	978	74	492	1521	1222
7	H	92	567	1129	853	146	837	1517	1222
8	H	96	1006	980	1129	123	1416	1460	1523
9	H	168	1225	715	1360	133	1032	930	1756
10	H	274	1719	910	2314	180	1130	1078	2590
11	C	330	2112	545	768	252	1658	679	924
12	C	383	2954	748	680	285	2167	1035	746
13	C	520	3529	739	772	343	2323	1124	848
14	H	655	4726	956	1094	416	2977	1160	1431
15	H	692	4956	1050	1441	436	3065	1166	1847
16	H	668	4595	1487	853	407	2752	1930	1098
17	C	563	4444	782	559	357	2786	883	745
18	H	504	3642	1727	1417	346	2437	2024	1752
19	H	293	2646	1753	1187	215	1963	1967	1339
20	H	213	1893	1476	1509	174	1601	2026	1924
21	H	259	1791	1337	1175	224	1575	1584	1407
22	H	260	1655	1072	1200	241	1557	1304	1267
23	H	186	1168	920	1668	123	751	1167	1763
24	K	182	1069	632	1063	114	675	822	1439
25	H	153	1082	1108	1187	110	812	1428	1479
26	H	137	939	1106	1198	113	802	1428	1411
27	H	192	1627	863	726	208	1519	1060	971
28	C	231	1995	929	716	187	1564	1215	981
29	H	269	2160	1096	1325	193	1513	1410	1573
30	C	434	2722	1590	884	276	1726	1893	918

TOTAL AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR

Date and Place		Projected Area Umb.	Projected Area Whole Spots	Projected Area Faculae West	Projected Area Faculae East	Corrected Area Umb.	Corrected Area Whole Spots	Corrected Area Faculae West	Corrected Area Faculae East
1970 JULY									
1	H	426	3461	1557	439	277	2215	1965	676
2	C	487	3965	737	915	313	2476	942	1165
3	H	637	4182	1221	1408	371	2454	1505	1426
4	H	609	4335	922	508	369	2638	1115	764
5	H	557	4190	1254	817	371	2765	1666	1220
6	H	456	3771	806	610	311	2615	1143	813
7	H	446	3155	1428	1186	316	2254	1724	1470
8	H	363	2363	1996	1983	317	2146	2277	2243
9	H	259	1634	1498	1002	246	1524	2145	1331
10	H	203	1433	946	1059	199	1415	1335	1278
11	H	204	1380	1370	725	176	1133	1535	1018
12	H	186	1300	1024	1313	165	1123	1273	1530
13	H	201	1288	818	819	127	820	1318	1088
14	H	113	890	1695	1418	69	538	1879	1937
15	H	120	848	633	772	76	547	729	1002
16	H	98	535	1635	1336	68	388	1888	1542
17	H	70	584	1810	1049	78	695	2166	1270
18	H	83	722	623	1142	105	980	818	1610
19	H	156	1265	841	1670	143	1214	1059	1866
20	H	239	1695	530	714	186	1340	726	946
21	H	332	2258	808	668	305	1826	1044	1112
22	H	301	2662	1144	1595	232	1949	1543	2310
23	H	360	2639	507	1037	233	1665	647	1568
24	H	299	2591	1071	1981	177	1529	1185	2426
25	H	341	2823	725	1175	247	1888	850	1468
26	K	323	2461	972	584	201	1539	1296	742
27	H	460	3676	1196	885	290	2274	1508	1167
28	H	518	3422	1127	735	320	2140	1307	909
29	H	422	2921	1185	806	269	1885	1352	990
30	H	407	2802	828	977	262	1891	1260	1084
31	H	269	1983	598	966	160	1165	634	1190
1970 OCTOBER									
1	H	163	1137	997	898	123	896	1219	1143
2	C	116	781	574	1039	109	763	925	1176
3	H	105	746	581	569	80	579	636	758
4	C	158	1118	693	379	122	867	720	480
5	C	151	1244	1078	345	140	997	1466	461
6	H	154	1233	844	577	114	858	916	699
7	H	142	1091	1128	1094	94	699	1367	1393
8	C	224	1567	701	1703	186	1311	1064	1948
9	C	261	2227	766	1490	160	1362	822	1536
10	H	238	1769	546	658	177	1317	672	1004
11	H	154	1313	1110	899	118	1067	1175	1086
12	C	211	1555	850	1336	228	1737	1119	1542
13	C	210	1108	689	1228	149	829	1178	1405
14	C	165	1375	732	1292	107	848	765	1396
15	H	193	1325	621	1165	115	770	670	1336
16	H	229	1353	1334	1023	148	903	1440	1336
17	H	205	1261	1120	809	150	910	1227	1102
18	H	202	1364	931	929	119	814	1090	1092
19	H	168	1411	778	1807	115	993	983	2007
20	H	203	1453	1097	1285	136	990	1173	1534
21	C	195	1259	1049	1154	138	887	1152	1353
22	H	181	1334	1639	1340	153	1098	1913	1823
23	H	252	1769	1149	1657	229	1882	1344	2198
24	C	320	2229	577	1067	301	2149	916	1263
25	H	380	3087	639	1046	270	2255	811	1198
26	H	543	3938	1277	991	343	2515	1588	1267
27	K	537	3319	735	1025	329	2028	888	1193
28	C	492	3182	595	810	283	1834	634	1110
29	H	520	3467	1254	1895	316	2065	1413	2297
30	C	414	2638	521	1319	269	1708	633	1531
31	C	325	2142	746	1206	222	1476	900	1208

Date and Place		Projected Area Umb.	Projected Area Whole Spots	Projected Area Faculae West	Projected Area Faculae East	Corrected Area Umb.	Corrected Area Whole Spots	Corrected Area Faculae West	Corrected Area Faculae East
1970 AUGUST									
1	H	198	1436	1049	703	137	966	1204	933
2	H	148	1077	1840	989	121	871	2414	1243
3	H	113	630	1647	1118	103	666	1966	1555
4	H	121	874	1542	1025	136	822	1875	1224
5	H	191	1204	1022	976	143	918	1248	1141
6	H	163	1079	884	757	109	723	1273	1087
7	H	232	1504	919	724	139	891	1165	888
8	H	220	1546	871	767	123	871	1202	1023
9	H	321	2207	729	661	181	1233	1055	958
10	H	297	2165	604	808	165	1183	917	1109
11	H	178	1791	709	639	99	1004	906	873
12	H	216	1607	924	468	131	970	1142	626
13	H	216	1723	1063	491	156	1315	1302	745
14	H	249	2309	969	855	301	2830	1287	1173
15	H	278	2159	672	991	280	2701	890	1161
16	H	259	2352	582	756	177	1610	678	911
17	H	285	2167	729	570	202	1534	921	835
18	H	267	2102	652	732	228	1817	920	950
19	C	252	1799	532	720	252	1737	676	971
20	H	192	1642	786	1104	152	1292	1232	1311
21	H	303	1761	422	1561	227	1371	621	1763
22	H	225	1748	1265	935	147	1106	1422	1280
23	H	359	1990	934	957	220	1250	1036	1205
24	H	285	2076	1254	979	186	1425	1531	1151
25	H	206	1586	1126	1341	150	1189	1429	1594
26	H	233	1378	855	1196	180	1012	1097	1362
27	H	197	1428	1116	1243	127	873	1675	1641
28	H	177	1226	1093	682	139	895	1276	1097
29	H	275	1659	1423	956	264	1602	1580	1279
30	H	290	1913	1625	1568	278	1902	2176	2305
31	H	366	2243	2076	1587	318	2058	2771	1742
1970 NOVEMBER									
1	C	254	1750	1617	1361	186	1277	1713	1670
2	K	176	1223	966	985	130	910	1131	1461
3	H	171	1160	1372	965	138	891	1954	1039
4	C	165	1097	978	917	126	888	965	979
5	H	163	885	1298	1144	102	565	1362	1130
6	C	132	957	1167	902	85	623	1233	976
7	C	143	920	2438	1231	104	673	2445	1541
8	H	76	519	1496	1144	54	332	1671	1267
9	H	72	462	1617	1319	56	346	1874	1643
10	C	123	769	1291	1228	110	709	1509	1352
11	C	105	935	1477	959	107	920	1834	1231
12	C	255	1803	1045	1108	200	1368	1123	1281
13	H	408	2764	1085	1325	265	1800	1519	1462
14	C	585	4145	1012	908	352	2375	1074	1045
15	C	683	5421	1002	1249	380	3035	1124	1422
16	C	620	6157	844	771	349	3471	952	1067
17	H	705	5987	523	1002	424	3623	684	1219
18	P	834	4738	1783	2201	571	3328	1949	2383
19	H	525	3928	1274	904	443	3419	1665	1156
20	C	366	3109	1358	1494	366	3259	2041	1673
21	C	361	2337	1752	865	342	2227	1911	1290
22	H	223	1893	1066	717	204	1666	1238	869
23	P	319	1213	1142	1014	290	1251	1685	1177
24	H	203	1192	1217	805	163	1035	1878	1085
25	C	132	954	485	842	78	578	614	1111
26	H	169	1036	663	977	144	931	820	1385
27	H	178	1315	1208	1228	171	1247	1495	1664
28	C	213	1418	829	1322	181	1252	1014	1957
29	C	211	1572	639	1215	190	1379	732	1372
30	H	285	1966	889	1333	239	1611	1055	1560

Date and Place		Projected Area Umb.	Projected Area Whole Spots	Projected Area Faculae West	Projected Area Faculae East	Corrected Area Umb.	Corrected Area Whole Spots	Corrected Area Faculae West	Corrected Area Faculae East
1970 SEPTEMBER									
1	H	307	2367	1365	1818	216	1685	1687	1966
2	H	322	2520	1258	702	215	1695	1528	939
3	H	361	2939	1306	1591	251	1911	1692	2276
4	H	446	3387	668	1768	260	1919	864	2057
5	H	443	3702	396	691	252	2047	578	851
6	H	485	3743	555	896	280	2155	665	1220
7	H	406	3405	1032	816	265	2168	1082	1157
8	H	332	2628	1787	792	245	1916	2074	1000
9	K	280	2201	954	498	219	1736	1253	614
10	H	187	1288	2055	1366	135	1144	2272	1666
11	H	160	948	1083	1457	150	1084	1525	1671
12	H	122	686	1208	1309	88	494	1279	1630
13	H	79	571	1490	554	59	421	1624	696
14	K	86	435	1249	351	68	343	1483	467
15	H	81	514	566	847	60	418	826	1170
16	H	82	504	484	1276	62	378	522	1469
17	H	91	480	564	1430	69	364	719	1642
18	H	125	700	845	1183	88	503	1121	1607
19	H	235	1135	965	1100	155	755	1043	1298
20	H	257	1632	890	801	165	1094	1066	1185
21	H	293	1861	921	978	199	1255	1270	1134
22	H	274	1917	834	1003	169	1186	1271	1177
23	H	311	2162	608	573	246	1699	723	694
24	H	333	2286	955	888	274	1860	1082	1458
25	H	324	2159	923	854	237	1600	1085	1099
26	C	358	2071	997	1625	257	1459	1510	1889
27	H	322	2031	919	852	226	1492	1277	1169
28	H	328	1917	900	1101	190	1100	1240	1217
29	H	213	1577	1155	1020	125	930	1330	1286
30	H	254	1327	959	1642	172	881	1217	1952
1970 DECEMBER									
1	H	297	2082	1263	1209	228	1597	1465	1473
2	H	281	1904	1390	955	191	1304	1581	1020
3	H	253	1871	1397	913	142	1052	1576	981
4	H	287	2246	1381	696	166	1272	1548	881
5	H	321	1896	1330	875	248	1458	1524	1195
6	C	302	2075	723	934	244	1800	858	1274
7	H	327	2461	1764	1722	277	2270	1907	2046
8	C	308	2037	1076	1192	297	1873	1352	1434
9	H	322	2820	1751	1133	226	2025	2064	1333
10	C	339	2515	1488	1698	234	1727	1497	1895
11	C	434	2730	900	1393	276	1765	1106	1519
12	C	296	2139	848	902	163	1177	1007	1050
13	H	252	1942	1162	728	169	1412	1305	1109
14	H	259	1920	868	737	287	1978	886	1010
15	C	215	1653	734	1089	215	1770	870	1367
16	H	226	1541	834	715	198	1344	1112	861
17	C	248	1659	1293	1273	180	1211	1553	1477
18	C	211	1784	992	585	146	1206	1309	787
19	C	324	2188	1022	688	190	1296	1436	830
20	C	381	2328	543	751	224	1339	707	886
21	H	350	3082	475	691	215	1881	754	852
22	H	378	2218	736	833	252	1486	659	927
23	K	236	1580	435	426	169	1151	409	510
24	H	225	1211	1666	369	273	1405	1965	462
25	C	133	860	577	451	188	1250	876	656
26	C	83	555	542	417	81	614	755	481
27	D	100	409	319	761	63	259	445	1169
28	C	112	693	562	622	82	520	615	868
29	C	145	806	545	575	87	503	665	705
30	C	201	1289	658	701	126	794	838	813
31	H	323	1889	886	1166	221	1277	901	1261

TOTAL AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR

Date and Place		Projected Area Umb.	Projected Area Whole Spots	Projected Area Faculae West	Projected Area Faculae East	Corrected Area Umb.	Corrected Area Whole Spots	Corrected Area Faculae West	Corrected Area Faculae East
1971 JANUARY									
1	H	241	1693	701	1292	173	1215	760	1591
2	C	220	1574	636	594	166	1263	712	700
3	C	130	1020	691	836	109	783	785	1123
4	C	173	1196	982	2005	294	2000	1318	2693
5	C	244	1872	908	1377	255	1987	1113	1606
6	C	301	2215	696	1236	239	1777	695	1299
7	C	301	2409	1498	915	198	1610	1683	972
8	H	352	2722	972	465	210	1610	1206	514
9	C	347	2284	752	555	242	1510	914	644
10	K	386	1918	295	630	221	1101	325	895
11	H	321	1868	1491	766	193	1094	1668	892
12	C	339	1895	1368	1411	202	1127	1477	1531
13	H	293	1573	1211	788	199	1059	1183	851
14	H	271	1539	2008	713	269	1589	2283	1078
15	K	187	1161	626	307	234	1441	754	463
16	C	185	1723	1111	1099	287	2361	1465	1238
17	C	224	1871	992	1368	184	1663	1177	1543
18	C	320	2776	649	1466	250	2407	766	1833
19	H	412	3767	1027	1029	306	2708	1078	1264
20	C	479	4051	845	1129	318	2641	889	1214
21	C	673	4342	839	712	400	2581	1045	876
22	C	582	4582	586	661	323	2532	764	805
23	C	622	4419	765	879	357	2518	919	998
24	H	601	3877	1095	792	460	3116	1160	959
25	H	414	3283	1102	982	335	2726	1227	1252
26	C	365	3194	972	836	324	2889	1278	905
27	H	331	2349	1404	788	340	2406	1792	895
28	H	362	2780	1230	950	289	2297	1421	1124
29	H	349	2940	1044	1011	262	2210	1540	1270
30	C	343	3218	713	670	197	1899	913	780
31	C	426	3479	647	1139	263	2096	717	1463
1971 APRIL									
1	H	207	1192	747	412	123	680	800	539
2	H	167	1169	592	635	103	717	765	824
3	C	125	852	594	615	108	752	726	677
4	C	107	835	476	573	107	874	588	795
5	C	66	632	638	585	67	647	811	740
6	C	74	609	650	617	63	529	858	775
7	H	98	683	481	759	63	432	622	835
8	C	152	1065	272	532	100	714	305	575
9	C	103	710	424	621	81	568	521	788
10	H	93	623	714	869	138	959	1003	1063
11	C	102	643	533	1186	110	706	570	1418
12	C	205	1405	478	1131	213	1380	585	1543
13	C	287	1808	413	1590	239	1541	484	2056
14	H	421	2442	593	1242	278	1603	687	1393
15	C	428	2634	710	917	259	1586	855	920
16	H	404	2420	527	548	223	1348	599	544
17	H	421	2647	1101	573	237	1487	1392	643
18	H	318	2386	808	629	202	1456	966	860
19	C	320	2168	580	636	215	1421	752	722
20	H	304	1995	978	687	230	1462	1133	694
21	C	223	1351	918	338	177	1075	962	336
22	H	145	909	1621	315	169	1050	1881	434
23	C	87	528	1240	220	129	780	1484	228
24	C	33	223	1014	567	31	239	1460	641
25	H	83	575	553	418	58	387	736	519
26	K	85	532	0	196	57	343	0	278
27	H	176	940	475	485	100	543	502	526
28	H	138	890	1049	587	76	488	1116	708
29	C	145	756	341	539	79	418	423	662
30	H	84	586	621	689	48	334	756	769
1971 FEBRUARY									
1	C	423	3738	524	1195	242	2153	673	1382
2	H	458	3573	682	1041	268	2043	789	1125
3	C	385	3410	1298	1248	234	2005	1398	1401
4	C	403	3206	1080	723	258	2027	1088	782
5	C	345	2803	1302	546	243	2131	1509	592
6	C	313	2290	1281	504	249	1898	1389	577
7	C	286	1825	1104	504	323	2045	1303	577
8	H	192	931	1043	793	231	1036	1555	867
9	C	109	642	726	485	85	522	1032	584
10	H	116	516	1325	196	88	408	1522	367
11	H	64	367	1185	412	81	520	1494	655
12	C	57	329	1084	400	114	685	1611	634
13	H	95	702	476	1159	99	714	670	1740
14	H	119	772	153	1534	121	792	250	2098
15	H	148	1020	411	1344	102	690	515	1477
16	H	189	1254	631	959	119	786	617	885
17	C	191	1359	840	315	175	1255	965	537
18	C	246	1683	581	432	262	1811	698	643
19	C	287	1913	369	549	279	1902	546	683
20	C	310	2151	484	844	244	1724	716	1046
21	H	310	2234	608	513	219	1580	681	626
22	C	373	2381	937	579	250	1631	1131	652
23	H	406	2886	842	437	290	2038	968	681
24	C	368	2514	1069	771	244	1752	1317	928
25	H	382	2343	929	601	274	1631	1329	669
26	H	348	2266	469	524	243	1546	693	777
27	H	317	2151	428	754	211	1430	475	967
28	C	303	2085	658	1464	203	1392	716	1605
1971 MAY									
1	H	85	489	475	486	53	292	456	513
2	C	63	405	858	418	61	350	883	523
3	C	84	535	451	462	68	442	653	579
4	H	147	942	363	683	103	648	463	668
5	H	257	1490	352	375	156	910	353	371
6	H	342	2298	569	522	198	1291	595	586
7	C	320	2507	385	529	185	1521	501	640
8	C	397	2746	242	407	227	1557	276	527
9	H	319	2425	431	850	218	1596	521	1277
10	H	273	2007	477	955	201	1493	466	1159
11	C	185	1409	685	1271	208	1618	745	1586
12	H	178	1111	955	1272	249	1585	1096	1360
13	C	127	810	653	310	123	816	1113	308
14	H	144	1071	648	444	109	862	876	586
15	C	100	692	485	552	58	408	600	720
16	H	70	540	455	695	62	435	598	851
17	C	59	498	599	210	42	333	650	310
18	H	50	426	718	388	38	315	923	545
19	H	42	391	869	481	30	275	1068	623
20	H	50	271	1040	479	36	196	1260	608
21	H	34	212	1325	447	25	161	1465	516
22	C	27	123	789	201	21	103	972	282
23	H	5	21	332	160	2	11	590	208
24	H	10	55	298	160	9	59	338	206
25	C	58	436	555	399	44	328	741	410
26	H	100	700	206	331	63	437	281	437
27	C	174	874	245	145	95	484	309	246
28	H	240	1505	605	686	152	960	742	1026
29	C	192	1282	579	524	124	856	649	683
30	H	176	1069	617	981	144	819	828	1057
31	C	124	766	311	367	103	594	593	612
1971 MARCH									
1	H	255	1608	921	955	211	1342	1294	1237
2	H	210	1472	635	886	167	1141	824	1177
3	C	190	1283	584	627	170	993	877	761
4	C	127	886	425	668	79	544	530	734
5	H	142	872	1210	638	97	603	1313	832
6	C	68	605	894	298	59	495	1000	462
7	C	70	459	702	340	103	732	966	544
8	C	82	582	533	608	111	801	582	748
9	H	87	604	1200	792	78	562	1294	790
10	H	92	753	616	572	66	536	759	700
11	H	132	911	968	495	109	736	1109	637
12	H	189	1111	924	682	154	904	1111	900
13	H	224	1317	616	1210	147	852	847	1553
14	C	170	1238	321	1091	102	738	394	1150
15	C	169	1075	810	864	98	613	811	931
16	H	172	1046	1028	753	99	602	1101	966
17	C	158	1058	889	813	95	626	894	925
18	H	163	1144	649	836	132	913	724	961
19	H	152	1071	555	610	138	955	623	680
20	C	110	716	879	548	121	857	1066	591
21	C	82	656	805	473	80	652	977	541
22	H	126	558	954	532	71	318	998	655
23	H	76	510	1264	854	59	355	1606	1118
24	H	82	511	1087	510	56	353	1202	525
25	H	89	632	709	509	92	669	919	772
26	H	95	712	876	654	88	617	1070	808
27	H	117	823	623	556	88	604	774	600
28	H	126	861	555	465	81	548	580	523
29	C	138	945	344	462	82	550	401	537
30	H	122	929	478	644	68	517	616	742
31	H	169	1134	590	378	90	602	689	402
1971 JUNE									
1	H	105	791	436	757	87	703	617	1017
2	H	97	699	815	1137	109	740	1026	1433
3	H	84	665	411	845	95	706	512	942
4	C	77	530	423	546	53	370	626	689
5	C	104	580	278	455	60	338	422	657
6	C	89	609	568	790	47	324	627	1075
7	C	100	630	692	368	52	322	789	609
8	C	85	643	445	746	44	339	552	805
9	C	92	522	279	367	51	290	479	355
10	C	83	467	814	357	52	295	823	376
11	H	64	373	1251	1010	49	296	1401	1289
12	C	59	290	837	726	51	259	1116	890
13	H	34	209	655	654	30	181	781	785
14	K	14	106	210	0	16	131	312	0
15	H	18	85	921	725	12	59	1047	958
16	H	11	92	772	886	6	94	1028	1217
17	H	42	186	1015	830	30	137	1110	915
18	K	16	162	600	148	12	115	746	146
19	C	24	137	437	560	20	127	666	714
20	H	41	280	666	942	34	229	747	972
21	H	39	281	484	749	28	206	641	880
22	H	55	342	918	653	48	325	1031	888
23	H	30	219	334	703	23	175	600	803
24	H	92	590	814	826	58	356	947	1030
25	C	134	866	550	537	80	518	609	669
26	C	154	842	537	358	118	694	691	608
27	H	241	1211	369	727	219	1219	533	1198
28	H	246	1633	450	576	227	1514	448	728
29	H	345	2307	380	679	248	1694	455	741
30	H	429	2919	601	983	276	1864	946	1034

TOTAL AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR

Date and Place		Projected Area Umb.	Projected Area Whole Spots	Projected Area Faculae West	Projected Area Faculae East	Corrected Area Umb.	Corrected Area Whole Spots	Corrected Area Faculae West	Corrected Area Faculae East
1971 JULY									
1	H	523	3374	553	427	298	1937	829	565
2	H	494	3073	427	369	272	1704	461	486
3	H	395	2688	529	508	220	1498	663	570
4	H	372	2639	289	300	218	1542	449	350
5	C	361	2613	157	225	238	1749	236	445
6	H	279	1935	576	610	209	1429	631	726
7	H	216	1471	635	519	237	1584	784	732
8	H	153	998	1232	347	194	1277	1599	494
9	H	107	634	728	381	152	872	1136	474
10	H	83	565	415	483	72	512	615	699
11	H	101	694	403	449	73	503	475	592
12	H	189	1024	161	553	156	907	228	861
13	C	204	1335	201	480	186	1219	269	560
14	C	237	1478	380	449	177	1139	490	502
15	C	262	1744	446	813	176	1150	451	919
16	H	305	1843	473	772	186	1133	679	916
17	C	310	1855	168	526	164	1026	215	626
18	C	316	1662	492	391	170	880	610	509
19	H	286	1796	391	541	156	994	628	677
20	C	278	1616	201	358	156	906	248	408
21	C	239	1240	291	246	155	782	355	277
22	H	229	1226	738	726	165	915	970	890
23	C	195	1123	605	393	162	951	704	596
24	H	321	1716	819	611	331	1744	979	807
25	C	283	1633	882	881	237	1337	1136	1119
26	H	251	1416	934	1082	208	1229	1177	1151
27	C	186	1192	367	600	184	1175	550	750
28	C	188	1143	537	437	126	786	612	540
29	H	151	945	506	483	110	666	507	460
30	H	154	1029	516	333	115	743	694	366
31	H	130	814	712	586	83	494	941	722
1971 OCTOBER									
1	H	290	1893	358	538	172	1130	518	642
2	C	306	1641	260	454	172	924	334	517
3	C	207	1433	194	346	122	840	222	473
4	H	185	1041	681	502	126	691	735	673
5	C	162	991	443	617	116	769	511	789
6	C	117	941	368	487	110	902	561	620
7	C	99	527	443	507	68	366	560	687
8	C	66	437	638	345	54	345	708	420
9	C	47	295	561	539	47	297	635	601
10	H	21	142	444	544	38	257	681	637
11	C	25	125	312	657	19	87	332	740
12	C	28	141	378	678	17	85	397	817
13	C	19	99	377	474	11	53	430	524
14	H	13	71	545	444	8	40	647	490
15	C	9	54	441	215	6	34	498	292
16	C	21	123	463	301	31	163	444	381
17	C	56	376	741	441	49	331	730	497
18	C	141	1105	452	280	101	791	553	273
19	C	219	1607	590	407	132	969	675	420
20	C	292	2618	429	311	159	1420	424	351
21	H	462	3113	748	583	276	1935	829	770
22	H	485	3565	605	462	279	2018	716	506
23	C	527	3502	632	471	304	1980	731	544
24	C	608	3971	416	619	365	2384	551	702
25	C	518	3431	364	504	392	2578	433	734
26	C	402	2533	757	566	348	2207	812	648
27	C	281	1940	722	638	332	2242	1005	807
28	C	244	1405	629	544	201	1158	877	622
29	C	186	1257	234	435	124	834	394	509
30	C	204	1151	403	287	117	654	441	422
31	H	202	1232	979	561	205	1110	1098	890

Date and Place		Projected Area Umb.	Projected Area Whole Spots	Projected Area Faculae West	Projected Area Faculae East	Corrected Area Umb.	Corrected Area Whole Spots	Corrected Area Faculae West	Corrected Area Faculae East
1971 AUGUST									
1	H	122	725	504	654	81	486	610	781
2	H	96	595	494	563	64	392	517	634
3	C	69	457	502	468	73	521	529	561
4	H	71	466	1059	345	83	520	1269	551
5	H	82	538	678	437	81	536	875	508
6	C	93	560	490	458	68	411	515	531
7	H	114	765	494	574	70	459	548	637
8	H	187	1340	780	494	102	737	953	648
9	C	228	1484	368	567	127	811	368	743
10	C	232	1383	778	556	132	787	851	626
11	H	184	1117	700	436	130	774	862	739
12	C	165	897	512	500	120	680	619	694
13	H	94	532	492	709	89	504	684	772
14	H	74	443	822	536	90	549	979	676
15	H	56	351	660	239	77	459	949	290
16	H	86	419	402	516	72	342	547	639
17	C	83	563	321	522	109	638	357	648
18	C	164	1187	511	478	219	1685	589	619
19	H	300	2126	571	456	284	2108	637	539
20	C	361	3281	390	634	272	2493	406	697
21	C	466	4229	575	563	296	2666	671	669
22	C	524	4475	410	577	305	2592	505	627
23	C	654	4629	145	478	363	2561	170	581
24	H	748	4533	171	490	415	2517	169	549
25	H	541	4016	341	434	322	2382	440	406
26	H	400	3177	547	227	271	2214	606	254
27	H	290	2314	1115	443	224	1802	1217	648
28	C	175	1526	804	363	175	1597	960	421
29	C	121	644	716	583	217	1186	926	750
30	H	41	217	410	331	50	262	501	375
31	H	18	122	634	363	25	170	811	540
1971 NOVEMBER									
1	H	261	1302	836	913	221	1108	947	1261
2	H	220	1477	341	616	196	1240	527	780
3	C	254	1541	287	606	173	1062	276	613
4	H	252	1535	1089	616	174	1049	1245	870
5	H	245	1639	527	594	193	1275	664	832
6	H	199	1131	396	405	163	846	633	543
7	H	134	908	307	703	70	480	367	789
8	C	125	824	180	636	69	458	165	676
9	C	95	669	337	878	59	419	364	975
10	H	55	534	759	781	43	419	818	813
11	H	56	399	1399	438	72	522	1421	685
12	C	45	309	412	656	77	509	629	815
13	C	38	228	421	654	80	506	416	865
14	C	72	393	624	793	94	529	681	909
15	H	112	638	374	505	96	554	435	575
16	C	110	704	487	1055	76	490	532	1155
17	H	151	901	462	495	131	713	592	657
18	H	187	1008	359	956	128	696	422	1132
19	C	199	1237	295	411	133	829	378	488
20	H	213	1253	317	275	129	753	354	323
21	K	182	1137	280	200	105	657	244	271
22	H	253	1674	785	1253	244	1537	879	1602
23	H	295	1895	718	905	239	1593	895	950
24	H	247	1948	556	740	210	1604	730	879
25	C	242	1822	283	388	172	1401	420	506
26	C	314	2359	558	390	172	1289	691	565
27	C	287	2262	432	486	156	1234	509	596
28	C	274	2378	786	828	161	1361	994	1144
29	H	285	1858	261	652	181	1201	351	783
30	H	182	1315	977	882	147	1083	1166	1073

Date and Place		Projected Area Umb.	Projected Area Whole Spots	Projected Area Faculae West	Projected Area Faculae East	Corrected Area Umb.	Corrected Area Whole Spots	Corrected Area Faculae West	Corrected Area Faculae East
1971 SEPTEMBER									
1	C	17	91	408	463	40	196	575	524
2	H	16	105	510	614	9	61	559	685
3	H	72	419	589	362	39	220	768	451
4	H	53	401	430	249	27	207	588	303
5	H	75	501	396	442	40	271	463	550
6	H	181	1031	440	498	110	630	511	640
7	H	185	1313	937	576	138	988	961	709
8	H	159	1089	1348	612	174	1203	1493	764
9	H	90	507	836	531	191	1022	1068	611
10	H	13	90	983	519	39	290	1258	650
11	H	16	81	496	316	19	98	705	401
12	H	30	176	510	521	33	175	639	670
13	H	69	402	553	723	76	442	711	1149
14	H	107	661	248	1278	115	716	266	1645
15	H	175	1023	462	1002	136	814	487	1047
16	H	165	1009	566	805	116	701	596	905
17	H	187	1006	656	563	113	606	705	630
18	C	159	951	383	460	92	560	478	504
19	H	136	779	664	698	73	408	737	869
20	H	102	593	462	789	54	323	498	990
21	H	115	678	746	1141	72	430	838	1262
22	H	87	625	852	337	72	512	877	327
23	P	61	284	1249	359	57	264	1340	447
24	H	73	423	865	415	116	660	1183	602
25	H	105	668	887	875	105	637	1262	1156
26	H	128	759	280	730	102	591	312	848
27	H	206	1160	807	785	139	782	952	845
28	H	252	1652	617	796	229	1519	660	916
29	H	305	1744	650	739	217	1346	671	844
30	H	305	1972	550	572	190	1299	639	644
1971 DECEMBER									
1	C	133	1018	997	451	117	898	1040	686
2	C	111	966	832	485	131	1181	1006	573
3	H	107	617	845	454	93	550	1538	562
4	C	103	694	251	461	63	427	461	532
5	C	171	1217	671	745	95	667	785	1083
6	C	204	1711	272	503	132	1062	323	760
7	C	200	1612	357	861	130	954	670	1235
8	H	206	1524	260	748	123	902	293	787
9	C	241	1780	441	588	149	1090	494	896
10	H	235	1475	1051	466	175	1142	1198	622
11	H	227	1650	617	671	208	1477	670	866
12	P	366	1667	445	763	301	1409	587	824
13	P	356	1558	513	499	223	976	662	449
14	H	230	1756	477	337	136	1028	696	313
15	C	181	1284	639	399	125	854	725	553
16	H	190	1189	583	594	141	959	584	669
17	C	254	1606	503	535	214	1382	568	640
18	H	330	2101	423	1160	263	1726	552	1669
19	C	252	1958	449	970	195	1577	474	1144
20	C	298	2214	479	898	195	1452	568	869
21	C	255	2154	846	866	160	1337	916	906
22	C	267	2178	719	375	164	1310	889	441
23	C	210	1986	513	627	136	1164	760	670
24	K	228	1861	138	236	121	984	124	217
25	K	180	1426	316	514	102	813	306	636
26	C	129	893	383	477	97	635	522	520
27	C	122	780	1128	805	132	921	1108	997
28	H	97	532	1126	639	113	633	1199	775
29	H	76	571	1429	930	73	588	1800	1123
30	C	77	587	823	908	49	397	1115	973
31	C	113	785	437	616	74	481	507	634

SUMMARY OF RESULTS FOR 1968

MEAN AREAS OF SUNSPOTS AND FACULAE FOR EACH ROTATION OF THE SUN

FROM 1967 DECEMBER 20 TO 1969 JANUARY 4

No. of Rotation	Rotation Commenced	Days Photographed	Mean Projected Daily Area Umbrae	Whole Spots	Faculae	Mean Corrected Daily Area Umbrae	Whole Spots	Faculae
1529	1967 December 19.51	27	526	3911	2572	389	2896	3136
1530	1968 January 15.84	27	450	2892	2584	345	2237	3014
1531	February 12.19	28	219	1548	1943	157	1106	2291
1532	March 10.52	27	267	1632	2045	202	1227	2474
1533	April 6.82	27	203	1250	2399	169	1063	2897
1534	May 4.07	27	409	2508	2633	313	1921	3188
1535	May 31.29	28	398	2672	2888	284	1922	3435
1536	June 27.49	27	280	1840	2460	211	1386	2993
1537	July 24.69	27	378	2427	2516	287	1883	3092
1538	August 20.92	27	229	1525	2675	173	1152	3278
1539	September 17.17	28	252	1602	2549	185	1183	3061
1540	October 14.46	27	320	2148	2450	237	1573	2932
1541	November 10.76	27	239	1769	2216	160	1192	2647
1542	December 8.07	28	274	1992	2242	236	1691	2728
Mean Areas of Sunspots and Faculae for 1968		366	312	2090	2434	234	1571	2928

MEAN HELIOGRAPHIC LATITUDE OF SUNSPOTS FOR EACH ROTATION OF THE SUN

FROM 1967 DECEMBER 20 TO 1969 JANUARY 4

No. of Rotation	Rotation Commenced	Days Photographed	Northern Spots Mean Daily Area	Mean Hel. Lat. °	Southern Spots Mean Daily Area	Mean Hel. Lat. °	All Spots Mean Hel. Lat. °	Mean Dist. fm Equator °
1529	1967 December 19.51	27	1262	16.67	1634	20.72	-4.42	18.96
1530	1968 January 15.84	27	1876	13.39	361	15.47	+8.74	13.73
1531	February 12.19	28	788	13.85	318	24.62	+2.79	16.95
1532	March 10.52	27	763	20.30	465	20.08	+5.01	20.22
1533	April 6.82	27	882	22.24	181	18.44	+15.31	21.60
1534	May 4.07	27	1056	19.16	865	23.06	+0.15	20.92
1535	May 31.29	28	1156	14.50	766	19.26	+1.04	16.40
1536	June 27.49	27	1047	12.99	339	15.91	+5.93	13.70
1537	July 24.69	27	958	11.31	925	14.13	-1.19	12.70
1538	August 20.92	27	308	12.96	845	14.38	-7.08	14.01
1539	September 17.17	28	923	14.25	261	14.58	+7.90	14.32
1540	October 14.46	27	751	15.56	822	15.25	-0.54	15.40
1541	November 10.76	27	685	14.96	507	12.25	+3.38	13.81
1542	December 8.07	28	1032	16.99	659	22.97	+1.43	19.32
Mean Heliographic Latitude of Sunspots for 1968		366	960	15.40	611	18.18	+2.35	16.48

SUMMARY OF SOLAR ACTIVITY FOR 1968

Chief features of the record for 1968 are as follows:

(1) Activity remained fairly constant and the mean daily area of sunspots only rose to 1571 millionths from 1524 millionths in 1967.

(2) The largest spot group crossed the Sun's central meridian on January 30.6 in latitude 13°N; its mean area was 2383 millionths. There were twenty-six groups with mean areas exceeding 500 millionths.

(3) There were no spot-free days during the year

(4) The ratio of mean corrected areas of faculae/sunspots was 1.86, and that of mean corrected areas of umbrae/whole spots 0.149

(5) The number and distribution, northern and southern hemispheres, of spot groups of

(a) two days' duration or longer

(b) one day's duration

were as follows:

	(a)	(b)
Northern spots	209	93
Southern spots	186	95
	395	188

(6) The following table gives the mean daily areas of sunspots (projected and corrected values) and faculae (corrected only) for each calendar month

Month	Spots Projected	Spots Corrected	Faculae Corrected
January	3296	2483	3060
February	2517	1879	2638
March	1492	1117	2327
April	1217	1002	2794
May	2481	1904	3174
June	2569	1839	3388
July	1892	1482	2971
August	2145	1641	3149
September	1747	1264	3371
October	1932	1407	2934
November	1559	1135	2705
December	2216	1685	2627

SUMMARY OF RESULTS FOR 1969

MEAN AREAS OF SUNSPOTS AND FACULAE FOR EACH ROTATION OF THE SUN

FROM 1969 JANUARY 5 TO 1969 DECEMBER 24

No. of Rotation	Rotation Commenced	Days Photographed	Mean Projected Daily Area Umbrae	Mean Projected Daily Area Whole Spots	Mean Projected Daily Area Faculae	Mean Corrected Daily Area Umbrae	Mean Corrected Daily Area Whole Spots	Mean Corrected Daily Area Faculae
1543	1969 January 4.40	27	353	2160	2603	254	1559	3025
1544	January 31.74	27	269	1702	2569	197	1238	3046
1545	February 28.08	28	429	2742	2778	320	2069	3250
1546	March 27.39	27	411	2700	2860	296	1957	3358
1547	April 23.66	27	199	1245	2788	151	952	3426
1548	May 20.89	27	521	3321	2568	372	2390	3061
1549	June 17.10	27	255	1616	2599	185	1204	3097
1550	July 14.29	27	254	1744	2252	175	1237	2737
1551	August 10.51	28	154	998	1999	114	756	2401
1552	September 6.76	27	222	1248	2038	160	900	2365
1553	October 4.03	27	344	2269	2179	247	1635	2515
1554	October 31.32	28	356	2303	1911	265	1746	2318
1555	November 27.63	27	249	1526	2129	180	1113	2565
Mean Areas of Sunspots and Faculae for 1969		365	310	1970	2400	226	1452	2854

MEAN HELIOGRAPHIC LATITUDE OF SUNSPOTS FOR EACH ROTATION OF THE SUN

FROM 1969 JANUARY 5 TO 1969 DECEMBER 24

No. of Rotation	Rotation Commenced	Days Photographed	Northern Spots Mean Daily Area	Northern Spots Mean Hel. Lat.	Southern Spots Mean Daily Area	Southern Spots Mean Hel. Lat.	All Spots Mean Hel. Lat.	All Spots Mean Dist. fm Equator
				°		°	°	°
1543	1969 January 4.40	27	1025	15.90	534	14.51	+5.48	15.43
1544	January 31.74	27	874	12.87	364	15.13	+4.65	13.53
1545	February 28.08	28	1486	16.50	583	19.39	+6.39	17.31
1546	March 27.39	27	1525	12.83	432	11.90	+7.37	12.62
1547	April 23.66	27	514	11.93	438	13.25	+0.34	12.54
1548	May 20.89	27	1186	11.99	1205	15.29	-1.81	13.70
1549	June 17.10	27	556	11.17	648	15.29	-3.07	13.38
1550	July 14.29	27	356	13.41	881	11.17	-4.09	11.82
1551	August 10.51	28	522	9.90	234	16.71	+1.65	12.01
1552	September 6.76	27	445	10.35	455	16.02	-2.97	13.21
1553	October 4.03	27	1357	12.44	278	13.11	+8.09	12.56
1554	October 31.32	28	1606	13.05	140	12.70	+10.98	13.02
1555	November 27.63	27	524	14.14	588	13.26	-0.35	13.67
Mean Heliographic Latitude of Sunspots for 1969		365	922	13.33	530	14.56	+3.15	13.73

SUMMARY OF SOLAR ACTIVITY FOR 1969

Chief features of the record for 1969 are as follows:

(1) Activity remained fairly constant although the mean daily area of sunspots fell slightly to 1452 millionths from 1571 millionths in 1968

(2) The largest spot group crossed the Sun's central meridian on October 26.1 in latitude 11°N; its mean area was 1772 millionths. There were eighteen groups with mean areas exceeding 500 millionths.

(3) There were no spot-free days during the year

(4) The ratio of mean corrected areas of faculae/sunspots was 1.97 and that of mean corrected areas of umbrae/whole spots 0.156

(5) The number and distribution, northern and southern hemispheres, of spot groups of

(a) two days' duration or longer

(b) one day's duration

were as follows:

	(a)	(b)
Northern spots	210	83
Southern spots	167	76
	377	159

(6) The following table gives the mean daily areas of sunspots (projected and corrected values) and faculae (corrected only) for each calendar month

Month	Spots Projected	Spots Corrected	Faculae Corrected
January	2043	1571	3053
February	1738	1272	3124
March	2818	2188	3217
April	2182	1509	3342
May	1810	1336	3306
June	2496	1794	2974
July	1556	1168	2912
August	1691	1200	2621
September	1125	846	2292
October	2160	1574	2517
November	2270	1699	2421
December	1741	1247	2484

SUMMARY OF RESULTS FOR 1970

MEAN AREAS OF SUNSPOTS AND FACULAE FOR EACH ROTATION OF THE SUN FROM 1969 DECEMBER 25 TO 1971 JANUARY 10

No. of Rotation	Rotation Commenced		Days Photographed	Mean Projected Daily Area: Umbrae	Whole Spots	Faculae	Mean Corrected Daily Area: Umbrae	Whole Spots	Faculae
1556	1969 December	24.95	28	236	1467	2052	175	1100	2468
1557	1970 January	21.29	27	381	2514	1765	289	1919	2145
1558	February	17.63	27	439	2901	1928	313	2097	2339
1559	March	16.96	27	408	2542	2093	287	1779	2508
1560	April	13.25	28	300	2043	2184	239	1645	2633
1561	May	10.49	27	337	2608	2035	249	1896	2567
1562	June	6.70	27	345	2512	2185	243	1770	2701
1563	July	3.90	27	301	2209	2147	217	1582	2722
1564	July	31.11	27	232	1700	1814	171	1277	2308
1565	August	27.34	28	253	1793	2152	180	1275	2689
1566	September	23.61	27	214	1474	1944	154	1068	2366
1567	October	20.89	27	307	2197	2293	207	1484	2692
1568	November	17.19	28	322	2261	2256	248	1768	2735
1569	December	14.51	27	183	1244	1591	143	964	1938
Mean Areas of Sunspots and Faculae for 1970			365	315	2178	2036	230	1596	2497

MEAN HELIOGRAPHIC LATITUDE OF SUNSPOTS FOR EACH ROTATION OF THE SUN FROM 1969 DECEMBER 25 TO 1971 JANUARY 10

No. of Rotation	Rotation Commenced		Days Photographed	Northern Spots: Mean Daily Area	Mean Hel. Lat.	Southern Spots: Mean Daily Area	Mean Hel. Lat.	All Spots: Mean Hel. Lat.	Mean Dist. fm Equator
					°		°	°	°
1556	1969 December	24.95	23	269	13.21	831	14.09	-7.42	13.87
1557	1970 January	21.29	27	435	17.18	1484	14.86	-7.60	15.39
1558	February	17.63	27	835	13.78	1262	13.19	-2.45	13.43
1559	March	16.96	27	807	13.03	972	11.25	-0.23	12.06
1560	April	13.25	28	776	14.34	869	11.04	+0.93	12.60
1561	May	10.49	27	989	16.25	908	10.31	+3.54	13.41
1562	June	6.70	27	1284	16.95	486	9.22	+9.77	14.83
1563	July	3.90	27	959	12.51	624	9.96	+3.65	11.50
1564	July	31.11	27	962	14.76	315	10.66	+8.49	13.75
1565	August	27.34	28	1079	16.69	196	12.74	+12.18	16.09
1566	September	23.61	27	623	14.41	445	9.27	+4.54	12.27
1567	October	20.89	27	1252	14.57	233	11.22	+10.53	14.04
1568	November	17.19	28	1405	13.99	363	10.87	+8.88	13.35
1569	December	14.51	27	775	15.41	190	9.89	+10.43	14.32
Mean Heliographic Latitude of Sunspots for 1970			365	917	14.92°	679	11.95°	+3.50°	13.66°

SUMMARY OF SOLAR ACTIVITY FOR 1970

Chief features of the record for 1970 are as follows:

(1) Activity remained steady with the mean daily area of sunspots rising slightly to 1596 millionths from 1452 millionths in 1969

(2) The largest spot group crossed the Sun's central meridian on May 18.2 in latitude 17°N; its mean area was 1396 millionths. There were seventeen groups with mean areas exceeding 500 millionths.

(3) There were no spot-free days during the year

(4) The ratio of mean corrected areas of faculae/sunspots was 1.56, and that of mean corrected areas of umbrae/whole spots 0.144

(5) The number and distribution, northern and southern hemispheres, of spot groups of
   (a) two days' duration or longer
   (b) one day's duration

   were as follows:

	(a)	(b)
Northern spots	222	69
Southern spots	213	69
	435	138

(6) The following table gives the mean daily areas of sunspots (projected and corrected values) and faculae (corrected only) for each calendar month

Month	Spots: Projected	Spots: Corrected	Faculae: Corrected
January	2184	1593	2240
February	3027	2256	2301
March	1837	1383	2425
April	2536	1920	2612
May	2958	2127	2642
June	2075	1530	2650
July	2362	1646	2677
August	1690	1311	2517
September	1836	1256	2552
October	1768	1271	2377
November	2121	1566	2758
December	1819	1355	2215

SUMMARY OF RESULTS FOR 1971

MEAN AREAS OF SUNSPOTS AND FACULAE FOR EACH ROTATION OF THE SUN

FROM 1971 JANUARY 11 TO 1971 DECEMBER 31

No. of Rotation	Rotation Commenced		Days Photographed	Mean Projected Daily Area Umbrae	Mean Projected Daily Area Whole Spots	Mean Projected Daily Area Faculae	Mean Corrected Daily Area Umbrae	Mean Corrected Daily Area Whole Spots	Mean Corrected Daily Area Faculae
1570	1971 January	10.84	27	386	2952	1950	277	2134	2276
1571	February	7.18	28	222	1466	1452	180	1179	1841
1572	March	6.52	27	132	878	1393	98	652	1642
1573	April	2.83	27	190	1232	1339	141	918	1607
1574	April	30.09	27	134	933	1112	98	681	1348
1575	May	27.31	28	81	514	1224	58	374	1531
1576	June	23.51	27	263	1682	991	183	1179	1276
1577	July	20.71	27	159	946	1151	124	733	1408
1578	August	16.93	27	215	1587	1044	163	1194	1253
1579	September	13.18	28	151	919	1208	111	683	1442
1580	October	10.46	27	236	1557	1049	170	1098	1265
1581	November	6.76	27	167	1158	1200	125	869	1448
1582	December	4.07	28	207	1455	1231	146	1012	1477
Mean Areas of Sunspots and Faculae for 1971			365	197	1342	1272	146	990	1542

MEAN HELIOGRAPHIC LATITUDE OF SUNSPOTS FOR EACH ROTATION OF THE SUN

FROM 1971 JANUARY 11 TO 1971 DECEMBER 31

No. of Rotation	Rotation Commenced		Days Photographed	Northern Spots Mean Daily Area	Northern Spots Mean Hel. Lat.	Southern Spots Mean Daily Area	Southern Spots Mean Hel. Lat.	All Spots Mean Hel. Lat.	All Spots Mean Dist. fm Equator
					°		°	°	°
1570	1971 January	10.84	27	1316	12.74	818	10.79	+3.72	11.99
1571	February	7.18	28	558	14.02	621	12.04	+0.30	12.98
1572	March	6.52	27	125	16.18	527	13.74	-8.01	14.21
1573	April	2.83	27	535	11.09	383	8.76	+2.81	10.12
1574	April	30.09	27	634	10.60	46	6.05	+9.46	10.29
1575	May	27.31	28	177	9.30	197	6.10	+1.18	7.61
1576	June	23.51	27	501	10.81	678	11.56	-2.05	11.24
1577	July	20.71	27	362	11.58	371	11.36	-0.02	11.47
1578	August	16.93	27	155	9.62	1038	10.89	-8.22	10.72
1579	September	13.18	28	285	9.81	399	8.56	-0.90	9.08
1580	October	10.46	27	763	9.96	335	8.53	+4.31	9.53
1581	November	6.76	27	187	13.16	682	12.31	-6.82	12.49
1582	December	4.07	28	320	13.11	693	9.97	-2.68	10.96
Mean Heliographic Latitude of Sunspots for 1971			365	455	11.64	535	10.59	-0.38	11.07

SUMMARY OF SOLAR ACTIVITY FOR 1971

Chief features of the record for 1971 are as follows:

(1) Activity decreased slowly and the mean daily area of sunspots fell to 990 millionths from 1596 millionths in 1970

(2) The largest spot group crossed the Sun's central meridian on August 23.7 in latitude 12°S; its mean area was 1843 millionths. There were eleven groups with mean areas exceeding 500 millionths.

(3) There were no spot-free days during the year

(4) The ratio of mean corrected areas of faculae/sunspots was 1.56, and that of mean corrected areas of umbrae/whole spots 0.148

(5) The number and distribution, northern and southern hemispheres, of spot groups of

(a) two days' duration or longer

(b) one day's duration

were as follows:

	(a)	(b)
Northern spots	157	52
Southern spots	157	42
	314	94

(6) The following table gives the mean daily areas of sunspots (projected and corrected values) and faculae (corrected only) for each calendar month

Month	Spots Projected	Spots Corrected	Faculae Corrected
January	2567	1942	2268
February	1905	1434	1900
March	906	688	1692
April	1207	884	1595
May	971	702	1343
June	642	487	1558
July	1565	1122	1294
August	1584	1156	1258
September	740	599	1513
October	1379	955	1177
November	1243	914	1429
December	1398	999	1509