ROYAL OBSERVATORY
ANNALS

Number 11

Photoheliographic Results 1967

HERSTMONCEUX: ROYAL GREENWICH OBSERVATORY

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PHOTOHELIOGRAPHIC RESULTS 1967

INTRODUCTION

1. General

The photographs from which these measures were made were taken at the Royal Greenwich Observatory; the Royal Observatory, Cape of Good Hope; and the Kodaikanal Observatory, Southern India. In addition, two photographs were supplied by the Mount Wilson and Palomar Observatories, California, and one by the Heliophysical Observatory, Debrecen, Hungary.

The photographs of the Sun obtained at Herstmonceux were taken with the 4-inch photoheliograph, of which the original object-glass was replaced in 1910 by a Grubb photographic objective. The equivalent focal length of the photoheliograph with its present enlarging system (supplied in 1926 by Ross, Ltd.) is 67½ feet, the diameter of the Sun's image at the secondary focus being approximately 7½ inches.

The photographs of the Sun obtained at the Cape Observatory were taken under the superintendence of Her Majesty's Astronomer at the Cape, Dr. R. H. Stoy, and those at Kodaikanal under the superintendence of the Director, Dr. M. K. Vainu Bappu. At the Cape Observatory the instrument employed was a 4-inch photoheliograph giving an image of the Sun about 7½ inches in diameter; at Kodaikanal a Cooke photo-visual objective of 6 inches aperture was used, the image of the Sun which was obtained being of about the same size.

Photographs of the Sun were available for measurement on 365 days in 1967, those finally selected for measurement being supplied by the different observatories as under:

Herstmonceux	250
Cape	110
Kodaikanal	2
Mount Wilson and Palomar	2
Debrecen	1
Total	365

The names of the measurers of the photographs for the year 1967 were as follows:

P. S. Laurie	G. M. Appleby	Mrs. M. E. Berry
Mrs. F. Cannon	Miss C. M. Ladley	C. Sharp
	Mrs. D. M. Wickenden	

At the primary focus of the photoheliographs at Herstmonceux and the Cape two spider-wires are fixed by which the zero of position angles on the photographs can be determined. These wires are inclined at an angle of 45° to the celestial equator. In the Kodaikanal instrument there is one wire fixed parallel to the equator.

The precise zero of position angles for the photoheliographs has been determined by three different methods.

(i) *Zero Photographs.* Plates were exposed twice, with an interval of about 100 seconds between the two exposures, the instrument being firmly clamped. Two images of the Sun, overlapping each other by about a fifth part of the Sun's diameter, were thus produced upon the plates. The exposures were so made that the line joining the cusps passed approximately through the centre of the plates and the inclinations of the two spider-wires to this line were measured. A small correction for the inclination of the Sun's path was applied. Two zero photographs were usually taken each month at Herstmonceux, the Cape and Kodaikanal.

(ii) *Transits.* At Herstmonceux and the Cape, transits of the Sun were taken visually, the times of contact of the first and second limbs of the Sun with the two wires being noted by an eye-and-ear method. The ratio of the time taken by the Sun to pass over the NE–SW wire to the time taken to pass over the SE–NW wire was used in order to find the angle made by the Sun's path with the bisectors of the wires. From this, again incorporating a correction to allow for the inclination of the Sun's path, the orientation of the wires with respect to the N–S line could be inferred. Transits were generally taken at Herstmonceux and the Cape during each month.

(iii) *Supplementary Zero Photographs.* At Herstmonceux, supplementary partial images of the Sun were occasionally recorded on otherwise normal photographs, a second exposure being made after clamping the instrument firmly for about 130 seconds. The small portion of the Sun's limb visible at the western edge of the plate can be used, together with the main image which it does not intersect, to deduce the orientation of the wires in a way similar to that used for the zero photographs. One supplementary zero photograph was taken at Herstmonceux each month. The values for the zero of position angles deduced from them were given half weight in the adoption of zero corrections to be used in the reduction of photographs.

2. Reductions

(i) *Method of Measurement.* The measures of the photographs were made with a large position-micrometer that can be used for photographs of the Sun up to 12 inches in diameter. In this micrometer the photograph is held with its film-side uppermost on three pillars fixed on a circular plate, which can be turned through a small angle about a pivot in its circumference by means of a screw and antagonistic spring acting at the opposite extremity of the diameter. The pivot of this plate is mounted on the circumference of another circular plate which can be turned by a similar screw-action about a pivot in its circumference. This pivot, 90° distant from that of the upper plate, is mounted on a third circular plate, with a position-circle graduated in divisions of 30 minutes of arc, which may be rotated about its centre. By this means small movements in two directions at right angles to each other can be readily given and the photograph can be accurately centred with respect to the centre of rotation of the position-circle. When this has been done, a Ramsden eyepiece, having at its anterior focus a glass diaphragm ruled with cross-lines into squares with sides of one hundredth of an inch (for measurement of areas), is moved along a slide adjusted so that the centre of the eyepiece moves diametrically across the photograph, the diaphragm being nearly in contact with the photographic film, so that parallax is negligible. The distance of a spot or facula from the centre of the disk is read from a scale and vernier to 1/250th of an inch, corresponding to 0·001 of the Sun's radius for images 8 inches in diameter. The position angle is read from the large position-circle which rotates with the photographic plate. The photograph is illuminated by diffused light reflected from white paper placed at an angle of 45° below the photograph.

In the case of large or complex groups of spots, the chief components were measured individually; so also in the case of groups near to the east or west limbs of the Sun where the effects

of foreshortening are appreciable. In other cases the position of the centre of a group was estimated by the measurer at the micrometer or derived during the computation.

When required, corrections have been applied to the measured distances and position angles to allow for differential refraction. The details of this correction were given in the Introduction to the *Greenwich Photo-Heliographic Results* for 1909. It is necessary to apply this correction to about twenty per cent of the photographs taken at Herstmonceux in the months October to March.

(ii) *Calculations of Heliographic Longitude and Latitude.* The calculations are made from formulae given by W. de la Rue, B. Stewart and B. Loewy, *Phil. Trans.*, 1869. The system of heliographic co-ordinates may be defined as follows. The inclination of the Sun's axis to the ecliptic is assumed to be 82° 45′, the longitude of the ascending node of the Sun's equator on the ecliptic for 1967·0 to be 75° 18′·0, and the period of the Sun's sidereal rotation to be 25·38 days. The meridian which passed through the ascending node on 1854 January 1, Greenwich mean noon, is taken as the zero meridian and longitudes increase from east to west. The mean synodic rotation period is 27·2753 days; synodic rotation periods are counted from 1853 November 9, in continuation of Carrington's series.

Let r be the measured distance of a spot from the centre of the Sun's apparent disk, χ the position angle of the spot from the Sun's axis, R the measured radius of the Sun on the photograph and S the tabular semi-diameter of the Sun in arc. Let ρ and ρ' be the angular distances of a spot from the centre of the apparent disk, as viewed from the Sun's centre and from the Earth respectively. ρ—the heliocentric angle—is obtained from the following equations:

$$\rho' = \frac{r}{R} S \qquad \text{and} \qquad \sin(\rho + \rho') = \frac{r}{R}$$

If B_0 and ϕ are the heliographic latitudes and L_0 and λ the heliographic longitudes of the Earth and the spot respectively,

$$\sin\phi = \cos\rho \sin B_0 + \sin\rho \cos B_0 \cos\chi$$
$$\sin(L_0 - \lambda) = \sin\chi \sin\rho \sec\phi$$

χ is found from the position angle measured eastwards from the north point of the Sun's disk by subtracting P, the position angle of the north end of the Sun's axis also measured eastwards from the north point. The three quantities P, B_0 and L_0 for the time of the exposure of each photograph are derived from the *Ephemeris for Physical Observations of the Sun*, given on page 300 of the *Astronomical Ephemeris* for 1967.

3. Description of Tables

(i) *Positions and Areas of Sunspots for each Day.* The measured positions and areas of sunspots are given for each day of the year (pp. 14–74). 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 of the Sun's axis from the north point
Col. 3. Heliographic longitude of the centre of the disk
Col. 4. Heliographic latitude 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 1966 in *Royal Observatory Annals* No. 10, 1974. 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 (pp. 75–91).

(ii) *General Catalogue of Groups of Sunspots*

(*a*) This catalogue (pp. 94–103) contains particulars of every group of sunspots which lasted for two or more days, group numbers being in continuation of those given in 1966 and 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 also (pp. 14–74), 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 $\xi = 14^\circ{\cdot}37 - 2^\circ{\cdot}60 \sin^2 \phi$, 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 $0^d{\cdot}01$, corresponding to $0^\circ{\cdot}13$ of solar longitude. In other cases, in which groups disappear before or appear after the central meridian, the deduced time is given to $0^d{\cdot}1$.

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 (pp. 105–110) 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 suffixed by a number given in 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 (pp. 112–114) 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 Mount Wilson and Palomar 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.

4. Summary of Results

The rotations adopted in the tables (which are in continuation of those for the years 1873–1966; see page 10, *R. Obs. Annals* No. 10, 1974) 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 25·38 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.

MEAN AREAS OF SUNSPOTS AND FACULAE FOR EACH ROTATION OF THE SUN
FROM 1966 DECEMBER 30 TO 1967 DECEMBER 19

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
1516	1966 December 29·95	27	402	2359	2284	293	1746	2745
1517	1967 January 26·29	28	306	1748	2590	229	1341	3036
1518	February 22·63	27	451	2826	2573	333	2093	3015
1519	March 21·95	27	308	1749	2135	246	1436	2539
1520	April 18·24	28	165	961	1875	125	740	2205
1521	May 15·48	27	471	2970	2179	343	2167	2651
1522	June 11·68	27	224	1261	2299	167	947	2751
1523	July 8·88	27	372	2427	2573	271	1775	3092
1524	August 5·09	27	398	2507	2691	323	2039	3209
1525	September 1·33	28	192	1141	2549	146	900	2965
1526	September 28·60	27	193	1153	2265	145	857	2744
1527	October 25·89	27	315	1869	2150	245	1480	2580
1528	November 22·19	28	333	2371	2667	261	1846	3196
Mean Areas of Sunspots and Faculae for 1967		365	324	1997	2385	245	1524	2840

MEAN HELIOGRAPHIC LATITUDE OF SUNSPOTS FOR EACH ROTATION OF THE SUN
FROM 1966 DECEMBER 30 TO 1967 DECEMBER 19

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. from Equator
				°		°	°	°
1516	1966 December 29·95	27	946	17·87	800	22·39	− 0·57	19·94
1517	1967 January 26·29	28	998	17·04	343	21·48	+ 7·18	18·17
1518	February 22·63	27	1366	21·14	727	19·78	+ 6·92	20·67
1519	March 21·95	27	1014	21·09	423	21·10	+ 8·68	21·09
1520	April 18·24	28	461	22·21	280	20·54	+ 6·05	21·58
1521	May 15·48	27	1784	23·21	383	18·53	+15·84	22·39
1522	June 11·68	27	659	20·04	287	21·59	+ 7·40	20·51
1523	July 8·88	27	1575	21·56	200	21·76	+16·67	21·58
1524	August 5·09	27	1261	20·61	778	24·93	+ 3·24	22·26
1525	September 1·33	28	531	17·23	369	22·88	+ 0·79	19·55
1526	September 28·60	27	571	14·46	285	19·85	+ 3·03	16·25
1527	October 25·89	27	1143	13·81	337	20·61	+ 5·96	15·36
1528	November 22·19	28	1196	18·23	650	23·93	+ 3·39	20·24
Mean Heliographic Latitude of Sunspots for 1967		365	1036	19·53	488	21·49	+ 6·39	20·16

(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.

5. Summary of Solar Activity for the Year 1967

Chief features of the record for 1967 are as follows:

(1) Activity continued to increase considerably and the mean daily area of sunspots rose to 1524 millionths from 595 millionths in 1966

(2) The largest spot group crossed the Sun's central meridian on February 27·2 in latitude 23° N; its mean area was 1896 millionths. There were nineteen 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 0·161

(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	280	198
Southern spots	179	100
	459	298

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

	Spots		Faculae
Month	Projected	Corrected	Corrected
January	2465	1840	2957
February	2046	1493	2911
March	2752	2082	2999
April	1032	892	2268
May	2310	1731	2492
June	1395	1026	2625
July	2094	1476	3030
August	2595	2129	3158
September	1130	886	2968
October	1437	1117	2727
November	2007	1553	2617
December	2633	2004	3307

6. ACKNOWLEDGEMENTS

These results were compiled, under the supervision of P. S. Laurie and Dr. A. L. T. Powell, by Miss C. Y. Hohenkerk, Miss C. M. Ladley and P. J. Rudd.

Thanks are due to the Directors and staff of the Cape, Kodiakanal, Mount Wilson and Palomar, and Debrecen Observatories for their generous supply of photoheliographs to ensure the completeness of these results. Finally, the valuable assistance of Miss J. E. Perry in the publication of this annal is gratefully acknowledged.

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1975 November

Positions and Areas of Sunspots

Daily Results 1967

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	Elements of Day P	L_o	B_o	Group No.	Measures Radial Distance	Position Angle	Position Long.	Lat.	Area Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Jan. 1.458	+ 2.1	327.0	- 3.1	20988	.811	242.6	18.7	-23.8	15	105
				20995	.355	156.8	318.4	-22.0	74	509
				20996	.824	65.3	275.2	+18.2	42	218
				20997	.838	69.5	272.7	+15.3	20	83
				20998	.915	82.1	261.5	+ 6.0	21	93
2.436	+ 1.7	314.1	- 3.2	20988	.909	245.1	18.3	-23.8	18	106
				20995	.336	192.0	318.4	-22.3	170	965
				20996	.690	59.2	275.7	+18.1	42	185
				20997	.681	64.5	274.9	+14.5	15	57
				20998	.805	81.0	261.4	+ 5.3	44	191
				20999	.830	113.1	259.6	-20.9	0	8
3.483	+ 1.1	300.3	- 3.3	20988	.980	246.5	19.0	-23.7	21	176
				20995	.449	222.9	319.6	-22.2	249	1321
				21000	.397	320.3	315.4	+14.5	31	103
				20996	.540	47.3	275.7	+18.4	27	185
				20997	.525	54.8	274.1	+14.6	13	72
				20999	.635	117.2	263.7	-19.5	13	70
				20998	.634	78.1	262.0	+ 4.9	25	156
				21001	.712	61.8	259.5	+17.1	34	129
				21002	.991	59.2	221.7	+29.9	15	138
4.609	+ 0.6	285.5	- 3.4	20995	.619	236.6	319.4	-22.7	243	1590
				21000	.580	301.9	316.0	+14.8	83	319
				20996	.410	23.6	275.6	+18.6	32	240
				20997	.372	30.5	274.3	+15.3	2	16
				20999	.427	129.2	265.1	-18.8	71	194
				20998	.421	70.3	262.2	+ 5.0	25	112
				21001	.529	49.2	260.8	+17.0	53	178
				1516 03	.724	43.3	251.1	+28.9	5	22
				21002	.946	55.8	220.3	+30.7	47	209
5.502	+ 0.2	273.8	- 3.5	20995	.746	242.4	319.4	-22.7	214	1544
				21000	.717	295.4	315.8	+15.2	83	323
				20996	.373	358.0	274.5	+18.3	50	262
				1	.375	356.6	275.1	+18.4	48	238
				20999	.284	155.8	266.7	-18.5	73	380
				20998	.243	51.7	262.8	+ 5.1	6	32
				21001	.411	31.5	260.8	+17.0	27	134
				21003	.854	60.3	220.3	+22.9	6	39
				21002	.889	53.0	218.6	+30.3	45	209
6.464	- 0.3	261.1	- 3.6	20995	.865	245.3	319.6	-23.1	299	1968
				21000	.838	291.0	315.1	+15.3	66	288
				20996	.432	328.6	274.7	+18.0	38	219
				1	.438	327.9	275.2	+18.2	37	201
				20997	.388	329.0	273.0	+15.8	2	29
				20999	.268	197.5	265.9	-18.4	95	608
				21001	.350	354.2	263.2	+16.7	24	89
				20998	.157	356.7	261.6	+ 5.4	4	27
				21004	.499	54.6	236.4	+13.4	7	42
				21002	.788	45.7	220.3	+30.5	23	144
				21003	.759	54.1	219.1	+23.7	31	161
7.100	- 0.6	252.7	- 3.7	20995	.925	246.7	319.8	-22.9	270	1557
				21000	.904	289.4	314.9	+15.8	44	230
				20996	.511	316.7	274.3	+18.3	38	199
				1	.517	316.2	274.7	+18.4	36	184
				20997	.478	314.4	273.5	+16.0	2	11
				20999	.335	220.4	265.9	-18.3	87	537
				21001	.385	335.3	262.3	+16.7	9	40
				20998	.210	315.1	261.2	+ 4.9	2	8

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	Elements of Day P	L_o	B_o	Group No.	Measures Radial Distance	Position Angle	Position Long.	Lat.	Area Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Jan. 7.100	Continued			21004	.396	42.7	236.7	+13.3	7	33
				21002	.728	39.9	219.9	+30.7	16	102
				21003	.673	49.0	219.4	+23.0	11	107
8.441	- 1.3	235.1	- 3.8	21000	.992	285.9	316.1	+15.2	16	126
				20995	.982	246.0	314.4	-24.3	111	632
				20997	.693	296.7	274.8	+15.1	6	35
				20996	.700	300.3	274.3	+17.6	32	207
				20999	.559	241.9	266.2	-18.5	64	502
				21001	.570	305.3	263.9	+15.8	6	39
				1516 04	.518	326.9	252.7	+21.9	5	46
				1516 05	.344	320.3	248.0	+11.5	1	11
				21004	.297	342.7	240.2	+12.6	2	12
				21003	.494	28.1	220.6	+22.0	55	352
				21002	.608	21.4	220.2	+30.6	16	106
9.481	- 1.8	221.4	- 4.0	1516 06	.889	289.6	281.5	+15.3	2	19
				20997	.844	291.1	275.9	+15.3	4	30
				20996	.837	294.0	274.4	+17.5	51	324
				20999	.721	247.9	266.0	-18.5	78	397
				21001	.735	296.1	264.6	+15.9	2	16
				21004	.403	317.2	237.6	+13.3	33	123
				1516 07	.365	205.6	231.2	-23.0	4	23
				21005	.536	350.5	227.1	+27.8	1	15
				21002	.564	0.4	221.1	+30.2	12	82
				21003	.437	3.1	219.9	+21.8	112	728
				21006	.609	31.1	200.7	+27.6	1	11
				21007	.916	72.1	157.3	+14.7	3	13
10.466	- 2.2	208.4	- 4.1	20997	.936	288.6	275.4	+15.8	12	101
				20996	.936	290.7	275.0	+17.8	34	219
				20999	.853	250.6	266.3	-18.6	51	307
				21001	.816	296.1	258.8	+18.5	0	19
				21004	.585	299.7	239.7	+13.3	52	308
				21005	.561	327.8	227.4	+24.4	0	5
				21002	.588	341.2	220.9	+29.7	9	43
				21003	.482	336.4	220.3	+22.1	158	888
				21006	.564	13.6	199.7	+29.1	0	13
				21007	.793	67.9	159.1	+14.7	0	11
11.285	- 2.6	197.6	- 4.2	20996	.981	288.5	274.1	+17.2	52	276
				20999	.927	251.8	265.4	-18.4	45	187
				21008	.786	235.6	245.3	-29.1	3	8
				21004	.719	293.1	240.2	+13.3	84	368
				21005	.662	314.0	228.8	+23.7	0	8
				21002	.653	327.9	221.1	+29.6	10	52
				21003	.573	321.0	220.5	+22.5	133	792
				21009	.350	19.0	190.8	+15.1	16	49
				21010	.922	113.2	130.9	-23.0	0	24
12.475	- 3.2	181.9	- 4.3	20999	.983	251.2	262.0	-19.3	0	23
				21008	.909	240.0	245.8	-28.9	3	21
				21004	.868	287.5	239.9	+12.8	87	506
				21002	.780	312.8	222.5	+28.7	7	19
				21003	.723	307.0	220.4	+22.4	118	735
				1516 08	.521	327.4	199.5	+21.9	0	8
				21009	.370	332.9	191.9	+15.0	22	90
				1516 09	.424	342.8	189.6	+19.6	0	5
				21010	.777	116.3	133.0	-22.9	73	336
				21011	.980	65.5	106.5	+22.9	0	16

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	Elements of Day P	L_o	B_o	Group No.	Measures Radial Distance	Position Angle	Position Long.	Lat.	Area Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Jan. 13.558	- 3.7	167.7	- 4.4	21008	.967	238.0	242.6	-32.0	8	50
				21004	.967	284.5	241.2	+12.8	78	542
				21002	.899	303.8	224.9	+27.6	10	34
				21003	.849	299.3	220.5	+21.9	53	494
				21009	.505	309.5	191.3	+14.6	27	179
				21010	.627	122.7	132.8	-23.3	94	592
				21011	.909	61.7	107.1	+23.4	0	41
14.458	- 4.1	155.8	- 4.5	21004	.991	283.3	236.5	+12.5	31	199
				21002	.968	299.8	226.5	+27.4	4	67
				21003	.935	295.6	221.0	+21.9	67	389
				21009	.650	299.0	191.7	+14.7	55	354
				21010	.483	133.8	133.6	-23.6	106	689
				21011	.801	57.1	109.2	+22.6	22	133
				1516 10	.795	124.3	107.0	-29.6	0	9
15.310	- 4.5	144.6	- 4.6	21002	.986	299.9	220.7	+28.4	0	24
				21003	.975	293.3	218.7	+21.5	9	112
				21009	.794	292.6	193.7	+14.8	45	332
				21010	.390	149.7	132.2	-24.0	135	783
				21011	.695	50.1	109.5	+22.6	35	172
16.288	- 5.0	131.7	- 4.7	21009	.920	288.4	196.1	+14.9	32	232
				21010	.336	182.9	132.8	-24.2	100	686
				21011	.578	38.2	109.1	+22.6	38	206
				21012	.996	73.2	48.8	+16.2	0	99
17.291	- 5.5	118.5	- 4.8	21009	.986	285.7	196.9	+14.5	24	217
				21010	.400	212.8	132.2	-24.2	104	665
				21011	.486	20.2	108.1	+22.3	26	208
				21012	.962	71.6	46.8	+16.2	41	426
18.320	- 5.9	105.0	- 4.9	21010	.545	231.8	132.8	-23.9	93	525
				1516 11	.453	337.1	115.7	+19.8	0	5
				21011	.460	353.9	108.0	+22.3	22	180
				21012	.889	68.7	45.5	+16.3	75	464
				21013	.920	58.0	44.2	+26.8	0	13
				21014	.990	74.1	25.1	+14.9	35	206
19.428	- 6.5	90.4	- 5.0	21010	.726	241.7	134.5	-23.7	72	416
				21011	.536	328.0	108.2	+22.2	33	136
				21015	.445	52.3	69.4	+11.1	1	24
				21012	.763	63.6	45.2	+16.3	63	344
				21013	.812	52.2	44.8	+26.4	6	15
				1516 12	.934	57.8	27.4	+27.7	0	18
				21014	.932	71.7	24.2	+15.1	21	183
				21016	.990	69.6	11.2	+19.3	15	240
20.439	- 6.9	77.1	- 5.1	21010	.861	245.8	135.7	-23.3	54	306
				21011	.655	312.7	108.2	+22.0	26	134
				21015	.328	26.7	68.5	+11.9	19	89
				21013	.699	43.5	44.8	+26.1	3	18
				21012	.625	55.6	44.7	+16.4	60	346
				21017	.641	111.3	38.5	-17.4	3	14
				21014	.834	68.3	23.9	+14.9	33	199
				21018	.928	71.9	11.5	+14.7	9	34
				21016	.936	66.9	11.2	+19.5	34	213
21.417	- 7.4	64.2	- 5.2	21010	.949	247.1	136.2	-23.3	65	272
				21011	.773	304.6	107.5	+22.2	27	146
				21019	.635	314.9	93.1	+22.0	3	15
				21015	.304	340.8	70.0	+11.5	35	264
				21013	.590	28.4	46.1	+26.2	5	29

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POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Jan. 21.417	Continued			21012	.483	42.7	44.4	+15.9	60	361
				21017	.449	118.7	39.9	-17.1	15	81
				21014	.702	63.0	24.1	+14.6	29	206
				21020	.781	66.3	16.7	+14.8	10	48
				21018	.823	68.2	12.2	+14.6	23	132
				21016	.843	63.9	11.3	+18.7	51	222
				21021	.883	108.8	2.3	-19.0	0	9
				21022	.954	67.0	355.1	+20.1	0	14
				21023	.956	119.4	351.1	-29.5	0	25
22.462	- 7.8	50.4	- 5.2	21010	.966	247.2	126.0	-23.3	0	16
				1516 13	.906	289.2	112.5	+14.9	0	23
				21011	.887	298.6	107.6	+22.3	23	112
				21019	.776	304.0	94.2	+21.9	10	34
				21015	.439	309.4	70.6	+11.2	37	180
				21013	.510	4.4	47.9	+25.2	3	11
				21012	.379	16.0	44.2	+16.1	49	246
				21017	.272	139.1	39.7	-17.0	7	30
				21024	.497	42.5	30.0	+16.5	0	7
				21014	.545	52.3	24.1	+14.7	36	175
				21020	.633	58.2	16.7	+15.1	14	61
				21016	.712	55.8	11.9	+19.5	34	163
				21018	.698	62.2	10.9	+14.9	18	83
				21021	.746	110.6	3.1	-18.8	0	10
				21022	.873	62.8	354.6	+20.5	0	9
				21023	.890	122.2	349.4	-30.9	0	5
				21025	.924	67.4	346.5	+18.5	11	67
				21026	.992	112.1	326.6	-22.6	0	24
23.525	- 8.3	36.4	- 5.3	21011	.967	295.1	107.6	+22.6	17	87
				21019	.875	299.0	91.9	+22.1	0	13
				21015	.629	294.5	71.9	+10.7	14	121
				21012	.397	340.0	44.5	+16.5	20	115
				21017	.216	199.3	40.7	-17.0	8	44
				21024	.374	15.4	30.5	+15.8	16	72
				21014	.402	31.2	24.0	+14.8	31	159
				21020	.479	42.5	16.9	+15.6	18	160
				21018	.536	52.3	10.6	+14.3	14	81
				21016	.591	44.9	10.2	+19.9	23	114
				21022	.735	56.5	355.9	+19.8	2	38
				21023	.808	126.4	346.5	-32.1	0	7
				21025	.843	63.5	343.8	+18.8	2	44
				21026	.967	112.0	320.6	-22.6	75	539
24.429	- 8.7	24.5	- 5.4	21015	.790	289.0	74.0	+11.4	9	46
				1516 14	.538	309.5	49.9	+15.1	0	10
				21012	.474	321.5	42.4	+16.5	30	130
				21017	.347	232.5	41.2	-17.3	2	25
				21024	.380	341.8	31.6	+15.7	18	117
				21014	.346	1.2	24.1	+14.7	25	171
				21020	.384	17.8	17.5	+16.0	11	91
				21016	.475	27.8	11.0	+19.5	20	129
				21018	.408	34.2	10.9	+14.4	14	101
				21022	.636	47.1	354.7	+20.9	0	8
				21025	.742	58.1	342.9	+19.0	3	31
				21026	.897	112.7	321.0	-22.7	82	470
25.493	- 9.2	10.5	- 5.5	21015	.913	284.8	74.5	+11.1	0	16
				21027	.657	251.3	50.8	-16.4	0	11
				21012	.635	304.2	43.6	+16.2	35	182
				21024	.498	315.0	31.8	+15.4	16	71
				21028	.341	264.0	30.4	- 7.2	0	7
				21014	.409	326.8	23.8	+14.6	26	137

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POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Jan. 25.493	Continued			21020	.386	341.5	17.8	+15.9	16	98
				21016	.423	354.8	12.8	+19.3	14	78
				21029	.123	351.0	11.6	+ 1.4	0	17
				21018	.355	359.3	10.8	+15.2	35	177
				1516 15	.505	8.4	5.9	+24.3	0	6
				21022	.507	29.2	355.3	+20.8	3	8
				21025	.601	48.0	342.5	+18.8	5	19
				21026	.788	114.8	319.8	-22.8	74	434
				21030	.958	71.6	299.8	+15.8	0	15
26.399	- 9.6	358.6	- 5.6	21027	.789	254.3	50.5	-15.8	0	5
				21013	.817	306.9	44.8	+25.5	7	51
				21012	.754	298.0	42.5	+16.7	40	186
				21028	.605	266.4	35.9	- 6.6	0	5
				21024	.640	303.1	32.3	+15.8	14	56
				21014	.534	309.1	23.9	+14.6	33	159
				21020	.479	319.3	17.5	+15.9	12	91
				21029	.263	298.8	11.9	+ 1.8	9	13
				21016	.466	333.1	11.4	+19.0	12	64
				21018	.408	333.4	9.5	+15.8	46	240
				21022	.443	4.6	356.4	+20.5	0	17
				1517 01	.062	122.7	355.6	- 7.5	0	9
				21026	.669	118.5	319.1	-22.9	86	422
				21030	.898	69.6	298.0	+15.5	5	27
				21031	.970	68.6	285.9	+19.1	17	279
27.294	-10.0	346.8	- 5.7	21027	.895	254.0	50.5	-16.8	0	14
				21013	.890	304.2	42.3	+26.8	5	23
				21012	.858	293.3	42.0	+16.6	28	144
				21024	.787	294.6	34.5	+15.3	0	20
				21032	.828	310.6	32.4	+28.6	0	7
				21014	.670	299.4	23.8	+14.6	34	179
				21020	.601	305.1	17.3	+15.3	16	130
				21029	.483	285.1	14.5	+ 2.2	2	21
				21016	.578	317.9	11.1	+20.2	36	195
				21018	.529	312.6	10.5	+15.7	37	268
				21022	.506	344.3	355.3	+23.5	0	8
				21033	.317	199.0	353.2	-23.0	5	24
				21026	.525	125.4	319.3	-22.7	89	438
				21030	.782	63.7	300.0	+16.4	0	7
				21031	.920	66.0	284.0	+19.4	40	317
28.284	-10.4	333.8	- 5.7	21013	.973	296.4	46.2	+24.0	0	9
				21012	.949	289.1	42.5	+16.1	0	39
				21032	.926	302.3	35.0	+27.0	0	8
				21024	.879	290.8	31.9	+15.2	0	11
				21014	.803	292.8	23.5	+14.4	26	220
				21020	.748	296.6	17.5	+15.4	22	108
				21029	.651	279.5	13.5	+ 1.7	0	7
				1517 02	.807	318.1	13.4	+32.5	0	5
				21016	.710	306.4	11.2	+20.3	80	630
				21018	.682	300.9	11.1	+15.9	33	185
				21022	.570	319.8	356.8	+20.4	0	8
				21033	.430	223.7	352.6	-23.5	3	23
				21026	.377	141.6	319.1	-22.7	81	437
				21030	.643	56.8	299.9	+15.8	3	11
				21031	.817	61.6	284.5	+19.1	71	422
				21034	.955	72.8	263.6	+14.5	0	10
29.453	-10.9	318.4	- 5.8	21014	.928	288.3	23.7	+14.5	23	149
				21020	.886	291.0	17.4	+15.5	23	144
				21018	.843	293.6	11.8	+16.3	28	126
				21016	.848	298.8	10.7	+20.6	89	507

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Jan. 29.453	Continued			21022	.713	305.0	356.5	+19.5	3	34
				21033	.614	239.3	353.2	-23.0	3	27
				21026	.288	179.9	318.4	-22.5	88	403
				21030	.487	40.3	299.3	+16.2	4	22
				21031	.675	52.8	283.8	+19.2	47	382
				21034	.842	68.5	264.5	+14.6	12	52
				21035	.884	117.1	256.9	-26.6	0	9
				21036	.907	112.3	253.2	-22.6	0	10
				21037	.963	75.7	245.9	+12.1	0	24
				21038	.995	75.5	236.2	+13.7	10	41
30.289	-11.2	307.4	- 5.9	21014	.977	285.8	22.9	+14.1	0	83
				21020	.955	288.6	17.2	+15.8	21	77
				21018	.926	290.4	11.9	+16.3	35	187
				21016	.924	295.2	10.4	+20.6	95	502
				21022	.819	298.8	356.8	+19.4	24	100
				21026	.337	211.4	318.3	-22.4	65	382
				21031	.560	41.5	284.3	+19.3	77	357
				21034	.715	63.6	266.2	+14.1	24	76
				21035	.810	118.8	255.0	-26.6	7	61
				21037	.897	74.0	245.9	+11.5	7	33
				21038	.957	73.8	236.6	+13.5	14	28
31.562	-11.8	290.6	- 6.0	21016	.993	291.4	10.7	+20.3	35	432
				21018	.991	287.7	10.3	+16.5	0	199
				21022	.947	293.1	358.0	+19.6	31	130
				21026	.520	235.4	318.1	-22.4	78	392
				21031	.442	15.2	283.6	+19.2	60	252
				21034	.501	49.3	267.7	+13.5	17	90
				21035	.637	126.2	255.5	-26.9	6	34
				21037	.725	68.2	247.5	+11.2	3	11
				21038	.841	69.6	236.6	+13.6	12	58
				21039	.976	60.6	218.3	+27.0	34	151
				21040	.955	105.0	217.1	-16.0	43	241
Feb. 1.293	-12.1	281.0	- 6.0	21022	.970	291.7	353.6	+19.3	0	9
				1517 03	.811	291.8	331.6	+13.7	0	12
				21026	.640	242.1	318.5	-22.2	94	407
				21031	.431	353.3	284.0	+19.2	36	160
				21034	.391	31.0	269.1	+13.6	14	84
				21036	.576	120.3	248.7	-21.9	3	18
				21037	.614	61.9	247.6	+11.7	0	12
				21038	.750	65.4	236.5	+13.9	3	21
				1517 04	.917	64.1	219.3	+20.8	0	8
				21039	.934	58.3	218.3	+26.7	23	157
				21040	.892	104.8	217.5	-15.9	46	189
				21041	.997	75.3	197.5	+14.1	25	240
2.344	-12.9	267.1	- 6.1	21026	.790	246.4	318.5	-22.3	82	385
				1517 05	.813	295.8	316.8	+16.8	0	11
				21031	.505	325.4	284.7	+18.7	15	77
				21034	.347	351.0	270.3	+13.9	22	94
				21036	.393	132.7	249.2	-21.2	17	31
				21037	.474	48.9	245.8	+12.4	0	5
				21038	.577	56.3	237.7	+13.3	0	6
				21042	.631	105.0	228.3	-14.2	3	5
				21039	.849	53.2	217.8	+26.6	37	150
				21040	.768	105.6	217.1	-15.9	44	218
				21041	.951	73.3	197.7	+13.8	103	481
3.298	-12.9	254.6	- 6.2	21026	.894	247.9	318.1	-22.5	70	365
				21031	.633	310.5	285.0	+18.9	14	87
				21034	.438	320.5	271.2	+13.7	8	68

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POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Feb. 3.298	Continued			21036	.271	163.3	249.8	-21.1	4	26
				21037	.323	26.7	246.1	+10.6	4	11
				21042	.478	109.6	227.0	-14.7	5	20
				21043	.625	53.5	223.1	+16.5	0	11
				21039	.746	45.9	218.0	+26.3	32	134
				21040	.612	108.3	217.5	-16.0	42	199
				21041	.861	70.2	198.3	+13.6	117	501
4.435	-13.3	239.6	- 6.3	21026	.975	248.3	318.0	-22.5	29	373
				21031	.796	298.6	286.8	+18.2	0	14
				21034	.608	302.3	271.4	+13.6	7	35
				1517 06	.544	240.7	270.0	-20.8	1	12
				21037	.336	340.1	246.3	+12.1	1	8
				21042	.296	122.0	224.6	-15.1	1	7
				21043	.429	42.0	222.6	+12.5	5	36
				21039	.630	31.5	218.1	+26.6	22	125
				21040	.401	116.3	217.8	-16.0	31	160
				21041	.715	64.7	198.2	+13.1	94	420
				21044	.939	68.3	173.3	+17.8	9	53
				21045	.979	114.8	160.0	-25.5	46	296
5.406	-13.7	226.8	- 6.3	21031	.867	295.4	282.2	+18.3	0	9
				21046	.761	294.3	272.2	+13.8	10	33
				21034	.687	297.9	265.4	+13.8	12	48
				21037	.430	319.1	243.5	+12.9	0	35
				21038	.390	339.5	234.9	+15.1	0	28
				1517 07	.417	180.5	227.1	-30.9	0	5
				21043	.334	15.5	221.6	+12.4	0	15
				21039	.551	13.2	218.8	+26.1	14	83
				21040	.228	139.8	218.1	-16.2	36	176
				21041	.566	55.7	198.3	+13.0	108	438
				21044	.859	64.5	172.4	+18.1	39	160
				21045	.914	115.4	160.7	-25.7	47	307
6.298	-14.1	215.1	- 6.4	21046	.875	290.1	272.8	+14.1	4	24
				21034	.819	291.5	266.5	+13.5	15	67
				21038	.477	319.3	233.8	+15.1	0	19
				21039	.540	354.5	218.4	+26.0	17	67
				21040	.186	197.3	218.4	-16.5	28	159
				21047	.554	8.9	209.6	+26.7	0	24
				21041	.438	41.9	197.7	+12.9	76	460
				21044	.760	59.6	171.7	+18.0	27	282
				21045	.823	116.7	160.8	-25.4	28	200
7.599	-14.6	198.0	- 6.4	21046	.961	285.6	269.6	+13.0	0	8
				1517 08	.784	290.4	246.4	+11.5	0	12
				21039	.622	329.6	218.4	+26.3	6	33
				21040	.354	238.5	216.3	-16.8	56	230
				21047	.575	342.2	209.3	+26.7	3	19
				21041	.341	8.0	195.2	+13.2	141	930
				21044	.592	46.8	171.1	+18.1	81	565
				21045	.654	121.9	160.2	-25.3	19	120
				1517 09	.890	112.3	134.9	-22.7	2	14
				21048	.940	66.2	132.1	+19.8	0	38
				21049	.969	69.4	125.7	+18.1	26	138
8.424	-14.9	187.1	- 6.5	21039	.698	318.3	218.0	+25.8	3	18
				21040	.514	248.0	216.8	-16.7	33	146
				21041	.364	336.4	195.7	+13.0	146	778
				1517 10	.458	13.1	180.8	+19.9	0	2
				21044	.496	33.5	170.4	+18.1	76	472
				1517 11	.469	43.6	167.7	+13.7	0	5
				21045	.540	128.7	159.4	-25.4	10	71

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

	Elements of Day			Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Feb. 8.424	Continued			21048	.881	61.8	131.0	+21.0	4	43
				21049	.912	67.1	125.4	+17.8	18	118
				21050	.944	65.3	120.9	+20.7	0	13
				21051	.991	74.6	107.2	+14.2	0	38
9.410	-15.3	174.1	- 6.6	21039	.810	309.0	218.4	+25.9	2	15
				21040	.684	252.3	216.8	-16.8	42	250
				21041	.488	312.5	195.7	+13.1	121	747
				21044	.435	12.3	168.6	+18.5	79	406
				21045	.416	144.9	158.7	-26.2	4	71
				21048	.773	55.6	131.2	+21.1	5	24
				21049	.814	62.3	125.1	+18.0	17	61
				21050	.851	60.0	122.0	+21.2	0	54
				21051	.940	72.6	106.8	+13.9	13	66
10.409	-15.6	161.0	- 6.6	21040	.840	254.3	218.3	-16.8	34	196
				21041	.638	300.3	195.3	+13.3	122	741
				21044	.438	345.1	167.8	+18.4	57	466
				21045	.354	179.4	160.7	-27.2	0	14
				21048	.638	45.2	132.1	+20.9	4	23
				21049	.682	54.4	125.4	+18.0	9	36
				21050	.745	52.0	121.8	+22.1	0	28
				21051	.840	68.6	107.5	+13.9	38	112
11.432	-16.0	147.5	- 6.7	21040	.942	254.6	218.8	-16.7	35	161
				21041	.794	292.6	196.2	+13.4	92	533
				1517 12	.730	302.4	187.7	+17.9	0	8
				21044	.535	321.5	168.0	+18.4	66	365
				21045	.380	208.0	158.9	-26.0	2	19
				21048	.512	28.9	132.3	+20.1	1	11
				21049	.542	40.6	125.8	+18.0	3	18
				21051	.700	61.6	108.2	+14.3	26	126
				21052	.935	71.8	81.2	+14.4	9	49
12.434	-16.3	134.3	- 6.7	21040	.993	253.8	218.8	-16.8	17	147
				21041	.910	288.3	196.8	+13.6	57	341
				21044	.673	306.9	168.7	+18.3	56	276
				21045	.504	219.9	155.9	-28.9	1	11
				21048	.464	1.5	133.5	+20.8	2	29
				21049	.441	16.5	126.7	+18.3	1	10
				21051	.545	49.7	108.9	+14.5	21	94
				21052	.834	68.1	81.5	+14.1	6	37
13.420	-16.7	121.3	- 6.8	21041	.972	285.6	195.4	+13.4	31	261
				21044	.800	299.2	168.6	+18.4	49	452
				21048	.509	337.3	133.4	+21.3	1	20
				21051	.421	29.6	109.0	+14.8	19	111
				21052	.690	62.2	82.6	+13.5	16	84
				21053	.985	113.5	39.4	-24.2	25	205
14.417	-17.0	108.2	- 6.8	21044	.913	293.8	169.7	+18.4	30	164
				1517 13	.452	337.4	118.6	+17.9	1	6
				21051	.376	358.2	108.9	+15.2	32	148
				1517 14	.397	18.4	100.7	+15.3	1	8
				21052	.521	50.5	83.9	+13.1	10	47
				1517 15	.841	62.8	56.3	+18.4	0	8
				21053	.925	113.2	40.0	-24.0	23	113
15.414	-17.4	95.1	- 6.8	21044	.987	289.8	172.8	+18.2	15	120
				21049	.619	308.4	125.4	+16.7	1	12
				21051	.433	328.6	108.5	+15.0	28	206
				21052	.372	27.4	85.0	+12.5	6	25
				21053	.833	115.0	39.2	-24.5	18	117

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POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	Elements of Day P	L_o	B_o	Group No.	Measures Radial Distance	Position Angle	Position Long.	Lat.	Area Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Feb. 15.414	Continued			21054	.962	71.9	23.8	+15.3	28	166
16.294	-17.7	83.5	- 6.9	21051	.556	310.8	109.2	+15.1	44	232
				21052	.332	353.9	85.6	+12.3	6	13
				21053	.725	117.7	38.7	-24.6	32	130
				21054	.893	68.9	23.9	+15.3	70	260
				21055	.961	68.3	13.3	+18.6	19	105
				21056	.992	65.5	4.8	+23.1	0	64
17.503	-18.1	67.6	- 6.9	1517 16	.844	240.5	124.0	-28.5	0	12
				21051	.738	297.6	109.9	+14.9	11	80
				21052	.446	315.1	86.3	+11.8	4	12
				21053	.553	124.5	37.7	-24.2	30	132
				21054	.763	62.3	23.1	+15.9	28	211
				21057	.869	59.7	13.7	+22.0	4	37
				21055	.867	63.9	12.5	+18.5	20	111
				21056	.932	62.1	4.4	+22.9	12	83
18.307	-18.3	57.0	- 7.0	1517 17	.959	245.7	131.7	-25.2	0	7
				21051	.838	292.9	109.8	+14.8	12	77
				21052	.577	301.7	86.9	+11.6	5	13
				21058	.346	2.0	56.2	+13.2	0	31
				21053	.433	135.5	37.6	-24.5	12	91
				21054	.641	55.7	23.8	+15.3	33	192
				21057	.781	54.1	14.1	+22.1	5	32
				21055	.772	58.9	12.9	+18.5	30	136
				21056	.859	58.1	4.9	+22.7	6	37
19.306	-18.6	43.8	- 7.0	21051	.935	289.2	109.8	+15.2	0	15
				21052	.737	293.0	87.5	+11.7	3	20
				21058	.429	326.8	57.8	+14.2	7	55
				21053	.319	160.2	37.0	-24.3	11	72
				21054	.505	41.0	23.8	+15.7	28	197
				21057	.670	44.3	13.4	+22.6	3	17
				21055	.647	49.8	12.5	+18.6	21	110
				21056	.748	51.5	4.7	+22.3	6	35
20.293	-19.0	30.8	- 7.0	21052	.868	288.3	88.1	+12.0	0	6
				21058	.567	308.0	58.1	+14.2	8	68
				21053	.311	196.2	36.2	-24.3	7	69
				21054	.412	16.8	23.7	+16.2	31	221
				21055	.519	34.9	12.6	+18.5	21	111
				1517 18	.530	43.2	8.7	+16.2	0	5
				21056	.638	41.4	3.8	+22.3	8	112
				21059	.707	121.9	348.6	-27.1	0	9
				21060	.975	111.3	312.0	-22.2	23	196
21.378	-19.3	16.5	- 7.1	21058	.733	296.8	58.7	+14.1	10	66
				21053	.422	223.5	35.1	-24.5	7	28
				21054	.405	342.4	23.8	+15.6	22	143
				1517 19	.350	359.1	16.8	+13.3	1	28
				21055	.438	8.5	12.6	+18.5	19	114
				21056	.522	22.1	4.4	+21.9	3	83
				21059	.558	130.6	348.1	-27.4	18	45
				21060	.896	111.1	312.4	-22.0	20	166
				21061	.985	65.6	300.5	+22.5	25	337
22.294	-19.6	4.5	- 7.1	21058	.854	290.7	59.5	+13.6	25	99
				1517 20	.559	247.5	37.2	-18.3	5	23
				21053	.565	235.6	35.2	-24.7	3	8
				21054	.501	320.2	23.9	+15.9	28	164
				21055	.454	343.6	12.2	+18.7	19	111

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POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

	Elements of Day				Measures		Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Feb. 22.294	Continued			21056	.505	0.5	4.2	+23.1	16	61
				21059	.412	142.6	348.4	-25.8	6	24
				21060	.792	112.9	312.6	-22.4	41	224
				21061	.945	62.7	299.0	+22.9	190	1053
23.381	-19.9	350.1	- 7.1	21058	.958	286.7	60.8	+13.7	15	135
				21053	.729	242.3	35.3	-24.9	2	6
				21054	.648	305.3	23.4	+16.0	29	143
				21055	.555	320.5	12.0	+18.7	16	109
				21056	.566	331.4	7.2	+22.9	5	12
				21062	.427	329.4	3.1	+14.6	0	10
				21060	.633	117.0	312.7	-22.3	38	223
				21061	.855	57.4	298.8	+23.0	191	1457
24.372	-20.2	337.1	- 7.1	21058	.994	286.8	58.1	+15.7	0	56
				21053	.852	244.5	35.2	-25.4	0	12
				21054	.780	297.4	23.1	+16.1	37	188
				21055	.679	308.1	11.4	+18.8	21	108
				21056	.673	316.8	7.1	+23.1	0	27
				21062	.549	315.1	0.8	+16.3	1	5
				21060	.485	123.9	311.4	-22.1	32	159
				21061	.748	49.9	298.8	+23.2	209	1711
25.562	-20.5	321.4	- 7.2	21054	.902	291.7	21.9	+16.0	12	165
				21055	.819	298.9	10.4	+18.7	19	119
				21056	.814	304.4	7.9	+22.5	0	7
				21060	.316	146.8	310.7	-22.3	28	154
				21061	.608	35.1	299.2	+23.1	339	2073
26.490	-20.8	309.2	- 7.2	21054	.973	288.3	22.8	+15.8	14	88
				21055	.914	294.6	10.5	+19.0	21	61
				21056	.914	299.4	9.0	+23.1	0	8
				21063	.483	318.0	328.6	+14.2	2	16
				1518 01	.347	333.7	318.2	+11.0	1	12
				21060	.268	184.8	310.6	-22.6	25	124
				21061	.530	17.0	299.5	+23.3	360	2163
				21064	.586	114.0	274.7	-19.7	4	28
				21065	.686	103.8	265.8	-14.6	18	61
				21066	.774	62.3	263.9	+16.1	0	10
				21067	.881	114.6	247.3	-25.0	0	5
				21068	.988	110.8	226.0	-21.5	21	126
27.360	-21.0	297.7	- 7.2	21055	.970	291.4	9.8	+18.6	13	40
				21069	.922	245.0	5.7	-25.8	6	22
				21063	.616	303.5	329.5	+13.7	6	14
				21060	.339	216.8	310.4	-22.7	23	149
				21061	.509	356.9	299.4	+23.2	257	2054
				21064	.422	122.6	275.6	-19.7	13	65
				1518 02	.597	44.5	271.6	+18.7	3	12
				21065	.539	106.8	265.6	-15.1	12	57
				21066	.660	55.4	263.4	+16.1	13	58
				21067	.774	116.8	248.2	-25.1	9	17
				21068	.955	110.6	223.7	-21.8	44	186
				21070	.977	105.4	218.8	-16.5	0	75
28.381	-21.3	284.3	- 7.2	21069	.987	244.2	7.4	-26.6	0	40
				21063	.767	294.9	329.9	+13.8	2	12
				21060	.489	235.3	310.0	-22.7	23	115
				21061	.559	335.1	299.0	+23.4	259	2063
				21071	.124	248.7	291.0	- 9.7	2	15
				21064	.262	147.5	275.7	-19.8	23	100
				21065	.332	115.9	266.3	-15.2	14	73
				21066	.504	40.0	264.7	+15.8	39	166

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POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	Elements of Day P	L_o	B_o	Group No.	Measures Radial Distance	Position Angle	Position Long.	Lat.	Area Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Feb. 28.381	Continued			1518 03	.717	45.1	250.5	+24.4	0	11
				21067	.616	122.0	249.2	-24.9	6	14
				21068	.884	110.8	221.7	-21.7	71	522
				21072	.921	74.2	219.7	+11.5	6	50
				21070	.904	104.8	218.9	-16.4	15	51
				21073	.962	76.3	212.3	+11.1	8	47
Mar. 1.473	-21.5	269.9	- 7.2	21060	.658	243.4	309.4	-22.7	16	90
				21061	.669	317.5	299.2	+23.2	336	2119
				21071	.360	261.0	291.0	-10.0	19	63
				21064	.243	203.2	275.7	-20.1	17	61
				21066	.395	8.2	266.6	+15.7	98	481
				21065	.163	146.3	264.6	-14.9	8	35
				21067	.483	133.3	247.0	-26.0	5	34
				21068	.754	112.0	221.5	-21.2	133	664
				21072	.805	68.9	219.9	+12.2	9	51
				21070	.782	105.1	218.3	-16.3	10	38
				21074	.843	107.1	212.1	-18.3	0	10
				21073	.890	73.6	209.7	+11.0	26	109
2.640	-21.8	254.5	- 7.2	21060	.813	247.2	308.7	-22.6	7	47
				21061	.798	306.5	298.7	+23.2	401	2159
				21071	.621	264.2	293.1	- 9.2	8	28
				21064	.401	234.4	274.8	-20.2	5	16
				21065	.275	235.3	268.1	-16.0	0	7
				21066	.436	333.1	266.3	+15.7	105	607
				21067	.343	160.4	247.2	-26.0	16	83
				21068	.575	116.6	221.3	-20.9	125	802
				21072	.639	58.4	220.6	+13.5	38	155
				21070	.599	107.1	218.1	-16.0	7	26
				21075	.717	58.8	215.0	+16.2	22	91
				21074	.663	110.8	213.7	-19.1	0	6
				21073	.764	68.5	208.2	+11.3	12	71
				21076	.988	66.2	177.3	+22.0	14	119
3.370	-22.0	244.9	- 7.2	21060	.892	248.2	308.5	-22.6	5	19
				21061	.876	301.6	299.0	+23.2	299	1869
				21071	.727	263.9	291.9	- 9.4	13	45
				21064	.527	242.7	274.7	-20.2	4	9
				21065	.391	245.6	266.6	-16.0	4	23
				21066	.520	317.3	266.3	+15.7	91	478
				21067	.332	188.2	247.9	-26.4	6	42
				21068	.457	123.5	220.9	-21.2	105	666
				21072	.534	51.2	219.7	+13.0	53	242
				21070	.470	110.9	217.8	-16.1	5	20
				1518 04	.726	150.9	214.7	-45.6	2	19
				21075	.625	52.2	214.0	+16.3	28	118
				21074	.548	115.6	213.4	-19.9	0	5
				1518 05	.774	40.4	209.5	+30.2	0	7
				21073	.660	64.5	207.8	+10.7	7	20
				21076	.960	64.8	175.8	+21.7	35	170
				21077	.982	107.8	164.2	-18.8	57	512
4.583	-22.3	228.9	- 7.2	21061	.969	296.2	299.7	+23.0	359	2138
				21071	.896	263.6	293.0	- 8.9	0	10
				21064	.742	249.3	276.4	-20.1	0	13
				21066	.691	301.9	266.3	+15.7	91	531
				21065	.605	252.1	265.7	-16.5	6	58
				21067	.464	226.0	250.6	-25.5	1	6
				21068	.275	153.0	221.3	-21.3	128	737
				21072	.386	24.7	219.4	+13.3	69	400
				21070	.249	129.1	217.4	-16.1	3	11
				21075	.474	31.5	214.0	+16.7	15	111

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POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	Lo	Bo	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Mar. 4.583	Continued			21073	.486	50.3	206.6	+11.3	1	14
				21076	.872	59.3	175.0	+22.3	42	152
				21078	.859	65.3	174.5	+16.9	0	9
				21077	.915	108.1	161.9	-19.4	140	1277
5.328	-22.5	219.1	- 7.2	21071	.947	262.5	291.0	- 9.4	10	39
				21061	.972	296.9	290.5	+24.0	88	681
				21064	.824	250.8	274.8	-19.9	0	9
				21066	.791	296.1	266.4	+15.5	73	425
				21065	.732	254.3	266.2	-16.4	6	17
				21068	.242	188.4	221.3	-21.0	93	664
				21072	.358	359.1	219.5	+13.6	39	238
				21070	.155	166.5	217.0	-15.9	2	11
				21075	.423	12.9	213.5	+17.0	16	80
				21073	.362	27.6	209.3	+11.5	1	16
				21076	.802	54.4	174.3	+22.7	34	174
				21078	.825	64.9	168.3	+16.0	0	4
				21077	.834	108.5	162.4	-19.4	150	1158
6.390	-22.7	205.1	- 7.2	21064	.954	250.9	278.8	-20.3	0	18
				21066	.908	290.8	266.6	+15.4	94	535
				21079	.639	307.0	237.1	+16.4	1	20
				21068	.368	228.6	222.3	-21.0	44	421
				21072	.424	326.4	219.0	+13.5	32	271
				21075	.437	340.5	213.9	+17.1	6	61
				21073	.327	352.6	207.6	+11.6	3	26
				21076	.684	45.2	173.5	+22.6	51	239
				21077	.686	110.7	162.4	-19.4	130	1060
7.304	-22.9	193.1	- 7.2	21066	.974	287.8	266.9	+15.4	71	457
				21079	.795	298.7	239.9	+17.5	10	26
				1518 06	.631	274.7	231.9	- 2.7	0	5
				21068	.535	239.7	222.8	-21.9	83	465
				21072	.548	309.5	218.8	+13.8	48	223
				21075	.531	320.2	213.8	+17.2	18	66
				21073	.431	316.5	210.6	+11.2	7	42
				21080	.387	11.1	188.7	+15.0	2	9
				21076	.589	32.7	173.0	+22.8	34	155
				21077	.533	115.5	162.6	-19.5	137	1003
8.361	-23.1	179.2	- 7.2	21079	.906	293.3	239.7	+17.6	8	39
				21068	.668	245.3	219.8	-21.7	81	389
				21072	.710	297.9	219.2	+13.8	44	145
				21075	.675	304.4	214.6	+16.5	12	46
				1518 07	.777	320.1	214.4	+30.7	2	14
				21073	.623	296.8	213.5	+10.3	3	28
				21080	.408	352.3	182.4	+16.5	2	14
				21076	.523	13.0	171.8	+23.3	18	122
				21077	.350	128.7	162.4	-19.6	161	1127
9.492	-23.4	164.3	- 7.2	21079	.992	289.8	243.6	+18.4	0	33
				21068	.838	249.2	221.2	-21.4	28	208
				21072	.865	292.4	220.1	+15.2	13	85
				21075	.832	296.0	215.5	+16.9	2	18
				21073	.795	290.8	213.5	+11.7	0	7
				21080	.473	329.2	178.8	+16.8	0	6
				21076	.515	348.4	170.7	+23.0	31	230
				21077	.218	171.6	162.3	-19.6	103	805
10.400	-23.6	152.3	- 7.2	21068	.926	249.3	220.9	-21.9	15	121
				21072	.935	287.8	218.5	+13.7	9	61
				21075	.920	293.7	214.7	+18.4	0	11
				21073	.885	287.2	211.8	+11.5	0	14

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Mar. 10.400	Continued			21080	.630	308.6	183.2	+16.9	6	34
				21076	.580	330.4	170.4	+23.3	63	351
				21077	.271	218.4	162.5	-19.3	79	745
				21081	.948	57.6	87.9	+27.6	0	7
				21082	.933	67.2	87.7	+18.2	0	6
11.347	-23.7	139.8	- 7.2	21068	.978	248.7	219.4	-22.2	10	82
				21080	.805	295.1	188.7	+15.3	11	30
				21076	.672	317.1	169.5	+23.2	36	151
				21077	.418	238.0	161.8	-19.5	73	633
				1518 08	.157	196.9	142.5	-15.8	2	12
				21081	.875	53.5	87.8	+27.0	7	27
				21082	.873	63.7	84.3	+18.7	18	36
12.396	-23.9	126.0	- 7.2	21068	.994	249.8	211.5	-20.8	0	38
				21080	.922	289.7	189.8	+15.0	0	11
				21076	.807	304.9	171.6	+22.5	15	57
				21077	.611	247.8	162.6	-19.1	57	343
				1518 09	.384	231.1	144.6	-20.8	2	18
				1518 10	.467	133.1	103.9	-25.3	2	17
				21081	.755	43.2	90.5	+27.5	5	25
				21082	.759	57.5	83.6	+18.7	17	89
				21083	.992	104.3	42.1	-15.1	8	131
13.407	-24.1	112.7	- 7.2	21076	.902	299.6	170.7	+22.8	0	35
				21077	.773	251.4	163.2	-18.9	44	262
				21081	.663	31.8	89.5	+27.6	0	26
				21082	.623	47.4	83.9	+18.6	23	86
				21084	.726	42.0	79.9	+26.6	5	13
				21083	.957	105.0	38.4	-16.4	28	158
14.365	-24.3	100.0	- 7.2	21077	.881	251.9	162.4	-19.3	19	109
				21082	.505	30.5	84.4	+18.8	13	72
				21084	.644	30.0	78.9	+27.1	36	106
				21083	.854	104.6	40.9	-16.2	33	167
15.566	-24.5	84.2	- 7.2	21077	.968	251.7	161.1	-19.5	0	4
				21084	.570	7.9	79.2	+27.1	19	142
				21083	.697	105.8	40.1	-16.1	41	227
				21085	.881	66.1	27.0	+17.1	2	14
				1518 11	.872	108.7	23.1	-19.7	0	13
				21086	.987	63.8	7.9	+24.3	54	237
16.369	-24.6	73.6	- 7.1	21087	.602	339.4	87.4	+27.2	0	11
				21084	.574	349.4	80.4	+27.1	16	112
				21083	.536	108.7	41.9	-16.0	39	305
				21086	.958	62.2	5.7	+24.0	57	381
				21088	.989	70.7	355.1	+17.8	0	103
17.432	-24.8	59.6	- 7.1	21087	.689	322.5	87.6	+26.8	3	30
				21084	.655	330.1	81.2	+27.9	16	96
				21089	.468	30.0	45.5	+16.9	5	21
				21083	.340	120.4	41.9	-16.7	48	300
				21086	.883	58.5	4.7	+23.5	54	323
				21088	.935	67.8	354.4	+17.8	30	212
				21090	.978	70.8	344.9	+17.0	21	72
18.420	-24.9	46.6	- 7.1	1518 12	.969	294.3	118.0	+21.4	9	88
				21087	.797	311.9	88.1	+26.8	0	18
				21084	.756	317.9	81.6	+28.2	20	91
				21083	.179	158.5	42.7	-16.6	45	283
				21085	.498	37.2	28.3	+16.6	3	9
				21086	.773	51.5	5.5	+23.4	31	220

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	o	o	o			o	o	o		
Mar. 18.420	Continued			1518 13	.791	116.1	355.2	-24.9	0	18
				21088	.838	63.3	355.0	+17.7	36	185
				21090	.912	68.0	344.7	+16.7	27	91
19.523	-25.1	32.0	- 7.1	21084	.872	308.5	82.9	+28.5	9	29
				21089	.466	329.2	46.4	+16.6	1	12
				21083	.238	226.6	42.4	-16.3	25	165
				21086	.648	39.7	5.3	+23.5	42	184
				21088	.695	55.5	355.3	+17.5	28	159
				21090	.791	62.3	345.2	+16.8	29	92
20.347	-25.2	21.2	- 7.0	1518 14	.904	285.5	83.4	+10.7	0	23
				21084	.937	304.2	82.9	+28.6	6	22
				21089	.567	315.7	45.6	+17.4	3	17
				21083	.384	244.1	42.2	-16.2	25	156
				1518 15	.250	338.8	26.4	+ 6.4	2	7
				21086	.557	24.9	6.4	+23.5	32	157
				21088	.582	46.2	355.2	+17.4	34	168
				21090	.687	56.2	344.7	+16.8	35	182
				21091	.721	53.4	343.4	+19.9	8	32
				21092	.653	114.6	341.8	-21.2	1	9
				21093	.984	71.6	304.4	+16.6	0	24
				21094	.991	66.3	303.0	+22.2	109	529
21.473	-25.3	6.3	- 7.0	1518 16	.929	296.3	69.5	+21.3	6	45
				21089	.724	302.5	46.0	+17.5	10	37
				21083	.568	250.2	40.2	-16.9	11	45
				21085	.523	318.7	27.3	+16.5	3	16
				21086	.511	0.9	5.8	+23.6	19	121
				21088	.451	24.4	355.1	+17.3	27	206
				21090	.533	41.6	344.7	+16.9	38	172
				21091	.607	41.4	341.0	+20.7	7	46
				21093	.893	68.2	307.0	+15.8	0	10
				21094	.933	62.7	302.8	+22.3	128	652
				21095	.989	67.5	288.4	+20.9	0	30
				21096	.994	62.6	287.4	+26.0	19	228
22.540	-25.4	352.3	- 7.0	21089	.839	297.0	43.9	+18.1	0	20
				21083	.739	254.6	39.9	-16.1	11	75
				21086	.556	338.4	5.2	+24.2	29	122
				21088	.413	353.8	354.9	+17.2	36	190
				21092	.264	148.6	343.9	-19.9	1	3
				21090	.430	19.9	343.5	+16.9	28	102
				21091	.506	21.8	340.7	+21.1	4	33
				21097	.474	40.9	333.6	+14.3	16	72
				21094	.841	57.0	302.5	+22.8	167	673
				21095	.932	64.6	288.4	+20.6	54	329
				21096	.943	59.4	288.1	+25.7	26	187
23.304	-25.5	342.2	- 6.9	21089	.913	293.7	43.7	+18.3	5	21
				21083	.807	254.7	36.2	-16.4	4	22
				21086	.630	323.0	6.6	+23.8	17	94
				1519 01	.570	336.4	356.7	+24.7	1	12
				21088	.461	332.7	354.9	+17.3	30	195
				21090	.411	356.9	343.5	+17.2	21	73
				21091	.486	3.3	340.5	+22.0	2	23
				21097	.389	18.8	334.8	+14.6	21	63
				21094	.753	51.3	302.8	+22.7	149	676
				21096	.882	55.7	288.4	+25.7	18	140
				21095	.868	61.6	287.8	+20.4	65	472
				21098	.971	72.5	268.9	+15.1	9	35

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Mar. 24.382	-25.6	328.0	- 6.9	21089	.994	288.0	48.8	+16.9	0	28
				21083	.970	254.0	45.2	-17.1	0	45
				21086	.747	309.8	6.4	+23.2	12	85
				21088	.584	312.6	354.6	+17.1	33	189
				21092	.351	229.0	344.3	-19.9	2	20
				21090	.475	328.6	342.9	+17.1	15	39
				21099	.567	339.5	340.6	+25.2	16	60
				21097	.384	338.6	336.2	+14.0	20	48
				21100	.527	46.2	304.9	+15.0	5	42
				21094	.629	39.9	302.2	+22.5	148	659
				21096	.781	48.6	287.5	+25.8	21	71
				21095	.750	55.0	287.2	+20.2	107	656
				1519 02	.777	107.0	277.0	-17.5	4	11
				21101	.872	58.8	274.1	+22.8	11	40
				21098	.908	70.4	266.2	+14.5	45	183
25.554	-25.7	312.5	- 6.9	21086	.873	301.2	6.5	+22.9	18	63
				21088	.749	300.6	354.9	+17.3	38	214
				21090	.624	309.0	342.9	+17.1	7	16
				21099	.669	319.7	340.9	+24.6	21	76
				21097	.526	311.0	336.6	+13.9	7	21
				21102	.282	177.8	311.9	-23.1	5	35
				21094	.518	19.5	301.8	+22.4	119	663
				21100	.427	30.5	299.6	+14.8	2	20
				21096	.649	34.7	288.3	+25.9	9	29
				21095	.615	42.8	286.1	+20.6	104	757
				21101	.746	50.5	273.9	+22.9	10	30
				21098	.773	65.0	266.3	+14.3	25	196
				21103	.985	109.8	230.8	-20.6	25	202
26.389	-25.8	301.5	- 6.8	21086	.940	297.6	6.1	+23.0	13	54
				21088	.850	295.6	354.8	+17.5	19	176
				21090	.736	300.7	342.8	+17.0	7	15
				21099	.768	310.6	341.3	+24.7	7	52
				21097	.649	300.6	336.4	+13.7	9	15
				21102	.348	211.2	312.8	-23.9	4	18
				21094	.487	358.8	302.1	+22.2	137	643
				21104	.287	165.8	297.2	-22.9	1	14
				21096	.581	22.6	287.2	+25.7	7	14
				21095	.519	27.5	286.7	+20.7	109	749
				21101	.648	41.6	273.8	+22.8	13	32
				21098	.648	58.6	266.9	+14.1	35	139
				21103	.937	109.5	231.2	-20.6	25	156
27.591	-25.9	285.7	- 6.8	21088	.951	291.1	354.1	+17.7	21	142
				21090	.885	294.2	343.4	+17.7	0	19
				21099	.891	303.2	341.1	+25.4	69	252
				21097	.814	291.8	336.5	+13.4	8	17
				21094	.548	331.9	301.8	+22.3	130	650
				21104	.335	215.3	297.7	-22.4	7	31
				21095	.465	353.2	289.0	+20.6	105	546
				21101	.534	21.7	273.3	+23.0	3	12
				21098	.476	40.3	267.2	+14.8	13	78
				21103	.810	109.1	231.6	-19.4	30	240
28.334	-26.0	275.9	- 6.7	21088	.989	288.9	354.6	+17.5	0	45
				21099	.941	301.0	339.6	+26.2	40	227
				21097	.896	287.9	336.7	+12.7	7	25
				1519 03	.722	306.1	314.1	+19.9	2	13
				21094	.625	319.5	301.8	+22.2	122	749
				21104	.440	231.4	297.6	-22.1	49	226
				21095	.499	335.2	288.7	+20.3	99	745
				21105	.383	358.8	276.3	+15.7	2	14

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POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Mar. 28.334	Continued			21098	.399	21.2	267.3	+15.1	11	94
				21103	.707	110.8	231.6	-19.4	52	322
29.327	-26.0	262.8	- 6.7	21099	.984	299.0	337.4	+26.9	24	98
				21094	.742	308.6	301.5	+22.3	134	605
				21104	.608	242.3	298.0	-21.9	102	477
				21095	.626	315.9	290.4	+20.7	126	1011
				1519 04	.502	227.4	286.9	-25.9	1	6
				21105	.455	330.5	276.3	+16.7	15	40
				1519 05	.250	219.7	272.4	-17.6	2	7
				21098	.390	348.0	267.6	+15.7	5	34
				21106	.397	2.8	261.6	+16.6	4	35
				1519 06	.296	135.3	250.1	-18.6	2	14
				21103	.543	116.1	231.7	-19.5	71	301
				21107	.957	59.4	195.8	+26.6	19	68
				21108	.976	71.5	188.4	+16.3	15	35
30.328	-26.1	249.6	- 6.6	21094	.854	301.5	301.4	+22.4	93	646
				21104	.755	246.4	297.6	-22.1	174	897
				21095	.746	305.4	289.9	+20.5	137	967
				21105	.576	311.0	276.4	+16.2	15	63
				21098	.486	322.3	267.5	+16.2	3	20
				21106	.448	333.0	261.8	+16.9	0	15
				21103	.358	129.8	232.6	-19.6	29	260
				21107	.887	55.4	195.0	+26.4	14	50
				21108	.888	68.5	190.7	+15.6	0	22
				21109	.940	69.7	183.0	+16.4	6	32
				21110	.981	64.7	175.1	+23.1	17	134
31.339	-26.2	236.2	- 6.6	21094	.935	296.8	300.4	+22.1	84	567
				21104	.876	248.2	297.5	-22.3	126	920
				21095	.859	298.2	289.8	+20.1	110	1169
				21111	.839	311.1	282.3	+29.0	12	43
				21105	.728	301.5	276.6	+17.3	15	55
				21103	.233	166.0	232.8	-19.6	37	199
				1519 07	.740	31.6	208.8	+33.1	2	7
				21107	.791	48.8	194.6	+26.5	6	29
				21108	.785	63.8	189.3	+15.8	4	18
				21109	.855	65.9	181.9	+16.7	9	34
				21110	.927	62.0	173.8	+22.9	18	68
				21112	.964	59.4	167.6	+27.2	4	25
Apr. 1.379	-26.2	222.5	- 6.5	21094	.988	294.1	299.9	+22.5	71	455
				21104	.952	248.7	295.6	-22.2	114	660
				21095	.947	293.7	289.5	+19.9	90	706
				21111	.924	304.9	282.1	+28.7	6	26
				21105	.863	294.7	277.6	+17.5	7	24
				21103	.279	216.9	232.7	-19.3	16	115
				21113	.279	174.0	220.7	-22.6	0	5
				21108	.608	55.0	191.6	+14.8	3	8
				21107	.709	41.8	190.8	+26.3	5	19
				21109	.739	60.2	180.7	+16.6	3	16
				21110	.831	57.6	173.4	+22.2	10	42
				21112	.895	55.8	166.8	+26.6	0	17
2.274	-26.3	210.7	- 6.5	21104	.977	248.1	289.8	-22.8	75	338
				21095	.976	292.3	284.5	+20.0	29	170
				21105	.944	291.3	277.8	+17.6	3	16
				21103	.439	239.9	234.2	-18.6	20	95
				21108	.465	40.1	192.8	+14.6	6	29
				21107	.615	29.2	191.3	+26.2	12	23
				21110	.717	51.2	173.9	+21.5	6	29
				21112	.808	50.1	167.0	+26.6	2	11

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POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	Elements of Day			Group	Measures		Position		Area	
	P	L_o	B_o	No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Apr. 2.274	Continued			21114	.825	108.9	155.2	-19.2	4	15
3.349	-26.3	196.5	- 6.4	21103	.634	249.7	235.0	-17.7	9	75
				21113	.490	234.5	222.0	-22.3	1	15
				21115	.660	349.1	205.1	+33.9	12	41
				21108	.408	20.3	188.1	+16.1	2	15
				21110	.579	39.5	173.4	+20.6	5	26
				21112	.689	41.1	166.5	+25.7	5	18
				21114	.664	111.9	155.9	-19.2	3	16
4.347	-26.3	183.3	- 6.4	21116	.458	236.8	207.3	-20.3	5	18
				21115	.700	331.9	206.2	+32.2	6	31
				21108	.397	341.6	190.8	+15.7	10	57
				21110	.489	18.5	173.8	+21.3	0	15
				21117	.824	116.0	128.8	-24.9	4	27
				21118	.965	77.3	110.4	+10.4	17	142
5.346	-26.3	170.2	- 6.3	21119	.905	253.2	235.4	-17.8	0	10
				21115	.794	319.6	207.5	+32.2	7	22
				21116	.605	244.8	205.7	-20.0	6	32
				21120	.780	326.1	202.1	+34.9	7	25
				21108	.476	322.6	187.6	+16.1	5	34
				21110	.496	0.7	169.8	+23.3	1	13
				21121	.350	147.7	158.5	-23.3	0	5
				21117	.689	120.8	129.4	-25.4	28	158
				21118	.877	74.3	111.2	+10.5	14	111
6.354	-26.3	156.9	- 6.2	21119	.973	252.3	234.7	-18.6	0	38
				21115	.874	311.9	206.5	+31.7	7	34
				21120	.859	318.8	200.9	+35.8	4	20
				21108	.676	301.3	193.6	+15.6	3	12
				21110	.567	335.3	171.9	+24.9	3	18
				21121	.242	172.9	155.1	-20.1	15	75
				21117	.519	130.4	131.0	-25.2	26	178
				1519 08	.740	49.2	119.2	+23.9	0	7
				1519 09	.699	116.0	114.2	-22.5	6	34
				21118	.753	70.0	111.0	+10.6	13	102
				21122	.833	57.5	107.4	+22.5	0	8
7.368	-26.4	143.5	- 6.2	1519 10	.952	246.9	216.5	-23.8	4	29
				21115	.951	305.9	207.7	+31.4	0	21
				21120	.923	313.1	199.4	+35.8	6	29
				21121	.314	219.5	155.7	-20.0	42	210
				1519 11	.443	165.7	136.2	-31.4	4	15
				21117	.376	151.2	132.0	-25.2	14	71
				21123	.547	37.6	122.8	+19.8	5	23
				21118	.586	62.5	111.7	+10.4	10	55
				21122	.724	50.7	106.3	+22.3	6	48
				21124	.863	63.7	88.7	+18.9	4	22
8.306	-26.3	131.1	- 6.1	21108	.898	292.0	191.2	+16.7	0	15
				1519 12	.766	299.7	175.3	+18.0	0	3
				21110	.762	308.9	171.4	+23.9	0	10
				21125	.647	244.8	169.7	-20.7	7	43
				21121	.462	237.3	155.4	-20.0	86	532
				21117	.331	176.1	129.7	-25.3	21	117
				21123	.456	17.2	122.9	+19.6	4	20
				21118	.431	49.1	111.8	+10.5	9	42
				21122	.597	38.7	107.4	+22.1	17	87
				21124	.743	57.8	89.6	+18.7	8	32
				21126	.979	73.8	55.3	+14.4	16	75

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Apr. 9.326	-26.3	117.6	- 6.0	21108	.940	294.2	183.6	+20.3	0	13
				21125	.801	249.3	170.3	-20.1	4	27
				21121	.638	245.5	155.7	-20.1	116	681
				21127	.655	334.9	136.4	+30.6	3	16
				21117	.403	214.4	132.2	-25.2	18	83
				1519 13	.679	347.1	128.3	+35.4	0	15
				21122	.494	14.5	110.0	+22.4	13	61
				21124	.580	46.0	91.6	+18.3	5	19
				21126	.907	71.3	55.5	+14.1	15	84
10.521	-26.3	101.9	- 6.0	21121	.815	249.5	156.1	-20.1	121	836
				21127	.767	318.5	137.7	+30.2	5	24
				21117	.576	234.0	132.6	-24.9	16	53
				21122	.493	343.3	110.6	+22.2	23	100
				21124	.411	23.7	92.0	+16.2	0	9
				21126	.771	66.2	55.4	+14.0	17	82
11.372	-26.3	90.6	- 5.9	21121	.901	250.0	155.0	-20.5	124	876
				21117	.682	238.9	130.6	-25.1	14	68
				21122	.577	325.9	111.1	+22.9	52	242
				21126	.650	60.3	55.2	+13.9	14	54
12.405	-26.3	77.0	- 5.8	21121	.979	250.5	156.3	-20.3	89	960
				21117	.820	243.9	130.9	-24.6	14	70
				21122	.699	312.3	111.1	+23.2	60	312
				21126	.491	47.3	55.3	+14.0	8	63
13.481	-26.2	62.8	- 5.7	21121	.997	250.3	149.7	-20.0	0	80
				21117	.934	246.0	132.1	-24.4	12	47
				1519 14	.890	301.4	119.1	+24.5	0	19
				21118	.783	288.1	111.8	+10.3	0	23
				21122	.830	303.4	111.6	+23.4	62	268
				21128	.742	293.3	107.0	+12.9	8	30
				21129	.480	315.8	82.9	+14.6	5	18
				21126	.364	20.6	55.2	+14.1	10	36
				21130	.987	63.8	345.9	+24.6	96	466
14.341	-26.2	51.4	- 5.7	21122	.907	298.4	111.2	+22.8	112	524
				21128	.854	289.1	107.2	+13.0	2	26
				21126	.331	352.0	54.1	+13.4	10	33
				21130	.945	61.4	345.8	+24.6	68	487
15.385	-26.1	37.6	- 5.6	21122	.977	295.1	111.4	+23.1	62	464
				21128	.951	285.9	107.5	+13.2	42	223
				21129	.773	293.4	84.4	+14.0	0	21
				21126	.483	317.3	57.4	+15.4	6	32
				21130	.860	56.7	345.5	+24.7	72	436
16.380	-26.1	24.5	- 5.5	21128	.994	284.4	106.4	+13.6	16	207
				21126	.628	297.4	59.1	+12.2	0	17
				21131	.599	30.7	4.8	+25.7	3	8
				21132	.455	129.7	2.4	-21.9	3	11
				21130	.753	50.0	345.3	+24.7	71	357
17.355	-26.0	11.6	- 5.4	21133	.768	297.3	56.9	+16.8	7	40
				1519 15	.260	257.4	26.5	- 8.5	2	21
				21132	.347	144.5	359.2	-21.7	4	19
				21130	.652	39.8	344.3	+25.2	58	340
				21134	.985	65.4	295.1	+23.0	38	255
				21135	.973	111.8	294.0	-22.4	29	149

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Apr. 18.363	-25.9	358.3	- 5.4	21133	.885	292.0	57.0	+16.6	12	82
				21131	.497	341.6	8.1	+22.7	3	21
				21132	.279	191.6	1.8	-21.1	5	40
				21130	.557	25.1	343.3	+25.0	45	344
				21135	.935	62.4	294.0	-23.4	44	188
				21134	.912	112.4	292.7	+22.6	16	87
				21136	.981	103.6	278.8	-14.4	0	34
19.351	-25.8	345.3	- 5.3	21133	.974	288.6	59.7	+16.7	15	64
				21131	.589	331.6	3.4	+26.1	0	8
				21132	.386	222.6	1.5	-21.5	7	27
				21130	.513	3.8	343.1	+25.4	65	359
				1520 01	.623	49.6	315.2	+19.2	6	23
				1520 02	.737	123.2	301.4	-27.6	0	13
				21134	.845	58.1	294.2	+23.2	42	209
				21135	.802	114.6	293.2	-22.8	30	139
				21136	.910	104.0	279.5	-14.9	3	27
20.403	-25.7	331.4	- 5.2	21132	.588	238.3	4.0	-22.3	8	62
				21130	.534	341.6	342.1	+25.3	82	363
				21134	.726	50.9	293.8	+23.1	34	218
				21135	.648	119.3	293.8	-22.6	26	132
				21136	.829	103.7	275.4	-14.3	4	30
21.357	-25.6	318.8	- 5.1	21132	.733	244.1	4.0	-22.2	46	193
				21130	.619	325.0	341.9	+25.7	72	358
				21137	.700	160.8	299.5	-46.1	3	13
				21135	.501	127.9	293.6	-22.5	34	186
				21134	.612	40.2	293.4	+23.1	30	187
				21136	.700	105.8	274.9	-14.7	17	49
				21138	.991	63.2	239.9	+25.6	0	17
22.309	-25.5	306.2	- 5.0	21132	.853	246.5	3.9	-22.6	46	250
				21130	.721	313.3	341.6	+25.5	53	324
				1520 03	.702	320.5	336.6	+28.4	0	9
				21137	.656	171.5	298.3	-45.2	12	58
				21135	.372	145.6	293.1	-22.7	35	166
				21134	.515	24.1	293.0	+23.0	36	188
				21139	.477	132.6	283.8	-23.4	4	17
				21136	.529	109.4	275.3	-14.4	19	98
				21138	.954	60.6	238.7	+26.0	22	90
23.405	-25.4	291.7	- 4.9	21132	.949	248.1	3.6	-22.3	28	123
				21130	.841	304.9	341.4	+25.6	44	269
				21137	.651	186.2	297.4	-45.0	3	17
				21135	.310	182.5	292.6	-22.9	23	151
				21134	.470	358.6	292.4	+23.0	32	186
				21139	.361	158.4	283.4	-24.4	2	23
				21140	.361	29.0	281.4	+13.5	2	12
				21136	.316	121.2	275.6	-14.1	12	73
				21141	.507	121.6	264.5	-19.7	5	18
				21138	.893	57.2	235.1	+26.2	35	183
24.367	-25.3	279.0	- 4.8	21132	.990	248.3	2.1	-22.1	16	222
				21130	.922	300.5	340.6	+25.6	32	217
				21142	.882	242.0	339.5	-26.8	19	81
				21135	.369	213.1	291.6	-22.6	17	114
				21134	.513	337.5	291.3	+23.5	35	195
				21139	.320	193.3	283.6	-22.9	2	14
				21140	.316	359.9	279.1	+13.5	0	4
				21136	.171	164.3	276.3	-14.2	7	30
				21141	.373	133.1	262.3	-19.3	2	9
				1520 04	.461	139.5	259.8	-25.0	0	10

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POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Apr. 24.367	Continued			21138	.806	52.4	233.9	+26.0	25	179
25.314	-25.2	266.5	- 4.7	21130	.977	297.7	340.1	+25.7	30	206
				21142	.958	243.2	339.9	-27.0	30	241
				21135	.505	232.2	291.9	-22.3	18	121
				21134	.607	319.6	291.7	+23.1	27	167
				21140	.419	318.4	283.1	+13.6	5	24
				1520 05	.458	206.0	279.7	-28.8	1	15
				21136	.241	231.3	277.6	-13.3	2	25
				21138	.705	44.0	233.5	+26.4	45	218
				21143	.883	109.2	204.8	-19.1	12	55
26.337	-25.0	253.0	- 4.6	21135	.664	240.8	291.7	-22.5	12	92
				21134	.729	308.0	291.4	+23.0	36	168
				21140	.603	300.4	285.2	+13.8	0	3
				21136	.468	250.6	279.8	-13.0	1	8
				21141	.378	230.4	270.8	-18.3	1	9
				1520 06	.358	172.8	250.2	-25.4	2	18
				21138	.611	31.6	232.0	+26.9	23	174
				21143	.764	110.5	204.2	-18.6	9	35
				1520 07	.890	110.6	190.5	-20.4	2	10
27.403	-24.9	238.9	- 4.5	21134	.845	301.3	290.5	+23.2	30	177
				21135	.799	245.4	290.4	-22.3	6	45
				21136	.627	254.0	277.1	-13.5	1	17
				21138	.550	16.2	229.0	+27.3	30	183
				1520 08	.486	31.2	223.4	+20.1	0	12
				21143	.599	115.8	204.3	-18.8	6	25
				21144	.873	73.2	180.3	+12.3	2	7
				21145	.993	110.5	155.0	-20.9	0	72
28.317	-24.8	226.8	- 4.5	21134	.932	296.8	291.2	+22.9	24	203
				21135	.902	247.2	290.8	-22.5	8	30
				21146	.665	332.5	248.0	+31.9	6	32
				21138	.529	356.0	229.2	+27.3	17	245
				21143	.401	127.8	207.4	-18.4	41	220
				21144	.728	67.6	183.3	+12.9	0	10
				21145	.956	110.3	153.6	-20.7	26	274
29.343	-24.6	213.3	- 4.4	21134	.986	294.0	290.8	+22.8	26	117
				21135	.967	247.6	288.9	-22.8	0	26
				21146	.749	322.4	246.0	+32.6	8	53
				21138	.582	334.8	229.4	+27.5	19	227
				21143	.247	162.1	208.7	-17.9	46	272
				21144	.599	63.6	180.2	+11.7	8	31
				21145	.867	111.3	153.9	-20.5	28	191
30.395	-24.4	199.4	- 4.3	21146	.834	314.4	244.2	+32.6	4	31
				21138	.677	318.3	229.5	+26.6	12	114
				21143	.298	214.6	209.6	-18.3	38	247
				21144	.398	43.7	183.1	+12.6	15	67
				21145	.718	114.9	155.5	-20.6	29	284
				21147	.938	65.9	133.2	+20.8	0	6
May 1.317	-24.3	187.2	- 4.2	21138	.765	310.7	227.6	+26.7	7	43
				21148	.648	240.9	224.5	-21.6	6	35
				21143	.460	237.2	211.1	-18.2	37	218
				21144	.292	9.8	184.3	+12.5	29	174
				21145	.576	120.7	155.3	-20.6	27	178
				21147	.874	63.0	130.8	+21.1	2	27
				21149	.987	68.1	108.9	+20.8	61	351

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	Elements of Day			Measures			Position		Area	
	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
May 2.334	-24.1	173.7	- 4.1	21148	.803	245.6	225.5	-21.8	11	66
				21143	.641	246.4	211.7	-18.0	38	232
				21144	.335	326.9	184.5	+12.3	35	226
				21145	.405	135.5	156.2	-20.6	38	184
				21147	.795	59.3	126.8	+21.2	4	24
				21149	.927	65.8	109.3	+20.6	51	281
3.330	-23.9	160.6	- 4.0	21148	.905	248.0	224.8	-21.5	11	74
				21143	.798	251.1	212.7	-17.4	37	211
				1520 09	.684	293.1	200.6	+12.5	2	15
				21144	.479	305.4	184.1	+12.4	39	198
				21145	.302	167.1	156.5	-21.0	38	223
				21147	.682	51.3	125.7	+21.9	0	15
				21149	.837	62.1	108.6	+20.6	82	314
4.315	-23.7	147.6	- 3.8	21148	.968	248.9	223.2	-21.4	4	52
				21143	.911	252.5	212.9	-17.5	37	200
				21144	.648	295.1	184.4	+12.8	25	137
				21145	.329	207.0	156.7	-20.8	19	130
				21147	.551	39.0	125.7	+21.7	1	13
				1520 10	.788	39.1	110.6	+34.5	0	14
				21149	.716	56.5	108.2	+20.3	60	329
5.507	-23.5	131.8	- 3.7	21143	.991	253.7	214.4	-16.7	31	163
				1520 11	.946	291.7	200.1	+19.1	0	13
				21150	.877	285.1	191.3	+11.3	16	116
				21144	.835	289.7	185.8	+14.1	32	147
				21145	.489	232.9	156.3	-20.5	18	142
				21151	.349	172.3	128.9	-23.9	5	21
				21149	.561	43.5	107.5	+20.6	62	313
6.458	-23.3	119.2	- 3.6	21150	.958	282.3	191.3	+10.7	8	117
				21144	.928	287.2	185.4	+14.4	24	133
				21152	.859	251.5	177.8	-17.7	4	35
				21145	.645	242.1	156.5	-20.4	13	86
				21151	.385	202.2	128.4	-24.4	2	16
				21149	.452	25.6	107.2	+20.4	57	283
7.393	-23.1	106.9	- 3.5	21150	.990	285.2	187.1	+14.5	0	46
				21144	.978	289.3	182.6	+18.0	0	32
				21152	.958	252.7	180.3	-17.6	4	23
				21145	.778	246.7	156.2	-20.2	7	50
				21151	.487	224.9	128.7	-23.4	3	16
				21149	.408	359.7	107.0	+20.4	57	331
8.365	-22.8	94.0	- 3.4	21145	.878	249.2	154.6	-19.9	10	57
				21149	.457	334.1	106.3	+20.8	69	327
				1520 12	.885	112.3	32.8	-21.2	0	5
9.425	-22.6	80.0	- 3.3	21145	.969	250.2	155.7	-20.0	9	45
				21149	.586	314.2	106.7	+21.1	56	305
				1520 13	.842	119.2	25.3	-26.1	0	19
				21153	.951	114.2	8.6	-24.0	7	36
10.348	-22.4	67.8	- 3.2	21149	.707	304.8	106.2	+21.2	67	317
				21153	.878	115.8	8.0	-24.0	5	16
11.368	-22.1	54.3	- 3.1	21149	.833	298.3	106.1	+21.3	49	298
				21153	.760	119.3	8.1	-23.9	0	7
				21154	.994	64.1	333.3	+25.2	10	116

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	Elements of Day P	Lo	Bo	Group No.	Measures Radial Distance	Position Angle	Position Long.	Lat.	Area Umbrae	Whole Spots
1967	°	°	°			°	°	°		
May 12.564	-21.8	38.5	- 3.0	21149	.940	294.1	105.5	+21.4	46	287
				21155	.674	122.3	0.3	-23.4	6	35
				21154	.940	61.8	332.4	+25.1	33	132
13.364	-21.6	27.9	- 2.9	21149	.984	292.6	105.4	+21.6	50	286
				21155	.577	127.4	358.2	-22.9	3	12
				21156	.835	106.5	332.0	-15.3	0	6
				21154	.879	59.3	331.5	+25.0	21	123
				21157	.980	104.4	309.4	-14.7	11	55
14.287	-21.4	15.7	- 2.8	21155	.463	146.8	359.5	-25.4	0	5
				21156	.689	112.0	334.0	-17.0	6	37
				21154	.786	55.8	330.4	+24.2	22	115
				21157	.920	105.9	309.2	-15.7	11	45
15.329	-21.1	1.9	- 2.7	21156	.492	118.3	335.3	-15.8	8	51
				21154	.663	45.7	330.4	+25.2	27	127
				21157	.802	106.3	309.5	-14.6	6	22
				21158	.943	109.9	291.9	-19.6	0	10
				21159	.970	103.3	286.0	-13.5	31	179
16.323	-20.8	348.8	- 2.5	21156	.314	136.5	335.9	-15.6	19	109
				21154	.554	32.4	329.7	+25.4	30	131
				21157	.644	109.7	310.2	-14.5	1	10
				21158	.841	112.7	293.1	-20.3	0	17
				21159	.889	104.3	286.5	-13.8	19	113
17.418	-20.5	334.3	- 2.4	1521 01	.600	317.0	0.8	+23.8	3	17
				21156	.228	191.0	336.9	-15.3	13	110
				21154	.480	10.1	329.0	+25.7	26	114
				21160	.330	30.5	324.4	+14.1	0	10
				21159	.745	106.1	287.0	-13.6	17	102
18.326	-20.3	322.3	- 2.3	21156	.316	225.1	335.6	-15.1	14	84
				21154	.482	349.1	328.1	+25.8	18	98
				21160	.287	345.3	326.6	+13.7	0	2
				21157	.343	129.9	306.6	-14.9	2	24
				21159	.616	109.2	285.7	-13.5	13	76
				21161	.728	113.0	277.6	-18.1	21	71
				21162	.989	64.5	242.9	+24.8	30	133
19.355	-20.0	308.7	- 2.2	21156	.519	242.8	337.2	-15.6	8	41
				21154	.554	328.4	327.5	+26.0	23	122
				21157	.205	181.4	309.0	-14.0	0	3
				1521 02	.267	3.8	307.7	+13.2	0	7
				21159	.433	119.1	285.8	-14.1	12	71
				21161	.556	119.1	278.2	-17.5	33	159
				21162	.934	62.6	243.3	+24.5	43	238
				21163	.955	63.8	239.1	+24.2	11	102
				21164	.989	63.4	229.3	+25.9	22	192
20.364	-19.7	295.3	- 2.1	21156	.690	250.1	337.4	-15.1	3	12
				21154	.664	314.7	326.9	+26.0	19	108
				21165	.634	227.2	326.7	-27.2	0	3
				21157	.329	226.0	309.5	-15.2	0	5
				21159	.265	139.4	285.2	-13.6	16	85
				21161	.369	134.2	279.3	-16.9	21	101
				21162	.838	58.7	243.7	+24.5	44	258
				21163	.907	62.0	234.2	+24.2	47	235
				21164	.960	61.8	224.8	+26.3	77	674
				21166	.973	107.1	219.0	-17.1	56	248

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	Elements of Day P	Elements of Day L_o	Elements of Day B_o	Group No.	Measures Radial Distance	Measures Position Angle	Position Long.	Position Lat.	Area Umbrae	Area Whole Spots
1967	°	°	°			°	°	°		
May 21.377	-19.4	281.9	- 2.0	21156	.830	253.4	337.1	-14.8	0	4
				21154	.780	306.4	326.1	+26.0	16	90
				21165	.756	233.9	325.5	-27.8	7	29
				21159	.222	204.4	287.3	-13.6	9	30
				21161	.266	165.7	278.0	-16.8	21	118
				21162	.703	52.0	244.8	+24.0	38	238
				21163	.793	58.0	235.0	+23.4	55	361
				21164	.887	59.1	224.2	+26.0	180	1252
				21166	.896	108.0	219.1	-16.9	41	219
				21167	.993	80.4	199.6	+ 9.3	27	207
22.440	-19.0	267.9	- 1.8	21154	.889	300.5	326.0	+25.8	26	98
				21165	.875	239.4	325.7	-27.4	9	36
				21159	.390	237.2	287.5	-13.9	7	29
				21161	.312	217.5	279.2	-16.1	15	65
				21162	.570	39.6	244.5	+24.2	35	247
				21163	.637	49.5	236.3	+22.8	76	502
				21164	.772	53.4	224.4	+26.0	218	1478
				21166	.771	110.6	219.1	-16.9	36	232
				21167	.942	79.3	198.3	+ 9.4	39	235
23.379	-18.7	255.4	- 1.7	21165	.951	241.5	325.8	-27.6	11	77
				21154	.956	297.5	325.3	+25.6	23	115
				21159	.570	247.2	288.1	-14.2	6	19
				21161	.486	240.6	281.4	-15.3	8	39
				21168	.431	225.9	274.5	-19.0	0	13
				21162	.472	21.3	244.7	+24.3	35	223
				21163	.506	35.3	237.0	+22.7	81	636
				21169	.611	133.5	226.0	-26.3	0	6
				21164	.664	45.3	223.9	+26.3	193	1612
				21166	.628	115.5	219.2	-17.0	41	227
				21167	.849	77.7	198.4	+ 9.4	43	221
				21170	.997	68.7	171.3	+21.0	0	135
24.320	-18.4	243.0	- 1.6	21165	.995	242.1	326.8	-27.9	0	21
				21154	.995	296.0	325.3	+25.6	21	95
				21159	.731	252.0	288.6	-14.1	3	22
				21161	.656	247.4	281.8	-15.8	6	39
				21168	.602	241.0	276.6	-18.3	3	14
				21162	.440	357.2	244.3	+24.4	50	226
				21171	.253	23.6	237.1	+11.7	0	4
				21163	.422	13.3	237.0	+22.6	92	671
				21169	.478	147.6	226.6	-25.3	3	10
				21164	.556	32.2	223.7	+26.4	246	1642
				21166	.472	124.8	219.2	-17.0	41	220
				21172	.622	122.5	209.0	-20.8	4	23
				21167	.720	75.4	198.2	+ 9.3	43	212
				21173	.747	71.2	196.7	+12.8	5	27
				1521 03	.809	63.8	192.7	+19.8	0	12
				21170	.963	66.9	170.7	+21.7	46	273
				21174	.973	111.6	166.9	-21.4	0	10
				21175	.989	63.4	163.4	+26.0	8	30
25.315	-18.1	229.8	- 1.5	21161	.808	251.7	282.4	-15.6	4	19
				21176	.366	283.7	250.6	+ 3.5	2	20
				21162	.489	333.7	243.5	+24.4	34	198
				21171	.274	331.9	237.4	+12.5	1	10
				21163	.419	345.5	236.3	+22.4	108	812
				21169	.411	175.1	227.6	-25.6	3	20
				21164	.486	12.7	223.0	+26.7	235	1618
				21166	.329	146.1	218.8	-17.3	37	230
				21172	.454	135.8	210.2	-20.4	15	126
				21167	.552	70.5	198.2	+ 9.3	47	205

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
May 25.315	Continued			21173	.579	65.2	197.4	+12.8	14	60
				1521 04	.700	62.7	189.3	+17.5	0	5
				21170	.884	64.0	171.1	+21.9	39	228
				21174	.885	113.3	169.3	-21.2	17	78
				21177	.901	68.1	167.9	+18.9	16	139
				21175	.952	61.3	160.9	+26.7	11	107
26.326	-17.7	216.5	- 1.4	21176	.596	275.7	252.7	+ 2.3	3	13
				21162	.594	318.9	241.9	+25.3	61	321
				21178	.605	327.8	238.1	+29.4	11	60
				21163	.513	321.8	236.5	+22.4	87	846
				21169	.430	196.9	224.4	-25.5	0	8
				21164	.483	348.4	222.7	+26.8	256	1575
				21166	.273	188.3	218.8	-16.9	55	211
				21179	.439	178.5	215.7	-27.3	0	10
				21172	.342	164.4	210.8	-20.5	38	249
				21167	.363	59.1	198.1	+ 9.4	29	194
				21173	.400	52.1	197.6	+12.9	15	117
				1521 05	.634	117.3	180.3	-18.0	3	15
				21170	.771	59.3	170.9	+22.1	43	271
				21174	.754	116.4	170.5	-20.5	5	49
				21177	.784	64.5	168.3	+18.7	44	253
				21175	.884	58.1	159.2	+27.1	17	100
				1521 06	.904	65.7	154.6	+21.1	0	21
				21180	.921	116.2	151.5	-24.6	0	6
				21181	.921	111.3	150.7	-20.1	0	9
				21182	.972	108.7	140.6	-18.5	72	412
27.456	-17.4	201.5	- 1.2	21162	.736	307.9	241.5	+25.9	78	358
				21178	.737	314.6	238.7	+30.0	5	47
				21163	.660	308.0	235.7	+22.9	107	755
				21169	.563	221.9	226.1	-25.8	3	39
				21164	.569	326.2	222.3	+27.0	211	1363
				21166	.393	226.3	218.7	-16.8	42	215
				21179	.481	205.4	214.8	-26.8	4	23
				21172	.362	200.6	209.3	-20.9	74	352
				21167	.193	18.8	197.9	+ 9.3	40	173
				21173	.257	15.7	197.4	+13.1	28	192
				21170	.606	50.2	171.6	+21.6	39	217
				21174	.607	126.4	169.8	-22.1	7	45
				21177	.621	56.5	168.4	+18.9	41	142
				1521 07	.618	117.8	166.6	-17.7	0	9
				21175	.770	52.5	158.4	+27.0	13	70
				21181	.766	114.8	154.1	-19.5	0	11
				21182	.891	110.7	140.0	-18.9	70	355
				21183	.974	69.8	126.1	+19.4	0	10
28.446	-17.0	188.4	- 1.1	21162	.849	301.7	241.6	+25.8	21	167
				21163	.792	300.5	236.0	+22.9	98	634
				21164	.680	314.1	221.6	+27.2	143	1319
				21166	.555	240.2	218.5	-16.9	24	172
				21172	.479	223.7	209.1	-21.2	63	365
				21173	.293	325.4	198.2	+12.8	58	399
				21167	.242	318.3	197.7	+ 9.3	29	189
				21170	.470	35.4	171.5	+21.4	29	160
				1521 08	.393	134.5	171.4	-17.0	1	7
				21177	.458	44.4	168.8	+18.0	17	122
				21174	.488	140.0	168.6	-22.9	3	20
				21184	.560	52.0	160.7	+19.1	0	4
				21175	.636	43.4	159.3	+26.4	3	14
				21182	.777	114.0	139.9	-19.1	63	342
				21183	.900	66.7	126.8	+20.3	5	40
				21185	.981	65.6	111.4	+23.6	6	45

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	Elements of Day			Measures			Position		Area	
	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
May 29.357	-16.7	176.3	- 1.0	21162	.932	298.9	241.7	+26.3	28	188
				21163	.889	296.9	235.7	+23.2	75	663
				1521 09	.820	237.8	226.9	-26.5	0	16
				21164	.783	307.0	220.9	+27.3	144	939
				21166	.704	246.8	218.7	-16.8	35	186
				21172	.606	234.6	208.2	-21.3	35	232
				21173	.440	302.0	198.7	+12.5	36	305
				21167	.406	296.5	197.8	+ 9.4	30	180
				21170	.387	11.9	171.5	+21.1	35	238
				21177	.354	22.3	168.2	+18.1	16	104
				21175	.506	28.6	160.9	+25.3	0	8
				21184	.399	40.0	160.9	+16.8	0	10
				21182	.641	118.6	140.1	-18.6	48	353
				21183	.813	63.0	125.6	+20.9	4	27
				21185	.930	64.2	110.7	+23.4	9	77
				21186	.977	67.5	100.2	+21.7	43	314
30.535	-16.3	160.8	- 0.9	21162	.989	296.4	240.8	+25.9	22	134
				21163	.970	294.4	234.8	+23.3	72	674
				21187	.893	244.3	221.6	-23.2	0	10
				21164	.902	301.2	220.8	+27.3	112	906
				21166	.860	250.7	218.6	-17.0	39	169
				21172	.775	242.5	208.2	-21.5	28	198
				21173	.656	289.9	199.7	+12.2	43	222
				21167	.624	286.5	197.9	+ 9.4	23	149
				21170	.413	335.2	171.4	+21.0	35	196
				21177	.352	340.7	167.8	+18.4	14	93
				21180	.433	166.7	154.4	-25.7	0	5
				21182	.463	132.5	139.7	-18.9	58	338
				21183	.607	55.1	129.0	+19.5	1	11
				21185	.831	60.0	109.0	+24.0	36	263
				21186	.891	65.0	100.7	+21.7	41	211
31.319	-16.0	150.4	- 0.8	21163	.996	295.5	233.8	+25.3	47	401
				21187	.955	245.9	221.6	-23.2	0	15
				21164	.959	300.7	220.8	+29.0	117	1090
				21166	.939	252.0	219.2	-17.1	40	204
				21172	.861	245.4	207.4	-21.4	40	207
				21173	.787	285.8	200.8	+11.8	30	189
				21167	.755	283.8	198.3	+ 9.8	28	160
				1521 10	.599	284.0	186.2	+ 7.7	3	23
				21170	.498	318.1	171.1	+20.9	40	218
				21177	.417	321.8	166.1	+18.3	10	48
				1521 11	.485	344.3	158.8	+27.0	5	25
				21180	.461	181.8	151.3	-28.1	0	10
				21182	.363	150.2	139.4	-19.0	54	330
				21183	.488	45.0	129.0	+19.4	3	12
				21188	.455	57.2	127.3	+13.5	3	10
				21185	.749	55.0	108.0	+24.8	124	602
				21186	.813	61.5	100.0	+22.3	67	345
Jun. 1.435	-15.6	135.6	- 0.6	21164	.995	298.7	218.5	+28.5	32	150
				21166	.993	252.9	218.2	-17.1	18	106
				21172	.954	247.4	206.9	-21.7	11	88
				21173	.921	283.1	201.7	+11.7	28	116
				21167	.899	281.2	198.9	+ 9.7	40	179
				21170	.646	306.2	169.7	+21.8	32	213
				21177	.567	306.2	164.4	+18.9	5	41
				21182	.323	190.5	139.2	-19.0	45	306
				21188	.245	22.1	130.2	+12.4	1	13
				21183	.359	15.9	129.7	+19.5	7	29
				21185	.604	44.2	108.1	+25.0	134	844
				21186	.672	53.8	99.8	+22.8	75	423

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Jun. 2.360	-15.2	123.4	- 0.5	21173	.982	281.8	201.8	+11.5	12	71
				21167	.970	279.8	198.7	+ 9.4	37	139
				21170	.779	298.6	170.5	+21.5	33	163
				21177	.715	296.6	165.5	+18.2	2	16
				21182	.405	218.9	138.9	-18.8	45	274
				21183	.355	341.8	130.1	+19.1	2	12
				21185	.475	26.6	109.9	+24.5	163	914
				21186	.539	42.8	100.1	+22.7	87	491
3.418	-14.8	109.4	- 0.4	21170	.900	294.1	171.0	+21.3	21	128
				21182	.560	234.7	138.2	-19.1	26	217
				1521 12	.445	331.3	122.7	+22.5	0	9
				21185	.409	355.4	111.4	+23.5	158	1061
				21186	.423	21.7	99.6	+22.7	72	511
4.324	-14.5	97.4	- 0.3	21170	.967	292.4	171.2	+21.6	8	91
				21182	.703	241.9	138.4	-19.5	28	155
				21189	.581	232.2	126.8	-21.0	1	10
				21185	.459	332.3	110.8	+23.6	204	1129
				21186	.393	357.5	98.5	+22.7	66	464
				21190	.768	68.5	49.5	+16.1	10	52
				21191	.803	106.1	45.2	-13.0	4	22
5.475	-14.0	82.1	- 0.2	21182	.853	246.8	138.3	-19.7	26	129
				21189	.753	244.4	127.9	-19.0	0	3
				21185	.609	310.6	112.2	+23.2	142	863
				21186	.475	327.0	98.4	+23.2	36	369
				21190	.604	63.0	48.3	+15.8	17	114
				21191	.625	110.4	45.4	-12.7	9	51
				1521 13	.831	112.2	28.2	-18.4	0	14
				21192	.891	67.4	21.3	+19.9	0	10
6.344	-13.7	70.6	0.0	21182	.934	248.6	138.1	-19.9	13	86
				1521 14	.882	310.3	125.3	+34.6	0	22
				21185	.720	303.3	111.4	+23.2	172	880
				21186	.573	312.8	97.7	+22.8	38	215
				21190	.456	53.6	48.3	+15.6	14	99
				21191	.460	118.2	46.2	-12.5	4	26
				21192	.764	63.0	24.4	+20.2	2	18
7.318	-13.3	57.8	+ 0.1	21182	.986	250.1	137.3	-19.6	0	46
				21185	.851	297.6	112.7	+23.2	156	769
				21186	.706	303.9	97.2	+23.2	16	129
				21191	.267	135.3	46.8	-10.8	1	13
				21190	.328	39.3	45.4	+14.7	6	38
8.319	-12.9	44.5	+ 0.2	21185	.944	294.3	113.3	+22.9	157	621
				21193	.860	303.0	99.1	+28.0	0	9
				21186	.826	297.7	96.7	+22.6	6	69
				1521 15	.747	291.7	90.6	+16.1	2	14
				1521 16	.344	212.5	55.6	-16.6	1	12
				21190	.252	354.4	46.0	+14.6	5	14
				21194	.288	178.4	44.0	-16.5	1	7
9.326	-12.5	31.2	+ 0.3	21185	.992	293.1	113.4	+22.9	136	589
				21193	.953	298.1	101.2	+26.7	0	22
				1521 17	.829	289.3	85.5	+16.0	2	18
				21190	.352	314.9	46.0	+14.6	7	42
				21194	.348	220.1	44.6	-15.1	0	2
				1521 18	.237	315.0	40.9	+ 9.9	2	11
				1521 19	.334	155.3	22.8	-17.3	1	9

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	Elements of Day P	L_o	B_o	Group No.	Measures Radial Distance	Position Angle	Position Long.	Lat.	Area Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Jun. 10.333	-12.1	17.9	+ 0.4	21190	.526	297.7	46.5	+14.5	3	24
				21195	.350	209.3	28.2	-17.3	10	49
				1521 20	.422	191.1	22.9	-23.9	5	33
11.276	-11.7	5.4	+ 0.6	21190	.683	291.5	46.3	+14.9	5	25
				21195	.490	231.6	28.9	-17.1	12	58
				1521 21	.208	45.5	356.8	+ 8.9	2	21
12.520	-11.2	348.9	+ 0.7	21190	.878	287.2	49.2	+15.3	0	14
				21195	.708	245.2	30.9	-16.7	31	146
				1522 01	.706	62.0	307.6	+19.8	0	6
13.355	-10.8	337.9	+ 0.8	21190	.955	285.7	49.9	+15.2	4	23
				21195	.825	248.3	31.1	-17.2	57	200
14.336	-10.4	324.9	+ 0.9	21195	.927	250.7	31.1	-17.5	24	148
				21196	.965	110.5	251.7	-19.5	4	50
15.358	-10.0	311.3	+ 1.0	21195	.984	252.0	30.0	-17.5	24	159
				21196	.888	113.2	251.3	-19.9	10	41
				21197	.957	70.8	239.2	+18.7	19	90
				21198	.982	65.2	233.1	+24.6	23	121
16.343	- 9.5	298.3	+ 1.2	21196	.773	116.5	251.3	-19.3	7	34
				1522 02	.857	52.9	245.0	+31.7	0	9
				21197	.879	68.8	238.4	+19.0	19	86
				21198	.931	63.5	231.7	+24.9	22	118
				21199	.986	59.1	219.1	+30.6	0	40
				21200	.987	109.4	218.7	-19.0	14	84
				21201	.988	65.4	217.8	+24.4	7	51
17.546	- 9.0	282.4	+ 1.3	21202	.357	141.6	269.2	-14.9	2	17
				21196	.590	126.5	252.4	-19.3	7	58
				21197	.738	64.4	237.7	+19.4	17	81
				21198	.822	59.3	231.0	+25.5	30	172
				21200	.913	111.6	218.7	-19.0	14	89
				21199	.926	56.8	218.0	+31.0	0	6
				21201	.938	62.9	214.6	+25.8	37	174
				21203	.989	79.9	201.0	+10.2	23	145
18.464	- 8.6	270.2	+ 1.4	21196	.472	134.9	249.7	-18.1	4	34
				21204	.425	54.0	249.4	+15.7	6	25
				21197	.603	58.6	237.3	+19.4	14	103
				21198	.707	55.0	230.7	+25.0	21	145
				21199	.832	51.2	220.4	+32.2	8	40
				21200	.822	115.0	218.2	-19.4	12	49
				21201	.864	60.7	213.7	+25.7	31	145
				21205	.910	61.8	207.2	+26.0	5	27
				21203	.946	79.7	199.4	+10.2	17	122
19.327	- 8.2	258.8	+ 1.5	21196	.360	161.4	251.9	-18.4	2	16
				21204	.291	30.0	250.1	+16.0	7	31
				21197	.469	47.9	237.2	+19.6	13	68
				21198	.583	46.8	231.0	+24.7	17	93
				21200	.710	119.7	218.2	-19.4	10	41
				21201	.748	57.0	215.2	+25.1	14	76
				21205	.826	58.8	207.0	+26.2	4	37
				21203	.867	78.8	199.2	+10.4	16	105
20.312	- 7.8	245.8	+ 1.6	21204	.259	343.1	250.2	+15.9	14	64
				21197	.342	24.5	237.1	+19.7	13	64
				21198	.461	30.7	230.8	+24.8	10	109
				21200	.569	127.4	217.3	-18.7	3	20

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Jun. 20.312	Continued			21201	.625	49.8	214.1	+25.1	12	97
				21205	.691	53.4	207.9	+25.5	3	13
				21206	.746	46.8	206.1	+31.9	2	14
				21203	.733	77.0	199.3	+10.6	19	115
				1522 03	.778	64.1	197.4	+20.9	2	18
				21207	.961	72.8	172.4	+17.0	40	356
21.323	- 7.4	232.4	+ 1.7	21202	.662	244.4	270.4	-15.2	6	53
				21204	.392	309.8	250.6	+16.1	10	60
				21197	.314	345.5	237.1	+19.3	13	57
				21198	.390	4.9	230.3	+24.5	12	78
				21201	.482	35.4	214.6	+24.7	12	84
				21200	.517	140.0	211.5	-21.6	3	19
				21205	.535	43.5	208.6	+24.3	4	24
				21203	.558	73.6	199.5	+10.5	21	60
				21207	.881	71.4	171.7	+17.1	84	526
22.335	- 6.9	219.0	+ 1.9	21202	.809	250.2	270.7	-14.7	4	30
				21204	.574	296.0	251.4	+16.1	8	46
				21197	.421	316.5	236.8	+19.5	6	26
				21198	.425	336.7	229.6	+24.7	17	94
				21200	.397	168.0	213.9	-20.9	0	9
				21201	.424	14.3	212.3	+26.0	6	48
				21206	.527	26.7	203.2	+29.8	3	16
				21203	.370	65.1	199.1	+10.7	14	68
				21207	.767	68.6	170.8	+17.4	108	642
				21208	.914	117.5	156.6	-24.1	22	120
23.373	- 6.4	205.2	+ 2.0	1522 04	.864	284.8	264.4	+13.8	4	26
				21204	.775	287.6	254.9	+14.8	4	16
				21197	.583	301.6	236.8	+19.4	3	11
				21198	.540	316.3	229.4	+24.7	8	69
				21201	.419	345.4	211.9	+25.8	4	17
				21206	.487	356.6	207.1	+31.0	0	5
				21203	.186	34.5	199.1	+10.8	7	45
				21207	.577	63.4	172.8	+16.6	80	621
				21208	.812	121.9	156.4	-24.0	33	189
24.699	- 5.9	187.7	+ 2.1	21204	.901	285.1	251.4	+14.5	0	11
				21198	.717	303.5	228.8	+24.8	13	53
				21200	.527	220.3	209.1	-21.6	3	11
				21206	.558	336.3	203.1	+32.7	0	8
				21203	.250	308.8	199.1	+11.1	7	21
				1522 05	.232	333.1	193.9	+14.0	0	7
				21209	.522	180.7	188.1	-29.2	3	13
				21207	.349	43.8	173.1	+16.6	59	498
				1522 06	.501	42.7	166.1	+23.5	5	29
				21208	.639	133.6	157.3	-24.2	40	380
				21210	.972	66.6	111.8	+23.3	58	509
25.347	- 5.6	179.1	+ 2.2	21204	.969	285.0	254.7	+15.0	13	54
				21198	.797	299.9	228.5	+24.8	11	50
				1522 07	.617	228.8	209.0	-22.0	3	14
				21206	.613	327.2	202.3	+32.9	1	7
				21203	.373	296.2	199.0	+11.5	0	7
				21209	.524	197.9	189.5	-27.6	4	17
				1522 08	.368	164.8	173.3	-18.5	2	18
				21207	.270	21.7	173.2	+16.7	96	516
				21208	.557	141.6	157.0	-23.7	73	457
				21210	.930	65.9	111.9	+23.2	90	485

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	Elements of Day			Measures			Position		Area	
	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Jun. 26.348	- 5.1	165.9	+ 2.3	21198	.899	296.5	227.9	+24.7	8	37
				1522 09	.646	299.3	202.6	+20.2	3	14
				21207	.281	331.8	173.8	+16.6	87	432
				21208	.458	164.1	158.0	-23.7	94	436
				21210	.838	63.5	111.3	+23.3	86	425
27.323	- 4.7	153.0	+ 2.4	21198	.964	294.9	226.9	+24.6	13	47
				21207	.446	303.3	175.7	+16.4	59	305
				1522 10	.116	290.5	159.2	+ 4.7	1	7
				21208	.447	188.7	157.2	-23.7	48	355
				21210	.719	59.1	110.9	+23.4	86	409
28.341	- 4.2	139.5	+ 2.5	21207	.624	293.1	176.1	+16.2	66	398
				21208	.528	213.6	158.0	-23.6	60	320
				21211	.339	196.4	145.2	-16.3	5	12
				21212	.225	24.4	134.0	+14.3	1	5
				21210	.576	50.4	110.6	+23.7	79	399
				1522 11	.939	61.4	71.2	+27.6	0	7
				21213	.996	70.5	54.5	+19.6	47	213
29.543	- 3.7	123.6	+ 2.7	21207	.819	287.9	177.6	+16.1	74	301
				21208	.676	229.4	157.5	-23.8	51	261
				21211	.479	227.9	145.2	-16.2	1	5
				21214	.397	195.4	130.0	-19.8	0	2
				21210	.416	30.3	110.4	+23.6	90	317
				21215	.644	74.6	84.3	+11.9	3	12
				21213	.937	69.3	54.7	+20.3	55	301
30.446	- 3.3	111.6	+ 2.8	21207	.925	286.9	178.8	+16.6	58	286
				21216	.802	309.0	158.9	+32.1	7	22
				21208	.789	236.6	157.5	-23.8	47	276
				21211	.636	240.8	146.7	-15.7	0	6
				21210	.365	2.5	110.6	+24.1	82	319
				21215	.485	68.6	84.2	+12.7	3	14
				21213	.853	67.8	54.4	+20.3	36	284
				21217	.917	71.9	45.7	+17.7	0	17
				21218	.972	107.4	36.8	-16.1	24	113
July 1.339	- 2.9	99.8	+ 2.9	21207	.982	286.5	179.0	+16.7	40	208
				21208	.889	241.2	158.0	-23.8	29	262
				21216	.880	305.3	157.6	+32.0	5	21
				21211	.784	247.2	148.3	-15.8	0	2
				21212	.572	292.3	132.9	+14.9	0	5
				21214	.620	233.3	131.4	-19.2	1	4
				21210	.397	336.1	109.9	+24.0	72	353
				21219	.695	128.2	63.5	-23.0	3	14
				21213	.737	65.4	54.5	+19.9	43	237
				21217	.820	71.0	45.8	+17.2	4	17
				21218	.910	109.5	36.6	-16.3	21	96
				21220	.992	113.1	19.4	-22.4	8	58
2.425	- 2.4	85.4	+ 3.0	21208	.966	243.8	157.1	-24.3	22	165
				21216	.957	302.9	157.0	+32.2	0	20
				21212	.768	287.9	134.6	+15.6	14	63
				21210	.521	314.6	109.4	+24.1	67	347
				21219	.551	140.5	63.3	-22.3	11	50
				21221	.505	66.7	57.0	+14.2	0	7
				21213	.566	58.8	54.7	+19.6	49	281
				21222	.644	74.4	46.2	+12.3	3	17
				21218	.783	113.2	37.2	-15.9	18	105
				21220	.938	115.0	19.1	-22.2	13	66

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
July 3.334	- 1.9	73.4	+ 3.1	21208	.996	244.7	155.8	-24.8	0	93
				21212	.875	286.2	133.9	+15.7	9	51
				21210	.650	304.9	109.0	+24.3	59	309
				21219	.457	157.7	62.7	-21.9	50	245
				21221	.344	52.9	57.0	+14.9	2	17
				21213	.421	47.5	54.2	+19.4	36	254
				21222	.476	67.8	46.6	+13.1	1	5
				21223	.529	55.3	45.9	+20.2	1	15
				21218	.650	118.9	37.3	-15.8	18	84
				21220	.860	118.3	18.7	-22.2	15	35
				21224	.994	72.7	349.5	+17.5	19	115
4.330	- 1.5	60.2	+ 3.2	21212	.959	284.6	133.8	+14.9	24	120
				21210	.776	298.9	108.2	+24.1	53	294
				21219	.428	184.9	62.5	-21.9	59	385
				21221	.196	13.5	57.5	+14.1	1	9
				21213	.292	20.5	54.0	+19.0	52	274
				21222	.269	57.1	47.0	+11.5	4	14
				21223	.358	37.3	47.0	+19.6	5	20
				21218	.503	129.8	36.6	-15.8	15	85
				21220	.738	124.3	19.2	-22.1	9	41
				21225	.939	64.5	351.3	+25.0	0	10
				21224	.943	72.6	349.8	+17.5	27	116
5.324	- 1.0	47.1	+ 3.3	21212	.994	284.5	130.9	+14.8	0	29
				21210	.884	295.8	107.6	+24.3	68	244
				21219	.485	209.1	61.7	-21.7	65	403
				21221	.257	315.6	57.7	+13.8	4	13
				21213	.295	338.5	53.6	+19.1	46	253
				21222	.155	353.6	48.1	+12.1	0	3
				1522 12	.264	183.1	47.9	-11.9	0	4
				21223	.280	358.6	47.5	+19.5	4	17
				1522 13	.165	32.4	41.9	+11.3	6	20
				21218	.366	151.8	36.8	-15.5	15	61
				21220	.619	133.2	18.0	-22.1	6	20
				21224	.849	71.3	349.7	+17.5	22	104
				21225	.862	63.8	349.3	+24.1	5	25
6.348	- 0.6	33.5	+ 3.4	21210	.962	294.3	107.5	+24.3	33	242
				21226	.883	298.0	93.6	+26.1	0	15
				21219	.605	225.9	61.3	-21.8	55	435
				21221	.437	296.1	57.3	+14.2	6	33
				21213	.433	310.4	53.9	+19.4	41	199
				21223	.379	316.3	49.5	+19.1	0	14
				21222	.234	306.8	44.5	+11.4	0	2
				21218	.328	190.4	37.0	-15.3	7	48
				21220	.500	149.6	17.7	-22.2	4	11
				21225	.733	60.0	349.7	+23.9	10	61
				21224	.713	68.4	349.6	+17.7	16	97
				1522 14	.829	67.8	338.9	+20.2	0	4
7.326	- 0.1	20.6	+ 3.5	21226	.958	295.9	93.5	+25.8	4	32
				21219	.738	234.7	61.1	-22.5	41	368
				21221	.622	291.1	57.5	+15.7	0	4
				21213	.589	299.1	53.5	+19.6	37	202
				21218	.422	220.3	36.9	-15.3	8	28
				21220	.413	175.3	18.5	-20.7	6	28
				21225	.577	53.3	350.5	+23.1	3	23
				21224	.552	62.5	349.7	+17.7	21	94
				21227	.926	65.9	313.6	+23.6	0	21

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	Elements of Day P	L_o	B_o	Group No.	Measures Radial Distance	Position Angle	Position Long.	Lat.	Area Umbrae	Whole Spots
1967	°	°	°			°	°	°		
July 8.576	+ 0.4	4.0	+ 3.7	21219	.878	242.6	61.0	-21.9	38	249
				21213	.777	292.6	53.5	+19.7	31	168
				21218	.619	239.0	37.3	-15.5	3	9
				21220	.454	204.6	15.6	-20.7	0	3
				21224	.336	42.0	350.4	+18.0	15	65
				21225	.425	32.1	349.7	+24.6	18	92
				1522 15	.446	53.8	341.8	+18.6	0	4
				21227	.784	63.0	314.8	+23.2	13	37
9.356	+ 0.8	353.7	+ 3.7	21219	.944	245.4	61.0	-21.7	35	200
				21213	.872	291.2	53.5	+20.3	21	112
				21222	.766	284.5	43.2	+13.4	4	18
				21228	.577	272.7	28.9	+ 4.6	4	31
				21224	.254	13.2	350.2	+18.0	6	50
				21225	.368	9.0	350.1	+24.9	10	62
				21227	.671	58.5	315.3	+23.4	8	53
10.364	+ 1.2	340.4	+ 3.8	21219	.991	247.3	60.4	-21.9	34	153
				21213	.956	290.4	53.3	+20.6	23	135
				21222	.897	282.6	44.0	+12.9	0	8
				21228	.776	273.0	31.2	+ 4.7	0	4
				1523 01	.783	239.4	26.3	-20.8	0	7
				21224	.292	326.5	350.1	+17.8	8	38
				21225	.394	337.2	350.0	+25.0	10	46
				21227	.493	46.4	317.6	+23.4	11	67
				21229	.916	74.4	274.1	+15.9	0	11
				1523 02	.988	113.6	261.8	-22.5	0	15
11.331	+ 1.7	327.6	+ 3.9	21213	.996	290.3	53.1	+20.6	24	95
				21222	.959	283.1	41.3	+13.7	0	20
				21228	.874	273.9	28.5	+ 5.3	0	5
				21224	.443	303.0	350.4	+17.5	6	18
				21225	.473	317.5	347.9	+24.0	26	129
				21227	.365	23.6	318.4	+23.4	10	28
				1523 03	.510	57.4	300.6	+19.4	0	3
				21230	.825	109.9	274.7	-13.9	0	6
				21229	.810	72.9	274.1	+16.1	0	4
12.346	+ 2.1	314.1	+ 4.0	21231	.888	237.5	10.5	-26.3	0	27
				21224	.631	294.7	351.2	+18.5	3	9
				21225	.615	305.0	347.5	+24.0	10	60
				21227	.335	344.9	319.5	+22.8	4	12
				21232	.448	35.5	297.5	+25.2	5	28
				21230	.659	116.7	276.9	-13.9	0	5
				21233	.818	119.4	264.5	-21.1	4	38
				21234	.942	111.7	246.7	-18.8	0	17
13.340	+ 2.6	301.0	+ 4.1	21231	.964	240.9	11.3	-26.6	0	13
				21224	.780	290.3	351.2	+18.3	0	9
				21225	.784	296.8	350.5	+23.4	7	48
				21232	.363	9.1	297.4	+25.0	9	59
				21230	.476	127.6	278.3	-13.0	3	12
				21233	.657	127.8	267.5	-20.2	2	9
				21234	.857	115.6	246.2	-19.3	16	94
14.449	+ 3.1	286.3	+ 4.3	21224	.902	287.3	350.6	+17.4	0	5
				21225	.890	294.8	348.2	+24.0	40	276
				21232	.392	335.2	296.7	+25.0	10	60
				21230	.321	156.8	278.9	-12.9	7	32
				21233	.564	140.0	263.4	-21.6	1	8
				21234	.710	122.5	247.2	-19.1	31	199
				21235	.976	111.1	211.4	-19.5	16	89

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
July 15.329	+ 3.5	274.6	+ 4.3	21225	.965	294.5	349.6	+24.8	42	327
				21232	.502	315.9	297.2	+25.0	12	63
				21230	.316	192.6	278.7	-13.5	6	28
				21233	.473	155.9	262.8	-21.2	3	13
				21234	.583	131.8	247.4	-19.0	62	345
				21235	.935	113.4	208.9	-20.0	19	81
				21236	.963	82.4	200.1	+ 8.5	8	41
16.553	+ 4.0	258.5	+ 4.5	21232	.662	304.6	295.5	+25.6	3	25
				21230	.473	227.4	279.4	-14.5	3	8
				21237	.404	215.8	272.5	-14.7	0	3
				21233	.426	194.0	264.7	-19.9	9	36
				21234	.424	156.5	248.2	-18.4	57	327
				21235	.811	118.2	209.3	-19.6	10	47
				21236	.860	81.9	199.0	+ 9.3	7	45
				1523 04	.902	71.0	194.2	+19.0	0	3
17.368	+ 4.4	247.7	+ 4.5	21237	.507	232.4	272.0	-13.8	3	11
				21233	.494	212.7	264.1	-20.1	9	46
				21234	.385	183.1	248.9	-18.0	27	227
				21238	.465	27.5	233.6	+28.6	1	6
				21235	.719	123.7	208.3	-20.0	10	43
				21236	.734	82.1	200.5	+ 8.9	5	25
				21239	.953	122.4	181.1	-29.0	0	7
18.347	+ 4.8	234.7	+ 4.6	21232	.887	296.5	296.1	+25.5	10	74
				21230	.731	245.8	278.0	-14.0	0	3
				21233	.637	230.9	266.2	-19.7	1	10
				21234	.449	212.2	249.2	-17.8	24	139
				21238	.421	4.0	232.8	+29.3	0	1
				21235	.575	135.4	209.4	-19.9	8	33
				21236	.542	81.6	202.0	+ 8.4	1	9
				21240	.874	105.7	175.8	-11.3	0	14
				1523 05	.932	127.2	173.7	-32.1	0	6
				21241	.981	114.5	159.2	-22.9	42	204
19.334	+ 5.2	221.7	+ 4.7	21232	.957	296.2	294.9	+26.4	8	31
				21234	.576	229.5	248.9	-17.7	13	53
				21235	.481	154.4	208.9	-21.0	5	22
				21236	.338	77.2	202.3	+ 8.7	0	4
				21239	.799	132.6	179.4	-29.2	7	23
				21240	.760	109.6	174.9	-11.5	0	4
				1523 06	.864	45.0	168.4	+40.5	5	23
				21241	.906	117.5	161.4	-22.4	34	122
20.336	+ 5.7	208.4	+ 4.8	21234	.711	239.7	248.3	-17.3	5	38
				21235	.415	176.6	206.9	-19.5	2	21
				21239	.729	140.3	176.0	-30.0	16	103
				21241	.817	122.1	160.0	-22.5	23	112
				1523 07	.814	111.7	157.2	-14.5	0	12
21.401	+ 6.1	194.3	+ 4.9	1523 08	.901	288.5	258.6	+18.7	0	21
				21234	.860	246.1	249.7	-17.6	9	76
				1523 09	.882	218.6	240.1	-40.1	0	15
				1523 10	.114	337.9	196.8	+10.9	0	3
				21242	.256	38.4	184.8	+16.4	1	4
				1523 11	.346	42.1	180.1	+19.6	0	4
				21239	.619	155.9	177.5	-29.6	26	117
				21241	.670	130.8	161.3	-21.8	14	74
				21243	.682	106.7	153.2	- 7.6	5	41
				21244	.994	64.9	109.5	+25.5	117	429

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
July 22.307	+ 6.5	182.3	+ 5.0	21234	.951	249.8	251.5	-17.5	8	59
				21235	.510	215.9	200.7	-19.6	1	5
				21242	.183	355.7	183.1	+15.4	0	5
				1523 12	.179	176.9	181.8	- 5.2	0	7
				21245	.468	174.7	179.6	-22.7	3	22
				21239	.567	175.2	179.2	-29.3	17	87
				21241	.570	144.8	161.5	-23.0	6	43
				21243	.516	113.7	154.0	- 7.5	11	54
				21244	.972	65.0	105.2	+25.5	188	1003
23.542	+ 7.1	166.0	+ 5.1	21234	.983	249.7	242.6	-18.8	0	24
				1523 13	.814	296.2	218.9	+24.2	0	10
				1523 14	.789	286.9	217.7	+16.4	0	4
				1523 15	.739	234.9	206.3	-21.2	0	7
				21246	.578	314.8	193.7	+28.5	0	6
				1523 16	.516	323.6	186.4	+29.2	1	8
				21239	.610	203.0	181.8	-29.1	19	98
				21242	.278	303.3	179.8	+13.7	1	5
				21245	.519	199.9	177.1	-24.1	3	8
				21241	.451	175.8	163.9	-21.5	0	10
				21243	.297	138.4	154.6	- 7.8	8	36
				21244	.890	63.2	104.0	+26.1	145	1209
				21247	.970	77.7	89.6	+13.1	93	575
24.349	+ 7.4	155.3	+ 5.2	1523 17	.878	286.0	216.8	+16.5	0	14
				1523 18	.880	300.3	215.3	+28.9	0	14
				1523 19	.888	233.9	209.9	-28.6	0	12
				21246	.676	308.6	192.3	+29.0	0	9
				21239	.685	215.6	182.4	-29.1	20	126
				21242	.429	290.6	179.6	+13.4	1	22
				21245	.588	216.5	177.6	-23.3	1	26
				21243	.234	176.6	154.5	- 8.3	4	44
				21248	.398	157.2	146.1	-16.3	0	13
				21244	.819	61.0	102.3	+26.5	132	1783
				21247	.937	77.2	85.3	+13.8	176	940
				1	.906	78.2	90.0	+12.9	130	545
25.350	+ 7.8	142.1	+ 5.2	21246	.804	302.6	192.7	+29.0	8	31
				21239	.791	226.2	182.8	-29.2	19	116
				21249	.526	214.0	160.3	-20.8	1	5
				21243	.303	222.4	153.9	- 7.8	5	33
				21248	.400	193.4	147.6	-17.6	2	23
				21244	.699	56.5	101.5	+26.6	206	1806
				21247	.841	76.8	84.8	+13.9	187	989
				1	.785	77.4	90.4	+13.1	111	558
				21250	.998	77.8	55.0	+12.5	0	98
26.409	+ 8.3	128.0	+ 5.3	1523 20	.899	282.1	192.3	+13.2	0	26
				21246	.899	299.9	190.9	+29.1	5	47
				21239	.892	232.8	182.7	-29.6	18	116
				21243	.504	243.7	155.1	- 8.1	3	24
				21244	.553	47.3	101.1	+26.7	201	1754
				21247	.682	75.3	85.4	+13.9	166	893
				1	.618	75.3	90.3	+13.2	112	532
				1523 21	.796	57.3	78.3	+28.9	0	11
				21251	.880	71.9	66.5	+18.4	2	43
				21250	.957	79.3	54.5	+11.7	23	102
				21252	.984	110.9	51.2	-19.4	0	13
				21253	.994	70.1	43.3	+20.3	29	136
27.498	+ 8.7	113.6	+ 5.4	21246	.970	299.7	190.2	+30.1	0	9
				1523 22	.951	257.4	183.9	-10.2	0	7
				21239	.963	237.1	182.0	-29.7	25	118

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	Elements of Day P	L_o	B_o	Group No.	Measures Radial Distance	Position Angle	Position Long.	Lat.	Area Umbrae	Whole Spots
1967	°	°	°			°	°	°		
July 27.498	Continued			21249	.806	237.3	160.6	-22.1	0	4
				21243	.714	252.6	157.0	- 8.4	3	20
				1523 23	.460	263.1	140.7	+ 1.7	0	5
				21244	.429	29.7	99.9	+27.1	425	2196
				21247	.494	71.0	85.0	+14.0	174	937
				1	.426	69.9	89.5	+13.3	117	584
				1523 24	.732	56.3	70.3	+27.9	0	3
				21251	.745	70.0	66.3	+18.4	21	115
				21252	.903	114.4	53.2	-19.2	0	5
				21250	.887	79.0	50.9	+12.2	49	257
				21253	.944	70.3	42.4	+20.4	42	248
28.744	+ 9.2	97.2	+ 5.5	1523 25	.989	240.6	174.3	-28.0	0	15
				21243	.896	258.0	159.2	- 8.2	5	21
				1523 26	.801	244.4	145.9	-16.6	0	4
				21244	.377	353.2	100.0	+27.4	256	2092
				21247	.252	51.6	85.5	+14.4	169	919
				1	.188	39.4	90.1	+13.8	113	547
				21251	.503	64.2	68.9	+17.5	48	228
				21250	.694	78.6	53.3	+11.8	37	206
				21253	.824	69.1	42.2	+20.3	48	408
				21254	.958	114.4	27.8	-21.4	12	111
29.544	+ 9.6	86.6	+ 5.6	21244	.429	329.6	100.6	+27.0	184	1773
				21247	.159	7.8	85.3	+14.6	143	785
				1	.163	339.8	89.9	+14.3	90	463
				21251	.340	53.2	70.1	+17.1	60	360
				21250	.538	77.1	54.4	+11.6	50	238
				21253	.716	67.2	42.2	+20.1	51	342
				21254	.895	117.4	28.2	-21.5	12	52
30.343	+ 9.9	76.0	+ 5.6	21244	.525	315.0	100.5	+26.8	189	1646
				21247	.220	313.4	85.5	+14.2	146	973
				1	.286	301.7	90.5	+14.1	88	544
				21251	.209	23.4	71.1	+16.6	55	282
				21250	.388	73.4	53.8	+11.6	46	266
				1	.362	72.7	55.5	+11.4	37	204
				21253	.594	63.7	41.7	+19.9	43	326
				21254	.813	121.9	28.3	-21.6	8	68
31.363	+10.3	62.5	+ 5.7	21244	.670	304.0	100.7	+26.5	193	1642
				21247	.409	292.4	85.4	+14.2	165	842
				1	.482	289.7	90.3	+14.4	94	459
				21251	.245	325.2	70.9	+17.2	71	372
				21250	.164	50.8	55.1	+11.6	36	185
				1	.159	49.9	55.4	+11.5	27	163
				21253	.415	52.6	42.1	+19.9	39	312
				21254	.692	129.3	27.6	-21.3	6	20
Aug. 1.326	+10.7	49.8	+ 5.8	21244	.787	299.8	99.5	+26.8	201	1641
				21247	.590	286.6	85.3	+14.4	146	865
				1	.656	285.3	90.4	+14.4	91	456
				21251	.404	300.4	71.1	+17.1	82	426
				1523 27	.303	341.1	55.9	+22.4	0	4
				21250	.139	319.7	55.0	+11.8	35	203
				1	.142	314.6	55.7	+11.5	28	148
				21253	.273	27.2	42.2	+19.7	48	236
				21254	.570	141.9	27.7	-21.2	3	11
				21255	.652	147.6	26.6	-28.0	9	48
				21256	.906	58.1	345.9	+31.2	0	8
				1523 28	.921	94.3	343.2	- 1.7	0	6

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date 1967	P °	L_o °	B_o °	Group No.	Radial Distance	Position Angle °	Long. °	Lat. °	Umbrae	Whole Spots
Aug. 2.621	+11.2	32.7	+ 5.9	21244	.914	296.4	98.5	+26.5	164	1266
				21257	.818	277.4	87.8	+ 9.4	0	12
				21247	.813	283.9	87.1	+14.7	130	671
				1	.846	283.8	90.6	+14.8	97	453
				21258	.777	310.6	78.2	+34.5	0	11
				21251	.642	290.1	71.7	+17.3	69	342
				1523 29	.703	230.4	68.2	-21.8	2	10
				21250	.392	287.3	55.1	+12.1	39	258
				1	.405	285.4	56.1	-11.6	31	181
				21253	.285	327.2	42.1	+19.6	48	241
				1523 30	.119	298.6	38.7	+ 9.1	0	3
				21255	.575	172.6	27.8	-28.8	25	145
				1523 31	.417	61.6	10.2	+16.9	1	8
				21256	.790	52.6	344.6	+32.6	0	7
				1523 32	.954	113.1	324.0	-19.9	0	11
3.334	+11.5	23.2	+ 5.9	21244	.957	296.2	97.1	+26.8	141	948
				21257	.900	278.7	87.8	+10.4	0	10
				21247	.898	283.7	87.5	+14.9	110	526
				1	.913	283.7	89.6	+14.9	92	424
				21258	.849	305.7	78.4	+33.1	0	9
				21251	.754	287.5	71.8	+17.0	45	272
				1523 33	.806	228.7	66.2	-27.8	0	19
				21250	.543	282.7	55.9	+11.8	35	202
				1	.546	282.0	56.1	-11.5	25	167
				21253	.381	309.7	41.3	+19.7	36	204
				1523 34	.483	191.7	29.3	-22.2	0	10
				21255	.575	186.2	27.3	-28.8	31	114
				1523 35	.475	170.3	18.3	-21.9	0	8
				21259	.996	70.3	297.0	+20.1	0	71
4.341	+11.9	9.9	+ 6.0	21244	.983	297.5	90.9	+28.1	63	627
				21247	.981	283.9	89.5	+14.8	73	465
				21251	.883	285.6	72.2	+16.6	44	286
				21250	.725	280.2	56.5	+11.5	40	174
				1	.726	279.8	56.6	+11.2	37	148
				21253	.561	297.0	41.9	+19.8	29	173
				21255	.633	205.5	28.0	-29.0	25	181
				21260	.350	38.7	356.3	+21.6	0	5
				21259	.955	70.7	296.4	+20.2	36	191
5.578	+12.4	353.6	+ 6.1	21251	.974	285.4	71.5	+16.4	50	339
				1524 01	.933	291.7	63.0	+22.4	0	25
				2	.893	279.4	57.2	+11.1	20	156
				21250	.893	279.4	57.2	+11.1	20	156
				1524 02	.841	285.8	50.9	+16.6	0	29
				1524 03	.844	295.7	50.3	+24.9	0	21
				21253	.766	290.4	43.0	+19.5	25	131
				21255	.741	220.4	26.9	-29.2	73	396
				21261	.444	289.5	19.0	+14.0	0	8
				21260	.233	23.0	348.1	+18.4	5	16
				1524 04	.179	120.8	344.7	+ 0.8	0	9
				1524 05	.684	118.6	315.4	-14.3	0	2
				21259	.843	69.5	296.4	+20.5	78	555
				21262	.979	64.4	274.1	+26.2	0	65
				21263	.995	112.3	272.7	-21.4	117	382
6.766	+12.8	337.8	+ 6.2	21250	.982	280.4	57.6	+11.3	18	154
				21253	.901	288.2	42.4	+19.0	22	132
				21255	.845	230.0	25.3	-28.8	87	543
				21261	.587	281.3	13.7	+11.6	0	7
				21264	.555	291.8	10.4	+17.1	3	13
				21260	.245	328.7	345.5	+18.1	2	12

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Aug. 6.766	Continued			21265	.437	57.1	315.1	+19.4	6	28
				21259	.678	67.1	296.4	+19.9	147	1025
				21262	.924	62.8	270.3	+27.4	33	162
				21263	.961	114.8	268.1	-21.8	142	745
				21266	.944	79.7	266.6	+11.8	0	14
7.345	+13.0	330.2	+ 6.2	21253	.947	288.1	42.3	+19.1	25	131
				21255	.899	233.0	25.4	-29.3	78	484
				21264	.614	291.2	7.0	+17.8	0	3
				21260	.316	301.0	346.4	+15.3	0	12
				21265	.335	46.8	315.3	+19.2	5	15
				21259	.582	64.1	296.5	+19.9	112	818
				1524 06	.739	42.2	291.3	+38.0	0	7
				21262	.878	61.7	269.6	+27.7	21	86
				21263	.914	117.1	269.3	-21.6	124	637
				1	.902	117.2	270.9	+21.2	90	391
				21266	.881	80.3	268.0	+11.4	2	17
				1524 07	.930	60.6	261.8	+29.6	0	12
				21267	.992	108.7	249.9	-17.6	18	181
8.468	+13.5	315.3	+ 6.3	21255	.972	237.5	25.4	-29.5	64	376
				21260	.535	293.5	346.2	+17.7	4	35
				21268	.466	202.9	326.4	-19.2	3	19
				21265	.212	359.6	315.4	+18.4	0	7
				21259	.387	51.5	296.6	+19.8	137	834
				1524 08	.679	49.9	278.2	+30.9	0	9
				1524 09	.809	35.7	273.0	+45.7	0	8
				21266	.700	80.1	270.8	+11.4	3	16
				21269	.772	118.1	270.1	-16.9	0	11
				21262	.749	57.7	269.7	+28.0	17	74
				21263	.807	122.8	268.6	-21.6	113	679
				1	.788	123.1	270.5	+21.1	93	383
				21267	.934	111.5	249.8	-17.5	35	156
9.343	+13.8	303.8	+ 6.3	21255	.994	240.6	22.6	-28.1	29	214
				21260	.692	289.1	346.9	+17.7	5	24
				21268	.560	220.1	326.2	-19.4	3	18
				21270	.263	359.2	304.0	+21.5	1	14
				21259	.262	26.1	296.8	+19.8	91	621
				21266	.536	78.9	271.5	+11.3	1	5
				21262	.626	51.7	270.1	+28.1	6	34
				21263	.703	129.9	268.5	-21.6	83	548
				1	.685	130.4	270.0	+21.0	63	321
				21269	.701	122.0	265.6	-16.8	2	3
				2	.850	114.9	250.2	-17.2	26	134
				21267	.850	114.9	250.2	-17.2	26	134
				21271	.863	119.6	250.2	-21.5	0	16
10.315	+14.1	290.9	+ 6.4	21260	.851	286.7	349.4	+17.5	2	13
				21268	.690	232.8	326.4	-19.4	5	25
				21270	.333	326.5	302.3	+22.3	2	18
				21259	.253	335.5	297.3	+19.6	62	484
				21262	.479	39.3	271.0	+27.7	1	21
				21263	.582	142.0	268.4	-21.3	98	538
				1	.569	142.9	269.4	+21.0	81	382
				2	.724	120.8	250.5	-16.8	18	133
				21267	.724	120.8	250.5	-16.8	18	133
				1524 10	.825	119.0	241.2	-19.4	2	12
11.342	+14.5	277.3	+ 6.4	21260	.948	286.0	349.7	+17.2	0	29
				21272	.803	295.9	329.7	+24.5	65	295
				21268	.820	240.8	326.5	-19.4	10	40
				21265	.658	290.6	317.6	+18.3	2	8

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	Lo	Bo	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Aug. 11.342	Continued			21270	.504	302.3	304.5	+21.3	0	19
				21259	.405	306.6	297.5	+20.0	68	406
				21262	.380	12.6	272.0	+28.1	5	41
				21263	.496	161.8	267.8	-21.6	108	561
				1	.483	163.5	268.9	+21.1	86	380
				1524 11	.193	68.7	266.9	+10.3	2	12
				21273	.561	151.9	260.7	-23.4	3	22
				1524 12	.530	140.4	256.6	-18.0	1	11
				21267	.588	130.7	249.7	-16.8	35	184
				1	.578	131.5	250.6	-16.7	29	161
				21274	.895	116.4	218.9	-20.1	3	15
12.334	+14.9	264.2	+ 6.5	21272	.913	293.8	330.5	+24.4	81	666
				21268	.914	245.5	325.8	-19.2	6	31
				21259	.592	295.9	298.7	+20.3	58	379
				21263	.479	187.4	268.0	-21.8	98	464
				1	.474	188.9	268.7	+21.3	88	369
				21273	.517	174.0	260.9	-24.3	3	16
				21267	.455	149.7	250.4	-16.8	24	157
				1	.451	150.5	250.9	-16.7	23	141
				21274	.833	121.4	214.6	-21.5	2	16
13.392	+15.2	250.2	+ 6.5	21272	.983	293.5	331.1	+24.2	115	649
				21268	.986	249.4	327.5	-19.0	0	40
				21270	.832	295.6	305.8	+24.8	4	20
				21259	.751	291.3	298.3	+20.2	45	268
				21275	.499	314.6	273.6	+26.5	1	7
				21263	.550	210.8	267.8	-21.8	89	448
				1	.551	212.0	268.4	+21.5	79	368
				21273	.536	197.3	260.2	-24.2	3	24
				21267	.390	180.3	250.4	-16.3	35	181
				1	.390	182.0	251.0	-16.3	32	166
				21276	.326	10.8	246.4	+25.1	2	12
				21277	.992	121.6	172.6	-30.1	72	487
14.521	+15.6	235.3	+ 6.6	1524 13	.891	282.9	298.8	+14.4	0	12
				21259	.891	288.9	298.7	+19.8	43	195
				21263	.681	227.2	267.8	-21.9	89	440
				1	.682	227.8	268.1	+21.7	83	391
				21273	.601	216.2	257.9	-22.8	1	11
				21271	.556	209.6	252.5	-22.5	0	8
				21267	.456	211.1	249.5	-16.5	36	201
				1	.467	213.7	250.9	-16.4	31	160
				21276	.367	330.4	246.8	+25.0	11	38
				21277	.953	124.9	170.6	-30.3	112	528
15.330	+15.9	224.6	+ 6.6	21259	.957	289.0	298.9	+20.0	39	228
				21263	.779	234.5	267.7	-22.0	87	369
				1	.780	234.8	267.8	+21.9	83	345
				21267	.563	226.7	249.9	-16.7	31	187
				1	.574	227.9	250.9	-16.6	27	159
				21276	.476	311.9	247.5	+24.6	5	34
				21278	.252	21.4	219.0	+20.1	2	20
				21277	.902	128.5	169.9	-30.4	112	515
16.336	+16.3	211.3	+ 6.7	21259	.992	291.5	296.2	+22.1	0	72
				21275	.887	296.4	273.7	+26.5	0	10
				21263	.886	240.7	267.6	-22.0	84	364
				1	.887	240.7	267.8	+22.1	84	354
				2	.716	238.3	250.7	-16.9	33	165
				21267	.716	238.3	250.7	-16.9	33	165
				21276	.617	301.4	246.4	+24.2	13	52
				21278	.261	337.3	217.5	+20.5	36	167

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Aug. 16.336	Continued			21279	.152	73.1	202.9	+ 9.1	2	8
				21277	.823	134.9	168.8	-30.6	96	508
				1524 14	.795	55.2	161.6	+31.3	0	4
17.322	+16.6	198.3	+ 6.7	21263	.958	244.2	266.9	-22.3	79	319
				1	.958	244.2	266.9	-22.3	79	319
				21271	.870	239.6	252.3	-22.2	0	7
				21280	.820	305.6	250.5	+32.7	0	4
				2	.838	244.6	250.4	-17.0	29	187
				21267	.838	244.6	250.4	-17.0	29	187
				21276	.769	296.0	247.3	+24.1	21	146
				21278	.423	300.8	220.8	+18.7	38	228
				21279	.096	291.3	203.5	+ 8.7	53	364
				1524 15	.219	359.7	198.4	+19.3	0	7
				21277	.736	144.0	168.2	-30.7	101	493
18.452	+17.0	183.4	+ 6.8	21263	.997	247.2	265.3	-21.9	27	243
				21280	.924	303.2	250.6	+33.2	6	47
				2	.941	249.2	250.0	-16.9	27	177
				21267	.941	249.2	250.0	-16.9	27	177
				21276	.896	293.9	247.2	+24.4	15	97
				1524 16	.917	241.2	244.0	-23.0	0	17
				21278	.627	291.4	221.2	+18.6	29	192
				21279	.359	276.4	204.4	+ 8.6	96	454
				1524 17	.641	199.8	197.9	-30.4	1	7
				21277	.652	158.4	167.3	-30.6	96	523
				1524 18	.688	37.2	151.1	+38.9	0	6
				21281	.990	123.4	107.4	-31.6	8	64
19.390	+17.3	171.0	+ 6.8	21267	.990	251.3	250.2	-17.3	16	156
				21276	.948	295.7	243.4	+26.5	0	14
				21282	.867	279.0	231.5	+11.2	0	20
				21278	.779	288.0	222.1	+18.3	32	169
				21279	.551	275.8	204.5	+ 8.9	66	449
				21277	.616	173.7	166.5	-30.8	109	477
				21281	.934	126.7	110.7	-30.7	6	37
				21283	.943	66.5	99.5	+24.4	3	36
				21284	.951	77.2	98.0	+14.2	0	21
				21285	.982	66.9	90.1	+23.9	87	867
20.335	+17.6	158.5	+ 6.9	21282	.951	280.6	231.3	+12.2	4	35
				21278	.902	286.7	223.5	+18.0	21	127
				21279	.730	276.1	205.6	+ 9.1	61	379
				21277	.623	190.3	165.9	-30.9	102	514
				1524 19	.715	82.7	112.6	+10.0	0	13
				21281	.861	131.9	110.6	-30.6	2	11
				21283	.861	65.9	99.3	+24.1	9	35
				1524 20	.871	85.0	97.6	+ 7.7	0	4
				21284	.884	78.8	95.8	+13.1	9	52
				21286	.917	74.2	91.3	+17.2	0	16
				21285	.931	67.4	89.2	+23.5	130	1088
				21287	.970	78.4	81.6	+12.9	14	90
				21288	.968	59.4	81.5	+31.3	0	26
				21289	.988	73.6	75.8	+17.2	0	42
21.357	+17.9	145.0	+ 6.9	21282	.994	281.3	229.5	+12.0	0	19
				21278	.973	286.7	222.9	+17.8	20	117
				21279	.856	276.1	204.1	+ 8.8	81	425
				1524 21	.920	228.3	200.7	-34.0	0	12
				21277	.677	206.1	165.2	-30.9	93	483
				21284	.733	79.0	97.6	+12.7	10	50
				21283	.757	63.3	97.1	+24.6	14	80
				21286	.782	73.9	93.4	+16.9	0	7

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	Elements of Day P	L_o	B_o	Group No.	Measures Radial Distance	Position Angle	Position Long.	Lat.	Area Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Aug. 21.357	Continued			21285	.838	66.3	88.3	+23.6	149	1174
				21288	.864	59.9	86.2	+29.3	9	47
				1524 22	.881	72.5	82.7	+18.6	0	19
				21287	.895	78.6	80.9	+13.2	23	155
				21289	.960	75.7	70.3	+15.6	23	169
22.336	+18.2	132.0	+ 6.9	1524 23	.979	289.2	211.6	+20.2	0	22
				21279	.950	276.9	204.3	+ 8.7	80	499
				21277	.756	217.4	164.3	-31.0	97	547
				1524 24	.135	318.4	137.3	+12.7	2	14
				21281	.711	149.9	107.4	-31.6	3	19
				21283	.619	56.8	97.1	+25.5	17	161
				21284	.581	77.8	96.6	+12.7	3	14
				21286	.662	71.8	91.1	+17.2	3	12
				21285	.718	64.2	87.5	+23.2	149	1101
				21288	.754	57.2	85.8	+28.9	7	29
				21287	.763	79.3	82.0	+12.7	28	146
				21289	.880	76.5	69.8	+15.2	33	184
23.346	+18.5	118.7	+ 7.0	21279	.985	277.7	199.4	+ 8.8	39	245
				1524 25	.910	283.3	184.9	+15.0	0	8
				21277	.846	225.8	163.8	-31.2	77	445
				1524 26	.697	223.5	150.3	-24.4	0	3
				1524 27	.460	160.8	109.5	-18.8	0	5
				21281	.632	164.9	107.7	-30.6	1	9
				21283	.472	45.1	97.0	+25.9	10	72
				21284	.386	74.0	96.4	+12.6	2	12
				21286	.464	69.3	92.0	+15.7	0	3
				21290	.636	130.4	88.1	-18.3	0	7
				21285	.561	58.0	87.6	+23.2	158	1194
				21288	.653	50.5	83.2	+30.2	6	54
				21287	.608	78.3	81.3	+12.6	26	189
				21289	.751	75.6	69.9	+15.3	21	133
				21291	.906	73.7	53.1	+17.7	0	5
24.324	+18.8	105.8	+ 7.0	21277	.920	231.6	163.0	-31.2	89	444
				21292	.767	279.0	156.1	+11.4	3	31
				21284	.177	49.2	97.9	+13.6	0	8
				21283	.351	29.1	95.0	+24.7	8	83
				21285	.414	45.7	87.0	+23.4	159	1243
				21290	.580	140.0	82.5	-19.9	14	84
				21288	.538	39.4	82.4	+30.9	10	111
				21287	.422	74.6	81.2	+12.8	23	187
				21289	.587	73.3	70.2	+15.4	23	119
25.371	+19.1	91.9	+ 7.0	21277	.976	235.8	162.4	-31.1	109	439
				21292	.891	278.3	155.4	+10.6	0	5
				21284	.182	296.7	101.4	+11.6	2	21
				21283	.335	347.7	96.5	+26.0	8	121
				21286	.160	9.6	90.3	+16.1	1	12
				21285	.296	16.1	86.8	+23.5	154	1104
				21288	.405	19.8	82.9	+29.2	5	32
				21290	.482	161.4	82.6	-20.1	26	164
				21287	.218	60.3	80.7	+13.1	36	225
				21289	.397	69.3	69.5	+14.6	11	55
26.383	+19.4	78.6	+ 7.1	21277	.997	242.6	159.6	-26.4	0	92
				1524 28	.459	283.2	105.7	+12.3	0	9
				21284	.390	288.0	100.9	+13.4	4	26
				21283	.431	318.7	96.9	+25.5	5	55
				1524 29	.454	335.1	91.4	+31.1	10	78
				21285	.310	336.5	86.3	+23.4	171	1112
				21288	.413	351.2	82.8	+31.0	2	10

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Aug. 26.383	Continued			21290	.471	188.1	82.6	-20.6	35	144
				21287	.112	343.1	80.5	+13.2	27	171
				21293	.466	3.7	76.5	+34.6	1	10
				21289	.191	48.0	70.2	+14.3	12	74
				1524 30	.575	70.9	44.1	+16.7	3	18
				21294	.944	128.4	17.2	-32.7	0	17
27.365	+19.7	65.6	+ 7.1	21295	.783	296.5	116.0	+25.0	4	18
				21281	.820	224.3	107.2	-30.6	0	15
				21284	.586	284.3	101.2	+14.1	4	24
				21283	.562	304.6	96.0	+24.7	9	51
				21286	.424	293.1	89.4	+16.0	2	15
				21285	.434	311.4	86.2	+23.3	161	1111
				21290	.542	210.9	82.8	-20.8	46	298
				21288	.474	327.3	82.7	+30.2	3	13
				21287	.298	292.1	82.0	+13.2	13	72
				21289	.145	327.7	70.2	+14.1	9	38
				21291	.233	51.7	54.7	+15.2	1	8
				1524 31	.708	44.3	28.0	+36.1	0	3
				21294	.864	133.5	18.2	-31.8	2	11
				21296	.963	75.5	350.1	+15.8	0	12
28.460	+20.0	51.1	+ 7.1	21295	.923	293.8	119.2	+24.7	0	6
				21284	.755	283.4	100.3	+14.7	3	26
				21283	.708	297.6	94.5	+24.3	3	39
				21285	.612	299.5	86.4	+23.4	102	791
				21290	.667	226.3	82.2	-21.3	54	384
				21287	.507	284.1	81.3	+13.2	13	73
				21289	.338	292.8	69.8	+14.2	6	19
				1524 32	.419	317.5	69.2	+24.7	0	4
				1524 33	.336	310.3	66.8	+19.4	0	2
				1524 34	.522	339.6	64.1	+36.1	0	7
				1524 35	.154	199.2	54.0	- 1.2	0	10
				21291	.187	348.4	53.4	+17.6	0	7
				1524 36	.282	6.8	49.0	+23.3	1	12
				1524 37	.370	91.9	29.4	+ 5.9	2	17
				21297	.695	133.2	18.0	-22.4	9	66
				1524 38	.766	69.0	1.5	+20.6	0	11
				21296	.877	74.9	349.3	+16.6	5	24
				21298	.981	121.5	338.5	-28.9	34	228
				21299	.990	64.6	327.2	+26.0	83	597
29.325	+20.2	39.7	+ 7.1	21295	.964	291.8	115.5	+22.8	17	67
				21283	.847	295.3	97.3	+25.1	2	28
				21285	.736	295.8	85.8	+23.6	92	997
				21290	.775	234.4	82.2	-21.6	59	335
				21287	.663	281.4	81.3	+12.9	0	17
				21289	.506	285.2	69.7	+13.8	5	20
				1524 39	.316	349.3	43.4	+25.1	1	10
				1524 40	.214	13.2	36.7	+19.1	1	5
				21300	.449	166.3	33.2	-18.7	8	43
				1524 41	.176	131.0	32.1	+ 0.5	0	5
				21297	.572	140.8	17.2	-19.6	0	8
				21301	.835	129.5	353.4	-27.2	15	64
				21296	.757	74.3	350.4	+16.5	3	10
				21298	.932	124.8	338.9	-28.8	50	156
				1524 42	.920	72.8	332.0	+18.6	0	12
				21299	.951	64.8	326.6	+26.1	72	498
30.362	+20.5	26.0	+ 7.2	21283	.939	291.7	96.9	+22.8	0	33
				21285	.867	293.6	86.1	+23.9	56	578
				21302	.843	281.1	83.9	+13.2	0	19
				21290	.878	240.9	81.1	-21.3	24	167

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Aug. 30.362	Continued			21293	.802	305.0	76.6	+32.0	0	15
				21287	.758	281.1	75.6	+13.0	7	35
				1524 43	.731	294.9	71.9	+22.9	0	13
				21289	.691	282.7	69.8	+13.9	5	13
				21300	.475	197.2	34.5	-19.8	13	57
				21297	.545	163.5	16.2	-24.3	0	4
				21301	.743	137.4	351.7	-27.3	12	44
				21298	.853	130.3	338.2	-28.7	28	150
				21299	.863	63.9	326.6	+26.1	76	510
				1524 44	.904	70.1	320.7	+21.0	3	24
				21303	.925	60.2	318.0	+30.2	0	41
				21304	.992	76.2	302.1	+14.5	41	323
31.348	+20.8	13.0	+ 7.2	21285	.954	292.8	86.7	+23.8	67	448
				21302	.954	283.0	86.5	+14.5	0	30
				21290	.962	245.6	82.7	-21.1	34	207
				21287	.877	281.4	74.8	+13.4	0	9
				1524 45	.588	228.7	40.3	-16.4	3	18
				21305	.484	315.7	35.1	+26.9	9	34
				21300	.561	218.0	34.4	-19.5	15	92
				1524 46	.459	220.4	30.7	-13.5	0	4
				21297	.503	185.0	15.7	-22.7	1	11
				1524 47	.621	159.9	359.0	-28.6	0	14
				21301	.650	149.5	351.2	-27.3	8	37
				1524 48	.687	136.4	342.0	-23.6	2	16
				21298	.752	138.0	338.4	-28.0	24	127
				21306	.792	121.4	327.3	-19.4	11	46
				21299	.757	61.5	325.4	+26.1	71	553
				21303	.838	58.2	317.5	+30.4	0	17
				21304	.942	77.1	301.8	+14.6	40	220
				21307	.941	69.6	301.7	+21.6	0	7
				21308	.984	75.8	292.0	+15.2	44	286
Sept. 1.432	+21.1	358.6	+ 7.2	21290	.996	246.7	79.6	-22.2	0	47
				21285	.982	292.4	79.5	+23.3	0	35
				21287	.970	281.1	75.5	+12.5	0	18
				1525 01	.900	283.8	63.4	+15.6	3	15
				21305	.656	302.9	36.5	+26.6	0	3
				21300	.699	232.4	34.5	-19.3	9	41
				21309	.667	198.3	12.9	-32.1	2	9
				21298	.656	150.9	337.5	-28.2	30	132
				21310	.536	129.8	333.7	-13.5	0	5
				21306	.633	132.6	329.2	-19.1	38	126
				21299	.610	54.9	324.9	+26.5	67	509
				21303	.679	50.7	320.9	+31.2	0	3
				21307	.823	68.8	303.4	+21.4	4	16
				21304	.830	77.3	302.1	+14.5	32	176
				21308	.908	76.7	292.7	+15.0	27	220
				21311	.953	114.7	291.0	-20.9	15	74
2.435	+21.3	345.4	+ 7.2	1525 02	.994	280.7	69.9	+11.4	0	19
				1525 03	.965	290.6	61.5	+21.7	0	17
				21300	.823	239.8	34.3	-19.8	16	94
				21309	.735	211.3	12.2	-32.4	0	5
				21298	.593	167.2	336.8	-28.0	13	75
				21310	.414	155.3	335.1	-14.9	0	2
				21306	.520	150.7	329.7	-19.9	32	165
				21299	.472	44.3	323.9	+26.4	54	387
				21307	.673	66.9	304.1	+20.7	0	6
				21304	.689	75.8	301.8	+15.0	31	147
				21308	.791	76.5	292.9	+15.1	30	281
				21311	.880	118.8	289.9	-21.1	24	157
				21312	.996	112.5	264.3	-21.4	23	187

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	Elements of Day P	L_o	B_o	Group No.	Measures Radial Distance	Position Angle	Position Long.	Lat.	Area Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Sept. 3.174	+21.5	335.6	+ 7.2	21300	.908	244.8	35.9	-19.3	15	94
				21298	.582	180.9	336.2	-28.2	11	66
				21306	.465	168.8	330.2	-19.9	15	112
				21299	.386	29.6	323.4	+26.6	47	316
				21307	.589	61.7	301.7	+22.2	3	17
				21304	.573	74.8	300.9	+14.6	23	150
				21308	.679	75.7	292.9	+15.0	32	184
				21311	.792	123.6	290.9	-20.9	19	121
				21312	.969	114.1	264.3	-21.2	17	116
4.333	+21.8	320.3	+ 7.2	21300	.984	248.4	36.4	-19.6	31	261
				1525 04	.947	276.3	32.0	+ 8.3	0	14
				21313	.840	228.6	6.1	-28.7	4	37
				21298	.622	201.9	335.5	-28.1	13	75
				21306	.494	202.0	331.6	-20.1	14	98
				1	.511	205.4	333.8	-20.3	9	74
				21299	.340	350.7	323.8	+26.8	46	287
				21314	.429	9.3	315.6	+32.2	3	9
				21307	.392	48.2	302.0	+22.0	16	86
				21304	.337	66.8	301.8	+14.4	14	65
				21308	.470	72.4	292.9	+14.6	23	121
				21311	.652	134.6	290.6	-20.9	26	97
				21315	.750	64.4	272.8	+23.8	0	10
				21312	.887	118.7	263.9	-21.3	20	132
5.387	+22.0	306.4	+ 7.2	21313	.949	236.1	10.3	-28.9	10	57
				21298	.707	215.8	334.4	-28.6	10	67
				21306	.585	220.1	329.9	-19.8	17	107
				1	.622	223.6	333.5	-20.3	10	64
				21299	.438	321.8	324.0	+27.0	44	202
				21314	.447	342.6	315.5	+32.3	0	3
				21307	.252	17.1	301.9	+21.1	6	34
				21304	.147	35.2	301.4	+14.1	9	46
				21308	.256	61.4	293.1	+14.1	9	61
				21311	.550	149.5	289.1	-21.3	16	82
				1525 05	.378	50.2	288.4	+20.9	1	5
				21316	.463	135.6	287.1	-12.4	1	8
				21315	.585	57.2	273.8	+24.6	10	31
				21312	.781	125.2	263.3	-21.5	14	91
				21317	.988	112.0	228.9	-20.3	7	36
				21318	.989	84.8	224.4	+ 6.2	15	91
6.351	+22.2	293.7	+ 7.2	21313	.990	239.6	10.2	-28.7	0	32
				21298	.800	225.4	334.0	-28.7	9	41
				21306	.708	232.1	330.0	-19.9	27	104
				1	.745	234.2	333.6	-20.3	15	63
				1525 06	.646	314.6	326.8	+33.0	0	6
				21299	.571	309.0	323.6	+27.3	36	190
				21307	.271	329.1	302.2	+20.6	7	28
				21304	.177	307.4	301.9	+13.3	7	28
				21308	.123	357.9	293.9	+14.2	7	34
				21311	.483	170.0	288.5	-21.1	9	45
				21316	.386	164.4	287.5	-14.5	0	9
				21315	.423	45.1	274.6	+24.1	10	21
				21312	.663	134.8	263.4	-21.5	15	84
				1525 07	.800	60.0	242.1	+28.2	4	11
				21317	.927	115.2	230.5	-20.0	36	201
				21318	.929	86.2	225.2	+ 6.3	6	33
				21319	.977	115.0	220.6	-22.4	10	51
7.624	+22.5	276.9	+ 7.2	1525 08	.907	287.6	342.7	+18.9	0	11
				21298	.908	233.3	333.0	-29.0	5	27
				21306	.865	241.5	330.7	-20.2	24	108
				1	.888	242.3	333.7	-20.5	15	73

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POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	Elements of Day P	L_o	B_o	Group No.	Measures Radial Distance	Position Angle	Position Long.	Lat.	Area Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Sept. 7.624	Continued			21299	.750	300.5	323.4	+27.4	22	113
				21320	.593	296.9	311.4	+21.5	6	30
				21304	.461	287.5	303.7	+14.4	3	18
				21307	.416	315.9	295.3	+24.2	1	12
				21308	.306	295.4	293.4	+14.5	13	66
				21311	.515	198.0	286.7	-22.1	5	25
				1525 09	.179	332.4	281.8	+16.3	0	9
				21312	.534	154.7	262.7	-21.7	17	80
				1525 10	.523	127.6	251.9	-12.0	1	11
				21317	.806	121.9	230.2	-20.2	38	244
				21318	.786	87.0	224.9	+ 6.9	13	55
				21319	.898	119.3	219.3	-22.2	10	41
8.342	+22.7	267.4	+ 7.2	21298	.953	236.1	332.2	-29.2	0	22
				21306	.930	245.0	331.0	-20.0	18	83
				1	.945	245.5	333.5	-20.2	14	61
				21299	.831	298.0	322.7	+27.1	20	123
				1525 11	.766	271.6	317.6	+ 5.9	2	18
				21320	.701	293.1	311.0	+21.2	3	13
				21304	.519	287.1	298.2	+15.0	5	32
				1525 12	.577	313.9	295.9	+29.9	3	11
				21308	.429	282.1	292.6	+11.7	3	13
				1525 13	.318	278.1	285.9	+ 9.4	2	10
				21311	.573	210.8	285.8	-22.5	4	23
				21315	.303	350.3	270.6	+24.5	7	38
				21312	.499	169.6	261.8	-22.0	16	73
				1525 14	.524	152.5	252.5	-20.6	4	17
				21317	.727	127.4	229.4	-20.5	36	218
				21319	.833	122.9	218.5	-22.2	8	41
				1525 15	.833	83.1	210.6	+ 9.7	4	20
				21321	.974	79.5	189.5	+11.8	79	444
9.555	+22.9	251.4	+ 7.2	21306	.979	250.4	326.2	-17.4	5	75
				21299	.936	296.5	321.6	+27.3	25	121
				1525 16	.802	280.9	305.1	+13.0	4	15
				1525 17	.780	288.7	302.6	+19.0	4	32
				1525 18	.796	233.1	295.1	-23.4	0	15
				21304	.642	285.4	291.1	+15.4	1	13
				21311	.694	227.1	284.5	-22.1	6	31
				21315	.443	317.0	270.8	+25.7	10	57
				1525 19	.501	211.7	267.4	-18.2	1	13
				21312	.519	197.9	261.2	-22.4	12	63
				21317	.588	141.0	228.2	-20.4	39	288
				21319	.701	132.9	217.7	-22.4	6	44
				1525 20	.795	74.0	198.5	+17.1	0	7
				21321	.879	80.4	189.3	+11.9	57	386
				1	.878	80.6	189.3	+11.7	52	366
10.322	+23.1	241.2	+ 7.2	21299	.979	296.7	321.4	+27.5	11	74
				21311	.793	234.9	285.5	-22.0	5	32
				21315	.558	306.5	270.9	+25.7	40	265
				21312	.581	212.5	260.9	-22.4	11	59
				21317	.502	156.9	229.2	-20.3	35	213
				21319	.619	143.1	217.5	-23.0	7	28
				21321	.785	80.8	189.2	+11.7	72	394
				1	.785	81.1	189.2	-11.5	69	371
11.352	+23.3	227.6	+ 7.2	21311	.907	238.9	285.9	-24.2	0	5
				21315	.714	297.7	271.5	+24.6	65	438
				21312	.696	226.1	260.4	-22.7	11	50
				21317	.460	182.7	228.9	-20.0	23	153
				21319	.504	163.5	218.8	-21.6	4	25
				2	.617	80.2	189.4	+11.7	55	359

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Sept. 11.352	Continued			21321	.617	80.2	189.4	+11.7	55	359
				21322	.994	121.5	149.8	-30.0	19	135
12.328	+23.5	214.8	+ 7.2	21311	.978	244.0	287.8	-23.4	0	11
				1525 21	.870	284.9	275.8	+16.5	5	32
				21315	.838	294.7	271.4	+24.6	83	473
				21323	.729	282.8	261.7	+14.3	0	7
				21312	.806	234.9	260.1	-22.6	8	32
				21317	.512	207.0	229.0	-20.0	21	124
				21319	.501	191.8	221.1	-22.1	5	23
				1525 22	.179	71.5	204.9	+10.4	2	15
				21321	.431	78.1	189.3	+11.6	63	321
				1	.429	78.1	189.5	+11.6	60	308
				1525 23	.705	52.3	174.3	+31.0	3	16
				21322	.954	124.3	149.9	-29.6	30	138
13.313	+23.7	201.7	+ 7.2	21315	.924	293.8	270.1	+24.7	45	396
				21323	.847	280.3	260.1	+12.6	0	8
				21312	.901	240.1	259.6	-22.9	5	25
				21317	.618	222.6	228.2	-20.5	15	85
				21321	.226	68.8	189.4	+11.7	74	343
				1	.221	68.7	189.7	-11.7	72	326
				21322	.891	128.9	148.9	-29.8	19	158
14.330	+23.9	188.3	+ 7.2	21315	.982	293.9	269.2	+24.8	23	221
				21312	.968	244.1	258.9	-22.7	9	44
				21317	.744	234.3	228.3	-20.2	7	51
				21321	.086	351.5	189.1	+12.1	62	349
				1	.085	343.5	189.7	-11.9	58	312
				1525 24	.298	48.5	174.7	+18.4	1	7
				21322	.802	135.7	148.4	-29.5	21	120
15.313	+24.1	175.3	+ 7.2	21317	.862	240.8	228.7	-20.6	9	56
				21321	.248	291.6	188.9	+12.2	62	410
				1	.261	289.4	189.8	-11.9	52	339
				21322	.712	145.3	147.7	-29.4	12	121
16.316	+24.2	162.1	+ 7.2	21317	.941	244.8	227.5	-20.8	3	22
				21321	.461	282.2	189.4	+12.0	57	346
				1	.468	281.7	189.9	-11.8	52	314
				21322	.635	159.2	147.1	-29.3	21	129
				21324	.777	128.2	120.6	-23.3	3	24
17.317	+24.4	148.9	+ 7.2	21321	.650	279.5	189.6	+11.6	52	304
				1	.650	279.5	189.6	+11.6	52	304
				1525 25	.382	202.8	157.6	-13.4	2	12
				21322	.598	176.3	146.4	-29.4	19	95
				21324	.675	137.5	119.1	-23.6	21	140
18.393	+24.6	134.7	+ 7.2	21325	.907	288.6	200.5	+19.9	0	8
				21321	.818	279.0	190.0	+11.5	51	295
				1525 26	.779	249.0	182.3	-11.4	4	43
				1525 27	.586	218.8	157.7	-20.5	1	8
				21322	.618	196.2	146.0	-29.2	14	90
				21324	.558	155.3	120.0	-23.4	57	386
19.359	+24.7	121.9	+ 7.1	21325	.975	289.7	200.7	+20.7	10	60
				21321	.924	279.3	190.1	+11.3	41	304
				21322	.682	210.7	145.3	-29.2	12	83
				1525 28	.230	296.3	134.1	+12.8	1	9
				21324	.514	176.6	120.0	-23.6	71	379

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	Elements of Day P	L_o	B_o	Group No.	Measures Radial Distance	Position Angle	Position Long.	Lat.	Area Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Sept. 20.394	+24.9	108.3	+ 7.1	21321	.986	280.1	189.7	+11.1	39	283
				21326	.614	276.3	146.3	+ 9.5	5	30
				21322	.771	221.9	144.3	-29.2	12	85
				21324	.542	200.7	120.2	-23.4	78	434
				21327	.364	23.9	98.8	+26.3	2	12
				21328	.391	39.7	92.4	+24.3	2	14
				21329	.339	59.7	90.6	+16.6	5	20
				21330	.502	51.9	82.7	+24.4	0	9
21.332	+25.0	95.9	+ 7.1	21331	.774	285.4	146.8	+16.4	0	7
				21326	.763	277.4	145.9	+10.2	19	106
				21322	.856	229.0	143.7	-29.5	13	65
				21324	.626	216.2	119.6	-23.8	66	393
				21332	.274	294.8	110.7	+13.4	2	14
				21327	.338	354.0	98.1	+26.6	6	48
				21333	.491	174.1	92.8	-22.1	3	13
				21328	.304	10.2	92.5	+24.4	0	5
				21329	.185	27.2	90.8	+16.5	5	25
				21330	.357	36.0	82.7	+23.6	4	19
				1525 29	.681	85.8	52.8	+ 8.0	0	9
22.344	+25.1	82.5	+ 7.0	21331	.912	285.3	149.0	+16.8	0	5
				21326	.882	278.4	144.9	+10.7	9	43
				21322	.934	234.1	143.1	-29.9	12	62
				21324	.743	228.4	119.8	-23.9	67	363
				21332	.453	280.6	109.4	+11.1	4	29
				21327	.421	324.3	98.4	+26.7	2	12
				21328	.313	332.4	91.5	+23.0	0	4
				21329	.207	318.3	90.7	+15.8	9	62
				21333	.458	191.5	88.1	-19.6	3	23
				21330	.294	354.7	84.2	+24.0	7	49
23.302	+25.2	69.9	+ 7.0	21331	.971	286.2	147.2	+17.3	13	111
				21322	.979	237.5	141.7	-29.8	0	37
				21324	.844	235.7	119.4	-23.9	52	299
				21327	.542	311.2	97.0	+27.1	1	12
				21329	.408	293.0	92.7	+15.6	2	11
				21334	.197	311.0	78.6	+14.3	2	11
24.306	+25.4	56.6	+ 7.0	21324	.941	241.7	121.1	-23.6	28	128
				21327	.694	302.6	97.6	+27.3	3	27
				21329	.567	289.6	90.4	+16.8	8	42
				21334	.395	290.9	79.0	+14.6	2	12
25.492	+25.5	41.0	+ 7.0	21324	.985	242.3	116.2	-25.6	25	185
				21327	.844	297.3	97.8	+26.7	0	4
				21329	.765	285.9	91.0	+16.6	21	118
				21334	.629	284.7	79.8	+14.6	6	35
				21335	.865	76.3	340.6	+15.3	0	4
				21336	.971	79.5	323.9	+11.8	37	232
				21337	.988	69.3	318.0	+21.4	14	72
26.371	+25.6	29.4	+ 6.9	21329	.882	284.4	91.9	+16.0	48	316
				21334	.788	283.2	81.7	+14.6	2	11
				1525 30	.844	117.6	337.4	-18.8	2	17
				21336	.908	80.4	323.6	+11.6	61	361
				21337	.956	70.5	315.3	+20.6	7	72
27.340	+25.7	16.6	+ 6.9	21329	.960	284.6	91.2	+15.9	80	487
				21336	.788	80.4	324.2	+11.8	65	359
				21337	.897	70.4	312.3	+20.5	20	141

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	Elements of Day P	L_o	B_o	Group No.	Measures Radial Distance	Position Angle	Position Long.	Lat.	Area Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Sept. 28.364	+25.8	3.1	+ 6.8	21329	.998	284.8	90.8	+15.2	0	129
				1525 31	.687	284.0	46.4	+14.6	2	8
				21338	.374	281.0	24.9	+10.4	5	34
				21336	.599	79.4	326.3	+11.8	53	307
				21337	.789	69.4	311.3	+20.4	15	98
				21339	.971	107.3	289.7	-14.9	32	248
29.323	+25.9	350.4	+ 6.8	21338	.558	278.2	24.4	+10.2	8	49
				21335	.152	39.9	344.7	+13.4	0	7
				21336	.409	75.9	326.6	+11.9	43	282
				21337	.641	66.2	311.9	+20.3	11	75
				21339	.889	111.2	291.4	-15.3	38	232
30.342	+25.9	337.0	+ 6.8	21338	.720	278.3	23.2	+10.6	6	32
				21340	.731	234.7	16.1	-19.7	0	8
				21335	.170	314.1	344.1	+13.4	8	43
				21336	.200	61.3	326.7	+12.2	32	250
				21337	.436	54.5	314.8	+20.9	7	40
				21339	.767	116.3	291.7	-15.1	31	175
				21341	.956	68.1	262.8	+22.9	8	23
				21342	.990	110.5	258.1	-19.1	31	157
Oct. 1.465	+26.0	322.2	+ 6.7	21338	.898	278.2	26.5	+10.3	5	34
				21340	.839	240.0	12.9	-20.6	8	24
				21335	.400	290.7	344.7	+14.3	28	131
				21336	.125	317.2	327.1	+11.9	36	273
				21337	.259	26.9	315.0	+19.9	1	10
				21339	.600	126.8	292.4	-15.2	26	185
				21342	.930	114.0	258.1	-19.4	44	239
2.353	+26.1	310.4	+ 6.7	21338	.965	279.3	25.9	+10.7	0	17
				21340	.925	244.5	13.2	-20.4	17	64
				21335	.568	285.5	344.7	+14.2	98	399
				21336	.299	288.0	327.2	+11.7	56	274
				21337	.254	341.2	315.4	+20.5	2	14
				21339	.474	141.1	292.5	-15.2	28	170
				21342	.848	117.8	258.0	-19.3	54	317
3.443	+26.1	296.1	+ 6.6	21340	.993	248.5	15.8	-20.3	0	62
				21335	.750	283.3	344.8	+14.4	63	368
				21336	.525	280.1	327.7	+10.9	45	256
				21337	.415	311.9	315.5	+22.3	12	61
				21343	.496	210.9	311.6	-18.7	0	8
				21339	.377	170.4	292.3	-15.1	27	145
				21342	.720	124.7	257.4	-19.1	29	235
				21344	.926	79.9	227.7	+11.9	0	9
				21345	.947	65.4	224.0	+25.4	0	7
				21346	.977	119.0	223.7	-26.4	41	189
4.458	+26.2	282.7	+ 6.6	21335	.884	282.6	345.2	+14.1	57	353
				21336	.709	278.6	328.0	+10.7	50	268
				21337	.578	299.4	315.4	+22.0	16	90
				21343	.636	230.5	313.6	-18.2	6	32
				21339	.407	203.6	292.4	-15.4	22	134
				1526 01	.183	38.6	275.9	+14.7	1	14
				21342	.567	136.8	258.6	-18.4	31	150
				21344	.798	80.0	229.5	+11.9	4	17
				21345	.859	64.8	223.9	+24.9	0	9
				21346	.916	122.4	223.3	-26.2	30	196
5.362	+26.2	270.7	+ 6.5	21335	.963	282.7	346.0	+14.0	56	304
				21336	.839	278.4	328.1	+10.5	49	249
				21337	.736	293.6	317.0	+21.7	7	56

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date 1967	Elements of Day P °	Lo °	Bo °	Group No.	Measures Radial Distance	Position Angle °	Position Long. °	Position Lat. °	Area Umbrae	Area Whole Spots
Oct. 5.362	Continued			21343	.763	238.4	314.0	-18.8	17	103
				21339	.525	223.3	292.7	-16.3	46	284
				1526 02	.646	205.2	289.1	-29.5	1	15
				21342	.456	155.1	259.2	-17.9	14	98
				1526 03	.445	34.9	254.1	+27.6	1	7
				21344	.641	78.6	230.9	+12.3	1	7
				21346	.833	127.6	223.6	-26.1	40	194
6.473	+26.3	256.1	+ 6.4	21336	.950	278.9	328.5	+10.5	49	222
				21337	.889	291.6	319.0	+22.1	7	39
				1526 04	.887	297.3	318.1	+27.1	0	14
				21343	.893	245.0	314.7	-18.9	40	187
				1526 05	.720	294.5	300.8	+22.0	0	6
				21339	.685	237.7	293.1	-16.3	74	449
				21342	.410	186.7	258.9	-17.5	13	76
				21341	.309	351.6	258.9	+24.2	1	9
				21344	.463	76.9	228.8	+11.7	10	57
				21346	.713	137.0	223.5	-26.0	25	162
7.373	+26.3	244.2	+ 6.4	21336	.994	279.5	328.5	+10.1	28	204
				21337	.959	291.1	318.8	+22.0	0	11
				21343	.960	247.4	314.2	-19.5	37	206
				21339	.801	244.1	292.6	-16.2	81	502
				21347	.753	224.7	280.6	-27.2	2	16
				21341	.389	322.9	259.0	+24.2	2	11
				21342	.468	210.0	258.4	-17.6	18	90
				21344	.270	68.7	229.4	+11.8	13	49
				21346	.620	149.5	223.7	-26.2	19	118
8.328	+26.3	231.6	+ 6.3	21343	.992	248.5	311.0	-20.3	16	113
				21339	.901	248.6	292.2	-16.2	44	261
				21347	.859	234.4	282.4	-26.0	4	21
				21348	.491	284.6	260.6	+12.6	5	32
				21342	.592	229.7	259.7	-16.9	7	32
				21344	.103	13.8	230.2	+12.0	6	49
				21346	.538	168.7	224.9	-25.4	13	113
9.425	+26.3	217.1	+ 6.3	21339	.973	251.6	291.0	-16.3	53	267
				21347	.959	239.4	284.7	-27.0	4	31
				21348	.722	282.0	263.3	+13.0	38	215
				21342	.745	240.5	259.6	-16.9	5	20
				21344	.283	294.3	232.4	+12.7	2	10
				21346	.539	194.1	225.4	-25.2	14	90
				21349	.223	16.7	213.3	+18.5	3	18
				1526 06	.342	42.9	202.8	+20.6	1	9
				1526 07	.432	49.3	196.5	+22.2	0	5
				21350	.401	66.7	194.9	+14.9	5	46
10.795	+26.4	199.1	+ 6.2	21348	.906	282.1	264.5	+13.5	109	575
				21341	.874	292.8	259.8	+22.8	6	40
				21342	.899	247.4	259.1	-17.1	6	29
				21344	.551	283.9	232.1	+12.7	0	10
				21346	.644	217.6	224.7	-25.0	11	55
				1526 08	.515	215.9	217.6	-18.7	0	13
				21349	.319	313.2	213.2	+18.6	7	52
				21350	.178	19.6	195.5	+15.8	16	108
				21351	.987	115.9	122.4	-24.2	17	94
11.791	+26.4	185.9	+ 6.1	21348	.977	282.8	264.3	+13.8	121	491
				21342	.972	250.6	259.5	-17.1	0	18
				21346	.754	228.2	224.2	-25.3	13	65
				21352	.573	291.6	219.7	+17.3	2	22
				21349	.480	300.9	211.8	+19.7	3	13

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Oct. 11.791	Continued			21350	.238	315.4	195.8	+15.7	70	535
				21351	.940	119.1	121.4	-24.6	41	165
12.311	+26.3	179.1	+ 6.1	21348	.985	282.3	260.1	+13.1	25	191
				21346	.809	232.5	224.0	-25.2	15	73
				21352	.655	289.9	219.2	+17.5	14	81
				21350	.334	302.7	196.0	+16.2	72	475
				21351	.899	121.3	121.5	-24.6	19	139
13.349	+26.3	165.4	+ 6.0	21346	.908	238.5	224.1	-25.3	11	42
				21352	.802	287.4	218.5	+17.5	41	242
				21349	.720	293.2	210.2	+20.7	3	13
				21350	.528	291.3	196.1	+16.2	68	435
				1526 09	.158	56.9	157.6	+10.9	2	16
				21351	.797	127.3	121.3	-24.5	24	135
				21353	.895	112.0	105.5	-16.6	0	5
14.352	+26.3	152.1	+ 5.9	21346	.970	242.2	223.2	-25.1	4	26
				21352	.906	286.4	217.5	+17.4	30	156
				21350	.722	286.8	198.0	+16.2	37	309
				1526 10	.266	323.7	161.6	+18.2	0	2
				21351	.687	136.3	120.7	-24.7	21	112
				1526 11	.739	108.9	107.1	- 9.6	2	21
15.371	+26.3	138.7	+ 5.9	21352	.974	287.0	216.4	+17.9	10	67
				21350	.861	285.5	198.2	+16.3	43	256
				1526 12	.649	284.3	178.9	+13.7	0	7
				1526 13	.197	310.1	147.5	+13.0	2	16
				1526 14	.123	256.9	145.5	+ 4.2	0	6
				21351	.575	150.7	120.8	-24.4	30	126
				21353	.649	124.0	104.7	-16.4	3	20
				1526 15	.595	74.6	102.6	+13.8	1	14
				1526 16	.744	129.5	100.0	-23.7	5	33
				1526 17	.754	69.3	90.5	+19.3	0	5
				1526 18	.877	121.3	83.9	-23.8	0	5
16.530	+26.2	123.4	+ 5.8	21350	.957	285.8	197.3	+16.7	29	227
				21351	.499	174.8	120.6	-23.9	12	79
17.487	+26.2	110.8	+ 5.7	21350	.993	285.4	194.9	+16.0	9	97
				1526 19	.681	276.5	153.8	+ 8.6	0	12
				21351	.534	197.5	120.9	-24.9	21	94
				1526 20	.316	357.9	111.5	+24.1	1	8
				21353	.384	168.0	106.0	-16.3	2	11
				1526 21	.240	61.4	98.4	+12.1	2	10
				21354	.545	72.8	78.4	+14.1	1	11
18.356	+26.1	99.3	+ 5.6	21351	.593	213.5	120.3	-24.3	11	61
				1526 22	.314	323.5	110.7	+20.1	2	14
				21353	.396	191.5	104.0	-17.1	2	27
				1526 23	.122	58.3	93.3	+ 9.3	2	10
				21354	.376	65.9	78.7	+14.1	2	17
				21355	.747	73.5	51.4	+16.0	5	27
				21356	.957	78.9	25.7	+12.3	19	143
19.353	+26.1	86.2	+ 5.6	1526 24	.844	232.8	135.0	-27.0	2	23
				21351	.699	227.0	120.0	-23.8	8	25
				21353	.477	220.4	104.8	-15.9	1	13
				21357	.285	317.2	97.8	+17.5	1	10
				21358	.195	335.6	90.9	+15.7	1	10
				21359	.240	2.7	85.5	+19.4	2	11
				21355	.580	69.2	51.9	+16.4	35	185
				21356	.874	79.4	25.0	+11.9	22	131

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Oct. 20.357	+26.0	72.9	+ 5.5	21351	.830	236.2	121.7	-23.9	4	20
				21353	.625	235.0	105.0	-16.3	0	4
				1526 25	.562	301.4	103.9	+21.7	3	19
				21357	.474	294.2	99.6	+16.1	1	11
				21359	.319	326.1	83.8	+20.7	2	15
				21355	.392	59.8	52.3	+16.5	87	339
				1526 26	.588	37.2	48.0	+32.8	0	5
				21356	.734	80.4	25.6	+10.7	29	214
				21360	.938	79.2	2.8	+12.0	6	19
				21361	.984	72.2	352.2	+18.5	0	12
21.390	+25.9	59.3	+ 5.4	21357	.682	287.8	101.6	+16.0	0	6
				21355	.225	27.2	53.2	+16.8	50	273
				21356	.546	78.9	26.4	+10.5	38	264
				21360	.814	78.9	4.7	+12.2	8	30
				21361	.910	71.3	353.6	+19.3	5	24
				21362	.965	68.9	343.8	+21.8	17	116
22.432	+25.9	45.6	+ 5.3	21355	.237	327.0	53.3	+16.7	52	309
				21356	.339	73.5	26.3	+10.5	57	400
				21360	.638	78.5	6.1	+11.4	9	44
				21361	.787	70.1	354.3	+18.8	4	20
				21362	.887	68.3	343.3	+21.6	14	102
				21363	.964	80.0	330.5	+11.0	20	135
23.362	+25.8	33.3	+ 5.2	21358	.832	285.4	89.5	+15.7	0	8
				21355	.402	302.2	54.1	+17.2	36	216
				1526 27	.193	309.6	42.0	+12.2	2	14
				21356	.148	51.4	26.6	+10.5	52	313
				1526 28	.655	30.6	8.0	+38.9	1	9
				21360	.443	76.0	7.5	+10.8	10	39
				21361	.689	66.3	351.3	+19.9	8	38
				21362	.782	66.2	343.1	+21.7	21	104
				1526 29	.780	75.4	342.2	+14.6	4	18
				21363	.883	79.8	331.1	+11.4	14	103
24.406	+25.7	19.5	+ 5.1	21355	.597	292.1	54.8	+17.1	32	221
				21356	.178	297.7	28.7	+ 9.8	53	324
				21360	.213	62.5	8.5	+10.6	7	32
				21361	.514	58.6	351.8	+20.0	30	247
				21362	.640	61.8	342.3	+21.6	23	113
				21363	.754	79.4	330.6	+11.3	20	109
25.345	+25.6	7.1	+ 5.0	21364	.821	284.5	62.2	+14.8	8	39
				21355	.753	288.6	55.3	+17.3	30	171
				21356	.405	283.0	30.6	+ 9.8	74	490
				21360	.108	340.7	9.2	+10.8	8	22
				21361	.353	42.9	352.4	+19.8	22	143
				21362	.492	53.1	342.2	+21.7	15	96
				21363	.599	77.8	330.6	+11.3	14	94
				21365	.903	69.6	302.7	+20.5	0	15
26.363	+25.5	353.7	+ 4.9	21364	.939	283.0	63.9	+13.9	0	6
				21355	.872	286.8	54.3	+17.0	32	231
				21356	.608	279.7	31.0	+ 9.8	125	823
				21360	.294	291.4	9.8	+10.9	6	14
				21361	.257	1.3	353.4	+19.8	15	104
				21362	.349	33.6	341.8	+21.6	16	80
				21363	.404	72.7	330.7	+11.4	12	87
				21365	.784	68.0	303.1	+20.2	14	81
				21366	.994	75.0	269.3	+15.4	38	208

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Oct. 27.295	+25.3	341.4	+ 4.9	21355	.957	286.5	54.9	+17.1	29	172
				21356	.766	278.4	31.5	+ 9.6	120	1221
				21360	.491	283.9	10.3	+11.0	2	11
				21361	.316	328.5	351.5	+20.3	26	167
				21362	.289	359.7	341.5	+21.6	9	44
				21363	.220	58.7	330.4	+11.3	19	104
				21367	.417	52.8	320.9	+19.1	7	63
				21365	.648	64.5	303.1	+19.9	25	121
				21366	.947	75.5	269.7	+15.3	59	301
				21368	.992	109.5	261.2	-18.5	16	128
28.292	+25.2	328.3	+ 4.8	21356	.902	278.4	32.9	+ 9.7	231	1678
				21360	.679	281.2	10.9	+11.1	0	6
				21361	.467	305.9	351.9	+20.2	16	93
				21362	.362	324.0	341.4	+21.6	7	42
				1527 01	.251	329.0	336.0	+17.1	1	8
				21363	.122	344.2	330.2	+11.5	17	88
				21367	.280	26.6	320.7	+19.2	24	135
				21365	.484	55.3	303.3	+20.3	13	77
				21369	.844	125.2	278.3	-26.0	26	130
				21366	.852	75.2	269.9	+15.1	48	251
				21368	.930	111.8	263.2	-18.2	17	137
				21370	.966	73.0	252.8	+17.6	24	145
				21371	.992	111.2	248.2	-20.2	48	320
29.372	+25.1	314.0	+ 4.7	21356	.964	279.1	28.9	+10.0	118	725
				21361	.638	296.2	351.4	+20.1	14	124
				21363	.293	294.1	329.8	+11.3	24	89
				21367	.267	338.2	320.0	+18.9	37	237
				21365	.332	33.9	302.7	+20.5	9	71
				21369	.729	134.0	278.2	-26.6	28	167
				21366	.706	73.5	269.8	+14.9	67	314
				21368	.823	115.9	263.0	-18.2	20	127
				21370	.885	72.1	251.9	+18.0	25	159
				21371	.942	114.1	247.4	-20.8	37	237
				21372	.983	111.5	237.2	-20.1	46	298
30.423	+24.9	300.2	+ 4.6	21356	.994	279.3	24.1	+ 9.7	0	76
				21361	.840	289.9	356.7	+19.1	4	16
				21363	.501	285.1	329.6	+11.4	11	59
				21367	.412	307.8	320.2	+18.8	33	209
				21373	.357	322.5	313.6	+20.8	5	39
				21365	.280	353.9	302.0	+20.6	6	39
				21369	.619	147.0	278.0	-26.9	27	188
				21366	.523	68.5	270.1	+15.0	54	265
				21368	.664	124.2	265.0	-18.1	44	267
				21374	.642	73.7	260.9	+13.9	1	26
				21375	.752	120.4	257.1	-19.0	5	33
				21370	.760	70.1	251.7	+18.0	24	118
				21371	.853	117.5	246.5	-20.5	27	189
				21376	.819	69.5	246.0	+19.3	0	8
				21372	.921	114.5	237.0	-20.4	45	247
31.427	+24.8	286.9	+ 4.5	1527 02	.839	240.4	338.5	-21.7	4	16
				21363	.684	281.6	329.8	+11.2	9	57
				21367	.574	296.9	319.6	+18.8	27	172
				21373	.537	302.3	315.8	+20.5	4	25
				21369	.549	164.5	277.5	-27.4	17	92
				21366	.337	56.8	270.0	+14.8	47	255
				21368	.523	136.3	264.7	-18.0	41	207
				21374	.448	67.6	261.8	+13.8	2	12
				1527 03	.508	60.2	259.3	+18.5	0	5
				21375	.601	128.8	257.5	-18.2	6	41

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	Elements of Day			Measures			Position		Area	
	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Oct. 31.427	Continued			21370	.604	65.8	251.7	+17.9	22	131
				21371	.735	123.6	246.3	-20.6	16	139
				1527 04	.728	62.0	242.7	+23.1	0	10
				1527 05	.724	90.8	240.7	+ 2.5	0	10
				21372	.832	119.0	236.0	-21.0	61	300
				21377	.901	113.5	226.3	-18.9	0	8
Nov. 1.386	+24.6	274.3	+ 4.4	21363	.821	280.6	329.5	+11.2	11	44
				21367	.718	291.6	318.8	+18.4	24	108
				21373	.697	295.0	316.5	+20.3	12	50
				21369	.529	187.3	278.6	-27.2	12	53
				21366	.192	20.4	270.3	+14.7	50	276
				21368	.419	155.8	263.9	-18.1	30	170
				21374	.262	50.6	262.3	+13.8	2	13
				21375	.466	144.2	257.7	-18.0	8	43
				21370	.438	56.5	251.8	+18.0	21	118
				21371	.609	133.3	246.1	-20.8	24	137
				21372	.718	125.4	235.6	-21.1	76	346
2.386	+24.4	261.1	+ 4.3	21363	.930	280.4	329.6	+11.2	9	59
				21378	.914	248.8	324.1	-17.4	5	37
				21373	.855	290.9	319.1	+20.0	13	67
				21367	.849	288.2	318.7	+17.6	17	85
				21379	.723	247.6	304.2	-12.9	3	16
				21369	.587	208.9	279.6	-26.8	11	45
				21366	.239	320.0	270.2	+14.7	57	266
				1527 06	.277	337.4	267.6	+19.0	2	11
				1527 07	.134	318.4	266.3	+10.0	0	4
				21380	.519	187.2	265.2	-26.6	0	5
				21368	.385	187.1	264.0	-18.1	25	182
				21374	.169	356.2	261.8	+13.9	4	29
				21375	.387	173.4	258.4	-18.2	5	31
				21370	.296	34.0	251.1	+18.4	18	100
				21371	.481	150.4	246.4	-20.5	15	75
				21376	.362	44.1	245.7	+19.1	2	16
				21381	.570	143.0	239.3	-23.0	3	12
				21372	.592	136.1	235.0	-21.3	50	288
				21377	.627	130.6	230.7	-20.3	3	17
3.383	+24.3	248.0	+ 4.2	21378	.978	250.3	323.5	-18.2	0	21
				21367	.948	288.1	319.6	+18.5	41	350
				21373	.932	291.3	316.4	+21.4	0	15
				21379	.852	252.8	304.1	-12.2	4	21
				21382	.808	295.2	300.1	+22.7	4	22
				21369	.702	225.1	281.5	-26.2	9	31
				21366	.412	296.5	270.2	+14.4	46	241
				21368	.460	215.2	264.1	-18.0	32	144
				21380	.572	205.7	264.1	-26.9	22	80
				21375	.416	205.7	258.9	-17.8	7	61
				21370	.246	347.1	251.2	+18.0	12	43
				21371	.421	176.6	246.4	-20.6	12	56
				21376	.246	9.1	245.6	+18.2	0	8
				21381	.479	163.1	239.3	-23.1	4	13
				21372	.482	153.6	234.7	-21.4	60	297
				21377	.502	144.7	230.1	-20.1	4	38
4.315	+24.1	235.7	+ 4.1	21367	.993	288.0	319.5	+18.4	68	561
				21379	.930	255.1	302.3	-12.2	6	37
				21382	.910	292.5	300.6	+22.1	0	13
				21369	.805	232.8	281.1	-26.2	5	14
				1527 08	.762	226.7	274.5	-28.2	3	24
				21366	.580	289.1	269.9	+14.3	39	252
				21380	.679	220.1	265.2	-27.7	4	24

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Nov. 4.315	Continued			21368	.566	229.9	262.6	-17.7	32	167
				21375	.512	219.3	255.7	-19.4	4	20
				21370	.351	313.3	251.1	+17.8	6	23
				1527 09	.477	209.8	250.3	-20.4	2	10
				21371	.456	202.0	246.2	-20.9	5	19
				21376	.297	323.9	246.2	+17.8	2	7
				21372	.432	176.3	233.9	-21.4	56	324
5.308	+23.9	222.6	+ 4.0	21369	.896	238.4	280.4	-25.9	9	28
				21366	.741	285.8	269.8	+14.3	49	308
				21380	.784	229.7	264.8	-27.5	3	20
				21368	.712	240.2	262.9	-17.7	27	197
				21370	.520	299.2	251.0	+18.1	5	30
				21376	.457	303.5	246.1	+18.2	2	17
				21371	.558	221.7	245.9	-20.9	3	10
				21372	.456	202.7	233.4	-20.9	50	269
6.476	+23.7	207.2	+ 3.8	21369	.973	242.1	279.9	-25.9	0	23
				21366	.889	283.5	269.7	+13.8	52	257
				21368	.860	247.1	263.1	-17.4	15	90
				21380	.850	234.5	258.0	-27.1	0	17
				21370	.706	292.1	250.5	+18.2	3	19
				21371	.731	234.2	246.9	-22.3	0	8
				21381	.649	227.5	238.3	-22.6	1	9
				21372	.593	224.8	233.7	-21.4	42	218
				21377	.555	218.0	228.8	-22.2	1	13
				1527 10	.924	111.7	142.6	-18.4	6	20
7.427	+23.5	194.6	+ 3.7	21366	.966	283.1	269.9	+13.6	80	336
				21368	.947	249.9	263.4	-17.6	27	203
				21375	.894	243.7	253.8	-21.4	7	58
				21370	.839	289.1	250.9	+18.0	0	12
				1527 11	.842	248.5	249.0	-15.8	4	32
				21371	.851	242.1	248.2	-21.2	0	10
				21381	.799	238.9	242.0	-21.8	4	18
				21372	.712	234.9	233.2	-21.2	39	201
8.409	+23.3	181.7	+ 3.6	21372	.830	241.4	232.9	-21.1	37	184
				21383	.189	349.4	183.7	+14.3	1	4
9.393	+23.0	168.7	+ 3.5	21372	.924	245.3	232.6	-21.2	31	184
				1527 12	.889	279.4	231.4	+ 9.9	0	5
				21383	.305	307.2	183.1	+14.0	0	3
				1527 13	.254	336.6	174.8	+16.9	0	3
				21384	.979	74.6	90.2	+15.8	32	242
10.350	+22.8	156.1	+ 3.4	21372	.979	248.0	231.9	-20.7	20	142
				1527 14	.973	242.4	229.3	-25.9	22	162
				21384	.912	74.2	90.5	+15.8	41	281
11.413	+22.6	142.1	+ 3.3	21383	.673	282.9	183.8	+11.1	3	12
				21385	.156	355.7	142.8	+12.2	9	54
				21384	.788	72.4	90.9	+15.8	28	191
				21386	.937	77.4	72.6	+12.9	15	111
12.268	+22.3	130.8	+ 3.2	21385	.259	308.8	142.7	+12.4	32	204
				21384	.659	69.8	91.0	+15.6	34	208
				21386	.851	77.0	72.8	+12.8	14	98
				21387	.982	73.8	51.3	+16.5	6	39
13.314	+22.1	117.0	+ 3.1	21385	.468	290.2	143.6	+12.0	42	395
				21388	.480	147.4	101.0	-20.8	11	92
				21384	.478	62.5	91.0	+15.5	29	207

Continued

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Nov. 13.314	Continued			21386	.709	75.1	72.6	+12.7	6	63
				21387	.917	72.8	50.9	+17.0	11	68
				21389	.962	81.6	42.9	+ 8.9	53	289
				21390	.988	79.0	35.9	+11.3	92	446
14.381	+21.8	103.0	+ 2.9	21385	.674	284.1	144.7	+11.6	59	353
				21391	.406	222.4	119.3	-14.6	2	18
				21388	.410	181.0	103.4	-21.2	3	21
				21384	.292	43.2	91.1	+15.1	30	141
				21386	.521	69.8	73.0	+12.9	9	44
				21387	.798	70.8	51.1	+17.0	3	31
				21389	.865	81.3	43.3	+ 9.0	50	262
				21390	.922	79.6	35.9	+10.7	89	586
15.463	+21.5	88.7	+ 2.8	21385	.838	282.4	145.2	+11.9	74	366
				21391	.587	241.5	120.6	-13.8	13	79
				21388	.457	209.1	102.4	-20.7	4	20
				21384	.214	348.8	91.1	+14.9	34	173
				21386	.314	55.9	73.3	+12.8	5	23
				21392	.712	66.8	45.3	+18.3	2	8
				21389	.718	79.9	43.2	+ 9.2	61	309
				21390	.801	78.5	35.8	+10.9	85	613
16.400	+21.2	76.3	+ 2.7	21385	.944	281.5	147.0	+11.7	36	234
				21391	.748	248.7	122.0	-13.8	28	147
				21393	.477	300.4	101.6	+16.3	5	32
				21384	.313	310.2	90.5	+14.2	46	213
				21386	.165	23.8	72.5	+11.3	22	155
				21392	.565	60.9	45.2	+18.2	5	21
				21389	.558	77.5	43.0	+ 9.2	51	283
				21390	.655	76.6	36.0	+10.8	116	671
				1527 15	.735	69.2	30.6	+17.0	3	16
				21394	.792	69.0	25.5	+18.2	7	32
17.488	+20.9	62.0	+ 2.6	21385	.982	282.3	141.2	+12.5	11	80
				21391	.863	251.3	119.5	-14.7	4	17
				21393	.640	292.9	99.7	+16.4	3	13
				21384	.507	293.3	90.5	+13.8	37	192
				21386	.246	305.3	73.7	+10.7	14	91
				21392	.388	44.0	45.6	+18.6	4	23
				21389	.348	70.6	42.7	+ 9.0	40	304
				21390	.449	71.0	36.5	+10.7	119	668
				21394	.641	62.7	25.1	+19.1	17	121
18.409	+20.7	49.9	+ 2.5	21388	.844	243.4	103.4	-20.7	4	22
				21393	.814	287.8	103.3	+15.8	9	45
				21395	.797	237.7	97.0	-23.4	14	83
				21384	.674	288.1	91.0	+13.9	35	209
				21386	.435	289.3	74.4	+10.5	11	75
				21392	.308	15.6	44.8	+19.6	5	30
				21389	.170	48.8	42.5	+ 8.8	43	305
				21390	.271	57.5	36.5	+10.7	119	529
				21394	.498	54.4	24.6	+19.0	10	69
				21396	.707	66.1	7.1	+18.4	9	43
				21397	.996	70.1	324.8	+20.0	68	398
19.326	+20.4	37.8	+ 2.4	21393	.883	288.0	98.9	+17.0	0	9
				21395	.898	242.8	97.8	-23.0	14	57
				21384	.813	286.0	91.3	+14.3	22	125
				21386	.626	282.7	75.9	+ 9.7	13	81
				21392	.321	335.4	45.9	+19.3	4	19
				21389	.142	325.8	42.4	+ 9.1	32	201
				21390	.150	6.6	36.8	+10.0	99	426

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

	Elements of Day				Measures		Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Nov. 19.326	Continued			21394	.382	37.2	23.6	+19.9	5	29
				21396	.573	59.6	6.4	+18.8	10	52
				21397	.957	69.6	325.2	+20.2	121	619
				21398	.990	70.7	315.9	+19.4	43	327
20.473	+20.0	22.6	+ 2.2	21395	.985	246.3	100.5	-22.9	28	233
				21393	.977	285.8	100.2	+15.9	20	125
				21384	.940	284.8	92.4	+14.6	25	121
				21386	.836	279.8	79.0	+ 9.4	38	317
				21392	.474	310.4	45.1	+19.8	5	21
				21389	.361	289.1	42.7	+ 8.8	21	221
				21399	.395	221.1	38.2	-15.1	5	23
				21390	.288	301.4	37.1	+10.7	89	558
				21394	.294	356.8	23.6	+19.2	10	77
				21396	.371	39.5	8.3	+18.7	7	34
				1527 16	.519	115.8	354.3	-11.0	3	11
				21397	.859	67.6	325.0	+20.3	87	654
				21398	.926	70.1	315.6	+19.2	58	416
21.425	+19.7	10.1	+ 2.1	21384	.991	284.7	92.2	+14.8	15	93
				21386	.933	279.2	78.8	+ 9.3	85	440
				21389	.547	282.5	42.6	+ 8.5	26	182
				21399	.547	236.5	38.2	-15.7	8	42
				21390	.475	289.2	37.1	+10.8	117	506
				21394	.367	323.3	23.4	+19.1	9	47
				21396	.296	12.9	6.1	+18.8	9	73
				21397	.748	64.1	324.3	+20.5	94	612
				21398	.837	68.2	314.9	+19.3	66	410
22.421	+19.4	357.0	+ 2.0	21386	.990	279.1	78.6	+ 9.3	107	639
				21389	.722	279.8	42.8	+ 8.4	16	164
				21399	.720	246.7	40.0	-15.1	2	9
				21390	.657	284.1	37.2	+10.7	90	598
				21394	.489	307.1	21.2	+18.9	5	25
				1528 01	.346	295.6	15.4	+10.4	2	12
				21396	.319	333.2	5.7	+18.4	12	59
				21397	.601	57.2	324.4	+20.6	71	597
				21398	.705	64.2	314.9	+19.3	61	389
				21400	.959	111.2	285.5	-19.6	15	68
23.454	+19.1	343.4	+ 1.9	21389	.870	278.2	43.6	+ 8.1	26	136
				21390	.817	282.0	37.6	+10.9	98	536
				21396	.475	310.5	5.8	+19.6	5	40
				1528 02	.427	334.5	355.0	+24.4	1	14
				21397	.450	43.6	324.0	+20.7	137	669
				21398	.544	56.5	314.8	+19.0	60	348
				21401	.634	74.2	305.0	+11.4	6	34
				21400	.915	111.2	279.5	-18.5	16	97
				21402	.957	77.4	270.5	+12.6	19	122
				21403	.982	115.9	266.5	-25.0	6	45
24.532	+18.7	329.1	+ 1.7	21389	.964	277.9	43.6	+ 8.1	16	148
				21390	.930	280.9	37.3	+10.7	79	501
				21397	.335	16.7	323.3	+20.3	62	658
				21398	.386	38.3	314.5	+19.2	41	323
				21404	.575	151.6	311.0	-28.6	21	185
				21401	.420	68.9	305.8	+10.3	2	21
				21400	.797	114.7	279.6	-18.3	14	135
				21402	.858	76.3	270.7	+12.6	18	126
				21403	.923	118.7	265.6	-25.5	5	35

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Nov. 25.352	+18.4	318.3	+ 1.6	21390	.985	280.2	38.1	+10.3	70	527
				1528 03	.742	296.2	3.4	+20.2	3	30
				1528 04	.388	310.0	336.3	+15.9	2	16
				21405	.461	324.5	335.3	+23.5	2	9
				21397	.339	345.8	323.4	+20.7	75	586
				21398	.314	11.8	314.5	+19.5	35	304
				21404	.512	168.2	311.6	-28.3	27	174
				21401	.269	55.2	305.4	+10.4	2	15
				21400	.691	118.5	278.8	-18.0	26	222
				21402	.747	74.2	271.0	+12.8	19	113
				21403	.832	121.6	267.2	-24.8	4	28
				21406	.996	116.2	235.2	-25.9	22	132
26.427	+18.1	304.2	+ 1.5	21405	.607	310.1	334.7	+24.2	10	68
				21397	.450	317.6	323.0	+20.7	68	503
				21398	.354	331.3	314.5	+19.5	42	278
				21404	.511	194.6	312.5	-28.0	25	193
				21400	.523	131.2	279.7	-18.7	36	225
				21402	.564	69.0	271.6	+12.9	22	124
				21403	.705	129.1	267.2	-25.1	3	17
				21406	.953	117.7	234.9	-25.8	14	99
				1528 05	.937	81.9	234.8	+ 8.1	0	12
27.579	+17.7	289.0	+ 1.3	21405	.767	301.4	334.8	+24.4	105	631
				21397	.622	302.6	322.9	+20.6	65	455
				21398	.512	308.1	314.2	+19.6	34	225
				21404	.601	215.3	312.1	-28.0	42	199
				21400	.372	159.0	280.9	-18.9	31	192
				21402	.347	54.9	272.1	+12.8	17	116
				21403	.546	143.5	268.2	-24.7	1	12
				21406	.864	121.3	234.1	-25.9	9	67
28.566	+17.3	276.0	+ 1.2	21405	.883	297.3	335.3	+24.4	131	884
				21397	.765	296.2	322.9	+20.5	93	412
				21398	.667	298.0	314.4	+19.1	34	205
				21404	.715	227.1	312.2	-28.0	100	635
				21400	.347	194.3	281.1	-18.4	33	235
				21402	.210	20.8	271.6	+12.5	16	97
				1528 06	.388	159.5	267.7	-20.0	0	5
				21406	.758	126.8	233.6	-26.0	13	80
29.297	+17.0	266.3	+ 1.1	21405	.946	296.0	335.7	+24.9	135	884
				21397	.856	293.7	323.1	+20.7	55	362
				21398	.773	294.2	314.4	+19.2	43	243
				21404	.796	232.7	312.0	-28.0	95	691
				21400	.427	217.6	282.2	-18.6	28	184
				21402	.208	338.4	270.8	+12.2	12	54
				21407	.349	356.2	267.8	+21.4	0	9
				21403	.453	176.2	264.4	-25.6	1	13
				1528 07	.619	19.0	251.9	+36.7	0	8
				21406	.674	133.0	233.1	-26.3	11	78
				21408	.858	81.0	207.6	+ 8.3	4	18
				1528 08	.953	80.7	194.3	+ 9.2	0	7
30.404	+16.6	251.8	+ 1.0	21405	.980	298.1	329.1	+27.7	27	309
				21397	.951	291.2	322.6	+20.4	77	313
				21398	.896	291.2	313.8	+19.3	32	214
				21404	.904	238.4	312.0	-27.8	140	870
				21400	.591	234.0	282.1	-19.4	28	232
				21402	.378	300.8	271.1	+12.0	5	25
				21407	.435	320.6	268.8	+20.5	1	7
				21409	.360	171.8	248.6	-19.8	9	64
				21406	.561	147.2	231.9	-27.1	13	54

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POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	Elements of Day P	L_o	B_o	Group No.	Measures Radial Distance	Position Angle	Position Long.	Lat.	Area Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Nov. 30.404	Continued			21408	.684	78.8	209.3	+ 8.3	1	12
				21410	.835	105.8	196.6	-12.5	0	16
Dec. 1.400	+16.2	238.6	+ 0.9	21397	.992	291.2	320.8	+21.1	16	151
				21398	.971	289.8	314.0	+19.4	17	104
				21404	.971	240.6	312.1	-28.2	108	978
				21400	.737	242.5	282.3	-19.2	34	298
				21402	.566	290.6	271.3	+12.2	4	20
				21407	.559	303.5	268.0	+18.6	0	8
				21409	.395	205.6	249.0	-19.9	33	198
				21406	.473	170.3	233.5	-26.8	5	17
				21408	.537	74.3	207.2	+ 9.0	3	14
				21410	.738	110.6	193.3	-14.4	2	8
				21411	.988	78.5	157.8	+11.5	46	270
2.336	+15.9	226.3	+ 0.7	21404	.996	240.9	309.6	-28.8	22	209
				21398	.990	290.4	307.5	+20.3	13	99
				21400	.859	247.4	283.0	-18.8	33	199
				21402	.735	287.5	272.2	+13.3	6	32
				21407	.727	298.8	269.2	+21.0	9	67
				21409	.516	225.8	249.4	-20.4	22	179
				21406	.472	192.1	232.6	-26.6	2	14
				21408	.346	64.8	207.9	+ 9.1	2	13
				21410	.563	116.1	195.1	-13.7	4	20
				21412	.649	46.9	194.3	+26.8	4	22
				21411	.933	77.5	158.0	+11.9	35	230
3.542	+15.4	210.4	+ 0.6	21400	.971	250.8	285.3	-18.4	22	178
				21407	.877	293.7	269.4	+20.9	23	184
				21409	.701	238.9	250.1	-20.7	18	156
				21413	.615	245.2	245.5	-14.4	3	17
				21406	.546	214.8	230.6	-26.0	3	18
				21408	.149	24.5	206.8	+ 8.3	4	22
				21412	.490	30.6	194.4	+25.4	6	34
				21411	.807	75.6	157.6	+11.9	49	286
				2	.810	76.9	157.2	+10.9	35	192
				21414	.929	78.2	142.7	+11.1	23	93
4.465	+15.0	198.2	+ 0.5	21407	.962	291.4	271.2	+20.7	16	133
				21409	.838	243.9	252.0	-21.3	10	73
				21413	.789	250.4	248.4	-15.0	14	106
				1528 09	.551	296.2	228.8	+14.4	1	16
				21408	.262	306.0	210.6	+ 9.3	1	7
				21412	.414	6.1	195.5	+24.7	5	29
				21411	.668	73.0	157.7	+11.6	35	217
				2	.670	74.6	157.3	+10.6	25	154
				21414	.833	76.9	142.7	+11.1	12	78
				21415	.979	107.2	120.9	-16.7	16	84
5.459	+14.6	185.1	+ 0.3	21409	.953	247.4	255.7	-21.4	4	21
				21413	.916	252.7	250.2	-15.6	11	65
				1528 10	.866	295.1	242.5	+21.7	2	22
				1528 11	.781	292.1	234.3	+17.3	2	10
				21412	.460	343.0	193.8	+26.3	2	16
				21411	.486	67.2	158.1	+11.1	34	188
				2	.492	68.8	157.5	+10.5	26	155
				21414	.692	74.0	142.6	+11.2	9	39
				21416	.761	119.6	139.8	-21.8	2	5
				1528 12	.832	113.0	131.4	-18.7	0	10
				21417	.847	60.8	130.9	+24.6	10	61
				21415	.909	108.3	121.2	-16.4	28	171
				21418	.995	111.7	101.9	-21.5	0	31

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	Elements of Day P	L_o	B_o	Group No.	Measures Radial Distance	Position Angle	Position Long.	Lat.	Area Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Dec. 6.281	+14.3	174.3	+ 0.2	21409	.989	248.1	254.7	-21.6	0	27
				21419	.717	228.8	211.8	-27.9	1	12
				21411	.334	56.1	158.0	+10.9	34	199
				2	.336	58.4	157.4	+10.3	29	(173)
				21414	.556	69.5	142.4	+11.4	6	40
				21416	.648	130.1	141.5	-24.4	1	11
				21417	.745	56.5	131.5	+24.3	20	191
				21415	.825	110.2	120.7	-16.3	40	367
				21418	.972	114.7	99.5	-23.9	18	127
				21420	.988	74.5	93.8	+15.3	0	33
7.596	+13.7	157.0	+ 0.1	21419	.885	234.7	213.9	-30.7	5	32
				21421	.357	302.9	174.7	+11.2	3	42
				21411	.196	351.9	158.6	+11.2	34	184
				2	.177	357.0	157.5	+10.2	25	(135)
				21414	.318	50.1	142.6	+11.8	5	25
				21417	.563	43.7	131.9	+24.0	20	271
				21415	.638	116.3	120.6	-16.3	39	508
				21422	.676	60.8	118.5	+19.3	3	13
				21418	.872	117.7	99.6	-23.8	13	122
				21420	.892	71.3	95.4	+16.6	10	48
				21423	.952	80.3	85.3	+ 9.3	25	105
8.302	+13.4	147.7	0.0	21421	.500	291.9	175.8	+10.7	0	7
				21411	.245	314.6	157.9	+ 9.8	18	158
				2	.242	314.8	157.7	+ 9.7	17	(153)
				21414	.219	22.4	142.8	+11.6	2	10
				21417	.478	32.2	131.6	+23.7	27	236
				21415	.505	123.1	121.6	-16.0	28	325
				21422	.580	55.3	117.5	+19.2	5	47
				21418	.794	120.5	99.5	-23.7	7	72
				21420	.808	69.4	95.8	+16.5	4	25
				21424	.817	109.4	94.7	-15.7	4	36
				21423	.891	79.6	85.3	+ 9.3	14	128
9.287	+13.0	134.7	- 0.1	1528 13	.882	303.7	191.7	+29.1	4	26
				21411	.420	293.4	157.6	+ 9.4	21	175
				21414	.259	329.7	142.4	+12.7	0	4
				21417	.406	7.1	131.6	+23.5	30	274
				21415	.368	139.8	120.5	-16.4	28	328
				21422	.431	39.8	117.8	+19.1	5	24
				1528 14	.556	54.8	106.2	+18.5	0	6
				21418	.667	126.8	99.2	-23.6	11	115
				21420	.683	66.4	94.3	+15.7	1	19
				21424	.685	113.9	94.2	-16.2	11	66
				1528 15	.769	72.5	86.0	+13.3	2	10
				21423	.769	77.8	85.3	+ 9.3	29	137
10.379	+12.6	120.3	- 0.3	21411	.627	285.2	157.9	+ 9.2	19	135
				21414	.443	305.4	142.1	+14.6	0	5
				21417	.444	336.2	131.5	+23.6	27	243
				21415	.271	183.1	121.2	-15.9	22	200
				21422	.336	5.5	118.3	+19.2	2	14
				21425	.446	159.0	110.2	-24.8	5	16
				21418	.513	139.5	99.2	-23.1	10	71
				21424	.490	122.3	95.0	-15.4	10	71
				21420	.527	59.6	92.3	+15.1	1	12
				21423	.588	73.7	85.6	+ 9.2	18	132
				21426	.988	80.0	39.8	+ 9.8	20	117
11.536	+12.1	105.1	- 0.4	1528 16	.841	286.5	160.9	+13.6	0	10
				21411	.810	281.8	158.3	+ 9.3	24	140
				21427	.703	289.8	147.8	+13.4	18	94

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	Elements of Day P	L_o	B_o	Group No.	Measures Radial Distance	Position Angle	Position Long.	Lat.	Area Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Dec. 11.536	Continued			21417	.582	314.1	132.0	+23.4	19	122
				21415	.377	222.1	120.3	-16.6	29	192
				21425	.420	192.3	110.7	-24.6	31	175
				1528 17	.272	357.8	105.7	+15.2	0	12
				21418	.405	166.1	99.0	-23.5	7	45
				21424	.311	147.7	95.2	-15.6	16	87
				21423	.367	63.0	85.8	+ 9.1	22	121
				21428	.626	58.1	71.0	+18.9	0	6
				21426	.919	79.3	39.0	+ 9.6	22	120
				21429	.950	68.2	35.0	+20.4	7	38
12.286	+11.7	95.2	- 0.5	21411	.898	280.5	158.4	+ 9.1	21	130
				21427	.811	286.4	147.9	+12.9	22	121
				21417	.690	306.0	132.5	+23.4	16	76
				21415	.502	236.6	121.0	-16.5	23	166
				21425	.482	211.2	111.1	-24.8	56	328
				21418	.400	188.6	98.9	-23.7	6	25
				21424	.266	180.8	95.4	-15.9	11	52
				21423	.232	44.3	85.8	+ 9.0	28	113
				21426	.837	78.0	39.3	+ 9.7	15	118
				21429	.872	67.1	37.0	+19.5	0	17
13.545	+11.2	78.6	- 0.7	21411	.987	279.2	159.0	+ 9.0	27	214
				21427	.936	285.1	146.9	+13.8	15	131
				21417	.844	299.1	132.1	+23.8	12	66
				21415	.721	248.0	122.6	-16.1	19	94
				21430	.629	306.3	111.4	+21.2	3	28
				21425	.637	229.3	110.7	-25.0	94	463
				21418	.500	219.2	98.7	-23.4	5	9
				21424	.374	216.7	92.1	-18.0	13	104
				21423	.202	325.9	85.2	+ 8.9	14	118
				21426	.654	74.8	39.0	+ 9.3	23	103
				21429	.713	60.8	37.3	+19.7	9	40
				21431	.838	65.4	24.6	+19.9	4	20
14.435	+10.8	66.9	- 0.8	21427	.982	285.0	145.2	+14.6	0	23
				21417	.929	296.4	132.3	+24.1	12	76
				21415	.836	250.7	122.1	-16.4	14	105
				21425	.751	235.5	110.1	-25.6	82	634
				21430	.715	298.4	108.5	+19.2	8	48
				21418	.615	231.5	98.3	-23.1	4	10
				21424	.517	235.5	93.3	-17.7	14	69
				21432	.636	211.7	90.4	-33.4	14	84
				21423	.364	297.2	85.9	+ 8.8	10	69
				21433	.464	6.5	63.5	+26.5	1	13
				1528 18	.428	154.6	55.4	-23.5	1	7
				21434	.320	49.7	52.5	+11.1	1	3
				21435	.457	126.0	44.3	-16.3	4	17
				21426	.497	69.6	38.8	+ 9.2	13	75
				21429	.595	51.8	37.0	+20.8	5	38
				21431	.698	62.3	26.4	+18.3	23	197
				21436	.980	68.0	349.8	+21.3	11	70
15.301	+10.4	55.5	- 0.9	21415	.932	253.3	123.4	-15.8	14	74
				21430	.831	294.5	108.6	+19.5	7	45
				21425	.838	238.7	108.3	-26.3	75	672
				21418	.734	238.8	98.2	-22.9	3	15
				21424	.667	244.8	94.5	-17.1	4	28
				21432	.730	222.4	91.4	-33.2	27	210
				21423	.527	287.8	85.8	+ 8.4	10	59
				21434	.234	21.1	50.5	+11.6	2	19
				21435	.316	147.2	45.3	-16.2	2	11
				21426	.330	59.0	38.9	+ 8.9	7	51

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POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Elements of Day				Measures			Position		Area	
Date	P	L_o	B_o	Group No.	Radial Distance	Position Angle	Long.	Lat.	Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Dec. 15.301	Continued			21429	.477	39.9	36.5	+20.5	11	81
				21431	.573	53.8	26.4	+18.9	27	281
				21436	.925	66.8	350.1	+20.9	3	11
				21437	.988	65.8	336.0	+23.7	78	532
16.292	+ 9.9	42.4	- 1.0	21415	.989	251.8	123.4	-18.2	7	95
				21425	.922	240.9	107.0	-27.0	79	677
				21432	.837	229.7	92.1	-33.4	40	250
				21424	.782	245.7	91.3	-19.4	3	28
				21423	.704	283.5	86.1	+ 8.7	6	29
				21433	.572	321.3	65.6	+25.4	3	13
				21434	.269	328.9	50.5	+12.2	2	11
				21426	.186	19.3	38.9	+ 9.0	9	38
				21429	.382	14.3	36.7	+20.6	49	298
				21431	.420	36.5	27.2	+18.6	102	683
				21436	.825	63.3	350.4	+21.1	0	7
				21437	.940	64.1	335.0	+23.8	73	540
17.454	+ 9.4	27.1	- 1.2	21425	.977	241.2	103.4	-28.3	60	409
				21424	.931	248.6	94.4	-20.3	12	112
				21432	.934	234.5	92.4	-33.3	36	289
				21423	.862	281.0	85.8	+ 8.8	2	28
				21428	.747	298.3	71.3	+19.8	3	33
				21433	.726	307.6	66.5	+25.3	31	313
				1528 19	.571	233.2	56.3	-21.0	5	34
				21434	.505	297.2	54.3	+12.2	3	16
				21438	.411	208.9	39.4	-22.2	0	4
				21426	.270	311.3	38.9	+ 9.1	5	20
				21429	.405	335.3	37.4	+20.3	37	332
				21431	.337	357.5	28.0	+18.4	104	1019
				1528 20	.269	143.6	17.7	-13.6	0	11
				1528 21	.601	68.3	352.4	+11.8	3	8
				21437	.841	60.2	334.3	+23.9	64	522
				21439	.963	115.7	314.0	-25.0	68	351
18.499	+ 8.9	13.3	- 1.3	21432	.987	235.9	92.6	-33.8	75	610
				21423	.954	279.7	85.2	+ 8.8	7	57
				21433	.843	301.5	65.7	+25.3	55	609
				21440	.598	299.1	46.1	+15.7	3	16
				21438	.557	229.9	40.6	-22.1	1	10
				21426	.466	291.9	39.1	+ 8.8	2	17
				21429	.539	313.0	38.1	+20.3	32	208
				21431	.412	324.2	27.9	+18.2	122	1477
				1528 22	.260	12.5	10.0	+13.3	1	4
				21437	.707	54.0	334.9	+23.5	77	599
				21439	.889	117.7	313.2	-25.0	38	376
19.287	+ 8.5	2.9	- 1.4	21432	.996	234.9	87.3	-35.1	11	88
				21433	.913	298.7	65.1	+25.3	82	494
				21440	.727	294.3	46.5	+16.3	3	21
				21426	.613	287.9	39.1	+ 9.6	11	53
				21429	.658	303.8	38.4	+20.2	34	187
				21431	.521	309.5	27.8	+18.0	267	1703
				21437	.595	45.6	335.5	+23.2	96	683
				21439	.808	120.3	312.8	-24.9	60	322
20.421	+ 8.0	348.0	- 1.6	21433	.977	297.2	63.1	+26.1	54	398
				21434	.917	282.6	53.5	+10.9	0	11
				21429	.822	296.6	39.5	+20.5	19	122
				21426	.795	283.8	39.4	+ 9.9	2	12
				21431	.706	297.4	29.0	+17.7	301	2014
				21437	.467	27.7	334.4	+22.8	101	616
				21441	.442	125.1	326.0	-16.1	7	33

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	Elements of Day P	L_o	B_o	Group No.	Measures Radial Distance	Position Angle	Position Long.	Lat.	Area Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Dec. 20.421	Continued			21442	.594	46.7	320.2	+22.6	4	38
				21439	.669	127.6	312.3	-25.3	58	338
21.347	+ 7.6	335.8	- 1.7	21429	.935	292.2	42.8	+20.0	12	55
				21431	.831	292.4	29.2	+17.4	293	2198
				21437	.413	3.0	334.4	+22.6	71	536
				21441	.299	145.7	325.8	-15.9	33	190
				21442	.483	32.2	319.7	+22.4	0	5
				21439	.547	137.5	311.8	-25.2	42	262
				21443	.954	74.4	264.6	+14.3	3	21
				21444	.993	111.5	252.8	-21.6	34	252
22.577	+ 7.0	319.6	- 1.8	21431	.952	289.4	29.9	+17.8	321	2235
				21437	.476	332.2	333.5	+23.0	49	358
				21441	.277	206.2	326.9	-16.2	20	161
				21442	.410	1.4	319.0	+22.2	1	8
				21439	.416	161.6	311.3	-25.0	31	261
				21443	.838	71.4	264.7	+14.4	4	23
				21444	.953	112.7	248.2	-22.1	87	563
23.320	+ 6.6	309.8	- 1.9	21431	.977	288.5	26.0	+17.6	85	827
				1529 01	.620	294.8	345.1	+13.4	8	40
				21437	.556	317.3	333.7	+22.3	51	323
				21441	.381	229.1	327.2	-16.2	20	129
				21442	.424	340.4	318.6	+21.5	2	22
				21439	.388	182.6	310.9	-24.6	32	167
				21445	.520	126.4	283.5	-19.6	4	19
				21443	.739	68.5	264.8	+14.3	3	14
				21444	.886	114.0	249.3	-22.0	66	515
24.567	+ 6.1	293.4	- 2.1	21446	.741	256.2	340.5	-11.5	2	13
				21437	.713	305.3	332.3	+22.7	49	259
				21441	.581	243.5	326.2	-16.8	19	130
				21439	.468	214.8	310.4	-24.5	27	148
				1529 02	.424	201.9	303.4	-25.1	1	14
				21445	.336	154.9	284.7	-19.7	5	25
				21447	.426	138.9	276.1	-20.6	1	10
				21443	.543	58.7	264.9	+14.5	5	26
				21448	.633	114.4	256.6	-16.8	7	42
				21444	.741	118.4	248.9	-22.0	81	505
25.310	+ 5.7	283.6	- 2.2	21446	.857	260.1	342.2	- 9.6	8	56
				21437	.805	300.4	332.2	+22.5	60	261
				21441	.692	247.1	325.3	-17.2	20	121
				21439	.557	225.9	309.6	-24.7	26	158
				21445	.296	183.1	284.6	-19.3	4	26
				21443	.422	47.4	265.0	+14.5	5	17
				21448	.516	118.2	255.5	-16.0	43	257
				21444	.624	123.7	249.7	-22.0	85	453
26.450	+ 5.2	268.6	- 2.3	21446	.952	260.6	340.6	- 9.6	14	91
				21437	.918	295.8	331.7	+22.5	43	235
				21441	.855	251.3	326.3	-17.2	8	46
				1529 03	.834	303.4	319.1	+25.8	2	20
				21439	.717	237.0	309.8	-24.7	17	77
				21447	.363	201.8	276.9	-21.9	2	13
				21443	.296	11.8	265.0	+14.5	2	12
				21448	.315	139.9	256.4	-16.2	139	797
				21444	.460	138.3	249.4	-22.2	96	448
				21449	.925	107.4	201.5	-17.0	11	130
				21450	.963	117.6	195.2	-27.2	8	24
				21451	.960	103.7	195.0	-13.8	50	336

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

Date	Elements of Day P	L_o	B_o	Group No.	Measures Radial Distance	Position Angle	Position Long.	Lat.	Area Umbrae	Whole Spots
1967	°	°	°			°	°	°		
Dec. 27.278	+ 4.8	257.7	- 2.4	21446	.988	260.6	338.7	- 9.6	13	117
				21437	.974	293.7	332.3	+22.5	36	169
				21441	.953	252.7	329.7	-17.2	3	14
				21439	.825	241.3	310.3	-24.7	11	70
				21443	.300	345.9	262.0	+14.4	3	25
				21448	.237	177.9	257.2	-16.0	143	958
				21444	.362	160.7	250.3	-22.3	52	318
				1	.357	162.5	251.1	-22.2	47	(282)
				21449	.848	108.6	200.7	-17.0	16	125
				21451	.888	103.9	195.5	-13.4	41	309
				21450	.908	118.6	194.6	-26.9	5	30
28.533	+ 4.1	241.2	- 2.6	21439	.933	242.9	308.6	-26.2	24	197
				21452	.811	247.8	293.7	-19.4	11	74
				21453	.675	242.6	280.6	-20.0	7	51
				21443	.473	304.7	264.6	+13.2	2	13
				21448	.358	228.7	257.3	-16.1	178	1438
				21444	.373	203.3	250.3	-22.5	61	286
				1	.375	204.3	250.7	-22.5	58	(269)
				21449	.661	112.5	201.7	-16.6	11	68
				21451	.719	105.7	196.1	-13.0	77	407
				21450	.798	123.3	192.5	-27.6	21	214
29.422	+ 3.7	229.4	- 2.7	21439	.984	243.8	309.1	-26.3	6	108
				21452	.913	250.5	294.6	-18.9	32	158
				21453	.817	248.2	282.7	-19.2	0	11
				21443	.614	299.1	263.0	+15.1	0	10
				21448	.504	242.1	256.9	-16.0	181	1508
				21444	.471	222.8	249.7	-22.6	59	317
				1	.478	223.8	250.3	-22.6	57	(296)
				21454	.328	231.0	244.7	-14.4	7	39
				21455	.221	13.4	226.5	+ 9.7	2	16
				21449	.488	119.5	203.3	-16.3	12	70
				21451	.552	109.4	197.3	-12.8	56	326
				21450	.672	130.0	194.0	-27.7	39	211
				21456	.973	119.3	153.6	-29.1	9	83
30.298	+ 3.3	217.9	- 2.8	21452	.957	251.0	290.7	-19.0	14	106
				21453	.900	250.4	281.2	-18.8	2	24
				1529 04	.825	228.9	266.8	-34.6	4	15
				21448	.650	248.9	256.8	-15.7	169	1400
				21444	.599	234.5	249.7	-22.7	53	288
				1	.605	234.9	250.2	-22.6	51	(276)
				21454	.485	243.8	244.6	-14.8	7	45
				21455	.227	339.7	222.5	+ 9.5	1	4
				21449	.346	133.0	202.7	-16.3	6	46
				21451	.379	118.4	198.0	-12.9	57	343
				21450	.554	140.3	194.5	-27.7	27	198
				21456	.925	120.9	152.3	-29.5	13	82
				21457	.990	104.9	135.9	-15.1	7	57
31.322	+ 2.8	204.4	- 2.9	21448	.801	252.6	256.7	-15.6	188	1148
				2	.750	241.8	250.0	-22.7	39	(252)
				21444	.750	241.8	250.0	-22.7	39	252
				21454	.658	251.1	244.3	-14.5	11	61
				21449	.233	180.6	204.6	-16.3	15	83
				21451	.206	148.4	198.1	-12.9	40	256
				21450	.439	163.1	196.2	-27.6	30	219
				21456	.822	124.0	153.4	-29.1	11	47
				21457	.931	105.1	136.0	-15.1	9	51

NOTES ON SUNSPOT GROUPS 1967

Group 20999	Jan.	2–12	A single spot which develops rapidly into a complex cluster with maximum area on January 6, but decays more slowly to leave a single component by January 12.
Group 21000	Jan.	3– 8	Rapidly developing spots appearing west of the central meridian.
Group 21001	Jan.	3–10	Two or three spots developing into a stream by January 4. The following spots slowly decay to leave two small spots on January 10.
Group 21002	Jan.	3–15	Two spots widely separated in longitude. Only the leader remains by January 12.
Group 21003	Jan.	5–15	Several slowly-developing spots until January 7, when rapid growth occurs and the group attains maximum area on January 10. The following components gradually decay and die out before reaching the west limb.
Group 21004	Jan.	6–14	A few spots until January 9 when the group develops rapidly to form a scattered stream.
Group 21005	Jan.	9–11	Two small spots on January 9; a single spot on the remaining days.
Group 21006	Jan.	9–10	A single spot on January 9; two small spots on January 10.
Group 21007	Jan.	9–10	A single spot.
Group 21008	Jan.	11–13	A single spot on January 11 and 13; two small spots on January 12.
Group 21009	Jan.	11–17	Scattered spots until January 13 when sudden growth begins, to give a maximum area on the following day. The following spots die out, leaving a single spot by January 16.
Group 21010	Jan.	11–22	A single spot on January 11, developing into a moderate-sized stream with a prominent leader and follower and intermittent, linking companions.
Group 21011	Jan.	12–23	Two associated components of which the follower dies out on January 19, while the leader, subsequently assuming a regular configuration, persists to the west limb.
Group 21012	Jan.	16–28	A moderate-sized spot with variable companions, which gradually disintegrates during transit.
Group 21013	Jan.	18–28	Intermittent. A few scattered spots, not seen on January 23, 24 or 25.
Group 21014	Jan.	18–30	A single spot, regular in outline.
Group 21015	Jan.	19–25	A group of spots of rapid growth and decay.
Group 21016	Jan.	19–31	Two moderate-sized components which break up until January 27, after which further development occurs.
Group 21017	Jan.	20–24	A single spot on January 20; a small group of fading spots on the other days.
Group 21018	Jan.	20–31	Scattered spots until January 25 when the group assumes stream formation.
Group 21019	Jan.	21–23	A single spot on January 21 and 23; two small spots on January 22.
Group 21020	Jan.	21–30	A spot with variable companions.
Group 21021	Jan.	21–22	A single spot on January 21; two small spots on January 22.

Group 21022	Jan. 21–Feb. 1	Variable spots until January 30 when two distinct components form.
Group 21023	Jan. 21–23	A single spot.
Group 21024	Jan. 22–28	A single spot on January 22. On the following day a leading component appears which persists to the west limb, the original spot dying out on January 27.
Group 21025	Jan. 22–25	Several spots.
Group 21026	Jan. 22–Feb. 4	A moderate-sized, stable spot with one or two leading companions, one of these being the only spot visible at the east limb on January 22.
Group 21027	Jan. 25–27	A single spot with a minute companion on January 25.
Group 21028	Jan. 25–26	A single spot.
Group 21029	Jan. 25–28	A variable number of spots, usually two.
Group 21030	Jan. 25–29	A single spot on all days but January 26 when two spots are visible.
Group 21031	Jan. 26–Feb. 5	An elongated cluster of spots decreasing rapidly in area after February 1.
Group 21032	Jan. 27–28	A single spot.
Group 21033	Jan. 27–29	A small cluster of spots.
Group 21034	Jan. 28–Feb. 6	A complex group of spots concentrating into two spots by February 1.
Group 21035	Jan. 29–31	Two spots.
Group 21036	Jan. 29–Feb. 3	Intermittent. A single spot on January 29; returning as a small cluster of spots on February 1.
Group 21037	Jan. 29–Feb. 5	A variable group of small spots.
Group 21038	Jan. 29–Feb. 6	A complex group of small spots which is not seen on February 3 and 4.
Group 21039	Jan. 31–Feb. 9	A single spot, followed by smaller spots which disappear on February 5.
Group 21040	Jan. 31–Feb. 12	A single spot initially, with a companion that fades and returns on February 7 as a cluster of spots.
Group 21041	Feb. 1–13	A single spot which divides into two and is subsequently followed by a complex stream.
Group 21042	Feb. 2– 4	A variable appearance of two small spots.
Group 21043	Feb. 3– 5	A variable group of spots.
Group 21044	Feb. 4–15	A complex stream of spots.
Group 21045	Feb. 4–12	A small cluster of spots which rapidly declines to nothing.
Group 21046	Feb. 5– 7	A small complex spot appearing near the west limb.
Group 21047	Feb. 6– 7	A single, diffuse spot.
Group 21048	Feb. 7–13	Two small, single spots.
Group 21049	Feb. 7–15	An elongated spot which separates into two small spots. The group disappears after February 12 and returns on February 15 as a single spot.
Group 21050	Feb. 8–10	Two small, diffuse spots.
Group 21051	Feb. 8–19	Initially a single spot which divides into two. The leader subsequently breaks into a cluster of small spots.
Group 21052	Feb. 11–20	A single spot.

Group 21053	Feb. 13–24	A decreasing, complex spot.
Group 21054	Feb. 15–26	A single, regular spot. Small companions appear on February 23.
Group 21055	Feb. 16–27	A regular spot.
Group 21056	Feb. 16–26	Small spots, developing into a stream by February 20.
Group 21057	Feb. 17–19	A cluster of small spots.
Group 21058	Feb. 18–24	A small stream of spots, the tail of which disappears to leave a single spot.
Group 21059	Feb. 20–22	Two single spots.
Group 21060	Feb. 20–Mar. 3	A single, regular spot throughout.
Group 21061	Feb. 21–Mar. 5	A long stream of complex spots, only partially visible on February 21 and March 5.
Group 21062	Feb. 23–24	Two spots on February 23; a single spot on February 24.
Group 21063	Feb. 26–28	A single spot.
Group 21064	Feb. 26–Mar. 6	Initially two separate components each containing irregular spots. From March 2, usually a single spot alone is visible.
Group 21065	Feb. 26–Mar. 5	A complex group of spots.
Group 21066	Feb. 26–Mar. 7	A complex stream of spots of rapid growth, slowly becoming two single spots by March 6.
Group 21067	Feb. 26–Mar. 4	A single spot developing into a short-lived cluster.
Group 21068	Feb. 26–Mar. 12	A complex spot with a few leading companions.
Group 21069	Feb. 27–28	A single spot.
Group 21070	Feb. 27–Mar. 5	A single, regular spot.
Group 21071	Feb. 28–Mar. 5	A single spot followed by small, variable spots.
Group 21072	Feb. 28–Mar. 10	A complex system of spots.
Group 21073	Feb. 28–Mar. 10	A few spots becoming two single spots by March 3.
Group 21074	Mar. 1– 3	Two small spots on March 1, one of which has faded by the following day.
Group 21075	Mar. 2–10	A single spot which breaks up into a complex spot and a few small spots.
Group 21076	Mar. 2–13	A single spot with a stream of small companions which evolve into two complex spots by March 9.
Group 21077	Mar. 3–15	A large complex cluster of spots which becomes a complex spot with a stream of small spots by March 8.
Group 21078	Mar. 4– 5	A single, small spot.
Group 21079	Mar. 6– 9	Two single spots of variable appearance.
Group 21080	Mar. 7–12	Two single spots.
Group 21081	Mar. 10–13	Two single spots.
Group 21082	Mar. 10–14	Two spots with a few small, intermittent companions.
Group 21083	Mar. 12–24	A stream of spots with maximum area on March 17.
Group 21084	Mar. 13–20	Initially a small cluster of spots. The leader grows into a single, regular spot by March 17.
Group 21085	Mar. 15–21	Intermittent. A single spot.
Group 21086	Mar. 15–26	A single spot with small companions.
Group 21087	Mar. 16–18	A small cluster of diffuse spots.
Group 21088	Mar. 16–28	A single, regular spot.

Group 21089	Mar. 17–24		A single spot with a companion on March 21.
Group 21090	Mar. 17–27		A complex spot with companions which fade completely by March 24.
Group 21091	Mar. 20–23		A cluster of small spots.
Group 21092	Mar. 20–24		Intermittent. A single spot on March 20 and 22; a few small spots on March 24.
Group 21093	Mar. 20–21		A single spot.
Group 21094	Mar. 20–Apr.	1	A large, single spot. Companions appear on March 28 and the spot divides at the same time.
Group 21095	Mar. 21–Apr.	2	A stream of complex spots, only partially visible on March 21 and April 2.
Group 21096	Mar. 21–26		A group of small, diminishing spots.
Group 21097	Mar. 22–28		A regular spot, with following companions for the first two days.
Group 21098	Mar. 23–30		A cluster of small spots.
Group 21099	Mar. 24–29		A group of small spots developing into a stream on March 27.
Group 21100	Mar. 24–25		Small spots.
Group 21101	Mar. 24–27		A single spot.
Group 21102	Mar. 25–26		A small, complex spot.
Group 21103	Mar. 25–Apr.	3	Initially a large, diffuse group. This finally separates into spots on March 30.
Group 21104	Mar. 26–Apr.	2	A stream of complex spots.
Group 21105	Mar. 28–Apr.	2	A single spot leading a stream of smaller spots.
Group 21106	Mar. 29–30		A group of small spots.
Group 21107	Mar. 29–Apr.	2	Two single spots, the leader of which dies out by April 1.
Group 21108	Mar. 29–Apr.	9	A variable, elongated group of small spots.
Group 21109	Mar. 30–Apr.	1	Two small, diffuse spots.
Group 21110	Mar. 30–Apr.	8	Two single spots, the leader fading by April 4.
Group 21111	Mar. 31–Apr.	1	Two spots.
Group 21112	Mar. 31–Apr.	3	A single spot.
Group 21113	Apr. 1–	3	Intermittent. A single spot on April 1; two small spots on April 3.
Group 21114	Apr. 2–	3	Two small spots.
Group 21115	Apr. 3–	7	Two small spots on April 3, 6 and 7; a single spot on the other days.
Group 21116	Apr. 4–	5	Two small spots.
Group 21117	Apr. 4–	13	A complex stream of spots with the leading spot developing by April 8.
Group 21118	Apr. 4–	13	A complex spot with intermittent, following companions. Not visible from April 9 to 12, a single spot is seen on April 13.
Group 21119	Apr. 5–	6	Two spots.
Group 21120	Apr. 5–	7	A single spot.
Group 21121	Apr. 5–	13	A stream of complex spots rapidly increasing in area.
Group 21122	Apr. 6–	15	Two single spots. Between April 8 and 12, these grow into a complex group of spots.

Group 21123	Apr. 7– 8	Small spots.
Group 21124	Apr. 7–10	Small spots.
Group 21125	Apr. 8– 9	Small spots.
Group 21126	Apr. 8–16	A single spot, joined by a small companion on April 14.
Group 21127	Apr. 9–10	Two spots.
Group 21128	Apr. 13–16	Two spots exhibiting rapid growth.
Group 21129	Apr. 13–15	Intermittent. Two spots on April 13; a single spot on April 15.
Group 21130	Apr. 13–25	A regular spot.
Group 21131	Apr. 16–19	A single spot on April 16. The group reappears as two spots on April 18, only one of which is visible on the following day.
Group 21132	Apr. 16–24	A cluster of small spots, the leaders of which coalesce into a single spot on April 21.
Group 21133	Apr. 17–19	A stream of small spots.
Group 21134	Apr. 17–29	A regular spot.
Group 21135	Apr. 17–29	A single spot, developing into a complex spot with companions by April 23.
Group 21136	Apr. 18–27	A cluster of small spots.
Group 21137	Apr. 21–23	Single spots.
Group 21138	Apr. 21–May 1	A cluster of complex spots.
Group 21139	Apr. 22–24	A cluster of small spots.
Group 21140	Apr. 23–26	Two spots on April 23 and 25; a single spot on the other days.
Group 21141	Apr. 23–26	A small, complex group of spots.
Group 21142	Apr. 24–25	A group of small spots greatly increasing in size as it passes round the west limb.
Group 21143	Apr. 25–May 5	Initially a few small spots. On April 28 a complex spot develops and the others fade until finally, on May 3, a single spot remains.
Group 21144	Apr. 27–May 7	At first a cluster of small spots. On May 1, a complex spot is established as the leader and eventually dominates the group.
Group 21145	Apr. 27–May 9	A cluster of complex spots.
Group 21146	Apr. 28–30	Two spots.
Group 21147	Apr. 30–May 4	A variable group of small spots.
Group 21148	May 1– 4	Small spots.
Group 21149	May 1–13	A single, regular spot.
Group 21150	May 5– 7	A complex group of spots.
Group 21151	May 5– 7	A group of small spots.
Group 21152	May 6– 7	A pair of spots.
Group 21153	May 9–11	A single spot.
Group 21154	May 11–24	A regular spot.
Group 21155	May 12–14	Two spots on May 12; a single spot on the other days.
Group 21156	May 13–21	A small spot developing into a complex group which decays and dies out before reaching the west limb.

Group 21157	May 13–20	A single spot which disappears on May 17 and returns, by May 18, as a complex group of small spots, only one of which is visible on the following days.
Group 21158	May 15–16	One spot on May 15; two spots on May 16.
Group 21159	May 15–24	A complex spot with companions which have disappeared by May 21.
Group 21160	May 17–18	A single spot.
Group 21161	May 18–25	A group of complex spots.
Group 21162	May 18–30	A regular spot with intermittent companions.
Group 21163	May 19–31	A complex group of spots. A single, regular spot develops as a leader by May 23.
Group 21164	May 19–June 1	A large, composite group of spots.
Group 21165	May 20–24	Small spots.
Group 21166	May 20–June 1	A single, regular spot which has a few small companions on May 25 only.
Group 21167	May 21–June 2	A pair of spots of similar longitude. The smaller, more southerly spot, disappears completely by June 1.
Group 21168	May 23–24	Small spots.
Group 21169	May 23–27	A pair of spots of variable appearance.
Group 21170	May 23–June 4	Initially a single spot with a trailing companion. The spot divides into two on May 31.
Group 21171	May 24–25	Small spots.
Group 21172	May 24–June 1	A complex group of spots.
Group 21173	May 24–June 2	A single spot developing rapidly to form a complex stream of spots with maximum area on May 28.
Group 21174	May 24–28	A group of small spots.
Group 21175	May 24–29	Small spots.
Group 21176	May 25–26	Small spots.
Group 21177	May 25–June 2	A group of complex spots.
Group 21178	May 26–27	A single spot.
Group 21179	May 26–27	A single spot.
Group 21180	May 26–31	Intermittent. One or two variable spots.
Group 21181	May 26–27	A small spot.
Group 21182	May 26–June 7	A cluster of two complex spots with intermittent companions. The group declines rapidly as it nears the west limb.
Group 21183	May 27–June 2	A small spot.
Group 21184	May 28–29	A single spot.
Group 21185	May 28–June 9	Initially an elongated stream of complex spots. The leader grows steadily into a single, regular spot by June 5.
Group 21186	May 29–June 8	A compact group of complex spots.
Group 21187	May 30–31	A small spot.
Group 21188	May 31–June 1	Two small spots.
Group 21189	June 4– 5	Two small spots.
Group 21190	June 4–13	Several scattered spots which disperse rapidly after maximum development.

Group 21191	June 4– 7	Two irregular components which separate in longitude during transit.
Group 21192	June 5– 6	A single spot.
Group 21193	June 8– 9	A single spot.
Group 21194	June 8– 9	A single spot.
Group 21195	June 10–15	A few scattered spots developing rapidly after June 11 to form a stream.
Group 21196	June 14–19	Two single spots becoming a more extensive cluster. This soon decays to leave two spots on June 19.
Group 21197	June 15–23	A regular spot until June 21 when it diminishes to form a small, irregular spot by June 23.
Group 21198	June 15–27	A regular spot on all days except June 17 and 18, when two components are visible.
Group 21199	June 16–18	A single spot.
Group 21200	June 16–24	A single spot until June 20, after which several small, variable components appear in its place. Not seen on June 23.
Group 21201	June 16–23	Two single spots developing to form two complex components which decay by June 20, leaving a scattered stream of small spots.
Group 21202	June 17–22	Intermittent. A variable spot.
Group 21203	June 17–25	A regular spot until June 22 when it assumes an irregular configuration and subsequently diminishes rather rapidly.
Group 21204	June 18–25	Three single spots on June 18, two of which develop until June 20. The leading component alone remains by June 23.
Group 21205	June 18–21	Variable scattered spots.
Group 21206	June 20–25	Intermittent. Two close spots on June 20, a few small spots on June 22 and a single, variable spot thereafter.
Group 21207	June 20–July 1	Two loose, complex components with scattered companions forming from June 23 onwards. The following component gradually disintegrates to leave a single spot at the west limb.
Group 21208	June 22–July 3	An irregular spot, with companions which rapidly develop into two composite components by June 25. The following component gradually decays to leave a single spot by July 3.
Group 21209	June 24–25	A single spot on June 24; an elongated spot and companion on June 25.
Group 21210	June 24–July 6	A regular spot, with several variable companions which have all disappeared by July 1.
Group 21211	June 28–July 1	Several scattered spots.
Group 21212	June 28–July 5	A few intermittent spots until July 2 when rapid growth occurs.
Group 21213	June 28–July 11	A single spot until July 5 when the umbra divides and the spot separates into two. The larger component alone survives to the west limb.
Group 21214	June 29–July 1	One or two intermittent spots.
Group 21215	June 29–30	Two small spots.

Group 21216	June 30–July 2	A single spot.
Group 21217	June 30–July 1	A single spot.
Group 21218	June 30–July 8	A single spot with an occasional companion.
Group 21219	July 1–10	Initially a single spot, developing rapidly to form two composite structures by July 3. While the following component remains static, the leader gradually disintegrates.
Group 21220	July 1– 8	A single spot with a small, leading companion on July 6. Scattered spots appear on July 7, only one of which survives to the following day.
Group 21221	July 2– 7	Several small, scattered spots until July 6 when three main spots are prominent, two of which have disappeared by July 7.
Group 21222	July 2–11	Scattered spots until July 5 when one spot remains. After this nothing is seen until July 9 when two spots are visible, only one of which is seen on the following days.
Group 21223	July 3– 6	Scattered spots.
Group 21224	July 3–14	A single spot with scattered companions until July 8 when the main spot elongates and divides and gradual decay occurs.
Group 21225	July 4–15	Scattered spots with several phases of growth and decay.
Group 21226	July 6– 7	Two single spots.
Group 21227	July 7–12	Two spots on July 8 and 12; a variable cluster of spots on the other days.
Group 21228	July 9–11	Two spots on July 9; a small, single spot on the other days.
Group 21229	July 10–11	A single spot.
Group 21230	July 11–18	One or two small spots until July 14 when a small cluster is visible. Most of this decays to leave two spots by July 16, which disappear on the following day; a single spot is visible on July 18.
Group 21231	July 12–13	Two spots on July 12; one small spot on July 13.
Group 21232	July 12–19	Two main components separated in latitude, the lower of which disintegrates and finally disappears by July 19.
Group 21233	July 12–18	Several small spots.
Group 21234	July 12–23	Several scattered spots rapidly growing into a complex stream comprising three main clusters of spots, of which two survive to the west limb.
Group 21235	July 14–22	Two diminishing spots, separated widely in longitude, with occasional companions. Nothing is seen on July 21, and the follower alone is visible on July 22.
Group 21236	July 15–19	Several scattered spots on all days except July 19 when only a single spot can be seen.
Group 21237	July 16–17	One or two scattered spots.
Group 21238	July 17–18	Two spots on July 17; a single, minute spot on July 18.
Group 21239	July 17–27	Scattered spots until July 23, after which only a single spot is visible.
Group 21240	July 18–19	A single spot.
Group 21241	July 18–23	Two principal components gradually disintegrating into two clusters of spots. Two single spots alone remain on July 23.

Group 21242	July 21–24	A single spot on July 21 and 23; a few scattered spots on the other days.
Group 21243	July 21–28	Two regions of scattered spots which slowly decay to leave only two spots on July 28.
Group 21244	July 21–Aug. 4	A very extensive composite group which begins to disintegrate on July 26. The leading component remains reasonably stable while the followers drift apart and gradually fade to leave two compact regions by August 1.
Group 21245	July 22–24	A spot with variable companions.
Group 21246	July 23–27	A slowly-developing spot with an occasional companion, reaching maximum area on July 26.
Group 21247	July 23–Aug. 4	Two main components separated in longitude, the leader of which remains stable throughout. The follower develops several moderate-sized companions on July 30 which gradually diminish and disappear by August 4.
Group 21248	July 24–25	Several scattered spots.
Group 21249	July 25–27	An intermittent spot.
Group 21250	July 25–Aug. 6	A few scattered spots forming a stream on July 27. The leading component assumes a regular configuration and is the sole survivor at the west limb.
Group 21251	July 26–Aug. 5	Two spots developing rapidly into a stream by July 29. The following spots gradually disintegrate leaving only the leader on August 5.
Group 21252	July 26–27	A single spot.
Group 21253	July 26–Aug. 7	A regular spot, with following companions which die out after August 4.
Group 21254	July 28–Aug. 1	A single, irregular spot.
Group 21255	Aug. 1– 9	Two rapidly-developing components with variable, associated companions. The leader becomes regular in outline and the smaller companions disappear by August 8, leaving only the irregular follower visible at the west limb.
Group 21256	Aug. 1– 2	A single spot.
Group 21257	Aug. 2– 3	A single spot.
Group 21258	Aug. 2– 3	A single spot.
Group 21259	Aug. 3–16	A rapidly-developing compact group which gradually divides into an irregular leader with multiple following spots. On August 9 the umbra divides and the leader becomes two main components connected by a chain of smaller spots which die out by August 14.
Group 21260	Aug. 4–11	Scattered spots.
Group 21261	Aug. 5– 6	A variable spot.
Group 21262	Aug. 5–11	Several scattered spots, with a larger follower which eventually disintegrates on August 9.
Group 21263	Aug. 5–18	Two main components, the leader of which remains constant throughout. The follower gradually decays and has disappeared by August 17.
Group 21264	Aug. 6– 7	One or two variable spots.
Group 21265	Aug. 6–11	Small, intermittent spots.
Group 21266	Aug. 6– 9	One or two compact spots.

Group 21267	Aug. 7–19	A single spot with occasional following companions.
Group 21268	Aug. 8–13	Scattered spots.
Group 21269	Aug. 8– 9	A single spot.
Group 21270	Aug. 9–13	Scattered spots, not visible on August 12.
Group 21271	Aug. 9–17	Intermittent. A single spot.
Group 21272	Aug. 11–13	Several moderate-sized components appearing west of the central meridian and exhibiting rapid growth as they pass from view.
Group 21273	Aug. 11–14	Several compact spots.
Group 21274	Aug. 11–12	One or two small spots.
Group 21275	Aug. 13–16	Intermittent. A single spot.
Group 21276	Aug. 13–19	Several scattered spots developing rapidly, by August 17, into a short-lived stream.
Group 21277	Aug. 13–26	A single regular spot, with scattered companions appearing on August 20 which merge to form a single, following component, persisting to August 25.
Group 21278	Aug. 15–21	Initially two small spots which develop rapidly into a stable leader and slowly fading, following spots.
Group 21279	Aug. 16–23	Two single spots on August 16 which undergo very rapid development to form a complex stream on the following day. The mid-sections of the stream gradually decay, while the leader and follower remain unchanged.
Group 21280	Aug. 17–18	A single spot on August 17; two larger spots on August 18.
Group 21281	Aug. 18–27	Intermittent spots.
Group 21282	Aug. 19–21	Two small spots; the follower alone is visible at the west limb on August 21.
Group 21283	Aug. 19–30	A single spot until August 21 when scattered companions appear. These slowly decay until a single spot remains on August 30.
Group 21284	Aug. 19–28	A spot with variable companions.
Group 21285	Aug. 19–Sept. 1	A very extensive region of composite components which start to decay on August 28, leaving a complex leading spot and a single follower by August 31.
Group 21286	Aug. 20–27	Intermittent scattered spots.
Group 21287	Aug. 20–Sept. 1	A spot with following companions forming a stream on August 23. The followers develop into a compact component while the leader disintegrates. The followers in turn break up, and only a small spot remains on August 31.
Group 21288	Aug. 20–27	A single spot on August 20 and 27; scattered spots on the other days.
Group 21289	Aug. 20–30	Several scattered components, only one of which remains on August 25. This spot develops several short-lived companions, but is again a single spot from August 29.
Group 21290	Aug. 23–Sept. 1	A single spot on August 23, developing rapidly into a stream by August 27. The leader diminishes while the two following components separate.
Group 21291	Aug. 23–28	Intermittent. One or two small spots.
Group 21292	Aug. 24–25	A single spot.

Group 21293	Aug. 26–30	Intermittent. A single spot.
Group 21294	Aug. 26–27	Two spots on August 26; a single spot on the following day.
Group 21295	Aug. 27–29	Three spots on August 27, otherwise a single spot.
Group 21296	Aug. 27–29	A single spot.
Group 21297	Aug. 28–31	Scattered spots on August 28 and 31; a single spot on the other days.
Group 21298	Aug. 28–Sept. 8	A single spot with occasional companions.
Group 21299	Aug. 28–Sept. 10	A cluster of composite spots, the leader of which remains stable after September 4. The remaining components gradually diminish to leave only the original leader by September 8.
Group 21300	Aug. 29–Sept. 4	A developing group of scattered spots.
Group 21301	Aug. 29–31	Two single spots.
Group 21302	Aug. 30–31	A few scattered spots on August 30; a single spot on August 31.
Group 21303	Aug. 30–Sept. 1	Three widely-scattered spots on August 30; a single, small spot on the other days.
Group 21304	Aug. 30–Sept. 9	Two main components separated in latitude, which develop numerous companions. The entire group rapidly decays after September 3 and only a single spot remains on September 9.
Group 21305	Aug. 31–Sept. 1	Two close spots on August 31; a single, small spot on September 1.
Group 21306	Aug. 31–Sept. 9	At first several scattered spots. These develop into two main components which subsequently extend in longitude by September 1.
Group 21307	Aug. 31–Sept. 7	A single spot until September 3 when other spots appear and the group develops to attain a maximum area on the following day. The leading spots disintegrate and fade to leave three small spots by September 7.
Group 21308	Aug. 31–Sept. 8	An irregular spot with multiple umbrae, and scattered companions which disintegrate rapidly on September 7, leaving a single spot on the following day.
Group 21309	Sept. 1– 2	A single spot.
Group 21310	Sept. 1– 2	A single spot.
Group 21311	Sept. 1–12	Several scattered spots developing rapidly into a stream. The scattered leaders eventually decay to leave only the single, following spot by September 11.
Group 21312	Sept. 2–14	A single spot, apart from a few scattered companions on September 8.
Group 21313	Sept. 4– 6	A single spot on September 4 and 6; two small spots on September 5.
Group 21314	Sept. 4– 5	A single spot closely following the former position of group 21303.
Group 21315	Sept. 4–14	Variable scattered spots until September 6. Following the group's reappearance on September 8, rapid development occurs, resulting in a long stream with a single leader and follower and complex mid-components.
Group 21316	Sept. 5– 6	One or two scattered spots.

Group 21317	Sept. 5–16	A single spot with several rapidly developing and decaying companions between September 5 and 15.
Group 21318	Sept. 5– 7	A single spot on September 5 and 6; three smaller spots on September 7.
Group 21319	Sept. 6–12	A single, irregular spot which disintegrates on September 11.
Group 21320	Sept. 7– 8	One or two scattered spots.
Group 21321	Sept. 8–20	A single spot with smaller, following companions.
Group 21322	Sept. 11–23	A single spot throughout.
Group 21323	Sept. 12–13	A single spot.
Group 21324	Sept. 16–25	Two small spots rapidly developing into a stream of moderate-sized spots. Only the prominent leader and a single follower are seen on September 24.
Group 21325	Sept. 18–19	A single spot, growing rapidly as it passes round the west limb.
Group 21326	Sept. 20–22	Two small regions of spots for the first two days, only one of which survives to September 22.
Group 21327	Sept. 20–25	Small spots until September 22 when a single spot remains.
Group 21328	Sept. 20–22	A few scattered spots on September 20; a single spot on the other days.
Group 21329	Sept. 20–28	Initially a quiescent group of scattered spots. On September 25, rapid growth occurs and four main components are formed, the extreme follower of which is the only component visible at the west limb.
Group 21330	Sept. 20–22	One or two scattered spots.
Group 21331	Sept. 21–23	A single spot until after September 22 when rapid growth occurs and three components are visible at the west limb.
Group 21332	Sept. 21–22	Two or three scattered spots.
Group 21333	Sept. 21–22	Two small spots.
Group 21334	Sept. 23–26	A few spots with maximum area on September 25.
Group 21335	Sept. 25–Oct. 5	Intermittent. A single spot on September 25 which reappears on September 29 and develops rapidly to become two regular components with a connecting bridge of companions. A third major component is visible on October 5.
Group 21336	Sept. 25–Oct. 7	A regular spot with multiple, following companions which have all died out by September 30.
Group 21337	Sept. 25–Oct. 7	A single spot, with following companions developing more rapidly than the leader, which is not seen after September 28. The remaining spots again develop until October 3, but only the leading spot survives to the west limb.
Group 21338	Sept. 28–Oct. 2	Scattered spots until September 30 when a single, diminishing spot remains.
Group 21339	Sept. 28–Oct. 9	A single, regular spot with variable companions until October 4, when the following companions develop rapidly into a composite component.
Group 21340	Sept. 30–Oct. 3	A single spot until October 2 when a small, leading companion develops.
Group 21341	Sept. 30–Oct. 10	One or two intermittent spots.
Group 21342	Sept. 30–Oct. 11	A single spot with variable, following companions which have died out by October 8.

Group 21343	Oct. 3– 8	A single spot which develops rapidly to form two main components with occasional companions.
Group 21344	Oct. 3–10	A single spot with an occasional companion. On October 6, the group develops into a stream, of which only the leader remains by October 9.
Group 21345	Oct. 3– 4	A single spot on October 3; two small spots on October 4.
Group 21346	Oct. 3–14	A single spot until October 6 when the umbra elongates and the spot divides. The follower disintegrates rapidly while the leader continues to the west limb.
Group 21347	Oct. 7– 9	A few widely-scattered spots.
Group 21348	Oct. 8–12	Several spots, the leader of which rapidly develops into a regular spot by October 10, while the following companions develop more slowly.
Group 21349	Oct. 9–13	A single spot with a small, leading companion with maximum area on October 10. The leader disappears on the following day, leaving a small, intermittent spot.
Group 21350	Oct. 9–17	Many scattered spots developing to form a single leader and following spots by October 10, after which rapid growth occurs. While the followers diminish, being only two small spots on October 14, the leader divides.
Group 21351	Oct. 10–20	Initially a single spot with occasional companions. On October 17 several smaller, leading spots appear, but these gradually decay.
Group 21352	Oct. 11–15	Two main spots with associated companions. The leading component gradually fades.
Group 21353	Oct. 13–20	Scattered spots.
Group 21354	Oct. 17–18	One or two scattered spots.
Group 21355	Oct. 18–27	Two spots rapidly developing to form a single leader with complex followers by October 20. The following spots fade out completely by October 27.
Group 21356	Oct. 18–30	A single spot with several following companions which develop into a composite cluster by October 21. The group subsequently elongates into an irregular stream of spots, of which the following components merge to form a single complex structure with various companions by October 28. The leaders also merge to form two smaller components on the same date.
Group 21357	Oct. 19–21	Two spots on October 19; a single spot on the other days.
Group 21358	Oct. 19–23	One or two intermittent spots.
Group 21359	Oct. 19–20	One or two scattered spots.
Group 21360	Oct. 20–28	A single spot.
Group 21361	Oct. 20–30	A few scattered spots until rapid development occurs on October 24 and a composite stream with two main components is formed. The stream extends and the following spots fade to leave a single spot and companion by October 30.
Group 21362	Oct. 21–28	A single spot.
Group 21363	Oct. 22–Nov. 2	A single spot.
Group 21364	Oct. 25–26	Three spots on October 25; a single spot on the following day.

Group 21365	Oct. 25–30	A single spot developing to form a stream comprising two major components with variable companions.
Group 21366	Oct. 26–Nov. 7	A regular spot.
Group 21367	Oct. 27–Nov. 4	Two spots of which the leader has faded by November 1. Companions form around the remaining spot and are enlarging rapidly as they pass round the west limb.
Group 21368	Oct. 27–Nov. 7	A spot with occasional companions until October 30 when two leading components develop, the leader of which fades by November 1. Further companions appear around the follower but decay rapidly, and the remaining spots are widely scattered by November 7.
Group 21369	Oct. 28–Nov. 6	Two spots with multiple companions which extend, by October 30, into a stream. The leader alone remains on November 3.
Group 21370	Oct. 28–Nov. 7	A single spot with an occasional companion, which fades erratically after November 2.
Group 21371	Oct. 28–Nov. 7	A diminishing irregular spot with an occasional companion.
Group 21372	Oct. 29–Nov. 10	A single spot until November 1 when several following companions appear. On November 4 the umbra divides and the spot breaks into two single spots, separated mainly in latitude.
Group 21373	Oct. 30–Nov. 3	A simple stream of which the following spots have disappeared by November 2.
Group 21374	Oct. 30–Nov. 2	A closely-packed cluster of variable spots.
Group 21375	Oct. 30–Nov. 7	Variable scattered spots, not seen on November 5 and 6.
Group 21376	Oct. 30–Nov. 5	A few intermittent spots.
Group 21377	Oct. 31–Nov. 6	One or two intermittent spots.
Group 21378	Nov. 2– 3	Two spots on November 2; a single spot on the following day.
Group 21379	Nov. 2– 4	Scattered spots.
Group 21380	Nov. 2– 6	A single spot becoming a short-lived scattered cluster with maximum area on November 3.
Group 21381	Nov. 2– 7	One or two intermittent spots.
Group 21382	Nov. 3– 4	Compact spots.
Group 21383	Nov. 8–11	A single spot on November 8 and 9, not seen on the following day. Two small, irregular spots are visible on November 11.
Group 21384	Nov. 9–21	A complex spot on the first two days, becoming regular in outline with occasional following companions which develop rapidly on November 16, but fade to leave only the leader on November 20.
Group 21385	Nov. 11–17	A rapidly-developing complex stream.
Group 21386	Nov. 11–22	A single spot with variable companions until November 16 when many scattered spots are seen. Most of these have disappeared by November 19, leaving a single leader with a compact cluster of following spots, all developing rapidly as they near the west limb.
Group 21387	Nov. 12–14	A single spot.

Group 21388	Nov. 13–18	A single leading spot with gradually decaying followers. Not seen on November 16 and 17; a single spot is visible on the following day.
Group 21389	Nov. 13–24	Two spots, with companions appearing on November 16 and decaying by November 21, to leave a single, elongated spot with a double umbra, with companions on November 23.
Group 21390	Nov. 13–25	A large, irregular spot with scattered companions developing after November 15 which become very extensive and gradually fade to leave the original complex structure on November 23.
Group 21391	Nov. 14–17	A single spot on November 14 and 17; two complex components on the other days.
Group 21392	Nov. 15–20	A single spot on November 15 and 19; various scattered spots otherwise.
Group 21393	Nov. 16–20	Variable scattered spots.
Group 21394	Nov. 16–22	Scattered spots developing to form a stream.
Group 21395	Nov. 18–20	Two irregular components with occasional companions, rapidly enlarging in size at the west limb.
Group 21396	Nov. 18–23	Two irregular components with companions, which break up by November 20 and form a stream of irregular spots.
Group 21397	Nov. 18–Dec. 1	A large irregular spot with lower, developing companions which merge into the main spot. On November 23 multiple umbrae are seen, which combine into two main areas, whereupon the spot itself divides and the two resulting components gradually deteriorate.
Group 21398	Nov. 19–Dec. 2	A single spot with occasional leading companions which disappear by November 21. The umbra elongates and divides and two spots are visible on November 27. More companions appear on the following day but disintegration commences on November 30.
Group 21399	Nov. 20–22	Scattered spots on the first two days; a single spot on November 22.
Group 21400	Nov. 22–Dec. 3	At first a single spot. Scattered spots appear on the following day, developing to form a stream by November 25. The followers then disintegrate while companions appear around the leading spot, which breaks up on December 1 leaving two smaller components with a few companions at the west limb.
Group 21401	Nov. 23–25	Scattered spots.
Group 21402	Nov. 23–Dec. 2	A single spot, with leading companions which have disappeared by November 29. On December 2 several, more northerly companions are visible.
Group 21403	Nov. 23–29	Scattered spots on all days except November 27 when a single spot is visible. Nothing is seen on November 28.
Group 21404	Nov. 24–Dec. 2	Two close, single components rapidly separating and developing to form an elongated stream of complex spots by November 28.
Group 21405	Nov. 25–30	Initially a single spot. A small stream is visible on November 26 after which a massive development occurs.
Group 21406	Nov. 25–Dec. 3	A single spot until November 29 when scattered companions appear.

Group 21407	Nov. 29–Dec. 4	Variable spots until December 2 when two distinct components are visible.
Group 21408	Nov. 29–Dec. 4	A single spot on the first two days; scattered spots thereafter, only one of which remains on December 4.
Group 21409	Nov. 30–Dec. 6	A developing stream until December 2 when the following spots gradually fade, leaving only the original leader on December 5.
Group 21410	Nov. 30–Dec. 2	A single spot until December 2 when a small stream is visible.
Group 21411	Dec. 1–13	Three main components of which one regular spot remains stable while the others break up and fade by December 10.
Group 21412	Dec. 2– 5	Variable scattered spots.
Group 21413	Dec. 3– 5	A single spot on December 3; a scattered stream on December 4, of which only two small spots remain on the following day.
Group 21414	Dec. 3–10	A single, slowly fading spot.
Group 21415	Dec. 4–16	Initially a single spot. Other spots appear and a stream is formed on December 6, of which only the leader remains by December 15.
Group 21416	Dec. 5– 6	Two spots.
Group 21417	Dec. 5–14	A complex cluster until December 7 when a stream is formed, of which only a single leader and follower remain on December 14.
Group 21418	Dec. 5–15	A single spot with intermittent companions.
Group 21419	Dec. 6– 7	Two spots on December 6; a single spot on December 7.
Group 21420	Dec. 6–10	One or two scattered spots.
Group 21421	Dec. 7– 8	Scattered spots on December 7; a single spot on December 8.
Group 21422	Dec. 7–10	A single spot on December 7; two spots on the other days.
Group 21423	Dec. 7–18	A single spot on all days except December 13 when two following companions are visible.
Group 21424	Dec. 8–17	A small stream of spots, the follower being the more prominent of the two main components.
Group 21425	Dec. 10–17	A rapidly-developing composite stream, the leader of which breaks to form two smaller components while the complex follower becomes regular by December 16.
Group 21426	Dec. 10–20	A slowly fading spot with occasional companions.
Group 21427	Dec. 11–14	A single leader and follower with occasional companions.
Group 21428	Dec. 11–17	A single spot on December 11; three spots on December 17. Not visible in between.
Group 21429	Dec. 11–21	Initially a single spot. Following spots develop to form a stream which becomes compact and complex by December 17, after which the followers gradually disintegrate to leave only the original leader on December 21.
Group 21430	Dec. 13–15	Scattered spots which form a simple stream by December 15.
Group 21431	Dec. 13–23	Two spots developing rapidly into a disjointed stream which proceeds to grow into an extensive composite region by December 17. The chains of spots linking leader and follower develop and merge to form four complex structures with multiple companions on December 19.

Group 21432	Dec. 14–19	A rapidly growing stream comprising a single, stable leader with variable following companions.
Group 21433	Dec. 14–20	Intermittent scattered spots until December 17 when a complex stream is formed.
Group 21434	Dec. 14–20	One or two intermittent spots.
Group 21435	Dec. 14–15	Two spots on December 14; a single spot on December 15.
Group 21436	Dec. 14–16	A single spot.
Group 21437	Dec. 15–27	A single spot with scattered companions developing to form two main, leading components by December 18. These break up by December 23, leaving only the original follower on the next day and a few intermittent, small, leading companions.
Group 21438	Dec. 17–18	A single spot.
Group 21439	Dec. 17–29	Initially a single spot, which divides on December 20 when two components, with several lower-latitude companions, are visible. On December 24, only the two main components are seen, the leader of which enlarges on December 28.
Group 21440	Dec. 18–19	A single, variable spot.
Group 21441	Dec. 20–27	A developing and dying stream with maximum area on December 21. The leading spot alone remains on December 27.
Group 21442	Dec. 20–23	A simple degenerating stream until December 23 when a few scattered spots remain.
Group 21443	Dec. 21–29	A single spot on all days except December 27 when a few scattered followers are visible.
Group 21444	Dec. 21–Jan. 2	Two main components with intermediate spots from December 26 which, together with the following component, gradually fade to leave only the leader on January 1.
Group 21445	Dec. 23–25	A single spot, with a small companion on December 25.
Group 21446	Dec. 24–27	Scattered spots.
Group 21447	Dec. 24–26	Intermittent scattered spots.
Group 21448	Dec. 24–Jan. 2	Scattered spots rapidly developing into a composite stream comprising a complex leader and follower and intermediate spots.
Group 21449	Dec. 26–Jan. 5	Multiple scattered spots.
Group 21450	Dec. 26–Jan. 8	Scattered spots rapidly developing, after December 27, into a stream of which the intermediate spots grow and merge to form a composite structure.
Group 21451	Dec. 26–Jan. 6	Two slightly irregular components with occasional companions. After January 1 the following component gradually fades and has disappeared by January 6.
Group 21452	Dec. 28–30	A stream of spots appearing west of the central meridian.
Group 21453	Dec. 28–30	Several scattered spots on December 28; a small, single spot on the other days.
Group 21454	Dec. 29–Jan. 1	A simple stream until January 1 when only the leader remains.
Group 21455	Dec. 29–30	A single spot.
Group 21456	Dec. 29–Jan. 6	A single spot with an intermittent companion until January 5 when the spot disintegrates to leave a smaller spot on the following day.
Group 21457	Dec. 30–Jan. 6	A single spot with occasional companions.

General Catalogue
of
Sunspots
1967

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 Umbrae	Corrected Mean Area Whole Spots	Mean Position Long.	Mean Position Lat.	Reference
	1967	d	1967	°	1967	°			°	°	
20999	Jan. 6.16	11	Jan. 2	-55	Jan. 12	+80	58	319	265.1	-18.8	
21000	2.3	6	3	+15	8	+81	61	253	315.4	+15.1	
1	6.41	8	3	-41	10	+50	19	81	261.7	+16.8	
2	9.47	13	3	-79	15	+76	16	95	221.4	+29.6	
3	9.58	11	5	-54	15	+74	68	436	220.1	+22.3	
4	8.14	9	6	-25	14	+81	44	242	239.0	+13.1	
21005	9.0	3	9	+ 6	11	+31	0	9	227.8	+25.3	
6	11.1	2	9	-21	10	- 9	1	12	200.2	+28.4	
7	14.3	2	9	-64	10	-49	2	12	158.2	+14.7	
8	7.7	3	11	+48	13	+75	5	26	244.6	-30.0	
9	11.62	7	11	- 7	17	+78	32	208	193.2	+14.8	
21010	16.16	12	11	-67	22	+76	81	481	133.3	-23.6	
1	18.08	12	12	-75	23	+71	22	131	108.0	+22.5	
2	22.95	13	16	-83	28	+69	42	249	44.0	+16.3	
3	22.86	8/11	18	-61	28	+72	3	15	45.1	+25.9	
4	24.47	13	18	-80	30	+76	29	179	24.0	+14.7	1961(1)
21015	20.88	7	19	-21	25	+64	16	106	71.3	+11.3	
6	25.44	13	19	-79	31	+80	41	268	11.2	+19.7	
7	23.25	5	20	-39	24	+17	7	39	40.0	-17.2	
8	25.46	12	20	-66	31	+80	24	151	11.0	+15.4	
9	19.2	3	21	+29	23	+56	4	21	93.1	+22.0	
21020	24.98	10	21	-48	30	+70	16	101	17.2	+15.5	
1	26.1	2	21	-62	22	-47	0	10	2.7	-18.9	
2	26.60	12	21	-69	Feb. 1	+73	6	34	355.9	+20.5	
3	27.1	3	21	-73	Jan. 23	-50	0	12	349.0	-30.8	
4	23.88	7	22	-20	28	+58	9	51	31.8	+15.7	
21025	27.5	4	22	-64	25	-28	5	40	343.9	+18.8	
6	29.41	14	22	-84	Feb. 4	+78	76	419	319.0	-22.6	1960(2)
7	22.5	3	25	+40	Jan. 27	+64	0	10	50.6	-16.3	
8	23.8	2	25	+20	26	+37	0	6	33.1	- 6.9	
9	25.3	4	25	+ 1	28	+40	3	15	12.9	+ 1.8	
21030	30.9	5	25	-71	29	-19	2	16	299.4	+15.9	
1	Feb. 1.03	11	26	-73	Feb. 5	+55	34	214	284.4	+19.0	
2	Jan. 23.7	2	27	+46	Jan. 28	+61	0	8	33.7	+27.8	
3	26.8	3	27	+ 6	29	+35	4	25	353.0	-23.2	
4	Feb. 2.31	10	28	-70	Feb. 6	+51	13	62	267.6	+13.9	
21035	3.2	3	29	-61	Jan. 31	-35	4	35	255.8	-26.7	
6	3.6	4/ 6	29	-65	Feb. 3	- 5	4	14	250.2	-21.7	
7	3.94	8	29	-73	5	+17	2	17	246.1	+11.8	
8	4.70	7/ 9	29	-82	6	+19	4	20	236.0	+14.1	
9	6.05	10	31	-72	9	+44	19	93	218.2	+26.3	
21040	6.11	13	31	-74	12	+85	39	194	217.5	-16.4	
1	7.69	13	Feb. 1	-84	13	+74	101	553	196.7	+13.3	
2	5.4	3	2	-39	4	-15	3	11	226.6	-14.7	
3	5.7	3	3	-32	5	- 5	2	21	222.4	+13.8	
4	9.70	12	4	-66	15	+78	49	315	170.3	+18.2	
21045	10.51	9	4	-80	12	+22	17	123	159.5	-26.2	
6	2.0	3	5	+45	7	+72	5	22	271.5	+13.6	
7	6.72	2	6	- 6	7	+11	2	22	209.4	+26.7	
8	12.58	7	7	-66	13	+12	2	27	132.2	+20.7	
9	13.08	7/ 9	7	-72	15	+30	8	44	125.6	+17.8	

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	1967	d	1967	°	1967	°			°	°	
21050	Feb. 13.4	3	Feb. 8	-66	Feb. 10	-39	0	32	121.6	+21.3	
1	14.38	12	8	-80	19	+66	20	109	108.6	+14.6	
2	16.19	10	11	-66	20	+57	7	31	84.9	+12.7	
3	19.82	12	13	-82	24	+58	13	71	37.0	-24.5	
4	20.85	12	15	-71	26	+74	30	178	23.4	+15.8	1961(2)
21055	21.73	12	16	-70	27	+72	20	103	11.9	+18.6	
6	22.20	11	16	-79	26	+60	5	48	5.7	+22.7	
7	21.6	3	17	-54	19	-30	4	29	13.7	+22.2	
8	18.19	7	18	- 1	24	+81	11	76	58.5	+13.8	
9	23.5	3	20	-42	22	-16	8	26	348.4	-26.8	
21060	26.37	12	20	-79	Mar. 3	+64	23	139	310.8	-22.4	
1	27.25	13	21	-76	5	+71	291	1896	299.1	+23.2	1962(1)
2	22.5	2	23	+13	Feb. 24	+24	1	8	2.0	+15.5	
3	25.0	3	26	+19	28	+46	3	14	329.3	+13.9	
4	Mar. 1.04	9	26	-35	Mar. 6	+74	7	35	275.7	-20.0	
21065	1.76	8	26	-43	5	+47	9	41	266.1	-15.6	
6	1.79	10	26	-45	7	+74	68	375	265.7	+15.7	1963(1)
7	3.12	7	26	-62	4	+22	6	29	248.2	-25.6	
8	5.15	15	26	-83	12	+86	74	456	221.4	-21.5	
9	Feb. 22.2	2	27	+68	Feb. 28	+83	6	22	5.7	-25.8	
21070	Mar. 5.4	7	27	-79	Mar. 5	- 2	6	33	218.0	-16.2	
1	Feb. 27.8	6	28	+ 7	5	+72	9	33	291.8	- 9.4	
2	Mar. 5.30	11	28	-65	10	+66	33	175	219.5	+13.4	
3	6.03	11	28	-72	10	+60	6	35	209.9	+11.2	
4	5.8	3	Mar. 1	-58	3	-32	0	7	213.1	-19.1	
21075	5.69	9	2	-40	10	+63	13	67	214.3	+16.9	
6	8.84	12	2	-77	13	+58	31	163	172.8	+22.7	
7	9.63	13	3	-81	15	+77	99	775	162.4	-19.4	
8	8.9	2	4	-55	5	-51	0	7	171.4	+16.4	
9	3.7	4	6	+32	9	+79	5	30	240.1	+17.5	
21080	7.90	6	7	- 4	12	+64	4	17	185.3	+15.9	
1	15.2	4	10	-64	13	-23	3	21	88.9	+27.4	
2	15.5	5	10	-65	14	-16	14	58	84.8	+18.6	
3	18.84	13	12	-84	24	+77	26	162	41.0	-16.4	
4	15.82	8	13	-33	20	+62	16	76	80.9	+27.6	
21085	19.86	3/ 7	15	-57	21	+21	1	6	27.5	+16.7	
6	21.50	12	15	-76	26	+65	32	170	6.0	+23.6	
7	15.3	3	16	+14	18	+42	1	20	87.7	+26.9	
8	22.34	13	16	-79	28	+79	26	168	354.8	+17.5	
9	18.53	7/ 8	17	-14	24	+81	3	18	45.2	+17.5	
21090	23.17	11	17	-75	27	+58	21	79	343.9	+17.0	
1	23.4	4	20	-38	23	- 2	5	34	341.4	+20.9	
2	23.22	3/ 5	20	-39	24	+16	1	6	343.3	-20.3	
3	26.1	2	20	-77	21	-59	0	17	305.7	+16.2	
4	26.36	13	20	-78	Apr. 1	+77	122	628	301.8	+22.4	1962(2)
21095	27.38	13	21	-78	2	+74	101	737	288.5	+20.4	
6	27.4	6	21	-79	Mar. 26	-14	17	112	287.8	+25.8	
7	23.79	7	22	-19	28	+61	13	37	335.8	+13.8	
8	29.00	8	23	-73	30	+18	20	106	267.0	+15.0	1963(2)
9	23.4	6	24	+13	29	+75	31	133	340.7	+25.2	1964(1)

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	1967	d	1967	°	1967	°			°	°	
21100	Mar. 26.3	2	Mar. 24	-23	Mar. 25	-13	4	31	302.3	+14.9	
1	28.5	4	24	-54	27	-12	9	29	273.8	+22.9	
2	25.56	2	25	- 1	26	+11	5	27	312.3	-23.5	
3	31.61	10	25	-82	Apr. 3	+39	32	196	232.6	-19.3	
4	26.71	8	26	- 4	2	+79	82	461	297.3	-22.3	1965(1)
21105	28.3	6	28	+ 1	2	+67	10	35	276.8	+16.8	
6	29.41	2	29	- 1	Mar. 30	+12	2	25	261.7	+16.7	
7	Apr. 3.6	5	29	-67	Apr. 2	-19	11	38	193.5	+26.4	
8	3.86	11/12	29	-74	9	+66	4	22	189.8	+16.1	
9	4.5	3	30	-67	1	-42	6	27	181.9	+16.6	
21110	5.13	9/10	30	-75	8	+40	6	36	172.9	+22.6	
1	Mar. 27.9	2	31	+46	1	+60	9	35	282.2	+28.8	
2	Apr. 5.6	4	31	-69	3	-30	3	18	167.0	+26.5	
3	1.47	2/ 3	Apr. 1	- 2	3	+25	0	7	221.3	-22.5	
4	6.5	2	2	-56	3	-41	4	16	155.5	-19.2	
21115	2.6	5	3	+ 9	7	+64	6	30	206.6	+32.3	
6	2.6	2	4	+24	5	+36	6	25	206.5	-20.2	
7	8.32	10	4	-55	13	+69	17	87	130.9	-25.0	
8	9.80	6/10	4	-73	13	+49	6	48	111.3	+10.5	
9	Mar. 31.4	2	5	+65	6	+78	0	24	235.0	-18.2	
21120	Apr. 3.0	3	5	+32	7	+56	6	25	200.8	+35.5	
1	6.42	9	5	-12	13	+87	74	522	156.0	-20.6	1966(1)
2	9.92	10	6	-49	15	+74	41	211	109.8	+22.7	1967(1)
3	8.9	2	7	-21	8	- 8	5	22	122.8	+19.7	
4	11.4	4	7	-55	10	-10	4	21	90.5	+18.0	
21125	5.4	2	8	+39	9	+53	6	35	170.0	-20.4	
6	14.00	9	8	-76	16	+35	11	53	55.8	+13.9	
7	7.9	2	9	+19	10	+36	4	20	137.0	+30.4	
8	10.1	4	13	+44	16	+82	17	93	107.2	+13.0	
9	11.9	2/ 3	13	+20	15	+47	2	13	83.7	+14.3	
21130	19.51	13	13	-77	25	+74	61	348	343.1	+25.2	1964(2)
1	17.82	3/ 4	16	-20	19	+18	2	9	5.4	+24.8	
2	21.45	9	16	-22	24	+83	18	91	317.5	-22.0	
3	13.9	3	17	+45	19	+74	11	62	57.9	+16.7	
4	23.35	13	17	-77	29	+78	33	189	292.4	+23.0	1962(3)
21135	23.36	13	17	-78	29	+76	20	111	292.3	-22.6	1965(2)
6	24.52	10	18	-80	27	+38	7	39	277.0	-14.1	
7	22.90	3	21	-19	23	+ 6	6	29	298.4	-45.4	
8	27.89	11	21	-79	May 1	+40	21	152	232.5	+26.6	
9	24.02	3	22	-22	Apr. 24	+ 5	3	18	283.6	-23.6	
21140	24.13	4	23	-10	26	+32	2	11	282.2	+13.6	
1	25.36	3/ 4	23	-27	26	+18	2	9	265.9	-19.1	
2	19.8	2	24	+61	25	+73	25	161	339.7	-26.9	
3	29.69	11	25	-62	May 5	+83	30	172	208.7	-18.2	1968(1)
4	May 1.60	11	27	-59	7	+76	19	106	183.5	+13.3	
21145	3.71	13	27	-84	9	+76	22	154	155.6	-20.5	1966(2)
6	Apr. 26.9	3	28	+21	Apr. 30	+45	6	39	246.1	+32.4	
7	May 5.8	5	30	-66	May 4	-22	1	17	128.4	+21.3	
8	Apr. 28.5	4	May 1	+37	4	+76	8	57	224.5	-21.6	
9	May 7.37	13	1	-78	13	+78	59	309	107.1	+20.9	1967(2)

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	1967	d	1967	°	1967	°			°	°	
21150	May 1.0	3	May 5	+60	May 7	+80	12	117	191.3	+11.0	
1	5.74	3	5	- 3	7	+22	3	18	128.7	-23.9	
2	1.9	2	6	+59	7	+73	4	29	179.1	-17.7	
3	14.9	3	9	-71	11	-46	4	20	8.2	-24.0	
4	17.85	14	11	-81	24	+82	24	114	328.6	+25.5	1964(3)
21155	15.5	3	12	-38	14	-16	3	17	359.3	-23.9	
6	17.31	9	13	-56	21	+55	8	50	335.7	-15.5	
7	19.33	7/ 8	13	-79	20	+14	4	21	309.1	-14.8	
8	20.6	2	15	-70	16	-56	0	14	292.5	-20.0	
9	21.01	10	15	-76	24	+46	13	73	286.8	-13.8	
21160	18.08	2	17	-10	18	+ 4	0	6	325.5	+13.9	
1	21.54	8	18	-45	25	+53	16	76	279.7	-16.5	
2	24.31	13	18	-79	30	+80	41	233	243.2	+24.9	
3	24.84	13	19	-70	31	+84	76	574	236.1	+23.1	1969(1)
4	25.85	14	19	-79	June 1	+83	178	1289	222.8	+26.9	1970(1)
21165	18.0	5	20	+31	May 24	+84	7	36	325.9	-27.5	
6	26.14	13	20	-76	June 1	+83	41	211	218.9	-17.0	1968(2)
7	27.71	13	21	-82	2	+75	36	186	198.2	+ 9.4	1971(1)
8	21.9	2	23	+19	May 24	+34	2	14	275.6	-18.7	
9	25.60	5	23	-30	27	+25	2	17	226.1	-25.7	
21170	29.76	13	23	-84	June 4	+74	33	200	171.0	+21.5	
1	24.75	2	24	- 6	May 25	+ 8	1	7	237.3	+12.1	
2	26.90	9	24	-34	June 1	+71	34	204	208.8	-21.1	
3	27.64	10	24	-46	2	+78	27	170	199.0	+12.4	
4	29.9	5	24	-76	May 28	-20	6	40	169.0	-21.6	
21175	30.6	6	24	-80	29	-15	9	55	160.3	+26.4	
6	23.7	2	25	+21	26	+36	3	17	251.6	+ 2.9	
7	30.05	9	25	-62	June 2	+42	18	106	167.3	+18.5	
8	24.7	2	26	+22	May 27	+37	8	54	238.4	+29.7	
9	26.42	2	26	- 1	27	+13	2	17	215.2	-27.1	
21180	31.17	3/ 6	26	-65	31	+ 1	0	4	152.4	-26.1	
1	31.2	2	26	-66	27	-47	0	10	152.4	-19.8	
2	June 1.17	13	26	-76	June 7	+80	42	257	139.1	-19.1	
3	2.01	7	27	-75	2	+ 7	3	20	128.0	+19.7	
4	May 30.5	2	28	-28	May 29	-16	0	7	160.8	+17.9	
21185	June 3.32	13	28	-77	June 9	+82	122	672	110.7	+23.7	1967(3)
6	4.20	11	29	-76	8	+52	50	322	99.0	+22.6	
7	May 25.9	2	30	+61	May 31	+71	0	13	221.6	-23.2	
8	June 2.0	2	31	-23	June 1	- 5	2	12	128.7	+12.9	
9	2.1	2	June 4	+29	5	+46	1	7	127.3	-20.0	
21190	8.09	10	4	-48	13	+72	7	45	47.5	+15.1	
1	8.2	4	4	-52	7	-11	5	28	45.9	-12.2	
2	10.0	2	5	-61	6	-46	1	14	22.8	+20.0	
3	4.1	2	8	+55	9	+70	0	16	100.1	+27.3	
4	8.33	2	8	- 1	9	+13	1	5	44.3	-15.8	
21195	9.4	6	10	+10	15	+79	26	127	30.0	-17.2	1972(1)
6	19.9	6	14	-73	19	- 7	6	39	251.4	-19.1	
7	20.94	9	15	-72	23	+32	13	65	237.5	+19.3	
8	21.51	13	15	-78	27	+74	16	91	230.0	+24.8	1969(2)
9	22.3	3	16	-79	18	-50	3	29	219.2	+31.3	1970(2)

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	1967	d	1967	°	1967	°			°	°	
21200	June 22.59	8/ 9	June 16	-80	June 24	+21	7	36	215.7	-19.9	1968(3)
1	22.74	8	16	-81	23	+ 7	17	92	213.8	+25.5	
2	18.47	3/ 6	17	-13	22	+52	2	17	270.1	-14.9	
3	23.83	9	17	-81	25	+20	13	70	199.2	+10.7	1971(2)
4	19.87	8	18	-21	25	+76	8	38	251.6	+15.5	
21205	23.2	4	18	-63	21	-24	4	25	207.7	+25.5	
6	23.44	5/ 6	20	-40	25	+23	1	8	204.4	+31.7	
7	25.69	12	20	-73	July 1	+79	71	424	174.6	+16.7	
8	26.99	12	22	-62	3	+82	47	293	157.3	-23.9	
9	24.6	2	24	0	June 25	+10	4	15	188.8	-28.4	
21210	30.57	13	24	-76	July 6	+74	71	358	109.9	+23.8	1967(4)
1	27.8	4	28	+ 6	1	+49	2	6	146.3	-16.0	
2	28.76	6/ 8	28	- 6	5	+84	7	35	133.8	+15.1	
3	July 4.80	14	28	-85	11	+86	39	225	54.0	+19.8	
4	June 29.0	2/ 3	29	+ 6	1	+32	0	2	130.7	-19.5	
21215	July 2.5	2	29	-39	June 30	-27	3	13	84.2	+12.3	
6	June 26.9	3	30	+47	July 2	+72	4	21	157.8	+32.1	
7	July 5.4	2	30	-66	1	-54	2	17	45.7	+17.4	
8	6.09	9	30	-75	8	+33	14	70	36.9	-15.7	1972(2)
9	4.19	10	July 1	-36	10	+80	40	261	62.0	-22.1	
21220	7.52	8	1	-80	8	+12	8	29	18.1	-21.7	
1	4.55	6	2	-29	7	+37	2	14	57.3	+14.5	
2	5.47	8/10	2	-39	11	+74	1	9	45.1	+12.6	
3	5.29	4	3	-28	6	+16	3	17	47.5	+19.6	
4	9.62	12	3	-84	14	+64	11	55	350.3	+17.8	
21225	9.67	12	4	-69	15	+75	15	97	349.5	+24.2	
6	1.8	2	6	+60	7	+73	2	24	93.5	+25.9	
7	12.17	6	7	-67	12	+ 5	8	36	316.5	+23.3	
8	6.6	3	9	+35	11	+61	1	13	29.5	+ 4.9	
9	15.4	2	10	-66	11	-53	0	8	274.1	+16.0	
21230	15.09	7/ 8	11	-53	18	+43	2	12	277.8	-13.7	
1	8.0	2	12	+56	13	+70	0	20	10.9	-26.5	
2	13.68	7/ 8	12	-17	19	+73	7	43	296.5	+25.4	
3	16.08	7	12	-50	18	+32	4	23	264.7	-20.5	
4	17.35	12	12	-67	23	+77	21	133	247.9	-18.3	1973(1)
21235	20.41	8/ 9	14	-75	22	+18	7	32	207.5	-19.9	
6	20.9	5	15	-75	19	-19	4	25	200.8	+ 8.8	
7	15.5	2	16	+14	17	+24	2	7	272.3	-14.2	
8	18.5	2	17	-14	18	- 2	1	4	233.2	+28.9	
9	22.45	10/11	17	-67	27	+68	15	83	180.5	-29.4	
21240	22.8	2	18	-59	19	-47	0	9	175.3	-11.4	
1	23.9	6	18	-76	23	- 2	20	94	161.2	-22.3	
2	22.34	4	21	-10	24	+24	1	9	181.8	+14.7	
3	24.36	8	21	-41	28	+62	6	34	155.2	- 8.0	
4	28.47	15	21	-85	Aug. 4	+81	202	1597	100.8	+26.6	1967(5)
21245	22.63	3	22	- 3	July 24	+22	2	19	178.1	-23.4	
6	21.6	5	23	+28	27	+77	3	20	192.0	+29.1	
7	29.59	13	23	-76	Aug. 4	+80	149	817	86.0	+14.3	1974(1)
8	24.99	2	24	- 9	July 25	+ 6	1	18	146.8	-17.0	
9	24.0	2/ 3	25	+18	27	+47	0	3	160.4	-21.5	

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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 Umbrae	Corrected Mean Area Whole Spots	Mean Position Long.	Mean Position Lat.	Reference
	1967	d	1967	°	1967	°			°	°	
21250	July 31.94	13	July 25	-87	Aug. 6	+80	36	200	54.9	+11.7	
1	30.78	11	26	-62	5	+78	50	279	70.2	+17.2	
2	Aug. 1.2	2	26	-77	July 27	-60	0	9	52.2	-19.3	
3	1.90	13	26	-85	Aug. 7	+72	38	240	42.1	+19.7	
4	3.0	5	28	-69	1	-22	8	52	27.9	-21.4	
21255	3.08	9	Aug. 1	-23	9	+79	49	286	26.6	-28.9	
6	6.2	2	1	-64	2	-48	0	8	345.2	+31.9	
7	July 29.4	2	2	+55	3	+65	0	11	87.8	+ 9.9	
8	30.2	2	2	+46	3	+55	0	10	78.3	+33.8	
9	Aug. 9.83	14	3	-86	16	+85	76	500	297.4	+20.0	
21260	5.95	8	4	-14	11	+72	2	18	348.6	+17.9	
1	3.9	2	5	+25	6	+36	0	8	16.3	+12.8	
2	11.9	7	5	-79	11	- 5	14	70	270.4	+27.8	
3	12.05	14	5	-81	18	+82	100	509	268.0	-21.8	1975(1)
4	4.4	2	6	+33	7	+37	2	8	8.7	+17.4	
21265	8.43	4/ 6	6	-23	11	+40	2	10	315.8	+18.8	
6	12.0	4	6	-71	9	-32	2	13	269.2	+11.5	
7	13.40	13	7	-80	19	+79	29	168	250.1	-16.9	1973(2)
8	7.6	6	8	+11	13	+77	5	29	326.5	-19.3	
9	12.1	2	8	-45	9	-38	1	7	267.9	-16.9	
21270	9.3	4/ 5	9	0	13	+56	1	14	304.1	+22.5	
1	13.29	3/ 9	9	-54	17	+54	0	3	251.7	-22.1	
2	7.3	3	11	+52	13	+81	73	481	330.1	+24.4	1976(1)
3	12.66	4	11	-17	14	+23	3	18	259.9	-23.7	
4	15.9	2	11	-58	12	-50	3	16	216.7	-20.8	
21275	11.6	2/ 4	13	+23	16	+62	0	4	273.6	+26.5	
6	13.68	7	13	- 4	19	+72	10	56	246.4	+24.8	
7	19.71	14	13	-78	26	+81	97	493	166.8	-30.8	1977(1)
8	15.60	7	15	- 6	21	+78	25	146	221.0	+18.9	
9	16.87	8	16	- 8	23	+81	63	368	204.2	+ 8.8	
21280	13.4	2	17	+52	18	+67	3	26	250.5	+33.0	
1	24.12	6/10	18	-76	27	+42	2	16	108.5	-30.9	
2	14.8	3	19	+61	21	+85	2	28	231.4	+11.7	
3	24.99	12	19	-71	30	+71	7	66	96.9	+24.8	
4	24.87	10	19	-73	28	+49	4	25	98.6	+13.3	
21285	25.75	14	19	-81	Sept. 1	+81	129	995	87.0	+23.5	1967(6)
6	25.43	6/ 8	20	-67	Aug. 27	+24	1	8	91.2	+16.5	
7	26.28	13	20	-77	Sept. 1	+77	16	107	79.9	+13.0	1974(2)
8	26.02	8	20	-77	Aug. 27	+17	5	40	83.4	+30.1	
9	27.04	11	20	-83	30	+44	15	82	69.9	+14.6	
21290	26.05	10	23	-31	Sept. 1	+81	32	199	83.0	-20.6	
1	28.26	3/ 6	23	-66	Aug. 28	+ 2	0	3	53.7	+16.8	
2	20.5	2	24	+50	25	+64	2	18	155.7	+11.0	
3	26.53	2/ 5	26	- 2	30	+51	0	5	76.5	+33.3	
4	31.0	2	26	-61	27	-47	1	14	17.7	-32.2	
21295	23.5	3	27	+50	29	+76	7	30	116.9	+24.2	
6	Sept. 2.1	3	27	-76	29	-49	3	15	349.9	+16.3	
7	Aug. 31.06	4	28	-33	31	+ 3	3	22	16.8	-22.2	
8	Sept. 3.14	12	28	-73	Sept. 8	+65	19	97	336.1	-28.5	
9	4.04	14	28	-84	10	+80	48	317	324.2	+26.7	1976(2)

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	1967	d	1967	°	1967	°			°	°	
21300	Aug. 29.70	7	Aug. 29	- 6	Sept. 4	+76	15	97	34.7	-19.4	
1	Sept. 1.9	3	29	-46	Aug. 31	-22	12	48	352.1	-27.3	
2	Aug. 25.9	2	30	+58	31	+74	0	25	85.2	+13.8	
3	Sept. 4.5	3	30	-68	Sept. 1	-38	0	20	318.8	+30.6	
4	5.84	11	30	-84	9	+40	17	90	300.5	+14.5	
21305	Aug. 29.6	2	31	+22	1	+38	5	19	35.8	+26.8	
6	Sept. 3.60	10	31	-46	9	+75	22	105	330.0	-19.8	
7	5.76	8	31	-71	7	+18	5	26	301.5	+21.7	
8	6.40	9	31	-81	8	+25	18	123	293.1	+14.3	
9	Aug. 31.4	2	Sept. 1	+14	2	+27	1	7	12.5	-32.2	
21310	Sept. 3.3	2	1	-25	2	-10	0	4	334.4	-14.2	
1	6.78	12	1	-68	12	+73	11	59	288.0	-21.9	
2	8.77	13	2	-81	14	+71	13	71	261.7	-22.1	1975(2)
3	Aug. 31.7	3	4	+46	6	+77	5	42	8.9	-28.8	
4	Sept. 4.69	2	4	- 5	5	+ 9	2	6	315.6	+32.2	
21315	8.00	10/11	4	-48	14	+81	27	173	271.8	+24.7	
6	6.8	2	5	-19	6	- 6	1	9	287.3	-13.5	
7	11.26	12	5	-78	16	+65	22	141	228.9	-20.3	
8	11.5	3	5	-82	7	-52	10	44	225.0	+ 6.6	
9	12.00	7	6	-73	12	+ 6	7	36	219.1	-22.3	
21320	5.0	2	7	+35	8	+44	5	22	311.2	+21.3	
1	14.25	13	8	-78	20	+81	60	355	189.4	+11.8	
2	17.51	13	11	-78	23	+72	16	101	146.3	-29.5	1977(2)
3	8.8	2	12	+47	13	+58	0	8	260.9	+13.4	
4	19.51	10	16	-42	25	+75	49	283	120.0	-23.6	1978(1)
21325	13.4	2	18	+66	19	+79	5	34	200.6	+20.3	
6	17.6	3	20	+38	22	+62	11	60	145.7	+10.1	
7	21.18	6	20	- 9	25	+57	2	19	97.9	+26.8	
8	21.60	3	20	-16	22	+ 9	1	8	92.3	+24.1	
9	21.73	9	20	-18	28	+88	22	135	91.3	+16.1	
21330	22.30	3	20	-26	22	+ 2	4	26	83.2	+24.0	
1	17.4	3	21	+51	23	+77	4	41	147.7	+16.8	
2	20.3	2	21	+15	22	+27	3	22	110.0	+12.2	
3	21.75	2	21	- 3	22	+ 6	3	18	90.4	-20.9	
4	22.6	4	23	+ 9	26	+52	3	17	79.8	+14.5	
21335	29.78	8/11	25	-60	Oct. 5	+75	28	146	344.3	+14.1	
6	Oct. 1.12	13	25	-77	7	+84	49	282	326.7	+11.4	1979(1)
7	2.00	13	25	-83	7	+75	9	59	315.1	+21.1	
8	Sept. 26.7	5	28	+22	2	+76	5	33	25.0	+10.4	1980(1)
9	Oct. 3.75	12	28	-73	9	+74	42	254	292.0	-15.6	
21340	Sept. 27.5	4	30	+39	3	+80	6	40	14.5	-20.2	
1	Oct. 6.16	4/11	30	-74	10	+61	2	8	260.1	+23.5	
2	6.27	12	30	-79	11	+74	20	119	258.8	-17.9	1981(1)
3	2.1	6	Oct. 3	+16	8	+79	20	107	313.6	-18.8	
4	8.44	8	3	-68	10	+33	5	26	230.1	+12.1	
21345	8.9	2	3	-72	4	-59	0	8	223.9	+25.1	
6	8.90	12	3	-72	14	+71	20	110	224.0	-25.6	
7	4.5	3	7	+36	9	+68	3	23	282.6	-26.7	
8	5.9	5	8	+29	12	+81	68	328	263.2	+13.2	1982(1)
9	9.80	4/ 5	9	- 4	13	+45	3	19	212.1	+19.4	

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	1967	d	1967	°	1967	°			°	°	
21350	Oct. 10.99	9	Oct. 9	-22	Oct. 17	+84	43	299	196.5	+16.0	
1	16.71	11	10	-77	20	+49	19	95	121.1	-24.3	1978(2)
2	9.3	5	11	+34	15	+78	22	125	218.7	+17.4	
3	17.92	6/ 8	13	-60	20	+32	1	10	105.0	-16.4	
4	19.9	2	17	-32	18	-21	2	14	78.5	+14.1	
21355	21.83	10	18	-48	27	+74	39	214	53.5	+16.8	
6	23.72	13	18	-74	30	+84	84	598	28.5	+10.3	1980(2)
7	18.3	3	19	+12	21	+42	1	9	99.7	+16.5	
8	19.0	2/ 5	19	+ 5	23	+56	0	4	90.2	+15.7	
9	19.47	2	19	- 1	20	+11	2	13	84.6	+20.0	
21360	25.30	9	20	-70	28	+43	6	24	7.8	+11.2	
1	26.43	11	20	-81	30	+57	14	98	352.8	+19.7	
2	27.22	8	21	-76	28	+13	15	87	342.4	+21.6	
3	28.15	12	22	-75	Nov. 2	+69	15	86	330.2	+11.3	1979(2)
4	21.1	2	25	+55	Oct. 26	+70	4	23	63.0	+14.3	
21365	30.22	6	25	-64	30	+ 2	11	67	302.8	+20.3	
6	Nov. 1.71	13	26	-84	Nov. 7	+75	54	277	270.0	+14.6	1982(2)
7	Oct. 28.94	9	27	-21	4	+84	26	170	319.8	+18.7	1983(1)
8	Nov. 2.19	12	27	-80	7	+69	28	172	263.6	-17.9	1981(2)
9	1.00	10	28	-50	6	+73	14	77	279.3	-26.5	
21370	3.12	11	28	-76	7	+56	15	82	251.4	+18.0	
1	3.48	11	28	-80	7	+54	14	88	246.6	-20.9	
2	4.41	13	29	-77	10	+76	47	254	234.4	-21.0	
3	Oct. 29.2	5	30	+13	3	+69	7	39	316.3	+20.6	
4	Nov. 2.34	4	30	-39	2	+ 1	2	20	261.7	+13.8	
21375	2.70	7/ 9	30	-43	7	+59	5	32	257.0	-18.9	
6	3.54	5/ 7	30	-54	5	+24	1	8	245.9	+18.5	
7	4.82	4/ 7	31	-61	6	+22	1	11	229.0	-20.4	
8	Oct. 28.6	2	Nov. 2	+63	3	+76	3	29	323.8	-17.8	
9	30.2	3	2	+43	4	+67	4	25	303.5	-12.4	
21380	Nov. 2.2	5	2	+ 4	6	+51	6	29	263.5	-27.2	
1	4.01	4/ 6	2	-22	7	+47	2	9	239.7	-22.6	
2	Oct. 30.4	2	3	+52	4	+65	2	18	300.4	+22.4	
3	Nov. 8.3	3/ 4	8	+ 2	11	+42	1	5	183.5	+13.1	
4	15.29	13	9	-79	21	+82	33	192	91.0	+14.9	1984(1)
21385	11.2	7	11	+ 1	17	+79	42	268	144.3	+12.0	
6	16.54	12	11	-70	22	+82	21	136	74.4	+11.4	1985(1)
7	18.3	3	12	-80	14	-52	7	46	51.1	+16.8	
8	14.41	4/ 6	13	-16	18	+54	4	26	102.6	-20.8	
9	18.93	12	13	-74	24	+74	36	234	42.9	+ 8.8	
21390	19.40	13	13	-81	25	+80	98	560	36.8	+10.7	1980(3)
1	13.1	4	14	+16	17	+58	12	65	120.3	-14.2	
2	18.75	6	15	-43	20	+23	4	20	45.3	+19.0	
3	14.6	5	16	+25	20	+78	7	45	100.7	+16.3	
4	20.38	7	16	-51	22	+24	9	57	23.9	+19.1	
21395	14.7	3	18	+47	20	+78	19	124	98.4	-23.1	1986(1)
6	21.69	6	18	-43	23	+23	9	50	6.6	+18.8	
7	24.95	14	18	-85	Dec. 1	+82	84	537	323.7	+20.5	
8	25.64	14	19	-82	2	+81	44	288	314.5	+19.3	1983(2)
9	19.3	3	20	+16	Nov. 22	+43	5	25	38.8	-15.3	

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	1967	d	1967	°	1967/8	°			°	°	
21400	Nov. 28.13	12	Nov. 22	-72	Dec. 3	+75	26	189	281.7	-18.7	
1	26.3	3	23	-38	Nov. 25	-13	3	23	305.4	+10.7	
2	28.92	10	23	-73	Dec. 2	+46	14	83	271.3	+12.6	1982(3)
3	29.3	6/ 7	23	-77	Nov. 29	- 2	3	21	266.5	-25.1	
4	25.84	9	24	-18	Dec. 2	+83	70	491	311.9	-28.1	1987(1)
21405	24.1	6	25	+17	Nov. 30	+77	77	495	335.2	+24.3	1988(1)
6	Dec. 1.82	9	25	-83	Dec. 3	+20	9	53	233.0	-26.3	
7	Nov. 29.1	6	29	+ 1	4	+73	8	68	269.1	+20.5	
8	Dec. 3.70	6	29	-59	4	+12	3	14	208.2	+ 8.7	
9	Nov. 30.48	7	30	- 3	6	+80	16	115	250.8	-20.6	1989(1)
21410	Dec. 4.7	3	30	-55	2	-31	2	15	195.0	-13.5	
1	7.52	13	Dec. 1	-81	13	+80	29	186	158.0	+10.5	
2	4.75	4	2	-32	5	+ 9	4	25	194.5	+25.8	
3	Nov. 30.7	3	3	+35	5	+65	9	63	248.0	-15.0	
4	Dec. 8.69	8	3	-68	10	+22	7	37	142.5	+11.9	
21415	10.30	13	4	-77	16	+81	25	218	121.3	-16.3	
6	8.8	2	5	-45	6	-33	2	8	140.7	-23.1	
7	9.51	10	5	-54	14	+66	19	162	131.8	+23.8	
8	11.99	11	5	-83	15	+43	8	61	99.0	-23.5	1986(2)
9	3.4	2	6	+38	7	+57	3	22	212.8	-29.3	
21420	12.3	5	6	-81	10	-28	4	26	94.5	+16.0	1984(2)
1	6.2	2	7	+18	8	+28	2	25	175.2	+10.9	
2	10.5	4	7	-39	10	- 2	4	25	118.0	+19.2	
3	13.01	12	7	-72	18	+72	15	91	85.6	+ 9.0	1985(2)
4	12.38	10	8	-53	17	+67	10	65	94.0	-17.1	
21425	11.19	8	10	-10	17	+76	60	424	109.7	-25.4	
6	16.55	11	10	-81	20	+51	11	61	39.0	+ 9.3	1980(4)
7	8.3	4	11	+43	14	+78	18	115	147.5	+13.4	
8	14.11	2/ 7	11	-34	17	+44	0	6	71.1	+19.3	
9	16.64	11	11	-70	21	+67	20	129	37.8	+20.3	
21430	11.2	3	13	+33	15	+53	6	40	109.5	+20.0	
1	17.41	11	13	-54	23	+76	156	1183	27.6	+18.3	1990(1)
2	12.6	6	14	+24	19	+84	38	289	91.8	-33.4	
3	14.59	6/ 7	14	- 3	20	+75	32	263	64.9	+25.7	
4	15.55	5/ 7	14	-14	20	+66	1	9	52.3	+11.6	
21435	16.1	2	14	-23	15	-10	3	14	44.8	-16.2	
6	20.3	3	14	-77	16	-52	5	29	350.1	+21.1	
7	21.49	13	15	-80	27	+75	65	433	333.9	+23.0	1988(2)
8	16.5	2	17	+12	18	+27	1	7	40.0	-22.2	
9	23.22	13	17	-73	29	+80	34	218	311.1	-25.1	1987(2)
21440	16.0	2	18	+33	19	+44	3	19	46.3	+16.0	
1	22.04	8	20	-22	27	+72	16	103	326.7	-16.6	
2	22.59	4	20	-28	23	+ 9	2	18	319.4	+22.2	
3	26.77	9	21	-71	29	+34	3	18	264.3	+14.4	
4	27.89	13	21	-83	Jan. 2	+74	63	370	249.6	-22.3	1989(2)
21445	25.26	3	23	-26	Dec. 25	+ 1	4	23	284.3	-19.5	
6	21.0	4	24	+47	27	+81	8	53	341.1	-10.2	
7	25.85	2/ 3	24	-17	26	+ 8	1	8	276.5	-21.2	
8	27.37	10	24	-37	Jan. 2	+80	136	974	256.5	-15.8	1991(1)
9	31.33	11	26	-67	5	+69	11	82	204.2	-16.2	

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 Umbrae	Corrected Mean Area Whole Spots	Mean Position Long.	Mean Position Lat.	Reference
	1967/8	d	1967	°	1967/8	°			°	°	
21450	Jan. 1.13	14	Dec. 26	-73	Jan. 8	+85	47	397	193.7	-27.3	
1	Dec. 31.83	12	26	-74	6	+75	43	274	197.7	-12.9	1992(1)
2	24.6	3	28	+53	Dec. 30	+73	19	113	293.0	-19.1	
3	25.5	3	28	+40	30	+63	3	29	281.5	-19.3	
4	28.2	4	29	+15	Jan. 1	+60	6	39	245.1	-14.4	
21455	29.80	2	29	- 3	Dec. 30	+ 5	2	10	224.5	+ 9.6	
6	Jan. 4.28	9	29	-76	Jan. 6	+25	6	37	152.2	-29.2	
7	5.48	8	30	-82	6	+13	6	37	136.4	-15.9	

Sunspots
seen on one day only
1967

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.
	1967	°	1967			°	°
1516 03	Jan. 4	-34.4	Jan. 7.2	5	22	251.1	+28.9
04	8	+17.7	7.1	5	46	252.7	+21.9
05	8	+12.9	7.5	1	11	248.0	+11.5
06	9	+60.1	4.9	2	19	281.5	+15.3
07	9	+ 9.8	8.7	4	23	231.2	-23.0
08	12	+17.5	11.1	0	8	199.5	+21.9
09	12	+ 7.6	11.9	0	5	189.6	+19.6
10	14	-48.8	18.2	0	9	107.0	-29.6
11	18	+10.7	17.5	0	5	115.7	+19.8
12	19	-63.0	24.2	0	18	27.4	+27.7
13	22	+62.1	17.8	0	23	112.5	+14.9
14	24	+25.3	22.5	0	10	49.9	+15.1
15	25	- 4.6	25.8	0	6	5.9	+24.3
1517 01	26	- 3.0	26.6	0	9	355.6	- 7.5
02	28	+39.6	25.3	0	5	13.4	+32.5
03	Feb. 1	+50.6	28.5	0	12	331.6	+13.7
04	1	-61.7	Feb. 6.0	0	8	219.3	+20.8
05	2	+49.7	Jan. 29.6	0	11	316.8	+16.8
06	4	+30.4	Feb. 2.1	1	12	270.0	-20.8
07	5	+ 0.3	5.4	0	5	227.1	-30.9
08	7	+48.4	3.9	0	12	246.4	+11.5
09	7	-63.0	12.4	2	14	134.9	-22.7
10	8	- 6.3	8.9	0	2	180.8	+19.9
11	8	-19.4	9.9	0	5	167.7	+13.7
12	11	+40.2	8.4	0	8	187.7	+17.9
13	14	+10.5	13.6	1	6	118.6	+17.9
14	14	- 7.5	15.0	1	8	100.7	+15.3
15	14	-51.9	18.3	0	8	56.3	+18.4
16	17	+56.5	13.2	0	12	124.0	-28.5
17	18	+74.7	12.6	0	7	131.7	[illegible]
18	20	-22.1	22.0	0	5	8.7	+16.2
19	21	+ 0.3	21.4	1	28	16.8	+13.3
20	22	+32.8	19.8	5	23	37.2	-18.3
1518 01	26	+ 9.0	25.8	1	12	318.2	+11.0
02	27	-26.1	Mar. 1.3	3	12	271.6	+18.7
03	28	-33.7	2.9	0	11	250.5	+24.4
04	Mar. 3	-30.2	5.7	2	19	214.7	-45.6
05	3	-35.4	6.1	0	7	209.5	+30.2
06	7	+38.9	4.4	0	5	231.9	- 2.7
07	8	+35.2	5.7	2	14	214.4	+30.7
08	11	+ 2.7	11.1	2	12	142.5	-15.8
09	12	+18.6	11.0	2	18	144.6	-20.8
10	12	-22.1	14.1	2	17	103.9	-25.3
11	15	-61.1	20.2	0	13	23.1	-19.7
12	18	+71.4	13.0	9	88	118.0	+21.4
13	18	-51.4	22.3	0	18	355.2	-24.9
14	20	+62.3	15.6	0	23	83.4	+10.7
15	20	+ 5.2	20.0	2	7	26.4	+ 6.4
16	21	+63.2	16.7	6	45	69.5	+21.3
1519 01	23	+14.5	22.2	1	12	356.7	+24.7
02	24	-51.0	28.2	4	11	277.0	-17.5
03	28	+38.2	25.4	2	13	314.1	+19.9
04	29	+24.1	27.5	1	6	286.9	-25.9
05	29	+ 9.6	28.6	2	7	272.4	-17.6
06	29	-12.7	30.3	2	14	250.1	-16.0
07	31	-27.4	Apr. 2.4	2	7	208.8	+33.1
08	Apr. 6	-37.7	9.2	0	7	119.2	+23.9

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.
	1967	°	1967			°	°
1519 09	Apr. 6	-42.6	Apr. 9.6	6	34	114.2	-22.5
10	7	+73.0	1.8	4	29	216.5	-23.8
11	7	- 7.3	7.9	4	15	136.2	-31.4
12	8	+44.2	5.0	0	3	175.3	+18.0
13	9	+10.7	8.5	0	15	128.3	+35.4
14	13	+56.3	9.2	0	19	119.1	+24.5
15	17	+14.8	16.2	2	21	26.5	- 8.5
1520 01	19	-30.1	21.6	6	23	315.2	+19.2
02	19	-43.9	22.7	0	13	301.4	-27.6
03	22	+30.4	20.0	0	9	336.6	+28.4
04	24	-19.2	25.8	0	10	259.8	-25.0
05	25	+13.2	24.3	1	15	279.7	-28.8
06	26	- 2.8	26.5	2	18	250.2	-25.4
07	26	-62.5	May 1.1	2	10	190.5	-20.4
08	27	-15.5	Apr. 28.6	0	12	223.4	+20.1
09	May 3	+40.0	30.3	2	15	200.6	+12.5
10	4	-37.0	May 7.1	0	14	110.6	+34.5
11	5	+68.3	Apr. 30.3	0	13	200.1	+19.1
12	8	-61.2	May 13.0	0	5	32.8	-21.2
13	9	-54.7	13.6	0	19	25.3	-26.1
1521 01	17	+26.5	15.4	3	17	0.8	+23.8
02	19	- 1.0	19.4	0	7	307.7	+13.2
03	24	-50.3	28.1	0	12	192.7	+19.8
04	25	-40.5	28.4	0	5	189.3	+17.5
05	26	-36.2	29.1	3	15	180.3	-18.0
06	26	-61.8	31.0	0	21	154.6	+21.1
07	27	-34.9	30.1	0	9	166.6	-17.7
08	28	-17.0	29.7	1	7	171.4	-17.0
09	29	+50.6	25.5	0	16	226.9	-26.5
10	31	+35.8	28.6	3	23	186.2	+ 7.7
11	31	+ 8.5	30.7	5	25	158.8	+27.0
12	June 3	+13.3	June 2.4	0	9	122.7	+22.5
13	5	-54.0	9.6	0	14	28.2	-18.4
14	6	+54.7	2.2	0	22	125.3	+34.6
15	8	+46.1	4.8	2	14	90.6	+16.1
16	8	+11.1	7.5	1	12	55.6	-16.6
17	9	+54.3	5.2	2	18	85.5	+16.0
18	9	+ 9.7	8.6	2	11	40.9	+ 9.9
19	9	- 8.4	10.0	1	9	22.8	-17.3
20	10	+ 5.1	10.0	5	33	22.9	-23.9
21	11	- 8.6	11.9	2	21	356.8	+ 8.9
1522 01	12	-41.3	15.7	0	6	307.6	+19.8
02	16	-53.3	20.4	0	9	245.0	+31.7
03	20	-48.4	24.0	2	18	197.4	+20.9
04	23	+59.1	18.9	4	26	264.4	+13.8
05	24	+ 6.2	24.2	0	7	193.9	+14.0
06	24	-21.6	26.3	5	29	166.1	+23.5
07	25	+29.9	23.1	3	14	209.0	-22.0
08	25	- 5.8	25.8	2	18	173.3	-18.5
09	26	+36.7	23.6	3	14	202.6	+20.2
10	27	+ 6.2	26.8	1	7	159.2	+ 4.7
11	28	-68.2	July 3.5	0	7	71.2	+27.6
12	July 5	+ 0.8	5.3	0	4	47.9	-11.9
13	5	- 5.1	5.7	6	20	41.9	+11.3
14	6	-54.6	10.5	0	4	338.9	+20.2
15	8	-22.2	10.3	0	4	341.8	+18.6
1523 01	10	+45.9	6.9	0	7	26.3	-20.8

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.
	1967	°	1967			°	°
1523 02	July 10	-78.5	July 16.3	0	15	261.8	-22.5
03	11	-27.0	13.4	0	3	300.6	+19.4
04	16	-64.2	21.4	0	3	194.2	+19.0
05	18	-61.0	23.0	0	6	173.7	-32.1
06	19	-53.3	23.4	5	23	168.4	+40.5
07	20	-51.2	24.2	0	12	157.2	-14.5
08	21	+64.2	16.5	0	21	258.6	+18.7
09	21	+45.8	17.9	0	15	240.1	-40.1
10	21	+ 2.5	21.2	0	3	196.8	+10.9
11	21	-14.2	22.5	0	4	180.1	+19.6
12	22	- 0.6	22.3	0	7	181.8	- 5.2
13	23	+52.9	19.5	0	10	218.9	+24.2
14	23	+51.7	19.6	0	4	217.7	+16.4
15	23	+40.3	20.5	0	7	206.3	-21.2
16	23	+20.4	22.0	1	8	186.4	+29.2
17	24	+61.5	19.7	0	14	216.8	+16.5
18	24	+60.0	19.8	0	14	215.3	+28.9
19	24	+54.6	20.2	0	12	209.9	-28.6
20	26	+64.3	21.5	0	26	192.3	+13.2
21	26	-49.7	30.2	0	11	78.3	+28.9
22	27	+70.2	22.2	0	7	183.9	-10.2
23	27	+27.1	25.4	0	5	140.7	+ 1.7
24	27	-43.4	30.8	0	3	70.3	+27.9
25	28	+77.1	22.9	0	15	174.3	-28.0
26	28	+48.7	25.1	0	4	145.9	-16.6
27	Aug. 1	+ 6.1	31.9	0	4	55.9	+22.4
28	1	-66.6	Aug. 6.4	0	6	343.2	- 1.7
29	2	+35.6	July 30.9	2	10	68.2	-21.8
30	2	+ 6.1	Aug. 2.2	0	3	38.7	+ 9.1
31	2	-22.4	4.3	1	8	10.2	+16.9
32	2	-68.7	7.8	0	11	324.0	-19.9
33	3	+43.0	July 31.1	0	19	66.2	-27.8
34	3	+ 6.1	Aug. 2.9	0	10	29.3	-22.2
35	3	- 4.9	3.7	0	8	18.3	-21.9
1524 01	5	+69.5	July 31.3	0	25	63.0	+22.4
02	5	+57.4	Aug. 1.2	0	29	50.9	+16.6
03	5	+56.8	1.3	0	21	50.3	+24.9
04	5	- 8.8	6.2	0	9	344.7	+ 0.8
05	5	-38.2	8.5	0	2	315.4	-14.3
06	7	-38.9	10.3	0	7	291.3	+38.0
07	7	-68.4	12.5	0	12	261.8	+29.6
08	8	-37.1	11.3	0	9	278.2	+30.9
09	8	-42.4	11.7	0	8	273.0	+45.7
10	10	-49.8	14.1	2	12	241.2	-19.4
11	11	-10.5	12.1	2	12	266.9	+10.3
12	11	-20.7	12.9	1	11	256.6	-18.0
13	14	+63.5	9.7	0	12	298.8	+14.4
14	16	-49.7	20.1	0	4	161.6	+31.3
15	17	+ 0.1	17.3	0	7	198.4	+19.3
16	18	+60.7	13.9	0	17	244.0	-23.0
17	18	+14.5	17.3	1	7	197.9	-30.4
18	18	-32.2	20.9	0	6	151.1	+38.9
19	20	-45.9	23.8	0	13	112.6	+10.0
20	20	-60.9	24.9	0	4	97.6	+ 7.7
21	21	+55.7	17.1	0	12	200.7	-34.0
22	21	-62.2	26.1	0	19	82.7	+18.6
23	22	+79.6	16.3	0	22	211.6	+20.2
24	22	+ 5.2	21.9	2	14	137.3	+12.7
25	23	+66.2	18.3	0	8	184.9	+15.0

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.
	1967	°	1967			°	°
1524 26	Aug. 23	+31.7	Aug. 21.0	0	3	150.3	-24.4
27	23	- 9.2	24.0	0	5	109.5	-18.8
28	26	+27.1	24.3	0	9	105.7	+12.3
29	26	+12.9	25.4	10	78	91.4	+31.1
30	26	-34.4	29.0	3	18	44.1	+16.7
31	27	-37.6	30.2	0	3	28.0	+36.1
32	28	+18.1	27.1	0	4	69.2	+24.7
33	28	+15.7	27.3	0	2	66.8	+19.4
34	28	+13.0	27.5	0	7	64.1	+36.1
35	28	+ 2.9	28.2	0	10	54.0	- 1.2
36	28	- 2.1	28.6	1	12	49.0	+23.3
37	28	-21.7	30.1	2	17	29.4	+ 5.9
38	28	-49.6	Sept. 1.2	0	11	1.5	+20.6
39	29	+ 3.7	Aug. 29.0	1	10	43.4	+25.1
40	29	- 2.9	29.6	1	5	36.7	+19.1
41	29	- 7.6	29.9	0	5	32.1	+ 0.5
42	29	-67.7	Sept. 3.5	0	12	332.0	+18.6
43	30	+45.9	Aug. 26.9	0	13	71.9	+22.9
44	30	-65.3	Sept. 4.3	3	24	320.7	+21.0
45	31	+27.3	Aug. 29.3	3	18	40.3	-16.4
46	31	+17.7	30.0	0	4	30.7	-13.5
47	31	-14.0	Sept. 1.4	0	14	359.0	-28.6
48	31	-31.0	2.7	2	16	342.0	-23.6
1525 01	Sept. 1	+64.8	Aug. 27.5	3	15	63.4	+15.6
02	2	+84.5	27.0	0	19	69.9	+11.4
03	2	+76.1	27.7	0	17	61.5	+21.7
04	4	+71.7	29.9	0	14	32.0	+ 8.3
05	5	-18.0	Sept. 6.7	1	5	288.4	+20.9
06	6	+33.2	3.8	0	6	326.8	+33.0
07	6	-51.5	10.3	4	11	242.1	+28.2
08	7	+65.9	2.6	0	11	342.7	+18.9
09	7	+ 4.9	7.2	0	9	281.8	+16.3
10	7	-25.0	9.5	1	11	251.9	-12.0
11	8	+50.2	4.5	2	18	317.6	+ 5.9
12	8	+28.5	6.2	3	11	295.9	+29.9
13	8	+18.5	6.9	2	10	285.9	+ 9.4
14	8	-14.9	9.5	4	17	252.5	-20.6
15	8	-56.8	12.6	4	20	210.6	+ 9.7
16	9	+53.7	5.5	4	15	305.1	+13.0
17	9	+51.2	5.7	4	32	302.6	+19.0
18	9	+43.7	6.2	0	15	295.1	-23.4
19	9	+16.0	8.3	1	13	267.4	-18.2
20	9	-52.9	13.6	0	7	198.5	+17.1
21	12	+61.0	7.7	5	32	275.8	+16.5
22	12	- 9.9	13.1	2	15	204.9	+10.4
23	12	-40.4	15.4	3	16	174.3	+31.0
24	14	-13.6	15.4	1	7	174.7	+18.4
25	17	+ 8.7	16.7	2	12	157.6	-13.4
26	18	+47.7	14.8	4	43	182.3	-11.4
27	18	+23.0	16.7	1	8	157.7	-20.5
28	19	+12.2	18.4	1	9	134.1	+12.8
29	21	-43.1	24.6	0	9	52.8	+ 8.0
30	26	-52.0	30.3	2	17	337.4	-18.8
31	28	+43.3	25.1	2	8	46.4	+14.6
1526 01	Oct. 4	- 6.8	Oct. 5.0	1	14	275.9	+14.7
02	5	+18.3	4.0	1	15	289.1	-29.5
03	5	-16.6	6.6	1	7	254.1	+27.6
04	6	+62.0	1.8	0	14	318.1	+27.1

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.
	1967	°	1967			°	°
1526 05	Oct. 6	+44.7	Oct. 3.1	0	6	300.8	+22.0
06	9	-14.3	10.5	1	9	202.8	+20.6
07	9	-20.6	11.0	0	5	196.5	+22.2
08	10	+18.5	9.4	0	13	217.6	-18.7
09	13	- 7.7	13.9	2	16	157.6	+10.9
10	14	+ 9.5	13.6	0	2	161.6	+18.2
11	14	-45.0	17.8	2	21	107.1	- 9.6
12	15	+40.2	12.3	0	7	178.9	+13.7
13	15	+ 8.8	14.7	2	16	147.5	+13.0
14	15	+ 6.8	14.9	0	6	145.5	+ 4.2
15	15	-36.1	18.1	1	14	102.6	+13.8
16	15	-38.7	18.3	5	33	100.0	-23.7
17	15	-48.2	19.0	0	5	90.5	+19.3
18	15	-54.8	19.5	0	5	83.9	-23.8
19	17	+43.0	14.2	0	12	153.8	+ 8.6
20	17	+ 0.7	17.4	1	8	111.5	+24.1
21	17	-12.4	18.4	2	10	98.4	+12.1
22	18	+11.4	17.5	2	14	110.7	+20.1
23	18	- 6.0	18.8	2	10	93.3	+ 9.3
24	19	+48.8	15.7	2	23	135.0	-27.0
25	20	+30.9	18.0	3	19	103.9	+21.7
26	20	-24.9	22.2	0	5	48.0	+32.8
27	23	+ 8.7	22.7	2	14	42.0	+12.2
28	23	-25.3	25.3	1	9	8.0	+38.9
29	23	-51.0	27.2	4	18	342.2	+14.6
1527 01	28	+ 7.8	27.7	1	8	336.0	+17.1
02	31	+51.6	27.5	4	16	338.5	-21.7
03	31	-27.6	Nov. 2.5	0	5	259.3	+18.5
04	31	-44.2	3.8	0	10	242.7	+23.1
05	31	-46.3	3.9	0	10	240.7	+ 2.5
06	Nov. 2	+ 6.5	1.9	2	11	267.6	+19.0
07	2	+ 5.2	2.0	0	4	266.3	+10.0
08	4	+38.9	1.4	3	24	274.5	-28.2
09	4	+14.6	3.2	2	10	250.3	-20.4
10	6	-64.6	11.4	6	20	142.6	-18.4
11	7	+54.4	3.3	4	32	249.0	-15.8
12	9	+62.6	4.6	0	5	231.4	+ 9.9
13	9	+ 6.0	8.9	0	3	174.8	+16.9
14	10	+73.2	4.8	22	162	229.3	-25.9
15	16	-45.8	19.9	3	16	30.6	+17.0
16	20	-28.3	22.6	3	11	354.3	-11.0
1528 01	22	+18.4	21.0	2	12	15.4	+10.4
02	23	+11.6	22.6	1	14	355.0	+24.4
03	25	+45.0	21.9	3	30	3.4	+20.2
04	25	+18.0	24.0	2	16	336.3	+15.9
05	26	-69.3	Dec. 1.7	0	12	234.8	+ 8.1
06	28	- 8.3	Nov. 29.2	0	5	267.7	-20.0
07	29	-14.5	30.4	0	8	251.9	+36.7
08	29	-72.0	Dec. 4.8	0	7	194.3	+ 9.2
09	Dec. 4	+30.6	2.2	1	16	228.8	+14.4
10	5	+57.4	1.1	2	22	242.5	+21.7
11	5	+49.1	1.7	2	10	234.3	+17.3
12	5	-53.7	9.5	0	10	131.4	-18.7
13	9	+57.0	5.0	4	26	191.7	+29.1
14	9	-28.5	11.4	0	6	106.2	+18.5
15	9	-48.7	13.0	2	10	86.0	+13.3
16	11	+55.9	7.3	0	10	160.9	+13.6
17	11	+ 0.6	11.5	0	12	105.7	+15.2

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.
	1967	°	1967			°	°
1528 18	Dec. 14	-11.5	Dec. 15.3	1	7	55.4	-23.5
19	17	+29.2	15.2	5	34	56.3	-21.0
20	17	- 9.4	18.2	0	11	17.7	-13.6
21	17	-34.7	20.1	3	8	352.4	+11.8
22	18	- 3.3	18.7	1	4	10.0	+13.3
1529 01	23	+35.2	20.6	8	40	345.1	+13.4
02	24	+10.0	23.8	1	14	303.4	-25.1
03	26	+50.5	22.6	2	20	319.1	+25.8
04	30	+48.9	26.6	4	15	266.8	-34.6

Total Areas
1967

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

Date and Place		Projected Area				Corrected Area			
			Whole Spots	Faculae			Whole Spots	Faculae	
		Umb.		West	East	Umb.		West	East
JANUARY									
1	H	242	1489	1277	1709	172	1008	1534	2242
2	H	470	2492	1386	2478	289	1512	1489	2955
3	H	686	3621	801	1527	428	2350	1180	1892
4	H	879	4506	577	1218	561	2880	739	1444
5	H	742	4263	661	1093	504	2923	796	1236
6	H	766	4597	2900	672	589	3575	2791	767
7	K	545	3207	1037	769	486	2824	1324	949
8	C	355	2429	646	750	314	2068	971	953
9	H	470	2748	1052	1459	303	1781	1090	1617
10	H	463	2742	2303	875	316	1914	2274	1015
11	C	436	2275	1817	824	343	1764	1955	957
12	H	392	2190	2012	638	310	1759	2569	686
13	H	307	2125	1811	260	270	1932	2412	346
14	H	353	2285	953	347	285	1840	1449	438
15	C	357	2149	1317	606	224	1423	1577	791
16	C	276	1826	877	460	170	1223	914	590
17	C	265	1888	504	640	195	1516	556	857
18	C	274	1704	699	951	225	1393	770	1180
19	H	262	1524	1547	1202	211	1376	1744	1578
20	H	298	1671	1124	1729	241	1353	1250	2270
21	H	422	2490	971	2095	323	1824	1143	2489
22	H	375	1866	692	2042	242	1256	987	2251
23	H	305	1961	465	2191	240	1594	623	2677
24	H	305	1940	921	1656	214	1329	975	1827
25	H	355	1987	995	1028	224	1276	1063	1127
26	H	428	2252	1714	922	281	1624	1823	1209
27	C	426	2566	1833	681	292	1795	1913	905
28	C	462	3008	1573	1625	319	2133	2023	1877
29	H	431	2487	1893	2130	330	1930	2193	2598
30	C	444	2263	1510	1604	369	1886	1809	1873
31	H	367	1869	1212	1990	319	1990	1572	2562
FEBRUARY									
1	C	306	1496	765	1522	244	1317	942	1776
2	C	363	1620	1017	1753	323	1463	1204	1910
3	C	352	1718	925	998	296	1422	968	979
4	H	289	1594	1356	1723	246	1539	1569	1950
5	H	381	1896	1455	889	266	1337	1668	975
6	C	306	2023	1247	1374	195	1302	1459	1412
7	H	555	3480	2487	1271	334	2107	2703	1657
8	H	501	2834	2031	1357	290	1704	2207	1589
9	H	459	2747	2155	1155	283	1694	2575	1256
10	H	387	2462	1695	690	264	1616	1904	764
11	H	302	1686	2081	763	234	1290	2283	907
12	H	185	1019	1357	630	161	945	1681	908
13	H	144	1098	1564	696	141	1133	1961	974
14	H	121	612	1470	1230	97	494	1738	1512
15	H	102	699	1438	1437	96	646	1802	1972
16	C	203	901	642	1011	171	804	719	1184
17	H	142	846	1978	1598	109	678	2414	1839
18	C	143	879	928	781	103	616	1095	942
19	C	131	854	354	1067	79	521	421	1085
20	C	143	1123	506	727	98	797	566	891
21	H	163	1143	983	1223	125	1010	1091	1441
22	C	340	1758	445	1051	333	1767	471	1287
23	H	350	2387	1659	1559	296	2095	1950	1722
24	H	416	3020	1913	1465	300	2266	1983	1358
25	H	618	3868	1165	491	398	2518	1281	586
26	H	728	4235	1470	1013	466	2702	1847	1378
27	H	611	4352	1366	1455	399	2749	1698	1819
28	H	707	4925	602	1715	468	3279	1081	2158
MARCH									
1	H	1014	5622	931	2044	677	3755	1158	2261
2	H	1058	5844	1491	1754	760	4217	1504	1884
3	H	874	5011	1217	1163	714	4264	1170	1670
4	H	878	5560	1814	1615	855	5467	2178	1821
5	C	644	4331	1553	1447	512	3516	2000	1429
6	H	507	3821	651	918	361	2651	809	1128
7	C	604	3568	1264	700	410	2451	1457	823
8	H	549	3291	1534	1140	331	1924	1722	1321
9	H	301	2328	1186	484	177	1392	1397	584
10	H	284	2226	1373	670	172	1350	1605	879
11	H	231	1528	1749	968	157	971	2214	1170
12	H	147	876	2357	951	106	729	2699	1120
13	H	115	650	1653	716	100	580	1816	801
14	H	130	564	2248	684	101	454	2588	956
15	H	111	665	1069	1256	116	637	1420	1579
16	H	125	968	1720	1477	112	912	1787	1867
17	H	210	1279	641	1900	177	1054	732	2436
18	H	225	1338	1194	1558	171	1003	1258	1718
19	H	199	995	752	1613	134	641	783	1563
20	H	261	1380	763	1082	255	1326	945	1273
21	H	293	1669	919	1376	268	1608	1081	1946
22	H	460	2148	1462	1584	372	1806	1454	1859
23	C	454	2359	974	1477	342	1826	1048	1568
24	H	626	3009	1911	1278	439	2176	2270	1332
25	H	571	3355	1792	733	390	2322	2123	934
26	H	596	3190	1528	986	386	2077	1714	1331
27	H	563	2909	1417	1046	386	1987	1706	1247
28	H	584	3732	1476	1764	384	2460	1978	1960
29	H	739	3996	535	1037	520	2731	908	1264
30	H	612	3937	956	1028	488	3106	903	1292
31	H	435	3176	1741	1443	427	3134	1894	1620
APRIL									
1	H	215	1410	1983	1303	325	2093	2369	1431
2	C	129	565	1004	745	157	726	1414	858
3	H	57	326	469	513	37	206	601	552
4	H	49	315	557	469	42	290	701	592
5	H	91	546	1665	1093	68	410	1771	1365
6	H	120	769	1287	862	77	526	1556	947
7	H	158	828	1059	457	95	523	1269	492
8	H	271	1584	1211	550	168	976	1538	693
9	C	263	1497	1356	478	174	999	1464	683
10	H	239	1385	1153	998	182	1104	1302	1012
11	C	236	1345	945	695	204	1240	1185	752
12	H	152	1038	1473	359	171	1405	1666	418
13	H	148	685	908	998	193	987	1149	1284
14	H	159	857	1065	1177	192	1070	1466	1454
15	H	139	873	684	1076	182	1176	950	1188
16	H	106	579	360	1101	93	600	623	1400
17	H	134	805	258	1169	138	824	335	1672
18	H	145	983	765	1822	125	796	784	2166
19	H	226	1179	900	1981	168	869	1098	2169
20	H	243	1252	965	1978	154	805	1087	1883
21	H	312	1539	743	1105	202	1003	776	1132
22	C	319	1696	787	663	227	1200	856	908
23	C	240	1413	1027	699	186	1055	1148	809
24	H	194	1198	1073	1244	155	1075	1505	1354
25	C	194	1187	339	568	170	1072	455	639
26	H	126	768	962	995	86	517	1081	1190
27	H	102	663	1305	815	75	538	1289	1042
28	C	151	1217	1140	802	122	1014	1300	1107
29	C	183	1261	869	594	135	917	1079	736
30	H	163	1194	735	1062	98	749	1069	1225

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

Date and Place		Projected Area				Corrected Area			
		Umb.	Whole Spots	Faculae West	Faculae East	Umb.	Whole Spots	Faculae West	Faculae East
MAY									
1	C	205	1257	704	1188	169	1026	698	1354
2	H	252	1440	803	883	177	1013	956	988
3	H	286	1484	679	995	209	1050	886	1075
4	C	190	1149	671	923	146	875	809	923
5	C	202	1138	946	308	164	915	1298	344
6	H	155	869	1677	556	108	670	1843	710
7	H	120	737	1134	463	71	498	1388	657
8	H	132	641	1420	365	79	389	1761	461
9	H	101	561	1148	580	72	405	1469	842
10	H	100	466	1056	1045	72	333	1316	1195
11	H	57	368	1182	887	59	421	1386	970
12	H	64	341	398	660	85	454	560	721
13	H	48	272	489	796	85	482	785	1134
14	D	45	240	427	2108	39	202	494	2474
15	C	76	402	433	1638	72	389	514	1837
16	H	106	565	341	2560	69	380	468	2825
17	H	98	595	159	1069	59	353	266	1160
18	C	120	637	433	1163	98	488	482	1389
19	C	173	978	741	783	152	935	741	989
20	C	264	1525	931	1275	283	1729	1163	1606
21	H	420	2637	1162	1991	394	2548	1340	2423
22	C	603	3825	898	1539	461	2922	1152	1673
23	H	648	4768	1325	1728	441	3323	1569	1876
24	H	867	5453	1119	1166	571	3551	1531	1554
25	H	957	6344	1131	1200	583	3875	1316	1484
26	H	1150	7397	916	1545	739	4740	1293	2134
27	H	1197	6881	974	1980	762	4376	1216	2342
28	C	848	6012	843	999	563	3999	950	1159
29	H	690	4884	2200	813	538	3840	2406	1139
30	C	590	3807	1235	534	524	3579	1553	619
31	H	674	3929	2020	882	611	3889	2586	986
JUNE									
1	C	559	3381	1771	412	428	2508	2491	360
2	H	589	3282	1118	599	381	2080	1447	645
3	H	480	3349	1364	516	277	1926	1719	752
4	C	546	3232	1050	424	321	1923	1301	489
5	H	359	2444	1641	769	230	1553	1957	990
6	H	339	1904	1069	952	243	1346	1220	1141
7	C	198	1106	1169	814	179	995	1446	1000
8	H	126	584	1336	899	172	746	1593	987
9	H	58	305	1037	773	148	693	1339	937
10	H	32	193	574	1068	18	106	811	1332
11	H	33	179	493	1321	19	104	610	1620
12	C	44	229	667	911	31	166	744	993
13	H	66	241	839	1125	61	223	984	1286
14	C	20	139	625	1150	28	198	847	1283
15	C	38	196	580	1037	76	411	745	1300
16	H	50	281	908	2009	69	422	1109	2873
17	H	116	677	1010	2286	130	742	1240	3017
18	C	137	825	478	2085	118	690	684	2333
19	H	123	668	829	2302	83	467	946	2284
20	H	151	1036	840	1693	118	870	1067	1972
21	H	222	1297	951	1146	165	981	1229	1355
22	C	257	1510	1138	1160	188	1099	1481	1357
23	C	210	1545	848	1305	143	999	1111	1515
24	H	251	2003	1549	861	188	1540	1720	960
25	C	409	2306	1187	593	293	1625	1389	645
26	H	439	2122	2181	981	278	1344	2304	1088
27	H	320	1790	1520	863	207	1123	1638	923
28	H	354	1898	1152	990	258	1354	1395	1166
29	H	370	1555	1354	895	274	1199	1745	1010

Date and Place		Projected Area				Corrected Area			
		Umb.	Whole Spots	Faculae West	Faculae East	Umb.	Whole Spots	Faculae West	Faculae East
JULY									
1	C	267	1465	1184	1027	226	1277	1484	1168
2	H	281	1536	1658	979	197	1121	2142	1206
3	C	309	1691	1122	851	210	1223	1435	1232
4	H	359	2034	1371	1336	249	1368	1849	1796
5	H	355	1816	737	1244	241	1196	859	1370
6	H	250	1624	1050	991	172	1161	1348	1098
7	H	183	1162	1118	713	120	800	1338	904
8	H	157	812	1301	887	118	627	1466	1016
9	H	98	609	1613	772	88	526	2053	894
10	H	75	433	1612	1003	86	484	2145	1313
11	H	81	365	1578	1153	66	308	2026	1312
12	H	42	271	1051	1432	26	196	1228	1698
13	H	48	322	1213	1454	37	244	1486	1702
14	H	122	764	1050	1522	105	669	1220	1899
15	C	175	1003	504	1410	152	898	702	1811
16	H	149	814	807	2476	89	494	1095	2797
17	H	95	630	587	1879	55	365	734	2224
18	C	86	506	926	1361	86	493	1155	1633
19	H	77	311	1095	1612	72	282	1459	1784
20	C	60	376	751	1903	46	286	885	1967
21	H	108	586	1531	1624	172	784	1939	1902
22	H	148	889	1118	1084	234	1285	1482	1417
23	H	234	1718	1083	1130	270	2000	1300	1540
24	H	333	3141	1784	1415	334	3003	1839	1607
25	H	548	3964	1843	1325	428	3101	2247	1694
26	H	631	4587	1751	1276	447	3165	2088	1811
27	H	1193	6269	1453	1947	739	3924	1680	2189
28	H	1003	6885	1627	1313	575	4004	2140	1409
29	C	891	6344	1047	835	500	3550	1257	837
30	C	874	6335	1059	835	487	3561	1263	894
31	C	878	5650	700	1313	510	3373	869	1604
AUGUST									
1	H	810	5170	1037	934	524	3448	1110	983
2	H	597	3594	1669	957	478	2985	1817	1137
3	H	419	2367	1928	677	398	2393	2212	1048
4	H	259	1623	1423	998	310	2102	1648	1296
5	H	288	1850	2118	1180	368	2134	2327	1609
6	H	467	2928	2002	1251	460	2835	2561	1575
7	H	404	2584	1400	917	385	2403	1854	1160
8	H	486	2902	758	1378	376	2224	1190	1553
9	H	356	2345	791	1204	247	1631	1120	1228
10	H	323	2134	851	1147	190	1244	999	1246
11	H	483	2644	963	803	302	1643	1094	1085
12	H	388	2325	997	1066	272	1729	1221	1323
13	H	348	1920	1017	1520	366	2136	1245	1802
14	H	326	1621	803	1352	292	1433	911	1720
15	C	293	1454	623	1533	276	1353	917	1914
16	H	329	1605	1177	1439	264	1350	1352	1494
17	H	416	2413	1200	1267	321	1755	1486	1287
18	H	419	2279	801	810	305	1827	1091	1297
19	C	365	2183	1307	1008	319	2246	1817	1565
20	C	387	2461	598	1995	352	2432	644	2522
21	H	469	2994	1577	2422	422	2757	1746	2467
22	H	510	3333	1653	2019	422	2748	1897	2226
23	H	460	3308	1860	1792	340	2384	2249	1851
24	C	501	3683	1661	1717	329	2310	1717	1812
25	H	512	3483	1470	1928	352	2178	1926	2246
26	C	508	3248	1646	1281	270	1816	1869	1461
27	C	449	2966	1138	1128	254	1689	1158	1285
28	H	353	2595	1342	1275	315	2323	1427	1519
29	H	345	2556	1839	1223	325	2275	2002	1489
30	H	255	1865	2095	1057	265	2026	2546	1302

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
SEPTEMBER									
1	H	302	1789	1124	898	227	1429	1536	1023
2	H	297	1973	1773	1023	223	1542	2025	1134
3	K	265	1717	1049	1081	182	1176	1347	1483
4	H	307	1771	1625	1103	210	1292	2084	1320
5	H	247	1308	1081	1522	169	921	1373	1827
6	H	249	1177	1367	1075	183	918	1705	1246
7	H	210	1128	1179	1837	158	850	1396	1910
8	H	223	1206	951	1357	214	1199	1094	1590
9	H	207	1403	1560	1346	170	1160	1628	1470
10	C	257	1509	976	1118	181	1065	1276	1195
11	H	246	1606	1700	770	177	1165	2033	825
12	H	290	1571	2149	1017	220	1192	2529	1348
13	C	224	1281	940	720	158	1015	1067	813
14	H	174	1030	1628	1752	123	792	2082	1819
15	C	146	1021	917	872	83	587	1007	882
16	C	140	859	612	906	84	521	704	1099
17	C	145	847	578	2078	94	551	843	2481
18	H	184	1199	970	2471	127	830	1000	2473
19	H	179	1052	1094	1885	135	835	1331	2065
20	C	184	1083	978	1631	143	887	1231	1733
21	H	180	1076	922	1171	118	704	895	1206
22	H	157	917	1454	923	113	652	1550	1043
23	C	74	453	817	686	70	481	1106	837
24	C	41	218	741	566	41	209	882	622
25	H	67	414	1472	1246	103	650	1598	1745
26	H	105	678	2146	1988	120	777	2258	2642
27	H	144	848	1918	1964	165	987	2483	2011
28	H	130	827	986	1671	107	824	1305	1822
29	C	143	939	984	1395	100	645	1193	1560
30	H	154	987	1076	1735	123	728	1255	1999
OCTOBER									
1	C	213	1334	901	1226	148	896	1077	1411
2	H	392	1905	572	1176	255	1255	731	1302
3	H	288	1751	891	1293	217	1340	1269	1782
4	H	282	1613	801	992	217	1263	936	1170
5	H	270	1569	871	1060	232	1317	1097	1242
6	H	262	1505	1080	1025	219	1221	1241	1108
7	C	219	1252	1205	722	200	1207	1471	728
8	C	102	676	1215	345	95	621	1656	456
9	H	132	786	1557	1144	125	711	1883	1579
10	P	173	1024	1315	693	172	976	1448	929
11	P	241	1524	1207	795	250	1309	1876	1122
12	C	200	1294	924	1001	145	959	1176	1326
13	H	210	1283	1264	3061	149	888	1431	3577
14	C	112	770	1332	2134	94	626	1529	2430
15	H	114	661	1212	1600	94	555	1462	1856
16	C	38	270	526	795	41	306	659	1024
17	H	49	275	255	1087	36	243	421	1266
18	H	52	345	467	1343	43	299	445	1599
19	H	103	572	886	864	72	408	941	1127
20	H	218	1050	1031	1409	132	658	1137	1746
21	H	183	1101	1314	1335	118	713	1604	1685
22	H	250	1612	1168	1210	156	1010	1543	1474
23	H	247	1439	1602	1224	148	862	1863	1483
24	H	281	1797	1170	961	165	1046	1322	1189
25	H	291	1809	1209	1508	171	1070	1507	1747
26	H	350	2226	1071	1180	258	1634	1297	1446
27	C	369	2827	934	1221	312	2332	1020	1481
28	C	461	2958	1075	1360	472	3110	1317	1823
29	C	443	2584	988	1306	425	2548	1142	1623
30	H	409	2451	1288	1191	286	1779	1490	1365
31	H	394	2278	936	1365	256	1480	1060	1385

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
NOVEMBER									
1	C	438	2228	954	870	270	1358	1169	948
2	H	396	2200	1076	803	242	1345	1310	994
3	H	402	2082	1089	792	257	1441	1324	839
4	C	289	1676	902	276	232	1495	1231	415
5	C	221	1320	1218	276	148	879	1242	384
6	H	143	796	979	209	120	674	1094	290
7	H	130	725	1924	627	161	870	2203	810
8	H	44	215	1348	953	38	188	1659	1161
9	H	37	262	781	572	63	437	1063	720
10	C	53	367	581	972	83	585	826	1079
11	H	67	439	404	1705	55	368	426	1918
12	C	129	825	507	2051	86	549	603	2197
13	C	220	1672	338	2432	244	1560	548	2946
14	C	293	1702	537	1959	245	1456	541	2401
15	H	374	2128	404	1810	278	1591	410	2135
16	H	486	2701	770	1605	319	1804	787	1825
17	H	423	2571	528	1451	249	1509	743	1782
18	H	470	2556	1167	1080	327	1808	1422	1521
19	C	434	2211	556	1374	363	1945	557	1850
20	H	478	3351	1900	1669	396	2811	2578	1967
21	H	561	3107	1228	1471	429	2405	1598	1703
22	H	434	3059	1113	1321	381	2560	1734	1404
23	H	529	2854	1472	709	374	2041	1536	959
24	C	339	2951	1070	675	258	2132	1229	745
25	C	366	2814	1103	1147	287	2156	1485	1258
26	H	370	2541	752	1286	220	1519	951	1529
27	H	462	2894	838	1505	304	1897	939	1595
28	H	541	3304	1714	1462	420	2553	2005	1530
29	C	408	2727	1651	987	384	2551	1897	1116
30	H	305	1935	1767	1168	333	2116	2106	1267
DECEMBER									
1	C	204	1527	1440	1158	268	2066	1895	1358
2	C	146	1003	2159	1102	152	1084	2690	1317
3	H	163	1057	1712	1231	151	988	1919	1588
4	H	122	820	1430	1257	110	743	1615	1571
5	H	128	748	1667	1176	104	639	1910	1332
6	C	160	1227	1224	1550	120	1007	1391	1863
7	H	222	1999	1199	1667	157	1350	1537	1885
8	C	173	1666	398	1413	109	1044	501	1459
9	C	232	1998	890	1297	142	1184	1141	1249
10	C	202	1613	797	890	134	1016	963	1045
11	H	299	1807	1170	1822	195	1162	1668	2343
12	C	307	1742	1046	1956	198	1146	1211	2239
13	H	322	1793	1196	1206	238	1390	1435	1198
14	H	298	2049	1273	718	217	1538	1657	812
15	C	278	2226	1804	491	270	2089	1941	804
16	C	471	3195	2264	1196	373	2669	2959	1576
17	H	504	4416	2158	1736	433	3501	2698	2269
18	H	521	5215	1029	2363	413	3983	1562	3329
19	C	820	5200	1393	2460	564	3551	1647	2639
20	H	761	4901	1447	1946	546	3582	1696	2488
21	C	604	4355	1230	1835	488	3519	1600	2333
22	C	428	3180	1233	1817	513	3609	1688	2023
23	C	309	2081	969	1990	271	2056	1556	2194
24	H	293	1735	728	1204	197	1172	1023	1180
25	C	375	2037	1041	605	251	1349	1086	657
26	H	563	3081	1882	843	392	2229	2316	1312
27	C	475	3147	1942	1284	323	2135	2260	1420
28	H	640	4470	1384	822	392	2748	1607	987
29	H	641	4478	1571	705	403	2857	2133	974
30	C	546	3908	1514	793	360	2608	1734	964