

ROYAL OBSERVATORY
BULLETINS

Number 132

Photoheliographic Results 1960

LONDON: HER MAJESTY'S STATIONERY OFFICE

PRICE 12s. 6d. NET

ROYAL OBSERVATORY
BULLETINS

JOINT PUBLICATIONS OF THE
ROYAL GREENWICH OBSERVATORY, HERSTMONCEUX
ROYAL OBSERVATORY, CAPE OF GOOD HOPE

Number 132

Photoheliographic Results 1960

Royal Greenwich Observatory
Herstmonceux Castle
Hailsham, Sussex

R. v. d. R. Woolley
Astronomer Royal



LONDON: HER MAJESTY'S STATIONERY OFFICE

1967

P H O T O H E L I O G R A P H I C R E S U L T S 1 9 6 0

I N T R O D U C T I O N

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.

The photographs of the Sun obtained at Herstmonceux were taken with the 4-inch photoheliograph, of which the original object-glass had been 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. On 1949 May 2 this photoheliograph was moved from Greenwich to Herstmonceux Castle, Sussex.

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 A. K. Das and his successor, 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 366 days in 1960, those finally selected for measurement being supplied by the different observatories as under:

Herstmonceux	..	..	..	..	..	263
Cape	..	..	..	..	..	94
Kodaikanal	..	..	..	..	..	9
Total	..	..	..	..	..	366

The names of the measurers of the photographs for the year 1960 were as follows:

P. S. Laurie	Miss M. J. Evans	Miss J. E. Purdy
N. S. C. Rhodes	Miss D. M. Hobden	Miss M. E. Winter
G. W. Rickett		

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 has been applied. Two or three 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 usually taken at Herstmonceux and the Cape on four or more days 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 130 seconds. The small portion of the Sun's limb visible at the western edge of the plate could 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. Six to ten supplementary zero photographs were 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.

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 $1/250$ th 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.

1. *Positions and Areas of Sunspots for each Day in the Year 1960*, page C 103.

In this section the measured positions and areas of sunspots are given for each day. The positions of sunspots 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 calculations of heliographic longitude and latitude 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 $82^{\circ} 45'$, the longitude of the ascending node of the Sun's equator on the ecliptic for 1960.0 to be $75^{\circ} 12'.1$, 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 and χ the position angle of the spot from the Sun's axis, R the measured radius of the Sun on the photograph, S the tabular semi-diameter of the Sun in arc, and ρ , ρ' 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:

$$\rho' = \frac{r}{R} S \quad \sin(\rho + \rho') = \frac{r}{R}$$

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

$$\sin \varphi = \cos \rho \sin B_0 + \sin \rho \cos B_0 \cos \chi$$

$$\sin(L_0 - \lambda) = \sin \chi \sin \rho \sec \varphi$$

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 310 of the *Astronomical Ephemeris for 1960*.

2. *General Catalogue of Groups of Sunspots for 1960*, page C 169.

This catalogue first contains particulars of every group of sunspots which lasted for two or more days during 1960. The group numbers are in continuation of those given in 1959 and previous years. The table includes an indication of those groups which may be considered to be members of 'recurrent series' of groups.

Spot groups seen on one day only are given in a separate table, where they receive a distinctive numeration.

Recurrent groups were selected upon the following plan, reference being made to the General Catalogue: If any spot when first seen was 60° or more to the east of the central meridian, the catalogue and, if necessary, the Daily Results also (Section 1), 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 60° 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 have been carefully compared before accepting them as a recurrent group.

3. *Total Areas, Mean Areas and Mean Heliographic Latitudes of Sunspots and Faculae in the Year 1960*, page C 185.

This section contains total areas of sunspots and faculae (the latter separated into west and east hemispheres) for each day in the year, together with mean areas and mean heliographic latitudes of sunspots and faculae for each rotation of the Sun during 1960. Similar annual mean values are also given.

Observations made with the spectrohelioscopes of Solar Filaments and Solar Flares are no longer published in this *Bulletin*. The latter appear in the *Quarterly Bulletin on Solar Activity* published under the auspices of the International Astronomical Union.

POSITIONS AND AREAS OF SUNSPOTS
FOR EACH DAY
IN THE YEAR 1960

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR 1960

The first line for each day gives the month numerically, the date and decimal of a day reckoned from midnight, the position angle of the Sun's axis from the north point and the heliographic longitude and latitude of the centre of the disk, all being computed for the time of the photograph.

- Col. 1. Number of spot group in order of appearance and in continuation of the group numbers given in *Royal Observatory Bulletin* No. 103. 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 prefixed by a number in smaller type giving the order of their appearance.
- Col. 2. Distance of spot group from Sun's centre in units of the Sun's radius.
- Col. 3. Position angle of spot group measured from the north pole of the Sun's axis in the direction *N. E. S. W. N.*
- Col. 4. Heliographic longitude of spot group derived from the measures.
- Col. 5. Heliographic latitude of spot group similarly derived.
- Col. 6. Area of umbræ corrected for foreshortening and expressed in millionths of the Sun's visible hemisphere.
- Col. 7. Area of whole spots composing the group similarly expressed.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area		
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots	
1960		°	°	°			1960		°	°	°			
01	1.284	+ 2.4	238.6	- 3.0			01	3.316	<i>continued</i>					
19683	.987	281.6	318.2	+10.9	57	350	19694	.555	70.8	180.1	+ 7.7	15	113	
19690	.977	252.9	316.5	-17.4	0	9	19696	.705	111.8	168.7	-17.5	34	295	
19686	.941	284.2	307.4	+12.2	37	253	19699	.834	56.9	161.6	+25.0	0	15	
06 1422	.935	291.5	305.2	+18.9	3	16	19701	.952	113.7	140.2	-23.5	27	195	
19687	.387	253.1	260.6	- 9.1	27	240	19702	.957	91.0	139.0	- 1.8	36	187	
19697	.341	336.9	246.6	+15.2	7	40	19703	.984	112.5	132.0	-22.7	27	170	
19685	.233	327.3	245.9	+ 8.3	39	216								
19695	.103	313.3	242.8	+ 1.0	4	50	01	4.290	+ 0.9	199.0	- 3.4			
19693	.658	75.0	198.9	+ 7.5	9	44	19687	.886	260.0	261.4	-10.4	29	173	
19698	.748	102.7	190.7	-11.4	8	37	19697	.790	291.8	248.2	+14.9	0	6	
19694	.860	78.9	180.4	+ 8.0	24	154	19685	.745	284.3	245.7	+ 8.3	23	173	
19696	.941	107.9	168.8	-17.8	42	227	19691	.519	289.7	228.4	+ 7.1	9	32	
							19693	.193	2.9	198.5	+ 7.7	2	17	
01	2.285	+ 1.9	225.4	- 3.1			19698	.170	139.1	192.6	-10.6	4	22	
19686	.981	283.5	302.8	+12.6	10	82	19700	.387	52.6	180.9	+10.3	12	88	
19687	.594	257.5	261.3	- 9.8	18	156	19694	.379	60.1	179.8	+ 7.7	23	124	
19697	.481	310.1	247.7	+15.1	7	25	19696	.546	117.5	168.7	-17.5	40	270	
19685	.399	299.7	245.9	+ 8.4	32	220	19699	.725	49.3	161.7	+25.4	1	9	
19695	.299	284.6	242.2	+ 1.3	2	22	07 1422	.792	105.1	147.2	-14.0	0	7	
19693	.465	67.5	199.9	+ 7.4	5	40	19701	.866	115.2	140.7	-23.4	52	307	
19698	.542	104.0	193.3	-10.2	5	47	19702	.862	90.7	139.6	- 2.3	75	454	
19694	.725	75.9	180.4	+ 7.9	30	157	19704	.885	71.1	139.1	+14.9	0	6	
19696	.839	108.7	169.3	-17.4	99	362	19703	.933	113.1	130.7	-22.8	37	183	
19699	.943	62.5	158.8	+24.5	6	43	19705	.971	106.7	122.7	-16.9	62	603	
							19706	.990	109.7	116.8	-20.0	34	170	

continued

continued

- Group 19697. Jan. 1 - 4. One or two small spots.
- Group 19698. Jan. 1 - 11. A small group of scattered spots not seen on January 9, increasing in area as it passes round the west limb.
- Group 19699. Jan. 2 - 4. A small spot.
- Group 19700. Jan. 3 - 8. Several small spots which suddenly grow into a moderate-sized group, dying out after January 6.
- Group 19701. Jan. 3 - 15. A large spot which becomes regular in outline, with occasional companions, and persists to the west limb.
- Group 19702. Jan. 3 - 14. A composite group, of which the follower gradually dies out as it crosses the disk.
- Group 19703. Jan. 3 - 11. A moderate-sized spot, breaking up gradually as it crosses the disk.
- Group 19704. Jan. 4 - 5. A small spot.
- Group 19705. Jan. 4 - 16. A large composite group.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		o	- o	o			1960		o	o	o		
01	5.608	<i>continued</i>					01	7.481	<i>continued</i>				
19707	.183	158.2	177.7	-13.3	2	18	19694	.429	295.9	179.8	+ 7.3	22	126
19708	.368	143.9	168.3	-20.7	1	19	19708	.354	213.7	169.1	-20.7	3	19
19696	.333	136.6	167.9	-17.3	66	291	19696	.297	217.3	167.8	-17.3	48	289
19701	.705	120.4	140.3	-23.5	52	327	19710	.273	12.4	153.6	+11.7	5	31
19704	.721	65.8	139.1	+14.6	0	6	19701	.435	141.1	139.8	-23.3	45	290
19702	.683	90.2	138.7	- 2.6	70	485	19702	.313	88.6	138.9	- 3.0	103	536
19703	.811	115.8	129.5	-22.8	14	118	19703	.554	128.1	128.8	-23.2	5	35
08 1422	.820	92.8	126.7	- 4.3	0	8	19705	.618	112.9	120.7	-16.8	144	944
19705	.876	107.2	121.0	-16.6	149	1123	19706	.698	116.7	115.3	-21.0	19	206
19706	.918	111.1	115.6	-20.7	38	206	19709	.864	65.7	101.0	+18.7	90	636
19709	.990	70.0	102.0	+19.2	118	403							
							01	8.505	- 1.2	143.5	- 3.8		
01	6.391	- 0.1	171.4	- 3.6			19691	.990	278.2	224.4	+ 7.5	88	502
19685	.966	279.3	245.5	+ 8.0	25	216	19693	.863	281.2	201.9	+ 7.7	83	337
19691	.836	281.0	227.0	+ 7.1	62	404	19698	.698	253.8	187.0	-14.0	1	12
19693	.515	292.3	200.0	+ 8.1	14	65	19700	.642	290.6	180.9	+ 9.9	1	14
19698	.388	249.1	192.9	-11.2	3	13	19694	.615	287.2	179.7	+ 7.3	25	114
19700	.286	321.6	181.7	+ 9.4	10	64	19708	.494	232.6	168.2	-20.9	6	49
19694	.241	321.9	179.9	+ 7.3	18	122	19696	.465	238.6	168.0	-17.5	81	335
19707	.184	211.3	177.0	-12.6	2	9	19711	.279	309.7	156.0	+ 6.5	7	27
19696	.245	167.2	168.1	-17.3	54	322	19702	.081	79.2	139.1	- 2.9	87	508
19710	.400	52.3	152.7	+10.7	2	21	19701	.344	167.8	139.0	-23.4	59	318
19701	.587	126.2	140.4	-23.4	44	298	19703	.429	145.6	128.1	-24.4	7	43
19702	.534	89.6	139.2	- 2.8	64	524	19705	.445	121.6	120.3	-16.9	183	1020
19703	.708	119.3	129.5	-22.9	22	133	19706	.544	123.6	114.7	-20.8	31	128
19705	.780	109.1	121.1	-17.0	96	1039	19709	.743	59.9	100.9	+19.0	127	636
19706	.836	112.7	116.0	-20.9	20	192							
19709	.951	68.9	102.1	+18.7	111	559	01	9.454	- 1.6	131.0	- 3.9		
							19693	.956	279.2	202.9	+ 7.5	33	297
01	7.481	- 0.7	157.0	- 3.7			19694	.769	283.0	179.9	+ 7.4	17	101
19691	.949	278.6	227.8	+ 6.9	174	859	19708	.650	241.2	168.6	-21.3	11	39
19693	.721	284.1	201.6	+ 7.5	19	122	19696	.624	246.6	167.8	-17.5	50	280
19698	.536	251.7	188.4	-12.9	0	4	19711	.405	300.5	151.5	+ 8.1	2	15
19700	.454	297.9	180.9	+ 8.8	3	24	19702	.160	278.4	140.1	- 2.5	80	429

continued

continued

- Group 19706. Jan. 4 - 11. A moderate-sized spot with companions, which breaks up on January 7 to form a cluster of small spots.
- Group 19707. Jan. 5 - 6. One or two small spots.
- Group 19708. Jan. 5 - 10. A group of small spots, not seen on January 6.
- Group 19709. Jan. 5 - 17. Return of Group 19666. A large regular spot with double umbra and occasional companions.
- Group 19710. Jan. 6 - 7. A group of scattered spots.
- Group 19711. Jan. 8 - 9. A group of small spots.
- Group 19712. Jan. 9 - 10. A tiny spot.
- Group 19713. Jan. 10 - 14. A group of small spots increasing in area as it passes round the limb.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
01	9.454	<i>continued</i>					01	11.562	<i>continued</i>				
19701	.352	199.8	138.5	-23.2	70	327	19705	.366	230.6	120.4	-17.2	100	705
19703	.362	170.6	127.3	-24.8	2	14	19715	.280	266.7	119.4	-4.8	4	40
19705	.292	142.5	120.4	-17.1	99	926	19706	.340	216.2	115.5	-19.9	5	66
19706	.390	137.2	114.7	-20.3	14	118	19709	.393	6.2	100.7	+18.7	108	660
19709	.608	51.4	101.0	+18.8	88	532	19717	.347	44.4	89.0	+10.2	1	9
19712	.852	77.4	74.0	+8.5	0	9	19716	.897	95.2	39.5	-6.5	9	65
01	10.469	-2.1	117.7	-4.1			01	12.394	-3.0	92.3	-4.3		
19693	.989	279.7	197.9	+8.9	19	138	19696	.962	253.2	166.8	-17.3	16	141
19698	.927	258.7	185.7	-12.0	5	34	19702	.754	271.0	141.0	-2.0	39	302
19694	.894	280.1	179.9	+7.1	24	124	19713	.803	306.2	138.0	+25.3	8	44
19696	.777	250.9	167.7	-17.3	51	290	19701	.737	241.7	137.1	-23.4	64	270
19708	.785	245.5	167.7	-21.6	3	15	19705	.510	241.9	120.3	-17.5	77	688
19702	.386	273.0	140.2	-2.5	70	424	19715	.463	267.4	119.8	-4.9	4	27
19701	.462	223.7	137.9	-23.3	54	273	19709	.406	341.4	100.1	+18.3	112	698
19713	.579	330.3	136.2	+26.3	0	6	19717	.248	15.0	88.6	+9.6	0	6
19714	.187	224.1	125.3	-11.7	2	19	19716	.783	95.8	40.8	-7.1	7	75
19715	.054	269.5	120.8	-4.1	0	5	19718	.972	106.4	15.6	-17.0	27	109
19705	.235	192.6	120.7	-17.1	99	756							
19706	.289	170.9	114.9	-20.5	14	65							
09 1422	.352	29.5	107.4	+13.8	5	23							
19709	.475	35.5	100.8	+18.8	98	554	01	13.284	-3.5	80.6	-4.4		
19712	.707	72.2	74.8	+9.5	0	6							
19716	.982	95.1	38.4	-5.8	10	57	19696	.996	252.7	166.2	-17.6	11	68
							19719	.905	252.5	145.2	-17.7	2	15
							19702	.871	269.7	141.0	-2.5	31	205
							19713	.895	300.9	138.4	+25.0	21	186
							19701	.844	245.1	136.8	-23.3	50	235
01	11.562	-2.6	103.3	-4.2			19705	.660	247.8	120.3	-17.6	78	557
19698	.989	259.3	185.0	-11.2	55	277	10 1422	.541	304.5	107.8	+13.9	2	16
19694	.975	278.2	179.5	+7.0	20	124	19709	.500	320.5	100.1	+18.5	138	661
19696	.901	252.8	167.4	-17.3	45	266	11 1422	.348	250.4	100.0	-10.8	2	8
19702	.615	272.0	141.1	-1.9	75	391	19717	.270	326.3	89.3	+8.6	1	7
19713	.708	312.3	138.4	+25.0	1	12	19720	.146	198.2	83.2	-12.1	3	28
19701	.619	236.8	137.4	-23.2	55	259	19716	.614	97.2	42.8	-7.8	8	47
19703	.512	229.1	128.1	-23.3	1	8	19718	.912	106.7	14.9	-17.0	18	83
19714	.377	248.4	124.2	-11.8	2	16	19722	.986	72.7	2.3	+16.2	0	17
						<i>continued</i>	19721	.988	83.4	0.3	+5.8	0	44

- Group 19714. Jan. 10 - 11. A group of small spots.
- Group 19715. Jan. 10 - 12. A single spot developing into a group of small spots.
- Group 19716. Jan. 10 - 18. A small stream, of which only the leader remains after January 12.
- Group 19717. Jan. 11 - 13. A few tiny spots.
- Group 19718. Jan. 12 - 19. Return of Group 19674. A regular spot breaking up as it crosses the disk.
- Group 19719. Jan. 13 - 14. A small spot, growing as it passes round the limb.
- Group 19720. Jan. 13 - 18. A few small spots developing into a cluster, which rapidly increases in area on January 16 and is dying out as it passes round the limb.
- Group 19721. Jan. 13 - 24. A variable stream of scattered spots, not seen on January 22.
- Group 19722. Jan. 13 - 14. A small spot.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area		
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots	
1960		o	- o	o			1960		o	o	o			
01	14.282	- 3.9	67.4	- 4.5			01	16.284	<i>continued</i>					
19719	.973	253.3	144.7	-17.2	9	62	19724	.517	12.7	33.9	+25.6	4	26	
19702	.962	268.9	141.5	- 2.3	23	240	19718	.483	118.1	14.7	-17.3	19	63	
19713	.965	297.9	138.0	+25.4	14	129	19725	.481	68.0	14.6	+ 6.2	1	6	
19701	.933	246.7	136.2	-23.3	40	259	19721	.633	74.8	3.4	+ 5.8	20	158	
19705	.800	251.1	119.9	-17.7	52	277	19723	.820	67.0	349.6	+15.8	13	65	
19709	.643	306.1	100.5	+18.5	85	650	19726	.942	79.5	332.0	+ 8.2	37	298	
19720	.280	241.1	81.9	-11.9	6	49	19727	.970	58.9	330.1	+28.6	85	355	
19716	.401	98.0	43.9	- 7.3	9	50								
19718	.802	108.0	14.7	-17.1	14	69	01	17.415	- 5.4	26.2	- 4.8			
19722	.929	70.6	1.8	+16.1	0	8								
19721	.928	82.4	0.2	+ 5.4	8	53	19709	.973	290.2	100.1	+18.4	78	473	
19723	.983	72.9	350.2	+15.8	5	34	19720	.829	258.4	82.2	-12.3	21	142	
							19716	.372	259.8	47.8	- 8.2	8	42	
01	15.464	- 4.5	51.9	- 4.6			19724	.526	344.8	35.0	+25.7	1	6	
19701	.990	247.1	134.5	-23.3	30	219	19718	.291	138.8	14.7	-17.3	11	39	
19705	.930	252.7	120.4	-17.8	38	271	19721	.411	64.4	4.4	+ 5.8	29	162	
19709	.802	297.2	100.5	+18.4	105	486	19723	.669	59.9	349.4	+15.7	7	34	
19720	.511	253.2	81.8	-12.3	7	52	19726	.819	76.8	332.7	+ 7.9	47	298	
19716	.125	115.5	45.4	- 7.6	5	37	19727	.893	55.0	330.3	+28.2	110	443	
19724	.576	29.7	33.5	+25.5	2	13	19728	.914	66.2	323.9	+19.5	15	88	
12 1422	.488	63.3	25.8	+ 8.5	2	18	19729	.956	74.6	315.2	+13.2	62	327	
19725	.611	73.9	15.9	+ 6.0	1	16	2	.959	74.4	314.6	+13.5	52	272	
19718	.627	112.1	14.6	-17.2	17	67								
19721	.776	78.7	2.2	+ 5.8	13	137	01	18.422	- 5.9	12.9	- 4.9			
19723	.909	70.3	349.3	+15.8	11	46								
19726	.991	81.4	330.7	+ 7.8	14	230	19720	.935	257.7	82.5	-13.2	3	18	
19727	.998	60.9	328.9	+28.6	29	296	13 1422	.810	277.3	66.3	+ 3.0	3	24	
							19716	.582	263.1	48.5	- 8.0	2	14	
01	16.284	- 4.9	41.1	- 4.7			19718	.217	186.3	14.4	-17.3	5	26	
19705	.982	252.5	120.7	-18.1	54	348	19721	.243	40.0	4.0	+ 5.8	23	164	
19709	.889	293.4	100.2	+18.3	81	439	19723	.511	49.8	349.2	+14.8	5	23	
19720	.657	256.9	81.8	-12.1	19	173	19726	.668	72.2	333.1	+ 8.0	44	233	
19716	.110	237.6	46.4	- 8.0	10	39	19727	.793	48.8	330.6	+27.9	77	375	
							19728	.806	61.6	324.4	+19.3	8	37	
						<i>continued</i>	19729	.872	72.2	314.7	+12.9	74	354	
							2	.879	72.1	314.0	+13.2	52	284	

Group 19723. Jan. 14 - 23. A single spot until January 17, after which other spots appear and form a cluster.
 Group 19724. Jan. 15 - 17. Two or three small spots.
 Group 19725. Jan. 15 - 16. A small spot.
 Group 19726. Jan. 15 - 23. A cluster, of which the leading components coalesce to form a composite spot which rapidly disintegrates.
 Group 19727. Jan. 15 - 27. A regular spot with following companions, which by January 21 has assumed stream formation. The leader begins to disintegrate from January 22, and is the sole survivor at the west limb.
 Group 19728. Jan. 17 - 19. A pair of small spots.
 Group 19729. Jan. 17 - 28. A regular spot with variable companions; preceded by a small spot until January 21; the latter then breaks up and the regular spot alone remains after January 24.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		o	o	o			1960		o	o	o		
01	19-283	- 6-3	1-6	- 4-9			01	22-292	- 7-7	322-0	- 5-2		
19718	-303	224-1	14-3	-17-4	3	22	19730	-566	253-1	355-7	-13-8	1	13
19721	-187	353-0	2-9	+ 5-7	24	149	01 1423	-559	302-5	350-8	+12-8	1	10
19723	-398	30-3	349-7	+15-2	3	25	19723	-535	311-9	346-4	+16-1	8	42
19726	-512	65-4	333-7	+ 7-9	24	216	19726	-304	317-5	333-9	+ 7-8	2	26
19727	-696	40-4	331-1	+27-6	74	356	19727	-550	348-9	328-8	+27-3	41	321
19728	-688	54-8	325-1	+19-3	4	29	19732	-285	357-7	322-7	+11-3	4	33
19729	-765	68-3	315-0	+13-0	71	376	19729	-346	23-1	314-0	+13-3	51	400
2	-775	68-3	314-1	+13-3	56	291	2	-346	23-1	314-0	+13-3	51	400
							19731	-781	96-9	270-6	- 8-6	20	110
							19733	-942	79-6	253-0	+ 8-0	6	31
							19734	-976	79-0	245-9	+ 9-6	23	104
							19735	-976	87-1	244-9	+ 1-7	9	29
01	20-405	- 6-8	346-8	- 5-0									
19721	-361	303-7	4-3	+ 6-7	6	53	01	23-283	- 8-1	308-9	- 5-3		
19730	-217	225-0	355-9	-13-8	7	47	19721	-857	282-5	6-4	+ 7-8	8	59
19723	-363	359-8	346-9	+16-1	7	34	19723	-687	300-8	346-7	+16-4	7	33
19726	-316	45-2	333-8	+ 7-9	14	153	19726	-454	298-0	332-7	+ 7-4	2	19
19727	-586	24-8	330-8	+27-2	63	360	19727	-605	330-9	328-1	+26-8	37	320
19729	-604	60-3	314-4	+13-1	48	352	19732	-355	319-5	322-4	+10-4	0	7
2	-609	60-4	314-0	+13-2	40	313	19729	-330	345-7	313-7	+13-3	44	300
19731	-974	98-4	269-6	- 9-3	19	141	2	-330	345-7	313-7	+13-3	44	300
							19731	-619	97-5	270-7	- 8-8	16	104
							19733	-853	75-7	252-2	+ 9-3	12	88
							19734	-907	76-7	245-6	+ 9-7	18	94
							19735	-901	85-8	245-2	+ 1-4	2	24
							19736	-978	81-6	232-0	+ 7-0	96	1123
							19737	-995	81-6	225-8	+ 7-8	99	255
01	21-521	- 7-3	332-1	- 5-2			01	24-434	- 8-6	293-8	- 5-4		
19721	-573	290-3	4-8	+ 7-1	2	18	19721	-957	281-6	5-4	+ 9-4	22	152
19730	-425	247-8	356-0	-13-9	9	81	01 1423	-893	291-3	353-6	+16-2	0	12
19723	-431	327-1	346-2	+16-2	7	34	19738	-855	287-3	350-1	+11-7	9	64
19726	-230	354-0	333-5	+ 8-0	6	77							
19727	-537	4-7	329-3	+27-0	44	362							
19732	-317	30-3	322-8	+10-7	0	4							
19729	-426	43-8	314-6	+12-9	46	370							
2	-431	44-2	314-2	+13-0	42	329							
19731	-878	97-4	270-5	- 9-0	16	152							

continued

- Group 19730. Jan. 20 - 22. A few small spots.
 Group 19731. Jan. 20 - 31. A regular spot which dies out before reaching the west limb.
 Group 19732. Jan. 21 - 23. A few small spots.
 Group 19733. Jan. 22 - 29. A single spot developing rapidly into a loose stream.
 Group 19734. Jan. 22 - Feb. 2. Return of Group 19685. A diminishing regular spot, which dies out before reaching the limb.
 Group 19735. Jan. 22 - 24. A single spot on January 22 and 23; a widely separated pair on January 24.
 Group 19736. Jan. 23 - Feb. 3. Return of Group 19691. A large, complex group consisting of many components scattered widely in latitude, diminishing in area as it crosses the disk.
 Group 19737. Jan. 23 - Feb. 4. A moderate-sized spot with many companions, the whole forming a cluster by January 26 and dying out as it crosses the disk. The principal component alone remains at the west limb.
 Group 19738. Jan. 24 - 25. A few small spots.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
01	24-434	<i>continued</i>					01	26-571	<i>continued</i>				
19727	-722	316.2	327.7	+26.9	55	334	19731	-088	235.1	269.8	- 8.4	20	93
19729	458	313.8	313.5	+13.3	60	303	05 1423	-145	182.2	266.0	-13.9	1	11
2	458	313.8	313.5	+13.3	60	303	19733	-315	37.1	254.6	+ 9.0	4	51
03 1423	-534	333.5	308.7	+23.2	1	10	19739	-514	28.9	250.2	+21.2	56	453
04 1423	-609	341.7	306.5	+29.9	1	14	19742	-401	40.5	250.2	+12.3	0	4
19731	-398	99.7	270.5	- 8.8	16	103	19734	-422	54.1	245.5	+ 9.0	19	102
19733	-665	70.5	254.6	+ 8.6	25	127	19736	-565	68.8	233.7	+ 7.1	106	1032
19739	-756	57.2	251.3	+20.1	47	207	19737	-697	72.1	223.7	+ 8.2	70	702
19734	-773	73.6	245.3	+ 9.0	15	124	19740	-835	75.9	210.9	+ 8.5	47	251
19735	-798	84.0	241.4	+ 1.5	4	24	19743	-912	103.5	199.5	-14.5	70	524
19736	-880	79.5	233.4	+ 6.6	171	1050	19744	-938	98.0	195.5	- 9.5	0	10
19737	-944	79.0	224.5	+ 8.5	164	643	19745	-974	64.9	192.7	+22.8	0	9
19740	-994	81.4	211.3	+ 7.9	26	219	19746	-992	80.9	183.9	+ 8.3	39	231
01	25-393	- 9.0	281.1	- 5.5			01	27-289	- 9.9	256.2	- 5.6		
19738	-949	283.4	350.9	+10.9	11	61	19727	-973	300.5	327.6	+27.9	32	205
19727	-830	308.6	327.9	+27.4	46	240	19729	-868	289.2	313.4	+13.5	50	241
19729	-608	301.0	313.4	+13.6	64	292	2	-868	289.2	313.4	+13.5	50	241
2	-608	301.0	313.4	+13.6	64	292	19731	-242	258.5	270.0	- 8.3	15	81
19741	-658	317.2	310.3	+24.0	1	13	19733	-250	1.5	255.8	+ 8.7	21	80
19731	-199	107.8	270.2	- 8.9	29	101	19739	-468	12.7	249.9	+21.4	102	537
19733	-484	61.8	255.7	+ 8.2	13	100	19742	-328	20.8	249.4	+12.2	3	18
19739	-634	48.2	251.0	+20.2	60	423	19734	-312	36.4	245.4	+ 9.0	12	79
19742	-588	61.4	249.4	+11.6	8	40	19747	-357	54.2	239.3	+ 6.6	7	29
19734	-625	68.0	245.4	+ 9.0	18	102	19736	-440	61.5	233.4	+ 6.9	106	834
19736	-757	76.4	233.6	+ 6.5	113	1106	19737	-576	67.1	223.9	+ 8.2	96	723
19737	-851	77.0	224.5	+ 8.0	119	795	19740	-734	72.9	211.2	+ 8.5	40	258
19740	-949	79.5	210.9	+ 8.1	44	281	19743	-833	104.3	199.7	-14.9	96	510
19743	-986	104.3	200.0	-14.9	68	695	19744	-858	97.9	196.8	- 9.6	2	13
							19745	-932	62.9	192.3	+22.7	0	8
							19746	-960	79.7	183.8	+ 8.2	59	382
01	26-571	- 9.5	265.6	- 5.6			01	28-623	-10.4	238.6	- 5.8		
19727	-931	302.7	327.6	+27.7	27	164							
19729	-779	292.3	313.2	+13.4	40	256	19729	-974	285.4	313.3	+13.6	15	229
2	-779	292.3	313.2	+13.4	40	256	2	-974	285.4	313.3	+13.6	15	229
19741	-781	306.3	308.8	+23.5	0	7							

*continued**continued*

- Group 19739. Jan. 24 - Feb. 2. A group of rapid growth and decline. At first a cluster, reaching maximum area on January 27, after which the whole assumes stream formation.
- Group 19740. Jan. 24 - Feb. 5. A regular spot with occasional companions until January 28, when it begins to break up, but resumes regular outline on February 2.
- Group 19741. Jan. 25 - 26. Tiny spots.
- Group 19742. Jan. 25 - 27. A few variable, small spots of which only one is seen on January 26.
- Group 19743. Jan. 25 - Feb. 6. A stream, of which the two rear components coalesce into a complex spot with several companions by February 1. The leading part of the group almost dies out by January 31.
- Group 19744. Jan. 26 - 29. One or two tiny spots.
- Group 19745. Jan. 26 - 29. Intermittent. A tiny spot on January 26 and 27; a pair of spots on January 29.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		o	o	o			1960		o	o	o		
01	28.623	<i>continued</i>					01	30.471	<i>continued</i>				
19731	.528	264.4	270.5	- 7.8	12	79	06 1423	.644	307.4	246.7	+18.0	3	18
19733	.370	310.7	255.0	+ 8.4	12	92	19734	.567	294.9	245.5	+ 8.7	12	45
19739	.494	341.0	248.6	+22.0	64	396	19736	.399	302.6	234.0	+ 6.8	62	398
19734	.282	334.4	245.7	+ 9.0	21	96	19737	.288	323.9	224.1	+ 7.6	75	415
19747	.215	354.6	239.8	+ 6.6	1	6	19748	.325	354.9	216.0	+12.9	8	63
19736	.240	25.0	232.8	+ 6.8	117	903	19740	.267	11.4	211.2	+ 9.2	48	234
19737	.350	47.7	223.5	+ 8.0	74	565	19751	.342	129.0	198.1	-18.1	2	15
19740	.514	61.6	211.5	+ 9.0	34	261	19743	.318	115.6	197.2	-13.5	63	357
19743	.649	105.8	198.7	-14.5	72	450	19746	.555	65.1	183.8	+ 8.4	59	317
19744	.661	97.8	197.2	- 9.5	1	5	19749	.728	53.7	175.6	+20.9	15	69
19746	.839	76.2	183.5	+ 8.2	59	378	19752	.734	109.0	167.7	-17.9	7	52
							19750	.909	60.0	154.9	+24.1	36	173
							19753	.987	113.0	131.9	-23.6	18	160
01	29.422	-10.8	228.1	- 5.8			01	31.589	-11.7	199.6	- 6.0		
19731	.681	265.2	271.1	- 7.5	16	62	19731	.951	264.4	271.8	- 7.2	0	10
19733	.505	299.5	234.4	+ 9.1	8	48	19739	.811	303.1	246.6	+22.2	13	73
19739	.564	325.2	248.3	+22.0	26	216	19734	.743	287.3	245.3	+ 8.6	3	21
19734	.388	310.4	245.5	+ 9.0	16	75	19736	.607	291.2	234.3	+ 7.7	47	284
19747	.289	315.6	239.8	+ 6.2	0	6	19737	.463	297.5	223.9	+ 6.9	71	358
19736	.236	338.8	233.0	+ 6.9	71	560	19748	.442	318.1	217.2	+13.4	13	70
19737	.249	17.4	223.8	+ 7.9	72	504	19740	.325	323.0	211.0	+ 9.1	26	168
19748	.395	36.0	214.4	+12.9	2	23	19751	.188	173.8	198.4	-16.6	14	87
19740	.380	48.6	211.4	+ 8.9	43	266	19743	.137	159.8	196.8	-13.3	58	315
19743	.514	107.6	198.0	-13.8	64	388	19746	.359	46.8	184.3	+ 8.4	49	237
19744	.528	98.2	196.3	- 9.2	0	5	19749	.569	40.3	176.6	+20.2	21	101
19745	.732	51.3	190.0	+22.6	0	13	19750	.799	53.7	155.0	+24.0	31	165
19746	.730	72.7	183.5	+ 8.4	70	442	19753	.926	113.2	131.5	-23.7	22	122
19749	.885	61.6	171.4	+21.8	2	23	19754	.978	104.1	120.7	-15.0	9	71
19750	.975	63.6	155.3	+24.1	48	234	19755	.992	106.4	115.8	-17.0	0	34
01	30.471	-11.2	214.3	- 5.9			02	1.294	-12.0	190.3	- 6.0		
19731	.838	265.0	271.4	- 7.4	4	24	19739	.880	299.8	245.9	+22.6	4	22
19739	.686	312.4	247.4	+22.6	16	102	19734	.834	284.6	244.8	+ 8.6	4	17

continued

continued

- Group 19746. Jan. 26 - Feb. 7. Return of Group 19694, fourth appearance. A stream, of which the principal component is a moderate-sized spot. The latter begins to break up on February 3 into a small cluster, of which only one component remains at the west limb.
- Group 19747. Jan. 27 - 29. A pair of tiny spots on January 27; a single spot on January 28 and 29.
- Group 19748. Jan. 29 - Feb. 4. A few small spots, appearing near the central meridian, and developing into a stream of which the leader alone remains on February 1.
- Group 19749. Jan. 29 - Feb. 6. A pair of spots on January 29, rapidly developing into an extended stream which dies out before reaching the limb.
- Group 19750. Jan. 29 - Feb. 7. A regular spot, with occasional companions, dying out before reaching the limb.
- Group 19751. Jan. 30 - Feb. 6. A few tiny spots developing rapidly into a bi-polar group with maximum area on February 2.
- Group 19752. Jan. 30 - Feb. 3. A few tiny spots seen only on January 30 and February 3.
- Group 19753. Jan. 30 - Feb. 12. Return of Group 19701. A stable regular spot.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
02	1.294	<i>continued</i>					02	3.293	-12.8	164.0	-6.2		
19736	.728	287.5	234.7	+ 8.3	44	288	19736	.957	281.4	235.5	+ 9.0	25	192
19737	.587	290.6	223.8	+ 6.9	65	392	19737	.877	280.3	223.9	+ 5.9	26	245
19748	.593	305.0	220.3	+14.6	12	77	19748	.869	291.4	220.7	+15.1	10	40
19740	.431	306.6	210.7	+ 9.2	25	162	19740	.753	287.2	210.5	+ 8.6	16	92
19751	.232	218.8	198.9	-16.2	67	282	19751	.587	249.7	198.9	-16.7	46	280
19743	.166	220.8	196.7	-13.2	64	330	19743	.546	254.8	196.6	-13.4	50	337
19746	.271	23.2	184.1	+ 8.4	57	294	19746	.431	305.4	184.7	+ 8.6	38	245
19749	.493	26.2	176.9	+20.3	29	144	19749	.480	335.0	176.3	+19.7	11	81
19750	.723	47.9	154.5	+24.1	27	133	19750	.233	195.8	167.8	-19.0	2	11
19756	.701	108.6	146.4	-17.2	3	17	19756	.529	18.3	153.6	+23.9	19	115
19753	.859	113.9	131.5	-23.5	22	147	19753	.587	122.2	131.4	-23.4	17	100
19754	.922	103.8	122.6	-15.0	19	127	19754	.657	105.3	123.2	-14.6	34	258
19755	.961	106.7	115.5	-17.7	41	208	19755	.748	110.0	116.2	-18.8	12	126
							19757	.951	69.6	95.4	+17.2	51	400
							1	.935	68.4	98.3	+17.7	27	193
02	2.386	-12.4	175.9	- 6.1									
19739	.964	297.0	245.8	+24.0	4	15							
19734	.942	281.0	244.7	+ 8.2	0	9	02	4.474	-13.3	148.4	- 6.2		
19736	.876	284.0	235.1	+ 9.1	17	168							
19737	.763	283.4	224.0	+ 6.1	39	270	19737	.974	277.6	224.2	+ 5.9	32	201
19748	.759	296.0	220.7	+15.1	16	70	19748	.965	287.3	220.5	+14.8	0	7
19740	.611	293.2	210.4	+ 8.9	17	101	11 1423	.922	277.9	214.6	+ 4.7	3	19
19751	.423	243.5	199.1	-16.3	49	372	19740	.899	282.9	210.6	+ 8.6	12	88
19743	.369	248.6	196.5	-13.4	72	286	19751	.770	253.8	198.6	-16.3	51	262
07 1423	.533	342.4	186.1	+24.4	0	5	19743	.745	257.3	196.6	-13.6	40	211
19746	.295	328.8	184.7	+ 8.5	35	191	19746	.634	292.2	184.7	+ 8.8	33	179
08 1423	.205	206.8	181.4	-16.6	2	19	19749	.605	317.1	174.4	+20.6	12	85
19749	.442	14	175.3	+20.0	22	154	19750	.511	351.4	153.2	+24.0	14	74
09 1423	.334	129.9	160.3	-18.2	2	17	19756	.186	166.5	145.8	-16.6	9	47
19750	.605	34.2	154.1	+24.3	25	150	10 1423	.633	6.1	143.9	+32.6	0	5
19756	.505	111.0	146.8	-15.6	0	7	19753	.407	137.9	131.2	-23.5	20	114
19753	.724	116.9	131.4	-23.5	24	124	19754	.442	110.6	123.2	-14.5	31	287
19754	.794	104.0	123.3	-14.8	24	154	19755	.569	115.7	115.6	-19.5	5	44
19755	.872	108.3	115.1	-18.8	16	144	19757	.847	65.0	95.1	+17.3	64	423
19757	.994	71.6	94.6	+17.5	36	438	1	.827	63.6	97.6	+17.7	31	209
1	.987	70.3	98.2	+18.2	24	149							

- Group 19754. Jan. 31 - Feb. 12. One or two spots developing into an extended cluster of variable spots by February 4. After a decrease in area there is a renewal of activity as the group approaches the limb.
- Group 19755. Jan. 31 - Feb. 9. A cluster of widely scattered spots.
- Group 19756. Feb. 1 - 10. One or two tiny spots on February 1 and 2; nothing is seen on February 3, on February 4 several spots appear and form a stream of which the leader alone remains on February 10.
- Group 19757. Feb. 2 - 14. Return of Group 19709, third appearance. A bi-polar group led by a stable regular spot.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
02	5409	-13.6	136.1	-6.3			02	7407	<i>continued</i>				
19740	.970	280.8	210.4	+8.8	8	56	19750	.784	308.4	152.0	+24.4	2	7
19751	.881	254.7	198.3	-16.4	32	178	19756	.624	250.9	147.7	-16.7	71	317
19743	.871	257.6	197.0	-13.9	26	242	19753	.439	227.4	130.3	-23.2	22	104
19746	.772	287.6	184.1	+9.3	13	128	19754	.267	240.1	123.5	-13.7	31	232
19749	.722	306.0	174.4	+20.2	18	87	19755	.247	194.4	113.5	-20.2	0	10
19750	.578	333.2	152.7	+24.9	8	72	19757	.464	31.0	95.4	+17.1	66	327
19756	.250	224.1	146.5	-16.4	33	199	1	.454	27.2	97.3	+17.4	38	189
19753	.304	164.2	131.0	-23.2	19	118	19759	.900	50.2	55.8	+31.5	5	30
19754	.254	124.7	123.7	-14.3	45	326	19758	.893	61.1	52.4	+22.2	189	1087
19755	.407	124.0	115.3	-19.0	2	24	19760	.913	108.2	43.3	-19.2	43	190
19757	.735	59.0	94.9	+17.5	76	434							
1	.710	57.2	97.5	+17.7	43	212	02	8373	-14.8	97.1	-6.5		
19758	.991	67.0	57.5	+21.6	78	474							
02	6422	-14.0	122.8	-6.4			19756	.765	253.3	146.9	-16.8	37	252
19751	.970	254.8	199.7	-16.2	16	109	19753	.587	238.4	129.9	-23.4	18	96
19743	.956	257.3	196.5	-14.0	37	157	19754	.464	252.8	124.1	-13.6	29	285
19746	.898	283.8	184.6	+9.4	25	100	19755	.424	237.2	119.2	-19.3	4	29
19749	.850	298.2	175.4	+19.9	8	63	19757	.402	5.1	95.0	+17.0	47	282
19750	.676	317.6	152.7	+24.4	3	29	1	.406	359.6	97.3	+17.4	21	142
19756	.444	244.9	147.5	-16.5	72	345	19759	.824	43.8	55.1	+31.7	8	42
19753	.319	203.4	130.7	-23.3	23	115	19758	.787	55.3	53.1	+22.0	168	927
19754	.143	186.8	123.8	-14.3	30	187	19760	.806	109.7	43.7	-19.6	33	177
19755	.279	154.7	115.5	-20.9	0	27	13 1423	.828	105.2	41.0	-16.2	2	12
19757	.589	48.5	95.4	+17.3	64	335	19761	.997	79.3	13.2	+10.1	43	442
1	.569	46.1	97.4	+17.4	37	186							
19759	.961	54.4	56.3	+31.6	0	39	02	9400	-15.2	83.6	-6.5		
12 1423	.928	80.0	56.0	+6.8	0	8	19756	.893	254.1	147.2	-17.0	41	221
19758	.963	64.6	52.8	+22.4	185	1065	19753	.736	244.0	129.5	-23.4	16	98
19760	.964	108.0	47.3	-19.0	24	107	19754	.661	256.8	124.8	-13.5	67	319
02	7407	-14.4	109.8	-6.4			19755	.612	246.6	120.0	-19.4	6	40
19746	.974	281.4	185.0	+9.5	9	28	19762	.342	296.0	101.4	+2.4	8	32
							19757	.440	334.4	95.0	+16.9	42	244
							1	.461	331.2	97.0	+17.3	24	129
							19759	.734	34.2	54.8	+31.6	10	51
							19758	.676	47.2	51.4	+21.8	205	926

continued

continued

- Group 19758. Feb. 5 - 18. A bi-polar group consisting of two regular spots of which the leader begins to break up on February 8. The follower develops a double umbra on February 8 and in turn splits up on February 16.
- Group 19759. Feb. 6 - 10. A few small spots, of which only one is seen on February 7 and 8.
- Group 19760. Feb. 6 - 14. A regular spot, with scattered companions until February 14, when a small cluster occupies the position.
- Group 19761. Feb. 8 - 21. A complex spot with a double umbra and following companions until February 13. On February 14 a great increase in area occurs to the rear, thus the whole group develops into a complicated stream which is dying out as it passes round the limb.
- Group 19762. Feb. 9 - 13. A small bi-polar stream, forming past the central meridian; the leader alone remains on February 13.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
02	9.400	<i>continued</i>					02	12.295	-16.2	45.4	-6.7		
19760	.654	112.5	43.8	-19.5	34	166	19753	.986	247.2	127.4	-23.5	17	187
19761	.957	76.8	12.4	+10.6	123	817	19754	.987	257.0	127.3	-13.8	119	689
19763	.942	113.4	12.4	-24.1	36	176	19762	.856	276.1	103.6	+1.7	27	92
19764	.949	94.7	11.7	-6.5	6	34	19757	.814	296.2	95.0	+16.7	21	156
							1	.825	295.8	96.2	+16.9	13	103
							19758	.488	349.2	51.1	+21.9	115	827
							19760	.220	179.7	45.4	-19.3	8	67
02	10.311	-15.5	71.6	-6.6			14 1423	.265	150.2	37.4	-19.9	1	15
19756	.982	253.9	151.7	-17.0	10	140	19763	.576	122.8	13.6	-23.8	9	56
19753	.846	246.1	129.0	-23.7	20	100	19761	.612	61.6	12.3	+11.3	91	505
19754	.805	257.9	125.4	-13.5	83	424	19765	.906	77.3	342.4	+8.5	0	10
19762	.525	284.6	102.0	+1.9	45	193							
19757	.547	315.2	95.2	+16.8	39	196	02	13.293	-16.6	32.3	-6.7		
1	.567	313.9	96.8	+17.1	23	117	19762	.967	273.4	107.0	+1.5	8	81
19759	.663	22.7	54.2	+31.3	11	55	19757	.917	291.4	95.1	+16.5	22	115
19758	.570	34.1	51.5	+21.9	187	917	1	.924	291.4	96.1	+16.8	17	71
19760	.493	118.9	44.4	-19.6	35	165	19758	.560	328.7	50.5	+22.1	131	1007
19761	.878	73.9	12.6	+10.7	124	683	19760	.306	224.2	45.3	-19.2	11	75
19763	.870	114.0	11.3	-24.0	35	196	19763	.422	135.0	13.4	-23.7	9	43
19764	.869	93.9	11.1	-6.7	4	25	19761	.460	49.0	11.7	+11.2	107	698
							19765	.803	73.2	341.4	+9.2	2	24
02	11.299	-15.9	58.6	-6.6									
19753	.932	247.5	128.0	-23.4	18	117	02	14.625	-17.0	14.8	-6.8		
19754	.919	258.6	125.9	-13.0	65	466	19757	.994	288.2	95.6	+17.1	9	103
19762	.714	279.5	103.2	+2.0	27	159	19758	.698	311.7	48.8	+22.0	146	668
19757	.691	303.5	95.5	+17.1	25	151	19760	.504	242.0	42.9	-19.7	8	61
1	.703	303.1	96.5	+17.3	16	107	15 1423	.515	304.8	40.1	+10.9	4	31
19758	.494	14.1	51.1	+21.9	159	874	19763	.299	170.3	11.6	-23.8	13	63
19760	.314	135.9	45.2	-19.4	25	121	19761	.328	18.5	8.7	+11.3	272	1310
19761	.760	69.4	12.3	+11.0	107	611	16 1423	.347	148.6	3.4	-23.9	2	23
19763	.744	116.3	11.9	-23.7	29	172	19765	.600	65.7	341.3	+8.6	2	22

Group 19763. Feb. 9 - 15. A regular spot with following companions, which breaks up on February 14 into a small stream.

Group 19764. Feb. 9 - 10. A single spot on February 9; a small cluster on February 10.

Group 19765. Feb. 12 - 14. Two tiny spots

Group 19766. Feb. 18 - 19. A tiny spot.

Group 19767. Feb. 18 - Mar. 1. A regular spot, with a few following companions until February 22, after which it disintegrates. A single spot remains at the west limb.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
02	15-372	-17-3	4-9	-6-8			02	20-294	-18-9	300-1	-7-0		
19758	-786	305-4	48-6	+22-1	127	623	19761	-949	284-7	9-5	+11-5	81	757
17 1423	-383	320-9	19-1	+10-6	1	9	19767	-850	110-9	241-8	-21-4	25	226
19763	-306	196-8	10-4	-23-7	8	49	19768	-966	80-2	226-5	+7-5	24	249
19761	-319	350-0	8-1	+11-4	248	1464							
							02	21-341	-19-2	286-3	-7-1		
02	16-401	-17-6	351-4	-6-9			19761	-981	283-0	3-1	+11-2	38	232
19758	-886	299-8	47-4	+22-3	84	603	19769	-553	17-2	276-0	+24-8	7	29
19761	-427	316-9	8-6	+11-5	193	1277	19770	-596	18-8	273-9	+27-3	4	18
							19767	-715	113-3	241-6	-21-5	50	221
							19768	-885	77-6	225-9	+7-5	37	253
							19771	-997	77-2	202-8	+12-1	24	293
02	17-372	-18-0	338-6	-6-9									
19758	-954	295-7	46-3	+21-9	75	435	02	22-301	-19-5	273-7	-7-1		
19761	-580	301-4	8-8	+11-6	173	1190							
							19769	-530	356-5	275-7	+24-7	8	40
							19770	-571	358-3	274-8	+27-5	4	14
02	18-461	-18-3	324-2	-7-0			19772	-549	67-4	243-2	+6-0	4	30
19758	-990	293-9	42-0	+22-3	30	255	19767	-571	117-7	241-0	-21-3	46	221
19761	-742	292-7	8-4	+11-6	137	868	19768	-749	74-6	227-3	+6-6	68	415
01 1424	-703	304-3	1-7	+17-8	0	3	19771	-954	74-9	203-6	+12-0	56	324
19766	-605	311-4	352-5	+17-4	0	6							
02 1424	-554	3-9	321-8	+26-5	2	37	02	23-293	-19-8	260-6	-7-1		
19767	-986	110-5	242-0	-21-3	65	240							
							19769	-572	335-4	275-7	+24-3	1	9
							19770	-593	339-5	274-0	+26-7	11	47
02	19-361	-18-6	312-4	-7-0			19772	-391	58-1	241-2	+5-2	0	6
19761	-861	288-1	8-8	+11-7	92	632	19767	-410	128-8	240-6	-21-5	31	230
19766	-733	301-4	353-1	+17-1	1	12	19773	-453	51-4	239-7	+9-7	1	11
19767	-936	110-2	242-1	-21-3	46	246	19768	-584	68-5	227-6	+6-4	74	421
							19771	-865	71-8	203-7	+11-8	36	215

- Group 19768. Feb. 20 - 28. A few spots developing into a scattered cluster with maximum area on February 23, after which the whole breaks up; a single spot remains on February 28.
- Group 19769. Feb. 21 - 25. One or two tiny spots.
- Group 19770. Feb. 21 - 23. A small spot on February 21 and 22; a few scattered spots on February 23.
- Group 19771. Feb. 22 - Mar 4. A regular spot with occasional companions.
- Group 19772. Feb. 22 - 23. A small spot.
- Group 19773. Feb. 23 - 25. Two or three tiny spots.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area		
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots	
1960		°	°	°			1960		°	°				
02	24-296	- 20.1	247.4	- 7.1			02	27-398	<i>continued</i>					
19769	.668	319.2	275.9	+24.0	1	7	19771	.319	5.4	204.8	+11.2	25	157	
19767	.282	154.7	240.0	-21.8	33	188	19775	.407	120.5	185.0	-18.6	2	12	
19773	.313	24.4	239.9	+ 9.4	0	22	19776	.709	45.5	173.2	+23.8	7	49	
19768	.404	54.6	228.1	+ 6.8	29	201	19777	.865	98.9	146.2	-11.3	13	108	
19774	.715	72.4	204.2	+ 7.3	4	27	19778	.956	101.5	132.7	-13.1	55	381	
19771	.740	66.1	203.8	+12.3	33	161								
							02	28-390	- 21.2	193.5	- 7.2			
02	25-294	- 20.4	234.3	- 7.2			19767	.747	247.6	241.2	-21.4	7	29	
19769	.779	308.2	276.0	+23.5	3	14	19768	.647	289.6	231.2	+ 6.8	3	14	
19767	.270	200.3	240.0	-21.7	31	172	19774	.358	311.0	209.2	+ 6.6	4	19	
19773	.319	342.4	239.9	+10.5	2	13	19771	.371	328.0	205.0	+11.2	23	167	
19768	.264	23.1	228.3	+ 6.9	37	208	19775	.235	146.2	185.6	-18.4	0	1	
19774	.517	63.4	206.6	+ 7.0	12	69	19776	.592	32.5	173.4	+23.1	3	37	
19771	.585	57.6	204.1	+12.0	31	188	19777	.722	99.7	147.0	-11.9	17	103	
19775	.796	107.4	181.4	-18.1	14	48	19778	.765	116.0	144.6	-24.4	0	10	
							19777	.869	101.3	132.6	-13.4	68	285	
							19779	.962	77.2	121.3	+10.2	4	31	
02	26-366	- 20.7	220.1	- 7.2			02	29-298	- 21.4	181.5	- 7.2			
19767	.415	231.4	240.5	-21.7	24	103	19767	.873	249.8	242.7	-21.1	2	13	
19768	.288	330.8	228.2	+ 7.4	20	168	19774	.508	294.2	209.2	+ 5.6	6	27	
19774	.318	39.9	208.4	+ 7.0	14	76	19771	.497	307.1	205.2	+10.8	26	169	
19771	.415	39.7	204.5	+11.7	27	184	19776	.524	16.7	172.2	+22.9	31	147	
19775	.617	110.6	182.8	-18.2	8	40	19777	.555	101.3	147.8	-12.1	18	99	
19776	.849	53.7	171.0	+25.6	4	24	19778	.752	101.9	132.5	-13.7	60	292	
19777	.962	100.2	145.1	-11.7	4	16	19779	.875	75.0	122.8	+ 9.3	2	15	
19778	.997	103.1	133.4	-13.5	78	286								
02	27-398	- 20.9	206.5	- 7.2			03	1-421	- 21.7	166.7	- 7.2			
19767	.585	242.6	240.4	-21.6	14	55	19767	.954	250.4	240.5	-20.8	0	21	
19768	.436	302.4	228.2	+ 6.8	6	53	19774	.700	285.4	209.2	+ 5.4	3	15	
19774	.252	350.1	209.0	+ 7.1	6	34	19771	.676	295.0	205.2	+11.0	37	166	
						<i>continued</i>						<i>continued</i>		

- Group 19774. Feb. 24 - Mar. 2. A few variable scattered spots.
Group 19775. Feb. 25 - 28. A pair of spots on February 25 and 26; a single tiny spot on February 27 and 28.
Group 19776. Feb. 26 - Mar. 5. A single spot developing into a cluster by February 29. The group assumes stream formation by March 3.
Group 19777. Feb. 26 - Mar. 3. A small spot developing rapidly into a bi-polar stream, of which only the leading components remain on March 3
Group 19778. Feb. 26 - Mar. 10. A stable regular spot.
Group 19779. Feb. 28 - 29. A small cluster on February 28; a single spot on February 29.
Group 19780. Mar. 3 - 12. A small, variable stream of which the leader alone remains at the west limb on March 12.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960			°	°			1960		°	°			
03	1421	<i>continued</i>					03	5535	-22.7	112.5	-7.3		
19776	.510	350.9	171.7	+22.9	23	110	19776	.891	302.1	168.2	+24.2	4	32
19777	.360	106.4	146.1	-12.5	16	114	19778	.343	249.8	131.8	-13.6	49	226
19778	.564	104.0	132.6	-13.8	50	238	19780	.352	39.6	99.5	+8.6	18	105
							19781	.745	71.9	67.0	+8.3	6	49
							19782	.882	85.9	51.1	+0.2	13	78
							19783	.931	89.4	44.1	-2.1	5	43
							19784	.960	97.8	38.1	-9.4	7	110
03	2587	-22.0	151.4	-7.2									
19774	.861	280.4	209.3	+5.1	4	25							
19771	.839	287.9	205.5	+10.7	28	156							
19776	.589	327.4	171.4	+22.9	25	140							
19777	.097	148.3	148.4	-11.8	9	52	03	6469	-22.9	100.2	-7.3		
19778	.340	110.6	132.4	-13.7	52	243	19778	.525	255.7	131.6	-13.6	44	234
							19785	.319	337.8	107.2	+9.9	2	26
							19780	.277	357.2	101.0	+8.7	11	92
							19781	.596	64.6	67.4	+8.7	8	24
03	3572	-22.3	138.4	-7.3			19782	.762	83.5	51.2	+0.2	8	44
19771	.934	284.3	205.2	+10.5	24	140	19783	.829	87.1	44.5	-1.7	4	37
19776	.699	315.1	170.8	+23.5	3	74	19786	.913	60.2	40.7	+23.4	0	22
19777	.212	246.3	149.8	-12.0	2	16	19784	.885	96.2	37.5	-8.8	37	212
19778	.155	137.7	132.3	-13.8	55	243							
19780	.719	71.5	95.1	+7.9	0	6							
19781	.957	78.6	67.0	+8.7	0	22	03	7372	-23.1	88.3	-7.3		
							19778	.684	257.9	131.6	-13.6	46	197
							19785	.443	312.4	107.7	+10.5	6	50
03	4372	-22.4	127.9	-7.3			19780	.358	319.2	101.9	+8.6	15	103
19771	.982	282.5	205.0	+10.8	34	234	19781	.438	52.8	67.8	+8.5	2	13
1424	.956	285.2	198.3	+12.2	0	15	19787	.721	50.1	52.0	+21.7	0	11
19776	.781	309.1	169.3	+24.1	6	80	19782	.606	80.5	51.8	-0.0	9	37
19778	.128	211.8	131.8	-13.5	56	238	19783	.684	84.5	45.6	-1.6	1	10
1424	.342	169.2	123.8	-26.8	1	10	19786	.830	54.7	40.7	+23.8	21	100
19780	.563	62.8	97.6	+8.6	15	65	19784	.780	95.1	36.8	-8.4	57	274
19781	.896	76.4	66.3	+8.7	8	44	19788	.966	74.0	15.9	+13.4	13	59
19782	.979	87.6	50.1	+0.8	22	199							

- Group 19781. Mar. 3 - 10. A small, diminishing spot.
- Group 19782. Mar. 4 - 12. A small, variable stream straddling the equator.
- Group 19783. Mar. 5 - 12. A single spot until March 8, after which other spots appear to form a small, variable cluster.
- Group 19784. Mar. 5 - 16. Two small spots developing rapidly into a stream, of which the rear part becomes a composite spot by March 8. The latter breaks up and dies out before reaching the limb.
- Group 19785. Mar. 6 - 10. A few small spots forming a stream and immediately preceding Group 19780.
- Group 19786. Mar. 6 - 16. A few small spots, which develop into an extended stream led by a regular spot by March 9. Only the rear components are seen on March 16.
- Group 19787. Mar. 7 - 8. A pair of tiny spots on March 7; a single spot on March 8.
- Group 19788. Mar. 7 - 17. A small, diminishing spot, with northern companions from March 9 to 11.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
03	8.365	-23.3	75.2	-7.2			03	11.486	-23.9	34.1	-7.2		
19778	.826	258.6	131.4	-13.5	41	214	19780	.941	281.9	102.5	+8.6	9	53
19785	.615	298.3	108.6	+10.9	9	45	19782	.324	292.2	51.5	+0.1	2	23
19780	.505	301.3	101.0	+8.6	23	119	19786	.546	342.1	44.7	+24.1	16	102
19781	.305	25.3	67.7	+8.8	5	16	19783	.188	310.6	42.2	-0.1	6	50
19787	.589	37.6	52.7	+21.0	0	8	19784	.034	254.4	35.9	-7.6	9	162
19782	.432	73.3	50.9	+0.5	9	51	19788	.467	40.9	15.8	+13.8	5	38
19783	.528	79.7	44.1	-0.7	6	36	19789	.851	70.1	339.2	+12.7	0	9
19786	.708	45.9	41.7	+23.4	23	118							
19784	.621	94.1	36.7	-8.1	59	335							
19788	.889	70.7	15.9	+13.4	10	43							
							03	12.313	-24.1	23.2	-7.2		
							19780	.986	280.5	102.1	+9.0	0	21
03	9.630	-23.6	58.6	-7.2			19782	.474	282.7	50.6	-0.3	2	29
19778	.950	258.2	131.2	-13.5	28	231	19786	.598	329.6	42.5	+24.1	22	137
19785	.795	290.2	107.9	+11.2	3	33	19783	.353	290.4	42.4	+0.2	4	31
19780	.718	289.7	101.5	+8.7	11	107	19784	.230	266.1	36.5	-7.8	22	130
19781	.318	330.0	67.8	+8.8	0	8	19788	.362	18.9	16.3	+12.8	5	17
19782	.182	40.8	51.8	+0.7	8	33	19789	.741	66.1	339.5	+12.3	0	10
19783	.260	61.6	45.4	+0.0	13	58							
19786	.589	28.4	40.8	+24.2	21	183	03	13.356	-24.3	9.5	-7.2		
19784	.377	93.5	36.4	-7.9	20	258	19786	.713	315.1	42.9	+24.3	22	123
19788	.752	63.3	14.8	+14.6	17	90	19784	.475	265.6	37.9	-8.3	28	164
							19788	.364	341.0	16.4	+12.9	4	14
03	10.511	-23.7	47.0	-7.2			06 1424	.084	269.9	14.3	-7.2	0	5
19778	.992	257.1	130.8	-13.6	41	228	19789	.595	57.9	338.6	+12.2	0	15
19785	.882	286.4	106.2	+10.8	4	20	07 1424	.642	53.1	337.2	+16.6	0	8
19780	.845	284.9	102.4	+8.5	10	72	19790	.959	98.9	295.2	-10.5	35	108
19781	.441	307.1	67.7	+8.6	0	4	19791	.989	97.9	287.1	-8.8	30	178
19782	.161	320.9	52.8	-0.1	4	13							
19783	.127	8.8	45.9	+0.0	9	48	03	14.304	-24.4	357.0	-7.2		
19786	.525	9.9	41.3	+23.8	27	184	19786	.826	305.9	44.0	+24.1	16	137
19784	.194	94.4	35.8	-7.8	33	219	19784	.687	266.2	40.6	-7.8	17	158
19788	.620	55.7	15.2	+14.2	11	91							
19789	.943	73.8	339.0	+12.6	6	16							

continued

- Group 19789. Mar. 10 - 13. A tiny spot, except on March 13, when it becomes a pair.
- Group 19790. Mar. 13 - 24. A regular spot, with following companions which form themselves into a regular spot by March 16 subsequently breaking up again by March 19. The leader alone remains on March 21.
- Group 19791. Mar. 13 - 22. A few small spots developing rapidly into a scattered cluster by March 15. The group collapses after March 19, a single spot alone remains on March 22.
- Group 19792. Mar. 15 - 17. A small stream.
- Group 19793. Mar. 15 - 23. A diminishing regular spot with northern companions from March 20 to 22.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		o	o	o			1960		o	o	o		
03	14:304	<i>continued</i>					03	17:343	<i>continued</i>				
19788	.468	315.2	16.6	+12.6	2	18	19790	.401	101.2	293.4	-10.9	28	212
19790	.873	98.7	295.7	-10.7	19	159	1	.388	101.6	294.3	-11.0	22	151
1	.873	98.1	295.6	-10.6	19	151	19791	.536	97.1	284.4	- 9.8	22	252
19791	.944	96.9	285.7	- 8.9	22	192	19793	.854	78.7	259.8	+ 5.8	23	84
03	15:422	- 24.6	342.2	- 7.2			03	18:304	- 25.0	304.2	- 7.1		
19786	.927	299.9	43.9	+24.3	13	99	19794	.714	284.0	348.1	+ 4.8	39	174
19784	.862	265.3	42.1	- 7.6	44	266	19795	.486	343.2	312.9	+20.6	3	25
19788	.636	300.2	16.4	+12.7	3	13	19790	.203	111.5	293.2	-11.1	37	234
or 1425	.647	38.8	316.0	+23.8	0	7	1	.189	114.2	294.2	-11.4	26	171
19792	.691	71.4	301.1	+ 7.3	3	25	19791	.341	98.8	284.3	- 9.7	29	270
19790	.746	98.1	293.7	-10.7	31	168	19793	.720	74.8	260.1	+ 5.8	22	92
1	.734	98.0	294.8	-10.7	24	134	19796	.982	64.4	229.6	+23.4	0	16
19791	.842	96.8	284.5	- 9.6	53	459							
19793	.994	83.9	259.7	+ 5.2	17	150							
03	16:604	- 24.8	326.7	- 7.1			03	19:305	- 25.1	291.1	- 7.1		
19784	.975	265.2	44.1	- 6.3	24	241	19794	.867	280.1	349.8	+ 5.1	13	93
19786	.956	299.8	33.5	+25.7	0	22	19795	.576	323.0	312.7	+20.7	24	181
19788	.802	291.8	16.3	+12.7	2	15	19790	.084	207.6	293.3	-11.1	26	167
19794	.399	301.3	346.6	+ 5.2	6	60	1	.095	214.7	294.2	-11.5	16	113
19792	.479	60.6	301.9	+ 7.1	3	50	19791	.118	115.7	284.9	-10.0	32	305
19790	.554	98.6	293.0	-10.6	30	206	19793	.551	67.9	260.3	+ 5.8	10	46
1	.531	98.5	294.5	-10.5	18	120	19796	.913	61.0	231.2	+22.8	18	161
19791	.669	96.6	284.4	- 9.7	36	262							
19793	.928	80.8	259.8	+ 5.8	15	97	03	20:413	- 25.3	276.4	- 7.0		
03	17:343	- 24.9	316.9	- 7.1			19794	.973	277.3	351.9	+ 5.4	4	23
19788	.886	288.7	16.1	+12.9	0	6	19795	.722	307.9	313.9	+20.7	66	339
19794	.542	290.7	347.3	+ 4.9	23	211	19790	.309	254.4	294.1	-11.3	24	143
19792	.351	46.9	302.0	+ 6.9	0	28	1	.316	254.5	294.5	-11.5	22	120
						<i>continued</i>	19791	.156	250.5	285.0	- 9.9	11	73
							19793	.360	51.4	260.1	+ 6.2	10	54
							19797	.538	38.0	256.1	+18.4	5	37
							19796	.802	55.0	231.3	+22.4	70	350
							19798	.952	76.2	206.5	+10.8	21	103

- Group 19794. Mar. 16 - 20. A short-lived, scattered stream appearing past the central meridian. On March 20 the leader alone remains.
- Group 19795. Mar. 18 - 23. A bi-polar group, led by a regular spot and appearing past the central meridian.
- Group 19796. Mar. 18 - 29. A few spots, developing into a complex cluster by March 21 and subsequently into an extended variable stream.
- Group 19797. Mar. 20 - 28. A few small spots, developing into a variable stream of which the leading components coalesce to form a composite spot by March 26.
- Group 19798. Mar. 20 - 29. Return of Group 19771. A diminishing regular spot with a preceding companion on March 29.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
03	21-375	- 25-4	263-8	- 7-0			03	23-362	<i>continued</i>				
19795	-840	300-5	314-4	+20-8	61	400	04 1425	-712	63-2	196-9	+13-4	0	5
19799	-774	282-0	313-0	+ 4-7	0	10	19800	-656	101-2	196-5	-12-4	22	117
19790	-508	258-8	294-2	-11-7	23	133	19801	-895	60-1	180-4	+22-8	8	37
1	-508	258-8	294-2	-11-7	23	133							
19791	-377	261-3	285-9	- 9-7	2	36							
19793	-236	17-7	259-6	+ 6-0	8	42	03	24-414	- 25-7	223-7	- 6-9		
19797	-434	17-2	256-1	+17-5	4	51							
1425	-522	118-0	234-5	-20-3	2	11	19802	-939	257-2	294-3	-14-3	0	26
19796	-695	46-9	230-6	+22-5	82	558	19790	-939	260-9	294-1	-10-9	23	128
19798	-866	73-2	206-4	+10-8	22	96	19797	-659	306-3	257-4	+17-2	68	540
							19796	-513	349-0	229-8	+23-3	67	554
							19798	-413	44-3	206-7	+10-6	20	88
							19800	-467	103-4	196-1	-12-2	29	160
03	22-326	- 25-5	251-2	- 7-0			19801	-814	53-8	177-9	+24-0	0	31
19795	-933	295-3	315-3	+20-5	58	306	19803	-958	113-2	149-3	-24-1	0	30
19799	-893	278-9	313-3	+ 4-7	10	54	19804	-968	102-8	147-2	-14-1	0	14
19790	-682	260-2	294-4	-11-7	18	115							
19791	-577	263-8	286-6	- 9-2	2	22							
19793	-262	327-1	259-4	+ 5-8	5	19	03	25-689	- 25-8	206-9	- 6-8		
19797	-422	346-5	257-1	+17-2	9	100							
19796	-594	34-3	230-0	+22-8	60	565	19797	-830	295-6	258-1	+16-8	60	428
19798	-743	69-0	206-5	+10-5	16	101	19796	-610	322-6	230-4	+22-6	39	398
19800	-834	100-2	194-3	-12-3	2	12	19805	-534	319-4	228-1	+17-5	2	16
19801	-967	64-3	180-6	+22-6	8	85	05 1425	-252	349-2	209-6	+ 7-4	2	12
							19798	-295	0-3	206-8	+10-3	13	67
							19800	-224	115-8	195-0	-12-1	38	344
							19801	-609	40-7	181-7	+21-2	1	10
03	23-362	- 25-6	237-6	- 6-9			19803	-833	114-9	151-1	-24-4	18	116
19795	-990	292-3	315-8	+20-8	28	288	19804	-856	101-8	147-5	-13-6	0	9
19799	-977	276-4	314-2	+ 4-7	5	107	19806	-930	115-4	137-8	-26-1	5	36
19790	-823	261-3	293-3	-11-0	26	134							
19802	-822	257-6	293-2	-14-1	2	10							
19793	-431	298-2	259-9	+ 5-3	1	11	03	26-628	- 25-9	194-5	- 6-8		
19797	-523	319-7	258-2	+17-0	50	305							
1425	-306	199-0	243-8	-23-6	1	5	19797	-927	291-1	258-8	+16-6	88	771
19796	-519	14-7	229-4	+23-1	55	392	19807	-671	247-6	235-6	-19-8	3	35
19798	-581	60-6	206-7	+10-6	22	101	19796	-728	309-7	231-6	+22-3	21	164

continued

continued

- Group 19799. Mar. 21 - 23. A few scattered spots.
- Group 19800. Mar. 22 - Apr. 1. A few tiny spots which develop into a stream by March 24. From March 25, the rear part increases in area and extends in latitude, the whole group assuming cluster formation.
- Group 19801. Mar. 22 - 25. Several scattered spots.
- Group 19802. Mar. 23 - 24. A few tiny spots.
- Group 19803. Mar. 24 - 29. Three or four variable spots with a brief maximum on March 25.
- Group 19804. Mar. 24 - 27. Two or three tiny spots.
- Group 19805. Mar. 25 - 27. Tiny scattered spots in stream formation.
- Group 19806. Mar. 25 - 29. Several small spots of which only one remains on March 28 and 29.
- Group 19807. Mar. 26 - 29. A few tiny spots of which only one is seen on March 28.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
03	26-628	<i>continued</i>					03	29-343	-26-1	158-7	-6-7		
19805	-682	304-6	230-3	+17-3	3	26	19807	-976	252-1	237-4	-18-9	0	34
19808	-587	295-8	226-7	+9-0	1	12	19796	-989	292-2	236-7	+20-7	109	808
19798	-359	323-5	207-0	+10-1	11	65	19808	-966	281-9	231-9	+9-6	0	25
19800	-100	183-9	194-9	-12-3	66	488	19798	-803	287-8	209-4	+10-1	2	16
19803	-717	118-0	150-6	-24-5	2	41	19800	-592	258-5	194-9	-12-1	64	591
19809	-829	51-1	148-4	+26-7	4	29	19809	-570	13-2	150-3	+27-0	2	15
19804	-739	101-1	146-7	-12-8	0	8	19803	-368	148-3	146-4	-24-7	0	15
19806	-841	116-9	138-0	-26-2	0	18	19806	-489	136-9	136-7	-27-0	2	19
							19810	-569	58-4	129-2	+11-5	180	1362
							19811	-816	79-5	105-3	+4-6	0	8
03	27-360	-26-0	184-8	-6-7			06 1425	-839	70-7	104-8	+12-2	0	2
							19812	-970	96-8	82-2	-8-1	39	336
19797	-974	289-2	258-7	+16-9	122	657							
19807	-788	250-0	236-5	-19-7	5	34							
19796	-827	302-1	233-6	+21-7	70	350							
19805	-774	300-0	229-5	+18-0	2	13	03	30-646	-26-2	141-5	-6-6		
19808	-709	289-8	227-1	+8-9	1	11							
19798	-470	307-0	207-2	+10-1	10	54	19800	-812	259-9	196-1	-12-0	53	384
19800	-195	239-9	194-7	-12-1	86	525	07 1425	-159	224-4	148-0	-13-0	2	17
19803	-619	122-5	149-8	-24-9	4	20	08 1425	-354	173-6	138-9	-27-1	1	11
19809	-748	43-8	149-4	+27-2	7	32	19810	-366	33-2	129-7	+11-3	280	1715
19804	-635	103-4	145-5	-13-7	4	34	09 1425	-422	72-9	117-8	+1-1	1	7
19806	-751	120-0	138-3	-26-7	7	39	19811	-639	71-4	104-1	+6-5	1	29
19810	-860	72-2	128-4	+11-6	29	155	19812	-860	96-0	81-8	-8-4	44	377
03	28-303	-26-0	172-4	-6-7			03	31-304	-26-2	132-8	-6-5		
19797	-993	290-4	252-4	+19-2	24	172	19800	-887	259-9	195-8	-11-9	24	341
19807	-918	251-2	239-6	-19-8	2	14	19810	-309	8-8	130-1	+11-2	242	1622
19796	-926	295-8	235-3	+20-8	73	447	19811	-521	66-8	104-2	+6-1	0	9
19808	-857	285-4	229-1	+9-5	4	27	19812	-755	95-0	83-6	-7-9	44	412
19798	-627	295-2	207-4	+10-0	7	28	19813	-985	78-7	54-3	+9-9	26	240
19800	-390	253-9	194-8	-12-3	85	615							
19809	-648	31-8	149-9	+27-1	3	14							
19803	-502	130-4	147-6	-25-0	1	10							
19806	-634	125-8	137-3	-27-2	4	24	04	1-314	-26-3	119-5	-6-5		
19810	-732	67-8	128-9	+11-1	154	661							
19811	-922	82-3	106-2	+4-4	5	22	19800	-969	258-9	195-9	-12-4	44	406
19812	-997	96-8	86-4	-7-3	0	54							<i>continued</i>

- Group 19808. Mar. 26 - 29. One or two very small spots.
 Group 19809. Mar. 26 - 29. A tiny cluster on March 26; a single spot on the other days.
 Group 19810. Mar. 27 - Apr. 6. A large composite group developing from a few spots on March 27. From March 30, the group comprises four composite spots of approximately equal areas in close association.
 Group 19811. Mar. 28 - 31. Small variable spots.
 Group 19812. Mar. 28 - Apr. 9. An elongated stream of scattered spots, of which the leading part alone remains at the west limb.
 Group 19813. Mar. 31 - Apr. 9. A stream, led by a regular spot which alone remains on April 8 and 9.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
04	1.314	<i>continued</i>					04	4.383	<i>continued</i>				
19810	.352	328.8	130.1	+11.1	347	1774	19814	.428	21.5	69.6	+17.1	24	134
19812	.580	94.7	83.9	- 7.9	42	546	19813	.492	56.9	54.4	+ 9.8	17	91
19814	.860	65.9	64.6	+16.9	4	23	19815	.551	93.1	45.5	- 7.0	28	137
19813	.931	77.0	52.9	+ 9.6	34	227	19818	.647	70.6	41.2	+ 7.4	5	16
19815	.961	95.3	45.1	- 6.8	50	204	19819	.698	111.9	35.8	-19.7	1	11
							19817	.770	108.3	29.0	-18.1	33	180
							19821	.975	77.7	3.7	+10.4	0	9
							19822	.994	98.7	354.8	- 9.4	56	380
04	2.394	- 26.3	105.2	- 6.4									
19810	.506	305.4	130.0	+11.1	361	1982							
19816	.260	298.0	118.5	+ 0.7	0	2	04	5.104	- 26.4	69.5	- 6.3		
19812	.367	96.4	83.7	- 8.2	62	336	19810	.896	286.1	130.7	+11.4	362	1506
19814	.705	58.2	66.7	+16.8	20	116	19812	.307	263.6	87.3	- 7.8	27	127
19813	.809	72.7	53.8	+ 9.9	24	141	19820	.307	277.7	87.2	- 3.6	4	38
19815	.862	94.1	45.5	- 6.8	23	165	19814	.404	355.4	71.4	+17.4	42	200
19817	.967	107.5	28.9	-18.5	21	116	19813	.382	43.4	54.1	+10.0	10	55
							19815	.406	92.8	45.5	- 6.8	23	121
							19818	.497	63.6	43.0	+ 7.1	1	5
04	3.349	- 26.3	92.6	- 6.4			19819	.585	115.4	35.5	-19.7	0	8
19810	.659	294.8	130.0	+11.0	318	1720	19817	.666	110.4	28.6	-18.1	31	152
19816	.460	284.6	119.0	+ 0.9	1	7	19821	.927	75.8	3.6	+10.7	0	17
19812	.119	101.8	86.0	- 7.6	36	274	19822	.969	98.1	353.2	- 9.4	94	422
19814	.539	42.6	70.2	+17.4	20	122							
19813	.678	67.5	53.3	+10.1	17	119	04	6.401	- 26.4	52.4	- 6.2		
19815	.730	93.1	45.6	- 6.6	22	178	19810	.986	282.4	131.1	+11.0	374	1666
19818	.808	76.1	40.6	+ 7.3	2	9	19820	.607	271.5	89.7	- 4.0	1	19
19819	.836	109.1	35.9	-19.5	0	5	19812	.585	264.7	88.2	- 8.0	20	128
19817	.895	107.2	28.8	-18.2	36	178	19814	.505	320.7	71.8	+17.1	44	280
							19813	.289	359.0	52.7	+10.5	7	55
04	4.383	- 26.3	79.0	- 6.3			19815	.116	97.0	45.7	- 7.0	21	129
19810	.811	288.4	130.4	+10.9	336	1786	19818	.290	39.3	41.8	+ 6.8	0	19
19816	.666	278.7	120.0	+ 1.0	1	6	19819	.364	132.7	35.9	-20.2	5	25
19812	.139	260.0	86.8	- 7.5	19	147	19817	.442	119.1	28.5	-18.0	31	184
19820	.137	290.7	86.4	- 3.5	7	39	19821	.779	71.0	4.1	+10.6	0	6
						<i>continued</i>	19822	.853	97.6	353.5	- 9.7	66	509

- Group 19814. Apr. 1 - 10. Two small spots which develop into a stream, led by a regular spot. The latter alone remains after April 8.
- Group 19815. Apr. 1 - 12. Return of Group 19784. A regular spot with a few companions until April 4; it then divides into two parts of which only the major part remains from April 9.
- Group 19816. Apr. 2 - 4. A tiny spot.
- Group 19817. Apr. 2 - 13. A regular spot with variable companions.
- Group 19818. Apr. 3 - 9. A tiny spot, except on April 4 and 6, when there is a small stream.
- Group 19819. Apr. 3 - 10. A single spot which develops into a small cluster on April 6; only one component remains from April 9.
- Group 19820. Apr. 4 - 9. A small, variable cluster.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area		
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots	
1960		o	o	o			1960		o	o	o			
04	7.378	-26.4	39.5	-6.1			04	9.565	<i>continued</i>					
19812	.789	263.7	91.8	-8.7	24	154	19817	.353	234.3	28.1	-17.6	24	112	
19820	.774	270.2	90.2	-3.8	3	24	19822	.309	103.1	352.9	-9.7	61	462	
19814	.654	306.0	73.0	+17.4	39	219	19823	.842	73.5	315.6	+10.4	17	80	
19813	.358	321.4	52.5	+10.2	5	34	19824	.871	72.9	312.6	+11.7	2	25	
19815	.100	261.8	45.2	-6.9	11	102	19825	.959	100.2	296.6	-11.5	3	23	
19818	.236	357.6	40.1	+7.5	0	5	19826	.984	59.8	295.9	+28.2	0	11	
19819	.261	166.3	35.7	-20.7	7	37								
19817	.280	138.0	28.2	-17.9	14	143								
19822.	.725	97.6	352.9	-9.7	61	473	04	10.508	-26.3	358.2	-5.9			
04	8.373	-26.4	26.3	-6.1			19814	.982	288.5	74.6	+16.9	23	184	
19812	.916	263.6	92.9	-8.2	16	96	19815	.725	265.5	44.7	-7.3	8	42	
19820	.892	268.6	89.5	-4.0	2	24	19819	.625	244.2	35.0	-20.5	0	3	
19814	.790	297.1	73.5	+16.9	36	215	19817	.524	246.1	28.1	-17.3	12	80	
19813	.542	299.0	55.0	+9.8	2	11	19822	.112	129.8	353.2	-10.0	62	536	
10 1425	.457	311.0	46.9	+11.7	0	1	19823	.702	69.4	316.5	+9.9	19	128	
19815	.323	265.6	45.2	-7.2	11	81	19824	.751	68.7	312.7	+11.7	8	47	
19818	.375	305.2	44.2	+6.6	1	6	19825	.878	100.1	296.4	-11.7	7	30	
19819	.302	207.8	35.0	-21.4	5	28	19826	.938	58.3	294.9	+26.9	3	18	
19817	.203	189.3	28.3	-17.6	29	155	19827	.974	100.9	280.6	-11.9	56	594	
19822	.552	98.2	352.8	-9.5	77	542								
19823	.959	77.6	314.6	+10.1	3	28	04	11.395	-26.3	346.4	-5.8			
04	9.565	-26.3	10.6	-6.0			19815	.846	265.5	44.4	-6.9	4	34	
19820	.985	267.7	90.7	-3.3	0	11	1426	.780	257.5	37.8	-13.4	0	6	
19812	.983	262.9	90.5	-8.0	0	11	1426	.768	249.7	36.0	-19.3	0	3	
19814	.922	291.0	74.3	+16.7	32	182	19817	.672	250.7	27.9	-17.2	17	69	
19813	.735	289.6	55.1	+10.0	1	7	19822	.142	239.4	353.5	-9.9	45	457	
19815	.563	265.7	44.9	-7.3	12	55	19828	.602	15.1	336.1	+29.7	4	42	
19818	.540	295.9	39.9	+8.4	1	7	19823	.550	62.1	317.0	+9.8	19	158	
19819	.476	233.3	34.8	-21.9	1	7	19824	.621	63.5	312.1	+11.3	8	44	
						<i>continued</i>	19825	.768	100.4	296.2	-11.7	9	44	
							19826	.872	53.3	294.4	+27.8	7	41	
							19827	.917	100.2	279.6	-11.6	59	620	

- Group 19821. Apr. 4 - 6. A tiny spot.
- Group 19822. Apr. 4 - 17. A regular spot with variable companions. From April 9 the spot begins to break up and become elongated in outline.
- Group 19823. Apr. 8 - 19. A small spot, rapidly developing into a complex structure which assumes stream formation by April 15.
- Group 19824. Apr. 9 - 19. A few tiny spots which develop into a scattered cluster. Of this the principal rear component alone remains at the west limb.
- Group 19825. Apr. 9 - 16. A small diminishing regular spot with occasional companions.
- Group 19826. Apr. 9 - 16. Two small spots developing into an unstable stream.
- Group 19827. Apr. 10 - 22. A stream of which the rear portion, a composite spot, is the most stable component.
- Group 19828. Apr. 11 - 15. A few small spots; after April 13 only tiny spots survive.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		o	o	o			1960		o	o	o		
04	12.417	-26.3	333.0	-5.8			04	15.313	-26.1	294.7	-5.5		
19815	.948	265.3	44.6	-6.3	0	14	19830	.896	263.8	358.6	-7.9	13	75
19817	.821	252.9	28.0	-17.3	11	52	19822	.850	261.1	353.1	-10.5	19	146
19822	.363	258.1	354.0	-9.7	37	286	19828	.812	310.5	338.8	+27.8	0	3
19828	.572	353.2	337.3	+28.7	5	48	19823	.486	300.0	319.8	+9.0	75	461
19823	.367	46.1	317.5	+9.1	41	280	19831	.326	272.9	313.7	-4.3	1	13
19824	.458	48.9	312.4	+12.1	29	164	19824	.417	314.9	312.2	+11.8	40	342
19825	.607	101.5	295.8	-11.5	8	36	19825	.091	192.9	295.9	-10.6	0	6
19826	.761	46.0	295.1	+27.3	7	77	19826	.553	359.1	295.3	+27.9	1	23
19827	.797	100.1	280.0	-11.4	69	687	19827	.269	111.2	280.0	-10.8	108	819
							19829	.843	75.0	239.2	+9.5	25	219
							19832	.939	61.5	229.9	+24.3	0	6
04	13.316	-26.2	321.1	-5.7			04	16.334	-26.0	281.2	-5.5		
19817	.914	253.4	27.5	-17.5	2	16	19830	.964	262.9	356.1	-8.3	7	117
19822	.533	259.8	353.1	-10.2	25	206	19822	.947	260.6	352.9	-10.6	20	86
19828	.612	334.9	338.1	+28.1	3	18	19823	.665	290.6	320.2	+9.3	66	406
19823	.265	8.9	318.7	+9.4	52	378	19831	.575	271.8	316.2	-3.4	1	10
19824	.349	27.4	311.7	+12.4	46	266	19824	.575	300.0	311.7	+12.0	54	367
19825	.435	104.2	295.7	-11.3	2	23	19825	.263	248.3	295.6	-10.8	0	5
19826	.677	36.8	293.9	+27.7	17	106	19826	.583	339.8	294.3	+27.7	0	11
19827	.654	100.4	280.3	-11.0	92	810	19826	.229	187.9	283.1	-18.5	1	11
19829	.993	78.6	239.5	+10.5	0	140	19827	.100	163.7	279.6	-10.8	128	842
							19829	.701	70.0	239.5	+9.8	34	212
							19832	.875	57.1	227.1	+25.2	4	30
04	14.359	-26.2	307.3	-5.6			04	17.357	-26.0	267.7	-5.4		
19830	.754	264.4	356.3	-7.9	3	19	19822	.996	259.9	353.1	-10.6	10	103
19822	.719	261.0	353.3	-10.4	29	141	19823	.819	285.5	320.6	+9.4	51	301
19828	.712	319.6	338.7	+28.0	0	8	19824	.726	292.6	310.8	+12.2	43	186
19823	.329	321.3	319.3	+9.3	91	507	19827	.235	245.5	280.2	-10.7	77	696
19824	.311	349.0	310.8	+12.1	33	230	19827	.462	46.4	247.7	+13.5	0	6
19825	.217	116.8	296.0	-11.1	2	17	19829	.541	61.5	238.9	+10.2	23	186
19826	.583	19.3	294.8	+27.8	4	49	19832	.765	51.0	227.0	+24.7	21	151
19827	.459	102.7	280.3	-10.7	118	729							
19829	.937	77.9	239.4	+9.3	21	176							

Group 19829. Apr. 13 - 25. A variable cluster of which the principal component becomes a regular spot by April 20 and is the sole survivor on April 24.

Group 19830. Apr. 14 - 16. Two tiny spots, preceding Group 19822 and growing into a cluster as the group passes round the limb.

Group 19831. Apr. 15 - 16. One or two tiny spots.

Group 19832. Apr. 15 - 26. A tiny spot developing into a bi-polar stream by April 21. On April 23 the rear part begins to die out; the leader, a regular spot, alone remains on April 26.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		o	o	o			1960		o	o	o		
04	18-558	- 25-9	251-9	- 5-3			04	22-321	- 25-5	202-1	- 4-9		
19823	.942	282-2	320-6	+ 9-6	36	249	19827	.971	260-2	278-8	-10-6	37	302
19824	.877	287-1	310-7	+12-2	17	88	19829	.657	293-6	239-9	+11-3	24	132
19827	.489	256-5	280-7	-11-0	93	613	06 1426	.629	314-9	230-8	+21-9	0	12
19833	.423	13-9	245-7	+18-9	4	22	19832	.558	325-4	222-1	+22-6	42	262
19829	.339	40-2	239-1	+ 9-8	50	323	19834	.274	323-0	211-7	+ 7-7	6	27
19832	.621	40-1	226-1	+23-5	42	256	07 1426	.191	200-9	206-2	-15-2	0	8
							19835	.667	111-3	161-6	-17-6	35	193
							19836	.943	76-5	133-2	+11-0	118	666
04	19-354	- 25-8	241-3	- 5-2									
19823	.978	281-3	317-8	+ 9-8	26	231							
19824	.948	285-0	310-8	+12-4	14	90	04	23-297	- 25-4	189-3	- 4-9		
19827	.637	258-6	280-7	-11-1	104	616							
19833	.421	350-0	245-8	+19-2	2	16	08 1426	.882	287-4	248-7	+12-8	0	7
19829	.280	7-9	239-1	+10-8	61	360	19829	.798	288-2	239-7	+11-3	24	119
19832	.537	29-0	225-0	+22-9	68	369	19832	.673	312-3	221-8	+22-7	32	273
							19834	.424	300-8	210-7	+ 8-0	10	75
04	20-326	- 25-7	228-5	- 5-1			19835	.484	118-2	162-8	-17-4	39	333
19827	.778	259-9	279-6	-11-0	42	402	19837	.474	105-0	161-5	-11-3	0	8
19829	.343	325-6	239-9	+11-4	41	257	19836	.850	74-1	133-2	+10-8	123	741
19832	.476	10-6	223-1	+22-7	59	498	19838	.888	70-5	129-6	+14-8	0	11
19834	.327	47-6	214-5	+ 7-7	2	16							
19835	.905	105-8	163-5	-16-4	0	13	04	24-316	- 25-2	175-8	- 4-8		
04	21-338	- 25-6	215-1	- 5-0			19829	.915	284-7	240-1	+11-4	17	103
19827	.890	260-0	278-2	-11-0	46	342	19832	.811	302-2	223-6	+22-4	31	193
19829	.497	304-1	239-8	+11-5	41	255	19834	.598	290-3	210-1	+ 8-0	98	440
05 1426	.352	252-3	235-0	-10-9	1	10	19835	.311	135-8	162-7	-17-4	17	79
19832	.484	346-1	222-3	+22-9	64	442	19837	.278	115-3	161-0	-11-4	1	10
19834	.239	19-1	210-6	+ 8-0	6	60	19836	.714	69-7	133-0	+10-9	112	701
19835	.809	107-9	161-6	-17-3	32	179	19838	.776	66-3	128-7	+14-9	2	17
19836	.990	78-9	134-4	+10-2	70	393	19839	.973	80-5	100-2	+ 8-1	0	11
							19840	.988	94-7	94-5	- 5-4	22	178

Group 19833. Apr. 18 - 19. A small spot.
 Group 19834. Apr. 20 - 27. A few variable spots until April 23. On April 24 the group rapidly develops into a bi-polar stream led by a regular spot.
 Group 19835. Apr. 20 - 29. A short-lived stream with maximum area on April 23.
 Group 19836. Apr. 21 - May 3. Return of Group 19810. A compact group of which the principal component soon becomes regular in outline and retains its identity throughout.
 Group 19837. Apr. 23 - 24. Two or three tiny spots.
 Group 19838. Apr. 23 - May 4. A few scattered variable spots until April 30 when they assume bi-polar stream formation.
 Group 19839. Apr. 24 - 26. A tiny spot.
 Group 19840. Apr. 24 - May 6. A regular spot with a cluster of northern companions. The latter die out after May 4.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
04	25.312	-25.1	162.6	-4.7			04	28.314	-24.7	123.0	-4.4		
19829	.982	282.5	240.3	+11.3	18	119	19835	.677	249.4	164.3	-17.1	3	29
19832	.921	296.5	225.2	+22.1	17	128	19841	.536	254.1	154.6	-12.2	8	30
19834	.762	284.3	210.6	+7.7	48	431	19843	.328	296.6	140.0	+4.2	7	25
19835	.226	188.8	164.7	-17.4	13	69	19842	.301	305.8	137.1	+5.8	7	27
19836	.547	62.0	133.3	+10.8	96	611	19836	.313	325.4	133.3	+10.5	90	441
19838	.620	59.7	129.2	+14.3	3	29	19838	.313	354.6	124.7	+13.7	5	36
19839	.891	78.4	101.0	+8.1	2	14	19840	.470	92.4	95.0	-4.9	59	374
19840	.923	94.5	95.2	-5.8	26	228	1	.453	95.9	96.2	-6.6	32	148
1	.922	94.7	95.3	-6.1	26	202							
							04	29.344	-24.5	109.4	-4.3		
04	26.332	-25.0	149.2	-4.6			19835	.813	251.9	163.2	-17.2	2	12
19832	.986	293.4	226.6	+22.1	6	94	19841	.723	257.1	155.3	-12.3	4	13
19834	.908	280.6	213.2	+7.6	53	353	19843	.543	284.3	141.0	+4.0	3	15
19835	.345	230.5	165.3	-16.9	6	38	19842	.493	289.7	137.0	+5.7	3	38
19841	.150	191.7	150.9	-12.8	18	72	19836	.476	302.3	133.4	+10.8	64	393
19842	.265	48.3	137.8	+5.6	3	14	19838	.404	319.6	124.9	+13.7	7	49
19836	.378	45.4	133.3	+10.9	95	555	19840	.243	95.0	95.4	-5.3	52	411
19838	.476	47.2	128.1	+14.5	5	37	1	.222	101.7	96.8	-6.8	35	172
19839	.766	74.8	101.0	+8.6	2	12	19844	.981	76.5	32.1	+12.3	40	333
19840	.816	93.5	94.5	-5.4	58	282							
1	.811	94.6	94.9	-6.4	46	183	04	30.338	-24.3	96.2	-4.2		
							19841	.862	257.5	155.7	-12.9	0	14
04	27.312	-24.8	136.2	-4.5			19843	.721	280.1	141.5	+4.3	0	10
19834	.984	277.9	214.9	+6.9	47	209	19836	.645	291.7	133.6	+10.5	73	409
19835	.520	244.4	165.4	-16.9	3	19	19838	.570	301.8	126.0	+13.8	36	218
09 1426	.465	251.3	162.9	-12.5	1	9	19840	.040	176.7	96.1	-6.2	39	234
19841	.302	241.5	151.9	-12.4	9	49	1	.045	198.9	97.1	-6.6	32	152
19842	.172	353.6	137.3	+5.3	5	26	19844	.913	74.1	32.3	+12.6	24	237
19836	.266	9.9	133.6	+10.6	74	481							
19838	.348	22.9	128.2	+14.2	0	11	05	1.369	-24.1	82.6	-4.1		
19840	.656	93.8	95.2	-5.8	39	226	19836	.799	286.0	133.7	+10.1	61	372
1	.652	95.0	95.5	-6.7	33	164							

continued

- Group 19841. Apr. 26 - 30. A pair of spots appearing near the central meridian; a single spot only after April 27.
- Group 19842. Apr. 26 - 29. A few tiny spots.
- Group 19843. Apr. 28 - 30. A small spot.
- Group 19844. Apr. 29 - May 10. A stream, decreasing rapidly to a regular spot by May 2.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		o	o	o			1960		o	o	o		
05	1.369	<i>continued</i>					05	4.345	-23.6	43.3	-3.8		
19838	.733	293.3	126.3	+13.9	50	392	19838	.985	284.0	121.9	+13.0	25	192
19840	.237	261.4	96.1	-5.9	28	226	19840	.812	265.2	97.5	-6.0	14	65
1	.256	259.6	97.2	-6.6	22	124	1	.813	264.4	97.6	-6.8	14	50
19844	.794	70.5	32.7	+12.7	24	123	10 1426	.258	148.7	35.3	-16.4	0	4
19845	.931	75.1	15.8	+12.3	19	108	19844	.326	27.9	34.3	+13.0	15	74
19846	.959	97.3	8.8	-8.2	115	514	19845	.514	58.0	16.9	+12.4	47	276
							1	.471	53.4	20.5	+12.8	23	118
							19846	.562	98.8	9.3	-8.0	119	474
							19847	.864	52.8	351.5	+29.1	60	350
05	2.589	-23.9	66.5	-4.0			19848	.859	105.8	344.4	-15.4	29	152
19836	.931	282.9	133.6	+10.5	65	328							
19838	.883	288.0	126.2	+13.9	73	534							
19840	.511	264.2	97.1	-6.4	13	112							
1	.511	264.2	97.1	-6.4	13	112	05	5.431	-23.3	28.9	-3.7		
19844	.596	62.1	34.0	+12.8	12	89	19840	.928	263.7	97.1	-7.2	9	64
19845	.800	71.1	15.8	+12.5	28	244	1	.928	263.7	97.1	-7.2	9	64
1	.756	69.2	20.2	+12.8	12	71	19844	.304	342.5	34.3	+13.2	13	68
19846	.844	97.2	8.9	-8.2	90	420	19845	.337	36.2	17.2	+12.1	40	286
19847	.980	58.9	352.4	+29.3	27	349	1	.320	25.6	20.8	+13.1	21	91
19848	.990	105.5	343.9	-15.9	0	32	19846	.339	102.9	9.5	-7.8	87	453
							19847	.756	45.5	351.0	+29.0	53	324
							19848	.687	108.7	346.6	-15.4	20	95
05	3.394	-23.8	55.8	-3.9									
19836	.981	281.4	133.5	+10.4	69	477	05	6.315	-23.2	17.2	-3.6		
19838	.951	286.0	125.9	+13.9	97	544							
19840	.661	264.3	97.1	-6.7	19	87	19840	.985	263.1	97.4	-7.5	0	20
1	.661	264.3	97.1	-6.7	19	87	1	.985	263.1	97.4	-7.5	0	20
19844	.461	52.2	34.0	+12.8	19	83	19844	.406	315.0	34.3	+13.2	14	87
19845	.679	67.0	16.2	+12.4	56	289	19845	.273	353.8	18.9	+12.1	37	206
1	.631	64.3	20.3	+12.7	19	90	1	.293	349.2	20.4	+13.1	19	94
19846	.729	97.4	9.1	-8.0	100	464	19846	.150	119.6	9.7	-7.8	107	439
19847	.937	56.8	352.1	+29.2	81	413	19847	.662	36.8	350.4	+28.8	49	395
19848	.947	105.4	344.6	-15.8	8	80	19848	.541	113.3	346.3	-15.3	11	100

- Group 19845. May 1 - 12. A scattered stream led by a persistent regular spot throughout. On May 9 the rear part of the group coalesces into two small composite spots; the whole group breaks up when passing round the limb.
- Group 19846. May 1 - 12. A regular spot with variable following companions.
- Group 19847. May 2 - 14. A composite spot which becomes elongated and breaks up, to form a cluster by May 9. This, in turn, coalesces into a large composite structure by May 13.
- Group 19848. May 2 - 14. An unstable spot with variable companions.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
05	7.315	-22.9	4.0	-3.5			05	10.331	-22.2	324.1	-3.1		
19844	.567	299.5	34.3	+13.2	12	66	19844	.952	285.3	34.7	+13.5	3	11
19845	.347	319.0	17.4	+11.8	50	442	19845	.818	286.0	17.2	+11.2	97	597
1	.397	315.7	20.5	+13.2	15	90	1	.850	287.8	20.2	+13.3	15	84
19846	.128	233.6	10.0	-7.8	81	389	19846	.725	261.2	10.4	-8.5	79	410
19847	.575	20.4	350.8	+29.1	41	470	19855	.791	310.4	7.2	+28.5	4	32
19848	.364	125.5	346.2	-15.3	20	111	19852	.774	315.6	3.1	+31.1	2	16
19849	.511	108.1	334.4	-12.1	5	32	19847	.677	321.9	352.6	+29.4	94	775
19850	.907	97.1	298.9	-7.9	0	11	19848	.447	241.2	347.9	-15.2	3	18
19851	.995	99.3	279.7	-9.7	51	241	19849	.266	235.1	336.9	-11.6	6	32
							19854	.196	243.0	334.2	-8.1	1	5
							19856	.297	44.6	312.0	+9.1	4	20
05	8.350	-22.7	350.3	-3.3			1427	.769	46.4	284.4	+29.5	0	4
19844	.734	291.9	34.6	+13.5	8	40	19853	.747	61.7	280.4	+18.4	0	5
19845	.509	299.0	17.2	+11.3	79	454	19851	.703	100.4	279.8	-9.5	46	233
1	.562	299.9	20.2	+13.3	24	93							
19846	.345	255.9	10.0	-7.9	82	416	05	11.373	-22.0	310.3	-3.0		
19852	.590	338.7	4.6	+30.0	1	7							
19847	.542	357.3	352.0	+29.3	99	609	19845	.928	283.4	17.1	+11.2	88	539
19848	.214	167.3	347.5	-15.3	7	39	1	.948	285.1	20.1	+13.2	17	85
19849	.326	121.3	333.8	-12.8	12	58	19846	.868	262.4	10.5	-8.1	96	436
19850	.793	97.5	298.0	-8.0	6	22	19855	.904	303.8	8.9	+28.6	15	94
19853	.951	68.7	281.0	+19.0	8	29	19852	.868	308.5	2.5	+30.8	16	66
19851	.944	98.9	279.5	-9.5	54	290	19847	.783	311.8	352.1	+29.2	305	1371
							19848	.631	249.6	347.9	-15.1	7	42
							19849	.505	251.2	339.4	-12.0	1	4
05	9.435	-22.5	336.0	-3.2			19856	.221	348.9	312.8	+9.4	10	61
19844	.876	287.7	35.0	+13.7	5	26	19851	.512	103.5	280.1	-9.4	35	204
19845	.680	290.4	16.3	+11.2	83	652	19857	.969	72.6	236.5	+16.0	20	106
1	.733	291.9	20.2	+13.5	15	97							
19846	.566	260.6	10.2	-8.0	76	392	05	12.563	-21.7	294.6	-2.9		
19847	.593	335.0	352.6	+29.3	81	671							
19848	.286	220.8	347.1	-15.6	6	22	19845	.995	281.9	17.7	+11.5	23	107
19849	.154	177.3	335.5	-11.9	11	57	19855	.984	299.5	11.0	+28.3	0	19
19854	.093	166.2	334.7	-8.2	1	10	19846	.970	262.1	10.6	-8.4	79	354
19850	.575	98.9	301.2	-7.7	3	12	19852	.954	304.1	1.9	+31.2	26	161
19853	.856	65.3	280.8	+19.1	2	7	19847	.898	304.4	352.3	+28.9	322	1832
19851	.833	99.5	279.7	-9.7	43	278							<i>continued</i>

Group 19849. May 7 - 11. A small stream of which only the leader remains on May 11.
 Group 19850. May 7 - 14. Intermittent; small variable spots.
 Group 19851. May 7 - 19. Return of Group 19827. A diminishing regular spot with variable companions until May 17.
 Group 19852. May 8 - 12. A tiny spot on May 8. Nothing is seen on May 9. On May 10 other small spots appear and are growing rapidly as the group passes round the limb.
 Group 19853. May 8 - 10. A few tiny spots.
 Group 19854. May 9 - 10. A pair of tiny spots on May 9; a single spot on May 10.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
05	12.563	<i>continued</i>					05	15.395	-20.9	257.1	-2.6		
19848	.817	253.7	348.6	-15.0	6	28							
19856	.393	301.3	314.4	+9.0	9	48	19851	.416	253.1	280.8	-9.3	18	109
19850	.163	227.7	301.6	-9.1	3	13	19858	.305	328.3	266.6	+12.5	5	19
19851	.274	115.6	280.2	-9.5	39	200	α 1427	.367	52.3	240.0	+10.5	0	8
19858	.590	58.9	263.2	+15.3	1	12	19857	.517	51.1	232.4	+16.5	6	37
19857	.884	69.8	235.0	+16.3	13	93	19859	.576	76.7	223.0	+5.5	35	187
19859	.952	83.5	223.1	+5.3	37	172	19861	.847	102.4	199.7	-11.7	184	1149
							19862	.978	70.1	181.1	+18.8	9	94
05	13.646	-21.4	280.3	-2.8			05	16.394	-20.6	243.9	-2.4		
19847	.967	301.0	351.4	+29.0	245	2301	19851	.604	257.7	280.5	-9.2	19	109
19848	.928	254.6	348.1	-15.3	3	36	19858	.465	303.6	267.2	+12.6	6	25
19860	.850	259.7	338.3	-10.2	0	8	19863	.274	352.5	246.0	+13.2	5	21
19856	.631	290.0	317.2	+10.2	0	21	19864	.332	355.3	245.5	+16.8	0	8
19850	.365	250.8	300.6	-9.5	1	22	α 1427	.314	167.9	240.0	-20.2	2	12
19851	.118	182.4	280.6	-9.5	34	159	19857	.363	26.9	234.1	+16.4	8	105
19858	.388	44.4	264.1	+13.4	10	31	19859	.380	68.6	223.2	+5.6	26	157
19857	.754	65.3	234.9	+16.4	9	78	α 1427	.698	52.1	207.2	+23.3	0	3
19859	.845	81.8	223.4	+5.4	40	205	19861	.708	104.3	199.7	-11.7	168	1229
19861	.984	102.3	200.5	-12.6	137	932	19862	.924	68.8	178.9	+18.5	29	173
05	14.339	-21.2	271.1	-2.7			05	17.407	-20.4	230.5	-2.3		
19847	.987	300.0	348.8	+29.0	103	742	19851	.776	260.0	281.1	-9.2	14	96
19848	.975	255.0	348.4	-15.2	0	47	19858	.641	293.4	267.5	+12.8	3	15
19860	.929	260.0	339.3	-10.3	0	12	19863	.385	311.4	247.7	+12.5	3	18
19850	.494	254.4	299.9	-9.9	1	22	19864	.405	321.8	245.6	+16.2	1	14
19851	.201	234.4	280.6	-9.3	20	145	19857	.325	351.0	233.6	+16.3	12	74
19858	.296	21.4	264.8	+13.2	11	64	19859	.192	42.0	223.2	+5.9	29	161
19857	.657	61.6	234.3	+16.0	11	47	19861	.529	108.5	199.9	-11.5	191	1213
19859	.756	80.2	222.9	+5.6	30	170	19862	.812	65.6	179.6	+18.1	18	153
19861	.947	102.1	199.9	-12.2	167	1143							

- Group 19855. May 10 - 12. A few variable spots.
 Group 19856. May 10 - 13. A small variable stream.
 Group 19857. May 11 - 19. A stream of small scattered spots.
 Group 19858. May 12 - 19. A small stream, led by a double spot which alone remains after May 14.
 Group 19859. May 12 - 24. A regular spot with occasional following companions.
 Group 19860. May 13 - 14. Tiny spots.
 Group 19861. May 13 - 25. A large composite spot with several followers, which becomes elongated in outline between May 16 and 18.
 Group 19862. May 15 - 25. A small spot, with following companions until May 22; the whole dies out before reaching the west limb.
 Group 19863. May 16 - 17. A few small spots.
 Group 19864. May 16 - 22. A few tiny spots, of which only one remains from May 21.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
05	18-325	-20-1	218-4	-2-2			05	21-137	-19-2	181-2	-1-9		
19851	-891	260-7	281-1	-9-3	23	87	19864	-911	286-0	245-3	+13-7	0	7
19858	-784	288-3	267-9	+12-8	4	14	19859	-676	281-0	222-8	+6-0	32	143
19864	-505	305-7	243-4	+15-1	3	16	19861	-367	243-0	200-6	-11-2	187	1103
19857	-403	322-3	233-2	+16-4	9	44	19867	-243	209-3	188-2	-13-9	65	293
19859	-162	329-1	223-2	+5-7	31	188	19862	-336	353-1	183-6	+17-5	7	24
19861	-359	117-2	199-4	-11-4	273	1324	19865	-177	86-8	171-0	-1-3	0	14
19862	-673	60-3	180-7	+17-7	20	107	19869	-772	71-6	132-7	+12-8	0	3
19865	-768	90-7	168-4	-2-0	2	7	19866	-840	72-6	125-8	+13-4	32	94
							19868	-855	68-4	125-0	+17-3	0	4
05	19-511	-19-7	202-7	-2-1			05	22-338	-18-8	165-3	-1-8		
19851	-980	261-1	281-1	-9-1	10	54	19864	-988	284-0	245-6	+13-6	13	86
19858	-919	285-2	268-0	+13-1	0	11	19859	-851	278-0	223-0	+5-9	29	170
19864	-721	293-5	245-7	+15-1	6	47	06 1427	-826	293-4	217-9	+18-1	2	10
19857	-563	303-5	231-8	+16-2	2	13	19861	-593	253-7	200-6	-10-9	208	1096
19859	-375	291-5	223-1	+5-9	31	174	19867	-439	242-1	188-7	-13-3	80	599
19861	-175	164-4	200-0	-11-6	237	1234	19862	-453	317-4	184-0	+17-8	4	17
19862	-482	45-6	181-6	+17-7	9	50	19870	-348	10-9	161-3	+18-2	2	21
19865	-536	89-8	170-4	-1-7	8	51	19871	-116	90-7	158-7	-1-8	0	7
19866	-974	75-5	127-1	+13-6	19	86	19869	-582	64-6	132-8	+12-9	0	4
							19866	-669	67-9	125-9	+13-2	15	79
							19868	-695	64-6	124-7	+15-9	6	34
05	20-575	-19-4	188-6	-2-0			19872	-950	96-4	93-6	-6-7	3	29
19864	-858	285-9	246-1	+12-5	2	14							
05 1427	-790	296-0	237-1	+18-9	2	9	05	23-439	-18-5	150-7	-1-6		
19859	-578	283-0	223-0	+5-8	29	158	19859	-953	276-1	222-6	+5-3	44	185
19861	-258	229-7	200-1	-11-3	178	1247	19861	-774	256-4	200-7	-11-4	203	989
19867	-210	175-5	187-7	-13-8	24	147	19867	-638	251-2	188-9	-13-0	83	611
19862	-343	14-0	183-7	+17-4	6	47	19862	-619	302-0	184-0	+17-7	1	7
19865	-315	88-6	170-4	-1-4	5	19							
19868	-901	70-0	126-5	+17-0	0	8							
19866	-900	74-0	126-0	+13-5	10	59							

continued

- Group 19865. May 18 - 21. A single spot on May 18, a small stream from May 19.
 Group 19866. May 19 - 31. Return of Group 19838. Two or three small spots, coalescing to form a moderate-sized composite spot which decreases in area as it passes round the west limb.
 Group 19867. May 20 - 26. A composite stream, forming near the central meridian.
 Group 19868. May 20 - 30. A few small spots which develop into a scattered stream; the leader alone survives at the west limb.
 Group 19869. May 21 - 22. One or two tiny spots.
 Group 19870. May 22 - 28. A stream of small scattered spots which combine to form a cluster by May 27.
 Group 19871. May 22 - 28. A small stream.
 Group 19872. May 22 - 25. A cluster of tiny spots on May 22; a pair of spots widely separated in longitude from May 23.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spot.		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		o	o	o			1960		o	o	o		
05	23-439	<i>continued</i>					05	26-310	-17-5	112-7	-1-3		
19870	.378	334-0	160-7	+18-2	5	34							
19871	.113	287-2	156-9	+0-3	4	21	19867	.972	257-6	188-8	-12-2	85	459
19873	.234	25-4	144-9	+10-6	0	4	19870	.783	294-8	161-0	+18-3	4	44
19866	.484	59-1	125-7	+12-9	21	119	19871	.718	271-6	158-4	+0-3	8	71
19868	.507	54-5	125-5	+15-6	4	14	19875	.466	304-1	136-1	+13-9	0	8
19872	.856	96-2	92-2	-6-0	7	36	19868	.419	321-1	128-7	+17-7	24	134
19874	.877	85-9	89-9	+2-8	7	46	19866	.330	320-9	125-1	+13-6	61	814
							19877	.187	7-7	111-3	+9-3	9	53
							19874	.390	79-8	90-3	+2-8	12	67
							19876	.911	86-6	47-5	+2-6	0	19
							19878	.989	76-9	31-9	+12-7	0	37
05	24-394	-18-2	138-1	-1-5									
19859	.997	275-4	223-1	+5-2	30	238							
19861	.890	258-1	200-5	-11-2	219	1053	05	27-329	-17-2	99-3	-1-2		
19867	.785	254-9	188-8	-12-6	91	634							
19862	.756	295-2	183-8	+17-6	0	7	19870	.903	291-2	161-6	+18-4	25	138
19870	.509	314-8	160-5	+19-5	0	16	19871	.859	271-7	158-2	+0-9	36	195
19871	.346	275-4	158-1	+0-5	5	35	19868	.568	304-9	128-4	+17-9	43	257
19873	.251	327-6	145-9	+10-7	1	20	19866	.494	301-6	124-8	+13-9	136	864
19868	.358	29-9	127-5	+16-5	3	23	19877	.287	308-9	112-3	+9-2	48	274
19866	.328	40-0	125-7	+13-0	61	526	19874	.142	57-6	92-4	+3-2	7	46
19872	.712	97-0	93-0	-6-0	5	30	19876	.789	85-6	47-6	+2-8	3	19
19874	.740	85-2	90-8	+2-5	17	96	19878	.950	76-2	28-4	+12-7	7	67
							19879	.997	101-0	14-0	-11-0	65	398
05	25-320	-17-9	125-9	-1-4			05	28-361	-16-8	85-6	-1-0		
19861	.964	258-5	200-2	-11-4	143	1066	19870	.972	290-2	160-6	+19-3	10	48
19867	.894	256-7	188-7	-12-3	93	544	19871	.953	271-1	157-8	+0-8	40	196
19862	.867	291-7	183-5	+17-9	0	9	19868	.743	294-9	130-4	+17-4	30	146
19870	.639	301-3	160-8	+18-2	0	30	19866	.668	292-2	125-0	+13-8	113	628
19871	.541	272-9	158-4	+0-4	4	48	19877	.491	289-8	113-4	+8-6	46	239
19873	.386	302-9	145-1	+10-7	0	4	19874	.142	299-1	92-7	+2-9	3	20
19875	.329	327-7	136-3	+14-7	0	12	19876	.621	85-2	47-5	+2-2	0	15
19868	.320	355-1	127-5	+17-1	14	58	19880	.742	111-5	39-8	-16-4	13	58
19866	.253	2-3	125-3	+13-2	128	733	19878	.869	75-1	26-6	+12-4	9	69
19872	.497	99-6	96-5	-5-8	0	8	19881	.878	113-6	26-3	-21-1	0	14
19874	.584	83-8	90-5	+2-5	13	67	19879	.957	99-7	12-8	-9-4	109	594
19876	.981	86-7	47-5	+3-0	0	27	19882	.971	103-1	9-8	-13-0	0	58

- Group 19873. May 23 - 25. A single spot on May 23 and 25; a pair of spots on May 24.
 Group 19874. May 23 - 29. A small stream.
 Group 19875. May 25 - 26. A few tiny spots.
 Group 19876. May 25 - 28. A small spot with companions on May 28.
 Group 19877. May 26 - June 1. A stream, led by a regular spot, which appears near the central meridian. After May 29 the regular spot is the only survivor.
 Group 19878. May 26 - June 3. A cluster of small spots which dies out before reaching the west limb.
 Group 19879. May 27 - June 8. Return of Group 19846. A composite spot with southern preceding companions until June 6.
 Group 19880. May 28 - June 2. An extended stream until June 1. On June 2 a widely separated pair of spots.
 Group 19881. May 28 - 31. A few small spots.
 Group 19882. May 28 - June 7. A cluster of small spots.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
05	29.343	-16.4	72.6	-0.9			06	1.331	-15.3	33.1	-0.6		
19868	.894	290.0	134.1	+17.4	14	84	19877	.994	278.5	116.2	+8.4	8	106
19866	.811	288.2	125.0	+14.1	99	693	19880	.303	206.2	41.0	-16.1	10	88
19877	.689	283.7	115.1	+8.7	35	218	19878	.238	22.6	27.7	+12.1	12	94
19874	.327	282.8	91.2	+3.3	6	40	19879	.380	112.8	12.4	-8.8	89	503
19880	.582	117.1	40.2	-16.0	37	185	19882	.422	120.6	11.3	-12.9	10	69
19878	.734	71.9	27.2	+12.5	28	160	19885	.600	80.5	356.8	+5.2	4	30
19881	.753	117.0	27.0	-20.6	5	23	19883	.756	50.6	351.7	+28.2	35	185
19879	.864	100.3	13.4	-9.2	111	584	19884	.856	53.2	340.6	+30.4	31	262
19882	.887	104.0	10.9	-12.8	14	138							
19883	.984	61.6	355.0	+27.7	11	74							
19884	.995	60.0	350.2	+29.7	19	102							
							06	2.323	-15.0	19.9	-0.4		
							19880	.452	233.0	41.9	-16.0	0	10
05	30.323	-16.1	59.7	-0.8			19878	.236	330.8	26.7	+11.4	4	35
19868	.969	288.3	134.1	+17.5	22	113	19879	.189	139.3	12.8	-8.5	71	451
19866	.924	285.7	125.9	+14.1	68	614	19882	.264	143.1	10.6	-12.6	0	25
19877	.840	280.7	116.0	+8.5	49	158	19885	.386	74.8	358.1	+5.4	10	43
19880	.405	130.6	41.1	-15.8	24	145	19883	.661	42.0	349.7	+28.9	25	129
19878	.571	66.7	27.3	+12.4	24	124	19884	.754	47.2	340.2	+30.4	19	251
19881	.625	124.0	26.1	-20.9	0	18							
19879	.733	102.3	13.3	-9.4	98	586							
19882	.763	107.4	11.4	-13.7	0	59	06	3.338	-14.6	6.5	-0.3		
19883	.951	59.2	351.0	+28.8	35	210	19886	.801	254.2	58.5	-12.8	0	13
19884	.988	59.3	340.6	+30.1	29	253	19878	.392	300.2	26.7	+11.0	0	25
							19879	.185	218.6	13.2	-8.5	89	483
							19882	.219	196.6	10.2	-12.4	3	25
							19885	.180	48.5	358.8	+6.5	39	250
05	31.307	-15.7	46.6	-0.7			19883	.556	27.8	349.4	+29.0	22	95
19866	.985	284.3	125.9	+14.0	59	369	07 1427	.538	36.6	345.9	+25.2	0	12
19877	.941	279.3	116.2	+8.5	26	160	19884	.651	38.8	338.5	+30.1	24	187
19880	.292	159.4	40.5	-16.3	25	129	19887	.740	78.6	319.6	+8.2	1	16
19881	.454	138.1	27.8	-20.3	0	6							
19878	.393	55.9	27.3	+12.0	9	55							
19879	.570	105.1	12.9	-9.0	89	502	06	4.290	-14.2	353.9	-0.2		
19882	.606	112.1	11.5	-13.7	7	55							
19883	.869	56.2	351.6	+28.5	35	224	19886	.923	257.0	60.5	-12.0	9	38
19884	.939	57.1	340.9	+30.3	23	162							<i>continued</i>

- Group 19883. May 29 - June 8. A stream of variable spots which diminishes in area as it crosses the disk.
Group 19884. May 29 - June 11. Return of Group 19847. A compact cluster, gradually increasing in area whilst crossing the disk.
Group 19885. June 1 - 10. A few small spots developing into a stream by June 4. The rear part becomes a composite structure by June 7 and is the more persistent.
Group 19886. June 3 - 5. A small spot, with variable companions on June 4 and 5.
Group 19887. June 3 - 10. A small spot developing into a scattered stream. Nothing is seen on June 8 and only a single small spot remains on June 10.
Group 19888. June 5 - 8. Two tiny spots which, by June 7, develop into a bi-polar stream comprising two regular spots.
Group 19889. June 6 - 7. Two or three tiny variable spots.
Group 19890. June 6 - 15. A small unstable stream.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
06	4.290	<i>continued</i>					06	7.269	<i>continued</i>				
19879	.325	251.6	11.9	- 6.0	92	450	19879	.860	260.2	13.2	- 8.3	62	448
19882	.361	231.7	10.8	-13.1	0	22	19882	.784	257.5	5.2	- 9.6	4	33
19885	.144	328.6	358.2	+ 6.8	80	520	19885	.681	280.2	356.7	+ 7.0	101	758
19883	.494	8.8	349.0	+28.9	12	82	19883	.684	314.0	348.3	+28.4	8	36
19884	.551	24.4	338.8	+29.8	29	223	19884	.594	327.8	335.8	+30.2	24	290
19887	.564	75.0	320.7	+ 8.2	19	64	19887	.186	317.0	321.8	+ 7.9	1	41
							19889	.722	73.7	269.6	+11.7	0	7
							19890	.873	77.4	254.5	+11.0	0	21
							19891	.935	75.4	246.1	+13.7	7	74
06	5.314	- 13.8	340.4	- 0.1									
19886	.973	256.6	56.5	-13.0	0	4							
19888	.619	280.2	18.0	+ 6.2	3	28	06	8.523	- 12.5	297.9	+ 0.3		
19879	.549	255.0	12.6	- 8.1	71	421	19888	.981	275.5	16.4	+ 5.5	28	191
19882	.556	247.0	11.9	-12.6	0	11	19879	.966	261.3	12.5	- 8.2	69	364
19885	.324	292.1	357.9	+ 6.9	103	676	19885	.850	278.2	355.7	+ 7.1	62	522
19883	.502	345.5	348.6	+28.9	14	76	19883	.814	307.3	345.9	+29.7	2	25
19884	.507	5.3	337.3	+30.1	14	116	19884	.724	313.6	335.0	+30.1	35	441
19887	.356	67.0	321.1	+ 7.9	4	42	19892	.481	66.3	271.3	+11.4	2	44
							19890	.721	74.9	252.9	+11.0	0	24
							19891	.806	73.6	245.5	+13.3	8	48
							19893	.964	72.9	224.2	+16.5	0	17
06	6.337	- 13.4	326.8	+ 0.1			19894	.968	68.9	223.5	+20.4	26	167
19888	.807	278.2	20.1	+ 6.6	13	75	19895	.994	102.1	214.8	-12.0	0	38
19879	.729	258.8	12.9	- 8.1	70	411							
19882	.640	254.2	5.4	-10.0	0	7							
19885	.523	283.8	357.5	+ 7.2	95	705	06	9.527	- 12.1	284.6	+ 0.4		
19883	.578	327.7	347.5	+29.2	1	24	19885	.944	277.8	355.0	+ 7.5	50	249
19884	.521	343.8	336.4	+30.0	13	106	19884	.832	306.9	334.8	+30.2	81	390
19887	.168	33.6	321.5	+ 8.0	3	36	19887	.648	283.9	324.1	+ 9.3	9	48
19889	.822	73.6	272.9	+13.4	0	6	19892	.265	47.1	273.3	+10.7	1	7
19890	.960	78.3	253.7	+11.2	0	19	19896	.561	124.0	255.5	-17.7	17	83
19891	.987	76.3	246.5	+13.5	0	61	19890	.568	70.3	251.7	+11.4	13	68
							19891	.647	69.0	246.4	+13.7	14	84
							19897	.752	69.7	237.8	+15.3	4	19
06	7.269	- 13.0	314.5	+ 0.2			19894	.899	66.9	222.6	+20.8	40	234
19888	.916	277.1	20.4	+ 6.6	49	286	19893	.896	70.2	222.6	+17.8	10	100
						<i>continued</i>	19895	.943	102.1	214.8	-11.3	21	102
							19898	.998	102.0	198.8	-12.0	64	545

- Group 19891. June 6 - 16. A small variable stream, of which the leading component is the sole survivor on June 16.
- Group 19892. June 8 - 11. Small scattered spots.
- Group 19893. June 8 - 19. A stream, led by a regular spot from June 12. The rear part increases in area on June 15 to form a single spot by June 17 and this is the sole survivor at the west limb.
- Group 19894. June 8 - 20. A regular spot with variable companions.
- Group 19895. June 8 - 17. A diminishing regular spot with companions on June 12 and 14.
- Group 19896. June 9 - 14. A small variable stream undergoing its whole life history on the disk.
- Group 19897. June 9 - 15. A small stream, of which only one component remains on June 13.
- Group 19898. June 9 - 22. Return of Group 19861. An unstable stream, of which one of the following components, a regular spot, is the most stable member. There is a revival of activity in the leading part of the group on June 20.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area		
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots	
1960		°	°	°			1960		°	°	°			
06	10.396	-11.8	273.1	+0.5			06	12.481	<i>continued</i>					
19885	.988	277.2	354.0	+7.2	6	57	19899	.368	319.6	259.9	+17.0	1	27	
19884	.904	303.8	333.5	+30.4	36	321	19896	.367	206.6	255.4	-18.2	5	28	
19887	.810	282.5	326.4	+10.4	0	25	19890	.229	325.3	253.1	+11.6	3	47	
19892	.198	4.8	272.1	+11.9	1	33	19891	.233	355.9	246.5	+14.1	5	31	
19899	.327	29.4	263.5	+17.0	3	33	19897	.281	26.7	238.0	+15.3	6	54	
19896	.431	137.3	255.3	-17.8	14	93	19893	.422	46.7	226.8	+17.5	17	110	
19890	.396	62.7	252.2	+10.9	14	83	19894	.520	46.7	221.6	+21.5	37	229	
19891	.499	62.1	246.2	+13.9	15	82	19895	.522	113.1	216.3	-11.1	18	65	
19897	.616	65.3	237.8	+15.3	19	89	19902	.630	120.1	210.7	-17.7	1	12	
19893	.780	67.3	224.2	+17.8	5	99	19898	.718	106.3	201.1	-10.9	74	414	
19894	.814	64.2	221.6	+21.1	44	236	19900	.801	108.4	194.1	-14.1	26	118	
19895	.858	103.6	215.0	-11.3	17	104								
19898	.961	102.2	199.8	-11.5	54	382	06	13.343	-10.5	234.1	+0.9			
19900	.986	103.9	193.4	-13.6	15	129								
							19901	.985	301.5	312.7	+31.1	0	6	
							19899	.542	303.0	262.5	+17.9	4	72	
							19890	.390	295.4	255.0	+10.4	0	15	
							19896	.451	225.8	253.8	-17.3	4	21	
06	11.533	-11.3	258.0	+0.7			19891	.326	309.4	249.0	+12.8	6	42	
19884	.970	300.9	332.0	+30.0	37	203	19897	.258	342.7	238.6	+15.1	16	37	
19901	.896	301.9	317.9	+28.5	8	40	19893	.313	23.5	226.6	+17.5	20	148	
19892	.310	312.1	271.6	+12.6	4	23	19894	.412	30.4	221.2	+21.6	29	178	
19899	.287	345.7	262.3	+16.7	8	49	19895	.361	125.1	216.6	-11.1	10	64	
19896	.328	172.6	255.5	-18.1	13	62	19902	.483	131.7	211.9	-17.8	1	8	
19890	.195	18.6	254.4	+11.3	9	57	19898	.574	110.8	201.1	-10.9	67	307	
19891	.294	40.3	246.8	+13.6	12	62	19900	.675	112.5	194.2	-14.3	26	104	
19897	.419	52.6	237.9	+15.3	16	86								
19893	.581	59.1	226.6	+17.8	20	141	06	14.317	-10.1	221.2	+1.0			
19894	.649	57.0	222.5	+21.2	50	248	19899	.685	295.5	261.5	+17.9	8	51	
19895	.692	107.4	215.8	-11.4	17	80	19896	.622	239.4	255.2	-17.5	0	4	
19898	.853	103.7	200.6	-11.1	117	605	19890	.568	287.9	254.4	+10.9	1	28	
19900	.908	105.8	194.1	-14.0	24	124	19891	.518	293.5	250.2	+12.7	6	88	
							19897	.383	310.4	238.7	+15.3	8	24	
06	12.481	-10.9	245.5	+0.8			19893	.299	342.5	226.6	+17.5	16	95	
19901	.960	299.6	317.0	+28.5	0	32	19894	.351	358.9	221.6	+21.4	28	173	
							19903	.322	8.5	218.3	+19.5	4	55	

continued

continued

Group 19899. June 10 - 15. Several small spots in loose, cluster formation.
 Group 19900. June 10 - 16. Return of Group 19867. A diminishing regular spot, with occasional companions, which breaks up and dies out before reaching the limb.
 Group 19901. June 11 - 13. Tiny scattered spots.
 Group 19902. June 12 - 15. Tiny variable spots.
 Group 19903. June 14 - 20. A number of small spots rapidly developing into a composite structure which then disintegrates.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
06	14:317	<i>continued</i>					06	16:417	<i>continued</i>				
19895	.237	160.9	216.7	-11.9	12	64	19900	.280	182.6	194.2	-14.9	1	17
19902	.366	151.5	210.7	-17.7	0	3	19906	.543	59.5	164.3	+17.0	7	52
19898	.401	122.1	201.0	-11.2	50	343	19904	.861	65.4	136.2	+21.6	21	95
19900	.508	121.7	194.8	-14.5	28	141	19907	.911	76.4	128.4	+12.9	14	89
04 1428	.626	112.1	184.9	-12.8	0	15	19908	.957	107.4	121.7	-16.2	0	39
19904	.994	68.3	138.1	+21.7	51	301	19909	.964	82.3	118.9	+ 7.7	0	22
06	15:308	- 9.7	208.1	+ 1.1			06	17:167	- 8.9	183.5	+ 1.4		
19899	.818	290.9	261.2	+17.6	4	28	19905	.949	259.9	254.3	- 9.1	11	75
19890	.736	283.5	254.7	+10.6	4	43	19893	.706	295.3	225.6	+18.5	12	65
19905	.715	255.7	252.5	- 9.4	11	54	19894	.669	302.1	221.0	+21.8	37	136
19891	.701	287.7	251.2	+13.1	10	88	19895	.590	249.5	217.5	-10.8	0	2
19897	.550	297.1	238.5	+15.4	3	18	19903	.601	302.4	216.0	+19.8	9	47
19893	.410	315.5	225.6	+18.0	30	164	19898	.372	233.1	201.0	-11.5	42	164
19894	.409	328.3	221.4	+21.4	37	168	19906	.422	49.1	164.1	+17.2	5	25
19903	.355	335.1	217.2	+19.8	16	94	19904	.783	63.2	135.0	+21.5	12	42
19895	.260	216.1	217.0	-11.0	5	23	19907	.836	75.2	127.7	+13.1	20	59
19902	.336	195.6	213.5	-17.7	0	3	19909	.909	81.9	118.4	+ 7.9	0	13
19898	.251	151.3	201.1	-11.4	55	355	19908	.919	107.5	118.2	-15.4	0	11
19900	.352	141.7	195.1	-14.9	13	33							
19906	.737	67.5	162.8	+17.1	12	43	06	18:286	- 8.4	168.7	+ 1.5		
04 1428	.755	63.7	162.1	+20.3	0	7	19893	.850	290.6	225.3	+18.1	7	48
19904	.956	67.7	136.3	+21.6	27	174	19894	.814	296.2	220.4	+21.9	36	180
19907	.987	76.7	127.6	+13.3	42	106	19903	.769	294.4	216.5	+19.5	7	48
							19898	.567	247.0	200.7	-11.4	46	185
							04 1428	.360	351.8	171.8	+22.3	1	11
							19906	.276	13.8	164.7	+16.9	4	22
							19904	.619	55.4	135.6	+21.7	8	35
							19907	.669	72.2	128.0	+12.9	20	74
							19909	.767	80.7	119.0	+ 8.1	0	12
							19908	.793	109.9	118.4	-14.7	4	15

continued

- Group 19904. June 14 - 20. A composite spot which breaks up and dies out near the central meridian.
- Group 19905. June 15 - 17. A pair of small spots.
- Group 19906. June 15 - 19. A single spot.
- Group 19907. June 15 - 27. Return of Group 19866, third appearance. A regular spot until June 20. On the next day several small spots appear and the regular spot begins to break up. The whole group becomes a single composite structure on June 26.
- Group 19908. June 16 - 20. Several tiny spots on June 16; a single spot on succeeding days.
- Group 19909. June 16 - 19. Return of Group 19877. A small spot.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
06	19324	- 7.9	154.9	+ 1.6			06	23432	- 6.1	100.5	+ 2.1		
19893	.936	288.6	223.6	+18.0	0	13	19907	.468	291.1	126.9	+11.5	16	110
19894	.919	293.6	220.2	+22.3	40	182	19910	.578	57.9	69.4	+19.6	54	289
19903	.909	291.1	218.9	+19.8	0	41	19911	.707	90.1	55.8	+ 1.4	1	19
19898	.748	252.8	201.6	-11.5	44	243	19912	.942	98.4	30.9	- 7.2	0	13
19906	.312	327.1	165.1	+16.7	0	6	19913	.963	82.8	26.3	+ 7.5	33	215
19904	.467	44.7	134.4	+20.8	3	27	19914	.993	96.8	18.1	- 6.5	8	115
19907	.483	66.2	128.1	+12.6	16	58							
19909	.589	78.1	119.5	+ 8.2	0	3	06	24338	- 5.7	88.6	+ 2.2		
19908	.636	114.9	118.6	-14.2	0	9							
19910	.995	70.4	71.0	+19.6	65	300	19907	.637	286.1	127.1	+11.9	41	199
							19910	.439	46.1	69.0	+19.7	51	313
06	20318	- 7.5	141.8	+ 1.7			19911	.513	91.5	57.9	+ 1.1	0	1
19894	.978	293.1	219.3	+22.9	28	168	19912	.854	99.7	30.8	- 7.1	0	17
19903	.975	290.7	218.5	+20.5	0	16	19913	.888	82.5	26.2	+ 7.7	51	260
19898	.887	255.8	203.0	-11.6	70	431	19914	.966	98.9	14.4	- 7.9	52	312
19904	.332	9.7	138.4	+20.7	0	10	2	.968	99.1	13.8	- 8.2	43	271
19907	.301	50.4	128.1	+12.7	15	59							
19908	.463	125.6	119.0	-14.0	0	4	06	25365	- 5.2	75.0	+ 2.3		
19910	.952	69.5	70.5	+20.0	51	377							
							19907	.802	284.7	127.6	+13.1	49	329
06	21315	- 7.1	128.6	+ 1.8			19910	.327	18.7	68.6	+20.2	63	296
19898	.963	257.1	202.0	-11.8	33	212	19912	.748	102.9	27.7	- 7.9	0	32
19907	.185	5.0	127.6	+12.4	15	67	19915	.755	96.0	26.4	- 3.0	0	8
19910	.865	68.1	70.2	+19.8	59	411	19913	.756	81.3	26.1	+ 8.0	39	256
19911	.967	89.1	53.5	+ 1.3	0	27	19914	.874	100.1	14.9	- 7.5	40	266
							2	.880	100.2	14.2	- 7.9	32	225
06	22328	- 6.6	115.2	+ 2.0			19916	.995	63.4	350.7	+26.6	19	219
19898	.996	258.2	199.1	-11.5	0	72							
19907	.275	311.0	127.4	+12.3	18	78	06	26375	- 4.8	61.6	+ 2.4		
19910	.742	65.1	69.8	+19.5	53	366	19907	.918	283.5	127.8	+13.4	78	519
19911	.875	89.6	54.4	+ 1.3	2	33	19917	.921	251.2	126.7	-16.3	0	3
							19910	.328	339.0	68.7	+20.2	65	411

continued

- Group 19910. June 19 - July 2. A regular spot, with numerous companions until June 25, after which it becomes composite.
- Group 19911. June 21 - 24. A pair of tiny spots of which only the leader is seen on June 24.
- Group 19912. June 23 - 29. A small spot on June 23 and 24; numerous variable, scattered spots on the following days.
- Group 19913. June 23 - July 4. Return of Group 19888. A regular spot, which develops a triple umbra by June 26 before dividing into two separate components on the next day.
- Group 19914. June 23 - July 6. Return of Group 19879, third appearance. A stable regular spot with variable companions.
- Group 19915. June 25 - 27. A single spot on June 25; nothing is seen on June 26; a tiny cluster on June 27.
- Group 19916. June 25 - July 8. A stream, of which the principal component is a large composite spot which alone survives at the west limb.
- Group 19917. June 26 - 27. A tiny spot growing rapidly as it disappears from view.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
06	26:375	<i>continued</i>					06	29:307	- 3:5	22:8	+ 2:8		
05 1428	-173	94.0	51.7	+ 1.7	0	8							
19912	-549	107.5	29.9	- 7.4	0	7	19921	-939	249.8	90.3	-17.8	3	31
19913	-592	79.3	25.7	+ 8.3	43	258	19922	-845	281.2	80.1	+10.9	0	7
19914	-741	102.8	15.0	- 7.7	52	231	19910	-748	293.9	69.1	+19.5	59	414
2	-745	102.9	14.6	- 7.9	49	214	19912	-207	213.1	29.3	- 7.2	0	8
19916	-953	61.6	350.6	+27.7	103	563	19913	-112	326.0	26.4	+ 8.0	27	193
							19914	-231	144.4	15.0	- 7.9	43	202
							2	-233	144.3	14.9	- 8.1	43	197
							19919	-419	141.2	7.0	-16.2	30	191
							19916	-631	47.2	351.4	+27.7	127	716
							19920	-870	82.7	322.5	+ 7.7	108	855
06	27:618	- 4:2	45.1	+ 2.6									
19907	-990	283.0	127.3	+13.2	42	370							
19917	-984	254.1	123.5	-15.1	0	44							
19910	-489	308.3	69.1	+19.9	67	436	06	30:332	- 3:0	9:2	+ 2:9		
19912	-343	123.9	28.5	- 8.6	0	9							
19915	-338	111.4	26.8	- 4.6	0	4	19922	-952	280.6	81.3	+11.0	0	11
19913	-336	72.0	26.4	+ 8.3	40	131	19910	-872	291.0	68.8	+19.6	66	426
19914	-527	108.8	15.0	- 7.4	38	207	19913	-306	286.7	26.3	+ 7.8	29	126
2	-456	110.8	19.8	- 7.0	0	7	19914	-215	207.6	15.0	- 8.1	39	201
19918	-579	80.6	10.1	+ 7.5	0	3	2	-215	207.6	15.0	- 8.1	39	201
19919	-693	115.6	4.9	-15.4	15	70	19919	-338	175.8	7.8	-16.6	19	154
19916	-848	58.2	350.6	+28.0	118	696	19916	-502	32.7	351.5	+27.6	116	749
19920	-977	82.8	327.4	+ 7.6	0	21	19920	-718	81.5	323.6	+ 8.1	153	1018
							06 1428	-879	108.3	309.9	-14.4	0	14
							19923	-980	87.8	291.0	+ 2.7	0	29
06	28:390	- 3:9	34.9	+ 2.6									
19921	-845	247.3	89.5	-17.5	0	20	07	1:305	- 2:6	356:3	+ 3:0		
19910	-610	299.7	69.0	+19.7	58	442	19910	-957	289.8	69.2	+19.7	39	396
19913	-172	57.1	26.6	+ 8.0	25	149	06 1429	-712	275.2	41.6	+ 5.7	0	15
19912	-265	144.6	26.0	- 9.7	0	15	19913	-502	279.9	26.1	+ 7.5	29	144
19914	-383	118.3	15.1	- 7.8	47	227	19914	-368	237.7	14.6	- 8.5	33	213
2	-386	118.3	14.9	- 8.0	47	227	2	-368	237.7	14.6	- 8.5	33	197
19918	-475	82.9	6.8	+ 5.7	0	5	06 1429	-291	301.4	10.9	+11.5	0	8
19919	-560	125.0	6.5	-16.2	32	136	19919	-381	208.6	7.2	-16.6	26	161
19916	-756	54.4	351.0	+28.0	134	690	19916	-432	11.1	350.9	+28.0	116	825
19920	-960	83.2	321.1	+ 7.3	47	671	19920	-536	78.6	324.3	+ 8.6	193	1499
							19923	-907	88.8	291.4	+ 2.4	0	29
							19924	-984	65.6	276.6	+24.6	14	87

Group 19918. June 27 - 28. Tiny variable spots.
 Group 19919. June 27 - July 6. A cluster of small spots which gradually increase in area as they cross the disk.
 Group 19920. June 27 - July 10. A large composite stream throughout.
 Group 19921. June 28 - 29. A few tiny spots.
 Group 19922. June 29 - 30. A tiny spot.
 Group 19923. June 30 - July 2. One or two small spots.
 Group 19924. July 1 - 7. A regular spot which begins to break up and die out after July 4.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
07	2.374	- 2.1	342.2	+ 3.1			07	4.369	<i>continued</i>				
19910	.999	289.9	70.2	+20.0	0	118	19920	.183	300.5	324.9	+ 8.5	336	1867
19913	.698	277.4	26.2	+ 7.3	21	112	19924	.681	56.8	277.2	+24.4	14	60
19914	.562	249.7	14.3	- 8.6	39	178	19926	.832	82.4	259.6	+ 8.2	63	366
2	.562	249.7	14.3	- 8.6	39	178	19927	.867	75.8	256.1	+13.9	10	83
19919	.504	232.0	6.4	-15.1	61	312							
19916	.442	343.1	350.5	+28.0	145	900							
19925	.536	10.2	335.6	+34.8	0	14	07	5.671	- 0.6	298.5	+ 3.4		
19920	.321	73.3	324.2	+ 8.2	225	1617							
19923	.789	88.8	290.2	+ 2.9	0	19	19928	.980	276.0	17.0	+ 6.5	0	39
1429	.898	80.0	278.4	+10.4	0	6	19914	.974	260.2	14.5	- 8.8	35	276
19924	.919	64.5	276.6	+24.6	20	93	2	.974	260.2	14.5	- 8.8	35	276
19926	.996	81.9	257.4	+ 8.4	0	26	19919	.939	253.7	6.5	-13.9	73	348
							19916	.812	302.2	349.4	+27.8	125	769
							19920	.454	282.8	325.0	+ 8.8	220	1626
							19929	.487	317.2	319.7	+24.1	1	17
							19924	.489	42.3	277.5	+24.3	12	34
							19926	.633	80.2	259.6	+ 8.9	41	223
							19927	.659	72.4	258.3	+14.1	9	82
07	3.366	- 1.6	329.1	+ 3.2									
19913	.842	276.2	26.3	+ 7.0	15.	110							
19914	.730	254.7	14.3	- 8.8	40	195							
2	.730	254.7	14.3	- 8.8	40	195							
19919	.661	243.4	6.5	-14.5	56	369							
19916	.530	322.7	350.2	+27.8	137	915							
19925	.512	349.3	335.6	+33.3	0	9	07	6.325	- 0.3	289.9	+ 3.5		
19920	.122	40.5	324.5	+ 8.5	220	1890	19914	.996	261.0	13.7	- 8.6	36	262
19924	.818	61.8	276.8	+24.6	12	54	19919	.979	254.6	6.6	-14.2	42	290
19926	.936	82.8	259.6	+ 7.8	49	202	19916	.874	299.8	348.5	+27.5	130	738
19927	.966	76.7	254.1	+13.6	0	9	19920	.596	280.1	326.1	+ 8.8	243	1758
							19929	.572	307.5	319.4	+23.4	0	5
							19924	.408	28.9	277.5	+24.3	4	24
							19926	.505	79.2	259.9	+ 8.4	29	154
							19927	.549	70.8	257.8	+13.3	6	59
							19930	.827	74.4	234.6	+14.8	0	23
							1429	.892	121.5	232.4	-25.9	0	2
07	4.369	- 1.2	315.8	+ 3.3									
19913	.941	276.3	26.0	+ 7.0	13	74							
19928	.855	276.3	14.4	+ 7.1	2	15							
19914	.863	257.9	14.2	- 8.7	41	191							
2	.863	257.9	14.2	- 8.7	41	191							
19919	.807	249.5	6.9	-14.2	98	486							
19916	.654	310.4	349.9	+27.7	159	981							
19925	.594	330.0	336.7	+33.9	1	14	07	7.343	+ 0.2	276.4	+ 3.6		
							19916	.953	297.7	348.0	+27.4	139	731

continued

continued

- Group 19925. July 2 - 4. Tiny scattered spots.
- Group 19926. July 2 - 11. A stream which breaks up into a scattered cluster by July 9.
- Group 19927. July 3 - 11. Two tiny spots developing into a scattered stream by July 6.
- Group 19928. July 4 - 5. A small spot.
- Group 19929. July 5 - 6. Two or three tiny spots.
- Group 19930. July 6 - 16. A few small spots developing into a stream by July 8. The leading spot becomes regular in outline by July 12 and retains its identity throughout.
- Group 19931. July 7 - 10. A small cluster, diminishing to a single spot on July 10.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
07	7.343	<i>continued</i>					07	10.416	<i>continued</i>				
19920	.768	278.9	326.4	+ 9.1	234	1857	19927	.416	301.7	257.2	+16.2	2	38
05 1429	.455	184.0	278.4	-23.2	0	5	19926	.354	286.6	255.8	+ 9.5	1	21
19924	.363	356.8	277.7	+24.8	1	11	19931	.378	232.0	253.3	- 9.7	0	6
19926	.291	73.2	260.1	+ 8.3	16	95	19930	.204	3.4	235.0	+15.6	110	683
19927	.331	55.8	260.1	+14.1	1	60	19932	.368	133.6	220.1	-10.9	1	11
19931	.475	119.0	251.6	-10.0	0	7	19933	.653	65.1	197.2	+19.0	25	121
19930	.666	71.9	235.7	+14.6	16	86	19934	.985	71.4	155.1	+19.0	0	185
19932	.877	105.2	216.9	-11.3	5	36							
19933	.988	71.8	194.8	+18.5	0	28							
							07	11.555	+ 2.1	220.7	+ 4.1		
07	8.604	+ 0.8	259.7	+ 3.8			07 1429	.952	248.9	290.0	-18.6	0	19
19916	.996	296.8	345.4	+27.0	0	452	19927	.630	288.9	258.6	+14.9	1	27
19920	.926	278.4	327.5	+ 9.2	178	1570	19926	.616	282.9	258.2	+11.1	0	8
19926	.082	354.0	260.2	+ 8.4	7	44	19930	.322	307.3	236.0	+15.1	74	453
19927	.188	359.4	259.8	+14.6	0	16	19933	.442	54.9	198.4	+18.4	19	110
19931	.269	152.5	252.5	-10.0	1	16	19934	.898	71.8	157.0	+18.1	39	201
19930	.451	63.1	235.2	+15.1	62	372	19935	.956	67.7	147.8	+22.5	62	294
19932	.693	110.6	218.5	-11.2	14	74							
19933	.903	71.2	195.6	+18.5	29	162							
							07	12.328	+ 2.4	210.4	+ 4.1		
07	9.383	+ 1.1	249.4	+ 3.8			19930	.458	295.8	235.6	+15.2	58	408
19920	.979	278.7	327.7	+ 9.3	119	984	19936	.224	50.8	200.3	+12.2	0	3
06 1429	.957	261.5	321.6	- 7.0	0	19	19933	.331	38.9	197.8	+18.9	22	125
19926	.200	297.5	259.7	+ 9.0	2	21	19934	.808	70.9	157.3	+17.8	51	227
19927	.252	319.1	259.2	+14.7	0	34	19935	.898	66.8	147.4	+22.6	42	236
19931	.244	191.7	252.3	- 9.9	7	39	19937	.988	107.6	131.2	-16.6	16	133
19930	.309	49.5	235.4	+15.2	53	525							
19932	.564	116.7	218.7	-11.3	8	59							
19933	.808	69.7	196.5	+18.5	19	113	07	13.331	+ 2.9	197.2	+ 4.2		
							19930	.651	288.5	236.8	+15.1	46	358
07	10.416	+ 1.6	235.7	+ 3.9			19936	.151	337.8	200.5	+12.2	0	27
19920	.987	277.7	316.8	+ 8.2	0	61	19933	.261	356.1	198.2	+19.2	21	99
						<i>continued</i>	19934	.657	68.0	157.7	+17.5	35	189
							19935	.786	64.1	147.3	+22.8	31	231
							19937	.932	109.2	131.0	-16.2	18	86

Group 19932. July 7 - 10. A few small spots with rapid development and decline.
 Group 19933. July 7 - 19. A short stream of which the leader, a regular spot, alone remains on July 14.
 Group 19934. July 10 - 22. A double spot until July 12. After this other spots appear to the rear and the whole group assumes stream formation.
 Group 19935. July 11 - 23. A regular spot until July 13. On July 14 this begins to break up and numerous other spots appear, thus forming a large composite structure by July 17. The group disintegrates as it passes from view.
 Group 19936. July 12 - 13. Tiny spots.
 Group 19937. July 12 - 23. Return of Group 19917. A diminishing regular spot.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area		
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots	
1960	o	o	o				1960	o	o	o				
07	14.442	+ 3.4	182.5	+ 4.3			07	17.446	<i>continued</i>					
19930	.817	285.6	236.9	+15.2	59	417	19939	.560	268.3	176.6	+ 2.9	12	77	
19933	.364	315.6	198.0	+19.2	15	83	19934	.349	308.4	159.2	+16.9	23	137	
19934	.477	60.5	156.8	+17.4	37	253	19935	.306	342.5	148.4	+21.5	122	955	
19935	.628	58.1	147.3	+22.8	27	201	19937	.418	148.9	129.8	-16.4	9	52	
08 1429	.679	52.6	145.1	+27.7	1	12	19938	.748	119.0	99.5	-17.7	0	9	
19937	.822	113.4	130.8	-16.4	16	77	19943	.737	80.3	95.3	+10.3	1	24	
							19941	.847	77.0	84.9	+13.5	11	54	
							19942	.930	65.9	74.6	+24.1	40	252	
							19944	.967	70.5	67.1	+20.0	0	13	
07	15.317	+ 3.8	170.9	+ 4.4			07	18.322	+ 5.1	131.1	+ 4.7			
19930	.915	284.7	237.2	+15.2	46	358	10 1429	.957	281.1	204.6	+12.0	0	24	
19933	.499	302.0	197.4	+19.3	13	68	19933	.909	290.1	196.3	+20.2	14	57	
19934	.306	44.1	158.1	+16.9	32	178	19939	.716	269.5	176.7	+ 2.9	5	44	
19935	.481	49.9	147.6	+22.1	58	355	19934	.512	295.6	159.8	+16.9	19	128	
19937	.708	118.8	130.7	-16.6	10	67	19935	.403	316.6	148.3	+21.4	152	980	
19938	.963	109.5	99.0	-17.5	0	29	11 1429	.302	357.6	131.9	+22.2	0	1	
							19937	.370	176.5	129.8	-16.9	12	52	
07	16.304	+ 4.2	157.8	+ 4.5			19938	.616	126.9	100.2	-17.6	0	8	
19930	.987	284.0	239.0	+14.5	62	362	19943	.582	79.1	95.8	+10.1	0	20	
09 1429	.752	247.8	203.4	-13.3	0	12	19941	.719	75.5	85.6	+13.6	5	22	
19933	.679	294.5	198.7	+19.7	14	73	19942	.843	63.9	75.1	+24.4	34	194	
19939	.319	263.8	176.2	+ 2.3	3	22	19944	.900	69.7	67.2	+20.3	0	24	
19934	.216	358.0	158.3	+16.9	33	158	19945	.957	103.0	59.7	-10.9	0	39	
19935	.337	27.3	148.3	+21.8	96	618	19946	.972	81.2	54.5	+ 9.7	13	106	
19937	.566	128.4	130.4	-16.5	10	64								
19938	.885	112.4	99.0	-17.2	0	18	07	19.349	+ 5.6	117.5	+ 4.8			
19940	.872	74.7	97.3	+15.5	0	10	19933	.977	289.3	196.0	+19.8	0	42	
19941	.954	77.8	85.0	+13.0	0	15	19939	.855	269.8	176.2	+ 2.4	7	73	
19942	.989	66.4	75.3	+24.0	30	315	19934	.689	289.6	160.1	+16.8	22	100	
							19935	.562	302.5	148.1	+21.6	130	776	
07	17.446	+ 4.7	142.7	+ 4.6			19937	.414	207.9	129.2	-16.7	5	39	
19933	.817	290.7	196.7	+19.5	16	64	19938	.489	146.7	101.1	-19.4	0	3	
							12 1429	.518	119.1	90.3	-10.3	0	12	

continued

continued

- Group 19938. July 15 - 19. One or two tiny variable spots.
- Group 19939. July 16 - 20. A few scattered spots briefly assuming stream formation on July 17 and 18.
- Group 19940. July 16 - 22. Intermittent. Small scattered spots.
- Group 19941. July 16 - 23. A single spot, developing into a small scattered stream; not seen on July 21.
- Group 19942. July 16 - 28. A regular spot, with variable following companions until July 23.
- Group 19943. July 17 - 18. Tiny spots.
- Group 19944. July 17 - 20. Return of Group 19910. Two or three tiny spots.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
07	19:349	<i>continued</i>					07	22:315	+ 6.8	78.3	+ 5.1		
19941	.544	72.5	85.5	+13.5	0	17	19934	.991	286.2	161.7	+16.7	0	26
19942	.722	60.3	74.2	+24.5	28	174	19935	.929	290.8	146.8	+21.2	88	729
19944	.777	67.6	67.7	+20.3	0	13	19937	.811	245.2	128.3	-16.6	2	14
19945	.874	105.8	58.7	-11.3	7	63	19948	.643	278.5	118.3	+ 9.3	19	96
19946	.887	82.1	54.9	+ 9.3	17	84	19940	.366	300.5	97.3	+15.4	1	8
							19941	.147	350.3	79.8	+13.4	3	11
							19942	.350	14.3	72.8	+24.8	27	162
							19945	.361	135.3	63.5	- 9.8	15	81
07	20:331	+ 6.0	104.5	+ 4.9			19946	.362	76.9	57.5	+ 9.4	18	89
19939	.943	268.2	174.8	- 0.0	7	34	19947	.690	101.4	35.8	- 4.1	3	19
19934	.840	287.2	161.4	+17.1	19	92	19949	.813	103.3	25.5	- 7.7	12	63
19935	.712	295.2	148.0	+21.2	157	1106	19950	.906	104.1	15.1	-10.5	19	124
19937	.536	228.0	129.0	-16.5	8	42							
19940	.239	27.6	97.9	+17.0	11	56	07	23:338	+ 7.3	64.8	+ 5.1		
19941	.361	65.3	85.0	+13.2	9	58	19935	.988	291.2	147.1	+21.7	115	740
19942	.583	52.9	73.9	+24.7	38	238	19937	.916	249.5	128.1	-16.4	0	5
19944	.626	63.6	68.0	+20.0	3	22	19948	.775	277.5	115.6	+ 9.1	0	14
19945	.750	110.0	58.7	-11.5	16	56	19941	.375	294.3	85.2	+13.7	1	15
19946	.763	81.4	54.8	+ 9.7	14	80	19942	.367	338.5	73.3	+25.0	23	115
19947	.938	96.8	35.7	- 4.6	10	50	19945	.256	182.3	65.4	- 9.5	0	24
							19946	.148	67.4	56.9	+ 8.3	8	55
							19947	.522	111.3	35.6	- 6.4	0	17
07	21:366	+ 6.4	90.8	+ 5.0			19949	.653	107.1	26.0	- 7.1	6	76
13 1429	.983	266.0	169.6	- 3.0	0	13	19950	.786	107.3	15.3	-10.2	16	106
19934	.931	286.4	159.7	+17.0	16	103							
19935	.845	292.3	147.8	+21.4	144	866	07	24:339	+ 7.7	51.5	+ 5.2		
19937	.684	239.1	128.4	-16.6	10	36	19942	.480	314.5	73.5	+24.5	19	112
19948	.453	280.8	117.5	+ 9.3	16	78	19945	.392	231.5	69.5	- 9.1	0	11
14 1429	.125	346.4	92.6	+11.9	1	7	19951	.353	317.1	66.3	+20.0	0	11
19942	.438	38.4	73.5	+24.7	30	187	19946	.130	296.5	58.2	+ 8.5	2	51
19945	.576	117.5	59.6	-11.0	12	65	19947	.322	123.5	36.0	- 5.2	0	10
19946	.573	81.5	56.0	+ 8.9	8	50	19949	.485	115.1	25.4	- 7.1	17	77
19947	.833	100.0	35.5	- 5.5	8	60							<i>continued</i>
19949	.920	101.0	25.2	- 8.1	9	49							
19950	.975	101.7	15.1	-10.2	35	164							

Group 19945. July 18 - 28.

A variable extended stream, of which a single component alone remains on July 26. There is a renewal of activity on July 27 and the group is still growing when it passes round the limb.

Group 19946. July 18 - 27.

A stream of variable spots which assumes cluster formation by July 23 and then begins to die out.

Group 19947. July 20 - 26.

A cluster of small scattered spots.

Group 19948. July 21 - 23.

A short-lived bi-polar stream.

Group 19949. July 21 - 29.

A diminishing spot with variable companions.

Group 19950. July 21 - Aug. 2.

A stable regular spot with occasional companions.

Group 19951. July 24 - 26.

Tiny spots.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960	o		o	o			1960		o	o	o		
07	24.339	<i>continued</i>					07	27.345	+ 9.0	11.8	+ 5.5		
19950	.639	113.7	15.1	-10.7	26	132							
19952	.953	63.5	338.9	+26.8	18	77	19945	.900	257.4	74.3	- 8.8	2	24
19953	.985	82.8	331.2	+ 8.0	130	1002	19942	.880	295.0	72.7	+24.6	17	96
19954	.988	78.5	329.6	+12.1	22	169	19946	.751	278.4	60.5	+ 9.9	0	5
							19949	.303	231.4	25.5	- 5.5	1	15
							19950	.271	189.7	14.4	-10.0	23	146
							19952	.635	52.2	337.4	+27.4	10	70
							19953	.651	84.0	331.1	+ 8.1	78	777
07	25.319	+ 8.1	38.6	+ 5.3			19954	.673	78.0	329.6	+12.1	6	42
15 1429	.909	261.5	102.8	- 5.4	0	6							
19942	.624	303.9	73.1	+24.7	19	98							
19945	.562	246.5	69.8	- 8.4	1	14	07	28.558	+ 9.5	355.7	+ 5.6		
19951	.516	301.7	66.4	+20.4	0	12							
19946	.327	281.4	57.4	+ 8.7	3	40	19945	.978	258.6	72.3	-10.0	17	76
19947	.185	166.8	36.1	- 5.0	1	11	19942	.969	294.0	72.2	+24.5	10	63
19949	.308	132.1	25.3	- 6.7	11	59	19949	.526	250.1	25.4	- 5.5	1	7
19950	.475	123.3	14.9	-10.2	23	120	19955	.558	226.4	20.7	-17.5	1	5
19952	.880	61.9	338.1	+27.1	15	77	19950	.409	229.8	14.1	-10.0	24	120
19953	.923	83.4	330.9	+ 8.1	104	934	19952	.477	37.4	336.7	+27.5	13	60
19954	.933	78.9	329.2	+12.3	19	112	19954	.430	72.4	331.0	+12.5	8	23
							19953	.426	83.0	330.5	+ 8.0	127	920
							19956	.577	44.0	328.4	+29.4	1	7
							19954	.897	85.6	291.8	+ 6.4	2	16
07	26.321	+ 8.5	25.3	+ 5.4									
19945	.783	253.5	74.6	- 9.4	0	7							
19942	.761	297.7	72.8	+24.3	22	102	07	29.473	+ 9.8	343.6	+ 5.6		
19951	.678	294.2	66.4	+20.2	0	3							
19946	.544	278.4	58.2	+ 9.1	0	9	19949	.688	256.0	25.6	- 5.4	0	5
16 1429	.273	289.3	40.4	+10.4	0	6	19955	.700	239.8	22.5	-16.2	0	8
19947	.290	228.9	37.9	- 5.7	3	27	19950	.678	232.9	18.5	-19.5	0	8
19949	.200	179.9	25.3	- 6.1	5	28	19950	.561	242.8	13.9	-10.0	24	114
19950	.325	145.3	14.5	-10.1	21	116	19952	.391	17.1	336.2	+27.5	14	50
19952	.769	58.9	337.9	+27.1	19	76	19954	.232	53.6	332.6	+13.4	6	32
19953	.806	83.9	331.5	+ 8.1	93	775	19953	.220	77.4	331.2	+ 8.2	109	790
19954	.826	79.3	329.5	+11.9	11	55							

- Group 19952. July 24 - Aug. 3. Return of Group 19916. A diminishing regular spot, which disintegrates after August 2.
- Group 19953. July 24 - Aug. 5. Return of Group 19920. A moderate-sized composite spot, with numerous major companions until July 31. After this most of the companions die out.
- Group 19954. July 24 - 31. A single spot with occasional tiny companions, immediately north of 19953.
- Group 19955. July 28 - Aug. 1. One or two small spots.
- Group 19956. July 28 - Aug. 2. A few tiny spots on July 28. On July 29 and 30 nothing is seen, but on July 31 a pair of spots appear of which only the rear component remains on August 1.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
07	30.441	+10.2	330.8	+5.7			08	2.327	<i>continued</i>				
19955	.824	245.6	22.0	-16.3	2	11	19956	.643	312.4	326.0	+30.6	0	6
19950	.716	250.4	13.8	-9.7	18	119	04 1430	.516	230.8	316.8	-13.6	0	4
19952	.381	348.8	335.6	+27.5	9	44	19959	.411	80.2	268.5	+9.4	0	12
19954	.140	349.6	332.3	+13.6	8	71							
19953	.048	359.0	330.9	+8.3	130	773							
05 1430	.875	82.5	269.5	+9.3	2	7	08	3.375	+11.8	278.8	+6.0		
07	31.326	+10.6	319.1	+5.8			19952	.824	300.8	332.2	+28.6	0	14
19955	.905	248.6	20.5	-16.6	8	37	19953	.788	275.4	331.0	+8.0	75	476
19957	.843	296.0	15.5	+24.9	0	8	19959	.173	64.0	269.7	+10.2	0	9
19950	.843	254.2	14.4	-10.0	21	123							
19952	.449	327.0	335.1	+27.6	12	23	08	4.528	+12.2	263.5	+6.1		
19954	.273	295.2	333.7	+12.2	3	26	19953	.923	276.0	331.1	+7.8	62	349
19953	.203	282.9	330.6	+8.2	80	669	05 1430	.306	284.8	281.0	+10.3	0	12
19956	.450	338.2	330.2	+30.2	4	47	19959	.116	306.4	269.0	+10.0	0	4
19958	.965	77.5	243.8	+13.5	0	34	19960	.389	71.2	241.4	+12.8	1	14
08	1.327	+11.0	306.2	+5.9									
19955	.972	252.4	20.1	-15.5	0	19	08	5.331	+12.5	252.9	+6.1		
19957	.942	294.0	17.0	+24.5	0	57	19953	.978	276.9	331.4	+8.0	43	289
19950	.943	256.8	14.9	-10.3	21	113	19961	.385	223.1	268.3	-10.4	0	4
19952	.577	312.8	334.8	+28.2	4	27	19960	.217	56.8	242.2	+12.8	1	12
19953	.423	277.2	331.2	+8.3	75	496							
19956	.531	323.8	327.5	+30.8	0	21							
19958	.884	77.6	243.8	+13.7	0	5							
08	2.327	+11.4	292.6	+5.9			08	6.321	+12.9	239.8	+6.2		
19950	.995	258.5	15.2	-10.7	42	148	19961	.534	239.7	267.6	-10.0	0	11
19952	.714	304.1	334.5	+28.0	0	20	19962	.488	299.9	266.4	+19.6	0	5
19953	.622	275.6	331.2	+8.1	86	564	19963	.980	70.9	160.2	+19.9	73	290

continued

- Group 19957. July 31 - Aug. 1. A single spot on July 31; a pair of spots on August 1.
Group 19958. July 31 - Aug. 1. One or two tiny spots.
Group 19959. Aug. 2 - 4. A tiny cluster, of which only one component remains on August 4.
Group 19960. Aug. 4 - 5. Tiny spots.
Group 19961. Aug. 5 - 6. A tiny spot on August 5; a pair of spots on August 6.
Group 19962. Aug. 6 - 7. Tiny spots.
Group 19963. Aug. 6 - 18. Return of Group 19934. A stable regular spot with occasional companions.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
08	7430	+13.3	225.2	+6.3			08	11323	+14.8	173.7	+6.5		
19962	694	290.5	268.3	+18.6	0	8	19964	768	233.4	215.4	-22.4	3	28
19964	473	164.8	217.6	-20.8	0	6	19972	185	221.0	180.6	-1.6	1	22
19963	903	71.0	160.2	+19.8	39	257	19963	332	43.0	159.8	+20.3	47	217
19965	977	71.1	146.2	+19.8	123	1092	19965	521	60.2	144.9	+20.7	126	948
19966	986	66.4	143.2	+24.3	20	155	19966	575	55.0	142.6	+24.7	13	64
							19967	756	114.9	128.9	-13.8	75	291
							19968	871	107.3	115.8	-11.6	2	16
							19969	914	100.1	109.0	-6.4	90	380
08	8344	+13.7	213.1	+6.3			19970	936	76.5	103.5	+14.9	81	427
19963	803	69.4	160.1	+20.2	45	295	19971	954	73.7	100.3	+17.5	35	346
19965	915	70.9	146.4	+20.0	140	991	19974	973	97.6	98.3	-5.8	42	272
19966	939	65.9	142.7	+24.7	20	102	19973	977	70.4	94.8	+20.4	0	37
							08	12329	+15.1	160.4	+6.5		
							19964	892	241.2	217.6	-22.0	0	23
08	9340	+14.1	199.9	+6.4			19972	416	252.6	183.7	-1.0	56	324
19963	655	65.9	160.4	+20.5	41	217	19963	241	3.0	159.6	+20.4	44	222
19965	810	69.6	146.1	+20.2	165	824	19975	189	18.1	156.9	+16.8	0	14
19966	846	64.8	142.7	+24.7	20	116	19965	354	44.9	145.0	+20.7	130	979
19967	953	107.6	130.3	-14.5	18	83	19966	427	42.1	142.1	+24.6	15	51
							19967	606	123.6	129.2	-13.9	97	546
							19968	756	111.7	114.7	-11.7	4	39
							19969	802	103.3	108.8	-6.5	110	492
08	10372	+14.4	186.3	+6.4			19970	826	76.3	104.5	+15.0	54	336
19964	650	224.0	215.3	-22.2	3	32	19971	864	73.5	100.4	+17.5	66	400
19963	486	59.2	160.0	+20.2	56	212	19974	907	99.9	96.7	-6.1	48	364
19965	668	66.5	145.6	+20.3	85	887	19973	915	70.3	93.6	+20.6	9	63
19966	715	61.4	142.8	+24.7	30	85							
19967	876	110.3	128.6	-14.2	27	130	08	13327	+15.5	147.2	+6.6		
19968	962	104.0	114.2	-11.5	0	43	19972	615	259.9	184.3	-0.8	61	238
19969	979	98.1	109.2	-6.5	60	496	19963	313	320.5	159.4	+20.4	40	222
19970	985	75.8	105.1	+15.1	68	335	19975	232	322.3	155.7	+17.0	0	8
19971	998	73.8	98.5	+16.5	0	115							

continued

Group 19964. Aug. 7 - 12. A single spot on August 7; nothing is seen on August 8 and 9. On August 10 a small stream appears, of which only the leader remains on August 12.

Group 19965. Aug. 7 - 19. A stream, led by a large composite spot which is the most persistent component.

Group 19966. Aug. 7 - 17. Return of Group 19935. A small spot until August 11. On August 12 other small spots appear to the rear thus forming a small stream of which only a single component remains on August 16.

Group 19967. Aug. 9 - 20. At first a single spot which develops into a bi-polar stream by August 13. The leading portion coalesces into a composite spot with a double umbra by August 14, when the rear part begins to break up and die out.

Group 19968. Aug. 10 - 15. Small variable spots.

Group 19969. Aug. 10 - 21. An unstable extended stream, of which only the leading spots remain on August 20.

Group 19970. Aug. 10 - 22. A persistent spot with small companions until August 17, then it begins to break up and form a loose cluster of which the leader alone remains on August 22. This group immediately precedes and is, at times, almost in contact with Group 19971.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960	o		o	o			1960	o		o	o		
08	13-327	<i>continued</i>					08	15-315	<i>continued</i>				
19965	241	5.3	145.8	+20.4	134	792	19969	312	137.3	108.7	- 6.5	75	424
19966	331	16.3	141.3	+25.0	10	49	19970	330	62.4	103.4	+15.1	77	396
19967	458	139.1	129.3	-13.8	161	759	19971	423	59.6	98.4	+18.5	187	1197
19968	600	120.4	115.4	-12.1	6	31	19974	453	117.5	97.2	- 5.9	67	365
19969	650	109.5	109.2	- 7.2	79	356	19976	766	109.0	73.8	- 9.8	62	340
19970	682	75.1	104.4	+15.0	68	350	19977	792	75.8	68.4	+15.3	111	509
19971	750	71.8	98.9	+17.9	91	522	19978	982	80.3	41.1	+10.8	28	236
19974	788	103.1	96.9	- 6.1	44	329							
19976	972	102.1	72.6	-10.0	11	104							
19977	968	75.4	70.8	+15.7	72	394							
							08	16-328	+16.5	107.5	+ 6.7		
08	14-595	+15.9	130.4	+ 6.7			19972	968	268.1	182.6	- 0.1	0	21
19972	802	263.8	183.1	- 0.8	32	155	19963	793	291.7	159.5	+21.2	47	207
19963	519	299.5	159.2	+20.6	51	216	19965	639	293.1	146.0	+19.8	94	555
19965	358	311.3	147.0	+20.0	61	507	19966	603	302.9	141.2	+24.7	0	14
19966	361	331.9	141.2	+25.0	9	41	19967	508	227.6	130.1	-13.6	96	717
19967	352	178.0	129.7	-13.7	91	852	19969	234	180.0	107.5	- 6.6	57	312
19968	393	143.1	116.6	-11.8	4	29	19970	164	28.7	102.9	+14.9	67	446
19969	430	122.6	109.1	- 7.1	58	272	19971	259	35.1	98.5	+18.8	85	841
19970	460	69.7	104.0	+15.1	50	344	19974	279	140.8	97.4	- 5.8	52	287
19971	549	66.3	98.6	+18.4	116	976	19976	592	117.2	75.3	- 9.9	50	281
19974	587	110.2	96.9	- 6.1	68	330	19977	628	73.1	69.1	+15.8	85	438
19976	872	105.3	72.0	- 9.7	28	224	19978	899	81.2	43.0	+10.8	12	68
19977	882	76.4	68.1	+15.1	99	500	19979	936	65.1	37.5	+25.6	0	13
19978	999	79.9	42.2	+10.4	0	69							
							08	17-347	+16.8	94.1	+ 6.8		
08	15-315	+16.2	120.9	+ 6.7			19963	899	290.6	158.5	+21.4	31	185
19972	890	265.8	183.3	- 0.5	18	108	19965	789	289.9	145.8	+19.8	48	381
19963	637	295.0	159.0	+20.9	46	219	19966	742	297.1	140.4	+24.4	0	5
19965	467	300.7	146.1	+19.8	117	608	07 1430	734	301.8	138.6	+27.6	0	5
19966	446	315.1	141.1	+24.6	5	27	19967	670	241.1	131.0	-13.4	93	524
06 1430	217	299.3	132.0	+12.6	4	21	19969	330	226.6	108.0	- 6.4	30	217
19967	381	203.6	129.9	-13.6	154	896	19970	210	315.2	102.8	+15.2	60	282
19968	315	168.2	117.2	-11.2	6	35	19971	222	341.0	98.4	+18.8	67	529
							19974	225	195.1	97.4	- 5.8	51	268
							19976	414	132.7	76.1	- 9.7	59	324

continued

continued

- Group 19971. Aug. 10 - 22. A few small spots developing into a complicated extended stream. The whole group begins to decline rapidly after August 19.
- Group 19972. Aug. 11 - 16. A cluster appearing near the central meridian and of rapid growth and decline; only a single spot remains on August 16.
- Group 19973. Aug. 11 - 12. A few small spots in close proximity to Group 19971.
- Group 19974. Aug. 11 - 22. A regular spot becoming elongated by August 14; there are scattered companions on several days.
- Group 19975. Aug. 12 - 13. A few tiny spots.
- Group 19976. Aug. 13 - 24. A few small spots, developing into a scattered stream and led by a regular spot after August 21.
- Group 19977. Aug. 13 - 25. A nearly regular spot with variable companions following and to the south.
- Group 19978. Aug. 14 - 24. A variable stream, of which the leading components coalesce to form a single spot by August 22; this alone remains on the following days.
- Group 19979. Aug. 16 - 17. A single tiny spot on August 16; a pair on August 17.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
08	17.347	continued					08	20.422	+17.8	53.4	+6.9		
19977	.435	67.6	69.5	+15.7	75	385	19967	.985	254.6	131.1	-13.7	71	393
19978	.787	81.9	41.8	+10.6	17	122	19969	.894	256.0	114.7	-9.2	18	108
19979	.838	64.0	37.8	+25.4	0	6	19970	.745	284.2	101.7	+15.1	23	160
19980	.990	99.8	13.5	-8.6	17	143	19971	.723	291.8	98.9	+20.4	17	135
							19974	.720	255.4	97.7	-5.5	38	225
08	18.341	+17.2	80.9	+6.8			19981	.626	235.8	85.7	-14.7	0	7
19963	.970	290.9	158.2	+21.9	55	176	19976	.488	235.1	77.3	-9.8	94	651
19965	.904	288.4	146.1	+19.5	50	312	19977	.308	301.5	69.2	+15.8	75	542
19967	.813	247.9	131.5	-13.4	92	528	19978	.158	61.9	45.3	+11.1	3	57
19969	.521	243.8	108.9	-7.2	28	145	19984	.508	42.2	30.7	+28.4	1	6
19970	.380	293.3	102.0	+15.0	34	267	19983	.391	86.9	30.3	+7.6	0	9
19971	.365	306.8	98.9	+19.1	50	427	19980	.669	112.2	14.7	-9.2	14	87
19974	.356	233.0	97.5	-5.8	42	237	19982	.776	120.7	8.9	-18.3	62	392
19981	.372	187.2	83.7	-14.8	0	9	19985	.989	83.5	331.3	+7.5	17	130
19976	.299	165.7	76.6	-9.8	84	683							
19977	.252	51.4	69.2	+15.7	67	477	08	21.376	+18.1	40.8	+6.9		
19978	.620	81.3	42.5	+10.7	16	138	19969	.959	259.2	112.8	-8.2	0	40
19980	.928	102.8	14.7	-9.2	28	116	19970	.864	283.1	101.1	+14.8	14	105
19982	.965	111.3	9.9	-18.5	47	205	19971	.843	290.2	98.3	+20.7	10	85
							19974	.851	258.8	97.6	-5.8	39	222
08	19.326	+17.5	67.9	+6.9			19976	.647	245.7	77.4	-9.7	85	667
19965	.972	288.1	145.6	+19.1	33	265	19977	.491	289.4	69.4	+15.5	68	550
08 1430	.918	280.5	135.2	+12.3	0	26	19986	.332	296.1	58.7	+15.0	0	6
09 1430	.897	292.3	132.0	+23.0	0	8	10 1430	.330	355.3	42.5	+26.1	1	14
19967	.917	251.6	131.4	-13.7	73	454	19978	.069	336.9	42.3	+10.5	1	24
19969	.713	251.8	110.8	-7.8	40	172	19984	.397	22.5	30.9	+28.2	0	6
19970	.564	286.9	101.7	+15.1	33	225	19983	.234	97.1	27.4	+5.1	0	5
19971	.541	296.5	98.7	+19.8	39	336	19980	.508	121.8	15.0	-9.2	19	68
19974	.533	247.9	97.6	-5.6	45	228	19982	.650	129.1	8.9	-18.2	48	410
19981	.448	218.1	84.4	-13.9	0	24	19985	.931	84.9	331.8	+7.3	12	65
19976	.328	209.2	77.2	-9.7	125	774							
19977	.157	353.1	69.0	+15.7	79	546	08	22.387	+18.4	27.4	+7.0		
19978	.417	79.6	43.4	+10.5	7	53	19970	.956	284.5	101.4	+15.8	12	81
19980	.826	106.1	14.6	-9.2	19	113							
19982	.893	114.6	9.4	-18.3	45	300							continued

- Group 19980. Aug. 17 - 29. At first a spot with numerous companions. On August 22 other spots appear and the whole group assumes cluster formation.
- Group 19981. Aug. 18 - 20. Tiny spots.
- Group 19982. Aug. 18 - 29. A fairly stable spot with double umbra and following companions.
- Group 19983. Aug. 20 - 28. A tiny spot, developing into a stream by August 22.
- Group 19984. Aug. 20 - 28. A few small spots.
- Group 19985. Aug. 20 - Sept. 1. Return of Group 19953, third appearance. A slowly diminishing regular spot.
- Group 19986. Aug. 21 - 22. Tiny spots.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U. T. and Group No.	Measures		Position		Area		U. T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
08	22-387	<i>continued</i>					08	25-529	+194	345-9	+71		
19971	.945	290-0	994	+21-1	0	45	19977	.989	284-5	68-6	+15-4	186	525
19974	.949	261-5	97-7	-5-8	33	182	19987	.792	297-0	37-2	+25-6	26	141
19976	.809	252-7	78-8	-9-5	82	493	19984	.733	302-2	30-4	+28-1	15	57
19977	.674	285-4	69-7	+15-5	79	423	19983	.670	269-9	28-1	+5-2	32	168
19986	.516	290-0	57-6	+16-2	0	15	19980	.563	241-2	15-8	-9-5	28	170
19978	.288	288-8	43-5	+12-0	8	50	19988	.473	247-2	11-8	-4-2	48	268
19984	.370	351-1	31-2	+28-3	3	20	19982	.560	220-7	8-5	-18-4	55	364
19983	.035	194-0	27-9	+5-3	3	32	19989	.433	314-7	5-6	+24-3	5	47
19980	.364	142-3	14-4	-9-8	26	133	19985	.244	89-0	331-8	+7-1	15	74
19982	.519	144-5	9-0	-18-2	67	378							
19985	.823	86-0	331-8	+7-3	18	90							
08	23-588	+18-8	11-6	+7-0			08	26-394	+19-6	334-5	+7-1		
19976	.937	256-9	79-1	-9-5	31	349	19987	.893	295-0	37-9	+25-4	23	135
19977	.844	283-7	69-5	+15-3	89	467	19984	.828	299-8	29-1	+28-5	6	35
19978	.580	278-9	47-1	+10-9	0	22	19983	.797	271-5	27-5	+5-4	23	130
19987	.489	316-3	33-8	+27-1	12	36	19980	.693	248-4	15-1	-9-4	27	151
19984	.467	324-4	29-6	+28-9	0	27	19988	.622	253-7	11-1	-4-3	73	382
19983	.289	263-2	28-2	+4-8	14	100	19982	.674	232-2	8-5	-18-4	45	326
19980	.294	190-2	14-6	-9-6	33	145	19989	.555	306-1	4-1	+25-2	25	123
19988	.222	185-0	12-7	-5-7	0	7	19985	.056	86-4	331-3	+7-3	14	65
19982	.434	173-9	8-8	-18-3	66	344	19990	.651	59-6	296-5	+24-8	5	21
19985	.640	86-7	331-6	+7-5	18	77							
08	24-457	+19-1	0-1	+7-0			08	27-287	+19-9	322-7	+7-1		
19976	.976	258-4	75-9	-9-6	0	16	19987	.962	295-1	38-3	+26-1	16	91
19977	.930	283-8	69-4	+15-4	79	455	19984	.909	298-8	28-1	+29-1	0	13
19978	.739	278-5	48-0	+11-0	0	13	19983	.905	272-8	27-7	+5-5	23	134
19987	.624	304-3	35-1	+26-4	11	58	19980	.820	253-3	15-3	-9-3	22	270
19984	.595	309-4	31-4	+28-2	3	30	19988	.761	258-0	10-8	-4-2	62	377
19983	.468	266-9	27-9	+4-8	36	142	19982	.786	239-7	8-2	-18-4	47	282
19980	.382	223-0	15-3	-9-3	16	85	19989	.697	299-6	4-6	+25-5	27	123
19988	.277	222-9	11-0	-4-8	7	47	19985	.145	270-9	331-1	+7-2	15	62
19982	.453	198-5	8-8	-18-3	64	288	19990	.491	50-2	298-3	+24-7	4	25
19985	.475	87-6	331-6	+7-3	18	73	19991	.829	71-7	266-6	+19-1	0	27

Group 19987. Aug. 23 - 28.

Group 19988. Aug. 23 - 29.

Group 19989. Aug. 25 - 29.

Group 19990. Aug. 26 - 28.

A small spot with following companions.

Tiny spots, appearing near the central meridian and rapidly developing to form a stream, of which the rear part becomes a regular spot by August 28.

An unstable stream of rapid development and decline.

A pair of tiny spots.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U. T. and Group No.	Measures		Position		Area		U. T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		o	o	o			1960		o	o	o		
08	28.329	+20.2	308.9	+7.1			08	31.345	+21.0	269.1	+7.2		
19983	.988	274.1	30.4	+5.1	7	101	19985	.878	273.9	330.8	+6.8	7	40
19984	.974	298.3	27.7	+29.1	0	46	19995	.808	252.1	320.2	-9.9	2	29
19980	.931	257.2	15.7	-9.1	15	133	19994	.721	287.3	315.0	+17.4	15	69
19988	.913	262.3	13.8	-4.0	69	488	19992	.596	228.5	296.8	-16.7	38	233
19982	.901	245.2	8.5	-18.6	63	267	19996	.381	215.4	282.0	-10.9	10	61
19989	.855	295.0	7.5	+25.0	22	133	19991	.209	5.9	267.8	+19.1	44	220
19985	.375	271.3	331.0	+7.1	15	64	01 1431	.813	101.1	216.1	-4.7	0	6
19990	.351	27.1	298.8	+25.2	1	13							
19992	.473	149.2	294.4	-17.0	4	23							
19991	.665	69.2	268.0	+19.1	5	32							
							09	1.377	+21.2	255.5	+7.2		
							19985	.966	275.1	330.8	+6.8	0	17
							19995	.913	256.2	319.3	-9.5	0	13
08	29.531	+20.5	293.1	+7.2			19994	.866	285.0	316.0	+16.5	25	126
19980	.989	259.7	13.1	-9.0	0	23	19992	.757	240.2	298.6	-16.8	65	371
19988	.980	263.5	10.5	-4.8	27	234	19996	.542	236.6	282.8	-10.8	9	69
19982	.980	249.3	8.0	-18.5	17	273	19991	.288	319.8	266.8	+19.7	57	269
19989	.953	294.0	6.6	+25.0	0	50	19997	.976	74.3	176.6	+16.8	0	20
19993	.856	240.7	345.7	-20.5	0	11							
19985	.612	272.3	330.9	+7.1	10	57	09	2.363	+21.5	242.4	+7.2		
19994	.389	296.7	314.3	+16.7	3	21	19995	.975	259.0	318.0	-9.0	0	20
19992	.412	187.0	296.1	-16.8	31	99	19994	.960	285.2	317.4	+16.6	26	136
19991	.463	61.2	267.8	+19.3	21	149	19992	.885	245.6	300.0	-17.5	54	330
							19996	.697	245.8	282.7	-11.0	11	69
08	30.410	+20.7	281.5	+7.2			19991	.461	299.9	267.5	+19.8	52	283
19993	.941	244.5	346.8	-21.0	0	16	19997	.895	75.3	178.2	+16.3	6	53
19985	.758	273.1	331.0	+7.0	15	54							
19995	.661	247.4	319.5	-9.1	3	26	09	3.157	+21.7	232.0	+7.2		
19994	.560	289.5	314.8	+16.8	3	22	19994	.992	282.9	315.8	+13.7	0	23
19992	.464	210.2	295.5	-16.5	25	126	19992	.951	247.4	299.8	-18.7	77	370
19996	.308	180.4	281.6	-10.6	1	18							
19991	.312	47.2	267.5	+19.2	39	205							

continued

- Group 19991. Aug. 27 - Sept. 6. A few tiny spots which develop into a complex stream by August 29. From September 2 the group is led by a regular spot.
- Group 19992. Aug. 28 - Sept. 4. A few small spots appearing near the central meridian and developing into a bi-polar stream by August 31. On September 1 a small spot appears, preceding the group and persisting until the west limb.
- Group 19993. Aug. 29 - 30. Tiny spots appearing near the west limb.
- Group 19994. Aug. 29 - Sept. 3. One or two small spots developing into a stream led by a regular spot.
- Group 19995. Aug. 30 - Sept. 2. A few tiny spots.
- Group 19996. Aug. 30 - Sept. 3. A small stream, dying out before reaching the west limb.
- Group 19997. Sept. 1 - 10. A few tiny spots which develop into an unstable stream by September 4. The stream breaks up by September 7 to form a small cluster which dies out before reaching the limb.
- Group 19998. Sept. 3 - 15. A composite spot, led by a small regular spot which divides into two by September 6. On September 12 these two have coalesced to re-form a composite spot.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		o	o	o			1960		o	o	o		
09	3.157	<i>continued</i>					09	7.589	+ 22.7	173.4	+ 7.3		
19996	.821	248.7	283.5	-12.8	0	23	19997	.147	353.5	174.4	+15.6	3	31
19991	.601	291.2	268.0	+18.4	21	161	20002	.223	154.3	167.9	- 4.2	7	51
19997	.819	72.9	176.7	+18.1	2	46	19998	.416	60.0	151.2	+18.7	57	335
19998	.986	70.0	149.7	+20.8	129	575	19999	.579	112.2	140.9	- 6.4	0	44
							20003	.640	114.7	137.4	- 9.7	0	22
							20001	.736	118.0	131.3	-14.9	68	274
							20000	.672	90.3	131.2	+ 5.2	11	69
09	4.429	+ 22.0	215.2	+ 7.2			20004	.899	111.8	113.4	-16.0	12	54
							20005	.941	76.9	102.3	+14.7	16	76
19992	.993	251.3	295.2	-17.4	0	28							
19991	.803	289.1	268.6	+19.6	31	275							
19997	.642	72.7	175.6	+16.6	22	121	09	8.318	+ 22.8	163.8	+ 7.3		
19998	.890	72.2	151.7	+19.1	113	686	19997	.243	311.0	174.8	+16.3	0	34
19999	.969	98.5	140.8	- 6.4	4	22	20002	.215	196.4	167.3	- 4.5	26	115
20000	.984	86.0	135.1	+ 5.2	5	55	19998	.299	47.0	150.5	+18.8	48	298
							19999	.448	121.0	141.1	- 6.6	5	57
09	5.370	+ 22.2	202.7	+ 7.2			20003	.527	122.2	137.0	- 9.8	8	49
							20000	.529	91.7	131.8	+ 5.3	12	46
19991	.910	288.5	269.1	+19.8	68	304	20001	.632	124.6	131.4	-14.9	71	275
19997	.468	68.1	175.9	+16.5	21	62	20004	.812	115.6	114.4	-15.8	9	38
19998	.782	71.4	151.3	+19.0	87	543	20005	.875	77.4	102.1	+14.5	16	119
19999	.907	100.9	139.2	- 6.7	6	32							
20000	.933	87.2	133.7	+ 5.2	7	34	09	9.326	+ 23.0	150.5	+ 7.3		
20001	.964	107.8	131.2	-15.0	79	330	19997	.447	292.1	175.9	+16.2	3	19
							20002	.354	237.5	167.8	- 3.9	38	172
							19998	.205	0.6	150.4	+19.0	55	335
09	6.089	+ 22.4	193.2	+ 7.3			20006	.120	31.8	146.8	+13.0	0	7
							19999	.285	146.6	141.4	- 6.5	22	90
19991	.963	288.6	269.0	+19.8	64	255	20003	.380	142.9	137.1	-10.5	4	39
19997	.334	60.8	175.7	+16.3	6	46	20001	.489	139.0	131.2	-14.7	61	302
19998	.680	69.7	151.0	+19.1	69	440	20000	.344	93.1	130.4	+ 5.7	1	31
19999	.835	103.1	138.4	- 6.7	12	34	20004	.696	122.6	113.0	-16.2	0	11
20000	.862	87.7	133.5	+ 5.7	21	62	20005	.749	76.4	101.8	+15.0	19	97
20001	.908	109.9	131.4	-14.6	65	275	20007	.975	76.8	72.1	+14.5	24	216
							20008	.990	80.5	67.6	+10.4	7	70

- Group 19999. Sept. 4 - 14. A small spot, developing into a scattered stream by September 7 and dying out before reaching the limb.
- Group 20000. Sept. 4 - 13. A scattered stream of which only a single spot survives from September 11.
- Group 20001. Sept. 5 - 16. Return of Group 19967. A stable regular spot.
- Group 20002. Sept. 7 - 13. A bi-polar stream appearing near the central meridian.
- Group 20003. Sept. 7 - 11. A few tiny spots in stream formation, the rear part alone remains on September 11.
- Group 20004. Sept. 7 - 10. Two or three tiny, variable spots.
- Group 20005. Sept. 7 - 12. Return of Group 19970. A regular spot which rapidly breaks up and dies out.
- Group 20006. Sept. 9 - 11. Tiny scattered spots.
- Group 20007. Sept. 9 - 20. Return of Group 19977. A regular spot, with following companions, which divides into two on September 12. The two parts break up and extend in longitude as the group crosses the disk.
- Group 20008. Sept. 9 - 15. A small diminishing spot.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area		
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots	
1960		°	°	°			1960		°	°	°			
09	10-330	+23-3	137-2	+7-2			09	12-366	<i>continued</i>					
19997	-625	286-8	175-6	+16-1	0	20	19999	-566	247-5	142-0	-6-2	24	139	
20002	-561	251-6	169-3	-3-9	41	199	20000	-365	270-4	131-8	+6-9	0	4	
19998	-294	313-9	150-1	+18-8	52	423	20001	-504	223-0	131-1	-14-8	56	260	
20006	-175	311-2	145-0	+13-7	4	17	20005	-215	45-6	101-2	+15-8	0	6	
19999	-244	195-3	140-9	-6-2	37	166	20011	-391	135-7	94-3	-9-2	0	9	
20003	-307	181-6	137-7	-10-5	3	31	20007	-616	75-4	72-5	+14-7	42	212	
20000	-098	104-8	131-8	+5-8	0	16	20010	-667	102-5	69-9	-2-7	30	134	
20001	-387	165-0	131-3	-14-7	58	299	20008	-648	83-4	69-7	+9-8	6	25	
20004	-567	135-2	112-6	-17-0	1	14	20009	-774	71-1	59-7	+19-2	0	9	
20005	-583	74-6	101-9	+14-8	12	82								
20007	-899	77-4	72-6	+14-5	38	225	09	13-322	+23-8	97-7	+7-2			
20008	-926	82-0	68-8	+10-2	12	63								
20009	-965	72-4	61-2	+18-9	0	26	20002	-971	263-1	172-9	-4-7	12	99	
							19998	-781	288-0	149-1	+18-5	36	222	
09	11-374	+23-5	123-4	+7-2			19999	-737	254-6	143-1	-6-1	25	165	
20002	-748	258-0	170-5	-3-9	24	143	20000	-565	270-8	132-2	+6-4	1	15	
19998	-476	296-2	150-1	+18-6	47	248	20001	-640	236-0	130-9	-14-9	58	282	
20006	-404	286-3	146-8	+13-2	0	1	20012	-437	191-2	102-8	-18-0	8	46	
19999	-379	233-3	141-2	-6-1	26	132	20011	-303	170-2	94-7	-10-0	10	48	
20003	-365	215-7	135-9	-10-1	0	6	20013	-522	144-9	79-3	-18-2	2	31	
20000	-141	273-3	131-6	+7-6	0	4	20007	-437	71-3	72-5	+14-6	29	145	
20001	-397	199-3	131-2	-14-7	53	261	20010	-462	111-0	72-2	-2-9	35	219	
02 1431	-382	347-7	128-7	+29-0	0	11	20008	-467	83-2	69-8	+9-6	5	20	
20005	-387	68-5	101-7	+14-8	6	42	20014	-876	63-8	36-7	+26-3	4	37	
20007	-776	77-0	72-3	+14-6	37	209	20015	-980	97-4	20-4	-5-7	22	176	
20008	-806	82-7	69-4	+10-1	9	45								
20010	-823	98-9	69-2	-3-0	2	65	09	14-327	+24-0	84-5	+7-2			
20009	-876	72-8	61-7	+18-5	0	2								
03 1431	-878	77-3	61-4	+14-6	0	7	19998	-897	287-3	148-8	+18-7	18	144	
							19999	-884	259-2	145-1	-6-0	18	76	
09	12-366	+23-6	110-3	+7-2			20001	-779	243-8	130-7	-15-2	56	252	
20002	-896	261-2	172-7	-4-5	8	68	20016	-341	252-4	103-4	+0-9	1	14	
19998	-644	290-4	149-7	+18-5	43	292	20012	-521	216-3	103-3	-17-8	14	64	
							20011	-362	218-0	97-5	-9-5	10	25	
							20013	-445	170-6	80-1	-18-6	0	25	
							04 1431	-264	39-4	74-3	+18-8	0	6	

continued

continued

- Group 20009. Sept.10 - 12. Tiny scattered spots.
- Group 20010. Sept.11 - 19. A few tiny spots on September 11, rapidly developing into an extended stream led by a regular spot on September 15; the latter alone remains on September 19.
- Group 20011. Sept.12 - 15. A few small spots assuming stream formation by September 13, after which the leader alone remains.
- Group 20012. Sept.13 - 15. A stream of small spots.
- Group 20013. Sept.13 - 14. A tiny stream.
- Group 20014. Sept.13 - 18. A small variable stream of which the leading spot alone remains from September 17.
- Group 20015. Sept.13 - 25. A stable regular spot with occasional companions.
- Group 20016. Sept.14 - 15. Tiny scattered spots.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		o	o	o			1960		o	o	o		
09	14.327	<i>continued</i>					09	17.559	+ 24.5	41.8	+ 7.2		
20010	.259	134.2	73.8	- 3.2	26	159	05 1431	.865	245.5	97.0	-17.0	0	5
20007	.249	57.1	72.1	+14.7	28	138	20020	.728	285.1	88.6	+15.8	0	7
20008	.254	81.0	69.8	+ 9.2	0	9	20010	.611	253.7	77.7	- 4.0	10	42
20017	.377	73.8	62.7	+12.7	0	6	20007	.512	286.6	72.1	+14.5	14	81
20014	.778	61.8	34.8	+26.3	25	107	20014	.326	7.9	39.0	+25.9	0	13
20015	.907	99.6	20.7	- 5.6	29	176	20021	.312	31.3	31.8	+22.4	0	7
							20022	.446	41.7	22.6	+26.2	0	16
							20015	.417	120.5	20.7	- 5.5	29	151
							20018	.777	114.7	35.2	-14.0	0	14
09	15.317	+ 24.2	71.4	+ 7.2			20019	.837	118.2	35.8	-18.7	123	836
							20023	.967	75.3	32.5	+16.0	39	139
19998	.968	287.2	148.1	+18.4	0	35							
20001	.889	248.6	130.3	-15.3	49	247							
20016	.569	260.4	105.4	+ 0.5	0	4							
20012	.652	231.9	103.8	-17.5	10	52	09	18.319	+ 24.7	31.8	+ 7.1		
20011	.517	237.6	97.6	- 9.6	3	12							
20010	.191	191.9	73.6	- 3.4	19	110	20010	.723	257.5	76.6	- 3.8	10	55
20007	.134	355.9	72.0	+14.8	17	93	06 1431	.677	295.5	73.0	+22.3	0	20
20008	.038	37.2	70.0	+ 8.9	1	5	20007	.636	284.3	71.1	+14.5	12	100
20017	.186	53.1	62.7	+13.5	0	10	07 1431	.469	303.4	56.5	+21.4	0	5
20014	.636	56.5	35.3	+26.4	18	76	20014	.341	341.0	38.8	+25.8	0	5
20015	.797	102.4	20.1	- 5.4	35	143	20021	.264	357.7	32.4	+22.3	10	47
20018	.979	105.9	35.8	-13.9	0	17	20022	.355	22.8	23.0	+26.0	12	64
20019	.993	109.8	351.6	-18.6	79	482	20015	.294	139.2	20.7	- 5.8	28	143
							20018	.670	120.6	35.4	-14.1	0	6
							20019	.748	123.5	35.6	-18.9	190	816
							20023	.907	75.8	32.5	+15.9	21	144
							20025	.988	109.5	31.7	-17.9	35	194
09	16.586	+ 24.4	54.6	+ 7.2			1	.988	109.5	31.7	-17.9	35	194
							20024	.980	83.1	31.2	+ 8.1	51	272
20001	.981	252.4	130.5	-15.6	63	256							
20020	.616	287.9	92.2	+16.6	0	10							
20010	.409	243.9	76.1	- 3.6	23	97							
20007	.325	294.7	72.3	+14.6	24	111	09	19.354	+ 24.8	18.1	+ 7.1		
20014	.428	39.4	37.1	+26.1	3	27							
20015	.596	109.2	20.3	- 5.4	24	137	20010	.892	262.0	80.2	- 3.8	0	5
20018	.887	109.8	35.6	-13.9	0	12	20007	.808	283.0	72.4	+14.7	14	47
20019	.924	113.6	351.5	-18.6	88	597							

continued

Group 20017.	Sept. 14 - 15.	Tiny scattered spots.
Group 20018.	Sept. 15 - 19.	A tiny spot.
Group 20019.	Sept. 15 - 27.	A moderate-sized composite spot with multiple umbrae.
Group 20020.	Sept. 16 - 17.	Three tiny spots on September 16; a single spot on September 17.
Group 20021.	Sept. 17 - 24.	A few tiny spots when first seen, developing into a regular spot with following companions by September 19.
Group 20022.	Sept. 17 - 22.	A small scattered stream.
Group 20023.	Sept. 17 - 29.	A diminishing regular spot.
Group 20024.	Sept. 18 - 30.	A bi-polar stream, the rear component being a complex spot; this becomes nearly regular in outline by September 27 and alone remains by September 29.
Group 20025.	Sept. 18 - 30.	A bi-polar group, led by a regular spot which is the sole survivor by September 27.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		o	o	o			1960		o	o	o		
09	19-354	<i>continued</i>					09	21-466	<i>continued</i>				
20021	.377	316-4	34-4	+22-6	29	187	20023	.427	66-8	326-2	+16-1	23	117
20022	.339	346-9	23-0	+26-3	3	21	20025	.706	124-3	312-6	-17-7	84	366
20015	.224	190-3	20-4	- 5-6	31	148	1	.700	124-7	313-2	-17-8	74	320
20018	.520	133-3	355-2	-14-3	0	3	20024	.612	85-7	312-3	+ 8-2	64	302
20019	.622	134-0	349-9	-19-2	157	913	20028	.751	97-6	302-3	- 1-0	15	107
20023	.789	75-2	325-8	+16-0	26	143	20029	.801	99-5	298-1	- 3-3	2	32
20024	.911	84-2	312-0	+ 8-2	65	398	20026	.806	66-3	297-0	+23-2	21	97
20025	.942	111-9	311-6	-17-7	54	363	20030	.864	106-9	293-2	-10-7	18	98
1	.936	112-4	312-8	-18-0	45	288	20027	.887	62-6	287-9	+27-5	30	183
20026	.986	67-4	295-7	+23-4	21	173	20031	.947	106-7	281-7	-13-3	14	114
20027	.993	65-4	292-8	+25-2	0	63							
09	20-162	+ 24-9	7-4	+ 7-1			09	22-552	+ 25-2	335-9	+ 7-0		
20007	.880	283-5	69-6	+15-2	15	91	20021	.848	291-6	33-9	+21-9	25	175
20021	.517	303-3	35-3	+22-7	36	152	20022	.732	299-5	20-9	+26-1	0	4
20022	.406	322-9	23-1	+25-6	1	17	20015	.723	254-7	20-3	- 6-0	31	136
20015	.311	225-4	20-3	- 5-7	25	114	02 1432	.705	240-6	15-2	-14-8	1	16
20019	.529	146-5	349-5	-19-2	197	870	20019	.495	207-1	349-7	-19-1	106	697
20023	.666	73-6	325-9	+16-2	17	105	20023	.232	44-8	326-1	+16-4	28	107
20024	.816	84-7	312-4	+ 8-4	46	241	20025	.562	137-7	312-5	-17-9	71	412
20025	.871	114-8	311-6	-17-4	91	409	1	.557	138-3	313-0	-18-0	68	374
1	.861	115-5	313-0	-17-7	65	297	20024	.407	85-4	311-8	+ 8-3	62	424
20028	.922	94-3	300-8	- 1-2	8	46	20028	.562	101-7	302-7	- 0-6	19	95
20029	.937	95-6	298-6	- 2-7	6	38	20032	.696	126-6	299-8	-18-7	0	21
20026	.944	67-7	295-7	+23-4	43	209	20029	.630	103-7	298-3	- 3-0	3	26
20030	.973	102-6	292-8	-10-3	26	208	20026	.649	61-4	297-6	+23-6	12	60
20027	.976	63-0	288-2	+27-8	47	265	20030	.715	113-4	294-1	-11-2	10	53
							20027	.775	59-9	287-0	+27-5	17	84
							20031	.845	110-7	281-8	-13-3	6	44
09	21-466	+ 25-1	350-2	+ 7-1			09	23-454	+ 25-4	324-0	+ 7-0		
20021	.711	294-4	34-4	+22-1	49	224	20021	.930	290-9	33-2	+21-9	24	194
20022	.589	306-1	22-2	+26-3	0	12	20015	.848	258-2	20-4	- 6-2	27	156
20015	.543	247-1	20-3	- 6-1	35	153	20019	.607	223-7	350-3	-19-6	121	627
20019	.451	179-3	349-9	-19-5	112	825	20023	.167	346-9	326-2	+16-3	28	121
02 1432	.404	142-4	335-7	-11-8	0	15							

continued

continued

- Group 20026. Sept. 19 - 28. A spot with a number of variable companions. On September 26 further activity occurs and a few scattered spots occupy the position.
- Group 20027. Sept. 19 - 29. An unstable scattered stream.
- Group 20028. Sept. 20 - 27. A small spot, which becomes regular in outline by September 24 and subsequently breaks up and dies out.
- Group 20029. Sept. 20 - 24. Two or three tiny spots which die out before reaching the central meridian.
- Group 20030. Sept. 20 - 25. A cluster of small spots rapidly dying out.
- Group 20031. Sept. 21 - 25. A single spot, which breaks up rapidly into numerous tiny spots and dies out.
- Group 20032. Sept. 22 - 25. Tiny scattered spots.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960	°		°				1960	°		°			
09	23.454	<i>continued</i>					09	25.362	<i>continued</i>				
20025	.462	156.2	312.7	-17.9	87	395	20025	.478	208.5	312.6	-18.0	69	336
1	.459	156.8	313.0	-18.0	82	372	1	.478	208.5	312.6	-18.0	69	336
20024	.215	82.7	311.6	+ 8.4	92	597	20024	.227	276.0	311.9	+ 8.1	44	335
20028	.383	108.3	302.8	- 0.3	17	89	20034	.259	314.6	309.9	+17.3	6	24
20032	.593	138.7	299.4	-20.0	0	6	20028	.132	207.8	302.3	+ 0.3	13	64
20029	.455	110.5	298.8	- 2.8	2	12	20032	.438	183.2	300.3	-18.9	0	15
20026	.508	54.1	297.4	+23.6	13	38	20026	.285	4.4	297.4	+23.3	2	13
20030	.580	121.3	293.7	-11.4	10	39	20030	.328	164.6	293.7	-11.5	0	6
20033	.684	123.9	287.7	-16.7	3	21	20027	.381	26.1	288.0	+26.7	3	35
20027	.655	54.1	287.1	+28.2	9	55	20033	.470	154.4	286.5	-18.2	0	5
20031	.714	116.7	283.1	-13.4	0	16	20031	.402	148.2	286.3	-13.1	0	9
09	24.378	+ 25.5	311.8	+ 7.0			09	26.440	+ 25.7	284.6	+ 6.9		
20021	.986	290.7	34.0	+21.5	41	159	20019	.940	246.1	350.2	-19.6	100	651
20015	.940	260.7	20.6	- 6.2	26	147	20023	.661	287.0	325.6	+16.4	18	86
20019	.730	234.4	350.7	-19.6	92	581	20024	.474	273.2	312.9	+ 7.6	42	260
20023	.289	304.8	326.0	+16.2	23	114	20025	.608	227.7	312.7	-18.0	68	322
20025	.424	181.4	312.4	-17.9	80	351	1	.608	227.7	312.7	-18.0	68	322
1	.423	182.0	312.7	-18.0	79	330	20034	.465	295.1	310.7	+17.5	1	17
20024	.028	8.1	311.6	+ 8.2	64	393	20028	.321	250.2	302.1	+ 0.4	8	32
20028	.200	126.5	302.6	+ 0.1	21	74	20026	.310	333.1	293.3	+22.8	0	9
20029	.267	127.3	299.6	- 2.5	0	7	20027	.358	356.9	285.8	+27.7	1	46
20032	.495	155.0	299.0	-19.6	0	13	20035	.321	164.7	279.6	-11.0	4	32
20026	.368	38.4	297.4	+23.4	10	22	20036	.457	51.5	261.8	+22.8	0	7
20030	.436	135.7	293.8	-11.5	3	20							
20027	.512	45.6	287.6	+27.3	7	24	09	27.322	+ 25.8	272.9	+ 6.9		
20033	.581	135.2	286.4	-18.0	0	11	20019	.988	248.6	350.4	-19.7	72	715
20031	.566	126.7	284.1	-13.6	3	22	20023	.794	285.5	325.6	+16.4	15	94
09	25.362	+ 25.6	298.8	+ 6.9			20025	.731	237.0	313.0	-18.2	61	284
20015	.993	262.5	20.6	- 6.5	28	186	1	.731	237.0	313.0	-18.2	61	284
20019	.846	241.3	350.7	-19.6	84	566	20024	.633	274.7	312.3	+ 8.3	33	232
20023	.470	291.5	325.7	+16.1	24	116	20028	.497	258.7	302.0	+ 0.4	2	14
							20026	.429	318.1	291.3	+25.1	1	15
						<i>continued</i>							<i>continued</i>

- Group 20033. Sept. 23 - 27. A tiny cluster from September 23 to 25. Nothing is seen on September 26 but a small spot occupies the position on September 27.
- Group 20034. Sept. 25 - 26. Tiny scattered spots.
- Group 20035. Sept. 26 - Oct. 2. A few small spots, appearing near the central meridian and developing into a stream, led by a regular spot, by September 30. The regular spot alone survives at the west limb.
- Group 20036. Sept. 26 - 28. A tiny spot.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
09	27.322	<i>continued</i>					10	1.305	+ 26.1	220.4	+ 6.7		
20033	.470	208.5	286.5	-17.6	0	11	20035	.921	255.5	285.2	-10.5	14	97
20027	.410	336.1	283.8	+28.7	0	10							
20035	.338	208.0	282.2	-10.4	7	45							
20036	.323	32.4	262.2	+22.5	0	8							
							10	2.381	+ 26.1	206.2	+ 6.6		
09	28.333	+ 25.8	259.6	+ 6.8			20035	.990	258.0	286.5	-10.9	24	179
20023	.910	284.8	325.7	+16.2	8	56	20038	.458	186.9	209.5	-20.3	1	17
20024	.800	275.3	313.0	+ 8.3	35	195	20039	.986	106.9	128.2	-15.3	34	293
20025	.852	243.6	312.9	-18.3	49	260	1	.988	106.5	127.4	-15.1	29	230
1	.852	243.6	312.9	-18.3	49	260							
20037	.790	286.4	311.8	+17.1	7	32							
20026	.578	306.4	290.6	+25.9	1	32	10	3.365	+ 26.2	193.2	+ 6.6		
20027	.540	314.8	285.3	+28.4	2	26	20038	.523	209.4	209.1	-20.7	2	28
20035	.479	233.6	282.5	-10.1	10	57	20039	.931	109.6	127.9	-15.4	43	291
20036	.274	348.8	262.9	+22.3	0	2	1	.935	108.8	127.0	-15.0	38	219
09	29.306	+ 25.9	246.8	+ 6.8			10	4.459	+ 26.2	178.8	+ 6.5		
20023	.976	285.3	325.2	+16.3	0	16	20038	.646	228.5	209.5	-19.7	0	20
20025	.942	247.8	313.1	-18.2	40	235	20040	.554	230.6	204.9	-14.7	0	21
1	.942	247.8	313.1	-18.2	40	235	20041	.249	93.1	164.4	+ 5.5	3	27
20024	.900	276.2	311.3	+ 8.5	13	94	20039	.833	113.0	126.4	-14.9	31	237
20037	.886	286.2	309.7	+17.4	0	4	1	.830	112.7	126.6	-14.7	31	202
20027	.663	306.3	284.1	+28.5	3	27	20042	.970	109.5	106.0	-17.0	0	38
20035	.643	245.4	283.0	- 9.9	30	151							
04 1432	.468	299.2	272.3	+19.3	0	11							
							10	5.567	+ 26.3	164.1	+ 6.5		
09	30.312	+ 26.0	233.5	+ 6.7			04 1432	.832	271.8	220.6	+ 5.1	0	8
20025	.994	250.8	314.2	-18.1	30	352	20040	.719	243.5	205.5	-13.8	0	3
1	.994	250.8	314.2	-18.1	30	352	20041	.023	193.7	164.4	+ 5.4	51	246
20024	.975	277.0	311.1	+ 8.3	9	90	20039	.684	120.3	126.6	-14.9	51	232
20035	.808	252.6	284.8	- 9.7	21	114	1	.681	119.5	126.6	-14.5	43	189

continued

- Group 20037. Sept. 28 - 29. A tiny cluster on September 28; a single spot on September 29.
- Group 20038. Oct. 2 - 4. Two or three tiny spots.
- Group 20039. Oct. 2 - 14. A regular spot with variable companions, developing into a cluster by October 9; the regular spot remains the most stable component.
- Group 20040. Oct. 4 - 5. Tiny spots of which only one remains on October 5.
- Group 20041. Oct. 4 - 11. A bi-polar stream, led by a regular spot which alone survives from October 10.
- Group 20042. Oct. 4 - 12. A scattered stream of variable spots.
- Group 20043. Oct. 5 - 11. A scattered stream, of which only the rear part remains on October 11.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
10	5.567	<i>continued</i>					10	9.307	+ 26.4	114.8	+ 6.2		
20042	.886	113.2	106.0	-16.9	4	77	20041	.790	273.4	167.1	+ 6.5	15	100
20043	.903	81.1	99.1	+10.8	4	55	20045	.261	276.7	129.9	+ 7.7	37	249
20044	.916	87.7	97.7	+ 4.7	5	121	20039	.408	205.7	125.3	-15.3	64	405
							1	.406	209.9	126.8	-14.5	38	150
							20043	.198	69.5	104.0	+10.1	0	15
10	6.385	+ 26.3	153.3	+ 6.4			20042	.438	155.1	103.7	-17.1	7	102
20041	.199	265.8	164.8	+ 5.4	48	265	20044	.273	98.5	99.2	+ 3.7	0	5
05 1432	.275	49.9	140.7	+16.4	0	7	20046	.984	70.9	33.6	+19.9	17	72
20039	.564	128.8	126.4	-14.8	39	233							
1	.557	128.9	126.8	-14.7	34	163	10	10.302	+ 26.4	101.7	+ 6.2		
20042	.797	117.8	105.9	-17.4	23	81	20041	.921	275.1	169.0	+ 7.1	22	109
20043	.812	81.4	98.8	+10.7	3	40	07 1432	.622	271.4	140.2	+ 5.7	14	45
20044	.826	89.1	97.6	+ 4.4	16	61	20045	.484	275.7	130.6	+ 8.1	46	285
							20039	.532	226.8	125.3	-15.5	97	496
							1	.537	230.2	126.8	-14.5	33	144
10	7.510	+ 26.3	138.5	+ 6.3			20047	.364	265.4	122.9	+ 4.1	0	5
06 1432	.921	251.5	202.6	-14.2	0	7	20042	.404	185.9	104.1	-17.4	2	54
20041	.454	270.7	165.5	+ 6.0	37	213	20043	.079	15.1	100.5	+10.4	0	32
20045	.155	83.3	129.6	+ 7.3	18	87	20044	.054	135.4	99.5	+ 4.0	0	5
20039	.420	149.8	125.9	-14.9	43	288	20048	.275	59.3	87.6	+14.0	2	26
1	.408	151.0	126.7	-14.6	34	166	20046	.926	71.0	33.3	+19.8	22	85
20042	.660	125.7	104.5	-17.3	37	97	20049	.983	97.3	23.2	- 6.0	11	59
20043	.616	79.6	100.5	+11.4	10	62							
20044	.639	91.3	98.8	+ 4.1	0	23	10	11.377	+ 26.4	87.5	+ 6.1		
							20041	.988	276.2	169.1	+ 7.0	0	29
							20045	.686	275.4	130.9	+ 8.1	45	223
10	8.624	+ 26.3	123.8	+ 6.3			20039	.695	239.7	125.9	-15.6	71	352
20041	.676	272.8	166.4	+ 6.5	38	158	1	.698	241.6	126.7	-14.7	22	155
20045	.115	285.4	130.2	+ 8.0	47	151	20047	.585	268.9	123.3	+ 4.3	0	6
20039	.372	184.8	125.6	-15.3	53	364	20042	.495	212.8	103.8	-18.6	2	58
1	.360	188.1	126.8	-14.5	31	185	20043	.176	293.7	96.9	+10.0	1	7
20042	.517	139.8	103.4	-17.2	18	109	20048	.121	342.1	89.6	+12.6	29	140
20043	.376	75.6	102.1	+11.2	1	53	20046	.817	70.3	33.0	+19.6	19	56
20044	.419	94.3	99.1	+ 3.9	6	15	20049	.916	100.1	22.4	- 6.7	5	25
							20050	.959	109.4	17.0	-16.6	31	166

Group 20044. Oct. 5 - 10. A few small spots rapidly dying out.
 Group 20045. Oct. 7 - 13. A bi-polar stream of which the leader is the more stable component.
 Group 20046. Oct. 9 - 13. A diminishing regular spot which dies out before the central meridian.
 Group 20047. Oct. 10 - 11. A pair of tiny spots.
 Group 20048. Oct. 10 - 17. A stream of scattered spots. The following part becomes regular in outline by October 13 and is the most persistent component.
 Group 20049. Oct. 10 - 15. A small spot.
 Group 20050. Oct. 11 - 17. A regular spot which, on October 13, disintegrates to form a scattered cluster.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
10	12.343	+26.3	74.7	+6.0			10	15.419	+26.3	34.2	+5.8		
20045	.836	275.6	131.7	+8.0	37	204	20048	.812	282.4	88.6	+13.4	62	426
20039	.821	246.7	125.9	-15.1	48	284	20051	.221	173.3	32.7	-6.8	1	23
1	.825	247.5	126.6	-14.7	33	169	20052	.320	170.2	31.0	-12.4	45	295
20042	.615	229.5	104.1	-18.1	3	25	20049	.289	138.4	23.1	-6.7	0	7
20048	.267	297.7	88.7	+12.9	58	307	09 1432	.365	142.8	21.2	-11.2	0	4
20046	.679	67.9	33.1	+19.3	6	67	20050	.453	142.2	17.5	-15.3	5	20
20051	.720	107.8	31.1	-8.3	0	9	20053	.752	123.4	352.4	-20.1	0	3
20052	.750	113.6	30.0	-13.1	27	116	20054	.912	105.6	330.7	-11.6	41	348
20049	.802	102.6	23.0	-6.3	6	17	20055	.962	70.5	319.3	+20.3	114	804
20050	.880	112.5	16.9	-16.5	40	171	20056	.986	65.7	312.3	+24.9	0	80
10	13.378	+26.3	61.1	+5.9			10	16.404	+26.2	21.2	+5.7		
20045	.945	276.6	132.3	+8.2	3	153	20048	.910	282.5	87.1	+13.7	43	385
20039	.929	251.6	126.5	-14.5	37	241	20057	.433	296.4	44.9	+16.3	0	7
1	.931	251.9	126.9	-14.5	37	175	20051	.300	222.4	32.9	-7.1	0	10
08 1432	.817	271.5	115.9	+4.6	0	11	20052	.355	208.1	31.0	-12.5	51	346
20048	.469	286.9	88.4	+13.1	75	413	20050	.374	171.8	18.0	-15.9	0	11
20046	.515	61.3	32.6	+19.5	5	23	20054	.803	109.1	330.6	-11.5	47	240
20051	.525	114.1	32.3	-7.1	0	16	20055	.881	70.0	319.5	+20.3	100	1046
20052	.583	121.6	30.6	-12.5	23	142	20056	.939	65.2	311.1	+25.2	0	26
20049	.643	107.5	23.1	-6.4	6	16							
20050	.749	117.9	17.7	-16.2	17	80							
10	14.548	+26.3	45.7	+5.9			10	17.384	+26.2	8.2	+5.7		
20039	.993	254.6	126.6	-14.4	28	195	20048	.974	283.1	85.8	+14.1	58	387
1	.993	254.6	126.6	-14.4	28	195	10 1432	.883	292.3	70.0	+22.3	0	10
20048	.678	283.4	88.2	+13.4	70	392	20057	.649	290.0	47.7	+17.2	12	61
20051	.338	134.5	31.6	-7.9	1	16	20052	.486	230.8	30.9	-12.6	50	313
20052	.405	140.7	30.5	-12.4	38	218	20050	.404	206.1	18.9	-15.7	0	13
20049	.441	118.6	22.8	-6.8	2	16	20054	.660	114.6	330.7	-11.3	34	251
20050	.581	127.7	17.3	-15.6	7	48	20055	.762	68.2	319.5	+20.1	123	1234
20053	.855	117.7	352.2	-20.0	0	11	20056	.846	64.2	311.5	+24.7	0	20
20054	.974	103.8	330.8	-12.0	43	286							
20055	.993	69.7	321.2	+20.8	79	449							

- Group 20051. Oct. 12 - 16. Two or three tiny spots.
 Group 20052. Oct. 12 - 21. A small cluster which coalesces into a regular spot by October 15.
 Group 20053. Oct. 14 - 15. A tiny spot.
 Group 20054. Oct. 14 - 26. A regular spot with variable companions.
 Group 20055. Oct. 14 - 27. A composite spot with double umbra and numerous variable companions.
 Group 20056. Oct. 15 - 23. A diminishing stream of scattered spots.
 Group 20057. Oct. 16 - 20. A stream of small spots of which the leading part alone remains on October 20.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
10	18.354	+26.1	355.4	+5.6			10	22.611	+25.8	299.3	+5.2		
20057	.798	287.1	48.1	+17.0	11	72	20054	.565	240.7	329.4	-11.4	32	184
20052	.641	242.4	30.9	-12.7	39	278	20055	.408	310.2	318.6	+20.1	166	1055
20054	.501	124.7	330.7	-11.4	33	170	20056	.369	337.1	308.4	+24.9	0	7
20055	.612	64.4	319.7	+19.8	157	1161							
20056	.733	60.7	310.8	+25.0	0	13							
α 1433	.918	104.1	290.8	-10.6	0	16							
							10	23.516	+25.7	287.4	+5.1		
							20054	.714	248.6	329.9	-11.3	25	150
							20055	.556	299.9	318.2	+20.5	174	1067
10	19.304	+26.0	342.9	+5.5			20056	.470	319.7	307.0	+25.8	0	6
20057	.917	285.6	49.8	+16.4	0	51	20059	.251	46.3	276.6	+15.0	1	8
20052	.779	248.3	30.7	-13.1	37	264							
20054	.359	144.4	330.7	-11.4	28	174							
20055	.459	56.5	319.1	+19.7	175	1085	10	24.366	+25.6	276.2	+5.1		
20056	.570	54.9	312.4	+23.8	0	8	20054	.832	253.2	330.2	-11.0	28	161
							20055	.695	294.6	318.5	+20.5	132	1058
							α 1433	.376	204.7	285.5	-14.9	0	11
							20059	.166	357.7	276.6	+14.6	0	9
10	20.315	+26.0	329.6	+5.4									
20057	.990	285.2	52.2	+15.8	0	71							
20058	.884	296.8	30.8	+26.1	0	10	10	25.361	+25.5	263.0	+5.0		
20052	.896	252.4	30.7	-13.1	44	247	20054	.936	256.3	330.6	-10.9	18	136
20054	.290	182.7	330.4	-11.3	30	167	20055	.824	291.8	317.7	+20.7	122	1058
20055	.311	35.1	318.7	+20.0	187	1165	20060	.778	278.7	314.1	+9.9	2	26
20056	.483	43.6	308.0	+25.4	0	6	20059	.306	305.1	278.0	+14.9	0	4
							20061	.974	69.3	185.5	+21.2	47	551
10	21.366	+25.9	315.7	+5.3									
20058	.966	295.4	31.4	+25.8	12	187	10	26.303	+25.4	250.6	+4.9		
20052	.975	255.1	30.8	-13.2	29	257	20054	.990	257.8	330.9	-11.3	30	223
20054	.376	220.1	330.0	-11.5	37	162	20055	.919	290.1	317.4	+20.4	132	947
20055	.264	348.7	318.9	+20.2	235	1150	20060	.886	278.6	313.1	+9.9	0	6
20056	.372	19.7	307.8	+25.7	0	9							

continued

- Group 20058. Oct. 20 - 21. A tiny spot which grows rapidly into a cluster by October 21.
- Group 20059. Oct. 23 - 25. One or two tiny spots.
- Group 20060. Oct. 25 - 26. A tiny cluster on October 25; a single spot on October 26.
- Group 20061. Oct. 25 - Nov. 5. A close pair of moderate-sized spots, of which the follower breaks up by October 29. The whole group now forms a stream led by a regular spot which alone remains on November 4.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
10	26.303	continued					10	31.371	+24.7	183.8	+4.4		
20061	.914	69.1	184.7	+21.0	79	526	03 1433	.722	238.6	224.3	-18.7	0	5
20062	.979	76.7	171.7	+14.0	14	104	20061	.303	355.0	185.4	+21.9	34	304
20063	.991	73.8	167.6	+16.7	7	67	20062	.280	53.7	170.4	+13.7	16	68
							20063	.353	50.5	167.3	+17.1	1	28
10	27.359	+25.2	236.7	+4.8			20064	.396	46.1	166.2	+20.1	0	18
							20065	.743	103.3	137.2	-6.7	26	160
20055	.979	290.1	315.6	+20.6	70	803							
20061	.799	67.2	184.9	+20.9	53	499	11	1.447	+24.5	169.6	+4.3		
20062	.907	77.2	171.4	+13.6	31	119	20061	.394	320.9	185.0	+21.8	42	215
20063	.933	74.3	167.6	+16.4	12	51	20062	.177	356.8	170.2	+14.4	5	33
20064	.940	71.0	166.5	+19.5	13	64	20063	.242	11.2	166.8	+17.9	0	22
							20064	.286	15.1	165.1	+20.2	1	38
10	28.406	+25.1	222.9	+4.7			20065	.562	109.5	137.5	-7.0	15	108
							20066	.934	79.9	100.4	+10.9	12	51
20061	.653	62.5	184.6	+21.2	61	440							
20062	.789	76.5	171.0	+13.5	19	96	11	2.373	+24.3	157.4	+4.2		
20063	.810	73.3	169.2	+16.2	8	31	20061	.542	306.0	185.5	+22.2	29	149
20064	.852	69.4	165.0	+19.9	30	141	20062	.276	306.8	170.5	+13.5	2	15
							20063	.286	325.8	167.1	+17.7	0	9
10	29.304	+25.0	211.0	+4.6			20064	.314	331.4	166.6	+20.0	2	19
							20065	.391	121.0	137.7	-7.5	6	48
20061	.517	54.2	184.4	+21.6	84	408	20067	.741	81.4	109.7	+9.2	0	7
20062	.656	74.0	170.7	+13.9	15	90	20066	.839	79.8	100.4	+10.8	16	65
20063	.675	70.8	169.6	+16.2	4	24	20068	.968	74.0	81.5	+16.5	18	108
20064	.736	66.7	165.2	+20.1	32	209							
20065	.971	98.0	135.8	-6.6	12	88	11	3.483	+24.1	142.8	+4.1		
							20061	.708	297.5	185.2	+22.0	17	103
10	30.431	+24.8	196.2	+4.5			20063	.466	300.0	167.6	+17.1	0	15
							20069	.164	323.3	148.4	+11.5	0	7
20061	.351	31.1	185.0	+21.8	37	294	20065	.221	158.9	138.2	-7.7	6	25
20062	.455	68.0	170.5	+13.8	17	104	20067	.558	79.2	109.1	+9.4	11	54
20063	.512	65.5	167.3	+16.1	2	33							
20064	.562	60.6	165.0	+19.8	4	63							
20065	.871	100.4	136.8	-6.6	42	189							

continued

- Group 20062. Oct. 26 - Nov. 2. A diminishing regular spot with variable companions.
- Group 20063. Oct. 26 - Nov. 3. A scattered stream of faint spots.
- Group 20064. Oct. 27 - Nov. 2. A cluster of small spots.
- Group 20065. Oct. 29 - Nov. 5. A scattered cluster.
- Group 20066. Nov. 1 - 9. A small regular spot.
- Group 20067. Nov. 2 - 11. A bi-polar group of which the follower is a small regular spot. The latter alone remains on November 10.
- Group 20068. Nov. 2 - 11. A diminishing regular spot with a distant southern companion on November 4.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
11	3.483	<i>continued</i>					11	7.407	+23.3	91.0	+3.7		
20066	.670	77.8	101.1	+11.2	15	56	20072	.954	266.0	163.0	-2.7	30	195
20068	.874	73.1	82.2	+16.7	11	96	20067	.330	287.3	109.5	+9.1	22	87
							20066	.220	309.1	101.0	+11.5	10	44
							20070	.213	351.4	92.9	+15.8	0	4
11	4.511	+23.9	129.2	+4.0			20068	.267	33.9	82.1	+16.3	15	98
20061	.834	293.9	184.3	+22.0	12	50	20071	.467	125.9	68.3	-12.4	12	103
20069	.351	291.7	148.5	+11.1	2	15	20073	.815	65.3	38.2	+22.1	25	145
20065	.256	218.3	138.4	-7.7	5	18	20074	.878	106.9	31.7	-12.9	16	84
20067	.357	73.5	109.0	+9.5	12	43	20076	.898	100.8	28.3	-8.0	0	5
20066	.485	73.4	101.0	+11.4	10	60	20075	.901	62.4	28.2	+26.4	208	912
20070	.591	70.3	94.2	+14.7	0	2							
20068	.737	71.5	82.6	+16.2	23	104							
							11	8.489	+23.1	76.7	+3.5		
11	5.352	+23.7	118.1	+3.9			20072	.997	268.0	161.8	-1.7	54	304
20061	.922	292.4	184.8	+22.1	0	23	20067	.545	281.0	109.4	+8.9	21	107
04 1433	.790	284.0	169.9	+13.4	3	12	20066	.433	289.9	101.2	+11.7	7	23
20065	.380	240.4	137.5	-7.2	1	11	20068	.239	337.1	82.3	+16.2	13	97
20067	.188	59.0	108.8	+9.3	13	64	20071	.316	150.9	67.7	-12.4	43	141
20066	.318	64.4	101.2	+11.6	11	71	20073	.672	60.6	37.7	+21.9	36	222
20070	.454	66.9	92.8	+13.7	0	13	20074	.744	111.0	31.5	-13.0	13	82
20068	.610	67.3	82.3	+16.7	11	81	20075	.796	58.8	27.3	+26.6	228	1199
20071	.792	109.6	68.4	-12.8	5	30	20076	.786	102.7	26.3	-7.7	43	241
							20077	.882	74.2	15.2	+15.6	0	4
11	6.369	+23.5	104.7	+3.8			11	9.585	+22.8	62.3	+3.4		
20072	.825	265.5	159.9	-1.6	2	11	20067	.737	279.0	109.6	+8.9	24	110
20067	.114	323.9	108.5	+9.0	10	47	20066	.639	284.4	101.3	+11.7	0	7
20066	.147	24.1	101.2	+11.4	15	71	20068	.397	303.8	82.3	+15.9	12	59
20070	.238	56.3	93.1	+11.2	3	17	20071	.287	193.9	66.3	-12.6	30	154
20068	.431	58.7	82.2	+16.4	17	83	20073	.495	49.2	38.6	+21.9	34	170
20071	.628	115.2	69.3	-12.3	24	115	20074	.571	119.0	31.6	-13.1	16	88
20073	.923	68.0	37.8	+21.7	19	113	20076	.594	108.0	27.7	-7.7	45	256
20074	.965	105.2	31.5	-13.6	24	158	20075	.662	51.8	26.8	+26.9	215	1340
20075	.972	63.8	28.4	+26.4	133	1000	20077	.708	70.4	18.5	+16.2	0	8

- Group 20069. Nov. 3 - 4. A pair of tiny spots.
 Group 20070. Nov. 4 - 7. One or two tiny, scattered spots.
 Group 20071. Nov. 5 - 13. One or two spots developing into a scattered stream of which the rear part is the more persistent.
 Group 20072. Nov. 6 - 8. A tiny spot, developing into a rapidly-growing stream as it passes from view.
 Group 20073. Nov. 6 - 17. A compact stream of which the leader is the most persistent component.
 Group 20074. Nov. 6 - 13. A diminishing regular spot.
 Group 20075. Nov. 6 - 18. Return of Group 20058. A large composite spot with numerous companions.
 Group 20076. Nov. 7 - 17. A tiny spot, developing into a cluster on November 8. This, in turn, becomes an extended stream by November 12; the leading part alone remains at the west limb.
 Group 20077. Nov. 8 - 9. A tiny variable spot.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area		
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots	
1960		°	°	°			1960		°	°	°			
11	10.459	+22.6	50.8	+3.3			11	13.421	<i>continued</i>					
20067	.858	278.9	109.8	+9.3	13	102	20074	.440	231.5	32.3	-13.0	2	14	
20068	.556	294.4	82.4	+16.0	8	28	20075	.460	333.2	25.1	+27.0	290	1686	
20071	.372	221.1	65.3	-12.9	21	125	20079	.565	113.6	340.1	-10.5	0	1	
20073	.378	31.0	38.7	+22.0	35	234	20078	.851	68.7	314.6	+19.6	169	1040	
20074	.423	131.6	31.9	-13.1	12	58								
20076	.422	116.9	28.6	-7.8	64	368	11	14.388	+21.6	359.0	+2.9			
20075	.546	42.8	26.4	+26.5	251	1308								
11	11.399	+22.4	38.4	+3.2			20073	.651	300.6	36.8	+21.6	22	115	
20067	.946	279.0	109.6	+9.6	20	98	20076	.562	253.2	32.6	-6.8	66	324	
20068	.716	289.0	82.9	+15.7	5	20	20075	.556	317.9	24.5	+26.8	373	2040	
20071	.531	239.9	66.3	-12.5	14	161	20079	.380	127.1	341.1	-10.5	2	20	
20073	.325	359.2	38.7	+22.1	24	135	20078	.720	65.4	315.2	+19.4	198	829	
20074	.302	159.0	32.0	-13.1	16	60								
20076	.237	141.1	29.8	-7.3	60	380	11	15.460	+21.3	344.8	+2.7			
20075	.449	25.0	26.1	+27.0	257	1452	20080	.926	295.5	51.4	+24.6	6	42	
20078	.989	70.8	316.4	+19.4	98	466	20073	.816	295.3	37.3	+22.0	11	71	
11	12.293	+22.2	26.6	+3.1			20076	.767	259.5	34.0	-6.2	36	218	
20071	.653	245.4	64.0	-13.3	1	36	20081	.673	250.9	25.0	-10.6	3	28	
20073	.379	331.6	37.8	+22.4	15	114	20075	.702	307.5	23.5	+27.4	293	1690	
20074	.290	198.0	31.9	-12.9	1	44	20082	.468	336.1	357.2	+27.9	6	36	
20076	.190	202.5	30.8	-6.8	42	302	20078	.572	58.7	313.8	+19.6	152	750	
20075	.408	1.8	25.8	+27.0	251	1519	20083	.988	83.7	263.8	+6.6	51	338	
20078	.952	70.1	314.7	+19.9	158	1128	1	.977	83.6	267.2	+6.9	30	177	
11	13.421	+21.9	11.7	+3.0			11	16.381	+21.1	332.7	+2.6			
20071	.818	250.2	64.1	-14.2	0	8	20080	.990	293.6	54.5	+23.7	0	68	
20073	.522	308.4	37.7	+21.5	18	125	20073	.911	293.0	37.2	+21.9	18	108	
20076	.393	244.8	32.6	-6.7	40	282	20076	.886	262.0	34.3	-5.7	35	218	
							20081	.806	254.9	24.8	-10.5	2	9	
							20075	.814	302.5	23.2	+27.5	266	1495	
							201434	.768	258.8	21.9	-6.9	2	14	
							20082	.565	318.8	357.4	+27.5	8	45	

continued

continued

- Group 20078. Nov. 11 - 24. Return of Group 20055. A moderate-sized bi-polar stream. The follower, a composite spot, alone remains on November 23.
- Group 20079. Nov. 13 - 14. Tiny scattered spots.
- Group 20080. Nov. 15 - 16. A few small spots.
- Group 20081. Nov. 15 - 16. A small spot.
- Group 20082. Nov. 15 - 17. A short-lived stream.
- Group 20083. Nov. 15 - 27. A stream, led by a regular spot which alone remains after November 18.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
11	16.381	<i>continued</i>					11	20.286	+19.9	281.2	+2.2		
20078	.430	46.5	313.5	+19.6	143	687							
20083	.932	84.2	264.0	+6.4	64	294	20085	.698	278.2	325.2	+7.3	57	394
1	.909	84.0	267.5	+6.6	46	148	20078	.582	301.9	312.7	+19.7	64	611
							20087	.291	318.4	292.7	+14.6	0	7
							20083	.241	68.1	268.3	+7.2	27	141
							1	.241	68.1	268.3	+7.2	27	141
							20086	.910	112.9	218.5	-19.8	2	30
11	17.294	+20.8	320.7	+2.5									
20073	.970	291.7	36.3	+21.6	8	69							
20076	.958	263.0	33.4	-5.8	26	167	11	21.292	+19.6	268.0	+2.0		
20075	.900	299.4	22.5	+27.4	195	1160							
20082	.685	308.4	357.6	+27.0	4	34	20085	.845	277.1	325.4	+7.1	172	702
20078	.315	21.5	313.7	+19.4	140	856	20078	.746	294.9	313.7	+19.7	108	645
20083	.814	83.2	266.3	+6.9	32	193	20087	.418	301.9	289.4	+14.6	6	57
1	.795	83.0	268.2	+7.1	28	150	20083	.096	358.4	268.1	+7.5	31	139
							1	.096	358.4	268.1	+7.5	31	139
							20086	.825	115.2	216.0	-19.2	2	26
11	18.404	+20.5	306.0	+2.4									
20075	.968	298.7	20.4	+28.3	204	1031	11	22.432	+19.2	252.9	+1.9		
20084	.723	301.4	348.3	+23.8	1	46	20085	.956	276.4	325.8	+6.7	122	659
20085	.309	291.8	322.8	+8.8	18	45	α 1434	.945	255.5	322.5	-13.0	17	50
20078	.321	339.8	312.8	+19.8	99	807	20078	.873	291.7	312.2	+19.7	69	434
20083	.631	82.3	267.2	+6.7	22	209	20087	.613	292.6	288.6	+15.1	0	18
1	.619	82.1	268.1	+6.8	22	185	20083	.279	290.2	268.2	+7.3	27	135
							1	.279	290.2	268.2	+7.3	27	135
							20086	.686	124.8	215.9	-21.5	0	9
							α 1434	.812	46.0	207.3	+35.5	0	26
							20088	.794	53.2	206.2	+29.6	9	21
11	19.390	+20.2	293.0	+2.3									
20084	.855	295.6	349.7	+22.8	0	14							
20085	.528	279.3	324.5	+6.8	29	180	11	23.497	+18.8	238.9	+1.8		
20078	.436	313.8	312.5	+19.6	119	688							
20083	.427	78.7	268.2	+6.8	25	152	20085	.994	277.2	322.4	+7.3	39	262
1	.427	78.7	268.2	+6.8	25	152	20078	.939	290.3	307.9	+19.6	22	207
20086	.973	110.8	218.4	-19.6	0	19	20083	.496	281.6	268.1	+7.2	26	145
							1	.496	281.6	268.1	+7.2	26	145

continued

Group 20084. Nov. 18 - 19. Three tiny spots on November 18; a single spot on November 19.
 Group 20085. Nov. 18 - 20. A few spots which, by November 21, develop into a bi-polar group consisting of two regular spots.
 Group 20086. Nov. 19 - 22. A small spot on November 19 and 20; several small spots on the other days.
 Group 20087. Nov. 20 - 22. A tiny variable stream.
 Group 20088. Nov. 22 - 26. An unstable spot with companions on November 23.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
11	23.497	<i>continued</i>					11	27.129	+17.6	191.0	+1.3		
04 1434	.508	84.9	208.5	+4.1	1	6							
20088	.661	45.8	206.3	+28.8	9	81	20083	.974	276.7	267.7	+6.9	39	138
20089	.937	95.4	169.8	-4.4	3	18	1	.974	276.7	267.7	+6.9	39	138
							20089	.367	104.6	170.3	-4.1	14	75
							20090	.585	73.9	156.4	+10.3	41	182
11	24.299	+18.6	228.3	+1.7									
20078	.984	289.9	307.6	+19.8	30	221	11	28.434	+17.1	173.8	+1.1		
20083	.645	279.7	268.1	+7.5	31	143							
1	.645	279.7	268.1	+7.5	31	143	20089	.106	146.3	170.5	-3.9	9	35
20088	.561	35.1	206.9	+28.8	17	46	20090	.324	59.9	157.4	+10.4	37	184
20089	.857	96.3	169.8	-4.5	0	11	20091	.427	57.1	152.2	+14.4	4	36
20090	.937	79.5	159.0	+10.5	9	30	20092	.725	72.9	128.7	+13.0	0	5
							20093	.937	99.7	104.9	-8.7	44	293
							20094	.974	97.7	97.5	-7.3	15	147
11	25.385	+18.2	214.0	+1.5			11	29.314	+16.8	162.2	+1.0		
20083	.814	277.6	268.2	+7.1	27	152							
1	.814	277.6	268.2	+7.1	27	152	20089	.171	238.8	170.6	-4.0	2	16
20088	.468	13.7	206.8	+28.4	5	26	20090	.181	25.1	157.8	+10.3	38	154
20089	.698	97.2	170.2	-3.9	15	100	20091	.301	39.4	150.9	+14.4	2	29
20090	.824	78.4	159.1	+10.4	7	48	20092	.582	68.0	128.7	+13.4	1	12
							20093	.842	100.4	105.7	-8.2	54	296
							20094	.913	98.8	97.0	-7.6	0	44
11	26.161	+17.9	203.8	+1.4									
20083	.903	277.3	268.0	+7.2	32	123	11	30.409	+16.3	147.8	+0.9		
1	.903	277.3	268.0	+7.2	32	123							
20088	.455	354.4	206.7	+28.2	1	8	20090	.242	310.6	158.5	+9.9	16	69
05 1434	.287	78.5	187.5	+4.6	2	18	20091	.242	337.5	153.3	+13.7	13	62
20089	.563	99.4	170.1	-4.1	34	154	20092	.333	52.9	132.1	+12.4	2	14
20090	.737	77.3	157.0	+10.2	24	105	20095	.324	58.4	131.6	+10.6	0	23
06 1434	.761	65.2	156.9	+19.5	2	9	20093	.672	103.3	106.6	-8.2	49	281
07 1434	.963	77.1	129.8	+12.8	0	11	20094	.784	101.1	97.0	-8.1	0	14

- Group 20089. Nov. 23 - 29. A tiny spot, developing into a small compact cluster by November 25.
- Group 20090. Nov. 24 - Dec. 5. A single tiny spot, developing into a bi-polar stream by November 27. A revival of activity occurs on December 3 before the group dies out.
- Group 20091. Nov. 28 - Dec. 6. A few scattered spots developing, by December 1, into a bi-polar stream led by a regular spot.
- Group 20092. Nov. 28 - Dec. 4. Tiny variable spots until December 2, when only one remains.
- Group 20093. Nov. 28 - Dec. 9. An unstable spot which becomes regular in outline by December 1. From December 2 to 6 there are variable companions.
- Group 20094. Nov. 28 - 30. Several small spots rapidly dying out.
- Group 20095. Nov. 30 - Dec. 4. One or two tiny variable spots.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°			
12	1418	+16.0	134.5	+ 0.8			12	4.280	+14.8	96.8	+ 0.4		
20090	.416	292.7	157.3	+ 9.9	6	59	20090	.853	279.3	154.8	+ 8.1	6	158
20091	.393	305.9	153.6	+14.0	76	396	20091	.857	286.2	154.6	+14.0	75	386
20096	.090	319.3	137.9	+ 4.6	0	12	20096	.739	277.4	144.1	+ 5.7	0	13
20095	.162	2.7	134.1	+10.0	15	50	20095	.620	287.3	133.7	+10.9	0	11
20092	.215	11.7	132.0	+12.9	2	9	20092	.583	290.8	130.6	+12.2	0	12
20093	.484	108.9	107.0	- 8.3	50	304	20093	.236	230.4	107.3	- 8.2	39	309
20097	.548	60.8	104.8	+16.1	8	24	20100	.177	152.4	92.1	- 8.6	0	13
							20098	.688	58.3	58.0	+21.4	0	10
							20099	.912	106.4	32.3	-14.7	37	248
							20101	.972	64.4	21.8	+24.9	0	13
							20102	.996	62.4	12.8	+27.5	21	152
12	2455	+15.6	120.9	+ 0.6									
20090	.615	284.2	157.8	+ 9.1	0	23							
20091	.574	293.8	153.5	+13.9	68	325	12	5.387	+14.4	82.2	+ 0.3		
20096	.295	289.7	137.0	+ 6.3	0	12							
20095	.298	304.6	135.2	+10.3	4	21	20090	.960	278.2	155.7	+ 8.0	3	69
20092	.293	320.9	131.8	+13.7	2	11	20091	.956	284.9	154.4	+14.3	63	382
20093	.283	122.5	107.0	- 8.0	57	340	20103	.842	275.0	139.2	+ 4.4	4	30
20097	.375	43.4	105.4	+16.3	5	43	20093	.458	251.1	108.1	- 8.3	55	279
20098	.923	63.1	56.0	+24.9	12	26	20097	.463	311.4	103.5	+18.0	0	4
08 1434	.946	60.7	52.4	+27.8	0	14	20100	.232	228.4	92.3	- 8.6	1	30
							20098	.549	47.6	56.4	+21.8	0	26
							20104	.561	76.7	48.9	+ 7.6	20	49
							10 1434	.727	78.3	36.4	+ 8.6	0	8
							20099	.784	109.3	32.5	-14.9	63	277
							11 1434	.920	50.8	21.1	+35.6	0	5
							20101	.902	62.4	20.8	+24.8	20	123
							20102	.947	61.2	13.6	+27.1	47	142
12	3.282	+15.2	110.0	+ 0.5									
20090	.714	281.6	154.8	+ 8.6	17	105							
20091	.721	288.6	154.4	+13.6	43	254							
09 1434	.684	265.2	152.9	- 2.9	0	12							
20096	.493	282.0	138.9	+ 6.3	0	7							
20095	.460	292.0	135.6	+10.3	0	14	12	6.385	+14.0	69.1	+ 0.1		
20092	.411	303.2	130.6	+13.4	0	12							
20093	.157	161.8	107.1	- 8.1	40	283	20091	.990	285.9	150.3	+15.7	0	58
20097	.294	20.9	103.7	+16.4	0	9	20103	.952	274.1	140.9	+ 3.9	0	13
20098	.856	61.8	54.4	+24.1	0	11	20093	.630	257.1	107.3	- 8.0	62	375
20099	.978	105.0	32.7	-14.5	31	279							

continued

Group 20096. Dec. 1 - 4. A few tiny spots of which only one remains on December 4.
 Group 20097. Dec. 1 - 8. A small variable spot, not seen on December 4.
 Group 20098. Dec. 2 - 6. One or two tiny variable spots.
 Group 20099. Dec. 3 - 14. A composite spot with a double umbra, which splits into two parts on December 8. By December 14 the two parts have coalesced to form a single spot again.
 Group 20100. Dec. 4 - 6. Tiny spots.
 Group 20101. Dec. 4 - 7. Return of Group 20075, third appearance. A short-lived stream, associated with Group 20102.
 Group 20102. Dec. 4 - 16. Return of Group 20075, third appearance. A regular spot with occasional companions.
 Group 20103. Dec. 5 - 6. One or two tiny spots appearing near the west limb.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		o	o	o			1960		o	o	o		
12	6.385	<i>continued</i>					12	9.405	+12.7	29.3	- 0.3		
20097	.640	299.1	105.0	+18.1	15	38							
20100	.428	249.5	92.9	- 8.5	0	13	20093	.981	262.3	107.8	- 7.6	89	392
20098	.425	25.3	57.8	+22.6	0	6	20105	.849	258.5	86.7	- 9.9	23	57
20104	.362	67.3	49.5	+ 8.1	12	40	20099	.258	189.0	31.7	-14.9	39	174
20099	.634	114.1	32.4	-14.8	32	245	20108	.567	22.5	14.6	+31.2	4	27
20101	.791	57.6	21.8	+25.1	14	109	20102	.537	32.5	10.5	+26.5	18	71
20102	.873	58.3	12.6	+27.3	19	136	20109	.714	103.3	344.6	- 9.5	8	35
							20106	.789	105.8	338.5	-12.6	63	342
							20107	.826	84.1	333.9	+ 4.7	34	160
12	7.313	+13.6	56.8	+ 0.0			12	10.283	+12.3	17.7	- 0.4		
12 1434	.947	282.0	127.4	+11.4	0	9	20105	.935	259.5	86.5	- 9.9	0	62
20093	.778	260.2	107.3	- 7.6	55	382	20104	.548	288.2	49.4	+ 9.5	1	31
20097	.789	293.2	106.3	+18.1	14	28	20099	.347	222.9	31.8	-15.0	30	201
20105	.490	250.6	84.6	- 9.3	0	10	20108	.513	3.9	15.4	+30.3	12	38
20104	.188	35.6	50.5	+ 8.7	4	13	20110	.552	6.4	13.5	+32.7	8	20
20099	.479	122.0	32.1	-14.7	39	222	20102	.472	14.5	10.1	+26.7	22	93
20101	.679	51.4	21.2	+24.9	6	45	20109	.558	105.9	345.0	- 9.0	15	52
20102	.778	53.8	12.0	+27.2	20	124	20106	.652	109.1	338.7	-12.6	58	278
20106	.982	102.2	338.4	-12.0	64	327	20107	.694	82.9	334.2	+ 4.6	16	109
20107	.993	85.0	334.0	+ 4.9	24	177	20111	.811	71.1	325.4	+15.0	4	36
12	8.284	+13.2	44.0	- 0.1			12	11.405	+11.8	2.9	- 0.5		
20093	.899	261.2	107.6	- 8.0	52	373	20099	.533	241.2	31.8	-15.3	36	189
20097	.897	289.9	106.1	+17.6	2	26	20108	.538	339.4	15.4	+29.6	12	18
20105	.685	255.3	86.1	- 9.9	17	65	20110	.571	345.8	12.5	+33.0	0	16
20104	.188	324.7	50.3	+ 8.6	2	13	20102	.469	348.0	9.2	+26.6	15	83
13 1434	.131	145.7	39.8	- 6.3	0	9	14 1434	.270	27.1	355.7	+13.3	5	11
20099	.328	140.9	31.7	-14.7	39	185	20109	.334	115.7	345.3	- 8.7	17	54
20102	.663	46.8	11.4	+26.8	19	94	20106	.457	118.3	338.6	-12.9	61	244
20106	.918	103.3	338.2	-12.2	42	301	20107	.493	80.3	333.9	+ 4.3	11	63
20107	.943	84.9	333.9	+ 4.8	46	170	20111	.627	66.6	326.7	+13.9	16	47

Group 20104. Dec. 5 - 10. Two or three small variable spots; not seen on December 9.
 Group 20105. Dec. 7 - 10. A small scattered stream.
 Group 20106. Dec. 7 - 19. A stable regular spot with an occasional companion.
 Group 20107. Dec. 7 - 15. A diminishing regular spot which dies out before reaching the limb.
 Group 20108. Dec. 9 - 12. A few small spots.
 Group 20109. Dec. 9 - 16. A small stream, of which only the leader remains on December 14.
 Group 20110. Dec. 10 - 12. A small spot.
 Group 20111. Dec. 10 - 18. A scattered stream, of which only the leader remains on December 15.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area	
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots
1960		°	°	°			1960		°	°	°		
12	12·286	+ 11·4	351·3	- 0·6			12	15·282	+ 10·1	311·8	- 1·0		
20099	·683	247·5	32·1	-15·6	31	124	20102	·873	302·1	7·7	+27·0	6	45
20108	·619	324·2	15·8	+29·5	0	6	20109	·605	254·5	348·0	-10·1	0	11
20110	·640	332·4	12·1	+33·8	0	6	20113	·648	311·5	343·9	+24·5	14	68
20102	·535	329·4	9·0	+26·7	12	78	20106	·504	245·7	339·8	-12·8	40	278
20109	·158	151·1	346·9	- 8·6	23	121	20111	·449	302·6	334·6	+13·0	17	37
20106	·297	133·8	338·7	-12·5	49	292	20107	·387	283·4	333·9	+ 4·2	1	15
20107	·310	73·6	334·1	+ 4·4	16	54	20112	·360	318·3	326·1	+14·5	0	35
20111	·465	57·2	327·7	+14·0	4	25	20114	·344	336·2	320·2	+17·2	14	51
							20115	·103	239·8	316·9	- 3·8	21	105
12	13·285	+ 11·0	338·1	- 0·8									
20099	·825	251·5	32·2	-15·6	17	114	12	16·363	+ 9·6	297·6	- 1·2		
20102	·643	316·3	7·9	+26·9	11	57	20102	·953	298·9	6·8	+27·0	3	34
20109	·213	226·8	347·2	- 9·1	7	57	20109	·778	257·7	347·9	-10·2	3	17
20106	·209	184·9	339·2	-12·8	51	332	20113	·809	301·8	346·5	+24·4	2	25
20107	·116	39·1	334·0	+ 4·4	7	27	20106	·693	252·8	340·1	-12·6	46	265
20111	·265	22·0	332·3	+13·4	2	12	20111	·643	291·8	335·2	+12·9	5	31
20112	·371	43·4	322·9	+14·8	0	10	20112	·572	298·6	328·7	+14·8	0	34
							20114	·481	311·0	319·8	+17·2	25	143
							20115	·323	260·0	316·1	- 4·2	24	274
12	14·281	+ 10·5	325·0	- 0·9									
20099	·928	253·9	32·3	-15·3	13	72							
20102	·763	307·4	7·7	+26·9	15	44	12	17·521	+ 9·0	282·3	- 1·3		
20109	·415	248·5	348·0	- 9·6	2	17	20106	·850	256·2	339·8	-12·4	54	253
20113	·510	326·9	342·7	+24·3	6	21	20111	·811	287·7	334·8	+13·4	0	13
20106	·318	229·7	339·3	-12·7	45	267	20114	·674	297·4	320·9	+17·0	14	74
20107	·179	299·1	334·0	+ 4·1	0	26	20115	·552	264·0	315·6	- 4·3	25	242
20111	·287	336·8	331·7	+14·3	14	74	20116	·570	243·2	314·2	-16·0	0	12
m 1435	·353	355·8	326·6	+19·6	0	7	20117	·232	185·6	283·7	-14·6	0	17
20112	·267	5·1	323·6	+14·4	0	14	20118	·635	70·8	244·8	+11·0	32	97
20114	·334	17·1	319·1	+17·7	11	39							
20115	·160	111·1	316·5	- 4·2	0	17							

Group 20112. Dec. 13 - 16. A tiny variable stream.
 Group 20113. Dec. 14 - 16. A pair of spots, of which the leader alone remains on December 16.
 Group 20114. Dec. 14 - 18. A short-lived scattered stream.
 Group 20115. Dec. 14 - 20. A single spot developing rapidly into a stream. The following components form a regular spot by December 17 before rapidly dying out.
 Group 20116. Dec. 17 - 20. One or two tiny spots, which increase rapidly in area on December 20.
 Group 20117. Dec. 17 - 21. A short-lived scattered stream, of which only the leading spot remains on December 21.
 Group 20118. Dec. 17 - 25. A scattered stream, led by a regular spot which alone survives on December 23.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area		
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots	
1960		°	°	°			1960		°	°	°			
12	18.282	+ 8.7	272.3	- 1.4			12	21.495	<i>continued</i>					
20106	.928	257.1	340.0	-12.5	36	257	20118	.355	310.4	245.9	+11.5	21	110	
20111	.892	285.5	334.1	+13.1	0	4	20119	.387	209.1	241.6	-21.3	29	161	
20114	.808	292.3	323.5	+16.9	5	32	20120	.966	75.1	156.2	+13.9	65	324	
20115	.688	264.7	315.5	- 4.5	30	158								
20116	.703	246.9	314.7	-17.0	3	18	12	22.400	+ 6.8	218.1	- 1.9			
20117	.290	214.8	282.1	-15.0	9	41	20118	.541	294.2	248.1	+11.1	13	65	
20118	.478	63.3	246.7	+11.1	21	100	20119	.497	227.0	240.9	-21.4	27	130	
							20120	.896	73.3	156.1	+14.0	49	237	
12	19.090	+ 8.3	261.7	- 1.5										
20106	.978	257.7	339.4	-12.4	51	199	12	23.441	+ 6.3	204.4	- 2.0			
20116	.816	250.8	314.9	-16.3	4	23	20118	.725	286.8	249.1	+10.6	18	46	
20115	.800	265.7	314.6	- 4.4	5	31	20119	.663	239.5	242.0	-21.1	26	65	
20117	.423	236.7	283.0	-14.7	5	44	20120	.771	70.1	156.2	+13.9	39	242	
20118	.335	50.1	246.6	+10.9	26	125								
20119	.443	139.9	243.9	-21.1	4	16	12	24.283	+ 5.9	193.3	- 2.2			
							20118	.839	284.1	249.0	+10.5	9	32	
12	20.382	+ 7.7	244.6	- 1.7			20119	.785	244.5	242.5	-21.0	17	49	
20116	.957	253.2	317.3	-16.4	32	181	20120	.650	66.0	155.8	+13.6	42	167	
20115	.944	264.7	315.1	- 5.6	0	6	20121	.987	98.8	112.7	- 9.0	12	69	
20117	.666	249.2	284.6	-14.8	8	52								
20118	.224	350.1	246.9	+11.0	18	96	12	25.397	+ 5.3	178.6	- 2.3			
20119	.333	175.0	242.9	-20.8	26	114	20118	.957	282.3	250.7	+11.0	0	10	
							20119	.925	248.7	245.2	-20.4	0	17	
12	21.495	+ 7.2	230.0	- 1.8			20122	.279	42.4	167.6	+ 9.6	0	15	
20135	.925	245.0	296.1	-23.7	0	17	20120	.446	52.1	157.5	+13.7	26	175	
20117	.845	254.2	286.8	-14.3	2	37	20121	.905	98.9	114.0	- 9.0	15	91	
						<i>continued</i>	20123	.986	75.8	99.2	+13.6	6	50	

- Group 20119. Dec. 19 - 25. A stream of small scattered spots which become bi-polar in formation by December 22.
- Group 20120. Dec. 21 - Jan. 1. Return of Group 20091. A diminishing regular spot, with a north preceding companion until December 29.
- Group 20121. Dec. 24 - Jan. 4. Return of Group 20093. A small spot with variable tiny companions.
- Group 20122. Dec. 25 - 27. A tiny cluster.
- Group 20123. Dec. 25 - Jan. 6. A compact stream, led by a regular spot which becomes composite in structure by December 28. By January 1, however, it resumes its regular outline.
- Group 20124. Dec. 26 - Jan. 7. A composite spot, immediately north of and almost merging with Group 20125.

POSITIONS AND AREAS OF SUNSPOTS FOR EACH DAY IN THE YEAR

U.T. and Group No.	Measures		Position		Area		U.T. and Group No.	Measures		Position		Area		
	Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots		Rad. Dist.	Pos. Ang.	Long.	Lat.	Umb.	Whole Spots	
1960		°	°	°			1960		°	°	°			
12	26.550	+ 4.8	163.4	- 2.4			12	29.482	<i>continued</i>					
20122	.230	347.9	166.2	+10.5	0	13	20128	.356	315.1	139.6	+11.8	11	54	
20120	.311	25.7	155.5	+13.8	39	175	20121	.246	118.1	112.1	- 9.3	17	73	
20121	.784	99.5	112.1	- 9.0	14	78	20123	.518	56.2	98.5	+14.2	32	206	
20123	.927	74.2	97.0	+13.6	24	206	20124	.653	57.8	89.4	+18.0	55	481	
20124	.960	71.5	91.4	+16.9	46	516	20125	.664	63.6	87.0	+14.9	31	253	
20125	.977	75.9	86.9	+13.2	5	55	20127	.634	98.6	85.7	- 7.6	7	26	
12	27.405	+ 4.4	152.1	- 2.5			12	30.617	+ 2.8	109.8	- 2.9			
20122	.309	313.2	165.3	+ 9.7	0	16	20120	.739	292.0	154.6	+14.0	11	42	
20120	.288	349.4	155.3	+13.8	23	137	20128	.587	292.2	143.3	+10.4	7	20	
20126	.356	3.5	150.9	+18.2	0	20	20121	.119	201.2	112.3	- 9.3	13	55	
20121	.656	101.4	111.6	- 9.3	17	100	20123	.351	30.7	99.2	+14.6	31	374	
20123	.843	72.0	96.7	+13.6	55	260	20124	.492	43.2	89.2	+18.2	65	453	
20124	.902	69.4	90.2	+17.3	57	499	20125	.465	48.5	88.8	+15.2	66	727	
20125	.924	73.0	86.4	+14.6	37	228	20127	.422	100.3	85.2	- 7.0	6	29	
20127	.918	96.9	85.6	- 7.3	5	28	20129	.689	103.3	66.9	-11.2	0	12	
							20130	.848	106.5	52.5	-15.5	0	8	
12	28.297	+ 3.9	140.4	- 2.6			12	31.382	+ 2.4	99.8	- 3.0			
20120	.383	318.4	155.5	+14.0	19	114	20120	.839	289.1	154.5	+14.2	6	32	
20126	.399	334.6	150.7	+18.4	0	4	20128	.722	287.0	144.1	+10.0	5	19	
20121	.488	103.8	111.8	- 9.0	17	73	20131	.530	292.6	129.3	+ 9.1	14	106	
20123	.706	67.3	98.5	+13.8	35	261	20121	.248	243.2	112.6	- 9.3	7	53	
20124	.809	66.2	89.7	+17.4	76	657	20123	.307	1.6	99.3	+14.8	58	367	
20125	.813	70.5	88.4	+14.1	32	221	20125	.353	28.4	89.8	+15.0	97	928	
							20124	.410	26.3	88.8	+18.5	68	323	
12	29.482	+ 3.3	124.8	- 2.8			20127	.279	104.3	84.0	- 6.8	2	37	
20120	.572	300.2	155.4	+14.3	24	122	20129	.562	106.4	66.5	-11.6	0	9	
						<i>continued</i>	20130	.737	107.6	53.3	-14.9	0	8	
							20132	.942	104.2	29.4	-14.4	0	19	

- Group 20125. Dec. 26 - Jan. 6. Scattered spots rapidly growing into a large composite structure with maximum area on January 1. After this date the whole group begins to disintegrate and becomes extended in longitude.
- Group 20126. Dec. 27 - 28. Tiny scattered spots.
- Group 20127. Dec. 27 - Jan. 3. Scattered spots, not seen on December 28.
- Group 20128. Dec. 29 - Jan. 1. A pair of spots on December 29; a single spot on the other days.
- Group 20129. Dec. 30 - 31. Tiny spots.
- Group 20130. Dec. 30 - Jan. 2. A single spot on December 30 becoming two or three spots subsequently.
- Group 20131. Dec. 31 - Jan. 3. A stream, led by a regular spot after January 1.
- Group 20132. Dec. 31 - Jan. 6. A single small spot until January 2, after which there are a few tiny scattered spots.

**GENERAL CATALOGUE
OF SUNSPOTS
FOR THE YEAR 1960**

GENERAL CATALOGUE OF GROUPS OF SUNSPOTS FOR THE YEAR 1960

Groups of sunspots, lasting for two or more days, are numbered in the *first* column in continuation of the group numbers given in *R. Obs. Bulletin* No. 103. Groups seen on one day only are not included in this catalogue but are given with a distinctive numeration in a following table on page C 181.

The *second* column gives the U.T. of the central meridian passage of each group as deduced from its mean longitude (given in the *tenth* column). For those groups which are in existence at the time of the central meridian passage of their longitude, the time is given to 0^d.01, corresponding to 0°.13 of solar longitude. In other cases, in which groups disappear before or appear after the central meridian, the deduced time is given to 0^d.1.

The *third* column gives the duration of each group in days. Intermittent groups, i.e. groups which are not seen upon the photographs of every day between their first and last appearances, are indicated by a fraction, the numerator of which represents the number of days on which they are actually observed, the denominator being the number of days covering the extreme limits of observation.

The *fifth* and *seventh* columns, headed 'Longitude from central meridian', give, for the days on which each group was first and last seen respectively, the heliographic longitude from the meridian passing through the centre of the Sun's disk at the time of observation, longitudes west of the centre being reckoned as positive.

The mean areas for umbrae and whole spots entered in the *eighth* and *ninth* columns are corrected for the effect of foreshortening and are expressed in millionths of the Sun's visible hemisphere.

The *tenth* and *eleventh* columns give the mean heliographic position of the group in longitude and latitude respectively.

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.

The *twelfth* column gives 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.

With reference to the identification of recurrent groups, 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 $\xi = 14.37 - 2.60 \sin^2 \varphi$, 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	Latitude	..	Drift
		<i>forwards</i>			<i>backwards</i>
0°	..	5°	20°	..	3°
5°	..	4.5	25°	..	7.5
10°	..	3	30°	..	12.5
15°	..	0.5	35°	..	18

GENERAL CATALOGUE OF SUNSPOTS

No. of Group	U.T. of C.M.P.	Duration	First Seen		Last Seen		Corrected Mean Area		Mean Position		Reference
			Date	Long. from C.M.	Date	Long. from C.M.	Umbræ	Whole Spots	Long.	Lat.	
			1960	°	1960	°			°	°	
19697	Dec. 31.6	4	Jan. 1	+ 8	Jan. 4	+49	4	20	247.8	+15.1	
8	Jan. 4.93	10/11	1	-48	11	+82	4	27	190.6	-11.6	
9	7.2	3	2	-67	4	-37	2	22	160.8	+25.0	
0	5.65	6	3	-31	8	+37	6	48	181.1	+ 9.8	
1	8.87	13	3	-72	15	+83	51	280	138.7	-23.4	1894 (1)
19702	8.77	12	3	-73	14	+74	63	390	140.0	- 2.5	
3	9.58	8 / 9	3	-80	11	+25	14	88	129.3	-23.4	
4	8.8	2	4	-60	5	-43	0	6	139.2	+14.8	
5	10.24	13	4	-76	16	+80	95	712	120.7	-17.3	
6	10.65	8	4	-82	11	+12	20	140	115.3	-20.6	
19707	5.93	2	5	- 4	6	+ 6	2	14	177.4	-13.0	
8	6.61	5 / 6	5	-13	10	+50	5	28	168.4	-21.1	
9	11.75	13	5	-80	17	+74	103	568	100.8	+18.7	1890 (2)
0	7.8	2	6	-19	7	- 3	4	26	153.2	+11.2	
1	7.7	2	8	+12	9	+21	5	21	153.8	+ 7.4	
19712	13.7	2	9	-57	10	-43	0	8	74.4	+ 9.1	
3	8.9	5	10	+19	14	+71	9	75	137.9	+25.4	
4	9.9	2	10	+ 8	11	+21	2	18	124.8	-11.8	
5	10.3	3	10	+ 3	12	+28	3	24	120.1	- 4.6	
6	16.08	9	10	-79	18	+36	8	47	43.8	- 7.4	
19717	12.64	3	11	-14	13	+ 9	1	7	89.0	+ 9.5	
8	18.28	8	12	-77	19	+13	14	60	14.8	-17.2	1891 (2)
9	8.4	2	13	+65	14	+77	6	39	145.0	-17.5	
0	13.2	6	13	+ 3	18	+70	10	77	82.3	-12.4	
1	19.11	11/12	13	-80	24	+72	16	111	3.8	+ 6.6	
19722	19.2	2	13	-78	14	-66	0	13	2.1	+16.2	
3	20.28	10	14	-77	23	+38	7	37	348.4	+15.8	
4	16.81	3	15	-18	17	+ 9	2	15	34.2	+25.6	
5	18.2	2	15	-36	16	-27	1	11	15.3	+ 6.2	
6	21.44	9	15	-81	23	+24	22	165	333.2	+ 8.0	
19727	21.74	13	15	-83	27	+72	58	320	329.2	+27.6	
8	22.1	3	17	-62	19	-36	9	51	324.5	+19.4	
9	22.89	12	17	-71	28	+75	52	317	314.1	+13.3	
0	19.7	3	20	+ 9	22	+34	6	47	355.9	-13.9	
1	26.19	12	20	-77	31	+72	15	88	270.6	- 8.4	
19732	22.24	3	21	- 9	23	+14	1	15	322.7	+10.9	
3	27.42	8	22	-69	29	+26	13	77	254.5	+ 8.7	
4	28.11	12	22	-76	Feb. 2	+69	13	72	245.4	+ 9.0	1892 (2)
5	28.2	3	22	-77	Jan. 24	-52	5	26	243.9	+ 1.6	
6	28.99	12	23	-77	Feb. 3	+72	81	662	233.8	+ 7.4	1893 (2)
19737	29.73	13	23	-83	4	+76	75	484	224.0	+ 7.4	
8	20.1	2	24	+56	Jan. 25	+70	10	63	350.5	+11.4	
9	27.87	10	24	-42	Feb. 2	+70	39	244	248.5	+21.9	
0	30.73	13	24	-83	5	+74	30	185	210.9	+ 8.8	
1	23.2	2	25	+29	Jan. 26	+43	1	10	309.6	+23.8	
19742	27.8	3	25	-32	27	- 7	4	21	249.7	+12.1	
3	31.74	13	25	-81	Feb. 6	+74	59	342	197.5	-13.9	
4	31.8	4	26	-70	Jan. 29	-32	1	8	196.5	- 9.5	
5	Feb. 1.2	3 / 4	26	-73	29	-38	0	10	191.7	+22.8	
6	1.75	13	26	-82	Feb. 7	+75	42	243	184.3	+ 8.7	1888 (4)

GENERAL CATALOGUE OF SUNSPOTS

No. of Group	U. T. of C. M. P.	Dura- tion	First Seen		Last Seen		Corrected Mean Area		Mean Position		Reference
			Date	Long. from C. M.	Date	Long. from C. M.	Umbræ	Whole Spots	Long.	Lat.	
			1960	°	1960	°			°	°	
19747	Jan. 28.54	3	Jan. 27	-17	Jan. 29	+12	3	14	239.7	+ 6.5	
8	30.15	7	29	-14	Feb. 4	+72	9	50	218.6	+14.2	
9	Feb. 2.44	9	29	-57	6	+53	15	90	175.2	+20.4	
0	4.06	10	29	-73	7	+42	21	115	153.8	+24.3	
1	Jan. 31.65	8	30	-16	6	+77	35	198	198.8	-16.6	
19752	Feb. 3.00	2 / 5	30	-47	3	+ 4	5	32	167.8	-18.5	
3	5.84	14	30	-82	12	+82	20	113	130.5	-23.5	1894 (2)
4	6.35	13	31	-79	12	+82	39	261	123.7	-14.2	
5	6.92	10	31	-84	9	+36	10	72	116.2	-19.3	
6	4.59	9/10	Feb. 1	-44	10	+80	33	176	146.9	-16.7	
19757	8.52	13	2	-81	14	+81	47	278	95.2	+17.1	1890 (3)
8	11.91	14	5	-79	18	+78	148	830	50.5	+22.1	
9	11.5	5	6	-67	10	-17	7	43	55.3	+31.6	
0	12.36	9	6	-76	14	+28	25	125	44.6	-19.5	
1	14.97	14	8	-84	21	+77	146	901	10.2	+11.3	
19762	7.9	5	9	+18	13	+75	23	111	103.5	+ 1.9	
3	14.82	7	9	-71	15	+ 6	20	108	12.1	-23.9	
4	14.9	2	9	-72	10	-61	5	30	11.4	- 6.6	
5	17.1	3	12	-63	14	-34	1	19	341.7	+ 8.8	
6	16.3	2	18	+28	19	+41	1	9	352.9	+17.3	
19767	24.78	13	18	-82	Mar. 1	+74	26	144	241.1	-21.5	
8	25.77	9	20	-74	Feb. 28	+38	33	220	228.0	+ 7.0	
9	22.13	5	21	-10	25	+42	4	20	275.9	+24.3	
0	22.26	3	21	-12	23	+13	6	26	274.3	+27.2	
1	27.54	13	21	-84	Mar. 4	+77	32	188	204.7	+11.4	1895 (1)
19772	24.7	2	22	-31	Feb. 23	-19	2	18	242.3	+ 5.7	
3	24.87	3	23	-21	25	+ 6	1	15	239.9	+ 9.9	
4	27.27	8	24	-43	Mar. 2	+58	7	37	208.2	+ 6.5	
5	29.1	4	25	-53	Feb. 28	- 8	6	25	183.8	-18.4	
6	Mar. 1.08	9	26	-49	Mar. 5	+56	12	77	171.3	+23.7	
19777	2.90	7	26	-75	3	+11	11	73	147.3	-11.9	
8	4.05	14	26	-87	10	+84	50	252	132.1	-13.6	
9	4.8	2	28	-72	Feb. 29	-59	3	23	122.1	+ 9.8	
0	6.45	10	Mar. 3	-43	Mar. 12	+79	11	74	100.5	+ 8.6	
1	8.96	8	3	-71	10	+21	4	23	67.4	+ 8.7	
19782	10.18	9	4	-78	12	+27	9	56	51.4	+ 0.2	
3	10.71	8	5	-68	12	+19	6	39	44.3	- 0.8	
4	11.17	12	5	-74	16	+78	30	211	38.3	- 8.0	1896 (1)
5	5.9	5	6	+ 7	10	+59	5	35	107.6	+10.7	
6	10.91	11	6	-60	16	+67	16	112	41.7	+24.2	
19787	10.1	2	7	-36	8	-23	0	10	52.4	+21.4	
8	12.86	11	7	-73	17	+59	7	37	16.0	+13.3	
9	15.7	4	10	-68	13	-31	2	13	339.1	+12.5	
0	19.08	12	13	-74	24	+71	27	159	294.0	-11.1	
1	19.74	10	13	-82	22	+35	24	205	285.3	- 9.6	
19792	18.5	3	15	-41	17	-15	2	34	301.7	+ 7.2	
3	21.67	9	15	-83	23	+22	12	66	259.9	+ 5.8	
4	14.9	5	16	+20	20	+76	17	112	348.8	+ 5.1	
5	17.5	6	18	+ 9	23	+78	40	257	314.2	+20.8	
6	23.81	12	18	-75	29	+78	55	397	231.7	+22.4	

GENERAL CATALOGUE OF SUNSPOTS

No. of Group	U.T. of C.M.P.	Duration	First Seen		Last Seen		Corrected Mean Area		Mean Position		Reference
			Date	Long. from C.M.	Date	Long. from C.M.	Umbræ	Whole Spots	Long.	Lat.	
			1960	°	1960	°			°	°	
19797	Mar. 21-84	9	Mar. 20	-20	Mar. 28	+80	51	361	257.6	+17.2	1895 (2)
8	25-67	10	20	-70	29	+51	14	72	207.1	+10.4	
9	17-6	3	21	+49	23	+77	5	57	313.6	+ 4.8	
0	26-56	11	22	-57	Apr. 1	+76	47	362	195.4	-12.2	
1	27-7	4	22	-71	Mar. 25	-25	4	41	180.2	+22.7	
19802	19-1	2	23	+56	24	+71	1	18	293.8	-14.3	
3	30-1	6	24	-74	29	-12	4	39	149.2	-24.6	
4	30-2	4	24	-77	27	-39	1	16	146.8	-13.6	
5	24-0	3	25	+21	27	+45	2	18	229.4	+17.6	
6	30-9	5	25	-69	29	-22	4	27	137.7	-26.7	
19807	23-4	4	26	+41	29	+79	3	29	237.3	-19.6	1897 (1)
8	24-0	4	26	+32	29	+73	2	19	228.8	+ 9.3	
9	30-0	4	26	-46	29	- 8	4	23	149.5	+27.0	
0	31-52	11	27	-56	Apr. 6	+79	271	1450	129.9	+11.3	
1	Apr. 2-4	4	28	-66	Mar. 31	-29	2	17	105.0	+ 5.4	
19812	3-83	13	28	-86	Apr. 9	+80	34	267	86.3	- 8.1	1896 (2)
3	6-29	10	31	-79	9	+45	14	98	53.9	+10.0	
4	4-99	10	Apr. 1	-55	10	+77	28	168	71.0	+17.1	
5	6-94	12	1	-74	12	+72	18	105	45.2	- 7.0	
6	1-3	3	2	+13	4	+41	1	5	119.2	+ 0.9	
19817	8-22	12	2	-76	13	+67	22	120	28.4	-17.8	
8	7-22	7	3	-52	9	+29	1	10	41.6	+ 7.4	
9	7-68	8	3	-57	10	+37	2	16	35.5	-20.5	
0	3-7	6	4	+ 7	9	+80	3	29	88.6	- 3.8	
1	10-1	3	4	-75	6	-48	0	11	3.8	+10.6	
19822	10-88	14	4	-84	17	+85	50	356	353.3	-10.0	1898 (1)
3	13-53	12	8	-72	19	+77	41	267	318.2	+ 9.6	
4	14-03	11	9	-58	19	+69	27	168	311.7	+12.0	
5	15-21	8	9	-74	16	+14	4	23	296.1	-11.3	
6	15-30	8	9	-75	16	+13	5	42	294.9	+27.7	
19827	16-43	13	10	-78	22	+77	79	621	279.9	-11.1	1898 (1)
8	12-04	5	11	-10	15	+44	2	24	337.9	+28.5	
9	19-48	13	13	-82	25	+78	32	205	239.6	+10.7	
0	10-6	3	14	+49	16	+75	8	70	357.1	- 8.1	
1	13-8	2	15	+19	16	+35	1	12	315.0	- 3.9	
19832	20-59	12	15	-65	26	+78	32	225	225.0	+23.2	1897 (2)
3	19-02	2	18	- 6	19	+ 4	3	19	245.8	+19.1	
4	21-57	8	20	-14	27	+79	34	201	212.1	+ 7.8	
5	25-24	10	20	-65	29	+54	15	96	163.5	-17.2	
6	27-52	13	21	-81	May 3	+78	87	515	133.4	+10.7	
19837	25-4	2	23	-28	Apr. 24	-15	1	9	161.3	-11.4	1899 (1)
8	28-00	12	23	-60	May 4	+79	25	171	127.1	+14.2	
9	30-0	3	24	-76	Apr. 26	-48	1	12	100.8	+ 8.3	
0	30-35	13	24	-81	May 6	+80	32	210	96.1	- 6.0	
1	26-0	5	26	+ 2	Apr. 30	+60	8	36	153.8	-12.6	
19842	27-23	4	26	-11	29	+28	5	26	137.4	+ 5.7	1900 (1)
3	27-0	3	28	+17	30	+45	3	17	140.9	+ 4.2	
4	May 5-05	12	29	-77	May 10	+71	16	103	33.9	+13.1	
5	6-34	12	May 1	-67	12	+83	57	372	16.9	+11.9	
6	6-88	12	1	-74	12	+76	93	430	9.8	- 8.1	

GENERAL CATALOGUE OF SUNSPOTS

No. of Group	U.T. of C.M.P.	Duration	First Seen		Last Seen		Corrected Mean Area		Mean Position		Reference
			Date	Long. from C.M.	Date	Long. from C.M.	Umbræ	Whole Spots	Long.	Lat.	
			1960	°	1960	°			°	°	
19847	May 8-24	13	May 2	-74	May 14	+78	121	822	351.8	+29.2	1901 (1)
8	8-60	13	2	-83	14	+77	10	64	347.0	-15.4	
9	9-43	5	7	-30	11	+29	7	37	336.1	-12.1	
0	12-15	6 / 8	7	-65	14	+29	2	17	300.1	- 8.7	
1	13-63	13	7	-84	19	+78	30	164	280.5	- 9.4	1898 (2)
19852	7-4	4 / 5	8	+14	12	+67	11	63	3.1	+30.8	
3	13-6	3	8	-69	10	-44	3	14	280.8	+18.9	
4	9-55	2	9	- 1	10	+10	1	8	334.5	- 8.2	
5	6-9	3	10	+43	12	+76	6	48	9.1	+28.5	
6	11-09	4	10	-12	13	+37	6	38	314.1	+ 9.5	
19857	17-14	9	11	-74	19	+29	10	66	234.0	+16.3	
8	14-71	8	12	-31	19	+65	5	24	266.2	+13.3	
9	17-97	13	12	-72	24	+85	33	173	223.1	+ 5.7	
0	9-2	2	13	+58	14	+68	0	10	338.8	-10.3	
1	19-70	13	13	-80	25	+74	197	1154	200.2	-11.5	1902 (1)
19862	21-05	11	15	-76	25	+58	9	59	182.4	+17.8	
3	16-2	2	16	+ 2	17	+17	4	20	246.9	+12.9	
4	16-3	7	16	+ 2	22	+80	2	18	245.3	+15.0	
5	22-0	4	18	-50	21	-10	4	23	170.1	- 1.6	
6	25-33	13	19	-76	31	+79	63	437	125.7	+13.6	1899 (2)
19867	20-58	7	20	- 1	26	+76	74	470	188.6	-13.1	1903 (1)
8	25-12	11	20	-62	30	+74	15	80	128.4	+17.1	
9	24-8	2	21	-49	22	-33	0	4	132.8	+12.9	
0	22-66	7	22	- 4	28	+75	7	47	161.0	+18.6	
1	22-88	7	22	- 7	28	+72	14	82	158.1	+ 0.2	
19872	27-7	4	22	-72	25	-29	4	26	93.9	- 6.2	
3	23-85	3	23	- 6	25	+19	0	9	145.3	+10.7	
4	27-94	7	23	-61	29	+19	9	55	91.2	+ 2.9	
5	24-5	2	25	+11	26	+23	0	10	136.2	+14.4	
6	31-2	4	25	-78	28	-38	1	20	47.6	+ 2.7	
19877	26-21	7	26	- 1	June 1	+83	36	184	114.1	+ 8.9	1904 (1)
8	June 1-77	9	26	-81	3	+20	12	79	27.3	+12.1	
9	2-86	13	27	-85	8	+75	85	483	12.9	- 8.5	1900 (2)
0	May 31-75	6	28	-46	2	+22	18	103	40.8	-16.2	
1	June 1-8	4	28	-59	May 31	-19	1	15	26.9	-20.8	
19882	3-08	11	28	-76	June 7	+51	3	46	10.0	-12.4	
3	4-64	11	29	-78	8	+48	19	109	349.3	+28.9	
4	5-54	14	29	-82	11	+74	30	247	337.3	+30.2	1901 (2)
5	4-04	10	June 1	-36	10	+81	60	417	357.2	+ 6.7	
6	May 30-4	3	3	+52	5	+76	3	18	58.5	-12.7	
19887	June 6-69	7 / 8	3	-47	10	+53	5	39	322.2	+ 8.6	
8	2-4	4	5	+38	8	+79	22	130	19.5	+ 6.5	1905 (1)
9	10-5	2	6	-54	7	-45	0	7	271.3	+12.6	
0	11-86	10	6	-73	15	+47	4	41	253.7	+11.1	
1	12-27	11	6	-80	16	+61	9	64	248.3	+13.4	
19892	10-47	4	8	-27	11	+14	2	27	272.1	+11.7	
3	14-00	12	8	-74	19	+69	14	93	225.4	+17.8	
4	14-30	13	8	-74	20	+78	37	191	221.5	+21.6	
5	14-67	10	8	-83	17	+34	11	57	216.5	-11.2	
6	11-75	6	9	-29	14	+34	9	49	255.2	-17.8	

GENERAL CATALOGUE OF SUNSPOTS

No. of Group	U.T. of C.M.P.	Duration	First Seen		Last Seen		Corrected Mean Area		Mean Position		Reference
			Date	Long. from C.M.	Date	Long. from C.M.	Umbrae	Whole Spots	Long.	Lat.	
			1960	°	1960	°			°	°	
19897	June 13.03	7	June 9	-47	June 15	+30	10	47	238.2	+15.3	
8	15.83	14	9	-86	22	+84	59	326	201.2	-11.4	1902 (2)
9	11.25	6	10	-10	15	+53	5	43	261.9	+17.4	
0	16.35	7	10	-80	16	+1	19	95	194.3	-14.4	1903 (2)
1	7.0	3	11	+60	13	+79	4	36	317.5	+28.6	
19902	15.03	4	12	-35	15	+5	1	7	211.8	-17.8	
3	14.59	7	14	-3	20	+77	8	55	217.5	+19.9	
4	20.8	7	14	-83	20	-3	12	64	136.0	+21.4	
5	11.9	3	15	+44	17	+71	11	61	253.8	-9.3	
6	18.62	5	15	-45	19	+10	6	30	164.2	+17.1	
19907	21.38	13	15	-81	27	+82	27	149	127.7	+12.7	1899 (3)
8	22.0	5	16	-72	20	-23	1	16	119.2	-15.0	
9	22.0	4	16	-74	19	-35	0	13	119.0	+8.0	1904 (2)
0	25.79	14	19	-84	July 2	+88	57	381	69.3	+19.8	1906 (1)
1	26.8	4	21	-75	June 24	-31	1	20	55.4	+1.3	
19912	28.83	7	23	-70	29	+7	0	14	29.0	-7.9	
3	29.04	12	23	-74	July 4	+70	30	169	26.3	+7.7	1905 (2)
4	29.92	14	23	-83	6	+84	42	225	14.7	-8.2	1900 (3)
5	29.0	2 / 3	25	-49	June 27	-18	0	6	26.7	-3.9	
6	July 1.76	14	25	-84	July 8	+86	129	773	350.3	+27.8	1907 (1)
19917	June 21.6	2	26	+65	June 27	+78	0	24	125.1	-15.7	1908 (1)
8	30.4	2	27	-35	28	-28	0	4	8.5	+6.6	
9	30.52	10	27	-40	July 6	+77	45	252	6.7	-15.3	
0	July 3.68	14	27	-78	10	+81	190	1434	324.8	+8.5	1909 (1)
1	June 24.2	2	28	+55	June 29	+68	2	26	90.0	-17.7	
19922	24.9	2	29	+57	30	+72	0	9	80.8	+11.0	
3	July 6.2	3	30	-78	July 2	-52	0	26	290.9	+2.7	
4	7.29	7	July 1	-80	7	+1	11	52	277.2	+24.6	
5	2.84	3	2	-7	4	+21	0	12	336.0	+34.0	
6	8.64	10	2	-85	11	+38	23	126	259.2	+8.9	
19927	8.74	9	3	-75	11	+38	3	45	258.0	+14.4	
8	June 29.8	2	4	+59	5	+78	1	27	15.8	+6.9	
9	July 4.1	2	5	+21	6	+30	1	11	319.6	+23.8	
0	10.41	11	6	-55	16	+81	55	366	235.9	+15.2	
1	9.15	4	7	-25	10	+18	2	17	252.5	-10.0	
19932	11.7	4	7	-60	10	-16	7	45	218.6	-11.2	
3	13.32	13	7	-82	19	+79	17	93	197.3	+19.2	
4	16.24	13	10	-81	22	+83	30	161	158.7	+17.3	1910 (1)
5	17.06	13	11	-73	23	+82	92	612	147.8	+22.0	1911 (1)
6	13.08	2	12	-10	13	+3	0	15	200.4	+12.2	
19937	18.42	12	12	-79	23	+63	10	56	129.8	-16.6	1908 (2)
8	20.7	5	15	-72	19	-17	0	13	99.8	-17.9	
9	14.9	5	16	+18	20	+70	7	50	176.2	+2.1	
0	20.86	3 / 7	16	-61	22	+19	4	25	97.5	+16.0	
1	21.85	7 / 8	16	-73	23	+21	4	27	84.5	+13.5	
19942	22.67	13	16	-83	28	+77	26	149	73.5	+24.6	
3	21.0	2	17	-47	18	-35	1	22	95.6	+10.2	
4	23.1	4	17	-76	20	-37	1	18	67.6	+20.2	1906 (2)
5	23.24	11	18	-72	28	+77	6	42	66.1	-10.0	
6	23.93	10	18	-77	27	+49	8	57	56.9	+9.2	

GENERAL CATALOGUE OF SUNSPOTS

No. of Group	U. T. of C.M.P.	Duration	First Seen		Last Seen		Corrected Mean Area		Mean Position		Reference
			Date	Long. from C.M.	Date	Long. from C.M.	Umbræ	Whole Spots	Long.	Lat.	
			1960	°	1960	°			°	°	
19947	July 25-50	7	July 20	-69	July 26	+13	4	28	36.1	- 5.3	
8	19.4	3	21	+27	23	+51	12	63	117.2	+ 9.3	
9	26.31	9	21	-66	29	+42	7	42	25.5	- 6.6	
0	27.09	13	21	-76	Aug. 2	+83	23	125	14.7	-10.2	
1	23.2	3	24	-15	July 26	+41	0	9	66.4	+20.2	
19952	30.02	11	24	-73	Aug. 3	+53	10	49	336.2	+27.6	1907 (2)
3	30.41	13	24	-80	5	+79	89	651	331.1	+ 8.2	1909 (2)
4	30.41	8	24	-82	July 31	+15	9	52	331.2	+12.6	
5	26.5	5	28	+25	Aug. 1	+74	2	16	21.2	-16.5	
6	30.62	4 / 6	28	-27	2	+33	1	20	328.1	+30.3	
19957	26.8	2	31	+56	1	+71	0	33	16.3	+24.8	
8	Aug. 6.2	2	31	-75	1	-62	0	20	243.8	+13.7	
9	4.11	3	Aug. 2	-24	4	+ 5	0	8	269.1	+ 9.9	
0	6.2	2	4	-22	5	-11	1	13	241.9	+12.9	
1	4.2	2	5	+15	6	+28	0	8	268.0	-10.3	
19962	4.2	2	6	+27	7	+43	0	7	267.4	+19.1	
3	12.39	13	6	-80	18	+77	47	226	159.6	+20.6	1910 (2)
4	8.08	4 / 6	7	- 8	12	+57	2	22	216.5	-21.9	
5	13.42	13	7	-79	19	+78	100	703	146.0	+20.1	
6	13.73	11	7	-82	17	+46	12	55	141.9	+24.8	1911 (2)
19967	14.62	12	9	-70	20	+78	87	514	130.1	-13.8	1912 (1)
8	15.7	6	10	-72	15	- 4	4	32	115.7	-11.7	
9	16.16	12	10	-77	21	+72	54	285	109.8	- 7.2	
0	16.68	13	10	-81	22	+74	48	285	102.8	+15.1	1913 (1)
1	16.97	13	10	-88	22	+72	64	487	99.0	+19.1	
19972	10.6	6	11	+ 7	16	+75	28	145	183.0	- 0.9	
3	17.3	2	11	-79	12	-67	5	50	94.3	+20.6	
4	17.09	12	11	-75	22	+70	47	276	97.5	- 5.9	
5	12.64	2	12	- 4	13	+ 9	0	11	156.3	+17.0	
6	18.71	12	13	-75	24	+76	65	445	76.1	- 9.8	
19977	19.22	13	13	-76	25	+83	82	474	69.3	+15.6	1914 (1)
8	21.14	11	14	-88	24	+48	9	78	43.9	+10.9	
9	21.6	2	16	-70	17	-56	0	10	37.7	+25.6	
0	23.32	13	17	-81	29	+80	22	134	15.1	- 9.4	
1	18.1	3	18	+ 3	20	+32	0	13	84.6	-14.5	
19982	23.80	12	18	-71	29	+75	52	319	8.8	-18.4	
3	22.33	9	20	-23	28	+82	16	90	28.2	+ 5.5	
4	22.20	9	20	-23	28	+79	3	27	30.0	+28.6	
5	26.63	13	20	-82	Sept. 1	+75	13	62	331.3	+ 7.2	1909 (3)
6	20.1	2	21	+18	Aug. 22	+30	0	11	58.2	+15.6	
19987	21.7	5	23	+22	27	+76	18	92	36.5	+26.2	
8	23.6	7	23	+ 1	29	+77	43	262	11.9	- 4.6	
9	24.0	5	25	+20	29	+74	16	95	5.7	+25.0	
0	29.2	3	26	-38	28	-10	3	20	297.9	+25.0	
1	31.44	11	27	-56	Sept. 6	+76	37	198	267.9	+19.4	
19992	29.21	8	28	-15	4	+80	42	222	297.4	-17.2	
3	25.5	2	29	+53	Aug. 30	+65	0	14	346.3	-20.8	
4	27.8	6	29	+21	Sept. 3	+84	14	75	315.5	+16.8	
5	27.5	4	30	+38	2	+76	1	22	319.3	- 9.4	
6	30.3	5	30	+ 0	3	+52	6	48	282.6	-11.3	

GENERAL CATALOGUE OF SUNSPOTS

No. of Group	U.T. of C.M.P.	Duration	First Seen		Last Seen		Corrected Mean Area		Mean Position		Reference
			Date	Long. from C.M.	Date	Long. from C.M.	Umbrae	Whole Spots	Long.	Lat.	
			1960	o	1960	o			o	o	
19997	Sept. 7.39	10	Sept. 1	-79	Sept. 10	+38	6	45	176.0	+16.5	
8	9.35	13	3	-82	15	+77	52	333	150.2	+18.8	
9	10.02	11	4	-74	14	+61	16	87	141.3	-6.4	
0	10.72	10	4	-80	13	+35	6	31	132.1	+6.0	
1	10.79	12	5	-72	16	+76	61	276	131.1	-15.0	1912 (2)
20002	7.86	7	7	-6	13	+75	22	121	169.8	-4.3	
3	10.34	5	7	-36	11	+12	3	29	137.1	-10.2	
4	12.1	4	7	-60	10	-25	6	29	113.4	-16.3	
5	13.0	6	7	-71	12	-9	12	70	101.9	+15.0	1913 (2)
6	9.65	3	9	-4	11	+23	1	8	146.2	+13.4	
20007	15.27	12	9	-78	20	+62	25	139	72.0	+14.7	1914 (2)
8	15.4	7	9	-83	15	-1	6	28	69.6	+9.7	
9	16.1	3	10	-76	12	-51	0	12	60.9	+18.9	
0	15.09	9	11	-54	19	+62	17	100	74.4	-3.4	
1	13.45	4	12	-16	15	+26	6	24	96.1	-9.6	
20012	12.9	3	13	+5	15	+32	11	54	103.4	-17.8	
3	14.7	2	13	-18	14	-4	1	28	79.8	-18.5	
4	17.92	6	13	-61	18	+7	8	44	37.0	+26.2	
5	19.17	13	13	-77	25	+82	29	148	20.5	-5.8	
6	12.8	2	14	+19	15	+34	1	9	104.4	+0.8	
20017	16.0	2	14	-22	15	-9	0	8	62.8	+13.1	
8	21.1	5	15	-76	19	-23	0	10	355.5	-14.1	
9	21.45	13	15	-80	27	+78	117	706	350.5	-19.3	
0	13.9	2	16	+38	17	+47	0	9	90.4	+16.3	
1	18.18	8	17	-10	24	+82	25	141	33.7	+22.4	
20022	19.02	6	17	-19	22	+45	3	22	22.5	+26.1	
3	23.31	13	17	-76	29	+78	21	104	325.9	+16.2	
4	24.35	13	18	-79	30	+78	48	295	312.1	+8.3	
5	24.32	13	18	-78	30	+81	69	339	312.6	-18.0	
6	25.62	10	19	-82	28	+31	11	55	295.4	+23.9	
20027	26.29	11	19	-85	29	+37	12	76	286.5	+27.9	
8	25.10	8	20	-67	27	+29	13	65	302.2	-0.3	
9	25.4	5	20	-69	24	-12	3	23	298.7	-2.9	
0	25.8	6	20	-75	25	-5	11	71	293.6	-11.2	
1	26.5	5	21	-69	25	-13	5	41	283.5	-13.4	
20032	25.29	4	22	-36	25	+2	0	14	299.7	-19.4	
3	26.27	4 / 5	23	-36	27	+14	1	12	286.8	-17.7	
4	24.5	2	25	+11	26	+26	4	21	310.3	+17.5	
5	26.56	7	26	-5	Oct. 2	+80	14	83	282.9	-10.3	
6	28.12	3	26	-23	Sept. 28	+3	0	6	262.4	+22.6	
20037	24.5	2	28	+52	29	+63	4	18	310.8	+17.3	
8	Oct. 2.1	3	Oct. 2	+3	Oct. 4	+31	1	22	209.4	-20.3	
9	8.43	13	2	-78	14	+81	51	310	126.4	-15.2	
0	2.5	2	4	+26	5	+41	0	12	205.3	-14.3	
1	5.43	8	4	-14	11	+82	31	160	166.0	+6.1	
20042	10.07	9	4	-73	12	+29	11	71	104.7	-17.5	
3	10.40	7	5	-65	11	+9	3	38	100.3	+10.7	
4	10.5	6	5	-67	10	-2	5	38	98.7	+4.2	
5	8.09	7	7	-9	13	+71	33	193	130.8	+8.0	
6	15.5	5	9	-81	13	-29	13	58	33.0	+19.6	

GENERAL CATALOGUE OF SUNSPOTS

No. of Group	U. T. of C. M. P.	Dura- tion	First Seen		Last Seen		Corrected Mean Area		Mean Position		Reference
			Date	Long. from C. M.	Date	Long. from C. M.	Umbræ	Whole Spots	Long.	Lat.	
			1960	°	1960	°			°	°	
20047	Oct. 8-7	2	Oct. 10	+21	Oct. 11	+36	0	6	123.1	+ 4.2	
8	11.33	8	10	-14	17	+78	50	310	88.0	+13.4	
9	16.3	6	10	-79	15	-11	5	23	23.0	- 6.5	
0	16.67	7	11	-71	17	+11	14	73	17.7	-16.0	
1	15.57	5	12	-44	16	+12	0	15	32.2	- 7.5	
20052	15.68	10	12	-45	21	+75	38	248	30.8	-12.8	
3	18.6	2	14	-54	15	-42	0	7	352.3	-20.1	
4	20.25	13	14	-75	26	+80	33	202	330.5	-11.4	
5	21.15	14	14	-85	27	+79	145	1049	318.6	+20.3	1915 (1)
6	21.83	9	15	-82	23	+20	0	12	309.7	+25.1	
20057	14.4	5	16	+24	20	+83	6	48	47.8	+16.7	
8	15.6	2	20	+61	21	+76	6	99	31.2	+26.0	1916 (1)
9	24.30	3	23	-11	25	+15	0	7	277.1	+14.9	
0	21.5	2	25	+51	26	+63	1	16	313.7	+ 9.9	
1	31.28	12	25	-78	Nov. 5	+67	41	297	185.0	+21.7	
20062	Nov. 1.35	8	26	-79	2	+13	15	79	170.9	+13.9	
3	1.58	9	26	-83	3	+25	3	27	167.9	+16.9	
4	1.74	7	27	-70	2	+ 9	12	79	165.7	+20.0	
5	3.89	8	29	-75	5	+19	14	81	137.4	- 7.2	
6	6.65	9	Nov. 1	-69	9	+39	11	50	101.0	+11.4	
20067	6.02	10	2	-48	11	+71	15	72	109.3	+ 9.3	
8	8.07	10	2	-76	11	+45	13	77	82.3	+16.3	
9	3.0	2	3	+ 6	4	+19	1	11	148.5	+11.4	
0	7.23	4	4	-35	7	+ 2	1	9	93.3	+13.9	
1	9.25	9	5	-50	13	+52	17	97	66.7	-12.9	
20072	2.1	3	6	+55	8	+85	16	103	161.5	- 2.2	
3	11.44	12	6	-67	17	+76	22	135	37.8	+22.0	
4	11.89	8	6	-73	13	+21	13	74	31.9	-13.1	
5	12.39	13	6	-76	18	+74	243	1372	25.3	+27.1	1916 (2)
6	11.97	11	7	-63	17	+73	42	251	30.8	- 7.0	
20077	13.0	2	8	-62	9	-44	0	6	16.9	+15.9	
8	17.90	14	11	-82	24	+79	113	685	312.7	+19.7	1915 (2)
9	15.8	2	13	-32	14	-18	1	11	340.7	-10.6	
0	10.4	2	15	+67	16	+82	6	42	51.5	+24.6	
1	12.4	2	15	+40	16	+52	3	19	25.0	-10.6	
20082	14.5	3	15	+12	17	+37	6	38	357.4	+27.5	
3	21.32	13	15	-81	27	+77	32	164	267.6	+ 7.1	
4	15.1	2	18	+42	19	+57	1	30	349.0	+23.4	
5	17.0	6	18	+17	23	+84	80	396	324.8	+ 7.4	
6	25.1	4	19	-75	22	-37	1	21	217.2	-20.1	
20087	19.6	3	20	+11	22	+36	2	27	290.3	+14.8	
8	25.95	5	22	-47	26	+ 3	8	36	206.6	+28.8	
9	28.71	7	23	-69	29	+ 8	11	58	170.2	- 4.2	
0	29.70	12	24	-69	Dec. 5	+73	17	99	157.2	+ 9.7	
1	29.98	9	28	-22	6	+81	43	234	153.4	+14.1	1917 (1)
20092	Dec. 1.71	7	28	-45	4	+34	1	11	130.7	+13.1	
3	3.50	12	28	-69	9	+79	54	326	107.0	- 8.1	1918 (1)
4	4.2	3	28	-76	Nov. 30	-51	5	68	97.2	- 7.7	
5	14.5	5	30	-16	Dec. 4	+37	4	24	134.1	+10.5	
6	1.0	4	Dec. 1	+ 3	4	+47	0	11	139.5	+ 5.8	

GENERAL CATALOGUE OF SUNSPOTS

No. of Group	U.T. of C.M.P.	Dura- tion	First Seen		Last Seen		Corrected Mean Area		Mean Position		Reference
			Date	Long. from C.M.	Date	Long. from C.M.	Umbræ	Whole Spots	Long.	Lat.	
			1960	°	1960/61	°			°	°	
20097	Dec. 3.66	7 / 8	Dec. 1	-30	Dec. 8	+62	6	25	105.0	+17.3	
8	7.3	5	2	-65	6	-11	2	16	56.6	+23.0	
9	9.18	12	3	-77	14	+67	34	194	32.2	-15.0	
0	4.61	3	4	-5	6	+24	0	19	92.5	-8.6	
1	10.0	4	4	-75	7	-36	10	73	21.4	+25.0	1916 (3)
20102	10.87	13	4	-84	16	+69	17	83	9.9	+27.0	
3	1.0	2	5	+57	6	+72	2	22	140.1	+4.2	
4	7.85	5 / 6	5	-33	10	+32	8	29	49.8	+8.6	
5	5.1	4	7	+28	10	+69	10	49	86.0	-9.8	
6	13.21	13	7	-78	19	+78	51	280	339.2	-12.6	1919 (1)
20107	13.60	9	7	-83	15	+22	16	78	334.0	+4.5	
8	10.46	4	9	-15	12	+25	7	22	15.4	+30.2	
9	12.64	8	9	-45	16	+50	9	46	346.7	-9.4	
0	10.66	3	10	-4	12	+21	3	14	12.8	+33.2	
1	13.80	9	10	-52	18	+62	7	31	331.4	+13.7	
20112	14.25	4	13	-15	16	+31	0	23	325.4	+14.7	
3	12.8	3	14	+18	16	+49	7	38	344.4	+24.5	
4	14.60	5	14	-6	18	+51	14	68	320.8	+17.3	
5	14.98	7	14	-9	20	+71	15	119	315.8	-4.5	
6	15.0	4	17	+32	20	+73	10	59	315.3	-16.5	
20117	17.4	5	17	+1	21	+57	5	38	284.1	-14.7	
8	20.16	9	17	-38	25	+72	18	76	247.6	+11.0	
9	20.53	7	19	-18	25	+67	18	79	242.8	-21.1	
0	27.14	12	21	-74	Jan. 1	+68	29	148	155.6	+14.0	1917 (2)
1	30.42	12	24	-81	4	+68	9	52	112.5	-9.3	1918 (2)
20122	26.32	3	25	-11	Dec. 27	+13	0	15	166.4	+10.0	
3	31.40	13	25	-79	Jan. 6	+82	41	266	99.5	+14.7	1920 (1)
4	Jan. 1.22	13	26	-72	7	+79	61	379	88.7	+18.5	
5	1.12	12	26	-77	6	+74	63	564	90.0	+15.2	
6	Dec. 27.50	2	27	-1	Dec. 28	+10	0	12	150.9	+18.4	
20127	Jan. 1.49	7 / 8	27	-67	Jan. 3	+26	3	28	85.1	-7.2	
8	Dec. 28.1	4	29	+15	1	+60	6	28	143.2	+10.4	
9	Jan. 2.9	2	30	-43	Dec. 31	-33	0	11	66.7	-11.5	
0	4.0	4	30	-57	Jan. 2	-25	0	9	51.9	-15.3	
1	Dec. 29.1	4	31	+30	3	+71	48	226	130.4	+8.9	
20132	Jan. 5.59	7	31	-70	6	+10	5	23	31.2	-14.3	

GENERAL CATALOGUE OF SUNSPOTS

SUNSPOTS SEEN ON ONE DAY ONLY

The groups of sunspots tabulated below were seen on one day only and appear in the *Daily Results* with a distinctive numeration, comprising the number of the rotation during which each was observed prefixed by a number, in smaller type, given in order of appearance. These short-lived groups are usually composed of one or two very small spots. The deduced time of central meridian passage of each spot is given in the fourth column of the table.

Number of Group	Date	Longitude from Central Meridian	U.T. of Central Meridian Passage	Area Corrected for Fore- shortening		Position of Group	
				Umbræ	Whole Spots	Longi- tude	Lati- tude
	1960	°	1959/60			°	°
1422 06	Jan. 1	+66.6	Dec. 27.2	3	16	305.2	+18.9
07	4	-51.8	Jan. 8.2	0	7	147.2	-14.0
08	5	-55.0	9.8	0	8	126.7	- 4.3
09	10	-10.2	11.2	5	23	107.4	+13.8
10	13	+27.2	11.2	2	16	107.8	+13.9
11	13	+19.4	11.8	2	8	100.0	-10.8
12	15	-26.0	17.4	2	18	25.8	+ 8.5
13	18	+53.4	14.4	3	24	66.3	+ 3.0
1423 01	22	+28.8	20.1	1	10	350.8	+12.8
02	24	+59.8	19.9	0	12	353.6	+16.2
03	24	+15.0	23.3	1	10	308.7	+23.2
04	24	+12.7	23.5	1	14	306.5	+29.9
05	26	+ 0.3	26.5	1	11	266.0	-13.9
06	30	+32.4	28.0	3	18	246.7	+18.0
07	Feb. 2	+10.2	Feb. 1.6	0	5	186.1	+24.4
08	2	+ 5.5	2.0	2	19	181.4	-16.6
09	2	-15.6	3.6	2	17	160.3	-18.2
10	4	+66.1	Jan. 30.4	3	19	214.6	+ 4.7
11	4	- 4.5	Feb. 4.8	0	5	143.9	+32.6
12	6	-66.7	11.5	0	8	56.0	+ 6.8
13	8	-56.0	12.6	2	12	41.0	-16.2
14	12	- 8.0	12.9	1	15	37.4	-19.9
15	14	+25.4	12.7	4	31	40.1	+10.9
16	14	-11.3	15.5	2	23	3.4	-23.9
17	15	+14.2	14.3	1	9	19.1	+10.6
1424 01	18	+37.4	15.6	0	3	1.7	+17.8
02	18	- 2.4	18.6	2	37	321.8	+26.5
03	28	-48.8	Mar. 4.1	0	10	144.6	-24.4
04	Mar. 4	+70.5	Feb. 27.0	0	15	198.3	+12.2
05	4	- 4.1	Mar. 4.7	1	10	123.8	-26.8
06	13	+ 4.9	13.0	0	5	14.3	- 7.2
07	13	-32.2	15.8	0	8	337.2	+16.6
1425 01	15	-26.2	17.4	0	7	316.0	+23.8
02	21	-29.3	23.6	2	11	234.5	-20.3
03	23	+ 6.2	22.9	1	5	243.8	-23.6
04	23	-40.6	26.4	0	5	196.9	+13.4
05	25	+ 2.7	25.5	2	12	209.6	+ 7.4
06	29	-53.9	Apr. 2.4	0	2	104.8	+12.2
07	30	+ 6.5	Mar. 30.1	2	17	148.0	-13.0
08	30	- 2.5	30.8	1	11	138.9	-27.1
09	30	-23.7	Apr. 1.4	1	7	117.8	+ 1.1
10	Apr. 8	+20.6	6.8	0	1	46.9	+11.7
1426 01	11	+51.4	7.5	0	6	37.8	-13.4
02	11	+49.5	7.6	0	3	36.0	-19.3
03	16	+ 1.9	16.2	1	11	283.1	-18.5

GENERAL CATALOGUE OF SUNSPOTS

SUNSPOTS SEEN ON ONE DAY ONLY

Number of Group	Date	Longitude from Central Meridian	U.T. of Central Meridian Passage	Area Corrected for Fore- shortening		Position of Group	
				Umbræ	Whole Spots	Longi- tude	Lati- tude
	1960	°	1960			°	°
1426 04	Apr. 17	-20.0	Apr. 18.9	0	6	247.7	+13.5
05	21	+19.9	19.8	1	10	235.0	-10.9
06	22	+28.6	20.2	0	12	230.8	+21.9
07	22	+ 4.0	22.0	0	8	206.2	-15.2
08	23	+59.5	18.8	0	7	248.7	+12.8
09	27	+26.7	25.3	1	9	162.9	-12.5
10	May 4	- 8.0	May 4.9	0	4	35.3	-16.4
1427 01	10	-39.7	13.3	0	4	284.4	+29.5
02	15	-17.1	16.7	0	8	240.0	+10.5
03	16	- 4.0	16.7	2	12	240.0	-20.2
04	16	-36.7	19.2	0	3	207.2	+23.3
05	20	+48.5	16.9	2	9	237.1	+18.9
06	22	+52.6	18.4	2	10	217.9	+18.1
07	June 3	-20.6	June 4.9	0	12	345.9	+25.2
1428 01	10	-21.6	12.0	0	8	251.5	- 9.4
02	14	-36.3	17.1	0	15	184.9	-12.8
03	15	-45.9	18.8	0	7	162.1	+20.3
04	18	+ 3.2	18.0	1	11	171.8	+22.3
05	26	- 9.9	27.1	0	8	51.7	+ 1.7
06	30	-59.3	July 4.8	0	14	309.9	-14.4
1429 01	July 1	+45.2	June 27.9	0	15	41.6	+ 5.7
02	1	+14.6	30.2	0	8	10.9	+11.5
03	2	-63.7	July 7.2	0	6	278.4	+10.4
04	6	-57.5	10.7	0	2	232.4	-25.9
05	7	+ 2.0	7.2	0	5	278.4	-23.2
06	9	+72.1	3.9	0	19	321.6	- 7.0
07	11	+69.3	6.3	0	19	290.0	-18.6
08	14	-37.4	17.3	1	12	145.1	+27.7
09	16	+45.5	12.9	0	12	203.4	-13.3
10	18	+73.5	12.8	0	24	204.6	+12.0
11	18	+ 0.8	18.3	0	1	131.9	+22.2
12	19	-27.3	21.4	0	12	90.3	-10.3
13	21	+78.8	15.4	0	13	169.6	- 3.0
14	21	+ 1.7	21.2	1	7	92.6	+11.9
15	25	+64.3	20.5	0	6	102.8	- 5.4
16	26	+15.1	25.2	0	6	40.4	+10.4
1430 01	28	-63.9	Aug. 2.4	2	16	291.8	+ 6.4
02	29	+34.9	July 26.8	0	8	18.5	-19.5
03	30	-61.3	Aug. 4.1	2	7	269.5	+ 9.3
04	Aug. 2	+24.2	July 31.5	0	4	316.8	-13.6
05	4	+17.5	Aug. 3.2	0	12	281.0	+10.3
06	15	+11.1	14.5	4	21	132.0	+12.6
07	17	+44.6	14.0	0	5	138.6	+27.6
08	19	+67.3	14.2	0	26	135.2	+12.3
09	19	+64.1	14.5	0	8	132.0	+23.0
10	21	+ 1.7	21.2	1	14	42.5	+26.1
1431 01	31	-53.0	Sept. 4.4	0	6	216.1	- 4.7
02	Sept. 11	+ 5.3	11.0	0	11	128.7	+29.0
03	11	-62.1	16.1	0	7	61.4	+14.6
04	14	-10.2	15.1	0	6	74.3	+18.8

GENERAL CATALOGUE OF SUNSPOTS

SUNSPOTS SEEN ON ONE DAY ONLY

Number of Group	Date	Longitude from Central Meridian	U.T. of Central Meridian Passage	Area Corrected for Fore- shortening		Position of Group	
				Umbræ	Whole Spots	Longi- tude	Lati- tude
	1960	°	1960			°	°
1431 05	Sept. 17	+55.2	Sept. 13.4	0	5	97.0	-17.0
06	18	+41.2	15.2	0	20	73.0	+22.3
07	18	+24.8	16.4	0	5	56.5	+21.4
1432 01	21	-14.5	22.6	0	15	335.7	-11.8
02	22	+39.3	19.6	1	16	15.2	-14.8
03	29	+25.5	27.4	0	11	272.3	+19.3
04	Oct. 5	+56.4	Oct. 1.3	0	8	220.6	+ 5.1
05	6	-12.6	7.3	0	7	140.7	+16.4
06	7	+64.1	2.7	0	7	202.6	-14.2
07	10	+38.5	7.4	14	45	140.2	+ 5.7
08	13	+54.8	9.2	0	11	115.9	+ 4.6
09	15	-13.0	16.4	0	4	21.2	-11.2
10	17	+61.7	12.7	0	10	70.0	+22.3
1433 01	18	-64.6	23.3	0	16	290.8	-10.6
02	24	+ 9.3	23.7	0	11	285.5	-14.9
03	31	+40.5	28.3	0	5	224.3	-18.7
04	Nov. 5	+51.8	Nov. 1.4	3	12	169.9	+13.4
1434 01	16	+49.2	12.6	2	14	21.9	- 6.9
02	22	+69.6	17.2	17	50	322.5	-13.0
03	22	-45.7	25.9	0	26	207.3	+35.5
04	23	-30.4	25.8	1	6	208.5	+ 4.1
05	26	-16.3	27.4	2	18	187.5	+ 4.6
06	26	-46.9	29.7	2	9	156.9	+19.5
07	26	-74.0	Dec. 1.8	0	11	129.8	+12.8
08	Dec. 2	-68.5	7.6	0	14	52.4	+27.8
09	3	+42.9	Nov. 30.0	0	12	152.9	- 2.9
10	5	-45.8	Dec. 8.9	0	8	36.4	+ 8.6
11	5	-61.1	10.0	0	5	21.1	+35.6
12	7	+70.6	2.0	0	9	127.4	+11.4
13	8	- 4.2	8.6	0	9	39.8	- 6.3
14	11	- 7.2	11.9	5	11	355.7	+13.3
1435 01	14	+ 1.6	14.2	0	7	326.6	+19.6
02	21	+66.1	16.5	0	17	296.1	-23.7

TOTAL AREAS OF SUNSPOTS AND FACULÆ

Projected and Corrected for Foreshortening for each day

The place where the photograph was taken is indicated in the second column. A photograph taken at Herstmonceux is indicated by the letter H, and those taken at the Cape and Kodaikanal by the letters C and K respectively.

The projected area is the area as it is measured on the photograph, uncorrected for foreshortening and expressed in millionths of the Sun's apparent disk.

The area corrected for foreshortening is expressed in millionths of the Sun's visible hemisphere.

The areas of faculæ are given separately for the Sun's western and eastern hemispheres.

TOTAL AREAS OF SUNSPOTS AND FACULÆ FOR EACH DAY IN THE YEAR 1960

Date and Place	Projected Area				Corrected Area				Date and Place	Projected Area				Corrected Area			
	Umb.	Whole Spots	Faculæ West	Faculæ East	Umb.	Whole Spots	Faculæ West	Faculæ East		Umb.	Whole Spots	Faculæ West	Faculæ East	Umb.	Whole Spots	Faculæ West	Faculæ East
JANUARY																	
1 C	269	1775	1358	1890	257	1636	1788	2437	1 H	211	1076	1278	939	129	664	1764	1020
2 C	278	1566	1431	1444	214	1154	1678	1689	2 H	190	984	1224	1235	118	616	1548	1371
3 C	221	1678	1222	1328	205	1464	1439	1623	3 H	134	742	766	698	84	501	917	860
4 C	412	2649	1057	1441	403	2644	1274	1798	4 H	177	922	1073	1061	142	885	1229	1276
5 H	729	4444	1573	1524	643	3834	1834	1678	5 C	160	884	1155	1209	102	643	1383	1433
6 H	705	5160	1095	1694	547	3981	1249	1884	6 H	164	979	769	1403	114	691	952	1523
7 H	917	5668	1609	1987	680	4121	1816	2127	7 H	231	1169	1132	1330	170	854	1252	1423
8 H	1167	6030	1317	1555	786	4043	1556	1698	8 H	272	1444	1331	1166	185	985	1413	1219
9 H	789	5163	1165	1123	466	3087	1327	1222	9 H	170	1422	1199	957	121	1001	1329	1085
10 H	734	4535	1511	1017	454	2789	1854	1090	10 H	182	1184	1528	1231	145	895	1654	1385
11 H	690	4267	1301	1049	481	2898	1600	1175	11 C	73	747	1160	1084	47	437	1402	1317
12 H	525	3560	1281	802	354	2360	1609	941	12 H	99	629	961	695	55	375	1220	834
13 C	511	2910	1536	1074	365	2177	1970	1476	13 H	115	648	1012	715	119	615	1130	1053
14 C	302	2080	1578	1383	265	1880	1951	1741	14 C	99	843	1263	1488	95	815	1344	1656
15 H	255	1517	1675	1599	274	1888	1968	1806	15 H	197	1355	1136	682	188	1321	1227	788
16 C	298	1742	1578	1150	343	1970	2097	1462	16 H	176	1347	1034	605	134	1073	1307	754
17 H	399	2058	1377	1724	441	2326	1702	2232	17 C	194	1596	907	1123	118	944	1163	1322
18 H	364	1941	1215	1757	296	1552	1487	1877	18 C	268	1723	1243	1659	156	982	1469	1997
19 C	375	2163	679	1536	259	1464	926	1551	19 C	230	1763	878	1435	139	1066	932	1534
20 H	315	2253	412	638	204	1453	480	769	20 H	329	1771	1270	1171	233	1242	1623	1316
21 C	293	2416	919	1122	172	1427	1067	1231	21 H	316	2066	740	751	227	1470	854	824
22 C	332	2480	924	1063	217	1519	1038	1315	22 H	233	1796	1276	1220	188	1379	1498	1459
23 C	367	2687	1037	1515	385	2726	1211	1881	23 H	298	1896	1209	877	220	1512	1510	945
24 H	745	4072	963	1719	676	3689	1254	2150	24 H	319	2373	1056	866	207	1571	1254	1071
25 H	809	5219	1282	1327	658	4541	1521	1609	25 H	261	2139	1155	1300	178	1436	1277	1515
26 H	698	5555	1127	1193	539	4156	1324	1456	26 H	266	2135	1511	1022	199	1657	1668	1056
27 C	950	5914	1626	1646	691	4239	2041	1989	27 C	388	2231	1690	1184	347	1924	1961	1369
28 H	812	5769	1575	869	497	3689	1800	965	28 C	459	2604	1368	1120	362	2088	1636	1264
29 H	698	4705	852	1784	438	2865	1005	1948	29 C	463	3753	915	1120	398	3231	1301	1367
30 H	704	3971	692	995	428	2442	887	1335	30 H	640	4138	1426	1146	382	2540	1535	1229
31 H	618	3390	1362	1849	377	2116	1515	2305	31 C	548	4040	1047	745	336	2624	1190	810
FEBRUARY																	
1 C	756	4080	1258	1751	483	2640	1485	1964	1 C	799	4718	872	862	521	3180	1028	1120
2 C	591	3608	1239	1251	424	2843	1496	1517	2 H	830	4607	723	1435	511	2858	959	1625
3 C	501	3441	1852	1465	384	2715	2125	1808	3 C	671	3943	1469	1253	452	2612	1431	1260
4 H	463	2932	1311	1083	357	2255	1474	1165	4 H	630	3464	935	1146	527	2936	1070	1368
5 H	493	3144	1644	1514	401	2550	1857	1599	5 H	615	2824	805	688	594	2651	925	1084
6 H	575	3118	2476	1093	524	2872	2785	1471	6 H	428	2604	991	1159	569	3020	1350	1311
7 H	609	3253	1553	913	476	2521	1894	1073	7 H	247	1828	1026	669	164	1191	1132	694
8 H	524	3304	1304	1282	410	2686	1360	1300	8 H	282	1827	1137	712	182	1187	1176	913
9 H	766	3913	1196	1163	618	3253	1384	1411	9 H	234	1493	935	979	154	993	1196	1236
10 C	845	4268	1363	1039	616	3211	1661	1171	10 H	237	1891	1280	1359	198	1662	1528	1597
11 C	668	3828	1649	1471	471	2778	1794	1582	11 H	237	2049	1130	728	172	1518	1160	800
12 C	492	3186	1867	1027	421	2707	2365	1215	12 H	323	2484	1164	873	207	1644	1447	1000
13 C	483	3346	1111	1153	307	2114	1217	1305	13 C	403	3076	977	1044	239	1963	1117	1173
14 H	774	3809	740	1263	456	2281	961	1301	14 H	514	3161	696	1424	301	1876	888	1790
15 H	643	3652	1198	1186	384	2145	1317	1316	15 H	473	3546	842	2000	282	2113	1044	2139
16 H	426	2867	1372	1077	277	1880	1587	1213	16 H	515	3398	1252	1743	315	2097	1592	1795
17 H	324	2202	1079	1078	248	1625	1279	1103	17 H	334	2495	1104	1126	225	1629	1330	1322
18 H	218	1396	1316	1056	234	1409	1398	1217	18 H	369	2374	1358	864	242	1551	1756	933
19 H	128	838	1309	1406	139	890	1387	1954	19 H	416	2449	1024	1148	275	1682	1231	1364
20 C	92	851	1011	1475	130	1232	1258	1757	20 H	238	1908	1078	944	144	1186	1311	1120
21 H	142	764	879	1506	160	1046	1182	1801	21 H	296	1988	1157	764	260	1681	1327	923
22 C	226	1256	1425	1708	186	1044	1594	1871	22 H	267	1603	1044	1112	262	1602	1316	1418
23 C	234	1442	1045	1425	154	939	1295	1563	23 H	292	2085	992	1058	228	1567	977	1112
24 C	170	1037	1566	1799	100	606	1809	1935	24 H	409	2253	1478	914	300	1732	1489	1110
25 C	226	1258	1249	1344	130	712	1465	1522	25 C	295	2101	1556	1271	223	1629	1734	1437
26 H	189	1134	840	1146	179	897	955	1375	26 H	353	2005	953	1043	246	1457	1236	1135
27 H	153	975	852	1016	128	849	892	1134	27 H	250	1560	882	701	178	1030	1147	795
28 H	162	925	1454	1235	129	696	1515	1403	28 H	331	1762	612	703	179	962	810	791
29 C	222	1171	1541	1382	145	762	1670	1520	29 H	258	1834	824	666	175	1264	936	888
									30 H	266	1675	827	793	172	1122	903	862
MARCH																	
1 H	211	1076	1278	939	129	664	1764	1020	1 H	211	1076	1278	939	129	664	1764	1020
2 H	190	984	1224	1235	118	616	1548	1371	2 H	190	984	1224	1235	118	616	1548	1371
3 H	134	742	766	698	84	501	917	860	3 H	134	742	766	698	84	501	917	860
4 H	177	922	1073	1061	142	885	1229	1276	4 H	177	922	1073	1061	142	885	1229	1276
5 C	160	884	1155	1209	102	643	1383	1433	5 C	160	884	1155	1209	102	643	1383	1433
6 H	164	979	769	1403	114	691	952	1523	6 H	164	979	769	1403	114	691	952	1523
7 H	231	1169	1132	1330	170	854	1252	1423	7 H	231	1169	1132	1330	170	854	1252	1423
8 H	272	1444	1331	1166	185	985	1413	1219	8 H	272	1444	1331	1166	185	985	1413	1219
9 H	170	1422	1199	957	121	1001	1329	1085	9 H	170	1422	1199	957	121	1001	1329	1085
10 H	182	1184	1528	1231	145	895	1654	1385	10 H	182	1184	1528	1231	145	895	1654	1385
11 C	73	747	1160	1084	47	437	1402	1317	11 C	73	747	1160	1084	47	437	1402	1317
12 H	99	629	961	695	55	375	1220	834	12 H	99	629	961	695	55	375	1220	834
13 H	115	648	1012	715	119	615	1130	1053	13 H	115	648	1012	715	119	615	1130	1053
14 C	99	843	1263	1488	95	815	1344	1656	14 C	99	843	1263	1488	95	815	1344	1656
15 H	197	1355	1136	682	188	1321	1227	788	15 H	197	1355	1136	682	188			

TOTAL AREAS OF SUNSPOTS AND FACULÆ FOR EACH DAY IN THE YEAR 1960

Date and Place	Projected Area				Corrected Area				Date and Place	Projected Area				Corrected Area			
	Umb.	Whole Spots	Faculæ West	Faculæ East	Umb.	Whole Spots	Faculæ West	Faculæ East		Umb.	Whole Spots	Faculæ West	Faculæ East	Umb.	Whole Spots	Faculæ West	Faculæ East
MAY									JULY								
1 H	306	1946	815	803	297	1735	819	1046	1 H	726	5276	483	1037	450	3377	613	1103
2 H	301	1981	815	1496	308	2108	970	2053	2 H	902	5807	840	1222	511	3395	1022	1394
3 H	432	2215	960	802	449	2437	1262	997	3 H	872	6463	1371	1232	529	3753	1340	1414
4 H	424	2061	1199	1073	309	1587	1278	1198	4 H	1174	6587	1049	935	737	4137	1096	928
5 H	367	2131	1076	997	222	1290	1211	1047	5 H	703	4739	1318	913	516	3414	1634	1137
6 H	399	2190	557	875	218	1247	748	993	6 H	611	4162	1109	1097	490	3315	1446	1343
7 H	399	2803	636	1703	260	1762	635	1842	7 H	446	3343	1630	1190	412	2916	1807	1368
8 H	553	3077	1352	954	356	1964	1499	1016	8 H	313	2348	1049	957	291	2706	1327	1032
9 H	472	3220	772	1228	311	2127	842	1359	9 C	204	1839	1372	1083	208	1794	1709	1065
10 H	461	2951	772	1034	339	2158	889	1052	10 C	263	1745	1005	559	139	1126	1201	674
11 H	674	3296	1468	1127	593	2923	1608	1248	11 H	248	1472	875	819	195	1112	1168	943
12 H	485	2672	1696	1640	558	3039	2285	1791	12 H	247	1486	1326	966	189	1132	1451	1313
13 H	323	2343	1250	1184	479	3793	1581	1484	13 C	216	1420	1009	886	151	990	1161	1109
14 H	260	1757	673	1198	343	2392	965	1462	14 H	224	1499	1198	1107	155	1043	1364	1247
15 C	313	1889	969	947	257	1603	1190	1008	15 H	256	1459	955	644	186	1028	1053	757
16 C	379	2661	957	1079	263	1842	1159	1188	16 H	316	2005	932	899	248	1667	1068	1182
17 H	455	2904	981	661	271	1744	1058	701	17 H	372	2664	1198	979	234	1637	1305	1357
18 H	654	3216	1185	456	365	1787	1316	482	18 H	403	2615	934	1244	254	1699	1117	1496
19 C	579	3084	984	795	322	1720	1225	954	19 H	239	2044	956	840	216	1396	1242	852
20 H	472	3164	1095	502	256	1708	1147	521	20 H	412	2604	1027	1143	292	1834	1119	1319
21 K	571	3022	779	1005	323	1685	872	1113	21 H	331	1923	1139	1116	289	1678	1449	1469
22 C	558	3337	1310	898	362	2152	1641	1033	22 H	249	1578	1325	1013	207	1422	1593	1157
23 H	488	2752	1130	810	379	2066	1304	1264	23 C	123	927	801	846	169	1167	939	938
24 H	479	3148	1631	582	432	2678	1892	645	24 C	171	1152	779	812	234	1652	943	1133
25 H	464	2893	1179	689	395	2606	1611	904	25 H	210	1505	645	1543	196	1483	773	2015
26 H	251	2423	906	747	203	1706	1143	915	26 H	229	1580	897	1783	174	1204	943	1879
27 C	488	2997	633	1224	370	2258	757	1429	27 H	209	1782	851	966	137	1175	937	977
28 H	414	2293	965	1010	373	2085	1233	1292	28 H	331	2143	1277	1186	204	1297	1638	1327
29 C	428	2606	1080	1348	379	2301	1195	1501	29 H	289	1915	1174	1128	153	1007	1307	1345
30 H	363	2286	907	1332	349	2280	1120	1605	30 H	321	1950	1139	966	169	1025	1250	1020
31 H	312	1848	942	1274	273	1662	1247	1546	31 H	220	1680	1265	1104	128	967	1508	1283
JUNE									AUGUST								
1 H	311	1998	1066	1134	199	1337	1332	1253	1 H	157	1107	944	1070	100	738	1196	1145
2 H	225	1625	551	1218	129	944	761	1404	2 H	143	983	1116	920	128	754	1334	1084
3 H	334	2038	1058	1012	178	1106	1145	1085	3 H	92	623	1036	794	75	499	1038	901
4 H	437	2564	1013	1324	241	1399	1065	1527	4 H	50	327	1967	1588	63	379	2169	1533
5 H	376	2459	842	1195	209	1374	979	1267	5 H	20	152	1403	874	44	305	1791	863
6 C	302	2198	1013	1218	195	1450	1115	1359	6 H	30	146	1034	1104	73	306	1268	1430
7 H	313	2530	1150	1380	256	1994	1239	1647	7 H	94	768	851	1218	182	1518	976	1524
8 C	188	1730	1580	1023	232	1881	2015	1218	8 H	179	1231	782	943	205	1388	891	1011
9 H	284	1534	1127	1081	324	1929	1399	1403	9 H	287	1474	724	1160	244	1240	821	1311
10 H	258	1835	1392	1657	243	1774	1804	2094	10 C	347	2351	767	1378	329	2335	1057	1921
11 C	415	2245	1357	1046	335	1780	1812	1070	11 C	603	3580	1022	1467	515	3048	1054	2068
12 C	299	1817	956	1500	193	1167	1090	1517	12 H	925	5648	1206	1126	633	3853	1277	1218
13 H	316	1734	864	817	183	1002	1139	936	13 H	1186	6246	767	996	777	4154	904	1250
14 H	304	2026	829	667	212	1385	970	984	14 H	1055	7199	723	1215	667	4515	775	1339
15 H	381	2108	863	1127	269	1401	1194	1411	15 H	1582	8852	665	1409	957	5381	792	1617
16 H	331	1582	1106	1083	211	1068	1178	1465	16 H	1093	7238	769	1215	645	4200	939	1417
17 K	217	911	501	697	148	639	599	795	17 H	893	5416	780	1159	548	3376	926	1390
18 H	190	891	1202	807	133	630	1310	858	18 H	821	5609	1324	1028	593	3720	1435	1201
19 H	137	757	1141	1220	168	882	1240	1413	19 H	793	5163	1100	904	538	3524	1324	946
20 H	137	852	1440	783	164	1065	1740	989	20 H	566	3934	1576	1027	433	2902	1835	1191
21 H	109	675	1499	990	107	717	1988	1171	21 H	433	3326	1508	1028	297	2267	1641	1218
22 H	106	687	874	690	73	549	1093	710	22 H	450	2619	1394	1165	331	1942	1774	1244
23 C	140	849	445	1158	112	761	501	1681	23 H	375	2117	1597	1073	263	1574	2202	1241
24 C	230	1297	771	1586	195	1102	802	1998	24 H	331	1642	1140	605	234	1207	1487	666
25 C	273	1650	919	1557	210	1406	926	1593	25 H	415	2248	1187	947	410	1814	1536	1148
26 H	386	2298	783	1187	341	2000	938	1296	26 H	350	1990	1187	787	241	1368	1346	863
27 H	419	2359	541	1059	320	1991	661	1194	27 H	268	1700	1428	697	216	1404	1628	764
28 H	485	2986	729	1189	343	2355	899	1309	28 H	189	1156	1152	788	201	1300	1630	839
29 H	578	3678	599	1352	397	2617	712	1434	29 H	132	831	1149	786	109	917	1720	980
30 H	646	4088	1117	1349	422	2728	1273	1499	30 H	151	802	887	1002	86	467	1060	1214
									31 H	194	1093	930	988	116	658	1043	1110

TOTAL AREAS OF SUNSPOTS AND FACULÆ FOR EACH DAY IN THE YEAR 1960

Date and Place	Projected Area				Corrected Area				Date and Place	Projected Area				Corrected Area			
	Umb.	Whole Spots	Faculæ West	Faculæ East	Umb.	Whole Spots	Faculæ West	Faculæ East		Umb.	Whole Spots	Faculæ West	Faculæ East	Umb.	Whole Spots	Faculæ West	Faculæ East
SEPTEMBER								NOVEMBER									
1 H	235	1274	831	684	156	885	956	853	1 H	121	790	528	1056	75	467	699	1381
2 H	176	1046	1113	1011	149	891	1340	1140	2 H	95	557	297	1585	73	420	407	1727
3 K	127	761	667	456	229	1198	967	673	3 H	86	501	374	956	60	356	518	1102
4 H	179	1184	555	736	175	1187	787	947	4 H	97	446	528	1221	64	292	608	1466
5 H	257	1274	623	1134	268	1305	717	1450	5 H	76	502	629	1037	44	305	727	1105
6 K	234	1206	390	821	237	1112	516	937	6 H	217	1261	935	1573	247	1615	1182	1873
7 H	252	1449	645	1201	174	956	761	1361	7 H	356	1799	880	1198	338	1677	1116	1404
8 H	326	1713	555	1248	195	1031	577	1400	8 H	567	2930	1034	1572	458	2420	1247	1658
9 H	380	2121	838	1802	234	1389	899	2147	9 H	593	3441	770	836	376	2192	1042	1007
10 H	422	2586	782	1450	258	1581	886	1621	10 H	688	3784	779	878	404	2223	952	1059
11 H	333	1871	847	1572	204	1176	906	1625	11 H	728	4208	657	1051	494	2772	847	1438
12 H	330	1807	611	791	209	1158	648	848	12 C	669	4420	760	1912	468	3143	974	2333
13 H	349	2025	1594	1368	247	1505	1756	1623	13 H	804	4865	911	1086	519	3156	1088	1297
14 H	310	1645	1933	1151	225	1201	1814	1269	14 H	1030	5250	985	1390	661	3328	1128	1550
15 H	230	1201	1966	1357	231	1286	2355	1516	15 H	764	4252	1081	874	558	3173	1229	1074
16 H	224	1246	857	858	225	1247	1217	967	16 H	687	3616	1644	942	538	2938	1788	1080
17 H	249	1574	699	936	215	1311	750	1188	17 C	500	3044	1295	821	405	2479	1664	925
18 H	431	2149	1806	1299	369	1871	1909	1715	18 H	362	2532	1123	665	344	2138	1630	854
19 H	512	3010	958	1206	400	2474	1009	1481	19 H	310	1841	732	720	173	1053	840	969
20 K	699	3333	1253	1242	558	2765	1537	1845	20 C	241	1870	833	866	150	1183	1046	1042
21 H	692	3943	800	1622	467	2645	956	1744	21 C	397	2021	1054	1191	319	1569	1338	1450
22 H	639	3831	1171	1306	391	2354	1296	1347	22 H	213	1207	1058	1101	244	1352	1287	1238
23 H	720	3870	1000	674	433	2366	1134	723	23 H	87	604	1079	1112	100	719	1311	1208
24 H	556	2948	891	496	370	1938	1075	505	24 C	94	409	683	882	87	451	881	1017
25 H	392	2428	1313	630	273	1710	1594	737	25 C	68	422	492	1195	54	326	627	1371
26 H	304	1819	1203	629	242	1462	1382	846	26 K	124	570	804	1239	95	428	1006	1515
27 H	197	1286	1012	652	191	1428	1402	824	27 K	110	499	474	1069	94	395	683	1299
28 H	135	795	1269	808	112	660	1351	922	28 H	132	764	676	1363	109	700	822	1602
29 H	87	546	1462	719	86	538	1655	791	29 C	142	767	653	1683	97	551	731	1910
30 C	35	258	1410	846	60	556	1790	917	30 C	133	759	629	1050	80	463	754	1155
OCTOBER								DECEMBER									
1 C	11	76	1474	1106	14	97	1696	1301	1 H	283	1548	238	479	157	854	300	575
2 H	20	181	773	873	59	489	1053	1129	2 H	249	1416	545	816	148	815	644	948
3 H	35	262	515	1288	45	319	746	1327	3 C	176	1281	957	1198	131	986	1094	1473
4 C	41	402	432	821	34	343	495	1038	4 C	193	1500	672	1323	178	1325	778	1670
5 H	187	1059	671	1422	115	742	743	1664	5 H	304	1546	905	1636	276	1424	1211	1888
6 H	210	1131	480	1451	129	687	588	1604	6 C	228	1421	850	1469	154	1033	1045	1716
7 H	250	1361	290	868	145	777	350	1009	7 C	227	1350	849	1279	226	1337	1053	1533
8 H	292	1523	347	961	163	850	473	1050	8 C	246	1335	1026	1363	219	1236	1184	1809
9 C	227	1592	777	1026	140	948	858	1071	9 H	298	1367	805	1142	278	1258	1079	1328
10 C	312	1813	733	689	216	1201	919	887	10 C	271	1444	806	1445	166	920	975	1611
11 H	275	1424	791	1080	203	1062	1021	1293	11 H	300	1264	501	796	173	725	592	954
12 H	302	1631	1381	1314	225	1200	1529	1447	12 C	246	1277	692	963	135	706	793	1018
13 H	239	1454	1125	734	166	1095	1409	931	13 C	166	1074	1329	681	95	609	1471	879
14 H	235	1420	1044	778	268	1631	1362	1002	14 C	177	1025	806	399	106	598	965	501
15 H	271	1926	1420	1342	268	2010	1617	1771	15 C	196	1108	794	667	113	645	980	699
16 H	282	2327	755	1320	241	2071	921	1629	16 C	173	1329	930	480	108	823	1132	559
17 H	343	2859	666	1243	277	2289	885	1476	17 C	170	997	1216	419	125	708	1450	539
18 H	379	2680	644	976	240	1710	828	1084	18 C	135	744	1453	827	104	610	1678	1069
19 C	412	2641	546	909	240	1582	608	1110	19 K	98	491	967	333	95	438	1142	332
20 C	452	2797	546	759	261	1666	674	910	20 C	116	590	999	532	84	449	1304	725
21 H	542	2751	798	333	313	1765	1000	381	21 C	128	726	665	936	117	649	878	1268
22 H	356	2133	732	422	198	1246	950	532	22 H	112	547	785	860	89	432	912	956
23 H	326	2013	629	586	200	1231	682	690	23 C	115	470	780	1094	83	353	964	1305
24 H	221	1742	815	364	160	1239	935	428	24 C	97	374	740	939	80	317	872	1204
25 H	176	1599	1469	485	189	1775	1697	630	25 H	61	455	529	638	47	358	724	799
26 C	188	1320	1360	941	262	1873	1573	1349	26 H	138	928	303	951	128	1043	413	1167
27 H	136	1121	958	815	179	1536	1373	989	27 H	216	1392	544	1699	194	1288	679	1937
28 H	157	973	1144	924	118	708	1314	1070	28 C	240	1752	388	838	179	1330	525	914
29 C	223	1198	917	1324	147	819	1189	1545	29 H	289	1947	563	1126	177	1215	729	1339
30 H	154	1084	550	1331	102	683	741	1529	30 H	353	3055	861	917	199	1720	913	936
31 H	132	1016	429	1287	77	583	533	1511	31 H	472	3481	724	911	257	1901	803	974

MEAN AREAS AND MEAN HELIOGRAPHIC LATITUDE OF SUNSPOTS AND FACULAE

for each rotation of the Sun and for the year

MEAN AREAS OF SUNSPOTS AND FACULÆ FOR EACH ROTATION OF THE SUN,
FROM 1960 JANUARY 20 TO 1961 JANUARY 7

The mean areas have been formed by taking the means of the areas for each day of observation throughout each rotation of the Sun, the projected areas being the areas as measured on the photographs and expressed in millionths of the Sun's apparent disk, and the areas corrected for foreshortening being expressed in millionths of the Sun's visible hemisphere.

The rotations adopted in the following table (which is in continuation of those for the years 1873-1959; see *R. Obs. Bulletin* No. 103, page C 94, 1965) 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 January 1, 1854, 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.

No. of Rotation	Rotation Commenced	Days Photo- graphed	Mean Projected Daily Area			Mean Corrected Daily Area			
			Umbræ	Whole Spots	Faculæ	Umbræ	Whole Spots	Faculæ	
1423	1960 January	19.40	27	612	3752	2552	445	2757	2980
1424	February	15.75	27	189	1146	2367	143	880	2728
1425	March	14.07	27	386	2477	2164	288	1833	2515
1426	April	10.37	28	347	2251	2083	246	1612	2424
1427	May	7.62	27	436	2648	2051	335	2062	2417
1428	June	3.83	27	306	1864	2126	231	1446	2501
1429	July	1.03	27	395	2668	2071	289	1972	2423
1430	July	28.23	28	488	3051	2211	340	2122	2583
1431	August	24.46	27	295	1641	2065	235	1313	2437
1432	September	20.72	27	270	1636	1922	198	1240	2270
1433	October	18.01	27	332	2021	1779	234	1461	2152
1434	November	14.31	28	292	1639	1949	222	1256	2339
1435	December	11.63	27	241	1540	1675	168	1058	1980

MEAN AREAS OF SUNSPOTS AND FACULÆ FOR THE YEAR

The mean projected areas are expressed in millionths of the Sun's apparent disk.

The mean areas corrected for foreshortening are expressed in millionths of the Sun's visible hemisphere.

Year	Days Photo- graphed	Mean Projected Daily Area			Mean Corrected Daily Area		
		Umbræ	Whole Spots	Faculæ	Umbræ	Whole Spots	Faculæ
1960	366	361	2227	2118	267	1659	2490

MEAN HELIOGRAPHIC LATITUDE OF SUNSPOTS FOR EACH ROTATION OF THE SUN,
FROM 1960 JANUARY 20 TO 1961 JANUARY 7

The numbers given in the accompanying table have been formed as follows:

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; and 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.

No. of Rotation	Rotation Commenced	Days Photo- graphed	Northern Spots		Southern Spots		All Spots		
			Mean Daily Area	Mean Hel. Lat.	Mean Daily Area	Mean Hel. Lat.	Mean Hel. Lat.	Mean Dist. from Equator	
1423	1960 January	19.40	27	2109	13°97	647	16°05	+ 6°92	14°46
1424	February	15.75	27	563	12.77	316	13.71	+ 3.25	13.11
1425	March	14.07	27	1148	14.12	686	10.91	+ 4.76	12.92
1426	April	10.37	28	953	14.04	659	10.22	+ 4.12	12.48
1427	May	7.62	27	1025	18.46	1036	11.13	+ 3.59	14.78
1428	June	3.83	27	1035	17.06	411	10.75	+ 9.16	15.27
1429	July	1.03	27	1741	15.81	231	11.71	+12.59	15.33
1430	July	28.23	28	1294	16.59	828	10.45	+ 6.04	14.20
1431	August	24.46	27	589	17.36	724	13.13	+ 0.54	15.03
1432	September	20.72	27	562	14.16	678	15.54	- 2.07	14.92
1433	October	18.01	27	1200	21.90	261	9.81	+16.22	19.73
1434	November	14.31	28	914	18.70	342	10.04	+10.87	16.34
1435	December	11.63	27	848	16.43	210	11.99	+10.78	15.54

MEAN HELIOGRAPHIC LATITUDE OF SUNSPOTS FOR THE YEAR

Year	Days Photo- graphed	Northern Spots		Southern Spots		All Spots	
		Mean Daily Area	Mean Hel. Lat.	Mean Daily Area	Mean Hel. Lat.	Mean Hel. Lat.	Mean Dist. from Equator
1960	366	1066	16°11	593	12°11	+5°93	14°84

SUMMARY OF SOLAR ACTIVITY FOR THE YEAR 1960

The chief features of the record for 1960 are as follows:

(1) Maximum phase having occurred two years earlier, the normal decrease in activity became apparent, and mean daily areas dropped appreciably.

(2) The spot group with the largest mean area crossed the central meridian on March 31.5 in latitude 11° N; its mean area was 1450 millionths.

In addition, there were 20 other groups with mean areas exceeding 500 millionths, including 4 with mean areas exceeding 1000 millionths.

(3) On no day was the Sun free from spots or faculae.

(4) The ratio of mean corrected areas of faculae/sunspots was 1.50 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	272	77
Southern spots	164	51
Total	436	128

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

Month	Spots		Faculae
	Projected	Corrected	Corrected
January	3527	2649	3120
February	2448	1868	3001
March	1690	1227	2581
April	2500	1787	2422
May	2618	2079	2400
June	1867	1414	2483
July	2571	1856	2455
August	2825	2034	2533
September	1873	1440	2397
October	1533	1169	2134
November	1998	1476	2343
December	1266	907	2062

Corrections to R. Obs. Bull. No. 103

Pages C 94, 95, line 2 For '1960 January 18' read '1960 January 19'
C 96, line 4 For 'for 1959.' read 'for 1958.'

ROYAL OBSERVATORY BULLETINS

81. Photographic Zenith Tube: Instrument and Method of Reduction. <i>D. V. Thomas</i>	4s. 6d.	109. Pivot Errors and Axis Flexure in the 7-inch Cooke Transit Circle. <i>R. d'E. Atkinson, L. S. T. Symms and K. C. Blackwell</i>	3s. 0d.
82. Clusters and Stellar Evolution: A Symposium. Edited by <i>O. J. Eggen and G. H. Herbig</i>	14s. 0d.	110. Fundamental Data for Southern Stars (Sixth List). <i>David S. Evans</i>	3s. 0d.
83. Time and Latitude Service, 1963 July-September	3s. 6d.	111. Proper Motions in the Field of NGC 6522. <i>S. V. M. Clube</i>	5s. 0d.
84. A Catalogue of High-Velocity Stars. <i>O. J. Eggen</i>	12s. 6d.	112. Photoelectric Photometry of RR Lyrae Stars. <i>D. H. P. Jones</i>	3s. 6d.
85. Fundamental Data for Southern Stars (Fifth List). <i>David S. Evans, J. D. Laing, A. Menzies and R. H. Stoy</i>	3s. 0d.	113. Time and Latitude Service, 1965 April-June	3s. 0d.
86. Time and Latitude Service, 1963 October-December	3s. 0d.	114. Radial-Velocity Observations of RR Lyrae Variables at Kottamia. <i>Sir Richard Woolley and Khairy Aly</i>	5s. 6d.
87. Differential Curve-of-Growth Analyses of some Cool Stars. <i>B. E. J. Pagel</i>	8s. 0d.	115. Photometric Observations of RR Lyrae Variables. <i>G. A. Harding and Margaret J. Penston</i>	
88. Double-Star Observations made with the 28-inch Refractor, 1960-1963. <i>Sir Richard Woolley, L. S. T. Symms, D. H. P. Jones and M. P. Candy</i>	4s. 6d.	116. Time and Latitude Service, 1965 July-September	2s. 6d.
89. Time and Latitude Service, 1964 January-March	3s. 6d.	117. Dynamics of Self-Gravitating Gaseous Spheres, I. The Collapse of an Isothermal Gas Sphere. <i>M. V. Penston</i>	2s. 6d.
90. Studies in the Magellanic Clouds, VII. Distribution of faint stars of various colours in selected areas of the LMC. <i>Sir Richard Woolley and Elizabeth Epps</i>	3s. 0d.	118. The Cassegrain Spectrograph of the Yapp 36-inch Reflector at Herstmonceux. <i>J. D. Pope, D. R. Palmer and J. B. Alexander</i>	2s. 6d.
91. Investigation of Proper Motions in the field of the Cluster M67, I. The Central Region. <i>C. A. Murray, P. M. Corben and Mary R. Allchoron</i>	5s. 6d.	119. The B-V of the Sun. <i>J. B. Alexander and R. Stansfield</i>	1s. 6d.
92. Results obtained with a Danjon Astrolabe at Herstmonceux, I. Observations. <i>D. V. Thomas</i>	10s. 0d.	120. Three-Colour Photometry of the Components in Wide Double and Multiple Systems, II. 298 Systems. <i>Olin J. Eggen</i>	10s. 0d.
93. Measurements of Radial Velocity from Coude' Plates. <i>Sir Richard Woolley and G. A. Harding</i>	3s. 0d.	121. Photoelectric Magnitudes and Colours of Southern Stars, II. <i>A. W. J. Cousins, R. Lake and R. H. Stoy</i>	7s. 6d.
94. Time and Latitude Service, 1964 April-June	3s. 0d.	122. Fabry Photometry of Bright Southern Stars. <i>A. W. J. Cousins</i>	9s. 0d.
95. Photometry of the Cluster NGC 6522. <i>S. V. M. Clube</i>	4s. 6d.	123. Time and Latitude Service, 1965 October-December	2s. 6d.
96. Time and Latitude Service, 1964 July-September	3s. 0d.	124. Analysis of the Cool Halo Subdwarf HD 25329. <i>B. E. J. Pagel and A. L. T. Powell</i>	3s. 6d.
97. The Absolute Magnitudes of RR Lyrae Variable Stars. <i>Sir Richard Woolley, G. A. Harding, Anneila I. Cassella and Jennifer Saunders</i>	4s. 6d.	125. Colours, Luminosities and Motions of the Nearer Giants of Types K and M. <i>Olin J. Eggen</i>	9s. 0d.
98. Proper Motions and Radial Velocities of Hyades Stars. <i>P. A. Wayman, L. S. T. Symms and K. C. Blackwell</i>	4s. 6d.	126. A Spectral Classification Scheme Applicable to Late-Type Stars of Differing Metal Deficiency. <i>D. H. P. Jones</i>	5s. 0d.
99. Studies of the Globular Cluster ω Centauri, II. Radial Velocities of Bright Members. <i>G. A. Harding</i>	3s. 0d.	127. Group Corrections and the Optimisation of an Observing Programme. <i>D. V. Thomas</i>	4s. 0d.
100. Studies of the Globular Cluster ω Centauri, III. Proper Motions. <i>C. A. Murray, D. H. P. Jones and M. P. Candy</i>	3s. 0d.	128. Studies of the Globular Cluster ω Centauri, V. HR Diagram, Structure and Dynamics. <i>R. J. Dickens and Sir Richard Woolley</i>	10s. 6d.
101. Studies of the Globular Cluster ω Centauri, IV. Photometry of RR Lyrae Variables. <i>R. J. Dickens and Jennifer Saunders</i>	4s. 0d.	129. Studies of the Globular Cluster ω Centauri, VI. Photometry of Cepheids with periods greater than one day. <i>R. J. Dickens and J. V. Carey</i>	3s. 6d.
102. Time and Latitude Service, 1964 October-December	3s. 0d.	130. Orbital Elements of Nine Spectroscopic Binaries. <i>Edwin S. Barker, David S. Evans and J. D. Laing</i>	2s. 6d.
103. Photoheliographic Results, 1959	12s. 6d.	131. G-R and R-I Colours of Late-Type Dwarfs. <i>J. B. Alexander and B. D. Yallop</i>	2s. 6d.
104. Revised Abundance Analysis of the Halo Red-Giant HD 122563. <i>B. E. J. Pagel</i>	4s. 0d.		
105. Time and Latitude Service, 1965 January-March	3s. 6d.		
106. Cape Catalogue of Circumpolar Stars for the Equinox 1950.0. <i>Reduced by W. Gliese</i>	3s. 6d.		
107. Discussion of Lunar Occultations observed in 1958 and 1959. <i>Flora McBain Sadler</i>	2s. 0d.		
108. Proper Motions in the region of the Hyades. <i>C. A. Murray, C. M. Lowne and E. D. Clements</i>	5s. 0d.		

Government publications can be purchased over the counter or by post from the Government Bookshops in London, Edinburgh, Cardiff, Manchester, Bristol, Birmingham and Belfast, or through any bookseller.

© Crown copyright 1967

Published by

HER MAJESTY'S STATIONERY OFFICE

To be purchased from

49 High Holborn, London W.C.1

423 Oxford Street, London W.1

13A Castle Street, Edinburgh 2

109 St. Mary Street, Cardiff

Brazennose Street, Manchester 2

50 Fairfax Street, Bristol 1

35 Smallbrook, Ringway, Birmingham 5

7-11 Linenhall Street, Belfast 2

or through any bookseller