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GREENWICH
PHOTO-HELIOGRAPHIC RESULTS
1941

Department of Terrestrial Magnetism
5241 Broad Branch Road, N. W.
Washington 15, D. C.

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RESULTS OF MEASURES MADE AT THE
ROYAL OBSERVATORY, GREENWICH, OF
PHOTOGRAPHS OF THE SUN

TAKEN AT GREENWICH, THE CAPE
AND KODAIKANAL IN THE YEAR

1941

UNDER THE DIRECTION OF
H. SPENCER JONES, D.Sc., F.R.S.
ASTRONOMER ROYAL

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GREENWICH PHOTO-HELIOGRAPHIC RESULTS 1941

INTRODUCTION

§1. *Positions and Areas of Sunspots and Faculae for each Day in the Year 1941.*

The photographs from which these measures were made were taken at the Royal Observatories of Greenwich or of the Cape, and at the Kodaikānal Observatory, Southern India.

The photographs of the Sun obtained at Greenwich were taken with the Dallmeyer Photoheliograph, of which the original 4-inch 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 $67\frac{1}{2}$ feet, the diameter of the Sun's image at the secondary focus being $7\frac{1}{2}$ inches at the Earth's mean distance.

The photographs from the Cape Observatory were taken under the superintendence of His Majesty's Astronomer at the Cape, Dr. J. Jackson, and those from Kodaikānal under the superintendence of the Director, Dr. A. L. Narayan. At the Cape Observatory the instrument employed was a Dallmeyer photoheliograph giving an image of the Sun about $7\frac{1}{2}$ inches in diameter; at Kodaikānal a Cooke photo-visual object-glass of 6 inches aperture was used, the image of the Sun being on about the same scale.

Photographs of the Sun were available for measurement on 358 days in 1941, those finally selected for measurement being supplied by the three observatories as under:

Greenwich	..	..	..	..	..	..	..	221
Cape	..	..	..	..	..	..	..	125
Kodaikānal	..	..	..	..	..	..	..	12
Total	..	..	..	..	..	..	..	358

For the seven missing days, copies of original solar negatives were together supplied by the Mount Wilson Observatory, California, and the U.S. Naval Observatory, Washington, D.C.

The names of the measurers of the photographs for the year 1941 are as follows:

H. Barton
P. S. Laurie

Miss C. Chapman

At the principal focus of the photoheliographs, excepting that at Kodaikanal, two spider-lines are fixed by which the zero of position-angles on the photographs can be determined. These lines are inclined at an angle of 45° to the celestial equator in the Greenwich and Cape photoheliographs; in the Kodaikanal instrument there is one wire fixed parallel to the equator.

The zero of position-angles for the photoheliographs has been determined by the measurement of plates which have been 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 therefore produced upon the plates, and the exposures having been so given that the line joining the cusps passed approximately through the centre of the plates, the inclination of the wires of the photoheliograph to this line was measured with the position-micrometer, and a small correction for the inclination of the Sun's path was then applied. Two zero photographs were usually taken each month at Greenwich and at the Cape.

At Greenwich and the Cape, transits of the Sun were also taken over the two wires; the times of contact of the first and second limbs of the Sun with the two wires being noted. The ratio of the time taken by the Sun to pass over the NE - SW wire to that taken to pass over the SE - NW wire gives the tangent of the angle made by the Sun's path to the latter wire, the wires being assumed to be at right angles to each other. From this angle, when corrected for the Sun's motion in declination, the correction for the zero position of the wires can be inferred. Transits were taken usually on four or more days during each month.

The following table gives the correction for zero of position thus determined by the two independent methods for the 4-inch Greenwich and Cape photoheliographs.

Determination of Zero of Position-Angles.

Month, 1941	Greenwich		Cape	
	Photographic	Visual	Photographic	Visual
January	° ' ..	+ 1 50	° ' ..	+ 1 18
February	+ 1 54	+ 1 50	+ 1 25	+ 1 22
March	+ 1 52	+ 1 52	+ 1 24	+ 1 23
April	° ' ..	+ 1 54	+ 1 27	+ 1 24
May	+ 1 54	+ 1 52	+ 1 24	+ 1 31
June	+ 1 47	+ 1 52	+ 1 21	+ 1 30
July	+ 1 50	+ 1 52	+ 1 31	+ 1 29
August	+ 1 45	+ 1 50	+ 1 19	+ 1 29
September	+ 1 51	+ 1 54	+ 1 35	+ 1 28
October	+ 1 53	+ 1 49	+ 1 28	+ 1 29
November	° ' ..	+ 1 52	+ 1 37	+ 1 21
December	+ 1 50	+ 1 52	+ 1 34	+ 1 26

The zero-correction used during the year 1941 in the reduction of the Greenwich photographs was $+1^\circ 51'$.

The zero-corrections used during the year 1941 in the reduction of the photographs taken at the Cape Observatory were, as follows:

January to March	° ' ..	+ 1 24
April to September	° ' ..	+ 1 27
October to December	° ' ..	+ 1 30

The zero-correction adopted for the Kodaikanal photographs ranged from $+0^\circ.2$ to $+0^\circ.5$.

The measures of the photographs were made with a large position-micrometer which 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 screw-action about a pivot in its circumference, 90° distant from that of the upper plate, this pivot being mounted on a circular plate with a position-circle which rotates 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 position-circle. When this has been done, a positive eye-piece, having at its 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 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 off by means of a scale and vernier to 1/250th inch (corresponding to 0.001 of the Sun's radius for photographs having solar diameter of 8 inches). The position-angle is read off on 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° between the photograph and the plate below.

The majority of the plates for 1941 were measured once, each by an experienced measurer. The remaining plates were measured twice independently, the two measurers taking right and left readings respectively with the micrometer. To the single measures of position, small corrections have been applied equivalent to half the instrumental difference between right and left scale readings applicable to the current adjustment of the position micrometer.

In the case of large or complex groups of spots, the positions of the chief components are measured individually, and also for groups so near the east or west limbs of the Sun that the effects of foreshortening are appreciable. In other cases the position of the centre of a group is estimated in the micrometer. In this respect a difference had been made in the practice during years previous to 1916, where in this section components of groups are given separately and combined into groups in the ledgers.

When required, corrections are applied to the measured distances and position-angles for differential refraction. The formula is given in the *Introduction* for 1909. It is seldom necessary, however, to apply this correction except to a few photographs taken at Greenwich in mid-winter.

The calculations of heliographic longitude and latitude are made by use of the formulæ given in "Researches on Solar Physics; Heliographical Positions and Areas of Sunspots observed with the Kew Photoheliograph during the years 1862 and 1863," by W. De La Rue, B. Stewart, and B. Loewy. *Phil. Trans.*, 1869. If r be the measured distance of a spot from the centre of the Sun's apparent disk, R the measured radius of the Sun on the photograph, (R) 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 is obtained from the equations:

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

If D and ϕ are the heliographic latitudes of the Earth and the spot respectively referred to the Sun's equator, and l the heliographic longitude of the spot from the solar meridian passing through the centre of the disk, longitudes west of the centre being reckoned as positive, and χ the position-angle from the Sun's axis

$$\sin \phi = \cos \rho \sin D + \sin \rho \cos D \cos \chi$$

$$\sin l = - \sin \chi \sin \rho \sec \phi$$

χ is found from the position-angle measured from the north point by subtracting P , the position-angle of the north end of the Sun's axis, measured eastward from the north point of the disk. The heliographic longitude of the spot is $l + L$, where L is the heliographic longitude of the centre of the disk. The three quantities P , D , and L for the time of the exposure of each photograph are derived from the *Ephemeris for Physical Observations of the Sun* given on p. 432 of the *Nautical Almanac* for 1941.

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 1941.0 to be $74^{\circ} 56'.2$, 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, being taken as the zero meridian.

§2. General Catalogue of Groups of Sunspots for 1941.

The catalogue contains every group of spots which lasted for two or more days, and the group numbers are in continuation of those given in 1940, and previous years. Groups seen only once are given with a distinctive numeration in a table which follows the catalogue.

A number of "Revival" groups of spots have been tabulated in series in a table following the catalogue and table of 1-day spots. The respective groups of each series are in the same heliographic position and were seen in consecutive disk passages, partial or complete, but with definite breaks in their history between each passage. The latter feature excludes them from being classed as "Recurrent" groups; they differ from "Intermittent" groups in their being of long-period intermittency. When a recurrent series forms part of a revival series, a reference is made in the last column of the table. Other groups which are given in detail in *Ledger II* are also indicated.

§3. Ledgers of the Areas and Heliographic Positions of Groups of Sunspots for 1941.

Ledger I. - Recurrent Groups. - This ledger supersedes the *Catalogue of Recurrent Groups of Sunspots* given in years previous to 1916 of the *Greenwich Photo-Heliographic Results*, and the reference numbers of the series are in continuation of those given therein. The groups forming this ledger have been abstracted from a general ledger of all spot groups seen throughout the year and were selected upon the following plan, reference being made to the General Catalogue:- If any spot group when first seen was 60° or more to the east of the central meridian, then the catalogue, and, if necessary, the daily results also (§1), were searched some fifteen or 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, then a search was made to identify with the earlier group, any spot near the Sun's east limb, about a fortnight later. When there appeared to be a case of probable identity between groups in consecutive rotations of the Sun (in some cases, partial transits of the disk), then the character of the group, its area, longitude and latitude, have been carefully compared before accepting its continuity as a recurrent group.

Besides the ledgers of the groups, there have been printed in a similar manner important components of the principal groups. This has been done in all cases where it appeared probable that an individual component lasted to the second or third rotation after its first appearance.

In deriving the proper motions of spots in longitude in both ledgers, the formula adopted as representing the Sun's daily sidereal motion is

$$\xi = 14^{\circ}.37 - 2^{\circ}.60 \sin^2 \phi$$

where ϕ is the latitude of the spot. See *Greenwich Photo-Heliographic Results*, 1924, §5.

Ledger II. - Non-Recurrent Groups. - This ledger contains the most important of those groups which do not last to a second rotation. Individual components are also given after their respective groups, where they are large and distinctive.

§4. *Total Areas of Sunspots and Faculae for each day, and Mean Areas and Mean Heliographic Latitude of Sunspots and Faculae for each Rotation of the Sun, and for the year 1941.*

Particulars relating to this section are given in the headings on pages C 83 and 88-89.

§5. *Observations of Solar Flocculi made with the Spectrohelioscope in the year 1941.*

This section contains measures of radial velocity of dark hydrogen flocculi seen on the Sun's disk near sunspots. The observations were made at Greenwich with a Spectrohelioscope lent by the Mount Wilson Observatory in the autumn of 1929 and set up in the south attic of the Main Building. The observations were made by Mr. Newton, Mr. Barton and Mr. Laurie.

ROYAL OBSERVATORY, GREENWICH.

Positions and Areas of Sunspots and Faculæ

For each Day in the Year

1941

POSITIONS AND AREAS OF SUNSPOTS AND FACULÆ FOR EACH DAY IN THE YEAR 1941.

- Col. 1. (1) Time when photograph was taken expressed in days and decimals of a day reckoning from midnight at commencement of year. (2) Place of observation - Greenwich (G), Cape of Good Hope (C), Kodaikanal (K), Washington (W), Mount Wilson (Mt. W). (3) Date of photograph.
- Col. 2. Number of spot group in order of appearance and in continuation of the group-numbers given in previous years. Groups seen on one day only are distinguished by the number of the rotation during which they were observed and by a letter given in the order of their appearance. When there is no number in the second column it is to be understood that there is a facula unaccompanied by a spot.
- Col. 3. Distance of spot group or faculæ from Sun's centre in terms of the Sun's radius.
- Col. 4. Position angle of spot group or faculæ measured from the north pole of the Sun's axis in the direction *n.*, *e.*, *s.*, *w.*, *n.*
- Col. 5. Heliographic longitude of the spot group derived from the measures.
- Col. 6. Heliographic latitude of the spot group similarly derived.
- Col. 7. Area of umbræ corrected for foreshortening in millionths of the Sun's visible hemisphere.
- Col. 8. Area of whole spots composing the group similarly expressed.
- Col. 9. Area of each group of faculæ similarly expressed. The positions of faculæ relative to the spots with which they are associated are indicated by the letters *n*, *s*, *p*, *f*, *c*, denoting respectively, north, south, preceeding, following, concentric.

In line with the date of each day is given in brackets for the time of photograph the position angle of the Sun's axis from the north point: the heliographic longitude and latitude of the centre of the disk: the total areas of spots and faculæ for the day.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
0° 312		° 960	258° 8					153	4° 099		° 936	256° 0					126
C		° 948	279° 4					265	K		° 808	283° 4					168
		° 949	289° 8					236		13785	° 629	300° 9	8° 8	+15° 8	13	56	
		° 872	284° 7					189		13789	° 419	256° 2	359° 0	- 9° 0	4	21	
	13785	° 486	43° 6	4° 2	+17° 6	0	3			13783	° 389	346° 6	340° 2	+18° 5	4	14	
	13781	° 388	103° 6	2° 4	- 8° 1	27	170			13782	° 320	350° 0	338° 1	+14° 7	35	208	
	13783	° 749	61° 6	340° 8	+18° 6	6	39	96 c		13784	° 197	349° 6	336° 8	+ 7° 5	16	95	
	13782	° 732	69° 0	340° 3	+12° 9	11	60	107 c		13787	° 238	34° 6	327° 0	+ 7° 7	2	17	
	13784	° 752	76° 4	337° 3	+ 8° 0	25	121	101 c		13788	° 284	119° 2	319° 7	-11° 7	6	34	
	13786	° 786	84° 8	333° 3	+ 2° 1	6	27	92 c			° 792	100° 8					254
	13787	° 870	79° 8	325° 3	+ 7° 3	0	8	210 c			° 927	113° 1					238
		° 817	106° 8					179			° 942	89° 4					191
		° 844	69° 6					178			° 958	73° 8					172
		° 847	91° 2					97			° 961	101° 1					205
		° 913	56° 0					177	Jan. 5		(+ 0° 2)	(334° 8) (- 3° 6)	(80)	(445)	(1354)		
		° 933	99° 4					327									
		° 944	87° 9					422									
Jan. 1		(+ 2° 0)	(24° 7) (- 3° 1)	(75)	(428)	(2629)			5° 705		° 961	282° 8					377
									W		° 924	293° 8					368
											° 920	246° 6					111
											° 762	301° 6					129
	1° 430									13785	° 868	290° 4	11° 0	+15° 6	2	13	299 f
	G									13789	° 722	260° 7	359° 6	- 9° 3	56	232	151 p
		13785	° 349	8° 9	6° 7	+16° 8	2	6		13782	° 523	305° 0	339° 7	+14° 1	16	61	
		13781	° 144	127° 2	3° 3	- 8° 3	18	63		13784	° 472	297° 4	338° 6	+ 9° 1	5	39	
		13783	° 595	51° 3	340° 6	+18° 9	11	42			° 857	97° 2					245
		13782	° 579	59° 7	339° 0	+14° 1	19	69			° 906	90° 4					184
		13784	° 559	70° 6	337° 9	+ 7° 9	22	93			° 914	106° 5					631
								389			° 947	77° 8					641
								316			° 966	97° 9					591
Jan. 2		(+ 1° 5)	(9° 9) (- 3° 3)	(72)	(273)	(705)			Jan. 6		(- 0° 6)	(313° 6) (- 3° 7)	(79)	(345)	(3727)		
	2° 451																
	G																
		13785	° 396	328° 5	8° 9	+16° 3	5	13									
		13781	° 178	240° 2	5° 4	- 8° 4	6	17									
		13783	° 460	34° 8	340° 5	+18° 8	7	31									
		13784	° 366	57° 5	338° 4	+ 8° 0	25	94									
		13782	° 453	45° 0	337° 2	+15° 4	19	105		6° 751							
								356	W		° 889	293° 8					407
								203		13785	° 934	288° 8	6° 5	+16° 0	3	14	471 c
								82		13789	° 871	261° 5	0° 5	- 9° 3	53	285	540 c
Jan. 3		(+ 1° 0)	(356° 5) (- 3° 4)	(62)	(260)	(641)				13784	° 686	288° 7	341° 0	+ 9° 7	7	32	
										13786	° 621	281° 8	337° 4	+ 4° 2	19	69	
										13790	° 871	97° 7	239° 3	- 8° 6	23	84	296 c
										13791	° 989	77° 8	219° 6	+11° 4	10	75	
											° 811	64° 9					356
											° 861	75° 3					626
	3° 480								Jan. 7		(- 1° 1)	(299° 9) (- 3° 9)	(115)	(559)	(2696)		
	G																
		13785	° 553	306° 3	10° 4	+15° 9	4	43									
		13783	° 380	6° 5	340° 3	+18° 5	8	26									
		13784	° 220	23° 7	337° 8	+ 8° 0	27	99									
		13782	° 334	15° 9	337° 5	+15° 1	25	136									
		13788	° 425	108° 8	318° 8	-11° 0	3	9									
								311									
								235									
Jan. 4		(+ 0° 5)	(342° 9) (- 3° 5)	(67)	(313)	(546)			7° 302		° 942	245° 8					147
									C		° 907	291° 6					221
										13785	° 968	287° 5	6° 0	+15° 8	0	8	190 c
										13789	° 924	262° 0	0° 2	- 8° 9	48	356	292 c

Group 13785. Jan. 1 - 8. A tiny spot until January 4; on January 5 other small scattered spots appear.
 Group 13786. Jan. 1 - 10. Intermittent. A small cluster on January 1. Nothing is seen until January 7, when a small stream appears, ~~up~~ the original position.
 Group 13787. Jan. 1 - 5. A small spot seen only on January 1 and 5.
 Group 13788. Jan. 4 - 5. A pair of tiny spots on January 4; a cluster on January 5.
 Group 13789. Jan. 5 - 9. A group of bi-polar type forming west of the central meridian.
 Group 13790. Jan. 7 - 13. A stream of normal type dying out.
 Group 13791. Jan. 7 - 18. A slowly diminishing regular spot.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.																		
U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA			
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae	
1941			°	°	°				1941			°	°	°				
	13784	•762	286°2	340°3	+ 9°6	6	27	224 c		13791	•412	50°9	220°0	+11°0	16	101		
	13786	•710	280°0	336°9	+ 4°3	9	73			13793	•705	93°7	194°1	- 5°6	0	13	108 f	
	13790	•796	97°8	239°9	- 8°5	21	172		116 c		•969	76°5					207	
	13791	•966	77°0	219°0	+11°5	32	142		273 p	Jan. 12		(- 3°3)	(238°9)	(- 4°3)	(34)	(251)	(1545)	
		•788	73°6					148										
Jan. 8			(- 1°4)	(292°6)	(- 3°9)	(116)	(778)	(1611)		12°290								
									C		•950	260°6					313	
	8°425	•868	290°4					238			•943	290°4					108	
G		•986	260°5	358°4	-10°0	14	157			•828	258°9						194	
	13789	•919	283°4	343°0	+10°6	14	52	471 c		13790	•291	248°8	242°8	-10°3	1	8		
	13784	•853	277°9	335°5	+ 4°6	4	25	231 c		13791	•288	23°2	220°3	+10°9	18	84		
	13786	•602	278°3	314°2	+ 1°7	11	51			13793	•605	90°2	189°7	- 3°6	3	11		
	13792	•609	99°1	240°5	- 8°7	30	153		Jan. 13		•923	74°6					362	
	13790	•872	74°3	219°0	+11°6	22	107	429 f			(- 3°8)	(226°9)	(- 4°4)	(22)	(103)	(977)		
Jan. 9			(- 1°9)	(277°8)	(- 4°0)	(95)	(545)	(1389)		13°279								
									C		•938	259°4					297	
	9°451	•919	287°3					300			•918	270°8					91	
G		•966	275°3	338°7	+ 4°0	0	17	788 c		13791	•286	336°8	220°5	+10°7	15	84		
	13792	•781	275°0	315°2	+ 1°3	28	140	121 c		13793	•403	87°5	190°2	- 3°2	2	12		
	13790	•410	102°6	240°5	- 8°9	32	124		Jan. 14		•821	71°5					280	
	13791	•729	70°3	219°2	+11°5	24	109	311 f			(- 4°2)	(213°9)	(- 4°5)	(17)	(96)	(668)		
		•919	77°4					218	14°281	13791	•422	308°2	220°3	+10°7	12	55		
		•961	92°0					287	C		•945	108°5					282	
Jan. 10			(- 2°4)	(264°3)	(- 4°1)	(84)	(390)	(2215)	Jan. 15		(- 4°7)	(200°7)	(- 4°6)	(12)	(55)	(282)		
										15°571	13791	•643	293°5	220°5	+11°4	11	52	
	10°299	•962	260°0					308	G	1168a	•825	103°6	128°4	-13°9	2	20	143 c	
		•955	252°9					179		13794	•980	76°9	107°0	+11°9	41	166	401 c	
		•954	291°6					266	Jan. 16		(- 5°3)	(183°7)	(- 4°8)	(54)	(238)	(544)		
		•928	262°8					277										
	13792	•886	273°8	315°0	+ 1°4	15	115	183 c		16°438	•964	287°7					440	
	13790	•207	117°4	242°4	- 9°6	8	56			G	•927	261°3					541	
	13791	•600	64°8	219°6	+11°2	29	144				•922	276°6					248	
	13793	•872	91°3	192°5	- 3°2	4	33	188 c			•872	290°0					240	
		•731	68°2					88		13791	•773	288°8	220°4	+11°2	12	51	341 c	
		•849	74°4					137		13794	•918	75°0	107°7	+11°7	44	189	576 f	
Jan. 11		•933	100°2					119			•931	96°7					248	
			(- 2°8)	(253°1)	(- 4°2)	(56)	(348)	(1745)	Jan. 17		(- 5°7)	(172°3)	(- 4°8)	(56)	(240)	(2634)		
	11°379	•970	259°7					202										
		•917	293°0					232		17°287	•973	262°3					168	
		•864	261°1					278		C	•876	286°1	220°1	+11°5	4	22	125 c	
		•728	256°1					174		13791	•828	72°1	107°7	+11°8	29	163	288 f	
	13792	•975	273°1	315°7	+ 2°1	14	95	344 c		13794	•835	100°0					94	
	13790	•103	203°3	241°3	- 9°7	4	42		Jan. 18		(- 6°1)	(161°1)	(- 4°9)	(33)	(185)	(675)		

Group 13792. Jan. 9 - 12. A small cluster on January 9, becoming a normal-type stream as it passes round the west limb.
 Group 13793. Jan. 11 - 14. One or two small variable spots.
 Group 13794. Jan. 16 - 28. A stable regular spot with an occasional companion.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
18.543		.954	285.3					267	25.382	13795	.930	264.9	123.1	- 6.8	11	73	219 <i>nf</i>
C	13795	.442	94.2	118.4	- 6.3	2	12		C	13794	.836	287.2	108.7	+11.0	15	156	110 <i>c</i>
	13794	.645	64.9	108.1	+11.8	35	192			13796	.765	258.5	104.3	-13.9	8	38	94 <i>c</i>
Jan. 19		.841	69.7					144	Jan. 28	13797	.909	73.7	351.5	+12.2	67	657	589 <i>c</i>
		(- 6.7)		(144.6)	(- 5.0)	(37)	(204)	(411)		13798	.949	99.5	342.4	-10.8	6	33	204 <i>c</i>
											(- 9.7)		(54.5)	(- 5.6)	(107)	(957)	(1216)
19.286		.952	283.7					209	26.298	13795	.985	264.3	122.9	- 6.6	0	28	224 <i>f</i>
C		.824	269.6					83	C	13794	.931	284.3	109.1	+11.0	28	169	152 <i>f</i>
	13795	.293	92.8	117.8	- 5.7	9	51			13796	.854	257.8	101.3	-13.4	2	8	108 <i>c</i>
Jan. 20	13794	.519	58.3	108.2	+11.2	30	163			13797	.813	70.7	351.0	+12.1	80	567	237 <i>c</i>
		(- 7.0)		(134.8)	(- 5.1)	(39)	(214)	(292)		13798	.860	98.9	342.9	-10.5	8	41	125 <i>c</i>
20.282		.954	267.6					198	Jan. 27		.939	78.5					204
C	13795	.083	98.7	117.0	- 5.9	43	246				.943	66.7					210
Jan. 21	13794	.364	39.2	108.2	+11.3	26	173				.950	90.7					205
		(- 7.5)		(121.7)	(- 5.2)	(89)	(419)	(198)			.957	104.9	(42.5)	(- 5.7)	(118)	(813)	(1635)
									27.281								
21.281	13795	.158	284.6	117.6	- 6.1	40	263		C	13794	.945	290.2					157
C	13794	.285	0.7	108.3	+11.1	19	146			13796	.987	282.0	108.7	+10.8	12	76	179 <i>c</i>
Jan. 22	13796	.184	136.1	101.0	-12.8	2	11			13797	.951	257.6	102.1	-13.6	0	16	194 <i>c</i>
		(- 7.9)		(108.5)	(- 5.3)	(61)	(420)	(0)		13798	.651	64.2	352.9	+11.8	66	592	
22.282	13795	.378	268.8	117.6	- 5.5	27	202			13799	.726	99.6	342.9	-11.0	8	38	96 <i>c</i>
C	13794	.362	321.2	108.7	+11.1	24	131			13799	.864	89.1	329.9	- 2.2	8	53	128 <i>c</i>
Jan. 23	13796	.182	223.0	102.7	-13.0	8	65		Jan. 28	13800	.996	100.6	304.0	-11.0	0	43	130 <i>c</i>
		(- 8.4)		(95.4)	(- 5.4)	(59)	(398)	(0)			.876	104.4					215
23.286		.973	288.3					168	28.295		.879	75.4					207
C	13795	.604	266.4	119.3	- 6.6	29	201		C	13801	.960	82.8	(29.5)	(- 5.8)	(92)	(818)	(1445)
	13794	.517	302.2	108.5	+11.0	26	158			13797	.848	279.9					108
Jan. 24	13796	.365	247.6	102.3	-13.1	17	98			13798	.433	277.6	41.5	- 1.9	11	80	
		.959	100.1					400		13799	.494	52.2	352.8	+12.1	79	571	
		.984	70.2					240	Jan. 29	13798	.593	100.5	339.9	-11.0	2	18	
		(- 8.6)		(82.1)	(- 5.5)	(72)	(457)	(808)		13799	.700	86.1	332.1	- 1.5	18	123	
24.279	13795	.799	265.3	122.2	- 7.1	32	135	120 <i>c</i>	29.541	13800	.948	100.1	304.2	-11.4	51	298	279 <i>c</i>
C	13794	.678	292.9	108.4	+11.0	26	152		C	13802	.972	79.0	301.4	+ 9.1	8	79	199 <i>c</i>
	13796	.559	253.8	102.5	-13.6	8	41				(-11.0)		(16.2)	(- 5.9)	(169)	(1169)	(586)
Jan. 25	13797	.980	76.7	352.3	+11.8	76	507	299 <i>c</i>	Jan. 30	13801	.708	273.7	44.6	- 1.7	6	50	
		.865	99.7					480		13797	.324	20.1	353.3	+11.7	67	645	
		(- 9.3)		(69.1)	(- 5.5)	(142)	(835)	(899)		13799	.471	80.9	332.2	- 1.0	29	152	
										13800	.842	99.7	302.2	-11.4	55	365	182 <i>c</i>
										13802	.881	75.5	300.1	+ 9.7	15	94	129 <i>c</i>
											(-11.5)		(359.8)	(- 6.0)	(172)	(1306)	(311)

Group 13795. Jan. 19 - 27. A stream of normal type developing rapidly from a small spot on January 19. On January 23, the leader divides but outlives the follower that has gone by January 25.

Group 13796. Jan. 22 - 28. A small short-lived group.

Group 13797. Jan. 25 - Feb. 5. A fairly large stream of normal type, of which the leader is somewhat elongated and complex. The follower dies out before reaching the west limb.

Group 13798. Jan. 26 - 29. A pair of spots of which one remains on January 29.

Group 13799. Jan. 28 - Feb. 5. A regular spot just south of the Sun's equator. There is a companion on January 30.

Group 13800. Jan. 28 - Feb. 9. On January 28 and 29, a single spot: then other spots appear forming a long stream that has nearly died out by the time that the west limb is reached.

Group 13801. Jan. 29 - Feb. 1. A small short-lived stream.

Group 13802. Jan. 29 - Feb. 4. One or two small spots.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
30.299 C	13801	.931	290.4					119	35.283 C	13797	.967	283.2	357.6	+11.0	25	270	615 _n
	13797	.832	272.1	45.9	-1.6	7	41	178 _c		13799	.771	273.6	334.3	-1.3	5	24	90 _c
	13799	.312	347.2	353.8	+11.7	59	556			13805	.548	286.7	315.8	+3.7	2	16	
	13800	.297	74.6	333.2	-1.3	13	122			13800	.320	253.1	302.3	-11.3	42	222	
	13802	.746	99.0	301.4	-10.7	37	390	171 _c		13806	.341	96.6	264.3	-8.2	1	5	
		.789	72.8	300.2	+9.6	6	30	123 _c		13804*	.705	105.5	239.5	-15.4	0	3	
		.939	107.1					127		13804	.847	96.8	226.0	-9.1	12	62	124 _c
Jan. 31			(-11.8)	(349.8)	(-6.0)	(122)	(1139)	(718)	Feb. 5								223
												(-13.8)	(284.2)	(-6.3)	(87)	(602)	(1052)
31.281 C	13801	.939	270.0	46.7	-2.1	12	55	355 _c	36.511 G		.974	256.4					165
	13797	.411	317.4	353.3	+11.7	57	626				.941	291.5					254
	13799	.103	36.0	333.4	-1.4	23	121				.924	281.1					112
	13800	.587	100.3	301.0	-11.0	70	378				.894	271.6					385
	13802	.633	66.8	300.9	+9.5	6	24				.868	256.3					326
Feb. 1			(-12.2)	(336.9)	(-6.1)	(168)	(1204)	(355)		13805	.765	279.1	316.9	+2.8	10	65	
										13800	.570	259.7	302.7	-11.1	30	173	
32.435 G	13803	.957	287.7					258		13806	.053	134.2	265.8	-8.5	8	37	
	13797	.613	259.5	359.5	-11.4	12	47			13804	.677	96.9	225.2	-9.4	9	44	
	13799	.595	299.4	353.5	+11.7	53	389		Feb. 6	13807	.928	71.8	202.8	+14.2	26	144	273 _c
	13799	.226	290.7	333.9	-1.5	14	93					(-14.3)	(268.0)	(-6.4)	(83)	(463)	(1515)
	13800	.358	105.2	301.2	-11.2	50	350			37.505 C							202
	13803*	.977	105.2	243.0	-16.1	0	9				.973	294.2					238
		.949	70.9					245			.971	281.1					333
		.950	98.1					179			.960	270.3					309
Feb. 2			(-12.7)	(321.7)	(-6.2)	(129)	(888)	(814)			.951	254.5					210 _c
										13805	.903	276.3	318.7	+2.8	9	33	359 _c
33.564 G	13797	.905	261.0					350		13800	.766	261.3	305.1	-10.8	24	139	
	13803	.801	289.2	357.1	+11.3	34	192	218 _c		13806	.200	259.9	266.3	-8.4	7	45	
	13799	.766	260.2	357.0	-11.5	3	7	70 _p		13804	.481	97.4	226.1	-9.2	5	22	
	13799	.464	279.2	333.9	-1.3	21	85		Feb. 7	13807	.812	67.5	204.5	+14.0	13	56	146 _c
	13800	.133	130.5	300.9	-11.1	67	267				.975	74.8					93
	13802	.262	21.8	300.7	+8.9	2	10					(-14.7)	(254.9)	(-6.5)	(58)	(295)	(1890)
	13803*	.893	105.0	243.2	-16.1	2	7			38.437 C							247
	13804	.989	98.3	224.8	-9.1	30	121	175 _c			.968	275.6					213
Feb. 3			(-13.2)	(306.6)	(-6.2)	(159)	(689)	(813)			.859	287.0					566 _c
										13800	.864	260.7	302.8	-11.3	21	94	
34.449 G	13797	.972	259.8					405		13806	.448	262.6	269.2	-9.1	4	21	
	13803	.879	259.5	357.2	+11.2	34	135	648 _c		13804	.288	102.2	226.1	-9.7	2	15	
	13799	.635	275.8	334.2	-1.2	18	81	143 _c	Feb. 8	13807	.686	61.8	204.3	+13.6	10	60	
	13805	.396	293.9	316.4	+3.3	2	8				.937	71.8					282
	13800	.144	234.7	302.0	-11.0	61	231					(-15.0)	(242.6)	(-6.5)	(37)	(190)	(1308)
	13802	.278	337.4	301.4	+8.6	3	10			39.401 C							169
	13804*	.826	105.5	239.4	-16.3	0	4				.952	283.2					139
	13804	.935	97.3	225.6	-9.0	21	83	381 _c			.950	308.9					539
Feb. 4			(-13.5)	(295.2)	(-6.3)	(148)	(581)	(1761)			.861	258.0					139 _c
										13800	.966	260.0	305.7	-11.3	0	15	
										13806	.640	263.5	269.8	-9.3	3	10	

Group 13803. Feb. 2 - 4. A pair of spots on February 2: a single spot afterwards.

Group 13803*. Feb. 2 - 3. One or two small spots.

Group 13804. Feb. 3 - 9. A spot from the invisible hemisphere dying out on the central meridian.

Group 13804*. Feb. 4 - 5. One or two small spots.

Group 13805. Feb. 6 - 7. A small cluster.

Group 13806. Feb. 5 - 11. One or two small spots.

Group 13807. Feb. 6 - 11. A small stream slowly dying out.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
	13804	•101	129°0	225°3	-10°2	2	12			1189a	•362	11°3	172°0	+13°9	2	5	
	13807	•544	51°1	204°1	+13°9	9	53			13809	•517	101°2	145°2	-11°6	24	131	
	13808	•782	72°9	180°9	+9°0	2	10	302 n		13811	•850	80°1	119°2	+4°7	4	21	189 c
	13809	•984	99°5	145°4	-10°1	28	187				•838	91°9					123
		•986	70°0					120			•986	72°9					173
Feb. 9			(-15°4)	(229°9)	(-6°6)	(42)	(287)	(1408)	Feb. 13		•988	177°0					22
												(-16°9)	(176°2)	(-6°8)	(44)	(248)	(1483)
40°422		•930	260°4					381			•949	252°4					225
G	13808	•808	263°2	270°5	-9°4	3	9	85 f	44°310		•852	264°8					329
	13810	•339	10°9	212°7	+12°8	4	17		C	13810	•807	292°4	215°2	+13°5	21	103	134 c
	13807	•436	34°1	201°9	+14°7	10	34			13809	•351	105°8	145°2	-11°8	21	122	
	13808	•620	66°2	181°6	+9°1	14	60			13811	•731	76°8	119°9	+4°8	6	31	180 f
Feb. 10	13809	•945	98°7	145°0	-10°4	30	137	299 f			•923	89°1					298
			(-15°8)	(216°5)	(-6°6)	(61)	(257)	(785)	Feb. 14			(-17°2)	(165°3)	(-6°8)	(48)	(256)	(1146)
41°283		•987	260°9					243			•938	260°4					390
C		•987	248°7					150	45°283		•806	295°1					109
		•926	277°7					143	C	13810	•926	287°3	217°5	+13°1	13	115	190 c
	13808	•901	262°5	270°0	-9°7	0	17	208 f		13809	•155	126°7	145°2	-12°2	26	120	
	13810	•372	343°0	211°6	+14°1	8	40			13811	•570	70°9	119°9	+4°9	5	20	
	13807	•381	11°5	200°7	+15°1	2	30				•828	62°4					181
	13808	•461	55°1	183°3	+8°7	4	6				•941	65°6					159
	13809	•867	98°4	144°7	-10°6	23	147	187 c	Feb. 15			(-17°5)	(152°5)	(-6°9)	(44)	(255)	(1029)
		•912	88°5					106			•901	291°4					204
		•955	103°4					181			•735	299°4					77
		•977	94°3					216		13810	•989	283°8	219°4	+12°5	13	56	176 c
Feb. 11			(-16°1)	(205°2)	(-6°7)	(37)	(242)	(1434)		13809	•133	223°2	145°3	-12°4	25	116	
									Feb. 16	13812	•961	92°8	65°9	-4°6	11	76	231 c
42°279		•961	187°8					11				(-17°8)	(140°0)	(-6°9)	(49)	(248)	(688)
C		•955	263°4					320			•981	289°7					106
		•954	184°0					21			•918	295°6					356
		•891	284°7					252			•891	283°8					143
		•850	263°3					122	47°427		•365	253°6	145°2	-12°4	28	158	
		•767	253°0					189	C	13812	•858	91°0	65°2	-4°4	18	82	285 c
	13810	•480	314°3	212°7	+13°2	15	110				•791	98°3					77
	13809	•728	98°7	145°3	-11°0	14	109	155 c			•917	111°8					131
		•795	87°0					100	Feb. 17		•932	101°4					207
		•857	99°8					121				(-18°2)	(124°3)	(-6°9)	(46)	(240)	(1305)
		•937	92°2					231			•950	288°9					133
Feb. 12		•940	106°9					249		48°304	•842	293°5					175
		•978	79°0					139		13809	•543	258°3	145°5	-12°2	27	117	
			(-16°4)	(192°1)	(-6°7)	(29)	(219)	(1910)		13812	•750	89°9	64°1	-4°6	12	61	169 c
43°483		•939	160°4					344			•927	89°7					168
G		•926	296°7					170	Feb. 18			(-18°5)	(112°7)	(-7°0)	(39)	(178)	(645)
		•917	283°6					283									
		•747	264°3					179									
	13810	•682	298°6	214°1	+13°7	14	91										

Group 13808. Feb. 9 - 11. A pair of small spots.

Group 13809. Feb. 9 - 21. A slowly decreasing regular spot with companions on February 16 and 17.

Group 13810. Feb. 10 - 16. A variable stream in which the leader spot survives to the west limb.

Group 13811. Feb. 13 - 16. One or two small spots.

Group 13812. Feb. 16 - 20. A stream of small spots dying out before reaching the central meridian.

POSITIONS AND AREAS OF SUNSPOTS AND FACULÆ FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
49.283 C		.968	289.0					165	55.394 G	1169b	.338	97.3	359.6	- 9.2	6	25	
		.855	290.8					192		13814	.551	49.3	353.9	+14.5	61	512	
	13809	.715	280.3	145.7	-11.8	15	58	74 c		13816	.746	74.9	333.2	+ 6.2	33	218	
	13812	.565	86.8	65.5	- 4.0	7	25			13817	.893	75.2	318.5	+ 9.7	38	210	423 f
		.827	90.6					93			.931	97.6					851
		.962	66.0					95	Feb. 25			(-20.6)	(19.4) (- 7.2)	(138)	(965)	(1074)	
Feb. 19			(-18.8)	(99.8) (- 7.0)		(22)	(83)	(619)									
50.286 C		.960	287.3					148	56.411 G		.890	182.4					8
		.852	259.9	145.5	-12.2	16	64	200 c			.886	268.3					351
	13809	.686	258.3	130.0	-13.1	33	149			13814	.422	28.9	353.9	+14.5	80	501	
	13813	.319	78.1	68.5	- 2.9	3	22			13816	.591	68.3	332.6	+ 6.6	27	146	
	13812	.902	75.3					158		13817	.768	70.8	318.8	+ 9.7	29	183	202 f
		.929	62.4					192			.820	95.4					143
		.943	99.8					250			.901	101.3					300
Feb. 20			(-19.1)	(86.6) (- 7.0)		(52)	(235)	(948)	Feb. 26		.937	179.9					13
												(-20.9)	(6.0) (- 7.2)	(136)	(830)	(1017)	
51.446 G	13809	.963	259.2	146.5	-12.3	13	40	273 f	57.314 C		.967	285.7					102
	13813	.872	258.9	132.5	-13.1	38	177	157 c			.950	266.6					284
	13814	.986	74.0	353.5	+14.4	12	50	506 c			.846	257.5					109
		.835	99.9					118			.845	267.7					162
		.951	100.7					104		13818	.725	254.5	40.6	-16.2	6	22	69 c
Feb. 21			(-19.5)	(71.3) (- 7.1)		(63)	(267)	(1158)		13814	.370	359.9	354.2	+14.4	119	712	
										1170a	.315	47.0	340.8	+ 5.3	3	18	
52.368 G	13813	.944	258.7	130.7	-12.9	45	246	519 c		13816	.421	55.9	333.6	+ 6.8	18	81	
	13815	.197	83.6	47.8	- 7.7	4	12			13817	.627	64.7	319.2	+ 9.6	33	194	
	13814	.931	71.7	353.7	+14.1	45	193	461 c			.721	99.5					145
		.877	70.3					225			.830	101.3					273
		.972	90.6					205			.961	94.5					156
Feb. 22			(-19.7)	(59.2) (- 7.1)		(94)	(451)	(1410)	Feb. 27		.940	103.7					93
											.944	111.8					134
												(-21.1)	(354.1) (- 7.2)	(179)	(1027)	(1527)	
53.484 G		.960	279.4					269	58.308 C		.967	288.7					172
		.879	291.1					23			.958	254.1					175
	13815	.036	236.4	46.2	- 8.3	2	10				.883	265.6					157
	13814	.824	66.6	353.3	+14.7	31	462	314 f		13818	.882	255.2	43.5	-16.4	2	14	144 c
		.899	89.9					123		13814	.431	328.8	354.3	+14.5	94	683	
Feb. 23			(-20.1)	(44.5) (- 7.1)		(33)	(472)	(729)		13816	.287	29.2	332.9	+ 7.3	15	68	
										13817	.468	52.6	318.9	+ 9.8	29	193	
54.416 G		.961	290.6					658		13819	.944	75.4	272.6	+11.2	12	82	173 c
		.959	263.2					191			.747	102.4					115
	13814	.698	60.2	353.6	+14.7	94	472		Feb. 28		.838	109.6					106
	13816	.876	78.8	332.6	+ 6.2	11	34	465 c				(-21.4)	(341.0) (- 7.2)	(152)	(1040)	(1042)	
	13817	.972	78.0	317.6	+ 9.8	38	211	429 c									
		.883	101.6					279	59.334 C		.946	254.0					199
		.979	97.6					185			.928	279.0					118
Feb. 24			(-20.3)	(32.2) (- 7.1)		(143)	(717)	(2207)			.887	292.7					170

Group 13813. Feb. 20 - 22. A group developing near the west limb, so that its subsequent history is lost.

Group 13814. Feb. 21 - Mar. 5. A small spot near the east limb growing rapidly to a large spot with multiple umbrae. Its maximum development on February 27-28 is followed by a rapid decline, and the group does not return. The Mount Wilson classification of the spot's magnetic polarity is γ . This group is associated with an intense geomagnetic storm commencing on March 1 at 3^h 57^m U.T.

Group 13815. Feb. 22 - 23. A tiny spot.

Group 13816. Feb. 24 - Mar. 2. A small stream.

Group 13817. Feb. 24 - Mar. 7. A stable regular spot with one or two companions from March 3 onwards.

Group 13818. Feb. 27 - 28. A cluster of tiny spots on February 27: a single spot on February 28.

Group 13819. Feb. 28 - Mar. 6. A small stream soon dying out.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
Mar. 1	13814	•570	308.8	354.6	+14.5	77	613		64.329		•965	288.2					167
	13816	•275	339.0	333.1	+7.7	11	88		C		•942	278.6					282
	13817	•323	25.9	319.2	+9.7	36	171				•940	298.4					154
	13819	•859	71.8	271.2	+11.6	22	145	142 c			•937	258.5					300
			(-21.6)	(327.4)	(-7.2)	(146)	(1017)	(629)			•934	307.8					200
											•811	264.6					144
60.480								136		13817	•870	284.2	319.9	+8.6	21	228	218 c
G	13814	•880	259.3							13819	•427	319.3	278.1	+11.9	2	19	
	13816	•735	298.9	354.8	+14.1	51	395			13822	•358	339.0	289.1	+12.3	5	23	
	13817	•434	304.4	333.5	+7.4	3	13			13820	•351	31.3	251.0	+10.3	10	58	
	13819	•307	336.6	319.5	+9.1	41	204			13821	•649	63.2	225.6	+11.1	13	72	
Mar. 2	13819	•695	65.7	272.4	+11.1	36	123		Mar. 6		•920	66.6					156
		•932	77.9					223				(-22.8)	(281.6)	(-7.2)	(51)	(398)	(1621)
			(-21.9)	(312.4)	(-7.2)	(131)	(735)	(359)									
61.442								183	65.325		•945	273.6					154
G		•865	262.0					109	C		•939	294.6					199
	13814	•855	291.8	354.8	+14.4	37	206	575 c			•931	307.2					201
	13817	•435	309.2	319.6	+9.1	45	223				•899	257.4					264
	13819	•490	52.6	276.5	+10.7	15	69				•732	261.0					132
	13820	•830	71.1	246.7	+11.3	24	73	99 c		13817	•956	281.3	319.7	+8.6	15	171	358 f
Mar. 3		•956	99.2					239		1170c	•934	267.0	317.8	-5.3	6	38	165 c
		•984	74.4					211		13820	•296	352.9	250.6	+9.8	14	78	
			(-22.2)	(299.7)	(-7.2)	(121)	(571)	(1416)	Mar. 7		•494	52.7	225.0	+10.8	2	21	
											•938	77.0					146
62.396								167				(-23.0)	(248.5)	(-7.2)	(37)	(308)	(1619)
G	13814	•944	288.2	354.8	+14.5	33	196	591 c	66.387		•951	257.4					246
	13817	•581	295.9	318.9	+8.6	49	262		G		•872	258.9					289
	13819	•357	28.7	277.1	+11.1	13	45			13823	•513	305.6	259.5	+10.8	45	272	
	13820	•674	64.9	248.8	+11.0	45	114			13820	•411	312.7	252.2	+9.3	7	30	
	13821	•898	73.7	225.7	+11.5	12	35	301 f		13821	•328	22.8	227.1	+10.4	4	14	
Mar. 4		•870	94.0					121	Mar. 8			(-23.3)	(234.5)	(-7.2)	(56)	(316)	(535)
			(-22.4)	(287.1)	(-7.2)	(152)	(652)	(1180)									
63.420								228	67.107		•940	259.4					290
G		•870	284.7					288	K		•632	297.6	259.6	+11.0	49	330	
		•837	254.4					219		13820	•545	300.0	253.5	+9.4	2	10	
		•834	304.4					237		13821	•306	359.4	225.2	+10.5	1	8	
	13814	•993	285.7	354.4	+14.5	37	142	265 f		13824	•985	97.2	144.3	-8.3	11	63	218 c
	13817	•748	288.1	319.4	+8.4	37	233				•870	64.1					93
	13819	•326	345.3	278.4	+11.1	6	11		Mar. 9		•940	72.8					94
	13822	•339	14.9	268.5	+11.9	4	16					(-23.4)	(225.0)	(-7.2)	(63)	(411)	(695)
	1170b	•258	101.8	258.8	-10.0	4	12										
	13820	•496	53.7	249.7	+10.4	21	81		68.454		•951	286.6					282
	13821	•785	69.6	225.2	+11.1	23	81	115 c	G		•817	285.6					132
Mar. 5		•951	84.7					176		13823	•832	288.4	260.6	+11.0	71	408	215 c
			(-22.6)	(273.6)	(-7.2)	(132)	(576)	(1528)		13325	•851	94.6	148.7	-7.7	10	61	101 c

Group 13820. Mar. 3 - 9. A small short-lived stream of normal type.

Group 13821. Mar. 4 - 9. A pair of spots.

Group 13822. Mar. 5 - 6. One or two small spots.

Group 13823. Mar. 8 - 12. A stream of normal (or bi-polar) type developing rapidly west of the central meridian. Its declining phase is represented by Group 13838 in the next rotation.

Group 13824. Mar. 9 - 16. A pair of spots of which only one remains after March 15.

Group 13825. Mar. 10 - 16. One or two variable spots.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
Mar. 10	13824	•905	98.1	142.0	- 8.6	22	90	271 c	Mar. 15	13828 13829	•939	71.1	76.4	+14.9	3	13	232 c
		•965	103.1					207			•943	98.7	71.8	-10.5	13	75	294 c
			(-23.7)	(207.3)	(- 7.2)	(103)	(657)	(1208)			•913	89.9					161
												(-24.5)	(143.0)	(- 7.2)	(48)	(316)	(1091)
69.477 G	13823	•936	284.5	260.9	+10.8	127	644	335 c	74.578 G	13828	•952	285.6					266
	13826	•427	36.2	178.9	+13.1	28	119			13825	•847	290.2	181.0	+12.9	34	128	400 c
	13825	•692	92.6	149.8	- 7.0	10	53			13824	•417	268.4	151.3	- 7.1	1	8	
	13824	•764	94.6	143.7	- 8.2	26	153			13824	•279	257.7	142.8	-10.3	1	7	
Mar. 11		•884	103.8					187	Mar. 16	13828	•812	65.9	76.7	+14.8	8	31	
		•973	77.2					164		13829	•811	97.9	72.0	-10.5	15	90	220 c
			(-23.8)	(193.8)	(- 7.2)	(191)	(969)	(686)		13830	•971	104.8	50.4	-16.0	45	230	333 c
											•761	89.2					85
70.328 C		•937	258.9					164				(-24.7)	(126.6)	(- 7.1)	(104)	(492)	(1304)
		•770	291.0					125	75.336 C	13826	•925	187.2	181.4	+12.9	16	75	515 c
	13823	•983	282.6	260.0	+10.9	52	434	381 c		13827	•565	59.4	87.1	+10.5	18	97	
	13826	•356	10.4	178.8	+13.8	30	239			13829	•698	97.7	72.1	-10.5	13	102	
Mar. 12	13825	•533	91.2	150.3	- 6.7	8	76			13830	•922	103.6	48.8	-15.2	48	303	354 c
	13824	•638	94.6	142.8	- 8.5	12	86		Mar. 17	1170d	•955	81.6	45.1	+ 5.8	3	18	233 c
		•800	105.5					186				(-24.8)	(116.6)	(- 7.1)	(98)	(595)	(1102)
		•929	73.0					129									
Mar. 13		•946	95.8					114									
			(-24.0)	(182.6)	(- 7.2)	(100)	(835)	(1099)	76.432 G		•972	287.2					391
		•938	283.4					378			•884	287.3					140
		•823	290.8					194		13831	•362	13.3	97.2	+13.5	4	14	
Mar. 13	13826	•396	333.1	179.4	+13.5	52	291			13827	•382	40.0	87.7	+10.1	66	346	
	13825	•313	89.8	150.5	- 6.8	8	36		Mar. 18	13832	•369	45.5	86.8	+ 8.1	6	14	
	13824	•428	95.4	143.4	- 8.8	8	27			13829	•504	99.1	71.8	-10.7	15	85	
		•865	113.5					163		13830	•793	103.7	49.3	-15.2	40	228	300 f
			(-24.2)	(168.8)	(- 7.2)	(68)	(354)	(735)		1170e	•959	78.8	30.3	+ 8.6	0	23	166 f
72.368 G		•968	282.0					172	77.478 G			(-25.0)	(102.1)	(- 7.1)	(131)	(710)	(997)
		•941	289.4					225			•953	289.4					143
	13826	•531	309.3	180.5	+13.1	59	265				•867	282.5					376
	13825	•087	92.2	150.7	- 7.4	6	12			13831	•363	333.9	98.2	+13.1	4	10	
Mar. 14	13824	•232	100.2	142.4	- 9.4	8	17		Mar. 19	13832	•258	1.0	88.0	+ 7.9	25	90	
	13827	•942	74.1	87.9	+12.3	3	10	161 c		13827	•302	2.7	87.5	+10.5	74	394	
	13828	•991	74.0	75.9	+14.7	0	40	317 c		13829	•287	104.4	71.9	-10.8	12	60	
	13829	•995	99.9	70.5	-10.5	34	139	159 c		13830	•632	105.2	49.3	-15.0	41	217	
73.330 C		•982	92.4					228	78.552 G		•777	78.8					105
			(-24.4)	(155.7)	(- 7.2)	(110)	(483)	(1262)			•962	103.9					239
	13826	•920	292.2					184				(-25.1)	(88.3)	(- 7.0)	(156)	(771)	(863)
	13825	•683	297.6	181.2	+12.8	23	187			13831	•526	308.0	99.2	+12.5	5	13	
Mar. 14	13824	•139	267.0	151.0	- 7.8	4	18		78.552 G	13832	•353	316.5	88.3	+ 8.0	35	149	
	13824	•047	216.5	144.6	- 9.3	3	14			13827	•370	323.1	87.2	+10.3	53	492	
	13827	•670	73.1	85.3	+10.8	2	9	220 c		13829	•074	153.2	72.3	-10.8	10	66	

Group 13826. Mar. 11 - 17. A variable stream with the leader as the most stable component.

Group 13827. Mar. 14 - 25. A small spot on March 14 and 15. On March 17 a stream begins to develop more rapidly than is usual. Decline at once sets in after a brief maximum on March 20.

Group 13828. Mar. 14 - 16. A small spot.

Group 13829. Mar. 14 - 24. A slowly diminishing regular spot.

Group 13830. Mar. 16 - 27. A regular spot shrinking rapidly after the disappearance of a companion on March 23. There is a small but definite trend equatorwards. Perhaps a return of Group 13818.

Group 13831. Mar. 18 - 23. A small but persistent spot $\neq$ Group 13827.

Group 13832. Mar. 18 - 24. A short-lived variable stream close to Group 13827.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
	13830	•427	110°4	49°8	-14°9	46	226			13834	•895	77°4	322°8	+8°0	23	154	376 c
	13833	•546	53°9	47°5	+12°5	5	12				•875	94°6					276
		•843	103°0					183			•914	59°3					195
Mar. 20		•930	64°0					358			•975	99°7					166
		(-25°3)		(74°2)	(-7°0)	(154)	(959)	(541)	Mar. 24		(-25°7)		(24°4)	(-6°9)	(85)	(574)	(1789)
79°321 C		•950	256°7					210	83°394		•943	266°4					246
		•859	287°9					170	G		•931	288°1					180
	13831	•648	298°2	99°6	+12°1	0	4				•903	255°6					204
	13832	•477	301°2	88°2	+7°9	26	170			13827	•977	281°1	86°3	+9°2	21	152	469 f
	13827	•497	305°8	88°1	+10°4	45	312			13830	•654	255°7	51°0	-14°5	18	76	
	13829	•180	244°4	72°4	-10°8	8	44			13834	•761	73°7	323°0	+7°7	18	117	181 f
	13830	•280	120°0	49°5	-14°8	36	200			13835	•842	96°5	312°6	-9°1	8	20	255 s
	13833	•421	38°4	48°5	+12°4	1	5				•930	99°9					522
		•841	79°5					95	Mar. 25		(-25°8)		(10°3)	(-6°8)	(65)	(365)	(2057)
		•892	67°5					248									
		•913	57°9					134									
Mar. 21		•946	86°3					266	84°452		•978	284°9					132
		(-25°4)		(64°0)	(-7°0)	(116)	(735)	(1123)	G		•815	257°1	51°3	-14°4	11	44	193 c
80°325 C		•951	298°1					120		13830	•590	67°0	323°3	+7°6	24	117	
		•947	286°4					148		13834	•687	96°7	312°8	-9°5	5	12	253 f
	13831	•838	289°5	104°5	+12°1	0	8	122 c	Mar. 26		•903	106°1					205
	13832	•648	291°3	86°2	+8°0	40	180				(-25°9)		(356°4)	(-6°8)	(40)	(173)	(783)
	13827	•647	294°9	87°2	+10°1	30	206	92 p									
	13829	•378	258°1	72°8	-11°0	9	32		85°346		•684	256°4					353
	13830	•137	173°9	49°9	-14°8	34	203		G		•869	282°9					400
	13833	•337	5°0	49°1	+12°5	2	11			13830	•918	257°3	51°9	-14°3	0	9	
		•773	62°1					200		13836	•225	17°6	340°7	+5°6	5	17	
		•929	58°5					172		13837	•280	61°3	330°4	+1°1	4	17	
		•930	77°3					197		13834	•431	56°1	323°5	+7°5	28	122	
		•931	67°9					144		13835	•522	96°8	313°1	-9°3	4	12	
Mar. 22		•947	105°1					270		13836	•980	78°2	267°8	+10°1	22	138	257 c
		(-25°5)		(50°8)	(-7°0)	(115)	(640)	(1465)			•888	73°5					108
									Mar. 27		•903	119°9					102
81°372 C		•929	296°4					158			•922	111°0					212
	13831	•938	285°8	104°2	+12°2	0	13	202 c			(-26°0)		(344°6)	(-6°8)	(63)	(315)	(1432)
	13832	•813	284°5	89°4	+7°6	20	92										
	13827	•806	288°0	87°9	+10°1	26	172	395 c	86°470		•967	276°0					257
	13829	•588	260°4	73°1	-11°2	8	37		G		•937	253°8					375
	13830	•261	237°9	50°2	-14°7	32	200			1171a	•804	256°8	23°6	-14°6	3	9	72 c
Mar. 23	13834	•971	79°8	322°4	+8°1	27	123	196 c		13836	•286	317°7	340°9	+5°6	9	24	
		(-25°6)		(37°0)	(-6°9)	(113)	(637)	(951)		13837	•140	340°4	331°3	+1°1	6	24	
										13834	•270	24°4	323°4	+7°5	22	126	
82°329 C		•822	270°8					108	Mar. 28		•901	75°6	267°7	+8°8	21	99	317 c
	13832	•927	284°7	90°1	+10°8	17	66				(-26°1)		(329°8)	(-6°7)	(61)	(282)	(1021)
	13827	•907	283°4	87°5	+9°0	25	228	668 c									
	13829	•755	261°3	73°7	-11°1	3	16		87°325		•966	252°9					184
	13830	•457	251°7	50°9	-14°4	17	110		C		•848	256°5					137
											•843	294°2					194

Group 13833. Mar. 20 - 22. One or two tiny spots.

Group 13834. Mar. 23 - Apr. 3. Return of Group 13817. A regular spot, slowly contracting, with occasional companions.

Group 13835. Mar. 25 - 27. A small spot on March 25 and 26; a pair on March 27.

Group 13836. Mar. 27 - Apr. 1. Intermittent. A cluster of tiny spots not seen on March 29-30.

Group 13837. Mar. 27 - 29. A tiny stream on March 27-28; a single spot on March 29.

Group 13838. Mar. 27 - Apr. 7. Return of Group 13823. A rapidly decaying spot ending probably on April 1. On April 2 and again on April 7 another spot appears just north and east of the point of disappearance.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
	13837	•252	307°9	329°9	+ 2°3	1	8		93°357		•943	283°3					397
	13834	•259	340°4	323°5	+ 7°4	14	78		G		•928	308°8					193
	13838	•799	72°5	268°1	+ 9°6	7	61	212 _{nf}			•914	257°8					436
		•951	75°9					120			•822	274°6					136
Mar. 29			(-26°1)	(318°5)	(- 6°7)	(22)	(147)	(847)		13841	•648	324°8	263°4	+26°1	2	12	
										13840	•932	96°7	169°8	- 8°5	19	58	262 _f
											•896	72°8					449
88°364		•933	287°9					304	Apr. 4			(-26°4)	(238°9)	(- 6°3)	(21)	(70)	(1873)
G		•933	255°2					137									
		•932	273°8					181									
	13834	•395	307°0	323°3	+ 7°4	16	87		94°417		•969	256°0					267
	13838	•645	65°0	268°5	+10°5	5	20		G		•935	297°8					139
		•839	98°8					101			•927	270°9					235
		•922	75°3					284			•915	315°2					138
Mar. 30			(-26°2)	(304°8)	(- 6°6)	(21)	(107)	(1007)		13841	•750	313°3	262°1	+25°9	7	12	122 _c
										13840	•812	95°0	170°4	- 7°7	15	53	152 _f
											•943	94°9					330
89°369		•946	289°1					202	Apr. 5			(-26°4)	(224°9)	(- 6°3)	(22)	(65)	(1383)
G		•939	301°0					207									
	13836	•790	283°4	341°9	+ 6°3	3	16	150 _n									
	13834	•570	292°7	323°4	+ 7°1	12	81		95°100		•948	270°7					200
	13838	•478	54°8	268°3	+ 9°8	5	10		K		•842	308°9					134
Mar. 31			(-26°2)	(291°5)	(- 6°6)	(20)	(107)	(559)		13840	•691	93°2	172°1	- 6°7	7	40	
										13842	•940	91°6	145°9	- 3°6	0	12	204 _c
									Apr. 6			(-26°4)	(215°9)	(- 6°2)	(7)	(52)	(538)
90°318		•800	276°5					121									
C		•792	247°7					97									
		•760	265°7					116	96°328		•944	300°8					136
	13836	•904	281°3	342°1	+ 7°3	5	20	278 _c	C		•787	290°9					87
	1171b	•861	260°9	338°8	-11°1	0	6	141 _c		13838	•940	285°5	267°4	+12°2	0	9	276 _c
	13834	•722	286°3	323°1	+ 7°0	9	42	126 _c		13840	•455	93°0	172°6	- 6°8	7	25	
	13839	•230	291°5	291°3	- 1°5	14	72			13842	•831	89°6	143°6	- 3°0	19	90	151 _c
	13838	•334	32°8	268°5	+ 9°8	2	7			13843	•946	98°6	126°1	-10°1	23	125	384 _c
Apr. 1			(-26°3)	(279°0)	(- 6°5)	(30)	(147)	(879)		13844	•993	97°8	115°9	- 8°5	8	53	
											•883	110°1					195
											•957	75°8					177
91°334		•972	280°4					144	Apr. 7			(-26°4)	(199°7)	(- 6°1)	(57)	(302)	(1406)
C		•962	291°6					225									
		•922	271°1					276									
		•906	258°0					278	97°335		•935	295°4					156
		•818	293°8					112	G		•927	274°9					117
		•772	264°5					81			•891	285°2					146
	13834	•865	282°3	323°8	+ 7°3	9	35	222 _c		13845	•323	21°9	165°7	+11°3	2	12	
	13839	•453	279°8	292°0	- 1°4	12	53			13840	•225	92°5	173°4	- 6°5	5	16	
	13838	•307	354°1	267°4	+11°3	3	20			13842	•666	88°0	144°8	- 3°2	19	87	
Apr. 2			(-26°3)	(265°6)	(- 6°4)	(24)	(108)	(1338)		13843	•843	98°0	126°7	-10°0	21	110	180 _c
										13844	•935	96°2	116°9	- 7°9	15	71	392 _c
											•882	107°5					257
92°354		•971	270°3					230	Apr. 8		•899	81°4					127
G		•951	301°8					357				(-26°4)	(186°4)	(- 6°1)	(62)	(296)	(1355)
		•890	260°2					425									
	13834	•956	279°3	323°9	+ 6°9	7	22	287 _c									
	13840	•993	97°1	168°5	- 7°8	18	45	151 _p	98°570		•933	283°3					123
		•963	73°8					326	G		•908	294°6					185
Apr. 3			(-26°3)	(252°2)	(- 6°4)	(25)	(67)	(1776)		13845	•324	333°5	178°5	+10°8	4	13	

Group 13839. Apr. 1 - 2. A small ephemeral stream.

Group 13840. Apr. 3 - 10. A pair of spots, $3\frac{1}{2}^{\circ}$ apart in latitude. By April 6, the more southerly spot has gone.

Group 13841. Apr. 4 - 5. A tiny pair on April 4: one spot on April 5.

Group 13842. Apr. 6 - 13. A few unstable spots.

Group 13843. Apr. 7 - 13. A small compact stream fading out rather suddenly.

Group 13844. Apr. 7 - 19. A small spot, suggesting the last phase of a regular spot with its development on the invisible hemisphere. For the first three days, there is a companion spot about 3° south and 3° behind in longitude. Fresh activity comes in on April 17, when a cluster appears.

Group 13845. Apr. 8 - 9. Tiny spots spread in longitude.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
Apr. 9	13840	•056	261.4	173.3	- 6.4	2	6		104.342 G		•938	252.2					129
	13842	•400	86.5	146.6	- 4.1	9	24				•936	265.0					220
	13843	•694	98.7	126.1	-10.4	36	183				•818	270.3					115
	13844	•810	95.9	115.8	- 8.3	29	120	76 f		13844	•402	261.0	117.5	- 8.6	5	21	
		•964	74.1					124			•809	108.8					190
			(-26.4)	(170.1)	(- 6.0)	(80)	(346)	(508)			•918	79.7					126
Apr. 10	99.348 G	•955	294.6					168	Apr. 15		•951	70.1			(5)	(21)	(1170)
		•952	282.1					126				(-26.1)	(93.9)	(- 5.5)			
	13840	•243	265.2	172.9	- 6.9	2	13				•901	269.5					192
	13842	•236	61.7	146.2	- 3.8	9	30			105.349 G	•759	259.4	130.0	-11.7	3	15	
	13843	•554	99.2	126.2	-10.0	27	111				•616	264.2	118.7	- 7.9	3	8	
Apr. 11	13844	•710	95.6	114.4	- 8.2	26	119	230 c	Apr. 16	13846	•229	0.7	80.4	+ 7.7	5	13	
		•867	66.1					112		1171e	•906	102.1					197
		•936	71.1					344			•950	70.0					212
		•959	78.7					273			•955	113.6					129
		•962	94.6					241			•959	61.2					195
			(-26.4)	(159.8)	(- 5.9)	(64)	(273)	(1494)				(-26.1)	(80.6)	(- 5.5)	(11)	(36)	(925)
Apr. 12	100.133 K	•916	274.9					266	Apr. 17		•957	248.3					153
		•858	271.4					97		106.389 G	•950	267.8					250
	13842	•053	46.0	147.3	- 3.8	6	29				•884	282.2					84
	13843	•396	102.4	126.5	-10.3	10	66			13846	•876	256.7	126.3	-14.2	2	4	315 n
	13844	•595	96.3	112.9	- 8.5	21	100			13844	•777	282.2	118.0	- 9.5	44	146	
Apr. 13			(-26.3)	(149.5)	(- 5.9)	(37)	(195)	(365)	Apr. 18		•899	65.9					280
	101.342 C	•970	268.3	209.4	- 3.1	4	18	152 c			•943	87.7					149
	13842	•253	278.4	148.0	- 3.5	5	15					(-26.0)	(66.9)	(- 5.4)	(46)	(152)	(1231)
	13843	•153	125.0	126.2	-10.8	9	48			107.396 C	•959	268.8					160
	13844	•336	98.7	113.9	- 8.4	17	107				•901	247.8					70
Apr. 14		•795	96.7					85	Apr. 19	13846	•982	256.5	126.3	-14.4	0	7	338 n
		•808	68.1					210		13844	•906	263.0	118.8	- 8.6	43	212	314 c
		•844	111.3					121		1171f	•630	67.5	1.2	+15.2	6	28	121 c
		•869	101.7					98				(-25.9)	(53.6)	(- 5.3)	(49)	(247)	(1003)
		•948	89.1					161	Apr. 20	108.329 C	•866	286.1					87
Apr. 15		•979	103.7					182			•809	294.0					93
			(-26.3)	(133.5)	(- 5.8)	(35)	(188)	(1009)		13844	•973	261.9	118.3	- 9.0	32	204	435 c
	102.410 G	•943	291.1					149		13847	•946	95.6	330.1	- 7.0	70	365	476 c
		•866	286.3					155			•913	104.2					217
Apr. 16	13842	•493	272.7	146.8	- 3.7	5	13		Apr. 21		•931	82.1					221
	13843	•176	232.2	127.5	-11.8	2	9					(-25.8)	(41.3)	(- 5.2)	(102)	(569)	(1529)
	13844	•067	128.5	116.4	- 8.0	9	34			109.418 G	•910	286.6					268
		•927	105.2					444			•832	94.0	330.5	- 6.2	91	480	269 c
		•927	75.1					222			•919	72.5					170
Apr. 17			(-26.2)	(119.4)	(- 5.7)	(16)	(56)	(970)	Apr. 22		•942	79.9					132
	103.469 C	•962	288.4					227				(-25.7)	(26.9)	(- 5.1)	(91)	(480)	(639)
	13844	•210	260.6	117.4	- 7.4	1	7										
	1171d	•372	18.6	98.4	+15.0	6	35										
		•874	110.6					151									
			(-26.2)	(105.4)	(- 5.6)	(7)	(42)	(378)									

Group 13846. Apr. 16 - 18. One or two very small spots.

Group 13847. Apr. 19 - 30. A stream of normal type showing some departure from the usual sequence of events. By April 24, the leader has split into two parts, the umbra, beginning to divide three days earlier. The follower of the stream remains small throughout.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.																	
U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
110° 465 G	13847	° 949	275° 5					141	116° 317 C	13848 13847 1172c 13849	° 946	292° 0					316
		° 928	285° 7					359			° 732	278° 7	342° 0 + 3° 2	21	121		
		° 665	93° 0	331° 3	- 5° 7	129	624	254 n			° 599	266° 0	332° 5 - 6° 0	67	386		
		° 842	104° 4					155			° 873	96° 5	234° 8 - 7° 9	4	22	109 c	
		° 909	87° 5					133			° 939	89° 5	226° 0 - 1° 1	32	312	488 c	
		° 912	124° 8					122	Apr. 27			(-24° 9)	(295° 7) (- 4° 5)	(124)	(841)	(913)	
		° 917	66° 0					139									
		° 936	101° 7					283									
		° 940	112° 0					180									
Apr. 21		(-25° 6)	(13° 0)	(- 5° 0)	(129)	(624)	(1766)	117° 393 C		° 907	266° 5					160	
										° 801	256° 9					145	
	13847	° 975	285° 8					217	13848	° 892	276° 1	343° 9 + 3° 4	17	63	277 c		
111° 338 C		° 499	93° 2	331° 6	- 5° 9	123	643		13847	° 784	266° 6	333° 1 - 5° 4	63	341			
		° 842	102° 9					221	13849	° 822	87° 9	226° 5 - 0° 8	46	267	229 c		
Apr. 22		(-25° 5)	(1° 5)	(- 4° 9)	(123)	(643)	(436)	Apr. 28		° 938	91° 5	(-24° 7)	(281° 5) (- 4° 4)	(126)	(671)	(1250)	
112° 101 K	13848 13847	° 864	254° 4					190	118° 600 G		° 933	277° 1				403	
		° 245	55° 8	339° 7	+ 3° 1	1	11			° 924	299° 7					321	
Apr. 23		° 346	93° 9	331° 2	- 5° 9	121	693			° 922	287° 8					159	
		(-25° 4)	(351° 4)	(- 4° 9)	(122)	(704)	(190)			° 848	258° 8					361	
	13848 13847 1172a	° 962	286° 2					245	13848	° 988	274° 2	346° 1 + 3° 4	0	16			
113° 422 G		° 946	277° 2					120	13847	° 929	266° 1	333° 9 - 5° 2	52	306	284 c		
		° 939	262° 2					325	13850	° 375	318° 0	280° 4 + 11° 9	6	22			
		° 171	325° 8	339° 5	+ 3° 3	7	19		13849	° 627	85° 6	227° 1 - 0° 6	45	210			
		° 065	114° 3	331° 1	- 6° 1	115	564	Apr. 29		° 821	91° 6	(-24° 5)	(265° 6) (- 4° 3)	(103)	(554)	(1665)	
		° 177	34° 6	328° 2	+ 3° 6	5	14										
		° 849	114° 6					74	119° 398 G		° 929	277° 6				243	
		° 890	101° 8					123			° 922	248° 7				145	
		° 934	71° 6					235			° 904	296° 6				341	
	° 950	110° 2					196			° 776	260° 0				232		
Apr. 24		° 970	93° 3	(334° 0)	(- 4° 8)	(127)	(597)	(1524)		13847	° 984	265° 5	334° 8 - 5° 2	44	236	590 sf	
	13848 13847	° 958	252° 6					213		13851	° 648	261° 7	295° 2 - 8° 6	6	27		
114° 376 G		° 920	261° 7					142		13850	° 493	304° 0	279° 6 + 12° 1	7	23		
		° 836	292° 7					308		13849	° 471	84° 5	227° 2 - 1° 1	46	210		
		° 377	291° 2	341° 9	+ 3° 4	26	115		Apr. 30	13852	° 673	89° 5	212° 8 - 2° 8	9	28		
		° 186	262° 9	332° 0	- 6° 0	94	412				° 951	74° 5	(-24° 4)	(255° 0) (- 4° 2)	(112)	(524)	(1985)
		° 904	95° 1					158									
		° 944	113° 6					135									
Apr. 25			(-25° 2)	(321° 4)	(- 4° 7)	(120)	(527)	(956)	120° 605 G		° 963	256° 4					269
											° 935	311° 4					172
	13848 13847 1172b 13849	° 923	301° 3					155		° 929	285° 4					182	
115° 360 G		° 930	254° 7					167		° 920	295° 1					370	
		° 929	290° 1					137		° 894	258° 6					113	
		° 660	270° 3					82		13851	° 825	262° 6	294° 7 - 6° 5	17	66	256 c	
		° 571	282° 5	342° 2	+ 3° 3	30	147			13850	° 731	289° 0	283° 7 + 10° 9	1	4	69 c	
		° 415	266° 3	332° 9	- 5° 7	97	440			13849	° 205	73° 9	227° 8 - 0° 8	32	168		
		° 391	291° 9	287° 2	+ 4° 0	1	8			13852	° 433	89° 7	213° 5 - 3° 6	6	33		
		° 994	90° 3	224° 9	- 0° 8	70	426	127 p		13853	° 940	71° 3	171° 5 + 16° 0	26	117	455 c	
		° 954	77° 8					185			° 846	74° 8					337
Apr. 26		(-25° 0)	(308° 4)	(- 4° 6)	(198)	(1021)	(853)	May 1		° 868	62° 9					113	
										° 968	98° 0					333	
										(-24° 2)	(239° 1) (- 4° 1)	(82)	(368)	(2669)			

Group 13848. Apr. 23 - 29. A small stream.

Group 13849. Apr. 26 - May 8. A spot with companions, within 1° of the Sun's equator. On May 1 division of the spot into two parts begins, and subsequent decline is rapid.

Group 13850. Apr. 29 - May 2. A small ephemeral group.

Group 13851. Apr. 30 - May 2. One or two small spots. Activity here revives in the following rotation in Group 13865.

Group 13852. Apr. 30 - May 5. One or more indefinite spots.

Group 13853. May 1 - 10. A cluster of variable spots.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
121° 561 G		° 941	308° 2					165	125° 363 G	13849	° 943	279° 1			6	22	201
		° 937	297° 4					121		13853	° 807	272° 0	229° 7 - 0° 5		23	101	116 c
		° 926	275° 6					124			° 353	12° 9	171° 5 +16° 4				
	13851	° 922	262° 8	293° 7 - 8° 2		3	12	233 p			° 772	102° 5					212
	13850	° 855	285° 4	283° 3 +11° 0		0	10	147 c			° 884	100° 5					360
	13849	° 069	333° 2	228° 2 - 0° 5		20	107				° 952	78° 5					184
	13852	° 205	90° 6	214° 6 - 4° 0		0	14				° 955	118° 1					113
	13853	° 852	68° 1	171° 2 +16° 2		24	126	179 c	May 6			(-23° 2)	(176° 2) (- 3° 6)		(29)	(123)	(1186)
		° 916	91° 8					77									
		° 940	74° 6					180									
May 2			(-24° 0)	(226° 4) (- 4° 0)		(47)	(269)	(1226)	126° 531 G	13849	° 921	270° 8	227° 5 - 0° 6		0	11	492 c
										13853	° 390	331° 8	171° 7 +16° 7		11	74	
									May 7		° 950	74° 4					243
												(-23° 0)	(160° 7) (- 3° 4)		(11)	(85)	(735)
122° 423 G		° 954	259° 5					148									
		° 946	295° 3					172									
		° 942	270° 5					100									
		° 936	281° 5					206	127° 453 G		° 927	261° 1					180
	13849	° 219	285° 4	227° 1 - 0° 5		30	145				° 915	270° 0					251
	13852	° 028	41° 0	214° 0 - 2° 7		6	39			13849	° 976	270° 9	225° 6 + 0° 1		0	16	171 c
	13853	° 745	64° 0	171° 0 +16° 2		42	193	139 f		13853	° 510	312° 7	171° 5 +17° 1		10	49	
		° 902	90° 4					196			° 861	68° 9					245
		° 941	114° 9					131			° 877	85° 3					117
		° 954	105° 8					185			° 938	96° 5					179
May 3			(-23° 8)	(215° 0) (- 3° 9)		(78)	(377)	(1277)	May 8		° 947	75° 6					245
												(-22° 8)	(148° 5) (- 3° 3)		(10)	(65)	(1388)
123° 370 G		° 965	288° 1					192									
		° 873	286° 2					81									
		° 780	289° 8					182	128° 308 G		° 959	263° 9					258
	13849	° 446	275° 9	228° 7 - 0° 7		20	65				° 943	271° 6					135
	13852	° 194	273° 6	213° 6 - 3° 0		9	60			13853	° 624	302° 5	170° 4 +16° 8		7	29	
	13853	° 617	56° 4	170° 2 +16° 7		46	228			13854	° 994	66° 8	55° 4 +22° 6		40	149	117 f
		° 909	90° 9					121			° 830	62° 3					81
		° 927	103° 1					330			° 871	72° 0					161
		° 941	75° 4					232			° 936	91° 9					127
		° 948	119° 5					122			° 944	59° 4					238
May 4			(-23° 7)	(202° 5) (- 3° 8)		(75)	(373)	(1260)	May 9		° 954	113° 4					187
												(-22° 6)	(137° 2) (- 3° 2)		(47)	(178)	(1304)
124° 382 G		° 952	256° 3					147									
		° 942	284° 8					134	129° 338 G		° 939	182° 5					16
		° 924	298° 0					132			° 927	275° 0					180
		° 809	276° 8					231			° 925	297° 4					354
	13849	° 632	273° 9	228° 0 - 0° 4		16	69				° 904	285° 5					263
	13852	° 416	269° 2	213° 6 - 3° 7		10	50			13853	° 797	293° 8	173° 0 +16° 7		0	2	205 c
	13853	° 462	41° 9	170° 4 +16° 6		48	185			13855	° 534	59° 3	95° 6 +13° 0		8	25	
		° 866	101° 4					359		13854	° 965	64° 3	52° 0 +23° 8		76	269	519 c
		° 879	86° 0					141			° 846	64° 3					211
		° 908	74° 3					175			° 924	84° 0					117
		° 936	113° 4					143			° 926	175° 6					35
		° 953	93° 8					129			° 933	104° 6					186
		° 964	102° 8					420	May 10		° 936	74° 0					190
May 5			(-23° 4)	(189° 1) (- 3° 7)		(74)	(304)	(2011)				(-22° 3)	(123° 6) (- 3° 1)		(84)	(296)	(2276)

Group 13854. May 9 - 21. A stream of normal type except that the leader spot is the first to die out, but is represented by a small spot for two days after the follower has gone.

Group 13855. May 10 - 16. A pair of spots: one remains for a day on May 14. A dot comes in nearly the same position on May 16.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.																		
U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA			
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae	
1941		°		° °					1941		°		° °					
130° 366 G		° 943	283° 9					169		13858	° 671	103° 5	2° 7	-10° 8	3	7		
		° 902	291° 3					393		13857	° 899	94° 8	340° 2	- 5° 4	24	113	378 f	
		° 850	300° 3					161			° 860	86° 2					199	
	13855	° 366	40° 8	95° 8	+13° 1	20	73				° 909	75° 4					203	
	13854	° 903	61° 3	50° 0	+24° 1	73	289	420 c			° 944	106° 6					291	
		° 810	97° 9					97	May 16			(-20° 8)	(44° 1)	(- 2° 5)	(41)	(164)	(1842)	
		° 813	81° 2					88										
		° 862	107° 1					134			° 968	282° 0					157	
		° 905	86° 6					186		136° 379 G	° 956	241° 7					96	
May 11		° 950	101° 5	(-22° 1)	(110° 0)	(93)	(362)	(1828)			° 934	259° 6					299	
											° 927	293° 9					144	
		° 948	287° 3					425		13859	° 862	281° 3	89° 0	+ 8° 5	10	24	299 mp	
		° 933	257° 1					312		13854	° 513	333° 3	45° 2	+25° 0	9	43		
	13856	° 801	287° 8	149° 7	- 3° 5	10	23	87 c		13858	° 450	108° 2	4° 9	-10° 1	4	5		
	13855	° 279	355° 8	97° 8	+13° 2	16	51			13857	° 787	94° 8	340° 6	- 5° 2	14	69	284 f	
	13854	° 798	56° 4	50° 0	+24° 1	63	195	294 c		13860	° 869	107° 0	331° 0	-15° 8	0	5	522 n	
		° 894	101° 6					215		1172d	° 927	82° 4	323° 2	+ 6° 1	3	9	349 f	
		° 899	112° 1					310			° 888	115° 2					148	
		° 930	68° 2					370			° 901	75° 5					130	
May 12		° 941	89° 4	(-21° 8)	(96° 6)	(89)	(269)	(2179)	May 17		° 982	102° 0	(-20° 5)	(30° 5)	(- 2° 3)	(40)	(155)	(2811)
132° 343 C		° 827	255° 0					203		137° 351 G	° 963	260° 4					92	
	13856	° 914	267° 6	149° 8	- 3° 3	0	20	193 c			° 836	287° 0					141	
	13855	° 348	322° 6	96° 4	+13° 2	7	33			13859	° 950	280° 2	88° 6	+ 9° 0	0	24	348 c	
	13854	° 681	49° 8	49° 4	+23° 7	27	171			13854	° 611	315° 8	45° 3	+24° 0	6	20		
May 13			(-21° 6)	(83° 9)	(- 2° 8)	(34)	(224)	(396)		13858	° 245	126° 0	6° 0	-10° 4	3	7		
										13861	° 583	101° 2	342° 4	- 8° 3	0	11		
133° 169 K		° 935	256° 6					220		13857	° 598	95° 8	341° 1	- 5° 2	13	96		
		° 922	67° 3					161			° 825	106° 8					180	
		° 817	254° 5					148			° 859	61° 5					166	
	13856	° 970	266° 9	148° 7	- 3° 7	0	16	172 c			° 890	83° 4					322	
	13855	° 438	307° 0	93° 8	+12° 7	4	21				° 919	73° 6					144	
	13854	° 579	39° 6	49° 2	+24° 0	17	88				° 927	104° 4					240	
May 14			(-21° 4)	(72° 9)	(- 2° 7)	(21)	(125)	(701)	May 18		° 954	62° 8	(-20° 2)	(17° 6)	(- 2° 2)	(22)	(158)	(1782)
134° 574 G		° 941	265° 4					117		138° 525 G	° 946	287° 3					201	
	13854	° 478	16° 6	45° 8	+24° 6	11	67				° 934	273° 6					226	
	13857	° 965	95° 1	339° 6	- 5° 6	21	141	286 c			° 908	256° 2					189	
		° 928	107° 2					227		13854	° 758	304° 2	45° 1	+23° 6	2	7	187 f	
		° 938	84° 2					212		13858	° 107	165° 0	0° 5	- 8° 0	1	4		
May 15		° 951	72° 2	(-21° 0)	(54° 4)	(32)	(208)	(1042)		13861	° 355	108° 8	342° 3	- 8° 5	1	6		
										13857	° 358	100° 0	341° 4	- 5° 5	15	59		
										13860	° 519	118° 4	333° 9	-16° 1	5	16		
											° 789	82° 4					222	
135° 348 G		° 958	265° 8					294			° 809	104° 8					184	
		° 933	256° 4					219			° 905	94° 1					211	
	13855	° 805	288° 4	95° 6	+13° 1	0	4	258 p			° 946	109° 2					260	
	13854	° 463	356° 2	46° 0	+24° 9	14	40		May 19			(-19° 8)	(2° 1)	(- 2° 1)	(24)	(92)	(1680)	

Group 13856. May 12 - 14. A small spot.
 Group 13857. May 15 - 25. Return of Group 13847. A small regular spot slowly dying out.
 Group 13858. May 16 - 19. A tiny spot not identical from day to day.
 Group 13859. May 17 - 18. A pair of small spots.
 Group 13860. May 17 - 24. A small short-lived stream halting for a day in its early development.
 Group 13861. May 18 - 19. Two tiny spots.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
139° 342		° 903	254° 2					317	144° 349		° 949	263° 9					663
C		° 873	301° 2					496	G		° 839	277° 2					141
	1173a	° 889	263° 2	53° 9	- 6° 9	2	14	147 c		13857	° 801	255° 4					170
	13857	° 183	111° 0	341° 5	- 5° 7	9	43			13855	° 838	262° 5	341° 7	- 7° 0	0	6	268 mp
	13860	° 384	130° 2	333° 6	- 16° 2	12	61			13864	° 237	231° 2	295° 9	- 9° 9	24	98	
	13862	° 619	106° 3	314° 1	- 11° 5	10	51			13866	° 362	68° 3	265° 4	+ 6° 3	22	77	
May 20		° 953	74° 0					173			° 933	94° 2	216° 4	- 4° 4	0	7	253 c
			(-19° 6)	(351° 3)	(- 2° 0)	(33)	(169)	(1123)	May 25		° 786	90° 4					443
												(-18° 0)	(285° 1)	(- 1° 4)	(46)	(188)	(1938)
140° 371		° 952	265° 7					213			° 944	277° 8					171
G	13854	° 970	295° 1	51° 2	+ 23° 8	0	18	312 nf	145° 385		° 929	265° 0					427
	13857	° 089	213° 8	340° 5	- 6° 1	4	24		G		° 928	251° 8					386
	13860	° 262	164° 8	333° 6	- 16° 5	23	135			13865	° 820	279° 2					99
	13863	° 392	109° 9	315° 9	- 9° 4	5	16			13866	° 802	259° 1					151
	13862	° 434	114° 4	314° 0	- 12° 0	3	13				° 478	252° 0	298° 6	- 9° 6	19	84	
	13864	° 935	83° 9	269° 0	+ 5° 0	0	13	305 f		13864	° 149	34° 4	266° 5	+ 5° 7	19	49	
May 21		° 921	70° 7					290		13866	° 809	94° 5	217° 5	- 4° 4	0	18	138 c
			(-19° 3)	(337° 7)	(- 1° 9)	(35)	(219)	(1120)			° 805	70° 3					153
											° 885	84° 6					110
141° 403		° 935	305° 1					317	May 26		° 920	75° 9					115
G	13857	° 319	255° 6	342° 0	- 6° 3	4	17					(-17° 6)	(271° 3)	(- 1° 3)	(38)	(151)	(1750)
	13860	° 300	214° 2	334° 1	- 16° 1	18	99				° 954	270° 8					187
	13863	° 181	135° 1	316° 6	- 9° 1	3	6		146° 400		° 935	252° 4					350
	13865	° 535	105° 9	292° 6	- 10° 0	7	25		G		° 909	277° 5					300
May 22		° 851	82° 2	266° 3	+ 5° 6	2	26	223 c		1173b	° 950	262° 6	329° 5	- 7° 4	3	8	267 c
	13864		(-19° 0)	(324° 0)	(- 1° 8)	(34)	(173)	(540)		13865	° 665	256° 7	298° 8	- 9° 7	17	68	
										13864	° 170	322° 0	263° 9	+ 6° 4	7	24	
											° 902	59° 5					263
142° 657		° 945	283° 9					189	May 27		° 928	75° 6					366
G		° 924	296° 4					200			° 935	108° 2					318
		° 824	275° 7					170				(-17° 3)	(257° 9)	(- 1° 2)	(27)	(100)	(2051)
		° 798	300° 5					237									
	13857	° 597	260° 9	343° 7	- 6° 7	0	3				° 948	255° 3					498
	13860	° 525	243° 0	336° 3	- 15° 1	11	30		147° 315		° 945	305° 0					145
	13865	° 262	119° 1	294° 1	- 8° 9	16	79		G		° 932	278° 1					249
	13864	° 696	79° 5	264° 1	+ 6° 1	14	64			13865	° 930	290° 2					170
May 23		° 834	96° 7					236			° 795	284° 3					98
		° 947	90° 5					491		13865	° 815	256° 7	299° 8	- 9° 8	8	40	99 c
			(-18° 5)	(307° 4)	(- 1° 6)	(41)	(176)	(1523)		13864	° 303	292° 9	262° 0	+ 5° 7	7	21	
										13867	° 966	98° 1	171° 0	- 8° 1	4	17	154 p
143° 369		° 941	298° 5					159	May 28		° 936	67° 5					273
G		° 930	287° 1					147				(-16° 9)	(245° 8)	(- 1° 1)	(19)	(78)	(1686)
		° 800	285° 8					245									
	13857	° 700	264° 1	342° 2	- 5° 2	1	6				° 981	257° 2					123
	13860	° 642	246° 7	335° 6	- 15° 8	9	44		148° 350		° 891	258° 8					213
	13865	° 147	157° 9	294° 8	- 9° 3	25	100		C		° 520	284° 4	262° 4	+ 6° 7	0	5	
	13864	° 568	76° 9	264° 3	+ 6° 1	30	90			13864	° 862	97° 3					130
	13866	° 973	93° 7	221° 6	- 4° 0	0	15	282 c			° 963	97° 0					154
May 24		° 880	89° 1					593	May 29			(-16° 6)	(232° 1)	(- 0° 9)	(0)	(5)	(620)
		° 914	103° 1					250									
			(-18° 3)	(298° 0)	(- 1° 5)	(65)	(255)	(1676)									

Group 13862. May 20 - 21. A small spot.
 Group 13863. May 21 - 22. A small spot.
 Group 13864. May 21 - June 1. A small stream of weak development.
 Group 13865. May 22 - 28. A short stream of minor importance. The leader spot remains from May 25 to 28.
 Group 13866. May 24 - 26. A small spot on each of the three days.
 Group 13867. May 28 - June 8. Intermittent. One or more variable spots.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
149° 418 C		° 966	258° 2					329		13867	° 368	245° 0	171° 1	- 9° 1	16	62	
		° 747	280° 2					200		13868	° 294	176° 1	150° 2	- 17° 2	56	250	
	13868	° 932	108° 4	150° 3	- 17° 4	30	139	251 c		13870	° 217	120° 9	140° 6	- 6° 5	17	99	
	13869	° 971	107° 4	142° 5	- 17° 0	14	100			13871	° 910	75° 7	86° 9	+ 12° 9	76	382	305 c
	13870	° 986	95° 6	137° 9	- 5° 6	26	123	114 c			° 781	84° 8				138	
May 30			(- 16° 2)	(218° 0)	(- 0° 8)	(70)	(362)	(894)			° 924	66° 2				177	
											° 930	93° 9				371	
									June 4			(- 14° 3)	(151° 4)	(- 0° 2)	(165)	(793)	(1756)
150° 874 Mt. W		° 909	278° 3					405			° 952	266° 6					161
	13868	° 795	111° 8	150° 9	- 17° 5	42	148	266 c		13867	° 499	253° 0	171° 5	- 8° 5	12	59	
	13869	° 893	108° 8	139° 5	- 17° 0	9	56		155° 100 K	13868	° 322	202° 0	150° 0	- 17° 4	91	444	
	13870	° 892	95° 8	138° 6	- 5° 5	25	106	263 f		13870	° 123	160° 6	140° 5	- 6° 7	17	105	
May 31			(- 15° 7)	(201° 4)	(- 0° 6)	(76)	(310)	(934)		13871	° 825	74° 7	88° 4	+ 12° 5	51	379	299 c
											° 920	59° 8				204	
151° 573 G		° 905	310° 8					53			° 963	94° 9				172	
	13864	° 812	265° 4	265° 1	+ 6° 5	0	18	185 c	June 5			(- 14° 1)	(142° 8)	(- 0° 1)	(171)	(987)	(836)
	13867	° 970	276° 8	169° 8	- 8° 6	4	11			13867	° 751	260° 0	173° 7	- 7° 4	0	7	152 c
	13868	° 364	113° 1	151° 2	- 17° 6	54	234			13868	° 496	232° 9	150° 1	- 17° 2	76	459	
	13869	° 663	116° 6	139° 4	- 17° 3	6	19	61 f		13870	° 286	245° 9	140° 9	- 6° 5	9	72	
	13870	° 791	111° 8	129° 4	- 5° 6	21	129	59 f		13871	° 622	69° 8	89° 1	+ 12° 4	31	406	
		° 933	109° 0					156			° 884	96° 3				200	
		° 937	84° 8					65			° 969	63° 7				177	
June 1		° 940	95° 8	(189° 5)	(- 0° 5)	(85)	(411)	(941)	June 6			(- 13° 5)	(125° 7)	(+ 0° 1)	(116)	(944)	(529)
			(- 15° 4)														
152° 542 C		° 843	270° 3					388			° 790	285° 8					108
	13868	° 512	124° 6	150° 6	- 17° 2	32	183			13867	° 873	260° 1	173° 8	- 8° 5	0	7	554 c
	13870	° 607	99° 0	139° 8	- 5° 8	20	101		157° 310 G	13868	° 651	242° 6	150° 7	- 17° 2	72	292	
	13869	° 654	116° 5	139° 1	- 17° 2	3	13			13870	° 475	255° 6	141° 1	- 6° 6	14	73	
		° 895	104° 7					111		13871	° 461	62° 0	89° 1	+ 12° 7	68	320	
		° 927	113° 5					161			° 879	106° 2				190	
June 2		° 964	82° 4	(176° 7)	(- 0° 4)	(55)	(297)	(899)			° 928	62° 0				579	
			(- 15° 0)								° 950	100° 2				235	
									June 7			(- 13° 2)	(113° 6)	(+ 0° 2)	(154)	(692)	(1666)
153° 394 C		° 936	270° 0					522			° 945	292° 0					172
	13867	° 826	264° 3	169° 0	- 9° 9	4	16	215		13867	° 927	281° 7				242	
	13868	° 179	200° 4	149° 9	- 17° 0	40	260		156° 411 G	13868	° 894	303° 3				152	
	13870	° 386	138° 3	140° 2	- 6° 1	20	109			13870	° 963	261° 2	173° 0	- 8° 4	9	20	230 c
	13871	° 437	103° 6	86° 6	+ 12° 2	48	247	195 c		13871	° 808	248° 7	150° 7	- 16° 9	43	213	256 c
		° 983	76° 5					173		13870	° 676	259° 6	140° 9	- 6° 8	17	71	
		° 889	83° 4					192		13871	° 292	37° 9	88° 4	+ 12° 5	115	490	
June 3		° 939	78° 3	(165° 4)	(- 0° 3)	(112)	(632)	(1297)		13872	° 385	71° 6	77° 5	+ 7° 2	18	43	
			(- 14° 7)							13873	° 809	101° 3	45° 8	- 8° 9	19	73	151 c
154° 449 G		° 939	276° 7					181			° 893	53° 6				252	
		° 937	263° 0					388			° 942	63° 4				506	
		° 891	298° 6					112				(- 12° 7)	(99° 0)	(+ 0° 3)	(221)	(910)	(1961)
		° 792	321° 1					84	June 8								

Group 13868. May 30 - June 10. At first a regular spot, on June 2 other spots begin to appear, increasing in number to form a compact cluster which is dying out as it passes round the west limb.

Group 13869. May 30 - June 2. A small spot.

Group 13870. May 30 - June 11. A slowly decreasing regular spot with a trend in latitude away from the equator.

Group 13871. June 3 - 15. At first a single complex spot. By rapid changes involving the partial disintegration of the original spot, the group is transformed into a stream with complex, unstable components at the head and tail. A double string of spotlets connects the two on June 8. The group, which collapses after June 11, is classified by Mount Wilson as γ according to the magnetic polarities of the component spots.

Group 13872. June 8 - 12. A pair of small spots.

Group 13873. June 8 - 16. A small stream of normal type. The leader alone is left on June 16.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.																	
U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
159° 691 W	13868	° 838	250° 3					243	13871	° 817	287° 0	87° 1	+14° 3	82	352	381 c	
	13874	° 942	251° 6	151° 1	-17° 2	42	167	764 c	13875	° 643	291° 0	71° 7	+14° 0	3	10		
	13870	° 892	277° 2	144° 8	+ 6° 6	21	73	412 c	13873	° 282	230° 4	46° 3	- 9° 4	51	193		
	13871	° 866	261° 5	141° 4	- 7° 1	11	42	495 c	13876	° 300	74° 2	16° 8	+ 5° 5	81	326		
	13872	° 256	334° 3	88° 5	+13° 7	99	463			° 860	111° 5					223	
	13875	° 135	30° 2	78° 1	+ 7° 1	0	14			° 867	100° 6					207	
	13873	° 319	48° 7	67° 8	+12° 5	4	15			° 930	120° 8					155	
	13876	° 616	105° 1	45° 1	- 8° 9	22	71			° 935	85° 5					224	
June 9	13876	° 944	83° 3	11° 6	+ 6° 4	41	160	586 c	June 13	° 960	70° 2					162	
			(-12° 2)	(82° 0)	(+ 0° 4)	(240)	(1005)	(2500)			(-10° 7)	(33° 6)	(+ 0° 9)	(217)	(881)	(2092)	
160° 431 C	13868	° 985	252° 6	151° 4	-17° 0	7	65	473 c	164° 394 C	° 959	274° 2					136	
	13874	° 957	277° 3	145° 0	+ 7° 1	14	65	264 c		° 848	277° 0					157	
	13870	° 936	262° 7	141° 2	- 6° 7	6	25	449 c	13871	° 923	285° 0	86° 4	+14° 2	47	277	484 c	
	13871	° 346	312° 1	87° 5	+13° 8	107	717		13873	° 521	250° 2	49° 4	- 9° 3	17	119		
	13872	° 160	320° 5	78° 1	+ 7° 6	3	15		13876	° 080	23° 6	18° 0	+ 5° 2	68	370		
	13875	° 216	15° 5	68° 8	+12° 5	5	15			° 983	83° 2					130	
	13873	° 457	111° 7	46° 8	- 9° 2	17	79		June 14		(-10° 2)	(19° 8)	(+ 1° 0)	(132)	(766)	(907)	
June 10	13876	° 866	83° 3	12° 6	+ 6° 0	46	295	228 c									
			(-11° 9)	(72° 2)	(+ 0° 5)	(205)	(1276)	(1414)									
161° 308 G	° 981	276° 9						144	165° 489 G	° 953	275° 4					187	
	° 970	252° 4						139		° 917	287° 9					342	
	° 922	270° 1						118		° 912	264° 9					167	
	13870	° 982	262° 7	139° 3	- 7° 1	0	18	264 p	13871	° 981	282° 8	83° 9	+12° 8	13	45	232 c	
	13871	° 499	297° 9	87° 5	+14° 0	124	670		13873	° 734	256° 6	51° 4	- 9° 0	18	84	179 c	
	13872	° 318	291° 9	77° 8	+ 7° 4	1	8		13876	° 254	285° 3	19° 5	+ 4° 9	78	313		
	13875	° 266	325° 1	69° 6	+13° 1	5	9			° 916	102° 3					128	
	13873	° 281	125° 3	47° 2	- 8° 7	39	135			° 917	68° 4					143	
	13876	° 738	82° 7	13° 4	+ 5° 8	67	369		June 15	° 930	83° 2					202	
	° 905	62° 5						132			(- 9° 8)	(5° 3)	(+ 1° 1)	(109)	(442)	(1580)	
June 11	° 956	99° 1						385									
		(-11° 5)	(60° 6)	(+ 0° 6)	(236)	(1209)	(1182)		166° 352 G	° 956	284° 6					193	
162° 367 G	° 953	260° 6						170		° 890	299° 4					175	
	° 854	281° 5						109	13873	° 789	302° 3					93	
	13871	° 673	290° 6	87° 0	+14° 2	85	389		13876	° 885	259° 0	55° 3	- 9° 1	13	40	251 f	
	13872	° 555	282° 2	79° 6	+ 7° 4	1	7			° 465	278° 0	21° 3	+ 4° 8	54	322		
	13875	° 461	299° 4	70° 9	+13° 7	3	13			° 819	103° 2					200	
	13873	° 175	190° 1	48° 4	- 9° 0	59	199			° 833	82° 9					228	
	13876	° 520	80° 4	15° 7	+ 5° 6	78	319		June 16	° 938	106° 3					246	
	° 813	100° 5						196			(- 9° 4)	(353° 9)	(+ 1° 2)	(67)	(362)	(1386)	
June 12	° 914	101° 5						309	167° 337 G	° 897	298° 9					116	
	° 940	111° 7						200		° 755	260° 1	29° 1	- 6° 5	5	12	148 f	
		(-11° 1)	(46° 6)	(+ 0° 8)	(226)	(927)	(984)		1174a	° 658	275° 2	21° 7	+ 4° 4	50	358		
163° 349 G	° 957	283° 0						274	13876	° 277	181° 7	341° 3	-14° 7	3	7		
	° 952	246° 6						167		° 839	105° 4					126	
	° 940	300° 2						183		° 904	95° 1					133	
	° 896	263° 8						116	June 17	° 951	82° 4					258	
											(- 9° 0)	(340° 8)	(+ 1° 4)	(58)	(377)	(781)	

Group 13874. June 9 - 10. A cluster of small spots.

Group 13875. June 9 - 13. A small spot.

Group 13876. June 9 - 20. A stream of normal type. The leader a regular spot alone remains by June 18.

Group 13877. June 17 - 22. A few unstable spots in a stream.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA *			
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae	
1941			°	°	°				1941			°	°	°				
168° 320		° 955	280° 7					209	172° 359		° 925	270° 6					239	
G		° 953	295° 0					170	G	13877	° 931	253° 7	341° 4	-14° 4	16	57	756 c	
		° 939	306° 2					282		13879	° 468	283° 3	301° 5	+ 7° 8	20	84		
		° 839	283° 5					167		13880	° 724	79° 7	228° 4	+ 8° 7	12	37	129 f	
	13878	° 812	274° 4	21° 9	+ 4° 4	53	280	100 c			° 941	99° 3					201	
	13878	° 789	98° 8	276° 2	- 4° 4	23	79	123 c			° 946	72° 6					261	
		° 878	82° 8					287	June 22		(- 6° 8)	(274° 3)	(+ 1° 9)	(48)	(178)	(1586)		
		° 913	104° 1					111										
		° 969	88° 6					183										
June 18		(- 8° 5)	(327° 8)	(+ 1° 5)		(76)	(359)	(1632)	173° 377		° 953	254° 3					187	
									G	13879	° 672	279° 8	302° 7	+ 8° 1	14	84		
										13880	° 522	76° 2	230° 2	+ 8° 9	10	34		
169° 341		° 875	285° 4					142		13881	° 762	71° 3	212° 6	+15° 5	21	69	75 f	
G		° 871	254° 6					152		13882	° 961	97° 0	187° 5	- 6° 1	50	309	262 c	
	13878	° 928	274° 2	22° 2	+ 4° 5	49	269	379 f			° 922	108° 6					118	
	13877	° 499	233° 7	338° 9	-15° 7	1	5		June 23		(- 6° 3)	(260° 9)	(+ 2° 1)	(95)	(496)	(642)		
	13878	° 613	99° 0	277° 1	- 4° 2	21	68											
	1174b	° 910	90° 2	249° 0	+ 0° 5	2	14	229 c										
		° 962	98° 8					290	174° 375		° 948	282° 4					178	
June 19		(- 8° 1)	(314° 3)	(+ 1° 6)		(73)	(356)	(1192)	G		° 943	253° 2					154	
										13879	° 841	278° 4	304° 7	+ 8° 2	5	19	162 c	
170° 339		° 940	266° 9					267		13880	° 341	67° 6	229° 1	+ 9° 5	24	86		
G		° 827	258° 8					304		13881	° 606	67° 4	212° 4	+15° 2	69	339	362 c	
	13878	° 989	274° 6	22° 4	+ 4° 8	52	285	581 f		13882	° 875	98° 2	187° 4	- 6° 0	73	270		
	13877	° 674	246° 7	340° 6	-14° 1	28	121				° 902	73° 5					132	
	13879	° 108	3° 5	300° 7	+ 7° 8	4	12		June 24		° 947	91° 1	(- 5° 9)	(247° 7)	(+ 2° 2)	(171)	(714)	(1111)
	13878	° 415	103° 9	277° 4	- 4° 1	12	48											
		° 784	90° 5					110										
		° 901	88° 2					288	175° 374		° 929	265° 7					155	
		° 912	99° 2					612	G		° 915	255° 3					228	
June 20		° 960	79° 2	(- 7° 7)	(301° 1)	(+ 1° 7)	(96)	(466)	(2364)		° 802	248° 7					115	
										13879	° 915	277° 0	300° 4	+ 7° 3	0	22	218 c	
171° 378		° 960	269° 7					202		13880	° 124	30° 7	230° 7	+ 8° 4	28	115		
G		° 924	256° 1					222		13881	° 411	57° 6	213° 4	+14° 8	117	579		
		° 917	281° 7					200		13882	° 744	100° 2	187° 2	- 6° 0	45	198	126 c	
		° 858	269° 2					223		13883	° 987	84° 5	153° 8	+ 5° 8	0	15	195 f	
	13877	° 827	251° 1	341° 0	-14° 4	38	165	121 c	June 25		° 929	73° 1					232	
	13879	° 263	293° 0	301° 4	+ 7° 6	14	66				° 980	94° 6	(- 5° 4)	(234° 4)	(+ 2° 3)	(190)	(929)	(1468)
	13878	° 204	121° 1	277° 3	- 4° 2	4	17											
	13880	° 878	80° 7	226° 5	+ 9° 0	24	52	104 c	176° 442		° 970	278° 5					281	
		° 773	98° 8					161	G		° 847	262° 2					151	
		° 909	97° 7					274			° 821	278° 7					101	
June 21		° 958	75° 2	(- 7° 2)	(287° 3)	(+ 1° 8)	(80)	(300)	(1626)	13880	° 229	296° 3	232° 2	+ 8° 2	57	246		
										13881	° 245	28° 1	213° 5	+14° 8	100	526		

Group 13878. June 18 - 21. A small short-lived stream.

Group 13879. June 20 - 25. Another small short-lived stream.

Group 13880. June 21 - July 1. A stream of small changing spots increasing in size rather slowly to a more stable condition by June 26.

Group 13881. June 23 - July 3. A stream of rapid development from tiny spots on June 23. The follower, complex in structure, becomes temporarily larger than the leader, but begins to break up on June 29. The decline of the leader, of more regular structure, is slower, but the spot does not last to the next rotation.

Group 13882. June 23 - 30. A stream in decline.

Group 13883. June 25 - 27. One small spot.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
	13882	•568	104°7	186°9	- 6°3	32	143		180°410		•874	259°9					118
	13883	•911	84°7	154°8	+ 5°8	2	11	467 f	G	13880	•915	277°2	233°9	+ 7°8	43	207	135 c
	13884	•952	95°7	148°7	- 4°6	3	19	298 c		13881	•761	287°4	216°4	+15°1	87	358	82 c
June 26		•934	111°2					319		13882	•370	238°4	186°3	- 8°4	4	24	
		(- 4°9)		(220°3)	(+ 2°4)	(194)	(947)	(1617)		13887	•169	166°7	165°6	- 6°5	11	49	
										13885	•657	86°3	126°8	+ 4°6	80	346	96 f
177°310		•929	264°2					310		13886	•730	74°2	121°7	+13°5	121	592	89 f
G	13880	•409	284°1	232°3	+ 8°0	65	262				•856	113°5					88
	13881	•231	337°8	214°0	+14°8	87	471		June 30		•969	75°9					161
	13882	•403	112°3	186°9	- 6°4	25	82				(- 3°1)		(167°8)	(+ 2°9)	(346)	(1576)	(769)
	13884	•818	96°3	154°6	- 3°7	4	10	183 c									
	13883	•845	86°0	151°3	+ 4°7	2	8	578 n									
	13885	•985	84°5	128°8	+ 5°9	14	34	266 p	181°373		•956	260°7					272
	13886	•992	76°4	126°0	+13°8	27	141	119 np	G	13880	•985	277°7	235°2	+ 8°1	25	118	416 f
		•875	114°5					214		13881	•896	285°4	216°2	+15°1	82	347	445 c
		•925	104°5					151		13887	•250	230°9	166°2	- 6°1	15	60	
June 27		•947	93°5					160		13888	•112	201°1	157°3	- 3°0	4	18	
		(- 4°5)		(208°8)	(+ 2°5)	(224)	(1008)	(1981)		13886	•469	85°8	127°1	+ 4°6	61	327	
										13886	•563	70°5	122°1	+13°3	89	451	
178°306		•938	279°4					265		13889	•902	77°3	90°8	+12°8	0	8	335 c
G		•823	253°4					102	July 1		•895	83°8					384
		•811	266°2					128			(- 2°7)		(155°0)	(+ 3°0)	(276)	(1329)	(1852)
	13880	•612	279°0	233°0	+ 7°5	36	175										
	13881	•375	305°3	214°0	+15°0	94	365		182°349		•974	264°7					176
	13882	•216	136°4	187°0	- 6°4	11	43		G		•954	285°6					758
	13887	•587	105°3	161°0	- 6°7	15	63			13881	•967	285°2	217°4	+15°5	80	434	
	13885	•931	85°6	127°1	+ 5°0	69	303	314 c		13887	•487	252°2	169°8	- 5°8	7	13	
	13886	•957	76°8	122°6	+13°4	102	411	732 c		13888	•343	246°4	160°4	- 4°9	10	56	
		•789	82°4					187		13890	•285	317°6	153°5	+15°1	6	15	
		•791	121°9					206		13885	•253	83°3	127°6	+ 4°6	45	282	
		•843	101°3					128		13886	•364	63°1	121°6	+12°9	72	446	
June 28		•952	100°3					409		13889	•804	74°1	89°3	+14°5	2	10	271 c
		(- 4°1)		(195°6)	(+ 2°6)	(327)	(1360)	(2471)			•855	83°9					133
									July 2		•899	99°8					131
179°278		•959	271°8					301			(- 2°2)		(142°1)	(+ 3°1)	(222)	(1256)	(1469)
G		•924	252°8					179									
		•891	264°9					126									
		•789	256°7					374	183°355		•868	261°6					346
	13880	•772	277°9	233°1	+ 7°8	43	208	90 c	G	13881	•995	283°8	213°4	+14°1	10	34	339 c
	13881	•563	293°3	215°0	+15°1	108	447			13891	•934	277°8	197°8	+ 8°4	26	103	211 c
	13882	•193	208°7	188°1	- 7°0	4	15			13887	•684	260°5	171°2	- 4°1	3	11	
	13887	•405	110°2	160°5	- 5°6	30	128			13890	•469	296°8	154°4	+15°0	5	24	
	13885	•835	85°7	126°3	+ 5°0	71	377			13885	•030	33°0	127°9	+ 4°6	52	246	
	13886	•872	75°9	122°6	+13°6	112	500	349 c		13886	•207	33°7	122°1	+13°1	70	359	
June 29		•619	86°3					121	July 3	13892	•935	97°1	60°3	- 5°5	7	19	422 f
		(- 3°6)		(182°8)	(+ 2°7)	(368)	(1675)	(1540)			(- 1°8)		(128°8)	(+ 3°2)	(173)	(796)	(1316)

Group 13884. June 26 - 27. One or two tiny spots that revive on July 1 as Group 13888.

Group 13885. June 27 - July 9. A regular spot with several companions until July 3. The magnetic polarities are irregular (P.A.S.P. 53, 259, 1941).

Group 13886. June 27 - July 10. Two spots nearly regular in outline. The leader slowly dies out by July 7; the follower remains fairly stable until July 6; then changes begin to occur, not only in the spot itself, but in the formation of penumbral filaments and spot nuclei nearby, and the group has risen considerably in area as it passes out of sight at the west limb. On July 8, an extensive solar flare was recorded at 15^h 41^m to 16^h 08^m at the Mount Wilson Observatory (P.A.S.P. 53, Plate XXIII, 1941). An earlier major flare on July 3, lasting from 15^h 09^m to 20^h 40^m U.T., was probably intimately related to the cause of the "great" geomagnetic storm of July 4-5.

Group 13887. June 28 - July 3. Variable spots in a small stream.

Group 13888. July 1 - 2. Small ephemeral spots.

Group 13889. July 1 - 5. Return or revival of Group 13871. A small spot not seen on July 3.

Group 13890. July 2 - 3. A pair of tiny spots.

Group 13891. July 3 - 4. Small spots in a cluster forming near the west limb.

Group 13892. July 3 - 10. A variable stream of tiny spots.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.																	
U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941		°		°	°				1941		°		°				
184° 384		° 957	261° 0					629		13892	° 165	164° 4	60° 1	- 5° 4	8	37	
G		° 809	259° 6					294		13893	° 591	89° 1	26° 5	+ 3° 5	14	74	
	13891	° 982	280° 4	194° 4	+ 10° 8	18	65	300 c			° 858	105° 3					157
	13885	° 211	274° 3	127° 3	+ 4° 1	48	198				° 940	93° 4					302
	13886	° 210	324° 8	122° 3	+ 13° 1	72	372				° 958	104° 7					318
	1174c	° 186	168° 7	113° 1	- 7° 1	4	12				° 960	77° 9					245
	13889	° 443	66° 4	90° 7	+ 13° 2	3	13		July 8		(+ 0° 5)		(62° 6) (+ 3° 7)	(158)	(853)	(1958)	
	13892	° 830	98° 9	60° 0	- 5° 5	14	58	170 c									
		° 950	103° 6					547									
July 4		(- 1° 3)		(115° 2) (+ 3° 3)		(159)	(718)	(1940)		189° 384							
									G		° 964	260° 2					170
											° 895	256° 3					102
										13885	° 985	272° 0	128° 9	+ 2° 6	39	183	364 c
185° 333		° 899	261° 9					391		13886	° 954	282° 1	121° 6	+ 12° 7	138	981	651 c
G		° 831	244° 7					165		13894	° 442	293° 4	73° 6	+ 13° 5	7	18	
		° 771	280° 1					234		13892	° 260	227° 7	60° 1	- 6° 3	5	12	
		° 759	280° 5					79		13893	° 365	89° 8	26° 4	+ 3° 6	12	50	
	13885	° 426	271° 9	127° 8	+ 3° 9	29	164			13895	° 980	105° 9	332° 0	- 14° 8	30	130	582 c
	13886	° 367	297° 6	122° 0	+ 12° 9	66	348		July 9		(+ 1° 0)		(49° 0) (+ 3° 8)	(231)	(1374)	(2100)	
	13889	° 260	48° 0	91° 2	+ 13° 3	7	24										
	13892	° 691	101° 0	59° 9	- 5° 0	23	61										
	13893	° 972	87° 2	26° 3	+ 3° 5	19	73	332 c									
		° 850	105° 5					152		190° 361							
July 5		(- 0° 9)		(102° 6) (+ 3° 4)		(144)	(670)	(1353)	G		° 882	289° 6					146
											° 817	281° 6					199
186° 334		° 929	264° 5					248		13886	° 994	283° 3	120° 5	+ 13° 7	64	343	232 f
G		° 924	247° 9					387		13894	° 644	286° 7	75° 3	+ 13° 7	3	12	
		° 884	281° 2					342		13892	° 404	244° 7	57° 6	- 6° 3	5	28	
	13885	° 627	271° 6	128° 1	+ 3° 7	27	132			13893	° 172	93° 1	26° 2	+ 3° 3	8	34	
	13886	° 563	288° 7	122° 5	+ 13° 3	68	381			1174d	° 262	49° 0	24° 4	+ 13° 7	4	15	
	13894	° 249	64° 4	76° 3	+ 9° 6	4	19			13896	° 364	83° 4	14° 9	+ 6° 0	6	24	
	13892	° 491	106° 1	61° 3	- 4° 7	16	54			13895	° 916	108° 7	332° 2	- 15° 3	28	134	780 c
	13893	° 892	87° 8	26° 4	+ 3° 6	20	81	215 c	July 10		(+ 1° 4)		(36° 1) (+ 3° 9)	(118)	(590)	(1594)	
		° 959	78° 3					202									
July 6		(- 0° 4)		(89° 4) (+ 3° 5)		(135)	(667)	(1394)		191° 350							
									G		° 911	283° 5					277
187° 342		° 962	279° 9					457		13893	° 883	275° 5					110
G		° 945	244° 3					226		13896	° 057	257° 5	26° 2	+ 3° 3	4	16	
		° 935	259° 1					417		13895	° 178	77° 0	13° 0	+ 6° 3	5	11	
	13885	° 789	271° 9	128° 0	+ 3° 7	28	156	72 p		13896	° 814	111° 5	331° 6	- 14° 8	40	136	247 c
	13886	° 723	284° 7	121° 7	+ 13° 1	73	426	176 c			° 904	108° 0					135
	13894	° 126	4° 9	75° 4	+ 10° 8	0	1		July 11		(+ 1° 8)		(23° 0) (+ 4° 0)	(49)	(162)	(1046)	
	13892	° 316	119° 1	60° 0	- 5° 3	11	41										
	13893	° 763	88° 5	26° 4	+ 3° 5	16	75	203 c		192° 358							
		° 893	81° 7					204	G		° 967	281° 0					290
		° 940	89° 6					202			° 938	262° 6					330
July 7		(0° 0)		(76° 0) (+ 3° 6)		(128)	(699)	(2221)			° 863	283° 3					90
											° 811	261° 5					147
188° 355		° 822	260° 7					101		13893	° 285	267° 9	26° 1	+ 3° 4	4	17	
G	13885	° 912	272° 3	128° 3	+ 3° 6	28	134	251 c		13896	° 080	300° 5	13° 6	+ 6° 4	4	21	
	13886	° 855	283° 3	121° 1	+ 13° 3	108	608	584 c	July 12		° 673	117° 2	331° 5	- 14° 7	23	89	
											° 906	86° 6					136
											(+ 2° 3)		(9° 6) (+ 4° 1)	(31)	(127)	(993)	

Group 13893. July 5 - 13. Return of Group 13876. A small regular spot slowly dying out.
 Group 13894. July 6 - 10. A small spot on each day except July 8.
 Group 13895. July 9 - 15. A small cluster of variable spots.
 Group 13896. July 10 - 12. Tiny ephemeral spots in a stream.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
193° 323		° 946	281° 9					322	13900	° 878	31° 0	226° 8	+10° 2		2	9	140 f
C		° 907	264° 2					263		° 831	102° 6						149
		° 865	251° 3					133		° 942	73° 4						328
	13893	° 488	266° 7	26° 0	+ 3° 0	2	10			° 946	100° 2						170
July 13	13895	° 531	127° 4	331° 1	-15° 0	15	73		July 18		(+ 5° 0)	(268° 3)	(+ 4° 7)	(172)	(774)	(1647)	
			(+ 2° 7)	(358° 9)	(+ 4° 2)	(17)	(83)	(718)									
194° 359		° 974	263° 8					226	199° 348		° 948	253° 9					428
G		° 964	253° 1					215	G	13901	° 782	285° 0	328° 2	+14° 7	28	117	94 c
		° 892	254° 9					153		13897	° 770	246° 2	323° 7	-14° 8	96	477	283 c
	13895	° 374	147° 1	331° 2	-14° 0	9	22			13898	° 628	83° 6	236° 2	+ 7° 8	10	62	
		° 881	110° 6					170		13899	° 728	72° 1	231° 1	+16° 3	18	85	89 f
July 14		° 925	100° 0					300			° 877	72° 4					403
			(+ 3° 2)	(343° 2)	(+ 4° 3)	(9)	(22)	(1064)	July 19		° 963	81° 0	(277° 1)	(+ 4° 8)	(152)	(741)	(1581)
											(+ 5° 4)						
195° 319		° 967	257° 9					178	200° 356	13901	° 903	283° 8	328° 5	+14° 5	22	76	178 c
G		° 853	269° 7					132	G	13897	° 898	250° 9	324° 9	-14° 7	79	428	656 c
		° 819	280° 1					201		13898	° 439	82° 6	237° 9	+ 7° 7	14	80	
	1175a	° 431	251° 3	354° 4	- 4° 0	1	13			13899	° 561	68° 2	231° 1	+16° 1	25	118	
July 15	13895	° 323	184° 7	332° 0	-14° 3	4	13			13900	° 649	79° 9	223° 5	+10° 3	12	39	
			(+ 3° 6)	(330° 4)	(+ 4° 4)	(5)	(26)	(511)		13902	° 978	99° 0	187° 0	- 7° 7	21	110	168 c
									July 20		° 887	81° 0	(263° 8)	(+ 4° 9)	(173)	(851)	(1212)
											(+ 5° 8)						
196° 316		° 957	273° 6					371	201° 384		° 930	264° 7					186
G		° 873	278° 9					305	G	13901	° 976	284° 1	328° 2	+14° 8	4	42	417 f
	13897	° 327	195° 9	322° 6	-13° 8	1	3			13897	° 975	253° 8	325° 4	-14° 5	70	325	463 c
	13898	° 981	82° 8	236° 3	+ 7° 9	18	76	227 c		13898	° 213	76° 7	236° 2	+ 7° 7	11	52	
July 16		° 920	92° 4	(317° 3)	(+ 4° 5)	(19)	(79)	(1164)		13899	° 372	57° 7	231° 2	+16° 1	18	100	
			(+ 4° 1)							13900	° 461	76° 0	223° 2	+10° 8	22	82	
197° 392		° 956	277° 6					270		13902	° 910	101° 3	186° 1	- 8° 1	36	156	621 c
G		° 828	252° 8					205		13903	° 966	79° 2	174° 8	+11° 7	12	44	519 c
	13897	° 471	225° 6	323° 3	-14° 8	16	78			13904	° 983	95° 0	171° 5	- 4° 0	5	19	238 c
	13898	° 904	83° 4	236° 2	+ 7° 9	16	107	143 c			° 787	79° 8	(250° 2)	(+ 5° 0)	(178)	(820)	(2630)
	13899	° 948	74° 8	231° 3	+15° 8	25	153	386 c	July 21		(+ 6° 3)						
	13900	° 973	80° 4	226° 0	+10° 4	4	15										
July 17		° 939	101° 2	(303° 0)	(+ 4° 6)	(61)	(353)	(1468)	202° 361	13897	° 997	254° 4	321° 0	-15° 1	12	110	
			(+ 4° 5)						G	13898	° 048	335° 6	236° 4	+ 7° 5	8	37	
198° 506		° 938	253° 9					192		13899	° 215	28° 0	231° 3	+15° 8	17	94	
C		° 872	251° 2					236		13900	° 247	66° 6	224° 0	+10° 4	13	50	
		° 797	240° 3					220		13902	° 796	104° 0	186° 3	- 7° 9	32	132	209 c
	13901	° 672	286° 8	329° 8	+14° 7	30	107			13903	° 885	78° 8	174° 9	+12° 2	31	141	408 c
	13897	° 651	240° 3	324° 0	-15° 0	101	483			13904	° 915	97° 1	171° 9	- 4° 4	46	206	635 c
	13898	° 766	83° 8	236° 3	+ 7° 8	14	72	78 f			° 969	80° 8					183
	13899	° 842	73° 8	231° 2	+16° 1	25	103	134 f	July 22		(+ 6° 7)	(237° 3)	(+ 5° 0)	(159)	(770)	(1435)	

- Group 13897. July 16 - 22. A stream of normal type growing rapidly from a tiny spot on July 16.
- Group 13898. July 16 - 27. Return of Group 13880. A small regular spot slowly dying out. The spot on July 26-27 represents a feeble revival of activity a few degrees away.
- Group 13899. July 17 - 27. A slowly declining regular spot not recorded on July 26.
- Group 13900. July 17 - 24. A group of feeble activity.
- Group 13901. July 18 - 21. A small stream forming suddenly near the west limb and declining as abruptly.
- Group 13902. July 20 - 28. A revival in the place of Group 13882. A small regular spot by itself until July 24, then small companions appear making a cluster which, however, soon disappears.
- Group 13903. July 21 - Aug. 2. A small stream diminishing until July 26. Thereafter there is a fuller development of the follower spot which becomes more regular in structure.
- Group 13904. July 21 - Aug. 2. A large stream in development. The leader at first is complex, showing considerable changes until July 24 when it assumes a more regular outline. Meanwhile the follower is growing into a complex spot larger than the leader.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
203° 337 G	13898	• 247	280° 4	238° 5	+ 7° 5	5	24		208° 362 G		• 957	258° 7					255
	13899	• 224	328° 3	231° 4	+16° 0	19	83				• 929	282° 6					555
	13900	• 097	343° 3	226° 0	+10° 4	4	20				• 886	264° 7					148
	13902	• 644	108° 8	186° 6	- 7° 9	25	125				• 815	286° 4					198
	13903	• 778	77° 9	173° 4	+12° 6	43	181	239 c	13902		• 549	246° 3	188° 3	- 8° 0	14	64	
	13904	• 796	98° 7	172° 5	- 3° 8	137	639	423 c	13904		• 310	240° 1	173° 5	- 3° 6	147	1144	
		• 926	82° 1					452	13903		• 292	302° 4	172° 6	+14° 3	36	183	
		• 939	114° 1					248	13907		• 248	215° 4	166° 2	- 6° 1	22	62	
July 23		(+ 7° 1)		(224° 4)	(+ 5° 1)	(233)	(1072)	(1362)	13905		• 449	91° 1	131° 3	+ 4° 4	19	106	
									13906		• 589	76° 4	122° 2	+12° 4	89	707	
204° 360 G	13898	• 464	276° 8	238° 4	+ 7° 7	3	14		13908		• 995	95° 1	74° 4	- 4° 5	42	134	176 c
	13899	• 391	299° 5	231° 4	+15° 9	17	78				• 924	78° 7					178
	13900	• 283	287° 7	226° 6	+ 9° 9	1	7		July 28		(+ 9° 2)		(157° 9)	(+ 5° 5)	(369)	(2380)	(1510)
	13902	• 454	116° 7	187° 2	- 7° 8	21	115										
	13904	• 617	102° 5	173° 6	- 3° 5	135	774		209° 804 W		• 957	286° 6					391
	13903	• 625	75° 7	172° 5	+12° 9	29	101				• 889	277° 2					270
	13905	• 984	87° 1	131° 0	+ 3° 8	19	101	673 n			• 804	254° 6					408
	13906	• 997	76° 7	124° 4	+13° 6	12	98	310 np			• 738	248° 1					90
July 24		• 886	76° 6					180	13904		• 599	256° 2	174° 3	- 3° 7	203	973	
		(+ 7° 6)		(210° 8)	(+ 5° 2)	(237)	(1288)	(1143)	13903		• 565	286° 6	172° 6	+13° 9	39	154	
205° 296 G	13898	• 644	276° 1	238° 5	+ 8° 0	1	6		13907		• 495	247° 0	166° 0	- 6° 1	13	42	
	13899	• 561	291° 2	231° 3	+16° 1	19	59		13905		• 127	97° 6	131° 6	+ 4° 6	17	69	
	13902	• 297	141° 1	187° 6	- 8° 1	34	148		13906		• 310	67° 7	121° 8	+12° 1	96	526	
	13904	• 437	108° 6	174° 0	- 3° 2	134	860		13908		• 916	97° 6	73° 4	- 4° 6	75	332	799 c
	13903	• 447	72° 1	172° 7	+12° 7	22	82				• 913	83° 0					409
	13905	• 923	87° 8	131° 0	+ 4° 1	27	107	402 c	July 29		(+ 9° 8)		(138° 8)	(+ 5° 6)	(443)	(2096)	(2367)
	13906	• 987	77° 6	122° 6	+13° 3	112	564	891 c									
July 25		(+ 8° 0)		(198° 4)	(+ 5° 3)	(349)	(1826)	(1293)	210° 323 G		• 967	285° 9					220
											• 938	276° 1					196
206° 679 W		• 838	257° 2					177			• 860	258° 6					244
	1175b	• 916	268° 6	246° 3	+ 0° 9	2	15	225 c			• 817	249° 0					236
	13898	• 881	279° 3	242° 2	+10° 7	0	11		13904		• 691	258° 7	174° 6	- 3° 6	173	1116	
	13902	• 262	210° 6	187° 9	- 7° 7	16	42		13903		• 646	285° 3	171° 6	+14° 2	38	222	
	13904	• 196	141° 0	173° 1	- 3° 4	94	638		13907		• 580	251° 5	165° 4	- 5° 8	5	29	
	13903	• 193	39° 6	173° 0	+13° 8	7	63		13905		• 018	168° 3	131° 8	+ 4° 7	16	76	
	13905	• 752	89° 0	131° 5	+ 4° 3	20	87	182 c	13906		• 200	55° 5	122° 3	+12° 1	105	591	
	13906	• 844	78° 4	122° 5	+12° 7	94	511	348 c	13908		• 842	99° 4	75° 8	- 4° 7	65	310	589 c
July 26		(+ 8° 5)		(180° 2)	(+ 5° 4)	(233)	(1367)	(932)			• 841	85° 2					190
											• 928	79° 6					195
207° 406 G		• 928	259° 2					367	July 30		(+10° 0)		(132° 0)	(+ 5° 7)	(402)	(2344)	(1870)
	13898	• 938	277° 0	240° 5	+ 8° 5	0	10	251 c									
	13899	• 871	284° 8	231° 2	+15° 5	2	5	173 f	211° 433 G		• 866	262° 1	176° 4	- 3° 8	219	1156	694 c
	13902	• 369	233° 0	187° 7	- 7° 5	21	90				• 801	264° 0	170° 5	+14° 7	52	222	211 c
	13903	• 158	344° 8	172° 9	+14° 2	32	164		13905		• 260	266° 5	132° 3	+ 4° 7	17	82	
	13904	• 154	194° 5	172° 7	- 3° 0	181	1128		13906		• 137	322° 3	122° 2	+11° 9	92	507	
	13907	• 208	160° 2	166° 5	- 5° 7	20	72		13908		• 650	104° 5	78° 3	- 4° 8	49	175	
	13905	• 635	89° 8	131° 1	+ 4° 4	18	100		13909		• 970	81° 0	40° 9	+10° 1	45	248	135 c
	13906	• 748	78° 1	122° 1	+12° 5	105	818	423 f	July 31		(+10° 5)		(117° 3)	(+ 5° 8)	(474)	(2390)	(1040)
July 27		(+ 8° 8)		(170° 5)	(+ 5° 5)	(379)	(2367)	(1214)									

Group 13905. July 24 - Aug. 3. Return of Group 13885. A small regular spot slowly shrinking to a dot when last seen.

Group 13906. July 24 - Aug. 6. Return of Group 13886. A large principal spot with a few unstable companions.

Group 13907. July 27 - 30. A dwarf group in the wake of Group 13904.

Group 13908. July 28 - Aug. 6. A stream already in decay when first seen. The leader, a complex spot is the largest component and alone remains by July 31, but does not survive for long.

Group 13909. July 31 - Aug. 12. A big spot of nearly regular outline, with a few companions. On August 6, it begins to divide into two portions, each becoming a regular spot before the group passes out of sight round the west limb.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
212° 386 G	13904	° 839	275° 1					104	13912	° 785	111° 4		3° 4	-12° 6	57	318	329 f
	13903	° 958	264° 0	177° 2	- 4° 1	114	933	916 f	13915	° 859	87° 5		352° 4	+ 5° 3	7	20	122 c
	13903	° 911	283° 0	170° 8	+14° 2	30	183	568 c		° 970	78° 4						230
	13910	° 577	292° 7	138° 5	+17° 7	3	10			° 977	98° 4						290
	13905	° 468	268° 7	132° 6	+ 4° 5	14	63			° 979	108° 0						247
	13906	° 319	291° 6	122° 3	+12° 2	75	507		Aug. 5		(+12° 4)		(51° 7)	(+ 6° 1)	(265)	(1554)	(2120)
	13908	° 468	112° 5	79° 2	- 5° 0	23	164										
	1175c	° 812	111° 2	53° 8	-13° 4	0	4	98 c									
Aug. 1	13909	° 893	81° 4	41° 1	+10° 3	87	488	685 c	217° 350 G	13908	° 990	280° 0	121° 6	+11° 5	48	298	386 c
			(+10° 9)	(104° 7)	(+ 5° 8)	(346)	(2352)	(2371)		13913	° 710	255° 9	82° 6	- 5° 5	4	6	
										13914	° 540	274° 1	71° 8	+ 7° 4	8	29	
213° 097 K		° 912	275° 0					128		13908	° 531	253° 7	69° 6	- 3° 2	1	8	
	13904	° 981	265° 2	173° 5	- 3° 6	72	446	634 c		13909	° 077	323° 4	41° 7	+ 9° 7	116	672	
	13903	° 958	283° 4	169° 4	+14° 5	14	72	336 c		13911	° 251	51° 4	27° 3	+15° 1	18	91	
	13905	° 613	269° 8	133° 1	+ 4° 5	5	30			13912	° 647	118° 1	3° 3	-12° 7	62	305	
	13906	° 457	285° 7	121° 9	+12° 4	81	590			13915	° 729	88° 3	352° 1	+ 5° 5	8	30	
	13908	° 330	123° 9	79° 4	- 4° 9	21	136			1175e	° 894	105° 2	337° 9	-10° 6	2	10	78 c
	13909	° 803	81° 2	41° 7	+10° 6	85	565	129 c		13916	° 939	108° 7	332° 1	-15° 1	23	122	622 c
	1175d	° 882	78° 4	33° 1	+13° 0	2	8	245 c	Aug. 6	1175f	° 945	98° 9	329° 3	- 6° 3	0	3	302 c
		° 911	88° 9					198			° 917	78° 2					213
Aug. 2		° 952	76° 6					211			(+12° 8)		(39° 0)	(+ 6° 2)	(290)	(1574)	(1601)
			(+11° 2)	(95° 3)	(+ 5° 9)	(280)	(1847)	(2009)	218° 333 G		° 856	260° 6					330
214° 415 G	13910	° 878	286° 4	139° 4	+17° 2	7	11	71 c		13914	° 748	273° 6	74° 6	+ 6° 8	7	26	
	13905	° 827	271° 8	133° 6	+ 4° 9	4	10	192 c		13909	° 281	285° 8	41° 9	+10° 4	153	961	
	13906	° 691	281° 5	121° 5	+12° 3	71	428			13911	° 151	1° 5	25° 8	+14° 8	21	85	
	13908	° 188	198° 9	74° 3	- 4° 2	14	80			1175g	° 179	66° 2	16° 5	+10° 3	5	19	
	13909	° 568	80° 4	41° 8	+10° 5	106	621			13912	° 494	130° 2	3° 3	-12° 8	51	278	
	13911	° 789	75° 6	25° 7	+15° 1	22	88			13915	° 570	89° 5	351° 2	+ 5° 4	9	43	
Aug. 3	13912	° 972	104° 2	3° 4	-12° 2	56	286	382 c	Aug. 7	13916	° 849	113° 7	332° 1	-16° 3	20	69	667 f
			(+11° 7)	(77° 8)	(+ 6° 0)	(280)	(1524)	(645)			° 823	102° 4					100
											(+13° 2)		(26° 0)	(+ 6° 2)	(266)	(1481)	(1097)
215° 681 W		° 955	273° 7					732	219° 395 C		° 881	261° 0					844
		° 941	257° 4					172		13914	° 895	274° 1	75° 7	+ 6° 4	0	10	211 f
	13906	° 867	280° 9	121° 5	+12° 5	52	247	1026 c		13909	° 506	279° 6	42° 3	+10° 3	151	899	
	13913	° 400	242° 5	81° 9	- 4° 9	5	30			13911	° 299	301° 8	27° 2	+15° 1	6	28	
	13914	° 161	278° 9	70° 3	+ 7° 5	4	19			13912	° 360	155° 9	3° 4	-12° 9	58	312	
	13909	° 347	76° 1	41° 2	+10° 5	96	499			13915	° 373	91° 8	350° 1	+ 5° 2	9	43	
	13911	° 583	72° 2	26° 1	+15° 3	21	102			13916	° 716	119° 3	331° 7	-15° 7	9	57	618 f
	13912	° 870	107° 8	3° 4	-12° 2	45	257	1278 c	Aug. 8		° 939	109° 4					320
	13915	° 925	87° 1	351° 8	+ 4° 9	0	17	250 c			(+13° 6)		(12° 0)	(+ 6° 3)	(233)	(1349)	(1993)
Aug. 4		° 830	79° 4					121	220° 411 G		° 954	262° 6					300
			(+12° 2)	(61° 1)	(+ 6° 1)	(223)	(1171)	(3579)			° 953	275° 3					205
216° 392 G	13906	° 937	280° 7	121° 8	+12° 2	62	313	902 c		13909	° 691	278° 1	42° 4	+10° 2	157	810	
	13913	° 542	250° 1	82° 4	- 5° 4	5	35			13911	° 485	289° 5	26° 7	+15° 0	6	13	
	13908	° 393	244° 7	72° 5	- 3° 9	3	15			13912	° 341	194° 1	3° 5	-12° 8	57	307	
	13914	° 325	275° 4	70° 7	+ 7° 5	10	41			13915	° 134	99° 3	351° 0	+ 5° 1	10	24	
	13909	° 185	68° 6	41° 7	+ 9° 8	100	698			13916	° 567	130° 7	332° 2	-15° 9	11	38	
	13911	° 439	67° 7	26° 9	+15° 1	21	114		Aug. 9		° 832	112° 8					103
											(+14° 0)		(358° 6)	(+ 6° 4)	(241)	(1192)	(608)

Group 13910. Aug. 1 - 3. A pair of tiny spots not seen on August 2.

Group 13911. Aug. 3 - 12. A small stream of variable spots. Nothing is seen on August 10.

Group 13912. Aug. 3 - 14. A large stable regular spot showing a small drift in latitude from the equator. Its umbra is crossed by a bright "bridge" on August 11 and 12.

Group 13913. Aug. 4 - 6. A small, short-lived spot.

Group 13914. Aug. 4 - 8. Small spots in a stream; only one member remains on August 7 and 8.

Group 13915. Aug. 4 - 11. A small nondescript group.

Group 13916. Aug. 6 - 12. Probable return of Group 13897. A small spot dying out.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.																	
U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
221° 386		° 955	356° 2					23			° 857	257° 4					138
G	13909	° 837	277° 9	42° 8	+10° 1	116	688	318 c			° 792	243° 1					475
	13912	° 445	222° 5	3° 6	-13° 0	44	287				° 786	68° 5					99
	13915	° 079	256° 1	350° 1	+ 5° 3	6	28				° 874	74° 3					158
	13917	° 180	46° 2	338° 1	+13° 5	3	6				° 949	81° 7					295
	13918	° 440	149° 2	332° 2	-15° 9	4	10				° 973	94° 6					141
Aug. 10		(+14° 3)		(345° 7)	(+ 6° 4)	(173)	(1019)	(341)	Aug. 15		(+16° 1)		(279° 1)	(+ 6° 7)	(0)	(0)	(2039)
222° 563		° 909	270° 7					190	227° 354		° 952	260° 6					184
G	13909	° 953	278° 4	43° 0	+10° 0	142	680	755 c	G		° 915	250° 0					337
	13911	° 825	282° 8	26° 0	+14° 2	2	6	354 c			° 854	238° 6					98
	13918	° 564	279° 9	4° 4	+11° 0	7	18		13919	° 988	95° 1	186° 5	- 3° 9	44	353	384 c	
	13912	° 626	239° 7	3° 7	-13° 0	54	252		Aug. 16		(+16° 4)		(266° 8)	(+ 6° 7)	(44)	(353)	(1003)
	13915	° 377	267° 8	352° 2	+ 5° 2	4	15				° 956	250° 3					287
	13917	° 193	306° 1	339° 3	+12° 9	6	15				° 951	240° 4					182
	13918	° 389	185° 9	332° 5	-16° 2	4	10		228° 412		° 928	97° 2	185° 6	- 4° 0	57	339	630 c
Aug. 11		° 936	91° 2					209	G	13919	° 956	75° 3					269
		° 984	81° 7	(+14° 7)	(330° 1)	(+ 6° 5)	(219)	(976)	(1697)	Aug. 17	(+16° 8)		(252° 8)	(+ 6° 8)	(57)	(339)	(1368)
223° 355		° 926	272° 7					240	229° 366		° 931	248° 9					200
G	13909	° 990	279° 1	42° 0	+ 9° 8	121	494	705 n	G	13919	° 814	99° 9	186° 9	- 4° 0	91	559	718 f
	13911	° 914	282° 8	26° 2	+14° 3	0	9	243 f			° 883	76° 6					387
	13912	° 749	246° 0	4° 1	-13° 1	38	225				° 931	87° 8					154
	13918	° 694	279° 2	3° 7	+11° 1	14	49		Aug. 18		(+17° 1)		(240° 2)	(+ 6° 8)	(91)	(559)	(1459)
	13917	° 370	286° 4	340° 8	+12° 0	3	11				° 963	251° 6					167
	13918	° 415	208° 7	331° 4	-14° 9	4	19				° 957	259° 0	295° 2	- 8° 4	0	12	160 c
Aug. 12		° 857	90° 9					154	230° 612		13919	° 625	104° 8	186° 6	- 3° 7	86	468
		° 905	101° 9					132	G	13920	° 702	82° 8	178° 9	+10° 0	4	11	216 f
		° 945	80° 7	(+15° 0)	(319° 6)	(+ 6° 5)	(180)	(807)	(1768)		° 802	101° 5					303
224° 124		° 953	285° 8					284			° 982	83° 1					295
K	13912	° 849	249° 5	4° 2	-13° 5	32	185	210 nf	Aug. 19		(+17° 5)		(223° 7)	(+ 6° 9)	(90)	(491)	(1141)
	13918	° 813	278° 1	4° 2	+10° 4	9	43	124 c		231° 362	13919	° 490	110° 5	186° 5	- 3° 7	78	444
Aug. 13		° 875	81° 3					201	G	13920	° 564	81° 8	179° 4	+10° 3	4	22	
		° 971	76° 1	(+15° 3)	(309° 5)	(+ 6° 6)	(41)	(228)	(958)	13921	° 943	101° 0	144° 9	- 7° 9	13	40	317 f
225° 349		° 863	272° 7					89		13922	° 991	79° 3	130° 5	+11° 5	83	329	419 c
G	13918	° 953	278° 6	6° 2	+10° 1	8	18	154 f	Aug. 20		° 952	83° 2					385
	13912	° 959	254° 0	4° 3	-13° 2	59	183	611 f		(+17° 7)		(213° 8)	(+ 6° 9)	(178)	(835)	(1121)	
	1176a	° 929	71° 6	227° 4	+19° 4	2	36	276 c									
		° 987	76° 1	(+15° 7)	(293° 3)	(+ 6° 6)	(69)	(237)	(1350)								
Aug. 14		° 979	258° 7					211	232° 350	13923	° 201	300° 2	210° 9	+12° 6	16	79	
226° 423		° 974	276° 5					230	G	13919	° 298	126° 6	186° 9	- 3° 5	58	361	
C		° 956	251° 5					141		13920	° 370	76° 5	179° 3	+11° 4	3	12	
		° 908	246° 4					151		1176c	° 800	75° 2	147° 4	+15° 9	2	6	121 f
										13921	° 849	104° 0	144° 6	- 8° 0	5	10	325 f
									Aug. 21	13922	° 944	80° 3	129° 3	+11° 4	112	518	1101 c
										(+18° 0)		(200° 7)	(+ 6° 9)	(196)	(986)	(1547)	

Group 13917. Aug. 10 - 12.

One or two very small spots.

Group 13918. Aug. 11 - 14.

A small single spot on August 11, joined by another on the following days.

Group 13919. Aug. 16 - 26. Return of Group 13904. A slowly decaying spot with several variable companions.

Group 13920. Aug. 19 - 23. A pair of tiny spots, representing a feeble revival of Group 13903.

Group 13921. Aug. 20 - 22. A pair of small spots perhaps related to Group 13924.

Group 13922. Aug. 20 - Sept. 2. Return or revival of Group 13906. When first seen near the east limb, the group consists of a large regular spot closely preceded and followed by clusters of small spots. By August 24, a small regular spot has formed in front, but a marked decline of the whole group sets in, and by August 31, the parent spot alone survives.

Group 13923. Aug. 21 - 27. Small spots in a stream that soon disintegrates.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
233° 427 G	13923	° 919	278° 7	210° 1	+12° 8	40	174	258	238° 393 C	13923	° 888	286° 6					114
	13919	° 408	285° 8	187° 2	- 3° 3	44	252			13919	° 858	278° 4					267
	13920	° 180	184° 0	178° 5	+10° 7	9	23			13924	° 780	288° 6					150
	13921	° 152	64° 3	144° 4	- 7° 9	5	8			13922	° 779	256° 4					278
	13922	° 704	108° 8	129° 4	+11° 7	127	664	912 c		13925	° 983	282° 1	201° 3	+13° 1	0	24	217 c
Aug. 22		° 836	80° 6	(186° 5)	(+ 7° 0)	(225)	(1121)	(1170)		13926	° 919	263° 0	186° 7	- 3° 6	22	125	615 c
		(+18° 4)								13927	° 582	239° 8	151° 6	-10° 8	2	13	
										13928	° 158	296° 5	129° 1	+11° 1	66	346	
										13929	° 180	26° 5	116° 7	+15° 3	1	11	
										13930	° 956	83° 0	47° 4	+ 8° 7	44	321	414 c
234° 141 K	13923	° 955	280° 7	210° 7	+12° 5	30	122	242 c	Aug. 27		(+19° 8)		(120° 9)	(+ 7° 1)	(135)	(840)	(2055)
	13919	° 555	282° 0	187° 4	- 3° 5	40	226										
	13920	° 255	224° 6	178° 4	+10° 3	0	8										
	13922	° 061	337° 6	129° 1	+11° 4	99	645										
Aug. 23		° 740	80° 9														
		° 871	74° 4	(177° 1)	(+ 7° 0)	(169)	(1001)	(520)									
		(+18° 6)															
235° 492 C		° 953	258° 4					186									
		° 951	282° 4					264									
		° 941	292° 4					353									
		° 936	288° 2					129									
		° 818	291° 2					129									
	13923	° 788	280° 8	211° 5	+12° 8	25	85	323 c									
	13919	° 507	250° 4	187° 7	- 3° 6	33	177										
	13924	° 352	151° 9	149° 5	-11° 1	6	27										
	13922	° 502	79° 5	129° 1	+11° 3	99	600										
Aug. 24		° 940	96° 4	(159° 2)	(+ 7° 0)	(163)	(889)	(1847)									
		(+19° 0)															
236° 588 G	13923	° 847	251° 5	207° 4	+12° 1	4	33	279 c									
	13919	° 884	280° 0	188° 0	- 3° 6	25	139										
	1176d	° 703	257° 5	176° 3	- 6° 1	5	19										
	13924	° 564	248° 0	148° 1	-11° 5	4	19										
	13922	° 326	190° 2	130° 7	+11° 2	93	435										
		° 250	72° 4					98									
		° 817	101° 3					215									
		° 907	83° 5					408									
Aug. 25		° 934	98° 0	(144° 7)	(+ 7° 1)	(131)	(645)	(1127)									
		(+19° 3)															
237° 405 G	13923	° 939	258° 1	202° 3	+12° 5	6	18	595 p									
	13919	° 925	280° 7	186° 8	- 3° 6	27	188	291 p									
	13924	° 803	259° 9	149° 5	-11° 6	12	28										
	13922	° 413	219° 7	131° 1	+11° 5	71	346										
	13924*	° 092	32° 1	115° 1	+15° 5	0	5										
	13925	° 348	63° 9	48° 8	+ 8° 5	43	187										
Aug. 26		° 995	82° 2					343									
		° 848	100° 7	(133° 9)	(+ 7° 1)	(159)	(772)	(1557)									
		(+19° 5)															

Group 13924. Aug. 24 - 28. One or two unstable spots, perhaps related to Group 13921.
 Group 13924*. Aug. 26 - 27. A tiny spot.
 Group 13925. Aug. 26 - Sept. 4. Return of Group 13909. A single spot disintegrating into a short stream and so dying out.
 Group 13926. Aug. 28 - 29. Two or three small spots.
 Group 13927. Aug. 29 - 30. A pair of spots.
 Group 13928. Aug. 29 - 30. A pair on August 29: a single spot on the following day.
 Group 13929. Aug. 29 - Sept. 1. A few spots declining as they come more fully on to the Sun's disk.
 Group 13930. Aug. 30 - Sept. 4. Return of Group 13912. A small dying spot.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.																	
U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
	13922	•859	277°5	128°2	+10°1	22	86	633 c		13925	•506	275°9	46°1	+9°1	6	44	
	13925	•376	81°0	46°5	+10°0	20	79			1176g	•328	284°3	34°4	+11°4	3	14	
	13929	•552	78°2	35°0	+12°5	3	8			13930	•402	149°1	3°4	-13°1	1	8	
	13930	•929	107°4	3°1	-13°2	3	9	461 c		13931	•321	70°6	357°6	+12°9	37	187	
	13931	•956	78°0	354°6	+13°5	13	42	318 c		13932	•458	117°6	351°6	-5°6	52	245	
	13932	•983	97°4	350°2	-5°9	37	186	257 c			•734	119°0					133
Aug. 31		(+20°9)		(68°5)	(+7°2)	(96)	(410)	(2554)			•864	118°5					225
											•936	121°8					127
											•975	96°6					128
243°411		•928	269°6					90	Sept. 4		(+21°9)		(15°6)	(+7°2)	(99)	(498)	(1570)
G		•869	287°2					114									
	13922	•959	280°1	128°9	+11°7	31	196	892 c									
	13925	•153	69°5	46°3	+10°2	17	52										164
	13929	•279	68°4	39°2	+12°8	1	5		247°560		•962	259°7					125
	13930	•824	111°3	2°8	-13°0	4	10	204 s	G		•841	270°7					168
	13931	•865	78°9	354°2	+13°2	14	52	313 c		13931	•113	19°1	357°6	+13°3	18	69	
	13932	•912	100°1	350°3	-6°1	33	252	604 c		13932	•258	149°6	352°3	-5°7	44	256	
	13933	•924	88°2	347°0	+4°4	16	53	182 c		13934	•800	79°7	306°3	+12°6	6	19	112 c
Sept. 1		•900	108°8					130			•890	98°6					124
		(+21°2)		(54°6)	(+7°2)	(116)	(620)	(2529)	Sept. 5		(+22°2)		(359°8)	(+7°2)	(66)	(344)	(693)
244°346		•968	286°6					200	248°347		•838	285°0					124
G		•952	266°1					109	C		•791	274°8					275
		•794	257°9					149		13931	•186	303°2	358°5	+12°9	9	56	
	13922	•993	281°7	126°7	+12°4	0	57	340 sf		13932	•228	187°4	351°1	-5°7	44	320	
	13925	•083	315°4	45°7	+10°5	9	34			13934	•689	79°0	305°7	+12°8	6	39	
	13929	•698	117°1	2°8	-12°9	5	8		Sept. 6		(+22°4)		(349°4)	(+7°2)	(59)	(415)	(399)
	13931	•714	79°5	356°5	+12°5	43	154	140 f									
	13932	•796	103°1	351°3	-5°9	36	219	271 c									
	13933	•834	87°9	345°6	+5°7	4	13	124 c	249°366		•947	286°3					176
		•938	110°0					212	G		•942	277°7					334
		•955	87°6					95		13931	•379	285°7	357°9	+12°5	6	27	
		•958	12°2					12		13932	•361	231°7	352°5	-6°0	63	313	
Sept. 2		(+21°4)		(42°3)	(+7°2)	(97)	(485)	(1664)		13935	•266	174°6	334°6	-8°1	6	13	
											•947	84°5					385
									Sept. 7		(+22°6)		(336°0)	(+7°2)	(75)	(353)	(1106)
245°417		•942	278°2					368									
G		•894	261°3					327									
		•846	282°7					106									
		•801	275°2					86	250°408		•986	278°4					204
	13925	•311	281°4	46°1	+10°4	5	18		C		•945	283°5					172
	13929	•536	129°3	3°0	-13°3	1	3				•844	287°3					153
	13931	•515	77°2	357°2	+12°8	40	185				•771	247°9					133
	13932	•633	108°6	351°2	-5°9	49	222			13936	•640	283°3	2°0	+14°1	34	98	
	13933	•697	88°7	343°8	+6°1	1	6			13932	•536	246°5	351°7	-6°0	67	419	
	1176f	•956	116°7	320°3	-22°9	0	6	363 c		13935	•350	221°0	335°6	-8°2	11	54	
Sept. 3		(+21°7)		(28°1)	(+7°2)	(96)	(442)	(1435)			•820	85°2					181
											•850	95°0					78
									Sept. 8		•931	99°3					221
											(+22°8)		(322°2)	(+7°2)	(112)	(571)	(1142)
246°364		•955	282°0					264									
G		•946	267°1					225	251°402		•938	289°2					157
		•882	275°9					120	C		•891	252°3					347
		•877	257°7					350		13936	•818	281°0	4°4	+13°1	11	76	156 f

- Group 13931. Aug. 31 - Sept. 7. A long stream of variable spots; decay is rapid after September 4.
 Group 13932. Aug. 31 - Sept. 12. A regular spot followed by a train of changing companions.
 Group 13933. Sept. 1 - 3. One or two small spots.
 Group 13934. Sept. 5 - 6. A small spot.
 Group 13935. Sept. 7 - 11. A small short-lived group first seen near the central meridian.
 Group 13936. Sept. 9 - 10. A small spot near the west limb.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
Sept. 9	13932	•718	254° 1	352° 9	- 6° 1	49	329		Sept. 13	13939	•746	71° 4	211° 9	+18° 6	60	417	
	13935	•530	242° 5	337° 3	- 7° 8	11	58			13937	•761	80° 7	210° 0	+11° 7	192	1111	345 f
		•951	83° 0	(309° 1) (+ 7° 2)		(71)	(463)	(818)			•905	106° 4				213	
252° 349 C			(+23° 0)						256° 417 C		•930	94° 7	(259° 9) (+ 7° 2)		(254)	(1540)	(1301)
		•975	285° 6					219				(+23° 8)					
		•951	253° 8					403			•961	243° 8					163
Sept. 10		•923	241° 4					99	Sept. 14		•943	235° 4					112
	13936	•927	280° 9	5° 3	+12° 8	12	51	338 f			•782	232° 1					96
	13932	•856	258° 2	353° 8	- 6° 2	46	292	272 c		13939	•512	66° 2	213° 5	+18° 2	99	515	
Sept. 11	13935	•679	250° 2	336° 6	- 7° 8	6	28		Sept. 15	13937	•546	79° 6	209° 8	+11° 7	183	1131	
	13937	•992	79° 4	212° 9	+11° 4	50	435	89 c			•779	80° 8					146
		•892	70° 6					125			•810	96° 2					126
253° 423 G		•893	83° 0					245	257° 650 G		•905	76° 7					354
		•927	102° 6					131			•924	99° 6					422
			(+23° 2)	(296° 6) (+ 7° 2)		(114)	(806)	(1921)			•943	86° 2	(242° 9) (+ 7° 2)		(282)	(1646)	(1574)
Sept. 12		•959	283° 7					315	Sept. 16			(+24° 0)					155
		•957	250° 7					116			•637	278° 3	266° 4	+10° 8	5	19	
		•891	273° 3					74		13940	•290	204° 5	233° 5	- 8° 1	15	70	
Sept. 13	13932	•956	261° 1	354° 0	- 6° 3	45	244	660 c	Sept. 17	13941	•313	49° 1	212° 2	+18° 7	84	557	
	13935	•816	254° 3	334° 8	- 8° 3	0	6	259 c		13939	•305	74° 6	209° 2	+11° 5	214	1458	
	13938	•487	126° 2	259° 0	-10° 0	3	9			13942	•545	78° 8	193° 6	+12° 1	4	17	
Sept. 14	13939	•945	73° 0	210° 4	+18° 4	11	47	723 c	Sept. 18	13943	•671	99° 3					136
	13937	•950	79° 7	209° 8	+12° 0	121	832	97			•943	85° 2	(226° 6) (+ 7° 2)		(322)	(2121)	(419)
		•814	82° 2	(282° 4) (+ 7° 2)		(180)	(1138)	(2244)				(+24° 2)					283
254° 361 C		•951	259° 8					147	258° 451 G		•896	286° 1					76
		•939	240° 8					120		13940	•767	277° 9	266° 4	+10° 7	3	14	90 c
		•898	258° 3					99		13941	•403	230° 2	234° 1	- 8° 0	18	92	
Sept. 15		•824	235° 0					212	Sept. 19	13939	•213	15° 7	212° 5	+19° 0	57	381	
	13932	•995	263° 4	353° 2	- 5° 7	19	148	181 c		13937	•126	55° 9	209° 9	+11° 2	260	1656	
	1177a	•955	262° 0	341° 6	- 5° 4	3	15	139 c		13942	•389	76° 3	193° 4	+11° 9	1	6	
Sept. 16	13938	•353	142° 2	257° 4	- 9° 1	2	10		259° 354 G	13943	•941	104° 4	148° 1	-10° 9	10	39	224 c
	13937	•869	80° 7	209° 1	+11° 6	141	984	661 c			•887	92° 4					337
	13939	•852	72° 4	211° 2	+16° 7	45	291	214 c			•945	81° 0	(216° 0) (+ 7° 2)		(349)	(2188)	(1407)
255° 128 K		•946	104° 6					134	Sept. 20			(+24° 3)					680
		•953	95° 5	(270° 0) (+ 7° 2)		(210)	(1448)	(2113)			•843	259° 8	264° 9	+ 9° 6	2	4	124
			(+23° 6)							13940	•869	277° 0	235° 0	- 7° 6	19	85	228 p
Sept. 17		•975	261° 0					194	Sept. 21	13941	•564	244° 9	209° 8	+11° 5	288	1896	
		•968	252° 2					116		13937	•124	307° 8	210° 8	+19° 1	78	411	
		•899	240° 4					137		13939	•235	331° 9	147° 2	-11° 0	49	207	295 c
Sept. 18	13938	•268	172° 4	257° 9	- 6° 1	2	12			13943	•663	107° 3					

Group 13937. Sept. 10 - 23. A giant group in development. When near the east limb, the group consists of a larger leader spot followed by a regular spot that remains stable throughout in contrast to the great changes that take place in front of it. From September 13, the leader becomes very elongated and develops multiple umbrae. At the same time, spots just south of it grow rapidly and merge with it into one extensive complex structure. In addition some spots nearer the stable follower increase to yet another, though smaller, multiple spot, so that at maximum development the group appears almost as one long, loosely compacted entity terminating in a typical regular spot. A great magnetic storm began at Abinger on September 18 at 4^h 8^m U.T., about 20½ hours after the onset of an intense solar flare over the group.

Group 13938. Sept. 11 - 13. A pair of diminutive spots on September 11 and 12; a single spot on September 13.

Group 13939. Sept. 11 - 22. A large stream developing rapidly north of the giant group (No. 13937). Both leader and follower tend to become complex before breaking up after rather a short life for their size.

Group 13940. Sept. 15 - 17. A pair of tiny spots on September 15 and 16; a spotlet on September 17.

Group 13941. Sept. 15 - 20. Unstable spots in a small stream.

Group 13942. Sept. 15 - 20. A small but persistent spot (not recorded on September 17) in the wake of Group 13937.

Group 13943. Sept. 16 - 27. Revival of Groups 13921 and 13924. A group of stream type. The leader is a regular spot; the follower is represented by a cluster of variable spots not seen on September 23.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
	13944	° 868	83° 9	143° 5	+ 8° 9	7	18	539 c	264° 412		° 898	264° 3					165
	13945	° 987	73° 5	121° 9	+17° 4	19	88	454 p	G		° 887	273° 3					292
		° 819	95° 3					88		13937	° 961	280° 3	212° 1	+11° 8	298	2401	} 1235 c
		° 838	122° 7					92		13939	° 955	287° 8	211° 1	+18° 8	11	59	
		° 941	65° 1					131		13946	° 505	288° 2	187° 0	+15° 1	18	71	
Sept. 17		(+24° 5)		(204° 1)	(+ 7° 2)	(462)	(2709)	(1951)		13944	° 227	285° 2	150° 4	+ 5° 7	6	22	
										13943	° 365	211° 8	148° 6	-11° 1	35	194	
260° 383		° 939	259° 5					243		13947	° 080	304° 2	141° 1	+ 9° 5	7	20	
G		° 931	275° 5					304			° 854	100° 4					192
	13941	° 745	252° 8	236° 2	- 7° 8	34	136	169 c			° 880	81° 9					164
	13939	° 387	303° 7	210° 3	+19° 0	71	375		Sept. 22		° 980	82° 9					221
	13937	° 329	284° 1	209° 4	+11° 3	368	2598				(+25° 2)		(137° 3)	(+ 7° 0)	(373)	(2767)	(2269)
	13942	° 109	321° 9	194° 4	+12° 0	2	11			265° 558	° 967	264° 6					259
	13943	° 725	112° 5	147° 7	-10° 9	51	246		G		° 872	259° 1					226
	13944	° 702	86° 0	145° 7	+ 7° 8	14	35	243 f		13937	° 985	281° 6	203° 3	+12° 6	172	716	878 c
Sept. 18	13945	° 923	74° 4	120° 7	+17° 1	11	40	748 c		13946	° 719	284° 4	168° 2	+15° 2	47	187	170 c
		(+24° 6)		(190° 5)	(+ 7° 1)	(551)	(3441)	(1707)		13944	° 488	289° 3	151° 4	+ 5° 7	5	13	
261° 414	13941	° 877	257° 1	236° 3	- 7° 7	19	92	310 c		13943	° 536	236° 7	149° 2	-10° 8	40	204	
G	13939	° 566	293° 4	210° 1	+18° 9	48	228			13947	° 343	278° 5	142° 2	+ 9° 5	14	40	
	13937	° 543	280° 3	209° 8	+11° 6	395	2815		Sept. 23		° 939	83° 7					484
	13942	° 309	287° 1	194° 4	+12° 0	1	7				(+25° 4)		(122° 2)	(+ 7° 0)	(278)	(1180)	(2017)
	13943	° 565	120° 9	147° 5	-10° 7	50	236			266° 481	° 958	259° 1					423
	13944	° 491	87° 4	147° 4	+ 7° 5	5	22		G		° 950	286° 5					177
Sept. 19	13945	° 821	74° 2	121° 4	+17° 0	4	15	325 c		13946	° 848	284° 0	168° 4	+15° 5	45	221	274 c
		(+24° 8)		(176° 9)	(+ 7° 1)	(522)	(3415)	(635)		13944	° 661	270° 5	151° 4	+ 5° 6	3	12	
262° 342		° 949	285° 3					163		13943	° 676	244° 8	148° 4	-11° 2	37	206	
C		° 932	276° 4					184		13947	° 557	277° 3	144° 0	+ 9° 8	8	36	
	13941	° 954	259° 9	235° 6	- 7° 4	7	67	468 c	Sept. 24		° 823	84° 1					99
	13939	° 710	289° 5	209° 4	+18° 7	47	320	171 p			° 935	73° 8					203
	13937	° 720	279° 4	210° 9	+11° 7	409	2916	478 p			(+25° 5)		(110° 0)	(+ 7° 0)	(93)	(475)	(1176)
	13942	° 498	281° 1	194° 4	+11° 7	2	8			267° 456	° 945	282° 5					202
	13944	° 269	90° 8	149° 0	+ 6° 6	5	19		G		° 931	275° 6					122
	13943	° 413	136° 5	147° 9	-10° 5	43	234			13946	° 949	284° 0	169° 6	+15° 4	44	208	338 c
Sept. 20		° 920	97° 9					369		13943	° 613	250° 0	148° 2	-11° 7	43	245	97 c
		(+24° 9)		(164° 6)	(+ 7° 1)	(513)	(3564)	(1833)		13947	° 711	276° 0	142° 6	+ 9° 1	20	50	140 p
263° 546		° 922	264° 5					115		1177b	° 566	117° 9	66° 8	- 9° 4	1	6	
G		° 803	251° 1					112	Sept. 25		° 909	74° 4					120
		° 769	283° 2					176			° 976	100° 8					151
	13937	° 889	279° 7	212° 1	+11° 9	449	3088	} 450 c			(+25° 6)		(97° 1)	(+ 6° 9)	(108)	(509)	(1170)
	13939	° 881	287° 6	211° 1	+18° 8	25	151			268° 428	° 920	266° 6					98
	13944	° 036	231° 3	150° 4	+ 5° 9	6	14		G	13946	° 996	285° 5	170° 7	+16° 0	0	11	176 c
	13943	° 310	180° 4	148° 9	-10° 8	35	187			13943	° 916	253° 6	148° 0	-12° 0	27	149	293 c
		° 827	99° 6					119		13947	° 670	277° 1	145° 2	+ 9° 6	7	29	
Sept. 21		° 948	100° 8					279		13948	° 975	89° 0	7° 2	+ 2° 5	96	457	544 c
		(+25° 1)		(148° 8)	(+ 7° 1)	(515)	(3440)	(1251)	Sept. 26		(+25° 7)		(84° 3)	(+ 6° 9)	(130)	(646)	(1111)

Group 13944. Sept. 17 - 24. Revival of Group 13928. A small spot which if identical from day to day shows a pronounced drift in latitude equatorwards.

Group 13945. Sept. 17 - 19. A pair of small spots possibly marking the disappearance of a larger spot formed on the invisible solar hemisphere.

Group 13946. Sept. 22 - 26. A stream forming rather rapidly west of the central meridian. Its subsequent history is lost to view.

Group 13947. Sept. 22 - 27. A small nondescript group.

Group 13948. Sept. 26 - Oct. 8. A large regular spot nearly on the Sun's equator with one or two small attendants until October 3. Its umbra is divided by a bright bridge from October 2 onwards.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
269° 356 G		° 973	268° 3					192		13949	° 192	174° 1	4° 9 - 4° 4		3	13	
		° 801	284° 0					279		13950	° 304	132° 4	353° 0 - 5° 3		8	47	
	13943	° 978	255° 6	147° 9	-12° 5	70	205	372 c			° 822	122° 7					194
	13947	° 949	277° 5	144° 3	+ 9° 3	21	88	523 c			° 932	122° 5					212
	1177c	° 243	191° 0	74° 8	- 6° 8	1	2		Oct. 2			(+26° 1)	(6° 0) (+ 6° 6)	(119)	(627)	(980)	
	13948	° 901	90° 3	7° 9	+ 2° 8	137	639	460 f									
	13949	° 932	96° 9	4° 3	- 3° 8	10	15										
	13950	° 967	97° 8	356° 0	- 5° 7	21	137	565 c									
		° 785	65° 5					117		275° 390 G	° 952	258° 5					161
		° 915	106° 4					220			° 887	274° 4					179
		° 934	77° 0					247		1178a	° 968	271° 6	68° 0 + 3° 4		4	25	151 c
Sept. 27			(+25° 8)	(72° 1) (+ 6° 9)		(260)	(1086)	(2975)		13948	° 309	253° 1	9° 5 + 1° 1		96	463	
										13949	° 293	224° 2	4° 2 - 5° 6		2	10	
										13950	° 210	182° 0	352° 8 - 5° 5		4	22	
									Oct. 3			(+26° 2)	(352° 4) (+ 6° 6)	(106)	(520)	(491)	
270° 380 G		° 894	284° 0					447			° 959	274° 4					256
		° 880	272° 7					139		276° 404 C	° 522	259° 9	9° 9 + 0° 3		91	497	
		° 862	251° 4					110		13951	° 482	251° 3	6° 2 - 3° 1		7	32	
	13948	° 771	92° 4	8° 4 + 2° 5		129	582	498 f				(+26° 2)	(339° 1) (+ 6° 5)	(98)	(529)	(256)	
	13949	° 822	99° 6	4° 5 - 3° 9		3	11										
	13950	° 918	98° 3	353° 1 - 4° 8		33	144	786 c	Oct. 4								
		° 894	77° 1					447									
Sept. 28			(+25° 9)	(56° 6) (+ 6° 8)		(165)	(737)	(2427)									
271° 583 G		° 957	284° 4					190		277° 382 C	° 703	263° 5	10° 3 + 0° 1		103	564	
		° 878	263° 4					58		13951	° 661	257° 3	6° 3 - 3° 4		15	92	
	13948	° 569	96° 3	8° 4 + 2° 1		112	596		Oct. 5			(+26° 3)	(326° 2) (+ 6° 5)	(118)	(656)	(0)	
	13949	° 632	104° 5	5° 1 - 3° 7		1	7										
	13950	° 800	101° 5	351° 0 - 5° 0		27	134	190 c									
Sept. 29			(+25° 9)	(42° 7) (+ 6° 8)		(140)	(737)	(438)		278° 416 G	° 944	257° 4					168
											° 937	287° 3					94
											° 887	248° 0					132
											° 878	227° 0					139
272° 370 G		° 968	263° 5					110		13948	° 856	266° 2	10° 9 + 0° 1		104	549	369 c
		° 800	267° 8					76		13951	° 829	260° 7	7° 4 - 4° 0		15	61	77 c
	13948	° 413	100° 3	8° 4 + 1° 9		111	562			13952	° 996	77° 4	226° 5 + 13° 1		0	59	132 p
	13949	° 493	110° 0	4° 8 - 3° 7		3	15				° 849	81° 3					147
	13950	° 674	104° 9	351° 6 - 4° 9		19	94	204 f			° 942	100° 8					295
Sept. 30			(+26° 0)	(32° 3) (+ 6° 7)		(133)	(671)	(390)	Oct. 6			(+26° 3)	(312° 5) (+ 6° 4)	(119)	(669)	(1573)	
273° 328 C		° 862	256° 9					237		279° 320 C	° 985	256° 9					121
	13948	° 205	114° 7	9° 0 + 1° 7		95	551				° 943	251° 1					249
	13949	° 325	125° 7	4° 4 - 4° 5		6	22				° 906	283° 7					188
	13950	° 497	113° 1	352° 5 - 5° 3		19	93				° 880	274° 7					525
		° 903	119° 7					186			° 834	255° 7					461
		° 926	74° 0					113		13948	° 943	268° 0	10° 8 + 0° 3		106	508	397 c
Oct. 1			(+26° 1)	(19° 7) (+ 6° 7)		(120)	(666)	(536)		13951	° 916	263° 9	6° 2 - 3° 0		0	7	131 c
										13953	° 172	337° 3	304° 5 + 15° 5		12	54	
274° 366 G		° 921	273° 0					170		13952	° 964	78° 3	225° 2 + 12° 9		56	246	729 c
		° 871	254° 7					113			° 856	103° 3					454
	1177d	° 967	256° 0	79° 1 - 11° 7		8	39	291 c			° 881	80° 1					90
	13948	° 104	211° 4	8° 1 + 1° 5		100	528		Oct. 7		° 939	71° 6					124
												(+26° 3)	(300° 6) (+ 6° 4)	(174)	(815)	(3469)	

Group 13949. Sept. 27 - Oct. 3. One or two very small spots on the opposite side of the equator to Group 13948.
 Group 13950. Sept. 27 - Oct. 3. Return of Group 13932. Two or three groupings of small spots in a stream.
 Group 13951. Oct. 4 - 7. A diminutive stream led by a small regular spot forming 3° south of Group 13948.
 Group 13952. Oct. 6 - 18. With Group 13954, a return of Group 13937. A decaying regular spot ending rather abruptly.
 Small variable clusters of small spots both precede and follow the parent spot until October 16.
 Group 13953. Oct. 7 - 12. A small stream with greatly shortened time-scale for its life history.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
280° 303		• 967	275° 8					448	285° 381	13952	• 136	322° 4	225° 4	+12° 2	40	185	
C		• 958	285° 2					167	G	13954	• 337	69° 1	201° 9	+12° 5	50	208	
		• 945	251° 2					156		13955	• 952	105° 9	150° 7	-13° 1	11	21	245 c
		• 941	261° 2					691			• 919	84° 9					420
	13948	• 992	270° 2	10° 2	+ 1° 0	65	378	155 c	Oct. 13			(+26° 4)	(220° 6)	(+ 6° 0)	(101)	(412)	(665)
	13953	• 341	299° 6	305° 5	+15° 7	23	143										
	13952	• 888	78° 6	224° 5	+13° 1	56	283	872 c									
	13954	• 992	77° 7	203° 9	+12° 9	34	206	233 c									
		• 814	108° 4					212	286° 597		• 919	283° 4					71
		• 965	69° 1					303	G		• 851	253° 4					95
		• 965	89° 3					222		13952	• 394	284° 9	227° 3	+11° 2	36	188	
Oct. 8		(+26° 4)		(287° 6)	(+ 6° 3)	(178)	(1010)	(3459)		13954	• 128	23° 8	201° 6	+12° 6	38	211	
										13955	• 851	109° 7	149° 4	-13° 4	15	44	333 f
											• 792	81° 1					200
											• 805	95° 4					168
281° 300		• 960	262° 8					283			• 918	78° 6					208
C		• 931	341° 0					23			• 962	71° 7					320
	13953	• 542	290° 0	306° 3	+16° 0	21	103		Oct. 14			(+26° 3)	(204° 6)	(+ 5° 9)	(69)	(443)	(1395)
	13952	• 774	77° 8	223° 7	+13° 4	72	356	313 c									
	13954	• 942	78° 6	203° 5	+12° 8	44	259	292 c									
		• 913	69° 2					333									
		• 927	91° 2					242	287° 439		• 834	257° 4					120
Oct. 9		(+26° 4)		(274° 5)	(+ 6° 2)	(137)	(718)	(1486)	G	13952	• 561	281° 6	227° 4	+11° 3	35	173	
										13954	• 181	311° 7	201° 4	+12° 6	33	185	
										1178b	• 580	110° 6	160° 5	- 6° 9	1	5	
										13955	• 769	111° 8	146° 7	-12° 6	27	121	
282° 627		• 922	239° 7					170			• 882	75° 2					210
G		• 790	276° 6					90			• 951	75° 9					302
	13953	• 780	286° 0	308° 2	+16° 3	16	94	90 c	Oct. 15			(+26° 3)	(193° 5)	(+ 5° 8)	(96)	(484)	(632)
	13952	• 566	75° 8	222° 6	+13° 1	56	322										
	13954	• 812	78° 6	202° 5	+12° 8	49	240	422 f									
		• 792	65° 6					127									
		• 870	103° 6					123	288° 399		• 890	257° 6					363
		• 958	96° 8					210	G	13952	• 722	280° 7	227° 0	+11° 7	19	100	
		• 970	75° 6					180		13954	• 363	289° 6	201° 2	+12° 4	30	176	
Oct. 10		(+26° 4)		(267° 0)	(+ 6° 2)	(121)	(656)	(1412)		13956	• 433	102° 2	155° 9	- 0° 1	1	5	
										13955	• 632	118° 3	146° 2	-12° 7	38	195	
											• 864	77° 7					164
283° 412		• 868	231° 5					111			• 950	68° 6					158
G		• 882	284° 9	308° 8	+16° 0	12	67	188 c			• 957	99° 7					189
	13953	• 383	72° 0	224° 8	+12° 4	70	322		Oct. 16			(+26° 3)	(180° 8)	(+ 5° 7)	(88)	(476)	(874)
	13952	• 695	78° 1	202° 6	+12° 7	55	255										
	13954	• 846	103° 5					124									
		• 918	96° 8					208									
		• 931	73° 6					240	289° 412		• 980	259° 0					292
Oct. 11		(+26° 4)		(246° 6)	(+ 6° 1)	(137)	(644)	(871)	G		• 946	249° 6					167
											• 910	278° 7					395
										13952	• 848	281° 8	225° 7	+13° 0	8	36	223 c
284° 411	13953	• 967	284° 8	309° 4	+15° 8	4	31	376 c		13954	• 562	284° 2	201° 3	+12° 7	31	167	
G	13952	• 158	51° 3	226° 2	+11° 6	58	331			13956	• 217	118° 1	156° 5	- 0° 2	12	66	
	13954	• 522	75° 0	202° 4	+12° 9	56	228			13955	• 466	131° 4	146° 6	-12° 5	40	253	
		• 900	74° 4					253		13957	• 811	69° 8	113° 8	+19° 6	7	33	118 c
		• 976	84° 9					225			• 901	87° 7					125
Oct. 12		(+26° 4)		(233° 4)	(+ 6° 0)	(118)	(590)	(854)	Oct. 17		• 922	103° 5					227
											(+26° 2)		(167° 5)	(+ 5° 7)	(98)	(555)	(1547)

Group 13954. Oct. 8 - 20. With Group 13952, a return of Group 13937. A stable regular spot in slow decline, with a companion on October 18 and 19.

Group 13955. Oct. 13 - 23. A developing stream in which the leader emerges as a regular spot by October 17, while the trailer portion slowly dies out.

Group 13956. Oct. 16 - 21. A cluster of small variable spots on the Sun's equator.

Group 13957. Oct. 17 - 26. A stream rising to its maximum area on the 5th day. The leader becomes a regular spot by October 22 and alone survives after October 24.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
290° 296 C		° 985	251° 0					192		13955	° 789	247° 6	148° 2	-14° 1	30	167	140 c
		° 966	277° 0					333		13957	° 396	303° 6	119° 7	+17° 5	36	234	
		° 855	263° 5					133			° 897	85° 6					198
		° 852	253° 6					142			° 945	104° 2					133
		° 815	274° 7					258	Oct. 22			(+25° 6)	(99° 6)	(+ 5° 2)	(68)	(401)	(1542)
13952		° 933	281° 6	225° 1	+12° 8	8	41	362 c									
13954		° 714	283° 4	201° 2	+13° 5	34	194				° 940	267° 2					384
13956		° 110	193° 2	157° 2	- 0° 5	14	76		295° 395 G		° 927	274° 8					176
13955		° 356	155° 8	147° 2	-13° 4	42	267				° 862	280° 7					217
13957		° 656	69° 4	115° 9	+17° 6	9	37			13955	° 899	249° 2	149° 4	-16° 1	20	85	352 c
1178c		° 819	105° 1	102° 8	- 9° 0	3	15	136 c		13957	° 542	295° 2	119° 5	+17° 8	51	220	
		° 964	99° 8					126		13958	° 947	95° 7	18° 1	- 3° 7	11	34	308 c
Oct. 18			(+26° 2)	(155° 6)	(+ 5° 6)	(110)	(630)	(1682)		13959	° 964	90° 2	14° 2	+ 1° 2	28	128	175 c
										13960	° 985	77° 6	8° 0	+13° 1	125	734	313 c
291° 482 G		° 957	281° 4					264	Oct. 23			(+25° 6)	(88° 6)	(+ 5° 2)	(235)	(1201)	(1925)
		° 926	270° 9					232									
		° 920	255° 6					139	296° 463 G		° 991	269° 3					238
13954		° 874	281° 7	201° 4	+12° 9	27	171	329 c			° 968	277° 9					194
13956		° 307	252° 6	157° 2	0° 0	10	39				° 959	254° 7					499
13955		° 357	200° 2	147° 5	-14° 0	37	234				° 935	282° 7					170
13957		° 404	60° 2	118° 8	+16° 7	28	122			13957	° 850	285° 6					104
Oct. 19		° 853	101° 3					104			° 730	290° 1	120° 4	+18° 1	39	202	
			(+26° 1)	(140° 2)	(+ 5° 5)	(102)	(566)	(1068)		13958	° 840	98° 0	18° 2	- 3° 8	8	25	124 c
292° 412 G		° 954	265° 1					144		13959	° 877	91° 3	13° 5	+ 1° 3	24	114	279 f
		° 953	254° 4					143		13960	° 926	78° 0	6° 4	+13° 0	197	1154	442 c
		° 944	274° 1					165	Oct. 24		° 934	111° 7					121
		° 857	261° 7					95			° 942	101° 8					244
13954		° 956	281° 8	201° 3	+12° 8	18	123	541 c				(+25° 7)	(74° 5)	(+ 5° 1)	(268)	(1495)	(2415)
13956		° 486	261° 6	156° 5	+ 0° 7	7	33										
13955		° 468	225° 2	147° 8	-14° 1	35	195				° 979	257° 8					194
13957		° 269	36° 4	117° 9	+17° 5	38	178		297° 297 C		° 934	284° 0					265
Oct. 20		° 919	86° 8					306		13957	° 849	288° 8	121° 2	+18° 5	28	163	269 f
			(+26° 0)	(127° 9)	(+ 5° 4)	(98)	(527)	(1394)		13958	° 717	100° 6	18° 7	- 4° 0	4	12	102 f
293° 403 G		° 930	269° 0					209		13959	° 762	93° 0	14° 1	+ 1° 0	16	112	159 f
		° 886	282° 6					213		13960	° 832	77° 8	7° 2	+12° 9	192	1333	396 c
		° 875	256° 7					228			° 804	117° 3					111
13956		° 680	264° 4	157° 2	+ 0° 1	5	20				° 867	103° 7					187
13955		° 627	236° 8	148° 3	-14° 5	39	206				° 889	92° 1					87
13957		° 211	343° 7	118° 3	+16° 9	78	287				° 930	115° 0					158
		° 860	77° 5					214			° 945	97° 8					219
Oct. 21		° 972	84° 8					230	Oct. 25		° 946	68° 4					123
			(+25° 9)	(114° 8)	(+ 5° 3)	(122)	(513)	(1094)				(+25° 6)	(63° 5)	(+ 5° 0)	(240)	(1620)	(2270)
294° 560 G		° 961	290° 4					117	298° 399 G		° 915	259° 6					189
		° 960	270° 7					136		13957	° 947	287° 6	120° 5	+18° 2	20	149	779 f
		° 941	281° 6					96		13958	° 521	105° 4	18° 8	- 3° 7	5	10	
		° 941	257° 6					161		13959	° 575	95° 4	14° 1	+ 0° 9	19	105	
		° 870	266° 2					245		13960	° 683	76° 1	6° 2	+13° 1	227	1432	167 f
		° 804	277° 3					316	Oct. 26		° 799	98° 8					91
												(+25° 4)	(48° 9)	(+ 4° 9)	(271)	(1696)	(1226)

Group 13956. Oct. 23 - 27. A small but definite spot shrinking to a dot.

Group 13959. Oct. 28 - Nov. 1. Return of Group 13948. A small regular spot slowly contracting to zero area. There is a small equatorward drift in latitude noticeable in the previous rotation, but the centre of the spot never succeeds in crossing the equator.

Group 13960. Oct. 23 - Nov. 5. An important stream of normal type reaching maximum size just before central meridian passage. The leader is a large regular spot. The follower is a complex structure and includes a spot of more regular shape that largely retains its identity throughout.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.																	
U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
299° 607 G	13958	*969	287° 6			4	9	219		13960	*808	253° 7					222
	13959	*291	121° 6	18° 7	- 4° 1					13962	*781	283° 4	5° 2	+12° 9	181	1049	271 c
	13960	*331	102° 7	14° 2	+ 0° 4	16	70			13964	*491	270° 0	345° 3	+ 3° 7	33	142	
		*465	70° 7	6° 3	+12° 1	246	1339			13963	*293	281° 2	332° 8	+ 7° 2	2	5	
		*961	79° 3					174		13965	*614	74° 9	278° 8	+12° 5	1	6	
Oct. 27			(+25° 3)	(33° 0)	(+ 4° 8)	(266)	(1418)	(393)			*934	91° 0	247° 2	+ 0° 6	3	10	121 c
											*968	79° 5				151	
									Nov. 2			(+24° 4)	(316° 0)	(+ 4° 2)	(220)	(1212)	(1320)
300° 588 G	13959	*897	256° 0			11	57	197									
	13960	*127	125° 9	14° 2	+ 0° 4					306° 441 G	*939	271° 0					190
	13961	*280	58° 7	6° 0	+12° 9	279	1347				*930	251° 6				148	
		*876	79° 7	318° 9	+11° 3	16	46				*928	261° 3				144	
Oct. 28			(+25° 2)	(20° 1)	(+ 4° 7)	(306)	(1450)	(351)		13960	*875	283° 4	3° 8	+13° 7	170	953	518 c
	13959	*113	226° 8	14° 3	+ 0° 2	4	16			13962	*682	271° 1	345° 8	+ 3° 7	83	361	
	13960	*162	25° 9	5° 5	+12° 9	201	1397			13966	*131	334° 2	306° 2	+10° 8	4	10	
	13961	*767	78° 3	319° 7	+11° 9	7	32	103 c		13963	*358	68° 4	283° 1	+11° 4	13	43	
Oct. 29			(+25° 1)	(9° 6)	(+ 4° 6)	(212)	(1445)	(221)		13965	*836	93° 2	246° 5	- 0° 4	2	6	121 c
									Nov. 3		*905	79° 3				140	
											*976	77° 5				272	
												(+24° 2)	(302° 9)	(+ 4° 1)	(272)	(1373)	(1533)
302° 390 G	13959	*950	270° 5			7	23	278		307° 278 C	*973	253° 2					145
	13960	*317	257° 2	14° 2	+ 0° 2						*973	261° 5				173	
	13961	*213	313° 5	5° 4	+12° 9	191	1109				*867	254° 0				127	
Oct. 30			(+24° 9)	(356° 3)	(+ 4° 5)	(209)	(1181)	(580)		13960	*945	283° 4	2° 9	+13° 9	124	917	654 c
										13962	*817	272° 1	346° 6	+ 4° 0	83	550	184 c
										13966	*276	297° 0	306° 3	+11° 0	2	17	
										13963	*214	56° 9	281° 4	+10° 6	11	34	
303° 418 G	13959	*950	282° 4			4	9	174			*790	79° 1				120	
	13960	*531	263° 1	14° 5	+ 0° 1						*917	77° 5				618	
	13962	*406	292° 7	5° 3	+12° 1	165	1025				*972	87° 8				178	
Oct. 31			(+24° 9)	(356° 3)	(+ 4° 5)	(209)	(1181)	(580)		Nov. 4		(+24° 1)	(291° 9)	(+ 4° 0)	(220)	(1516)	(2199)
	13961	*399	69° 5	320° 4	+12° 1	4	21			308° 563 G	*995	285° 8	359° 9	+16° 1	72	283	267 c
		*895	79° 1					269		13962	*956	272° 8	347° 8	+ 3° 8	93	613	528 c
		*962	100° 6					79		13964	*884	276° 0	337° 0	+ 7° 1	7	23	149 f
			(+24° 7)	(342° 8)	(+ 4° 4)	(177)	(1077)	(522)		13963	*206	314° 8	283° 5	+12° 2	7	14	
304° 427 G	13959	*895	290° 4			1	6	134			*873	86° 5				112	
	13960	*716	266° 0	14° 8	+ 0° 2						*946	78° 1				284	
	13962	*603	285° 2	5° 8	+12° 5	147	978		Nov. 5		*960	69° 8				329	
	13963	*287	268° 4	346° 0	+ 3° 7	9	24					(+23° 8)	(274° 9)	(+ 3° 9)	(179)	(933)	(1669)
Nov. 1			(+24° 6)	(329° 4)	(+ 4° 3)	(159)	(1014)	(223)		309° 278 C	*935	276° 8					295
											*825	282° 1					233
305° 446 G										13962	*985	273° 5	345° 5	+ 4° 1	37	310	359 c
		*916	251° 7					135		13963	*372	293° 1	285° 9	+11° 9	0	7	
		*911	262° 3					211			*906	71° 2					607
		*862	240° 6					86	Nov. 6		*962	93° 2				160	
		*845	270° 6					123				(+23° 7)	(265° 5)	(+ 3° 8)	(37)	(317)	(1654)

Group 13961. Oct. 28 - 31. One or two small spots.

Group 13962. Oct. 31 - Nov. 6. A group of stream type developing rapidly from one or two tiny spots. Possibly its full development is lost to view.

Group 13963. Nov. 1 - 6. A few unstable spots, scattered in longitude.

Group 13964. Nov. 2 - 5. Intermittent. A small spot on November 2; another on Nov. 5, 5° away in longitude.

Group 13965. Nov. 2 - 3. A small spot.

Group 13966. Nov. 3 - 4. One or two small spots.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
310° 412 G		•938	282° 1					142		13968	•672	102° 0	131° 9	- 5° 7	10	55	
		•834	283° 0					79			•872	70° 9					480
		•826	87° 2					271	Nov. 13		(+22° 0)	(173° 1)	(+ 3° 0)	(25)	(116)	(1384)	
		•917	95° 2					164									
		•936	103° 2					169									
Nov. 7		•961	75° 1	(250° 5)	(+ 3° 7)	(0)	(0)	(1000)	317° 276 C		•940	281° 0					306
		(+23° 4)									•911	290° 9					228
										13969	•721	288° 2	205° 0	+15° 0	3	15	169 c
311° 421 G		•944	280° 3					132		13967	•119	25° 6	157° 0	+ 9° 0	29	147	
		•960	66° 5					174	Nov. 14	13968	•480	108° 4	132° 9	- 6° 1	28	135	
Nov. 8		•960	92° 4	(237° 2)	(+ 3° 5)	(0)	(0)	(614)			(+21° 8)	(160° 0)	(+ 2° 9)	(58)	(297)	(703)	
		(+23° 2)															
312° 401 G		•835	282° 3					138	318° 415 G		•964	276° 2					242
		•842	94° 0					121			•884	254° 9					117
		•917	84° 0					434		13969	•868	285° 6	204° 7	+14° 9	4	22	186 s
		•951	95° 4					123		13967	•245	296° 5	157° 8	+ 8° 9	21	61	
Nov. 9		•969	106° 5	(224° 3)	(+ 3° 4)	(0)	(0)	(1013)	Nov. 15	13968	•262	122° 8	132° 3	- 5° 5	44	166	
		(+23° 0)									(+21° 4)	(145° 0)	(+ 2° 7)	(69)	(249)	(787)	
313° 410 C		•937	282° 0					209	319° 274 C		•902	288° 6					582
		•788	93° 3					137			•847	265° 5					141
		•825	80° 4					130	Nov. 16	13967	•430	284° 6	158° 5	+ 8° 6	12	64	
		•923	99° 2					169		13968	•143	176° 2	133° 2	- 5° 6	20	133	
		•924	72° 0					204			(+21° 2)	(133° 7)	(+ 2° 6)	(32)	(197)	(723)	
Nov. 10		•924	108° 6	(211° 0)	(+ 3° 3)	(0)	(0)	(1040)									
		(+22° 8)							320° 398 C		•948	290° 0					202
										13967	•645	280° 5	158° 6	+ 8° 6	15	79	
314° 307 C		•964	258° 8					176	Nov. 17	13968	•292	243° 1	134° 0	- 5° 1	20	131	
		•809	290° 3					129			(+20° 9)	(118° 9)	(+ 2° 5)	(35)	(210)	(202)	
		•820	70° 7					144									
		•834	106° 7					212	321° 399 G	13967	•801	278° 8	158° 7	+ 8° 5	12	65	184 c
		•932	99° 5					166	Nov. 18	13968	•504	254° 5	134° 8	- 5° 6	22	141	
Nov. 11		•934	77° 9	(199° 2)	(+ 3° 2)	(0)	(0)	(1016)			(+20° 6)	(105° 7)	(+ 2° 4)	(34)	(206)	(184)	
		(+22° 5)															
315° 275 C	13967 1179a	•509	78° 9	156° 2	+ 8° 3	2	12		322° 285 C		•926	268° 3					207
		•872	108° 3	127° 9	-14° 2	2	19				•848	256° 7					167
		•855	77° 3					203		13967	•906	278° 2	158° 8	+ 8° 4	12	64	333 c
		•948	69° 7					262		13968	•667	257° 2	134° 7	- 6° 7	50	239	
Nov. 12		•956	98° 5	(186° 4)	(+ 3° 1)	(4)	(31)	(730)	Nov. 19	13970	•983	90° 1	14° 6	+10° 1	0	16	362 c
		(+22° 3)									(+20° 3)	(94° 0)	(+ 2° 3)	(62)	(319)	(1069)	
316° 282 C		•944	281° 0					196	323° 290 C		•936	257° 0					265
		•936	258° 3					183		13967	•973	278° 0	157° 4	+ 8° 3	13	72	179 c
		•861	276° 3					145		13968	•813	259° 4	134° 2	- 7° 3	35	206	301 c
		•832	289° 0					380		13970	•914	78° 6	15° 0	+11° 3	0	10	399 c
	13967	•300	69° 8	156° 6	+ 8° 8	15	61		Nov. 20		•865	104° 2	(80° 8)	(+ 2° 2)	(46)	(266)	(1477)
											(+20° 0)						

Group 13967. Nov. 12 - 20. A short stream of small variable spots.

Group 13968. Nov. 13 - 22. A stream of changing spots with an increase on November 19.

Group 13969. Nov. 14 - 15. A small spot.

Group 13970. Nov. 19 - 20. A single small spot.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbrae	Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbrae	Spots	Faculae
1941			°	°	°				1941			°	°	°			
324° 407 G		° 872	283° 5					155	330° 278 C	13973	° 481	287° 0	16° 3	+ 9° 2	26	111	
		° 776	283° 1					103		13971	° 186	286° 1	359° 0	+ 4° 2	17	114	
	13968	° 929	282° 9	133° 7	- 5° 9	38	229	854 c		13972	° 413	147° 2	335° 1	-19° 0	101	615	
	1179b	° 940	68° 9	356° 8	+20° 5	0	6	741 c		13974	° 497	72° 4	320° 1	+ 9° 8	44	266	
	13971	° 936	65° 8	356° 8	+ 4° 6	41	155	525 c		13975	° 731	73° 5	302° 9	+12° 9	1	8	132 c
		° 792	77° 5					447			° 937	76° 3					237
		° 864	107° 5					162	Nov. 27		(+17° 7)		(348° 7) (+ 1° 3)	(189)	(1112)	(369)	
		° 948	97° 7					169									
Nov. 21		(+19° 7)		(66° 0) (+ 2° 0)		(77)	(390)	(3156)									
									331° 280 C	13973	° 894	281° 3					252
										13971	° 693	281° 5	18° 7	+ 8° 8	9	41	
325° 473 G		° 959	281° 7					197		13972	° 409	277° 5	359° 4	+ 4° 1	23	117	
		° 861	287° 0					107		13972	° 348	177° 4	334° 5	-19° 0	96	579	
	13968	° 988	282° 0	132° 5	- 7° 6	28	205	279 c		13974	° 302	61° 1	320° 0	+ 9° 5	44	222	
	13971	° 818	85° 8	357° 3	+ 4° 5	40	144	360 f		13976	° 994	94° 7	252° 2	- 4° 5	26	149	155 c
	13972	° 978	109° 2	335° 7	-18° 3	127	681	580 c	Nov. 28		(+17° 3)		(335° 5) (+ 1° 2)	(198)	(1108)	(407)	
		° 840	68° 0					221									
Nov. 22		(+19° 3)		(52° 0) (+ 1° 9)		(195)	(1030)	(1744)									
									332° 279 C	13973	° 866	279° 6	21° 8	+ 8° 8	6	23	662 c
326° 486 G		° 955	284° 1					236		13971	° 618	275° 5	0° 2	+ 4° 2	13	62	
		° 934	295° 3					135		13972	° 400	210° 7	334° 7	-19° 0	96	526	
	13973	° 454	73° 7	12° 5	+ 8° 9	21	50			13974	° 153	11° 5	320° 5	+ 9° 6	30	204	
	13971	° 660	65° 0	357° 5	+ 4° 6	23	134			13977	° 307	60° 0	306° 7	+ 9° 8	13	90	
	13972	° 910	111° 2	335° 4	-18° 4	144	714	670 c		13976	° 945	95° 5	251° 8	- 4° 8	26	121	296 c
	13974	° 985	79° 7	318° 6	+10° 5	42	365	225 c	Nov. 29		(+16° 9)		(322° 3) (+ 1° 0)	(164)	(1026)	(958)	
		° 828	75° 2					97									
Nov. 23		(+19° 0)		(38° 6) (+ 1° 8)		(230)	(1253)	(1363)									
									333° 281 C	13973	° 959	278° 6	22° 3	+ 8° 5	7	30	559 f
327° 439 C	13973	° 255	59° 6	13° 3	+ 8° 9	34	238			13971	° 781	273° 8	0° 2	+ 3° 6	10	49	119 c
	13971	° 476	83° 6	357° 9	+ 4° 5	18	129			13972	° 539	228° 7	334° 5	-19° 9	95	623	
	13972	° 818	114° 8	334° 5	-19° 0	95	599	420 c		13974	° 256	307° 3	321° 0	+ 9° 7	26	163	
	13974	° 922	79° 5	319° 2	+10° 3	49	301	322 c		13977	° 158	6° 8	308° 0	+ 9° 9	17	105	
		° 986	79° 5					380		13976	° 841	96° 6	252° 3	- 5° 0	19	116	433 f
Nov. 24		(+18° 7)		(26° 1) (+ 1° 6)		(196)	(1267)	(1122)	Nov. 30		(+16° 6)		(309° 1) (+ 0° 9)	(174)	(1066)	(1316)	205
328° 399 C		° 862	263° 2					144	334° 114 K		° 972	280° 0					295
	13973	° 126	359° 5	13° 5	+ 8° 7	48	321				° 914	283° 3					117
	13971	° 266	79° 1	358° 2	+ 4° 3	26	127				° 874	294° 4					328
	13972	° 680	120° 1	335° 2	-18° 7	94	686				° 812	278° 6					150
	13974	° 810	78° 1	319° 9	+10° 5	57	354	179 f		13971	° 894	273° 5	1° 2	+ 3° 4	4	29	92 c
		° 939	76° 1					317		13972	° 664	239° 2	335° 1	-19° 2	79	493	
Nov. 25		(+18° 3)		(13° 4) (+ 1° 5)		(225)	(1486)	(640)		13974	° 416	292° 6	320° 9	+ 9° 9	22	137	
										13977	° 215	314° 8	307° 0	+ 9° 5	16	119	
										13976	° 726	97° 0	252° 0	- 4° 5	24	113	212 f
329° 408 G		° 978	262° 7					153			° 849	74° 8					136
	13973	° 286	297° 7	14° 9	+ 8° 9	45	195		Dec. 1		(+16° 2)		(298° 1) (+ 0° 8)	(145)	(891)	(1468)	138
	13971	° 055	30° 7	358° 5	+ 4° 1	30	119										
	13972	° 527	130° 8	335° 3	-18° 8	121	650										
	13974	° 657	75° 7	319° 9	+10° 4	46	214										
	13975	° 842	75° 3	303° 6	+13° 1	11	32	299 c	335° 403 C		° 960	261° 5					252
Nov. 26		(+18° 0)		(0° 1) (+ 1° 4)		(253)	(1210)	(452)			° 952	291° 9					354
											° 947	277° 1					533

Group 13971. Nov. 21 - Dec. 1. Return or revival of Group 13962. A decreasing regular spot with variable companions.

Group 13972. Nov. 22 - Dec. 3. A large stream in slow decay. The leader is a stable regular spot. The follower has a double umbra and begins to break up on November 28 and dies out before reaching the west limb.

Group 13973. Nov. 23 - 30. A stream of rapid growth and decay.

Group 13974. Nov. 23 - Dec. 5. A spot in steady decline as it crosses the disk with one or two companions after November 25.

Group 13975. Nov. 26 - 27. A small spot.

Group 13976. Nov. 28 - Dec. 9. A small regular spot, stable in size and position until December 6. As it disappears it drifts from the Sun's equator.

Group 13977. Nov. 29 - Dec. 3. A short-lived cluster of small spots.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbrae	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbrae	Whole Spots	Faculae
1941		°		°	°				1941		°		°				
	13972	•843	247° 3	336° 0	-18° 5	52	310	634 c	340° 402		•919	274° 5					124
	13974	•650	284° 9	320° 6	+10° 1	21	123		G	13979	•918	280° 9	281° 3	- 8° 3	58	250	455 c
	13977	•454	288° 9	306° 8	+ 8° 9	14	78			13978	•620	261° 1	253° 0	- 5° 5	17	74	
	13976	•484	101° 3	252° 8	- 4° 9	19	115			13981	•693	78° 9	172° 1	+ 7° 7	8	39	
		•830	85° 5					127			•958	95° 9					600
		•853	66° 8					180	Dec. 7		(+13° 7)		(215° 2) (0° 0)	(83)	(363)	(1179)	
		•929	81° 0					155									
		•961	71° 7					186									
Dec. 2		(+15° 7)		(281° 1) (+ 0° 6)		(106)	(626)	(2421)	341° 424		•962	273° 9					234
									G	13979	•989	261° 8	283° 0	- 8° 1	23	121	351 c
336° 306		•970	279° 8					190		13978	•787	226° 6	253° 3	- 5° 9	18	87	
C	13972	•945	250° 8	338° 6	-17° 9	38	238	946 c		13981	•508	73° 8	172° 4	+ 8° 0	6	29	
	13974	•789	282° 4	320° 5	+10° 0	17	109	169 c		13982	•973	97° 5	125° 6	- 7° 3	49	310	419 c
	13977	•616	284° 1	306° 3	+ 9° 0	13	87				•863	96° 1					425
	13977*	•211	288° 8	280° 7	+ 4° 4	0	5		Dec. 8		•958	84° 4					186
	13976	•292	108° 7	253° 2	- 4° 9	16	105				(+13° 3)		(201° 8) (- 0° 1)	(96)	(547)	(1615)	
	13978	•936	99° 3	200° 4	- 8° 5	6	29	391 c									
		•907	89° 4					93	342° 279		•910	277° 9					311
		•916	69° 0					540	C		•816	286° 4					153
Dec. 3		(+15° 4)		(289° 2) (+ 0° 5)		(90)	(573)	(2329)		13978	•892	263° 3	253° 3	- 6° 1	4	25	230 f
337° 282		•952	248° 6					506		13981	•337	64° 1	172° 7	+ 8° 3	2	11	
C		•775	284° 2					132		13982	•894	97° 9	127° 5	- 7° 2	30	234	650 c
	13974	•906	281° 4	320° 7	+10° 5	7	42	176 c	Dec. 9		•878	78° 1					135
	13979	•443	252° 2	281° 5	- 7° 4	2	12				•973	74° 9					155
	13977*	•414	280° 2	280° 4	+ 4° 6	2	15				(+12° 9)		(190° 5) (- 0° 2)	(36)	(270)	(1634)	
	13976	•105	148° 4	253° 2	- 4° 7	16	94										
	13978	•835	100° 6	200° 5	- 8° 6	4	15	85 c	343° 395		•952	264° 2					486
		•868	63° 4					178	C		•932	281° 4					256
		•925	96° 4					299		13981	•219	42° 2	167° 3	+ 8° 9	4	21	
Dec. 4		(+15° 0)		(256° 4) (+ 0° 4)		(31)	(178)	(1376)		13982	•751	98° 9	127° 6	- 6° 9	38	246	254 c
338° 287		•979	249° 0					202	Dec. 10		•908	79° 2					153
C		•889	283° 8					519			•931	68° 0					352
	13974	•980	280° 7	321° 2	+10° 5	10	62	400 f			(+12° 4)		(175° 8) (- 0° 4)	(42)	(267)	(1503)	
	13979	•651	256° 6	282° 7	- 8° 4	23	89		344° 429		•904	294° 0					176
	13977*	•626	276° 8	281° 5	+ 4° 5	1	6		G		•195	333° 0	167° 3	+ 9° 4	24	115	
	13978	•197	241° 6	253° 1	- 5° 0	15	103			13981	•282	42° 9	151° 0	+11° 4	16	72	
	13976	•691	103° 1	200° 4	- 8° 7	1	12			13983	•562	101° 4	128° 6	- 6° 8	59	270	
	13980	•773	99° 2	193° 1	- 8° 9	3	13	194 c	Dec. 11		(+12° 0)		(162° 2) (- 0° 5)	(99)	(457)	(176)	
	13981	•964	82° 5	168° 9	+ 7° 3	15	78	443 c									
		•783	62° 2					126									
Dec. 5		(+14° 6)		(243° 1) (+ 0° 3)		(68)	(363)	(1884)	345° 576		•939	282° 2					187
339° 293		•948	282° 9					615	G		•905	290° 7					226
C	13979	•806	259° 2	282° 9	- 8° 6	51	199	211 c			•902	257° 7					250
	13978	•405	256° 6	253° 1	- 5° 2	18	98				•820	308° 5					189
	13980	•603	101° 8	193° 6	- 7° 0	3	14			13981	•393	296° 1	168° 0	+ 9° 3	37	223	
	13981	•862	81° 7	170° 9	+ 7° 2	10	64	615 c		13983	•221	345° 4	150° 3	+11° 7	19	133	
Dec. 6		(+14° 1)		(229° 9) (+ 0° 1)		(82)	(375)	(1441)	Dec. 12		•327	108° 2	129° 0	- 6° 4	62	464	
											(+11° 5)		(147° 1) (- 0° 6)	(118)	(820)	(1161)	

Group 13977*. Dec. 3 - 5. A few variable spots.

Group 13978. Dec. 3 - 5. A small spot, probably representing the end of a regular spot.

Group 13979. Dec. 4 - 8. A stream developing towards the west limb.

Group 13980. Dec. 5 - 6. A small ephemeral spot.

Group 13981. Dec. 5 - 16. One or two small spots up to December 10. On the next day, a stream is forming rapidly, but as rapidly it begins to fade away.

Group 13982. Dec. 8 - 19. A compact cluster of spots; a regular spot is left by December 17.

Group 13983. Dec. 11 - 17. A short stream; only one member remains by December 15.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
346° 441		° 940	287° 0					258	352° 416		° 936	282° 5					132
C		° 885	282° 0					470	C	13982	° 961	263° 3	130° 8	- 6° 8	18	112	746 c
		° 871	296° 5					232			° 784	69° 9					106
	13981	° 553	288° 5	167° 7	+ 9° 4	37	205				° 899	78° 9					271
	13983	° 330	310° 5	150° 5	+11° 5	23	96				° 903	65° 5					276
Dec. 13	13982	° 161	129° 9	128° 6	- 6° 7	69	418		Dec. 19		° 966	109° 9	(57° 0)	(- 1° 5)	(18)	(112)	357
		(+11° 1)		(135° 7)	(- 0° 8)	(129)	(719)	(960)			(+ 8° 3)						(1887)
347° 329		° 957	281° 7					525	353° 335		° 923	288° 8					210
C		° 953	290° 5					334	C		° 800	79° 1					142
		° 928	301° 9					153			° 836	61° 3					181
	13981	° 709	284° 6	167° 9	+ 9° 6	27	173	295 p			° 925	103° 3					185
	13983	° 502	295° 0	151° 5	+11° 4	19	119				° 941	112° 9					280
Dec. 14	13982	° 135	219° 3	128° 9	- 6° 9	46	345		Dec. 20		° 957	93° 3	(44° 9)	(- 1° 6)	(0)	(0)	221
		(+10° 7)		(124° 0)	(- 0° 9)	(92)	(637)	(1307)			(+ 7° 9)						(1219)
348° 443	13984	° 865	278° 4	168° 7	+ 5° 0	14	30		354° 281		° 818	113° 7					302
G	13981	° 863	282° 2	168° 0	+10° 0	33	95	558 c	C		° 875	54° 9					176
	13983	° 711	285° 4	153° 2	+10° 1	14	65				° 890	93° 7					319
	13982	° 354	252° 2	129° 1	- 7° 1	47	269				° 930	112° 2					344
Dec. 15		° 908	89° 3					153	Dec. 21		° 936	86° 1					123
		(+10° 2)		(109° 3)	(- 1° 0)	(108)	(459)	(711)			° 941	77° 7	(32° 4)	(- 1° 8)	(0)	(0)	366
349° 427	13984	° 947	276° 4	167° 1	+ 5° 7	0	25		355° 294	13986	° 994	98° 8	295° 2	- 9° 0	18	101	
G	13981	° 940	282° 5	165° 4	+11° 3	6	22	606 c	C		° 800	95° 1					124
	13983	° 850	282° 7	153° 5	+10° 1	7	24	100 c			° 824	85° 1					92
	13985	° 792	283° 0	148° 4	- 6° 0	0	6	86 c	Dec. 22		° 884	74° 8	(19° 0)	(- 1° 9)	(18)	(101)	541
	1180a	° 587	248° 5	130° 5	-12° 8	2	9				(+ 7° 0)						(757)
	13982	° 556	258° 8	129° 5	- 7° 1	35	194										
Dec. 16		° 950	79° 5					618	356° 452		° 953	288° 4					176
		(+ 9° 7)		(96° 3)	(- 1° 1)	(50)	(280)	(1409)	G	1180b	° 813	74° 4	311° 0	+11° 4	0	3	504 c
										13986	° 936	98° 0	294° 5	- 8° 2	21	133	375 c
350° 297		° 945	253° 7					214			° 952	65° 4					174
C		° 837	265° 1					199	Dec. 23		° 958	73° 3					74
	13983	° 935	281° 3	153° 3	+10° 1	0	6	242 c			° 965	80° 8	(3° 8)	(- 2° 0)	(21)	(136)	164
	13985	° 914	264° 1	150° 7	- 5° 9	21	102	246 c			(+ 6° 4)						(1467)
	13982	° 715	262° 1	130° 2	- 6° 5	27	160	168 c	357° 439	1181a	° 183	344° 5	353° 6	+ 7° 9	3	20	
		° 887	96° 1					101	G	13986	° 832	98° 0	294° 8	- 7° 8	25	140	356 f
Dec. 17		° 888	74° 1					298			° 851	57° 6					124
		° 897	82° 7	(84° 9)	(- 1° 3)	(48)	(268)	(1820)	Dec. 24		° 868	75° 0					108
		(+ 9° 3)									° 970	81° 4	(350° 8)	(- 2° 2)	(28)	(160)	131
351° 436		° 866	261° 5					537			(+ 5° 9)						(719)
G		° 820	287° 3					113	358° 314		° 795	284° 1					392
	13982	° 873	262° 3	130° 4	- 7° 4	27	239		C	13986	° 700	99° 1	295° 2	- 8° 0	22	154	
		° 879	99° 2					112	Dec. 25		° 835	97° 6	(339° 3)	(- 2° 3)	(22)	(154)	328
Dec. 18		° 945	73° 7	(69° 9)	(- 1° 4)	(27)	(239)	(893)			(+ 5° 5)						(720)

Group 13984. Dec. 15 - 16.

A pair of spots.

Group 13985. Dec. 16 - 17.

A group seen for only two days before passing over the west limb.

Group 13986. Dec. 22 - 1942 Jan. 3.

A small regular spot diminishing slowly. Its umbra is double on December 24 and triple by December 28.

POSITIONS AND AREAS OF SUNSPOTS AND FACULAE FOR EACH DAY IN THE YEAR.

U.T.	Group No.	MEASURES		POSITION		AREA			U.T.	Group No.	MEASURES		POSITION		AREA		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae			Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculae
1941			°	°	°				1941			°	°	°			
359° 334 C	13986	° 914	283° 8					172	362° 479 G		° 942	279° 7					159
		° 518	101° 4	295° 1	- 7° 9	18	142				° 935	293° 5					240
		° 949	78° 8					268		13987	° 650	301° 6	319° 8	+17° 6	51	301	
Dec. 26		° 967	97° 0	(325° 8)	(- 2° 4)	(16)	(142)	(641)		13988	° 534	296° 9	313° 4	+11° 5	31	165	
		(+ 5° 0)								13986	° 214	244° 9	295° 6	- 7° 9	27	117	
									Dec. 29		° 973	96° 6	(284° 4)	(- 2° 8)	(109)	(583)	(561)
											(+ 3° 5)						
360° 362 C		° 942	283° 1					159									
		° 877	254° 3					103									
		° 817	244° 2					98									
		° 782	284° 5					216									
	13987	° 361	342° 5	318° 8	+17° 5	7	39		363° 312 C		° 917	245° 9					348
	13988	° 283	354° 9	313° 8	+13° 8	0	6				° 861	265° 7					224
	13986	° 300	108° 7	295° 7	- 7° 9	21	125			13987	° 788	295° 7	319° 7	+17° 4	46	377	
	13989	° 864	93° 9	252° 7	- 4° 6	4	12	164 c		13988	° 670	290° 4	313° 1	+11° 2	21	118	
Dec. 27		° 896	75° 1	(312° 3)	(- 2° 5)	(32)	(182)	(1008)		13986	° 391	256° 2	295° 8	- 8° 0	16	104	
		(+ 4° 5)							Dec. 30		° 921	96° 8	(273° 4)	(- 2° 9)	(83)	(599)	(858)
											(+ 3° 1)						
361° 422 G		° 951	286° 9					173									
		° 942	275° 3					222									
		° 879	294° 2					135									
		° 832	283° 9					97									
		° 828	307° 4					96	364° 314 C		° 938	246° 4					297
	13987	° 494	314° 2	320° 0	+17° 7	36	184				° 928	264° 4					332
	13988	° 339	316° 6	312° 0	+11° 7	3	14				° 923	276° 2					182
	13986	° 103	150° 7	295° 4	- 7° 7	32	154			13987	° 888	291° 2	320° 1	+17° 2	50	250	403 c
	13989	° 714	94° 3	252° 9	- 4° 9	0	3	81 f		13988	° 816	285° 2	313° 2	+10° 5	14	78	308 c
		° 844	98° 2					80		13986	° 579	260° 3	295° 2	- 8° 0	14	53	
		° 952	79° 0					138			° 844	98° 8					319
		° 972	65° 7					159			° 897	83° 6					419
Dec. 28		(+ 4° 0)		(298° 3)	(- 2° 6)	(71)	(355)	(1181)	Dec. 31		° 971	83° 0	(260° 2)	(- 3° 0)	(78)	(381)	(2623)
											(+ 2° 6)						

Group 13987. Dec. 27 - 1942 Jan. 1. A stream of normal type developing suddenly just past the central meridian. It is dying out as it passes round the limb.

Group 13988. Dec. 27 - 1942 Jan. 2. A pair of spots, sp Group 13987, with synchronous development.

Group 13989. Dec. 27 - 28. A single small spot.

ROYAL OBSERVATORY, GREENWICH.

General Catalogue of Groups of Sunspots

For the Year

1941

GREENWICH PHOTO-HELIOGRAPHIC RESULTS, 1941

GENERAL CATALOGUE OF GROUPS OF SUNSPOTS FOR THE YEAR 1941.

Groups of sunspots, lasting for two or more days, are numbered in the first column in continuation of the group-numbers given in 1940 and the previous years. Groups seen only once are not included in this catalogue but are given with a distinctive enumeration in a following table on p. C 48.

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 $0^{\circ}.13$ of solar longitude. In other cases, in which groups disappear before or appear after the central meridian, the deduced time is given to $0^d.1$.

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.

The *twelfth* column gives reference to all groups contained in *Ledger I* and *Ledger II*; for a group in *Ledger I* both its recurrent series number and its order in the series are also given.

With reference to the identification both of recurrent and revival groups, it should be noted that longitudes are based on the ephemeris given in the *Nautical Almanac*, assuming a solar rotation period, constant at all latitudes. After an interval of one rotation, recurring groups will, therefore, show in general - apart from any proper motion they may have of their own - apparent drifts in longitude varying in amount according to their respective latitudes. The following table derived from the formula $\xi = 14^{\circ}.37 - 2^{\circ}.60 \sin^2 \phi$ gives the apparent drift in longitude appropriate to corresponding latitudes after an interval of 27 days.

Latitude. ...	Drift. <i>forwards.</i>	Latitude. ...	Drift <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 Central Meridian Passage	Duration in Days	First Seen		Last Seen		Mean Area Corrected for Foreshortening		Mean Position of Group		Reference to Ledger
			Date	Longitude from Central Meridian	Date	Longitude from Central Meridian	Umbræ	Whole Spots	Longitude	Latitude	
	1941		1941	°	1941	°			°	°	
13785	Jan. 2° 61	8	Jan. 1	-20	Jan. 8	+73	4	22	7° 5	+16° 4	II
86	5° 00	5/10	1	-51	10	+74	2	18	336° 1	+ 3° 8	II
87	5° 8	2/5	1	-59	5	- 8	0	5	328° 2	+ 7° 5	
88	6° 3	2	4	-24	5	-15	4	22	319° 2	-11° 4	
89	3° 2	5	5	+24	9	+81	26	188	359° 6	- 9° 0	
13790	12° 20	7	7	-61	13	+16	16	92	241° 2	- 9° 3	II
91	13° 82	12	7	-80	18	+59	18	86	219° 9	+11° 2	II
92	6° 6	4	9	+36	12	+77	17	100	315° 0	+ 1° 6	
93	16° 0	4	11	-61	14	-24	2	17	191° 6	- 3° 9	
94	22° 30	13	16	-77	28	+79	27	156	108° 3	+11° 3	II
13795	21° 48	9	19	-26	27	+80	24	148	119° 1	- 6° 2	II
96	22° 75	7	22	- 8	28	+73	6	40	102° 3	-13° 3	II
97	30° 99	12	25	-77	Feb. 5	+73	58	476	353° 9	+11° 7	I 1334 (1)
98	31° 9	4	26	-72	Jan. 29	-36	6	32	342° 0	-10° 8	
99	Feb. 1° 57	9	28	-60	Feb. 5	+50	17	95	333° 0	- 1° 4	II
13800	3° 90	13	28	-86	9	+76	42	244	302° 6	-11° 1	II
01	Jan. 27° 1	4	29	+25	1	+70	9	56	44° 7	- 1° 8	
02	Feb. 4° 02	6/7	29	-75	4	+ 6	6	35	300° 8	+ 9° 2	II
03	Jan. 30° 7	3	Feb. 2	+38	4	+62	8	28	357° 9	-11° 7	
03*	Feb. 7° 4	2	2	-79	3	-64	1	8	243° 1	-16° 1	
04	9° 7	7	3	-82	9	- 5	8	40	225° 7	- 9° 4	II
04*	8° 7	2	4	-56	5	-45	0	4	239° 4	-15° 8	
13805	2° 8	4	4	+21	7	+64	6	30	317° 0	+ 3° 2	
06	6° 51	7	5	-20	11	+65	4	21	268° 0	- 8° 9	II
07	11° 4	6	6	-65	11	- 4	12	63	203° 0	+14° 3	II
08	13° 0	3	9	-49	11	-22	7	26	181° 9	+ 8° 9	
09	15° 83	13	9	-84	21	+75	22	110	145° 4	-11° 7	II
13810	10° 56	7	10	- 4	16	+79	13	76	214° 7	+13° 3	II
11	17° 8	3	13	-57	15	-33	5	24	119° 7	+ 4° 8	
12	21° 9	5	16	-74	20	-18	10	53	65° 8	- 4° 1	
13	16° 9	3	20	+43	22	+72	39	191	131° 1	-13° 0	
14	27° 31	13	21	-78	Mar. 5	+81	61	416	354° 1	+14° 4	I 1334 (2)
13815	23° 29	2	22	-11	Feb. 23	+ 2	3	11	47° 0	- 8° 0	
16	28° 91	7	24	-60	Mar. 2	+21	17	93	333° 1	+ 6° 9	II
17	Mar. 1° 97	12	24	-75	Mar. 7	+71	34	207	319° 1	+ 9° 2	I 1335 (1)
18	Feb. 23° 7	2	27	+46	Feb. 28	+62	4	16	42° 0	-16° 3	I 1336 (1)
19	Mar. 5° 30	7	28	-68	Mar. 6	+16	15	71	275° 2	+11° 2	II
13820	7° 19	7	Mar. 3	-53	9	+28	18	63	250° 4	+10° 2	II
21	9° 07	6	4	-61	9	0	9	38	225° 6	+10° 9	II
22	5° 79	2	5	- 5	6	+ 8	4	20	268° 8	+12° 1	
23	6° 4	5	8	+25	12	+77	69	417	260° 1	+10° 9	I 1337 (1)
24	15° 33	8	9	-81	16	+16	11	56	143° 1	- 9° 0	II
13825	14° 78	7	10	-59	16	+25	6	37	150° 3	- 7° 2	II
26	12° 51	7	11	-15	17	+65	35	186	180° 2	+13° 2	II
27	19° 56	11/12	14	-68	25	+76	30	202	87° 2	+10° 3	II
28	20° 4	3	14	-80	16	-50	4	28	76° 3	+14° 8	
29	20° 69	11	14	-85	24	+49	11	61	72° 4	-10° 6	II

GENERAL CATALOGUE OF SUNSPOTS											
No. of Group	U.T. of Central Meridian Passage	Duration in Days	First Seen		Last Seen		Mean Area Corrected for Foreshortening		Mean Position of Group		Reference to Ledger
			Date	Longitude from Central Meridian	Date	Longitude from Central Meridian	Umbræ	Whole Spots	Longitude	Latitude	
	1941		1941	°	1941	°			°	°	
13830	Mar. 22° 37	12	Mar. 16	-76	Mar. 27	+67	31	170	50° 2	-14° 8	I 1336 (2)
31	18° 56	6	18	- 5	23	+67	2	10	100° 5	+12° 6	II
32	19° 46	7	18	-15	24	+66	24	109	88° 4	+ 8° 3	II
33	22° 5	3	20	-27	22	- 2	3	9	48° 4	+12° 5	
34	28° 06	12	23	-75	Apr. 3	+72	17	92	323° 3	+ 7° 5	I 1335 (2)
13835	29° 8	3	25	-58	Mar. 27	-32	6	15	312° 8	- 9° 3	
36	27° 59	4/6	27	- 4	Apr. 1	+63	4	13	341° 4	+ 6° 2	II
37	28° 41	3	27	-14	Mar. 29	+11	4	16	330° 5	+ 1° 5	
38	Apr. 2° 16	8/12	27	-77	Apr. 7	+68	5	30	268° 0	+10° 4	I 1337 (2)
39	Mar. 31° 4	2	Apr. 1	+12	2	+26	13	62	291° 6	- 1° 4	
13840	Apr. 9° 41	8	3	-84	10	+14	8	30	172° 2	- 7° 1	II
41	2° 6	2	4	+24	5	+37	4	12	262° 8	+26° 0	
42	11° 37	8	6	-70	13	+29	9	38	146° 4	- 3° 6	II
43	12° 83	7	7	-72	13	+ 8	18	93	127° 0	-10° 5	II
44	13° 63	13	7	-84	19	+77	20	96	116° 6	- 8° 4	II
13845	8° 66	2	8	- 1	9	+ 8	3	12	182° 1	+11° 0	
46	12° 7	3	16	+49	18	+75	2	9	128° 9	-13° 4	
47	24° 57	12	19	-71	30	+80	89	458	332° 1	- 5° 9	I 1338 (1)
48	23° 85	7	23	-12	29	+80	17	79	341° 5	+ 3° 3	II
49	May 2° 48	13	26	-84	May 8	+77	24	135	227° 4	- 0° 6	II
13850	Apr. 28° 4	4	29	+15	2	+57	4	15	281° 8	+11° 5	
51	27° 4	3	30	+40	2	+67	9	35	294° 5	- 8° 4	
52	May 3° 53	6	30	-42	5	+24	7	37	213° 7	- 3° 3	II
53	8° 74	10	May 1	-68	10	+49	24	110	171° 2	+16° 5	II
54	16° 05	12/13	9	-82	21	+74	25	101	48° 1	+24° 2	II
13855	12° 44	6/7	10	-28	16	+52	8	30	95° 8	+13° 0	II
56	8° 4	3	12	+53	14	+76	3	20	149° 4	- 3° 5	
57	21° 10	11	15	-75	25	+57	10	52	341° 3	- 5° 8	I 1338 (2)
58	19° 4	4	16	-41	19	- 2	3	6	3° 5	- 9° 8	
59	13° 0	2	17	+58	18	+71	5	24	88° 8	+ 8° 8	
13860	21° 65	7/8	17	-60	24	+38	10	49	334° 0	-15° 9	II
61	21° 0	2	18	-35	19	-20	0	8	342° 4	- 8° 4	
62	23° 2	2	20	-37	21	-24	3	32	314° 0	-11° 8	
63	23° 0	2	21	-22	22	- 7	4	11	316° 2	- 9° 2	
64	26° 87	10/12	21	-69	June 1	+76	9	35	264° 9	+ 6° 0	II
13865	24° 49	7	22	-31	May 28	+54	17	71	296° 4	- 9° 6	II
66	30° 4	3	24	-76	26	-54	0	13	218° 5	- 4° 3	
67	June 2° 92	8/12	28	-75	June 8	+74	4	18	171° 6	- 8° 6	II
68	4° 52	12	30	-68	10	+79	50	254	150° 5	-17° 2	II
69	5° 3	4	30	-76	2	-38	8	44	140° 3	-17° 2	
13870	5° 29	13	30	-80	11	+79	14	79	140° 3	- 6° 4	II
71	9° 27	13	June 3	-79	15	+79	76	421	87° 8	+13° 4	I 1339 (1)
72	9° 98	5	8	-22	12	+33	6	18	78° 2	+ 7° 4	
73	12° 20	9	8	-53	16	+61	29	115	46° 8	- 9° 1	II
74	4° 9	2	9	+63	10	+73	14	65	145° 0	+ 7° 1	

GENERAL CATALOGUE OF SUNSPOTS											
No. of Group	U. T. of Central Meridian Passage	Duration in Days	First Seen		Last Seen		Mean Area Corrected for Foreshortening		Mean Position of Group		Reference to Ledger
			Date	Longitude from Central Meridian	Date	Longitude from Central Meridian	Umbrae	Whole Spots	Longitude	Latitude	
	1941		1941	o	1941	o			o	o	
13875	June 10 ^h 58	5	June 9	-14	June 13	+38	4	12	70 ^h 2	+13 ^h 3	I 1340 (1)
76	14 ^h 51	12	9	-70	20	+81	62	322	18 ^h 3	+5 ^h 1	
77	17 ^h 4	5/6	17	0	22	+67	14	59	340 ^h 6	-14 ^h 7	II
78	22 ^h 2	4	18	-52	21	-10	15	53	277 ^h 0	-4 ^h 2	II
79	20 ^h 28	6	20	0	25	+66	10	48	301 ^h 9	+7 ^h 8	
13880	25 ^h 64	11	21	-61	July 1	+80	34	142	230 ^h 9	+8 ^h 4	I 1341 (1)
81	26 ^h 87	11	23	-48	3	+85	84	394	214 ^h 7	+15 ^h 1	II
82	28 ^h 94	8	23	-73	June 30	+18	30	136	187 ^h 2	-6 ^h 6	II
83	July 1 ^h 5	3	25	-81	27	-58	1	11	153 ^h 3	+5 ^h 4	II
84	1 ^h 6	2	26	-72	27	-54	4	14	151 ^h 6	-4 ^h 2	
13885	3 ^h 44	13	27	-80	July 9	+80	48	237	127 ^h 6	+4 ^h 2	I 1342 (1)
86	3 ^h 87	14	27	-83	10	+84	91	490	122 ^h 0	+13 ^h 2	I 1343 (1)
87	June 30 ^h 56	6	28	-35	3	+42	14	54	165 ^h 7	-5 ^h 8	II
88	July 1 ^h 1	2	July 1	+2	2	+18	7	37	158 ^h 8	-4 ^h 0	I 1339 (2)
89	6 ^h 2	4/5	1	-64	5	-11	2	11	90 ^h 5	+13 ^h 4	
13890	1 ^h 5	2	2	+11	3	+26	6	20	154 ^h 0	+15 ^h 0	II
91	June 28 ^h 3	2	3	+69	4	+79	22	84	196 ^h 1	+9 ^h 6	
92	July 8 ^h 56	8	3	-68	10	+22	11	39	59 ^h 9	-5 ^h 5	I 1340 (2)
93	11 ^h 10	9	5	-76	13	+29	11	48	26 ^h 3	+3 ^h 4	
94	7 ^h 41	4/5	6	-13	10	+39	3	10	75 ^h 2	+11 ^h 9	
13895	15 ^h 23	7	9	-77	15	+2	21	85	331 ^h 7	-14 ^h 7	II
96	12 ^h 04	3	10	-21	12	+4	5	19	13 ^h 8	+6 ^h 2	I 1344 (1)
97	15 ^h 8	7	16	+5	22	+84	60	298	324 ^h 0	-14 ^h 6	
98	22 ^h 27	12	16	-79	27	+70	9	49	238 ^h 5	+7 ^h 8	I 1341 (2)
99	22 ^h 82	10/11	17	-72	27	+61	18	88	231 ^h 2	+16 ^h 0	II
13900	23 ^h 28	7/8	17	-77	24	+16	7	28	225 ^h 2	+10 ^h 3	II
01	15 ^h 5	4	18	+42	21	+78	21	86	328 ^h 7	+14 ^h 7	II
02	26 ^h 15	9	20	-77	28	+30	26	118	187 ^h 1	-7 ^h 9	
03	27 ^h 27	13	21	-75	Aug. 2	+74	31	143	172 ^h 4	+13 ^h 5	II
04	27 ^h 16	13	21	-79	2	+78	129	798	173 ^h 8	-3 ^h 7	I 1345 (1)
13905	30 ^h 32	11	24	-80	3	+56	15	75	132 ^h 0	+4 ^h 4	I 1342 (2)
06	31 ^h 07	14	24	-86	6	+83	88	558	122 ^h 1	+12 ^h 4	I 1343 (2)
07	27 ^h 75	4	27	-4	July 30	+33	16	54	166 ^h 0	-5 ^h 9	II
08	Aug. 3 ^h 58	9/10	28	-84	Aug. 6	+31	25	127	75 ^h 6	-4 ^h 4	
09	6 ^h 13	13	31	-76	12	+82	114	665	41 ^h 9	+10 ^h 2	I 1346 (1)
13910	July 29 ^h 8	2/3	Aug. 1	+34	3	+62	3	7	139 ^h 0	+17 ^h 4	II
11	Aug. 7 ^h 30	9/10	3	-52	12	+67	11	48	26 ^h 5	+14 ^h 6	
12	9 ^h 03	12	3	-74	14	+71	52	267	3 ^h 7	-12 ^h 9	I 1347 (1)
13	3 ^h 1	3	4	+21	6	+44	4	20	82 ^h 5	-5 ^h 4	
14	3 ^h 8	5	4	+9	8	+64	6	26	73 ^h 2	+7 ^h 0	
13915	9 ^h 96	8	4	-69	11	+22	8	29	351 ^h 3	+5 ^h 3	II
16	11 ^h 42	7	6	-67	12	+12	11	46	332 ^h 0	-15 ^h 7	I 1344 (2)
17	10 ^h 86	3	10	-8	12	+21	4	11	339 ^h 4	+12 ^h 8	
18	9 ^h 0	4	11	+34	14	+73	10	32	4 ^h 6	+10 ^h 6	I 1345 (2)
19	22 ^h 39	13	16	-80	28	+80	51	298	186 ^h 9	-3 ^h 6	

GENERAL CATALOGUE OF SUNSPOTS

No. of Group	U.T. of Central Meridian Passage	Duration in Days	First Seen		Last Seen		Mean Area Corrected for Foreshortening		Mean Position of Group		Reference to Ledger
			Date	Longitude from Central Meridian	Date	Longitude from Central Meridian	Umbrae	Whole Spots	Longitude	Latitude	
	1941		1941	°	1941	°			°	°	
13920	Aug. 23 ⁰⁰	5	Aug. 19	-45	Aug. 23	+ 1	4	15	178° 9	+10° 5	
21	25° 6	3	20	-69	22	-42	8	19	144° 6	- 7° 9	
22	26° 76	14	20	-83	Sept. 2	+84	71	369	129° 2	+11° 1	I 1343 (3)
23	20° 7	7	21	+10	Aug. 27	+80	20	85	208° 8	+12° 6	I 1348 (1)
24	25° 26	5	24	-10	28	+40	5	18	149° 1	-11° 4	
24*	27° 8	2	26	-19	27	- 4	0	8	115° 9	+15° 4	
13925	Sept. 2 ⁰¹	10	26	-85	Sept. 4	+30	24	131	46° 7	+ 9° 6	I 1346 (2)
26	Aug. 24° 6	2	28	+48	Aug. 29	+64	12	51	157° 4	- 6° 0	
27	25° 4	2	29	+53	30	+66	12	66	147° 8	- 2° 2	
28	25° 5	2	29	+52	30	+64	3	14	146° 4	+ 6° 2	
29	Sept. 2° 8	4	29	-59	Sept. 1	-15	5	18	36° 5	+11° 7	
13930	5° 3	6	30	-78	4	-12	2	9	3° 2	-13° 1	I 1347 (2)
31	5° 79	8	31	-74	7	+22	22	96	356° 8	+13° 0	II
32	6° 16	13	31	-78	12	+83	47	275	351° 9	- 6° 0	I 1349 (1)
33	6° 6	3	Sept. 1	-68	3	-44	7	24	345° 5	+ 5° 4	
34	9° 6	2	5	-54	6	-44	6	29	306° 0	+12° 7	
13935	7° 38	5	7	- 1	11	+52	7	32	335° 8	- 8° 0	
36	5° 3	3	8	+40	10	+69	19	75	3° 9	+13° 3	
37	16° 91	14	10	-84	23	+81	275	1862	210° 0	+11° 6	I 1348 (2)
38	13° 3	3	11	-23	13	- 2	2	10	258° 1	- 9° 1	
39	16° 81	12	11	-72	22	+74	53	313	211° 2	+18° 7	II
13940	12° 7	3	15	+40	17	+61	3	12	265° 9	+10° 4	
41	15° 0	6	15	+ 7	20	+71	19	90	235° 1	- 7° 8	II
42	18° 12	5/6	15	-33	20	+30	2	8	194° 0	+11° 9	II
43	21° 59	12	16	-68	27	+76	41	196	148° 1	-11° 2	II
44	21° 55	8	17	+61	24	+41	6	19	148° 6	+ 6° 7	II
13945	23° 6	3	17	-82	19	-56	8	28	121° 0	+17° 0	
46	20° 1	5	22	+30	26	+86	38	171	168° 3	+15° 3	
47	22° 0	6	22	+ 4	27	+72	13	44	143° 2	+ 9° 5	II
48	Oct. 2° 12	13	26	-77	Oct. 8	+83	107	541	9° 2	+ 1° 4	I 1350 (1)
49	2° 47	7	27	-68	3	+12	4	13	4° 6	- 4° 2	II
13950	3° 34	7	27	-74	3	0	19	96	353° 1	- 5° 2	I 1349 (2)
51	2° 3	4	Oct. 4	+27	7	+66	9	48	6° 5	- 3° 4	
52	13° 02	13	6	-86	16	+69	43	215	225° 4	+12° 4	I 1348 (3)
53	6° 8	6	7	+ 4	12	+76	15	82	307° 1	+15° 9	II
54	14° 80	13	8	-84	20	+73	39	201	201° 9	+12° 8	I 1348 (3)
13955	18° 89	11	13	-70	23	+61	30	163	148° 0	-13° 7	II
56	18° 22	6	16	-25	21	+42	8	40	156° 8	0° 0	II
57	21° 12	10	17	-54	26	+72	34	162	118° 6	+17° 6	II
58	28° 7	5	23	-70	27	-14	6	18	18° 5	- 3° 9	
59	29° 03	10	23	-74	Nov. 1	+45	13	64	14° 2	+ 0° 6	I 1350 (2)
13960	29° 69	14	23	-81	5	+85	193	1169	5° 5	+13° 1	II
61	Nov. 2° 2	4	28	-61	Oct. 31	-22	10	37	319° 6	+11° 8	
62	Oct. 31° 2	7	31	+ 2	Nov. 6	+80	51	235	346° 1	+ 3° 8	I 1351 (1)
63	Nov. 5° 03	6	Nov. 1	-50	6	+20	6	18	281° 9	+11° 8	II
64	1° 0	2/4	2	+17	5	+62	2	7	334° 9	+ 7° 2	

GENERAL CATALOGUE OF SUNSPOTS

No. of Group	U.T. of Central Meridian Passage	Duration in Days	First Seen		Last Seen		Mean Area Corrected for Foreshortening		Mean Position of Group		Reference to Ledger
			Date	Longitude from Central Meridian	Date	Longitude from Central Meridian	Umbræ	Whole Spots	Longitude	Latitude	
	1941		1941	°	1941	°			°	°	
13965	Nov. 7.7	2	Nov. 2	-69	Nov. 3	-56	2	8	246.8	+ 0.1	II I 1352 (1)
66	3.2	2	3	+ 3	4	+14	3	14	306.2	+10.9	
67	14.45	9	12	-30	20	+77	15	69	157.7	+ 8.6	
68	16.29	10	13	-41	22	+80	29	159	133.5	- 5.9	
69	10.9	2	14	+45	15	+80	4	18	204.8	+15.0	
13970	25.3	2	19	-79	20	-66	0	13	14.8	+10.7	I 1351 (2) II II II
71	26.51	11	21	-69	Dec. 1	+63	22	107	358.6	+ 4.2	
72	28.29	12	22	-76	3	+69	95	560	335.4	-18.8	
73	25.17	8	23	-26	Nov. 30	+73	24	126	16.4	+ 8.8	
74	29.42	13	23	-80	Dec. 5	+78	31	183	320.4	+10.1	
13975	30.7	2	26	-56	Nov. 27	-46	6	19	303.2	+13.0	II
76	Dec. 4.55	12	28	-83	Dec. 9	+63	17	96	252.8	- 5.1	
77	Nov. 30.44	5	29	-16	3	+37	15	96	307.0	+ 9.4	
77*	Dec. 2.4	3	Dec. 3	+12	5	+38	1	9	280.9	+ 4.5	
78	8.5	3	3	-69	5	-43	4	19	200.4	- 8.6	
79	2.3	5	4	+25	8	+81	34	138	282.1	- 8.2	
13980	9.1	2	5	-50	6	-36	3	14	193.4	- 7.0	II I 1352 (2) II
81	10.91	12	5	-74	16	+69	17	90	169.0	+ 8.9	
82	13.96	12	8	-76	19	+74	42	272	128.8	- 6.9	
83	12.21	7	11	-11	17	+68	14	74	151.9	+10.9	
84	11.0	2	15	+59	18	+71	7	28	167.9	+ 5.4	
13985	12.4	2	16	+52	17	+66	10	54	149.6	- 6.0	II II II II
86	26.65	13	22	-84	Jan. 3	+74	18	105	296.3	- 8.0	
87	26.8	6	27	+ 6	Jan. 1	+73	36	208	319.7	+17.4	
88	27.3	7	27	+ 2	2	+79	13	74	313.0	+11.4	
89	31.9	2	27	-60	Dec. 28	-45	2	8	252.8	- 4.8	

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 enumeration, comprising the number of the rotation during which each was observed and a letter 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.

No. of Group	Date	Longi- tude from Central Meridian	U.T. of Central Meridian Passage	Area Corrected for Foreshortening		Position of Group		No. of Group	Date	Longi- tude from Central Meridian	U.T. of Central Meridian Passage	Area Corrected for Foreshortening		Position of Group	
				Umbræ	Whole Spots	Longi- tude	Lat- tude					Umbræ	Whole Spots	Longi- tude	Lat- tude
1168a	Jan. 16	° -55°3	Jan. 20°8	2	20	128°4	-13°9	1175a	July 15	° +24°0	July 13°5	1	13	354°4	-4°0
1169a	Feb. 13	-4°2	Feb. 13°8	2	5	172°0	+13°9	b	26	+66°1	21°7	2	15	246°3	+0°9
b	Feb. 25	-19°8	26°9	6	25	359°6	-9°2	c	Aug. 1	-50°9	Aug. 5°2	0	4	58°8	-13°4
1170a	Feb. 27	-13°3	Feb. 28°3	3	18	340°8	+5°3	d	2	-62°2	6°8	2	8	33°1	+13°0
b	Mar. 5	-14°8	Mar. 6°5	4	12	256°8	-10°0	e	6	-61°1	11°0	2	10	337°9	-10°6
c	7	+69°3	2°1	6	36	317°8	-5°3	f	6	-69°7	11°6	0	3	329°3	-6°3
d	17	-71°5	22°8	3	18	45°1	+5°8	g	7	-9°5	8°1	5	19	16°5	+10°3
e	18	-71°8	23°9	0	23	30°3	+8°6	1176a	Aug. 14	-65°9	Aug. 19°3	2	36	227°4	+19°4
1171a	Mar. 28	+53°8	Mar. 24°4	3	9	23°6	-14°6	b	19	+71°5	14°2	0	12	295°2	-8°4
b	Apr. 1	+59°8	27°8	0	6	336°8	-11°1	c	21	-53°3	25°4	2	6	147°4	+15°9
c	12	+75°9	Apr. 6°6	4	18	209°4	-3°1	d	25	+31°6	23°2	5	19	176°3	-6°1
d	14	-7°0	15°0	6	36	98°4	+15°0	e	30	-62°9	Sept. 4°1	0	7	18°8	+19°9
e	16	-0°2	16°4	5	13	80°4	+7°7	f	Sept. 3	-67°8	8°6	0	8	320°3	-22°9
f	18	-52°4	22°4	6	28	1°2	+15°2	g	4	+16°8	2°9	3	14	34°4	+11°4
1172a	Apr. 24	-5°8	Apr. 24°9	5	14	328°2	+3°6	1177a	Sept. 12	+71°6	Sept. 6°9	3	15	341°6	-5°4
b	26	-21°2	28°0	1	8	287°2	+4°0	b	25	-30°3	27°8	1	8	66°8	-9°4
c	27	-60°9	May 1°9	4	22	234°8	-7°9	c	27	+2°7	27°1	1	2	74°8	-6°8
d	May 17	-67°3	22°5	3	9	323°2	+6°1	d	Oct. 2	+73°1	26°8	8	39	79°1	-11°7
1173a	May 20	+62°6	May 15°6	2	14	53°9	-6°9	1178a	Oct. 3	+75°6	Sept. 27°7	4	25	68°0	+3°4
b	27	+71°6	22°0	3	8	329°5	-7°4	b	15	-33°0	Oct. 17°9	1	5	160°5	-6°9
1174a	June 17	+48°3	June 13°7	5	12	29°1	-6°5	c	18	-53°0	22°3	3	15	102°8	-9°0
b	19	-65°3	24°3	2	14	249°0	+0°5	1179a	Nov. 12	-58°5	Nov. 16°7	2	19	127°9	-14°2
c	July 4	-2°1	July 4°5	4	12	113°1	-7°1	b	21	-69°2	26°7	0	6	356°8	+20°5
d	10	-11°7	11°2	4	15	24°4	+13°7	1180a	Dec. 16	+34°2	Dec. 13°8	2	9	130°5	-12°8
								b	23	-52°8	27°5	0	3	311°0	+11°4
								1181a	Dec. 24	+2°8	Dec. 24°2	3	20	353°6	+7°9

REVIVAL GROUPS OF SUNSPOTS

Groups of spots occupying the same heliographic position in consecutive disk passages (partial or complete) but with definite breaks in their history are termed 'Revivals'. Such groups have been abstracted from the preceding catalogue and are grouped in series in the following table. When a 'Recurrent' series i.e. *Ledger I* forms part of a 'Revival' series, a reference is given in the last column of the table. Groups that are given in detail in *Ledger II* are also indicated.

No.	No. of Group	U.T. of Central Meridian Passage	Rotation	Duration in Days	First Seen		Last Seen		Area	Mean Position		Reference to Ledger
					Date	Longitude from Central Meridian	Date	Longitude from Central Meridian		Longitude	Latitude	
1	13789 803	1941 Jan. 3 ^h 2	1168	5	1941 Jan. 5	0	1941 Jan. 9	+81	188	0	- 9	
		Jan. 30 ^h 7	1169	3	Feb. 2	+38	Feb. 4	+62	28	358	-12	
2	13791 810	Jan. 13 ^h 82	1168	12	Jan. 7	-80	Jan. 18	+59	86	220	+11	II
		Feb. 10 ^h 56	1169	7	Feb. 10	- 4	Feb. 16	+79	76	215	+13	II
3	13792 805	Jan. 6 ^h 6	1168	4	Jan. 9	+36	Jan. 12	+77	100	315	+ 2	
		Feb. 2 ^h 8	1169	4	Feb. 4	+21	Feb. 7	+64	30	317	+ 3	
4	13809 24 25	Feb. 15 ^h 83	1169	13	Feb. 9	-84	Feb. 21	+75	110	145	-12	II
		Mar. 15 ^h 33	1170	8	Mar. 9	-81	Mar. 16	+16	56	143	- 9	II }
		Mar. 14 ^h 78	1170	7	Mar. 10	-59	Mar. 16	+25	37	150	- 7	II }
5	13826 45	Mar. 12 ^h 51	1170	7	Mar. 11	-15	Mar. 17	+65	186	180	+13	II
		Apr. 8 ^h 66	1171	2	Apr. 8	- 1	Apr. 9	+ 8	12	182	+11	
6	13836 48	Mar. 27 ^h 59	1171	4/6	Mar. 27	- 4	Apr. 1	+63	13	341	+ 6	II
		Apr. 23 ^h 85	1172	7	Apr. 23	-12	Apr. 29	+80	79	342	+ 3	II
7	13842 56	Apr. 11 ^h 37	1171	8	Apr. 6	-70	Apr. 13	+29	38	146	- 4	II
		May 8 ^h 4	1172	3	May 12	+53	May 14	+76	20	149	- 4	
8	13851 65	Apr. 27 ^h 4	1172	3	Apr. 30	+40	May 2	+67	35	295	- 6	II
		May 24 ^h 49	1173	7	May 22	-31	May 28	+54	71	296	-10	
9	13852 66	May 3 ^h 53	1172	6	Apr. 30	-42	May 5	+24	37	214	- 3	II
		May 30 ^h 4	1173	3	May 24	-76	May 26	-54	13	218	- 4	
10	13860 77 95	May 21 ^h 65	1173	8	May 17	-60	May 24	+38	49	334	-16	II
		June 17 ^h 4	1174	5/6	June 17	0	June 22	+67	59	341	-15	II
		July 15 ^h 23	1175	7	July 9	-77	July 15	+ 2	85	332	-15	II
11	13875 94	June 10 ^h 58	1173	5	June 9	-14	June 13	+38	12	70	+13	
		July 7 ^h 41	1174	4/5	July 6	-13	July 10	+39	10	75	+12	
12	13882 902	June 28 ^h 94	1174	8	June 23	-73	June 30	+18	136	187	- 7	II
		July 26 ^h 15	1175	9	July 20	-77	July 28	+30	118	187	- 8	II
13	13887 88 907	June 30 ^h 56	1174	6	June 28	-35	July 3	+42	54	166	- 6	II }
		July 1 ^h 1	1174	2	July 1	+ 2	July 2	+18	37	159	- 4	
		July 27 ^h 75	1175	4	July 27	- 4	July 30	+33	54	166	- 6	
14	13903 20	July 27 ^h 27	1175	13	July 21	-75	Aug. 2	+74	143	172	+13	II
		Aug. 23 ^h 00	1176	5	Aug. 19	-45	Aug. 23	+ 1	15	179	+11	
15	13915 33	Aug. 9 ^h 98	1176	8	Aug. 4	-69	Aug. 11	+22	29	351	+ 5	II
		Sept. 6 ^h 6	1176	3	Sept. 1	-68	Sept. 3	-44	24	345	+ 5	

REVIVAL GROUPS OF SUNSPOTS												
No.	No. of Group	U.T. of Central Meridian Passage	Rotation	Duration in Days	First Seen		Last Seen		Area	Mean Position		Reference to Ledger
					Date	Longitude from Central Meridian	Date	Longitude from Central Meridian		Longitude	Latitude	
16	13918 36	1941 Aug. 9° 0	1176	4	1941 Aug. 11	0	1941 Aug. 14	+73	32	0	0	
		Sept. 5° 3	1177	3	Sept. 8	+40	Sept. 10	+69	75	5	+11	
17	13921 24 43 55	Aug. 25° 6	1176	3	Aug. 20	-69	Aug. 22	-42	19	145	- 8	} II
		Aug. 25° 26	1176	5	Aug. 24	-10	Aug. 28	+40	18	149	-11	
		Sept. 21° 59	1177	12	Sept. 16	-66	Sept. 27	+76	196	148	-11	
		Oct. 16° 89	1178	11	Oct. 13	-70	Oct. 23	+61	163	148	-14	
18	13928 44	Aug. 25° 5	1176	2	Aug. 29	+52	Aug. 30	+64	14	146	+ 6	II
		Sept. 21° 55	1177	8	Sept. 17	-61	Sept. 24	+41	19	149	+ 7	
19	13945 57	Sept. 23° 6	1177	3	Sept. 17	-82	Sept. 19	-56	28	121	+17	II
		Oct. 21° 12	1178	10	Oct. 17	-54	Oct. 26	+72	162	119	+18	
20	13961 74	Nov. 2° 2	1179	4	Oct. 28	-61	Oct. 31	-22	37	320	+12	II
		Nov. 29° 42	1180	13	Nov. 23	-80	Dec. 5	+78	183	320	+10	
21	13966 77	Nov. 3° 2	1179	2	Nov. 3	+ 3	Nov. 4	+14	14	306	+11	
		Nov. 30° 44	1180	5	Nov. 29	-16	Dec. 3	+37	96	307	+ 9	
22	13967 81 91	Nov. 14° 45	1179	9	Nov. 12	-30	Nov. 20	+77	69	158	+ 9	II
		Dec. 10° 91	1180	12	Dec. 5	-74	Dec. 16	+69	90	169	+ 9	II
		Jan. 6° 7	1181	6	Jan. 1	-71	Jan. 6	- 3	53	176	+ 8	II (1942)
23	13978 90	Dec. 8° 5	1180	3	Dec. 3	-69	Dec. 5	-43	19	200	- 9	
		Jan. 4° 86	1181	5	Jan. 1	-46	Jan. 5	+ 8	19	200	-11	
24	13985 93	Dec. 12° 4	1180	2	Dec. 16	+52	Dec. 17	+66	54	150	- 6	II (1942)
		Jan. 7° 83	1181	7	Jan. 3	-64	Jan. 9	+25	61	161	- 8	

Reference No. 15: Group 13933 disappeared before Rotation 1177 began.

ROYAL OBSERVATORY, GREENWICH.

Ledgers of Groups of Sunspots
For the Year
1941

Ledger I.—Recurrent Groups

LEDGER I - RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR 1941.

The time (U.T.) at which the photograph was taken is expressed in the *first* column by the day of the year and decimal of a day reckoned from Greenwich mean midnight.

The place where the photograph was taken is also indicated in the *first* column. A photograph taken at Greenwich is indicated by the letter G, and those taken at the Cape, Kodaikanal, Washington and Mount Wilson by the letters C, K, W and Mt. W respectively.

The projected area of the umbræ and whole spots, given in the *second* and *third* columns, is the area as it is measured on the photograph, uncorrected for the effect of foreshortening, and expressed in millionths of the Sun's apparent disk.

The area corrected for foreshortening given in the *fourth* and *fifth* columns is expressed in millionths of the Sun's visible hemisphere.

The longitude given in the *sixth* column is based on the ephemeris given in the *Nautical Almanac*, assuming a daily sidereal motion of $14^{\circ}.18$, due to the Sun's rotation, constant at all latitudes; this corresponds to Carrington's assumed rotation period of 25.38 days.

The proper motion given in the *seventh* column is derived from the difference of longitude thus computed from the measured positions on any given day and the first day on which the group of spots or single spot is visible, after the correction for the motion appropriate to the latitude has been applied according to the formula, $\xi = 14^{\circ}.37 - 2^{\circ}.60 \sin^2 \phi$. A *plus* sign indicates a motion forwards; a *minus* sign a motion backwards relative to the position of the first day.

The remaining columns correspond to those with similar headings in the preceding section.

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

LEDGER I. - RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR																																																																																																																																																																														
Date U. T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C. M.		Date U. T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C. M.																																																																																																																																																														
	Umbrae	Whole Spots	Umbrae	Whole Spots						Umbrae	Whole Spots	Umbrae	Whole Spots																																																																																																																																																																	
No. 1334. Latitude +13° 1								No. 1334. Group 13814 - continued																																																																																																																																																																						
Group 13797 in Rotation 1169 " 13814 " " 1170								decline and the group does not return. The Mount Wilson classification of the spot's polarity is γ. This group is associated with an intense geomagnetic storm commencing on March 1 at 03 ^h 57 ^m U. T.																																																																																																																																																																						
Group 13797. Jan. 25-Feb. 5. A fairly large stream of normal type, of which the leader, a, is somewhat elongated and complex. The follower, b, dies out before reaching the west limb.								<table> <tr> <td>a</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr> <td>51° 44' 0</td><td>4</td><td>17</td><td>12</td><td>50</td><td>353° 5</td><td>-4° 0</td><td>+14° 4</td><td>-77° 8</td><td>52° 36' 8</td><td>33</td><td>142</td><td>45</td><td>193</td><td>353° 7</td><td>-3° 9</td><td>+14° 1</td><td>-65° 5</td></tr> <tr> <td>53° 48' 4</td><td>35</td><td>525</td><td>31</td><td>462</td><td>353° 3</td><td>-4° 4</td><td>+14° 7</td><td>-51° 2</td><td>54° 41' 6</td><td>134</td><td>675</td><td>94</td><td>472</td><td>353° 6</td><td>-4° 1</td><td>+14° 7</td><td>-38° 6</td></tr> <tr> <td>55° 39' 4</td><td>101</td><td>854</td><td>61</td><td>512</td><td>353° 9</td><td>-3° 9</td><td>+14° 5</td><td>-25° 5</td><td>56° 41' 1</td><td>145</td><td>911</td><td>80</td><td>501</td><td>353° 9</td><td>-3° 9</td><td>+14° 5</td><td>-12° 1</td></tr> <tr> <td>57° 31' 4</td><td>220</td><td>1319</td><td>119</td><td>712</td><td>354° 2</td><td>-3° 7</td><td>+14° 4</td><td>+0° 1</td><td>58° 30' 8</td><td>170</td><td>1242</td><td>94</td><td>683</td><td>354° 3</td><td>-3° 6</td><td>+14° 5</td><td>+13° 3</td></tr> <tr> <td>59° 33' 4</td><td>127</td><td>1005</td><td>77</td><td>613</td><td>354° 6</td><td>-3° 4</td><td>+14° 5</td><td>+27° 2</td><td>60° 48' 0</td><td>70</td><td>541</td><td>51</td><td>395</td><td>354° 6</td><td>-3° 3</td><td>+14° 1</td><td>+42° 4</td></tr> <tr> <td>61° 44' 2</td><td>39</td><td>215</td><td>37</td><td>208</td><td>354° 6</td><td>-3° 5</td><td>+14° 4</td><td>+54° 9</td><td>62° 39' 6</td><td>22</td><td>131</td><td>33</td><td>196</td><td>354° 6</td><td>-3° 4</td><td>+14° 5</td><td>+67° 7</td></tr> <tr> <td>63° 42' 0</td><td>9</td><td>35</td><td>37</td><td>142</td><td>354° 4</td><td>..</td><td>+14° 5</td><td>+80° 8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr> <td>Means</td><td>..</td><td>..</td><td>61</td><td>416</td><td>354° 1</td><td>..</td><td>+14° 4</td><td>..</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>								a																	51° 44' 0	4	17	12	50	353° 5	-4° 0	+14° 4	-77° 8	52° 36' 8	33	142	45	193	353° 7	-3° 9	+14° 1	-65° 5	53° 48' 4	35	525	31	462	353° 3	-4° 4	+14° 7	-51° 2	54° 41' 6	134	675	94	472	353° 6	-4° 1	+14° 7	-38° 6	55° 39' 4	101	854	61	512	353° 9	-3° 9	+14° 5	-25° 5	56° 41' 1	145	911	80	501	353° 9	-3° 9	+14° 5	-12° 1	57° 31' 4	220	1319	119	712	354° 2	-3° 7	+14° 4	+0° 1	58° 30' 8	170	1242	94	683	354° 3	-3° 6	+14° 5	+13° 3	59° 33' 4	127	1005	77	613	354° 6	-3° 4	+14° 5	+27° 2	60° 48' 0	70	541	51	395	354° 6	-3° 3	+14° 1	+42° 4	61° 44' 2	39	215	37	208	354° 6	-3° 5	+14° 4	+54° 9	62° 39' 6	22	131	33	196	354° 6	-3° 4	+14° 5	+67° 7	63° 42' 0	9	35	37	142	354° 4	..	+14° 5	+80° 8									Means	..	..	61	416	354° 1	..	+14° 4	..								
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53° 48' 4	35	525	31	462	353° 3	-4° 4	+14° 7	-51° 2	54° 41' 6	134	675	94	472	353° 6	-4° 1	+14° 7	-38° 6																																																																																																																																																													
55° 39' 4	101	854	61	512	353° 9	-3° 9	+14° 5	-25° 5	56° 41' 1	145	911	80	501	353° 9	-3° 9	+14° 5	-12° 1																																																																																																																																																													
57° 31' 4	220	1319	119	712	354° 2	-3° 7	+14° 4	+0° 1	58° 30' 8	170	1242	94	683	354° 3	-3° 6	+14° 5	+13° 3																																																																																																																																																													
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Means 58 476 353° 9 .. +11° 7 ..								<table> <tr> <td colspan="8">No. 1335. Latitude +8° 3</td><td colspan="8">Group 13817 in Rotation 1170 " 13834 " " 1171</td><td></td></tr> <tr> <td colspan="8">Spot a</td><td colspan="8">Group 13817. Feb. 24-Mar. 7. A stable regular spot with one or two companions from March 3 onwards.</td><td></td></tr> <tr> <td>24° 27' 9</td><td>8</td><td>61</td><td>15</td><td>116</td><td>356° 0</td><td>0° 0</td><td>+12° 1</td><td>-73° 1</td><td>54° 41' 6</td><td>18</td><td>101</td><td>38</td><td>211</td><td>317° 6</td><td>0° 0</td><td>+9° 8</td><td>-74° 6</td></tr> <tr> <td>25° 38' 2</td><td>33</td><td>234</td><td>34</td><td>243</td><td>355° 6</td><td>-0° 5</td><td>+12° 2</td><td>-58° 9</td><td>55° 39' 4</td><td>35</td><td>191</td><td>38</td><td>210</td><td>318° 5</td><td>+0° 8</td><td>+9° 7</td><td>-60° 9</td></tr> <tr> <td>26° 29' 8</td><td>31</td><td>113</td><td>24</td><td>86</td><td>356° 9</td><td>+0° 8</td><td>+12° 0</td><td>-45° 6</td><td>56° 41' 1</td><td>37</td><td>234</td><td>29</td><td>183</td><td>318° 8</td><td>+0° 9</td><td>+9° 7</td><td>-47° 2</td></tr> <tr> <td>27° 28' 1</td><td>56</td><td>598</td><td>36</td><td>363</td><td>354° 8</td><td>-1° 4</td><td>+11° 6</td><td>-34° 7</td><td>57° 31' 4</td><td>51</td><td>303</td><td>33</td><td>194</td><td>319° 2</td><td>+1° 2</td><td>+9° 6</td><td>-34° 9</td></tr> <tr> <td>28° 29' 5</td><td>88</td><td>564</td><td>49</td><td>316</td><td>355° 9</td><td>-0° 3</td><td>+11° 7</td><td>-20° 3</td><td>58° 30' 8</td><td>51</td><td>339</td><td>29</td><td>193</td><td>318° 9</td><td>+0° 8</td><td>+9° 8</td><td>-22° 1</td></tr> <tr> <td>29° 54' 1</td><td>63</td><td>635</td><td>33</td><td>330</td><td>356° 9</td><td>+0° 6</td><td>+11° 0</td><td>-2° 9</td><td>59° 33' 4</td><td>68</td><td>322</td><td>3</td></tr></table>	No. 1335. Latitude +8° 3								Group 13817 in Rotation 1170 " 13834 " " 1171									Spot a								Group 13817. Feb. 24-Mar. 7. A stable regular spot with one or two companions from March 3 onwards.									24° 27' 9	8	61	15	116	356° 0	0° 0	+12° 1	-73° 1	54° 41' 6	18	101	38	211	317° 6	0° 0	+9° 8	-74° 6	25° 38' 2	33	234	34	243	355° 6	-0° 5	+12° 2	-58° 9	55° 39' 4	35	191	38	210	318° 5	+0° 8	+9° 7	-60° 9	26° 29' 8	31	113	24	86	356° 9	+0° 8	+12° 0	-45° 6	56° 41' 1	37	234	29	183	318° 8	+0° 9	+9° 7	-47° 2	27° 28' 1	56	598	36	363	354° 8	-1° 4	+11° 6	-34° 7	57° 31' 4	51	303	33	194	319° 2	+1° 2	+9° 6	-34° 9	28° 29' 5	88	564	49	316	355° 9	-0° 3	+11° 7	-20° 3	58° 30' 8	51	339	29	193	318° 9	+0° 8	+9° 8	-22° 1	29° 54' 1	63	635	33	330	356° 9	+0° 6	+11° 0	-2° 9	59° 33' 4	68	322	3																													
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26° 29' 8	31	113	24	86	356° 9	+0° 8	+12° 0	-45° 6	56° 41' 1	37	234	29	183	318° 8	+0° 9	+9° 7	-47° 2																																																																																																																																																													
27° 28' 1	56	598	36	363	354° 8	-1° 4	+11° 6	-34° 7	57° 31' 4	51	303	33	194	319° 2	+1° 2	+9° 6	-34° 9																																																																																																																																																													
28° 29' 5	88	564	49	316	355° 9	-0° 3	+11° 7	-20° 3	58° 30' 8	51	339	29	193	318° 9	+0° 8	+9° 8	-22° 1																																																																																																																																																													
29° 54' 1	63	635	33	330	356° 9	+0° 6	+11° 0	-2° 9	59° 33' 4	68	322	3																																																																																																																																																																		

LEDGER I. - RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR

Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C.M.	Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C.M.
	Umbrae	Whole Spots	Umbrae	Whole Spots					Umbrae	Whole Spots					
No. 1335. Group 13834 - continued								No. 1337. Group 13823 - continued							
^d 87° 325 C	26	150	14	78	323° 5 + 1° 4	+ 7° 4	+ 5° 0	^d 86° 387 G	77	465	45	272	259° 5 0° 0	+10° 8	+25° 0
88° 364 G	29	162	16	87	323° 3 + 1° 1	+ 7° 4	+18° 5	87° 107 K	76	506	49	330	259° 6 0° 0	+11° 0	+34° 6
89° 369 G	20	133	12	81	323° 4 + 1° 0	+ 7° 1	+31° 9	88° 454 G	78	448	71	406	260° 6 +0° 9	+11° 0	+53° 3
90° 318 C	13	58	9	42	323° 1 + 0° 8	+ 7° 0	+44° 1	89° 477 G	87	443	127	644	260° 9 +1° 1	+10° 8	+67° 1
91° 334 C	9	35	9	35	323° 8 + 1° 2	+ 7° 3	+58° 2	70° 328 C	18	161	52	434	260° 0 +0° 1	+10° 9	+77° 4
92° 354 G	4	13	7	22	323° 9 + 1° 1	+ 6° 9	+71° 7								
Means	..	..	17	92	323° 3	..	+ 7° 5	Means	..	..	69	417	260° 1	..	+10° 9
No. 1336. Latitude -15° 6								Spot a							
Group 13818 in Rotation 1170*								87° 107 K	35	204	23	137	263° 2 0° 0	+10° 4	+38° 2
" 13830 " " 1170								88° 454 G	40	213	39	209	264° 1 +0° 8	+10° 5	+56° 8
Group 13818. Feb. 27-28. A cluster of tiny spots on February 27; a single spot on February 28. *(This group appears one day after the ending of Rotation 1169).								89° 477 G	42	209	69	343	264° 2 +0° 8	+10° 5	+70° 4
								70° 328 C	9	60	34	229	263° 6 ..	+10° 3	+81° 0
Group 13838. Mar. 27-Apr. 7. A rapidly decaying spot (a of Group 13823) ending probably on April 1. On April 2 and again on April 7 another spot appears just north and east of the point of disappearance.															
57° 314 C	8	30	6	22	40° 6 0° 0	-16° 2	+46° 5	85° 346 G	9	56	22	138	267° 8 +2° 7	+10° 1	-76° 8
58° 308 C	2	13	2	14	43° 5 + 2° 9	-16° 4	+62° 5	86° 470 G	18	67	21	99	267° 7 +2° 5	+ 9° 6	-62° 1
Means	..	..	4	16	42° 0	..	-16° 3	87° 325 C	9	73	7	61	268° 1 +2° 8	+ 9° 6	-50° 4
Group 13830. Mar. 16-27. A regular spot shrinking rapidly after the disappearance of a companion on March 23. There is a small but definite trend equatorwards.								88° 364 G	7	31	5	20	268° 5 +3° 1	+10° 5	-36° 3
74° 578 G	22	112	45	230	50° 4 + 9° 8	-16° 0	-76° 2	89° 369 G	9	18	5	10	268° 3 +2° 8	+ 9° 8	-23° 2
75° 336 C	38	240	48	303	48° 6 + 8° 0	-15° 2	-86° 0	90° 318 C	4	13	2	7	268° 5 +2° 9	+ 9° 8	-10° 5
76° 432 G	48	280	40	228	49° 3 + 8° 7	-15° 2	-52° 8	91° 334 C	6	37	3	20	267° 4 +1° 7	+11° 3	+ 1° 6
77° 478 G	64	338	41	217	49° 3 + 8° 7	-15° 0	-39° 0	92° 354 G	0	0	0	0			
78° 552 G	84	411	46	226	49° 8 + 9° 2	-14° 9	-24° 4	93° 357 G	0	0	0	0			
79° 321 C	70	383	36	200	49° 5 + 8° 9	-14° 8	-14° 5	94° 417 G	0	0	0	0			
80° 325 C	68	406	34	203	49° 9 + 9° 3	-14° 8	- 0° 9	95° 100 K	0	0	0	0			
81° 372 C	62	385	32	200	50° 2 + 9° 6	-14° 7	+13° 2	96° 328 C	0	6	0	9	267° 4 +1° 2	+12° 2	+67° 7
82° 329 C	30	197	17	110	50° 9 +10° 2	-14° 4	+26° 5	Means	..	..	5	30	268° 0	..	+10° 4
83° 394 G	27	115	18	78	51° 0 +10° 3	-14° 5	+40° 7	No. 1338. Latitude -5° 8							
84° 452 G	13	51	11	44	51° 3 +10° 6	-14° 4	+54° 9	Group 13847 in Rotation 1172							
85° 346 G	0	7	0	9	51° 9 +11° 2	-14° 3	+67° 3	" 13857 " " 1173							
Means	..	..	31	170	50° 2	..	-14° 8	Group 13847. Apr. 19-30. A stream of normal type showing some departure from the usual sequence of events. BY April 24 the leader, a, has split into two parts, a ₁ , a ₂ , the umbra beginning to divide three days earlier. The follower spot, b, of the stream remains small throughout.							
No. 1337. Latitude +10° 6								108° 329 C							
Group 13823 in Rotation 1170								46 231 70 365 330° 1 0° 0 - 7° 0 -71° 2							
" 13838 " " 1171								109° 418 G 101 538 91 480 330° 5 +0° 2 - 8° 2 -56° 4							
Group 13823. Mar. 8-12. A stream of normal (or bi-polar) type developing rapidly west of the central meridian.								110° 465 G 192 928 129 624 331° 3 +0° 9 - 5° 7 -41° 7							
								111° 338 C 213 1116 123 643 331° 6 +1° 0 - 5° 9 -29° 9							
								112° 101 K 228 1298 121 693 331° 2 +0° 5 - 5° 9 -20° 2							
								113° 422 G 228 1124 115 564 331° 1 +0° 2 - 6° 1 - 2° 9							

LEDGER I. - RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR

Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C.M.	Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C.M.		
	Umbrae	Whole Spots	Umbrae	Whole Spots					Umbrae	Whole Spots							
No. 1338. Group 13847 - continued								No. 1338. Group 13857 - continued									
d								d									
114° 376 G	184	806	94	412	332° 0	+0° 9	- 6° 0	+10° 6	142° 657 G	0	5	0	3	343° 7	+6° 5	- 6° 7	+36° 3
115° 360 G	178	807	97	440	332° 9	+1° 7	- 5° 7	+24° 5	143° 369 G	2	9	1	6	342° 2	+4° 9	- 5° 2	+44° 2
116° 317 C	107	615	67	386	332° 5	+1° 1	- 6° 0	+36° 8	144° 349 G	0	7	0	6	341° 7	+4° 2	- 7° 0	+56° 6
117° 393 C	78	422	63	341	333° 1	+1° 5	- 5° 4	+51° 6									
118° 600 G	39	229	52	306	333° 9	+2° 1	- 5° 2	+68° 3									
119° 398 G	16	86	44	236	334° 8	+2° 9	- 5° 2	+79° 8									
Means	..	..	89	458	332° 1	..	- 5° 9	..	Means	..	..	10	52	341° 3	..	- 5° 8	..
Spot a								No. 1339. Latitude +13° 4									
								Group 13871 in Rotation 1173 " 13889 " " 1174									
108° 329 C 37 166 52 234 331° 6 0° 0 - 6° 5 -69° 7								Group 13871. June 3-15. At first a single complex spot. By rapid changes, involving the partial disintegration of the original spot, the group is transformed into a stream with complex, unstable components at the head and tail. A double string of spotlets connects the two on June 8. The group which collapses after June 11, is classified by Mount Wilson as Y according to the magnetic polarities of the component spots.									
109° 418 G 74 407 63 346 332° 6 +0° 8 - 5° 8 -54° 3																	
110° 465 G 140 686 91 446 332° 7 +0° 8 - 5° 3 -40° 3																	
111° 338 C 187 959 107 547 332° 4 +0° 3 - 5° 4 -29° 1																	
112° 101 K 184 1026 98 544 332° 2 0° 0 - 5° 4 -19° 2																	
Spots a ₁ and a ₂																	
113° 422 G 183 909 92 455 332° 4 0° 0 - 5° 6 - 1° 6								153° 394 C 18 93 48 247 86° 6 0° 0 +13° 2 -78° 8									
114° 376 G 165 707 84 360 332° 9 +0° 3 - 5° 6 +11° 5								154° 449 G 64 321 76 382 86° 9 +0° 2 +12° 9 -64° 5									
115° 360 G 167 751 91 410 333° 5 +0° 8 - 5° 7 +25° 1								155° 100 K 58 431 51 379 88° 4 +1° 7 +12° 5 -54° 4									
116° 317 C 103 576 65 363 333° 4 +0° 5 - 5° 8 +37° 7								156° 392 C 49 635 31 406 89° 1 +2° 4 +12° 4 -36° 6									
117° 393 C 76 409 62 332 333° 6 +0° 6 - 5° 3 +52° 1								157° 310 G 119 564 68 320 89° 1 +2° 3 +12° 7 -24° 5									
118° 600 G 39 229 52 306 334° 0 +0° 8 - 5° 1 +68° 4								158° 411 G 220 934 115 490 88° 4 +1° 5 +13° 5 -10° 6									
119° 398 G 16 86 44 236 334° 8 +1° 4 - 5° 2 +79° 8								159° 691 W 190 892 99 463 88° 5 +1° 6 +13° 7 + 6° 5									
Spot b								160° 431 C 197 1332 107 717 87° 5 +0° 5 +13° 8 +15° 3									
108° 329 C 9 65 18 131 325° 6 0° 0 - 7° 5 -75° 7								161° 308 G 214 1152 124 670 87° 5 +0° 5 +14° 0 +26° 9									
109° 418 G 9 61 9 62 325° 8 0° 0 - 8° 3 -61° 1								162° 367 G 124 568 85 389 87° 0 0° 0 +14° 2 +40° 4									
110° 465 G 23 122 17 89 325° 7 -0° 2 - 8° 3 -47° 3								163° 349 G 94 411 82 352 87° 1 0° 0 +14° 3 +53° 5									
111° 338 C 22 122 13 74 326° 5 +0° 4 - 8° 0 -35° 0								164° 394 C 35 207 47 277 86° 4 -0° 8 +14° 2 +66° 6									
112° 101 K 19 92 10 51 326° 0 -0° 2 - 9° 0 -25° 4								165° 489 G 5 18 (13 45 83° 9 .. +12° 8) +76° 6									
113° 422 G 20 95 10 48 326° 6 +0° 2 - 9° 1 - 7° 4								Means 76 421 87° 6 .. +13° 4 ..									
114° 376 G 7 23 4 12 326° 7 +0° 1 - 9° 1 + 5° 3								Spot a									
115° 360 G 11 56 6 30 326° 5 -0° 2 - 8° 3 +18° 1								157° 310 G 73 385 41 216 90° 3 0° 0 +12° 3 -23° 3									
Group 13857. May 15-25. A small regular spot (representing the leader of Group 13847) slowly dying out.								158° 411 G 74 334 39 174 91° 2 +0° 8 +12° 5 - 7° 8									
124° 574 G 11 75 21 141 339° 6 +3° 7 - 5° 6 -74° 8								159° 691 W 102 474 53 246 91° 6 +1° 2 +13° 6 + 9° 6									
125° 348 G 21 100 24 113 340° 2 +4° 2 - 5° 4 -63° 9								160° 431 C 113 599 62 329 91° 8 +1° 3 +13° 8 +19° 6									
126° 379 G 18 89 14 69 340° 6 +4° 4 - 5° 2 -49° 9								161° 308 G 85 533 52 322 92° 2 +1° 7 +13° 9 +31° 6									
127° 351 G 21 155 13 96 341° 1 +4° 8 - 5° 2 -36° 5								162° 367 G 44 177 33 132 93° 0 +2° 4 +13° 7 +46° 4									
128° 525 G 27 109 15 59 341° 4 +4° 9 - 5° 5 -20° 7								163° 349 G 23 71 23 74 94° 3 +3° 7 +13° 4 +60° 7									
129° 342 C 18 84 9 43 341° 5 +4° 8 - 5° 7 - 9° 6								164° 394 C 9 51 16 89 92° 8 +2° 1 +13° 7 +73° 0									
130° 371 G 9 48 4 24 340° 5 +3° 7 - 6° 1 + 2° 8								Spot b									
131° 403 G 7 32 4 17 342° 0 +6° 0 - 6° 3 +18° 0								157° 310 G 46 179 27 104 86° 1 0° 0 +13° 8 -27° 5									
								158° 411 G 80 337 42 179 85° 1 -1° 1 +14° 1 -13° 9									
								159° 691 W 88 418 46 217 84° 7 -1° 5 +14° 3 + 2° 7									
								continued									

LEDGER I. - RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR

LEDGER I. - RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR																	
Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C.M.	Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C.M.		
	Umbrae	Whole Spots	Umbrae	Whole Spots					Umbrae	Whole Spots	Umbrae	Whole Spots					
No. 1339. Group 13871 - continued Spot b - continued								No. 1340. Group 13876 - continued Spot b									
160° 431 C	84	733	45	388	84° 6'	-1° 7'	+14° 4'	+12° 4'	159° 691 W	7	40	12	70	8° 6'	0° 0'	+5° 1'	-73° 4'
161° 308 G	108	463	60	259	83° 9'	-2° 4'	+14° 1'	+23° 3'	160° 431 C	18	120	19	130	9° 8'	+1° 1'	+5° 6'	-62° 4'
162° 387 G	62	301	40	196	84° 1'	-2° 3'	+14° 3'	+37° 5'	161° 308 G	50	250	39	195	10° 6'	+1° 7'	+5° 6'	-50° 0'
163° 349 G	46	260	37	208	84° 0'	-2° 4'	+14° 3'	+50° 4'	162° 387 G	55	205	34	125	11° 4'	+2° 3'	+5° 6'	-35° 2'
164° 394 C	22	129	26	152	84° 0'	-2° 5'	+14° 2'	+64° 2'	163° 349 G	64	232	35	125	11° 8'	+2° 6'	+5° 9'	-21° 8'
								164° 394 C	31	210	16	107	12° 4'	+3° 0'	+6° 1'	-7° 4'	
								165° 489 G	21	87	11	44	12° 6'	+3° 0'	+6° 3'	+7° 3'	
								166° 352 G	7	23	4	12	13° 4'	+3° 6'	+7° 0'	+19° 5'	
								167° 337 G	2	7	1	4	14° 2'	+4° 3'	+6° 8'	+33° 4'	
Group 13889. July 1-5. A small spot not seen on July 3.								Group 13893. July 5-13. A small regular spot (a of Group 13876) slowly dying out.									
181° 373 G	0	7	0	8	90° 8'	-0° 7'	+12° 8'	-64° 2'	185° 333 G	9	35	19	73	26° 3'	+6° 5'	+3° 5'	-76° 3'
182° 349 G	2	12	2	10	89° 3'	-2° 3'	+14° 5'	-52° 8'	186° 334 G	18	74	20	81	26° 4'	+6° 4'	+3° 6'	-63° 0'
183° 355 G	0	0	0	0	..	..	..	..	187° 342 G	21	97	16	75	26° 4'	+6° 3'	+3° 5'	-49° 6'
184° 384 G	5	23	3	13	90° 7'	-1° 0'	+13° 2'	-24° 5'	188° 355 G	23	120	14	74	26° 5'	+6° 2'	+3° 5'	-36° 1'
185° 333 G	12	46	7	24	91° 2'	-0° 5'	+13° 3'	-11° 4'	189° 364 G	23	92	12	50	26° 4'	+5° 9'	+3° 6'	-22° 6'
Means	..	..	2	11	90° 5'	..	+13° 4'	..	190° 361 G	16	67	8	34	26° 2'	+5° 5'	+3° 3'	-9° 9'
No. 1340. Latitude +4° 3'								191° 350 G	9	32	4	16	26° 2'	+5° 4'	+3° 3'	+3° 2'	
Group 13876 in Rotation 1173								192° 358 G	7	32	4	17	26° 1'	+5° 1'	+3° 4'	+16° 5'	
" 13893 " " 1174								193° 323 C	4	18	2	10	26° 0'	+4° 8'	+3° 0'	+29° 1'	
Group 13876. June 9-20. A stream of normal type. The leader a, a regular spot, alone remains by June 18.								Means	..	..	11	48	26° 3'	..	+3° 4'	..	
								No. 1341. Latitude +8° 1'									
								Group 13880 in Rotation 1174									
								" 13898 " " 1175									
								Group 13880. June 21-July 1. A stream of small, changing spots increasing in size slowly to a more stable condition by June 28 a is the leader, b the follower.									
159° 691 W	29	108	41	160	11° 6'	0° 0'	+6° 4'	-70° 4'	171° 378 G	23	51	24	52	226° 5'	0° 0'	+9° 0'	-60° 8'
160° 431 C	47	302	46	295	12° 6'	+0° 9'	+6° 0'	-59° 6'	172° 359 G	16	51	12	37	228° 4'	+1° 8'	+8° 7'	-45° 9'
161° 308 G	91	497	67	369	13° 4'	+1° 5'	+5° 8'	-47° 2'	173° 377 G	17	57	10	34	230° 2'	+3° 4'	+8° 9'	-30° 7'
162° 387 G	132	543	78	319	15° 7'	+3° 6'	+5° 6'	-30° 9'	174° 375 G	44	161	24	86	229° 1'	+2° 2'	+9° 5'	-18° 6'
163° 349 G	151	618	81	326	16° 8'	+4° 6'	+5° 5'	-16° 8'	175° 374 G	56	232	28	115	230° 7'	+3° 6'	+8° 4'	-3° 7'
164° 394 C	134	736	68	370	18° 0'	+5° 6'	+5° 2'	-1° 8'	176° 442 G	111	480	57	248	232° 2'	+5° 0'	+8° 2'	+11° 9'
165° 489 G	150	607	78	313	19° 5'	+6° 9'	+4° 9'	+14° 2'	177° 310 G	118	473	65	262	232° 3'	+5° 0'	+8° 0'	+23° 5'
166° 352 G	94	566	54	322	21° 3'	+8° 5'	+4° 8'	+27° 4'	178° 306 G	68	277	36	175	233° 0'	+5° 5'	+7° 5'	+37° 4'
167° 337 G	76	543	50	358	21° 7'	+8° 8'	+4° 4'	+40° 9'	179° 278 G	55	265	43	208	233° 1'	+5° 5'	+7° 8'	+50° 3'
168° 320 G	62	329	53	280	21° 9'	+8° 8'	+4° 4'	+54° 1'	180° 410 G	35	166	43	207	233° 9'	+6° 2'	+7° 8'	+66° 1'
169° 341 G	37	202	49	269	22° 2'	+8° 9'	+4° 5'	+67° 9'	181° 373 G	9	42	25	118	235° 2'	..	+6° 1'	+80° 2'
170° 339 G	16	87	52	285	22° 4'	..	+4° 8'	+81° 3'	Means	..	..	34	142	230° 9'	..	+6° 4'	..
Spot a								Spot a									
159° 691 W	18	49	23	62	15° 3'	0° 0'	+6° 6'	-66° 7'	174° 375 G	7	23	4	12	232° 1'	0° 0'	+6° 6'	-15° 6'
160° 431 C	20	138	18	121	16° 9'	+1° 5'	+6° 2'	-55° 3'	175° 374 G	16	69	8	34	233° 4'	+1° 2'	+7° 8'	-1° 0'
161° 308 G	34	185	23	128	17° 5'	+1° 9'	+5° 8'	-43° 1'	176° 442 G	69	298	36	155	233° 9'	+1° 5'	+7° 8'	+13° 6'
162° 387 G	58	281	33	160	19° 0'	+3° 2'	+5° 5'	-27° 6'	continued								
163° 349 G	78	356	41	185	19° 7'	+3° 8'	+5° 0'	-13° 9'									
164° 394 C	103	526	52	263	20° 5'	+4° 4'	+4° 9'	+0° 7'									
165° 489 G	115	474	60	246	21° 0'	+4° 7'	+4° 6'	+15° 7'									
166° 352 G	87	543	50	310	21° 5'	+5° 0'	+4° 6'	+27° 6'									
167° 337 G	74	536	49	354	21° 7'	+5° 1'	+4° 4'	+40° 9'									
168° 320 G	62	329	53	280	21° 9'	+5° 1'	+4° 4'	+54° 1'									
169° 341 G	37	202	49	269	22° 2'	+5° 2'	+4° 5'	+67° 9'									
170° 339 G	16	87	52	285	22° 4'	..	+4° 8'	+81° 3'									

LEDGER I. - RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR

Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C.M.		Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C.M.								
	Umbrae	Whole Spots	Umbrae	Whole Spots						Umbrae	Whole Spots													
No. 1341. Group 13880 - continued									No. 1342. Group 13885 - continued															
Spot a - continued																								
d									d															
177° 310 G	81	328	45	184	234° 3	+1° 8	+ 7° 4	+25° 5	186° 334 G	42	206	27	132	128° 1	-0° 4	+ 3° 7	+38° 7							
178° 308 G	46	224	29	143	234° 6	+2° 0	+ 7° 3	+39° 0	187° 342 G	35	192	28	156	128° 0	-0° 7	+ 3° 7	+52° 0							
179° 278 G	37	166	30	136	235° 1	+2° 3	+ 7° 4	+52° 3	188° 355 G	23	111	28	134	128° 3	-0° 6	+ 3° 6	+65° 7							
180° 410 G	23	129	30	168	235° 4	+2° 5	+ 7° 7	+67° 6	189° 384 G	14	65	39	183	128° 9	-0° 1	+ 2° 6	+79° 9							
									Means								..	..	48	237	127° 6	..	+ 4° 2	..
Spot b																								
									Group 13905. July 24-Aug. 3. A small regular spot slowly shrinking to a dot when last seen.															
174° 375 G	16	55	9	50	227° 0	0° 0	+10° 3	-20° 7	204° 360 G	7	37	19	101	131° 0	-2° 5	+ 3° 8	-79° 8							
175° 374 G	14	65	7	32	230° 0	+2° 9	+ 8° 2	- 4° 4	205° 296 G	21	83	27	107	131° 0	-2° 7	+ 4° 1	-67° 4							
176° 442 G	30	122	15	62	229° 2	+1° 9	+ 8° 6	+ 8° 9	206° 679 W	26	115	20	87	131° 5	-2° 4	+ 4° 3	-48° 7							
177° 310 G	28	106	15	57	229° 0	+1° 6	+ 8° 8	+20° 2	207° 406 G	28	154	18	100	131° 1	-3° 0	+ 4° 4	-39° 4							
178° 308 G	12	53	7	32	228° 8	+1° 2	+ 8° 3	+33° 2	208° 362 G	34	189	19	106	131° 3	-2° 9	+ 4° 4	-26° 6							
179° 278 G	18	99	13	72	229° 5	+1° 8	+ 8° 2	+46° 7	209° 804 W	34	138	17	69	131° 6	-2° 9	+ 4° 6	- 7° 2							
180° 410 G	12	37	13	39	229° 8	+2° 0	+ 8° 3	+62° 0	210° 323 G	32	151	16	76	131° 8	-2° 8	+ 4° 7	- 0° 2							
Group 13895. July 15-27. A small regular spot (a of Group 13880) slowly dying out. The spot on July 26-27 represents a feeble revival of activity a few degrees away.									211° 433 G	32	158	17	82	132° 3	-2° 5	+ 4° 7	+15° 0							
196° 316 G	7	30	18	76	238° 3	+3° 2	+ 7° 9	-79° 0	212° 386 G	25	110	14	63	132° 6	-2° 3	+ 4° 5	+27° 9							
197° 392 G	14	92	16	107	238° 2	+2° 9	+ 7° 9	-64° 8	213° 097 K	8	47	5	30	133° 1	-2° 0	+ 4° 5	+57° 8							
198° 508 G	18	94	14	72	238° 3	+2° 9	+ 7° 8	-50° 0	214° 415 G	5	11	4	10	133° 6	-1° 7	+ 4° 9	+55° 8							
199° 348 G	16	97	10	62	238° 2	+2° 7	+ 7° 8	-38° 9	Means	..	..	15	75	132° 0	..	+ 4° 4	..							
200° 356 G	25	143	14	80	237° 9	+2° 2	+ 7° 7	-25° 9	No. 1343. Latitude +12° 2															
201° 384 G	21	101	11	52	238° 2	+2° 4	+ 7° 7	-12° 0	Group 13886 in Rotation 1174															
202° 361 G	16	74	8	37	238° 4	+2° 4	+ 7° 5	+ 1° 1	" 13906 "	" "	" "	1175												
203° 337 G	9	46	5	24	238° 5	+2° 4	+ 7° 5	+14° 1	" 13922 "	" "	" "	1176												
204° 360 G	5	25	3	14	238° 4	+2° 2	+ 7° 7	+27° 6	Group 13886. June 27-July 10. Two spots nearly regular in outline. The leader, a, slowly dies out by July 7; the follower, b, remains fairly stable until July 6. Then changes begin to occur, not only in the spot itself but in the formation of penumbral filaments and spot nuclei nearby, and the group has risen considerably in area as it passes out of sight at the west limb. On July 8 an extensive solar flare was recorded at 15 ^h 41 ^m to 16 ^h 08 ^m at the Mount Wilson Observatory (P.A.S.P. 53, Plate XXIII, 1941). An earlier major flare on July 3 lasting from 15 ^h 09 ^m to 20 ^h 40 ^m U.T. was probably intimately related to the cause of the "great" geomagnetic storm of July 4-5.															
205° 296 G	2	9	1	6	238° 5	+2° 1	+ 8° 0	+40° 1	177° 310 G	7	37	27	141	126° 0	..	+13° 6	-82° 8							
206° 679 W	0	10	0	11	242° 2	+5° 7	+10° 7	+62° 0	178° 306 G	58	240	102	411	122° 6	0° 0	+13° 4	-73° 0							
207° 406 G	0	7	0	10	240° 5	+3° 8	+ 8° 5	+70° 0	179° 278 G	111	492	112	500	122° 6	-0° 1	+13° 6	-60° 2							
Means	..	..	9	49	238° 5	..	+ 7° 8	..	180° 410 G	167	820	121	592	121° 7	-1° 1	+13° 5	-46° 1							
No. 1342. Latitude +4° 3									181° 373 G	148	748	89	451	122° 1	-0° 7	+13° 3	-32° 9							
Group 13885 in Rotation 1174									182° 349 G	134	830	72	446	121° 6	-1° 3	+12° 9	-20° 5							
" 13905 "	" "	" "	1175						183° 355 G	137	703	70	359	122° 1	-0° 9	+13° 1	- 6° 7							
Group 13885. June 27-July 9. A regular spot with several companions until July 3. The magnetic polarities are irregular (P.A.S.P. 53, 259, 1941).									184° 384 G	141	730	72	372	122° 3	-0° 7	+13° 1	+ 7° 1							
177° 310 G	5	12	(14	34	128° 8	..	+ 5° 9)	-80° 0	185° 323 G	122	644	66	348	122° 0	-1° 1	+12° 9	+19° 4							
178° 306 G	51	224	69	303	127° 1	0° 0	+ 5° 0	-68° 5	186° 334 G	113	631	68	381	122° 5	-0° 7	+13° 3	+33° 1							
179° 278 G	81	419	71	377	126° 3	-1° 0	+ 5° 0	-56° 5	187° 342 G	100	582	73	426	121° 7	-1° 6	+13° 1	+45° 7							
180° 410 G	123	522	80	346	126° 8	-0° 7	+ 4° 6	-41° 0																
181° 373 G	109	562	61	327	127° 1	-0° 5	+ 4° 6	-27° 9																
182° 349 G	86	542	45	282	127° 6	-0° 2	+ 4° 6	-14° 5																
183° 355 G	106	490	52	246	127° 9	-0° 1	+ 4° 6	- 0° 9																
184° 384 G	95	388	48	198	127° 3	-0° 9	+ 4° 1	+12° 1																
185° 323 G	53	298	29	164	127° 8	-0° 5	+ 3° 9	+25° 2																

LEDGER I. - RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR

Date U. T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Lat- itude	Long. from C.M.				Date U. T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Lat- itude	Long. from C.M.			
	Umbræ	Whole Spots	Umbræ	Whole Spots								Umbræ	Whole Spots	Umbræ	Whole Spots						
No. 1343. Group 13886 - continued										No. 1343. - continued											
										Group 13922. Aug. 20-Sept. 2. When first seen near the east limb, the group consists of a large regular spot closely preceded and followed by clusters of small spots. By August 24, a small regular spot has formed in front, but a marked decline of the whole group sets in, and by August 31 the parent spot alone survives.											
Means 91 490 122° 0 .. +13° 2 ..										Means 71 369 129° 2 .. +11° 1 ..											
Spot a										Spot a											
178° 306 G 28 141 43 217 124° 5 0° 0 +13° 5 -71° 1										231° 362 G 23 91 83 329 130° 5 .. +11° 5 -83° 3											
179° 278 G 51 231 48 219 124° 8 +0° 2 +13° 6 -58° 0										232° 350 G 76 345 112 518 129° 3 +5° 2 +11° 4 -71° 4											
180° 410 G 58 300 40 207 124° 8 +0° 1 +13° 4 -43° 0										233° 427 G 137 712 127 664 129° 4 +5° 2 +11° 7 -57° 1											
181° 373 G 60 233 35 137 124° 7 0° 0 +13° 2 -30° 3										234° 141 K 132 855 99 645 129° 1 +4° 9 +11° 4 -48° 0											
182° 349 G 49 155 26 82 124° 6 -0° 2 +12° 7 -17° 5										235° 492 C 171 1038 99 600 129° 1 +4° 8 +11° 3 -30° 1											
183° 355 G 35 139 18 71 124° 4 -0° 5 +12° 6 -4° 4										236° 588 G 180 840 93 435 130° 7 +6° 3 +11° 2 -14° 0											
184° 384 G 28 134 14 68 124° 3 -0° 6 +12° 6 +9° 1										237° 405 G 142 688 71 346 131° 1 +6° 6 +11° 5 -2° 8											
185° 333 G 16 46 9 25 124° 2 -0° 8 +12° 3 +21° 6										238° 393 C 130 679 66 346 129° 1 +4° 6 +11° 1 +8° 2											
186° 334 G 7 42 4 26 124° 4 -0° 7 +12° 2 +35° 0										239° 411 G 103 465 55 253 128° 6 +4° 0 +10° 6 +21° 2											
187° 342 G 5 23 4 17 124° 2 -1° 0 +12° 4 +48° 2										240° 359 C 70 363 43 219 128° 4 +3° 7 +10° 5 +33° 5											
										241° 357 G 46 170 34 123 128° 5 +3° 7 +10° 4 +46° 8											
										242° 360 G 23 89 22 86 128° 2 +3° 4 +10° 1 +59° 7											
										243° 411 G 18 113 31 196 128° 9 +4° 0 +11° 7 +74° 3											
										244° 346 G 0 14 0 57 126° 7 .. +12° 4 +84° 4											
Spot b										Spot b											
178° 306 G 30 99 59 194 120° 1 0° 0 +13° 2 -75° 5										196° 316 G 2 5 1 3 322° 6 0° 0 -13° 8 +5° 3											
179° 278 G 53 238 57 257 120° 4 +0° 2 +13° 2 -62° 4										197° 392 G 28 138 16 78 323° 3 +0° 7 -14° 8 +20° 3											
180° 410 G 104 508 77 376 120° 6 +0° 3 +13° 2 -47° 2										198° 506 C 152 733 101 483 324° 0 +1° 4 -15° 0 +35° 7											
181° 373 G 88 515 54 314 120° 9 +0° 6 +13° 2 -34° 1										199° 348 G 122 605 96 477 323° 7 +1° 1 -14° 8 +46° 6											
182° 349 G 85 675 46 364 121° 0 +0° 6 +12° 9 -21° 1										200° 356 G 71 380 79 428 324° 9 +2° 3 -14° 7 +61° 1											
183° 355 G 102 584 52 288 121° 3 +0° 8 +13° 3 -7° 5										201° 384 G 30 143 70 325 325° 4 +2° 7 -14° 5 +75° 2											
184° 384 G 113 596 58 304 121° 7 +1° 2 +13° 2 +6° 5										202° 361 G 2 18 (12) 110 321° 0 .. -15° 1 +83° 7											
185° 333 G 97 559 52 302 121° 8 +1° 2 +13° 0 +19° 2										Means 60 298 324° 0 .. -14° 6 ..											
186° 334 G 90 469 54 281 122° 0 +1° 3 +12° 9 +32° 6										Spot a											
187° 342 G 81 450 59 328 122° 6 +1° 8 +13° 1 +46° 6										197° 392 G 14 53 8 30 325° 5 0° 0 -13° 9 +22° 5											
188° 355 G 67 365 64 350 121° 3 +0° 5 +13° 2 +58° 7										198° 506 C 76 341 52 232 326° 5 +1° 0 -14° 1 +38° 2											
189° 384 G 76 492 124 802 121° 5 +0° 6 +13° 0 +72° 5										199° 348 G 58 285 48 237 327° 2 +1° 7 -13° 9 +50° 1											
190° 361 G 14 76 64 343 120° 5 .. +13° 7 +84° 4										200° 356 G 34 198 42 244 327° 7 +2° 2 -13° 7 +63° 9											
Group 13906. July 24-Aug. 6. A large principal spot with a few unstable companions.										201° 384 G 18 76 49 208 328° 0 +2° 5 -13° 4 +77° 8											
204° 360 G 2 16 (12) 98 124° 4 .. +13° 6 -86° 4										Spot b											
205° 296 G 58 292 112 564 122° 6 +0° 5 +13° 3 -75° 8										197° 392 G 14 85 8 48 322° 4 0° 0 -15° 2 +19° 4											
206° 679 W 101 549 94 511 122° 5 +0° 3 +12° 7 -57° 7										198° 506 C 76 392 49 251 321° 8 -0° 6 -15° 7 +33° 5											
207° 406 G 140 1090 105 818 122° 1 -0° 2 +12° 5 -48° 4										continued											
208° 362 G 143 1141 89 707 122° 2 -0° 1 +12° 4 -35° 7																					
209° 804 W 182 992 96 526 121° 8 -0° 6 +12° 1 -17° 0																					
210° 323 G 206 1159 105 591 122° 3 -0° 2 +12° 1 -9° 7																					
211° 433 G 185 1014 92 507 122° 2 -0° 4 +11° 9 +4° 9																					
212° 386 G 142 957 75 507 122° 3 -0° 3 +12° 2 +17° 6																					
213° 097 K 144 1054 81 590 121° 9 -0° 8 +12° 4 +26° 6																					
214° 415 G 103 621 71 428 121° 5 -1° 3 +12° 3 +43° 7																					
215° 681 W 52 247 52 247 121° 5 -1° 4 +12° 5 +60° 4																					
216° 392 G 44 222 62 313 121° 8 -1° 1 +12° 2 +70° 1																					
217° 350 G 14 87 48 298 121° 6 .. +11° 5 +82° 6																					
Means 88 558 122° 1 .. +12° 4 ..																					

LEDGER I. - RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR																	
Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C.M.	Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C.M.		
	Umbrae	Whole Spots	Umbrae	Whole Spots					Umbrae	Whole Spots	Umbrae	Whole Spots					
No. 1344. Group 13897 - continued								No. 1345. Group 13904 - continued									
Spot b - continued								Spot a - continued									
d								d									
199° 348 G	64	320	48	240	321° 5'	-0° 9'	-15° 8'	+44° 4'	204° 360 G	87	407	53	248	177° 3' + 5° 3'	-3° 7'	-33° 5'	
200° 366 G	37	182	37	184	321° 2'	-1° 2'	-15° 9'	+57° 4'	205° 298 G	104	538	56	291	178° 0' + 5° 8'	-3° 4'	-20° 4'	
201° 384 G	12	67	21	117	321° 2'	-1° 2'	-16° 0'	+71° 0'	206° 679 W	94	629	48	321	178° 5' + 6° 1'	-3° 5'	-1° 7'	
Group 13916. Aug. 6-12. A small spot dying out - perhaps a of Group 13897.								207° 406 G	113	642	58	327	179° 1' + 6° 5'	-3° 3'	+ 8° 6'		
								208° 362 G	115	756	63	416	179° 6' + 6° 9'	-4° 1'	+21° 7'		
								209° 804 W	108	486	75	335	181° 0' + 8° 0'	-4° 6'	+42° 2'		
								210° 323 G	80	502	62	392	181° 1' + 8° 0'	-4° 5'	+49° 1'		
								211° 433 G	87	369	104	439	181° 8' + 8° 5'	-5° 0'	+64° 5'		
								212° 386 G	18	140	45	383	182° 7' + 9° 2'	-5° 1'	+78° 0'		
								Spot b									
217° 350 G	18	85	23	122	332° 1'	+6° 4'	-15° 1'	-66° 9'	203° 337 G	39	147	35	131	169° 1' 0° 0'	-3° 8'	-55° 3'	
218° 333 G	21	73	20	69	332° 1'	+6° 4'	-16° 3'	-53° 9'	204° 360 G	53	338	36	230	169° 2' - 0° 1'	-2° 9'	-41° 6'	
219° 395 C	13	80	9	57	331° 7'	+6° 0'	-15° 7'	-40° 3'	205° 298 G	76	497	44	288	169° 1' - 0° 4'	-2° 8'	-29° 3'	
220° 411 G	18	62	11	38	332° 2'	+6° 4'	-15° 9'	-26° 4'	206° 679 W	59	382	30	196	169° 1' - 0° 6'	-2° 3'	-11° 1'	
221° 386 G	7	18	4	10	332° 2'	+6° 4'	-15° 9'	-13° 5'	207° 406 G	161	1173	82	598	168° 7' - 0° 1'	-2° 8'	-0° 8'	
222° 563 G	7	18	4	10	332° 5'	+6° 7'	-16° 2'	+ 2° 4'	208° 362 G	131	1228	67	633	170° 5' + 0° 5'	-3° 2'	+12° 6'	
223° 355 G	7	34	4	19	331° 4'	+5° 6'	-14° 9'	+11° 8'	209° 804 W	84	402	50	237	168° 1' - 1° 2'	-3° 6'	+30° 3'	
Means	..	..	11	46	332° 0'	..	-15° 7'	..	210° 323 G	57	403	36	258	169° 2' - 1° 2'	-3° 3'	+37° 2'	
No. 1345. Latitude -3° 7'								211° 433 G	66	389	57	335	171° 1' + 0° 6'	-3° 5'	+53° 8'		
Group 13904 in Rotation 1175								212° 386 G	16	121	20	155	171° 1' + 0° 4'	-3° 1'	+66° 4'		
" 13919 " " 1176								213° 097 K	8	64	16	125	170° 1' - 0° 7'	-2° 8'	+74° 8'		
Group 13904. July 21-Aug. 2. A large stream in development. The leader, a, at first is complex, showing considerable changes until July 24 when it assumes a more regular outline. Meanwhile the follower, b, is growing into a complex spot larger than the leader.								Group 13919. Aug. 16-28. A slowly decaying spot (perhaps a of Group 13904) with several variable companions.									
201° 384 G	2	7	5	19	171° 5'	0° 0'	-4° 0'	-78° 7'	227° 354 G	14	112	44	353	186° 5'	..	-3° 9'	-80° 3'
202° 361 G	37	164	46	206	171° 9'	+0° 2'	-4° 4'	-65° 4'	228° 412 G	43	255	57	339	185° 6' + 9° 3'	-4° 0'	-67° 2'	
203° 337 G	164	768															

LEDGER I. -- RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR

Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C.M.	Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C.M.		
	Umbræ	Whole Spots	Umbræ	Whole Spots					Umbræ	Whole Spots	Umbræ	Whole Spots					
No. 1346. Group 13909 - continued								No. 1347. - continued									
Group 13925. Aug. 26-Sept. 4. A single spot disintegrating into a short stream and so dying out.								Group 13930. Aug. 30-Sept. 4. A small dying spot.									
211° 433 G	23	121	45	248	40° 9'	0° 0'	+10° 1'	-76° 4'	241° 357 G	0	5	0	14	4° 0'	-1° 0'	-13° 1'	-77° 7'
212° 386 G	80	446	87	488	41° 1'	+0° 1'	+10° 3'	-63° 6'	242° 360 G	2	7	3	9	3° 1'	-1° 9'	-13° 2'	-65° 4'
213° 097 K	102	681	85	565	41° 7'	+0° 6'	+10° 6'	-53° 6'	243° 411 G	5	11	4	10	2° 8'	-2° 3'	-13° 0'	-51° 8'
214° 415 G	170	999	106	621	41° 8'	+0° 6'	+10° 5'	-36° 0'	244° 346 G	7	11	5	8	2° 8'	-2° 4'	-12° 9'	-39° 5'
215° 681 W	181	939	98	499	41° 2'	-0° 2'	+10° 5'	-19° 9'	245° 417 G	2	5	1	3	3° 0'	-2° 2'	-13° 3'	-25° 1'
216° 392 G	196	1367	100	698	41° 7'	+0° 2'	+9° 8'	-10° 0'	246° 364 G	2	14	1	8	3° 4'	-1° 9'	-13° 1'	-12° 2'
217° 350 G	231	1344	116	672	41° 7'	+0° 1'	+9° 7'	+2° 7'	Means	..	..	2	9	3° 2'	..	-13° 1'	..
218° 333 G	293	1850	153	961	41° 9'	+0° 2'	+10° 4'	+15° 9'	No. 1348. Latitude +12° 3'								
219° 395 C	262	1560	151	899	42° 3'	+0° 5'	+10° 3'	+30° 3'	Group 13923 in Rotation 1176								
220° 411 G	227	1182	157	810	42° 4'	+0° 5'	+10° 2'	+43° 8'	" 13937 " " 1177								
221° 386 G	128	760	116	688	42° 8'	+0° 8'	+10° 1'	+57° 1'	" 13952 " " 1178								
222° 563 G	87	406	142	660	43° 0'	+0° 8'	+10° 0'	+72° 9'	" 13954 " " 1178								
223° 355 G	32	137	121	494	42° 0'	..	+9° 8'	+82° 4'	Group 13923. Aug. 21-27. Small spots in a stream that soon disintegrates.								
Means	..	..	114	665	41° 9'	..	+10° 2'	..	232° 350 G	30	155	16	79	210° 9'	0° 0'	+12° 6'	+10° 2'
Group 13925. Aug. 26-Sept. 4. A single spot disintegrating into a short stream and so dying out.								233° 427 G	73	319	40	174	210° 1'	-0° 9'	+12° 8'	+23° 6'	
237° 405 G	9	39	43	187	48° 8'	..	+8° 5'	-85° 1'	234° 141 K	50	203	30	122	210° 7'	-0° 3'	+12° 5'	+33° 6'
238° 393 C	26	191	44	321	47° 4'	+3° 5'	+8° 7'	-73° 5'	235° 492 C	31	105	25	85	211° 5'	+0° 4'	+12° 8'	+52° 3'
239° 411 G	36	241	36	241	47° 4'	+3° 3'	+8° 9'	-60° 0'	236° 588 G	4	31	4	33	207° 4'	-3° 8'	+12° 1'	+62° 7'
240° 359 C	48	297	35	217	47° 7'	+3° 5'	+9° 0'	-47° 2'	237° 405 G	5	14	6	18	202° 3'	-9° 0'	+12° 5'	+68° 4'
241° 357 G	66	284	40	171	47° 3'	+3° 0'	+9° 2'	-34° 4'	238° 393 C	0	9	0	24	201° 3'	..	+13° 1'	+80° 4'
242° 360 G	36	146	20	79	46° 5'	+2° 1'	+10° 0'	-22° 0'	Means	..	..	20	85	208° 6'	..	+12° 6'	..
243° 411 G	35	102	17	52	46° 3'	+1° 6'	+10° 2'	-8° 3'	No. 1347. Latitude -13° 0'								
244° 346 G	18	68	9	34	45° 7'	+1° 1'	+10° 5'	+3° 4'	Group 13912 in Rotation 1176								
245° 417 G	9	34	5	18	46° 1'	+1° 4'	+10° 4'	+18° 0'	" 13930 " " 1176								
246° 364 G	11	75	6	44	46° 1'	+1° 3'	+9° 1'	+30° 5'	Group 13912. Aug. 3-14. A large stable regular spot showing a small drift in latitude from the equator. Its umbra is crossed by a bright "bridge" on August 11 and 12.								
Means	..	..	24	131	46° 7'	..	+9° 6'	..	Group 13937. Sept. 10-23. A giant group in development. When near the east limb, the group consists of a larger leader, a, followed by a regular spot, b, that remains stable throughout in contrast to the great changes that take place in front of it. From September 13 a becomes very elongated and develops multiple umbrae. At the same time, spots just south of it grow rapidly and merge with it into one extensive complex structure. In addition, some spots nearer the stable follower increase to yet another, though smaller, multiple spot, so that at maximum development the group appears almost as one long, loosely compacted entity, terminating in a typical regular spot. A great magnetic storm began at Abinger at 4 ^h .8 U.T. on September 18, about 20½ hours after the onset of an intense solar flare over the group.								
No. 1347. Latitude -13° 0'								Group 13937. Sept. 10-23. A giant group in development. When near the east limb, the group consists of a larger leader, a, followed by a regular spot, b, that remains stable throughout in contrast to the great changes that take place in front of it. From September 13 a becomes very elongated and develops multiple umbrae. At the same time, spots just south of it grow rapidly and merge with it into one extensive complex structure. In addition, some spots nearer the stable follower increase to yet another, though smaller, multiple spot, so that at maximum development the group appears almost as one long, loosely compacted entity, terminating in a typical regular spot. A great magnetic storm began at Abinger at 4 ^h .8 U.T. on September 18, about 20½ hours after the onset of an intense solar flare over the group.									
214° 415 G	27	137	58	288	3° 4'	0° 0'	-12° 2'	-74° 4'	252° 349 C	13	114	(50	435	212° 9'	..	+11° 4'	-83° 7'
215° 681 W	45	254	45	257	3° 4'	-0° 1'	-12° 2'	-57° 7'	253° 423 G	79	526	121	832	209° 8'	-2° 6'	+12° 0'	-72° 6'
216° 392 G	71	398	57	318	3° 4'	-0° 1'	-12° 6'	-48° 3'	254° 361 C	142	979	141	984	209° 1'	-3° 4'	+11° 6'	-60° 9'
217° 350 G	96	469	62	305	3° 3'	-0° 3'	-12° 7'	-35° 7'	255° 128 K	247	1449	192	1111	210° 0'	-2° 5'	+11° 7'	-49° 9'
218° 333 G	89	488	51	278	3° 3'	-0° 3'	-12° 8'	-22° 7'	256° 417 C	305	1900	183	1131	209° 8'	-2° 8'	+11° 7'	-33° 1'
219° 395 C	107	577	58	312	3° 4'	-0° 3'	-12° 9'	-8° 6'	257° 650 G	409	2781	214	1458	209° 2'	-3° 5'	+11° 5'	-17° 4'
220° 411 G	108	579	57	307	3° 5'	-0° 3'	-12° 8'	+4° 9'									
221° 386 G	78	513	44	287	3° 6'	-0° 2'	-13° 0'	+17° 9'									
222° 563 G	85	394	54	252	3° 7'	-0° 2'	-13° 0'	+33° 6'									
223° 355 G	50	300	38	225	4° 1'	+0° 2'	-13° 1'	+44° 5'									
224° 124 K	34	197	32	185	4° 2'	+0° 2'	-13° 5'	+54° 7'									
225° 349 G	34	105	59	183	4° 3'	+0° 3'	-13° 2'	+71° 0'									
Means	..	..	52	267	3° 7'	..	-12° 9'	..									

LEDGER I. - RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR

Date U. T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Lati- tude	Long. from C.M.	Date U. T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Lati- tude	Long. from C.M.								
	Umbræ	Whole Spots	Umbræ	Whole Spots					Umbræ	Whole Spots													
No. 1348. Group 13937 - continued								No. 1348. Group 13952 - continued															
^d					^o	^o	^o	^d					^o	^o	^o								
258° 451 G	514	3272	260	1656	209° 9	-2° 9	+11° 2	- 6° 1	280° 303 C	52	262	56	283	224° 5 + 9° 6	+13° 1 -63° 1								
259° 354 G	569	3746	288	1896	209° 8	-3° 0	+11° 5	+ 5° 7	281° 300 C	92	452	72	356	223° 7 + 8° 7	+13° 4 -50° 8								
260° 383 G	688	4678	368	2598	209° 4	-3° 5	+11° 3	+18° 9	282° 627 G	93	534	56	322	222° 9 + 7° 8	+13° 1 -34° 1								
261° 414 G	659	4720	395	2615	209° 8	-3° 2	+11° 6	+32° 9	283° 412 G	129	595	70	322	224° 8 + 9° 6	+12° 4 -21° 8								
262° 842 C	568	4036	409	2916	210° 9	-2° 2	+11° 7	+46° 3	284° 411 G	115	651	58	331	226° 2 +11° 0	+11° 6 - 7° 2								
263° 546 G	419	2830	449	3088	212° 1	-1° 0	+11° 9	+63° 3	285° 381 G	78	369	40	185	225° 4 +10° 1	+12° 2 + 4° 8								
264° 412 G	164	1336	(298	2401	212° 1	..	+11° 8	+74° 8	286° 597 G	65	342	36	188	227° 3 +11° 9	+11° 2 +22° 7								
265° 558 G	62	256	(172	716	203° 3	..	+12° 6	+81° 1	287° 439 G	57	287	35	173	227° 4 +11° 9	+11° 3 +33° 9								
Means	..	..	275	1862	210° 0	..	+11° 6	..	288° 399 G	26	140	19	100	227° 0 +11° 5	+11° 7 +46° 2								
									289° 412 G	9	38	8	36	225° 7 +10° 1	+13° 0 +58° 2								
									290° 296 C	6	30	8	41	225° 1 + 9° 4	+12° 8 +69° 3								
Spot a								Means								..	..	43	215	225° 4	..	+12° 4	..
Group 13954. Oct. 8-20. A stable regular spot (b of Group 13937) in slow decline, with a companion on October 18 and 19.																							
252° 349 C	13	114	50	435	212° 9	..	+11° 4	-83° 7	280° 303 C	9	54	34	206	203° 9	..	+12° 9	-83° 7						
253° 423 G	68	436	92	593	213° 0	0° 0	+11° 7	-69° 4	281° 300 C	30	176	44	259	203° 5	- 0° 2	+12° 8	-71° 0						
254° 361 C	110	727	99	654	213° 0	-0° 1	+11° 3	-57° 0	282° 627 G	58	282	49	240	202° 5	- 1° 3	+12° 8	-54° 5						
255° 128 K	180	1127	130	811	213° 1	0° 0	+11° 5	-46° 8	283° 412 G	80	369	55	255	202° 6	- 1° 3	+12° 7	-44° 0						
256° 417 C	203	1295	116	738	213° 3	+0° 1	+11° 5	-29° 6	284° 411 G	95	386	56	228	202° 4	- 1° 6	+12° 9	-31° 0						
257° 650 G	148	1080	75	551	213° 5	+0° 2	+11° 2	-13° 1	285° 381 G	95	388	50	206	201° 9	- 2° 1	+12° 5	-18° 7						
258° 451 G	173	979	86	490	213° 6	+0° 4	+11° 1	- 2° 2	286° 597 G	75	422	38	211	201° 6	- 2° 5	+12° 6	- 3° 0						
259° 354 G	166	911	85	465	213° 8	+0° 4	+10° 8	+ 9° 7	287° 439 G	64	362	33	185	201° 4	- 2° 8	+12° 6	+ 7° 9						
Spot a ¹								288° 399 G								56	326	30	176	201° 2	- 3° 0	+12° 4	+20° 4
256° 417 C	13	87	8	50	213° 0	0° 0	+ 8° 9	-29° 9	289° 412 G	51	278	31	167	201° 3	- 3° 0	+12° 7	+33° 8						
257° 650 G	88	556	45	284	213° 2	+0° 1	+ 8° 7	-13° 4	290° 296 C	48	270	34	194	201° 2	- 3° 2	+13° 5	+45° 4						
258° 451 G	130	893	65	446	213° 4	+0° 3	+ 8° 5	- 2° 6	291° 482 G	26	166	27	171	201° 4	- 3° 1	+12° 9	+61° 2						
259° 354 G	86	776	44	396	214° 7	+1° 5	+ 9° 2	+10° 6	292° 412 G	11	73	18	123	201° 3	- 3° 2	+12° 8	+73° 4						
Spot b								Means								..	..	39	201	201° 9	..	+12° 8	..
No. 1349. Latitude -5° 6																							
Group 13932 in Rotation 1177																							
" 13950 " " 1178																							
Group 13932. Aug. 31-Sept. 12. A regular spot followed by a train of changing companions.																							
242° 360 G	14	70	37	186	350° 2	0° 0	- 5° 9	-78° 3	243° 411 G	27	209	33	252	350° 3	- 0° 1	- 6° 1	-64° 3						
244° 346 G	43	266	36	219	351° 8	+ 0° 8	- 5° 9	-51° 0	245° 417 G	75	345	49	222	351° 2	+ 0° 5	- 5° 9	-36° 9						
246° 364 G	93	438	52	245	351° 8	+ 0° 7	- 5° 6	-24° 0	247° 560 G	84	491	44	256	352° 3	+ 1° 2	- 5° 7	- 7° 5						
248° 347 C	85	627	44	320	351° 1	- 0° 1	- 5° 7	+ 1° 7	249° 366 G	116	581	63	313	352° 5	+ 1° 1	- 6° 0	+16° 5						
250° 408 C	112	705	67	419	351° 7	+ 0° 2	- 6° 0	+29° 5	251° 402 C	68	458	49	329	352° 9	+ 1° 2	- 6° 1	+43° 8						
252° 349 C	48	305	46	292	353° 8	+ 2° 0	- 6° 2	+57° 2	253° 423 G	27	145	45	244	354° 0	+ 2° 0	- 6° 3	+71° 6						
254° 361 C	4	31	19	148	353° 2	..	- 5° 7	+83° 2	Means	..	..	47	275	351° 9	..	- 6° 0	..						
Group 13952. Oct. 6-18. With Group 13954 a return of Group 13937. A decaying regular spot ending rather abruptly. Small variable clusters of small spots both precede and follow the parent spot until October 16.								278° 416 G								0	11	0	59	226° 5	..	+13° 1	-86° 0
279° 320 C	30	133	56	246	225° 2	+10° 3	+12° 9	-75° 4	279° 320 C	30	133	56	246	225° 2	+10° 3	+12° 9	-75° 4						

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LEDGER I. - RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR																						
Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C.M.	Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C.M.							
	Umbræ	Whole Spots	Umbræ	Whole Spots					Umbræ	Whole Spots	Umbræ	Whole Spots										
No. 1352. Group 13968 - continued								No. 1352. - continued														
^d					^o	^o	^o						^o	^o	^o							
316° 282 C	16	82	10	55	131° 9	0° 0	- 5° 7	- 41° 2	Group 13995. 1942 Jan. 4-15. When first seen, a small regular spot, a; on January 7 small spots begin to form behind it as a loose cluster. The whole group declines rapidly after January 11.													
317° 276 C	46	236	26	135	132° 9 + 0° 8	- 6° 1	- 27° 1	^d					^o	^o	^o							
318° 415 G	86	322	44	166	132° 3 + 0° 1	- 5° 5	- 12° 7	3° 538 G	9	30	15	51	131° 4 - 8° 9	- 6° 9	- 73° 2							
319° 274 C	40	265	20	133	133° 2 + 0° 8	- 5° 6	- 0° 5	4° 463 G	13	26	13	27	131° 5 - 8° 9	- 6° 7	- 60° 9							
320° 398 C	38	250	20	131	134° 0 + 1° 4	- 5° 1	+ 15° 1	5° 446 G	13	48	10	36	131° 7 - 8° 9	- 6° 4	- 47° 8							
321° 399 G	37	241	22	141	134° 8 + 2° 1	- 5° 6	+ 29° 1	6° 433 G	19	60	12	37	130° 1 - 10° 6	- 6° 6	- 36° 4							
322° 285 C	75	357	50	239	134° 7 + 1° 8	- 6° 7	+ 40° 7	7° 451 G	34	170	18	92	129° 7 - 11° 2	- 5° 9	- 23° 4							
323° 290 C	42	243	35	206	134° 2 + 1° 2	- 7° 3	+ 53° 4	8° 415 G	59	253	30	128	129° 4 - 11° 6	- 6° 2	- 11° 0							
324° 407 G	26	170	36	229	133° 7 + 0° 5	- 5° 9	+ 67° 7	9° 281 C	51	350	25	176	129° 2 - 12° 0	- 6° 0	+ 0° 2							
325° 473 G	9	65	28	205	132° 5 ..	- 7° 6	+ 80° 5	10° 351 C	134	653	69	338	129° 1 - 12° 3	- 7° 5	+ 14° 2							
Means	..	..	29	159	133° 5 ..	- 5° 9	..	11° 428 G	79	387	46	224	131° 5 - 10° 0	- 6° 6	+ 30° 8							
Group 13982. Dec. 8-19. A compact cluster of spots; a regular spot is left by December 17.								12° 281 C								29	154	19	105	132° 4 - 9° 3	- 6° 0	+ 42° 9
341° 424 G	24	165	49	310	125° 6 - 10° 3	- 7° 3	- 76° 2	13° 281 C	25	117	23	111	134° 5 - 7° 3	- 4° 1	+ 58° 2							
342° 279 C	27	165	30	234	127° 5 - 8° 6	- 7° 2	- 63° 0	14° 418 G	9	43	16	76	135° 0 - 7° 0	- 3° 6	+ 73° 7							
343° 395 C	52	328	38	246	127° 6 - 8° 6	- 6° 9	- 48° 2	Means	..	...	25	117	131° 3 ..	- 6° 0	..							
344° 429 G	99	449	59	270	128° 6 - 7° 8	- 6° 8	- 33° 6	Spot a														
345° 576 G	118	876	62	464	129° 0 - 8° 6	- 6° 4	- 18° 1	3° 538 G	9	30	15	51	131° 4 0° 0	- 6° 9	- 73° 2							
346° 441 C	136	821	69	418	128° 6 - 8° 1	- 6° 7	- 7° 1	4° 463 G	13	26	13	27	131° 5 0° 0	- 6° 7	- 60° 9							
347° 329 C	92	683	46	345	128° 9 - 8° 0	- 6° 9	+ 4° 9	5° 446 G	13	48	10	36	131° 7 0° 0	- 6° 4	- 47° 8							
348° 443 G	88	503	47	269	129° 1 - 7° 9	- 7° 1	+ 19° 8	6° 433 G	15	43	9	26	131° 9 0° 0	- 6° 2	- 34° 6							
349° 427 G	59	321	35	194	129° 5 - 7° 7	- 7° 1	+ 33° 2	7° 451 G	15	73												

ROYAL OBSERVATORY, GREENWICH.

Ledgers of Groups of Sunspots
For the Year
1941

Ledger II.—Non-Recurrent Groups

GREENWICH PHOTO-HELIOGRAPHIC RESULTS, 1941

LEDGER II - NON-RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR 1941.

The time (U.T.) at which the photograph was taken is expressed in the *first* column by the day of the year and decimal of a day reckoned from Greenwich mean midnight.

The place where the photograph was taken is also indicated in the *first* column. A photograph taken at Greenwich is indicated by the letter G, and those taken at the Cape, Kodaikanal, Washington and Mount Wilson by the letters C, K, W and Mt. W respectively.

The projected area of the umbrae and whole spots, given in the *second* and *third* columns, is the area as it is measured on the photograph, uncorrected for the effect of foreshortening, and expressed in millionths of the Sun's apparent disk.

The area corrected for foreshortening given in the *fourth* and *fifth* columns is expressed in millionths of the Sun's visible hemisphere.

The longitude given in the *sixth* column is based on the ephemeris given in the *Nautical Almanac*, assuming a daily sidereal motion of $14^{\circ}.18$, due to the Sun's rotation, constant at all latitudes; this corresponds to Carrington's assumed rotation period of 25.38 days.

The proper motion given in the *seventh* column is derived from the difference of longitude thus computed from the measured positions on any given day and the first day on which the group of spots or single spot is visible, after the correction for the motion appropriate to the latitude has been applied according to the formula, $\xi = 14^{\circ}.37 - 2^{\circ}.60 \sin^2 \phi$. A *plus* sign indicates a motion forwards; a *minus* sign a motion backwards relative to the position of the first day.

The remaining columns correspond to those with similar headings in the preceding section.

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

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LEDGER II. - NON-RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR																	
Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C.M.	Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C.M.		
	Umbrae	Whole Spots	Umbrae	Whole Spots					Umbrae	Whole Spots	Umbrae	Whole Spots					
Group 13785.								Group 13791 - continued									
Jan. 1-8. A tiny spot until January 4; on January 5 other small scattered spots appear.																	
d								d									
0°312 C	0	6	0	3	4°2	0°0	+17°6	-20°5	6°751 W	3	23	10	75	219°6	..	+11°4	-80°3
1°430 G	4	11	2	6	6°7	+2°5	+16°8	-3°2	7°302 C	17	75	32	142	219°0	0°0	+11°5	-73°6
2°451 G	9	24	5	13	8°9	+4°7	+16°3	+12°4	8°425 G	22	106	22	107	219°0	-0°1	+11°6	-58°8
3°480 G	6	71	4	43	10°4	+6°3	+15°9	+27°5	9°451 G	32	147	24	109	219°2	0°0	+11°5	-45°1
4°099 K	22	88	13	56	8°8	+4°7	+15°8	+34°0	10°299 C	46	233	29	144	219°6	+0°3	+11°2	-33°5
5°705 W	2	13	2	13	11°0	+6°9	+15°6	+57°4	11°379 C	29	183	16	101	220°0	+0°6	+11°0	-18°9
6°751 W	2	10	3	14	6°5	+2°4	+16°0	+66°6	12°290 C	35	162	18	84	220°3	+0°8	+10°9	-6°6
7°302 C	0	4	0	8	6°0	+1°9	+15°8	+73°4	13°279 C	29	162	15	84	220°5	+1°0	+10°7	+6°6
									14°281 C	21	100	12	55	220°3	+0°7	+10°7	+19°6
									15°571 G	17	80	11	52	220°5	+0°7	+11°4	+36°8
									16°438 G	15	65	12	51	220°4	+0°6	+11°2	+48°1
									17°287 C	4	21	4	22	220°1	+0°2	+11°5	+59°0
Means	..	..	4	22	7°5	..	+16°4	..	Means	..	..	18	86	219°9	..	+11°2	..
Group 13786.								Group 13794.									
Jan. 1-10. Intermittent. A small cluster on January 1. Nothing is seen until January 7 when a small stream appears np the original position.								Jan. 16-28. A stable regular spot with an occasional companion.									
0°312 C	8	33	6	27	333°3	0°0	+2°1	-51°4	15°571 G	17	69	41	166	107°0	0°0	+11°9	-76°7
1°430 G	0	0	0	0	..	..	..	..	16°438 G	35	151	44	189	107°7	+0°6	+11°7	-64°6
2°451 G	0	0	0	0	..	..	..	..	17°287 C	33	183	29	163	107°7	+0°5	+11°8	-53°4
3°480 G	0	0	0	0	..	..	..	..	18°543 C	54	296	35	192	108°1	+0°8	+11°8	-36°5
4°099 K	0	0	0	0	..	..	..	..	19°286 C	52	280	30	163	108°2	+0°9	+11°2	-26°6
5°705 W	0	0	0	0	..	..	..	..	20°282 C	48	320	26	173	108°2	+0°8	+11°3	-13°5
6°751 W	30	108	19	69	337°4	+2°9	+4°2	+37°5	21°281 C	36	280	19	146	108°3	+0°8	+11°1	-0°2
7°302 C	12	102	9	73	336°9	+2°3	+4°3	+44°3	22°282 C	44	242	24	131	108°7	+1°1	+11°1	+13°3
8°425 G	4	26	4	25</													

LEDGER II. - NON-RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR

LEDGER II. - NON-RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR																
Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Lat- itude	Long. from C.M.	Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Lat- itude	Long. from C.M.	
	Umbræ	Whole Spots	Umbræ	Whole Spots					Umbræ	Whole Spots	Umbræ	Whole Spots				
Group 13798.								Group 13802.								
Jan. 22-28. A small short-lived group.								Jan. 29-Feb. 4. One or two small spots.								
^d					^o	^o	^o	^d					^o	^o	^o	
21° 281 C	4	21	2	11	101° 0	0° 0	-12° 8	-7° 5	28° 295 C	4	38	8	79	301° 4	0° 0	+9° 1 -74° 8
22° 282 C	16	127	8	65	102° 7	+1° 6	-13° 0	+7° 3	29° 541 C	14	90	15	94	300° 1	-1° 5	+9° 7 -59° 7
23° 286 C	33	184	17	98	102° 3	+1° 2	-13° 1	+20° 2	30° 299 C	8	37	6	30	300° 2	-1° 4	+9° 6 -49° 6
24° 279 C	12	69	6	41	102° 5	+1° 3	-13° 6	+33° 4	31° 281 C	10	36	6	24	300° 9	-0° 9	+9° 5 -36° 0
25° 382 C	10	50	8	38	104° 3	+3° 1	-13° 9	+49° 8	32° 435 G	0	0	0	0	..	..	..
26° 298 C	2	8	2	8	101° 3	0° 0	-13° 4	+58° 8	33° 564 G	4	19	2	10	300° 7	-1° 3	+8° 9 -6° 1
27° 281 C	0	10	0	16	102° 1	+0° 8	-13° 6	+72° 6	34° 449 G	6	19	3	10	301° 4	-0° 8	+8° 6 +6° 2
Means	..	..	6	40	102° 3	..	-13° 3	..	Means	..	..	6	35	300° 8	..	+9° 2 ..
Group 13799.								Group 13804.								
Jan. 28-Feb. 5. A regular spot with a companion on January 30.								Feb. 3-9. A spot from the invisible hemisphere dying out on the central meridian.								
27° 281 C	8	54	8	53	329° 9	0° 0	-2° 2	-59° 6	33° 564 G	9	37	30	121	224° 8	..	-9° 1 -82° 0
28° 295 C	25	176	18	123	332° 1	+2° 0	-1° 5	-44° 1	34° 449 G	15	60	21	83	225° 6	0° 0	-9° 0 -69° 6
29° 541 C	50	270	29	152	332° 2	+1° 9	-1° 0	-27° 6	35° 283 C	13	67	12	62	226° 0	+0° 3	-9° 1 -58° 2
30° 299 C	25	234	13	122	333° 2	+2° 7	-1° 3	-16° 6	36° 511 G	13	65	9	44	225° 2	-0° 6	-9° 4 -42° 8
31° 281 C	46	242	23	121	333° 4	+2° 7	-1° 4	-3° 5	37° 505 C	8	38	5	22	226° 1	+0° 1	-9° 2 -28° 8
32° 435 G	28	182	14	93	333° 9	+3° 0	-1° 5	+12° 2	38° 437 C	4	29	2	15	226° 1	0° 0	-9° 7 -16° 5
33° 564 G	37	151	21	85	333° 9	+2° 8	-1° 3	+27° 1	39° 401 C	4	25	2	12	225° 3	-0° 9	-10° 2 -4° 6
34° 449 G	28	125	18	81	334° 2	+3° 0	-1° 2	+39° 0	Means	..	..	8	40	225° 7	..	-9° 4 ..
35° 283 C	6	31	5	24	334° 3	+2° 9	-1° 3	+50° 1								
Means	..	..	17	95	333° 0	..	-1° 4	..	Group 13806.							
Group 13800.								Feb. 5-11. One or two small spots.								
Jan. 28-Feb. 9. On January 28 and 29, a single spot; then other spots appear forming a long stream that has nearly died out by the time the west limb is reached.																
27° 281 C	0	8	0	43	304° 0	..	-11° 0	-85° 5	35° 283 C	2	10	1	5	264° 3	0° 0	-8° 2 -19° 9
28° 295 C	33	192	51	298	304° 2	0° 0	-11° 4	-72° 0	36° 511 G	17	73	8	37	265° 8	+1° 3	-8° 5 -2° 2
29° 541 C	56	381	55	365	302° 2	-2° 1	-11° 4	-57° 6	37° 505 C	14	89	7	45	266° 3	+1° 7	-8° 4 +11° 4
30° 299 C	46	513	37	390	301° 4	-3° 0	-10° 7	-48° 4	38° 437 C	8	38	4	21	269° 2	+4° 5	-9° 1 +26° 6
31° 281 C	113	605	70	378	301° 0	-3° 5	-11° 0	-35° 9	39° 401 C	4	15	3	10	269° 8	+5° 0	-9° 3 +39° 9
32° 435 G	94	654	50	350	301° 2	-3° 4	-11° 2	-20° 5	40° 422 G	4	11	3	9	270° 5	+5° 5	-9° 4 +54° 0
33° 564 G	132	527	67	287	300° 9	-3° 8	-11° 1	-5° 9	41° 283 C	0	15	0	17	270° 0	+4° 9	-9° 7 +64° 8
34° 449 G	121	453	61	231	302° 0	-2° 8	-11° 0	+6° 8	Means	..	..	4	21	268° 0	..	-8° 9 ..
35° 283 C	78	416	42	222	302° 3	-2° 5	-11° 3	+18° 1	Group 13807.							
36° 511 G	50	285	30	173	302° 7	-2° 2	-11° 1	+34° 7	Feb. 6-11. A small stream slowly dying out.							
37° 505 C	31	180	24	139	305° 1	+0° 1	-10° 8	+50° 2	36° 511 G	20	108	26	144	202° 8	0° 0	+14° 2 -65° 2
38° 437 C	21	94	21	94	302° 8	-2° 3	-11° 3	+60° 2	37° 505 C	15	65	13	56	204° 5	+1° 7	+14° 0 -50° 4
39° 401 C	0	8	0	15	305° 7	+0° 5	-11° 3	+75° 8	38° 437 C	15	86	10	60	204° 3	+1° 4	+13° 8 -38° 3
Means	..	..	42	244	302° 6	..	-11° 1	..								

LEDGER II. - NON-RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR

LEDGER II. - NON-RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR																	
Date U. T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Lat- itude	Long. from C.M.	Date U. T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Lat- itude	Long. from C.M.		
	Umbræ	Whole Spots	Umbræ	Whole Spots					Umbræ	Whole Spots	Umbræ	Whole Spots					
Group 13807. - continued								Group 13816. - continued									
^d 39° 401 C	15	90	9	53	204° 1	+1° 2	+13° 9	-25° 8	^d 57° 314 C	32	148	18	81	333° 6	+0° 6	+ 6° 8	-20° 5
40° 422 G	17	61	10	34	201° 9	-1° 0	+14° 7	-14° 6	58° 308 C	28	129	15	68	332° 9	-0° 3	+ 7° 3	- 8° 1
41° 283 C	4	55	2	30	200° 7	-2° 2	+15° 1	- 4° 5	59° 334 C	21	169	11	88	333° 1	-0° 2	+ 7° 7	+ 5° 7
									60° 480 G	6	24	3	13	333° 5	0° 0	+ 7° 4	+21° 1
Means	..	..	12	63	203° 0	..	+14° 3	..	Means	..	..	17	93	333° 1	..	+ 6° 9	..
Group 13809.								Group 13819.									
Feb. 9-21. A slowly decreasing regular spot with companions on February 16 and 17.								Feb. 28-Mar. 6. A small stream soon dying out.									
39° 401 C	6	38	26	167	145° 4	..	-10° 1	-84° 5	58° 308 C	8	55	12	82	272° 6	0° 0	+11° 2	-68° 4
40° 422 G	20	91	30	137	145° 0	0° 0	-10° 4	-71° 5	59° 334 C	23	148	22	145	271° 2	-1° 5	+11° 6	-56° 2
41° 283 C	23	147	23	147	144° 7	-0° 4	-10° 6	-60° 5	60° 480 G	50	177	36	123	272° 4	-0° 4	+11° 1	-40° 0
42° 279 C	19	151	14	109	145° 3	+0° 1	-11° 0	-46° 8	61° 442 G	26	121	15	69	276° 5	+3° 6	+10° 7	-23° 2
43° 483 G	41	226	24	131	145° 2	0° 0	-11° 6	-31° 0	62° 396 G	24	85	13	45	277° 1	+4° 1	+11° 1	-10° 0
44° 310 C	40	231	21	122	145° 2	-0° 1	-11° 8	-20° 1	63° 420 G	11	20	6	11	278° 4	+5° 3	+11° 1	+ 4° 8
45° 283 C	50	235	26	120	145° 2	-0° 2	-12° 2	- 7° 3	64° 329 C	4	34	2	19	278° 1	+4° 9	+11° 9	+16° 5
46° 230 C	50	234	25	116	145° 3	-0° 2	-12° 4	+ 5° 3	Means	..	..	15	71	275° 2	..	+11° 2	..
47° 427 C	52	295	28	158	145° 2	-0° 4	-12° 4	+20° 9									
48° 304 C	46	198	27	117	145° 5	-0° 1	-12° 2	+32° 8									
49° 283 C	21	82	15	58	145° 7	0° 0	-11° 8	+45° 9									
50° 286 C	17	68	16	64	145° 5	-0° 3	-12° 2	+58° 9									
51° 446 G	7	22	13	40	146° 5	+0° 6	-12° 3	+75° 2									
Means	..	..	22	110	145° 4	..	-11° 7	..									
Group 13810.								Group 13820.									
Feb. 10-16. A variable stream in which the leader survives to the west limb.								Mar. 3-9. A small short-lived stream of normal type.									
40° 422 G	7	33	4	17	212° 7	0° 0	+12° 8	- 3° 8	61° 442 G	26	83	24	73	246° 7	0° 0	+11° 3	-53° 0
41° 283 C	16	74	8	40	211° 6	-1° 1	+14° 1	+ 6° 4	62° 396 G	66	166	45	114	248° 8	+2° 0	+11° 0	-38° 3
42° 279 C	27	191	15	110	212° 7	-0° 1	+13° 2	+20° 6	63° 420 G	35	141	21	81	249° 7	+2° 8	+10° 4	-23° 9
43° 483 G	21	133	14	91	214° 1	+1° 2	+13° 7	+37° 9	64° 329 C	19	105	10	56	251° 0	+4° 0	+10° 3	-10° 6
44° 310 C	25	122	21	103	215° 2	+2° 3	+13° 5	+49° 9	65° 325 C	26	150	14	78	250° 6	+3° 5	+ 9° 8	+ 2° 1
45° 283 C	10	86	13	115	217° 5	+4° 5	+13° 1	+65° 0	66° 387 G	13	55	7	30	252° 2	+5° 0	+ 9° 3	+17° 7
46° 230 C	4	17	13	58	219° 4	+6° 4	+12° 5	+79° 4	67° 107 K	4	16	2	10	253° 5	+6° 2	+ 9° 4	+28° 5
Means	..	..	13	76	214° 7	..	+13° 3	..	Means	..	..	18	63	250° 4	..	+10° 2	..
Group 13816.								Group 13821.									
Feb. 24-Mar. 2. A small stream.								Mar. 4-9. A pair of spots.									
54° 416 G	11	33	11	34	332° 6	0° 0	+ 6° 2	-59° 6	62° 396 G	11	31	12	35	225° 7	0° 0	+11° 5	-61° 4
55° 394 G	43	291	33	218	333° 2	+0° 5	+ 6° 2	-46° 2	63° 420 G	28	101	23	81	225° 2	-0° 6	+11° 1	-48° 4
56° 411 G	44	235	27	146	332° 6	-0° 3	+ 6° 6	-33° 4	64° 329 C	20	109	13	72	225° 6	-0° 3	+11° 1	-36° 0
									65° 325 C	4	37	2	21	225° 0	-1° 1	+10° 8	-23° 5
									66° 387 G	7	26	4	14	227° 1	+1° 0	+10° 4	- 7° 4
									67° 107 K	2	16	1	8	225° 2	-1° 2	+10° 5	+ 0° 2
Means	..	..							Means	..	..	9	38	225° 6	..	+10° 9	..

LEDGER II. - NON-RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR

Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Lati- tude	Long. from C.M.	Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Lati- tude	Long. from C.M.
	Umbræ	Whole Spots	Umbræ	Whole Spots					Umbræ	Whole Spots	Umbræ	Whole Spots			
Group 13824.								Group 13827 - continued							
Mar. 9-16. A pair of spots of which only one remains after March 15.								^a 75° 336 C 30 160 18 97 87° 1 -1° 1 +10° 5 -29° 5 76° 432 G 121 637 66 346 87° 7 -0° 6 +10° 1 -14° 4 77° 478 G 140 751 74 394 87° 5 -0° 9 +10° 5 -0° 8 78° 552 G 97 913 53 492 87° 2 -1° 4 +10° 3 +13° 0 79° 321 C 79 544 45 312 88° 1 -0° 5 +10° 4 +24° 1 80° 325 C 45 312 30 206 87° 2 -1° 6 +10° 1 +36° 4 81° 372 C 32 205 26 172 87° 9 -1° 0 +10° 1 +50° 9 82° 329 C 21 193 25 228 87° 5 -1° 5 +9° 0 +63° 1 83° 394 G 9 66 21 152 86° 3 -2° 8 +9° 2 +76° 0							
Means 11 56 143° 1 .. -9° 0 ..								Means 30 202 87° 2 .. +10° 3 ..							
Group 13825.								Spot a							
Mar. 10-16. One or two variable spots.								76° 432 G 55 334 30 180 90° 4 0° 0 +10° 5 -11° 7 77° 478 G 69 307 37 163 90° 3 -0° 2 +10° 7 +2° 0 78° 552 G 57 435 31 239 90° 6 0° 0 +10° 9 +16° 4 79° 321 C 43 285 25 168 90° 8 +0° 1 +11° 1 +26° 8 80° 325 C 26 124 18 86 90° 8 0° 0 +11° 1 +40° 0 81° 372 C 15 111 13 98 90° 0 -0° 9 +10° 5 +53° 0 82° 329 C 21 193 25 228 87° 5 -3° 5 +9° 0 +63° 1 83° 594 G 9 66 21 152 86° 3 -4° 8 +9° 2 +76° 0							
Means 6 37 150° 3 .. -7° 2 ..								Group 13829.							
Group 13826.								Mar. 14-24. A slowly diminishing regular spot.							
Mar. 11-17. A variable stream with the leader as the most stable component.								72° 368 G 7 29 34 139 70° 5 .. -10° 5 -85° 2 73° 330 C 9 51 13 75 71° 8 0° 0 -10° 5 -71° 2 74° 578 G 18 106 15 90 72° 0 +0° 1 -10° 5 -54° 6 75° 336 C 19 146 13 102 72° 1 +0° 1 -10° 5 -44° 5 76° 432 G 26 147 15 85 71° 8 -0° 3 -10° 7 -30° 3 77° 478 G 24 115 12 60 71° 9 -0° 3 -10° 8 -16° 4 78° 552 G 20 133 10 66 72° 3 0° 0 -10° 8 -1° 9 79° 321 C 15 66 8 44 72° 4 0° 0 -10° 8 +8° 4 80° 325 C 17 60 9 32 72° 8 +0° 3 -11° 0 +22° 0 81° 372 C 13 60 8 37 73° 1 +0° 5 -11° 2 +36° 1 82° 329 C 4 21 3 16 73° 7 +1° 0 -11° 1 +49° 3							
Means 35 166 180° 2 .. +12° 2 ..								Means 11 61 72° 4 .. -10° 8 ..							
Group 13827.								Group 13831.							
Mar. 14-25. A small spot on March 14 and 15. On March 17 a stream begins to develop more rapidly than is usual. Decline at once sets in after a brief maximum on March 20.								Mar. 18-23. A small but persistent spot preceding Group 13827.							
72° 368 G 2 7 3 10 87° 9 0° 0 +12° 3 -67° 8 73° 330 C 2 9 2 9 85° 3 -2° 7 +10° 8 -57° 7 74° 578 G 0 0 0 0								76° 432 G 7 26 4 14 97° 2 0° 0 +13° 5 -4° 9 77° 478 G 7 18 4 10 98° 2 +0° 9 +12° 1 +9° 9 78° 552 G 9 22 5 13 99° 2 +1° 9 +12° 5 +25° 0 79° 321 C 0 6 0 4 99° 6 +2° 2 +12° 1 +35° 6 80° 325 C 0 9 0 8 104° 5 +7° 0 +12° 1 +53° 7 81° 372 C 0 9 0 13 104° 2 +6° 7 +12° 2 +67° 2							
Means								Means 2 10 100° 5 .. +12° 6 ..							

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LEDGER II. - NON-RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR																	
Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Lat- tude	Long. from C.M.	Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Lat- tude	Long. from C.M.		
	Umbræ	Whole Spots	Umbræ	Whole Spots					Umbræ	Whole Spots	Umbræ	Whole Spots					
Group 13832.																	
Mar. 18-24. A short-lived, variable stream close to Group 13827.																	
d								d									
76° 432 G	11	26	6	14	88° 8'	0° 0'	+ 8° 1'	-15° 3'	98° 570 G	17	43	9	24	146° 6'	+0° 1'	- 4° 1'	-23° 5'
77° 478 G	47	174	25	90	88° 0'	+1° 1'	+ 7° 9'	- 0° 3'	99° 348 G	17	60	9	30	146° 2'	-0° 5'	- 3° 8'	-13° 6'
78° 552 G	64	276	35	149	88° 3'	+1° 2'	+ 8° 0'	+14° 1'	100° 133 K	12	58	6	29	147° 3'	+0° 5'	- 3° 8'	- 2° 2'
79° 321 C	47	300	26	170	88° 2'	+1° 0'	+ 7° 9'	+24° 2'	101° 342 C	9	28	5	15	148° 0'	+1° 0'	- 3° 5'	+14° 5'
80° 325 C	60	274	40	180	88° 2'	+0° 9'	+ 8° 0'	+37° 4'	102° 410 G	9	22	5	13	148° 8'	+1° 6'	- 3° 7'	+29° 4'
81° 372 C	23	107	20	92	89° 4'	+1° 9'	+ 7° 6'	+52° 4'									
82° 329 C	13	50	17	66	90° 1'	+2° 5'	+10° 8'	+65° 7'									
Means	..	..	24	109	88° 4'	..	+ 8° 3'	..	Means	..	..	9	38	146° 4'	..	- 3° 6'	..
Group 13836.																	
Mar. 27-Apr. 1. Intermittent. A tiny cluster of spots not seen on March 29-30.																	
85° 346 G	9	33	5	17	340° 7'	0° 0'	+ 5° 6'	- 3° 9'	96° 328 C	15	78	23	125	128° 1'	0° 0'	-10° 1'	-71° 6'
86° 470 G	16	48	9	24	340° 9'	0° 0'	+ 5° 6'	+11° 1'	97° 335 G	22	118	21	110	128° 7'	+0° 5'	-10° 0'	-57° 7'
87° 325 C	0	0	0	0	..	..	..	..	98° 570 G	51	264	36	183	126° 1'	-2° 2'	-10° 4'	-44° 0'
88° 364 G	0	0	0	0	..	..	..	..	99° 348 G	44	183	27	111	128° 2'	-2° 2'	-10° 0'	-33° 6'
89° 369 G	4	20	3	16	341° 9'	+0° 6'	+ 6° 3'	+50° 4'	100° 133 K	20	121	10	66	128° 5'	-2° 0'	-10° 3'	-23° 0'
90° 318 C	4	17	5	20	342° 1'	+0° 6'	+ 7° 3'	+63° 1'	101° 342 C	17	95	9	48	128° 2'	-2° 4'	-10° 8'	- 7° 3'
Means	..	..	4	13	341° 4'	..	+ 6° 2'	..	102° 410 G	4	18	2	9	127° 5'	-1° 2'	-11° 8'	+ 8° 1'
									Means	..	..	18	93	127° 0'	..	-10° 5'	..
Group 13840.																	
Apr. 3-10. A pair of spots, 3½° apart in latitude. By April 6, the more southerly spot has gone.																	
92° 354 G	4	11	18	45	168° 5'	..	- 7° 8'	-83° 7'	96° 328 C	2	13	8	53	115° 9'	..	- 8° 5'	-83° 8'
93° 357 G	14	42	19	58	169° 8'	0° 0'	- 8° 5'	-69° 1'	97° 335 G	11	51	15	71	116° 9'	0° 0'	- 7° 9'	-69° 5'
94° 417 G	18	62	15	53	170° 4'	+0° 4'	- 7° 7'	-54° 5'	98° 570 G	34	141	29	120	115° 8'	-1° 3'	- 8° 3'	-54° 3'
95° 100 K	10	58	7	40	172° 1'	+2° 0'	- 6° 7'	-43° 8'	99° 348 G	36	166	26	119	114° 4'	-2° 8'	- 8° 2'	-45° 4'
96° 328 C	13	45	7	25	172° 6'	+2° 4'	- 6° 8'	-27° 1'	100° 133 K	33	159	21	100	112° 9'	-4° 4'	- 8° 5'	-36° 6'
97° 335 G	9	31	5	16	173° 4'	+3° 0'	- 6° 5'	-13° 0'	101° 342 C	33	201	17	107	113° 9'	-3° 5'	- 8° 4'	-19° 6'

LEDGER II. - NON-RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR																
Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C.M.	Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C.M.	
	Umbræ	Whole Spots	Umbræ	Whole Spots					Umbræ	Whole Spots	Umbræ	Whole Spots				
Group 13848 - continued								Group 13853 - continued								
^d 115° 360 G	48	240	30	147	342° 2	+1° 9	+ 3° 3	+33° 8	^d 124° 382 G	86	326	48	185	170° 4	-1° 0	+16° 6 -18° 7
116° 317 C	28	164	21	121	342° 0	+1° 5	+ 3° 2	+46° 3	125° 363 G	43	189	23	101	171° 5	+0° 1	+16° 4 - 4° 7
117° 393 C	15	57	17	63	343° 9	+3° 2	+ 3° 4	+62° 4	126° 531 G	20	136	11	74	171° 7	+0° 3	+16° 7 +11° 0
118° 600 G	0	5	0	16	346° 1	+5° 2	+ 3° 4	+80° 5	127° 453 G	18	84	10	49	171° 5	+0° 1	+17° 1 +23° 0
									128° 308 G	12	46	7	29	170° 4	-0° 9	+16° 8 +33° 2
									129° 338 G	0	2	0	2	173° 0	+1° 7	+16° 7 +49° 4
Means	..	..	17	79	341° 5	..	+ 3° 3	..	Means	..	..	24	110	171° 2	..	+16° 5 ..
Group 13849.								Group 13854.								
Apr. 26-May 8. A spot, with companions, within 1° of the Sun's equator. On May 1, division of the spot into two parts begins, and subsequent decline is rapid.								May 9-21. A stream of normal type except that the leader spot is the first to die out, but is represented by a small spot two days after the follower has gone.								
115° 360 G	16	97	70	426	224° 9	..	- 0° 8	-83° 5	128° 308 G	9	34	40	149	55° 4	..	+22° 6 -81° 8
116° 317 C	22	217	32	312	226° 0	0° 0	- 1° 1	-69° 7	129° 338 G	39	136	76	269	52° 0	0° 0	+23° 8 -71° 6
117° 393 C	53	307	48	267	226° 5	+0° 3	- 0° 8	-55° 0	130° 366 G	62	246	73	289	50° 0	-1° 7	+24° 1 -60° 0
118° 600 G	70	328	45	210	227° 1	+0° 7	- 0° 6	-38° 5	131° 384 G	75	244	63	195	50° 0	-1° 5	+24° 1 -46° 6
119° 398 G	81	368	46	210	227° 2	+0° 6	- 1° 1	-27° 8	132° 343 C	40	246	27	171	49° 4	-1° 9	+23° 7 -34° 5
120° 605 G	64	330	32	168	227° 8	+1° 0	- 0° 8	-11° 3	133° 169 K	27	143	17	88	49° 2	-1° 9	+24° 0 -23° 7
121° 561 G	41	214	20	107	228° 2	+1° 2	- 0° 5	+ 1° 8	134° 574 G	19	120	11	67	45° 8	-4° 9	+24° 6 - 8° 6
122° 423 G	58	281	30	145	227° 1	-0° 1	- 0° 5	+12° 1	135° 348 G	24	72	14	40	46° 0	-4° 5	+24° 9 + 1° 9
123° 370 G	36	152	20	85	228° 7	+1° 4	- 0° 7	+26° 2	136° 379 G	16	73	9	43	45° 2	-5° 1	+25° 0 +14° 7
124° 382 G	25	105	16	69	228° 0	+0° 5	- 0° 4	+38° 9	137° 351 G	9	32	6	20	45° 3	-4° 7	+24° 0 +27° 7
125° 363 G	7	27	6	22	229° 7	+2° 0	- 0° 5	+53° 5	138° 525 G	2	9	2	7	45° 1	-4° 6	+23° 6 +43° 0
126° 531 G	0	9	0	11	227° 5	-0° 4	- 0° 6	+66° 8	139° 342 C	0	0	0	0	..	..	
127° 453 G	0	7	0	16	225° 6	-2° 5	+ 0° 1	+77° 1	140° 371 G	0	9	0	18	51° 2	+1° 9	+23° 8 +73° 5
Means	..	..	24	135	227° 4	..	- 0° 6	..	Means	..	..	25	101	48° 1	..	+24° 2 ..
Group 13852.								Spot a								
Apr. 30-May 5. One or more indefinite spots.								Spot b								
119° 398 G	12	41	9	28	212° 8	0° 0	- 2° 8	-42° 2	128° 308 G	9	34	40	149	55° 4	..	+22° 6 -81° 8
120° 605 G	10	59	6	33	213° 5	+0° 5	- 3° 6	-25° 6	129° 338 G	25	86	38	132	55° 7	0° 0	+22° 7 -67° 9
121° 561 G	0	27	0	14	214° 6	+1° 4	- 4° 0	-11° 8	130° 366 G	21	84	20	81	56° 1	+0° 7	+22° 9 -53° 9
122° 423 G	12	79	6	39	214° 0	+0° 6	- 2° 7	- 1° 0	131° 384 G	27	82	20	50	56° 6	+1° 4	+23° 0 -40° 0
123° 370 G	16	118	9	60	213° 6	+0° 1	- 3° 0	+11° 1	132° 343 C	22	77	14	49	56° 8	+1° 8	+23° 1 -27° 1
124° 382 G	18	91	10	50	213° 6	-0° 1	- 3° 7	+24° 5	133° 169 K	8	46	5	27	56° 2	+1° 4	+23° 5 -16° 7
Means	..	..	7	37	213° 7	..	- 3° 3	..	Spot b							
Group 13853.								129° 338 G	14	50	38	137	45° 6	0° 0	+17° 0 -78° 0	
May 1-10. A cluster of variable spots.								130° 366 G	32	128	44	174	45° 4	+0° 1	+24° 8 -64° 6	
120° 605 G	18	81	26	117	171° 5	0° 0	+16° 0	-67° 6	131° 384 G	41	135	38	124	45° 2	+0° 1	+24° 5 -51° 4
121° 561 G	25	123	24	126	171° 2	-0° 3	+16° 2	-56° 2	132° 343 C	18	169	13	122	45° 3	+0° 4	+23° 9 -38° 6
122° 423 G	56	258	42	193	171° 0	-0° 5	+16° 2	-44° 0	133° 169 K	19	97	12	61	45° 4	+0° 7	+23° 9 -27° 5
123° 370 G	73	361	46	228	170° 2	-1° 2	+16° 7	-32° 3	134° 574 G	14	93	8	52	45° 9	+1° 6	+23° 8 - 8° 5
									135° 348 G	14	36	8	20	45° 5	+1° 4	+23° 8 + 1° 4
									136° 379 G	9	34	5	20	45° 9	+2° 0	+24° 0 +15° 4
									137° 351 G	9	32	6	20	45° 3	+1° 7	+24° 0 +27° 7
									138° 525 G	2	9	2	7	45° 1	+1° 8	+23° 6 +43° 0

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LEDGER II. - NON-RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR															
Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Lat- tude	Long. from C.M.	Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Lat- tude	Long. from C.M.
	Umbrae	Whole Spots	Umbrae	Whole Spots					Umbrae	Whole Spots	Umbrae	Whole Spots			
Group 13855.								Group 13865 - continued							
May 10-16. A pair of spots. One remains for a day on May 14. A dot comes in at nearly the same position on May 16.								^d 141° 403 G 12 43 7 25 292° 6 0° 0 -10° 0 -31° 4 142° 657 G 32 151 16 79 294° 1 +1° 4 - 8° 9 -13° 3 143° 369 G 50 200 25 100 294° 8 +2° 0 - 9° 3 - 3° 2 144° 349 G 46 189 24 98 295° 9 +3° 0 - 9° 9 +10° 8 145° 385 G 34 148 19 84 298° 6 +5° 5 - 9° 6 +27° 3 146° 400 G 26 101 17 68 298° 8 +5° 6 - 9° 7 +40° 9 147° 315 G 9 46 8 40 299° 8 +6° 5 - 9° 8 +54° 0							
^d 129° 338 G 14 43 8 25 95° 6 0° 0 +13° 0 -28° 0 130° 368 G 36 137 20 73 95° 8 +0° 1 +13° 1 -14° 2 131° 384 G 30 98 16 51 97° 8 +2° 1 +13° 2 + 1° 2 132° 343 C 13 61 7 33 96° 4 +0° 6 +13° 2 +12° 5 133° 169 K 8 38 4 21 93° 8 -2° 0 +12° 7 +20° 9 134° 574 G 0 0 0 0 135° 348 G 0 5 0 4 95° 6 -0° 4 +13° 1 +51° 5								Means 17 71 296° 4 .. - 9° 6 ...							
Means 8 30 95° 8 .. +13° 0 ..								Group 13867.							
Group 13860.								May 28-June 8. Intermittent. One or more variable spots.							
May 17-24. A small short-lived stream halting for a day in its early development.								147° 315 G 2 9 4 17 171° 0 0° 0 - 8° 1 -74° 8 148° 360 C 0 0 0 0 149° 418 C 0 0 0 0 150° 674 Mt.W 0 0 0 0 151° 573 G 7 19 4 11 169° 8 -1° 7 - 8° 6 -19° 7 152° 542 C 0 0 0 0 153° 394 C 7 31 4 16 169° 0 -2° 8 - 9° 9 + 3° 6 154° 449 G 29 116 16 62 171° 1 -0° 8 - 9° 1 +19° 7 155° 100 K 20 102 12 59 171° 5 -0° 5 - 8° 5 +28° 7 156° 392 C 0 9 0 7 173° 7 +1° 5 - 7° 4 +48° 0 157° 310 G 0 7 0 7 173° 8 +1° 5 - 8° 5 +60° 2 158° 411 G 5 11 9 20 173° 0 +0° 6 - 8° 4 +74° 0							
136° 379 G 0 5 0 5 331° 0 0° 0 -15° 8 -59° 5 137° 351 G 0 0 0 0 138° 525 G 9 27 5 16 333° 9 +2° 9 -16° 1 -28° 2 139° 342 C 22 113 12 61 333° 6 +2° 6 -16° 2 -17° 7 140° 371 G 45 260 23 135 333° 6 +2° 6 -16° 5 - 4° 1 141° 403 G 34 187 18 99 334° 1 +3° 1 -16° 1 +10° 1 142° 657 G 18 50 11 30 336° 3 +5° 3 -15° 1 +26° 9 143° 369 G 14 68 9 44 385° 6 +4° 6 -15° 8 +37° 6								Means 4 18 171° 6 .. - 8° 6 ..							
Means 10 49 334° 0 .. -15° 9 ..								Group 13868.							
Group 13864.								May 30-June 10. At first a regular spot, on June 2 other spots begin to appear, increasing in number to form a compact cluster which is dying out as it passes round the west limb.							
May 21-June 1. A small stream of weak development.								149° 418 C 22 102 30 139 150° 3 0° 0 -17° 4 -67° 7 150° 674 Mt.W 51 181 42 148 150° 9 +0° 6 -17° 5 -50° 5 151° 573 G 80 350 54 234 151° 2 +1° 0 -17° 6 -38° 3 152° 542 C 55 315 32 183 150° 6 +0° 4 -17° 2 -26° 1 153° 394 C 75 480 40 260 149° 9 -0° 3 -17° 0 -15° 5 154° 449 G 106 481 56 250 150° 2 +0° 1 -17° 2 - 1° 2 155° 100 K 173 840 91 444 150° 0 -0° 1 -17° 4 + 7° 2 156° 392 C 133 796 76 459 150° 1 +0° 1 -17° 2 +24° 4 157° 310 G 109 442 72 292 150° 7 +0° 7 -17° 2 +37° 1 158° 411 G 51 254 43 213 150° 7 +0° 7 -16° 9 +51° 7 159° 691 W 28 113 42 167 151° 1 +1° 2 -17° 2 +69° 1 160° 431 C 2 22 7 65 151° 4 +1° 5 -17° 0 +79° 2							
140° 371 G 0 9 0 13 269° 0 0° 0 + 5° 0 -66° 7 141° 403 G 2 27 2 26 266° 3 -2° 9 + 5° 6 -57° 7 142° 657 G 23 101 14 64 264° 1 -5° 3 + 6° 1 -43° 3 143° 369 G 50 150 30 90 264° 3 -5° 2 + 6° 1 -33° 7 144° 349 G 41 144 22 77 265° 4 -4° 2 + 6° 3 -19° 7 145° 385 G 37 97 19 49 266° 5 -3° 3 + 5° 7 - 4° 8 146° 400 G 12 46 7 24 263° 9 -6° 1 + 6° 4 + 6° 0 147° 315 G 12 41 7 21 262° 0 -8° 1 + 5° 7 +16° 2 148° 350 C 0 9 0 5 262° 4 -7° 9 + 6° 7 +30° 3 149° 418 C 0 0 0 0 150° 674 Mt.W 0 0 0 0 151° 573 G 0 9 0 18 265° 1 -5° 7 + 6° 5 +75° 6								Means 50 254 150° 5 .. -17° 2 ..							
Means 9 35 264° 9 .. + 6° 0 ..								Group 13870.							
Group 13865.								May 30-June 11. A slowly decreasing regular spot with a trend in latitude away from the equator.							
May 22-28. A short stream of minor importance. The leader spot remains from May 25 to 28.															

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LEDGER II. - NON-RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR																	
Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C.M.	Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C.M.		
	Umbræ	Whole Spots	Umbræ	Whole Spots					Umbræ	Whole Spots	Umbræ	Whole Spots					
Group 13882 - continued								Group 13899.									
176° 442 G	53	235	32	143	186° 9	-1° 1	- 6° 3	-33° 4	July 17-27. A slowly declining regular spot not recorded on July 26.								
177° 310 G	46	150	25	82	186° 9	-1° 2	- 6° 4	-21° 9									
178° 306 G	21	83	11	43	187° 0	-1° 3	- 6° 4	- 8° 6									
179° 278 G	7	30	4	15	188° 1	-0° 3	- 7° 0	+ 5° 3									
180° 410 G	7	44	4	24	186° 3	-2° 3	- 8° 4	+18° 5									
Means	..	..	30	136	187° 2	..	- 6° 6	..									
Group 13887.																	
June 28-July 3. Variable spots in a small stream.																	
178° 306 G	25	102	15	63	181° 0	0° 0	- 6° 7	-34° 8	197° 392 G	16	99	25	153	231° 3	0° 0	+15° 8	-71° 7
179° 278 G	56	236	30	128	180° 5	-0° 7	- 5° 5	-22° 3	198° 506 C	27	112	25	103	231° 2	-0° 1	+16° 1	-57° 1
180° 410 G	21	97	11	49	185° 6	+4° 3	- 6° 5	- 2° 2	199° 348 G	25	117	18	85	231° 1	-0° 2	+16° 3	-46° 0
181° 373 G	28	115	15	60	186° 2	+4° 7	- 6° 1	+11° 2	200° 356 G	41	196	25	118	231° 1	-0° 2	+16° 1	-32° 7
182° 349 G	12	23	7	13	189° 6	+8° 1	- 5° 8	+27° 7	201° 384 G	34	186	18	100	231° 2	-0° 1	+16° 1	-19° 0
183° 355 G	5	16	3	11	171° 2	+9° 4	- 4° 1	+42° 4	202° 361 G	34	184	17	94	231° 3	0° 0	+15° 8	- 6° 0
Means	..	..	14	54	165° 7	..	- 5° 8	..	203° 337 G	37	163	19	83	231° 4	+0° 1	+16° 0	+ 7° 0
Group 13892.																	
July 3-10. A variable stream of tiny spots.																	
183° 355 G	5	14	7	19	60° 3	0° 0	- 5° 5	-68° 5	204° 360 G	32	145	17	78	231° 4	+0° 1	+15° 9	+20° 6
184° 384 G	16	65	14	58	60° 0	-0° 5	- 5° 5	-55° 2	205° 296 G	32	99	19	59	231° 3	+0° 1	+16° 1	+32° 9
185° 333 G	34	88	23	81	59° 9	-0° 7	- 5° 0	-42° 7	206° 679 W	0	0	0	0	..	..	..	..
186° 334 G	28	95	16	54	61° 3	+0° 5	- 4° 7	-28° 1	207° 406 G	2	5	2	5	231° 2	0° 0	+15° 5	+60° 7
187° 342 G	21	76	11	41	60° 0	-1° 0	- 5° 3	-16° 0	Means	..	..	18	88	231° 2	..	+16° 0	..
188° 365 G	14	74	8	37	60° 1	-1° 0	- 5° 4	- 2° 5	Group 13900.								
189° 384 G	7	24	5	12	60° 1	-1° 2	- 6° 3	+11° 1	July 17-24. A group of feeble activity.								
190° 361 G	9	51	5	28	57° 6	-3° 9	- 6° 3	+21° 5	197° 392 G	2	7	4	15	226° 0	0° 0	+10° 4	-77° 0
Means	..	..	11	39	59° 9	..	- 5° 5	..	198° 506 C	2	9	2	9	226° 8	+0° 7	+10° 2	-61° 5
Group 13895.																	
July 9-15. A small cluster of variable spots.																	
189° 384 G	12	53	30	180	332° 0	0° 0	-14° 8	-77° 0	199° 348 G	0	0	0	0	..	..	..	..
190° 361 G	23	109	28	134	332° 2	+0° 2	-15° 3	-63° 9	200° 356 G	19	60	12	39	223° 5	-2° 8	+10° 3	-40° 3
191° 350 G	47	158	40	135													

LEDGER II. - NON-RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR															
Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Lat- tude	Long. from C.M.	Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Lat- tude	Long. from C.M.
	Umbræ	Whole Spots	Umbræ	Whole Spots					Umbræ	Whole Spots	Umbræ	Whole Spots			
Group 13903.								Group 13915.							
July 21-Aug. 2. A small stream diminishing until July 26. Thereafter there is a fuller development of the follower spot which becomes more regular in structure.								Aug. 4-11. A small, nondescript group.							
a								a							
201°384 G	7	23	12	44	174°8	0°0	+11°7 -75°4	215°881 W	0	12	0	17	351°8	0°0	+4°9 -89°3
202°361 G	28	129	31	141	174°9	+0°1	+12°2 -82°4	216°392 G	7	21	7	20	352°4	+0°5	+5°3 -89°3
203°337 G	53	228	43	181	173°4	-1°5	+12°6 -51°0	217°350 G	11	41	8	30	352°1	0°0	+5°5 -46°9
204°360 G	46	159	29	101	172°5	-2°4	+12°9 -38°3	218°333 G	14	71	9	43	351°2	-1°0	+5°4 -34°8
205°296 G	39	145	22	82	172°7	-2°3	+12°7 -25°7	219°395 C	16	80	9	43	350°1	-2°3	+5°2 -21°9
206°679 W	14	116	7	63	173°0	-2°1	+13°8 -7°2	220°411 G	21	48	10	24	351°0	-1°6	+5°1 -7°6
207°406 G	64	322	32	164	172°9	-2°2	+14°2 +2°4	221°386 G	11	55	6	28	350°1	-2°7	+5°3 +4°4
208°362 G	69	311	36	163	172°6	-2°5	+14°3 +14°7	222°563 G	7	27	4	15	352°2	-0°6	+5°2 +22°1
209°804 W	64	253	39	154	172°6	-2°6	+13°9 +33°8	Means	..	..	8	29	351°3	..	+5°3 ..
210°323 G	59	339	38	222	171°8	-3°4	+14°2 +39°8	Group 13931.							
211°433 G	62	265	52	222	170°5	-4°8	+14°7 +53°2	Aug. 31-Sept. 7. A long stream of variable spots; decay is rapid after September 4.							
212°386 G	25	151	30	183	170°8	-4°5	+14°2 +66°1	242°360 G	7	23	13	42	354°6	0°0	+13°5 -73°9
213°097 K	8	42	14	72	169°4	-6°0	+14°5 +74°1	243°411 G	14	52	14	52	354°2	-0°5	+13°2 -60°4
Means	..	..	31	148	172°4	..	+13°5 ..	244°346 G	59	216	43	154	356°5	+1°8	+12°5 -45°6
Group 13908.								245°417 G	68	314	40	185	357°2	+2°4	+12°8 -30°9
July 28-Aug. 6. A stream already in decay when first seen. The leader, a complex spot, is the largest component and alone remains by July 31, but does not survive for long.								246°364 G	70	356	37	187	357°6	+2°8	+12°9 -16°0
208°362 G	9	28	(42	134	74°4	..	-4°5) -83°5	247°560 G	34	136	18	69	357°6	+2°7	+13°3 -2°2
209°804 W	61	270	75	332	73°4	0°0	-4°6 -65°4	248°347 C	16	111	9	56	356°5	+3°5	+12°9 +9°1
210°323 G	67	328	65	310	75°8	+2°3	-4°7 -56°2	249°366 G	11	50	6	27	357°9	+2°9	+12°5 +21°9
211°433 G	75	268	49	175	76°3	+4°6	-4°8 -39°0	Means	..	..	22	96	356°8	..	+13°0 ..
212°386 G	41	293	23	164	79°2	+5°3	-5°0 -25°5	Group 13939.							
213°097 K	40	257	21	136	79°4	+5°4	-4°9 -15°9	Sept. 11-22. A large stream developing rapidly north of the giant group (No. 13937). Both leader and follower tend to become complex before breaking up after rather a short life for their size.							
214°415 G	27	156	14	80	74°3	+0°1	-4°2 -3°5	253°423 G	7	31	11	47	210°4	0°0	+16°4 -72°0
215°881 W															

LEDGER II. - NON-RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR															
Date U. T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C.M.	Date U. T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C.M.
	Umbrae	Whole Spots	Umbrae	Whole Spots					Umbrae	Whole Spots	Umbrae	Whole Spots			
Group 13939 - continued								Group 13943.							
Spot a								Sept. 16-27. Revival of Groups 13921 and 13924. A group of stream type. The leader is a regular spot; the follower is represented by a cluster of variable spots not seen on September 23.							
d								d							
253° 423 G	2	11	3	15	213° 0	0° 0	+17° 8 -69° 4	258° 451 G	7	27	10	39	148° 1	0° 0	-10° 9 -67° 9
254° 361 C	26	142	23	125	213° 9	+1° 0	+18° 1 -56° 1	259° 354 G	50	211	49	207	147° 2	-1° 0	-11° 0 -56° 9
255° 128 K	38	274	27	195	214° 7	+1° 8	+18° 1 -45° 2	260° 383 G	70	342	51	246	147° 7	-0° 6	-10° 9 -42° 8
256° 417 C	65	514	48	293	215° 6	+2° 6	+18° 1 -27° 3	261° 414 G	83	391	50	236	147° 5	-0° 9	-10° 7 -29° 4
257° 650 G	86	572	45	297	215° 4	+2° 7	+18° 4 -11° 2	262° 342 C	78	424	43	234	147° 9	-0° 6	-10° 5 -16° 7
258° 451 G	45	385	23	196	215° 7	+3° 1	+18° 4 -0° 3	263° 546 G	87	353	35	187	148° 9	+0° 3	-10° 8 +0° 1
259° 354 G	61	351	32	183	215° 1	+2° 8	+18° 3 +11° 0	264° 412 G	65	360	35	194	148° 6	-0° 1	-11° 1 +11° 3
260° 383 G	50	288	28	161	215° 1	+2° 6	+18° 1 +24° 6	265° 558 G	67	345	40	204	149° 2	+0° 4	-10° 8 +27° 0
261° 414 G	36	166	23	106	215° 0	+2° 6	+18° 1 +38° 1	266° 481 G	56	305	37	206	148° 4	-0° 5	-11° 2 +36° 4
262° 342 C	35	178	27	137	214° 6	+2° 3	+17° 9 +50° 0	267° 456 G	52	287	43	245	148° 2	-0° 8	-11° 7 +51° 1
263° 546 G	16	86	19	100	214° 4	+2° 2	+18° 5 +65° 6	268° 428 G	22	121	27	149	148° 0	-1° 0	-12° 0 +63° 7
264° 412 G	4	20	8	39	213° 9	+1° 7	+18° 6 +76° 6	269° 356 G	28	87	70	205	147° 9	-1° 2	-12° 5 +76° 8
Spot b								Means							
253° 423 G	5	20	8	32	209° 3	0° 0	+18° 6 -73° 1	..	..	41	196	148° 1	..	-11° 2	..
254° 361 C	22	164	22	166	209° 1	-0° 1	+19° 0 -60° 9	Spot a							
255° 128 K	33	234	26	185	209° 0	-0° 2	+18° 9 -50° 9	258° 451 G	7	27	10	39	148° 1	0° 0	-10° 9 -67° 9
256° 417 C	70	286	43	174	208° 9	-0° 2	+19° 0 -34° 0	259° 354 G	34	148	32	138	149° 2	+1° 0	-11° 3 -54° 9
257° 650 G	72	482	39	260	208° 1	-0° 9	+19° 3 -18° 5	260° 383 G	50	259	35	181	149° 4	+1° 1	-11° 2 -41° 1
258° 451 G	65	356	34	185	207° 9	-1° 0	+19° 3 -8° 1	261° 414 G	56	256	33	151	149° 3	+0° 9	-10° 8 -27° 6
259° 354 G	90	448	46	228	208° 0	-0° 8	+19° 3 +3° 9	262° 342 C	65	339	36	186	149° 2	+0° 7	-10° 8 -15° 4
260° 383 G	81	403	43	214	207° 2	-1° 6	+19° 6 +16° 7	263° 546 G	63	333	33	176	149° 1	+0° 5	-10°

LEDGER II. - NON-RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR

Date U. T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C.M.		Date U. T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C.M.	
	Umbræ	Whole Spots	Umbræ	Whole Spots						Umbræ	Whole Spots	Umbræ	Whole Spots				
Group 13947.								Group 13955 - continued									
Sept. 22-27. A small, nondescript group.								^d 288° 399 G 59 302 38 195 146° 2 0° 0 -12° 7 -34° 6 289° 412 G 71 449 40 253 146° 6 -4° 3 -12° 5 -20° 9 290° 298 C 77 496 42 267 147° 2 -3° 7 -13° 4 -8° 6 291° 482 G 69 437 37 234 147° 5 -3° 5 -14° 0 +7° 3 292° 412 G 62 341 35 195 147° 8 -3° 2 -14° 1 +19° 9 293° 403 G 60 318 39 206 148° 3 -2° 8 -14° 5 +33° 5 294° 560 G 36 202 30 167 148° 2 -2° 9 -14° 1 +48° 6 295° 395 G 18 76 20 85 149° 4 -1° 7 -18° 1 +60° 6									
Means	..	..	13	44	143° 2	..	+ 9° 5	..	Means	..	..	30	163	148° 0	..	-13° 7	..
Group 13949.								Group 13956.									
Sept. 27-Oct. 3. One or two very small spots on the opposite side of the equator to Group 13948.								Oct. 16-21. A cluster of small variable spots on the Sun's equator.									
289° 356 G	7	11	10	15	4° 3	0° 0	- 3° 8	-67° 8	288° 399 G	2	9	1	5	155° 9	0° 0	- 0° 1	-24° 9
270° 380 G	4	13	3	11	4° 5	0° 0	- 3° 9	-54° 1	289° 412 G	24	130	12	66	156° 5	+0° 4	- 0° 2	-11° 0
271° 583 G	2	11	1	7	5° 1	+0° 4	- 3° 7	-37° 6	290° 298 C	30	154	14	76	157° 2	+0° 9	- 0° 5	+ 1° 4
272° 370 G	6	27	3	15	4° 8	0° 0	- 3° 7	-27° 5	291° 482 G	18	76	10	39	157° 2	+0° 7	0° 0	+17° 0
273° 328 C	11	41	6	22	4° 4	-0° 6	- 4° 5	-15° 3	292° 412 G	13	56	7	33	156° 5	-0° 2	+ 0° 7	+28° 6
274° 366 G	6	24	3	13	4° 9	-0° 3	- 4° 4	- 1° 1	293° 403 G	7	29	5	20	157° 2	+0° 3	+ 0° 1	+42° 4
275° 390 G	4	18	2	10	4° 2	-1° 2	- 5° 6	+11° 8	Means	..	..	6	40	156° 8	..	0° 0	..
Means	..	..	4	13	4° 6	..	- 4° 2	..	Group 13957.								
Group 13953.								Oct. 17-26. A stream rising to its maximum area on the 5th day. The leader becomes a regular spot by October 22 and alone survives after October 24.									
Oct. 7-12. A small stream with greatly shortened time-scale for its life history.								289° 412 G 8 40 7 33 113° 8 0° 0 +19° 6 -53° 7 290° 298 C 13 56 9 37 115° 9 +2° 1 +17° 6 -39° 9 291° 482 G 51 222 28 122 118° 8 +5° 1 +16° 7 -21° 4 292° 412 G 72 338 38 176 117° 9 +4° 3 +17° 5 -10° 0 293° 403 G 151 565 78 287 118° 3 +4° 7 +16° 9 +3° 5 294° 560 G 69 429 38 234 119° 7 +6° 2 +17° 5 +20° 1 295° 395 G 65 364 51 220 119° 5 +6° 0 +17° 6 +30° 9 296° 463 G 53 276 39 202 120° 4 +7° 0 +18° 1 +45° 9 297° 297 C 30 173 28 163 121° 2 +7° 8 +18° 5 +57° 7 298° 399 G 13 97 20 149 120° 5 +7° 2 +18° 2 +71° 6									
Means	..	..	15	82	307° 1	..	+15° 9	..	Means	..	..	34	162	118° 8	..	+17° 8	..
Group 13955.								Spot a									
Oct. 13-23. A developing stream in which the leader emerges as a regular spot by October 17, while the trailer portion slowly dies out.								293° 403 G 91 387 46 197 120° 2 0° 0 +16° 7 +5° 4 294° 560 G 51 347 28 191 121° 1 +1° 0 +17° 4 +21° 5 295° 395 G 69 298 42 162 121° 3 +1° 2 +17° 6 +32° 7 296° 463 G 42 243 31 180 121° 3 +1° 3 +18° 1 +46° 8 297° 297 C 30 173 28 163 121° 2 +1° 2 +18° 5 +57° 7 298° 399 G 13 97 20 149 120° 5 +0° 6 +18° 2 +71° 6									
285° 381 G	7	13	11	21	150° 7	0° 0	-13° 1	-69° 9									
286° 597 G	16	45	15	44	149° 4	-1° 4	-13° 4	-55° 2									
287° 439 G	36	154	27	121	146° 7	-4° 1	-12° 6	-46° 8									

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LEDGER II. - NON-RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR																	
Date U. T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C. M.	Date U. T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Latitude	Long. from C. M.		
	Umbrae	Whole Spots	Umbrae	Whole Spots					Umbrae	Whole Spots	Umbrae	Whole Spots					
Group 13960.								Group 13960 - continued									
Oct. 23-Nov. 5. An important stream of normal type reaching maximum size just before central meridian passage. The leader is a large regular spot. The follower is a complex structure and includes a spot of more regular shape that largely retains its identity throughout.								Spot b ₁									
d								d									
295° 395 G	51	226	(125	734	8° 0	..	+13° 1	-80° 6	296° 463 G	31	172	49	272	2° 2	0° 0	+14° 9	-72° 3
296° 463 G	150	864	197	1154	6° 4	0° 0	+13° 0	-66° 1	297° 297 C	30	213	30	215	2° 7	+0° 5	+14° 8	-60° 8
297° 297 C	215	1459	192	1333	7° 2	+0° 8	+12° 9	-56° 3	298° 399 G	75	339	55	247	2° 5	+0° 2	+15° 0	-46° 4
298° 399 G	330	2070	227	1432	6° 2	-0° 3	+13° 1	-42° 7	299° 607 G	132	422	78	249	2° 4	0° 0	+15° 0	-30° 6
299° 607 G	433	2369	246	1339	6° 3	-0° 3	+13° 1	-26° 7	300° 588 G	152	471	81	250	2° 1	-0° 3	+15° 2	-16° 0
300° 588 G	535	2578	279	1347	6° 0	-0° 6	+12° 9	-14° 1	301° 383 G	57	614	29	313	2° 3	-0° 2	+15° 1	-7° 3
301° 383 G	401	2782	201	1397	5° 5	-1° 2	+12° 9	-4° 1	302° 390 G	97	493	49	251	1° 9	-0° 6	+15° 4	+5° 6
302° 390 G	373	2158	191	1109	5° 4	-1° 3	+12° 9	+9° 1	303° 418 G	70	519	38	280	1° 8	-0° 8	+15° 5	+19° 0
303° 418 G	298	1835	165	1025	5° 3	-1° 5	+13° 1	+22° 5	304° 427 G	79	469	47	281	1° 3	-1° 4	+15° 7	+31° 9
304° 427 G	233	1545	147	978	5° 8	-1° 1	+12° 5	+36° 4	305° 446 G	46	378	33	268	0° 9	-1° 8	+15° 8	+44° 9
305° 446 G	226	1337	181	1049	5° 2	-1° 7	+12° 9	+49° 2	306° 441 G	44	260	41	244	0° 6	-2° 2	+16° 0	+57° 7
306° 441 G	148	854	170	953	3° 8	-3° 2	+13° 7	+60° 9	307° 278 C	42	244	57	332	0° 7	-2° 1	+15° 8	+68° 6
307° 278 C	72	509	124	917	2° 9	-4° 1	+13° 9	+71° 0									
308° 563 G	15	59	(72	283	359° 9	..	+16° 1	+85° 0									
Means	..	..	193	1169	5° 5	..	+13° 1	..	Group 13963.								
									Nov. 1-6. A few variable spots, scattered in longitude.								
									304° 427 G	2	7	2	6	278° 9	0° 0	+12° 5	-50° 5
									305° 446 G	2	9	1	6	278° 8	-0° 2	+12° 5	-37° 2
									306° 441 G	24	81	13	43	283° 1	+4° 0	+11° 4	-19° 8
									307° 278 C	21	65	11	34	281° 4	+2° 3	+10° 6	-10° 5
									308° 563 G	13	27	7	14	283° 5	+4° 3	+12° 2	+8° 6
									309° 278 C	0	13	0	7	285° 9	+6° 6	+11° 9	+20° 4
									Means	..	..	6	18	281° 9	..	+11° 8	..
Spot a									Group 13967.								
									Nov. 12-20. A short stream of small, variable spots.								
295° 395 G	51	177	125														

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LEDGER II. - NON-RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR															
Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Lat- tude	Long. from C.M.	Date U.T. Place	Projected Area		Corrected Area		Longitude and Proper Motion	Lat- tude	Long. from
	Umbræ	Whole Spots	Umbræ	Whole Spots					Umbræ	Whole Spots	Umbræ	Whole Spots			
Group 13981 - continued								Group 13987.							
d															
346° 441 C	62	340	37	205	167° 7'	-2° 2'	+ 9° 4'	Dec. 27-1942 Jan. 1. A stream of normal type developing suddenly just past the central meridian. It is dying out as it passes round the limb.							
347° 329 C	38	244	27	173	167° 9'	-2° 2'	+ 9° 6'								
348° 443 G	33	97	33	95	168° 0'	-2° 2'	+10° 0'								
349° 427 G	4	15	6	22	165° 4'	-4° 9'	+11° 3'								
Means	..	..	17	90	169° 0'	..	+ 8° 9'								
Group 13983.								Group 13987.							
Dec. 11-17. A short stream; only one member remains by December 15.								Dec. 27-1942 Jan. 1. A stream of normal type developing suddenly just past the central meridian. It is dying out as it passes round the limb.							
344° 429 G	30	139	18	72	151° 0'	0° 0'	+11° 4'	360° 362 C	14	73	7	39	318° 8'	0° 0'	+17° 5'
345° 578 G	37	261	19	133	150° 3'	-0° 8'	+11° 7'	361° 422 G	63	322	36	184	320° 0'	+1° 2'	+17° 7'
346° 441 C	44	180	23	96	150° 5'	-0° 7'	+11° 5'	362° 479 G	78	456	51	301	319° 8'	+1° 1'	+17° 6'
347° 329 C	34	207	19	119	151° 5'	+0° 2'	+11° 4'	363° 312 C	60	463	46	377	319° 7'	+1° 0'	+17° 4'
348° 443 G	20	91	14	65	153° 2'	+1° 8'	+10° 1'	364° 314 C	45	229	50	250	320° 1'	+1° 5'	+17° 2'
349° 427 G	7	26	7	24	153° 5'	+2° 0'	+10° 1'	0° 336 C	12	49	23	97	319° 9'	+1° 3'	+17° 0'
350° 297 C	0	4	0	6	153° 3'	+1° 7'	+10° 1'	Means	..	..	36	208	319° 7'	..	+17° 4'
Means	..	..	14	74	151° 9'	..	+10° 9'	Spot a							
Group 13986.								Spot a							
Dec. 22-1942 Jan. 3. A small regular spot diminishing slowly. Its umbra is double on December 24 and triple by December 28.								Spot a							
355° 294 C	4	23	18	101	295° 2'	..	- 9° 0'	360° 362 C	8	40	4	22	319° 6'	0° 0'	+18° 2'
356° 452 G	15	95	21	133	294° 5'	0° 0'	- 8° 2'	361° 422 G	37	216	21	125	321° 7'	+2° 1'	+17° 9'
357° 439 G	28	158	25	140	294° 8'	+0° 2'	- 7° 8'	362° 479 G	35	264	24	180	322° 1'	+2° 6'	+17° 3'
358° 314 C	31	220	22	154	295° 2'	+0° 4'	- 8° 0'	363° 312 C	35	312	28	250	321° 5'	+2° 0'	+17° 2'
359° 334 C	27	245	16	142	295° 1'	+0° 2'	- 7° 9'	364° 314 C	33	154	38	177	322° 0'	+2° 6'	+17° 2'
360° 362 C	40	241	21	125	295° 7'	+0° 7'	- 7° 9'	0° 336 C	8	37	17	79	321° 5'	+2° 1'	+17° 2'
361° 422 G	63	309	32	154	295° 4'	+0° 2'	- 7° 7'	Spot b							
362° 479 G	52	229	27	117	295° 6'	+0° 3'	- 7° 9'	360° 362 C	6	33	3	17	317° 6'	0° 0'	+16° 8'
363° 312 C	29	183	16	104	295° 8'	+0° 3'	- 8° 0'	361° 422 G	28	106	15	59	317° 4'	-0° 2'	+17° 0'
364° 314 C	23	87	14	53	295° 2'	-0° 4'	- 8° 0'	362° 479 G	37	164	23	103	316° 8'	-0° 7'	+17° 2'
0° 336 C	12	64	9	49	295° 6'	-0° 1'	- 8° 2'	363° 312 C	25	171	18	127	316° 6'	-0° 9'	+17° 6'
1° 334 C	8	54	8	57	295° 5'	-0° 4'	- 8° 3'	364° 314 C	12	75	12	73	316° 3'	-1° 1'	+17° 2'
2° 281 C	4	17	7	31	295° 4'	-0° 6'	- 8° 4'	0° 336 C	4	12	6	18	315° 9'	-1° 5'	+16° 6'
Means	..	..	18	105	295° 3'	..	- 8° 0'	Group 13988.							
Group 13988.								Group 13988.							
Dec. 27-1942 Jan. 2. A pair of spots sp Group 13987, with synchronous development.								Dec. 27-1942 Jan. 2. A pair of spots sp Group 13987, with synchronous development.							
360° 362 C	0	12	0	6	313° 8'	0° 0'	+13° 8'	360° 362 C	0	12	0	6	313° 8'	0° 0'	+13° 8'
361° 422 G	6	26	3	14	312° 0'	-1° 9'	+11° 7'	361° 422 G	6	26	3	14	312° 0'	-1° 9'	+11° 7'
362° 479 G	52	279	31	165	313° 4'	-0° 6'	+11° 5'	362° 479 G	52	279	31	165	313° 4'	-0° 6'	+11° 5'
363° 312 C	31	175	21	118	313° 1'	-1° 0'	+11° 2'	363° 312 C	31	175	21	118	313° 1'	-1° 0'	+11° 2'
364° 314 C	16	90	14	78	313° 2'	-0° 9'	+10° 5'	364° 314 C	16	90	14	78	313° 2'	-0° 9'	+10° 5'
0° 336 C	4	35	5	44	312° 6'	-1° 6'	+10° 6'	0° 336 C	4	35	5	44	312° 6'	-1° 6'	+10° 6'
1° 334 C	6	31	18	92	312° 8'	-1° 5'	+10° 8'	1° 334 C	6	31	18	92	312° 8'	-1° 5'	+10° 8'
Means	..	..	13	74	313° 0'	..	+11° 4'	Means	..	..	13	74	313° 0'	..	+11° 4'

ROYAL OBSERVATORY, GREENWICH.

Total Areas of Sunspots and Faculæ

Projected and Corrected for Foreshortening
for each Day, and

Mean Areas and Mean Heliographic
Latitude of Sunspots and Faculæ

for each Rotation of the Sun
and for the Year

1941

GREENWICH PHOTO-HELIOGRAPHIC RESULTS. 1941

TOTAL AREAS OF SUNSPOTS AND FACULÆ FOR EACH DAY IN THE YEAR 1941

The time (U.T.) at which the photograph was taken is expressed by the month, day of month, and decimal of a day, reckoned from Greenwich mean midnight.

The place where the photograph was taken is indicated in the second column. A photograph taken at Greenwich is indicated by the letter G, and those taken at the Cape, Kodaikanal, Washington and Mount Wilson by the letters C, K, W, and Mt. W respectively.

The projected area is the area as it is measured on the photograph, uncorrected for the effect of 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.

U. T.	Place	Projected Area			Area Corrected for Foreshortening			U. T.	Place	Projected Area			Area Corrected for Foreshortening			
		Umbræ	Whole Spots	Faculæ	Umbræ	Whole Spots	Faculæ			Umbræ	Whole Spots	Faculæ	Umbræ	Whole Spots	Faculæ	
1941 January	d							1941 February	d							
1° 312	C	115	651	2482	75	428	2829	15° 283	C	68	354	862	44	255	1029	
2° 430	G	124	465	540	72	273	705	16° 230	C	60	294	500	49	248	688	
3° 451	G	113	476	475	62	260	641	17° 427	C	71	379	1102	46	240	1305	
4° 480	G	125	587	464	67	313	546	18° 304	C	62	278	623	39	176	645	
5° 099	K	154	830	1126	80	445	1354	19° 283	C	31	124	544	22	83	619	
6° 705	W	116	507	2917	79	345	3727	20° 286	C	71	325	755	52	235	948	
7° 751	W	123	553	2558	115	559	2696	21° 446	G	48	211	796	63	267	1158	
8° 302	C	98	693	1364	116	778	1611	22° 368	G	69	319	1014	94	451	1410	
9° 425	G	105	544	1168	95	545	1369	23° 484	G	39	545	611	33	472	729	
10° 451	G	127	582	1698	84	390	2215	24° 416	G	163	809	1501	143	717	2207	
11° 299	C	79	482	1369	56	348	1745	25° 394	G	190	1384	810	138	965	1074	
12° 379	C	43	325	1240	34	251	1545	26° 411	G	226	1380	1012	136	830	1017	
13° 290	C	41	194	770	22	103	977	27° 314	C	317	1834	1407	179	1027	1527	
14° 279	C	33	183	603	17	96	668	28° 308	C	259	1778	863	152	1040	1042	
15° 281	C	21	100	187	12	55	282									
16° 571	G	36	171	380	54	238	544	March	1° 334	C	239	1644	527	146	1017	629
17° 438	G	50	216	2085	56	240	2634	2° 480	G	203	1127	295	131	735	359	
18° 287	C	37	204	599	33	186	675	3° 442	G	172	819	1107	121	571	1416	
19° 543	C	58	316	320	37	204	411	4° 396	G	202	836	875	152	652	1180	
20° 286	C	69	378	224	39	214	292	5° 420	G	146	659	1336	132	576	1528	
21° 282	C	135	811	121	69	419	198	6° 329	C	73	517	1273	51	398	1621	
22° 281	C	119	822	0	61	420	0	7° 325	C	43	315	1290	37	306	1619	
23° 282	C	110	741	0	59	398	0	8° 387	G	97	546	440	56	316	535	
24° 286	C	123	774	439	72	457	808	9° 107	K	86	560	439	63	411	696	
25° 279	C	117	651	745	142	835	899	10° 454	G	107	589	1012	103	557	1208	
26° 382	C	97	841	1057	107	957	1216	11° 477	G	186	929	517	191	969	686	
27° 298	C	125	848	1283	118	813	1635	12° 328	C	103	868	906	100	835	1099	
28° 281	C	118	1041	1064	92	818	1445	13° 374	G	124	655	849	68	354	736	
29° 295	C	225	1569	402	169	1169	586	14° 368	G	136	554	616	110	483	1262	
30° 541	C	254	2032	309	172	1306	311	15° 330	C	62	403	642	46	316	1091	
31° 299	C	199	1879	750	122	1139	718	16° 578	G	89	412	1155	104	492	1304	
								17° 336	C	101	613	830	96	595	1102	
February	1° 281	C	280	2057	282	168	1204	355	18° 432	G	213	1129	759	131	710	997
	2° 435	G	223	1532	469	129	888	814	19° 478	G	282	1396	730	156	771	863
	3° 564	G	229	978	723	159	689	813	20° 552	G	283	1775	464	154	958	541
	4° 449	G	212	822	1447	148	581	1761	21° 321	C	213	1328	922	116	735	1123
	5° 283	C	116	695	764	67	602	1052	22° 325	C	194	1082	1245	115	640	1465
	6° 511	G	113	616	1227	83	463	1515	23° 372	C	143	826	846	113	637	951
	7° 505	C	76	400	1472	58	295	1890	24° 329	C	89	600	1530	85	574	1789
	8° 437	C	48	247	1197	37	190	1308	25° 394	G	69	355	1636	65	365	2057
	9° 401	C	31	189	1320	42	267	1408	26° 452	G	58	258	769	40	173	783
	10° 422	G	70	289	564	61	257	765	27° 346	G	84	371	1221	63	315	1432
	11° 283	C	51	306	1009	37	242	1434	28° 470	G	91	437	754	61	282	1021
	12° 279	C	46	342	1668	29	219	1910	29° 325	C	37	238	765	22	147	847
	13° 483	G	70	390	1264	44	248	1483	30° 364	G	36	193	788	21	107	1007
	14° 310	C	73	395	1084	48	256	1146	31° 369	G	33	171	455	20	107	559

TOTAL AREAS OF SUNSPOTS AND FACULÆ FOR EACH DAY IN THE YEAR 1941

U.T.	Place	Projected Area			Area Corrected for Foreshortening			U.T.	Place	Projected Area			Area Corrected for Foreshortening		
		Umbrae	Whole Spots	Faculae	Umbrae	Whole Spots	Faculae			Umbrae	Whole Spots	Faculae	Umbrae	Whole Spots	Faculae
1941 April	d							1941 June	d						
1° 318	C	47	234	958	30	147	879	1° 573	G	121	566	744	85	411	941
2° 334	C	37	165	1102	24	108	1338	2° 542	C	90	495	773	55	297	899
3° 354	G	8	24	1137	25	87	1776	3° 394	C	136	799	981	112	632	1297
4° 357	G	18	60	1505	21	70	1873	4° 449	G	233	1113	1466	165	793	1756
5° 417	G	27	78	1070	22	65	1383	5° 100	K	286	1581	678	171	987	836
6° 100	K	10	66	421	7	52	538	6° 392	C	200	1578	478	116	944	529
7° 328	C	52	242	1102	57	302	1406	7° 310	G	253	1141	1438	154	692	1666
8° 335	G	75	353	1160	62	296	1355	8° 411	G	354	1469	1625	221	910	1961
9° 570	G	113	486	392	80	346	508	9° 691	W	318	1386	2106	240	1005	2500
10° 348	G	101	434	1119	64	273	1494	10° 431	C	304	1910	1014	205	1276	1414
11° 133	K	65	338	318	37	195	365	11° 308	G	393	1949	710	236	1209	1182
12° 342	C	61	333	824	35	188	1009	12° 367	G	378	1536	840	226	927	984
13° 410	G	29	109	762	16	56	970	13° 349	G	348	1416	1714	217	881	2092
14° 469	C	13	78	274	7	42	378	14° 394	C	199	1144	628	132	766	907
15° 342	G	10	38	853	5	21	1170	15° 489	G	180	738	1220	109	442	1580
16° 349	G	17	58	660	11	36	925	16° 352	G	108	603	1322	67	362	1366
17° 389	G	58	191	991	46	152	1231	17° 337	G	88	573	633	58	377	781
18° 396	C	44	217	803	49	247	1003	18° 320	G	90	426	1335	76	359	1632
19° 329	C	61	327	1102	102	569	1529	19° 341	G	74	331	989	73	356	1192
20° 418	G	101	538	742	91	480	839	20° 339	G	86	377	1875	96	466	2364
21° 465	G	192	928	1518	129	624	1766	21° 378	G	101	397	1426	80	300	1626
22° 338	C	213	1116	338	123	643	438	22° 359	G	63	242	1184	48	178	1566
23° 101	K	230	1319	192	122	704	190	23° 377	G	93	446	460	95	496	642
24° 422	G	250	1190	1029	127	597	1524	24° 375	G	228	981	943	171	714	1111
25° 376	G	232	1021	802	120	527	956	25° 374	G	329	1566	1098	190	929	1468
26° 360	G	244	1158	576	198	1021	853	26° 442	G	362	1754	1225	194	947	1617
27° 317	C	161	1018	624	124	841	913	27° 310	G	354	1606	1572	224	1008	1981
28° 393	C	146	786	1144	126	671	1250	28° 306	G	386	1601	1976	327	1360	2471
29° 600	G	119	603	1390	103	554	1665	29° 278	G	488	2174	1491	368	1676	1540
30° 398	G	130	577	1660	112	524	1985	30° 410	G	465	2106	764	346	1576	769
May								July							
1° 605	G	113	550	2103	82	388	2669	1° 373	G	375	1841	1432	276	1329	1852
2° 561	G	68	393	1001	47	269	1226	2° 349	G	303	1751	1121	222	1256	1469
3° 423	G	126	618	972	78	377	1277	3° 355	G	283	1346	878	173	796	1318
4° 370	G	125	631	998	75	373	1260	4° 384	G	271	1254	1363	159	718	1940
5° 382	G	129	522	1611	74	304	2011	5° 333	G	230	1111	1259	144	670	1353
6° 363	G	50	216	1066	29	123	1186	6° 334	G	208	1043	1109	135	667	1394
7° 531	G	20	145	551	11	65	735	7° 342	G	177	949	1756	128	699	2221
8° 453	G	18	91	1056	10	65	1388	8° 355	G	173	943	1584	158	853	1958
9° 308	G	21	80	898	47	178	1304	9° 384	G	153	874	1178	231	1374	2100
10° 336	G	53	181	1808	64	296	2276	10° 361	G	86	393	1340	118	590	1594
11° 366	G	98	383	1620	93	362	1828	11° 350	G	65	211	867	49	162	1046
12° 384	G	117	389	1803	89	269	2179	12° 358	G	49	205	762	31	127	993
13° 343	C	53	323	389	34	224	396	13° 323	C	30	141	569	17	83	718
14° 169	K	35	189	544	21	125	701	14° 359	G	18	41	752	9	22	1064
15° 574	G	30	195	661	32	208	1042	15° 319	G	9	48	462	5	26	511
16° 348	G	50	188	1471	41	164	1842	16° 316	G	9	35	850	19	79	1164
17° 379	G	53	208	2197	40	155	2811	17° 392	G	60	336	1058	61	353	1468
18° 351	G	35	233	1468	22	158	1782	18° 506	C	243	1106	1493	172	774	1647
19° 525	G	42	165	1523	24	92	1680	19° 348	G	198	964	1392	152	741	1581
20° 342	C	57	290	996	33	169	1133	20° 356	G	183	891	967	173	851	1212
21° 371	G	68	379	748	35	219	1120	21° 384	G	165	752	1645	178	820	2630
22° 403	G	60	300	456	34	173	540	22° 361	G	181	825	1150	159	770	1435
23° 657	G	73	307	1340	41	176	1523	23° 337	G	307	1435	1276	233	1072	1362
24° 369	G	116	434	1397	65	255	1676	24° 360	G	342	1810	644	237	1288	1143
25° 349	G	87	345	1842	46	188	1938	25° 296	G	458	2452	897	349	1826	1293
26° 385	G	71	266	1560	38	151	1750	26° 679	W	358	2137	966	233	1367	932
27° 400	G	40	152	1523	27	100	2051	27° 406	G	668	4098	1161	379	2387	1214
28° 315	G	23	96	1264	19	78	1666	28° 362	G	598	4057	1116	369	2380	1510
29° 350	C	0	9	461	0	5	620	29° 604	W	683	3273	2060	443	2096	2367
30° 418	C	38	193	643	70	362	894	30° 323	G	618	3606	1705	402	2344	1870
31° 674	Mt. W	82	328	793	78	310	934	31° 433	G	590	2978	985	474	2390	1040

TOTAL AREAS OF SUNSPOTS AND FACULÆ FOR EACH DAY IN THE YEAR 1941

U. T.	Place	Projected Area			Area Corrected for Foreshortening			U. T.	Place	Projected Area			Area Corrected for Foreshortening		
		Umbrae	Whole Spots	Faculae	Umbrae	Whole Spots	Faculae			Umbrae	Whole Spots	Faculae	Umbrae	Whole Spots	Faculae
1941 August	a							1941 October	a						
1° 386	G	362	2498	1946	346	2352	2371	1° 328	C	230	1282	490	120	666	536
2° 097	K	329	2251	1489	280	1847	2009	2° 366	G	225	1190	792	119	627	980
3° 415	G	366	2043	481	280	1524	645	3° 390	G	195	949	345	106	520	491
4° 681	W	327	1708	2877	223	1171	3579	4° 404	C	169	911	147	98	529	256
5° 392	G	368	2377	1441	265	1554	2120	5° 382	C	169	947	0	118	656	0
6° 350	G	426	2268	985	290	1574	1601	6° 416	G	124	649	1339	119	669	1573
7° 333	G	476	2720	1076	266	1481	1097	7° 320	C	121	579	2761	174	815	3469
8° 395	C	409	2359	1988	233	1349	1993	8° 303	C	121	682	2316	178	1010	3459
9° 411	G	384	1894	423	241	1192	808	9° 300	C	158	799	1227	137	718	1486
10° 386	G	229	1357	390	173	1019	341	10° 627	G	171	834	1287	121	656	1412
11° 563	G	210	912	1362	219	976	1697	11° 412	G	220	1028	788	137	644	871
12° 355	G	115	570	1225	180	807	1768	12° 411	G	212	1053	566	118	590	854
13° 124	K	45	248	793	41	228	958	13° 381	G	180	770	477	101	412	665
14° 349	G	41	146	1028	69	237	1350	14° 597	G	156	809	1255	89	443	1395
15° 423	C	0	0	1680	0	0	2039	15° 439	G	159	812	522	98	484	632
16° 354	G	14	112	651	44	353	1003	16° 399	G	143	777	710	88	476	874
17° 412	G	43	255	844	57	339	1368	17° 412	G	163	935	1293	98	555	1547
18° 366	G	104	648	1311	91	559	1459	18° 296	C	178	1022	1364	110	630	1682
19° 612	G	140	753	935	90	491	1141	19° 482	G	164	901	884	102	566	1068
20° 362	G	176	932	524	178	835	1121	20° 412	G	156	810	960	98	527	1394
21° 350	G	230	1236	1254	196	986	1547	21° 403	G	218	912	906	122	513	1094
22° 427	G	322	1563	1117	225	1121	1170	22° 560	G	105	631	1380	68	401	1542
23° 141	K	258	1509	534	169	1001	520	23° 395	G	176	756	1371	235	1201	1925
24° 492	C	270	1499	1467	163	889	1847	24° 463	G	234	1277	1647	268	1495	2415
25° 588	G	236	1137	980	131	645	1127	25° 297	C	272	1794	2081	240	1620	2270
26° 405	G	209	1021	1277	159	772	1557	26° 399	G	363	2357	1144	271	1696	1226
27° 393	C	179	1020	1781	135	840	2055	27° 607	G	471	2519	209	266	1418	393
28° 411	G	155	772	1460	102	561	1966	28° 588	G	572	2736	330	308	1450	351
29° 359	C	145	782	1334	105	562	1455	29° 383	G	418	2634	242	212	1445	221
30° 357	G	144	606	1238	104	467	1737	30° 390	G	404	2279	330	209	1181	580
31° 360	G	87	349	1636	96	410	2554	31° 418	G	318	1932	396	177	1077	522
September								November							
1° 411	G	113	537	2077	116	620	2529	1° 427	G	253	1607	209	159	1014	223
2° 346	G	132	589	1332	97	485	1664	2° 446	G	291	1610	1254	220	1212	1320
3° 417	G	156	712	1192	96	442	1435	3° 441	G	302	1487	1210	272	1373	1533
4° 364	G	181	910	1318	99	498	1570	4° 278	C	192	1234	1664	220	1518	2199
5° 560	G	125	650	704	68	344	693	5° 563	G	92	456	1056	179	933	1669
6° 347	C	110	795	475	59	415	399	6° 278	C	13	123	1208	37	317	1654
7° 366	G	137	656	818	75	353	1106	7° 412	G	0	0	647	0	0	1000
8° 408	C	185	955	974	112	571	1142	8° 421	G	0	0	373	0	0	614
9° 402	C	99	645	724	71	463	818	9° 401	G	0	0	610	0	0	1013
10° 349	C	78	498	1507	114	806	1921	10° 410	C	0	0	902	0	0	1040
11° 423	G	118	725	1628	180	1138	2244	11° 307	C	0	0	907	0	0	1016
12° 361	C	200	1343	1721	210	1448	2113	12° 275	C	6	40	449	4	31	730
13° 128	K	332	2030	985	254	1540	1301	13° 282	C	45	198	1307	25	116	1384
14° 417	C	473	2781	1358	262	1646	1574	14° 276	C	109	551	633	58	297	703
15° 650	G	610	4028	326	322	2121	419	15° 415	G	129	462	679	69	249	787
16° 451	G	669	4235	1080	349	2188	1407	16° 274	C	61	381	658	32	197	723
17° 354	G	817	4947	1664	462	2709	1951	17° 398	C	61	370	130	35	210	202
18° 383	G	966	6190	1542	551	3441	1707	18° 399	G	52	318	219	34	206	184
19° 414	G	654	5640	674	522	3415	635	19° 285	C	85	418	749	62	319	1069
20° 342	C	728	4998	1650	513	3564	1633	20° 290	C	48	285	1274	48	288	1477
21° 546	G	520	3352	1215	515	3440	1251	21° 407	G	55	285	2562	77	380	3156
22° 412	G	287	1935	1900	373	2767	2269	22° 473	G	107	501	1254	195	1030	1744
23° 558	G	229	957	1366	278	1160	2017	23° 486	G	205	1006	981	230	1253	1363
24° 481	G	120	615	907	93	475	1176	24° 439	C	245	1619	855	196	1267	1122
25° 456	G	110	502	907	108	509	1170	25° 399	C	349	2294	560	225	1488	640
26° 428	G	73	362	626	130	646	1111	26° 408	G	433	2072	370	253	1210	452
27° 356	G	180	786	2162	260	1086	2975	27° 276	C	342	2003	346	189	1112	369
28° 380	G	194	872	2284	165	737	2427	28° 280	C	323	1813	290	198	1108	407
29° 583	G	219	1148	392	140	737	438	29° 279	C	302	1735	956	184	1028	956
30° 370	G	236	1186	392	133	671	390	30° 281	C	280	1771	1151	174	1086	1316

TOTAL AREAS OF SUNSPOTS AND FACULÆ FOR EACH DAY IN THE YEAR 1941

U. T.	Place	Projected Area			Area Corrected for Foreshortening			U. T.	Place	Projected Area			Area Corrected for Foreshortening		
		Umbrae	Whole Spots	Faculae	Umbrae	Whole Spots	Faculae			Umbrae	Whole Spots	Faculae	Umbrae	Whole Spots	Faculae
1941 December 1 ^d	K	228	1399	1310	145	891	1468	1941 December 16 ^d	G	74	400	976	50	280	1409
2 ^d 403	C	147	854	1966	106	626	2421	17 ^d 297	C	54	312	1647	48	268	1820
3 ^d 306	C	102	662	1618	90	573	2329	18 ^d 436	G	26	237	867	27	239	893
4 ^d 282	C	51	289	1139	31	178	1376	19 ^d 416	C	10	63	1379	18	112	1887
5 ^d 287	C	85	448	1376	68	363	1884	20 ^d 335	C	0	0	997	0	0	1219
6 ^d 293	C	108	500	1223	82	375	1441	21 ^d 281	C	0	0	1409	0	0	1630
7 ^d 402	G	81	364	785	83	363	1179	22 ^d 294	C	4	23	764	18	101	757
8 ^d 424	G	62	336	1063	96	547	1615	23 ^d 452	G	15	99	1127	21	136	1467
9 ^d 279	C	35	249	1478	36	270	1634	24 ^d 439	G	34	195	627	28	160	719
10 ^d 395	C	60	368	1221	42	267	1503	25 ^d 314	C	31	220	842	22	154	720
11 ^d 429	G	175	814	152	99	457	176	26 ^d 334	C	27	245	416	16	142	641
12 ^d 576	G	223	1545	1150	118	820	1161	27 ^d 362	C	58	338	993	32	182	1008
13 ^d 441	C	242	1341	847	129	719	960	28 ^d 422	G	132	661	961	71	355	1181
14 ^d 329	C	164	1134	1022	92	637	1307	29 ^d 479	G	182	964	357	109	583	561
15 ^d 443	G	155	721	672	108	459	711	30 ^d 312	C	120	651	735	83	599	858
								31 ^d 314	C	84	406	2242	78	381	2623

MEAN AREAS OF SUNSPOTS AND FACULÆ FOR EACH ROTATION OF THE SUN,
FROM 1941 JANUARY 3 TO DECEMBER 23.

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 1873-1940 printed in the Greenwich Observations for 1884 and succeeding years) 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	Date of Commencement of each Rotation	No. of Days on which Photographs were taken	Mean of Daily Areas					
			Projected			Corrected for Foreshortening		
			Umbrae	Whole Spots	Faculae	Umbrae	Whole Spots	Faculae
1168	1941 January 3·18	27	96	571	913	72	439	1138
1169	January 30·52	28	114	699	919	82	492	1125
1170	February 26·86	27	157	894	908	110	631	1127
1171	March 26·18	28	60	289	858	45	218	1065
1172	April 22·45	27	102	495	1150	73	358	1442
1173	May 19·68	27	167	812	1127	108	532	1348
1174	June 15·89	27	211	1004	1220	157	754	1533
1175	July 13·09	27	327	1823	1238	231	1279	1540
1176	August 9·30	27	160	818	1160	125	642	1466
1177	September 5·55	28	326	1975	1117	235	1417	1357
1178	October 2·82	27	215	1155	1020	151	820	1280
1179	October 30·11	28	136	769	852	108	613	1078
1180	November 26·42	27	124	721	1079	83	482	1307

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	No. of Days on which Photographs were taken	Mean of Daily Areas					
		Projected			Corrected for Foreshortening		
		Umbrae	Whole Spots	Faculae	Umbrae	Whole Spots	Faculae
1941	365	167	913	1041	120	658	1268

MEAN HELIOGRAPHIC LATITUDE OF SUNSPOTS FOR EACH ROTATION OF THE SUN,
FROM 1941 JANUARY 3 TO DECEMBER 23.

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 mean heliographic latitude of spotted area north of 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 the 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	Date of Commencement of each Rotation	No. of Days on which Photographs were taken	Spots North of the Equator		Spots South of the Equator		Mean Heliographic Latitude of entire Spotted Area	Mean Distance from Equator of all Spots
			Mean of Daily Areas	Mean Heliographic Latitude	Mean of Daily Areas	Mean Heliographic Latitude		
1168	1941 January 3 ¹⁸	27	289	11 ¹⁰	150	8 ²⁸	+4 ⁴⁸	10 ¹³
1169	January 30 ⁵²	28	263	11 ⁹⁹	230	9 ⁶⁹	+1 ⁸⁹	10 ⁹¹
1170	February 28 ⁸⁶	27	499	11 ¹⁹	132	12 ⁵⁵	+8 ²³	11 ⁴⁸
1171	March 28 ¹⁸	28	47	8 ⁶²	171	7 ²³	-3 ⁷⁹	7 ⁵³
1172	April 22 ⁴⁵	27	121	17 ⁰¹	236	4 ¹⁶	+3 ⁰³	8 ⁵²
1173	May 19 ⁶⁸	27	296	10 ⁸⁴	236	12 ⁸⁹	+0 ³⁰	11 ⁷⁵
1174	June 15 ⁸⁹	27	538	11 ⁷⁷	216	6 ³⁹	+6 ⁵⁷	10 ²³
1175	July 13 ⁰⁹	27	660	11 ⁴⁸	618	6 ⁴⁶	+2 ⁸¹	9 ⁰⁶
1176	August 9 ³⁰	27	391	10 ⁷⁸	251	6 ⁴⁶	+4 ⁰⁵	9 ⁰⁹
1177	September 5 ⁵⁵	28	1196	11 ³⁸	221	8 ¹²	+8 ³³	10 ⁸⁷
1178	October 2 ⁸²	27	733	11 ⁰⁹	87	10 ⁸⁹	+8 ⁷⁵	11 ⁰⁷
1179	October 30 ¹¹	28	435	10 ²³	178	14 ⁵⁴	+3 ⁰³	11 ⁴⁸
1180	November 28 ⁴²	27	150	9 ¹¹	331	11 ⁴²	-5 ⁰¹	10 ⁷⁰

MEAN HELIOGRAPHIC LATITUDE OF SUNSPOTS FOR THE YEAR.

Year	No. of Days on which Photographs were taken	Spots North of the Equator		Spots South of the Equator		Mean Heliographic Latitude of entire Spotted Area	Mean Distance from Equator of All Spots
		Mean of Daily Areas	Mean Heliographic Latitude	Mean of Daily Areas	Mean Heliographic Latitude		
1941	365	427	11 ³¹	232	8 ⁶⁷	+4 ²⁸	10 ³⁸

ROYAL OBSERVATORY, GREENWICH

Observations of Solar Flocculi and Solar Flares

Made with the
Spectrohelioscope

In the Year

1941

GREENWICH PHOTO-HELIOGRAPHIC RESULTS, 1941

OBSERVATIONS OF SOLAR FLOCCULI MADE WITH THE SPECTROHELIOSCOPE IN THE YEAR 1941

The following observations relate to dark filaments or flocculi visible on the Sun's disk in the light of $H\alpha$ in the immediate vicinity of sunspots, the object of the measures being to determine the motion of these hydrogen flocculi in the line of sight.*

The observations were made at the Royal Observatory, Greenwich, with a spectrohelioscope lent by the Mount Wilson Observatory and described by Dr. Hale in the *Astrophysical Journal*, 70, 265-311, 1929. The spectrum is formed by a Rowland grating ruled with 14,438 lines to the inch, the observations being made in the light of $H\alpha$. The portion of the grating covered by the solar beam contains about 43,000 lines. The first order spectrum was used throughout the year, the scale being 1 mm. = 4.35 Å. The width of the second slit was usually 0.1 mm. The diameter of the monochromatic image of the Sun's disk at the second slit is about 50 mm., of which a strip 6 mm. wide and 28 mm. long is rendered visible by the rotating rectangular prisms. The eyepiece used magnifies twice.

Measures of radial velocity are taken with the "line-shifter", whose scale from 0 - 10 divisions = 0.37 Å = 17 km./sec. at $H\alpha$. The zero of the $H\alpha$ line is determined from measures of the darkest part of the line in an undisturbed portion of the Sun near the centre of the disk. The purpose of the observations being to locate large radial velocities, measured displacements are interpreted as being due to Doppler effects.

The probable error of a single measure of radial velocity, as determined from a number of successive readings, is about 3 km./sec., including the probable error of the zero determination. Three or four measures being generally made on each flocculus, the probable errors of the tabulated values in the third column of the following table do not usually exceed 2 km./sec., except, perhaps in the case of the larger velocities which have accordingly been rounded off to the nearest 5 km./sec. The systematic error for the smallest velocities observed is less than 0.5 km./sec., as is shown by measures of the Sun's equatorial rotation taken at the limbs.

In the following table, the headings of which are self-explanatory, particulars are given of each dark flocculus as follows -

* An analysis of the radial velocities of dark $H\alpha$ markings near sunspots observed at the Royal Observatory, Greenwich, 1930-33, is given in *Monthly Notices*, 94, 472, 1934.

- (1) The measured radial velocity in km./sec., + indicating motion away from the observer and - motion towards the observer.

Where two values are given it is to be understood, unless otherwise stated in the footnotes, that different velocities were observed along the length of the flocculus, and that the tabulated values are the extreme velocities measured, which in nearly all cases correspond to the opposite ends of the marking. In those cases in which one end of a flocculus, showing progressive velocities along its length, appeared to touch a sunspot, the radial velocity observed at that extremity of the flocculus is printed in heavy italics.

- (2) (a) The apparent length of the flocculus in minutes of arc, read by means of a scale inserted in the field. An asterisk denotes that the marking was small and roughly circular in shape. The diameters of these circular markings are of the order of 10".

(b) The apparent least distance in minutes of arc from the centre of the nearest sunspot or group of spots. In those cases indicated by dots in the appropriate column it was not possible to obtain a measure.

(c) The position of the flocculus relative to the group of associated sunspots or to a single component of the group. In cases where a sunspot has been designated in the *Ledgers* in the preceding *Results*, the appropriate letter *a* (the leader of the group) or *b* (the follower) has been added. The abbreviations *n*, *s*, *f*, *p*, *c*, stand respectively for, north, south, following, preceding, central.

- (3) Particulars of the associated group of sunspots, abstracted from the *General Catalogue*, including the longitude from the Sun's central meridian at the time of observing the flocculus (deduced from the mean longitude of the sunspots).

Notes have been added of unusual features seen at the time of observation. Flocculi which were apparently descending into sunspots with progressive velocities and showing a definite curvature of shape are also noted. The intensity scale of associated solar flares is that used in the "*Bulletin for Character Figures of Solar Phenomena*" published from Zurich under the auspices of the International Astronomical Union.

OBSERVATIONS OF SOLAR FLOCCULI MADE WITH THE SPECTROHELIOSCOPE IN THE YEAR

Dark H α Flocculi						Associated Group of Sunspots						
Reference Number	Date and Time U.T.		Measured Radial Velocity km./sec.	Length	Least Distance from Sunspot	Position relative to Sunspot or Group	Number of Group	Longitude from Central Meridian	Central Meridian Passage	Latitude	Area	
1	Mar.	d h										
1		1 11.1	+ 5				13814	+28	Feb.	27.31	+14	416
2		1 11.2	-49 to +35	2.2	0.5	n	14	+28				
3		1 11.2	- 5	1.7	1.6	s	14	+28				
3		3 8.2	- 5	2.2	0.8	s	14	+53				
4		3 8.7	-25 to +25	1.3	0.4	s	14	+53				
5	May	10 7.7	+47	1.2	1.1	n	13854	-76	May	16.05	+24	101
6	June	11 7.8	-16 to +45	1.3	1.7	n a	71	+27	June	9.27	+13	421
7		16 7.2	+26	1.5	1.7	s a	76	+24		14.51	+ 5	322
7		16 7.4	0				76	+24				
8		16 7.3	-58 to +46	1.4	0.8	s a	76	+24				
8		16 7.5	-12				76	+24				
9		30 10.0	+40	1.5	..	..	87	- 2		30.56	- 6	54
9		30 10.1	+ 5 to +85				87	- 2				
10	June	30 10.3	+24 to +110	1.1	..	..	13887	- 2	June	30.56	- 6	54
11	July	3 9.9	+19 to +37	1.1	0.5	sp	86	- 6	July	3.87	+13	490
12		7 9.1	-29 to +26	1.2	0.2	s	86	+46				
13		8 8.9	-33	0.6	2.0	n	86	+60				
14		8 10.0	-49 to 0	0.5	0.4	s	86	+60				
15	July	11 8.4	-60 to +26	1.8	4.0	s	13895	-51	July	15.23	-15	85
16		11 9.7	+10	0.8	2.4	s	95	-51				
17		24 9.1	+50	1.4	0.3	c	904	-37		27.16	- 4	798
18		24 10.3	-33 to +55	1.8	0.4	c	04	-36				
19		24 10.4	-45 to +65	1.5	0.2	n	04	-36				
20	July	25 7.7	-29 to +47	0.3	0.2	c	13904	-24	July	27.16	- 4	798
21		28 12.7	+ 2 to +124				04	+18				
21		28 12.8	- 8 to +165	2.4	0.3	s	04	+18				
22		30 8.0	+22 to +31	1.2	0.7	n b	04	+42				
23	Aug.	5 10.4	-33 to +50	2.0	..	..	08	+24	Aug.	3.59	- 4	127
24		7 8.8	-95 to +12	2.0	0.5	s	09	+16		6.13	+10	665
25	Aug.	7 8.8	+ 6	1.5	0.6	n	13909	+16	Aug.	6.13	+10	665
26		21 13.7	+55	0.3	0.6	f	22	-69		26.76	+11	369
27	Sept.	4 9.4	+38	*	0.4	sp	32	-23	Sept.	6.16	- 6	275
28		11 14.9	-38	0.3	1.0	n	37	-70		16.91	+12	1862
29		16 11.1	+ 5 to +75	0.7	0.0	c	37	- 6				
30	Sept.	16 11.1	-14 to +60	0.6	0.0	c	13937	- 6	Sept.	16.91	+12	1862
31		17 11.1	-40 to +45	2.1	0.6	s	37	+ 7				
32		17 11.1	+35 to +95	1.2	0.4	f	37	+ 7				
33	Oct.	6 10.4	-28 to +32	1.8	1.6	f	48	+57	Oct.	2.12	+ 1	541
34		11 10.9	-41 to +38	0.8	1.0	p	52	-21		13.02	+12	215
35	Oct.	13 8.6	-29 to +44	0.7	1.0	p	13954	-19	Oct.	14.80	+13	201
36		13 8.8	-65 to -140	0.7	1.5	np	54	-19				
37		13 9.1	+36	0.5	1.5	np	54	-19				
38		21 10.0	+32	0.4	1.0	np	57	+ 4		21.12	+18	162
38		21 10.1	+12 to +55	1.0	1.0	np	57	+ 4				
39		21 10.0	+37	0.4	0.3	c	57	+ 4				
40	Oct.	21 11.3	+19	0.3	1.5	np	13957	+ 5	Oct.	21.12	+18	162
41		23 9.7	+ 5 to +29	0.6	1.0	f	57	+30				
42		24 9.4	+ 5 to +55	0.6	0.1	n	60	-70		29.69	+13	1169
43		24 9.5	-45 to - 2	0.5	0.5	f	60	-70				
44		24 9.7	- 3 to +45	1.9	0.6	p	57	+43		21.12	+18	162

NOTES

Reference Number

1. The outward component of velocity appeared to come from the penumbra of a sunspot.
4. Associated with a major solar flare (bright chromospheric eruption).
6. Associated with a minor solar flare (intensity = 1).
12. Direction of inflow into penumbra of sunspot - anti-clockwise.

Reference Number

14. Associated with a solar flare of medium intensity (= 2).
21. Recorded with a solar flare of medium intensity.
23. } Each associated with a minor solar flare.
25. }
35. } Associated with a minor solar flare.
36. }
37. }
38. Appreciable change of shape of the filament occurred between the two readings 10 minutes apart.

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