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GREENWICH
PHOTO-HELIOGRAPHIC RESULTS
1945

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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

1945

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

Published by Order of the Board of Admiralty
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ADDENDA

GREENWICH PHOTO-HELIOGRAPHIC RESULTS, 1945.

Insert the following small areas of high latitude Faculæ :-

Page	Date	Dist. (Col. 3)	Pos. Angle (Col. 4)	Area (Col. 9)	Total Area of Faculæ for day
C 7	Mar. 12	·935	188·6	46	763
C 9	Apr. 28	·956	356·6	15	1568
		·936	4·3	15	
C 10	May 5	·965	2·2	83	168
C 16	July 17	·929	357·1	62	1211
C 16	July 22	·949	352·2	36	1316
C 23	Oct. 12	·964	359·2	41	435
		·904	10·7	55	

The daily totals on pages C 66-69 are correct.

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~~C 86~~

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GREENWICH
PHOTO-HELIOGRAPHIC RESULTS
1945

INTRODUCTION.

§1. *Positions and Areas of Sunspots and Faculæ for each Day in the Year* 1945.

The photographs from which these measures were made were taken at the Royal Observatories of Greenwich or of the Cape, and at the Kodaikánal 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 67½ feet, the diameter of the Sun's image at the secondary focus being 7½ 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 Kodaikánal 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 7½ inches in diameter; at Kodaikánal 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 359 days in 1945, those finally selected for measurement being supplied by the different observatories as under:

Greenwich	232
Cape	112
Kodaikánal	15
Total	359

For the six 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 1945 are as follows:

H. Barton
P. S. Laurie
N. Rhodes
Miss C. Chapman

At the principal focus of the photoheliographs, excepting that at Kodaikánal, 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 photo-photoheliographs; in the Kodaikánal 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, 1945.	Greenwich.		Cape.	
	Photographic.	Visual.	Photographic.	Visual.
	° ′	° ′	° ′	° ′
January	+ 1 18	+ 1 14	+ 1 08	+ 1 12
February	+ 1 16	+ 1 14	+ 1 10	+ 1 10
March	+ 1 19	+ 1 14	+ 1 17	+ 1 10
April	+ 1 14	+ 1 14	+ 1 14	+ 1 17
May	+ 1 14	+ 1 16	+ 1 20	+ 1 18
June	+ 1 22	+ 1 15	+ 1 27	+ 1 20
July	+ 1 12	+ 1 14	...	+ 1 21
August	+ 1 10	+ 1 14	...	...
September . ..	+ 1 15	+ 1 13	+ 1 20	+ 1 18
October	+ 1 28	+ 1 14	+ 1 21	+ 1 20
November	+ 0 59	+ 1 16	+ 1 19	+ 1 20
December	+ 1 10	+ 1 10	+ 1 21	+ 1 20
			+ 1 27	+ 1 20

The zero-corrections used during the year 1945 in the reduction of the photographs taken at Greenwich were as follows:

	° ′
January 1 to October 31..	+ 1 15
November 1 to December 31	+ 1 12

The zero-corrections used in the reductions of the photographs taken at the Cape Observatory were as follows:

	° ′
January 1 to March 14	+ 1 12
March 15 to April 30	+ 1 18
May 1 to July 31	+ 1 21
August 1 to Sept. 30	+ 1 18
October 1 to December 31	+ 1 21

The cross-wires were changed on March 14 and the polar axis of the telescope was adjusted.

The zero-correction adopted for the Kodaikánal photographs ranged from +0° 15′ to +1° 00′.

The measures of the photographs were made with a large position-micrometer that can be used for photographs of the Sun up to 12 inches in diameter. In this micrometer the photograph is held with its film-side uppermost on three pillars fixed on a circular plate, which can be turned through a small angle, about a pivot in its circumference, by means of a screw and antagonistic spring acting at the opposite extremity of the diameter. The pivot of this plate is mounted on the circumference of another circular plate, which can be turned by 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 eyepiece, 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 a 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.

All photographs were measured independently by two measurers, and the means taken.

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 has 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. 382 of the *Nautical Almanac* for 1945.

The inclination of the Sun's axis to the ecliptic is assumed to be 82° 45′, the longitude of the ascending node of the Sun's equator on the ecliptic for 1945·0 to be 79°59′·6, 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* 1945.

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 1944, and previous years. Commencing this year, the Mount Wilson spot-group numbers will be found in an adjacent column. 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 usually seen in consecutive disk passages, partial or complete, but with definite breaks (or suspected 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* 1945.

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

$$\xi = 14^\circ\cdot37 - 2^\circ\cdot60 \sin^2\phi$$

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 Faculæ for each day, and Mean Areas and Mean Heliographic Latitude of Sunspots and Faculæ for each Rotation of the Sun, and for the year* 1945.

Particulars relating to this section are given in the headings on pages C 66 and 70-71.

§5. *Observations of Solar Flocculi made with the Spectrohelioscope in the year* 1945.

This section contains measures of radial velocity of dark hydrogen flocculi seen on the Sun's disk near sunspots. A list of solar flares is also given. 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. Barton and Mr. Laurie.

ROYAL OBSERVATORY, GREENWICH.

Positions and Areas of Sunspots and Faculæ

For each Day in the Year

1945

POSITIONS AND AREAS OF SUNSPOTS AND FACULÆ FOR EACH DAY IN THE YEAR 1945.

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), Kodaikánal (K), Mount Wilson (Mt.W), Washington (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 faculae from Sun's centre in terms of the Sun's radius.

Col. 4. Position angle of spot group or faculae 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 umbrae 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, preceding, 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 faculae for the day.

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

U.T.	Group No.	Measures: Dist.	Measures: Pos. Angle	Position: Long.	Position: Lat.	Area: Umbræ	Area: Whole Spots	Area: Faculæ
			°	°	°			
1945								
0·310		·983	263·7					112
C	14245	·953	297·4	249·9	+24·8	7	21	597 c
	14248	·627	226·4	212·2	-28·2	3	19	
Jan. 1			(+2·0)	(181·3)	(- 3·1)	(10)	(40)	(709)
1·300	1221a	·973	299·7	241·0	+27·9	0	17	293 c
C	14248	·740	234·2	210·9	-28·0	0	6	86 c
Jan. 2			(+1·5)	(168·2)	(- 3·2)	(0)	(23)	(379)
2·284		·874	240·5					102
C		·861	306·0					282
Jan. 3			(+1·0)	(155·3)	(- 3·4)	(0)	(0)	(384)
3·294		·941	241·4					146
C		·927	300·9					372
		·846	308·0					82
		·974	111·0					454
Jan. 4			(+0·6)	(142·0)	(- 3·5)	(0)	(0)	(1054)
4·292		·969	300·3					103
C		·940	305·5					136
	1221b	·882	227·4	184·8	-38·6	0	8	119 c
	14249	·954	70·5	58·6	+17·3	7	57	250 c
		·928	112·5					595
Jan. 5			(+0·1)	(128·8)	(- 3·6)	(7)	(65)	(1203)
5·289	14250	·904	233·8	177·2	-34·1	5	22	134 c
C	14249	·875	67·5	57·9	+17·6	9	68	223 c
	14251	·986	113·8	34·8	-24·1	23	134	501 c
		·823	114·2					366
		·943	121·7					148
Jan. 6			(-0·4)	(115·7)	(- 3·7)	(37)	(224)	(1372)
6·320	14250	·956	235·4	173·7	-34·1	7	55	168 c
C	14249	·786	64·7	54·3	+17·0	5	20	126 c
	14251	·926	114·7	35·1	-24·2	28	148	367 c
		·764	119·9					217
		·950	123·3					264
Jan. 7			(-0·9)	(102·1)	(- 3·8)	(40)	(223)	(1142)
7·424		·922	246·8					152
G		·896	238·0					188
	14252	·457	130·3	65·8	-20·8	8	27	
	14249	·626	57·2	54·4	+16·5	3	11	
	14251	·823	117·0	34·3	-25·3	23	137	292 f
		·910	127·2					211
		·922	73·0					152
		·952	50·3					216
Jan. 8			(-1·4)	(87·6)	(- 3·9)	(34)	(175)	(1211)
1945								
8·291		·965	240·1					243
C	14252	·338	148·0	65·1	-20·5	8	42	
	14251	·718	121·1	33·7	-24·7	19	138	185 f
		·812	131·0					80
Jan. 9			(-1·9)	(76·1)	(- 4·0)	(27)	(180)	(508)
9·449	14251	·549	131·3	34·0	-24·8	29	136	
G	14253	·996	68·6	338·3	+20·8	0	80	74 p
		·844	33·6					116
		·859	43·6					210
		·895	54·0					120
Jan. 10			(-2·4)	(60·9)	(- 4·1)	(29)	(216)	(520)
10·459	14254	·904	283·3	110·7	+10·1	0	10	144 c
G	14251	·439	146·1	32·0	-25·3	36	125	
	14253	·960	66·5	337·2	+21·1	30	137	220 c
		·765	33·5					191
		·941	101·3					152
Jan. 11			(-2·9)	(47·6)	(- 4·2)	(66)	(272)	(707)
11·289		·857	303·9					130
C	14254	·974	281·2	112·3	+ 9·8	0	17	157 c
	14251	·372	164·2	30·3	-25·2	23	136	
	14253	·901	64·1	336·7	+21·0	52	164	134 c
		·951	122·7					150
Jan. 12			(-3·3)	(36·7)	(- 4·3)	(75)	(317)	(571)
12·287		·931	299·6					182
C	14251	·370	196·4	30·1	-25·0	30	142	
	14253	·792	58·7	337·1	+21·2	29	126	191 c
		·878	121·8					357
		·935	50·0					348
		·961	122·0					423
Jan. 13			(-3·8)	(23·5)	(- 4·4)	(59)	(268)	(1501)
13·459		·835	246·1					233
G		·802	297·7					122
		·721	239·5					78
	14251	·522	228·5	33·4	-24·2	8	23	
	14253	·642	49·2	336·9	+20·9	17	96	
		·761	130·0					66
		·898	124·8					208
Jan. 14			(-4·3)	(8·1)	(- 4·5)	(25)	(119)	(707)
14·314		·911	245·9					352
C		·898	292·1					165
	14251	·649	237·3	33·4	-24·1	4	24	
	14253	·537	37·3	336·5	+20·9	19	111	
		·876	128·3					118
Jan. 15			(-4·7)	(356·8)	(- 4·6)	(23)	(135)	(635)

Group 14248. Jan. 1- 2. A pair of tiny spots on Jan. 1: a single spot on Jan. 2.
Group 14249. Jan. 5- 8. One or two small spots.
Group 14250. Jan. 6- 7. A small spot on Jan. 6; two on Jan. 7.
Group 14251. Jan. 6-17. A small regular spot with a small cluster in its wake on Jan. 12 and 13.
Group 14252. Jan. 8- 9. A pair of small spots.
Group 14253. Jan. 10-22. A return of Group 14240: third appearance. A small stable regular spot.
Group 14254. Jan. 11-12. A tiny spot.

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

U.T.	Group No.	Measures Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umbræ	Area Whole Spots	Area Faculæ
			°	°	°			
1945								
15·283		·965	290·2					244
C		·950	245·4					403
	14251	·782	242·3	33·3	−24·3	3	15	163 c
	14253	·449	16·8	336·2	+20·7	16	91	
	1222a	·439	90·6	318·1	− 4·5	2	16	
Jan. 16			(−5·2)	(344·1)	(− 4·7)	(21)	(122)	(810)
16·446		·884	240·5					515
G		·847	317·5					151
		·819	227·1					141
	14251	·905	244·7	33·0	−24·9	0	5	
	14253	·448	345·1	335·9	+20·8	17	104	
		·849	105·7					91
		·874	96·9					88
		·968	62·5					178
Jan. 17			(−5·7)	(328·8)	(− 4·8)	(17)	(109)	(1164)
17·304		·949	244·9					301
C		·919	236·2					184
	14253	·522	326·3	335·5	+21·0	14	81	
	14255	·982	64·3	242·1	+24·0	21	98	168 c
		·903	312·7					163
		·933	60·3					300
Jan. 18			(−6·1)	(317·5)	(− 4·9)	(35)	(179)	(1116)
18·417		·943	242·6					231
G		·815	303·2					93
	14253	·661	310·3	335·4	+21·0	15	94	
	14255	·926	60·9	240·2	+24·5	42	193	309 c
		·884	52·2					206
Jan. 19			(−6·6)	(302·8)	(− 5·0)	(57)	(287)	(839)
19·430	14253	·789	301·9	335·2	+21·0	15	89	142 c
G	14255	·814	55·1	242·6	+24·3	31	161	343 c
		·803	46·0					139
		·930	46·7					140
Jan. 20			(−7·1)	(289·5)	(− 5·1)	(46)	(250)	(764)
20·336	14253	·885	297·1	335·0	+21·0	20	90	237 c
C	14256	·571	39·1	254·9	+21·4	2	27	
	14255	·700	48·0	243·1	+23·6	27	134	104 c
		·829	48·1					190
Jan. 21			(−7·5)	(277·6)	(− 5·2)	(49)	(251)	(531)
21·422		·937	266·8					176
C	14253	·968	294·4	335·0	+22·0	16	71	158 c
	14256	·465	15·0	255·9	+21·3	7	52	
	14255	·576	33·8	242·9	+23·5	20	117	
	14257	·752	49·6	224·3	+25·0	3	17	
Jan. 22			(−8·0)	(263·3)	(− 5·3)	(46)	(257)	(334)
1945								
22·287		·882	239·0					171
C	14256	·458	348·0	257·7	+21·1	3	14	
	14255	·505	17·0	242·7	+23·5	19	98	
	14257	·644	39·8	225·0	+24·8	3	14	
Jan. 23			(−8·4)	(251·9)	(− 5·4)	(25)	(126)	(171)
23·460	14256	·558	322·8	257·5	+21·2	3	13	
G	14255	·492	349·1	242·2	+23·3	17	84	
		·955	125·1					340
Jan. 24			(−8·9)	(236·4)	(− 5·5)	(20)	(97)	(340)
24·551	14256	·716	307·6	259·4	+21·4	1	6	
G	14255	·571	328·8	241·9	+23·9	10	48	
		·928	130·2					225
Jan. 25			(−9·4)	(222·0)	(− 5·6)	(11)	(54)	(225)
25·582	14256	·840	299·9	259·7	+21·3	0	6	75 c
G	14255	·685	312·7	241·5	+23·0	12	52	
		·830	134·2					116
Jan. 26			(−9·8)	(208·5)	(− 5·6)	(12)	(58)	(191)
26·286		·885	300·5					302
C		·724	319·6					120
	14255	·777	307·9	241·3	+24·2	6	40	193 c
	14258	·269	263·1	214·7	− 7·4	13	74	
Jan. 27			(−10·1)	(199·2)	(− 5·7)	(19)	(114)	(615)
27·322		·967	296·7					210
C		·819	305·5					191
	14255	·884	301·0	241·3	+23·8	8	35	171 c
	14258	·496	264·4	215·3	− 7·8	43	164	
		·918	75·0					151
Jan. 28			(−10·6)	(185·6)	(− 5·8)	(51)	(199)	(723)
28·423		·897	307·6					268
G	*1222b*	·952	299·4	237·8	+25·6	0	6	351 c
	14258	·720	264·8	217·3	− 7·9	78	407	
Jan. 29			(−11·0)	(171·1)	(− 5·9)	(78)	(413)	(619)
29·314		·978	296·4					296
C		·934	305·0					139
	14258	·844	264·8	217·0	− 7·5	92	475	218 c
Jan. 30			(−11·4)	(159·3)	(− 5·9)	(92)	(475)	(653)
30·290	14258	·952	264·0	218·9	− 7·5	85	402	437 c
C		·951	126·0					128
		·971	111·3					266
Jan. 31			(−11·8)	(146·5)	(− 6·0)	(85)	(402)	(831)

Group 14255. Jan. 18-28. A diminishing regular spot with a companion on Jan. 19, 20, 27, and 28.
Group 14256. Jan. 21-26. One or two small spots.
Group 14257. Jan. 22-23. A small spot.
Group 14258. Jan. 27-Feb. 1. A grouping of small spots, just past the central meridian, developing into a regular spot followed by a cluster.

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

U.T.	Group No.	Measures: Dist.	Measures: Pos. Angle	Position: Long.	Position: Lat.	Area: Umbræ	Area: Whole Spots	Area: Faculæ
			°	°	°			
1945								
31·430	14258	·992	261·1	214·9	− 9·6	8	34	314 c
G	14259	·987	112·5	49·3	−23·1	12	49	245 c
		·889	128·7					112
		·909	111·9					284
Feb. 1			(−12·3)	(131·5)	(− 6·1)	(20)	(83)	(955)
32·572		·892	241·2					124
G	14260	·541	114·6	85·4	−18·3	2	10	
	14259	·914	112·6	50·2	−23·1	10	55	296 c
		·752	115·0					86
		·934	121·8					113
Feb. 2			(−12·8)	(116·5)	(− 6·2)	(12)	(65)	(619)
33·460		·933	243·6					125
G		·828	234·3					54
	14260	·377	121·1	85·2	−17·0	18	75	
	14259	·823	112·3	49·9	−21·8	11	42	162 c
		·839	121·3					89
		·959	113·7					143
Feb. 3			(−13·1)	(104·8)	(− 6·2)	(29)	(117)	(573)
34·435		·939	236·3					213
G		·879	225·2					170
		·853	246·0					113
	14260	·212	151·9	85·9	−17·0	13	59	
	14259	·683	117·3	50·8	−23·0	12	52	
		·847	109·7					97
		·906	118·0					208
Feb. 4			(−13·5)	(91·9)	(− 6·3)	(25)	(111)	(801)
35·303		·949	237·1					116
C		·948	247·1					104
		·935	227·5					140
	14260	·211	204·4	85·7	−17·3	6	29	
	14259	·588	120·3	47·3	−22·5	5	33	
		·884	115·5					129
		·952	123·5					129
Feb. 5			(−13·9)	(80·5)	(− 6·3)	(11)	(62)	(618)
36·296	14260	·379	239·2	87·2	−17·2	2	11	
C	14259	·403	135·5	49·6	−22·7	4	23	
		·855	122·0					141
		·905	132·3					102
Feb. 6			(−14·2)	(67·4)	(− 6·4)	(6)	(34)	(243)
37·502		·914	286·2					127
G	14259	·287	166·7	47·4	−22·6	2	11	
Feb. 7			(−14·7)	(51·5)	(− 6·5)	(2)	(11)	(127)
38·334	14259	·298	203·8	48·0	−22·2	3	9	
C		·947	61·2					420
Feb. 8			(−15·0)	(40·6)	(− 6·5)	(3)	(9)	(420)

U.T.	Group No.	Measures: Dist.	Measures: Pos. Angle	Position: Long.	Position: Lat.	Area: Umbræ	Area: Whole Spots	Area: Faculæ
			°	°	°			
1945								
39·429		·850	252·6					173
G	14259	·444	231·0	48·0	−22·3	2	7	
	1222c	·357	158·0	17·7	−25·7	2	9	
		·881	56·6					228
		·943	120·2					154
Feb. 9			(−15·4)	(26·2)	(− 6·6)	(4)	(16)	(555)
40·385		·944	253·1					170
G		·824	246·2					211
		·917	122·8					270
Feb. 10			(−15·8)	(13·6)	(− 6·6)	(0)	(0)	(651)
41·360		·890	247·9					183
C		·812	239·4					258
Feb. 11			(−16·1)	(0·7)	(− 6·7)	(0)	(0)	(441)
42·306		·960	249·6					259
C		·879	241·9					252
		·927	125·1					222
Feb. 12			(−16·5)	(348·3)	(− 6·7)	(0)	(0)	(733)
43·577		·969	244·9					207
G		·854	243·5					86
	14261	·971	64·9	259·8	+22·3	23	141	376 c
Feb. 13			(−16·9)	(331·5)	(− 6·8)	(23)	(141)	(669)
44·430		·934	241·0					150
G		·926	251·8					228
	14261	·933	62·2	256·9	+22·8	60	307	493 c
Feb. 14			(−17·2)	(320·3)	(− 6·8)	(60)	(307)	(871)
45·479	14261	·836	57·6	257·0	+22·2	38	280	289 c
G		·972	63·5					297
		·985	91·6					110
Feb. 15			(−17·6)	(306·5)	(− 6·9)	(38)	(280)	(696)
46·365		·928	233·5					190
C	14261	·742	50·8	256·4	+22·5	35	156	236 c
		·923	52·4					271
		·942	93·2					370
Feb. 16			(−17·8)	(294·8)	(− 6·9)	(35)	(156)	(1067)
47·307		·948	236·6					98
C	14261	·634	40·4	256·1	+22·6	40	157	
		·860	92·5					316
		·952	56·5					135
Feb. 17			(−18·2)	(282·4)	(− 6·9)	(40)	(157)	(549)

Group 14259. Feb. 1– 9. A few small spots.
Group 14260. Feb. 2– 6. A small spot with one or two small companions on Feb. 3–5.
Group 14261. Feb. 13–21. A stream of small spots dying out after reaching the central meridian.

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

U.T.	Group No.	Measures: Dist.	Measures: Pos. Angle	Position: Long.	Position: Lat.	Area: Umbræ	Area: Whole Spots	Area: Faculæ
			°	°	°			
1945								
48·320	14261	·540	25·0	254·9	+22·4	27	110	
C		·776	95·0					267
		·884	50·9					157
Feb. 18			(-18·5)	(269·1)	(- 7·0)	(27)	(110)	(424)
49·300	*1223a*	·231	208·4	262·8	-18·7	4	15	
C	14261	·495	358·8	256·8	+22·5	11	60	
		·955	146·0					133
		·970	119·8					246
Feb. 19			(-18·8)	(256·2)	(- 7·0)	(15)	(75)	(379)
50·445	14261	·549	332·1	257·1	+22·2	5	21	
G		·927	118·9					359
		·935	145·6					136
Feb. 20			(-19·2)	(241·1)	(- 7·0)	(5)	(21)	(495)
51·304	14261	·645	317·8	257·6	+22·1	0	5	
C		·833	121·3					484
Feb. 21			(-19·4)	(229·8)	(- 7·1)	(0)	(5)	(484)
52·368		·980	235·6					96
G		·854	239·1					166
		·764	307·9					278
		·936	127·1					160
Feb. 22			(-19·7)	(215·8)	(- 7·1)	(0)	(0)	(700)
53·300		·853	303·9					531
C	*1223b*	·948	242·6	275·9	-28·2	0	12	278 *c*
	14262	·978	106·8	124·1	-17·8	30	244	469 *c*
Feb. 23			(-20·0)	(203·5)	(- 7·1)	(30)	(256)	(1278)
54·378		·981	241·2					121
G		·934	297·9					287
		·824	305·9					125
	14262	·889	104·9	125·9	-16·4	36	174	235 *c*
Feb. 24			(-20·3)	(189·3)	(- 7·1)	(36)	(174)	(768)
55·322		·904	300·1					331
C		·778	269·8					150
	14262	·766	105·2	126·8	-16·3	25	113	227 *c*
Feb. 25			(-20·6)	(176·9)	(- 7·2)	(25)	(113)	(708)
56·564		·971	295·3					144
G		·926	272·1					244
		·890	308·9					124
		·857	261·8					200
	14262	·557	109·6	127·4	-16·8	21	105	
		·968	108·1					163
Feb. 26			(-20·9)	(160·5)	(- 7·2)	(21)	(105)	(875)
57·360		·976	270·9					158
G		·942	261·5					168
	14262	·406	116·4	127·7	-17·0	18	86	
		·945	108·5					214
Feb. 27			(-21·1)	(150·0)	(- 7·2)	(18)	(86)	(540)

U.T.	Group No.	Measures: Dist.	Measures: Pos. Angle	Position: Long.	Position: Lat.	Area: Umbræ	Area: Whole Spots	Area: Faculæ
			°	°	°			
1945								
58·307	14262	·218	141·8	129·5	-16·9	20	89	
C		·936	111·9					178
Feb. 28			(-21·4)	(137·6)	(- 7·2)	(20)	(89)	(178)
59·567		·807	238·1					114
G	14262	·238	224·7	130·0	-16·8	17	53	
		·886	112·1					207
		·955	120·5					189
Mar. 1			(-21·7)	(120·0)	(- 7·2)	(17)	(53)	(510)
60·372		·868	238·1					164
G	14262	·389	242·6	131·5	-17·0	15	64	
	14263	·992	103·8	26·2	-14·5	69	233	158 *c*
		·814	113·3					76
		·910	121·1					169
Mar. 2			(-21·9)	(110·4)	(- 7·2)	(84)	(297)	(567)
61·375		·934	238·9					334
G	14262	·584	249·8	132·0	-17·5	19	41	
	14263	·947	102·8	24·9	-14·4	105	590	474 *c*
		·775	123·8					113
		·939	119·0					196
Mar. 3			(-22·1)	(97·1)	(- 7·2)	(124)	(631)	(1117)
62·454	14262	·787	254·8	135·0	-16·4	7	32	150 *c*
G	14263	·844	102·4	24·8	-14·3	111	551	406 *c*
		·962	115·5					166
Mar. 4			(-22·4)	(82·9)	(- 7·2)	(118)	(583)	(722)
63·438	*1223c*	·946	241·0	142·0	-29·7	13	56	168 *c*
G	14262	·853	254·5	129·0	-17·0	8	24	259 *c*
	14263	·705	103·2	25·1	-14·4	102	507	124 *f*
		·892	115·8					109
Mar. 5			(-22·6)	(70·0)	(- 7·2)	(123)	(587)	(660)
64·603		·962	289·9					158
G		·924	253·6					279
	14262	·983	254·9	135·4	-16·1	5	19	216 *c*
	14263	·498	106·1	25·2	-14·2	87	476	
		·931	126·9					223
Mar. 6			(-22·9)	(54·6)	(- 7·2)	(92)	(497)	(876)
65·377		·973	253·6					309
C	14263	·352	111·4	24·7	-14·1	83	471	
Mar. 7			(-23·0)	(44·4)	(- 7·2)	(83)	(471)	(309)
66·412	14263	·165	140·1	24·6	-14·4	67	415	
G		·960	116·8					303
Mar. 8			(-23·3)	(30·8)	(- 7·2)	(67)	(415)	(303)
67·378		·901	252·5					105
G	14264	·312	225·3	31·6	-19·6	2	14	
	14263	·168	222·7	24·7	-14·2	78	445	
	1223d	·912	117·5	311·9	-28·0	0	5	268 *c*
Mar. 9			(-23·5)	(18·0)	(- 7·2)	(80)	(464)	(373)

Group 14262. Feb. 23–Mar. 6. A declining stream of small variable spots.
Group 14263. Mar. 2–15. A large regular spot, stable in position, with occasional small companions.
Group 14264. Mar. 9–14. Small spots forming in front of Group 14263.

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

U.T.	Group No.	Measures: Dist.	Measures: Pos. Angle	Position: Long.	Position: Lat.	Area: Umbræ	Area: Whole Spots	Area: Faculæ
			°	°	°			
1945								
68·316		·858	249·3					145
C	14264	·502	242·0	33·7	-20·0	6	22	
	14263	·338	247·0	24·3	-14·4	74	407	
		·796	119·5					153
		·927	123·8					117
Mar. 10			(-23·7)	(5·7)	(- 7·2)	(80)	(429)	(415)
69·323		·977	248·1					196
C		·913	249·2					185
		·848	236·7					140
	14264	·669	247·7	33·5	-20·1	15	63	
	14263	·532	254·7	24·2	-14·2	58	434	
Mar. 11			(-23·8)	(352·4)	(- 7·2)	(73)	(497)	(521)
		.935	188.6					46
70·511		·965	245·1					117
G		·912	234·8					253
	14264	·848	250·7	35·0	-20·1	4	33	72 c
	14263	·732	257·1	24·0	-14·4	45	369	148 c
		·971	64·9					127
Mar. 12			(-24·1)	(336·8)	(- 7·2)	(49)	(402)	~~(717)~~ 763
71·367	14264	·935	251·0	35·7	-20·3	6	18	129 c
G	14263	·848	257·4	24·0	-14·5	69	398	245 c
		·949	62·0					236
Mar. 13			(-24·2)	(325·5)	(- 7·2)	(75)	(416)	(610)
72·363		·924	266·2					142
G		·874	245·8					191
	14264	·982	252·1	32·9	-18·8	0	10	185 c
	14263	·945	256·8	24·2	-14·8	53	352	481 c
		·896	57·2					246
Mar. 14			(-24·4)	(312·3)	(- 7·2)	(53)	(362)	(1245)
73·441		·921	245·4					210
G	14263	·996	255·4	24·5	-15·1	21	213	186 c
		·902	88·6					152
		·961	97·2					175
Mar. 15			(-24·6)	(298·1)	(- 7·2)	(21)	(213)	(723)
74·439	14265	·956	61·7	217·7	+24·3	0	7	185 c
G		·860	93·2					89
Mar. 16			(-24·7)	(285·0)	(- 7·1)	(0)	(7)	(274)
75·413	14265	·877	57·1	218·4	+24·3	2	18	134 c
C		·981	122·1					118
Mar. 17			(-24·9)	(272·1)	(- 7·1)	(2)	(18)	(252)
76·422	14265	·770	50·4	218·4	+24·0	4	21	117 c
G	*1224a*	·935	122·0	189·3	-32·3	0	13	168 c
Mar. 18			(-25·0)	(258·8)	(- 7·1)	(4)	(34)	(285)
77·316		·900	239·7					166
C	14265	·633	38·0	222·1	+23·4	3	19	
Mar. 19			(-25·1)	(247·1)	(- 7·1)	(3)	(19)	(166)

U.T.	Group No.	Measures: Dist.	Measures: Pos. Angle	Position: Long.	Position: Lat.	Area: Umbræ	Area: Whole Spots	Area: Faculæ
			°	°	°			
1945								
78·392	14265	·537	20·3	221·2	+23·3	5	24	
G		·955	123·7					154
Mar. 20			(-25·3)	(232·9)	(- 7·0)	(5)	(24)	(154)
79·355		·787	311·0					134
G	14265	·502	357·5	221·6	+23·0	4	20	
	14266	·992	120·0	135·0	-30·5	84	363	
		·970	104·2					178
Mar. 21			(-25·4)	(220·2)	(- 7·0)	(88)	(383)	(312)
80·373		·791	301·5					171
G	14266	·966	120·7	130·4	-31·4	153	798	398 c
		·940	102·5					145
		·950	109·0					169
Mar. 22			(-25·5)	(206·8)	(- 7·0)	(153)	(798)	(883)
81·365		·923	296·8					329
G	14266	·895	121·4	130·9	-31·1	92	534	381 c
		·826	107·8					166
		·938	108·0					247
Mar. 23			(-25·6)	(193·7)	(- 6·9)	(92)	(534)	(1123)
82·417		·766	305·1					205
G	14266	·797	124·4	129·7	-31·3	85	582	280 c
		·793	110·9					149
		·922	114·1					193
		·946	127·9					277
Mar. 24			(-25·7)	(179·8)	(- 6·9)	(85)	(582)	(1104)
83·320		·919	269·8					275
C		·895	300·0					148
		·815	309·6					58
	14266	·689	129·2	129·5	-31·1	102	604	176 f
Mar. 25			(-25·8)	(167·9)	(- 6·8)	(102)	(604)	(657)
84·327		·936	262·4					151
C		·934	300·1					201
	14266	·570	138·3	128·4	-31·2	85	625	
	14267	·985	110·1	72·9	-20·9	0	31	197 c
		·903	104·7					129
Mar. 26			(-25·9)	(154·6)	(- 6·8)	(85)	(656)	(678)
85·560	14266	·441	159·9	128·3	-31·0	102	568	
G	14267	·877	110·8	77·0	-21·4	37	164	161 c
	14268	·995	55·4	60·0	+33·3	10	62	
Mar. 27			(-26·0)	(138·4)	(- 6·7)	(149)	(794)	(161)
86·422	14266	·415	181·1	127·5	-31·1	88	600	
C	14267	·771	112·1	77·2	-21·2	81	472	153 c
	14268	·968	53·1	59·5	+33·2	18	59	155 c
		·943	114·4					121
Mar. 28			(-26·0)	(127·0)	(- 6·7)	(187)	(1131)	(429)

Group 14265. Mar. 16-21. A single spot on each day except Mar. 18 and 19 when there is a pair.
Group 14266. Mar. 21-Apr. 3. A regular spot closely followed by variable companions which have died out by Apr. 2.
Group 14267. Mar. 26-Apr. 7. A stream growing rapidly as it passes clear of the east limb. The leader is a regular spot with close companions; the follower, which develops as a composite spot, slowly becomes regular as it diminishes.
Group 14268. Mar. 27-Apr. 8. A small persistent spot.

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

U.T.	Group No.	Measures: Dist.	Measures: Pos. Angle	Position: Long.	Position: Lat.	Area: Umbræ	Area: Whole Spots	Area: Faculæ
			°	°	°			
1945								
87·400	14266	·461	205·4	127·4	-30·9	83	513	
C	14267	·632	116·0	76·7	-21·3	143	742	
	14268	·911	49·1	59·2	+32·9	18	34	144 *c*
		·834	113·7					203
		·973	50·5					207
Mar. 29			(-26·1)	(114·1)	(- 6·6)	(244)	(1289)	(554)
88·354		·785	256·6					86
G	14266	·560	220·4	126·5	-31·1	100	520	
	14267	·474	124·4	76·8	-21·5	143	854	
	14268	·835	43·1	58·9	+32·7	12	44	112 *f*
		·781	121·5					138
		·937	124·8					360
		·941	49·6					340
		·956	103·9					633
Mar. 30			(-26·2)	(101·5)	(- 6·6)	(255)	(1418)	(1669)
89·309		·856	260·4					114
C		·804	247·0					145
	14266	·676	230·2	126·0	-30·9	83	409	
	14267	·345	140·4	75·3	-21·8	185	905	
	14268	·750	34·5	58·8	+32·4	11	32	108 *c*
		·841	43·8					129
		·879	98·2					184
		·882	110·0					317
		·978	113·7					113
Mar. 31			(-26·2)	(88·9)	(- 6·6)	(279)	(1346)	(1110)
90·321		·932	245·7					141
C		·809	250·9					248
	14266	·796	235·5	125·3	-31·1	71	408	228 *f*
	14267	·255	178·1	75·0	-21·2	146	965	
	14268	·674	21·5	58·5	+32·5	12	35	
		·782	108·2					190
		·785	32·7					164
		·925	113·6					203
Apr. 1			(-26·3)	(75·5)	(- 6·5)	(229)	(1408)	(1174)
91·425		·933	251·3					290
G	14266	·902	238·9	124·7	-30·7	56	319	398 *sf*
	14267	·336	219·2	74·1	-21·3	137	832	
	14268	·632	4·7	57·5	+32·5	13	61	
	14269	·965	117·9	345·2	-28·6	21	180	225 *f*
		·825	115·5					94
Apr. 2			(-26·3)	(61·0)	(- 6·4)	(227)	(1392)	(1007)
92·342		·962	250·1					221
G	14266	·966	239·5	124·9	-31·1	72	338	556 *sf*
	14267	·480	236·3	74·1	-21·2	162	880	
	14268	·638	347·7	58·1	+32·1	8	32	
	14269	·900	118·8	345·2	-28·6	21	112	174 *f*
		·966	114·9					1016
Apr. 3			(-26·3)	(48·9)	(- 6·4)	(263)	(1362)	(1967)
93·595	14267	·678	245·5	73·5	-21·0	133	804	
C	14268	·715	330·2	57·1	+32·5	6	21	88 *c*
	14269	·773	122·6	344·4	-28·9	23	122	138 *s*
	1224b	·818	112·3	337·9	-21·8	3	15	177 *f*
		·885	119·8					347
Apr. 4			(-26·4)	(32·3)	(- 6·3)	(165)	(962)	(750)
94·314	14267	·787	247·8	74·1	-21·3	137	741	339 *c*
G	14268	·775	322·0	57·2	+32·3	3	17	97 *f*
	14269	·683	126·2	344·1	-28·7	17	88	
		·760	121·6					203
		·847	118·0					311
Apr. 5			(-26·4)	(22·9)	(- 6·3)	(157)	(846)	(950)
95·342		·759	323·4					139
G	14267	·904	249·4	74·3	-21·3	114	640	371 *c*
	14268	·860	314·0	56·4	+32·5	4	16	104 *c*
	14269	·544	135·8	343·8	-28·5	9	53	
Apr. 6			(-26·4)	(9·3)	(- 6·2)	(127)	(709)	(614)
96·357		·850	317·4					166
C	14267	·977	249·2	74·8	-21·6	139	652	531 *c*
	14268	·935	308·4	56·1	+32·5	6	24	201 *c*
	14269	·430	153·0	343·1	-28·4	12	40	
Apr. 7			(-26·4)	(355·9)	(- 6·1)	(157)	(716)	(898)
97·319		·921	312·8					193
C		·866	298·1					129
	14268	·980	305·7	54·8	+33·1	0	22	209 *c*
	14269	·379	179·0	342·8	-28·2	8	28	
Apr. 8			(-26·4)	(343·2)	(- 6·1)	(8)	(50)	(531)
98·401		·956	312·0					170
G		·858	261·0					152
		·852	249·0					245
		·844	308·4					100
	14269	·440	206·4	341·8	-28·8	6	34	
Apr. 9			(-26·4)	(328·9)	(- 6·0)	(6)	(34)	(667)
99·521		·959	251·5					188
G		·951	260·4					162
		·865	245·5					188
	14269	·567	226·4	341·7	-28·2	1	18	
Apr. 10			(-26·3)	(314·1)	(- 5·9)	(1)	(18)	(538)
100·336		·942	245·1					223
G								
Apr. 11			(-26·3)	(303·4)	(- 5·9)	(0)	(0)	(223)
101·506		·953	248·1					189
G		·808	248·7					103
		·779	235·6					221
Apr. 12			(-26·3)	(287·9)	(- 5·8)	(0)	(0)	(513)
102·324		·917	248·9					188
G		·912	237·2					312
		·798	239·7					288
Apr. 13			(-26·2)	(277·1)	(- 5·7)	(0)	(0)	(788)
103·388		·967	239·7					303
G		·942	252·8					159
		·881	241·8					353
	14270	·479	93·8	234·5	-6·7	6	28	
		·972	110·2					178
Apr. 14			(-26·2)	(263·1)	(- 5·6)	(6)	(28)	(993)

Group 14269. Apr. 2-10. A regular spot slowly vanishing.
Group 14270. Apr. 14-20. A short-lived stream of small variable spots.

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

U.T.	Group No.	Measures Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umbræ	Area Whole Spots	Area Faculæ
			°	°	°			
1945								
104·358		·958	242·3					299
C	14270	·260	94·9	235·2	- 6·7	7	22	
		·926	109·9					138
		·985	121·1					234
Apr. 15			(-26·1)	(250·3)	(- 5·6)	(7)	(22)	(671)
105·334		·987	240·0					121
G		·914	248·2					77
	14270	·048	110·3	234·8	- 6·4	10	50	
		·827	113·0					79
		·942	122·1					357
Apr. 16			(-26·1)	(237·4)	(- 5·5)	(10)	(50)	(634)
106·341	14270	·179	263·1	234·4	- 6·5	16	55	
G	14271	·966	111·8	148·3	-22·5	8	27	211 c
		·858	124·5					262
		·859	108·2					126
Apr. 17			(-26·0)	(224·1)	(- 5·4)	(24)	(82)	(599)
107·336	14270	·399	265·7	234·4	- 6·6	13	53	
G	14271	·906	112·9	146·2	-22·9	24	139	339 c
		·759	130·6					123
		·936	104·7					132
Apr. 18			(-25·9)	(210·9)	(- 5·3)	(37)	(192)	(594)
108·309		·904	296·7					136
G	14270	·560	266·4	232·2	- 6·3	4	19	
	14271	·802	115·2	146·2	-23·1	42	213	211 c
	14272	·991	121·2	114·0	-31·6	32	130	186 c
		·957	108·2					146
Apr. 19			(-25·8)	(198·1)	(- 5·2)	(78)	(362)	(679)
109·338		·968	294·7					198
G	14270	·741	265·9	232·4	- 6·5	1	7	186 c
	14271	·660	119·7	146·1	-23·1	84	392	159 f
	14272	·952	121·7	112·5	-31·7	29	138	505 s
		·881	109·0					118
Apr. 20			(-25·7)	(184·5)	(- 5·1)	(114)	(537)	(1166)
110·568		·914	263·4					316
G	14271	·474	133·0	146·2	-23·5	57	376	
	14272	·860	124·2	111·8	-31·7	24	140	352 s
Apr. 21			(-25·6)	(168·3)	(- 5·0)	(81)	(516)	(668)
111·319		·952	261·6					380
G	14271	·362	149·3	146·8	-23·0	49	300	
	14272	·787	126·9	110·9	-31·5	20	95	255 s
	14273	·987	110·2	76·6	-20·7	6	27	123 c
Apr. 22			(-25·5)	(158·3)	(- 5·0)	(75)	(422)	(758)
112·336		·953	297·5					176
G	14271	·318	185·5	146·8	-23·3	52	270	
	14272	·669	133·4	110·4	-31·3	25	111	222 sf
	14273	·924	110·0	77·4	-20·3	3	9	587 c
Apr. 23			(-25·4)	(144·9)	(- 4·9)	(80)	(390)	(985)
113·511	14271	·412	220·9	146·3	-22·6	52	276	
G	14272	·540	147·7	109·7	-31·6	27	106	
	14273	·804	114·8	77·3	-22·6	0	5	526 c
Apr. 24			(-25·3)	(129·4)	(- 4·8)	(79)	(387)	(526)
114·345		·888	247·9					123
C	14271	·556	235·0	147·9	-22·6	48	212	
	14272	·478	162·7	108·8	-31·7	30	132	
	14274	·989	107·0	36·2	-17·5	102	466	234 c
		·810	115·0					149
Apr. 25			(-25·2)	(118·4)	(- 4·7)	(180)	(810)	(506)
115·477		·886	233·8					169
C	14271	·734	243·0	148·4	-22·7	25	100	74 s
	14272	·470	191·2	109·6	-31·9	36	159	
	14274	·926	107·4	35·5	-17·9	183	1142	458 c
Apr. 26			(-25·0)	(103·4)	(- 4·6)	(244)	(1401)	(701)
116·518		·950	236·8					201
C	14271	·857	246·2	147·7	-22·6	25	121	358 c
	14272	·542	210·7	108·7	-31·9	24	144	
	14274	·817	108·7	35·6	-17·8	187	1116	452 c
		·892	121·7					67
		·959	106·5					160
Apr. 27			(-24·9)	(89·7)	(- 4·5)	(236)	(1381)	(1238)
		·456	356·6					15
		·926	4·3					15
117·314		·893	255·0					104
G	14271	·932	247·5	147·6	-22·5	20	72	511 c
	14272	·626	220·8	107·9	-32·1	26	119	
	14274	·708	110·8	35·3	-17·7	180	1075	168 c
		·850	100·6					59
		·867	119·3					63
		·921	108·9					235
		·940	129·4					157
		·959	118·5					150
		·970	86·2					91
Apr. 28			(-24·7)	(79·1)	(- 4·4)	(226)	(1266)	(~~1556~~)
								1568
118·324	14271	·982	247·6	145·4	-22·8	0	28	408 f
C	14272	·734	228·4	106·2	-32·3	19	115	181 c
	14274	·542	117·1	35·5	-17·9	183	1045	
		·891	85·3					52
Apr. 29			(-24·6)	(65·8)	(- 4·3)	(202)	(1188)	(641)

Group 14271. Apr. 17-29. A long stream of small spots in which the leader is the most stable component. The following part consists of a string of small changing spots.

Group 14272. Apr. 19-May 2. A small regular spot with a few companions after Apr. 25. Probable return of Group 14266.

Group 14273. Apr. 22-May 4. Intermittent. A small spot in the same general area on each of the days.

Group 14274. Apr. 25-May 7. A large composite spot of an inverted V-shape until May 2 when the following part begins to die out and the preceding part to assume a circular outline.

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

U.T.	Group No.	Measures: Dist.	Measures: Pos. Angle	Position: Long.	Position: Lat.	Area: Umbræ	Area: Whole Spots	Area: Faculæ
			°	°	°			
1945								
119·336	14272	·837	233·4	104·9	-32·4	16	84	203 *sf*
C	14274	·368	130·0	35·3	-17·6	131	814	
	14275	·911	109·2	347·0	-19·1	5	22	216 *f*
	14276	·980	115·3	333·4	-25·6	22	86	273 *s*
Apr. 30			(-24·4)	(52·4)	(- 4·2)	(174)	(1006)	(692)
120·503		·897	222·0					234
G	14272	·934	235·9	104·2	-33·2	25	131	524 *c*
	14274	·234	172·4	35·1	-17·5	117	546	
	14275	·786	110·8	346·3	-18·8	7	13	125 *c*
	14277	·889	62·8	338·8	+21·8	2	10	180 *c*
	14276	·910	116·4	332·5	-25·7	21	119	688 *c*
		·939	127·8					213
May 1			(-24·2)	(37·0)	(- 4·1)	(172)	(819)	(1964)
121·321		·757	240·4					129
G	14272	·978	237·1	104·1	-33·0	42	196	364 *c*
	14273	·806	250·1	79·0	-18·4	11	22	90 *c*
	14274	·274	212·3	35·0	-17·3	113	635	
	14275	·667	113·9	346·3	-18·7	3	6	
	14277	·816	58·8	337·4	+22·3	4	23	
	14276	·832	118·6	332·2	-25·8	21	127	608 *f*
		·762	118·2					114
		·928	129·4					136
May 2			(-24·0)	(26·2)	(- 4·0)	(194)	(1009)	(1441)
122·330	14273	·905	248·7	77·0	-20·9	0	15	641 *c*
C	14274	·427	235·7	34·4	-17·5	95	632	
	14275	·504	119·8	345·6	-17·9	8	28	
	14276	·708	123·4	331·9	-25·9	21	97	743 *f*
	14278	·773	56·4	328·8	+22·5	5	16	
May 3			(-23·9)	(12·8)	(- 3·9)	(129)	(788)	(1384)
123·340	14273	·976	251·1	77·2	-19·3	4	11	419 *c*
G	14274	·608	246·2	35·0	-17·3	80	491	
	14276	·575	132·1	331·3	-25·9	20	94	
	14278	·647	47·1	328·7	+22·8	4	18	
		·781	128·5					200
May 4			(-23·7)	(359·5)	(- 3·8)	(108)	(614)	(619)
		·965	22					83
124·400	14274	·774	250·2	35·1	-17·6	59	356	85 *c*
C	14276	·454	149·0	330·4	-26·4	24	100	
	14278	·543	33·9	326·3	+23·2	2	11	
May 5			(-23·4)	(345·5)	(- 3·7)	(85)	(467)	~~(85)~~ 168
125·340		·922	262·6					174
G	14274	·893	252·6	35·8	-17·1	80	410	658 *c*
	14275	·389	224·8	349·8	-19·4	6	24	
	14276	·393	171·2	329·2	-26·4	15	66	
May 6			(-23·2)	(333·0)	(- 3·6)	(101)	(500)	(832)
1945								
126·506	14274	·976	252·6	35·2	-17·7	34	428	776 *c*
G	14275	·592	242·0	351·0	-18·9	26	135	
	14276	·438	206·2	330·0	-26·4	10	41	
May 7			(-23·0)	(317·6)	(- 3·4)	(70)	(604)	(776)
127·296		·979	249·8					137
G	14275	·721	246·8	351·5	-18·9	30	131	
	14276	·504	223·0	329·3	-24·6	17	55	
May 8			(-22·8)	(307·2)	(- 3·4)	(47)	(186)	(137)
128·334	*1226a*	·971	252·2	9·7	-18·1	0	18	193 *c*
C	14275	·844	250·1	350·1	-18·4	27	76	202 *c*
	14276	·646	234·4	328·7	-24·6	8	27	
	14279	·351	144·8	281·1	-19·7	2	7	
May 9			(-22·6)	(293·5)	(- 3·2)	(37)	(128)	(395)
129·404		·855	234·7					137
C		·830	300·2					78
		·742	231·1					127
	14275	·946	251·6	350·1	-18·4	5	39	184 *c*
	14276	·765	242·1	326·4	-23·0	3	12	86 *c*
	14280	·435	231·3	300·2	-18·6	6	23	
May 10			(-22·3)	(279·3)	(- 3·1)	(14)	(74)	(612)
130·358		·921	245·5					174
G		·848	236·1					407
	14280	·592	241·9	300·0	-18·6	3	8	
	14279	·363	223·7	281·9	-18·1	1	3	
		·919	162·1					137
May 11			(-22·1)	(266·7)	(- 3·0)	(4)	(11)	(718)
131·440		·921	237·5					629
C	14280	·783	248·6	302·4	-18·4	3	18	
May 12			(-21·8)	(252·4)	(- 2·9)	(3)	(18)	(629)
132·329		·964	238·6					464
G	14280	·898	250·8	303·7	-18·4	0	10	81 *c*
		·937	97·2					186
May 13			(-21·6)	(240·6)	(- 2·8)	(0)	(10)	(731)
133·320		·969	234·7					217
G		·813	249·2					68
	14280	·976	251·7	304·9	-18·4	0	11	181 *c*
	14281	·983	115·3	148·3	-25·3	5	19	497 *c*
May 14			(-21·3)	(227·5)	(- 2·7)	(5)	(30)	(963)

Group 14275. Apr. 30–May 10. At first a small spot; after a lapse of two days a short stream appears a little ahead of the original position.
Group 14276. Apr. 30–May 10. A small regular spot with one or two companions after May 5.
Group 14277. May 1– 2. Small spots.
Group 14278. May 3– 5. A single spot on May 3 and 5: a pair on May 4.
Group 14279. May 9–11. A tiny spot not seen on May 10.
Group 14280. May 10–14. Some very small spots.
Group 14281. May 14–24. A stream of small changing spots with a brief maximum on May 16.

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

U.T.	Group No.	Measures: Dist.	Measures: Pos. Angle	Position: Long.	Position: Lat.	Area: Umbræ	Area: Whole Spots	Area: Faculæ
			°	°	°			
1945								
134·322		·930	252·8					293
G	14282	·514	231·2	239·6	−21·0	10	38	
	14281	·939	117·4	145·8	−26·6	27	112	623 c
		·939	108·8					164
May 15			(−21·0)	(214·3)	(− 2·6)	(37)	(150)	(1080)
135·318	14282	·667	241·2	239·6	−20·7	30	154	
G	14281	·862	119·9	144·5	−26·7	36	233	564 c
	14283	·966	108·0	126·3	−18·0	0	10	178 c
May 16			(−20·8)	(201·1)	(− 2·5)	(66)	(397)	(742)
136·343	14282	·805	245·4	238·9	−21·0	51	272	265 c
G	14281	·722	126·1	146·8	−26·9	26	101	324 c
	14283	·868	108·9	128·3	−17·5	0	5	211 f
May 17			(−20·5)	(187·5)	(− 2·3)	(77)	(378)	(800)
137·417	14282	·928	248·7	240·5	−20·5	54	325	434 c
G	14281	·577	135·6	147·1	−26·2	11	49	
	14283	·725	113·6	129·1	−18·4	4	8	87 f
	14284	·731	102·5	126·9	−10·6	10	23	
	14285	·899	57·6	114·6	+27·6	0	6	100 c
		·972	123·2					514
May 18			(−20·2)	(173·3)	(− 2·2)	(79)	(411)	(1135)
138·140	14282	·975	249·2	240·6	−20·7	93	515	227 c
K	14281	·470	152·7	149·9	−26·6	13	44	
	14284	·599	104·7	127·9	−10·4	11	38	
	14285	·821	54·3	115·4	+27·2	7	33	
		·961	125·5					485
May 19			(−19·9)	(163·8)	(− 2·1)	(124)	(630)	(712)
139·135	14281	·420	177·8	149·6	−26·7	9	43	
K	14284	·395	112·0	128·8	−10·3	9	40	
	14285	·674	45·3	118·2	+27·1	0	9	
		·881	127·0					374
		·965	116·0					179
May 20			(−19·6)	(150·6)	(− 2·0)	(18)	(92)	(553)
140·358	14281	·489	211·5	150·9	−26·4	5	25	
G	14284	·172	153·3	129·9	−10·7	1	5	
	14285	·561	28·2	117·0	+27·7	8	33	
	1226b	·896	120·6	73·7	−26·0	0	6	254 c
		·832	133·5					380
		·919	111·0					207
May 21			(−19·3)	(134·4)	(− 1·9)	(14)	(69)	(841)
141·335		·887	250·6					141
G	14281	·576	223·6	147·7	−26·2	9	27	
	14285	·492	9·4	116·3	+27·1	7	23	
		·796	118·6					318
		·808	135·8					111
May 22			(−19·0)	(121·5)	(− 1·8)	(16)	(50)	(570)
1945								
142·436	14281	·760	237·2	151·7	−25·3	4	11	249 c
G	14286	·652	221·1	136·7	−30·7	3	12	
	14285	·494	344·8	115·2	+26·8	12	52	
	1226c	·926	107·8	39·9	−17·0	6	15	540 f
	14287	·996	106·0	21·9	−16·1	27	96	
		·888	119·8					111
May 23			(−18·6)	(106·9)	(− 1·6)	(52)	(186)	(900)
143·459	14281	·887	241·1	153·0	−26·1	4	29	252 c
C	14286	·761	231·7	136·4	−29·1	0	5	169 c
	14285	·577	325·8	114·7	+27·0	12	67	
	14287	·946	106·8	22·9	−16·4	27	67	196 c
		·831	105·7					99
		·906	114·5					239
May 24			(−18·3)	(93·4)	(− 1·5)	(43)	(168)	(955)
144·325		·934	242·6					505
G		·853	239·2					413
	14283	·748	246·1	127·9	−18·5	9	32	96 c
	14285	·664	315·6	113·2	+27·1	6	26	
	14288	·734	118·0	38·1	−21·1	8	27	87 c
	14287	·869	108·1	22·7	−16·3	18	82	196 f
		·844	116·5					145
		·943	109·0					413
May 25			(−18·0)	(81·9)	(− 1·4)	(41)	(167)	(1855)
145·337	*1226d*	·980	246·8	146·5	−23·0	0	17	536 sp
C	14283	·871	249·2	127·6	−18·6	13	52	190 c
	14285	·771	307·6	111·8	+27·1	7	21	125 c
	14288	·593	126·5	37·9	−21·7	2	8	
	14287	·739	111·2	22·9	−16·3	20	100	92 c
		·848	111·2					171
		·934	71·2					138
		·949	113·9					251
May 26			(−17·6)	(68·6)	(− 1·3)	(42)	(198)	(1503)
146·403		·955	260·7					103
C	14283	·949	251·5	125·2	−17·9	17	69	366 c
	14285	·890	300·5	112·9	+26·2	4	32	189 c
	14287	·567	117·5	23·0	−16·1	13	68	
		·758	119·1					202
		·845	66·2					100
		·876	112·1					114
May 27			(−17·3)	(54·4)	(− 1·2)	(34)	(169)	(1074)
147·339		·964	300·1					339
G		·804	222·9					144
	14283	·992	250·4	124·6	−19·6	27	103	208 c
	14287	·406	129·9	23·3	−16·0	13	48	
		·966	121·6					196
May 28			(−16·9)	(42·1)	(− 1·0)	(40)	(151)	(887)

Group 14282. May 15–19. A short stream with its origin west of the central meridian and still growing as it passes round the west limb.
Group 14283. May 16–28. Intermittent. A tiny spot until May 18; after a lapse of six days a small stream appears in nearly the same place.
Group 14284. May 18–21. A small spot.
Group 14285. May 18–27. A few small variable spots.
Group 14286. May 23–24. A tiny spot.
Group 14287. May 23–31. A small spot slowly dying out.
Group 14288. May 25–26. A pair of tiny spots.

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

U.T.	Group No.	Measures Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umbræ	Area Whole Spots	Area Faculæ
			°	°	°			
1945								
148·417		·949	236·6					126
G		·884	227·8					151
	14289	·570	337·2	42·6	+30·7	14	58	
	14287	·273	163·1	23·1	-16·0	5	34	
		·921	126·9					180
		·957	119·0					163
		·977	109·4					221
May 29			(-16·6)	(27·8)	(- 0·9)	(19)	(92)	(841)
149·309		·945	230·2					311
G		·902	247·8					158
		·879	222·3					107
		·844	235·7					266
	14289	·647	323·0	42·7	+30·3	17	73	
	14287	·292	203·6	23·0	-16·2	4	9	
		·872	131·0					296
		·889	120·0					186
		·944	110·1					412
		·965	122·1					310
May 30			(-16·2)	(16·0)	(- 0·8)	(21)	(82)	(2046)
150·326		·982	232·1					179
G		·921	238·3					203
		·901	248·6					214
	14289	·753	312·7	42·1	+30·1	19	97	141 c
	14287	·425	231·7	22·7	-15·8	3	9	
	14290	·931	96·5	294·2	- 6·3	7	19	426 f
		·783	126·3					128
		·814	113·7					201
		·825	136·1					117
		·907	124·5					257
		·909	113·6					196
May 31			(-15·9)	(2·5)	(- 0·7)	(29)	(125)	(2062)
151·351		·968	237·7					202
G		·951	249·3					190
		·802	251·5					105
		·781	238·9					110
	14289	·859	307·0	41·8	+30·7	17	117	252 c
	14290	·827	96·9	293·6	- 6·0	2	6	229 c
		·767	118·5					179
		·808	131·1					134
June 1			(-15·5)	(349·0)	(- 0·6)	(19)	(123)	(1401)
152·325		·883	254·2					121
G		·865	241·1					216
		·772	235·1					107
	14289	·939	303·5	41·8	+30·9	33	137	366 c
		·938	93·7					176
June 2			(-15·1)	(336·1)	(- 0·5)	(33)	(137)	(986)

U.T.	Group No.	Measures Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umbræ	Area Whole Spots	Area Faculæ
			°	°	°			
1945								
153·337		·966	256·7					179
C		·938	245·6					255
		·866	247·5					239
		·770	248·5					139
	14289	·982	303·1	39·3	+32·3	0	23	193 c
	14291	·978	109·5	245·7	-19·1	21	94	172 c
June 3			(-14·7)	(322·7)	(- 0·3)	(21)	(117)	(1177)
154·312		·981	247·3					161
G		·950	247·9					246
		·897	229·2					108
		·881	250·1					324
		·841	238·1					101
	14291	·911	111·1	245·9	-19·1	19	83	475 c
		·898	98·3					134
		·938	55·5					236
		·976	112·5					526
June 4			(-14·3)	(309·8)	(- 0·2)	(19)	(83)	(2311)
155·374		·946	247·4					140
G		·847	325·4					68
	14291	·797	114·3	245·7	-19·1	15	86	325 c
		·758	102·8					70
		·907	115·3					595
		·911	48·5					110
June 5			(-13·9)	(295·7)	(- 0·1)	(15)	(86)	(1308)
156·404		·950	248·0					106
C	14291	·855	120·2	245·4	-19·1	11	59	
	1227a	·773	118·7	235·4	-21·7	7	23	587 c
June 6			(-13·5)	(282·1)	(0·0)	(18)	(82)	(693)
157·330		·866	231·2					164
G		·757	232·0					140
	14291	·516	129·6	245·0	-19·1	8	44	
		·952	108·7					156
June 7			(-13·2)	(269·8)	(+ 0·1)	(8)	(44)	(460)
158·306		·935	231·4					303
G		·878	239·6					162
		·813	228·8					117
		·796	244·6					151
	14291	·395	146·4	243·6	-18·8	6	25	
		·894	113·4					230
June 8			(-12·8)	(256·9)	(+ 0·3)	(6)	(25)	(963)
159·313		·965	238·4					226
G		·875	230·0					202
		·873	244·4					341
		·774	264·8					209
	14292	·443	146·5	228·5	-21·2	17	57	
		·908	63·5					130
June 9			(-12·4)	(243·6)	(+ 0·4)	(17)	(57)	(1108)

Group 14289. May 29-June 3. A short stream of small spots.
Group 14290. May 31-June 1. One or two tiny spots.
Group 14291. June 3- 8. A small diminishing spot with a companion on June 8.
Group 14292. June 9-14. A short stream with rapid rise and quick decay.

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

U.T.	Group No.	Measures Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umbræ	Area Whole Spots	Area Faculæ
			°	°	°			
1945								
160·415		·855	261·5					143
K	14292	·377	178·6	228·4	-21·5	53	223	
June 10			(-11·9)	(229·0)	(+ 0·5)	(53)	(223)	(143)
161·307		·966	263·3					296
G		·963	231·7					168
	14292	·420	206·2	228·6	-21·5	50	268	
	14293	·940	108·5	148·6	-17·1	13	67	382 *c*
	14294	·981	122·7	140·9	-31·9	81	406	243 *c*
		·940	116·1					334
June 11			(-11·5)	(217·2)	(+ 0·6)	(144)	(741)	(1423)
162·303	14292	·528	224·3	227·1	-21·4	40	226	
G	14293	·844	111·1	148·7	-17·2	8	34	592 *c*
	14294	·931	124·9	140·1	-31·9	93	335	898 *c*
		·975	109·9					356
June 12			(-11·1)	(204·0)	(+ 0·7)	(141)	(595)	(1846)
163·522		·851	248·8					109
G	14292	·700	237·3	227·0	-21·5	16	73	157 *c*
	14295	·476	218·2	206·2	-21·0	7	23	
	14293	·677	116·9	148·9	-17·0	6	36	
	14294	·829	130·0	139·5	-31·5	66	321	317 *c*
	14296	·783	112·4	139·0	-16·7	0	4	123 *c*
	14297	·943	115·2	119·9	-23·3	42	173	441 *c*
	14298	·986	117·8	109·7	-27·1	15	108	176 *c*
June 13			(-10·6)	(187·9)	(+ 0·9)	(152)	(738)	(1323)
164·461		·946	246·4					517
G	14292	·828	243·3	227·8	-21·2	13	28	192 *c*
	14295	·606	231·4	205·9	-21·3	9	26	
	14293	·528	126·0	149·1	-17·1	11	32	
	14294	·733	136·8	139·7	-31·3	58	306	276 *f*
	14296	·642	116·2	138·9	-15·6	0	3	
	14297	·855	118·3	120·7	-23·3	45	167	158 *c*
	14298	·936	119·8	109·7	-27·3	22	164	320 *c*
		·975	63·4					230
June 14			(-10·2)	(175·5)	(+ 1·0)	(158)	(726)	(1693)
165·528		·928	244·7					214
G	14295	·746	239·0	204·6	-21·7	0	7	81 *c*
	14293	·377	147·7	149·2	-17·4	5	20	
	14294	·626	149·0	139·2	-31·3	56	303	
	14296	·482	128·8	138·3	-16·5	0	5	
	14297	·728	124·5	120·6	-23·5	38	167	
	14298	·832	123·7	110·7	-26·7	23	113	240 *c*
	14299	·941	61·9	93·2	+26·7	0	10	294 *c*
June 15			(-9·7)	(161·3)	(+ 1·1)	(122)	(625)	(829)
1945								
166·387		·976	244·1					299
G		·854	244·1					158
	14293	·318	177·0	149·0	-17·2	5	20	
	14296	·344	151·4	140·2	-16·3	0	4	
	14294	·566	162·7	138·7	-31·4	52	292	
	14297	·612	132·8	120·8	-23·4	24	151	
	14298	·734	129·5	110·8	-26·8	33	175	215 *c*
	14299	·841	59·2	96·6	+26·1	0	5	133 *c*
June 16			(-9·4)	(150·0)	(+ 1·2)	(114)	(647)	(805)
167·334	14295	·912	246·0	200·4	-21·1	0	17	182 *c*
G	14293	·375	209·9	148·7	-17·5	5	16	
	14294	·539	181·8	138·5	-31·0	49	294	
	14296	·331	182·0	138·1	-17·8	0	4	
	14297	·493	147·8	120·9	-23·2	41	228	
	14298	·620	139·3	110·6	-26·7	21	139	
		·901	122·2					137
		·958	130·7					198
June 17			(-9·0)	(137·4)	(+ 1·4)	(116)	(698)	(517)
168·345		·965	247·7					164
G	14295	·968	247·7	197·6	-21·1	0	23	
	14293	·508	229·1	147·8	-17·9	5	16	
	14294	·576	201·0	138·0	-31·0	48	261	
	1227b	·325	181·4	124·6	-17·3	1	7	
	14297	·426	173·5	121·1	-23·4	49	293	
	14298	·518	155·7	110·4	-26·6	20	95	
		·908	123·9					109
		·928	135·5					190
		·966	118·5					285
		·989	106·1					229
June 18			(-8·5)	(124·1)	(+ 1·5)	(123)	(695)	(977)
169·319	14293	·663	241·0	148·5	-17·4	0	6	
G	14294	·658	215·5	137·5	-30·9	54	264	
	14297	·458	201·1	121·5	-23·0	48	233	
	14298	·471	178·3	110·3	-26·4	9	43	
	14299	·484	27·5	96·8	+26·8	3	18	
	14300	·998	104·7	25·6	-14·5	37	118	
		·834	129·6					99
		·859	138·7					116
		·859	108·7					101
		·908	122·7					184
		·928	106·0					153
		·960	57·1					211
June 19			(-8·1)	(111·2)	(+ 1·6)	(151)	(682)	(864)

Group 14293. June 11-19. A persistent small spot with a companion on June 18.
Group 14294. June 11-23. A stable regular spot.
Group 14295. June 13-18. One or two small spots not seen on June 16.
Group 14296. June 13-22. A tiny spot until June 17; a pair of small spots appear near the same position on June 20.
Group 14297. June 13-24. A pair of spots. On June 17, small companions appear and form a temporary cluster. By June 23, a regular spot represents the disturbance.
Group 14298. June 13-21. A stream of small changing spots.
Group 14299. June 15-25. A single spot not seen on June 17-18. Companions appear on June 20 to form a short stream.
Group 14300. June 19-July 1 A stream developing as it comes round the east limb. The follower, a small nearly regular spot, disintegrates into a cluster which soon dies out, and the leader (a regular spot) alone remains after June 28.

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

U.T.	Group No.	Measures Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umbræ	Area Whole Spots	Area Faculæ
			°	°	°			
1945								
170·347		·960	243·7					121
G		·882	294·7					150
		·820	241·3					451
	14294	·762	225·6	136·7	−30·8	35	209	94 c
	14296	·650	245·8	135·0	−14·0	8	32	
	14297	·569	222·2	122·0	−23·3	42	219	
	14298	·494	201·4	109·0	−25·6	0	5	
	14299	·422	359·0	98·0	+26·6	19	88	
	14300	·963	106·2	24·5	−15·1	29	147	455 c
		·793	110·9					147
		·802	147·5					115
		·819	126·0					240
		·912	55·9					189
		·923	118·1					112
June 20			(−7·7)	(97·5)	(+ 1·7)	(133)	(700)	(2074)
171·573		·937	250·5					178
G		·928	242·1					398
	14294	·861	232·9	136·2	−31·0	43	227	134 c
	14296	·826	252·1	135·1	−13·6	2	13	169 p
	14297	·728	235·6	121·8	−22·8	40	260	81 p
	14298	·596	225·5	108·7	−23·0	0	10	
	14299	·496	327·9	98·3	+26·4	14	74	
	14300	·861	109·3	24·0	−15·5	48	285	381 c
		·820	122·7					100
		·832	49·9					108
June 21			(−7·1)	(81·3)	(+ 1·8)	(147)	(869)	(1549)
172·350		·962	242·5					299
G		·862	228·7					118
		·845	247·6					102
		·763	227·8					191
	14296	·922	250·4	136·2	−17·2	0	9	284 c
	14294	·937	235·8	135·4	−30·9	39	212	330 c
	14297	·824	240·5	121·8	−22·6	39	261	100 c
	14299	·585	315·0	98·3	+26·0	8	48	
	14300	·767	112·4	23·8	−15·7	54	265	200 c
		·942	118·6					101
June 22			(−6·8)	(71·0)	(+ 1·9)	(140)	(795)	(1725)
173·381		·960	252·3					211
G		·850	232·9					357
	14294	·987	238·2	135·0	−30·9	42	167	560 f
	14297	·931	244·6	122·9	−22·6	43	246	285 c
	14299	·730	304·9	99·1	+26·2	4	22	98 p
	14300	·618	118·9	23·4	−15·5	59	349	
		·840	119·2					165
		·890	133·2					113
June 23			(−6·3)	(67·4)	(+ 2·1)	(148)	(784)	(1789)
174·379		·985	235·4					183
G		·921	236·4					367
	14297	·987	246·2	123·0	−23·1	42	239	265 c
	14299	·831	301·7	96·6	+27·1	7	32	294 c
	14300	·469	130·3	22·5	−15·5	47	262	
June 24			(−5·8)	(44·2)	(+ 2·2)	(96)	(533)	(1109)
1945								
175·380		·965	238·5					269
G	14299	·923	298·6	96·3	+27·2	3	31	322 c
	14300	·327	156·9	23·3	−15·1	43	200	
June 25			(−5·4)	(30·9)	(+ 2·3)	(46)	(231)	(591)
176·206	1227c	·945	300·0	89·1	+29·0	0	27	297 c
K	14300	·310	190·2	23·3	−15·2	36	208	
June 26			(−5·0)	(20·0)	(+ 2·4)	(36)	(235)	(297)
177·311		·878	219·5					149
G		·826	232·4					146
	14300	·435	225·3	24·0	−15·4	31	149	
	14301	·480	206·6	18·8	−22·9	2	12	
		·846	128·0					75
		·941	98·1					128
		·957	120·7					177
June 27			(−4·5)	(5·4)	(+ 2·5)	(33)	(161)	(675)
178·159		·864	249·6					137
K	14300	·553	236·3	22·5	−15·5	21	144	
	14301	·573	223·9	19·4	−22·0	10	54	
	1228a	·399	259·2	17·1	− 1·8	3	16	
		·922	120·7					177
June 28			(−4·1)	(354·1)	(+ 2·6)	(34)	(214)	(314)
179·506		·875	308·3					124
G	14300	·792	249·1	26·0	−14·5	15	85	138 c
	14301	·781	236·1	21·9	−22·3	26	107	138 c
June 29			(−3·5)	(336·3)	(+ 2·8)	(41)	(192)	(400)
180·320		·948	236·7					195
G		·925	303·8					179
	14300	·888	251·5	25·9	−15·0	17	90	227 c
	14301	·868	242·0	21·3	−22·5	9	46	298 c
	14302	·559	164·1	315·4	−29·6	0	3	
		·971	109·0					141
		·988	130·3					101
June 30			(−3·2)	(325·5)	(+ 2·8)	(26)	(139)	(1141)
181·362		·960	301·9					162
G	14300	·969	253·9	25·9	−14·8	10	56	193 n
	14301	·960	245·7	22·6	−22·3	0	12	586 c
	14302	·538	189·2	317·4	−28·9	0	3	
		·913	112·1					182
		·952	132·8					167
July 1			(−2·7)	(311·8)	(+ 3·0)	(10)	(71)	(1290)
182·601		·863	121·1					108
Mt. W		·886	140·1					93
		·961	124·3					81
		·963	118·3					132
July 2			(−2·1)	(295·3)	(+ 3·1)	(0)	(0)	(414)

Group 14301. June 27–July 1. Small spots.
Group 14302. June 30–July 7. Intermittent. A tiny variable spot.

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

U.T.	Group No.	Measures		Position		Area		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculæ
			°	°	°			
1945								
183·415		·773	124·6					147
G		·915	119·5					171
		·938	130·2					139
July 3			(-1·7)	(284·6)	(+ 3·2)	(0)	(0)	(457)
184·562	14303	·850	251·4	325·2	-13·8	1	10	27 c
Mt. W	14302	·817	231·1	315·6	-28·6	16	41	102 c
July 4			(-1·2)	(269·4)	(+ 3·3)	(17)	(51)	(129)
185·456	14303	·953	251·6	327·9	-16·4	8	29	160 c
G	14302	·906	235·8	316·2	-28·8	23	91	353 c
		·819	141·4					64
		·912	127·2					50
		·918	91·5					92
July 5			(-0·8)	(257·6)	(+ 3·4)	(31)	(120)	(719)
186·296		·847	233·1					64
G	14303	·991	252·8	327·0	-16·5	0	18	159 f
	14302	·957	237·6	314·4	-29·5	52	210	520 c
	14304	·787	261·0	297·5	- 4·9	7	28	60 c
	14305	·982	94·4	167·8	- 3·6	13	47	175 c
		·947	115·8					99
July 6			(-0·4)	(246·4)	(+ 3·5)	(72)	(303)	(1077)
187·328		·918	221·7					121
G		·878	232·8					156
	14302	·994	238·4	313·2	-30·9	0	112	226 c
	14304	·913	263·0	298·0	- 4·9	11	39	133 c
	14305	·907	94·6	168·2	- 2·6	6	21	281 c
		·916	118·8					141
July 7			(0·0)	(232·8)	(+ 3·6)	(17)	(172)	(1058)
188·429		·976	265·5					218
G	14305	·802	95·0	165·4	- 1·8	0	6	
	14306	·977	70·9	140·2	+19·4	5	28	245 c
		·948	117·3					409
July 8			(+0·5)	(218·2)	(+ 3·7)	(5)	(34)	(872)
189·340	1228b	·921	286·1	273·1	+16·3	0	11	160 c
G	14306	·900	71·6	142·4	+18·2	29	137	384 c
	14308	·980	68·2	127·4	+22·1	12	62	228 c
	14307	·980	110·6	130·0	-19·3	57	483 }	623 c
	14309	·995	106·4	123·6	-15·8	0	43 }	
		·898	122·1					391
		·969	57·5					92
July 9			(+0·9)	(206·2)	(+ 3·8)	(98)	(736)	(1878)
1945								
190·649		·872	240·8					223
W	14306	·727	67·5	143·8	+18·9	23	140	137 c
	14307	·872	114·5	132·0	-19·0	93	484	665 c
	14308	·875	65·8	128·9	+23·0	10	78	484 c
	14309	·909	108·3	125·8	-14·8	0	18	
	14310	·941	116·5	122·6	-23·3	4	29	
		·804	128·2					114
		·949	127·1					320
July 10			(+1·5)	(188·8)	(+ 3·9)	(130)	(749)	(1943)
191·592		·941	243·2					194
G	14306	·601	64·4	141·7	+18·3	32	174	
	14307	·784	118·8	129·8	-19·4	111	589	170 c
	14308	·800	64·0	125·2	+23·0	20	117	189 c
	14309	·816	112·0	124·9	-15·2	20	124	150 c
	14310	·878	119·8	120·4	-23·6	12	57	55 c
		·911	130·8					290
		·928	59·6					245
		·952	122·4					214
July 11			(+2·0)	(176·4)	(+ 4·0)	(195)	(1061)	(1507)
192·382		·972	243·1					167
G	14311	·698	239·2	204·8	-17·7	0	13	
	14306	·473	56·9	141·3	+18·7	33	158	
	14307	·681	124·9	129·7	-19·5	118	660	
	14308	·674	60·5	126·6	+22·5	25	141	
	14309	·714	115·9	124·4	-15·1	35	152	
	14310	·794	124·0	120·2	-23·5	11	81	
		·931	61·9					186
		·942	124·5					237
		·965	115·0					164
July 12			(+2·3)	(165·9)	(+ 4·1)	(222)	(1205)	(754)
193·328		·954	242·5					256
G		·931	228·1					224
	14311	·830	243·9	205·2	-18·8	33	148	111 c
	14306	·333	39·3	140·6	+19·0	34	156	
	14307	·557	135·3	129·0	-19·4	108	628	
	14308	·544	53·1	125·4	+22·7	43	216	
	14309	·577	123·9	123·8	-15·1	31	195	
	14310	·681	131·9	120·0	-23·5	10	54	
		·836	138·9					136
		·855	58·9					137
		·872	127·9					198
		·933	117·3					227
		·948	58·6					150
July 13			(+2·7)	(153·4)	(+ 4·2)	(259)	(1397)	(1439)

Group 14303. July 4- 6. A pair of spots on July 4: a single spot on July 5 and 6.
Group 14304. July 6- 7. A pair of small spots.
Group 14305. July 6- 8. A single spot on each day.
Group 14306. July 8-16. A pair of nearly regular spots.
Group 14307. July 9-21. A pair of widely separated regular spots. The leader is stable throughout, but the umbra of the follower begins to divide into two on July 13. A few small faint companions come between these regular spots after July 12.
Group 14308. July 9-20. A long stream of small changing spots.
Group 14309. July 9-17. A small cluster rising to a brief maximum and then declining rapidly.
Group 14310. July 10-19. Return of Group 14296. A small persistent spot.
Group 14311. July 12-15. A pair of developing spots.

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

U.T.	Group No.	Measures: Dist.	Measures: Pos. Angle	Position: Long.	Position: Lat.	Area: Umbræ	Area: Whole Spots	Area: Faculæ
			°	°	°			
1945								
194·426		·789	135·2					108
G	14311	·926	248·2	203·5	−18·2	58	346	170 c
	14306	·252	353·6	140·6	+18·8	18	82	
	14307	·436	156·0	128·1	−19·1	116	651	
	14308	·391	35·7	124·7	+22·6	39	239	
	14309	·416	142·6	123·8	−15·1	15	110	
	14310	·554	147·1	119·8	−23·5	5	50	
	14312	·888	120·6	81·9	−24·5	0	13	111 c
		·868	54·2					143
July 14			(+3·2)	(138·9)	(+ 4·3)	(251)	(1491)	(532)
195·350	14311	·983	250·2	203·6	−18·5	103	378	318 c
G	14306	·340	318·4	140·3	+18·9	11	49	
	14307	·405	182·8	127·8	−19·4	102	586	
	14308	·314	1·8	126·0	+22·6	39	230	
	14309	·338	168·4	122·6	−14·9	15	66	
	14310	·484	166·6	119·6	−23·6	12	42	
	14313	·689	142·7	98·1	−29·3	26	87	
	14314	·974	66·6	49·2	+23·8	0	15	147 c
July 15			(+3·6)	(126·6)	(+ 4·4)	(308)	(1453)	(465)
196·628		·852	265·4					109
G	14306	·565	294·6	142·1	+17·4	4	18	
	1228c	·563	235·2	138·1	−14·7	1	5	
	14307	·491	216·2	127·5	−19·0	98	599	
	14308	·405	319·8	126·4	+22·3	20	135	
	14309	·403	208·6	121·2	−16·2	1	5	
	14310	·497	198·0	119·3	−23·6	12	40	
	14313	·594	162·4	97·8	−29·9	63	268	
	14312	·682	138·8	79·6	−26·9	14	53	
	14314	·877	66·0	49·3	+23·1	0	9	134 c
July 16			(+4·2)	(109·7)	(+ 4·5)	(213)	(1132)	(243)
		.929	357.1					62
197·366		·916	266·7					232
G		·822	238·0					260
	14308	·532	305·0	127·7	+21·8	13	52	
	14307	·587	227·7	127·1	−19·1	75	460	
	14309	·501	225·7	121·7	−16·1	2	10	
	14310	·558	212·5	118·9	−23·6	11	36	
	14313	·573	176·7	97·7	−30·1	42	165	
	14312	·600	149·4	80·0	−26·7	27	115	
	14314	·783	63·1	50·4	+23·7	0	6	109 c
		·965	117·1					182
		·961	108·1					366
July 17			(+4·5)	(99·9)	(+ 4·6)	(170)	(844)	~~(1149)~~ 1211
198·391		·923	240·1					439
G		·832	286·6					94
	14308	·723	295·4	130·8	+21·4	4	22	
	14307	·732	238·6	127·5	−18·8	75	411	191 c
	14310	·679	226·5	118·8	−23·8	5	19	
	14313	·602	196·1	97·5	−30·5	31	134	
	14312	·527	170·3	80·7	−26·5	18	113	
	14314	·652	57·0	49·6	+24·5	9	44	
	14315	·855	122·2	34·1	−24·2	5	24	104 c
		·900	106·0					111
		·915	115·0					298
July 18			(+5·0)	(86·4)	(+ 4·7)	(147)	(767)	(1237)
1945								
199·368		·969	244·2					265
G		·926	234·6					127
		·839	227·3					147
		·780	216·1					133
		·775	301·6					182
	1228d	·934	285·4	142·8	+16·1	0	12	146 c
	14308	·851	282·5	131·0	+21·6	5	17	276 c
	14307	·853	244·5	127·7	−18·7	72	365	444 c
	14310	·794	234·6	118·4	−24·0	4	17	70 c
	14313	·679	211·2	97·6	−31·0	11	50	
	14312	·534	190·9	80·0	−26·7	28	115	
	14314	·500	47·4	49·8	+24·1	31	152	
	14315	·723	129·7	36·3	−23·6	6	18	72 c
	1228e	·887	144·8	29·3	−43·0	0	5	103 c
		·762	118·2					80
		·876	120·0					297
July 19			(+5·4)	(73·5)	(+ 4·8)	(157)	(751)	(2342)
200·363		·984	286·3					189
G		·919	232·5					209
		·865	219·3					138
		·774	225·5					128
	14308	·944	291·0	131·3	+21·5	0	10	572 f
	14307	·949	248·2	128·7	−18·9	65	308	690 c
	1228f	·913	243·5	121·7	−21·7	0	6	153 c
	14312	·599	210·4	80·0	−26·4	20	95	
	14314	·356	25·4	50·8	+23·5	51	283	
	14315	·585	143·3	38·0	−23·4	1	10	
July 20			(+5·9)	(60·3)	(+ 4·9)	(137)	(712)	(2079)
201·641		·978	294·5					287
W		·945	226·4					128
		·936	299·5					228
		·872	230·4					275
	14307	·989	251·1	122·5	−17·8	10	72	600 c
	14312	·751	229·8	82·6	−25·1	6	31	125 c
	14314	·353	338·2	51·6	+24·0	40	195	
	14316	·982	64·6	319·3	+25·8	0	31	236 c
July 21			(+6·4)	(43·4)	(+ 5·0)	(56)	(329)	(1879)
		.949	352.2					36
202·371		·954	235·3					472
G		·882	300·8					188
	14312	·858	237·1	86·0	−24·7	5	17	306 c
	14314	·443	319·0	52·2	+24·2	44	283	
	14316	·952	62·0	321·6	+28·1	0	14	188 c
		·974	122·5					126
July 22			(+6·7)	(33·7)	(+ 5·0)	(49)	(314)	~~(1280)~~ 1316
203·383		·919	297·4					180
G		·862	306·8					78
		·972	235·6					299
	14312	·915	239·2	80·6	−25·5	0	16	402 c
	14314	·584	306·1	51·4	+24·5	60	298	
	14317	·806	64·8	328·0	+23·2	8	31	206 c
		·915	125·8					141
		·956	98·2					124
July 23			(+7·2)	(20·3)	(+ 5·1)	(68)	(345)	(1430)

Group 14312. July 14-24. A stream of small variable components.
Group 14313. July 15-19. A pair of spots of sudden growth and rapid decay.
Group 14314. July 15-26. One or two tiny spots which by July 20 develop into a stream led by a regular spot.
Group 14315. July 18-20. One or two tiny spots.
Group 14316. July 21-22. A single spot on each day.
Group 14317. July 23-26. A small cluster.

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

U.T.	Group No.	Measures		Position		Area		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculæ
			°	°	°			
1945								
204·351		·949	297·6					137
G		·874	244·8					106
	14312	·980	241·6	81·7	−26·5	0	12	217 c
	14314	·718	299·6	50·7	+24·5	39	329	95 p
	14317	·662	60·2	329·0	+23·2	6	32	
		·845	133·2					160
		·899	61·2					142
		·902	97·7					172
		·924	125·6					125
		·973	120·8					207
July 24			(+7·6)	(7·5)	(+ 5·2)	(45)	(373)	(1361)
205·443	14314	·854	296·0	50·6	+24·8	34	179	338 c
G	14317	·514	51·2	327·3	+23·5	5	19	
	14318	·903	126·6	296·7	−29·7	2	10	111 c
		·906	120·6					167
		·966	73·6					122
July 25			(+8·0)	(353·1)	(+ 5·3)	(41)	(208)	(738)
206·614		·869	240·2					242
G	14314	·972	294·1	55.0	+24·7	19	157	641 c
	14317	·335	20·0	330·4	+23·6	3	10	
	14319	·969	74·0	261·2	+16·9	28	127	239 c
July 26			(+8·5)	(337·6)	(+ 5·4)	(50)	(294)	(1122)
207·399		·975	294·7					294
G		·934	243·1					174
		·839	234·8					282
	1229a	·387	27·1	316·0	+25·4	3	10	
	14318	·730	141·5	295·6	−30·1	0	5	75 f
	14319	·915	74·1	260·7	+16·7	31	153	170 c
		·785	132·1					129
July 27			(+8·9)	(327·2)	(+ 5·5)	(34)	(168)	(1124)
208·334		·963	276·2					75
G		·961	253·6					170
		·921	241·2					408
	14320	·208	1·8	314·4	+17·5	12	39	
	1229b	·615	146·6	292·8	−25·7	0	4	
	14319	·812	73·4	260·7	+16·6	21	125	91 f
		·914	114·8					106
July 28			(+9·2)	(314·8)	(+ 5·5)	(33)	(168)	(850)
209·409		·936	243·1					689
G	14320	·305	314·1	313·8	+17·6	4	20	
	14319	·651	70·9	260·9	+16·6	30	136	
	14321	·895	65·9	237·4	+24·0	0	8	91 c
July 29			(+9·7)	(300·6)	(+ 5·6)	(34)	(164)	(780)

U.T.	Group No.	Measures		Position		Area		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculæ
			°	°	°			
1945								
210·601	14319	·443	62·8	260·7	+16·9	23	138	
G	14321	·790	63·2	234·3	+24·5	0	6	40 c
		·968	71·2					188
		·984	110·0					126
July 30			(+10·2)	(264·9)	(+ 5·7)	(23)	(144)	(354)
211·628		·867	295·0					96
G		·846	225·8					96
	14319	·268	42·4	260·5	+17·0	17	102	
	14321	·636	57·4	235·3	+24·7	3	15	
		·901	70·8					83
		·939	113·0					323
July 31			(+10·6)	(271·3)	(+ 5·8)	(20)	(117)	(598)
212·138		·892	230·2					118
K		·887	297·4					183
	14319	·212	22·8	259·6	+17·0	24	124	
		·848	70·7					104
		·907	114·6					277
Aug. 1			(+10·8)	(264·5)	(+ 5·8)	(24)	(124)	(682)
213·350		·968	236·7					247
G		·897	286·5					97
		·828	229·7					490
	14322	·664	317·5	281·2	+34·2	5	18	
	14319	·278	315·4	260·2	+17·2	17	81	
	14321	·364	28·9	237·4	+24·3	6	23	
		·762	125·1					145
		·897	133·5					128
Aug. 2			(+11·3)	(248·5)	(+ 5·9)	(28)	(122)	(1107)
214·354		·928	260·0					128
G		·927	238·8					121
		·844	227·7					132
	14319	·451	297·4	259·9	+17·4	13	85	
	14321	·315	353·9	237·3	+24·1	7	21	
Aug. 3			(+11·7)	(235·2)	(+ 6·0)	(20)	(106)	(381)
215·345		·945	236·0					225
G	14322	·857	309·5	277·2	+36·5	0	5	142 p
	14319	·625	290·6	259·8	+17·5	16	100	
	14321	·386	324·3	236·3	+24·0	1	15	
	14323	·950	109·3	153·3	−16·2	14	73	155 c
		·954	117·5					218
		·962	71·7					205
Aug. 4			(+12·1)	(222·1)	(+ 6·0)	(31)	(193)	(945)

Group 14318. July 25-27. A tiny spot not seen on July 26.
Group 14319. July 26-Aug. 7. A small stable regular spot.
Group 14320. July 28-29. One or two small spots.
Group 14321. July 29-Aug. 4. One or more tiny spots.
Group 14322. Aug. 2- 4. A small spot.
Group 14323. Aug. 4- 8. A pair of small spots, one disappearing by Aug. 6.

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

U.T.	Group No.	Measures: Dist.	Measures: Pos. Angle	Position: Long.	Position: Lat.	Area: Umbræ	Area: Whole Spots	Area: Faculæ
			°	°	°			
1945								
216·294		·958	266·1					127
G		·936	305·6					97
	14319	·767	288·0	259·3	+17·6	14	94	90 c
	14323	·872	113·2	153·0	−16·8	16	41	188 c
		·897	72·7					116
		·956	122·6					202
		·962	67·2					187
		·966	109·4					262
Aug. 5			(+12·4)	(209·6)	(+ 6·1)	(30)	(135)	(1269)
217·422		·983	305·4					170
G	14319	·900	287·2	259·2	+18·1	13	71	242 c
	14323	·757	119·6	151·2	−17·5	8	36	62 c
	14324	·996	67·6	108·1	+22·8	27	112	112 p
		·847	115·5					132
		·882	127·8					337
		·905	67·6					159
		·936	114·4					353
		·966	107·1					283
Aug. 6			(+12·8)	(194·7)	(+ 6·2)	(48)	(219)	(1850)
218·258	14319	·961	287·7	258·5	+18·7	7	57	269 c
K	14323	·657	127·6	150·6	−18·4	5	34	
	14324	·970	69·0	106·7	+21·8	42	226	182 c
		·808	118·5					205
		·843	132·7					136
		·854	66·2					185
		·906	110·2					193
		·930	123·1					230
Aug. 7			(+13·2)	(183·7)	(+ 6·2)	(54)	(317)	(1400)
219·351		·924	294·2					124
G	14323	·504	143·8	150·9	−17·9	3	14	
	1229c	·726	85·4	122·4	+ 7·7	4	13	
	1229d	·917	128·2	111·8	−31·3	0	9	121 c
	14324	·892	67·8	105·9	+22·6	62	314	423 c
	1229e	·931	64·6	100·2	+25·9	3	12	
		·781	115·5					165
		·807	126·4					154
Aug. 8			(+13·6)	(169·1)	(+ 6·3)	(72)	(362)	(987)
220·188	14324	·810	67·5	105·6	+21·9	67	362	547 c
K		·786	55·1					231
		·877	133·0					113
Aug. 9			(+13·9)	(158·1)	(+ 6·4)	(67)	(362)	(891)
1945								
221·411		·936	244·3					231
G	14325	·458	155·1	130·2	−18·2	1	4	
	14324	·639	61·1	104·6	+23·1	74	360	97 f
	14326	·923	120·9	80·9	−25·3	9	23	296 c
		·869	63·9					188
		·937	130·1					123
		·938	139·7					132
Aug. 10			(+14·3)	(141·9)	(+ 6·4)	(84)	(387)	(1067)
222·384		·981	288·1					86
G	14325	·491	180·0	129·1	−22·8	3	10	
	14324	·487	53·0	104·2	+22·9	78	384	
	14326	·830	126·7	81·9	−25·3	4	8	161 c
		·832	136·7					99
		·923	124·1					236
		·965	64·5					194
Aug. 11			(+14·7)	(129·1)	(+ 6·5)	(85)	(402)	(776)
223·451		·751	217·1					154
G	14326*	·869	295·7	174·8	+25·5	0	5	117 c
	14325	·531	207·5	130·1	−21·7	1	5	
	1229f	·421	157·5	105·3	−16·4	3	6	
	14324	·336	30·5	104·3	+23·1	74	411	
	1229g	·964	70·5	39·3	+20·5	0	17	211 c
		·782	132·8					410
		·911	62·5					260
Aug. 12			(+15·1)	(114·9)	(+ 6·5)	(78)	(444)	(1152)
224·657		·815	229·0					116
W	14326*	·970	296·0	176·3	+26·7	0	24	359 c
	14324	·311	355·1	100·7	+24·5	146	451	
	1229h	·656	143·9	73·6	−26·0	5	23	
		·819	64·4					147
		·899	69·6					627
		·906	118·4					143
		·937	112·4					190
Aug. 13			(+15·5)	(99·0)	(+ 6·6)	(151)	(498)	(1582)
225·266		·968	295·3					145
K	14324	·347	337·7	99·2	+25·1	143	929	
	1229i	·685	124·1	54·6	−17·2	11	48	
		·829	68·9					207
		·890	121·7					104
Aug. 14			(+15·7)	(90·9)	(+ 6·6)	(154)	(977)	(456)
226·127	14325	·831	239·2	128·3	−20·9	4	13	72 c
K	14324	·443	318·2	97·6	+25·6	159	1051	
	1229j	·849	63·6	21·1	+25·9	8	24	
	14327	·939	72·4	7·8	+18·8	12	55	283 c
Aug. 15			(+16·0)	(78·6)	(+ 6·7)	(183)	(1143)	(355)

Group 14324. Aug. 6-20. At first a composite spot followed by a few companions that are small until Aug. 10. Two fairly large composite spots then quickly develop from this train, and the aggregate area of the group rises to 1000 millionths of the Sun's hemisphere. But the leader spot soon decreases and dies out by Aug. 18; the rest of the group is fast declining as it passes round the west limb.

Group 14325. Aug. 10-15. Intermittent. A single small spot.

Group 14326. Aug. 10-11. A pair of small spots on Aug. 10: a single spot on the next day.

Group 14326*. Aug. 12-13. A faint spot.

Group 14327. Aug. 15-19. A single spot on each day.

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

U.T.	Group No.	Measures		Position		Area		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculæ
			°	°	°			
1945								
227·370		·960	289·6					169
G		·958	248·0					322
		·944	234·7					198
		·886	246·9					305
		·876	295·4					106
		·858	225·2					121
	14324	·630	303·9	98·5	+26·0	96	696	
	14327	·811	71·0	9·0	+19·3	8	31	157 c
		·827	122·4					144
Aug. 16			(+16·4)	(63·1)	(+ 6·7)	(104)	(727)	(1522)
228·575		·976	295·8					153
G		·965	255·8					150
		·959	244·2					238
		·928	230·2					213
	14324	·792	297·5	98·3	+25·8	91	514	514 c
	14327	·640	68·0	8·4	+19·1	6	15	
Aug. 17			(+16·8)	(47·2)	(+ 6·8)	(97)	(529)	(1268)
229·430	14324	·876	296·4	96·8	+26·4	81	387	387 c
G	14328	·849	237·9	86·9	-22·6	8	34	86 c
	14327	·494	62·3	8·4	+19·3	3	8	
Aug. 18			(+17·1)	(35·9)	(+ 6·8)	(92)	(429)	(473)
230·278		·844	231·6					98
K	14324	·944	295·2	96·3	+26·0	76	361	559 c
	14328	·922	241·0	85·9	-23·3	10	44	106 c
	14327	·364	52·6	6·9	+19·3	3	16	
	14329	·946	62·0	312·9	+26·6	0	12	118 c
Aug. 19			(+17·4)	(24·7)	(+ 6·9)	(89)	(433)	(881)
231·140		·879	233·1					219
K	14324	·987	295·1	96·0	+25·8	52	242	267 c
		·798	47·8					79
		·873	63·0					108
Aug. 20			(+17·7)	(13·3)	(+ 6·9)	(52)	(242)	(673)
232·453		·950	228·9					223
G		·812	297·5					171
	1230a	·977	241·4	68·4	-26·0	0	21	245 c
		·849	134·2					112
		·929	56·9					146
		·929	71·9					117
Aug. 21			(+18·1)	(356·0)	(+ 6·9)	(0)	(21)	(1014)
233·449		·933	294·6					281
G		·840	244·4					147
		·787	294·2					157
Aug. 22			(+18·4)	(342·8)	(+ 7·0)	(0)	(0)	(585)
1945								
234·347		·965	299·4					164
G		·964	291·5					118
		·880	292·3					249
	14330	·487	156·3	319·0	-19·5	1	5	
	14329	·436	36·5	314·0	+27·1	1	5	
		·898	68·3					134
		·926	79·5					135
		·932	18·6					118
		·943	62·3					95
		·961	28·7					154
Aug. 23			(+18·7)	(330·9)	(+ 7·0)	(2)	(10)	(1167)
235·354		·958	291·2					110
G	1230b	·905	243·6	17·2	-20·3	6	16	49 c
	14330	·445	185·4	320·1	-19·2	3	9	
Aug. 24			(+19·0)	(317·6)	(+ 7·0)	(9)	(25)	(159)
236·398		·862	245·6					112
G		·859	288·3					199
	14330	·519	212·1	320·7	-19·1	3	10	
Aug. 25			(+19·3)	(303·8)	(+ 7·1)	(3)	(10)	(311)
237·372		·942	288·5					262
G								
Aug. 26			(+19·5)	(291·0)	(+ 7·1)	(0)	(0)	(262)
238·343	14331	·987	107·4	200·3	-15·8	0	15	95 c
G								
Aug. 27			(+19·8)	(278·1)	(+ 7·1)	(0)	(15)	(95)
239·339		·861	240·3					152
G		·854	221·6					108
	14331	·905	110·1	203·7	-14·8	12	37	106 c
		·923	122·1					124
Aug. 28			(+20·1)	(265·0)	(+ 7·1)	(12)	(37)	(490)
240·657		·949	204·3					253
W		·923	227·6					191
	14331*	·870	300·5	307·2	+29·9	3	10	143 p
	14331	·741	117·1	204·8	-14·5	15	42	61 c
		·950	62·6					106
Aug. 29			(+20·4)	(247·6)	(+ 7·1)	(18)	(52)	(774)
241·338		·963	232·2					141
C	14331*	·926	298·9	306·8	+29·4	0	12	182 c
	14331	·626	125·7	206·9	-15·2	3	17	
		·879	60·2					229
Aug. 30			(+20·6)	(238·6)	(+ 7·2)	(3)	(29)	(552)

Group 14328. Aug. 18-19. A pair of small spots.
Group 14329. Aug. 19-23. A tiny spot on Aug. 19 and 23 only.
Group 14330. Aug. 23-25. A small spot.
Group 14331. Aug. 27-Sept. 2. One or two small spots.
Group 14331*. Aug. 29-30. A small indefinite spot.

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

U.T.	Group No.	Measures Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umbræ	Area Whole Spots	Area Faculæ
			°	°	°			
1945								
242·487	14331	·472	141·7	205·9	-14·8	4	21	
G	14332	·966	113·7	152·7	-20·6	0	22	161
Aug. 31			(+20·9)	(223·4)	(+ 7·2)	(4)	(43)	(161)
243·459		·960	236·8					109
C		·896	254·0					111
	14333	·867	242·5	265·1	-19·4	9	48	209 c
	14331	·376	165·6	205·1	-14·1	6	42	
	14332	·883	118·3	154·5	-20·8	18	79	208 c
	14334	·981	107·5	134·6	-15·5	50	244	146 c
		·972	118·0					84
Sept. 1			(+21·2)	(210·6)	(+ 7·2)	(83)	(413)	(867)
244·413	14333	·946	246·7	264·7	-19·3	26	96	194 c
G	14331	·384	188·0	201·1	-15·1	0	11	
	14332	·771	124·2	155·2	-20·4	15	58	74 f
	14334	·923	110·4	134·1	-15·7	53	214	173 s
		·940	124·8					231
Sept. 2			(+21·4)	(197·9)	(+ 7·2)	(94)	(379)	(672)
245·348	14333	·994	249·5	266·0	-19·3	18	154	392 c
C	14332	·658	133·1	154·9	-20·4	9	37	
	14334	·828	114·2	134·2	-15·4	43	204	189 s
		·899	127·7					298
		·917	111·1					273
		·984	64·0					301
		·986	103·4					193
Sept. 3			(+21·7)	(185·6)	(+ 7·2)	(70)	(395)	(1646)
246·188	14332	·545	147·3	156·3	-20·4	2	14	
K	14334	·730	119·2	133·3	-15·4	39	220	142 s
	14335	·929	105·7	108·7	-11·7	0	8	178 c
		·955	65·3					271
Sept. 4			(+21·9)	(174·5)	(+ 7·2)	(41)	(242)	(591)
247·344		·769	244·3					180
C	14334	·553	131·5	133·9	-14·9	34	248	
	14335	·809	110·1	108·5	-11·6	0	8	245
	14336	·974	65·3	80·6	+25·6	9	39	582
		·845	64·3					246
Sept. 5			(+22·1)	(159·2)	(+ 7·2)	(43)	(295)	(1253)
248·592		·915	248·9					266
G	14337	·424	181·2	143·3	-17·8	5	18	
	14334	·404	159·2	134·3	-15·0	25	163	
	14336	·907	65·5	77·3	+25·1	55	240	187 c
		·829	57·6					132
Sept. 6			(+22·4)	(142·8)	(+ 7·2)	(85)	(421)	(585)
1945								
249·350		·955	250·5					151
G	14337	·450	204·6	143·9	-17·0	3	10	
	14334	·383	184·0	134·3	-15·1	31	159	
	14336	·829	64·4	77·3	+25·1	34	197	211 c
	14338	·960	120·7	65·3	-26·7	4	19	217 c
Sept. 7			(+22·6)	(132·7)	(+ 7·2)	(72)	(385)	(579)
250·336	14337	·566	223·9	143·9	-17·4	0	5	
C	14334	·454	212·8	134·4	-15·4	30	139	
	14336	·701	61·4	77·1	+25·0	23	128	75 f
	14338	·889	125·4	65·5	-26·9	8	43	249 c
		·942	60·4					129
Sept. 8			(+22·8)	(119·7)	(+ 7·2)	(61)	(315)	(453)
251·315		·813	237·9					261
C	14334	·585	230·3	134·5	-15·5	19	95	
	14336	·553	55·0	77·0	+24·8	16	75	
		·837	129·9					249
		·907	59·4					258
Sept. 9			(+23·0)	(106·8)	(+ 7·2)	(35)	(170)	(768)
252·321		·920	246·1					221
C	14339	·847	237·0	143·8	-23·0	4	24	126 c
	14334	·722	240·8	134·1	-15·1	6	38	
	14336	·420	41·8	75·6	+25·0	7	36	
	14338	·721	139·8	62·0	-27·3	5	25	86 f
		·925	121·7					194
Sept. 10			(+23·2)	(93·5)	(+ 7·2)	(22)	(123)	(627)
253·361		·951	248·8					210
C		·917	234·0					185
		·843	240·9					105
		·792	229·0					180
	14339	·949	242·5	145·9	-23·2	0	14	229 c
	14334	·856	247·6	134·6	-15·0	0	11	123 c
	14336	·318	14·2	74·9	+25·0	5	25	
	14338	·595	156·8	64·7	-26·1	1	8	
		·910	125·6					208
		·927	112·0					150
		·935	70·0					189
Sept. 11			(+23·4)	(79·8)	(+ 7·2)	(6)	(58)	(1579)
254·316		·938	252·2					257
C		·912	240·7					305
		·889	227·7					165
	14338	·590	168·3	59·4	-28·0	8	48	
		·822	65·8					210
		·934	74·0					196
Sept. 12			(+23·6)	(67·2)	(+ 7·2)	(8)	(48)	(1133)

Group 14332.	Aug. 31-Sept. 4.	A pair of small spots of which the leader remains on Sept. 4.
Group 14333.	Sept. 1- 3.	A group with origin near the west limb.
Group 14334.	Sept. 1-11.	A regular spot. Division into two, beginning on Sept. 6, precedes its rapid dissolution.
Group 14335.	Sept. 4- 5.	A very small spot.
Group 14336.	Sept. 5-11.	A stream of small variable components dying out near the central meridian.
Group 14337.	Sept. 6- 8.	One small spot.
Group 14338.	Sept. 7-14.	Small spots.
Group 14339.	Sept. 10-11.	A pair of small spots on Sept 10: a single spot on Sept. 11.

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

U.T.	Group No.	Measures: Dist.	Measures: Pos. Angle	Position: Long.	Position: Lat.	Area: Umbræ	Area: Whole Spots	Area: Faculæ
			°	°	°			
1945								
255·570		·923	248·4					169
G	14338	·587	191·7	58·3	-27·8	3	14	
Sept. 13			(+23·8)	(50·6)	(+ 7·2)	(3)	(14)	(169)
256·318		·942	252·6					176
C		·813	298·7					261
	14338	·632	203·8	57·5	-28·4	0	6	
Sept. 14			(+24·0)	(40·7)	(+ 7·2)	(0)	(6)	(437)
257·359		·951	296·8					210
G		·854	297·8					150
Sept. 15			(+24·2)	(27·0)	(+ 7·2)	(0)	(0)	(360)
258·473		·955	297·4					194
G		·939	223·6					130
		·866	296·4					189
		·860	237·4					98
		·816	224·9					112
	14340	·954	116·2	304·8	-22·3	0	11	165 *c*
Sept. 16			(+24·4)	(12·3)	(+ 7·2)	(0)	(11)	(888)
259·398		·943	293·9					293
G		·914	234·3					371
	14340	·876	121·2	305·9	-22·8	2	23	199 *f*
		·950	63·9					278
Sept. 17			(+24·5)	(0·1)	(+ 7·2)	(2)	(23)	(1141)
260·415		·973	238·5					298
G		·916	226·9					188
	14340	·762	129·0	306·7	-23·2	3	15	105 *f*
		·912	62·7					136
		·960	111·7					120
Sept. 18			(+24·7)	(346·7)	(+ 7·1)	(3)	(15)	(847)
261·379		·935	232·0					110
G		·828	227·2					180
	14340	·657	137·5	305·3	-22·7	14	68	
		·799	115·8					108
		·807	60·2					113
		·917	113·7					246
Sept. 19			(+24·8)	(333·9)	(+ 7·1)	(14)	(68)	(757)
262·526		·947	291·0					151
C		·940	239·0					215
	14340	·535	158·6	306·6	-22·8	13	75	
		·781	121·9					105
		·910	119·3					177
Sept. 20			(+25·0)	(318·8)	(+ 7·1)	(13)	(75)	(648)
1945								
263·365		·962	240·9					137
C	14340	·501	179·3	307·3	-22·8	9	41	
		·806	122·5					124
Sept. 21			(+25·1)	(307·7)	(+ 7·1)	(9)	(41)	(261)
264·435	*1231a*	·465	283·9	321·0	+12·6	0	5	
G	14341	·482	309·6	317·5	+24·3	0	8	
	14340	·555	205·6	308·7	-23·1	5	22	
	14342	·353	354·0	296·0	+27·5	12	80	
	14343	·505	151·5	278·8	-19·5	5	20	
Sept. 22			(+25·2)	(293·6)	(+ 7·0)	(22)	(135)	(0)
265·317	14341	·638	300·2	319·0	+24·3	1	7	
C	14340	·642	219·5	308·2	-23·3	3	8	
	14342	·397	332·9	293·6	+27·5	16	84	
	14343	·420	175·1	279·8	-17·6	75	352	
	14344	·979	62·7	201·9	+28·0	10	53	255 *c*
Sept. 23			(+25·3)	(281·9)	(+ 7·0)	(105)	(504)	(255)
266·635	14341	·809	296·1	317·8	+25·1	0	3	
G	14340	·789	232·6	307·6	-23·5	3	9	
	14342	·576	309·3	294·6	+27·5	29	118	
	14343	·485	208·3	278·6	-18·4	158	945	
	14344	·894	62·0	201·4	+28·1	4	32	157 *f*
		·965	106·8					177
		·974	59·1					195
Sept. 24			(+25·5)	(264·6)	(+ 7·0)	(194)	(1107)	(529)
267·339		·918	294·0					162
G		·866	234·7					244
	14342	·688	300·6	296·2	+25·7	48	287	
	14343	·560	221·8	278·3	-18·2	189	1140	
	14344	·826	60·2	201·0	+28·3	8	35	170 *f*
		·911	107·8					139
		·950	57·0					265
Sept. 25			(+25·6)	(255·3)	(+ 6·9)	(245)	(1462)	(980)
268·461		·932	240·2					158
G	14342	·845	296·9	297·4	+26·4	42	237	252 *c*
	14343	·709	234·8	277·9	-18·6	196	1077	154 *c*
	14344	·690	56·1	200·2	+27·9	0	6	
		·787	113·9					164
		·847	53·2					246
		·951	121·9					214
Sept. 26			(+25·7)	(240·4)	(+ 6·9)	(238)	(1320)	(1188)
269·345		·961	242·6					191
G	14342	·932	295·7	298·2	+26·4	69	400	325 *f*
	14343	·819	241·1	277·9	-18·9	149	840	231 *c*
	14345	·999	113·2	144·6	-22·6	41	365	134 *p*
		·768	51·9					158
		·891	125·4					122
Sept. 27			(+25·8)	(228·8)	(+ 6·8)	(259)	(1605)	(1161)

Group 14340. Sept. 16-24. A persistent small spot with the addition of another on Sept. 19-21.
Group 14341. Sept. 22-24. A tiny spot.
Group 14342. Sept. 22-28. A stream of small changing spots. The leading part condenses into a regular spot by Sept. 26.
Group 14343. Sept. 22-30. A large bi-polar group of rapid growth. On Sept. 27, the follower spot begins to split into two parts, and these are separating as the group passes round the west limb.
Group 14344. Sept. 23-26. A small spot.
Group 14345. Sept. 27-Oct. 9 A stable regular spot.

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

U.T.	Group No.	Measures Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umbræ	Area Whole Spots	Area Faculæ
			°	°	°			
1945								
270·556		·975	286·7					108
G		·807	234·7					188
	14342	·982	295·7	293·5	+26·4	0	10	377 c
	14343	·932	246·7	277·3	-18·8	124	786	551 c
	14346	·419	53·4	191·8	+20·8	12	40	
	14345	·958	115·5	144·2	-22·0	69	363	411 c
	14347	·948	68·0	140·4	+23·0	6	20	277 c
		·854	113·1					160
Sept. 28			(+25·9)	(212·8)	(+ 6·8)	(211)	(1219)	(2072)
271·374		·958	298·1					153
G	14343	·977	249·1	276·2	-18·7	102	551	509 c
	14346	·294	34·9	191·7	+20·5	17	91	
	14345	·892	118·7	144·8	-21·7	78	387	441 c
	14347	·859	66·7	142·9	+23·5	20	114	164 c
		·933	107·5					184
Sept. 29			(+25·9)	(202·0)	(+ 6·8)	(217)	(1143)	(1451)
272·412	14343	·998	250·6	271·8	-18·7	15	118	240 c
G	14348	·588	229·6	216·0	-16·4	6	25	
	14346	·243	351·7	190·4	+20·5	16	99	
	14345	·791	125·0	144·1	-22·1	78	399	218 c
	14347	·721	63·8	143·7	+23·3	92	539	
	14349	·889	118·9	131·5	-21·8	29	158	159 c
	14350	·957	110·4	118·5	-17·3	42	190	257 c
Sept. 30			(+26·0)	(188·3)	(+ 6·7)	(278)	(1528)	(874)
273·447		·899	295·5					122
C	14348	·750	240·9	217·7	-16·5	3	10	
	14346	·340	316·1	189·2	+20·6	16	89	
	14347	·563	57·1	143·8	+23·5	126	641	
	14345	·670	134·4	143·7	-22·1	71	363	176 f
	14349	·779	125·1	131·5	-21·8	71	408	157 c
	14350	·872	114·3	118·5	-17·3	30	175	233 c
		·931	126·7					204
		·959	64·5					158
Oct. 1			(+26·1)	(174·7)	(+ 6·7)	(317)	(1686)	(1050)
274·351		·947	294·1					140
C	14348	·857	243·8	216·6	-18·4	0	16	181 c
	14346	·500	300·8	189·9	+20·7	4	29	
	14345	·566	147·5	143·6	-22·1	82	377	
	14347	·422	46·9	143·2	+22·9	118	723	
	14349	·679	133·3	130·6	-22·1	77	528	
	14350	·765	119·5	118·6	-17·4	27	206	156 c
		·821	134·7					131
		·853	115·7					226
		·926	132·7					170
		·930	62·1					292
Oct. 2			(+26·1)	(162·7)	(+ 6·6)	(308)	(1879)	(1296)

U.T.	Group No.	Measures Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umbræ	Area Whole Spots	Area Faculæ
			°	°	°			
1945								
275·313		·883	246·4					201
C		·748	121·8					110
	14345	·494	167·0	143·1	-22·1	70	433	
	14347	·311	24·2	142·1	+23·0	97	776	
	14349	·564	145·8	130·2	-21·5	93	696	
	14350	·638	128·4	118·5	-17·6	16	129	
		·876	62·2					151
		·967	68·0					116
Oct. 3			(+26·2)	(150·0)	(+ 6·6)	(276)	(2034)	(578)
276·221		·844	295·2					240
K	14345	·486	188·4	142·5	-22·1	87	373	
	14347	·290	352·0	140·6	+23·1	138	830	
	14349	·485	165·8	130·8	-21·5	82	504	
	14350	·518	142·0	118·6	-17·9	15	72	
		·885	63·9					177
Oct. 4			(+26·2)	(138·1)	(+ 6·5)	(322)	(1779)	(417)
277·353		·953	299·3					189
G		·927	290·2					206
		·845	305·3					218
	14345	·565	213·9	142·8	-21·7	82	350	
	14347	·400	318·0	140·0	+23·5	119	862	
	14349	·485	198·2	132·4	-20·9	63	340	
	14350	·415	170·1	118·8	-17·5	10	38	
		·841	65·1					185
		·879	50·7					255
		·962	120·7					140
Oct. 5			(+26·3)	(123·1)	(+ 6·5)	(274)	(1590)	(1193)
278·428		·970	290·9					135
G		·921	303·9					142
	14345	·687	228·9	142·6	-21·5	77	395	
	14347	·559	303·3	139·4	+23·4	109	821	
	14349	·588	217·6	131·5	-21·8	63	344	
	14350	·448	200·1	118·2	-18·4	4	17	
	14351	·294	186·1	110·7	-10·5	5	19	
	14352	·675	64·5	68·1	+21·7	1	7	
		·921	125·6					249
Oct. 6			(+26·3)	(108·9)	(+ 6·4)	(259)	(1603)	(526)
279·328		·981	302·7					217
C		·915	245·7					198
	14345	·798	236·7	142·7	-21·5	81	378	
	14347	·689	297·5	138·6	+23·3	115	887	
	14349	·706	230·9	133·0	-21·2	37	214	
	14350	·540	220·9	118·8	-18·1	5	20	
	14351	·382	223·1	112·4	-10·0	2	14	
	14352	·575	61·7	64·4	+21·2	17	100	
	14353	·976	124·1	26·4	-31·2	31	112	244 c
		·854	133·3					139
Oct. 7			(+26·3)	(97·1)	(+ 6·4)	(288)	(1725)	(798)

Group 14346. Sept. 28-Oct. 2. A short stream of small spots.
Group 14347. Sept. 28-Oct. 10. A stream of normal type with initial rapid development from a small spot first seen near the east limb. The leader remains fairly stable, but the follower begins to break up on Oct. 3 into a cluster.
Group 14348. Sept. 30-Oct. 2. One or two small spots.
Group 14349. Sept. 30-Oct. 10. A stream in which the leader is represented by two spots that coalesce to make a nearly regular spot by Oct. 6. The follower begins to break up on Oct. 3 and fades away fairly rapidly.
Group 14350. Sept. 30-Oct. 9. A double spot slowly dying out.
Group 14351. Oct. 6- 7. A pair of small spots; one remains on Oct. 7.
Group 14352. Oct. 6-13. A stream of small changing spots with a brief maximum on Oct. 8.
Group 14353. Oct. 7-16. A long stream of small spots.

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

U.T.	Group No.	Measures Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umbræ	Area Whole Spots	Area Faculæ
			°	°	°			
1945								
280·383		·929	250·2					155
G		·823	225·4					99
	14345	·905	242·6	142·6	-21·5	67	345	328 c
	14347	·828	294·9	138·2	+24·1	105	677	250 c
	14349	·841	239·8	134·1	-21·1	35	185	412 c
	14350	·708	234·1	120·4	-19·4	3	16	
	14352	·398	46·8	65·0	+21·8	52	217	
	14353	·910	128·2	26·9	-30·8	32	147	348 c
		·938	120·3					102
Oct. 8			(+26·4)	(83·1)	(+ 6·3)	(294)	(1587)	(1694)
281·459		·974	246·6					106
G		·905	235·7					186
	14345	·975	245·9	142·2	-21·8	93	294	
	14347	·938	293·3	139·3	+24·0	113	564	244 c
	14349	·938	244·6	134·1	-21·2	39	190	228 f
	14350	·807	240·9	117·0	-19·0	0	13	142 c
	14352	·289	15·7	64·2	+22·2	31	180	
	14353	·815	135·4	27·4	-30·8	29	144	166 c
	14354	·790	124·0	24·3	-21·8	0	6	71 c
		·937	124·6					125
Oct. 9			(+26·4)	(69·0)	(+ 6·2)	(305)	(1391)	(1268)
282·388		·960	242·2					202
G		·856	245·9					373
	14347	·977	293·2	135·7	+24·0	41	205	362 c
	14349	·984	246·3	132·7	-21·9	37	208	237 c
	14352	·295	337·8	63·6	+21·9	12	78	
	14353	·726	144·7	27·6	-30·8	30	149	478 c
	14354	·683	132·8	24·0	-22·4	6	27	
		·910	113·4					93
Oct. 10			(+26·4)	(56·7)	(+ 6·2)	(126)	(667)	(1745)
283·421		·950	250·6					281
G		·829	296·2					109
	14352	·448	308·2	65·3	+21·7	7	42	
	14353	·642	159·8	28·2	-31·0	44	181	
Oct. 11			(+26·4)	(43·1)	(+ 6·1)	(51)	(223)	(390)
		.964	359.2					41
		.904	16.7					355
284·494		·924	294·6					129
G	14352	·641	296·6	66·7	+21·3	3	14	
	14353	·606	177·2	26·9	-31·1	23	117	
		·963	63·0					210
Oct. 12			(+26·4)	(28·9)	(+ 6·0)	(26)	(131)	~~(330)~~
								435
285·384		·929	304·6					149
G		·912	294·4					167
	14352	·769	293·3	66·5	+21·7	2	14	
	14355	·632	233·4	49·1	-17·0	6	26	
	14353	·620	194·2	27·4	-30·9	16	82	
	14356	·976	64·0	298·6	+26·6	61	200	521 c
Oct. 13			(+26·4)	(17·2)	(+ 6·0)	(85)	(322)	(837)

U.T.	Group No.	Measures Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umbræ	Area Whole Spots	Area Faculæ
			°	°	°			
1945								
286·591		·961	229·9					119
G		·860	293·3					291
		·835	227·6					124
	14355	·809	244·7	50·7	-16·4	12	60	91 c
	14353	·706	215·0	29·0	-30·1	9	50	
	14356	·906	62·7	296·6	+27·1	47	244	1127 c
	14357	·996	109·1	279·0	-18·3	22	138	184 c
Oct. 14			(+26·3)	(1·2)	(+ 5·9)	(90)	(492)	(1936)
287·417		·951	291·3					230
G		·919	233·0					181
		·766	210·4					139
	14355	·898	248·2	50·7	-16·6	7	33	132 c
	14353	·796	225·8	31·1	-29·3	9	35	194 c
	14356	·829	61·0	296·1	+27·1	52	278	845 c
	14357	·968	111·7	278·3	-19·3	43	355	253 c
		·786	52·1					71
Oct. 15			(+26·3)	(350·4)	(+ 5·8)	(111)	(701)	(2045)
288·428		·980	291·8					175
G		·822	222·1					265
	14355	·969	249·9	49·6	-17·8	0	28	170 c
	14353	·882	234·6	30·9	-27·4	2	9	287 c
	14356	·701	56·6	296·1	+27·0	56	266	344 c
	14357	·897	114·9	277·7	-19·3	49	264	251 c
	14358	·984	116·6	261·4	-24·8	42	274	268 c
Oct. 16			(+26·3)	(337·0)	(+ 5·7)	(149)	(841)	(1760)
289·400		·961	238·8					266
G		·901	228·6					264
		·863	241·1					152
	14356	·553	48·1	296·9	+26·7	45	216	143 f
	14357	·792	119·9	277·7	-19·3	47	305	230 c
	14358	·945	119·5	258·8	-25·4	71	485	259 c
		·951	106·0					248
Oct. 17			(+26·2)	(324·2)	(+ 5·7)	(163)	(1006)	(1562)
290·372		·965	233·0					271
G		·938	216·0					142
	14356	·432	32·4	296·5	+26·7	34	191	
	14357	·661	127·5	277·8	-19·0	46	279	
	14358	·866	123·6	258·6	-25·3	85	569	286 c
	14359	·965	56·4	236·2	+33·8	4	21	85 f
		·948	131·2					110
Oct. 18			(+26·2)	(311·4)	(+ 5·6)	(169)	(1060)	(894)

Group 14354. Oct. 9-10. A dot on Oct. 9: a pair of small spots on Oct. 10.
Group 14355. Oct. 13-16. A pair of small spots.
Group 14356. Oct. 13-24. Return of Group 14342. A regular spot followed by a small, very distant companion. The umbra of the regular spot begins to break up on Oct. 17 after which the whole spot dies out rather rapidly.
Group 14357. Oct. 14-25. Return of Group 14343. A spot with a double umbra, preceded by a small cluster which dies out by Oct. 23. Fresh activity in this area is represented by Group 14375.
Group 14358. Oct. 16-28. A long stream of small components of which the follower is the largest, becoming a regular spot by Oct. 20. This remains fairly stable to the west limb.
Group 14359. Oct. 18-23. Intermittent. A small spot on Oct. 18-20. After a break of two days, a tiny spot appears near the original place.

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

U.T.	Group No.	Measures: Dist.	Measures: Pos. Angle	Position: Long.	Position: Lat.	Area: Umbræ	Area: Whole Spots	Area: Faculæ
			°	°	°			
1945								
291·380		·986	234·1					193
G		·908	232·7					110
	14360	·797	223·5	337·8	-31·1	3	18	71 c
	14356	·369	7·4	295·1	+26·9	29	142	
	14361	·207	36·7	290·8	+15·0	4	18	
	14357	·522	140·9	277·9	-18·7	37	241	
	14358	·744	130·7	259·9	-24·6	108	629	111 c
	14362	·761	56·8	251·9	+28·4	3	10	
	14359	·910	54·6	234·4	+34·3	2	16	139 f
	14363	·932	67·3	229·2	+23·1	5	18	76 c
Oct. 19			(+26·1)	(298·1)	(+ 5·5)	(191)	(1092)	(700)
292·386	14360	·884	230·4	337·3	-31·1	10	49	131 c
G	14356	·412	333·9	296·5	+26·9	18	109	
	14361	·205	337·3	289·5	+16·2	1	7	
	14357	·426	162·0	276·9	-18·5	27	177	
	14358	·649	140·1	257·6	-25·0	103	621	
	14362	·609	48·4	253·7	+28·4	4	17	
	14359	·809	50·6	235·6	+34·5	2	8	200 f
	14363	·842	65·7	228·4	+23·3	4	35	197 c
Oct. 20			(+26·0)	(284·8)	(+ 5·4)	(169)	(1023)	(528)
293·336	14360	·965	235·6	340·5	-31·1	11	56	231 f
C	14356	·526	316·1	296·4	+27·0	12	101	
	14357	·410	190·0	276·6	-18·4	25	159	
	14358	·548	158·0	259·2	-25·3	111	722	
	14362	·496	37·4	252·4	+28·1	3	16	
		·966	62·0					293
Oct. 21			(+26·0)	(272·3)	(+ 5·3)	(162)	(1054)	(524)
294·383	14356	·678	305·4	296·7	+27·2	15	103	103 p
G	14357	·489	216·0	276·0	-18·2	17	111	
	14358	·503	176·7	256·7	-24·8	99	660	
	14362	·414	17·9	250·2	+28·3	6	28	
		·906	60·8					220
		·929	132·9					125
Oct. 22			(+25·9)	(258·5)	(+ 5·2)	(137)	(902)	(448)
295·437	14356	·792	300·4	294·4	+27·0	8	51	175 p
G	14357	·612	230·6	274·3	-18·2	6	36	
	14358	·538	197·5	254·9	-25·6	78	496	
	14362	·400	344·4	251·5	+27·7	22	118	
	14359	·559	27·4	226·5	+34·5	1	5	
		·818	55·8					123
		·940	114·7					133
		·960	57·9					187
Oct. 23			(+25·8)	(244·6)	(+ 5·2)	(115)	(706)	(618)
1945								
296·473		·844	286·7					86
G		·803	303·5					161
	1232a	·962	245·9	301·3	-21·5	20	92	155 c
	14356	·914	296·7	296·3	+26·4	5	18	257 c
	14357	·755	240·4	274·4	-18·1	3	14	138 c
	14358	·621	215·1	254·2	-25·7	83	480	
	14362	·507	322·3	251·5	+28·4	34	169	
	14364	·840	143·3	191·2	-38·3	4	12	111 c
	1232b	·921	118·5	168·9	-23·7	0	9	139 c
		·910	54·9					157
Oct. 24			(+25·7)	(230·9)	(+ 5·1)	(149)	(794)	(1204)
297·368		·972	295·3					320
C		·957	285·4					116
		·938	247·1					177
		·894	299·8					218
		·825	310·3					206
	14357	·861	245·6	274·5	-18·0	0	9	152 c
	14358	·700	224·4	251·9	-25·8	105	487	
	14362	·624	310·8	251·4	+28·2	36	196	
	14364	·750	153·4	194·2	-37·4	2	10	
	1232c	·731	124·9	179·4	-20·8	0	3	
	14365	·969	69·2	142·9	+21·3	26	149	584 c
	14366	·995	113·6	137·8	-22·8	19	125	159 p
		·832	123·2					105
Oct. 25			(+25·6)	(219·1)	(+ 5·0)	(188)	(979)	(2037)
298·439		·986	298·6					258
G		·947	251·2					243
		·936	307·0					148
	14358	·820	233·4	251·9	-25·9	111	582	451 c
	14362	·759	304·4	250·4	+28·8	55	269	209 c
	14364	·718	163·2	189·7	-38·5	4	15	
	14365	·918	68·5	138·5	+21·7	4	50	584 c
	14366	·952	115·6	136·9	-22·5	21	121	277 s
Oct. 26			(+25·4)	(205·0)	(+ 4·9)	(195)	(1037)	(2170)
299·396		·984	251·9					132
G		·962	303·7					310
	14358	·911	239·0	252·2	-25·6	99	581	605 c
	14362	·867	301·1	250·4	+29·1	112	480	222 c
	14367	·257	341·7	197·3	+18·8	6	29	
	14364	·685	183·7	195·6	-38·2	3	12	
	14365	·799	66·1	140·7	+21·9	11	78	601 c
	14366	·876	119·3	136·7	-22·6	32	140	202 s
	14368	·982	106·9	115·4	-15·5	28	205	222 c
		·956	119·1					302
Oct. 27			(+25·3)	(192·4)	(+ 4·8)	(291)	(1525)	(2596)

Group 14360. Oct. 19-21. Small spots.
Group 14361. Oct. 19-20. A pair of small spots on Oct. 19; a single spot on Oct. 20.
Group 14362. Oct. 19-29. Some small spots expanding on Oct. 22 into a short stream. The leading part has grown into a composite spot by the time it passes round the west limb.
Group 14363. Oct. 19-20. A pair of small spots.
Group 14364. Oct. 24-Nov. 2. One or two small spots increasing in number on Oct. 30 to form a longish stream in fairly high southern latitude.
Group 14365. Oct. 25-Nov. 5. Return of Group 14347. A scattered cluster of small changing spots slowly fading out.
Group 14366. Oct. 25-Nov. 6. Return of Group 14345. A regular spot of unusual stability.
Group 14367. Oct. 27-Nov. 2. A short stream forming suddenly, just past the central meridian.
Group 14368. Oct. 27-Nov. 6. A stream in which the leader, a regular spot, is the largest component and the last to die out.

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

U.T.	Group No.	Measures: Dist.	Measures: Pos. Angle	Position: Long.	Position: Lat.	Area: Umbræ	Area: Whole Spots	Area: Faculæ
			°	°	°			
1945								
300·521		·829	295·2					104
C	14362	·954	299·0	249·8	+29·0	94	690	296 c
	14358	·969	241·4	248·7	-26·2	52	297	323 c
	14367	·421	306·3	198·4	+18·7	23	149	
	14364	·697	195·7	191·2	-37·4	12	59	
	14365	·663	61·1	138·8	+22·3	15	78	
	14366	·755	126·0	136·2	-22·8	29	154	176 c
	14368	·896	109·4	116·7	-15·0	56	252	228 c
		·875	125·4					171
Oct. 28			(+25·2)	(177·5)	(+ 4·7)	(281)	(1679)	(1298)
301·600	14362	·992	299·0	247·1	+29·3	34	153	194 c
G	*1232d*	·935	244·8	228·5	-21·5	0	6	65 c
	14367	·616	294·8	199·3	+18·7	59	353	
	14364	·758	210·3	191·7	-36·6	10	51	134 c
	14365	·505	52·4	137·9	+22·0	17	85	
	14366	·618	136·8	136·1	-22·6	28	130	
	14368	·761	114·4	117·6	-15·1	45	196	182 c
		·778	134·3					122
		·884	122·1					117
		·945	132·4					100
Oct. 29			(+25·0)	(163·3)	(+ 4·6)	(193)	(974)	(914)
302·380		·949	293·7					173
G		·941	308·4					161
	14367	·728	291·7	198·4	+18·8	68	500	150 p
	14364	·815	216·3	190·3	-37·4	24	108	215 c
	14365	·380	37·5	138·6	+21·8	7	47	
	14366	·533	149·6	136·0	-23·0	25	137	
	14368	·643	120·1	118·0	-15·1	37	209	
		·763	142·7					119
		·831	122·9					101
		·932	128·6					209
Oct. 30			(+24·9)	(153·0)	(+ 4·5)	(161)	(1001)	(1128)
303·403		·961	304·4					124
G		·833	301·3					267
	14367	·859	289·7	198·2	+19·1	75	482	259 c
	14364	·884	222·7	188·5	-37·6	18	111	302 c
	14365	·305	3·5	138·4	+22·0	5	28	
	14366	·466	173·1	136·0	-23·0	31	146	
	14368	·467	133·9	119·2	-14·7	31	155	
	14369	·992	112·2	59·2	-21·3	27	134	151 sf
Oct. 31			(+24·7)	(139·5)	(+ 4·4)	(187)	(1056)	(1103)
304·408		·925	301·1					148
G	14367	·946	288·6	197·5	+19·0	71	399	277 c
	14364	·947	227·6	188·3	-37·7	25	109	453 c
	14365	·373	322·6	140·3	+21·3	2	19	
	14366	·484	198·1	135·7	-23·0	21	117	
	14368	·342	161·4	119·9	-14·6	24	152	
	14369	·946	114·2	58·8	-21·2	20	97	170 c
		·872	132·6					129
		·904	59·8					204
		·912	69·6					186
Nov. 1			(+24·6)	(126·3)	(+ 4·3)	(163)	(893)	(1567)
1945								
305·302		·963	299·8					201
C	14367	·983	289·2	194·5	+19·6	35	298	186 c
	14364	·978	229·4	185·3	-38·2	28	152	444 c
	14370	·899	232·8	170·6	-30·6	2	9	107 c
	14365	·517	306·9	140·8	+21·8	0	5	
	14366	·557	216·0	135·2	-22·8	28	125	
	14368	·332	200·6	121·4	-13·8	22	117	
	14369	·868	117·4	59·0	-21·1	21	110	250 f
		·840	58·8					136
		·877	68·2					113
Nov. 2			(+24·4)	(114·5)	(+ 4·2)	(136)	(816)	(1437)
306·412		·913	243·2					191
G		·889	309·2					147
	14370	·972	237·2	171·1	-30·5	0	8	119 c
	14366	·692	230·3	134·9	-22·8	26	137	
	14368	·468	230·2	121·4	-13·6	27	116	
	14369	·733	124·0	59·3	-21·0	18	99	76 f
	14371	·974	121·4	27·6	-29·3	0	15	237 c
		·865	120·0					178
		·910	47·2					118
		·921	129·1					196
		·970	80·8					97
Nov. 3			(+24·2)	(99·8)	(+ 4·1)	(71)	(375)	(1359)
307·318		·949	245·7					193
C	14365	·780	295·4	137·2	+22·1	0	10	378 n
	14366	·801	237·6	134·9	-22·6	17	127	192 s
	14368	·609	239·8	120·7	-14·4	13	98	
	14369	·612	133·0	59·3	-21·1	16	101	
	1232e	·920	80·2	20·9	+10·6	3	11	163 c
		·912	123·8					226
Nov. 4			(+24·0)	(87·9)	(+ 4·0)	(49)	(347)	(1152)
308·389		·826	222·2					77
G		·820	232·4					118
	14365	·901	293·4	137·2	+22·7	0	5	387 c
	14366	·908	242·4	134·5	-23·0	21	114	275 c
	14368	·762	247·6	120·2	-14·2	10	47	140 c
	14369	·480	150·8	59·3	-20·9	13	78	
	14371	·829	130·0	27·1	-29·5	0	6	176 c
		·919	121·6					116
		·948	131·1					119
Nov. 5			(+23·8)	(73·8)	(+ 3·9)	(44)	(250)	(1408)
309·311		·938	297·1					409
C		·921	233·6					243
		·825	242·5					196
	14366	·968	244·9	133·8	-23·1	16	108	262 s
	14368	·886	251·9	121·6	-14·1	6	41	125 c
	14369	·425	173·8	58·8	-21·1	9	65	
	14371	·752	131·5	22·6	-26·9	16	87	153 c
		·848	127·9					84
		·945	133·2					166
Nov. 6			(+23·7)	(61·6)	(+ 3·8)	(47)	(301)	(1638)

Group 14369. Oct. 31-Nov. 11. A small regular spot slowly decreasing.
Group 14370. Nov. 2- 3. A tiny spot.
Group 14371. Nov. 3- 7. A single small spot except on Nov. 6, when a small cluster is seen.

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

U.T.	Group No.	Measures: Dist.	Measures: Pos. Angle	Position: Long.	Position: Lat.	Area: Umbræ	Area: Whole Spots	Area: Faculæ
			°	°	°			
1945								
310·335		·967	239·7					195
C		·966	297·4					169
		·944	255·1					142
		·914	247·4					206
		·862	238·4					120
	14369	·450	203·0	58·9	-20·7	12	43	
	14371	·607	143·8	24·7	-25·9	4	32	
		·754	139·2					72
		·895	137·2					122
Nov. 7			(+23·4)	(48·1)	(+ 3·7)	(16)	(75)	(1026)
311·296		·974	248·6					239
C	*1232f*	·730	239·0	76·9	-19·3	0	8	
	1232g	·519	232·8	60·7	-15·0	1	8	
	14369	·557	221·6	58·8	-21·2	11	53	
	14371	·529	160·8	24·4	-26·3	2	18	
		·941	125·2					155
Nov. 8			(+23·2)	(35·5)	(+ 3·6)	(14)	(87)	(394)
312·509		·873	245·3					134
G	14369	·715	235·7	58·6	-21·0	11	47	
	14372	·986	112·2	301·5	-21·2	26	166	124 *c*
		·829	132·1					82
		·938	130·8					142
		·950	64·5					190
Nov. 9			(+22·9)	(19·5)	(+ 3·4)	(37)	(213)	(672)
313·392		·956	248·0					185
G	14369	·825	241·5	58·6	-21·0	6	27	117 *c*
	14372	·943	114·0	300·4	-21·3	39	221	269 *c*
	14373	·962	62·1	294·3	+27·7	0	7	432 *c*
		·869	134·3					110
Nov. 10			(+22·7)	(7·8)	(+ 3·3)	(45)	(255)	(1113)
314·448		·835	240·3					94
G	14369	·928	245·6	58·7	-21·2	5	29	94 *c*
	14374	·440	315·7	13·1	+21·3	6	34	
	14372	·859	117·1	299·0	-21·2	40	268	299 *c*
	14373	·914	59·9	289·8	+28·7	0	5	292 *p*
	14375	·992	109·3	272·8	-18·7	15	84	115 *c*
		·956	62·7					213
Nov. 11			(+22·5)	(353·9)	(+ 3·2)	(66)	(420)	(1107)
315·494		·972	244·6					173
G		·942	236·6					113
		·802	230·1					145
	14374	·588	301·6	12·3	+20·5	12	80	
	14372	·732	123·0	299·1	-21·1	35	213	181 *p*
	14375	·946	110·8	271·5	-18·5	20	109	166 *c*
		·779	55·8					121
1945								
		·878	117·9					86
		·943	60·2					234
		·971	119·6					98
Nov. 12			(+22·2)	(340·1)	(+ 3·1)	(67)	(402)	(1317)
316·381		·972	238·6					115
G		·883	234·2					255
	14374	·730	295·2	13·0	+20·2	19	108	
	14376	·510	118·5	301·3	-11·4	8	41	
	14372	·614	131·2	298·8	-21·2	38	207	
	14375	·866	113·9	271·8	-18·9	28	148	182 *f*
	14377	·978	61·5	250·7	+28·5	0	21	230 *c*
	14378	·987	115·5	250·4	-24·5	6	33	115 *c*
		·820	58·3					210
		·928	53·4					181
		·935	121·0					153
Nov. 13			(+22·0)	(328·4)	(+ 3·0)	(99)	(558)	(1441)
317·469		·960	239·6					289
G		·949	282·1					110
		·881	232·0					87
		·837	222·9					84
	14374	·870	291·7	13·3	+20·2	31	173	274 *c*
	14376	·314	145·7	303·7	-12·1	2	8	
	14372	·477	148·3	298·6	-21·0	30	164	
	14375	·733	118·3	271·5	-18·1	31	144	
	14377	·921	59·7	249·0	+28·9	0	11	374 *f*
	14378	·935	117·1	248·6	-24·0	16	63	381 *f*
		·743	50·4					146
		·824	123·7					289
		·894	50·9					158
Nov. 14			(+21·7)	(314·1)	(+ 2·9)	(110)	(563)	(2192)
318·294		·978	243·9					99
C		·883	224·9					167
	14374	·938	290·4	12·4	+20·1	27	214	283 *c*
	14376	·260	180·3	303·3	-12·2	2	12	
	14372	·409	169·3	298·6	-20·8	23	122	
	14375	·611	124·2	271·3	-17·6	25	130	
	14378	·854	120·5	249·8	-24·0	9	60	221 *c*
	14377	·848	57·2	248·8	+28·9	0	8	232 *c*
		·958	53·1					255
Nov. 15			(+21·5)	(303·2)	(+ 2·8)	(86)	(546)	(1257)
319·494		·952	230·6					203
G	14376	·386	229·9	304·9	-11·8	0	5	
	14372	·439	204·7	298·7	-20·9	14	86	
	14379	·449	177·1	286·0	-23·9	10	47	
	14375	·442	143·1	271·3	-18·1	10	39	
	14378	·715	128·1	249·5	-24·0	8	35	
Nov. 16			(+21·1)	(287·4)	(+ 2·6)	(42)	(212)	(203)

Group 14372. Nov. 9-20. Two small regular spots, the follower dying out by Nov. 17. By the next day, the leader has broken up and so fades out.
Group 14373. Nov. 10-11. A dot on each day differing in longitude by 3½°.
Group 14374. Nov. 11-15. A cluster of small spots with slow increase forming past the central meridian.
Group 14375. Nov. 11-19. A spot with one or two companions on Nov. 14-15.
Group 14376. Nov. 13-16. A pair of small spots on Nov. 13 from which one survives on the following three days.
Group 14377. Nov. 13-18. Return of Group 14362. A small spot.
Group 14378. Nov. 13-21. Return of Group 14358. A pair of small spots. Others appear on Nov. 17 and form a short-lived cluster.
Group 14379. Nov. 16-22. Small spots forming on the central meridian. On Nov. 20-21, the area rises sharply with the growth of a new double spot.

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

U.T.	Group No.	Measures: Dist.	Measures: Pos. Angle	Position: Long.	Position: Lat.	Area: Umbræ	Area: Whole Spots	Area: Faculæ
			°	°	°			
1945								
320·391		·961	249·4					205
C		·880	229·9					136
	14372	·552	224·7	299·9	-20·7	13	68	
	14379	·472	197·9	284·6	-24·2	11	51	
	14375	·359	168·3	271·1	-18·0	6	21	
	14378	·570	137·9	251·1	-22·6	27	94	
		·786	43·3					299
		·945	71·1					399
		·953	57·3					207
Nov. 17			(+20·9)	(275·5)	(+ 2·5)	(57)	(234)	(1246)
321·320		·927	234·6					144
C	14372	·688	235·9	300·7	-20·7	14	63	
	14379	·575	220·2	287·1	-23·8	9	53	
	14375	·376	200·0	271·0	-18·2	3	15	
	14378	·460	155·9	251·6	-22·4	16	80	
	14377	·544	27·6	248·3	+28·1	0	4	
		·840	67·8					174
		·869	52·8					231
		·935	69·8					268
		·955	127·2					168
Nov. 18			(+20·6)	(263·3)	(+ 2·4)	(42)	(215)	(985)
322·293		·951	290·5					174
C		·930	229·9					127
		·828	304·3					209
	14372	·802	241·4	299·3	-21·0	7	28	97 *c*
	14379	·711	232·7	288·5	-23·6	6	30	
	1233a	·676	204·7	270·7	-35·6	0	4	
	14375	·484	222·6	270·6	-18·6	2	9	
	14378	·440	178·3	249·7	-23·7	6	31	
	14380	·983	128·4	175·7	-37·1	5	21	190 *p*
		·733	64·3					95
		·842	68·3					158
		·886	132·0					124
Nov. 19			(+20·3)	(250·5)	(+ 2·3)	(26)	(123)	(1174)
323·428		·938	255·2					126
C		·909	300·5					250
		·821	305·8					143
	1233b	·984	293·0	314·9	+23·0	11	79	113 *c*
	14372	·933	245·2	301·4	-22·1	0	5	213 *c*
	14379	·830	240·1	286·7	-23·0	22	108	240 *c*
	14378	·504	198·0	245·5	-26·4	8	49	
	14380	·924	131·8	176·2	-36·9	5	22	286 *c*
		·797	138·3					103
		·849	53·8					88
Nov. 20			(+20·0)	(235·5)	(+ 2·1)	(46)	(263)	(1562)
1945								
324·287		·968	299·8					267
C		·904	301·3					109
		·808	307·6					255
		·772	236·9					213
	14379	·918	243·5	287·3	-23·2	55	474	460 *c*
	14378	·566	212·8	244·1	-26·4	1	6	
	14381	·547	30·7	205·5	+29·8	5	28	
	14380	·857	136·1	176·5	-36·7	4	16	301 *c*
		·976	63·4					189
Nov. 21			(+19·7)	(224·2)	(+ 2·0)	(65)	(524)	(1794)
325·299		·910	302·2					255
C		·889	243·1					118
		·839	234·4					144
		·776	310·8					113
	14379	·981	246·0	287·5	-23·0	101	444	363 *c*
	14381	·467	10·0	205·6	+29·1	12	49	
	14382	·825	131·6	164·5	-31·8	24	105	109 *c*
		·811	143·4					258
		·945	61·4					332
Nov. 22			(+19·4)	(210·9)	(+ 1·9)	(137)	(598)	(1692)
326·276		·965	301·5					218
C		·964	247·0					240
		·932	237·4					205
		·857	307·1					181
		·791	233·6					442
	14381	·483	345·0	206·2	+29·5	10	54	
	14383	·445	4·4	195·8	+28·0	11	50	
	14382	·720	139·6	164·9	-31·6	15	75	
	14384	·950	114·5	128·9	-22·5	6	33	189 *c*
		·755	152·2					223
		·912	61·6					737
		·964	105·3					233
Nov. 23			(+19·0)	(198·0)	(+ 1·8)	(42)	(212)	(2668)
327·406		·932	243·1					385
G		·924	302·3					295
		·869	231·9					349
	14385	·540	305·2	210·9	+19·6	10	69	
	14381	·581	322·5	206·8	+28·9	29	140	
	14383	·479	337·8	194·9	+27·9	45	231	
	14382	·592	156·1	166·9	-31·0	8	39	
	14384	·856	117·4	127·9	-22·3	4	21	120 *c*
		·757	49·3					119
		·870	59·7					517
		·914	108·1					218
Nov. 24			(+18·7)	(183·1)	(+ 1·7)	(96)	(500)	(2003)

Group 14380. Nov. 19-21. Probable return of Group 14364. A small spot.
Group 14381. Nov. 21-28. A cluster of small spots which by Nov. 25 becomes a short stream led by a regular spot.
Group 14382. Nov. 22-26. A pair of small spots on Nov. 22-23: a single spot afterwards.
Group 14383. Nov. 23-29. A short stream forming near the central meridian. The follower soon dies out.
Group 14384. Nov. 23-24. Return of Group 14366: third appearance. A single spot.
Group 14385. Nov. 24-26. A pair of small spots; one component remains on Nov. 26.

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

U.T.	Group No.	Measures Dist.	Measures Pos. Angle	Position Long.	Position Lat.	Area Umbræ	Area Whole Spots	Area Faculæ
			°	°	°			
1945								
328·436		·961	299·9					223
G		·954	239·5					446
		·916	310·2					214
	14385	·722	295·9	212·8	+19·4	8	30	
	14381	·717	311·1	207·6	+29·2	34	188	
	14383	·584	320·9	194·1	+28·2	52	322	
	14382	·541	176·3	167·2	-31·1	2	13	
		·794	56·1					165
		·831	125·7					155
		·836	113·0					321
		·957	71·9					119
Nov. 25			(+18·3)	(169·5)	(+ 1·5)	(96)	(553)	(1643)
329·293		·967	240·0					305
C		·946	306·0					185
		·933	248·7					149
	14385	·800	294·2	209·0	+20·0	3	14	166 *p*
	14381	·816	305·6	207·5	+29·2	41	217	148 *c*
	14383	·689	311·2	194·0	+28·0	53	267	
	14382	·555	193·0	166·6	-31·2	0	6	
	14386	·142	355·2	158·9	+ 9·5	11	44	
		·861	115·2					206
		·894	127·7					140
Nov. 26			(+18·0)	(158·2)	(+ 1·4)	(108)	(548)	(1299)
330·405		·943	291·1					210
G		·856	225·4					130
		·852	245·4					93
		·815	292·9					234
	14381	·924	301·2	208·2	+29·1	28	155	155 *c*
	14383	·826	303·5	194·6	+27·9	29	169	150 *c*
	14387	·748	211·9	173·7	-38·2	3	13	80 *n*
	14386	·316	298·1	160·0	+ 9·8	24	122	
	14389	·976	104·9	67·2	-14·2	0	20	149 *c*
		·762	123·6					134
		·918	113·0					122
Nov. 27			(+17·6)	(143·6)	(+ 1·3)	(84)	(479)	(1457)
331·302		·968	289·9					198
C		·889	231·2					125
		·885	291·1					202
	14381	·982	299·4	209·7	+29·1	16	98	246 *f*
	14383	·916	299·4	195·3	+27·2	26	173	238 *c*
	14387	·810	218·5	171·5	-38·3	0	24	131 *c*
	14386	·507	287·2	161·0	+ 9·6	20	121	
	14388	·650	139·5	103·1	-28·4	6	20	
	14389	·900	106·3	69·0	-14·1	12	45	108 *c*
		·973	77·4					81
Nov. 28			(+17·3)	(131·7)	(+ 1·2)	(80)	(481)	(1329)
332·293		·970	291·4					190
C		·950	234·3					125
		·801	227·6					113
		·792	215·7					163
1945								
333·601	14383	·978	298·0	195·5	+27·6	33	173	401 *c*
G	14387	·863	224·7	169·8	-38·2	0	17	190 *c*
	14386	·690	283·3	161·5	+ 9·8	14	74	
	14389	·780	109·3	69·5	-14·2	21	113	117 *c*
		·843	137·2					131
		·919	78·1					118
		·938	116·1					120
Nov. 29			(+16·9)	(118·7)	(+ 1·0)	(68)	(377)	(1668)
		·953	291·9					142
		·903	234·1					138
		·869	222·0					196
	14387	·972	228·8	172·4	-39·4	0	15	249 *c*
	14390	·897	300·1	161·8	+27·1	20	83	129 *c*
	14386	·863	281·8	160·4	+10·6	8	47	154 *c*
	14389	·559	117·3	70·7	-14·0	68	393	
		·859	58·5					131
Nov. 30			(+16·4)	(101·4)	(+ 0·9)	(96)	(538)	(1139)
334·413		·957	236·7					204
G		·949	228·6					130
		·917	221·5					122
		·844	305·8					233
	14386	·962	280·9	164·5	+10·7	0	13	205 *c*
	14390	·957	298·2	161·8	+27·1	45	242	217 *c*
	14388	·536	201·2	103·5	-29·1	0	10	
	14389	·422	129·2	71·0	-14·7	60	360	
		·816	142·0					122
		·948	122·1					186
		·966	69·0					175
Dec. 1			(+16·1)	(90·7)	(+ 0·8)	(105)	(625)	(1594)
335·308		·955	228·5					295
C		·892	301·8					156
		·842	237·6					240
		·804	310·4					211
	14390	·983	298·2	157·0	+27·8	0	21	206 *c*
	14388	·602	215·8	102·4	-28·5	5	20	
	1233c	·523	217·9	99·3	-23·6	2	8	
	14389	·303	153·5	70·9	-15·0	57	340	
		·698	126·0					260
		·914	66·6					318
Dec. 2			(+15·8)	(78·9)	(+ 0·7)	(64)	(389)	(1686)
336·408		·972	298·5					146
G		·967	241·3					178
		·929	307·6					87
		·856	242·5					252
		·849	297·8					139
	14389	·292	199·0	70·0	-15·5	67	353	
	14391	·996	111·7	340·6	-21·5	0	21	
		·811	62·9					195
		·850	129·5					195
Dec. 3			(+15·3)	(64·4)	(+ 0·5)	(67)	(374)	(1192)

Group 14386. Nov. 26-Dec. 1. A small stream of rather feeble development.
Group 14387. Nov. 27-30. One or two small spots.
Group 14388. Nov. 28-Dec. 2. A pair of small spots not seen on Nov. 29 and 30.
Group 14389. Nov. 27-Dec. 9. A pair of small spots developing into a short stream, consisting of a nearly regular spot followed by a grouping of small spots. On Dec. 4, the leader begins to break up, and the whole group disappears as a cluster.
Group 14390. Nov. 30-Dec. 2. A group forming near the west limb.
Group 14391. Dec. 3- 6. A pair of small spots.

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

U.T.	Group No.	Measures: Dist.	Measures: Pos. Angle	Position: Long.	Position: Lat.	Area: Umbræ	Area: Whole Spots	Area: Faculæ
			°	°	°			
1945								
337·297		·963	304·4					108
C		·961	241·2					251
		·950	291·6					93
		·943	257·4					124
		·913	297·8					132
		·885	247·4					146
		·832	235·0					226
	14389	·392	224·6	69·2	−15·8	82	480	
	14391	·935	113·7	345·7	−21·8	11	46	121 c
Dec. 4			(+15·0)	(52·7)	(+ 0·4)	(93)	(526)	(1201)
338·456		·963	249·9					178
G		·919	240·5					232
	14389	·585	241·3	69·6	−16·0	65	436	
	14391	·825	117·8	345·6	−22·4	12	61	112 c
		·932	122·1					177
Dec. 5			(+14·5)	(37·5)	(+ 0·3)	(77)	(497)	(699)
339·294		·945	241·3					284
C	14389	·706	246·8	68·7	−16·0	48	378	130 c
	14391	·725	121·6	344·8	−22·1	9	42	76 c
		·852	125·3					139
Dec. 6			(+14·1)	(26·4)	(+ 0·2)	(57)	(420)	(629)
340·288	14389	·840	250·7	68·7	−16·1	17	107	270 c
C	14392	·984	107·2	294·3	−16·9	16	79	171 c
	14393	·991	112·3	291·9	−22·1	7	36	205 c
Dec. 7			(+13·7)	(13·3)	(0·0)	(40)	(222)	(646)
341·419		·912	226·3					197
G	14389	·944	252·3	68·3	−17·1	12	79	319 c
	14392	·916	108·2	293·3	−16·6	37	160	200 c
	14393	·937	113·6	290·8	−22·0	6	31	192 c
		·901	119·2					169
		·825	56·7					226
Dec. 8			(+13·2)	(358·4)	(− 0·1)	(55)	(270)	(1303)
342·318		·836	240·8					171
C	14389	·991	252·1	68·3	−17·7	0	29	290 c
	14392	·699	110·3	293·3	−16·6	29	160	90 c
	14393	·821	115·7	290·2	−22·0	4	24	138 c
	1234a	·859	250·7	29·2	−13·5	3	18	
		·836	51·3					199
		·913	115·0					392
		·933	57·6					215
Dec. 9			(+12·9)	(346·6)	(− 0·2)	(36)	(231)	(1495)
343·287		·961	243·2					129
C	14392	·680	114·6	293·8	−16·8	26	116	
	14393	·738	119·9	290·4	−21·8	6	31	
		·742	48·2					162
		·770	129·8					139
		·799	117·8					251
1945								
		·859	51·7					126
		·939	117·2					210
		·942	56·9					240
Dec. 10			(+12·4)	(333·8)	(− 0·4)	(32)	(147)	(1257)
344·488		·956	254·6					146
G		·865	232·1					237
		·804	296·1					228
	14392	·485	124·9	293·6	−16·5	17	89	
	14393	·574	128·5	289·3	−21·3	10	58	
		·780	57·7					174
		·807	118·1					142
		·845	51·5					222
		·903	127·1					224
Dec. 11			(+11·9)	(318·0)	(− 0·5)	(27)	(147)	(1373)
345·288		·983	256·2					194
C		·934	234·3					217
	14392	·361	139·8	293·4	−16·6	11	44	
	14393	·453	140·6	289·5	−21·0	6	32	
	14394	·870	71·4	248·7	+15·8	2	21	116 c
		·819	128·0					137
		·909	113·4					194
		·916	63·7					154
		·961	54·4					193
		·968	121·6					155
Dec. 12			(+11·6)	(307·4)	(− 0·6)	(19)	(97)	(1360)
346·290		·968	232·9					102
C		·966	292·3					160
		·814	241·7					126
	14392	·274	176·1	293·1	−16·5	5	31	
	14393	·347	169·4	290·3	−20·5	6	29	
	14395	·491	14·9	286·1	+27·5	5	37	
	14394	·740	68·0	249·0	+15·5	12	55	116 c
		·850	62·0					102
		·899	121·7					189
		·938	54·3					209
		·953	109·3					187
		·971	67·5					223
Dec. 13			(+11·1)	(294·2)	(− 0·7)	(28)	(152)	(1414)
347·475		·928	247·4					274
G		·898	223·1					172
	14392	·364	220·4	292·8	−16·9	5	25	
	14393	·389	204·0	288·4	−21·6	2	9	
	14395	·491	346·8	285·8	+27·5	10	40	
	14394	·534	57·9	250·7	+15·7	7	34	
	14396	·969	111·0	203·8	−20·5	0	8	217 c
	14397	·977	59·0	203·5	+30·0	25	150	512 f
		·797	46·6					107
		·842	113·0					140
		·920	68·4					164
		·935	50·0					175
Dec. 14			(+10·6)	(278·6)	(− 0·9)	(49)	(266)	(1761)

Group 14392. Dec. 7-15. A pair of spots dying out.
Group 14393. Dec. 7-15. Return or revival of Group 14379. A small spot with an attendant on Dec. 11-13. Perhaps a revival only and not a true return of Group 14379.
Group 14394. Dec. 12-15. A single small spot on Dec. 12 and 15; a pair on Dec. 13-14.
Group 14395. Dec. 13-14. A pair of small spots.
Group 14396. Dec. 14-17. Tiny spots.
Group 14397. Dec. 14-24. A spot slowly dying out. Although apparently a return of Group 14381, unbroken continuity of activity is doubtful.

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

U.T.	Group No.	Measures: Dist.	Measures: Pos. Angle	Position: Long.	Position: Lat.	Area: Umbræ	Area: Whole Spots	Area: Faculæ
			°	°	°			
1945								
348·433		·962	231·0					148
G	14392	·516	237·2	292·9	-17·0	2	12	
	14393	·487	225·7	287·8	-20·7	2	20	
	14394	·429	47·5	246·9	+15·8	1	7	
	14398	·601	45·9	238·0	+23·8	0	6	
	14396	·902	111·8	203·2	-20·0	0	9	387 c
	14397	·925	56·8	203·0	+29·9	22	135	537 f
		·910	47·0					212
		·952	69·4					192
Dec. 15			(+10·2)	(266·0)	(- 1·0)	(27)	(189)	(1476)
349·523		·932	296·1					118
G		·800	314·5					225
	14398	·430	22·0	241·6	+22·2	6	25	
	14396	·784	116·2	202·9	-21·0	0	7	312 c
	14397	·832	52·2	202·6	+29·7	33	152	485 f
	14399	·986	68·6	172·7	+20·8	32	184	150 c
		·854	65·9					153
		·934	59·3					233
		·954	111·6					171
Dec. 16			(+ 9·7)	(251·6)	(- 1·2)	(71)	(368)	(1847)
350·378		·848	306·6					148
C		·847	225·6					82
		·829	247·3					242
		·790	235·5					122
	14400	·487	356·3	242·4	+27·6	19	74	
	14398	·396	358·2	241·2	+21·9	4	15	
	14396	·663	120·7	203·0	-20·7	1	11	68 f
	14397	·747	46·5	201·9	+29·8	22	124	217 c
	14399	·940	66·9	172·7	+21·1	30	148	287 c
		·869	56·7					293
Dec. 17			(+ 9·3)	(240·4)	(- 1·3)	(76)	(372)	(1459)
351·285		·926	248·8					197
C		·909	302·0					152
		·901	237·4					147
		·824	245·1					192
	14398	·459	329·0	243·1	+21·7	1	4	
	14400	·531	338·2	241·3	+28·0	14	64	
	14397	·654	37·8	201·0	+29·7	15	74	
	14399	·864	64·4	172·0	+21·1	33	152	173 f
		·792	51·2					120
		·874	131·8					96
		·970	132·2					135
		·981	59·4					461
Dec. 18			(+ 8·8)	(228·4)	(- 1·4)	(63)	(294)	(1673)
352·425		·954	249·1					320
G		·948	240·1					420
		·924	300·5					218
	14400	·632	323·4	238·8	+29·0	3	17	
	14397	·554	20·7	200·4	+29·6	21	86	
	14399	·727	58·7	171·9	+21·0	36	152	159 f
		·922	55·4					653
		·923	134·9					230
Dec. 19			(+ 8·3)	(213·4)	(- 1·5)	(60)	(255)	(2000)

U.T.	Group No.	Measures: Dist.	Measures: Pos. Angle	Position: Long.	Position: Lat.	Area: Umbræ	Area: Whole Spots	Area: Faculæ
			°	°	°			
1945								
353·396		·929	247·1					141
G		·904	302·9					177
		·891	234·2					195
	14397	·524	0·9	200·1	+29·9	13	62	
	14399	·601	49·8	171·2	+21·3	32	189	
		·886	54·5					303
Dec. 20			(+ 7·9)	(200·6)	(- 1·6)	(45)	(251)	(816)
354·352		·948	246·8					233
C		·860	302·0					383
		·827	314·8					114
	14397	·552	341·4	199·6	+29·7	13	53	
	14399	·472	35·0	171·2	+20·9	27	164	
		·743	42·2					231
		·830	52·8					158
		·905	134·4					253
		·950	52·6					171
Dec. 21			(+ 7·4)	(188·0)	(- 1·8)	(40)	(217)	(1543)
355·297		·935	301·7					303
C		·926	246·3					259
		·849	234·3					156
	14397	·622	326·6	198·6	+29·4	11	40	
	14399	·393	10·7	171·1	+20·7	33	162	
		·804	45·4					149
		·907	61·1					177
		·920	121·5					275
Dec. 22			(+ 6·9)	(175·6)	(- 1·9)	(44)	(202)	(1319)
356·460		·930	237·6					248
G		·885	293·5					174
	14397	·752	313·9	198·7	+29·8	7	36	
	14399	·421	335·8	170·8	+20·5	37	179	
		·932	114·2					230
Dec. 23			(+ 6·4)	(160·2)	(- 2·0)	(44)	(215)	(652)
357·316		·966	238·9					285
C		·957	293·7					148
		·945	250·2					236
		·820	298·6					163
		·805	244·9					192
	14397	·843	308·0	198·8	+29·8	0	4	211 c
	14399	·519	317·6	170·8	+20·5	45	211	
	14401	·987	106·8	68·3	-16·9	58	473	332 c
		·847	121·3					233
Dec. 24			(+ 6·0)	(149·0)	(- 2·1)	(103)	(688)	(1800)
358·530		·937	306·8					228
G		·910	245·4					159
		·907	298·7					178
		·807	306·8					136
	14399	·684	303·3	170·4	+20·2	33	150	
	14401	·915	107·2	67·4	-16·6	59	314	316 c
Dec. 25			(+ 5·4)	(133·0)	(- 2·3)	(92)	(464)	(1017)

Group 14398. Dec. 15-18. A single small spot on Dec. 15 and 18: a pair on Dec. 16 and 17.
Group 14399. Dec. 16-28. A stable regular spot with a small drift equatorwards.
Group 14400. Dec. 17-19. A pair of small spots of which the following component remains on Dec. 19.
Group 14401. Dec. 24-1946 Jan. 5. Return or revival of Group 14389. A stable regular spot.

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

U.T.	Group No.	Measures		Position		Area		
		Dist.	Pos. Angle	Long.	Lat.	Umbræ	Whole Spots	Faculæ
			°	°	°			
1945								
359·529		·961	246·9					145
G		·958	299·1					193
		·914	305·8					132
	14399	·813	297·0	170·1	+20·1	42	187	196 *f*
	14401	·808	109·0	67·1	-16·7	60	305	260 *c*
Dec. 26			(+ 4·9)	(119·8)	(- 2·4)	(102)	(492)	(926)
360·519		·921	282·5					132
G	14399	·915	293·0	170·1	+19·8	37	176	204 *c*
	14401	·660	113·0	67·6	-16·9	48	308	
		·738	111·6					56
Dec. 27			(+ 4·5)	(106·8)	(- 2·5)	(85)	(484)	(392)
361·286		·852	308·3					228
C	14399	·967	291·2	169·7	+19·7	25	129	218 *c*
	14401	·536	118·7	67·4	-17·1	52	276	
Dec. 28			(+ 4·1)	(96·7)	(- 2·6)	(77)	(405)	(446)
1945								
362·473		·911	304·8					324
G		·887	223·7					265
	14401	·340	138·7	67·5	-17·5	65	278	
Dec. 29			(+ 3·5)	(81·0)	(- 2·8)	(65)	(278)	(589)
363·433		·962	299·6					194
G		·909	307·4					237
		·883	250·6					211
		·811	236·9					184
	14401	·252	176·4	67·5	-17·4	43	224	
		·855	118·0					156
Dec. 30			(+ 3·0)	(68·4)	(- 2·9)	(43)	(224)	(982)
364·117		·959	302·8					228
K	14401	·288	207·9	67·5	-17·6	42	244	
	14402	·969	104·2	343·6	-14·5	24	80	276 *c*
Dec. 31			(+ 2·7)	(59·4)	(- 3·0)	(66)	(324)	(504)

Group 14402. Dec. 31-1946 Jan. 4. A pair of small spots of which only one remains on Jan. 4.

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ROYAL OBSERVATORY, GREENWICH.

General Catalogue of Groups of Sunspots

For the Year

1945

GREENWICH PHOTO-HELIOGRAPHIC RESULTS, 1945

GENERAL CATALOGUE OF GROUPS OF SUNSPOTS FOR THE YEAR 1945.

Groups of sunspots, lasting for two or more days, are numbered in the *first* column in continuation of the group-numbers given in 1944 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 39.

The *second* column gives the corresponding Mount Wilson group number, as identified from the bi-monthly summaries of the Mount Wilson magnetic observations of sunspots published in *Publications of the Astronomical Society of the Pacific.*

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

The *fourth* 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 *sixth* and *eighth* 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 umbræ and whole spots entered in the *ninth* and *tenth* columns are corrected for the effect of foreshortening and are expressed in millionths of the Sun's visible hemisphere.

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

The *thirteenth* 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 $\xi = 14^\circ{\cdot}37 - 2^\circ{\cdot}60 \sin^2 \phi$ gives the apparent drift in longitude appropriate to corresponding latitudes after an interval of 27 days.

Latitude.....	Drift. *forwards.*	Latitude.....	Drift. *backwards.*
0° ...	...5°	20° ...	... 3°
5° ...	...4·5	25° ...	... 7·5
10° ...	...3	30° ...	...12·5
15° ...	...0·5	35° ...	...18

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
G	Mt. W			Date	Longitude from Central Meridian	Date	Longitude from Central Meridian	Umbræ	Whole Spots	Longitude	Latitude	
		1944-45		1945	°	1945	°			°	°	
14248	7705	Dec. 30·0	2	Jan. 1	+31	Jan. 2	+43	2	12	211·6	-28·1	
49	06	Jan. 10·8	4	5	-70	8	-33	6	39	56·3	+17·1	
14250	7709	1·8	2	6	+62	7	+72	6	38	175·4	-34·1	
51	10, 12	12·57	12	6	-81	17	+64	19	94	33·0	-24·6	II
52	11	10·1	2	8	-22	9	-11	8	35	65·4	-20·6	
53	13	16·89	13	10	-83	22	+72	22	104	336·0	+21·0	I 1374 (3)
54		6·6	2	11	+63	12	+76	0	14	111·5	+10·0	
14255	7716	24·04	11	18	-75	28	+56	19	96	242·0	+23·8	II
56	17	22·86	6	21	-23	26	+51	3	20	257·5	+21·3	II
57	18	25·4	2	22	-39	23	-27	3	16	224·6	+24·9	
58	19	26·0	6	27	+16	Feb. 1	+83	62	304	216·6	- 7·6	II
59	21	Feb. 7·70	9	Feb. 1	-82	9	+22	6	29	48·9	-22·5	II
14260	7720	4·89	5	2	-31	6	+20	8	37	85·9	-17·4	
61	23	19·25	9	13	-72	21	+28	27	137	256·8	+22·4	II
62	25	28·92	12	23	-79	Mar. 6	+81	18	87	129·5	-16·8	II
63	29	Mar. 8·88	14	Mar. 2	-84	15	+86	78	451	24·6	-14·4	II
64	30	8·2	6	9	+14	14	+81	6	30	33·9	-20·0	II
14265	7731	21·38	6	16	-67	21	+ 1	3	18	219·9	+23·7	II
66	32	28·37	14	21	-85	Apr. 3	+76	90	524	127·6	-31·1	I 1375 (1)
67	33	Apr. 1·34	13	26	-82	7	+79	130	721	75·2	-21·3	II
68	34	2·66	13	27	-78	8	+72	9	35	57·8	+32·6	II
69	35	8·29	9	Apr. 2	-76	10	+28	13	75	343·6	-28·6	II
14270	7737	16·59	7	14	-29	20	+48	8	33	234·0	- 6·5	II
71	38	23·18	13	17	-76	29	+80	37	194	146·9	-22·9	II
72	39	26·10	14	19	-84	May 2	+78	26	128	108·4	-32·0	I 1375 (2)
73	40	28·43	6/13	22	-82	4	+78	2	5	77·6	-20·3	II
74	41	May 1·64	13	25	-82	7	+78	120	724	35·2	-17·6	II
14275	7743, 7748	5·16	9/11	30	-65	10	+71	11	43	348·6	-18·7	II
76	44, 49	6·53	11	30	-79	10	+47	17	75	330·5	-25·5	II
77	45	6·0	2	May 1	-58	2	-49	3	16	338·1	+22·0	
78	46	6·7	3	3	-44	5	-19	4	15	327·9	+22·8	
79	51	10·2	2/3	9	-12	11	+15	1	3	281·5	-18·9	
14280	7750	8·7	5	10	+21	14	+77	2	14	302·2	-18·5	
81	53	20·28	11	14	-79	24	+60	14	63	148·7	-26·3	II
82	52	13·4	5	15	+25	19	+77	48	261	239·8	-20·8	
83	55, 64	21·89	7/13	16	-75	28	+82	4	15	127·4	-18·2	II
84	56	21·8	4	18	-46	21	- 4	8	26	128·4	-10·5	
14285	7757	22·83	10	18	-59	27	+58	6	30	114·9	+27·1	II
86	60	21·2	2	23	+30	24	+43	2	8	136·6	-29·9	
87	63	29·78	9	23	-85	31	+20	13	52	23·0	-16·1	II
88	62	28·6	2	25	-44	26	-31	5	18	38·0	-21·4	
89	67	28·4	6	29	+15	June 3	+77	17	84	41·7	+30·8	II
14290	7768	June 5·5	2	31	-68	1	-55	4	12	293·9	- 6·2	
91	70	9·2	6	June 3	-77	8	-13	13	65	245·2	-19·0	II
92	71	10·50	6	9	-15	14	+52	32	146	227·9	-21·4	II
93	72	16·48	9	11	-69	19	+37	6	27	148·7	-17·3	II
94	73	17·28	13	11	-76	23	+78	55	277	138·1	-31·2	II

GENERAL CATALOGUE OF SUNSPOTS

No. of Group G	No. of Group Mt. W	U.T. of Central Meridian Passage	Duration in Days	First Seen Date	First Seen Longitude from Central Meridian	Last Seen Date	Last Seen Longitude from Central Meridian	Mean Area Corrected for Foreshortening Umbræ	Mean Area Corrected for Foreshortening Whole Spots	Mean Position of Group Longitude	Mean Position of Group Latitude	Reference to Ledger
		1945		1945	°	1945	°			°	°	
14295	7774	June 12·4	5/6	June 13	+18	June 18	+74	3	16	202·9	-21·2	
96	76 } 80 }	17·32	8/10	13	-49	22	+65	1	7	137·6	-16·0	II
97	75pt.	18·53	12	13	-68	24	+79	41	220	121·6	-23·1	I 1376 (1)
98	75pt.	19·41	9	13	-78	21	+27	16	95	110·0	-26·2	II
99	79	20·39	9/11	15	-68	25	+65	5	30	97·0	+26·6	II
14300	7781	25·90	13	19	-86	July 1	+74	34	187	24·1	-15·2	II
01	84	26·1	5	27	+13	1	+71	9	46	21·2	-22·4	
02	85	July 1·05	6/8	30	-10	7	+80	11	44	315·8	-29·2	
03	86	June 30·1	3	July 4	+56	6	+81	8	29	327·9	-16·4	
04	87	July 2·4	2	6	+51	7	+65	9	34	297·8	- 4·9	
14305	7788	12·3	3	6	-79	8	-53	6	25	167·1	- 2·7	
06	90	14·25	9	8	-78	16	+32	21	100	141·2	+18·6	II
07	91	15·21	13	9	-76	21	+79	91	522	128·4	-19·2	II
08	93	15·28	12	9	-79	20	+71	20	113	127·5	+22·2	II
09	94	15·61	9	9	-83	17	+22	17	95	123·2	-15·4	II
14310	7795	15·89	10	10	-66	19	+45	9	44	119·5	-23·6	I 1376 (2)
11	96	9·5	4	12	+39	15	+77	48	221	204·3	-18·3	II
12	98	18·79	10/11	14	-57	24	+74	11	55	81·0	-25·4	II
13	97	17·53	5	15	-28	19	+24	35	141	97·7	-30·2	II
14	99	21·08	12	15	-77	26	+77	26	160	50·8	+24·1	II
14315	7800	22·2	3	18	-52	20	-22	4	17	36·1	-23·7	
16	02	27·8	2	21	-84	22	-72	0	14	321·6	+28·1	
17	03	27·3	4	23	-52	26	- 7	6	23	328·7	+23·4	
18	04	29·8	2/3	25	-56	27	-32	1	5	296·2	-29·9	
19	05	Aug. 1·47	13	26	-76	Aug. 7	+75	20	107	260·1	+17·2	II
14320	7806	July 28·39	2	28	0	July 29	+13	8	30	314·1	+17·6	
21	07	Aug. 3·27	6/7	29	-63	Aug. 4	+14	2	13	236·3	+24·3	II
22	09	July 31·0	2/3	Aug. 2	+33	4	+55	2	8	279·2	+35·4	
23	11	Aug. 9·7	5	4	-69	8	-18	9	40	151·8	-17·4	
24	13	13·47	15	6	-87	20	+83	87	500	101·5	+24·2	II
14325	7812	11·36	4/6	10	-12	15	+50	2	5	129·4	-20·9	
26	15	15·0	2	10	-61	11	-47	6	16	81·4	-25·3	
26*	17	7·9	2	12	+60	13	+77	0	14	175·6	+26·1	
27	22	20·5	5	15	-71	19	-18	6	25	8·1	+19·2	
28	23	14·6	2	18	+51	19	+61	9	39	86·4	-23·0	
29	24 } 28 }	24·7	2/5	19	-72	23	-17	0	3	313·4	+27·8	
14330	7825	24·2	3	23	-12	25	+17	2	8	319·9	-19·3	
31	30	Sept. 1·97	7	27	-78	Sept. 2	+ 3	4	24	203·8	-15·0	II
31*	31	Aug. 25·2	2	29	+60	Aug. 30	+68	2	11	307·0	+29·6	
32	33	Sept. 5·7	5	31	-71	Sept. 4	-18	9	42	154·7	-20·5	
33	32	Aug. 28·3	3	Sept. 1	+54	3	+80	18	72	264·9	-19·4	
34	34	Sept. 7·24	11	1	-76	11	+55	30	158	134·2	-15·3	II
14335	7836	9·2	2	4	-66	5	-51	0	8	108·6	-11·6	
36	38	11·6	7	5	-79	11	- 5	21	106	77·1	+25·1	II
37	37	6·52	3	6	0	8	+24	3	11	143·7	-17·4	
38	39	12·72	7/8	7	-67	14	+17	4	20	61·8	-27·3	II
39	40	6·4	2	10	+50	11	+66	2	19	144·8	-23·1	
14340	7846	21·43	9	16	-68	24	+43	6	30	306·8	-22·9	II
41		20·6	3	22	+24	24	+53	0	6	318·1	+24·6	
42	47	22·25	7	22	+ 2	28	+81	36	201	296·0	+26·8	I 1377 (1)
43	48	23·61	9	22	-15	30	+84	125	714	278·1	-18·6	I 1378 (1)
44	49 } 50 }	29·5	4	23	-80	26	-40	4	24	200·9	+28·1	

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
G	Mt. W			Date	Longitude from Central Meridian	Date	Longitude from Central Meridian	Umbrae	Whole Spots	Longitude	Latitude	
		1945		1945	°	1945	°			°	°	
14345	7851	Oct. 3·83	13	Sept. 27	-84	Oct. 9	+73	78	371	143·2	-21·8	I 1379 (1)
46	52	Sept. 30·24	5	28	-21	2	+27	13	70	190·6	+20·6	
47	53	Oct. 4·00	13	28	-72	10	+79	96	622	141·0	+23·4	I 1380 (1)
48	55	Sept. 28·3	3	30	+28	2	+54	3	17	216·8	-17·1	
49	56	Oct. 4·68	11	30	-57	10	+76	57	343	132·0	-21·5	II
14350	7854	5·70	10	30	-70	9	+48	15	88	118·6	-18·0	II
51	58	6·2	2	Oct. 6	+ 2	7	+15	4	16	111·6	-10·2	
52	57	9·72	8	6	-41	13	+49	16	82	65·5	+21·7	II
53	59	12·55	10	7	-71	16	+54	22	103	28·2	-30·3	II
54	60	12·8	2	9	-45	10	-33	3	16	24·2	-22·1	
14355	7861	10·9	4	13	+32	16	+73	6	37	50·0	-17·0	
56	62	19·51	12	13	-79	24	+65	32	160	296·4	+26·9	I 1377 (2)
57	63	21·01	12	14	-82	25	+55	27	177	276·6	-18·6	I 1378 (2)
58	64	22·57	13	16	-76	28	+71	96	574	256·0	-25·4	I 1381 (1)
59	65	24·3	4/6	18	-75	23	-18	2	8	233·2	+34·3	II
14360	7868	16·3	3	19	+40	21	+68	8	41	338·5	-31·1	
61	66	19·98	2	19	- 7	20	+ 5	2	12	290·2	+15·6	
62	67	22·92	11	19	-46	29	+64	37	199	251·3	+28·4	I 1382 (1)
63	69	24·6	2	19	-69	20	-56	4	26	228·8	+23·2	
64	71	27·53	10	24	-40	Nov. 2	+71	13	64	190·6	-37·7	I 1383 (1)
14365	7873	31·43	11/12	25	-76	5	+63	7	46	139·2	+21·9	I 1380 (2)
66	74	31·70	13	25	-81	6	+72	25	130	135·6	-22·8	I 1379 (2)
67	75	27·0	7	27	+ 5	2	+80	50	319	198·2	+18·8	II
68	76	Nov. 1·94	11	27	-77	6	+60	27	144	119·3	-14·6	II
69	77	6·52	12	31	-80	11	+65	13	68	58·9	-21·0	II
14370		Oct. 29·0	2	Nov. 2	+56	3	+71	1	8	170·8	-30·6	
71	7879	Nov. 9·1	5/6	3	-72	8	-11	4	26	25·3	-27·6	
72	82 83 }	15·56	12	9	-78	20	+66	23	134	299·7	-21·1	II
73		16·1	2	10	-74	11	-64	0	6	292·0	+28·2	
74	84	10·0	5	11	+19	15	+69	19	122	12·8	+20·5	
14375	78 85 87 }	17·72	9	11	-81	19	+20	16	77	271·3	-18·2	II
76	86	15·29	4	13	-27	16	+18	3	16	303·3	-11·9	
77	89	19·4	4/6	13	-78	18	-15	0	7	249·2	+28·6	I 1382 (2)
78	88	19·41	9	13	-78	21	+20	11	50	248·9	-24·2	I 1381 (2)
79	91	16·54	7	16	- 1	22	+77	31	172	286·8	-23·5	I 1384 (1)
14380	7894	24·9	3	19	-75	21	-48	5	20	176·1	-36·9	I 1383 (2)
81	96	22·58	8	21	-19	28	+78	22	116	207·1	+29·2	I 1385 (1)
82	97	25·70	5	22	-46	26	+ 8	10	48	166·0	-31·3	
83	98	23·51	7	23	- 2	29	+77	36	198	194·9	+27·8	II
84	7900	28·6	2	23	-69	24	-55	5	27	128·4	-22·4	I 1379 (3)
14385	7901	22·3	3	24	+28	26	+51	7	38	210·9	+19·7	
86	03	26·1	6	26	+ 1	Dec. 1	+74	13	70	161·0	+10·0	II
87	05	25·3	4	27	+30	Nov. 30	+71	1	17	171·8	-38·5	
88	06	30·48	3/5	28	-29	Dec. 2	+24	2	10	103·0	-28·7	
89	04	Dec. 3·03	13	27	-76	9	+82	42	259	69·4	-15·2	I 1386 (1)
14390	7907	Nov. 26·0	3	30	+60	2	+78	32	162	161·8	+27·1	
91	08	Dec. 9·4	4	Dec. 3	-84	6	-42	11	50	345·4	-22·1	
92	10	13·43	9	7	-79	15	+27	16	80	292·4	-16·7	II
93	11	13·64	9	7	-81	15	+22	5	29	289·6	-21·4	I 1384 (2)
94	14	16·7	4	12	-59	15	-19	6	29	248·8	+15·7	

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
G	Mt. W			Date	Longitude from Central Meridian	Date	Longitude from Central Meridian	Umbræ	Whole Spots	Longitude	Latitude	
		1945		1945	°	1945	°			°	°	
14395	7915	Dec. 13·92	2	Dec. 13	- 8	Dec. 14	+ 7	8	38	286·0	+27·5	
96		20·2	4	14	-75	17	-37	0	9	203·2	-20·6	
97	17	20·39	11	14	-75	24	+50	17	83	200·8	+29·8	I 1385 (2)
98	16	17·33	4	15	-28	18	+15	3	12	241·0	+22·4	
99	19	22·63	13	16	-79	28	+73	34	168	171·1	+20·6	I 1387 (1)
14400	7918	17·3	3	17	+ 2	19	+25	12	52	240·8	+28·2	
01	22	30·50	13	24	-81	Jan. 5	+76	44	232	67·5	-17·2	I 1386 (2)
02	23	Jan. 5·9	5	31	-76	4	-22	10	46	343·1	-14·1	

GENERAL CATALOGUE OF SUNSPOTS - *continued.*

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	Longitude from Central Meridian	U.T. of Central Meridian Passage	Area Corrected for Foreshortening		Position of Group	
				Umbræ	Whole Spots	Longitude	Latitude
		°	1944-5			°	°
1221a	Jan. 2	+72·8	Dec. 27·8	0	17	241·0	+27·9
b	5	+56·0	Jan. 1·0	0	8	184·8	-38·6
1222a	Jan. 16	-26·0	Jan. 18·3	2	16	318·1	- 4·5
b	29	+66·7	24·4	0	6	237·8	+25·6
c	Feb. 9	- 8·5	Feb. 10·1	2	9	17·7	-25·7
1223a	Feb. 19	+ 6·6	Feb. 18·8	4	15	262·8	-18·7
b	23	+72·4	17·8	0	12	275·9	-28·2
c	Mar. 5	+72·0	28·0	13	56	142·0	-29·7
d	9	-66·1	Mar. 14·4	0	5	311·9	-28·0
1224a	Mar. 18	-69·5	Mar. 23·7	0	13	189·3	-32·3
b	Apr. 4	-54·4	Apr. 8·7	3	15	337·9	-21·8
1226a	May 9	+76·2	May 3·6	0	18	9·7	-18·1
b	21	-60·7	26·0	0	6	73·7	-28·0
c	23	-67·0	28·5	6	15	39·9	-17·0
d	26	+77·9	20·4	0	17	146·5	-23·0
1227a	June 6	-46·7	June 9·9	7	23	235·4	-21·7
b	18	+ 0·5	18·3	1	7	124·6	-17·3
c	26	+69·1	21·0	0	27	89·1	+29·0
1228a	June 28	+23·0	June 26·4	3	16	17·1	- 1·8
b	July 9	+66·9	July 4·3	0	11	273·1	+16·3
c	16	+28·4	14·5	1	5	138·1	-14·7
d	19	+69·3	14·1	0	12	142·8	+16·1
e	19	-44·2	22·6	0	5	29·3	-43·0
f	20	+61·4	15·7	0	6	121·7	-21·7
1229a	July 27	-11·2	July 28·2	3	10	316·0	+25·4
b	28	-22·0	30·0	0	4	292·8	-25·7
c	Aug. 8	-46·7	Aug. 11·9	4	13	122·4	+ 7·7
d	8	-57·3	12·7	0	9	111·8	-31·3
e	8	-68·9	13·6	3	12	100·2	+25·9
f	12	- 9·6	13·2	3	6	105·3	-16·4
g	12	-75·6	18·2	0	17	39·3	+20·5
h	13	-25·4	15·6	5	23	73·6	-26·0
i	14	-36·3	17·0	11	48	54·6	-17·2
j	15	-57·5	19·6	8	24	21·1	+25·9
1230a	Aug. 21	+72·4	Aug. 16·0	0	21	68·4	-26·0
b	24	+59·6	19·8	6	16	17·2	-20·3
1231a	Sept. 22	+27·4	Sept. 20·4	0	5	321·0	+12·6
1232a	Oct. 24	+70·4	Oct. 19·1	20	92	301·3	-21·5
b	24	-62·0	29·2	0	9	168·9	-23·7
c	25	-39·7	28·4	0	3	179·4	-20·8
d	29	+65·2	24·7	0	6	228·5	-21·5
e	Nov. 4	-67·0	Nov. 9·4	3	11	20·9	+10·6
f	8	+41·4	5·2	0	8	76·9	-19·3
g	8	+25·2	6·4	1	8	60·7	-15·0
1233a	Nov. 19	+20·2	Nov. 17·8	0	4	270·7	-35·6
b	20	+79·4	14·4	11	79	314·9	+23·0
c	Dec. 2	+20·4	30·8	2	8	99·3	-23·6
1234a	Dec. 9	+42·6	Dec. 6·1	3	18	29·2	-13·5

Greenwich Number	Mt. Wilson Number
1222a	7714
1223b	7724
c	27
1226a	7747
b	? 66
c	62
d	65
1228b	7792
1229c	7814
f	18
g	19
h	20
i	21
1230b	7826
1232a	7870
1232c	7872
e	78
f	81
g	80
1233a	7893
b	? 92
1234a	7912

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", 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	
		1944-5			1944-5	°	1944-5	°		°	°	
1	14239	Dec. 15·4	1220	5	Dec. 11	-52	Dec. 15	0	62	44	-25	
	51	Jan. 12·57	1221	12	Jan. 6	-81	Jan. 17	+64	94	33	-25	II
2	14245	Dec. 27·07	1221	13	Dec. 21	-73	Jan. 1	+69	126	250	+25	II
	55	Jan. 24·04	1222	11	Jan. 18	-75	Jan. 28	+56	96	242	+24	II
3	14256	Jan. 22·86	1222	6	Jan. 21	-23	Jan. 26	+51	20	258	+21	II
	61	Feb. 19·25	1223	9	Feb. 13	-72	Feb. 21	+28	137	257	+22	II
4	14267	Apr. 1·34	1224	13	Mar. 26	-82	Apr. 7	+79	721	75	-21	II
	73	Apr. 28·43	1225	6/13	Apr. 22	-82	May 4	+78	5	78	-20	II
5	14281	May 20·28	1226	11	May 14	-79	May 24	+60	63	149	-26	II
	99	June 20·39	1227	9/11	June 15	-68	June 25	+65	30	97	+27	II
6	14282	May 13·4	1226	5	May 15	+25	May 19	+77	261	240	-21	
	91	June 9·2	1227	6	June 3	-77	June 8	-13	65	245	-19	II
7	14287	May 29·78	1226	9	May 23	-85	May 31	+20	52	23	-16	II
	300	June 25·90	1227	13	June 19	-86	July 1	+74	187	24	-15	II
8	14290	June 5·5	1227	2	May 31	-68	June 1	-55	12	294	- 6	
	304	July 2·4	1228	2	July 6	+51	July 7	+65	34	298	- 5	
9	14307	July 15·21	1228	13	July 9	-76	July 21	+79	522	128	-19	II
	25	Aug. 11·36	1229	4/6	Aug. 10	-12	Aug. 15	+50	5	129	-21	
10	14312	July 18·79	1228	10/11	July 14	-57	July 24	+74	55	81	-25	II
	26	Aug. 15·0	1229	2	Aug. 10	-61	Aug. 11	-47	16	81	-25	
11	14316	July 27·8	1228	2	July 21	-84	July 22	-72	14	322	+28	
	29	Aug. 24·7	1230	2/5	Aug. 19	-72	Aug. 23	-17	3	313	+28	
12	14323	Aug. 9·7	1229	5	Aug. 4	-69	Aug. 8	-18	40	152	-17	
	32	Sept. 5·7	1230	5	Aug. 31	-71	Sept. 4	-18	42	155	-21	
13	14335	Sept. 9·2	1230	2	Sept. 4	-66	Sept. 5	-51	8	109	-12	
	51	Oct. 6·2	1231	2	Oct. 6	+ 2	Oct. 7	+15	16	112	-10	
14	14336	Sept. 11·6	1230	7	Sept. 5	-79	Sept. 11	- 5	106	77	+25	II
	52	Oct. 9·72	1231	8	Oct. 6	-41	Oct. 13	+49	82	65	+22	II

Reference No. 11: Group 14316 disappeared before Rotation 1229 began.

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	
		1945-6			1945-6	°	1945-6	°		°	°	
15	14339	Sept. 6·4	1230	2	Sept. 10	+50	Sept. 11	+66	19	145	-23	
	45	Oct. 3·83	1231	13	Sept. 27	-84	Oct. 9	+73	371	143	-22	} I 1379
	66	Oct. 31·70	1232	13	Oct. 25	-81	Nov. 6	+72	130	136	-23	
	84	Nov. 28·6	1233	2	Nov. 23	-69	Nov. 24	-55	27	128	-22	
16	14353	Oct. 12·55	1231	10	Oct. 7	-71	Oct. 16	+54	103	28	-30	II
	71	Nov. 9·1	1232	5/6	Nov. 3	-72	Nov. 8	-11	26	25	-28	
17	14357	Oct. 21·01	1232	12	Oct. 14	-82	Oct. 25	+55	177	277	-19	I 1378 (2)
	75	Nov. 17·72	1233	9	Nov. 11	-81	Nov. 19	+20	77	271	-18	II
18	14370	Oct. 29·0	1232	2	Nov. 2	+56	Nov. 3	+71	8	171	-31	
	82	Nov. 25·70	1233	5	Nov. 22	-46	Nov. 26	+ 8	48	166	-31	
19	14373	Nov. 16·1	1233	2	Nov. 10	-74	Nov. 11	-64	6	292	+28	
	95	Dec. 13·92	1234	2	Dec. 13	- 8	Dec. 14	+ 7	38	286	+28	
20	14377	Nov. 19·4	1233	4/6	Nov. 13	-78	Nov. 18	-15	7	249	+29	I 1382 (2)
	400	Dec. 17·3	1234	3	Dec. 17	+ 2	Dec. 19	+25	52	241	+28	
	08	Jan. 14·00	1235	7	Jan. 13	- 4	Jan. 19	+71	650	237	+29	II (1946)
	27	Feb. 10·7	1236	4	Feb. 5	-68	Feb. 8	-34	44	232	+26	
21	14394	Dec. 16·7	1234	4	Dec. 12	-59	Dec. 15	-19	29	249	+16	
	406	Jan. 12·79	1235	4	Jan. 10	-35	Jan. 13	+13	32	252	+18	
22	14401	Dec. 30·50	1234	13	Dec. 24	-81	Jan. 5	+76	232	67	-17	I 1386 (2)
	14	Jan. 26·91	1235	14	Jan. 20	-82	Feb. 2	+87	774	67	-15	} I 1389
	38	Feb. 23·20	1236	13	Feb. 17	-76	Mar. 1	+80	133	67	-13	
	65	Mar. 23·0	1237	2	Mar. 17	-74	Mar. 18	-65	12	60	-17	
23	14402	Jan. 5·9	1234	5	Dec. 31	-76	Jan. 4	-22	46	343	-14	
	16	Feb. 2·55	1236	10/13	Jan. 27	-77	Feb. 8	+72	79	339	-17	II (1946)
	46	Mar. 2·2	1236	2	Feb. 26	-50	Feb. 27	-37	14	336	-20	

Reference No. 23: Group 14402 disappeared before Rotation 1235 began. Group 14446 disappeared before Rotation 1237 began.

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ROYAL OBSERVATORY, GREENWICH.

Ledgers of Groups of Sunspots

For the Year

1945

Ledger I.—Recurrent Groups

LEDGER I - RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR 1945.

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 and Kodaikanal by the letters C and K respectively. The letters Mt.W and W indicate Mount Wilson and Washington respectively in the six cases for which copies of the original negatives were supplied.

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 $14^\circ\cdot18$, 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, $\xi = 14^\circ\cdot37 - 2^\circ\cdot60 \sin^2 \phi$. A *plus* sign indicates a motion forwards; a *minus* sign a motion backwards relative to the position on 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.

No. 1375. Latitude -31°·6

Group 14266 in Rotation 1224
" 14272 " " 1225

Group 14266. Mar. 21-Apr. 3. A regular spot *a*, closely followed by variable companions which have died out by Apr. 2.

Date U.T. Place	Projected Area Umbræ	Projected Area Whole Spots	Corrected Area Umbræ	Corrected Area Whole Spots	Longitude and Proper Motion	Latitude	Long. from C.M.
d					°	°	°	°
79·355 G	22	95	(84	363	135·0	..	-30·5)	-85·2
80·373 G	80	422	153	798	130·4	0·0	-31·4	-76·4
81·365 G	84	463	92	534	130·9	+ 1·0	-31·1	-62·8
82·417 G	104	704	85	582	129·7	+ 0·4	-31·3	-50·1
83·320 C	150	882	102	604	129·5	+ 0·6	-31·1	-38·4
84·327 C	142	1030	85	625	128·4	+ 0·1	-31·2	-26·2
85·560 G	186	1028	102	568	128·3	+ 0·6	-31·0	-10·1
86·422 C	160	1092	88	600	127·5	+ 0·3	-31·1	+ 0·5
87·400 C	148	914	83	513	127·4	+ 0·7	-30·9	+13·3
88·354 G	167	866	100	520	126·5	+ 0·3	-31·1	+25·0
89·309 C	123	603	83	409	126·0	+ 0·3	-30·9	+37·1
90·321 C	86	494	71	408	125·3	+ 0·1	-31·1	+49·8
91·425 G	49	277	56	319	124·7	+ 0·1	-30·7	+63·7
92·342 G	38	178	72	338	124·9	+ 0·8	-31·1	+76·0
Means	..	..	90	524	127·6	..	-31·1	..

Spot *a*

79·355 G	22	95	(84	363	135·0	..	-30·5)	-85·2
80·373 G	44	244	73	405	133·0	0·0	-30·6	-73·8
81·365 G	75	408	80	437	132·1	- 0·4	-30·7	-61·6
82·417 G	84	533	67	426	131·1	- 0·8	-30·8	-48·7
83·320 C	126	698	84	468	130·9	- 0·6	-30·8	-37·0
84·327 C	112	692	67	415	129·9	- 1·0	-30·8	-24·7
85·560 G	155	764	85	420	129·4	- 0·9	-30·8	- 9·0
86·422 C	138	830	76	456	128·6	- 1·2	-30·6	+ 1·6
87·400 C	135	757	76	424	127·8	- 1·5	-30·5	+13·7
88·354 G	147	693	88	416	127·3	- 1·5	-30·5	+25·8
89·309 C	108	523	73	356	126·5	- 1·8	-30·4	+37·6
90·321 C	82	462	68	383	125·9	- 1·9	-30·7	+50·4
91·425 G	49	277	56	319	124·7	- 2·5	-30·7	+63·7
92·342 G	38	178	72	338	124·9	- 1·8	-31·1	+76·0

Group 14272. Apr. 19-May 2. A small regular spot *a* of Group 14266, with a few companions after Apr. 25.

108·309 G	9	36	32	130	114·0	..	-31·6	-84·1
109·338 G	18	86	29	138	112·5	- 5·3	-31·7	-72·0
110·568 G	25	144	24	140	111·8	- 5·4	-31·7	-56·5
111·319 G	25	117	20	95	110·9	- 5·9	-31·5	-47·4
112·336 G	38	166	25	111	110·4	- 5·9	-31·3	-34·5
113·511 G	45	179	27	106	109·7	- 5·9	-31·6	-19·7
114·345 C	53	232	30	132	108·8	- 6·4	-31·7	- 9·6

No. 1375. Group 14272 - *continued.*

d					°	°	°	°
115·477 C	63	283	36	159	109·6	- 5·0	-31·9	+ 6·2
116·518 C	40	243	24	144	108·7	- 5·4	-31·9	+19·0
117·314 G	41	186	26	119	107·9	- 5·7	-32·1	+28·8
118·324 C	26	158	19	115	106·2	- 6·9	-32·3	+40·4
119·336 C	18	92	16	84	104·9	- 7·7	-32·4	+52·5
120·503 G	18	95	25	131	104·2	- 7·8	-33·2	+67·2
121·321 G	18	84	42	196	104·1	- 7·4	-33·0	+77·9
Means	..	..	26	128	108·4	..	-32·0	..

No. 1376. Latitude -23°·4

Group 14297 in Rotation 1227
" 14310 " " 1228

Group 14297. June 13-24. A pair of spots. On June 17, small companions appear and form a temporary cluster. By June 23 a regular spot represents the disturbance.

163·522 G	28	119	42	173	119·9	0·0	-23·3	-68·0
164·461 G	46	173	45	167	120·7	+ 1·0	-23·3	-54·8
165·528 G	51	228	38	167	120·6	+ 1·1	-23·5	-40·7
166·387 G	39	237	24	151	120·8	+ 1·5	-23·4	-29·2
167·334 G	73	400	41	228	120·9	+ 1·8	-23·2	-16·5
168·345 G	88	532	49	293	121·1	+ 2·3	-23·4	- 3·0
169·319 G	84	414	48	233	121·5	+ 2·9	-23·0	+10·3
170·347 G	69	361	42	219	122·0	+ 3·6	-23·3	+24·5
171·573 G	55	354	40	260	121·8	+ 3·7	-22·8	+40·5
172·350 G	44	294	39	261	121·8	+ 3·8	-22·6	+50·8
173·381 G	32	182	43	246	122·9	+ 5·2	-22·6	+65·5
174·379 G	14	79	42	239	123·0	+ 5·5	-23·1	+78·8
Means	..	..	41	220	121·6	..	-23·1	

Group 14310. July 10-19. A small persistent spot.

190·649 W	3	20	4	29	122·6	+ 8·7	-23·3	-66·2
191·592 G	12	55	12	57	120·4	+ 6·7	-23·6	-56·0
192·382 G	14	99	11	81	120·2	+ 6·6	-23·5	-45·7
193·328 G	14	80	10	54	120·0	+ 6·7	-23·5	-33·4
194·426 G	9	83	5	50	119·8	+ 6·7	-23·5	-19·1
195·350 G	21	74	12	42	119·6	+ 6·7	-23·6	- 7·0
196·628 G	21	69	12	40	119·3	+ 6·7	-23·6	+ 9·6
197·366 G	18	60	11	36	118·9	+ 6·4	-23·6	+19·0
198·391 G	7	28	5	19	118·8	+ 6·6	-23·8	+32·4
199·368 G	5	21	4	17	118·4	+ 6·4	-24·0	+44·9
Means	..	..	9	44	119·5	..	-23·6	..

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

No. 1377. Latitude +26°·9

Group 14342 in Rotation 1231
" 14356 " " 1232

Group 14342. Sept. 22-28. A stream of small changing spots. The leading part condenses into a regular spot by Sept. 26.

Date U.T. Place	Projected Area Umbræ	Projected Area Whole Spots	Corrected Area Umbræ	Corrected Area Whole Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
264·435 G	22	151	12	80	296·0	0·0	+27·5	+ 2·4
265·317 C	30	155	16	84	293·6	- 2·1	+27·5	+11·7
266·635 G	49	194	29	118	294·6	- 0·6	+27·5	+30·0
267·339 G	69	420	48	287	296·2	+ 1·2	+25·7	+40·9
268·461 G	45	253	42	237	297·4	+ 2·6	+26·4	+57·0
269·345 G	49	291	69	400	298·2	+ 3·9	+26·4	+69·4
270·556 G	0	4	(0	10	293·5	∴	+26·4)	+80·7
Means	..	..	36	201	296·0	..	+26·8	..

Group 14356. Oct. 13-24. A regular spot followed by a small, very distant companion. The umbra of the regular spot begins to break up on Oct. 17 after which the whole spot dies out rather rapidly.

285·384 G	27	89	61	200	298·6	+ 9·8	+26·6	-78·6
286·591 G	40	208	47	244	296·6	+ 8·2	+27·1	-64·6
287·417 G	58	314	52	278	296·1	+ 8·0	+27·1	-54·3
288·428 G	80	380	56	266	296·1	+ 8·3	+27·0	-40·9
289·400 G	75	360	45	216	296·9	+ 9·4	+26·7	-27·3
290·372 G	62	344	34	191	296·5	+ 9·4	+26·7	-14·9
291·380 G	53	260	29	142	295·1	+ 8·3	+26·9	- 3·0
292·386 G	33	199	18	109	296·5	+10·1	+26·9	+11·7
293·336 C	21	171	12	101	296·4	+10·3	+27·0	+24·1
294·383 G	22	150	15	103	296·7	+10·9	+27·2	+38·2
295·437 G	9	62	8	51	294·4	+ 9·0	+27·0	+49·8
296·473 G	4	15	5	18	296·3	+11·3	+26·4	+65·4
Means	..	..	32	160	296·4	..	+26·9	..

No. 1378. Latitude -18°·6

Group 14343 in Rotation 1231
" 14357 " " 1232

Group 14343. Sept. 22-30. A large bi-polar group of rapid growth. On Sept. 27, the follower spot, *b*, begins to split into two parts, and these are separating as the group passes round the west limb.

264·435 G	9	34	5	20	278·8	0·0	-19·5	-14·8
265·317 C	136	639	75	352	279·8	+ 1·1	-17·6	- 2·1
266·635 G	275	1644	158	945	278·6	0·0	-18·4	+14·0
267·339 G	311	1882	189	1140	278·3	- 0·3	-18·2	+23·0
268·461 G	276	1514	196	1077	277·9	- 0·6	-18·6	+37·5

No. 1378. Group 14343 - *continued.*

d					°	°	°	°
269·345 G	170	954	149	840	277·9	- 0·5	-18·9	+49·1
270·556 G	88	551	124	786	277·3	- 1·0	-18·8	+64·5
271·374 G	42	221	102	551	276·2	- 2·1	-18·7	+74·2
272·412 G	2	16	(15	118	271·8	..	-18·7)	+83·5
Means	..	..	125	714	278·1	..	-18·6	..

Spot *a*

265·317 C	70	303	39	167	281·8	0·0	-17·6	- 0·1
266·635 G	152	833	88	483	282·4	+ 0·7	-17·6	+17·8
267·339 G	179	959	111	595	282·3	+ 0·7	-17·8	+27·0
268·461 G	139	784	104	588	282·2	+ 0·6	-17·8	+41·8
269·345 G	94	542	89	515	282·1	+ 0·6	-17·9	+53·3
270·556 G	43	282	72	474	282·1	+ 0·7	-17·8	+69·3
271·374 G	13	76	50	290	281·8	+ 0·5	-17·5	+79·8

Spot *b*

266·635 G	123	811	70	462	274·9	0·0	-18·9	+10·3
267·339 G	132	923	78	545	273·7	- 1·1	-19·4	+18·4
268·461 G	137	730	92	489	273·1	- 1·7	-19·5	+32·7
269·345 G	76	412	60	325	272·7	- 2·0	-20·0	+43·9
270·556 G	45	269	52	312	272·3	- 2·3	-20·4	+59·5
271·374 G	29	145	52	261	272·1	- 2·4	-19·8	+70·1

Group 14357. Oct. 14-25. A spot, *a*, with a double umbra, possibly representing *a* of Group 14343, preceded by a small cluster which dies out by Oct. 23. Fresh activity in this area is represented by Group 14375.

286·591 G	4	26	(22	138	279·0	..	-18·3)	-82·2
287·417 G	22	181	43	355	278·3	+ 1·2	-19·3	-72·1
288·428 G	44	234	49	264	277·7	+ 0·7	-19·3	-59·3
289·400 G	57	371	47	305	277·7	+ 0·8	-19·3	-46·5
290·372 G	68	413	46	279	277·8	+ 0·9	-19·0	-33·6
291·380 G	64	407	37	241	277·9	+ 1·1	-18·7	-20·2
292·386 G	48	318	27	177	276·9	+ 0·2	-18·5	- 7·9
293·336 C	45	289	25	159	276·6	0·0	-18·4	+ 4·3
294·383 G	31	193	17	111	276·0	- 0·6	-18·2	+17·5
295·437 G	9	57	6	36	274·3	- 2·2	-18·2	+29·7
296·473 G	4	18	3	14	274·4	- 2·0	-18·1	+43·5
297·368 C	0	9	0	9	274·5	- 1·8	-18·0	+55·4
Means	..	..	27	177	276·6	..	-18·6	..

Spot *a*

287·417 G	18	111	37	237	276·9	- 3·2	-19·9	-73·5
288·428 G	33	190	38	220	276·7	- 3·4	-19·6	-60·3

continued

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

No. 1378. Group 14367 - *continued.*

Spot *a* - *continued.*

Date U.T. Place	Projected Area Umbræ	Projected Area Whole Spots	Corrected Area Umbræ	Corrected Area Whole Spots	Longitude and Proper Motion	Latitude	Long. from C.M.
d					°	°	°	°
289·400 G	44	298	37	249	276·2	- 3·8	-19·5	-48·0
290·372 G	53	316	37	218	275·7	- 4·2	-19·4	-35·7
291·380 G	44	292	28	175	275·3	- 4·5	-19·3	-22·8
292·386 G	35	261	20	146	274·9	- 4·9	-18·8	- 9·9
293·336 C	34	238	19	131	274·5	- 5·2	-18·8	+ 2·2
294·383 G	27	166	15	95	274·5	- 5·1	-18·3	+16·0
295·437 G	9	57	6	36	274·3	- 5·2	-18·2	+29·7
296·473 G	4	18	3	14	274·4	- 5·1	-18·1	+43·5
297·368 C	0	9	0	9	274·5	- 4·9	-18·0	+55·4

No. 1379. Latitude -22°·4

Group 14345 in Rotation 1231
" 14366 " " 1232
" 14384 " " 1233

Group 14345. Sept. 27-Oct. 9. A stable regular spot.

269·345 G	4	36	41	365	144·6	..	-22·6	-84·2
270·556 G	40	211	69	363	144·2	0·0	-22·0	-68·6
271·374 G	71	352	78	387	144·8	+ 0·8	-21·7	-57·2
272·412 G	96	493	78	399	144·1	+ 0·2	-22·1	-44·2
273·447 C	106	542	71	363	143·7	0·0	-22·1	-31·0
274·351 C	134	618	82	377	143·6	+ 0·1	-22·1	-19·1
275·313 C	123	760	70	433	143·1	- 0·2	-22·1	- 6·9
276·221 K	152	655	87	373	142·5	- 0·6	-22·1	+ 4·4
277·353 G	136	584	82	350	142·8	- 0·1	-21·7	+19·7
278·428 G	112	573	77	395	142·6	- 0·1	-21·5	+33·7
279·328 C	97	456	81	378	142·7	+ 0·1	-21·5	+45·6
280·383 G	58	297	67	345	142·6	+ 0·2	-21·5	+59·5
281·459 G	42	133	93	294	142·2	0·0	-21·6	+73·2
Means	..	..	78	371	143·2	..	-21·6	

Group 14366. Oct. 25-Nov. 6. A regular spot of unusual stability.

297·368 C	4	26	19	125	137·8	..	-22·6	-81·3
298·439 G	13	75	21	121	136·9	- 2·1	-22·5	-68·1
299·396 G	31	136	32	140	136·7	- 2·1	-22·6	-55·7
300·521 C	38	202	29	154	136·2	- 2·4	-22·6	-41·3
301·600 G	44	207	28	130	136·1	- 2·3	-22·6	-27·2
302·380 G	42	233	25	137	136·0	- 2·2	-23·0	-17·0
303·403 G	55	259	31	146	136·0	- 2·1	-23·0	- 3·5
304·408 G	37	205	21	117	135·7	- 2·2	-23·0	+ 9·4
305·302 C	47	208	28	125	135·2	- 2·5	-22·8	+20·7
306·412 G	37	198	26	137	134·9	- 2·6	-22·8	+35·1
307·318 C	21	153	17	127	134·9	- 2·4	-22·6	+47·0
308·369 G	18	97	21	114	134·5	- 2·6	-23·0	+60·7
309·311 C	8	55	16	108	133·8	- 3·2	-23·1	+72·2
Means	..	..	25	130	135·6	..	-22·8	..

Group 14384. Nov. 23-24. A single spot.

d					°	°	°	°
326·276 C	4	21	6	33	128·9	- 4·9	-22·5	-69·1
327·406 G	4	22	4	21	127·9	- 5·7	-22·3	-55·2
Means	..	..	5	27	128·4	..	-22·4	..

No. 1380. Latitude +22°·6

Group 14347 in Rotation 1231
" 14365 " " 1232

Group 14347. Sept. 28-Oct. 10. A stream of normal type with initial rapid development from a small spot first seen near the east limb. The leader, *a*, remains fairly stable, but the follower, *b*, begins to break up on Oct. 3 into a cluster.

270·556 G	4	13	6	20	140·4	0·0	+23·0	-72·4
271·374 G	20	116	20	114	142·9	+ 2·7	+23·5	-59·1
272·412 G	128	739	92	539	143·7	+ 3·7	+23·3	-44·6
273·447 C	209	1054	126	641	143·8	+ 4·0	+23·5	-30·9
274·351 C	215	1307	118	723	143·2	+ 3·5	+22·9	-19·5
275·313 C	186	1477	97	776	142·1	+ 2·6	+23·0	- 7·9
276·221 K	263	1582	138	830	140·6	+ 1·3	+23·1	+ 2·5
277·353 G	216	1579	119	862	140·0	+ 0·9	+23·5	+16·9
278·428 G	179	1351	109	821	139·4	+ 0·5	+23·4	+30·5
279·328 C	163	1271	115	887	138·6	- 0·1	+23·3	+41·5
280·383 G	116	743	105	677	138·2	- 0·3	+24·1	+55·1
281·459 G	75	382	113	564	139·3	+ 1·0	+24·0	+70·3
282·388 G	18	69	(41	205	135·7	..	+24·0)	+79·0
Means	..	..	96	622	141·0	..	+23·4	

Spot *a*

271·374 G	11	62	10	56	145·2	0·0	+23·0	-56·8
272·412 G	83	413	57	285	146·8	+ 1·8	+23·1	-41·5
273·447 C	123	559	71	324	147·6	+ 2·8	+23·6	-27·1
274·351 C	117	659	63	356	147·8	+ 3·2	+23·0	-14·9
275·313 C	95	689	49	358	147·1	+ 2·7	+22·8	- 2·9
276·221 K	115	713	61	378	146·3	+ 2·0	+22·5	+ 8·2
277·353 G	91	506	51	283	146·1	+ 2·1	+22·7	+23·0
278·428 G	54	392	35	251	145·6	+ 1·8	+22·8	+36·7
279·328 C	47	314	36	239	144·6	+ 0·9	+23·0	+47·5
280·383 G	49	328	49	328	143·1	- 0·4	+23·0	+60·0
281·459 G	44	200	74	336	142·6	- 0·4	+23·3	+73·8

Spot *b*

271·374 G	9	54	10	58	139·3	0·0	+23·6	-62·7
272·412 G	45	326	35	254	139·2	+ 0·1	+23·5	-49·1
273·447 C	86	495	55	317	138·7	- 0·2	+23·4	-36·0

continued

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

No. 1380. Group 14347 - *continued.*

Spot *b* - *continued.*

Date U.T. Place	Projected Area Umbræ	Projected Area Whole Spots	Corrected Area Umbræ	Corrected Area Whole Spots	Longitude and Proper Motion	Latitude	Long. from C.M.
d					°	°	°	°
274·351 C	76	462	43	263	137·7	- 1·0	+23·2	-25·0
275·313 C	91	788	48	418	138·0	- 0·5	+23·3	-12·0
276·221 K	148	869	77	452	136·9	- 1·5	+23·8	- 1·2
277·353 G	125	1073	68	579	137·4	- 0·7	+23·8	+14·3
278·428 G	103	754	61	445	136·8	- 1·1	+24·3	+27·9
279·328 C	77	600	52	402	136·1	- 1·7	+24·5	+39·0
280·383 G	67	415	56	349	135·8	- 1·8	+24·6	+52·7
281·459 G	31	182	39	228	135·8	- 1·5	+24·5	+66·8

Group 14365. Oct. 25-Nov. 5. A scattered cluster of small changing spots slowly fading out.

297·368 C	13	75	26	149	142·9	+ 2·7	+21·3	-76·2
298·439 G	4	40	4	50	138·5	- 1·5	+21·7	-66·5
299·396 G	13	94	11	78	140·7	+ 0·9	+21·9	-51·7
300·521 C	22	117	15	78	138·8	- 0·7	+22·3	-38·7
301·600 G	29	145	17	85	137·9	- 1·4	+22·0	-25·4
302·380 G	13	88	7	47	138·6	- 0·6	+21·8	-14·4
303·403 G	9	53	5	28	138·4	- 0·6	+22·0	- 1·1
304·408 G	4	35	2	19	140·3	+ 1·5	+21·3	+14·0
305·302 C	0	8	0	5	140·8	+ 2·2	+21·8	+26·3
306·412 G	0	0	0	0	..	..	..	..
307·318 C	0	13	0	10	137·2	- 1·0	+22·1	+49·3
308·389 G	0	4	0	5	137·2	- 0·8	+22·7	+63·4
Means	..	..	7	46	139·2	..	+21·9	..

No. 1381. Latitude -24°·8

Group 14358 in Rotation 1232
" 14378 " " 1233

Group 14358. Oct. 16-28. A long stream of small components of which the follower, *b*, is the largest, becoming a regular spot by Oct. 20. This remains fairly stable to the west limb.

288·428 G	15	95	(42	274	261·4	..	-24·8)	-75·6
289·400 G	48	319	71	485	258·8	0·0	-25·4	-65·4
290·372 G	86	570	85	569	258·6	+ 0·1	-25·3	-52·8
291·380 G	141	809	108	629	259·9	+ 1·6	-24·6	-38·2
292·386 G	155	939	103	621	257·6	- 0·4	-25·0	-27·2
293·336 C	183	1191	111	722	259·2	+ 1·5	-25·3	-13·1
294·383 G	169	1123	99	660	256·7	- 0·8	-24·8	- 1·8
295·437 G	132	832	78	496	254·9	- 2·3	-25·6	+10·3
296·473 G	128	744	83	480	254·2	- 2·7	-25·7	+23·3
297·368 C	149	686	105	487	251·9	- 4·8	-25·8	+32·8
298·439 G	126	663	111	582	251·9	- 4·5	-25·9	+46·9
299·396 G	80	473	99	581	252·2	- 3·9	-25·6	+59·8
300·521 C	26	149	(52	297	248·7	..	-26·2)	+71·2
Means	..	..	96	574	256·0	..	-25·4	..

No. 1381. Group 14358 - *continued.*

Spot *b*

Date U.T. Place	Projected Area Umbræ	Projected Area Whole Spots	Corrected Area Umbræ	Corrected Area Whole Spots	Longitude and Proper Motion	Latitude	Long. from C.M.
d					°	°	°	°
289·400 G	20	159	37	291	255·0	0·0	-26·3	-69·2
290·372 G	42	323	46	355	255·2	+ 0·5	-25·9	-56·2
291·380 G	55	411	46	345	253·7	- 0·8	-26·5	-44·4
292·386 G	80	471	56	330	252·9	- 1·3	-26·6	-31·9
293·336 C	77	499	49	314	252·3	- 1·6	-27·0	-20·0
294·383 G	82	451	48	266	252·1	- 1·6	-26·8	- 8·4
295·437 G	92	528	54	312	251·2	- 2·2	-26·8	+ 8·8
296·473 G	88	510	55	321	250·8	- 2·3	-26·6	+19·9
297·368 C	119	496	82	342	250·0	- 2·9	-26·3	+30·9
298·439 G	86	475	71	394	249·6	- 3·0	-26·0	+44·6
299·396 G	64	363	70	396	248·8	- 3·5	-26·3	+56·4

Group 14378. Nov. 13-21. A pair of small spots. Others appear on Nov. 17 and form a short-lived cluster.

316·381 G	2	11	6	33	250·4	- 1·2	-24·5	-78·0
317·469 G	11	44	16	63	248·6	- 2·7	-24·0	-65·5
318·294 C	10	63	9	60	249·8	- 1·3	-24·0	-53·4
319·494 G	11	48	8	35	249·5	- 1·2	-24·0	-37·9
320·391 C	44	154	27	94	251·1	+ 0·6	-22·6	-24·4
321·320 C	29	143	16	80	251·6	+ 1·4	-22·4	-11·7
322·293 C	10	55	6	31	249·7	- 0·3	-23·7	- 0·8
323·428 C	13	84	8	49	245·5	- 4·2	-26·4	+10·0
324·287 C	2	10	1	6	244·1	- 5·4	-26·4	+19·9
Means	..	..	11	50	248·9	..	-24·2	..

No. 1382. Latitude +28°·5

Group 14362 in Rotation 1232
" 14377 " " 1233

Group 14362. Oct. 19-29. Some small spots expanding on Oct. 22 into a short stream. The leading part has grown into a composite spot by the time it passes round the west limb.

291·380 G	4	13	3	10	251·9	0·0	+28·4	-46·2
292·386 G	7	27	4	17	253·7	+ 2·2	+28·4	-31·1
293·336 C	6	28	3	16	252·4	+ 1·3	+28·1	-19·9
294·383 G	11	51	6	28	250·2	- 0·5	+28·3	- 8·3
295·437 G	40	215	22	118	251·5	+ 1·2	+27·7	+ 6·9
296·473 G	57	290	34	169	251·5	+ 1·6	+28·4	+20·6
297·368 C	56	306	36	196	251·4	+ 1·9	+28·2	+32·3
298·439 G	71	352	55	269	250·4	+ 1·3	+28·8	+45·4
299·396 G	110	471	112	480	250·4	+ 1·7	+29·1	+58·0
300·521 C	54	394	94	690	249·8	+ 1·6	+29·0	+72·3
301·600 G	9	40	(34	153	247·1	..	+29·3)	+83·8
Means	..	..	37	199	251·3	..	+28·4	..

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

No. 1382. *continued*

Group 14377. Nov. 13-18. A small spot.

Date U.T. Place	Projected Area Umbræ	Projected Area Whole Spots	Corrected Area Umbræ	Corrected Area Whole Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
316·381 G	0	9	0	21	250·7	+ 8·9	+28·5	-77·7
317·469 G	0	9	0	11	249·0	+ 7·6	+28·9	-65·1
318·294 C	0	8	0	8	248·8	+ 7·7	+28·9	-54·4
319·494 G	0	0	0	0	..	..	..	..
320·391 C	0	0	0	0	..	..	..	..
321·320 C	0	6	0	4	248·3	+ 8·4	+28·1	-15·0
Means	..	..	0	7	249·2	..	+28·6	..

No. 1383. Latitude -37°·3

Group 14364 in Rotation 1232
" 14380 " " 1233

Group 14364. Oct. 24-Nov. 2. One or two small spots increasing in number on Oct. 30 to form a longish stream in fairly high southern latitude.

296·473 G	4	13	4	12	191·2	0·0	-38·3	-39·7
297·368 C	2	13	2	10	194·2	+ 3·7	-37·4	-24·9
298·439 G	6	22	4	15	189·7	0·0	-38·5	-15·3
299·396 G	4	18	3	12	195·6	+ 6·6	-38·2	+ 3·2
300·521 C	18	85	12	59	191·2	+ 3·1	-37·4	+13·7
301·600 G	13	66	10	51	191·7	+ 4·4	-36·6	+28·4
302·380 G	29	125	24	108	190·3	+ 3·6	-37·4	+37·3
303·403 G	17	101	18	111	188·5	+ 2·6	-37·6	+49·0
304·408 G	15	64	25	109	188·3	+ 3·2	-37·7	+62·0
305·302 C	12	62	28	152	185·3	+ 0·9	-38·2	+70·8
Means	..	..	13	64	190·6	..	-37·7	..

Group 14380. Nov. 19-21. A small spot.

322·293 C	2	8	5	21	175·7	+ 4·2	-37·1	-74·8
323·428 C	4	17	5	22	176·2	+ 5·6	-36·9	-59·3
324·287 C	4	17	4	16	176·5	+ 6·6	-36·7	-47·7
Means	..	..	5	20	176·1	..	-36·9	..

No. 1384. Latitude -22°·4

Group 14379 in Rotation 1233
" 14393 " " 1234

Group 14379. Nov. 16-22. Small spots forming on the central meridian. On Nov. 20-21, the area rises sharply with the growth of a new double spot.

319·494 G	18	83	10	47	286·0	0·0	-23·9	- 1·4
320·391 C	19	89	11	51	284·6	- 1·2	-24·2	+ 9·1

No. 1384. *continued*

d					°	°	°	°
321·320 C	16	86	9	53	287·1	+ 1·4	-23·8	+23·8
322·293 C	8	42	6	30	288·5	+ 3·0	-23·6	+38·0
323·428 C	25	120	22	108	286·7	+ 1·4	-23·0	+51·2
324·287 C	44	378	55	474	287·3	+ 2·2	-23·2	+63·1
325·299 C	40	176	101	444	287·5	+ 2·6	-23·0	+76·6
Means	..	..	31	172	286·8	..	-23·5	..

Group 14393. Dec. 7-15. A small spot with an attendant on Dec. 11-13. Perhaps a revival only and not a true return of Group 14379.

340·288 C	2	10	7	36	291·9	..	-22·1	-81·4
341·419 G	4	22	6	31	290·8	+ 8·9	-22·0	-67·6
342·318 C	4	25	4	24	290·2	+ 8·5	-22·0	-56·4
343·287 C	8	42	6	31	290·4	+ 8·8	-21·8	-43·4
344·488 G	17	96	10	58	289·3	+ 8·0	-21·3	-28·7
345·288 C	12	58	6	32	289·5	+ 8·3	-21·0	-17·9
346·290 C	12	54	6	29	290·3	+ 9·3	-20·5	- 3·9
347·475 G	4	17	2	9	288·4	+ 7·6	-21·6	+ 9·8
348·433 G	4	35	2	20	287·8	+ 7·2	-20·7	+21·8
Means	..	..	5	29	289·6	..	-21·4	..

No. 1385. Latitude +29°·5

Group 14381 in Rotation 1233
" 14397 " " 1234

Group 14381. Nov. 21-28. A cluster of small spots which by Nov. 25 becomes a short stream led by a regular spot.

324·287 C	8	46	5	28	205·5	0·0	+29·8	-18·7
325·299 C	21	88	12	49	205·6	+ 0·5	+29·1	- 5·3
326·276 C	17	94	10	54	206·2	+ 1·6	+29·5	+ 8·2
327·406 G	48	229	29	140	206·8	+ 2·7	+28·9	+23·7
328·436 G	57	321	34	188	207·6	+ 3·9	+29·2	+38·1
329·293 C	47	250	41	217	207·5	+ 4·2	+29·2	+49·3
330·405 G	21	118	28	155	208·2	+ 5·4	+29·1	+64·6
331·302 C	6	38	16	98	209·7	+ 7·3	+29·1	+78·0
Means	..	..	22	116	207·1	..	+29·2	..

Group 14397. Dec. 14-24. A spot slowly dying out. Although apparently a return of Group 14381, unbroken continuity of activity is doubtful.

347·475 G	11	65	25	150	203·5	+ 8·2	+30·0	-75·1
348·433 G	17	104	22	135	203·0	+ 8·1	+29·9	-63·0
349·523 G	37	169	33	152	202·6	+ 8·2	+29·7	-49·0
350·378 C	29	165	22	124	201·9	+ 7·9	+29·8	-38·5
351·285 C	23	112	15	74	201·0	+ 7·4	+29·7	-27·4

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

No. 1385. *continued*

Date U.T. Place	Projectedd Area Umbræ	Projected Area Whole Spots	Corrected Area Umbræ	Corrected Area Whole Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
352·425 G	35	143	21	86	200·4	+ 7·3	+29·6	-13·0
353·396 G	22	105	13	62	200·1	+ 7·4	+29·9	- 0·5
354·352 C	21	89	13	53	199·6	+ 7·3	+29·7	+11·6
355·297 C	117	62	11	40	198·6	+ 6·7	+29·4	+23·0
356·460 G	9	48	7	36	198·7	+ 7·4	+29·8	+38·5
357·316 C	0	4	0	4	198·8	+ 7·9	+29·8	+49·8
Means	..	..	17	83	200·8	..	+29·8	..

No. 1386. Latitude -16°·2

Group 14389 in Rotation 1233
" 14401 " " 1234

Group 14389. Nov. 27-Dec. 9. A pair of small spots developing into a short stream, consisting of a nearly regular spot followed by a grouping of small spots. On Dec. 4, the leader begins to break up, and the whole group disappears as a cluster.

330·405 G	0	9	0	20	67·2	0·0	-14·2	-76·4
331·302 C	10	40	12	45	69·0	+ 1·8	-14·1	-62·7
332·293 C	27	142	21	113	69·5	+ 2·3	-14·2	-49·2
333·601 G	114	649	68	393	70·7	+ 3·5	-14·0	-30·7
334·413 G	109	650	60	360	71·0	+ 3·8	-14·7	-19·7
335·308 C	109	650	57	340	70·9	+ 3·8	-15·0	- 8·0
336·408 G	129	675	67	353	70·0	+ 2·9	-15·5	+ 5·6
337·297 C	152	682	82	480	69·2	+ 2·1	-15·8	+16·5
338·456 G	107	711	65	436	69·6	+ 2·5	-16·0	+32·1
339·294 C	68	535	48	378	68·7	+ 1·6	-16·0	+42·3
340·288 C	19	115	17	107	68·7	+ 1·6	-16·1	+55·4
341·419 G	8	52	12	79	68·3	+ 1·2	-17·1	+69·9
342·318 C	0	8	0	29	68·3	..	-17·7	+81·7
Means	..	..	42	259	69·4	..	-15·2	..

Group 14401. Dec. 24-1946 Jan. 5. A stable regular spot.

357·316 C	19	156	58	473	68·3	..	-16·9	-80·7
358·530 G	48	255	59	314	67·4	+ 0·5	-16·6	-65·6
359·529 G	71	363	60	305	67·1	+ 0·2	-16·7	-52·7
360·519 G	73	467	48	308	67·6	+ 0·8	-16·9	-39·2
361·286 C	88	468	52	276	67·4	+ 0·6	-17·1	-29·3
362·473 G	123	525	65	278	67·5	+ 0·7	-17·5	-13·5
363·433 G	82	430	43	224	67·5	+ 0·7	-17·4	- 0·9
364·117 K	80	470	42	244	67·5	+ 0·7	-17·6	+ 8·1
0·477 G	52	315	30	183	68·0	+ 1·2	-17·3	+26·5
1·304 C	54	268	35	174	68·0	+ 1·2	-17·6	+37·4
2·406 G	39	195	32	158	67·2	+ 0·4	-17·5	+51·1
3·475 G	26	151	31	183	67·5	+ 0·8	-17·5	+65·5
4·298 C	17	71	34	143	67·2	+ 0·5	-17·2	+76·0
Means	..	..	44	232	67·5	..	-17·2	..

No. 1387. Latitude +21°·7

Group 14399 in Rotation 1234
" 14412 " " 1235
" 14435 " " 1236

Group 14399. Dec. 16-28. A stable regular spot with a small drift equatorwards.

d					°	°	°	°
349·523 G	11	63	32	184	172·7	0·0	+20·8	-78·9
350·378 C	21	102	30	148	172·7	+ 0·1	+21·1	-67·7
351·285 C	33	154	33	152	172·0	- 0·4	+21·1	-56·4
352·425 G	50	208	36	152	171·9	- 0·3	+21·0	-41·5
353·396 G	52	305	32	189	171·2	- 0·9	+21·3	-29·4
354·352 C	48	287	27	164	171·2	- 0·7	+20·9	-16·8
355·297 C	62	300	33	162	171·1	- 0·6	+20·7	- 4·5
356·460 G	67	326	37	179	170·8	- 0·7	+20·5	+10·6
357·316 C	77	364	45	211	170·8	- 0·6	+20·5	+21·8
358·530 G	48	220	33	150	170·4	- 0·8	+20·2	+37·4
359·529 G	50	220	42	187	170·1	- 0·9	+20·1	+50·3
360·519 G	30	143	37	176	170·1	- 0·8	+19·8	+63·3
361·286 C	13	67	25	129	169·7	- 1·0	+19·7	+73·0
Means	..	..	34	168	171·1	..	+20·6	..

Group 14412. 1946 Jan. 13-25. A small stable regular spot.

12·497 G	13	41	41	129	164·8	- 3·3	+21·1	-78·4
13·429 G	19	91	27	127	165·3	- 2·6	+21·0	-65·6
14·439 G	30	162	28	151	164·8	- 2·9	+20·8	-52·8
15·490 G	50	216	36	156	164·4	- 3·2	+20·9	-39·4
16·403 G	37	217	23	137	164·4	- 3·0	+21·0	-27·4
17·417 G	43	239	25	139	163·9	- 3·3	+21·1	-14·5
18·415 G	43	217	24	122	163·5	- 3·6	+21·2	- 1·8
19·318 C	48	207	27	116	162·5	- 4·4	+21·0	+ 9·1
20·286 C	36	188	22	113	162·5	- 4·3	+21·4	+21·9
21·292 C	29	148	20	102	162·0	- 4·6	+21·6	+34·6
22·295 C	31	125	26	106	161·8	- 4·6	+22·0	+47·6
23·580 G	22	87	30	118	161·4	- 4·8	+22·2	+64·1
24·293 C	13	61	28	130	160·7	- 5·4	+22·1	+72·8
Means	..	..	27	127	163·2	..	+21·3	..

Group 14435. 1946 Feb. 11-15. A small spot.

41·491 G	7	26	10	37	156·9	- 6·3	+23·1	-64·5
42·295 C	4	17	4	17	157·1	- 6·0	+23·0	-53·7
43·517 C	4	25	3	19	156·6	- 6·3	+23·2	-38·2
44·296 C	4	15	3	10	156·4	- 6·4	+23·2	-28·1
45·296 C	2	8	1	5	155·8	- 6·8	+23·5	-15·5
Means	..	..	4	18	156·6	..	+23·2	..

ROYAL OBSERVATORY, GREENWICH.

Ledgers of Groups of Sunspots

For the Year

1945

Ledger II.—Non-Recurrent Groups

GREENWICH PHOTO-HELIOGRAPHIC RESULTS, 1945

LEDGER II - NON-RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR 1945.

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 and Kodaikánal by the letters C and K, respectively. The letters Mt. W and W indicate Mount Wilson and Washington respectively in the six cases for which copies of the original negatives were supplied.

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 $14^{\circ}\cdot18$, 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, $\xi = 14^{\circ}\cdot37 - 2^{\circ}\cdot60 \sin^2 \phi$. 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 II. - NON-RECURRENT GROUPS OF SUNSPOTS FOR THE YEAR.

Group 14251.

Jan. 6-17. A small regular spot with a small cluster in its wake on Jan. 12 and 13.

Date U.T. Place	Projected Area: Umbræ	Projected Area: Whole Spots	Corrected Area: Umbræ	Corrected Area: Whole Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
5·289 C	8	46	23	134	34·8	..	-24·1	-80·9
6·320 C	21	113	28	148	35·1	0·0	-24·2	-67·0
7·424 G	26	156	23	137	34·3	- 0·5	-24·3	-53·3
8·291 C	27	191	19	138	33·7	- 0·9	-24·7	-42·4
9·449 G	48	227	29	136	34·0	- 0·3	-24·8	-26·9
10·459 G	65	224	36	125	32·0	- 2·0	-25·3	-15·6
11·289 C	43	253	23	136	30·3	- 3·5	-25·2	- 6·4
12·287 C	54	262	30	142	30·1	- 3·4	-25·0	+ 6·6
13·459 G	13	39	8	23	33·4	+ 0·2	-24·2	+25·3
14·314 C	6	36	4	24	33·4	+ 0·4	-24·1	+36·6
15·283 C	4	19	3	15	33·3	+ 0·5	-24·3	+49·2
16·446 G	0	4	0	5	33·0	+ 0·5	-24·9	+64·2
Means	..	..	19	94	33·0	..	-24·6	..

Group 14255.

Jan. 18-28. A diminishing regular spot with a companion on Jan. 19, 20, 27 and 28.

17·304 C	8	38	21	98	242·1	0·0	+24·0	-75·4
18·417 G	37	169	42	193	240·2	- 1·6	+24·5	-62·6
19·430 G	37	188	31	161	242·6	+ 1·0	+24·3	-46·9
20·336 C	38	192	27	134	243·1	+ 1·7	+23·6	-34·5
21·422 C	33	192	20	117	242·9	+ 1·8	+23·5	-20·4
22·287 C	33	169	19	98	242·7	+ 1·8	+23·5	- 9·2
23·460 G	30	147	17	84	242·2	+ 1·5	+23·3	+ 5·8
24·551 G	17	78	10	48	241·9	+ 1·5	+23·9	+19·9
25·582 G	17	76	12	52	241·5	+ 1·3	+23·0	+33·0
26·286 C	8	50	6	40	241·3	+ 1·3	+24·2	+42·1
27·322 C	8	33	8	35	241·3	+ 1·5	+23·8	+55·7
Means	..	..	19	96	242·0	..	+23·8	..

Group 14256.

Jan. 21-26. One or two small spots.

20·336 C	4	44	2	27	254·9	0·0	+21·4	-22·7
21·422 C	13	92	7	52	255·9	+ 1·2	+21·3	- 7·4
22·287 C	6	25	3	14	257·7	+ 3·1	+21·1	+ 5·8
23·460 G	6	22	3	13	257·5	+ 3·1	+21·2	+21·1
24·551 G	2	9	1	6	259·4	+ 5·1	+21·4	+37·4
25·582 G	0	7	0	6	259·7	+ 5·6	+21·3	+51·2
Means	..	..	3	20	257·5	..	+21·3	..

Group 14258.

Jan. 27-Feb. 1. A grouping of small spots, just past the central meridian, developing into a regular spot followed by a cluster.

Date U.T. Place	Projected Area: Umbræ	Projected Area: Whole Spots	Corrected Area: Umbræ	Corrected Area: Whole Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
26·286 C	25	142	13	74	214·7	0·0	- 7·4	+15·5
27·322 C	75	286	43	164	215·3	+ 0·5	- 7·8	+29·7
28·423 G	109	564	78	407	217·3	+ 2·3	- 7·9	+46·2
29·314 C	96	496	92	475	217·0	+ 1·9	- 7·5	+57·7
30·290 C	51	242	85	402	218·9	+ 3·6	- 7·5	+72·4
31·430 G	2	9	(8	34	214·9	..	- 9·6)	+83·4
Means	..	..	62	304	216·6	..	- 7·6	..

Group 14259.

Feb. 1-9. A few small spots.

31·430 G	4	16	12	49	49·3	..	-23·1	-82·2
32·572 G	8	44	10	55	50·2	0·0	-23·1	-66·3
33·460 G	13	48	11	42	49·9	- 0·1	-21·8	-54·9
34·435 G	18	76	12	52	50·8	+ 1·0	-23·0	-41·1
35·303 C	8	54	5	33	47·3	- 2·4	-22·5	-33·2
36·296 C	8	42	4	23	49·6	+ 0·1	-22·7	-17·8
37·502 G	4	22	2	11	47·4	- 1·9	-22·6	- 4·1
38·334 C	6	17	3	9	48·0	- 1·1	-22·2	+ 7·4
39·429 G	4	13	2	7	48·0	- 0·9	-22·3	+21·8
Means	..	..	6	29	48·9	..	-22·5	..

Group 14261.

Feb. 13-21. A stream of small spots dying out after reaching the central meridian.

43·577 G	11	69	23	141	259·8	0·0	+22·3	-71·7
44·430 G	42	219	60	307	256·9	- 2·7	+22·8	-63·4
45·479 G	40	301	38	280	257·0	- 2·4	+22·2	-49·5
46·365 C	47	211	35	156	256·4	- 2·9	+22·5	-38·4
47·307 C	63	243	40	157	256·1	- 3·0	+22·6	-26·3
48·320 C	45	186	27	110	254·9	- 4·0	+22·4	-14·2
49·300 C	19	104	11	60	256·8	- 1·9	+22·5	+ 0·6
50·445 G	9	35	5	21	257·1	- 1·4	+22·2	+16·0
51·304 C	0	8	0	5	257·6	- 0·8	+22·1	+27·8
Means	..	..	27	137	256·8	..	+22·4	..

Group 14262.

Feb. 23-Mar. 6. A declining stream of small variable spots.

53·300 C	12	103	30	244	124·1	0·0	-17·8	-79·4
54·378 G	33	162	36	174	125·9	+ 1·8	-16·4	-63·4

continued

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

Group 14262. - *continued*

Date U.T. Place	Projected Area Umbræ	Projected Area Whole Spots	Corrected Area Umbræ	Corrected Area Whole Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
55·322 C	33	148	25	113	126·8	+ 2·8	-16·3	-50·1
56·564 G	36	175	21	105	127·4	+ 3·4	-16·8	-33·1
57·360 G	33	157	18	86	127·7	+ 3·7	-17·0	-22·3
58·307 C	38	176	20	89	129·5	+ 5·5	-16·9	- 8·1
59·567 G	33	101	17	53	130·0	+ 6·1	-16·8	+10·0
60·372 G	28	117	15	64	131·5	+ 7·6	-17·0	+21·1
61·375 G	29	66	19	41	132·0	+ 8·1	-17·5	+34·9
62·454 G	9	40	7	32	135·0	+11·2	-16·4	+52·1
63·438 G	8	24	8	24	129·0	+ 5·2	-17·0	+59·0
64·603 G	2	7	5	19	135·4	..	-16·1	+80·8
Means	..	..	18	87	129·5	..	-16·8	..

Group 14263.

Mar. 2-15. A large regular spot, stable in position, with occasional small companions.

60·372 G	18	61	69	233	26·2	..	-14·5	-84·2
61·375 G	68	383	105	590	24·9	0·0	-14·4	-72·2
62·454 G	119	592	111	551	24·8	- 0·1	-14·3	-58·1
63·438 G	145	724	102	507	25·1	+ 0·1	-14·4	-44·9
64·603 G	150	825	87	478	25·2	+ 0·2	-14·2	-29·4
65·377 C	157	887	83	471	24·7	- 0·3	-14·1	-19·7
66·412 G	131	814	67	415	24·6	- 0·4	-14·4	- 6·2
67·378 G	153	874	78	445	24·7	- 0·4	-14·2	+ 6·7
68·316 C	140	767	74	407	24·3	- 0·8	-14·4	+18·6
69·323 C	98	735	58	434	24·2	- 0·9	-14·2	+31·8
70·511 G	62	506	45	369	24·0	- 1·2	-14·4	+47·2
71·367 G	74	425	69	398	24·0	- 1·2	-14·5	+58·5
72·363 G	35	233	53	352	24·2	- 1·0	-14·8	+71·9
73·441 G	4	40	21	213	24·5	..	-15·1	+86·4
Means	..	..	78	451	24·6	..	-14·4	..

Group 14264.

Mar. 9-14. Small spots forming in front of Group 14263.

67·378 G	4	26	2	14	31·6	0·0	-19·6	+13·6
68·316 C	11	38	6	22	33·7	+ 2·2	-20·0	+28·0
69·323 C	21	94	15	63	33·5	+ 2·1	-20·1	+41·1
70·511 G	4	35	4	33	35·0	+ 3·8	-20·1	+58·2
71·367 G	4	13	6	18	35·7	+ 4·6	-20·3	+70·2
72·363 G	0	4	0	10	32·9	..	-18·8	+80·6
Means	..	..	6	30	33·9	..	-20·0	..

Group 14265.

Mar. 16-21. A single spot on each day except Mar. 18 and 19 when there is a pair.

continued

Group 14265. - *continued*

Date U.T. Place	Projected Area Umbræ	Projected Area Whole Spots	Corrected Area Umbræ	Corrected Area Whole Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
74·439 G	0	4	0	7	217·7	0·0	+24·3	-67·3
75·413 C	2	17	2	18	218·4	+ 0·9	+24·3	-53·7
76·422 G	4	26	4	21	218·4	+ 1·2	+24·0	-40·4
77·316 C	4	30	3	19	222·1	+ 5·1	+23·4	-25·0
78·392 G	9	40	5	24	221·2	+ 4·4	+23·3	-11·7
79·355 G	7	35	4	20	221·6	+ 5·0	+23·0	+ 1·4
Means	..	..	3	18	219·9	..	+23·7	..

Group 14267.

Mar. 26-April 7. A stream growing rapidly as it passes clear of the east limb. The leader is a regular spot with close companions; the follower, which develops as a composite spot, slowly becomes regular as it diminishes.

84·327 C	0	11	0	31	72·9	..	-20·9	-81·7
85·560 G	36	159	37	164	77·0	0·0	-21·4	-61·4
86·422 C	103	598	81	472	77·2	+ 0·3	-21·2	-49·8
87·400 C	220	1146	143	742	76·7	0·0	-21·3	-37·4
88·354 G	251	1501	143	854	76·8	+ 0·2	-21·5	-24·7
89·309 C	346	1689	185	905	75·3	- 1·1	-21·8	-13·6
90·321 C	281	1757	146	965	75·0	- 1·3	-21·2	- 0·5
91·425 G	260	1569	137	832	74·1	- 2·0	-21·3	+13·1
92·342 G	285	1546	162	880	74·1	- 1·9	-21·2	+25·2
93·595 C	199	1184	133	804	73·5	- 2·3	-21·0	+41·2
94·314 G	170	924	137	741	74·1	- 1·6	-21·3	+51·2
95·342 G	98	550	114	640	74·3	- 1·2	-21·3	+65·0
96·357 C	61	274	139	652	74·8	- 0·5	-21·6	+78·9
Means	..	..	130	721	75·2	..	-21·3	..

Spot *a*

86·422 C	60	340	45	255	79·3	0·0	-21·4	-47·7
87·400 C	125	645	79	406	79·1	- 0·1	-21·8	-35·0
88·354 G	162	844	91	473	79·0	0·0	-21·9	-22·5
89·309 C	134	752	71	399	78·9	0·0	-21·8	-10·0
90·321 C	108	968	56	503	78·6	- 0·1	-21·5	+ 3·1
91·425 G	120	780	65	421	77·9	- 0·6	-21·5	+16·9
92·342 G	98	433	58	255	78·8	+ 0·4	-22·0	+29·9
93·595 C	58	330	43	244	78·7	+ 0·5	-22·0	+46·4
94·314 G	56	272	50	242	78·4	+ 0·3	-22·0	+55·5
95·342 G	38	187	52	256	78·7	+ 0·8	-22·1	+69·4
96·357 C	26	140	79	424	78·2	+ 0·4	-22·1	+82·3

Spot *b*

86·422 C	43	258	36	217	73·8	0·0	-20·5	-53·2
87·400 C	95	501	64	336	73·1	- 0·6	-20·2	-41·0
88·354 G	89	657	52	381	72·9	- 0·6	-20·9	-28·6
89·309 C	212	937	114	506	72·4	- 1·0	-21·2	-16·5
90·321 C	108	721	56	375	71·6	- 1·6	-21·1	- 3·9

continued

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

Group 14267. - *continued*

Spot *b* - *continued*

Date U.T. Place	Projected Area: Umbræ	Projected Area: Whole Spots	Corrected Area: Umbræ	Corrected Area: Whole Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
91·425 G	118	680	61	354	70·8	- 2·2	-21·0	+ 9·8
92·342 G	125	600	69	330	70·2	- 2·7	-21·2	+21·3
93·595 C	97	458	62	293	69·6	- 3·1	-20·8	+37·3
94·314 G	85	433	63	320	69·6	- 3·0	-20·7	+46·7
95·342 G	47	254	47	254	69·7	- 2·7	-20·4	+60·4
96·357 C	35	134	60	228	69·9	- 2·4	-19·9	+74·0

Group 14268.

Mar. 27- Apr. 8. A small persistent spot.

85·560 G	2	13	10	62	60·0	0·0	+33·3	-78·4
86·422 C	9	30	18	59	59·5	0·0	+33·2	-67·5
87·400 C	15	28	18	34	59·2	+ 0·2	+32·9	-54·9
88·354 G	13	49	12	44	58·9	+ 0·5	+32·7	-42·6
89·309 C	15	43	11	32	58·8	+ 0·9	+32·4	-30·1
90·321 C	17	52	12	35	58·5	+ 1·2	+32·5	-17·0
91·425 G	20	96	13	61	57·5	+ 0·8	+32·5	- 3·5
92·342 G	13	49	8	32	58·1	+ 1·9	+32·1	+ 9·2
93·595 C	9	30	6	21	57·1	+ 1·6	+32·5	+24·8
94·314 G	4	22	3	17	57·2	+ 2·1	+32·3	+34·3
95·342 G	4	16	4	16	56·4	+ 1·9	+32·5	+47·1
96·357 C	4	17	6	24	56·1	+ 2·2	+32·5	+60·2
97·319 C	0	9	0	22	54·8	+ 1·4	+33·1	+71·6
Means	..	..	9	35	57·8	..	+32·6	..

Group 14269.

Apr. 2-10. A regular spot slowly vanishing.

91·425 G	11	96	21	180	345·2	0·0	-28·6	-75·8
92·342 G	18	98	21	112	345·2	+ 0·4	-28·6	-63·7
93·595 C	30	156	23	122	344·4	+ 0·1	-28·9	-47·9
94·314 G	25	129	17	88	344·1	+ 0·1	-28·7	-38·8
95·342 G	16	89	9	53	343·8	+ 0·2	-28·5	-25·5
96·357 C	22	73	12	40	343·1	- 0·1	-28·4	-12·8
97·319 C	15	52	8	28	342·8	0·0	-28·2	- 0·4
98·401 G	11	61	6	34	341·8	- 0·6	-28·9	+12·9
99·521 G	2	29	1	18	341·7	- 0·2	-28·2	+27·6
Means	..	..	13	75	343·6	..	-28·6	..

Group 14270.

Apr. 14-20. A short-lived stream of small variable spots.

103·388 G	11	49	6	28	234·5	0·0	- 6·7	-28·6
104·358 C	13	43	7	22	235·2	+ 0·5	- 6·7	-15·1
105·334 G	22	99	10	50	234·8	0·0	- 6·4	- 2·6
106·341 G	31	109	16	55	234·4	- 0·6	- 6·5	+10·3

continued

Group 14270. - *continued*

Date U.T. Place	Projected Area: Umbræ	Projected Area: Whole Spots	Corrected Area: Umbræ	Corrected Area: Whole Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
107·336 G	23	97	13	53	234·4	- 0·7	- 6·6	+23·5
108·309 G	7	32	4	19	232·2	- 3·1	- 6·3	+34·1
109·338 G	2	9	1	7	232·4	- 3·0	- 6·5	+47·9
Means	..	..	8	33	234·0	..	- 6·5	..

Group 14271.

Apr. 17-29. A long stream of small spots in which the leader is the most stable component. The following part consists of a string of small changing spots.

106·341 G	4	14	8	27	148·3	0·0	-22·5	-75·8
107·336 G	22	117	24	139	146·2	- 1·9	-22·9	-64·7
108·309 G	50	254	42	213	146·2	- 1·7	-23·1	-51·9
109·338 G	126	594	84	392	146·1	- 1·6	-23·1	-38·4
110·568 G	99	658	57	376	146·2	- 1·2	-23·5	-22·1
111·319 G	90	554	49	300	146·8	- 0·5	-23·0	-11·5
112·336 G	97	510	52	270	146·8	- 0·3	-23·3	+ 1·9
113·511 G	92	493	52	276	146·3	- 0·5	-22·6	+16·9
114·345 C	80	348	48	212	147·9	+ 1·2	-22·6	+29·5
115·477 C	34	136	25	100	148·4	+ 2·0	-22·7	+45·0
116·518 C	26	123	25	121	147·7	+ 1·5	-22·6	+58·0
117·314 G	14	53	20	72	147·6	+ 1·5	-22·5	+68·5
118·324 C	0	11	0	28	145·4	- 0·5	-22·8	+79·6
Means	..	..	37	194	146·9	..	-22·9	..

Spot *a*

108·309 G	27	126	21	96	151·0	0·0	-22·6	-47·1
109·338 G	54	284	33	176	151·6	+ 0·8	-22·8	-32·9
110·568 G	54	346	30	190	151·7	+ 1·2	-22·8	-16·6
111·319 G	47	297	25	157	151·6	+ 1·2	-22·7	- 6·7
112·336 G	54	272	29	144	151·8	+ 1·6	-22·6	+ 6·9
113·511 G	50	312	28	175	151·3	+ 1·4	-22·5	+21·9
114·345 C	53	243	33	151	151·0	+ 1·2	-22·3	+32·6
115·477 C	20	88	15	67	150·6	+ 1·1	-22·5	+47·2
116·518 C	13	70	14	73	150·3	+ 1·0	-22·3	+60·6

Group 14273.

Apr. 22-May 4. Intermittent. A small spot in the same general area on each of the days.

111·319 G	2	9	6	27	76·6	..	-20·7	-81·7
112·336 G	2	7	3	9	77·4	0·0	-20·3	-67·5
113·511 G	0	5	0	5	77·3	0·0	-22·6	-52·1
114·345 C	0	0	0	0	..	..	..	..
115·477 C	0	0	0	0	..	..	..	..
116·518 C	0	0	0	0	..	..	..	..
117·314 G	0	0	0	0	..	..	..	..
118·324 C	0	0	0	0	..	..	..	..

continued

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

Group 14273. - *continued*

Date U.T. Place	Projected Area: Umbræ	Projected Area: Whole Spots	Corrected Area: Umbræ	Corrected Area: Whole Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
119·336 C	0	0	0	0	..	..	..	..
120·503 G	0	0	0	0	..	..	..	..
121·321 G	14	27	11	22	79·0	+ 2·7	-18·4	+52·8
122·330 C	0	13	0	15	77·0	+ 0·8	-20·9	+64·2
123·340 G	2	5	4	11	77·2	+ 1·2	-19·3	+77·7
Means	..	..	2	5	77·6	..	-20·3	..

Group 14274.

Apr. 25-May 7. A large composite spot of an inverted V-shape until May 2 when the following part begins to die out and the preceding part to assume a circular outline.

Date U.T. Place	Projected Area: Umbræ	Projected Area: Whole Spots	Corrected Area: Umbræ	Corrected Area: Whole Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
114·345 C	31	142	(102	466	36·2	..	-17·5)	-82·2
115·477 C	140	872	183	1142	35·5	0·0	-17·9	-67·9
116·518 C	215	1288	187	1116	35·6	+ 0·1	-17·8	-54·1
117·314 G	256	1521	180	1075	35·3	- 0·1	-17·7	-43·8
118·324 C	311	1767	183	1045	35·5	+ 0·1	-17·9	-30·3
119·336 C	244	1513	131	814	35·3	0·0	-17·6	-17·1
120·503 G	228	1065	117	546	35·1	- 0·2	-17·5	- 1·9
121·321 G	216	1218	113	635	35·0	- 0·2	-17·3	+ 8·8
122·330 C	171	1145	95	632	34·4	- 0·8	-17·5	+21·6
123·340 G	127	778	80	491	35·0	- 0·1	-17·3	+35·5
124·400 C	75	449	59	356	35·1	0·0	-17·6	+49·6
125·340 G	73	373	80	410	35·8	+ 0·8	-17·1	+62·8
126·506 G	14	186	34	428	35·2	+ 0·2	-17·7	+77·6
Means	..	..	120	724	35·2	..	-17·6	..

Group 14275.

Apr. 30-May 10. At first, a small spot; after a lapse of two days a short stream appears a little ahead of the original position.

Date U.T. Place	Projected Area: Umbræ	Projected Area: Whole Spots	Corrected Area: Umbræ	Corrected Area: Whole Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
119·336 C	4	18	5	22	347·0	0·0	-19·1	-65·4
120·503 G	9	16	7	13	346·3	- 0·6	-18·8	-50·7
121·321 G	5	9	3	6	346·3	- 0·5	-18·7	-39·9
122·330 C	13	48	8	28	345·6	- 1·2	-17·9	-27·2
123·340 G	0	0	0	0	..	..	..	..
124·400 C	0	0	0	0	..	..	..	..
125·340 G	11	43	6	24	349·8	+ 3·3	-19·4	+16·8
126·506 G	43	218	26	135	351·0	+ 4·6	-18·9	+33·4
127·296 G	41	181	30	131	351·5	+ 5·1	-18·9	+44·3
128·334 C	28	81	27	76	350·1	+ 3·8	-18·4	+56·6
129·404 C	4	24	5	39	350·1	+ 3·9	-18·4	+70·8
Means	..	..	11	43	348·6	..	-18·7	..

Group 14276.

Apr. 30-May 10. A small regular spot with one or two companions after May 5.

Date U.T. Place	Projected Area: Umbræ	Projected Area: Whole Spots	Corrected Area: Umbræ	Corrected Area: Whole Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
119·336 C	9	35	22	86	333·4	0·0	-25·6	-79·0
120·503 G	18	100	21	119	332·5	- 0·6	-25·7	-64·5
121·321 G	23	141	21	127	332·2	- 0·6	-25·8	-54·0
122·330 C	29	136	21	97	331·9	- 0·6	-25·9	-40·9
123·340 G	32	154	20	94	331·3	- 0·9	-25·9	-28·2
124·400 C	42	178	24	100	330·4	- 1·5	-26·4	-15·1
125·340 G	27	122	15	66	329·2	- 2·4	-26·4	- 3·8
126·506 G	18	73	10	41	330·0	- 1·3	-26·4	+12·4
127·296 G	30	95	17	55	329·3	- 1·8	-24·6	+22·1
128·334 C	11	40	8	27	328·7	- 2·1	-24·6	+35·2
129·404 C	4	15	3	12	326·4	- 4·1	-23·0	+47·1
Means	..	..	17	75	330·5	..	-25·5	..

Group 14281.

May 14-24. A stream of small changing spots with a brief maximum on May 16.

Date U.T. Place	Projected Area: Umbræ	Projected Area: Whole Spots	Corrected Area: Umbræ	Corrected Area: Whole Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
133·320 G	2	7	5	19	148·3	0·0	-25·3	-79·2
134·322 G	19	77	27	112	145·8	- 2·2	-26·6	-68·5
135·318 G	37	232	36	233	144·5	- 3·2	-26·7	-56·6
136·343 G	35	139	26	101	146·8	- 0·5	-26·9	-40·7
137·417 G	19	80	11	49	147·1	+ 0·1	-26·2	-26·2
138·140 K	23	78	13	44	149·9	+ 3·1	-26·6	-13·9
139·135 K	17	78	9	43	149·6	+ 3·2	-26·7	- 1·0
140·358 G	9	43	5	25	150·9	+ 4·9	-26·4	+16·5
141·335 G	14	44	9	27	147·7	+ 2·0	-26·2	+26·2
142·436 G	5	14	4	11	151·7	+ 6·3	-25·3	+44·8
143·459 C	4	27	4	29	153·0	+ 7·9	-26·1	+59·6
Means	..	..	14	63	148·7	..	-26·3	..

Group 14283.

May 16-28. Intermittent: a tiny spot until May 18; after a lapse of six days a small stream appears in nearly the same place.

Date U.T. Place	Projected Area: Umbræ	Projected Area: Whole Spots	Corrected Area: Umbræ	Corrected Area: Whole Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
135·318 G	0	5	0	10	126·3	0·0	-18·0	-74·8
136·343 G	0	5	0	5	128·3	+ 2·1	-17·5	-59·2
137·417 G	5	11	4	8	129·1	+ 2·9	-18·4	-44·2
138·140 K	0	0	Q	0	..	..	..	..
139·135 K	0	0	0	0	..	..	..	..
140·358 G	0	0	0	0	..	..	..	..
141·335 G	0	0	0	0	..	..	..	..
142·436 G	0	0	0	0	..	..	..	..
143·459 C	0	0	0	0	..	..	..	..
144·325 G	12	43	9	32	127·9	+ 2·2	-18·5	+46·0
145·337 C	13	51	13	52	127·6	+ 1·9	-18·6	+59·0
146·403 C	11	44	17	69	125·2	- 0·4	-17·9	+70·8
147·339 G	7	27	27	103	124·6	..	-19·6	+82·5
Means	..	..	4	15	127·4	..	-18·2	..

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

Group 14285.

May 18-27. A few small variable spots.

Date U.T. Place	Projected Area: Umbræ	Projected Area: Whole Spots	Corrected Area: Umbræ	Corrected Area: Whole Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
137·417 G	0	5	0	6	114·6	0·0	+27·6	-56·7
138·140 K	8	38	7	33	115·4	+ 1·1	+27·2	-48·4
139·135 K	0	13	0	9	118·2	+ 4·2	+27·1	-32·4
140·358 G	14	55	8	33	117·0	+ 3·4	+27·7	-17·4
141·335 G	12	41	7	23	116·3	+ 3·1	+27·1	- 5·2
142·436 G	21	91	12	52	115·2	+ 2·4	+26·8	+ 8·3
143·459 C	20	111	12	67	114·7	+ 2·2	+27·0	+21·3
144·325 G	10	39	6	26	113·2	+ 1·0	+27·1	+31·3
145·337 C	9	27	7	21	111·8	0·0	+27·1	+43·2
146·403 C	4	29	4	32	112·9	+ 1·4	+26·2	+58·5
Means	..	..	6	30	114·9	..	+27·1	..

Group 14287.

May 23-31. A small spot slowly dying out.

142·436 G	5	18	27	96	21·9	..	-16·1	-85·0
143·459 C	18	44	27	67	22·9	0·0	-16·4	-70·5
144·325 G	18	82	18	82	22·7	- 0·2	-16·3	-59·2
145·337 C	27	135	20	100	22·9	0·0	-16·3	-45·7
146·403 C	22	111	13	68	23·0	+ 0·1	-16·1	-31·4
147·339 G	23	87	13	48	23·3	+ 0·4	-16·0	-18·8
148·417 G	9	66	5	34	23·1	+ 0·2	-16·0	- 4·7
149·309 G	7	18	4	9	23·0	+ 0·2	-16·2	+ 7·0
150·326 G	5	16	3	9	22·7	- 0·1	-15·8	+20·2
Means	..	..	13	52	23·0	..	-16·1	..

Group 14289.

May 29-June 3. A short stream of small spots.

148·417 G	25	96	14	58	42·6	0·0	+30·7	+14·8
149·309 G	25	112	17	73	42·7	+ 0·5	+30·3	+26·7
150·326 G	25	126	19	97	42·1	+ 0·4	+30·1	+39·6
151·351 G	18	119	17	117	41·8	+ 0·6	+30·7	+52·8
152·325 G	23	94	33	137	41·8	+ 1·1	+30·9	+65·7
153·337 C	0	9	0	23	39·3	- 0·9	+32·3	+76·6
Means	..	..	17	84	41·7	..	+30·8	..

Group 14291.

June 3-8. A small diminishing spot with a companion on June 8.

153·337 C	9	40	21	94	245·7	0·0	-19·1	-77·0
154·312 G	16	69	19	83	245·9	+ 0·3	-19·1	-63·9
155·374 G	18	105	15	86	245·7	+ 0·2	-19·1	-50·0
156·404 C	16	89	11	59	245·4	0·0	-19·1	-36·7
157·330 G	14	76	8	44	245·0	- 0·4	-19·1	-24·8
158·306 G	10	46	6	25	243·8	- 1·7	-18·8	-13·3
Means	..	..	13	65	245·2	..	-19·0	..

Group 14292.

June 9-14. A short stream with rapid rise and quick decay.

Date U.T. Place	Projected Area: Umbræ	Projected Area: Whole Spots	Corrected Area: Umbræ	Corrected Area: Whole Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
159·313 G	30	103	17	57	228·5	0·0	-21·2	-15·1
160·415 K	98	413	53	223	228·4	+ 0·1	-21·5	- 0·6
161·307 G	90	483	50	268	228·6	+ 0·4	-21·5	+11·4
162·303 G	68	382	40	226	227·1	- 0·9	-21·4	+23·1
163·522 G	23	104	16	73	227·0	- 0·8	-21·5	+39·1
164·461 G	14	32	13	28	227·8	+ 0·1	-21·2	+52·3
Means	..	..	32	146	227·9	..	-21·4	..

Group 14293.

June 11-19. A persistent small spot with a companion on June 18.

161·307 G	9	46	13	67	148·6	0·0	-17·1	-68·6
162·303 G	9	37	8	34	148·7	+ 0·1	-17·2	-55·3
163·522 G	9	53	6	36	148·9	+ 0·4	-17·0	-39·0
164·461 G	18	55	11	32	149·1	+ 0·6	-17·1	-26·4
165·528 G	9	37	5	20	149·2	+ 0·8	-17·4	-12·1
166·387 G	9	37	5	20	149·0	+ 0·6	-17·2	- 1·0
167·334 G	9	30	5	16	148·7	+ 0·3	-17·5	+11·3
168·345 G	9	28	5	16	147·8	- 0·5	-17·9	+23·7
169·319 G	0	9	0	6	148·5	+ 0·2	-17·4	+37·3
Means	..	..	6	27	148·7	..	-17·3	..

Group 14294.

June 11-23. A stable regular spot.

161·307 G	32	161	81	406	140·9	0·0	-31·9	-76·3
162·303 G	69	248	93	335	140·1	- 0·3	-31·9	-63·9
163·522 G	74	361	66	321	139·9	+ 0·1	-31·5	-48·0
164·461 G	80	419	58	306	139·7	+ 0·4	-31·3	-35·8
165·528 G	87	474	56	303	139·2	+ 0·4	-31·3	-22·1
166·387 G	85	478	52	292	138·7	+ 0·4	-31·4	-11·3
167·334 G	83	499	49	294	138·5	+ 0·7	-31·0	+ 1·1
168·345 G	78	428	48	261	138·0	+ 0·7	-31·0	+13·9
169·319 G	82	400	54	264	137·5	+ 0·7	-30·9	+26·3
170·347 G	46	271	35	209	136·7	+ 0·4	-30·8	+39·2
171·573 G	41	216	43	227	136·2	+ 0·5	-31·0	+54·9
172·350 G	28	150	39	212	135·4	+ 0·1	-30·9	+64·4
173·381 G	14	55	42	167	135·0	+ 0·2	-30·9	+77·6
Means	..	..	55	277	138·1	..	-31·2	..

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

Group 14296.

June 13-22. A tiny spot until June 17; a pair of small spots appear near the same position on June 20.

Date U.T. Place	Projected Area: Umbræ	Projected Area: Whole Spots	Corrected Area: Umbræ	Corrected Area: Whole Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
163·522 G	0	5	0	4	139·0	0·0	-16·7	-48·9
164·461 G	0	5	0	3	138·9	- 0·1	-15·6	-36·6
165·528 G	0	9	0	5	138·3	- 0·7	-16·5	-23·0
166·387 G	0	7	0	4	140·2	+ 1·2	-16·3	- 9·8
167·334 G	0	7	0	4	138·1	- 0·9	-17·8	+ 0·7
168·345 G	0	0	0	0	..	..	..	..
169·319 G	0	0	0	0	..	..	..	..
170·347 G	12	48	8	32	135·0	- 4·0	-14·0	+37·5
171·573 G	2	14	2	13	135·1	- 3·8	-13·6	+53·8
172·350 G	0	7	0	9	136·2	- 2·7	-17·2	+65·2
Means	..	..	1	7	137·6	..	-16·0	..

Group 14298.

June 13-21. A stream of small changing spots.

163·522 G	5	37	15	108	109·7	0·0	-27·1	-78·2
164·461 G	16	117	22	164	109·7	+ 0·3	-27·3	-65·8
165·528 G	26	124	23	113	110·7	+ 1·6	-26·7	-50·6
166·387 G	44	235	33	175	110·8	+ 2·0	-26·8	-39·2
167·334 G	33	218	21	139	110·6	+ 2·1	-26·7	-26·8
168·345 G	33	161	20	95	110·4	+ 2·2	-26·6	-13·7
169·319 G	16	77	9	43	110·3	+ 2·4	-26·4	- 0·9
170·347 G	0	9	0	5	109·0	+ 1·5	-25·6	+11·5
171·573 G	0	16	0	10	108·7	+ 1·5	-23·0	+27·4
Means	..	..	16	95	110·0	..	-26·2	..

Group 14299.

June 15-25. A single spot not seen on June 17-18. Companions appear on June 20 to form a short stream.

165·528 G	0	7	0	10	93·2	0·0	+26·7	-68·1
166·387 G	0	5	0	5	96·6	+ 3·7	+26·1	-53·4
167·334 G	0	0	0	0	..	..	..	..
168·345 G	0	0	0	0	..	..	..	..
169·319 G	5	32	3	18	96·8	+ 4·9	+26·8	-14·4
170·347 G	35	159	19	88	98·0	+ 6·4	+26·6	+ 0·5
171·573 G	25	129	14	74	98·3	+ 7·1	+26·4	+17·0
172·350 G	14	78	8	48	98·3	+ 7·4	+26·0	+27·3
173·381 G	5	30	4	22	99·1	+ 8·5	+26·2	+41·7
174·379 G	7	36	7	32	96·6	+ 6·3	+27·1	+52·4
175·380 G	2	23	3	31	96·3	+ 6·4	+27·2	+65·4
Means	..	..	5	30	97·0	..	+26·6	..

Group 14300.

June 19-July 1. A stream developing as it comes round the east limb. The follower, a small nearly regular spot, disintegrates into a cluster which soon dies out, and the leader (a regular spot) alone remains after June 28.

Date U.T. Place	Projected Area: Umbræ	Projected Area: Whole Spots	Corrected Area: Umbræ	Corrected Area: Whole Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
169·319 G	5	16	37	118	25·6	..	-14·5	-85·6
170·347 G	16	78	29	147	24·5	0·0	-15·1	-73·0
171·573 G	48	292	48	285	24·0	- 0·5	-15·5	-57·3
172·350 G	69	340	54	265	23·8	- 0·7	-15·7	-47·2
173·381 G	92	545	59	349	23·4	- 1·1	-15·5	-34·0
174·379 G	83	463	47	262	22·5	- 2·0	-15·5	-21·7
175·380 G	80	377	43	200	23·3	- 1·3	-15·1	- 7·8
176·206 K	69	396	36	208	23·3	- 1·3	-15·2	+ 3·3
177·311 G	54	266	31	149	24·0	- 0·6	-15·4	+18·6
178·159 K	34	239	21	144	22·5	- 2·1	-15·5	+28·4
179·506 G	18	104	15	85	26·0	+ 1·4	-14·5	+49·7
180·320 G	16	83	17	90	25·9	+ 1·3	-15·0	+60·4
181·362 G	5	28	10	56	25·9	+ 1·3	-14·8	+74·1
Means	..	..	34	187	24·1	..	-15·2	..

Spot *a*

171·573 G	25	189	23	173	25·8	0·0	-14·5	-55·5
172·350 G	46	246	34	184	25·5	- 0·3	-14·5	-45·5
173·381 G	37	239	23	146	26·1	+ 0·3	-14·2	-31·3
174·379 G	42	233	23	128	26·0	+ 0·2	-13·9	-18·2
175·380 G	41	216	21	112	26·2	+ 0·4	-13·8	- 4·7
176·206 K	43	233	22	121	25·6	- 0·3	-14·2	+ 5·6
177·311 G	35	180	20	101	26·0	+ 0·1	-14·2	+20·6
178·159 K	21	162	13	99	25·4	- 0·5	-14·3	+31·3
179·506 G	18	104	15	85	26·0	+ 0·1	-14·5	+49·7
180·320 G	16	83	17	90	25·9	0·0	-15·0	+60·4
181·362 G	5	28	10	56	25·9	0·0	-14·8	+74·1

Group 14306.

July 8-16. A pair of nearly regular spots.

188·429 G	2	12	5	28	140·2	0·0	+19·4	-78·0
189·340 G	25	120	29	137	142·4	+ 2·3	+18·2	-63·8
190·649 W	32	192	23	140	143·8	+ 3·8	+18·9	-45·0
191·592 G	50	276	32	174	141·7	+ 1·7	+18·3	-34·7
192·382 G	60	280	33	158	141·3	+ 1·4	+18·7	-24·6
193·328 G	64	294	34	156	140·6	+ 0·8	+19·0	-12·8
194·426 G	35	159	18	82	140·6	+ 0·8	+18·8	+ 1·7
195·350 G	21	92	11	49	140·3	+ 0·6	+18·9	+13·7
196·628 G	7	30	4	18	142·1	+ 2·5	+17·4	+32·4
Means	..	..	21	100	141·2	..	+18·6	..

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

Group 14307.

July 9-21. A pair of widely separated regular spots. The leader is stable throughout, but the umbra of the follower begins to divide into two on July 13. A few small faint companions come between these regular spots after July 12.

Date U.T. Place	Projected Area Umbra	Projected Area Whole Spots	Corrected Area Umbra	Corrected Area Whole Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
189·340 G	23	188	57	483	130·0	0·0	-19·3	-76·2
190·649 W	85	462	93	484	132·0	+ 2·1	-19·0	-56·8
191·592 G	134	718	111	589	129·8	0·0	-19·4	-46·6
192·382 G	170	950	118	660	129·7	0·0	-19·5	-36·2
193·328 G	179	1037	108	628	129·0	- 0·6	-19·4	-24·4
194·426 G	207	1160	116	651	128·1	- 1·4	-19·1	-10·8
195·350 G	184	1065	102	586	127·8	- 1·7	-19·4	+ 1·2
196·628 G	170	1039	98	599	127·5	- 1·8	-19·0	+17·8
197·366 G	120	745	75	460	127·1	- 2·2	-19·1	+27·2
198·391 G	101	556	75	411	127·5	- 1·7	-18·8	+41·1
199·368 G	73	373	72	365	127·7	- 1·4	-18·7	+54·2
200·363 G	39	185	65	308	128·7	- 0·3	-18·9	+68·4
201·641 W	3	22	(10	72	122·5	- 6·4	-17·8)	+79·1
Means	..	..	91	522	128·4	..	-19·2	..

Spot *a*

189·340 G	18	139	35	268	133·4	0·0	-18·8	-72·8
190·649 W	39	272	36	250	135·6	+ 2·3	-18·7	-53·2
191·592 G	74	419	56	314	133·6	+ 0·4	-18·8	-42·8
192·382 G	92	478	60	311	133·5	+ 0·4	-18·9	-32·4
193·328 G	101	506	59	293	133·3	+ 0·3	-19·1	-20·1
194·426 G	101	534	56	294	133·1	+ 0·2	-19·3	- 5·8
195·350 G	92	467	51	257	133·0	+ 0·1	-19·3	+ 6·4
196·628 G	87	432	52	259	132·7	0·0	-19·3	+23·0
197·366 G	69	340	45	221	132·6	- 0·1	-19·2	+32·7
198·391 G	53	271	42	217	132·5	- 0·1	-19·1	+46·1
199·368 G	41	198	45	216	132·5	0·0	-19·1	+59·0
200·363 G	25	116	48	224	132·6	+ 0·2	-19·1	+72·3

Spot *b*

189·340 G	5	49	22	215	124·6	..	-19·8	-81·6
190·649 W	46	190	57	234	126·2	..	-19·9	-62·6
191·592 G	60	299	55	275	123·9	0·0	-20·1	-52·5
192·382 G	78	472	58	349	124·1	+ 0·3	-19·8	-41·8
193·328 G	78	531	49	335	124·1	+ 0·4	-19·5	-29·3
194·426 G	106	626	60	357	123·9	+ 0·3	-19·4	-15·0
195·350 G	92	598	51	329	123·8	+ 0·2	-19·4	- 2·8
196·628 G	83	607	46	340	123·4	0·0	-19·3	+13·7
197·366 G	51	405	30	239	123·0	- 0·4	-19·1	+23·1
198·391 G	48	285	33	194	122·8	- 0·5	-18·5	+36·4
199·368 G	22	175	27	149	122·8	- 0·4	-18·3	+49·3
200·363 G	14	69	17	84	122·9	- 0·2	-18·2	+62·6
201·641 W	3	22	10	72	122·5	- 0·5	-17·8	+79·1

Group 14308.

July 9-20. A long stream of small changing spots.

d					°	°	°	°
189·340 G	5	25	12	62	127·4	0·0	+22·1	-78·8
190·649 W	10	75	10	78	128·9	+ 1·7	+23·0	-59·9
191·592 G	25	141	20	117	125·2	- 1·8	+23·0	-51·2
192·382 G	37	207	25	141	126·6	- 0·2	+22·5	-39·3
193·328 G	72	365	43	216	125·4	- 1·3	+22·7	-28·0
194·426 G	72	437	39	239	124·7	- 1·8	+22·6	-14·2
195·350 G	73	439	39	230	126·0	- 0·3	+22·6	- 0·6
196·628 G	35	246	20	135	126·4	+ 0·3	+22·3	+16·7
197·366 G	23	88	13	52	127·7	+ 1·8	+21·8	+27·8
198·391 G	5	30	4	22	130·8	+ 5·0	+21·4	+44·4
199·368 G	5	18	5	17	131·0	+ 5·4	+21·6	+57·5
200·363 G	0	7	0	10	131·3	+ 5·9	+21·5	+71·0
Means	..	..	20	113	127·5	..	+22·2	..

Group 14309.

July 9-17. A small cluster rising to a brief maximum and then declining rapidly.

189·340 G	0	9	0	43	123·6	..	-15·8	-82·6
190·649 W	0	15	0	18	125·8	..	-14·8	-63·0
191·592 G	23	143	20	124	124·9	0·0	-15·2	-51·5
192·382 G	49	212	35	152	124·4	- 0·5	-15·1	-41·5
193·328 G	51	320	31	195	123·8	- 1·1	-15·1	-29·6
194·426 G	28	200	15	110	123·8	- 1·1	-15·1	-15·1
195·350 G	28	124	15	66	122·6	- 2·3	-14·9	- 4·0
196·628 G	2	9	1	5	121·2	- 3·7	-16·2	+11·5
197·366 G	4	18	2	10	121·7	- 3·2	-16·1	+21·8
Means	..	..	17	95	123·2	..	-15·4	..

Group 14311.

July 12-15. A pair of developing spots.

192·382 G	0	18	0	13	204·8	0·0	-17·7	+38·9
193·328 G	37	166	33	148	205·2	+ 0·5	-18·8	+51·8
194·426 G	44	263	58	346	203·5	- 1·2	-18·2	+64·6
195·350 G	37	136	103	378	203·6	- 1·0	-18·5	+77·0
Means	..	..	48	221	204·3	..	-18·3	..

Group 14312.

July 14-24. A stream of small variable components.

194·426 G	0	12	0	13	81·9	0·0	-24·5	-57·0
195·350 G	0	0	0	0	..	..	...	..
196·628 G	21	78	14	53	79·6	- 1·7	-26·9	-30·1
197·366 G	44	184	27	115	80·0	- 1·1	-26·7	-19·9

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

Group 14312 - *continued*

Date U.T. Place	Projected Area: Umbræ	Projected Area: Whole Spots	Corrected Area: Umbræ	Corrected Area: Whole Spots	Longitude and Proper Motion	Latitude	Long. from C.M.
d					°	°	°	°
198·391 G	32	191	18	113	80·7	- 0·1	-26·5	- 5·7
199·368 G	46	194	28	115	80·0	- 0·5	-26·7	+ 6·5
200·363 G	32	152	20	95	80·0	- 0·2	-26·4	+19·7
201·641 W	8	41	6	31	82·6	+ 2·8	-25·1	+39·2
202·371 G	5	18	5	17	86·0	+ 6·4	-24·7	+52·3
203·383 G	0	12	0	16	80·6	+ 1·3	-25·5	+60·3
204·351 G	0	5	0	12	81·7	+ 2·7	-26·5	+74·2
Means	..	..	11	55	81·0	..	-25·4	..

Group 14313.

July 15-19. A pair of spots of sudden growth and rapid decay.

195·350 G	37	127	26	87	98·1	0·0	-29·3	-28·5
196·628 G	103	432	63	268	97·8	+ 0·3	-29·9	-11·9
197·366 G	69	272	42	165	97·7	+ 0·5	-30·1	- 2·2
198·391 G	50	214	31	134	97·5	+ 0·8	-30·5	+11·1
199·368 G	16	74	11	50	97·6	+ 1·4	-31·0	+24·1
Means	..	..	35	141	97·7	..	-30·2	..

Group 14314.

July 15-26. One or two tiny spots which by July 20 develop into a stream led by a regular spot.

195·350 G	0	7	0	15	49·2	0·0	+23·8	-77·4
196·628 G	0	9	0	9	49·3	+ 0·4	+23·1	-60·4
197·366 G	0	7	0	6	50·4	+ 1·7	+23·7	-49·5
198·391 G	14	67	9	44	49·6	+ 1·1	+24·5	-36·8
199·368 G	53	262	31	152	49·8	+ 1·6	+24·1	-23·7
200·363 G	95	529	51	283	50·8	+ 2·8	+23·5	- 9·5
201·641 W	74	364	40	195	51·6	+ 3·9	+24·0	+ 8·2
202·371 G	78	506	44	283	52·2	+ 4·7	+24·2	+18·5
203·383 G	97	483	60	298	51·4	+ 4·2	+24·5	+31·1
204·351 G	55	455	39	329	50·7	+ 3·7	+24·5	+43·2
205·443 G	34	179	34	179	50·6	+ 3·9	+24·8	+57·5
206·614 G	7	60	19	157	55·0	+ 8·5	+24·7	+77·4
Means	..	..	26	160	50·8	..	+24·1	..

Group 14319.

July 26-Aug. 7. A small stable regular spot.

206·614 G	14	64	28	127	261·2	0·0	+16·9	-76·4
207·399 G	25	124	31	153	260·7	- 0·5	+16·7	-66·5
208·334 G	25	147	21	125	260·7	- 0·4	+16·6	-54·1
209·409 G	46	206	30	136	260·9	- 0·2	+16·6	-39·7
210·601 G	41	247	23	138	260·7	- 0·4	+16·9	-24·2
211·628 G	32	197	17	102	260·5	- 0·5	+17·0	-10·8
212·138 K	47	244	24	124	259·6	- 1·4	+17·0	- 4·9

Group 14319 - *continued*

Date U.T. Place	Projected Area: Umbræ	Projected Area: Whole Spots	Corrected Area: Umbræ	Corrected Area: Whole Spots	Longitude and Proper Motion	Latitude	Long. from C.M.
d					°	°	°	°
213·350 G	32	156	17	81	260·2	- 0·8	+17·2	+11·7
214·354 G	23	151	13	85	259·9	- 1·0	+17·4	+24·7
215·345 G	25	156	16	100	259·8	- 1·1	+17·5	+37·7
216·294 G	18	120	14	94	259·3	- 1·5	+17·6	+49·7
217·422 G	11	62	13	71	259·2	- 1·6	+18·1	+64·5
218·258 K	4	32	7	57	258·5	- 2·3	+18·7	+74·8
Means	..	..	20	107	260·1	..	+17·2	..

Group 14321.

July 29-Aug. 4. One or more tiny spots.

209·409 G	0	7	0	8	237·4	0·0	+24·0	-63·2
210·601 G	0	7	0	6	234·3	- 2·8	+24·5	-50·6
211·628 G	5	23	3	15	235·3	- 1·5	+24·7	-36·0
212·138 K	0	0	0	0	..	..	..	..
213·350 G	10	43	6	23	237·4	+ 1·0	+24·3	-11·1
214·354 G	12	41	7	21	237·3	+ 1·1	+24·1	+ 2·1
215·345 G	2	27	1	15	236·3	+ 0·4	+24·0	+14·2
Means	..	..	2	13	236·3	..	+24·3	..

Group 14324.

Aug. 6-20. At first a composite spot followed by a few companions that are small until Aug. 10. Two fairly large composite spots then quickly develop from this train, and the aggregate area of the group rises to 1000 millionths of the sun's hemisphere. But the leader soon decreases and dies out by Aug. 18; the rest of the group is fast declining as it passes round the west limb.

217·422 G	5	21	27	112	108·1	..	+22·8	-86·6
218·258 K	21	112	42	226	106·7	0·0	+21·8	-77·0
219·351 G	57	288	62	314	105·9	- 0·5	+22·6	-63·2
220·188 K	80	431	87	362	105·6	- 0·8	+21·9	-52·5
221·411 G	114	554	74	360	104·6	- 1·3	+23·1	-37·3
222·384 G	135	670	78	384	104·2	- 1·5	+22·9	-24·9
223·451 G	137	766	74	411	104·3	- 1·1	+23·1	-10·6
224·657 W	277	853	146	451	100·7	- 4·4	+24·5	+ 1·7
225·266 K	270	1749	143	929	99·2	- 5·8	+25·1	+ 8·3
226·127 K	288	1895	159	1051	97·6	- 7·2	+25·6	+19·0
227·370 G	149	1078	96	696	98·5	- 5·9	+26·0	+35·4
228·575 G	110	633	91	514	98·3	- 5·9	+25·8	+51·1
229·430 G	78	365	81	387	96·8	- 7·1	+26·4	+60·9
230·278 K	51	229	76	361	96·3	- 7·4	+26·0	+71·6
231·140 K	17	80	52	242	96·0	..	+25·8	+82·7
Means	..	..	87	500	101·5	..	+24·2	..

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

Group 14324 - *continued*

Spot *a*

Date U.T. Place	Projected Area: Umbræ	Projected Area: Whole Spots	Corrected Area: Umbræ	Corrected Area: Whole Spots	Longitude and Proper Motion	Latitude	Long. from C.M.
d					°	°	°	°
217·422 G	5	21	27	112	108·1	..	+22·8	-86·6
218·258 K	21	112	42	226	106·7	0·0	+21·8	-77·0
219·351 G	50	256	53	271	107·1	+ 0·7	+22·9	-62·0
220·188 K	63	338	51	274	106·5	+ 0·3	+22·1	-51·6
221·411 G	82	408	52	257	106·8	+ 0·9	+22·7	-35·1
222·384 G	85	451	48	253	106·9	+ 1·2	+22·6	-22·2
223·451 G	73	383	39	203	106·6	+ 1·2	+22·6	- 8·3
224·657 W	81	203	42	106	106·0	+ 0·9	+22·5	+ 7·0
225·266 K	45	237	24	128	105·4	+ 0·4	+22·4	+14·5
226·127 K	25	144	14	82	104·0	- 0·8	+22·5	+25·4
227·370 G	16	57	11	39	105·3	+ 0·9	+22·4	+42·2
228·575 G	5	11	5	10	104·0	- 0·2	+22·3	+56·8

Group 14331.

Aug. 27-Sept. 2. One or two small spots.

238·343 G	0	5	0	15	200·3	0·0	-15·8	-77·8
239·339 G	10	32	12	37	203·7	+ 3·4	-14·8	-61·3
240·657 W	21	57	15	42	204·8	+ 4·5	-14·5	-42·8
241·338 C	4	26	3	17	206·9	+ 6·6	-15·2	-31·7
242·487 G	7	36	4	21	205·9	+ 5·5	-14·8	-17·5
243·459 C	11	77	6	42	205·1	+ 4·7	-14·1	- 5·5
244·413 G	0	20	0	11	201·1	+ 0·7	-15·1	+ 3·2
Means	..	..	.4	24	203·8	..	-15·0	..

Group 14334.

Sept. 1-11. A regular spot. Division into two, beginning on Sept. 6, precedes its rapid dissolution.

243·459 C	20	97	50	244	134·6	0·0	-15·5	-76·0
244·413 G	41	166	53	214	134·1	- 0·5	-15·7	-63·8
245·348 C	48	229	43	204	134·2	- 0·4	-15·4	-51·4
246·188 K	54	301	39	220	133·3	- 1·3	-15·4	-41·2
247·344 C	57	414	34	248	133·9	- 0·7	-14·9	-25·3
248·592 G	45	297	25	163	134·3	- 0·3	-15·0	- 8·5
249·350 G	57	295	31	159	134·3	- 0·4	-15·1	+ 1·6
250·336 C	53	249	30	139	134·4	- 0·3	-15·4	+14·7
251·315 C	31	153	19	95	134·5	- 0·2	-15·5	+27·7
252·321 C	9	53	6	38	134·1	- 0·6	-15·1	+40·6
253·361 C	0	11	0	11	134·6	- 0·1	-15·0	+54·8
Means	..	..	30	158	134·2	..	-15·3	..

Group 14336.

Sept. 5-11. A stream of small variable components dying out near the central meridian.

247·344 C	4	18	9	39	80·6	0·0	+25·6	-78·6
248·592 G	47	204	55	240	77·3	- 3·0	+25·1	-65·5
249·350 G	39	220	34	197	77·3	- 2·7	+25·1	-55·4
250·336 C	33	182	23	128	77·1	- 2·7	+25·0	-42·6

Group 14336 - *continued*

d					°	°	°	°
251·315 C	28	123	16	75	77·0	- 2·5	+24·8	-29·8
252·321 C	13	66	7	36	75·6	- 3·6	+25·0	-17·9
253·361 C	9	48	5	25	74·9	- 4·0	+25·0	- 4·9
Means	..	..	21	106	77·1	..	+25·1	..

Group 14338.

Sept. 7-14. Small spots.

249·350 G	2	11	4	19	65·3	0·0	-26·7	-67·4
250·336 C	7	40	8	43	65·5	+ 0·6	-26·9	-54·2
251·315 C	0	0	0	0	..	..	..	..
252·321 C	7	35	5	25	62·0	- 2·2	-27·3	-31·5
253·361 C	2	13	1	8	64·7	+ 0·8	-26·1	-15·1
254·316 C	13	77	8	48	59·4	- 4·1	-28·0	- 7·8
255·570 G	5	23	3	14	58·3	- 4·8	-27·8	+ 7·7
256·318 C	0	9	0	6	57·5	- 5·3	-28·4	+16·8
Means	..	..	4	20	61·8	..	-27·3	..

Group 14340.

Sept. 16-24. A persistent small spot with the addition of another on Sept. 19-21.

258·473 G	0	7	0	11	304·8	0·0	-22·3	-67·5
259·398 G	2	22	2	23	305·9	+ 1·3	-22·8	-54·2
260·415 G	4	20	3	15	306·7	+ 2·3	-23·2	-40·0
261·379 G	22	102	14	68	305·3	+ 1·1	-22·7	-28·6
262·526 C	22	127	13	75	306·6	+ 2·6	-22·8	-12·2
263·365 C	15	72	9	41	307·3	+ 3·5	-22·8	- 0·4
264·435 G	9	36	5	22	308·7	+ 5·1	-23·1	+15·1
265·317 C	4	13	3	8	308·2	+ 4·8	-23·3	+26·3
266·635 G	4	11	3	9	307·6	+ 4·5	-23·5	+43·0
Means	..	..	6	30	306·8	..	-22·9	..

Group 14349.

Sept. 30-Oct. 10. A stream in which the leader is represented by two spots that coalesce to make a nearly regular spot by Oct. 6. The follower begins to break up on Oct. 3 and fades away fairly rapidly.

272·412 G	27	145	29	158	131·5	0·0	-21·8	-56·8
273·447 C	87	505	71	408	131·5	+ 0·2	-21·8	-43·2
274·351 C	114	784	77	528	130·6	- 0·6	-22·1	-32·1
275·313 C	155	1153	93	696	130·2	- 0·8	-21·5	-19·8
276·221 K	146	890	82	504	130·8	- 0·1	-21·5	- 7·3
277·353 G	112	598	63	340	132·4	+ 1·7	-20·9	+ 9·3
278·428 G	100	549	63	344	131·5	+ 1·0	-21·8	+22·6
279·328 C	53	302	37	214	133·0	+ 2·6	-21·2	+35·9

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.
	Umbræ	Whole Spots	Umbræ	Whole Spots				
Group 14349 - *continued*								
d					°	°	°	°
280·383 G	38	200	35	185	134·1	+ 3·9	-21·1	+51·0
281·459 G	27	133	39	190	134·1	+ 4·0	-21·2	+65·1
282·388 G	13	73	37	208	132·7	+ 2·8	-21·9	+76·0
Means	..	..	57	343	132·0	..	-21·5	..
Group 14350.								
Sept. 30-Oct. 9. A double spot slowly dying out.								
272·412 G	25	112	42	190	118·5	0·0	-17·3	-69·8
273·447 C	30	173	30	175	118·5	+ 0·1	-17·3	-56·2
274·351 C	35	268	27	206	118·6	+ 0·2	-17·4	-44·1
275·313 C	26	199	16	129	118·5	+ 0·2	-17·6	-31·5
276·221 K	25	124	15	72	118·6	+ 0·3	-17·9	-19·5
277·353 G	18	69	10	38	118·8	+ 0·6	-17·5	- 4·3
278·428 G	7	31	4	17	118·2	0·0	-18·4	+ 9·3
279·328 C	9	34	5	20	118·8	+ 0·7	-18·1	+21·7
280·383 G	4	22	3	16	120·4	+ 2·4	-19·4	+37·3
281·459 G	0	16	0	13	117·0	- 1·0	-19·0	+48·0
Means	..	..	15	88	118·6	..	-18·0	..
Group 14352.								
Oct. 6-13. A stream of small changing spots with a brief maximum on Oct. 8.								
278·428 G	2	11	1	7	68·1	0·0	+21·7	-40·8
279·328 C	28	163	17	100	64·4	- 3·6	+21·2	-32·7
280·383 G	94	397	52	217	65·0	- 2·8	+21·8	-18·1
281·459 G	58	344	31	180	64·2	- 3·4	+22·2	- 4·8
282·388 G	22	149	12	78	63·6	- 3·8	+21·9	+ 6·9
283·421 G	13	75	7	42	65·3	- 2·0	+21·7	+22·2
284·494 G	4	22	3	14	66·7	- 0·4	+21·3	+37·8
285·384 G	2	18	2	14	66·5	- 0·4	+21·7	+49·3
Means	..	..	16	82	65·5	..	+21·7	..
Group 14353.								
Oct. 7-16. A long stream of small spots.								
279·328 C	11	41	31	112	26·4	0·0	-31·2	-70·7
280·383 G	26	116	32	147	26·9	+ 1·0	-30·8	-56·2
281·459 G	33	164	29	144	27·4	+ 2·0	-30·8	-41·6
282·388 G	41	206	30	149	27·6	+ 2·6	-30·8	-29·1
283·421 G	67	275	44	181	28·2	+ 3·7	-31·0	-14·9
284·494 G	37	184	23	117	26·9	+ 2·9	-31·1	- 2·0
285·384 G	24	128	16	82	27·4	+ 3·9	-30·9	+10·2
286·591 G	12	70	9	50	29·0	+ 6·0	-30·1	+27·8
287·417 G	10	42	9	35	31·1	+ 8·5	-29·3	+40·7
288·428 G	2	9	2	9	30·9	+ 8·8	-27·4	+53·9
Means	..	..	22	103	28·2	..	-30·3	..
Group 14359.								
Oct. 18-23. Intermittent. A small spot on Oct. 18-20. After a break of two days, a tiny spot appears near the original place.								
d					°	°	°	°
290·372 G	2	11	4	21	236·2	0·0	+33·8	-75·2
291·380 G	2	13	2	16	234·4	- 1·2	+34·3	-63·7
292·386 G	2	9	2	8	235·6	+ 0·7	+34·5	-49·2
293·336 C	0	0	0	0	..	..	..	..
294·383 G	0	0	0	0	..	..	..	..
295·437 G	2	9	1	5	226·5	- 3·5	+34·5	-18·1
Means	..	..	2	8	233·2	..	+34·3	..
Group 14367.								
Oct. 27-Nov, 2. A short stream forming suddenly just past the central meridian.								
299·396 G	11	55	6	29	197·3	0·0	+18·8	+ 4·9
300·521 C	40	268	23	149	198·4	+ 1·2	+18·7	+20·9
301·600 G	92	555	59	353	199·3	+ 2·2	+18·7	+36·0
302·380 G	92	682	68	500	198·4	+ 1·3	+18·8	+45·4
303·403 G	75	480	75	482	198·2	+ 1·2	+19·1	+58·7
304·408 G	46	258	71	399	197·5	+ 0·6	+19·0	+71·2
305·302 C	13	112	(35	298	194·5	..	+19·6)	+80·0
Means	..	..	50	319	198·2	..	+18·8	..
Group 14368.								
Oct. 27-Nov. 6. A stream in which the leader, a regular spot, is the largest component and the last to die out.								
299·396 G	11	77	28	205	115·4	0·0	-15·5	-77·0
300·521 C	51	226	56	252	116·7	+ 1·3	-15·0	-60·8
301·600 G	57	255	45	196	117·6	+ 2·1	-15·1	-45·7
302·380 G	57	321	37	209	118·0	+ 2·5	-15·1	-35·0
303·403 G	55	273	31	155	119·2	+ 3·7	-14·7	-20·3
304·408 G	46	285	24	152	119·9	+ 4·4	-14·6	- 6·4
305·302 C	42	222	22	117	121·4	+ 5·9	-13·8	+ 6·9
306·412 G	48	205	27	116	121·4	+ 5·8	-13·6	+21·6
307·318 C	21	156	13	98	120·7	+ 5·1	-14·4	+32·8
308·389 G	13	61	10	47	120·2	+ 4·6	-14·2	+46·4
309·311 C	6	38	6	41	121·6	+ 6·0	-14·1	+60·0
Means	..	..	27	144	119·3	..	-14·6	..
Spot *a*								
300·521 C	34	138	35	142	119·0	0·0	-14·3	-58·5
301·600 G	31	163	23	119	120·2	+ 1·2	-14·4	-43·1
302·380 G	37	220	23	139	120·6	+ 1·6	-14·5	-32·4

continued

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

Group 14368 - *continued*

Spot *a* - *continued*

Date U.T. Place	Projected Area: Umbræ	Projected Area: Whole Spots	Corrected Area: Umbræ	Corrected Area: Whole Spots	Longitude and Proper Motion	Latitude	Long. from C.M.
d					°	°	°	°
303·403 G	44	224	25	125	121·2	+ 2·1	-14·2	-18·3
304·408 G	40	246	21	130	121·4	+ 2·3	-14·1	- 4·9
305·302 C	42	216	22	114	121·5	+ 2·4	-13·9	+ 7·0
306·412 G	40	152	23	87	121·8	+ 2·7	-13·8	+22·0
307·318 C	21	148	13	93	121·5	+ 2·3	-13·7	+33·6
308·389 G	13	57	10	44	121·2	+ 2·0	-13·8	+47·4
309·311 C	6	38	6	41	121·6	+ 2·4	-14·1	+60·0

Group 14369.

Oct. 31-Nov. 11. A small regular spot slowly decreasing.

303·403 G	7	35	27	134	59·2	..	-21·3	-80·3
304·408 G	13	64	20	97	58·8	0·0	-21·2	-67·5
305·302 C	21	110	21	110	59·0	+ 0·3	-21·1	-55·5
306·412 G	24	136	18	99	59·3	+ 0·8	-21·0	-40·5
307·318 C	25	161	16	101	59·3	+ 0·9	-21·1	-28·6
308·389 G	22	136	13	78	59·3	+ 1·1	-20·9	-14·5
309·311 C	17	119	9	65	58·8	+ 0·7	-21·1	- 2·8
310·335 C	21	76	12	43	58·9	+ 1·0	-20·7	+10·8
311·296 C	19	89	11	53	58·8	+ 1·0	-21·2	+23·3
312·509 G	15	66	11	47	58·6	+ 1·0	-21·0	+39·1
313·392 G	7	31	6	27	58·6	+ 1·1	-21·0	+50·8
314·448 G	4	22	5	29	58·7	+ 1·3	-21·2	+64·8
Means	..	..	13	68	58·9	..	-21·0	..

Group 14372.

Nov. 9-20. Two small regular spots, the follower dying out by Nov. 17. By the next day, the leader has broken up and so fades out.

312·509 G	9	57	26	166	301·5	0·0	-21·2	-78·0
313·392 G	26	147	39	221	300·4	- 1·0	-21·3	-67·4
314·448 G	41	274	40	268	299·0	- 2·2	-21·2	-54·9
315·494 G	48	291	35	213	299·1	- 2·0	-21·1	-41·0
316·381 G	59	328	38	207	298·8	- 2·1	-21·2	-29·6
317·469 G	52	289	30	164	298·6	- 2·2	-21·0	-15·5
318·294 C	42	222	23	122	298·6	- 2·0	-20·8	- 4·6
319·494 G	26	155	14	86	298·7	- 1·8	-20·9	+11·3
320·391 C	21	114	13	68	299·9	- 0·4	-20·7	+24·4
321·320 C	21	92	14	63	300·7	+ 0·5	-20·7	+37·4
322·293 C	8	34	7	28	299·3	- 0·8	-21·0	+48·8
323·426 C	0	4	0	5	301·4	+ 1·5	-22·1	+65·9
Means	..	..	23	134	299·7	..	-21·1	..

Group 14375.

Nov. 11-19. A spot with one or two companions on Nov. 14-15.

314·448 G	4	22	15	84	272·8	..	-18·7	-81·1
315·494 G	13	72	20	109	271·5	0·0	-18·5	-68·6
316·381 G	28	149	28	148	271·8	+ 0·4	-18·9	-56·6
317·469 G	42	197	31	144	271·5	+ 0·1	-18·1	-42·6

Group 14375 - *continued*

d					°	°	°	°
318·294 C	40	207	25	130	271·3	0·0	-17·6	-31·9
319·494 G	17	70	10	39	271·3	+ 0·1	-18·1	-16·1
320·391 C	11	38	6	21	271·1	- 0·1	-18·0	- 4·4
321·320 C	6	27	3	15	271·0	- 0·1	-18·2	+ 7·7
322·293 C	4	15	2	9	270·6	- 0·5	-18·6	+20·1
Means	..	..	16	77	271·3	..	-18·2	..

Group 14383.

Nov. 23-29. A short stream forming near the central meridian. The follower soon dies out.

326·276 C	21	88	11	50	195·8	0·0	+28·0	- 2·2
327·406 G	79	405	45	231	194·9	- 0·5	+27·9	+11·8
328·436 G	83	521	52	322	194·1	- 0·9	+28·2	+24·6
329·293 C	76	386	53	267	194·0	- 0·7	+28·0	+35·8
330·405 G	33	192	29	169	194·6	+ 0·4	+27·9	+51·0
331·302 C	21	139	26	173	195·3	+ 1·4	+27·2	+63·6
332·293 C	13	71	33	173	195·5	+ 2·0	+27·6	+76·8
Means	..	..	36	198	194·9	..	+27·8	..

Group 14386.

Nov. 26-Dec. 1. A small stream of rather feeble development.

329·293 C	21	88	11	44	158·9	0·0	+ 9·5	+ 0·7
330·405 G	44	231	24	122	160·0	+ 1·0	+ 9·8	+16·4
331·302 C	35	210	20	121	161·0	+ 1·9	+ 9·6	+29·3
332·293 C	21	108	14	74	161·5	+ 2·3	+ 9·8	+42·8
333·601 G	8	48	8	47	160·4	+ 1·0	+10·6	+59·0
334·413 G	0	7	0	13	164·5	+ 5·0	+10·7	+73·8
Means	..	..	13	70	161·0	..	+10·0	..

Group 14392.

Dec. 7-15. A pair of spots dying out.

340·288 C	6	29	16	79	294·3	0·0	-16·9	-79·0
341·419 G	30	130	37	160	293·5	- 1·0	-16·6	-65·1
342·318 C	33	184	29	160	293·3	- 0·9	-16·6	-53·3
343·287 C	38	171	26	116	293·8	- 0·4	-16·8	-40·0
344·488 G	30	156	17	89	293·6	- 0·6	-16·5	-24·4
345·288 C	21	84	11	44	293·4	- 0·8	-16·6	-14·0
346·290 C	10	59	5	31	293·1	- 1·0	-16·5	- 1·1
347·475 G	9	46	5	25	292·8	- 1·3	-16·9	+14·2
348·433 G	4	20	2	12	292·9	- 1·2	-17·0	+26·9
Means	..	..	16	80	292·4	..	-16·7	..

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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

1945

TOTAL AREAS OF SUNSPOTS AND FACULÆ FOR EACH DAY IN THE YEAR 1945.

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 and Kodaikanal, by the letters C and K respectively. The letters Mt. W and W indicate Mount Wilson and Washington respectively in the six cases for which copies of the original were supplied.

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		
			Umbræ	Whole Spots	Faculæ	Umbræ	Whole Spots	Faculæ
1945	d							
January	1·310	C	8	42	491	10	40	709
	2·300	C	0	16	270	0	23	379
	3·284	C	0	0	388	0	0	384
	4·294	C	0	0	679	0	0	1054
	5·292	C	4	42	848	7	65	1203
	6·289	C	20	130	1080	37	224	1372
	7·320	C	31	171	978	40	223	1142
	8·424	G	45	221	1009	34	175	1211
	9·291	C	42	270	473	27	180	508
	10·449	G	48	242	481	29	216	520
	11·459	G	82	311	639	66	272	707
	12·289	C	89	405	433	75	317	571
	13·287	C	89	416	1200	59	268	1501
	14·459	G	39	186	784	25	119	707
	15·314	C	39	224	554	23	135	635
	16·283	C	37	211	594	21	122	810
	17·446	G	30	190	1084	17	109	1164
	18·304	C	31	176	762	35	179	1116
	19·417	G	59	312	674	57	287	839
	20·430	G	56	298	769	46	250	764
	21·336	C	61	320	558	49	251	531
	22·422	C	58	343	213	46	257	334
	23·287	C	43	215	163	25	126	171
	24·460	G	36	169	205	20	97	340
	25·551	G	19	87	169	11	54	225
	26·582	G	17	83	212	12	58	191
	27·286	C	33	192	700	19	114	615
	28·322	C	83	319	606	51	199	723
	29·423	G	109	568	478	78	413	619
	30·314	C	96	496	454	92	475	653
	31·290	C	51	242	494	85	402	831
February	1·430	G	6	25	517	20	83	955
	2·572	G	12	61	568	12	65	619
	3·460	G	46	189	516	29	117	573
	4·435	G	42	191	712	25	111	801
	5·303	C	20	111	444	11	62	618
	6·296	C	12	63	235	6	34	243
	7·502	G	4	22	104	2	11	127
	8·334	C	6	17	273	3	9	420
	9·429	G	8	30	505	4	16	555
	10·385	G	0	0	571	0	0	651
	11·360	C	0	0	472	0	0	441
	12·306	C	0	0	557	0	0	733
	13·577	G	11	69	395	23	141	669
	14·430	G	42	219	665	60	307	871
1945	d							
February	15·479	G	40	301	482	38	280	696
	16·365	C	47	211	920	35	156	1067
	17·307	C	63	243	473	40	157	549
	18·320	C	45	186	486	27	110	424
	19·300	C	27	134	202	15	75	379
	20·445	G	9	35	370	5	21	495
	21·304	C	0	8	538	0	5	484
	22·368	G	0	0	689	0	0	700
	23·300	C	12	111	945	30	256	1278
	24·378	G	33	164	606	36	174	768
	25·322	C	33	148	749	25	113	708
	26·564	G	36	175	661	21	105	875
	27·360	G	33	157	326	18	86	540
	28·307	C	38	176	127	20	89	178
March	1·567	G	33	101	443	17	53	510
	2·372	G	46	178	460	84	297	567
	3·375	G	97	449	833	124	631	1117
	4·454	G	128	632	741	118	583	722
	5·438	G	161	784	649	123	587	660
	6·603	G	152	832	561	92	497	876
	7·377	C	157	887	145	83	471	309
	8·412	G	131	814	172	67	415	303
	9·378	G	157	904	323	80	464	373
	10·316	C	151	805	425	80	429	415
	11·323	C	119	829	387	73	497	521
	12·511	G	66	541	641	49	402	763
	13·367	G	78	438	524	75	416	610
	14·363	G	35	237	935	53	362	1245
	15·441	G	4	40	495	21	213	723
	16·439	G	0	4	224	0	7	274
	17·413	C	2	17	180	2	18	252
	18·422	G	4	35	265	4	34	285
	19·316	C	4	30	146	3	19	166
	20·392	G	9	40	93	5	24	154
	21·355	G	29	130	254	88	383	312
	22·373	G	80	422	696	153	798	883
	23·365	G	84	483	932	92	534	1123
	24·417	G	104	704	1110	85	582	1104
	25·320	C	150	882	654	102	604	657
	26·327	C	142	1041	448	85	656	678
	27·560	G	224	1200	144	149	794	161
	28·422	C	272	1720	340	187	1131	429
	29·400	C	383	2088	435	244	1289	554
	30·354	G	431	2416	1267	255	1418	1669
	31·309	C	484	2335	1099	279	1346	1110

TOTAL AREAS OF SUNSPOTS AND FACULÆ FOR EACH DAY IN THE YEAR 1945.

U.T.		Place	Projected Area			Area Corrected for Foreshortening		
			Umbræ	Whole Spots	Faculæ	Umbræ	Whole Spots	Faculæ
1945	d							
April	1·321	C	384	2403	1287	229	1408	1174
	2·425	G	340	2038	794	227	1392	1007
	3·342	G	354	1871	1164	263	1362	1967
	4·595	C	242	1387	800	165	962	750
	5·314	G	199	1075	1142	157	846	950
	6·342	G	118	655	613	127	709	614
	7·357	C	87	364	583	157	716	898
	8·319	C	15	61	369	8	50	531
	9·401	G	11	61	624	6	34	667
	10·521	G	2	29	399	1	18	538
	11·336	G	0	0	152	0	0	223
	12·506	G	0	0	519	0	0	513
	13·324	G	0	0	757	0	0	788
	14·388	G	11	49	686	6	28	993
	15·358	C	13	43	362	7	22	671
	16·334	G	22	99	436	10	50	634
	17·341	G	35	123	501	24	82	599
	18·336	G	45	214	548	37	192	594
	19·309	G	66	322	523	78	362	679
	20·338	G	146	689	965	114	537	1166
	21·568	G	124	802	597	81	516	668
	22·319	G	117	680	590	75	422	758
	23·336	G	137	683	805	80	390	985
	24·511	G	137	677	531	79	387	526
	25·345	C	164	722	377	180	810	506
	26·477	C	237	1291	596	244	1401	701
	27·518	C	281	1654	1222	236	1381	1238
	28·314	G	311	1760	1276	226	1266	1568
	29·324	C	337	1936	497	202	1188	641
	30·336	C	275	1658	517	174	1006	692
May	1·503	G	275	1285	1612	172	819	1964
	2·321	G	281	1506	1319	194	1009	1441
	3·330	C	220	1362	1476	129	788	1384
	4·340	G	168	964	541	106	614	619
	5·400	C	121	645	154	85	467	168
	6·340	G	111	538	794	101	500	832
	7·506	G	75	477	431	70	604	776
	8·296	G	71	276	57	47	186	137
	9·334	C	43	143	304	37	128	395
	10·404	C	19	81	634	14	74	612
	11·358	G	7	19	679	4	11	718
	12·440	C	4	22	495	3	18	629
	13·329	G	0	9	456	0	10	731
	14·320	G	2	12	467	5	30	963
	15·322	G	37	141	776	37	150	1080
	16·318	G	81	467	668	66	397	742
	17·343	G	94	463	916	77	378	800
	18·417	G	79	370	782	79	411	1135
	19·140	K	86	388	411	124	630	712
	20·135	K	34	165	451	18	92	553
	21·358	G	25	112	796	14	69	841
	22·335	G	26	85	652	16	50	570
	23·436	G	40	153	753	52	186	900
	24·459	C	42	189	907	43	168	955
	25·325	G	50	201	1659	41	167	1855
	26·337	C	53	233	1222	42	198	1503
	27·403	C	37	184	930	34	169	1074
	28·339	G	30	114	554	40	151	887
	29·417	G	34	162	556	19	92	841
	30·309	G	32	130	1637	21	82	2046
	31·326	G	35	156	1765	29	125	2062

U.T.		Place	Projected Area			Area Corrected for Foreshortening		
			Umbræ	Whole Spots	Faculæ	Umbræ	Whole Spots	Faculæ
1945	d							
June	1·351	G	20	126	1389	19	123	1401
	2·325	G	23	94	858	33	137	986
	3·337	C	9	49	870	21	117	1177
	4·312	G	16	69	1642	19	83	2311
	5·374	G	18	105	1231	15	86	1308
	6·404	C	25	118	792	18	82	693
	7·330	G	14	76	447	8	44	460
	8·306	G	10	46	903	6	25	963
	9·313	G	30	103	1024	17	57	1108
	10·415	K	98	413	149	53	223	143
	11·307	G	131	690	864	144	741	1423
	12·303	G	146	667	1449	141	595	1846
	13·522	G	151	720	1220	152	738	1323
	14·461	G	188	843	1403	158	726	1693
	15·528	G	173	888	759	122	625	829
	16·387	G	177	999	718	114	647	805
	17·334	G	198	1168	378	116	698	517
	18·345	G	210	1175	587	123	695	977
	19·319	G	192	948	725	151	682	864
	20·347	G	178	926	1928	133	700	2074
	21·573	G	171	1021	1419	147	869	1549
	22·350	G	155	869	1541	140	795	1725
	23·381	G	143	812	1461	148	784	1789
	24·379	G	104	578	820	96	533	1109
	25·380	G	82	400	401	46	231	591
	26·206	K	69	414	225	36	235	297
	27·311	G	58	287	582	33	161	675
	28·159	K	57	358	276	34	214	314
	29·506	G	50	238	466	41	192	400
	30·320	G	25	134	893	26	139	1141
July	1·362	G	5	40	852	10	71	1290
	2·601	Mt. W	0	0	315	0	0	414
	3·415	G	0	0	425	0	0	457
	4·562	Mt. W	18	55	146	17	51	129
	5·456	G	24	94	603	31	120	719
	6·296	G	42	171	628	72	303	1077
	7·328	G	14	73	770	17	172	1058
	8·429	G	2	19	476	5	34	872
	9·340	G	53	351	1286	98	736	1878
	10·649	W	130	764	1751	130	749	1943
	11·592	G	244	1333	1352	195	1061	1507
	12·382	G	330	1766	466	222	1205	754
	13·328	G	417	2262	1200	259	1397	1439
	14·426	G	395	2314	512	251	1491	532
	15·350	G	401	2064	295	308	1453	465
	16·628	G	361	1921	241	213	1132	243
	17·366	G	278	1374	971	170	844	1211
	18·391	G	214	1111	1135	147	767	1237
	19·368	G	205	981	2330	157	751	2342
	20·363	G	168	894	1691	137	712	2079
	21·641	W	85	435	1155	56	329	1879
	22·371	G	83	533	990	49	314	1316
	23·383	G	106	532	1153	68	345	1430
	24·351	G	65	508	1079	45	373	1361
	25·443	G	45	220	660	41	208	738
	26·614	G	26	142	816	50	294	1122
	27·399	G	30	149	953	34	168	1124
	28·334	G	48	230	641	33	168	850
	29·409	G	53	252	572	34	164	780
	30·601	G	41	254	192	23	144	354
	31·628	G	37	220	496	20	117	598

TOTAL AREAS OF SUNSPOTS AND FACULÆ FOR EACH DAY IN THE YEAR 1945.

U.T.		Place	Projected Area			Area Corrected for Foreshortening		
			Umbræ	Whole Spots	Faculæ	Umbræ	Whole Spots	Faculæ
1945 August	d							
	1·138	K	47	244	624	24	124	682
	2·350	G	49	226	1065	28	122	1107
	3·354	G	35	192	330	20	106	381
	4·345	G	36	234	629	31	193	945
	5·294	G	34	161	908	30	135	1269
	6·422	G	27	131	1410	48	219	1850
	7·258	K	33	195	1176	54	317	1400
	8·351	G	69	347	925	72	362	987
	9·188	K	80	431	996	67	362	891
	10·411	G	123	579	876	84	387	1067
	11·384	G	145	697	609	85	402	776
	12·451	G	144	800	1168	78	444	1152
	13·657	W	285	900	1319	151	498	1582
	14·266	K	286	1819	402	154	977	456
	15·127	K	308	1973	261	183	1143	355
	16·370	G	158	1114	1270	104	727	1522
	17·575	G	119	656	1072	97	529	1268
	18·430	G	92	415	461	92	429	473
	19·278	K	65	300	672	89	433	881
	20·140	K	17	80	528	52	242	673
	21·453	G	0	9	766	0	21	1014
	22·449	G	0	0	559	0	0	585
	23·347	G	4	18	850	2	10	1167
	24·354	G	10	30	105	9	25	159
	25·398	G	5	18	319	3	10	311
	26·372	G	0	0	178	0	0	262
	27·343	G	0	5	50	0	15	95
	28·339	G	10	32	456	12	37	490
	29·657	W	24	67	618	18	52	774
	30·338	C	4	35	440	3	29	552
	31·487	G	7	48	87	4	43	161
September	1·459	C	57	297	670	83	413	867
	2·413	G	76	322	498	94	379	672
	3·348	C	67	319	1012	70	395	1646
	4·188	K	58	330	484	41	242	591
	5·344	C	61	441	1067	43	295	1253
	6·592	G	101	533	527	85	421	585
	7·350	G	103	544	443	72	385	579
	8·336	C	93	480	396	61	315	453
	9·315	C	57	276	800	35	170	768
	10·321	C	33	180	570	22	123	627
	11·361	C	11	81	1296	6	58	1579
	12·316	C	13	77	968	8	48	1133
	13·570	G	5	23	131	3	14	169
	14·318	C	0	9	427	0	6	437
	15·359	G	0	0	289	0	0	360
	16·473	G	0	7	730	0	11	888
	17·398	G	2	22	854	2	23	1141
	18·415	G	4	20	603	3	15	847
	19·379	G	22	102	744	14	68	757
	20·526	C	22	127	525	13	75	648
	21·365	C	15	72	224	9	41	261
	22·435	G	40	244	0	22	135	0
	23·317	C	176	840	126	105	504	255
	24·635	G	332	1882	314	194	1107	529
	25·339	G	389	2342	839	245	1462	980
	26·461	G	321	1776	1198	238	1320	1188
	27·345	G	223	1281	1012	259	1605	1161
	28·556	G	154	851	1436	211	1219	2072
	29·374	G	164	861	987	217	1143	1451
	30·412	G	318	1737	650	278	1528	874

U.T.		Place	Projected Area			Area Corrected for Foreshortening		
			Umbræ	Whole Spots	Faculæ	Umbræ	Whole Spots	Faculæ
1945 October	d							
	1·447	C	466	2455	994	317	1686	1050
	2·351	C	506	3044	1221	308	1879	1296
	3·313	C	490	3589	544	276	2034	578
	4·221	K	586	3251	423	322	1779	417
	5·353	G	482	2830	1030	274	1590	1193
	6·428	G	409	2551	375	259	1603	526
	7·328	C	365	2293	533	288	1725	798
	8·383	G	336	1775	1614	294	1587	1694
	9·459	G	235	1179	1109	305	1391	1268
	10·388	G	103	557	899	126	667	1745
	11·421	G	80	350	300	51	223	390
	12·494	G	41	206	270	26	131	435
	13·384	G	62	275	515	85	322	837
	14·591	G	71	375	1516	90	492	1936
	15·417	G	96	566	1875	111	701	2045
	16·428	G	141	732	1476	149	841	1760
	17·400	G	180	1050	1366	163	1006	1562
	18·372	G	218	1338	656	169	1060	894
	19·380	G	279	1572	552	191	1092	700
	20·386	G	260	1589	548	169	1023	528
	21·336	C	261	1709	304	162	1054	524
	22·383	G	233	1526	418	137	902	448
	23·437	G	192	1175	535	115	706	618
	24·473	G	208	1138	1151	149	794	1204
	25·368	C	224	1119	1478	188	979	2037
	26·439	G	220	1152	1801	195	1037	2170
	27·396	G	260	1324	2043	291	1525	2596
	28·521	C	249	1441	1071	281	1679	1298
	29·600	G	244	1272	858	193	974	914
	30·380	G	233	1449	1082	161	1001	1128
	31·403	G	218	1201	968	187	1056	1103
November	1·408	G	161	911	1173	163	893	1567
	2·302	C	137	730	923	136	816	1437
	3·412	G	109	550	1068	71	375	1359
	4·318	C	69	492	1116	49	347	1152
	5·389	G	53	305	1361	44	250	1408
	6·311	C	52	326	1355	47	301	1638
	7·335	C	27	127	781	16	75	1026
	8·296	C	25	143	216	14	87	394
	9·509	G	24	123	497	37	213	672
	10·392	G	33	182	838	45	255	1113
	11·448	G	60	383	949	66	420	1107
	12·494	G	81	492	1128	67	402	1317
	13·381	G	128	714	1127	99	558	1441
	14·469	G	140	727	1847	110	563	2192
	15·294	C	115	673	973	86	546	1257
	16·494	G	72	365	126	42	212	203
	17·391	C	95	395	1007	57	234	1246
	18·320	C	72	354	823	42	215	985
	19·293	C	32	160	1073	26	123	1174
	20·428	C	46	254	1375	46	263	1562
	21·287	C	58	451	1543	65	524	1794
	22·299	C	88	382	1428	137	598	1692
	23·276	C	63	308	2287	42	212	2668
	24·406	G	162	835	1835	96	500	2003
	25·436	G	155	905	1246	96	553	1643
	26·293	C	148	751	1086	108	548	1299
	27·405	G	102	567	1390	84	479	1457
	28·302	C	80	485	1012	80	481	1329
	29·293	C	61	337	1360	68	377	1668
	30·601	G	140	776	939	96	538	1139

TOTAL AREAS OF SUNSPOTS AND FACULÆ FOR EACH DAY IN THE YEAR 1945.

U.T.	Place	Projected Area			Area Corrected for Foreshortening		
		Umbræ	Whole Spots	Faculæ	Umbræ	Whole Spots	Faculæ
1945 d December 1·413	G	135	812	1176	105	625	1594
2·308	C	121	704	1396	64	389	1686
3·408	G	129	679	1073	67	374	1192
4·297	C	160	915	924	93	526	1201
5·456	G	120	780	538	77	497	699
6·294	C	80	593	620	57	420	629
7·288	C	27	154	472	40	222	646
8·419	G	42	204	969	55	270	1303
9·318	C	41	242	1243	36	231	1495
10·287	C	46	213	1212	32	147	1257
11·488	G	47	252	1417	27	147	1373
12·288	C	35	163	984	19	97	1360
13·290	C	48	251	1085	28	152	1414
14·475	G	55	261	1163	49	266	1761
15·433	G	27	189	1052	27	189	1476
1945 d December 16·523	G	59	287	1762	71	368	1847
17·378	C	94	441	1514	76	372	1459
18·285	C	81	382	1277	63	294	1673
19·425	G	89	377	1529	60	255	2000
20·396	G	74	410	720	45	251	816
21·352	C	69	376	1489	40	217	1543
22·297	C	79	382	1127	44	202	1319
23·460	G	76	374	516	44	215	652
24·316	C	96	524	1433	103	688	1800
25·530	G	96	475	836	92	464	1017
26·529	G	121	583	842	102	492	926
27·519	G	103	610	342	85	484	392
28·286	C	101	535	361	77	405	446
29·473	G	123	525	518	65	278	589
30·433	G	82	430	884	43	224	982
31·117	K	92	510	282	66	324	504

MEAN AREAS OF SUNSPOTS AND FACULÆ FOR EACH ROTATION OF THE SUN, FROM 1944 DECEMBER 18 TO 1946 JANUARY 4.

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 years 1873–1944 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		
			Umbræ	Whole Spots	Faculæ	Umbræ	Whole Spots	Faculæ
1221	1944 December 18·74	27	66	358	704	56	309	867
1222	1945 January 15·07	28	36	184	486	29	144	592
1223	February 11·42	27	62	323	516	47	241	639
1224	March 10·75	27	161	928	632	117	674	746
1225	April 7·05	27	123	669	698	93	499	836
1226	May 4·30	28	51	246	731	44	220	898
1227	May 31·52	27	103	541	955	82	423	1135
1228	June 27·72	27	140	753	869	102	554	1092
1229	July 24·92	27	90	480	779	66	349	936
1230	August 21·15	28	29	150	556	24	126	690
1231	September 17·40	27	237	1365	741	179	1012	933
1232	October 14·69	27	163	935	1019	135	779	1233
1233	November 10·99	27	99	554	1139	75	422	1364
1234	December 8·30	28	73	374	979	56	294	1168

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		
		Umbræ	Whole Spots	Faculæ	Umbræ	Whole Spots	Faculæ
1945	365	102	560	774	78	429	940

MEAN HELIOGRAPHIC LATITUDE OF SUNSPOTS FOR EACH ROTATION OF THE SUN, FROM 1944 DECEMBER 18 TO 1946 JANUARY 4.

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		
				°		°	°	°
1221	1944 December 18·74	27	177	23·74	132	26·75	+ 2·15	25·03
1222	1945 January 15·07	28	70	22·67	75	10·95	+ 5·26	16·60
1223	February 11·42	27	46	22·50	195	15·09	− 7·94	16·50
1224	March 10·75	27	19	30·80	655	24·88	−23·28	25·05
1225	April 7·05	27	4	27·35	496	12·02	−11·75	12·13
1226	May 4·30	28	20	28·14	200	19·90	−15·54	20·65
1227	May 31·52	27	23	28·59	400	24·21	−21·29	24·45
1228	June 27·72	27	148	22·29	406	20·27	− 8·87	20·81
1229	July 24·92	27	332	23·32	16	20·27	+21·27	23·18
1230	August 21·15	28	27	25·24	99	17·15	− 7·96	18·90
1231	September 17·40	27	388	8·48	625	20·86	− 9·62	16·12
1232	October 14·69	27	242	24·37	537	23·19	− 8·43	23·56
1233	November 10·99	27	146	24·69	277	19·55	− 4·30	21·33
1234	December 8·30	28	131	23·00	163	17·61	+ 0·48	20·01

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		
			°		°	°	°
1945	365	121	20·13	309	20·26	− 8·92	20·22

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ROYAL OBSERVATORY, GREENWICH

Observations of Solar Flocculi and Solar Flares

Made with the

Spectrohelioscope

In the Year

1945

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OBSERVATIONS OF SOLAR FLOCCULI MADE WITH THE SPECTROHELIOSCOPE IN THE YEAR 1945

The following observations relate to (1) absorption filaments or dark flocculi visible on the Sun's disk in the light of $H\alpha$ in the immediate vicinity of sunspots, and (2) solar flares otherwise known as bright chromospheric eruptions.

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 1mm. = 4·35 A. The width of the second slit was usually 0·1mm. The diameter of the monochromatic image of the Sun's disk at the second slit is about 50mm., of which a strip 6 mm. wide and 28 mm. long is rendered visible by the rotating rectangular prisms. The eyepiece used magnifies twice.

Absorption Filaments or Flocculi

Measures of radial velocity are taken with the "line-shifter", whose scale from 0 – 10 divisions = 0·37 A. = 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. A further paper on the characteristic radial motions of such flocculi associated with solar flares appears in *Monthly Notices*, **102**, 2, 1942.

GREENWICH PHOTO-HELIOGRAPHIC RESULTS, 1945.

(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 which showed a definite curvature of shape are also noted.

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

Dark Hα 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
	d	h		′	′			°	d	°	
1	Feb. 14	12·7	-14	0·5	0·5	n	14261	-62	Feb. 19·25	+22	137
2	14	14·8	+34	0·5	0·5	s	61	-61			
3	24	9·0	+38	*	0·3	n	62	-63	Feb. 28·92	-17	87
4	24	9·1	-32	*	1·0	p	62	-63			
5	Feb. 24	10·2	-29	0·5	0·5	n	14262	-63	Feb. 28·92	-17	87
6	24	11·2	+39	*	1·0	s	62	-62			
7	26	12·9	0	0·3	0·2	p b	62	-34			
8	Mar. 2	9·0	+33	0·3	0·7	nf	62	+21			
9	2	10·9	-31	0·4	1·3	sp	63	-83	Mar. 8·88	-14	451
10	Mar. 3	9·5	+14	0·2	2·3	nf	14262	+35	Feb. 28·92	-17	87
11	8	10·5	+ 1	5·7	0·7	f	63	- 6	Mar. 8·88	-14	451
12	9	10·0	+ 1	3·5	0·5	f	63	+ 7			
13	12	13·6	- 1	3·2	0·6	sf	63	+48			
14	14	9·9	0	1·3	0·3	s	63	+72			
15	Mar. 22	9·2	+26	1·4	0·6	np a	14266	-76	Mar. 28·37	-31	524
15	22	9·4	+34	0·2	0·8	n a	66	-76			
15	22	11·6	+23	0·2	0·8	n a	66	-75			
16	22	9·2	-18	0·6	0·7	n a	66	-76			
17	23	9·9	+23	0·5	0·4	sp	66	-62			
18	23	13·5	+20	0·2	0·6	n	66	-60			
19	24	8·5	-23 }	1·0	0·2	f	66	-51			
19	24	10·0	-29 }				66	-50			
20	Mar. 24	8·6	+23				14266	-51			
20	24	9·0	-12 to +29 }	1·5	1·0	sf	66	-51	Mar. 28·37	-31	524
20	24	9·3	-13 to +25 }				66	-50			
21	27	11·2	+19	0·2	0·3	n	67	-63	Apr. 1·34	-21	721
22	27	13·6	-38 to +38 }	1·2	0·1	f	67	-61			
22	27	13·8	-50 to +50 }				67	-61			
23	30	8·7	- 7	0·8	0·5	s b	67	-25			
24	30	8·7	- 1	0·8	0·5	s a	67	-25			
25	Mar. 30	8·9	+ 2	1·5	1·0	sf	14266	+25	Mar. 28·37	-31	524
26	30	8·9	+ 5	2·0	1·8	n	66	+25			
27	30	9·0	-36 to +21	1·0	0·1	sf	66	+25			
28	30	9·8	-18 to +35	0·7	0·1	n	66	+26			
29	30	10·8	-39	1·5	3·0	f	66	+26			
30	Mar. 30	10·9	-30 to +46	1·8	0·3	f	14266	+26	Mar. 28·37	-31	524
31	Apr. 2	9·8	-46 to +40 }	0·7	2·0	np	66	+64			
31	2	10·0	-30 to +36 }				66	+64			
32	3	7·7	-23	*	0·6	c	67	+25	Apr. 1·34	-21	721
33	3	7·8	+ 3	1·0	0·7	f	66	+76	Mar. 28·37	-31	524
34	3	7·8	+ 3	1·7	0·7	p	69	-64	Apr. 8·29	-29	75
35	Apr. 3	7·9	-23	0·9	1·6	n	14269	-64	Apr. 8·29	-29	75
36	3	12·4	+27	1·3	0·3	c	67	+28	Apr. 1·34	-21	721
37	3	12·6	-24	0·5	1·9	p	66	+78	Mar. 28·37	-31	524
38	3	13·6	+43	0·4	0·3	p	66	+79			
39	3	13·4	- 5 to +39	1·0	0·2	n a	67	+28	Apr. 1·34	-21	721
40	Apr. 3	13·5	+44	0·3	0·7	sf a	14267	+28	Apr. 1·34	-21	721
41	5	8·0	-24	0·6	0·3	s a	67	+52			
42	5	8·0	- 6	0·3	0·3	n a	67	+52			
43	5	8·9	-12 to +37	0·6	2·0	nf	69	-38	Apr. 8·29	-29	75
44	6	8·0	+ 1	0·6	0·4	n	67	+65	Apr. 1·34	-21	721
45	Apr. 6	8·2	-23	0·4	0·3	f	14267	+65	Apr. 1·34	-21	721
46	14	9·6	- 6	0·3	0·5	f	70	-28	Apr. 16·59	- 7	33
47	16	8·2	- 5	0·8	0·6	f	70	- 2			
48	18	8·6	-34	0·3	0·3	f	71	-64	Apr. 23·18	-23	194
49	19	8·5	- 1	0·6	0·7	f	71	-51			

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

Dark Hα 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		Lati-tude	Area
		d	h		′	′			°		d	°	
50	Apr.	20	7·8	-28 to +21	0·7	0·2	n b	14271	-39	Apr.	23·18	-23	194
51		20	9·6	+ 1	0·7	1·0	f a	71	-38				
52		20	13·9	+ 2	0·8	2·0	s	71	-35				
53		23	8·3	+ 3	0·5	0·7	s b	71	+ 2				
54		28	8·3	+ 5 to +40	1·2	0·2	p a	74	-43	May	1·64	-18	724
55	Apr.	28	8·4	-27	0·3	1·5	s a	14274	-43	May	1·64	-18	724
56	May	1	12·6	- 1	0·5	1·5	n	74	- 2				
57		1	12·6	- 3	1·2	1·5	n	74	- 2				
58		2	8·1	-34	2·5	1·2	n	74	+ 9				
59		2	8·2	-18 to +26	1·6	0·5	f	76	-54	May	6·53	-25	75
60	May	4	12·7	- 4	1·3	0·2	n	14274	+38	May	1·64	-18	724
61		4	13·1	- 4	1·5	2·0	f	74	+38				
62		4	12·9	0	1·2	1·1	f	76	-26	May	6·53	-25	75
63		15	8·2	-46	0·2	0·2	f	81	-68	May	20·28	-26	63
64		16	8·3	-43 to +63	0·7	0·3	f	81	-56				
65	May	16	8·5	- 5	1·2	1·0	n	14281	-56	May	20·28	-26	63
66		17	12·2	-25	0·4	0·3	s	82	+54	May	13·4	-21	261
67		18	13·8	-59 to - 4	2·0	2·1	nf	81	-24	May	20·28	-26	63
68		22	7·8	-14	2·2	1·6	n	81	+26				
69		25	8·3	+ 4	1·2	1·0	s	83	+46	May	21·89	-18	15
70	May	28	8·4	- 3	1·3	0·9	sf	14287	-19	May	29·78	-16	52
71		29	9·4	- 6	0·3	0·4	s p	89	+14	May	28·4	+31	84
72	June	1	9·5	-33	0·4	0·3	s	89	+53				
73		1	9·6	+24	0·5	1·2	n	89	+54				
74		4	9·5	- 2	0·6	0·5	f	91	-63	June	9·2	-19	65
75	June	7	8·2	+ 8	0·4	1·3	f	14291	-25	June	9·2	-19	65
76		9	9·4	- 5	1·7	2·5	p	92	-14	June	10·50	-21	146
77		9	9·4	- 2	1·3	3·0	p	92	-14				
78		9	10·2	+31	0·5	0·4	c	92	-14				
79		12	13·1	-23	1·6	0·2	s	94	-61	June	17·28	-31	277
80	June	12	13·2	- 9	1·0	1·6	n	14294	-61	June	17·28	-31	277
81		13	13·4	- 2	0·7	1·3	n	94	-48				
82		13	13·5	- 8 to -32	1·9	0·2	f	94	-47				
83		16	9·4	-59	0·5	1·2	s	93	- 1	June	16·48	-17	27
84		18	8·5	+ 2	2·2	0·8	f	94	+14	June	17·28	-31	277
85	June	18	8·5	- 1	1·6	1·2	n	14294	+14	June	17·28	-31	277
86		19	9·6	+ 1	0·7	2·0	f	97	+11	June	18·53	-23	220
87		19	9·6	+ 1	1·3	3·0	f	97	+11				
88		19	9·6	- 7	1·0	1·0	f	94	+27	June	17·28	-31	277
89		19	9·6	- 6	3·0	0·8	n	94	+27				
90	June	19	9·7	+14	0·7	0·5	n	14299	-13	June	20·39	+27	30
91		20	9·3	- 2	2·3	0·9	f	94	+40	June	17·28	-31	277
92		20	9·3	- 4	2·7	1·0	s	94	+40				
93		20	9·8	+38	*	0·7	f	300	-72	June	25·90	-15	187
94		22	9·1	-25 }				297	+51	June	18·53	-23	220
94		22	9·6	- 5 }	1·1	1·2	n	97	+51				
95	June	22	9·1	+41 }	0·8	1·0	p	14294	+65	June	17·28	-31	277
95		22	9·6	-48 }				94	+65				
96		22	9·2	-20 to +14	0·3	0·3	p	97	+51	June	18·53	-23	220
97		22	9·4	+23	0·3	0·3	s	94	+65	June	17·28	-31	277
98		22	9·6	+ 2	0·6	0·3	s	97	+51	June	18·53	-23	220
99		22	9·7	-24	1·2	1·5	p	94	+65	June	17·28	-31	277
100	June	22	9·4	- 5	1·0	0·3	c	14300	-46	June	25·90	-15	187
101		23	9·7	-18 to +19	0·8	0·2	p	297	+66	June	18·53	-23	220
102		23	9·8	+ 3	1·1	0·6	c	94	+78	June	17·28	-31	277
103		23	9·9	+ 1	1·2	1·7	f	97	+66	June	18·53	-23	220
104		23	10·0	+13	0·6	0·4	c	300	-34	June	25·90	-15	187

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

Dark Hα 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
	d h		′	′			°	d	°	
105	June 30 9·3	- 2	3·1	0·6	n	14300	+61	June 25·90	-15	187
106	July 9 8·6	- 3	0·3	2·0	n	07	-76	July 15·21	-19	522
107	12 9·6	+38	0·7	0·3	p	07	-36			
108	12 9·6	-34	0·6	2·0	n	09	-41	July 15·61	-15	95
109	12 9·8	+17	1·6	1·0	n	09	-41			
110	July 13 7·9	+ 3	3·0	0·3	p b	14309	-30	July 15·61	-15	95
111	13 8·3	-18	0·3	0·5	n	11	+52	July 9·5	-18	221
112	13 8·4	-18 to +19	1·3	0·2	f	08	-28	July 15·28	+22	113
113	17 9·3	+ 9	2·0	0·6	c	07	+27	July 15·21	-19	522
114	19 9·1	- 4	1·5	1·7	n	13	+24	July 17·53	-30	141
115	July 19 9·2	+28	0·7	0·4	p b	14307	+54	July 15·21	-19	522
116	19 9·2	- 7	0·9	1·0	n a	07	+54			
117	19 9·3	- 4	1·4	0·3	n	12	+ 7	July 18·79	-25	55
118	19 9·4	+ 2	0·8	0·5	n	14	-23	July 21·08	+24	160
119	19 9·6	-20	0·5	0·3	n	14	-23			
120	July 19 11·2	-36 to +19	0·5	0·7	sf	14312	+ 8	July 18·79	-25	55
121	19 13·9	-21	0·2	0·8	s	14	-21	July 21·08	+24	160
122	20 10·9	- 7 to +43	2·0	0·3	f	14	- 8			
123	23 11·4	+ 3	0·4	0·8	p b	14	+32			
124	Aug. 4 8·9	+14	0·6	0·3	f	23	-68	Aug. 9·7	-17	40
125	Aug. 10 10·1	0 to +71	0·8	0·6	s	14324	-37	Aug. 13·47	+24	500
126	17 13·9	+ 5	3·0	0·3	c	24	+51			
127	Sept. 19 11·0	-27 to +52	0·6	0·3	f	40	-28	Sept. 21·43	-23	30
128	25 10·3	-46 to +66	1·5	0·5	p b	43	+24	Sept. 23·61	-19	714
129	27 9·2	+42	1·4	0·9	p b	43	+50			
130	Sept. 29 10·4	-20	0·3	1·2	sp	14345	-56	Oct. 3·83	-22	371
131	Oct. 5 8·8	+ 3	1·4	0·5	s b	47	+17	Oct. 4·00	+23	622
132	8 10·9	-28	2·0	1·7	s	45	+60	Oct. 3·83	-22	371
133	8 12·2	+37 }	1·3	0·5	s	47	+57	Oct. 4·00	+23	622
133	8 12·3	+31 to +65 }				47	+57			
134	8 12·2	-29 }	0·4	0·7	s	47	+57			
134	8 12·4	+28 }				47	+57			
135	Oct. 10 10·1	- 4	0·3	0·7	c	14353	-29	Oct. 12·55	-30	103
136	10 10·1	+ 2	0·4	1·2	f	52	+ 7	Oct. 9·72	+22	82
137	10 10·2	+53	1·4	1·3	s	53	-29	Oct. 12·55	-30	103
138	10 10·2	-40 }	0·2	0·3	n	53	-29			
138	10 10·3	+37 }				53	-29			
139	10 11·0	+ 4	1·1	1·5	p	53	-28			
140	Oct. 10 12·8	-31 to +37	0·4	0·8	c	14353	-27	Oct. 12·55	-30	103
141	11 12·2	- 5	1·1	1·2	c	53	-14			
142	11 14·5	+32	2·0	0·3	c	53	-12			
143	12 12·2	+ 8	1·3	0·5	c	53	- 2			
144	15 9·7	- 1	1·3	...		53	+41			
145	Oct. 15 9·8	- 2	0·8	...		14353	+41	Oct. 12·55	-30	103
146	15 9·9	- 1	0·4	1·2	f	56	-54	Oct. 19·51	+27	160
147	15 10·0	+28	1·2	0·7	n	56	-54			
148	15 11·0	+20 to +85	1·3	0·2	n	56	-54			
149	15 11·1	-51	1·1	0·4	np	56	-54			
150	Oct. 15 11·3	+43	0·5	0·2	p	14356	-54	Oct. 19·51	+27	160
151	15 11·3	+56 }				56	-54			
151	15 11·3	-57 to +39 }	2·0	0·3	c	56	-54			
151	15 11·6	-37 to +65 }				56	-53			
152	16 10·3	-11	0·8	0·6	c	56	-41			
153	16 10·5	+34	0·5	0·4	n a	56	-41			
154	16 10·6	-27	1·0	0·5	sp a	56	-41			

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

Dark Hα 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
	d h		′	′			°	d	°	
155	Oct. 17 11·1	- 2	0·8	2·0	*f*	14356	-26	Oct. 19·51	+27	160
156	17 12·1	-11	0·2	0·4	*np b*	58	-64	Oct. 22·57	-25	574
157	19 9·5	-38	0·7	0·4	*c*	58	-38			
158	19 9·6	- 8	2·1	0·6	*n*	58	-38			
159	19 9·6	+ 9	0·6	0·7	*s*	58	-38			
160	Oct. 19 11·1	- 5	0·6	0·5	*n a*	14357	-19	Oct. 21·01	-19	177
161	19 11·1	- 2	0·5	0·3	*f*	57	-19			
162	19 11·4	+35	0·3	0·4	*n*	62	-45	Oct. 22·92	+28	199
163	19 12·6	+41	0·6	1·2	*s*	58	-36	Oct. 22·57	-25	574
164	20 9·8	+ 3	4·0	2·0	*f*	57	- 8	Oct. 21·01	-19	177
165	Oct. 20 9·8	+ 2	0·5	0·6	*c*	14357	- 8	Oct. 21·01	-19	177
166	23 11·0	+ 5 to +35	0·9	0·2	*s*	62	+ 7	Oct. 22·92	+28	199
167	23 11·4	+ 2	2·0	0·5	*n*	58	+11	Oct. 22·57	-25	574
168	23 11·4	+14	0·4	0·9	*n*	58	+11			
169	23 11·5	- 3	2·1	0·7	*n*	57	+30	Oct. 21·01	-19	177
170	Oct. 23 11·6	- 3	1·5	0·6	*p*	14357	+30	Oct. 21·01	-19	177
171	27 10·0	-26	0·2	0·7	*s*	62	+58	Oct. 22·92	+28	199
172	27 10·2	+ 6	2·5	0·6	*sf*	66	-55	Oct. 31·70	-23	130
173	27 10·3	-18	0·3	0·6	*sp*	58	+60	Oct. 22·57	-25	574
174	27 10·4	+35	1·2	0·4	*p*	62	+58	Oct. 22·92	+28	199
175	Oct. 27 10·5	+16	1·3	0·7	*f*	14365	-51	Oct. 31·43	+22	46
176	27 11·0	-38	0·8	0·4	*p*	62	+59	Oct. 22·92	+28	199
177	29 14·8	-52	0·9	1·5	*sp*	68	-46	Nov. 1·94	-15	144
178	30 9·7	+ 4	1·5	0·3	*c*	67	+46	Oct. 27·0	+19	319
179	31 12·8	+36	0·5	0·6	*c*	67	+60			
180	Oct. 31 14·9	+20	0·6	0·7	*n*	14366	- 1	Oct. 31·70	-23	130
181	31 14·9	- 3	0·6	0·4	*c*	68	-18	Nov. 1·94	-15	144
182	Nov. 3 11·4	0	4·0	0·7	*sf*	69	-40	Nov. 6·52	-21	68
183	3 11·6	+12	1·3	0·8	*n*	66	+36	Oct. 31·70	-23	130
184	5 9·7	- 4	1·7	0·2	*c*	66	+61			
185	Nov. 13 9·5	-39	0·5	0·8	*nf*	14375	-56	Nov. 17·72	-18	77
186	13 9·7	+34	0·3	0·4	*c*	74	+45	Nov. 10·0	+20	122
187	13 9·8	- 6	1·2	0·6	*c*	72	-29	Nov. 15·56	-21	134
188	15 12·6	- 9	1·2	0·7	*f a*	72	- 2			
189	15 12·6	- 5	0·6	0·5	*f b*	72	- 2			
190	Nov. 15 12·7	0	1·3	...	*c*	14375	-29	Nov. 17·72	-18	77
191	24 11·5	-19 to +26	0·5	0·4	*c*	83	+13	Nov. 23·51	+28	198
192	Dec. 20 9·8	0	1·7	1·3	*f*	99	-29	Dec. 22·63	+21	168

NOTES

Reference Number

10. Associated with a flare of importance 1+.

15. A streak shrinking to a dot.

19., 20. Associated with a flare 1. At $14^h\ 20^m$ U.T., a measure of the mean velocity gave +6 Km./sec. The outward velocity was over the penumbra of the spot.

25. A further measure at $10^h\ 39^m$ gave -30 to +8 Km./sec.

27. Direction of motion clockwise out of the spot.

Reference Number

29. A measure made at $11^h\ 02^m$ gave -83 to +10 Km./sec. At $13^h\ 25^m$, there was no trace of this marking.

39. Direction of motion clockwise into spot.

54. Direction of motion counter - clockwise into the leading spot.

54., 55. These markings were associated with a group in which a flare 1 occurred at $09^h\ 04^m$ - $09^h\ 26^m$.

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

NOTES – *continued.*

Reference Number	
64.	A further measure of velocity at 08^h 26^m gave -37 to +76 Km./sec. and at 09^h 18^m, the mean velocity was +14 Km./sec. This was associated with an enhanced area which was not classified as a flare.
67.	A further measure taken at 14^h 06^m gave -31 to +15 Km./sec.
82.	Direction of motion clockwise out of the spot.
83.	At 09^h 29^m, this marking showed a progressive change of velocity along its length of -33 to +52 Km./sec., and at 09^h 37^m the inward motion of +39 Km./sec. alone remained.
101.	Direction of motion clockwise into spot.
127.	Another measure at 11^h 15^m gave -40 to +54 Km./sec.
128.	The outward velocity of this marking was measured over edge of penumbra.
148.	Direction of motion – clockwise into leading spot.
151.	Associated with a flare 3.
160.	At 14^h 27^m, this marking was active. It became semi-circular in shape, having an outward velocity of 11 Km./sec. in the centre and an inward velocity of 44 Km./sec. at the extremities.
166.	Associated with a flare 1.
178.	Associated with a flare 1.
190.	This marking was situated over centre of spot.
191.	Associated with a flare 1.

SOLAR FLARES

Observations of solar flares were begun at Greenwich when the spectrohelioscope was installed in 1929. The observed times of flares and their positions have been regularly communicated to Meudon for incorporation in the *Quarterly Bulletin on Solar Activity* published from Zurich under the auspices of the International Astronomical Union. Investigations made at Greenwich into the relationship between solar flares and (1) radio fade-outs: (2) geomagnetic disturbance are published in *Monthly Notices* **97**, 594, 1937: **103**, 244, 1943 and **104**, 4, 1944.

The following table gives the details of flares observed at Greenwich during 1945. The headings are largely self-explanatory, but a few remarks are needed:-

(1) Columns 3 and 4. Times in heavier type denote that the beginning or the end of the flare was actually observed.

(2) Column 7. When occurring within the period of observation, the observer's estimate of the time of the maximum of the flare is given, unless it can be derived more precisely from photometer or line-width measures.

(3) Column 8. Approximate area of the flare, corrected for foreshortening and expressed in millionths of the Sun's hemisphere.

(4) Column 9. The observer's estimate of the magnitude of the flare is on an arbitrary ascending scale 1-2-3, as used in the *Quarterly Bulletin on Solar Activity.*

(5) Columns 10, 11 and 12. Highest measured value of the central intensity of $H\alpha$ (not necessarily obtainable at the estimated time of maximum given in column 7) observed with a simple wedge photometer and expressed in terms of the intensity of the continuum (= 100) 15A from the centre of $H\alpha$. The measures are made initially either with respect to (a) the centre of the undisturbed line, corresponding to a part of the disk closely adjacent to the flare, or (b) directly with the continuum, on the long-wave side of $H\alpha$, and deviated into the upper or lower half of the field by a thick secondary line-shifter (*Monthly Notices* **99**, 463, 1939). Values obtained by direct comparison with the continuum are printed in italics. Instrumental values in either case have been corrected provisionally for instrumental scattering according to the procedure given in *Monthly Notices* **96**, 5-15, 1935. These corrected values are given in column 12.

(6) The last column gives the reference number from the preceding table of radial velocity measures of any absorption filament observed in close association with the flare.

Reference Number	U.T. of Observation			Position		U.T. of Max.	Area of Flare	Mag.	Measured central intensity of Hα (continuum = 100)			Associated Spot Group		Reference Number of Associated Dark Hα
	Date	From	To	Latitude	Long. from C.M.				U.T.	Obsd. Value	Corr. Value	Group Number	Relative Position of Flare	
		h m	h m	°	°	h m			h m					
1	Mar. 3	9 12	**9 32**	19 S	25 W			1+	9 13	46	41	14262	*f*	10
2	Mar. 20	9 14	**9 30**	34 S	90 E			2	9 19	31	24	(14266)		
3	Mar. 24	**8 41**	**9 22**	31 S	50 E	8 44		1	8 44	45	40	14266	*s*	19 & 20
4	Mar. 27	13 30	15 05	24 S	58 E			1	13 36	44	38	14267	*c*	22
5	Apr. 28	9 04	9 26	18 S	47 E			1	9 08	45	40	14274	*s*	54 & 55
6	Oct. 15	11 05	11 17	21 N	51 E	11 12	320	3	11 16	*106*	*107*	14356	*c*	151
7	Oct. 23	11 05	**11 19**	27 N	8 W	11 12		1	11 12	48	43	14362	*c*	166
8	Oct. 27	11 10	**11 22**	29 N	56 W	11 12	200	2	11 11	82	80	14362	*c*	176
9	Oct. 30	**9 29**	**9 40**	18 N	45 W	9 33	20	1	9 33	58	54	14367	*c*	178
10	Nov. 24	**11 12**	11 30	27 N	15 W	11 20	130	1	11 19	52	47	14383	*c*	191
11	Dec. 3	**10 12**	**10 35**	15 S	5 W	10 18		1	10 16	51	46	14389	*c*	

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