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GREENWICH
PHOTO-HELIOGRAPHIC RESULTS

1937

B-61

LONDON: HIS MAJESTY'S STATIONERY OFFICE
1951
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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

1937

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

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Greenwich Photo-Heliographic Results, 1936.

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		Col. 10,	,,	50°·6	,,	56°·4.
p. C 84.	Group 12162,	Col. 12,	,,	I. 1176(3)	,,	II (1937).
p. C 101.	Group 12016,	Col. 6,	,,	50°·6	,,	56°·4.

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GREENWICH PHOTO-HELIOGRAPHIC RESULTS 1937

INTRODUCTION.

§1. *Positions and Areas of Sun Spots and Faculæ for each Day in the Year* 1937.

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. A negative transparency for November 3 was kindly supplied by the Director of the Mt. Wilson Observatory to fill a gap in the above series.

The photographs of the Sun obtained at Greenwich were taken with the Dallmeyer Photoheliograph of 4 inches aperture (usually stopped down to 2.9 inches).

The diameter of the Sun's image at the secondary focus is 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 upon each day in 1937, those finally selected for measurement being supplied by the different observatories as under:

Greenwich	241
Cape	114
Kodaikánal	9
Mt. Wilson	1
Total	365

The names of the measurers of the photographs for the year 1937 are as follows:

H. W. Newton P. S. Laurie
H. Barton J. Wickham

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 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 Photoheliograph.

Determination of Zero of Position-Angle, Greenwich.

Month, 1937.	Greenwich.	
	Photographic.	Visual.
	° ′	° ′
January	+2 22	+2 24
February	+2 34	+2 22
March	+2 24	+2 24
April	+2 19	+2 24
May	+2 20	+2 23
June	+2 17	+2 24
July	+2 17	+2 25
August	+2 28	+2 23
September	+2 20	+2 25
October	+2 22	+2 23
November	+2 00	+2 07
December	+2 15	+2 08

One of the two cross wires broke on October 30 after the photographs had been taken. Both wires were replaced on November 1.

The Zero-corrections used during the year 1937 in the reduction of the Greenwich photographs were as follows :—

	°
January 1 to March 31	+2·40
April 1 to July 31	+2·35
August 1 to October 30	+2·40
November 1 to December 31	+2·10

With respect to the Cape Photoheliograph, instability in the zero of position angle developed during the year owing to a looseness in the wire frame fixture. Marked discontinuities in the zero occurred on February 17, April 16, May 7, June 9 and December 14, new wires being also inserted on February 1. Between these respective dates, the zero remained appreciably constant as shown by the various zero determinations. The following zero corrections were adopted for Cape photographs taken between the limiting dates given on page vi.

Zero-corrections to Position-Angles, Cape.

Date 1937.	Correction
	°
January 1 to 30	−0·4
February 2 to 14	−0·5
February 17 to March 22	+0·2
April 1 to 15	+0·1
April 17 to 29	−0·2
May 9 to 19	−0·6
June 12 to December 13	+0·3
December 15 to 31	+0·8

On December 14, the wire frame was wedged securely in position with respect to the tube of the telescope.

The Zero-correction adopted for the Kodaikánal photographs was + 0°·2 for January: + 0°·3 for February to August: + 0°·2 for September and October. [The correction adopted throughout 1936 was + 0°·2.]

The measures of the photographs were made with a large position-micrometer constructed by Messrs. Troughton and Simms for the measurement of photographs of the Sun up to 12 inches in diameter. In this micrometer the photograph is held with its film-side uppermost on three pillars fixed on a circular plate, which can be turned through a small angle, about a pivot in its circumference, by means of a screw and antagonistic spring acting at the opposite extremity of the diameter. The pivot of this plate is mounted on the circumference of another circular plate, which can be turned by screw-action about a pivot in its circumference, 90° distant from that of the upper plate, this pivot being mounted on a circular plate with a position-circle which rotates about its centre. By this means small movements in two directions at right angles to each other can be readily given, and the photograph can be accurately centred with respect to the position-circle. When this has been done, a positive eye-piece, having at its focus a glass diaphragm ruled with cross-lines into squares, with sides of one-hundredth of an inch (for measurement of areas), is moved along a slide diametrically across the photograph, the diaphragm being nearly in contact the photographic film, so that parallax is avoided. 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 are measured independently by two persons, 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 had been made in the practice during years previous to 1916, where in this section components of groups are given separately and combined into groups in the Ledgers.

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

The calculations of heliographic longitude and latitude are made by use of the formulæ given in "Researches on Solar Physics: Heliographical Positions and Areas of Sun Spots 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. 576 of the *Nautical Almanac* for 1937.

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 1937·0 to be 74°52′·9, 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 Sun Spots for* 1937.

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 1936, and previous years. Groups seen only once are given with a distinctive numeration in a table which follows the Catalogue.

A number of "Revival" groups of spots have been tabulated in series in a table following the Catalogue and table of 1-day spots. The respective groups of each series are in the same heliographic position and were usually seen in consecutive rotations but with definite breaks in their history between each rotation. 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 Sun Spots for* 1937.

Ledger I.—Recurrent Groups.—This Ledger supersedes the Catalogue of Recurrent Groups of Sun Spots 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, 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 the Catalogue was searched some fifteen or sixteen days later, to ascertain whether a spot group of similar heliographic longitude and latitude was then near the east limb of the Sun. Both the search forward and the search backward have been made in the case of every spot group that was

observed close to either the east or west limbs, in order that no possible case of identity might be overlooked. When there appeared to be a case of probable identity between spot groups observed in two consecutive rotations of the Sun, the character of the second group has been carefully compared with that of the first in each of the three elements—area, longitude, and latitude—before accepting it 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 Ledgers I and II, the formula adopted as representing the Sun's daily sidereal motion is

$$\xi = 14^\circ \cdot 37 - 2^\circ \cdot 60 \sin^2\phi,$$

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

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

§ 4. *Total Areas of Sun Spots and Faculæ for each day, and Mean Areas and Mean Heliographic Latitude of Sun Spots and Faculæ for each Rotation of the Sun, and for the year* 1937.

Particulars relating to this section are given in the headings on pages C 182 and 186-7.

§ 5. *Observations of Solar Flocculi made with the Spectrohelioscope in the year* 1937.

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

ROYAL OBSERVATORY, GREENWICH.

Positions and Areas of Sun Spots and Faculæ

For each Day in the Year

1937

GREENWICH PHOTO-HELIOGRAPHIC RESULTS, 1937.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

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). (3) Date of photograph.

Col. 2. Number of Spot Group in order of appearance and in continuation of the Group-numbers given in previous years. Groups seen on one day only are distinguished by the number of the Rotation during which they were observed and by a letter given in the order of their appearance. When there is no number in the second column it is to be understood that there is a Facula unaccompanied by a Spot.

Col. 3. Distance of Spot Group or Faculæ from Sun's centre in terms of the Sun's radius.

Col. 4. Position Angle of Spot Group or Faculæ measured from the north pole of the Sun's axis in the direction N., E., S., W., N.

Col. 5. Heliographic Longitude of the Spot Group derived from the measures.

Col. 6. Heliographic Latitude of the Spot Group similarly derived.

Col. 7. Area of Umbræ corrected for foreshortening in millionths of the Sun's visible hemisphere.

Col. 8. Area of Whole Spots composing the Group similarly expressed.

Col. 9. Area of each group of Faculæ similarly expressed. The positions of Faculæ relative to the Spots with which they are associated are indicated by the letters *n*, *s*, *p*, *f*, *c*, denoting respectively, north, south, 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 Faculæ for the day.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
0·329		·984	291·2					159
		·955	255·8					166
		·953	309·0					142
		·950	299·2					131
		·942	246·6					159
		·852	303·0					158
		·848	252·2					440
	12146	·944	289·6	296·4	+17·3	3	18	275*n*
	12147	·848	236·0	282·0	−30·1	24	135	217*c*
	12153	·662	289·7	267·1	+10·4	38	257	
	12154	·538	311·7	252·8	+18·1	12	60	
	12163	·443	211·8	242·8	−25·0	2	7	
C	12158	·414	39·6	212·1	+15·5	15	82	
	12161	·576	35·2	206·5	+25·1	95	528	
	12159	·449	121·8	204·6	−16·4	4	10	
	12160	·471	104·4	200·5	− 9·4	35	199	
	12164	·556	57·0	199·2	+14·8	19	52	
	12162	·808	130·4	180·4	−33·6	39	197	185*c*
	12165	·751	78·1	180·3	+ 6·8	0	6	
	12167	·848	61·6	174·6	+21·9	8	16	130*c*
	12166	·867	76·0	169·3	+10·5	17	175	241*c*
		·916	116·7					210
		·957	64·9					114
		·967	77·4					168
Jan. 1			(+2·0)	(227·9)	(−3·1)	(311)	(1742)	(2895)
1·448		·974	292·3					573
		·934	251·9					665
		·900	301·9					295
		·831	247·9					177
	12147	·939	238·5	281·3	−30·6	13	118	372*c*
	12153	·827	284·9	267·2	+10·3	42	232	475*c*
	12154	·715	296·2	254·8	+15·9	4	16	
	1114k	·475	254·2	240·7	−10·4	7	20	
	12158	·322	2·2	212·4	+15·4	10	62	
	12161	·490	13·2	206·0	+25·1	109	563	
	12159	·296	145·4	203·0	−17·3	9	15	
	12160	·245	117·0	200·4	− 9·6	41	211	
G	12164	·384	37·1	199·3	+14·5	12	39	
	1114l	·517	108·1	183·1	−12·1	5	10	
	12165	·537	68·1	183·0	+ 8·6	11	48	
	12162	·700	139·3	179·5	−34·7	61	383	
	12167	·713	54·4	174·6	+21·9	4	12	219*f*
	12166	·726	72·1	168·7	+10·5	28	149	202*f*
		·855	47·3					114
		·875	59·2					211
		·878	72·8					494
		·886	112·3					208
		·936	97·9					347
		·964	48·8					128
Jan. 2			(+1·5)	(213·1)	(−3·3)	(356)	(1878)	(4480)
1937.			°	°	°			
2·349		·970	252·2					176
		·945	298·3					131
		·883	256·2					220
		·856	310·9					300
		·831	294·8					269
	12147	·982	239·3	280·1	−30·7	16	85	129*f*
	12153	·920	283·0	266·8	+10·5	21	73	348*c*
	12157	·281	243·9	216·1	−10·4	2	6	
	12158	·374	329·2	212·7	+15·3	6	36	
C	12161	·484	351·0	206·1	+25·0	72	428	
	12159	·242	183·1	202·1	−17·3	9	48	
	12160	·107	174·4	200·7	− 9·5	50	227	
	12164	·300	4·2	200·0	+13·9	2	11	
	12165	·388	59·2	181·7	+ 8·2	4	20	
	12162	·609	148·6	178·8	−34·3	52	346	
	12167	·590	44·8	174·8	+21·6	0	2	
	12166	·584	66·2	168·5	+10·7	20	120	
		·774	68·6					156
		·867	96·2					218
		·896	46·7					128
		·949	116·0					97
		·959	106·6					181
Jan. 3			(+1·0)	(201·3)	(−3·4)	(254)	(1402)	(2353)
3·393		·978	282·7					294
		·947	253·7					288
		·938	307·5					143
		·916	287·1					332
		·911	241·9					100
		·853	252·1					198
		·829	297·3					240
	12157	·517	254·7	217·9	−10·8	1	3	
	12158	·515	308·0	212·3	+15·2	6	26	
	12161	·549	329·2	205·5	+24·7	79	385	
C	12159	·355	227·9	203·4	−17·1	4	13	
	12164	·385	320·5	202·0	+13·8	3	14	
	12160	·246	243·9	200·4	− 9·6	37	197	
	12165	·205	24·7	182·6	+ 7·2	2	4	
	12162	·548	164·3	177·1	−35·2	44	232	
	12166	·406	53·8	168·1	+10·5	4	22	
	12168	·535	68·7	157·4	+ 8·1	5	25	
		·883	119·0					159
		·889	95·5					56
		·890	106·8					113
		·958	112·3					464
Jan. 4			(+0·5)	(187·5)	(−3·5)	(185)	(921)	(2387)

Group 12167. Jan. 1–3. A small spot.
Group 12168. Jan. 4–6. A few small unstable spots in a stream.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
4·510		·989	286·2					298
		·948	255·2					242
		·947	209·9					316
		·927	301·0					385
		·856	292·8					156
	1114m	·940	243·3	242·1	−26·3	6	19	292*c*
	1114n	·824	303·2	221·8	+24·4	2	8	112*c*
	12158	·692	297·1	212·4	+15·6	4	12	
	12161	·689	313·1	206·4	+25·0	80	371	
G	12159	·546	243·6	203·4	−17·1	2	7	
	12160	·471	256·4	200·3	− 9·5	33	194	
	1114o	·496	233·6	197·9	−20·4	2	8	
	12165	·261	319·8	182·5	+ 7·9	5	20	
	12169	·249	335·2	178·8	+ 9·4	5	17	
	12162	·521	185·0	176·0	−34·8	44	195	
	12168	·343	54·0	156·6	+ 8·1	7	31	
		·770	120·6					115
		·889	113·2					396
		·943	76·8					223
Jan. 5			(0·0)	(172·8)	(−3·6)	(190)	(882)	(2535)
5·398		·972	244·0					226
		·937	288·6					94
		·927	298·8					193
		·801	290·0					181
		·798	255·6					233
	12161	·792	306·3	205·9	+25·3	61	346	
	12160	·635	259·0	200·2	− 9·8	44	187	
	12165	·413	298·4	182·5	+ 7·8	0	4	
C	12169	·367	308·0	178·1	+ 9·4	0	5	
	12162	·562	201·1	175·3	−35·0	31	160	
	12170	·190	354·4	162·2	+ 7·2	4	13	
	12171	·267	153·0	153·8	−17·3	9	26	
	12168	·237	35·4	153·2	+ 7·4	1	5	
	12172	·655	127·0	125·6	−26·2	24	85	
		·836	134·6					133
		·837	118·9					473
		·898	73·8					224
Jan. 6			(−0·4)	(161·1)	(−3·7)	(174)	(831)	(1757)
6·412		·971	296·5					98
		·941	239·2					101
G		·931	247·1					103
		·930	257·1					335
		·922	290·4					248
1937.			°	°	°			
6·412								
		·899	282·2					147
G		·831	247·9					292
		·826	234·7					342
		·799	291·5					260
		·754	223·1					353
	12161	·891	300·8	205·2	+25·1	63	385	313*c*
	12160	·799	260·4	200·6	−10·0	43	193	261*p*
	12165	·597	288·7	182·4	+ 7·9	6	24	
	12169	·526	298·7	175·6	+11·2	14	84	
	12162	·645	215·5	174·8	−35·0	17	147	
	12170	·309	308·7	161·7	+ 7·4	5	17	
	12171	·264	206·6	154·8	−17·3	21	62	
	12172	·497	140·5	126·2	−26·0	28	110	
	12173	·799	74·3	96·5	+10·1	5	14	155*f*
	1114p	·804	115·8	96·1	−22·8	3	8	97*f*
		·938	64·9					99
		·962	113·4					292
Jan. 7			(−0·9)	(147·7)	(−3·8)	(205)	(1044)	(3496)
7·497		·980	288·7					239
		·975	257·5					325
		·971	279·9					213
		·920	240·5					286
		·912	289·1					288
		·909	231·2					226
		·904	249·3					396
		·864	307·7					171
		·824	230·4					342
		·748	212·9					105
	12161	·970	297·5	205·6	+25·4	71	410	446*f*
	12160	·920	260·8	200·5	−10·0	33	197	605*f*
G	12165	·786	284·5	183·7	+ 8·9	2	3	328*c*
	12169	·710	291·3	175·9	+12·0	34	110	
	12162	·758	225·7	174·7	−34·8	36	134	222*c*
	12170	·536	289·5	164·0	+ 6·9	5	10	
	12171	·420	234·7	154·5	−17·6	87	353	
	12172	·393	166·1	127·5	−26·2	19	79	
	12174	·582	150·3	113·3	−33·8	13	37	
	12173	·645	69·3	95·9	+10·1	4	8	
		·853	115·6					205
		·883	67·5					156
		·884	59·9					114
		·940	114·7					423
Jan. 8			(−1·5)	(133·5)	(−3·9)	(304)	(1341)	(5090)

Group 12169. Jan. 5–10. A small stream of unstable spots *nf* Group 12165.
Group 12170. Jan. 6–11. A very small group, but long-lived for its size.
Group 12171. Jan. 6–13. A large stream of normal type.
Group 12172. Jan. 6–11. A pair of spots becoming a small stream.
Group 12173. Jan. 7–9. A very small ephemeral group.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
8·434		·979	237·7					94
		·977	287·1					198
		·954	247·8					290
		·930	232·9					385
		·925	303·3					252
		·900	280·9					374
		·817	304·7					126
		·808	217·5					372
	12161	·996	295·4	203·2	+24·8	48	138	175*f*
	12160	·979	259·9	199·6	−10·7	31	166	406*f*
	12169	·851	286·6	177·3	+11·8	17	56	428*c*
	12162	·852	230·9	174·6	−34·9	25	132	259*c*
G	12170	·679	284·9	162·3	+ 7·1	4	18	
	12171	·580	244·8	154·4	−17·6	116	657	
	12172	·386	191·7	126·1	−26·0	22	56	
	12174	·521	164·3	111·4	−33·9	6	21	
	12173	·468	58·0	97·4	+10·6	3	15	
	12175	·984	101·2	41·1	−11·7	16	47	148*f*
		·835	116·1					268
		·905	111·3					138
		·946	122·2					427
		·972	105·9					125
		·988	100·9					123
Jan. 9			(−1·9)	(121·1)	(−4·0)	(288)	(1306)	(4588)
9·426		·980	258·4					96
		·979	278·9					250
		·890	250·8					301
		·845	222·0					452
	12169	·959	283·6	180·1	+11·8	10	52	561*f*
	12162	·928	234·7	174·0	−34·1	15	74	610*c*
	1114q	·937	300·6	172·5	+26·7	0	13	125*f*
	12170	·847	281·6	164·7	+ 7·5	8	28	134*c*
	12171	·750	250·0	155·6	−17·6	95	619	
G	12172	·461	215·1	125·2	−26·0	23	96	
	12176	·362	196·7	114·6	−24·3	2	7	
	12174	·512	178·6	107·2	−34·8	2	8	
	12177	·278	28·6	100·4	+10·0	18	46	
	12175	·918	102·0	41·4	−12·7	11	65	305*f*
	12178	·989	97·0	26·4	− 7·5	43	298	
		·936	126·8					266
		·938	78·5					170
		·943	69·0					144
		·944	113·1					243
Jan. 10			(−2·4)	(108·1)	(−4·1)	(227)	(1306)	(3657)
1937.			°	°	°			
10·537		·978	285·7					254
		·975	235·7					276
		·966	295·9					131
		·928	229·1					317
		·898	307·2					147
		·877	217·2					190
		·845	290·5					261
	12170	·964	279·3	166·9	+ 7·8	0	17	242*f*
	12171	·879	252·5	154·6	−17·4	125	716	473*c*
	12172	·607	230·9	124·9	−26·1	11	43	
G	12176	·472	219·9	112·9	−25·2	5	27	
	12177	·265	335·7	99·7	+ 9·7	35	99	
	12175	·796	102·5	40·8	−12·5	24	65	202*c*
	12178	·949	98·7	21·6	− 9·6	104	681	690*c*
		·830	63·9					182
		·840	114·5					219
		·842	128·9					214
		·928	70·5					359
		·952	114·5					599
		·952	128·6					201
Jan. 11			(−2·9)	(93·4)	(−4·3)	(304)	(1648)	(4957)
11·395		·969	279·1					103
		·959	226·5					318
		·845	261·8					154
	12171	·957	252·9	155·5	−17·6	100	707	528*c*
	1114r	·963	285·5	154·6	+13·6	0	11	68*c*
	12179	·655	303·3	117·0	+17·5	5	16	
	12177	·398	304·5	101·4	+ 8·9	23	83	
C	12175	·677	104·1	40·0	−12·7	17	89	
	12178	·863	97·7	22·4	− 8·8	120	709	739*c*
		·795	131·5					205
		·852	67·2					162
		·903	116·1					538
		·929	130·8					229
		·949	70·3					268
Jan. 12			(−3·3)	(82·1)	(−4·3)	(265)	(1615)	(3312)
12·395		·949	263·2					366
		·868	272·6					141
C		·851	252·2					218
		·829	240·6					163
	12171	·985	253·0	149·7	−17·5	34	212	196*c*

Group 12174. Jan. 8–10. A few small unstable spots in a stream.
Group 12175. Jan. 9–20. A small stream of which the leader spot alone remains on January 15. On January 19, new spots appear.
Group 12176. Jan. 10–11. One or two small faint spots *f* Group 12172.
Group 12177. Jan. 10–16. A small stream; the leader spot alone remains on January 13, but there is a new small spot in the same area of faculæ on January 15.
Group 12178. Jan. 10–22. A large group of stream type which is fairly well developed on its appearance at the east limb. The leader is a regular spot; the follower is smaller and elongated in a direction north to south. There is a cluster of companion spots extending southwards, but this has disappeared by January 25.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
12·395	12179	·799	295·6	117·8	+17·3	21	90	116*c*
	12177	·602	290·8	103·6	+ 8·7	13	55	
C	12175	·517	106·8	38·7	−12·4	31	108	
	12178	·732	98·2	22·0	− 9·0	98	587	593*f*
	12180	·960	64·2	359·1	+23·2	39	188	274*c*
		·755	65·1					135
		·836	116·0					284
		·863	135·2					122
		·884	68·7					231
		·912	125·0					196
		·949	100·6					105
		·956	77·7					139
Jan. 13			(−3·8)	(69·0)	(−4·4)	(236)	(1240)	(3279)
13·392		·956	243·1					437
		·941	255·1					166
		·843	229·1					191
	12179	·914	291·1	118·8	+17·2	44	169	146*c*
	12181	·847	243·1	112·0	−25·0	2	6	244*c*
	12177	·764	285·2	103·8	+ 8·5	9	38	
	1114s	·656	238·7	93·3	−23·5	4	14	
	12175	·324	115·9	38·5	−12·4	15	63	
C	12178	·561	99·5	21·9	− 9·0	99	588	
	12180	·875	60·1	0·3	+23·3	21	112	370*f*
	12182	·969	104·1	339·6	−14·8	24	169	404*f*
		·777	62·7					156
		·829	126·1					278
		·857	73·7					159
		·959	69·5					181
		·962	112·5					157
Jan. 14			(−4·3)	(55·8)	(−4·5)	(218)	(1159)	(2889)
14·404		·989	255·8					177
		·987	243·2					327
G		·908	234·5					269
		·882	274·0					113
		·827	245·4					334
	12179	·982	288·8	119·2	+17·4	47	217	414*c*
	12181	·962	245·9	116·9	−24·5	13	27	638*f*

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
14·404	12177	·870	283·7	101·2	+ 9·4	12	40	644*c*
	1114t	·506	229·0	67·0	−23·6	4	16	
G	12183	·409	349·2	47·1	+18·9	9	43	
	12175	·144	179·5	42·4	−12·9	9	22	
	12178	·352	105·4	22·5	− 9·8	121	712	
	12184	·512	132·5	18·1	−24·4	5	24	
	12180	·766	53·8	0·3	+23·4	13	74	421*f*
	12182	·898	104·4	338·5	−15·0	22	149	1529*f*
	12185	·962	65·3	332·1	+22·1	31	211	487*c*
		·820	129·0					208
		·901	40·9					218
		·936	126·8					207
		·958	52·0					186
		·971	116·6					178
Jan. 15			(−4·8)	(42·5)	(−4·7)	(286)	(1535)	(6350)
15·417		·961	271·0					122
		·952	245·8					470
	12177	·969	280·7	103·6	+ 9·1	18	44	456*f*
	12183	·507	322·5	48·2	+19·1	15	65	
	12175	·271	239·4	43·0	−12·5	7	16	
	12178	·158	124·3	21·6	− 9·7	106	651	
	12184	·383	150·6	17·4	−24·0	3	17	
G	12180	·644	43·9	0·2	+23·5	11	31	
	12182	·775	105·3	338·8	−14·8	21	107	1034*c*
	12185	·888	61·8	331·6	+22·3	28	140	533*f*
	12186	·952	78·1	318·4	+ 9·8	3	14	269*f*
	12187	·975	116·5	311·4	−26·9	9	24	160*f*
		·888	71·4					151
		·922	117·1					207
		·973	71·9					298
Jan. 16			(−5·2)	(29·2)	(−4·7)	(221)	(1109)	(3700)
16·452		·988	280·7					217
		·970	259·6					97
G		·948	234·4					150
		·843	241·8					209
	12183	·640	307·4	47·9	+18·8	11	73	
	12175	·478	252·6	43·2	−12·5	5	16	

Group 12179. Jan. 12–15. A stream developing near the west limb.
Group 12180. Jan. 13–17. A regular spot with a small follower that has died out by January 16.
Group 12181. Jan. 14–15. A single spot on each day in a fairly large area of faculæ.
Group 12182. Jan. 14–22. An imperfectly formed regular spot. There is a small distant follower on January 15–17, and on January 19 a short-lived train of tiny spots. The extensive faculæ associated with the group suggest that the spots were very large on the invisible hemisphere.
Group 12183. Jan. 15–18. A small stream.
Group 12184. Jan. 15–16. A stream of tiny spots.
Group 12185. Jan. 15–25. Return of Group 12141. A stable regular spot with a tiny follower on January 23.
Group 12186. Jan. 16–25. A stream of weak development.
Group 12187. Jan. 16–20. Two very small spots.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
16·452	12178	·132	228·7	21·2	− 9·7	99	523	
	12180	·534	28·1	359·7	+23·4	5	18	
G	12182	·614	107·8	338·5	−14·6	12	85	291*f*
	12185	·783	56·1	331·0	+22·5	24	159	486*f*
	12186	·857	75·3	318·4	+10·0	9	41	343*f*
	12187	·906	116·9	311·3	−26·4	7	26	245*f*
	12188	·991	107·7	292·2	−18·2	87	606	305*n*
		·895	67·4					240
		·915	105·5					261
		·981	58·8					244
		·982	68·1					324
Jan. 17			(−5·7)	(15·5)	(−4·8)	(259)	(1547)	(3412)
17·401		·941	245·4					365
	12183	·771	299·8	48·0	+19·0	6	16	
	12175	·649	256·2	43·2	−12·7	3	7	
	12178	·331	257·2	22·1	− 8·9	106	438	
	12182	·433	114·8	339·2	−14·9	4	12	
	12185	·664	48·1	331·0	+22·1	15	117	
	12189	·584	109·2	328·4	−15·1	2	23	
C	12186	·735	72·0	318·1	+ 9·7	12	64	86*c*
	12187	·826	120·3	309·8	−27·5	7	20	84*c*
	12188	·966	108·8	287·5	−19·4	163	1488	468*c*
		·833	62·2					196
		·921	101·2					357
		·934	117·2					186
		·938	62·3					669
Jan. 18			(−6·2)	(3·1)	(−4·9)	(318)	(2185)	(2411)
18·456		·960	245·2					410
		·890	294·7					231
G		·887	307·4					81
		·875	236·0					123
		·812	224·4					187
	12175	·798	259·6	42·2	−11·3	22	79	260*c*
	12178	·566	264·0	23·6	− 7·5	63	372	
	12190	·447	317·6	7·3	+14·4	2	5	
	12182	·279	135·0	337·4	−16·3	7	38	
	12185	·543	33·4	330·5	+22·1	19	112	
	12189	·421	116·9	326·4	−15·5	5	30	
	12186	·560	63·8	318·7	+10·0	26	97	
	12187	·678	124·2	310·7	−26·2	3	6	
	12188	·887	109·1	286·8	−19·2	245	1479	735*c*
	12191	·969	106·4	273·0	−17·1	4	8	223*f*
1937.			°	°	°			
18·456		·833	100·1					327
		·862	58·2					657
G		·968	122·4					76
		·968	76·6					361
		·971	63·0					176
Jan. 19			(−6·6)	(349·2)	(−5·0)	(396)	(2226)	(3847)
19·420		·966	244·6					124
		·963	291·5					139
		·884	234·9					248
		·862	292·1					132
		·856	245·4					233
		·843	224·5					190
	12175	·912	258·8	39·8	−12·3	15	37	494*f*
	12178	·740	265·7	24·3	− 6·6	60	318	
	12190	·601	303·3	7·7	+14·9	11	27	
	12182	·182	177·2	336·0	−15·5	6	20	
	12185	·473	12·7	330·1	+22·3	20	115	
	12189	·272	139·4	325·9	−17·0	4	16	
G	12186	·387	47·0	319·9	+10·4	18	73	
	12187	·558	131·9	309·0	−26·4	2	8	
	1115a	·735	44·4	301·2	+27·5	0	5	182*f*
	12188	·778	111·0	286·3	−19·4	228	1509	608*c*
	12191	·900	106·4	272·2	−17·0	34	125	392*c*
		·921	123·6					137
		·921	72·9					455
		·933	42·1					112
		·939	59·0					256
		·971	105·5					266
		·983	75·3					242
		·987	68·1					164
Jan. 20			(−7·1)	(336·5)	(−5·1)	(398)	(2253)	(4374)
20·388		·980	256·8					576
		·939	288·9					307
G		·929	247·9					218
		·920	231·2					629
		·875	256·9					376
		·833	243·5					269
	12178	·870	265·4	24·3	− 6·5	47	299	258*c*
	12190	·769	293·5	10·2	+14·2	3	10	
	12192	·643	291·9	0·8	+ 9·7	6	20	
	12193	·554	309·3	350·0	+15·8	5	22	

Group 12188. Jan. 17–29. A very large group; the leader, which is by far the largest component, is elongated in a direction north to south, and developing several umbræ about January 23, disintegrates rapidly. In the rear of the stream is a regular spot whose umbra, becoming double on January 20, breaks into two parts on January 22. The sudden collapse of the group is noteworthy.
Group 12189. Jan. 18–22. A small stream of faint spots.
Group 12190. Jan. 19–23. A small group of a few spots.
Group 12191. Jan. 19–30. A fairly large stream *nf* Group 12188.
Group 12192. Jan. 21–24. Some unstable spots in a stream.
Group 12193. Jan. 21–24. A small group of stream type.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
20·388	12182	·316	233·5	338·9	−15·8	2	6	
	12185	·473	347·9	329·8	+22·3	20	105	
G	12189	·204	185·2	324·8	−16·9	5	52	
	12186	·278	16·7	319·1	+10·2	19	60	
	12194	·660	53·3	289·8	+18·8	20	92	
	12188	·623	114·7	287·0	−19·2	229	1538	
	12191	·784	108·1	272·5	−17·4	43	160	288*c*
	1115b	·911	64·0	262·6	+21·0	5	16	107*p*
	12195	·937	67·3	257·7	+19·1	6	13	328*f*
		·828	126·7					164
		·835	58·3					195
		·845	70·7					312
		·898	107·1					294
		·933	74·5					244
		·950	55·1					205
		·972	101·1					159
		·984	115·1					167
Jan. 21			(−7·5)	(323·7)	(−5·2)	(410)	(2393)	(5096)
21·142		·953	230·7					171
		·943	245·4					133
		·837	245·1					197
		·826	232·5					133
	12178	·946	266·1	25·0	− 5·4	43	293	605*sf*
	12190	·870	290·9	11·0	+15·2	4	12	153*nf*
	12192	·764	289·1	0·9	+10·8	29	84	68*c*
	12193	·670	302·1	350·0	+16·5	15	48	
	12182	·455	245·3	339·1	−15·7	2	4	
	12185	·528	332·1	329·3	+22·6	19	95	
	12189	·289	227·7	326·6	−16·3	4	38	
K	12186	·282	334·3	320·9	+ 9·4	11	42	
	1115c	·500	154·3	299·1	−31·8	1	5	
	12196	·413	117·7	291·6	−15·9	4	13	
	12194	·543	43·4	290·8	+18·2	71	401	
	12188	·505	122·3	286·8	−20·4	196	1278	
	12191	·667	111·6	273·2	−18·2	54	233	
	12195	·873	63·6	257·7	+19·9	4	12	321*c*
	1115d	·879	72·8	254·8	+12·4	2	4	133*f*
	1115e	·922	102·1	246·3	−13·2	8	33	103*c*
		·857	51·3					189
		·960	117·3					255
		·966	68·8					325
Jan. 22			(−7·9)	(313·8)	(−5·3)	(467)	(2595)	(2786)

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
22·394		·970	257·8					319
		·969	246·6					414
		·921	237·2					291
		·874	300·2					328
		·831	224·8					231
	12190	·959	286·8	8·5	+14·4	10	50	197*c*
	12192	·908	283·4	0·7	+ 9·7	50	216	234*c*
	12193	·840	292·8	350·7	+15·8	19	67	120*c*
	12185	·666	313·2	328·9	+22·5	15	89	
	12186	·458	302·2	320·3	+ 9·1	8	23	
	12197	·482	223·4	318·7	−25·5	3	10	
C	12196	·211	150·9	291·2	−16·0	5	30	
	12194	·418	14·2	291·1	+18·4	90	503	
	12188	·309	144·2	286·3	−19·8	154	978	
	12191	·456	118·7	272·6	−17·5	51	265	
	12195	·734	56·0	257·1	+20·1	58	233	
	12198	·903	62·2	237·9	+22·1	9	24	594*c*
		·779	104·2					222
		·891	118·3					464
		·934	53·4					301
		·952	103·8					227
		·958	43·6					196
Jan. 23			(−8·4)	(297·3)	(−5·4)	(472)	(2488)	(4138)
23·314		·962	235·4					196
		·885	258·1					179
		·764	252·5					209
	12192	·977	281·2	1·4	+ 9·7	52	172	180*c*
	1115f	·931	297·0	349·0	+22·6	0	8	198*f*
	12193	·920	290·8	348·9	+16·7	24	48	121*c*
	12185	·780	304·8	328·9	+22·5	17	50	
	12186	·630	291·6	321·4	+ 8·9	5	12	
	12197	·633	237·6	320·9	−24·2	13	32	
	12196	·220	208·6	291·5	−16·6	6	14	
C	12194	·405	346·4	290·9	+17·6	85	467	
	12188	·251	181·2	285·5	−20·0	146	774	
	12191	·294	135·0	272·7	−17·3	55	288	
	12199	·560	39·8	262·8	+20·3	6	23	
	12195	·605	46·6	257·5	+19·6	50	307	
	12198	·810	58·0	237·7	+21·7	8	42	188*f*
		·804	121·0					264
		·896	52·6					245
		·916	103·1					160
		·953	67·1					528
		·961	77·8					149
Jan. 24			(−8·8)	(285·2)	(−5·5)	(467)	(2237)	(2617)

Group 12194. Jan. 21–29. An extended stream of spots of rapid development.
Group 12195. Jan. 21–31. A stream of normal type of the simplest formation, namely, pair of spots which separate in longitude; a few tiny spots come between the pair on January 23–27. It is interesting to see the relative movement in longitude between the leader spot of this group and the spots of Group 12199 with which the former almost merges.
Group 12196. Jan. 22–25. One or two small unstable spots *np* Group 12188.
Group 12197. Jan. 23–26. A pair of small spots, one component remaining after January 24.
Group 12198. Jan. 23–29. A *small persistent spot.*
Group 12199. Jan. 24–Feb. 1. A stream originating closely *np* the leader of Group 12195.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
24·384		·986	286·9					190
		·924	258·1					219
		·912	249·2					232
		·899	289·7					61
	12185	·890	299·0	328·4	+22·6	4	28	313*c*
	12186	·794	285·5	321·6	+ 8·7	3	11	
	12197	·785	242·8	321·1	−24·6	5	17	
	12196	·437	240·0	294·4	−17·8	2	8	
	12194	·506	320·7	290·7	+17·7	88	386	
	12188	·345	224·9	286·0	−19·5	105	584	
	12200	·230	245·8	283·4	−10·8	5	18	
	12191	·214	188·7	273·0	−17·8	42	195	
G	12199	·449	16·0	263·6	+19·9	43	208	
	12195	·478	27·3	257·7	+19·6	78	316	
	12198	·678	49·5	237·6	+21·4	10	31	
	1115g	·631	126·7	236·7	−26·7	3	7	
	12201	·953	62·1	203·7	+24·4	51	310	626*c*
	12202	·924	101·4	203·2	−12·5	9	34	165*c*
	12203	·955	69·3	201·5	+17·9	0	7	
	12204	·978	100·1	192·7	−11·1	145	784	451*c*
		·839	64·6					288
		·936	73·7					274
		·943	110·4					145
		·990	81·4					151
Jan. 25			(−9·3)	(271·1)	(−5·6)	(593)	(2944)	(3115)
25·400		·976	250·5					272
		·956	295·5					386
C		·924	254·3					257
		·874	283·2					294
		·837	296·4					286
	12197	·894	244·8	320·6	−25·0	11	25	246*c*
	12194	·642	306·1	290·5	+17·5	88	477	
	12188	·517	240·0	286·0	−19·9	70	384	
	12200	·453	256·3	284·2	−11·1	47	151	
	12191	·345	232·4	274·3	−17·5	35	184	
	12199	·455	346·6	264·1	+20·6	58	311	
	12195	·430	358·2	258·5	+19·8	57	313	
	12198	·556	35·9	237·3	+21·4	6	16	
	12201	·874	57·2	203·7	+25·0	47	286 }	957*c*
	12203	·862	65·8	202·3	+17·5	4	17 }	
	12202	·812	101·8	203·3	−12·8	14	42	114*c*

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
25·400	12204	·892	99·9	194·3	−11·3	122	835 }	756*c*
	12205	·939	101·4	187·4	−12·6	42	216 }	
C	12206	·929	78·8	190·9	+ 8·2	28	106	271*c*
	12207	·949	70·8	189·0	+16·2	6	16	347*c*
	12208	·986	103·2	176·5	−13·9	18	61	191*c*
Jan. 26			(−9·8)	(257·7)	(−5·6)	(653)	(3440)	(4377)
26·549		·983	253·9					223
		·969	279·7					416
		·968	235·0					116
		·963	244·3					382
		·948	290·9					211
		·882	303·6					274
		·822	258·5					164
	12194	·808	295·5	292·0	+16·6	67	345	474*c*
	12188	·723	247·9	287·8	−19·8	30	155	
	12200	·669	260·0	284·6	−10·9	42	154	
	12191	·547	246·5	274·2	−17·4	20	125	
	12199	·546	323·3	262·9	+20·5	60	378	
	12195	·505	325·7	260·1	+19·1	71	318	
	12198	·461	10·7	237·4	+21·2	3	8	
C	12203	·699	58·0	204·4	+17·2	38	197	
	12201	·754	49·5	203·6	+24·8	44	290	
	12202	·637	103·1	203·3	−12·7	10	27	
	12204	·737	99·1	195·0	−10·5	171	1213	
	12206	·805	75·3	190·9	+ 8·3	18	111	193*f*
	12209	·806	113·6	189·8	−22·3	43	170	202*c*
	12207	·847	67·2	188·5	+15·8	20	55	161*c*
	12205	·820	102·1	187·4	−13·2	25	255	455*c*
	12208	·914	102·9	176·1	−14·1	43	201	505*f*
	12210	·996	109·1	156·2	−19·4	43	202	
		·862	127·1					256
		·932	76·1					375
		·963	125·2					478
		·964	64·3					163
Jan. 27			(−10·3)	(242·6)	(−5·7)	(748)	(4204)	(5048)
27·401		·963	249·0					108
		·938	306·0					179
C		·928	258·4					181
	12194	·885	295·0	289·2	+18·9	47	229	638*c*

Group 12200. Jan. 25–29. A group of three spots, fairly widely separated.
Group 12201. Jan. 25–Feb. 5. Return of Group 12161. A close pair of spots with companions. The preceding component dies out after January 29.
Group 12202. Jan. 25–28. Return of Group 12160. A small decreasing regular spot.
Group 12203. Jan. 25–Feb. 5. One or two spots developing into a fairly large stream led by a regular spot.
Group 12204. Jan. 25–Feb. 6. A large spot with triple umbræ. Two other spots develop rapidly *np*, and by January 30 have practically combined with the original spot to make one great composite structure with three principal umbræ. This composite spot is easily visible to the naked eye.
Group 12205. Jan. 26–31. A double spot in the wake of Group 12204.
Group 12206. Jan. 26–Feb. 6. A slowly diminishing regular spot. There is a distant cluster of small spots on February 3.
Group 12207. Jan. 26–Feb. 7. A feeble group of stream type.
Group 12208. Jan. 26–Feb. 6. A composite spot.
Group 12209. Jan. 27–Feb. 6. A stream led by a fairly large regular spot; the train soon dies out.
Group 12210. Jan. 27–Feb. 9. Return of Group 12171. A large spot with a double umbra.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
27·401	12188	·838	249·8	288·0	−20·0	17	61	598*c*
	12200	·805	261·9	285·2	−10·0	39	179	148*c*
C	12191	·688	250·8	274·1	−17·3	20	86	
	12199	·649	311·4	262·6	+20·4	88	602	
	12195	·616	311·4	260·5	+18·9	57	249	
	12211	·456	195·4	239·6	−31·7	4	14	
	12198	·462	347·4	237·6	+20·9	2	7	
	12203	·561	48·4	205·5	+16·6	70	281	
	12202	·476	106·4	203·6	−13·0	5	12	
	12201	·654	41·4	203·2	+24·1	46	276	
	12204	·586	100·0	195·6	−10·5	171	1314	
	12206	·678	71·8	191·0	+ 7·8	26	102	
	12209	·681	117·4	190·6	−22·6	52	255	
	12207	·736	62·6	188·9	+15·5	14	40	139*c*
	12205	·693	103·2	187·7	−13·3	17	176	
	12208	·820	103·4	176·2	−14·3	31	295	288*f*
	12210	·968	109·0	155·0	−19·8	57	417	349*f*
		·851	70·6					337
		·880	127·5					305
		·938	55·8					143
		·957	128·6					131
Jan. 28			(−10·6)	(231·4)	(−5·8)	(763)	(4595)	(3544)
28·112		·970	287·9					236
		·876	286·7					100
K		·861	308·0					159
	12194	·932	295·5	286·2	+21·1	11	27	317*c*
	12188	·897	249·1	285·8	−21·3	9	25	579*c*
	12200	·890	260·7	285·2	−11·0	28	90	118*c*
	12191	·805	252·3	275·4	−17·7	12	41	198*c*
	12199	·745	304·5	262·8	+20·4	104	715	
	12195	·718	303·5	261·1	+18·7	52	242	
	12211	·520	211·2	240·4	−31·8	5	16	
	12198	·515	330·1	237·9	+20·7	1	2	
	12212	·480	0·1	222·0	+22·7	5	16	
	12203	·468	34·1	206·1	+17·0	74	330	
	12201	·584	30·7	203·0	+24·5	35	249	
	12204	·434	101·4	196·5	−10·3	256	1650	
	12206	·553	67·1	191·2	+ 7·3	14	112	
	12209	·570	122·3	190·6	−22·8	79	359	
	12205	·575	104·7	187·3	−13·2	29	144	
	12207	·659	56·9	187·0	+16·2	14	46	
	1115h	·696	67·3	181·3	+11·1	1	3	
	12208	·719	104·5	176·2	−14·5	38	240	

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
28·112	12210	·919	109·0	154·8	−19·8	58	362	568*s*
	12213	·980	53·3	150·6	+34·1	20	69	190*s*
K		·848	129·3					342
		·907	59·2					107
		·929	71·1					141
		·945	130·3					311
		·978	78·2					153
Jan. 29			(−10·9)	(222·0)	(−5·9)	(845)	(4738)	(3519)
29·397		·984	295·5					332
		·977	261·1					216
		·962	248·1					895
		·944	286·6					141
		·888	306·3					118
		·834	287·3					85
	12191	·929	253·7	273·9	−17·3	5	48	237*f*
	12199	·884	297·3	262·0	+20·7	123	719	254*c*
	12195	·879	295·9	261·9	+19·4	29	196	
	12212	·555	328·5	223·3	+22·5	21	115	
	12214	·361	223·1	220·3	−20·9	2	9	
	12203	·399	355·8	206·8	+17·5	93	450	
C	12201	·510	3·5	203·1	+24·5	22	111	
	12204	·162	118·1	196·8	−10·2	267	1835	
	12209	·360	143·6	191·8	−22·5	69	402	
	12206	·325	46·1	191·5	+ 7·2	19	104	
	12205	·315	114·1	188·0	−13·0	9	49	
	12207	·474	37·1	187·8	+16·5	12	57	
	12208	·482	109·1	177·2	−14·2	31	210	
	12210	·778	110·3	154·6	−19·4	59	304	283*f*
	12213	·914	48·7	149·5	+33·8	5	35	310*f*
	12215	·947	60·1	139·5	+25·9	20	148	173*f*
	12216	·971	64·0	133·2	+23·5	27	129	258*f*
	12217	·965	104·5	129·5	−15·5	19	101	326*c*
Jan. 30			(−11·5)	(205·1)	(−5·9)	(832)	(5022)	(3628)
30·415		·985	253·0					601
		·941	284·3					285
G		·925	306·9					226
		·904	251·1					232
		·875	261·7					258
		·838	296·1					415
		·813	301·9					166

Group 12211. Jan. 28–29. A wide pair of small spots
Group 12212. Jan. 29–Feb. 3. A pair of spots developing in the usual manner to a stream of normal type.
Group 12213. Jan. 29–Feb. 5. A small regular spot diminishing to a speck.
Group 12214. Jan. 30–Feb. 4. A pair of spots of which the leader grows rapidly to a regular spot and the follower dies out.
Group 12215. Jan. 30–Feb. 6. A regular spot dividing into two on January 31.
Group 12216. Jan. 30–Feb. 10. A regular spot with occasional small followers.
Group 12217. Jan. 30–Feb. 6. An unstable spot preceded by a small companion on January 31 and February 1–3.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
30·415	12195	·960	292·3	261·8	+19·4	41	198	426c
	12199	·956	293·9	260·7	+20·7	154	899	
G	12212	·670	313·5	223·3	+22·3	42	253	
	12214	·543	240·7	221·9	−20·5	14	37	
	12203	·459	329·7	205·7	+17·4	96	554	
	12201	·533	342·2	202·0	+24·5	21	107	
	12204	·102	229·5	196·2	− 9·8	348	2309	
	12206	·225	0·7	191·5	+ 6·9	20	106	
	12209	·285	176·9	190·7	−22·5	81	421	
	12207	·369	5·7	189·5	+15·5	14	69	
	12205	·122	152·8	188·4	−12·2	11	39	
	12208	·281	122·1	177·5	−14·4	38	177	
	12218	·562	142·2	167·9	−31·8	8	23	
	12210	·627	113·6	154·4	−19·3	44	272	
	12213	·838	42·9	148·7	+33·5	8	30	208c
	12215	·872	55·7	138·7	+25·9	22	92	1015f
	12216	·909	61·1	132·0	+23·1	46	243	
	12217	·895	104·3	127·9	−15·4	17	87	400p
	12219	·966	68·7	119·9	+18·8	25	99	179c
		·860	135·6					347
Jan. 31			(−11·9)	(191·7)	(−6·0)	(1050)	(6015)	(4758)
31·424		·987	282·0					145
		·973	250·9					185
G		·957	259·5					92
		·917	306·5					216
		·864	242·7					312
	12199	·994	292·3	259·0	+21·3	97	593	573f
	12214	·736	247·4	224·8	−20·6	29	110	
	12212	·796	304·3	223·6	+22·3	42	270	272c
	12203	·594	310·1	206·7	+17·0	89	423	
	12220	·539	304·7	205·3	+12·4	5	15	
	12201	·627	323·3	202·6	+24·5	15	101	
	12204	·311	256·7	196·2	− 9·9	393	2364	
	12206	·317	313·7	191·7	+ 6·7	15	96	
	12209	·351	214·6	190·8	−22·7	63	464	
	12207	·418	337·8	187·8	+16·6	5	21	
	12208	·146	176·1	177·8	−14·4	27	129	
	12218	·468	158·9	167·0	−31·7	15	70	
	1115i	·483	139·2	157·7	−27·1	2	10	
	12210	·458	121·1	154·0	−19·2	45	250	
	12213	·757	34·3	147·9	+33·1	7	17	
	12215	·772	48·9	138·3	+25·8	34	129	856f
	12216	·814	55·7	131·6	+23·1	26	250	
	12217	·774	105·7	127·8	−16·0	13	41	
	12219	·890	65·2	120·0	+18·7	26	99	289f
31·424		·928	114·7					390
		·955	83·3					136
G		·959	75·1					75
		·976	111·3					254
Feb. 1			(−12·3)	(178·4)	(−6·1)	(948)	(5452)	(3795)
32·506		·967	248·5					170
		·967	303·3					162
		·926	322·3					103
		·923	312·1					194
		·916	241·2					476
		·872	290·4					190
		·846	312·3					97
	12214	·872	249·3	224·9	−21·0	21	101	236f
	12212	·905	298·8	223·3	+22·8	50	361	472c
	12203	·765	298·7	208·6	+17·1	58	333	
	12220	·709	294·2	205·5	+12·2	9	21	
	12201	·741	311·3	201·7	+24·3	26	86	
	12204	·545	262·5	197·2	− 9·3	362	2215	
	12206	·503	294·1	191·6	+ 6·3	19	100	
	12209	·512	233·1	190·6	−23·4	55	296	
C	12207	·543	314·9	187·8	+16·8	4	14	
	12208	·285	236·7	178·4	−15·0	25	104	
	12221	·139	193·3	166·1	−13·9	4	12	
	12218	·442	182·9	165·7	−32·3	25	79	
	12210	·289	142·7	153·6	−19·3	40	231	
	12213	·678	21·7	146·9	+33·0	9	17	
	1115j	·463	45·9	144·3	+12·9	7	16	
	12215	·653	37·9	138·0	+25·3	22	99	404f
	12216	·682	45·7	132·3	+23·1	29	146	
	12217	·594	109·6	128·6	−16·5	15	59	
	12219	·768	59·5	120·1	+18·5	15	80	
		·821	115·1					318
		·830	43·1					312
		·886	73·5					357
		·919	112·5					316
		·939	121·5					166
Feb. 2			(−12·7)	(164·2)	(−6·2)	(795)	(4370)	(3973)
33·454		·978	242·4					244
		·968	306·3					135
G		·948	316·1					184
		·937	257·3					147
		·930	285·6					170
	12214	·954	249·6	225·1	−21·3	33	134	238f

Group 12218. Jan. 31–Feb. 5. A small stream with the chief component following.
Group 12219. Jan. 31–Feb. 10. Return of Group 12179. A diminishing regular spot with a tiny companion on February 6.
Group 12220. Feb. 1–3. A diminutive group *f* Group 12203.
Group 12221. Feb. 2–3. A tiny group.

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U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
33·454	12212	·965	296·1	222·0	+23·1	41	250	509*c*
	12203	·882	293·5	209·4	+17·3	41	246	} 575*f*
G	12220	·858	288·7	207·8	+12·5	4	13	
	12201	·850	303·8	202·3	+24·3	12	50	430*c*
	12204	·718	262·9	197·7	− 9·4	333	2232	
	12209	·656	241·0	190·2	−23·4	49	306	
	12206	·649	288·4	189·9	+ 6·9	22	115	
	12208	·464	248·9	178·2	−15·1	17	59	
	12221	·291	238·5	166·5	−14·7	2	6	
	12218	·479	201·7	163·8	−32·4	15	58	
	12210	·224	187·9	153·6	−19·0	32	279	
	12213	·638	7·5	146·0	+33·0	6	16	
	12215	·572	22·9	137·5	+25·7	10	32	
	12216	·578	33·7	131·4	+22·8	31	206	
	12217	·407	117·9	129·7	−16·7	16	49	
	12219	·644	51·5	119·8	+18·3	14	68	
	12222	·963	68·9	80·8	+18·3	7	20	241*s*
	12223	·953	99·9	78·7	−11·3	18	49	217*c*
		·856	158·1					260
		·985	113·0					355
Feb. 3			(−13·1)	(151·7)	(−6·2)	(703)	(4188)	(3705)
34·398		·980	256·9					187
		·901	245·5					321
		·866	313·7					129
		·823	294·1					334
	12214	·991	249·2	223·2	−21·4	14	87	185*f*
	12203	·959	290·2	209·6	+17·3	42	264	843*f*
	12201	·928	299·2	201·7	+24·1	17	66	593*nf*
	12204	·855	262·4	198·4	− 9·7	260	2000	918*c*
	12206	·804	283·4	191·1	+ 6·8	25	97	
	12209	·783	244·6	189·7	−23·7	58	354	356*c*
G	12208	·637	253·5	178·4	−15·3	14	28	
	12218	·569	218·4	163·9	−32·1	9	28	
	12210	·320	226·0	153·3	−18·9	39	244	
	12213	·640	352·3	145·1	+32·9	3	11	
	12215	·533	4·3	136·8	+25·7	8	25	
	12216	·507	15·5	130·9	+22·9	37	186	
	12217	·264	134·6	128·0	−16·8	16	42	
	12219	·523	38·0	119·6	+18·3	13	48	
	12223	·857	100·0	80·0	−11·8	26	130	271*c*
	12222	·903	66·0	79·1	+18·4	26	121	281*c*
	12224	·957	112·1	65·3	−22·9	7	29	653*c*
Feb. 4			(−13·5)	(139·3)	(− 6·3)	(614)	(3760)	(5071)

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
35·316		·953	308·1					109
		·913	290·1					367
		·804	292·7					225
	12203	·994	288·3	208·4	+17·3	35	184	840*f*
	12201	·977	296·7	200·3	+24·3	9	48	530*c*
	12204	·947	261·9	199·0	− 9·7	213	2061	1280*c*
	12206	·913	279·9	191·8	+ 6·4	10	65	345*nf*
	12209	·882	246·5	189·0	−23·6	70	423	380*c*
	12225	·838	237·1	181·9	−30·7	4	19	78*c*
	12208	·782	255·5	178·7	−15·2	10	23	173*c*
	12218	·666	226·7	162·1	−32·3	5	22	
	12210	·474	241·1	153·1	−18·9	36	179	
	12213	·676	338·7	144·1	+32·9	3	10	
C	*1115k*	·288	214·9	137·2	−19·8	2	11	
	12215	·556	345·3	136·2	+26·2	4	11	
	12216	·489	354·9	129·9	+22·7	28	165	
	12217	·181	183·3	127·8	−16·7	7	13	
	12219	·436	17·5	119·3	+18·2	13	66	
	12223	·726	100·1	80·5	−11·7	23	120	116*c*
	12222	·796	61·8	79·9	+17·8	20	68	341*c*
	12224	·870	113·1	67·0	−23·1	50	275	537*c*
		·849	48·7					137
		·863	100·1					225
		·963	103·4					238
		·964	66·5					185
Feb. 5			(−13·9)	(127·2)	(−6·3)	(542)	(3763)	(6106)
36·469		·982	286·8					197
		·942	282·9					281
G		·894	291·5					229
		·878	309·7					226
		·873	233·7					465
		·774	220·7					728
	12204	·995	260·5	197·1	−10·1	105	977	1058*f*
	12206	·987	277·5	191·7	+ 6·3	0	12	118*c*
	12209	·968	247·0	188·6	−23·8	33	425	519*c*
	12225	·947	239·1	183·6	−31·3	23	149	230*c*
	12208	·915	256·0	178·8	−15·4	5	9	473*sf*
	12226	·783	241·4	161·8	−26·2	22	76	
	12210	·668	248·2	152·9	−19·2	20	137	
	12215	·646	329·3	133·8	+27·7	6	20	
	12216	·559	330·4	129·4	+22·8	25	138	
	12217	·320	233·4	127·5	−17·2	6	13	
	12219	·436	345·1	118·8	+18·5	9	46	
	12223	·502	102·2	82·1	−11·7	13	59	

Group 12222. Feb. 3–9. A sparse stream of small spots.
Group 12223. Feb. 3–10. A pair of spots, the leader developing into a small regular spot.
Group 12224. Feb. 4–15. A variable stream of unstable spots.
Group 12225. Feb. 5–7. A stream developing near the west limb.
Group 12226. Feb. 6–8. A stream developing near the west limb.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
36·469	12222	·671	53·7	77·5	+18·1	23	43	
	12224	·712	115·7	68·1	−22·6	43	200	593*f*
G	12227	·870	101·1	51·2	−12·8	0	4	436*c*
		·894	59·1					253
		·915	113·6					214
		·920	70·7					150
		·977	114·3					260
Feb. 6			(−14·3)	(112·0)	(−6·4)	(333)	(2308)	(6430)
37·524		·969	287·7					259
		·965	253·2					218
		·929	304·5					230
		·864	293·3					249
		·850	229·9					504
	12225	·985	239·5	180·0	−31·1	32	134	197*c*
	12226	·895	244·4	161·5	−25·7	28	142	149*c*
	12210	·814	251·5	152·5	−18·8	34	159	274*c*
C	12216	·680	313·0	130·4	+22·1	17	100	
	12219	·534	320·5	119·0	+18·2	8	35	
	12223	·285	110·5	82·3	−12·0	15	68	
	12222	·501	38·3	79·2	+16·9	11	47	
	12224	·537	122·7	68·9	−22·5	22	118	
	12228	·947	94·3	26·5	− 6·3	20	91	330*sf*
		·885	70·1					190
		·935	113·1					414
		·957	72·9					136
Feb 7			(−14·7)	(98·1)	(−6·5)	(187)	(894)	(3150)
38·487		·970	238·3					228
		·967	301·5					118
G		·933	278·7					134
		·932	289·0					389
		·920	312·9					192
		·890	229·3					663
		·862	242·3					138
		·856	307·9					396
		·825	256·8					210
		·792	322·3					516
	12226	·966	244·9	161·6	−25·9	22	96	275*f*
	12210	·917	252·1	152·5	−19·0	25	97	370*c*
	12229	·899	297·1	144·1	+20·9	19	34	99*c*
	12216	·787	305·9	129·0	+22·8	12	28	386*c*
	12219	·659	307·7	118·6	+18·3	9	16	
	12223	·113	148·1	81·9	−12·0	8	23	
	12222	·410	12·1	80·3	+17·1	2	16	
1937.			°	°	°			
38·487	*1115l*	·493	26·9	71·8	+19·6	2	15	
	12224	·391	135·5	68·2	−22·3	14	47	
G	12230	·724	53·9	47·0	+20·1	3	6	
	12231	·859	69·0	29·7	+14·3	13	21	125*c*
	12228	·862	93·2	25·7	− 6·1	17	87	623*sf*
		·865	115·9					275
		·912	77·3					152
		·921	50·6					290
		·936	129·9					218
		·952	115·9					412
		·959	68·7					181
		·980	77·0					310
Feb. 8			(−15·1)	(85·4)	(−6·5)	(146)	(486)	(6700)
39·601		·975	282·5					168
		·937	229·5					520
		·927	255·9					281
		·881	314·7					581
		·861	220·3					149
	12210	·827	251·5					290
	12229	·984	252·3	151·8	−18·5	11	82	201*sf*
	12216	·966	295·2	141·4	+22·2	4	13	341*c*
	12219	·904	298·7	129·6	+22·3	10	28	654*c*
	12222	·803	298·7	118·5	+18·2	9	20	400*c*
G	12223	·438	334·0	82·3	+16·7	2	15	
	12224	·217	242·8	82·1	−12·1	5	11	
	12230	·273	171·5	68·3	−22.2	7	40	
	12231	·568	39·7	48·2	+19·7	21	71	
	12228	·688	59·7	33·0	+15·1	21	99	
		·704	91·9	26·0	− 6·0	15	70	
		·846	119·7					323
		·877	114·2					346
		·891	64·3					137
		·921	75·5					523
		·944	122·2					212
Feb. 9			(−15·5)	(70·8)	(−6·6)	(105)	(449)	(5126)
40·441		·976	255·4					155
		·962	232·4					266
G		·932	310·0					545
		·914	252·3					233
		·910	224·0					150
		·864	304·4					86
		·794	247·6					151
	12216	·964	295·8	129·6	+22·6	7	7	365*n*
	12219	·894	294·3	118·6	+18·2	10	14	167*c*

Group 12227. Feb. 6–10. Intermittent. A tiny spot in an area of faculæ on February 6; a pair of spots on February 10.
Group 12228. Feb. 7–18. Return of Group 12178. A slowly decreasing regular spot.
Group 12229. Feb. 8–9. A pair of spots of which the leader remains on the second day.
Group 12230. Feb. 8–17. A typical stream of normal type.
Group 12231. Feb. 8–18. A stream in which the following part is poorly developed; the leader is a regular spot.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
40·441	12223	·355	255·4	80·1	−11·3	4	11	
	12224	·304	207·7	68·4	−22·1	7	38	
G	12230	·472	19·3	50·2	+19·9	37	193	
	12232	·280	39·2	49·5	+ 6·0	2	6	
	12227	·214	120·2	48·8	−12·6	2	5	
	12231	·568	51·1	32·6	+15·0	43	171	
	12228	·551	90·8	26·2	− 6·0	20	89	
	12233	·656	69·5	21·5	+ 8·0	3	10	
	1115m	·975	110·4	341·2	−21·3	0	9	219*f*
		·828	71·2					459
		·897	124·2					231
		·938	103·9					255
		·957	60·8					148
		·961	116·4					108
Feb. 10			(−15·8)	(59·7)	(−6·6)	(135)	(553)	(3538)
41·498		·979	250·8					233
		·977	307·2					313
		·954	223·6					85
		·951	299·2					218
		·936	287·4					241
		·914	251·2					90
		·872	243·8					280
	12224	·486	234·8	71·1	−22·3	5	30	
	12230	·454	351·3	50·0	+19·9	85	456	
C	12231	·428	29·7	33·2	+15·2	38	216	
	12228	·331	90·1	26·4	− 6·4	18	61	
	12233	·471	56·6	22·5	+ 8·8	2	13	
	1115n	·883	70·6	347·0	+13·7	2	4	111*n*
	12234	·865	118·0	346·6	−27·5	4	8	119*f*
		·852	102·9					439
		·894	57·4					256
		·913	112·3					419
		·962	105·0					333
		·977	114·8					136
Feb. 11			(−16·2)	(45·8)	(−6·7)	(154)	(788)	(3273)
42·462		·956	245·7					239
		·878	241·8					215
G		·795	297·7					98
	1115o	·800	234·9	83·2	−31·7	7	22	
	12224	·620	242·3	69·3	−22·1	11	39	
	1115p	·385	269·8	55·8	− 6·3	1	5	

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
42·462	12232	·412	296·1	54·8	+ 4·2	1	4	
	12230	·519	329·5	49·3	+20·0	112	536	
G	12231	·380	358·3	33·8	+15·5	36	196	
	12228	·112	86·7	26·7	− 6·3	16	58	
	12233	·319	28·9	24·1	+ 9·5	7	16	
	12235	·991	74·3	313·1	+14·5	47	253	216*c*
		·783	115·2					201
		·905	109·7					354
		·956	61·5					348
		·971	120·5					125
Feb. 12			(−16·5)	(33·1)	(−6·7)	(238)	(1129)	(1796)
43·341		·942	245·5					278
		·883	236·6					289
		·861	294·2					350
		·834	260·0					198
		·811	306·8					187
	12224	·745	246·0	68·7	−22·3	18	142	312*c*
	12232	·596	291·2	55·4	+ 6·8	0	4	
	12230	·617	315·2	48·9	+19·9	113	610	
C	12231	·433	330·7	34·1	+15·4	39	209	
	12228	·091	271·0	26·7	− 6·7	10	40	
	12233	·280	349·6	24·4	+ 9·1	26	98	
	12235	·943	72·0	313·9	+14·4	53	280	439*sf*
		·856	114·3					117
		·921	58·5					521
		·927	122·0					111
		·970	103·6					135
Feb. 13			(−16·8)	(21·5)	(−6·8)	(259)	(1383)	(2937)
44·357		·977	290·8					251
		·962	238·0					220
C		·942	258·8					200
		·923	293·6					150
	12224	·869	248·0	68·5	−22·4	13	67	524*sf*
	12230	·748	304·0	49·1	+19·6	101	599	
	12231	·575	310·6	35·0	+15·8	38	170	
	12228	·325	269·1	27·1	− 6·7	7	28	
	12233	·399	314·4	24·8	+ 9·6	53	267	
	12235	·846	68·6	314·0	+14·0	43	254	270*sf*
		·780	51·9					185
		·897	100·6					165

Group 12232. Feb. 10–13. A single spot on each day except February 11.
Group 12233. Feb. 10–19. A stream of spots, halting in its early development.
Group 12234. Feb. 11–17. Intermittent. A small spot on February 11; a pair of spots on February 15; a single spot on February 16, and a small stream on February 17.
Group 12235. Feb. 12–24. A regular spot that partly breaks up on February 16–17. The smaller parts resulting from the division have died out by February 21. Meanwhile the largest part regains a regular outline.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
44·357		·901	49·8					180
		·957	110·1					464
C		·965	62·2					150
		·973	71·0					187
		·974	101·2					569
Feb. 14			(−17·2)	(8·1)	(−6·8)	(255)	(1385)	(3515)
45·395		·985	290·9					124
		·966	257·5					103
		·879	241·9					96
		·862	256·6					203
		·858	280·3					84
	12224	·961	248·7	69·7	−22·3	12	30	562*f*
	12236	·887	234·7	55·5	−34·3	4	14	55*p*
	12230	·868	297·5	49·2	+19·7	82	558	371*c*
	12231	·724	299·7	35·1	+15·8	28	163	
	12228	·541	268·7	27·3	− 6·5	8	24	
G	12233	·576	297·4	25·6	+ 9·4	49	303	
	12234	·381	157·9	345·2	−27·4	12	26	
	12235	·712	62·3	314·1	+14·1	46	260	226*f*
	12237	·967	65·7	283·6	+21·3	8	17	276*f*
		·875	111·3					438
		·891	99·4					523
		·891	57·7					155
		·897	65·8					220
		·899	125·9					123
		·910	75·5					143
		·962	111·4					423
		·963	55·3					168
Feb. 15			(−17·5)	(354·5)	(−6·9)	(249)	(1395)	(4293)
46·450		·953	246·1					373
	12236	·958	236·0	54·8	−34·5	7	22	141*c*
	12230	·958	292·9	49·9	+19·6	52	307	537*c*
	12231	·858	293·0	35·5	+15·7	34	169	166*nf*
	12228	·728	268·1	27·4	− 6·1	9	19	
	12233	·751	290·1	26·2	+10·1	75	456	
	12234	·363	198·3	347·9	−26·9	2	9	
G	12235	·555	51·5	314·1	+14·0	49	251	
	12237	·891	61·5	283·5	+21·5	10	31	370*f*
	12238	·980	67·9	265·7	+20·0	96	504	492*c*
		·874	105·1					196
		·897	49·1					171
		·900	116·7					187
		·956	103·5					128
Feb. 16			(−17·9)	(340·6)	(−6·9)	(334)	(1768)	(2761)
1937.			°	°	°			
47·331		·863	242·5					339
	12236	·994	236·6	56·0	−33·8	0	35	145*c*
	12230	·987	295·4	45·2	+24·5	24	121	444*c*
	12231	·937	289·4	35·2	+15·4	30	142	251*f*
	12228	·847	267·0	27·1	− 6·2	6	12	252*s*
	12233	·856	286·2	25·4	+10·0	52	407	309*c*
	12234	·419	212·2	343·5	−27·3	14	60	
C	12235	·436	35·2	314·0	+14·1	40	261	
	12237	·803	56·2	283·3	+21·7	7	21	453*f*
	12238	·931	64·9	265·2	+20·3	74	443	868*c*
	12239	·985	66·3	252·9	+21·8	48	556	
		·816	104·6					343
		·923	72·2					184
		·945	96·3					101
		·969	110·9					376
Feb. 17			(−18·2)	(329·0)	(−6·9)	(295)	(2058)	(4065)
48·399		·934	245·0					237
		·881	258·3					441
		·868	233·8					284
		·820	290·5					216
		·783	245·5					168
	12231	·992	287·1	35·0	+15·8	15	88	274*f*
	12228	·949	265·7	26·8	− 6·3	6	13	186*c*
C	12233	·956	283·0	25·8	+10·2	84	370	397*c*
	12235	·361	2·6	313·9	+14·0	38	245	
	12237	·677	46·5	283·1	+21·8	5	10	196*nf*
	12238	·838	60·1	264·3	+20·3	76	409	972*c*
	12239	·927	63·3	252·2	+21·5	100	909	
	12240	·989	73·7	235·9	+14·8	56	508	307*c*
		·817	111·3					117
		·831	68·3					172
		·943	112·5					855
Feb. 18			(−18·5)	(314·9)	(−7·0)	(380)	(2552)	(4822)
49·424		·971	258·8					193
		·918	286·6					310
C		·899	244·7					218
	12233	·993	281·0	22·9	+10·0	24	187	147*f*
	1116a	·966	259·0	17·3	−12·4	4	15	
	12235	·415	329·2	314·0	+13·9	32	164	
	12237	·565	31·4	283·0	+22·1	5	13	
	12238	·707	51·6	265·3	+20·3	60	369	672*f*
	12239	·829	58·4	252·4	+21·2	78	789	

Group 12236. Feb. 15–17. A single spot.
Group 12237. Feb. 15–23. A small definite spot followed by faculæ in which other small spots appear after February 19.
Group 12238. Feb. 16–25. A large grouping of spots indeterminate in character and diminishing rapidly. This group immediately precedes Group 12239 from which it is rather arbitrarily separated at first. The distinction between the two groups becomes quite clear however by February 20. The two groups are taken together as a return of Group 12199.
Group 12239. Feb. 17–Mar. 1. A large complex spot, the preceding part of which breaks away to form a stream. See note to Group 12238.
Group 12240. Feb. 18–Mar. 2. A large spot that divides into two on February 20–21. The two parts separate in longitude, the following part being the larger and nearly of regular outline.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
49·424	12240	·926	71·2	236·7	+14·5	72	485	504c
	12242	·976	71·2	227·0	+16·6	47	340	
C	12241	·956	99·0	227·8	−10·6	20	153	187c
		·818	112·5					316
		·920	114·8					582
Feb. 19			(−18·8)	(301·4)	(−7·0)	(342)	(2515)	(3129)
50·388		·974	283·1					200
		·969	248·5					217
		·937	237·4					292
		·891	296·6					147
		·846	256·1					304
		·797	242·1					545
	12235	·542	309·7	314·0	+13·8	28	144	
	12243	·247	187·8	290·7	−21·1	2	7	
	12237	·488	20·5	278·2	+20·2	13	40	
	12238	·585	39·9	265·2	+20·2	45	269	
G	12239	·724	51·5	251·4	+21·2	138	925	608sf
	12240	·834	67·3	236·3	+14·5	70	475	714c
	12242	·915	68·5	226·3	+16·4	73	407	
	12241	·877	98·5	226·9	−10·8	27	120	213c
	12244	·937	62·7	224·6	+22·5	6	18	223nf
	12245	·977	67·3	214·9	+20·3	68	346	526f
	12246	·985	76·5	210·7	+11·9	11	68	350c
	12247	·995	100·4	203·5	−11·0	43	259	402p
		·770	115·1					212
		·879	116·9					363
		·956	51·1					146
Feb. 20			(−19·1)	(288·7)	(−7·0)	(524)	(3078)	(5462)
51·422		·916	256·2					322
		·912	242·2					436
G		·833	302·9					186
	12235	·699	298·9	314·1	+14·2	26	127	
	12243	·355	225·0	290·7	−21·3	2	7	
	12237	·458	354·4	277·8	+19·9	15	97	
	12238	·502	19·4	264·8	+21·2	33	190	
	12239	·593	38·8	251·8	+20·9	127	854	
	12248	·502	126·2	249·0	−23·6	1	5	
	12240	·705	60·4	235·9	+14·8	64	391	

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
51·422	12241	·736	98·0	227·4	−10·7	20	95	159c
	12242	·810	64·2	225·9	+16·0	48	391	440c
G	12244	·842	58·5	224·7	+21·7	2	8	
	12245	·923	64·0	212·8	+20·7	86	422	417c
	12246	·913	73·4	211·9	+11·9	5	16	563c
	12247	·943	99·2	203·9	−11·0	58	252	1259f
		·913	48·0					224
		·958	112·4					225
		·977	68·2					161
		·983	75·1					162
Feb. 21			(−19·4)	(275·1)	(−7·1)	(487)	(2855)	(4554)
52·322		·944	255·9					278
		·943	242·5					441
		·905	298·3					255
		·877	312·3					260
	12235	·821	292·8	314·4	+14·1	20	108	291f
	12249	·664	258·3	305·0	−13·1	5	38	
	12237	·497	332·5	277·3	+19·2	21	97	
	12238	·468	355·8	265·4	+20·6	19	133	
	12239	·502	21·7	251·9	+20·7	97	709	
	12240	·564	50·9	236·5	+14·5	63	393	
	12241	·575	98·7	228·1	−10·8	21	98	
C	12242	·690	58·3	225·9	+15·6	74	410	
	12245	·825	59·2	214·4	+20·4	39	328	333c
	12246	·809	69·7	212·7	+11·8	7	27	361c
	12247	·854	98·7	204·2	−11·1	52	261	1008c
	12250	·969	60·1	193·5	+26·6	16	109	553c
	12251	·980	114·0	183·1	−24·8	42	226	219c
		·819	47·3					191
		·916	81·0					108
		·918	68·5					451
		·926	108·5					242
		·928	45·9					266
		·970	77·9					204
Feb. 22			(−19·7)	(263·3)	(−7·1)	(476)	(2937)	(5461)
53·473		·956	297·5					460
		·951	308·1					218
G		·948	245·1					163
		·836	301·6					279

Group 12241. Feb. 19–Mar. 2. A small regular spot, usually with one or two companions.
Group 12242. Feb. 19–Mar. 2. A spot of composite structure *f* Group 12240.
Group 12243. Feb. 20–21. A small isolated spot.
Group 12244. Feb. 20–21. A small spot *n* Group 12242; probable return of Group 12212.
Group 12245. Feb. 20–Mar. 2. A group of stream type, the leader alone surviving after February 26.
Group 12246. Feb. 20–Mar. 2. A feeble group that has nearly died out by February 26; a pair of new spots appear on February 27.
Group 12247. Feb. 20–Mar. 4. Return of Group 12204. A stable regular spot with small companions on March 1 and 2.
Group 12248. Feb. 21–23. One or two small faint spots.
Group 12249. Feb. 22–23. A diminutive stream on February 22 of which one component alone remains on the following day.
Group 12250. Feb. 22–28. A diminishing regular spot with a distant follower on February 24.
Group 12251. Feb. 22–Mar. 5. Return of Group 12209. A regular spot, steady in area until February 28 when it decreases rapidly. Group 12255 develops closely behind it.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
53·473		·789	313·9					156
	12235	·939	288·3	314·9	+14·4	19	88	424*f*
G	12249	·828	258·1	304·4	−13·8	4	8	224*c*
	12237	·632	313·8	276·9	+19·6	14	47	
	12238	·541	329·1	265·3	+20·8	21	122	
	12239	·472	353·5	251·4	+20·8	80	700	
	12248	·284	182·6	248·9	−23·5	2	20	
	12240	·419	28·4	236·3	+14·6	66	391	
	12241	·347	101·9	228·0	−10·8	20	98	
	12242	·531	44·5	225·5	+15·6	75	352	
	12245	·687	50·7	213·8	+19·9	37	227	399*f*
	12246	·675	63·6	210·1	+11·9	9	50	
	12247	·695	98·6	203·8	−11·1	63	248	
	12250	·901	55·6	191·9	+26·7	31	158	921*f*
	12252	·930	67·9	183·7	+17·5	27	59	345*f*
	12251	·909	114·0	182·3	−24·7	21	177	268*s*
		·801	113·9					191
		·829	71·9					277
		·847	101·6					336
		·919	123·8					165
		·954	103·1					317
		·958	80·2					482
Feb. 23			(−20·1)	(248·1)	(−7·1)	(489)	(2745)	(5625)
54·376		·932	257·9					287
		·914	298·3					174
		·878	310·5					142
		·832	249·4					436
	12235	·985	285·8	313·8	+14·1	11	37	537*f*
	12238	·649	313·1	266·4	+20·1	9	42	
	12239	·523	333·3	250·7	+20·9	71	434	
	12240	·372	0·2	236·1	+14·7	62	442	
	12241	·156	115·5	228·0	−10·8	28	97	
	12242	·424	25·6	225·3	+15·4	51	299	
C	12245	·577	38·5	213·8	+20·2	30	182	
	12246	·539	53·1	210·1	+12·5	11	60	
	12247	·530	99·3	204·1	−11·0	45	230	
	12250	·832	50·0	190·5	+27·4	32	167	374*c*
	12252	·857	64·1	182·3	+17·9	33	203	138*f*
	12251	·815	115·7	182·3	−25·0	29	178	168*f*
	12253	·850	101·2	177·5	−13·2	8	38	232*f*
	12254	·980	79·5	159·3	+ 8·7	113	696	200*c*
		·889	77·5					296
		·948	119·9					115
Feb. 24			(−20·3)	(236·2)	(−7·1)	(533)	(3105)	(3099)
1937.			°	°	°			
55·682		·963	306·9					355
		·935	249·7					428
		·924	260·6					175
		·904	298·3					413
	12238	·809	301·0	266·3	+19·8	8	22	508*c*
	12239	·672	313·2	250·6	+21·2	70	491	
	12240	·467	322·3	236·1	+14·7	34	295	
	12241	·169	245·2	228·0	−11·2	20	65	
	12242	·392	345·8	224·7	+15·1	22	226	
	12245	·469	10·1	214·0	+20·2	29	115	
G	12246	·362	26·1	209·7	+11·8	11	53	
	12247	·259	107·2	204·5	−11·4	36	231	
	12250	·675	36·8	192·3	+26·2	16	106	
	12251	·639	121·6	182·1	−25·3	37	164	
	12252	·704	56·5	181·2	+17·2	20	153	
	12253	·664	101·6	177·3	−13·1	15	86	
	12254	·897	76·7	157·2	+ 8·5	173	932	756*c*
		·861	126·5					172
		·882	113·5					312
		·884	61·2					163
		·953	63·7					173
Feb. 25			(−20·7)	(219·0)	(−7·2)	(491)	(2939)	(3455)
56·351		·952	246·0					357
		·949	295·5					397
		·850	300·8					367
	12239	·748	306·9	249·9	+21·1	58	368	
	12240	·561	311·1	236·1	+15·1	33	200	
	12241	·308	255·5	227·8	−11·2	7	45	
	12242	·451	327·5	224·7	+15·3	35	232	
	12245	·467	351·3	214·5	+20·2	24	94	
	12246	·338	349·5	213·8	+12·1	3	13	
C	12247	·119	123·3	204·4	−10·9	30	213	
	12250	·618	26·7	192·2	+26·6	13	76	
	12251	·543	127·3	181·7	−25·5	30	174	
	12252	·617	49·3	181·0	+17·4	21	104	
	12253	·522	101·9	178·8	−12·3	9	61	
	12255	·616	120·0	174·7	−23·8	4	14	
	12254	·809	73·7	158·6	+ 8·7	167	916	581*c*
		·837	108·3					230
		·900	59·1					193
		·963	109·0					309
Feb. 26			(−20·9)	(210·2)	(−7·2)	(434)	(2510)	(2434)

Group 12252. Feb. 23–Mar. 4. A partially-formed regular spot with followers on February 24–26.
Group 12253. Feb. 24–27. A partially-formed regular spot with a cluster of tiny companions on February 27.
Group 12254. Feb. 24–Mar. 7. A big regular spot followed by nebulous companions. Small portions of this spot break away from its *nf* edge on March 1–2 and March 4–5. The spot is easily visible to the naked eye.
Group 12255. Feb. 26–Mar. 5. A variable stream *f* Group 12251.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
57·383		·960	246·9					239
		·950	296·9					986
		·948	287·3					163
		·854	312·2					239
		·786	244·6					240
	12239	·854	300·0	248·8	+20·9	51	295	401*c*
	12240	·705	300·5	235·5	+15·4	35	178	
	12241	·514	259·5	227·5	−11·6	14	51	
	12242	·593	309·3	224·9	+15·7	24	157	
	12245	·541	325·5	215·5	+19·6	9	30	
	12246	·399	323·1	210·7	+11·5	29	109	
	12247	·150	244·7	204·5	−10·8	37	221	
	12256	·330	347·1	200·9	+11·5	4	10	
G	12257	·059	139·7	194·4	− 9·7	4	9	
	12250	·558	7·5	192·0	+26·3	13	55	
	12258	·364	44·8	181·7	+ 7·9	2	5	
	12252	·482	31·5	181·4	+17·2	11	66	
	12251	·403	143·3	181·2	−25·7	31	175	
	12253	·315	106·8	178·7	−12·1	7	26	
	12255	·482	128·1	172·2	−23·8	13	27	
	12254	·655	67·5	159·0	+ 8·8	153	827	
		·896	61·3					221
		·912	121·8					212
		·931	109·1					213
		·941	131·7					161
		·943	98·0					130
		·978	58·2					207
Feb. 27			(−21·1)	(196·6)	(−7·2)	(437)	(2241)	(3412)
58·353		·987	293·8					564
		·928	246·8					359
C		·904	308·0					225
		·874	318·8					118
	12239	·933	296·0	247·6	+21·0	34	191	536*c*
	12259	·809	249·2	237·7	−21·0	7	21	239*s*
	12240	·829	295·0	235·0	+16·0	41	184	364*c*
	12241	·683	260·5	227·1	−11·7	14	57	
	12242	·729	300·0	224·7	+15·9	20	126	
	12245	·655	311·9	214·9	+19·7	7	20	
	12246	·547	305·8	210·7	+12·2	28	166	
	12247	·357	259·2	204·6	−10·5	47	217	
	12256	·436	317·1	201·4	+11·7	8	18	
	12250	·568	347·3	191·8	+26·4	4	18	
	12258	·268	3·3	182·9	+ 8·2	3	9	
	12252	·424	6·9	180·7	+17·6	15	66	

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
58·353	12251	·326	171·4	180·7	−25·9	36	179	
	12255	·339	150·4	173·3	−24·1	11	38	
C	12254	·478	56·6	160·1	+ 8·6	175	792	
	12260	·956	114·0	109·6	−25·0	7	22	75*f*
		·863	110·0					207
		·892	96·4					121
		·895	129·6					363
		·899	56·6					333
Feb. 28			(−21·4)	(183·8)	(−7·2)	(457)	(2124)	(3504)
59·494		·974	245·7					206
		·961	302·9					205
		·858	240·7					282
	12239	·990	292·6	246·8	+21·0	27	240	396*f*
	12259	·937	250·3	239·3	−20·9	49	228	299*c*
	12240	·940	289·7	235·4	+15·7	30	146	347*c*
	12241	·848	260·8	227·3	−11·6	8	16	184*c*
	12242	·871	292·7	225·2	+15·7	21	100	350*f*
	12245	·798	301·1	215·1	+19·4	7	14	
	12246	·697	296·3	208·4	+12·4	21	84	
	12247	·581	261·7	204·4	−10·7	31	210	
	1116b	·567	251·2	202·7	−16·5	2	5	
C	12258	·359	320·6	182·1	+ 9·0	0	7	
	12252	·467	335·5	180·5	+18·0	10	57	
	12251	·371	208·7	180·2	−26·0	21	140	
	12255	·295	187·6	171·2	−24·1	28	100	
	12254	·308	27·0	160·7	+ 8·7	183	788	
	12261	·411	139·7	151·8	−25·1	12	32	
	12262	·736	109·7	121·8	−19·3	3	10	119*f*
	12260	·864	115·1	109·1	−25·3	4	8	322*f*
		·812	135·9					122
		·852	46·9					321
		·922	133·5					183
		·944	50·7					285
Mar. 1			(−21·7)	(168·8)	(−7·2)	(457)	(2185)	(3621)
60·398		·951	299·5					133
		·920	314·8					373
G		·891	241·1					335
		·849	302·7					525
		·846	252·0					228
	12259	·986	249·8	238·9	−21·0	70	270	358*c*

Group 12256. Feb. 27–28. A small short-lived group.
Group 12257. Feb. 27–Mar. 2. A tiny spot seen only on February 27 and March 2.
Group 12258. Feb. 27–Mar. 2. One or two small but persistent spots.
Group 12259. Feb. 28–Mar. 2. A group developing near the west limb.
Group 12260. Feb. 28–Mar. 2. A small spot followed by faculæ.
Group 12261. Mar. 1–4. Two or three small variable spots.
Group 12262. Mar. 1–11. A single spot on March 1; there is then a gap until March 7 when a small stream makes its appearance.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
60·398	12240	·988	287·1	235·3	+15·5	22	98	384*c*
	12241	·940	260·4	227·7	−11·4	6	19	132*s*
G	12242	·949	289·6	225·1	+16·0	17	75	447*c*
	1116c	·884	287·3	218·6	+16·9	2	10	
	12245	·892	296·0	214·8	+19·3	4	14	935*c*
	12246	·824	291·0	208·8	+12·8	16	62	
	1116d	·846	262·9	215·1	− 9·8	0	8	76*c*
	12247	·742	262·2	205·1	−10·6	44	227	
	12257	·613	263·7	194·9	− 9·5	1	4	
	12258	·505	301·5	182·6	+ 8·8	1	5	
	12263	·687	327·7	181·6	+28·9	10	24	
	12252	·571	317·5	180·8	+18·2	13	39	
	12251	·485	227·1	180·1	−25·9	25	125	
	1116e	·311	243·3	173·2	− 9·0	2	16	
	12255	·387	219·2	172·4	−24·3	41	163	
	12254	·279	346·5	160·7	+ 8·5	190	829	
	12261	·306	169·3	153·3	−24·6	7	9	
	12260	·763	116·9	108·4	−25·0	2	5	332*f*
		·789	39·3					310
		·899	44·1					458
		·966	69·3					241
		·985	113·5					197
Mar. 2			(−21·9)	(156·9)	(−7·2)	(473)	(2002)	(5464)
61·552		·958	286·6					1187
		·948	239·9					220
		·932	317·0					215
		·927	297·6					630
		·870	270·0					243
		·869	307·0					361
		·816	244·1					188
	12247	·888	261·9	204·8	−10·5	38	185	660*s*
	12252	·726	304·6	180·7	+18·8	8	16	
G	12263	·794	316·6	180·4	+29·6	20	126	264*c*
	12251	·655	238·2	179·8	−25·9	17	78	
	12255	·568	236·6	172·9	−24·3	34	149	
	12254	·429	307·8	161·7	+ 8·5	163	787	
	12261	·366	212·9	154·3	−24·9	2	8	
	12264	·957	67·3	72·7	+19·2	15	37	174*c*
		·845	48·5					98
		·863	37·4					279
		·898	66·5					148
		·930	114·0					408
Mar. 3			(−22·2)	(141·7)	(−7·2)	(297)	(1386)	(5075)
1937.			°	°	°			
62·117		·957	298·3					347
		·956	286·9					521
		·933	320·3					153
		·914	308·5					453
		·859	245·3					158
	12247	·940	261·3	204·9	−10·6	35	183	586*s*
	12252	·797	299·9	180·8	+18·5	2	8	138*p*
	12263	·849	311·7	180·8	+29·5	14	31	269*c*
	12251	·735	241·3	179·7	−25·7	13	53	
	12255	·653	239·6	172·5	−25·0	26	119	
K	12254	·528	298·7	162·0	+ 8·3	180	803	
	12261	·449	225·5	154·8	−25·0	2	7	
	12265	·864	120·7	75·9	−29·4	4	12	340*c*
	12264	·914	64·9	73·0	+19·4	27	86	301*c*
		·883	58·1					108
		·902	104·0					176
		·921	89·8					182
		·924	132·3					205
		·953	116·1					173
		·956	72·8					131
Mar. 4			(−22·3)	(134·2)	(−7·2)	(363)	(1362)	(4241)
63·419		·977	283·8					196
		·947	303·5					685
		·903	293·4					190
		·903	256·6					298
		·879	281·8					254
	12251	·885	244·7	179·4	−25·7	4	9	205*c*
	12255	·834	244·4	173·2	−25·3	11	39	
C	12254	·750	287·6	163·1	+ 8·1	146	733	
	12264	·757	58·4	74·6	+18·1	50	304	226*c*
	12265	·722	124·8	74·3	−29·6	22	122	
	12266	·937	74·4	50·1	+11·9	42	179	179*c*
		·925	123·0					317
		·946	63·4					386
		·951	54·3					85
		·985	80·0					209
Mar. 5			(−22·6)	(117·1)	(−7·2)	(275)	(1386)	(3230)
64·397		·980	303·2					219
		·974	281·9					184
C		·955	256·2					229
		·927	244·8					392

Group 12263. Mar. 2–4. A short-lived stream.
Group 12264. Mar. 3–14. A large group of stream type showing rapid and considerable changes from March 5 to 9; afterwards the following spots die out, and the leader remains as a regular spot.
Group 12265. Mar. 4–14. A stream of simple formation in which the leader, a regular spot, alone remains after March 8.
Group 12266. Mar. 5–13. A pair of spots (the leader regular in outline) representing the simplest form of a bi-polar group.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
64·397		·800	239·8					193
	12254	·877	283·3	163·5	+ 8·0	103	620	517*c*
C	12264	·633	48·3	74·4	+18·6	73	612	
	12265	·592	132·2	74·0	−29·6	22	150	
	12266	·837	70·9	50·5	+11·7	39	275	121*c*
		·910	59·6					568
		·946	77·6					403
		·970	68·6					164
Mar. 6			(−22·8)	(104·2)	(−7·2)	(237)	(1657)	(2990)
65·328		·973	246·3					202
		·963	294·9					174
		·914	236·3					124
		·862	245·1					239
		·816	303·0					218
	12254	·957	280·4	163·4	+ 7·7	109	692	1061*f*
	12262	·487	244·2	119·3	−18·6	10	34	
	12267	·413	22·2	82·6	+15·3	2	10	
	12265	·468	146·6	74·7	−29·8	27	131	
C	12264	·532	34·2	73·5	+19·2	111	672	
	12266	·711	65·6	50·7	+11·7	41	246	
	12268	·830	56·0	43·7	+22·9	2	5	409*f*
	12269	·841	74·2	37·1	+ 9·1	4	7	307*f*
	12270	·957	70·0	22·3	+16·7	7	14	130*p*
	12271	·988	76·2	12·9	+12·4	25	107	142*c*
		·867	94·6					233
		·929	116·8					411
		·940	101·6					323
		·976	55·8					119
Mar. 7			(−23·0)	(91·9)	(−7·2)	(338)	(1918)	(4092)
66·401		·977	281·7					1000
		·959	246·9					277
C		·956	238·7					150
		·943	293·7					157
		·868	298·9					212
		·820	313·1					203
	12262	·690	250·3	120·9	−18·7	12	44	
	12267	·406	347·1	83·2	+16·0	0	2	
	12265	·386	176·7	76·3	−29·8	26	122	
	12264	·447	8·4	73·9	+19·0	109	685	
	12266	·544	55·2	50·8	+11·7	35	161	
	12268	·722	47·5	42·5	+23·3	22	37	
1937.			°	°	°			
66·401	12270	·852	66·0	23·9	+16·1	16	45	110*c*
	12272	·920	52·1	20·4	+30·7	5	21	159*c*
C	12273	·892	73·5	17·4	+11·2	4	21	104*c*
	12271	·935	73·3	11·3	+12·8	24	95	499*f*
		·816	101·5					246
		·831	50·1					61
		·842	118·5					322
		·952	114·7					204
Mar. 8			(−23·3)	(77·8)	(−7·2)	(253)	(1233)	(3704)
67·403		·950	292·9					95
		·894	310·5					123
		·835	326·3					124
		·822	327·3					171
	12262	·832	251·5	121·1	−19·3	19	82	178*c*
	12265	·432	206·3	77·3	−29·7	24	122	
	12264	·461	340·7	73·8	+18·6	79	569	
	12266	·399	36·1	50·8	+11·7	16	83	
C	12268	·616	34·7	42·2	+23·7	13	35	
	12269	·530	61·7	36·6	+ 8·2	2	10	
	12270	·719	59·3	24·7	+16·0	19	49	
	12272	·838	45·7	20·5	+30·7	24	108	223*c*
	12273	·749	68·3	19·6	+11·0	4	13	62*c*
	12271	·845	69·3	10·5	+13·2	20	129	444*f*
		·887	114·5					353
		·927	102·1					117
Mar. 9			(−23·5)	(64·6)	(−7·2)	(220)	(1200)	(1890)
68·401		·921	306·5					251
		·886	226·1					193
		·861	318·9					334
	12262	·930	252·1	120·8	−19·3	30	176	224*c*
	1116f	·892	265·9	114·8	− 6·9	4	10	81*f*
	12265	·560	225·0	78·4	−29·7	31	149	
	12264	·559	318·6	74·2	+18·1	117	547	
G	12266	·317	1·1	51·0	+11·2	16	52	
	12268	·539	17·1	41·5	+23·8	8	26	
	12269	·368	43·7	36·6	+ 8·4	1	2	
	12270	·587	49·3	23·9	+16·0	11	49	
	12272	·734	36·1	21·5	+30·1	23	135	
	12273	·602	60·6	19·2	+11·1	7	30	
	12271	·714	63·5	10·6	+13·1	33	138	
		·879	105·5					320
		·936	116·1					246
Mar. 10			(−23·7)	(51·4)	(−7·2)	(281)	(1314)	(1649)

Group 12267. Mar. 7–8. A small spot.
Group 12268. Mar. 7–11. A wide pair of small spots.
Group 12269. Mar. 7–11. One or two small spots not seen on March 8.
Group 12270. Mar. 7–11. A small group of feeble activity.
Group 12271. Mar. 7–19. A pair of spots coalescing on March 12 when a train of small spots first makes its appearance.
Group 12272. Mar. 8–14. A sparse stream of unimportant spots.
Group 12273. Mar. 8–12. A small short-lived group.

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U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
69·466		·977	263·3					110
		·942	304·9					340
		·915	318·3					352
		·872	245·0					222
		·797	296·1					415
	12262	·989	251·3	120·6	−19·4	14	136	320*c*
	1116g	·920	263·7	104·8	− 8·6	5	23	130*f*
	12265	·709	235·5	79·2	−29·1	25	122	
	12264	·705	305·8	74·4	+18·6	87	436	
	12266	·390	322·6	51·3	+11·0	17	68	
G	12268	·521	352·8	41·5	+23·8	9	26	
	12269	·281	19·3	32·0	+ 8·2	1	6	
	12272	·633	19·5	23·4	+29·5	25	98	
	12270	·461	32·1	22·7	+16·0	1	16	
	12273	·442	46·4	18·5	+10·8	11	37	
	12271	·559	53·2	10·2	+13·1	37	237	
		·853	118·7					387
		·895	71·7					330
		·921	108·3					126
		·976	65·5					207
Mar. 11			(−23·9)	(37·4)	(−7·2)	(232)	(1205)	(2939)
70·398		·974	262·4					191
		·960	312·8					174
		·937	243·8					274
		·893	290·8					230
	12265	·832	239·8	80·2	−28·9	26	139	330*f*
	12264	·830	297·5	75·6	+18·0	68	424	507*c*
	12266	·530	305·7	51·1	+11·5	11	52	
G	12272	·625	7·4	19·7	+31·0	31	96	
	12273	·328	18·3	19·1	+11·0	10	22	
	12271	·413	33·4	11·7	+13·1	24	145	
		·823	126·0					174
		·912	62·6					186
		·932	114·5					144
		·947	69·7					220
		·971	62·9					271
Mar. 12			(−24·0)	(25·1)	(−7·2)	(170)	(878)	(2701)
71·415	12265	·929	242·4	80·5	−28·2	29	150	341*f*
	12264	·935	292·2	76·9	+17·8	74	461	604*nf*
G	12266	·698	294·8	51·7	+11·5	9	52	
	12272	·621	349·3	19·3	+30·3	8	28	
	12271	·351	3·2	10·6	+13·2	29	167	
	1116h	·920	60·6	311·0	+23·4	9	28	196*c*
		·803	56·8					95

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
71·415		·850	66·0					141
		·863	97·8					129
G		·943	106·0					266
		·986	113·8					204
Mar. 13			(−24·2)	(11·7)	(−7·2)	(158)	(886)	(1976)
72·119		·852	306·1					380
		·805	291·5					353
		·744	324·7					76
	12265	·977	242·1	81·9	−28·7	28	143	649*f*
	12264	·978	290·1	76·9	+17·8	47	338	688*nf*
	12274	·731	258·4	49·6	−13·4	3	12	
K	12272	·652	338·5	18·4	+30·3	4	13	
	12271	·379	340·7	9·8	+13·7	22	158	
		·824	58·3					473
		·910	103·2					288
		·920	49·4					123
		·939	72·6					154
		·955	114·1					266
		·960	61·5					224
Mar. 14			(−24·3)	(2·4)	(−7·2)	(104)	(664)	(3674)
73·392		·977	242·2					152
		·931	284·2					342
		·910	298·9					414
		·876	235·5					163
		·805	286·5					286
G	12274	·914	259·5	52·4	−12·5	2	5	74*f*
	12271	·552	307·8	12·2	+13·2	35	148	
		·851	114·8					439
		·971	65·2					226
Mar. 15			(−24·6)	(345·7)	(−7·2)	(37)	(153)	(2096)
74·391		·974	258·4					102
		·973	287·0					326
		·942	297·5					329
		·902	284·6					355
		·839	314·3					155
C	12271	·695	298·3	11·4	+13·7	33	146	
	12275	·512	125·9	305·7	−23·8	27	85	
		·827	115·9					172
		·842	65·9					108
		·939	60·7					497
		·949	114·9					133
Mar. 16			(−24·7)	(332·5)	(−7·1)	(60)	(231)	(2177)

Group 12274. Mar. 14–15. A pair of tiny spots.
Group 12275. Mar. 16–24. A pair of spots with average separation in longitude for a bi-polar group. The leader, a regular spot, alone remains on March 20.

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U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
75·493		·961	282·3					234
		·944	290·9					132
		·929	306·9					310
		·911	256·9					110
	12271	·847	291·5	12·0	+13·9	29	131	517*c*
G	12275	·343	145·9	305·9	−23·4	30	130	
	12276	·982	113·1	237·0	−24·0	5	10	382*c*
		·816	41·1					142
		·870	326·1					618
		·917	113·5					232
		·955	65·9					456
Mar. 17			(−24·9)	(317·9)	(−7·1)	(64)	(271)	(3133)
76·468		·971	255·5					98
		·969	305·0					255
		·863	246·3					112
	12271	·941	287·2	12·5	+13·5	26	93	871*nf*
	12275	·281	180·6	305·3	−23·4	23	108	
G	12277	·797	51·2	262·1	+24·8	3	7	283*c*
	12278	·867	60·9	251·1	+20·8	4	9	317*c*
	12276	·918	112·8	237·8	−23·7	5	11	583*sf*
		·830	115·0					186
		·954	58·3					476
		·963	70·6					443
Mar. 18			(−25·0)	(305·1)	(−7·1)	(61)	(228)	(3624)
77·391		·945	246·1					166
		·813	250·5					146
	12271	·992	284·7	13·5	+13·5	15	69	755*nf*
	12279	·780	316·9	330·4	+29·1	7	19	125*c*
	12275	·349	215·6	305·6	−23·2	19	90	
	12277	·675	40·9	263·9	+24·5	14	76	
G	12278	·768	55·5	250·5	+20·6	3	9	130*f*
	12276	·828	113·9	237·4	−23·6	4	8	324*f*
		·896	65·9					538
		·901	54·0					798
		·915	120·9					212
		·959	73·8					351
		·981	106·7					360
Mar. 19			(−25·1)	(292·9)	(−7·0)	(62)	(271)	(3905)
1937.			°	°	°			
78·396		·934	239·3					184
		·916	251·9					218
		·848	243·6					125
	12279	·861	310·7	328·2	+29·6	4	9	163*c*
	12275	·515	236·5	307·3	−22·7	14	68	
	12277	·575	24·3	264·7	+24·7	15	81	
	12276	·752	117·7	232·5	−25·3	7	27	
G	12280	·943	105·9	208·2	−17·3	6	22	643*sf*
	12281	·952	99·7	206·8	−11·4	6	21	283*c*
		·804	60·5					288
		·844	48·1					493
		·876	121·9					250
		·894	70·6					397
		·965	64·4					353
		·967	124·2					247
Mar. 20			(−25·3)	(279·7)	(−7·0)	(52)	(228)	(3644)
79·364		·940	244·0					202
		·932	286·9					117
		·914	307·0					135
		·863	298·8					252
	12275	·669	243·4	307·2	−22·8	9	49	
	12277	·534	4·7	264·1	+25·0	14	76	
C	12280	·849	107·4	208·5	−18·4	12	62	335*f*
	12281	·863	99·1	206·8	−11·4	9	25	322*f*
	12282	·964	80·4	193·8	+ 7·2	51	275	732*c*
		·809	44·2					477
		·830	64·9					423
		·946	63·2					471
Mar. 21			(−25·4)	(266·9)	(−7·0)	(95)	(487)	(3466)
1937.								
80·408		·934	292·5					148
		·887	302·0					142
C	12275	·810	246·9	306·8	−22·7	8	24	
	12283	·504	228·9	278·0	−25·6	13	55	
	12277	·571	340·8	265·2	+25·7	2	8	
	12284	·311	353·3	255·3	+11·0	5	16	
	12278	·505	5·5	250·2	+23·1	5	23	
	12280	·699	109·3	209·4	−18·4	9	78	
	12281	·720	99·1	206·9	−11·4	8	35	

Group 12276. Mar. 17–20. Probable return of Group 12259. A small spot followed by fairly extensive faculæ in which another small spot appears on March 20.
Group 12277. Mar. 18–24. A small bi-polar group of feeble development.
Group 12278. Mar. 18–23. Intermittent. A small single spot on March 18–19 in extensive faculæ: a pair of small spots on March 22–23.
Group 12279. Mar. 19–20. A pair of spots on March 19: a single spot on March 20.
Group 12280. Mar. 20–28. A variable cluster of irregular spots.
Group 12281. Mar. 20–26. Return of Group 12247. A small but persistent spot with a companion on March 26.
Group 12282. Mar. 21–30. A stream of the simplest formation—leader and follower. The leader alone remains after March 24 and until March 29 when a new companion appears.
Group 12283. Mar. 22–26. A group similar to Group 12282, the leader being left on March 25.
Group 12284. Mar. 22–23. A small spot on March 22: a pair on March 23.

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U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
80·408	12282	·878	77·5	193·6	+ 7·5	32	210	525c
	12285	·966	103·7	177·1	−15·0	17	74	506f
C		·834	56·7					221
		·938	59·3					86
		·949	45·8					74
		·976	53·7					135
Mar. 22			(−25·5)	(253·2)	(−6·9)	(99)	(523)	(1837)
81·398		·969	297·4					109
		·887	302·4					170
		·865	259·5					170
	12275	·912	248·2	306·5	−22·7	11	22	281f
	12283	·651	238·4	277·8	−25·3	20	123	
	12277	·596	328·6	259·9	+24·0	2	17	
	12284	·400	321·1	254·9	+11·4	4	15	
	12278	·525	342·8	249·8	+23·2	6	15	
	12280	·547	112·4	208·1	−17·9	12	46	
	12281	·549	100·0	206·8	−11·2	2	9	
	12282	·744	73·2	194·3	+ 7·6	34	192	253f
G	12286	·783	62·4	193·9	+16·5	7	18	
	12285	·884	102·9	177·4	−14·6	19	89	598f
	12287	·969	69·4	167·9	+17·9	8	18	260c
	12288	·961	81·4	167·5	+ 6·2	74	439	420c
	12289	·989	78·3	160·3	+10·4	43	216	
		·857	53·9					132
		·887	69·2					225
		·893	39·4					158
		·933	50·3					236
		·938	116·4					246
		·959	58·0					134
		·983	97·2					88
Mar. 23			(−25·6)	(240·1)	(−6·9)	(242)	(1219)	(3480)
82·447		·946	259·0					117
		·934	301·1					177
G		·896	311·9					104
		·883	247·1					246
		·820	299·9					116
		·779	311·9					262
	12275	·979	248·2	306·2	−22·7	10	17	183f

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
82·447	12283	·809	242·9	279·3	−25·9	27	108	247c
	12277	·652	319·3	253·8	+23·5	1	3	
G	12280	·363	123·7	207·9	−18·1	8	22	
	12281	·342	104·1	206·6	−11·2	1	5	
	1117a	·343	88·0	206·2	− 5·8	2	10	
	12282	·547	65·3	196·4	+ 7·2	34	133	
	12286	·661	53·5	192·6	+17·4	9	44	
	12285	·752	103·5	177·4	−14·7	17	90	404f
	12287	·881	66·7	168·8	+16·7	19	37	217c
	12288	·872	78·8	167·2	+ 6·3	96	435	275c
	12289	·943	76·7	157·8	+10·1	100	531	391c
		·829	121·2					167
		·853	43·5					130
		·879	33·7					92
		·885	54·5					178
		·941	115·7					80
		·949	69·7					201
Mar. 24			(−25·7)	(226·3)	(−6·9)	(324)	(1435)	(3587)
83·391		·975	287·0					108
		·972	298·1					268
		·963	247·6					234
		·924	258·2					142
		·892	292·8					345
		·847	308·0					462
	12283	·912	244·8	279·9	−25·7	22	75	330f
	12280	·218	153·5	208·0	−18·0	4	25	
	12281	·152	120·8	206·2	−11·2	2	4	
G	12282	·373	50·8	196·9	+ 7·1	24	122	
	12286	·528	41·7	192·4	+16·8	2	13	
	12285	·601	105·0	177·1	−14·4	11	93	
	12287	·773	60·9	168·9	+17·3	9	34	141c
	12288	·747	75·2	167·4	+ 6·3	73	388	
	12289	·858	73·6	157·2	+10·3	96	684	460c
		·777	47·2					101
		·794	36·4					127
		·863	65·2					281
		·875	117·8					209
		·890	106·5					301
Mar. 25			(−25·8)	(213·8)	(−6·8)	(243)	(1438)	(3509)

Group 12285. Mar. 22–Apr. 3. A slowly diminishing regular spot with a few companions on March 26–29 and a single companion on April 2, that alone survives on April 3.
Group 12286. Mar. 23–Apr. 1. On March 23–25 a few small variable spots that develop into a considerable stream.
Group 12287. Mar. 23–31. Feeble but persistent activity shown by small variable spots.
Group 12288. Mar. 23–Apr. 4. Return of Group 12254. A large regular spot the southern part of which is crossed by a " bridge " and has completely broken away by April 1. Meanwhile the main portion regains a regular outline.
Group 12289. Mar. 23–Apr. 4. A group of stream type consisting of a regular spot as leader and a composite spot as follower. The latter has divided into two parts by March 27 and becomes a cluster.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
84·375		·969	283·5					133
		·963	294·5					293
		·835	301·0					316
		·765	315·2					290
	12283	·976	244·9	279·8	−25·9	20	74	272*f*
	1117b	·921	301·4	261·1	+25·4	3	10	322*n*
	12280	·249	211·9	208·8	−18·9	25	109	
	12281	·130	232·7	206·8	−11·2	2	12	
G	12282	·246	14·8	197·2	+ 6·9	24	104	
	12286	·458	18·7	191·9	+18·9	11	40	
	12285	·413	110·1	177·3	−14·4	23	116	
	12290	·463	98·0	173·2	− 9·7	2	4	
	12287	·618	50·4	171·0	+17·3	11	45	
	12288	·589	69·2	167·3	+ 6·4	66	413	
	12289	·723	69·2	157·7	+ 9·9	121	701	
		·852	112·1					126
		·931	78·4					194
		·946	63·9					163
		·948	120·7					130
		·980	108·1					192
Mar. 26			(−25·9)	(200·8)	(−6·8)	(308)	(1628)	(2431)
85·391		·980	298·6					273
		·952	244·6					172
		·903	295·6					358
		·849	309·8					344
		·839	244·5					202
	12280	·413	238·4	209·1	−18·7	12	55	
	12291	·433	306·0	208·1	+ 8·5	2	5	
	12282	·293	323·1	197·6	+ 6·9	16	73	
G	12286	·427	347·8	192·8	+17·9	24	115	
	12285	·216	128·4	177·4	−14·3	14	99	
	12290	·225	105·6	174·7	−10·0	1	4	
	12292	·321	111·8	169·6	−13·2	2	12	
	12287	·497	36·3	169·5	+17·2	10	34	
	12288	·408	57·2	167·3	+ 6·4	68	386	
	12289	·563	60·4	157·7	+10·3	98	604	
	12293	·975	96·8	109·7	− 8·1	24	148	219*s*
		·879	122·4					150
		·896	62·4					87
		·898	109·4					288
Mar. 27			(−26·0)	(187·4)	(−6·7)	(271)	(1535)	(2093)
86·394		·956	293·7					391
		·938	246·8					143
G		·909	308·5					502
1937.			°	°	°			
86·394		·854	291·1					299
	12280	·603	246·9	210·0	−19·1	3	11	
G	12291	·614	294·9	208·4	+ 9·4	6	14	
	12282	·456	299·0	197·8	+ 6·6	10	38	
	12286	·521	320·9	194·3	+17·5	60	356	
	12285	·148	201·5	177·4	−14·5	16	109	
	12287	·414	8·8	170·4	+17·4	2	12	
	12292	·171	145·4	168·5	−14·7	0	5	
	12288	·259	27·0	167·4	+ 6·6	67	413	
	12289	·404	44·6	157·5	+10·2	78	554	
	12293	·898	95·5	110·0	− 7·9	20	123	275*f*
		·811	110·1					189
		·915	54·9					82
Mar. 28			(−26·1)	(174·2)	(−6·7)	(262)	(1635)	(1881)
87·403		·976	301·5					324
		·966	209·5					422
		·953	309·0					152
		·945	246·1					420
		·930	316·9					180
		·889	287·7					395
		·881	234·1					198
		·880	304·0					312
		·855	315·9					149
		·774	249·1					193
	12291	·771	287·2	208·9	+ 8·7	10	38	
	12282	·644	287·0	199·0	+ 5·6	6	23	
	12286	·672	305·7	195·7	+17·6	66	397	
G	*1117c*	·463	235·9	185·0	−21·0	2	5	
	12285	·317	243·3	177·8	−14·5	16	82	
	12288	·257	333·3	167·5	+ 6·7	67	362	
	12287	·425	346·1	167·0	+17·7	1	9	
	12289	·294	9·5	158·1	+10·2	88	555	
	1117d	·598	135·6	131·8	−31·0	1	6	
	12293	·772	94·7	110·2	− 7·8	26	136	317*f*
	12294	·941	79·0	92·3	+ 8·0	13	53	383*c*
		·880	48·5					93
		·936	98·7					140
		·941	133·7					104
		·950	52·6					98
		·956	119·5					193
		·973	71·5					245
Mar. 29			(−26·1)	(160·9)	(−6·6)	(296)	(1666)	(4318)

Group 12290. Mar. 26–27. A tiny spot *n* Group 12285.
Group 12291. Mar. 27–29. A tiny spot on March 27 becoming a small stream.
Group 12292. Mar. 27–28. A wide pair of small spots on March 27: a single spot on March 28.
Group 12293. Mar. 27–Apr. 5. A regular spot, with occasional companions, disappearing rather suddenly as a close pair of small nuclei.
Group 12294. Mar. 29–Apr. 4. A few small spots in a stream.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
88·600		·936	283·8					211
		·929	297·8					253
		·901	255·4					430
	12282	·830	281·1	199·8	+ 5·4	7	18	261*c*
	12286	·826	296·6	195·7	+17·5	59	437	210*c*
	12285	·555	254·4	178·4	−14·1	11	67	
	12288	·441	300·2	167·6	+ 6·7	47	326	
	12287	·543	325·2	164·3	+20·1	2	9	
G	12289	·365	322·8	158·0	+10·4	61	457	
	12295	·318	28·8	136·2	+ 9·6	10	33	
	12296	·545	30·8	127·7	+21·5	5	14	
	12293	·570	94·4	110·2	− 7·9	24	138	
	12294	·808	75·2	93·3	+ 7·8	15	56	151*c*
	12297	·815	98·8	90·2	−11·0	2	3	128*c*
	12298	·874	68·8	87·8	+14·9	16	86	253*f*
		·847	124·7					154
		·879	136·3					127
		·946	118·6					304
Mar. 30			(−26·2)	(145·1)	(−6·6)	(259)	(1644)	(2482)
89·382		·963	282·9					154
		·963	296·5					366
		·953	251·4					453
		·928	236·1					230
		·921	260·6					192
		·920	276·2					168
		·881	306·0					174
		·879	284·0					388
		·832	319·0					290
	12286	·904	294·2	195·0	+18·5	59	433	582*c*
G	12285	·693	256·6	178·6	−14·0	9	40	
	12287	·656	307·7	167·8	+18·1	1	7	
	12288	·579	291·4	167·5	+ 6·6	51	254	
	12289	·501	302·4	160·1	+ 9·6	54	324	
	12295	·274	351·8	137·1	+ 9·0	14	44	
	12296	·478	11·1	129·2	+21·3	2	5	
	12293	·416	94·0	110·2	− 7·7	32	129	
	12294	·700	71·6	92·9	+ 7·9	17	75	
	12297	·678	98·8	92·0	−10·8	9	30	
	12298	·783	64·2	88·0	+15·4	42	156	
	1117c	·885	121·3	73·5	−30·7	2	10	456*c*
	12299	·984	63·3	59·6	+24·7	25	115	412*p*
		·908	106·7					262
		·923	42·2					166
Mar. 31			(−26·2)	(134·8)	(−6·6)	(317)	(1622)	(4293)

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
90·401		·965	282·7					243
		·963	259·3					178
		·925	322·1					162
		·917	312·7					174
		·899	286·0					165
		·866	304·2					139
	12286	·975	291·1	195·1	+18·8	60	494	452*c*
	12285	·838	257·7	178·5	−14·2	4	20	273*c*
	12288	·742	285·2	167·2	+ 6·7	36	238	
C	*1117f*	·712	252·1	166·3	−17·2	3	12	
	12289	·677	291·1	160·9	+ 9·0	32	214	
	12295	·380	313·5	137·4	+ 8·9	42	163	
	12300	·314	332·7	129·7	+ 9·7	6	23	
	12293	·198	97·1	109·9	− 7·8	20	108	
	12294	·486	61·5	95·9	+ 7·5	13	38	
	12298	·645	56·7	87·5	+15·2	22	134	
	12299	·922	62·3	59·5	+22·4	28	115	301*f*
	12301	·937	77·3	53·6	+ 9·4	6	37	231*nf*
		·870	57·4					359
		·903	123·3					136
Apr. 1			(−26·3)	(121·3)	(−6·5)	(272)	(1596)	(2813)
91·397		·974	286·7					178
		·957	307·6					175
		·874	294·5					286
	12285	·906	256·4	173·7	−15·0	9	34	380*c*
	12288	·872	281·7	167·3	+ 6·9	34	215	90*c*
	12289	·848	284·5	164·1	+ 8·7	28	190	
C	12295	·558	295·7	138·6	+ 8·5	68	434	
	12300	·454	307·6	129·5	+10·1	73	385	
	12293	·040	235·1	110·1	− 7·7	11	64	
	12294	·336	44·3	94·6	+ 7·7	5	27	
	12298	·509	43·5	87·0	+15·7	17	95	
	12299	·827	57·1	59·6	+22·5	15	121	202*f*
	12301	·819	73·2	55·7	+ 9·8	11	50	86*f*
		·940	66·8					119
Apr. 2			(−26·3)	(108·2)	(−6·4)	(271)	(1615)	(1516)
92·420		·957	240·3					235
		·955	303·1					166
G		·938	292·3					453
		·879	247·0					162
		·813	235·3					288

Group 12295. Mar. 30–Apr. 6. A few spots developing into a large stream of normal type. The follower spot partly coalesces with the leader spot of Group 12300 which originates on April 1.
Group 12296. Mar. 30–31. A pair of small spots on March 30: a single spot on March 31.
Group 12297. Mar. 30–31. A small spot on March 30, joined by a companion on March 31.
Group 12298. Mar. 30–Apr. 9. A small stream of generally unimportant spots.
Group 12299. Mar. 31–Apr. 8. A regular spot decreasing rapidly after April 6.
Group 12300. Apr. 1–6. A bi-polar group whose two components are fairly large and rather complex in structure. This group closely follows Group 12295.
Group 12301. Apr. 1–9. A regular spot with a train of small companions from April 4–6.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
92·420	12285	·971	255·3	171·8	−15·8	18	78	591*c*
	12288	·960	279·1	167·1	+ 6·8	39	216	287*c*
G	12289	·946	281·1	164·2	+ 8·3	33	173	662*f*
	12295	·733	287·3	139·5	+ 8·0	121	667	
	12300	·627	295·5	129·7	+10·4	90	566	
	12293	·269	264·7	110·3	− 7·6	10	43	
	12302	·072	215·6	97·1	− 9·7	4	9	
	12294	·238	356·8	95·5	+ 7·3	5	28	
	12298	·385	19·0	87·3	+14·9	22	96	
	12299	·699	48·1	60·6	+22·5	15	108	
	12301	·655	67·1	57·1	+ 9·7	12	60	
	12303	·726	104·3	48·2	−14·8	8	22	
	12304	·960	111·3	19·9	−22·2	31	150	396*c*
		·782	59·6					103
		·838	72·5					233
		·894	50·9					173
		·914	104·2					109
		·980	75·5					121
Apr. 3			(−26·3)	(94·7)	(−6·4)	(408)	(2216)	(3979)
93·378		·946	292·1					269
		·904	245·6					130
		·890	236·4					142
	12289	·991	278·8	163·2	+ 7·8	14	141	230*f*
	12295	·867	283·0	140·4	+ 7·9	111	660	216*c*
	12300	·768	289·4	129·4	+10·5	101	646	
	12293	·467	265·3	110·0	− 7·8	3	10	
C	12294	·338	314·1	96·2	+ 7·5	4	28	
	12302	·243	253·0	95·7	−10·1	5	27	
	12298	·360	344·4	87·8	+13·9	17	78	
	12299	·580	35·6	60·8	+22·1	15	98	
	12301	·512	57·6	56·2	+10·3	23	88	
	12303	·552	106·6	49·1	−14·4	11	29	
	12304	·892	111·8	18·8	−22·3	63	372	302*c*
		·948	72·6					418
		·951	95·8					146
Apr. 4			(−26·4)	(82·1)	(−6·3)	(367)	(2177)	(1853)
94·427		·961	248·0					296
		·953	238·2					262
G		·920	297·4					258
	12295	·956	280·8	139·6	+ 8·3	95	649	624*c*
	12300	·902	285·4	130·3	+11·0	91	571	342*c*
1937.			°	°	°			
94·427	12293	·663	265·4	109·9	− 7·8	3	12	
	12302	·427	262·0	93·4	− 9·1	2	10	
G	12298	·479	316·4	88·0	+14·3	24	150	
	12299	·483	14·4	60·8	+21·5	17	99	
	12301	·337	33·4	57·4	+10·1	22	108	
	12303	·302	116·7	52·1	−13·8	5	11	
	12304	·765	113·7	19·4	−22·1	92	514	343*f*
	12305	·839	95·6	10·9	− 8·1	43	158	128*c*
		·859	69·6					220
		·924	63·4					150
		·926	52·6					190
		·927	103·2					82
		·949	125·4					217
Apr. 5			(−26·4)	(68·2)	(−6·3)	(394)	(2282)	(3112)
95·398		·948	239·0					150
		·928	249·8					144
	12295	·989	280·0	135·6	+ 8·9	20	85	266*c*
	12300	·970	283·0	129·5	+11·0	91	406	365*c*
	12298	·607	303·2	86·8	+14·1	20	105	
	1117g	·309	270·6	78·3	− 5·7	3	14	
C	12299	·470	349·8	60·5	+21·3	13	67	
	12301	·294	348·0	58·9	+10·5	10	43	
	12303	·145	159·8	52·5	−14·0	3	13	
	12304	·628	117·9	18·8	−22·0	83	484	
	12305	·687	95·5	11·9	− 8·3	32	143	
		·836	58·9					187
		·864	46·0					192
Apr. 6			(−26·4)	(55·4)	(−6·2)	(275)	(1360)	(1304)
		·940	247·3					219
96·391	12306	·924	239·1	109·4	−30·8	14	41	81*c*
	12298	·760	294·4	87·6	+14·0	24	130	
	12301	·441	309·8	62·4	+10·7	5	15	
	12299	·533	327·6	60·0	+20·9	6	22	
C	12303	·250	234·6	54·4	−14·2	2	7	
	12307	·456	16·0	34·7	+19·8	5	15	
	12308	·618	28·4	23·1	+27·0	4	25	
	12304	·474	126·6	18·2	−22·0	91	512	
	12305	·495	96·8	12·6	− 8·6	37	181	
		·859	114·0					235
Apr. 7			(−26·4)	(42·3)	(−6·1)	(188)	(948)	(535)

Group 12302. Apr. 3–5. A very small stream.
Group 12303. Apr. 3–8. A small, short-lived group.
Group 12304. Apr. 3–16. A stream of normal type; there is considerable separation in longitude between the leader and follower spots.
Group 12305. Apr. 5–13. A stream developing suddenly but soon dying out.
Group 12306. Apr. 7–8. A group appearing near the west limb.
Group 12307. Apr. 7–13. A regular spot with a few variable followers.
Group 12308. Apr. 7–12. A few spots in a short stream: only one component remains after April 9.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
97·500		·948	261·3					442
		·941	306·7					180
		·940	280·8					339
		·890	291·2					579
	12306	·975	239·0	106·1	−31·5	4	20	153*n*
	12298	·894	289·3	88·0	+14·2	32	150	
G	12301	·641	294·9	63·8	+10·7	5	12	
	12299	·644	311·8	58·3	+20·1	0	7	
	12303	·462	251·2	54·4	−13·9	2	7	
	1117h	·532	315·0	50·7	+16·4	0	5	
	12307	·457	342·1	36·2	+19·6	10	55	
	12308	·577	10·2	20·9	+30·1	11	28	
	12304	·328	149·5	17·4	−22·3	88	609	
	12305	·254	101·6	13·2	− 8·9	23	152	
		·931	59·6					346
Apr. 8			(−26·4)	(27·7)	(− 6·1)	(175)	(1045)	(2039)
98·440		·979	260·4					130
		·860	246·7					109
		·855	236·8					161
	12298	·959	287·6	86·2	+15·0	16	52	699*c*
	12301	·783	287·9	64·3	+10·0	3	7	
	12307	·571	317·8	39·2	+19·4	13	74	
C	12309	·367	247·4	35·6	−13·7	2	9	
	12308	·579	356·1	17·8	+29·1	8	29	
	12304	·288	187·0	17·5	−22·5	83	519	
	12305	·058	156·6	14·0	− 9·0	27	106	
		·857	59·6					161
		·941	109·9					435
Apr. 9			(−26·4)	(15·3)	(− 6·0)	(152)	(796)	(1695)
99·426		·937	246·5					178
		·891	236·8					190
		·828	294·4					271
	12307	·699	306·3	38·8	+19·6	21	152	
	12309	·540	253·1	34·2	−14·1	2	10	
C	12308	·621	338·8	17·1	+29·5	6	31	
	12304	·368	219·5	16·8	−22·1	80	431	
	12305	·247	255·3	16·1	− 9·3	18	87	
	12310	·464	52·2	340·4	+11·0	2	10	
		·849	61·2					127
		·942	113·4					198
Apr. 10			(−26·4)	(2·2)	(− 5·9)	(129)	(721)	(964)
1937.			°	°	°			
100·410		·969	238·5					366
		·936	298·8					433
		·928	284·2					551
		·916	255·7					165
	12307	·827	298·1	39·7	+19·3	51	255	286*c*
	12309	·713	256·4	34·6	−13·7	1	3	
	12308	·700	324·5	17·1	+29·5	6	19	
G	12305	·466	260·9	17·0	− 9·4	10	32	
	12304	·523	235·3	16·9	−22·4	60	403	
	12310	·320	30·5	339·8	+10·2	10	60	
	1118a	·904	56·9	291·7	+26·5	2	5	316*nf*
	12311	·866	101·3	289·0	−12·7	13	40	99*c*
		·851	68·7					213
		·917	116·9					403
		·977	70·7					129
Apr. 11			(−26·3)	(349·3)	(− 5·8)	(153)	(817)	(2961)
101·417		·975	284·7					347
		·968	301·8					241
		·966	254·1					213
		·887	285·2					263
		·837	306·1					187
	12307	·930	293·5	40·4	+19·3	44	235	433*c*
G	12309	·881	258·9	38·1	−12·5	9	19	142*c*
	12305	·653	262·1	16·8	− 9·6	6	20	
	12308	·796	314·3	16·7	+29·4	2	3	98*n*
	12304	·675	242·5	16·3	−22·6	45	219	
	12310	·290	343·8	340·7	+10·3	7	37	
	12311	·714	101·3	290·4	−12·1	16	51	
		·806	115·5					282
		·866	49·9					222
		·936	64·3					559
Apr. 12			(−26·3)	(336·0)	(− 5·8)	(129)	(584)	(2987)
102·400		·939	281·0					219
		·899	304·9					363
C		·857	291·0					167
		·783	303·5					174
	12309	·974	259·6	40·5	−11·4	9	52	328*f*
	12307	·984	291·0	39·7	+19·4	62	349	476*c*
	12304	·830	246·6	18·3	−22·5	25	144	375*c*
	12305	·806	262·3	16·9	− 9·6	8	18	214*f*
	12310	·412	311·3	340·3	+10·3	2	9	
	12311	·545	103·9	290·4	−12·3	13	52	
		·824	58·1					296

Group 12309. Apr. 9–13. One or two very small spots.
Group 12310. Apr. 10–13. A small stream of unstable spots.
Group 12311. Apr. 11–21. A stream of small spots barely visible on April 14. On April 15 the group re-forms as a stream of normal type.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
102·400		·901	45·4					173
		·941	58·3					476
C		·972	116·1					127
		·977	68·7					175
Apr. 13			(−26·3)	(323·0)	(− 5·7)	(119)	(624)	(3563)
103·488		·962	302·0					274
		·907	285·4					243
		·891	261·2					347
		·877	313·0					196
		·869	298·4					347
G	12304	·943	248·5	19·6	−22·1	25	128	859*c*
	12311	·311	111·3	291·5	−11·8	5	26	
		·887	52·4					336
		·917	111·8					208
		·932	62·6					290
		·938	79·7					80
		·946	98·0					102
		·955	72·0					216
Apr. 14			(−26·2)	(308·6)	(− 5·6)	(30)	(154)	(3498)
104·415		·970	285·5					109
		·960	261·5					451
		·932	294·2					398
	12304	·962	247·6	11·2	−23·0	7	16	931*c*
	1118b	·719	291·1	339·3	+11·0	3	8	
	12311	·130	139·5	291·5	−11·1	18	83	
	12312	·581	140·4	270·8	−31·5	18	61	
C	12313	·760	119·1	249·2	−25·5	2	3	178*f*
	12314	·981	78·5	219·0	+10·1	10	33	415*f*
		·801	58·8					166
		·836	47·5					395
		·874	97·1					265
		·913	111·7					276
		·915	58·9					449
		·916	71·9					600
		·972	104·5					318
Apr. 15			(−26·1)	(296·4)	(− 5·5)	(58)	(204)	(4951)
105·400		·904	238·1					306
		·898	248·3					228
G	12304	·994	247·4	8·6	−23·0	18	97	220*f*
	12311	·184	237·1	292·4	−11·1	43	199	
	12312	·477	156·1	270·4	−31·1	55	233	
1937.			°	°	°			
105·400	12313	·619	124·7	249·4	−25·1	14	58	
	12314	·908	76·7	220·0	+ 9·6	54	278	390*c*
G		·845	51·9					229
		·867	63·9					269
		·939	104·1					403
		·950	112·6					160
		·956	53·9					309
		·967	65·9					216
		·974	85·1					204
		·985	74·9					454
Apr. 16			(−26·1)	(283·4)	(− 5·5)	(184)	(865)	(3388)
106·527		·958	282·4					255
		·951	244·6					307
	1118c	·913	295·4	330·0	+20·5	8	21	303*f*
	12311	·392	253·2	290·9	−11·5	42	272	
	12312	·435	182·9	270·0	−31·1	35	168	
	12313	·462	138·6	248·4	−25·3	4	30	
C	*1118d*	·495	126·0	243·1	−21·7	2	5	
	12314	·767	72·3	220·8	+ 9·8	62	291	190*c*
		·870	111·4					304
		·883	83·8					190
		·899	98·3					271
		·921	50·2					526
		·922	72·4					698
		·981	65·0					358
Apr. 17			(−26·0)	(268·5)	(− 5·4)	(153)	(787)	(3402)
107·366		·922	295·2					419
	12311	·557	257·6	290·9	−11·3	38	274	
	12312	·470	203·1	269·7	−30·7	26	140	
	12313	·335	169·4	253·5	−24·4	1	5	
	12314	·628	67·4	221·5	+ 9·6	47	225	
	12315	·818	97·0	202·6	− 7·8	15	92	206*c*
C	*1118c*	·892	66·9	198·1	+17·8	2	12	586*c*
	12316	·990	105·1	174·8	−15·7	14	58	241*p*
		·825	67·6					623
		·883	45·9					393
		·915	113·1					166
		·945	83·1					198
		·986	68·3					114
Apr. 18			(−25·9)	(257·4)	(−5·3)	(143)	(806)	(2946)

Group 12312. Apr. 15–20. A short-lived bi-polar group.
Group 12313. Apr. 15–19. A pair of double spots separating rapidly in longitude between April 16 and 17, after which the follower disappears.
Group 12314. Apr. 15–26. A bi-polar group; the follower spot dies out after April 19.
Group 12315. Apr. 18–28. A large stream with a regular spot as leader and a composite spot as the follower.
Group 12316. Apr. 18–24. A regular spot dying out.

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U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
108·394		·981	282·2					86
		·971	293·8					287
	12311	·720	259·1	289·8	−11·4	34	154	
	12312	·575	220·0	269·2	−30·7	21	67	
	12313	·373	200·6	252·1	−25·5	1	5	
	12317	·369	114·1	223·6	−13·5	5	15	
	12314	·447	55·8	221·9	+ 9·7	37	174	
G	12318	·644	74·4	205·4	+ 5·9	6	14	
	12315	·639	98·0	204·1	− 9·1	88	353	
	12319	·851	56·9	192·4	+24·5	2	4	693*c*
	12320	·942	66·5	177·1	+20·1	13	43	432*c*
	12316	·932	105·4	174·7	−16·2	19	64	604*f*
	12321	·973	80·6	168·4	+ 7·9	30	124	435*c*
		·861	105·0					231
		·864	73·4					116
		·887	38·8					253
Apr. 19			(−25·8)	(243·8)	(− 5·2)	(256)	(1017)	(3137)
109·410		·929	290·1					176
		·894	248·1					205
		·867	305·3					170
		·737	306·9					132
	12311	·851	259·5	288·9	−11·6	24	140	501*c*
	12322	·866	286·5	288·1	+11·5	4	9	185*n*
	12312	·701	229·7	268·8	−30·9	3	6	
	1118f	·660	336·8	248·3	+32·3	0	3	
	12317	·187	140·0	223·3	−13·2	2	10	
	12314	·292	28·2	222·4	+ 9·8	20	102	
C	*1118g*	·386	49·1	213·3	+ 9·7	1	5	
	12318	·458	66·1	205·6	+ 6·0	2	10	
	12315	·453	100·3	203·7	− 9·1	90	597	
	12319	·731	47·9	193·7	+25·2	26	67	232*c*
	12320	·846	62·8	177·6	+19·6	70	364	367*c*
	12316	·821	106·3	175·4	−16·3	15	61	254*f*
	12321	·891	78·3	168·8	+ 8·0	22	119	389*f*
		·910	112·5					125
		·940	123·9					206
		·958	70·7					318
		·969	52·5					121
Apr. 20			(−25·7)	(230·4)	(− 5·1)	(279)	(1493)	(3381)

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
110·388		·912	245·6					177
		·853	300·0					363
		·810	234·2					413
	12322	·963	283·5	290·1	+11·5	7	26	254*f*
	12311	·938	259·5	287·6	−11·6	20	116	591*p*
	12314	·269	342·3	222·2	+ 9·8	19	133	
	12315	·253	107·5	203·4	− 9·1	121	735	
G	12319	·623	36·1	193·6	+25·6	67	432	
	12320	·745	57·7	175·7	+19·7	170	1065	125*f*
	12316	·681	108·9	175·5	−16·4	12	86	
	12321	·771	75·2	168·9	+ 8·0	23	123	385*f*
		·884	66·1					233
		·911	48·1					175
		·959	75·5					313
		·961	119·1					299
		·977	82·0					248
Apr. 21			(−25·7)	(217·5)	(− 5·0)	(439)	(2716)	(3576)
111·551		·983	281·1					250
		·939	248·3					210
		·936	291·9					267
		·932	301·1					413
		·921	237·7					485
		·853	311·5					346
		·824	298·1					95
		·792	243·4					194
	1118h	·523	317·1	224·0	+17·9	2	5	
G	12314	·423	306·1	222·3	+ 9·8	21	109	
	12315	·088	192·5	203·2	− 9·8	107	689	
	12323	·226	4·6	201·1	+ 8·0	22	117	
	12319	·517	14·4	194·0	+25·1	130	903	
	12316	·481	115·7	175·4	−16·4	13	56	
	12320	·597	47·2	174·5	+19·5	302	1704	
	12321	·585	68·5	168·9	+ 8·3	25	123	
		·835	42·1					142
		·863	77·5					386
		·918	122·1					295
		·944	75·7					524
		·956	67·0					106
Apr. 22			(−25·5)	(202·1)	(− 4·9)	(622)	(3706)	(3713)

Group 12317. Apr. 19–20. One or two tiny spots.
Group 12318. Apr. 19–20. A pair of tiny spots.
Group 12319. Apr. 19–29. A small spot on April 19 (in a large area of scattered faculæ) developing into a large stream. With the partial exception of the leader, which becomes a regular spot, the components are of composite structure and in constant change.
Group 12320. Apr. 19–May 1. Some very active spots in a curved stream which grow and consolidate, so that for a few days the group is practically one extensive spot with multiple umbræ. The following part of this structure then expands and becomes separated by April 28 as a large composite spot.
Group 12321. Apr. 19–30. Return of Group 12288: a stable regular spot.
Group 12322. Apr. 20–21. A small spot.
Group 12323. Apr. 22–27. A small short-lived group consisting of two major components.

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U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
112·360		·975	290·6					239
		·966	239·0					418
		·926	297·3					348
		·904	309·2					340
		·855	242·6					242
	1118i	·737	303·4	232·2	+20·2	3	7	
G	12314	·564	295·7	222·3	+ 9·9	27	108	
	12315	·215	247·3	202·9	− 9·5	134	653	
	12323	·279	323·0	201·1	+ 8·0	45	145	
	12319	·499	356·1	193·5	+24·8	147	900	
	12316	·335	126·6	175·2	−16·2	10	46	
	12320	·500	34·3	174·1	+19·6	323	1823	
	12321	·441	59·0	169·0	+ 8·5	20	117	
	12324	·758	72·0	144·5	+10·2	3	7	334*c*
		·878	123·8					234
		·881	73·4					390
Apr. 23			(−25·4)	(191·4)	(− 4·9)	(712)	(3806)	(2545)
113·106		·953	293·3					129
		·936	305·7					239
		·909	225·7					144
		·845	294·9					262
		·826	310·6					184
	12314	·690	289·9	222·6	+ 9·9	17	112	
K	12315	·365	256·5	202·6	− 9·4	128	610	
	12323	·395	303·5	200·9	+ 8·0	50	258	
	12319	·535	337·3	194·7	+24·8	123	982	
	12325	·116	144·7	177·7	−10·2	4	14	
	12316	·229	153·0	175·4	−16·4	7	21	
	12320	·435	16·3	174·2	+19·8	321	1815	
	12321	·310	42·4	169·5	+ 8·5	26	115	
		·927	98·4					132
		·975	77·7					194
Apr. 24			(−25·3)	(181·6)	(− 4·8)	(676)	(3927)	(1284)
114·347		·937	287·8					319
		·930	307·2					351
G		·922	296·4					232
	12314	·859	285·1	222·5	+10·4	19	127	442*f*
	1118j	·698	240·8	206·6	−23·4	10	19	
	12315	·604	260·6	202·2	− 9·4	80	591	
	12323	·613	289·6	200·7	+ 8·0	23	163	
	12319	·656	318·0	194·2	+25·4	180	1380	
	12326	·376	314·8	180·9	+10·8	10	38	

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
114·347	12325	·234	248·3	177·9	− 9·6	16	58	
	12320	·437	341·2	173·8	+19·7	325	2246	
G	12321	·244	343·4	169·2	+ 8·8	17	95	
		·869	111·4					79
		·906	74·3					370
Apr. 25			(−25·2)	(165·2)	(− 4·7)	(680)	(4717)	(1793)
115·584		·979	293·0					108
		·938	308·2					252
		·878	249·2					435
		·874	289·6					322
	12314	·968	282·6	222·8	+11·0	18	71	339*f*
	12315	·805	261·4	202·4	− 9·7	75	499	447*c*
	12323	·815	283·3	201·8	+ 8·0	15	74	
G	12319	·785	307·1	192·3	+24·9	294	1795	
	12326	·594	295·0	181·9	+10·6	20	64	
	12325	·479	256·9	177·0	−10·3	51	174	
	12320	·553	316·0	172·7	+19·1	439	2440	
	12321	·420	303·0	169·6	+ 8·9	20	95	
	12327	·698	114·8	106·4	−20·4	78	349	
		·862	74·2					188
		·898	64·1					107
		·954	111·8					112
Apr. 26			(−25·0)	(148·8)	(− 4·6)	(1010)	(5561)	(2310)
116·417		·981	281·4					199
		·969	305·1					203
		·947	286·8					313
		·944	249·9					458
		·927	314·7					284
		·860	290·7					179
	12315	·907	262·1	203·0	− 9·0	62	414	689*c*
	12323	·909	281·1	201·9	+ 8·1	11	40	249*c*
	12319	·868	302·6	191·5	+25·2	264	1954	689*c*
G	12326	·718	289·9	181·0	+10·8	26	81	
	12325	·644	259·7	177·7	−10·0	91	448	
	1118k	·620	250·7	175·0	−15·4	6	15	
	12320	·671	306·3	172·7	+19·7	440	2474	
	12321	·567	293·3	169·5	+ 9·1	22	121	
	12324	·307	329·1	147·0	+10·7	4	11	
	12327	·554	121·6	107·6	−20·7	117	699	
		·876	63·3					314
		·922	112·5					390
		·951	75·3					325
Apr. 27			(−24·9)	(137·8)	(− 4·5)	(1043)	(6257)	(4292)

Group 12324. Apr. 23–28. Intermittent: a small spot in extended faculæ on April 23: a tiny group on April 27.
Group 12325. Apr. 24–30. A compact stream in which a large leader spot has developed by April 27.
Group 12326. Apr. 25–29. A small stream of which one component remains on April 29.
Group 12327. Apr. 26–May 5. A large stream of normal type showing rapid growth. The leader divides into two on May 1–2. Contrary to the usual sequence in development, a cluster of spots in the middle of the stream outlines the follower.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
117·595		·972	279·4					322
		·946	238·6					213
	12315	·991	262·0	204·9	− 8·5	91	464	543*c*
	12319	·959	298·4	191·4	+25·6	252	1757	781*c*
	12326	·866	285·3	180·3	+10·8	14	60	230*c*
	12325	·832	260·0	178·6	−10·8	63	397	311*c*
	12320	·817	297·3	172·4	+19·2	500	2311	611*c*
	12321	·761	286·5	169·8	+ 9·5	14	95	
G	12324	·504	299·5	148·7	+10·4	0	5	
	1118l	·470	223·8	143·1	−23·9	1	5	
	12328	·110	176·9	122·0	−10·7	4	16	
	12327	·359	141·7	108·6	−20·6	181	985	
	12329	·884	84·1	60·8	+ 3·1	0	5	89*f*
	12330	·996	70·9	39·5	+18·5	48	192	106*p*
		·881	132·9					190
		·887	71·7					593
		·906	122·4					252
		·936	55·9					246
		·975	100·9					261
Apr. 28			(−24·7)	(122·3)	(−4·4)	(1168)	(6292)	(4748)
118·394		·843	253·6					225
	12319	·985	297·4	188·2	+26·0	87	1272	508*c*
	12326	·947	282·3	181·5	+10·2	6	17	375*c*
	12325	·921	259·9	178·9	−11·0	56	248	253*c*
	12320	·903	293·4	172·7	+19·0	407	2196	612*c*
	12321	·863	283·9	169·7	+ 9·7	22	137	183*s*
	12327	·290	169·6	108·5	−20·8	188	1048	
C	12330	·967	69·6	39·1	+18·5	35	228	549*c*
		·790	69·1					240
		·809	84·4					158
		·837	125·8					144
		·841	136·3					121
		·874	54·7					122
		·927	98·6					173
Apr. 29			(−24·6)	(111·7)	(−4·3)	(801)	(5146)	(3663)
119·511		·927	242·4					59
		·921	249·3					100
G		·869	296·4					170
		·783	288·2					262

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
119·511	12325	·988	259·6	178·5	−11·0	55	247	391*c*
	12321	·961	281·6	169·6	+ 9·8	25	96	203*s*
G	12320	·965	290·8	169·0	+18·7	179	1602	544*c*
	12328	·453	255·6	123·4	−10·2	5	18	
	12327	·344	213·0	108·5	−20·8	216	1194	
	12330	·885	66·6	38·3	+18·4	54	276	733*c*
	12331	·924	106·3	29·5	−16·6	13	30	150*c*
		·826	101·2					259
		·855	50·1					351
		·967	115·2					166
Apr. 30			(−24·4)	(97·0)	(−4·2)	(547)	(3463)	(3388)
120·372		·930	248·6					189
		·891	285·0					375
	12320	·995	288·4	167·9	+17·8	96	532	610*f*
	12332	·671	247·6	126·1	−17·9	6	12	
	12328	·639	259·2	125·0	−10·0	9	27	
	12333	·515	253·0	115·7	−12·2	3	9	
G	12327	·498	233·8	110·9	−20·7	202	1106	
	12330	·785	62·6	38·5	+18·4	55	252	544*f*
	12331	·801	106·6	32·9	−15·7	16	37	232*c*
		·891	52·9					86
		·927	101·5					180
		·928	70·8					60
		·935	114·4					723
May 1			(−24·2)	(85·6)	(−4·1)	(387)	(1975)	(2999)
121·552		·967	245·6					97
		·926	283·8					630
		·881	235·4					131
	12332	·850	251·0	127·6	−18·2	13	42	112*c*
	12328	·842	260·4	127·3	−10·3	5	15	162*c*
G	12327	·702	244·4	112·4	−20·6	185	903	
	12329	·212	55·6	60·0	+ 2·9	3	10	
	12330	·626	53·8	38·0	+18·2	47	259	
	12331	·703	108·8	26·4	−16·0	4	6	
		·870	101·8					264
		·898	115·4					431
		·943	65·8					201
May 2			(−24·0)	(70·0)	(−4·0)	(257)	(1235)	(2028)

Group 12328. Apr. 28–May 3. A pair of small spots on April 28, April 30 and May 1: afterwards a single spot.
Group 12329. Apr. 28–May 3. Intermittent. A small spot on April 28: one or two faint spots on May 2 and 3.
Group 12330. Apr. 28–May 11. Return of Group 12307. A stable regular spot with a short-lived cluster *sp* on May 4.
Group 12331. Apr. 30–May 10. A disturbed area in which are seen one or two spots of unusual persistance for their small size.
Group 12332. May 1–3. A diminutive group preceding the large stream, Group 12327.
Group 12333. May 1–3. A pair of tiny spots on May 1: a single spot on May 3.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
122·404		·968	283·1					290
		·960	238·1					192
	12328	·929	260·9	127·1	− 9·9	7	15	179*f*
	12332	·927	251·5	126·5	−18·6	9	24	125*p*
	12333	·834	257·3	115·0	−12·7	2	8	105*c*
	12327	·819	247·9	112·5	−20·2	160	855	395*c*
G	12329	·130	340·7	61·2	+ 3·2	1	4	
	12330	·505	42·3	37·8	+18·2	53	279	
	12331	·572	114·5	25·9	−17·0	3	11	
	12334	·724	103·6	12·8	−12·5	1	4	
		·821	115·9					277
		·878	60·5					170
May 3			(−23·9)	(58·7)	(−3·9)	(236)	(1200)	(1733)
123·532		·953	260·4					230
		·947	235·0					69
		·896	286·5					183
	12327	·941	250·4	113·6	−19·7	134	842	1278*c*
G	12330	·385	15·0	37·5	+17·9	66	288	
	12331	·367	130·1	26·5	−17·3	12	26	
	12334	·561	107·5	10·4	−12·9	14	34	
	12335	·984	77·8	325·1	+11·2	49	474	321*c*
		·870	74·9					202
		·903	115·2					248
May 4			(−23·6)	(43·5)	(−3·8)	(275)	(1664)	(2531)
124·334		·949	284·0					207
	12327	·986	250·3	113·9	−20·0	127	1002	942*c*
	12330	·377	347·8	38·0	+17·8	66	306	
G	12331	·261	156·8	27·0	−17·5	6	14	
	12334	·410	114·6	10·8	−13·2	16	55	
	12335	·940	76·5	324·7	+11·4	70	493	461*f*
May 5			(−23·5)	(33·2)	(− 3·7)	(285)	(1870)	(1610)
125·331		·980	247·9					325
		·960	295·9					160
G	12330	·463	321·7	37·5	+17·8	46	248	
	12331	·263	203·1	26·2	−17·5	7	23	
	1118m	·176	172·3	18·6	−13·6	1	7	
	12334	·233	135·8	10·4	−13·1	5	30	
1937.			°	°	°			
125·331	12335	·840	73·9	324·8	+11·4	82	480	634*c*
		·883	107·1					121
G		·908	60·2					308
		·976	108·0					281
May 6			(−23·3)	(20·0)	(−3·6)	(141)	(788)	(1829)
126·631		·906	283·8					239
		·868	248·2					170
		·844	235·1					165
	12330	·648	303·8	37·2	+18·3	39	196	
	12331	·452	236·0	25·9	−17·7	5	13	
G	12336	·537	215·4	23·6	−29·0	4	14	
	12335	·650	67·8	325·1	+11·5	66	427	
	12337	·951	77·6	292·1	+10·7	3	8	140*f*
		·888	110·1					257
		·912	100·8					247
		·924	73·8					468
May 7			(−23·0)	(2·8)	(−3·4)	(117)	(658)	(1686)
127·615		·958	283·4					265
		·920	235·9					329
	12330	·783	296·5	37·2	+18·2	34	233	366*p*
	12331	·633	246·5	27·1	−17·2	6	20	
	12336	·662	226·6	23·3	−29·7	1	5	
G	12335	·485	58·6	324·9	+11·6	78	499	
	12337	·866	74·4	291·6	+11·7	0	9	193*f*
		·800	108·9					424
		·869	64·8					136
		·921	113·0					109
May 8			(−22·8)	(349·8)	(−3·3)	(119)	(766)	(1822)
128·381		·962	236·0					284
		·946	283·5					228
C		·870	259·0					300
	12330	·870	293·2	36·8	+18·2	40	211	579*n*
	12331	·737	248·8	25·7	−17·6	5	19	252*c*
	12335	·354	43·2	325·4	+11·8	77	455	
	12338	·458	122·2	315·9	−17·0	30	69	

Group 12334. May 3–6. A small, short-lived stream.
Group 12335. May 4–16. A regular spot with companions until May 10.
Group 12336. May 7–8. A pair of very small spots on May 7: a single spot on May 8.
Group 12337. May 7–14. A sparse stream of unstable spots. Possible return of Group 12322 or perhaps a revival only.
Group 12338. May 9–17. *A smallish group of bi-polar type showing considerable separation between the leader and follower spots.*

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

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1937.			°	°	°			
128·381	12337	·771	71·8	291·4	+11·8	5	27	416*f*
	12339	·859	116·0	282·3	−23·8	2	9	167*c*
C	12340	·934	67·9	273·5	+19·3	6	18	291*n*
	12341	·990	71·0	259·6	+18·3	88	444	252*c*
May 9			(−22·6)	(339·7)	(−3·2)	(253)	(1252)	(2769)
129·489		·932	257·5					160
	12330	·962	290·1	36·9	+18·4	32	180	679*c*
	12331	·870	251·2	24·6	−17·8	5	14	198*p*
	1119a	·818	243·0	17·5	−23·6	0	4	345*c*
	12342	·413	302·6	345·6	+ 9·9	15	25	
	12335	·260	358·9	325·3	+11·9	66	365	
	12338	·277	149·7	316·6	−16·9	45	193	
G	12337	·661	67·7	286·5	+12·1	17	66	
	12339	·726	118·9	281·6	−22·7	0	4	
	12340	·823	63·5	273·8	+19·6	6	20	258*c*
	12341	·939	69·3	257·6	+18·2	156	805	1154*c*
	12343	·978	121·8	247·4	−31·7	48	166	246*c*
		·862	54·7					138
		·904	122·7					126
		·942	47·7					184
		·954	57·5					253
May 10			(−22·3)	(325·0)	(−3·1)	(390)	(1842)	(3741)
130·418		·966	254·5					302
		·917	240·7					439
		·837	255·9					261
		·786	240·9					247
	12330	·996	288·7	36·1	+18·3	21	48	359*f*
C	12342	·574	292·3	345·3	+10·0	18	73	
	12335	·337	320·0	325·5	+12·0	56	335	
	12338	·259	198·5	317·7	−17·2	32	163	
	12337	·502	59·7	286·6	+11·9	19	84	
	12340	·701	57·7	274·0	+19·6	3	9	98*f*
	12341	·855	66·5	257·4	+18·2	104	767	1441*c*
	12343	·927	123·3	247·3	−31·8	34	127	324*c*
		·830	52·7					181
		·840	121·1					101
		·938	52·3					253
		·973	76·2					234
May 11			(−22·1)	(312·8)	(−3·0)	(287)	(1606)	(4240)
1937.			°	°	°			
131·494		·937	257·8					243
		·928	243·4					382
		·858	283·5					53
	12342	·730	286·4	343·6	+ 9·8	20	111	
	12335	·515	299·6	325·6	+12·1	53	292	
	12338	·409	232·0	318·1	−17·2	23	126	
C	12337	·322	40·4	286·3	+11·3	12	71	
	12340	·550	45·9	273·8	+19·8	5	14	
	12341	·722	61·2	256·9	+18·1	107	682	586*c*
	12343	·817	128·4	249·4	−32·3	23	78	262*f*
		·753	45·5					93
		·886	48·6					236
		·909	72·8					408
May 12			(−21·8)	(298·5)	(−2·9)	(243)	(1374)	(2263)
132·110		·957	260·2					126
		·946	244·9					321
		·931	302·4					228
	12342	·819	284·1	343·9	+ 9·8	26	128	232*c*
	12335	·620	293·8	325·7	+12·2	57	223	
	12338	·525	240·9	319·0	−17·2	16	78	
	12337	·246	7·9	288·4	+11·2	11	40	
K	12340	·470	35·3	273·7	+19·8	5	12	
	12341	·628	55·7	257·4	+18·3	112	744	
	12343	·750	132·3	249·5	−32·3	19	87	346*f*
		·814	73·9					113
		·843	46·1					204
		·911	64·3					190
		·930	75·5					165
		·951	115·1					170
		·962	98·4					229
May 13			(−21·7)	(290·4)	(−2·8)	(246)	(1312)	(2324)
133·391		·901	241·8					142
	12342	·943	281·1	343·0	+ 9·5	13	50	324*p*
G	12335	·811	287·5	325·7	+12·4	58	260	319*f*
	12338	·733	249·7	319·1	−16·6	13	68	
	1119b	·418	241·5	295·6	−13·9	3	10	
	12337	·394	306·5	292·2	+11·0	0	1	
	12340	·382	0·9	273·1	+19·6	3	8	
	12341	·439	36·7	257·6	+17·9	137	653	
	12344	·584	37·5	250·4	+25·3	3	16	
	12343	·605	144·9	249·4	−32·0	13	55	

Group 12339. May 9–10. A very small spot.
Group 12340. May 9–14. A small persistent spot.
Group 12341. May 9–21. A large stream in an extensive area of faculæ. The leader, having a double umbra undergoes a partial disruption but later regains a regular outline. It has for a companion a stable regular spot *nf*. The following part of the stream is never conspicuous and has died out by May 19.
Group 12342. May 10–14. A small stream with the largest component at the rear.
Group 12343. May 10–21. A regular spot (with a tiny companion on May 10, 11 and 15) diminishing to a pair of dots.
Group 12344. May 14–16. A tiny group *nf* Group 12341.

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U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
133·391	*1119c*	·687	45·9	240·3	+26·2	1	3	
	12345	·927	65·1	208·9	+21·7	7	12	125*f*
G	*1119d*	·923	68·6	208·7	+18·5	6	12	130*f*
	12346	·909	96·7	208·3	− 7·2	11	27	425*f*
	12347	·919	109·3	204·1	−18·8	6	18	99*f*
	12348	·977	65·2	198·4	+23·5	21	74	420*s*
	12349	·979	105·5	195·3	−15·7	22	120	611*f*
		·835	100·9					236
		·897	73·5					332
		·912	114·8					110
		·939	54·2					171
May 14			(−21·3)	(273·5)	(−2·7)	(317)	(1387)	(3444)
134·390		·860	300·2					257
	12335	·918	284·7	325·3	+12·4	55	276	549*f*
	12338	·872	253·0	320·2	−16·0	4	13	422*f*
	12341	·357	5·2	258·3	+18·2	104	619	
	12344	·497	19·7	249·6	+25·3	5	33	
	12343	·512	162·0	249·5	−31·6	19	58	
	12346	·782	97·3	209·0	− 7·3	9	32	352*f*
	12345	·832	60·9	208·6	+22·2	8	40	197*c*
	12347	·826	110·7	205·9	−18·5	24	80	167*c*
C	12348	·915	63·0	197·8	+23·3	22	101	904*c*
	12351	·989	62·1	181·4	+27·1	43	335	
	12349	·951	105·3	188·4	−15·3	145	932	922*c*
	12350	·984	70·7	182·2	+18·5	30	134	282*c*
		·710	97·6					173
		·787	47·9					104
		·789	71·9					197
		·811	117·1					109
		·905	73·1					225
		·916	51·1					177
		·946	80·2					175
May 15			(−21·1)	(260·2)	(−2·6)	(468)	(2653)	(5212)
135·392		·946	297·1					269
		·808	248·0					362
C		·803	285·0					468
1937.			°	°	°			
135·392	12335	·983	282·8	325·4	+12·1	48	247	478*f*
	12338	·956	253·9	319·8	−16·1	3	18	395*f*
C	12352	·457	237·7	270·6	−16·4	10	49	
	12341	·396	332·0	258·2	+17·9	113	590	
	12344	·457	354·6	249·7	+24·5	4	30	
	12343	·485	181·8	248·0	−31·3	7	28	
	1119e	·358	40·0	233·4	+13·4	2	11	
	12353	·579	61·2	215·6	+14·0	2	11	
	12346	·614	98·6	209·4	− 7·2	3	7	
	12345	·712	55·6	207·9	+21·7	9	38	
	12347	·696	114·6	205·2	−18·7	34	145	
	12348	·816	59·2	197·6	+23·0	21	76	919*c*
	12351	·942	59·8	180·8	+27·3	40	266	
	12349	·869	106·0	187·3	−15·1	155	1021	837*c*
	12350	·975	71·2	171·5	+17·7	137	896	1072*c*
		·838	73·4					342
May 16			(−20·8)	(247·0)	(−2·5)	(588)	(3433)	(5142)
136·379		·979	251·7					274
		·949	293·9					115
		·922	281·6					351
		·909	252·0					420
	12352	·623	245·7	270·1	−16·6	23	83	
	12341	·527	311·7	258·3	+18·4	115	557	
	12343	·528	201·6	247·0	−31·5	6	24	
	12353	·426	46·4	215·4	+14·8	3	6	
G	12345	·573	46·1	207·7	+21·2	4	11	
	12347	·535	121·9	205·4	−18·4	25	121	
	12346	·504	101·5	204·1	− 7·8	0	10	
	12348	·682	52·7	198·1	+22·5	16	56	
	12349	·738	108·3	187·6	−15·0	190	1474	
	12351	·863	56·1	180·3	+27·4	40	250	633*c*
	12350	·900	68·9	172·3	+17·8	89	672	826*c*
	12354	·907	78·3	169·9	+ 9·6	6	17	205*f*
		·936	41·8					262
		·960	60·6					289
		·971	110·9					365
May 17			(−20·5)	(233·9)	(−2·3)	(517)	(3281)	(3740)

Group 12345. May 14–20. A small group of feeble development.
Group 12346. May 14–20. Intermittent. A small spot on May 14–16: a tiny cluster on May 17 and 20. Probable return of Group 12315.
Group 12347. May 14–25. A smallish stream preceding Group 12349.
Group 12348. May 14–26. A few spots developing rapidly after May 20 into a large stream whose subsequent history is lost early by the passage of the group around the west limb. Probable return of Group 12319.
Group 12349. May 14–27. An extensive stream containing many components which are usually very variable from day to day. There is, however, a relatively stable regular spot at the end of the stream. The leader begins as a smallish regular spot but coalesces on May 21–22 with other spot nuclei to form a large composite spot.
Group 12350. May 15–27. Return of Group 12320. Two spots widely separated in longitude. The leader is a stable regular spot; the follower, surrounded by a few companions, is larger but does not last quite so long.
Group 12351. May 15–27. A regular spot splitting up after May 22.
Group 12352. May 16–21. A growing compact stream with the largest component in the rear.
Group 12353. May 16–18. Two or three tiny spots.
Group 12354. May 17–18. A tiny spot; probable return of Group 12321.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
137·352		·974	251·6					356
		·957	296·8					116
		·804	296·2					201
	12352	·767	249·2	269·5	−17·2	56	291	186*c*
	12341	·673	301·6	258·2	+18·8	103	481	
	12343	·614	217·7	246·9	−30·9	6	20	
	12353	·305	12·8	217·1	+15·0	3	7	
	12345	·489	30·4	205·6	+22·8	3	6	
G	12347	·384	138·0	205·4	−18·6	22	76	
	12348	·558	41·4	197·6	+22·6	12	38	
	12349	·572	113·9	188·4	−15·2	209	1423	
	12351	·759	50·3	180·2	+27·3	38	264	488*f*
	12350	·791	65·0	172·4	+18·0	104	601	454*f*
	12354	·789	76·0	170·4	+ 9·6	4	11	
	12355	·983	80·1	142·5	+ 9·3	37	157	372*c*
		·776	105·5					90
		·884	37·4					217
		·919	114·8					417
		·941	74·8					283
		·947	59·6					274
May 18			(−20·2)	(221·1)	(−2·2)	(597)	(3375)	(3454)
138·452		·928	302·3					221
		·923	287·9					435
		·845	237·1					247
		·837	312·0					222
	12352	·893	251·4	268·8	−17·5	58	379	489*c*
	12341	·823	294·9	258·4	+18·9	60	363	622*nf*
	12343	·737	228·7	246·4	−30·7	7	23	118*c*
C	12356	·553	339·3	219·4	+28·9	1	5	
	12347	·288	174·1	204·7	−18·7	23	105	
	12348	·429	19·4	197·7	+21·7	7	35	
	12349	·381	127·7	188·4	−15·4	231	1339	
	12351	·634	40·2	179·3	+27·0	40	242	
	12350	·628	57·5	172·8	+17·9	72	532	
	12355	·923	78·5	140·1	+ 9·8	46	201	464*c*
		·820	124·7					425
		·943	123·1					191
May 19			(−19·9)	(206·5)	(−2·1)	(545)	(3224)	(3434)
1937.			°	°	°			
139·328		·965	292·0					291
		·960	301·6					120
		·943	283·2					142
		·934	240·2					251
		·841	313·6					200
	12352	·969	252·4	270·3	−17·5	94	571	515*c*
	12341	·914	291·8	258·5	+19·0	64	374	992*nf*
	12343	·834	233·7	246·1	−30·7	2	4	242*c*
	12356	·633	322·6	220·7	+28·3	3	6	
	12346	·229	242·1	206·6	− 8·1	3	9	
G	12345	·450	337·1	205·8	+22·4	1	3	
	12347	·337	208·9	204·8	−19·1	28	128	
	12348	·412	354·2	197·5	+22·1	10	23	
	12349	·249	156·0	188·9	−15·1	215	1143	
	12357	·483	20·4	184·3	+24·8	3	4	
	12351	·544	27·2	178·8	+26·9	40	235	
	12350	·490	45·5	173·4	+18·2	99	515	
	1119f	·465	124·8	171·4	−17·2	3	5	
	12358	·630	118·2	159·1	−18·8	3	6	
	12355	·829	76·7	140·2	+ 9·8	45	234	497*c*
	12359	·976	109·7	117·9	−19·6	81	488	223*c*
		·860	33·3					106
		·988	79·3					85
May 20			(−19·6)	(194·9)	(−2·0)	(694)	(3748)	(3664)
140·421		·981	241·4					144
		·922	309·1					198
G		·873	257·0					111
		·853	287·1					200
	12352	·997	251·4	266·3	−18·7	30	165	
	12341	·982	289·9	258·1	+19·1	47	383	962*nf*
	12343	·923	237·5	244·9	−30·5	0	6	359*f*
	12347	·494	233·4	205·2	−18·8	14	55	
	12348	·463	326·9	195·8	+20·9	23	92	
	12349	·281	214·3	189·9	−15·2	253	1484	
	12357	·455	351·0	185·0	+24·6	9	20	
	12351	·483	4·1	178·3	+26·8	39	247	
	12350	·366	20·6	172·8	+18·1	97	435	
	12360	·372	153·5	170·3	−21·2	5	15	
	12358	·402	130·8	162·0	−16·9	3	6	

Group 12355. May 18–29. A regular spot followed by a somewhat smaller one which breaks up into a cluster after May 20 and has died out by May 25.
Group 12356. May 19–20. A single small spot.
Group 12357. May 20–21. A single spot on May 20: a pair on May 21.
Group 12358. May 20–24. Two or three small spots not seen on May 22 and 23.
Group 12359. May 20–June 1. Return of Group 12327. A large stable regular spot with one or two small companions northwards on May 27–29.
Group 12360. May 21–26. A diminutive group *sf* Group 12349.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
140·421	12355	·668	72·6	140·3	+10·0	50	290	
	12361	·852	76·5	123·3	+10·4	0	5	156*n*
G	12359	·897	111·1	118·0	−19·7	108	501	587*f*
	12362	·979	77·9	103·1	+11·4	187	1127	639*c*
May 21			(−19·3)	(180·5)	(− 1·9)	(865)	(4831)	(3356)
141·421		·981	292·8					413
		·952	307·0					227
		·935	235·4					349
		·922	285·0					262
		·886	296·6					151
		·829	308·8					193
	12347	·659	243·6	205·5	−18·3	6	20	
	12348	·595	311·2	195·8	+21·5	51	308	
	12349	·447	238·7	190·4	−15·0	192	1438	
G	12351	·505	341·0	177·8	+26·7	45	293	
	12350	·356	342·8	173·5	+18·1	73	370	
	12360	·343	188·1	170·2	−21·5	4	16	
	12363	·442	55·8	145·3	+12·7	5	15	
	12355	·489	65·5	140·5	+10·1	39	246	
	12361	·688	71·8	125·6	+11·1	25	82	
	12359	·784	114·0	117·9	−19·6	97	482	799*f*
	12362	·913	76·5	102·4	+11·6	201	1156	921*c*
		·856	65·6					164
May 22			(−19·0)	(167·2)	(−1·7)	(738)	(4426)	(3479)
142·367		·965	235·2					205
		·954	284·6					179
G		·903	303·9					184
		·870	260·3					484
		·853	288·4					433
	12347	·796	249·0	205·7	−17·5	9	38	
	12348	·734	300·5	197·0	+20·6	98	643	
	12349	·621	246·6	190·8	−15·5	213	1345	
	1119g	·563	306·5	183·0	+18·1	3	8	
	12351	·587	323·5	177·6	+26·6	37	243	
	12350	·458	317·7	173·6	+18·2	56	311	
	12360	·441	218·4	171·8	−21·7	3	6	
	1119h	·307	303·8	169·6	+ 8·2	3	5	
	12363	·252	27·8	147·9	+11·2	3	7	
	12355	·307	49·2	141·1	+10·0	34	189	
	1119i	·392	40·8	139·3	+15·6	3	6	
1937.			°	°	°			
142·367	12364	·378	64·2	134·7	+ 7·9	3	9	
	12361	·529	63·8	125·8	+12·0	27	121	
G	12359	·651	119·0	117·7	−19·6	102	492	
	12362	·796	74·6	103·4	+11·2	176	955	795*c*
		·838	119·8					457
		·947	121·5					148
		·988	84·3					180
May 23			(−18·6)	(154·7)	(−1·6)	(770)	(4378)	(3065)
143·408		·963	285·6					313
		·943	297·6					269
		·927	262·3					346
	12347	·916	251·1	206·3	−17·9	13	55	506*c*
	12348	·866	294·7	198·1	+20·4	192	1214	449*c*
	12349	·782	251·5	190·9	−15·2	207	1193	766*p*
	12351	·705	311·7	176·8	+26·6	35	203	
	12350	·606	302·7	173·1	+17·8	43	249	
G	12360	·580	232·8	170·6	−21·7	3	9	
	12358	·431	236·5	162·7	−15·1	8	31	
	12355	·196	356·5	141·6	+ 9·7	36	162	
	12365	·326	32·5	130·5	+14·4	4	14	
	12361	·345	49·0	125·6	+11·5	17	82	
	12359	·489	130·1	117·6	−19·7	99	465	
	12362	·634	70·7	103·5	+10·9	150	842	
	12366	·914	83·7	75·3	+ 5·1	6	11	323*f*
		·945	76·1					234
May 24			(−18·3)	(140·9)	(−1·5)	(813)	(4530)	(3206)
144·333		·968	261·5					223
	12347	·976	252·0	205·6	−17·8	4	20	504*c*
	12348	·946	291·8	197·7	+20·1	150	1175	1108*c*
	1119j	·897	279·7	191·7	+ 8·0	2	6	135*p*
	12349	·887	252·8	190·2	−15·8	154	985	1301*c*
	12351	·813	304·8	176·9	+26·7	27	139	175*c*
	12350	·752	295·6	174·0	+17·9	48	227	
G	12363	·411	305·2	148·7	+12·4	1	4	
	12355	·302	308·4	142·5	+ 9·4	24	133	
	12365	·277	352·5	130·8	+14·5	4	17	
	12361	·233	12·0	125·9	+11·7	11	54	
	12359	·364	149·7	117·5	−19·6	93	478	
	12362	·471	63·4	103·4	+10·8	150	816	
	12366	·813	82·7	74·9	+ 5·1	20	70	247*f*
		·867	74·2					292
May 25			(−18·0)	(128·7)	(−1·4)	(688)	(4124)	(3985)

Group 12361. May 21–June 1. A disturbed area continuing to be shown by individually unstable and short-lived spots. Fresh activity occurs towards the west limb.
Group 12362. May 21–June 2. A large spot usually of regular outline but elongated in an east to west direction. The spot is accompanied by companions, the most stable being a small regular spot preceding.
Group 12363. May 22–29. One or two small unstable spots, not seen on May 24 and 26, *np* Group 12355.
Group 12364. May 23-29. One or two tiny spots seen only on May 23, 26 and 29.
Group 12365. May 24–25. A diminutive group *np* Group 12361.
Group 12366. May 24–31. A small but persistent stream.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
145·538		·968	280·6					233
		·891	307·9					410
	12348	·989	291·8	192·9	+21·3	52	186	562*p*
	12349	·973	254·4	189·0	−15·4	193	860	1299*c*
	12350	·913	290·1	176·7	+17·7	29	152	732*c*
	12351	·924	299·6	176·5	+26·6	30	97	273*c*
	12360	·871	245·5	171·2	−21·8	2	7	102*f*
	12355	·525	289·8	142·7	+ 9·1	19	97	
G	12364	·427	291·8	136·3	+ 7·9	3	10	
	12361	·375	310·2	129·8	+12·7	10	27	
	12359	·324	194·1	117·6	−19·5	92	427	
	12367	·358	162·2	106·1	−21·1	3	9	
	12362	·267	37·5	103·3	+10·9	120	705	
	12366	·619	80·8	75·2	+ 4·6	9	19	
		·949	102·6					257
		·956	77·2					161
		·957	67·5					309
May 26			(−17·6)	(112·8)	(−1·3)	(562)	(2596)	(4338)
146·383		·930	301·9					284
		·895	254·8					114
		·816	236·9					167
	12350	·980	287·9	179·0	+17·3	22	123	1066*nf*
	12349	·978	253·4	179·0	−16·4	33	92	545*p*
	12351	·974	297·7	176·0	+26·6	0	11	413*c*
	12363	·758	287·5	149·1	+12·3	2	4	
	12355	·675	284·5	142·8	+ 8·8	12	93	
G	12361	·488	302·6	126·6	+14·1	8	27	
	12359	·404	219·3	117·3	−19·3	97	459	
	12367	·385	188·6	105·2	−23·5	3	10	
	12362	·212	351·7	103·4	+10·9	117	661	
	12366	·474	77·3	74·1	+ 4·9	23	62	
		·870	63·3					311
		·887	104·6					256
		·962	65·3					247
		·982	97·4					223
May 27			(−17·3)	(101·6)	(−1·2)	(317)	(1542)	(3626)
147·326		·978	298·2					258
		·973	285·5					511
G		·968	256·1					135
	12363	·883	285·0	149·8	+12·7	2	10	152*c*
	12355	·818	281·4	143·1	+ 8·6	12	59	118*n*
	12361	·613	293·1	124·3	+13·0	14	66	
	12359	·549	234·5	117·3	−19·5	88	450	
	12367	·466	212·8	105·1	−24·0	3	9	

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
147·326	12362	·318	311·2	103·1	+11·0	114	692	
	12366	·282	69·0	73·9	+ 4·8	26	98	
G		·810	61·9					214
		·929	97·5					214
		·937	59·3					210
		·962	116·6					115
May 28			(−17·0)	(89·1)	(−1·1)	(259)	(1384)	(1927)
148·356		·974	295·2					124
		·947	242·1					353
		·923	254·6					94
		·908	291·5					270
	12363	·962	281·8	148·9	+11·1	4	13	310*c*
	12355	·930	279·4	143·3	+ 8·4	12	43 }	416*c*
	12364	·878	279·8	136·2	+ 8·1	2	11 }	
	12361	·753	287·5	122·7	+12·5	24	85	241*c*
G	12359	·706	242·8	117·1	−19·4	89	434	
	12362	·505	294·2	103·4	+11·1	125	701	
	12366	·109	19·4	73·4	+ 4·9	24	57	
	1119k	·324	172·6	73·0	−19·6	3	18	
	12367*	·482	51·8	52·3	+16·4	5	10	
	12368	·993	76·9	353·0	+12·9	37	151	296*c*
		·899	54·9					311
		·913	118·2					217
May 29			(−16·6)	(75·5)	(−0·9)	(325)	(1523)	(2632)
149·311		·966	280·1					500
		·936	291·6					134
	1119l	·979	244·9	140·0	−24·7	12	43	219*c*
	12361	·866	284·9	121·5	+12·4	27	204	274*c*
	12359	·833	246·7	117·0	−19·7	107	466	
G	12362	·670	287·1	103·3	+10·7	105	864	
	12366	·210	297·7	73·5	+ 4·8	7	32	
	12367*	·317	22·3	55·6	+16·2	10	28	
	12368	·958	76·7	350·3	+12·5	96	629	871*c*
		·911	65·1					247
		·922	118·3					205
May 30			(−16·3)	(62·8)	(−0·8)	(364)	(2266)	(2450)
150·336		·940	293·5					149
		·837	237·7					296
G		·818	291·3					168
	12361	·955	283·1	121·2	+12·2	64	302	519*c*

Group 12367. May 26–28. One or two small spots in the wake of Group 12359.
Group 12367*. May 29–June 5. A rapidly changing group *nf* Group 12369.
Group 12368. May 29–June 11. A large composite cluster or stream with three chief nuclei.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
150·336	*1119m*	·931	254·7	117·1	−14·4	7	12	62*c*
	12359	·933	248·9	116·8	−19·8	75	382	287*f*
G	12362	·823	283·7	103·6	+10·8	104	683	379*c*
	12366	·398	283·3	72·1	+ 4·6	3	4	
	12367*	·308	338·6	56·0	+15·9	42	167	
	12368	·870	74·7	350·1	+12·9	126	662	740*c*
		·917	116·6					51
May 31			(−15·9)	(49·3)	(−0·7)	(421)	(2212)	(2651)
151·334		·894	235·0					394
		·837	291·7					187
	12361	·990	282·3	117·3	+12·1	31	206	126*f*
	12359	·987	249·7	116·2	−20·1	82	388	586*sf*
	12362	·929	282·1	103·6	+11·0	103	531	726*c*
G	12369	·434	300·2	58·6	+12·0	18	65	
	12367*	·419	315·3	53·9	+16·7	45	302	
	12368	·746	71·9	349·6	+12·9	130	1073	402*f*
		·942	78·1					287
		·977	105·0					327
June 1			(−15·5)	(36·1)	(−0·6)	(409)	(2565)	(3035)
152·407		·975	244·5					263
		·916	290·5					141
		·901	235·2					136
		·818	276·8					365
	12362	·992	280·9	104·3	+10·8	42	210	765*nf*
	12369	·647	291·3	60·0	+13·2	30	196	
	12367*	·586	300·7	53·6	+17·0	35	186	
G	12370	·334	209·7	31·8	−17·2	4	16	
	12368	·580	66·2	349·0	+13·1	145	1085	
	12371	·961	79·3	308·5	+10·1	0	12	338*c*
	12372	·998	78·5	295·7	+11·5	30	217	
		·841	76·5					168
		·887	67·1					147
		·921	106·0					422
		·969	66·7					173
June 2			(−15·1)	(21·9)	(−0·4)	(286)	(1922)	(2918)
153·332		·916	276·0					352
		·902	295·2					92
G		·899	284·5					142
	12369	·807	288·0	61·8	+14·2	52	250	279*c*

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	5 °	°			
153·332	12367*	·733	293·7	4·0	+16·9	30	175	
	12370	·466	232·0	32·1	−16·9	8	23	
G	12368	·419	56·6	348·6	+13·0	158	1062	
	12371	·879	78·9	308·8	+ 9·6	9	33	300*c*
	12372	·969	78·4	294·4	+11·2	123	615	515*c*
		·834	107·4					278
		·916	98·4					85
		·916	66·9					98
June 3			(−14·8)	(9·6)	(−0·3)	(380)	(2158)	(2141)
154·339		·973	276·2					204
	12369	·931	285·5	63·9	+14·3	29	205	279*f*
	12367*	·871	289·8	55·0	+17·0	9	27	249*c*
	1120a	·814	253·1	49·4	−13·8	8	12	140*c*
	12370	·619	241·0	30·8	−17·6	15	67	
	12373	·199	357·8	356·7	+11·2	9	26	
	12368	·257	28·6	349·1	+12·8	142	1130	
G	12374	·335	60·0	339·3	+ 9·4	5	12	
	12371	·716	74·6	311·8	+10·8	18	45	284*c*
	12372	·897	77·0	293·4	+11·5	111	667	870*c*
	12375	·966	106·2	282·1	−15·7	27	87	396*c*
		·803	61·5					247
		·888	114·8					284
		·975	74·4					431
June 4			(−14·4)	(356·3)	(−0·2)	(373)	(2278)	(3384)
155·366		·919	255·7					159
		·893	297·2					121
	12369	·990	284·8	64·0	+14·7	24	158	390*f*
	12367*	·940	288·9	51·4	+17·6	0	7	634*p*
	12370	·782	248·0	31·8	−17·0	11	38	150*c*
	12376	·455	284·8	9·0	+ 8·3	8	17	
	12377	·591	206·2	0·5	−31·9	6	14	
G	12373	·324	305·8	358·1	+10·8	7	14	
	12368	·247	333·1	349·2	+12·5	133	1019	
	12371	·534	69·1	312·3	+10·9	19	60	
	12372	·767	75·2	293·8	+11·2	121	639	510*f*
	12375	·887	107·6	281·5	−15·6	27	152	685*f*
		·937	71·4					598
		·969	60·9					191
June 5			(−14·0)	(342·7)	(−0·1)	(356)	(2118)	(3438)

Group 12369. June 1–5. A stream in which the leader becomes a fairly large regular spot which alone remains by June 3.
Group 12370. June 2–7. A smallish stream of unstable spots.
Group 12371. June 2–8. A stream of unstable spots preceding Group 12372.
Group 12372. June 2–15. A large regular spot with a number of companions that die out as the west limb is approached.
Group 12373. June 4–6. A small double spot immediately preceding Group 12368.
Group 12374. June 4–7. A pair of small spots on June 4: a single faint spot on June 7, *sf* Group 12368.
Group 12375. June 4–15. A regular spot diminishing rapidly as it nears the west limb.
Group 12376. June 5–6. A tiny group.
Group 12377. June 5–9. A stream of small active spots.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
156·378		·989	289·0					210
		·960	258·0					141
		·955	295·2					144
		·805	258·8					81
	12370	·907	252·0	33·1	−16·3	34	133	314*c*
	12376	·669	279·4	10·7	+ 6·3	1	5	
	12377	·718	221·4	3·4	−32·5	24	89	
	12373	·520	290·4	358·9	+10·4	3	6	
G	12368	·403	303·2	349·4	+12·7	134	864	
	12371	·334	55·6	313·1	+10·8	13	42	
	12372	·588	70·4	295·1	+11·3	118	556	
	12375	·762	111·0	281·8	−15·8	21	141	625*f*
		·821	69·2					548
		·923	55·8					177
		·943	121·6					163
		·954	68·7					713
June 6			(−13·6)	(329·3)	(0·0)	(348)	(1836)	(3116)
157·333		·909	261·0					143
		·904	304·8					174
	12370	·977	253·4	33·6	−16·1	48	225	650*c*
	12377	·818	228·2	3·0	−32·8	35	146	196*c*
	12368	·575	292·8	349·5	+13·0	120	801	
	12374	·437	290·0	341·1	+ 8·7	3	9	
	12371	·198	13·2	314·1	+11·2	6	26	
G	12378	·294	141·7	306·0	−13·1	5	20	
	12372	·418	62·6	294·6	+11·2	123	557	
	12375	·612	116·4	282·2	−15·5	38	174	
	12379	·695	74·3	273·9	+11·0	3	10	
		·834	64·0					373
		·934	68·0					842
		·947	53·8					169
		·955	101·0					438
June 7			(−13·2)	(316·7)	(+0·2)	(381)	(1968)	(2985)
158·348		·938	274·8					132
		·833	280·8					301
G	12377	·905	232·2	2·0	−33·5	29	144	380*c*
	12368	·741	287·1	349·6	+12·8	97	674	
	12371	·237	324·6	311·2	+11·4	1	5	
	12378	·241	197·8	307·5	−12·9	3	8	
	12372	·254	36·9	294·3	+11·9	86	448	
1937.			°	°	°			
158·348	12375	·444	128·2	282·1	−15·5	26	165	
	12379	·507	70·7	274·3	+ 9·9	3	4	
G		·868	63·4					724
		·882	103·0					399
		·956	74·2					588
		·961	52·8					358
June 8			(−12·8)	(303·2)	(+0·3)	(245)	(1448)	(2882)
159·338		·928	294·4					138
	12377	·957	235·2	359·3	−32·9	8	24	369*c*
	12368	·870	284·4	349·6	+12·7	105	732	489*c*
	12372	·220	341·0	294·3	+12·4	76	399	
	12375	·305	153·4	282·0	−15·4	29	153	
G	12380	·992	79·8	207·6	+10·2	88	420	
		·783	103·2					166
		·905	125·4					240
		·917	73·0					384
		·938	100·4					263
June 9			(−12·4)	(290·1)	(+0·4)	(306)	(1728)	(2049)
160·402	12368	·963	283·3	349·9	+12·9	93	624	820*c*
	1120b	·710	251·5	319·6	−12·7	4	10	
	12372	·370	304·9	294·1	+12·7	80	402	
	12375	·294	199·8	282·0	−15·5	31	140	
	12381	·476	49·7	253·7	+18·4	3	12	
	12382	·922	103·5	209·8	−12·2	3	18	163*c*
G	12380	·935	79·1	207·4	+10·4	83	482	392*nf*
	12383	·974	105·5	200·1	−15·0	130	1128	481*c*
	12384	·976	68·3	199·8	+21·2	100	648	491*c*
		·828	69·8					297
		·903	128·9					132
		·911	115·1					215
		·945	95·5					121
June 10			(−11·9)	(276·1)	(+0·5)	(527)	(3464)	(3112)
161·329		·914	237·5					146
		·891	281·5					276
G		·820	252·8					136
	12368	·993	283·5	346·7	+13·5	57	224	302*f*

Group 12378. June 7–8. A small group.
Group 12379. June 7–8. A tiny spot.
Group 12380. June 9–21. A large regular spot with occasional companions; a small nucleus becomes detatched from the southern part of the parent spot on June 17.
Group 12381. June 10–14. A small typical bi-polar group.
Group 12382. June 10–11. A single spot *p* Group 12383.
Group 12383. June 10–21. A stream in which the leader is a regular spot and the follower a cluster of three spots which disintegrate and die out by June 19.
Group 12384. June 10–22. Return of Group 12348. A triple formation of spots followed by a sparse train that has died out by June 18. Only two of the three spots at the head of the group remain by June 18. These continue stable in position with respect to one another.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
161·329	12372	·540	293·7	294·2	+13·0	70	354	
	12375	·408	227·3	281·8	−15·4	13	96	
G	12381	·359	28·9	253·3	+18·8	25	106	
	12382	·822	105·3	209·8	−12·1	4	14	644c
	12383	·910	106·5	199·6	−14·7	134	776	
	12380	·839	77·9	207·5	+10·4	111	565	505f
	12384	·927	66·9	197·6	+21·5	123	696	746c
	12385	·973	106·5	187·2	−15·9	4	11	536f
		·841	64·5					259
		·854	118·4					218
		·947	57·1					194
June 11			(−11·5)	(263·8)	(+0·6)	(541)	(2842)	(3962)
162·402		·976	282·0					342
		·939	253·4					379
		·934	295·0					270
		·880	282·9					324
		·851	259·2					255
		·819	245·8					184
	12372	·719	288·1	294·1	+13·5	58	281	
	12375	·577	240·8	281·0	−15·6	13	71	
C	12386	·415	329·9	262·5	+21·8	49	174	
	12381	·324	352·6	252·1	+19·4	42	135	
	12380	·685	75·3	207·4	+10·5	136	696	374f
	12383	·791	109·9	199·4	−15·0	151	732	467c
	12384	·822	64·3	197·1	+21·3	132	683	811c
	12385	·887	108·3	188·8	−15·8	19	83	848c
	12387	·947	72·7	179·2	+16·6	6	20	628c
	12388	·970	105·1	174·6	−14·4	4	14	263f
	12389	·980	81·9	171·4	+ 8·1	10	54	226c
		·968	57·5					139
June 12			(−11·1)	(249·6)	(+0·8)	(620)	(2943)	(5510)
163·394		·971	280·4					320
		·965	260·1					218
C		·945	292·5					243
		·898	243·9					332
1937.			°	°	°			
163·394	12372	·853	285·5	293·9	+13·6	55	312	643c
	12375	·726	247·3	280·3	−15·5	9	26	
C	12386	·544	311·2	262·4	+21·7	47	268	
	12381	·410	323·7	251·3	+20·1	18	68	
	12390	·553	3·5	234·1	+34·3	1	4	
	1120c	·253	24·4	230·2	+14·1	2	10	
	12380	·510	70·3	207·3	+10·7	93	585	
	12383	·642	114·5	199·4	−14·7	101	562	
	12384	·692	59·3	196·9	+21·3	124	602	393f
	12385	·779	110·5	187·5	−15·2	82	333	446c
	12387	·857	71·3	178·8	+16·4	5	9	1314f
	12389	·916	81·3	170·4	+ 8·3	9	27	205c
	12388	·912	106·3	172·0	−14·4	11	38	247c
	12391	·977	81·3	159·0	+ 8·7	9	37	428c
		·835	104·1					101
		·912	113·9					108
		·925	56·1					226
June 13			(−10·7)	(236·4)	(+0·9)	(566)	(2881)	(5224)
164·417		·970	253·3					149
		·831	285·6					372
		·774	239·4					118
	12372	·949	284·2	293·9	+13·8	44	239	619f
	12375	·861	251·2	280·5	−15·5	5	14	208c
	12386	·698	300·6	263·0	+21·5	52	270	
	12381	·557	307·3	251·0	+20·5	8	23	
	12390	·566	345·8	232·5	+34·1	5	25	
G	12380	·310	57·1	207·6	+10·7	117	600	
	12383	·461	124·5	199·9	−14·2	102	520	
	12384	·534	48·6	197·5	+21·5	108	627	
	12385	·633	116·8	187·1	−15·7	160	923	
	12392	·733	62·2	179·2	+20·7	4	13	
	12387	·722	67·8	178·9	+16·5	6	10	
	12388	·808	108·9	170·9	−14·5	19	69	134c
	12389	·795	80·5	170·7	+ 8·2	4	7	164c
	12391	·893	80·8	160·1	+ 8·6	6	15	598f
		·860	68·9					585
June 14			(−10·2)	(222·9)	(+1·0)	(640)	(3355)	(2947)

Group 12385. June 11–23. One or two small spots, *f* Group 12383, developing rapidly into a very large stream whose axis is inclined about 30° to the sun's equator when the group is on the central meridian. The leader is a regular spot with a double umbra at first. The follower also becomes regular in outline. Probable return of Group 12349 but possibly a revival only.

Group 12386. June 12–17. A stream of normal type of rapid initial development. The leader, a regular spot, alone remains on June 17.

Group 12387. June 12–18. Return of Group 12350; 3rd appearance. A small spot followed by a very extensive area of faculæ in which Group 12391 also appears.

Group 12388. June 12–23. A few small spots developing rather slowly into a stream in which there is marked separation between leader and follower. The leader approaches very closely to a component of Group 12385, but stops short of absorbing it.

Group 12389. June 12–23. A disturbed area in which a few small spots make little headway in development until June 20, when a moderate-sized stream results.

Group 12390. June 13–17. A short-lived cluster of small spots.

Group 12391. June 13–15. A doubtful spot on June 13: small pair on June 14; one spot remains on June 15.

Group 12392. June 14–15. A tiny cluster.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
165·370		·927	286·6					319
		·895	245·3					184
		·877	303·6					249
	12372	·993	283·8	293·2	+13·8	49	236	300*c*
	12375	·945	253·2	279·9	−15·5	0	3	216*c*
	12386	·827	295·0	263·5	+21·0	50	224	184*c*
	12390	·646	330·2	233·3	+35·0	15	36	
	12380	·168	14·9	207·8	+10·4	166	598	
	12383	·312	149·3	200·9	−14·4	101	414	
	12384	·398	28·8	198·5	+21·4	100	510	
G	12385	·480	126·0	186·7	−15·3	217	1009	
	12387	·573	62·4	178·5	+16·3	9	14	
	12392	·611	54·6	178·1	+21·6	3	9	
	12388	·663	114·2	171·7	−14·9	35	154	
	12389	·637	77·8	171·4	+ 8·6	3	7	
	12391	·756	80·0	161·7	+ 8·3	0	4	562*f*
	12393	·972	78·2	134·3	+11·7	125	759	655*c*
		·864	115·4					137
		·915	47·1					198
		·933	67·9					151
		·950	114·8					101
		·962	100·4					144
June 15			(−9·8)	(210·3)	(+ 1·1)	(813)	(3977)	(3404)
166·358		·983	284·6					184
		·968	247·8					204
		·924	302·8					172
		·863	245·3					225
		·833	312·6					62
	12386	·931	291·7	264·5	+20·6	32	234	391*c*
	12390	·740	320·7	232·4	+35·8	7	25	
	12380	·242	311·0	207·8	+10·3	139	715	
G	12383	·280	193·6	201·1	−14·5	48	386	
	12384	·350	357·6	198·1	+21·6	102	521	
	12385	·305	152·0	188·7	−14·4	202	1045	
	12387	·403	49·3	178·7	+16·3	7	13	
	12389	·386	68·6	176·0	+ 9·1	3	14	
	12388	·484	124·5	172·9	−14·8	47	288	
	12393	·900	77·3	133·6	+11·9	163	763	391*c*
	12394	·989	78·0	116·0	+12·0	23	69	481*p*
		·853	102·3					251
		·961	104·0					154
June 16			(−9·4)	(197·2)	(+ 1·2)	(773)	(4073)	(2515)
1937.			°	°	°			
167·335		·953	246·8					142
		·897	254·8					175
		·882	295·8					338
	12386	·990	289·7	265·9	+19·7	31	127	406*f*
	12390	·828	314·4	231·4	+36·3	4	12	198*c*
	12380	·426	291·4	208·0	+10·2	118	717	
	12383	·394	226·2	201·3	−14·4	58	341	
	12384	·413	326·4	198·4	+21·3	85	462	
G	12385	·276	195·8	188·7	−13·9	274	1458	
	12389	·184	25·3	179·7	+11·0	12	31	
	12387	·275	19·6	178·8	+16·3	5	6	
	12388	·319	148·5	174·4	−14·4	128	422	
	12395	·545	31·4	165·5	+28·9	13	31	
	12393	·779	75·4	134·0	+12·2	149	783	245*c*
	12394	·952	78·0	112·5	+11·9	54	221	891*c*
	12396	·962	113·4	112·3	−22·0	54	293	417*c*
		·856	102·8					159
June 17			(−9·0)	(184·3)	(+ 1·4)	(985)	(4904)	(2971)
168·435		·968	295·5					216
		·966	257·4					209
		·910	286·0					295
		·904	307·9					208
		·866	316·1					194
		·825	291·5					162
	12380	·638	284·4	208·4	+10·3	123	589	
	12383	·598	244·0	203·2	−13·9	34	200	
	12384	·581	307·2	199·5	+21·8	62	309	
G	12385	·418	233·1	189·7	−13·1	232	1236	
	12389	·236	313·1	179·8	+10·7	3	7	
	12387	·298	329·1	178·8	+16·3	3	5	
	12388	·285	204·8	176·7	−13·5	94	478	
	12395	·472	8·1	165·3	+29·2	5	13	
	12397	·272	54·5	156·7	+10·5	11	32	
	12393	·600	71·5	134·3	+12·2	126	728	
	12394	·854	77·0	111·7	+11·9	83	399	1232*c*
	12396	·880	116·5	111·6	−22·3	55	300	640*f*
	1120d	·885	68·7	108·9	+19·4	0	5	
	12398	·955	102·1	97·9	−11·1	8	15	192*c*
June 18			(−8·5)	(169·7)	(+ 1·5)	(839)	(4316)	(3348)

Group 12393. June 15–26. A very large regular spot from which a considerable part breaks away on June 16–17 and drifts forward in longitude. This, in turn, breaks up into a cluster by June 21, the leading member of which survives after June 24 as a composite spot. Meanwhile the parent spot regains a regular outline but decreases, slowly at first and then rapidly.

Group 12394. June 16–28. A group of stream type consisting of leader and follower which are both regular spots. There is a companion spot to the leader on June 18, 27 and 28.

Group 12395. June 17–24. A small stream originating on June 17 with its axis nearly at right angles to the sun's equator; by June 20 the axis is approximately parallel to the equator.

Group 12396. June 17–29. Probable return of Group 12359. A stable regular spot slowly diminishing.

Group 12397. June 18–21. A sparse stream of small faint spots.

Group 12398. June 18–20. A very small spot on each day.

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U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
169·381		·962	284·5					310
		·956	305·4					329
		·936	256·7					241
		·882	289·5					217
	12380	·788	281·9	208·6	+10·3	104	529	
	12383	·768	250·5	205·2	−13·8	36	179	
	12384	·719	299·3	199·5	+21·7	59	291	
	12385	·575	243·1	188·9	−13·7	272	1266	
	12389	·377	291·6	177·9	+ 9·4	3	5	
	12388	·431	231·5	177·4	−14·0	124	545	
G	*1120e*	·345	335·6	165·9	+19·8	3	10	
	12395	·474	343·9	165·8	+28·6	8	34	
	12397	·159	2·1	156·9	+10·7	12	46	
	12393	·423	63·6	134·5	+12·2	109	679	
	12399	·547	66·5	126·2	+13·9	4	11	
	12394	·722	75·5	111·9	+11·5	55	242	
	12396	·776	120·5	111·2	−22·0	55	296	481*f*
	12398	·833	105·3	102·3	−11·7	4	13	279*f*
		·874	82·1					183
		·878	71·3					323
		·953	121·9					412
		·964	82·1					265
June 19			(−8·1)	(157·2)	(+ 1·6)	(848)	(4146)	(3040)
170·497		·957	266·0					156
		·918	241·3					121
	12380	·920	280·6	209·0	+10·4	110	539	542*c*
	12383	·901	253·8	205·1	−13·8	36	163	533*c*
	12384	·858	294·6	199·3	+21·8	43	243	546*c*
	12385	·763	251·1	190·0	−13·1	238	1175	
	12389	·629	285·2	180·4	+10·8	38	153	
G	12388	·626	245·1	178·0	−13·8	137	675	
	12395	·572	320·0	166·8	+27·4	20	99	
	12397	·302	300·6	157·7	+10·4	3	11	
	12393	·227	37·2	134·4	+12·1	96	603	
	12399	·349	57·0	125·0	+12·5	3	5	
	12394	·539	72·5	111·0	+10·7	52	231	
	12396	·633	129·3	110·6	−22·1	53	293	
	12398	·677	109·2	101·8	−11·5	5	12	
		·811	126·9					269
		·958	77·2					286
June 20			(−7·6)	(142·4)	(+ 1·7)	(834)	(4202)	(2453)

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
171·333		·959	239·0					139
	12380	·976	280·2	208·8	+10·4	83	477	655*nf*
	12383	·968	255·8	205·8	−13·2	45	139	359*c*
	12384	·934	292·8	199·2	+21·8	44	259	715*f*
	12385	·872	254·0	190·5	−13·0	205	1174	1097*c*
	12389	·789	282·6	182·9	+11·0	67	331	
	12388	·766	250·5	179·2	−13·6	98	571	
	12395	·677	310·5	166·7	+27·5	19	64	
	12397	·556	288·6	163·8	+11·7	3	14	
G	*1120f*	·419	253·0	155·0	− 5·3	1	3	
	12393	·199	342·0	135·0	+12·7	106	562	
	12400	·199	196·1	134·6	− 9·1	9	21	
	12394	·374	65·5	111·2	+10·5	42	223	
	12396	·524	140·0	110·2	−21·9	55	262	
	12401	·961	103·0	58·5	−11·9	0	16	529*c*
	12402	·979	101·0	54·0	−10·4	105	443	
		·838	129·0					335
		·924	80·0					290
		·952	71·3					621
		·984	83·2					126
June 21			(−7·2)	(131·4)	(+ 1·8)	(882)	(4559)	(4866)
172·339		·981	263·1					174
		·976	281·9					270
		·938	262·0					132
		·825	294·8					407
	12384	·988	291·8	198·8	+21·8	55	268	971*f*
	12385	·957	255·2	189·9	−13·5	220	1050	1058*c*
	12389	·908	280·8	182·9	+10·6	117	431	607*c*
	12388	·896	254·6	180·1	−12·8	99	470	444*c*
	12395	·781	306·4	163·7	+28·9	30	71	120*c*
	12400	·362	238·5	136·1	− 9·0	15	55	
G	12393	·356	302·4	135·9	+12·8	97	417	
	1120g	·166	183·1	118·5	− 7·6	3	9	
	12403	·305	2·8	117·1	+19·6	1	4	
	12394	·196	38·8	110·9	+10·6	32	181	
	12396	·426	161·5	109·7	−21·8	45	254	
	12404	·388	131·8	100·8	−13·1	3	10	
	12401	·886	105·8	57·2	−13·1	33	125	651*c*
	12402	·916	102·6	52·8	−10·7	76	585	
	12405	·981	107·8	40·6	−17·0	58	343	251*f*
		·807	79·3					276
		·866	68·0					469
		·913	82·8					237
June 22			(−6·8)	(118·0)	(+ 1·9)	(884)	(4273)	(6067)

Group 12399. June 19–20. A small spot in the wake of Group 12393.
Group 12400. June 21–23. An ephemeral, diminutive stream.
Group 12401. June 21–July 2. A stream of small undeveloped spots closely *p* Group 12402.
Group 12402. June 21–July 3. A stream of normal type in which the leader a regular spot is the predominant spot.
Group 12403. June 22–28. A small stream of simple formation — leader and follower.
Group 12404. June 22–24. A pair of small spots.
Group 12405. June 22–July 4. A spot whose regular outline is modified by a " bridge " crossing the upper half of the spot and separating off a portion of the umbra. There is a clockwise rotation of the spot that is most marked between June 26 and 30. A possible return of Group 12370.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
173·345		·978	289·7					273
		·971	297·5					402
		·895	289·4					564
		·825	280·1					362
	12385	·987	252·3	184·1	−17·1	73	345	1064c
	12388	·981	257·3	182·5	−12·0	104	434	
	12389	·974	280·2	181·5	+10·4	76	353	880c
	12395	·901	299·6	166·4	+27·4	26	121	358c
	12400	·582	251·1	138·4	− 9·1	5	14	
	12393	·553	289·9	136·8	+12·6	69	488	
G	12403	·431	322·8	120·9	+22·0	10	21	
	12394	·201	319·1	112·4	+10·8	23	98	
	12396	·416	190·1	109·2	−22·0	53	267	
	12404	·268	161·7	99·8	−12·6	11	24	
	12401	·760	108·9	57·4	−12·8	31	131	
	12402	·790	105·3	54·1	−10·7	73	677	
	12405	·915	109·6	40·6	−16·9	66	308	534f
		·782	106·1					481
		·818	67·1					235
		·829	79·3					185
		·961	64·3					196
June 23			(−6·3)	(104·7)	(+ 2·1)	(620)	(3281)	(5534)
174·396		·978	253·1					289
		·966	288·2					502
		·941	307·7					245
		·937	279·3					290
		·865	280·5					211
	12395	·969	297·1	165·7	+26·8	18	90	482n
	12393	·731	285·2	136·9	+12·5	60	431	255c
	1120h	·594	282·0	126·7	+ 8·9	2	24	
	12406	·592	290·1	125·5	+13·5	0	4	
C	12403	·591	304·9	122·1	+21·6	31	137	
	12394	·413	292·9	113·5	+11·2	18	114	
	12396	·501	214·7	108·7	−22·1	47	229	
	12404	·287	210·9	99·4	−12·0	2	9	
	1120i	·165	43·4	84·2	+ 9·0	2	6	
	12407	·443	36·9	74·1	+22·8	6	12	
	12401	·577	115·7	58·7	−12·6	27	93	
	12402	·629	109·9	54·0	−10·5	103	604	
	12405	·799	112·9	40·8	−16·7	48	256	905f
	12408	·981	71·6	12·1	+18·5	35	153	247c
		·905	61·1					229
		·992	78·7					187
June 24			(−5·9)	(90·8)	(+ 2·2)	(399)	(2162)	(3842)
1937.			°	°	°			
175·368		·959	280·2					221
		·875	257·6					262
		·867	294·4					134
	12393	·868	283·0	137·8	+12·4	84	287	282c
	12403	·727	298·8	121·3	+22·1	35	156	
	12394	·600	285·8	113·9	+11·2	17	94	
G	12396	·626	228·6	108·4	−22·4	46	207	
	12407	·364	14·0	72·5	+22·8	3	5	
	12401	·382	130·6	60·8	−12·1	18	77	
	12402	·453	120·4	54·6	−11·1	132	763	
	12405	·662	118·1	40·7	−16·3	56	273	
	12408	·926	70·6	10·9	+18·8	39	141	321c
		·941	78·4					237
		·949	57·4					199
		·968	84·5					204
June 25			(−5·4)	(78·0)	(+ 2·3)	(430)	(2003)	(1860)
176·472		·960	259·9					211
		·955	292·3					237
		·877	281·1					630
	12393	·971	280·6	139·3	+10·8	18	86	768c
	12403	·863	294·7	121·0	+22·3	30	170	204c
	12394	·771	283·0	113·2	+11·5	24	102	
	12396	·769	238·0	107·9	−22·3	41	214	
	12401	·261	170·1	60·7	−12·5	17	108	
G	12402	·279	147·9	54·6	−11·2	109	504	
	12405	·491	130·2	40·4	−16·2	52	255	
	12409	·417	78·3	39·1	+ 7·0	5	13	
	12408	·813	68·5	10·5	+18·7	32	116	215c
		·855	80·2					217
		·865	123·3					148
		·900	55·1					127
		·914	70·8					135
		·956	78·5					563
June 26			(−4·9)	(63·3)	(+ 2·4)	(328)	(1568)	(3455)
177·315		·988	285·5					350
		·936	258·8					155
G		·784	252·0					151
	12406	·951	281·8	124·1	+12·0	3	14	543c
	12403	·952	292·4	123·7	+22·1	23	111	287f
	12394	·875	281·7	112·9	+11·4	33	145	305nf
	12396	·864	242·1	107·7	−22·4	44	238	366c
	12401	·306	213·3	62·1	−12·2	19	107	

Group 12406. June 24–27. A single, faint spot seen only on June 24 and 27.
Group 12407. June 24–25. A pair of spots on June 24: a single spot on June 25.
Group 12408. June 24–July 2. From June 24 to 28, a small regular spot preceded by a distant companion: on June 29–30, two unstable clusters: on July 1–2, a small faint stream.
Group 12409. June 26–28. A pair of spots on June 26–27 of which the following component remains on June 28.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
177·315	12402	·245	192·5	55·3	−11·3	98	490	
	12405	·373	147·9	40·4	−15·9	45	257	
G	12409	·236	67·9	39·5	+ 7·5	14	75	
	12408	·701	65·1	10·1	+19·0	16	98	
	1120j	·868	76·7	352·4	+12·8	0	5	499*f*
		·781	80·9					240
		·832	64·8					176
June 27			(−4·5)	(52·2)	(+ 2·5)	(295)	(1540)	(3072)
178·335		·968	252·7					235
		·910	255·3					143
		·849	287·7					239
		·833	231·9					249
	12403	·997	292·3	124·9	+22·5	12	98	295*f*
	12394	·964	281·1	113·2	+11·4	32	85	650*f*
G	12396	·950	245·4	107·6	−22·4	33	201	417*c*
	12401	·475	238·1	63·0	−12·1	12	46	
	12402	·364	229·7	55·1	−11·1	80	452	
	12405	·320	184·3	40·1	−15·9	51	250	
	12409	·109	358·8	38·8	+ 8·8	7	14	
	12410	·379	165·9	33·1	−18·9	4	8	
	12408	·539	57·8	10·0	+18·9	11	40	
		·826	71·0					467
		·948	75·5					279
		·953	105·5					227
		·981	97·7					338
June 28			(−4·1)	(38·7)	(+ 2·6)	(242)	(1194)	(3539)
179·331		·964	256·8					222
		·954	278·6					257
		·946	287·8					263
	12396	·994	247·4	107·4	−22·1	40	140	526*sf*
	12401	·676	248·2	65·3	−12·4	3	10	
	12402	·552	245·2	56·1	−11·0	58	338	
G	12405	·403	217·4	40·2	−16·0	41	190	
	12410	·393	201·8	34·3	−18·7	11	36	
	12408	·326	37·0	13·7	+17·7	11	41	
	12411	·589	67·0	351·4	+15·5	11	46	
	12412	·915	99·4	320·2	− 7·5	17	46	289*s*
		·874	110·2					318
		·880	77·2					288
June 29			(−3·6)	(25·5)	(+ 2·7)	(192)	(847)	(2163)
1937.			°	°	°			
180·411		·955	236·3					120
		·950	280·0					142
		·828	280·7					379
		·788	293·1					341
	12401	·779	253·4	60·5	−11·0	10	34	242*c*
	12402	·725	252·0	55·6	−10·8	45	293	
	12405	·566	236·1	40·3	−15·8	33	167	
	12410	·535	227·9	35·8	−18·3	7	40	
	12408	·273	347·1	14·9	+18·3	30	90	
C	12411	·400	55·5	351·3	+15·7	35	113	
	12413	·509	59·7	343·9	+17·4	2	8	
	12412	·768	103·2	322·3	− 8·2	3	7	372*f*
	12414	·983	76·5	291·7	+13·8	24	72	226*c*
		·812	113·7					381
		·889	67·5					295
		·922	96·5					201
		·931	77·8					378
		·931	105·9					217
		·968	67·2					212
June 30			(−3·1)	(11·2)	(+ 2·9)	(189)	(824)	(3506)
181·342		·956	280·1					195
		·862	290·7					612
	12402	·858	255·3	56·4	−11·0	54	251	928*c*
	12405	·709	243·5	40·1	−16·1	34	177	
	12408	·387	309·5	17·0	+17·0	8	25	
	12411	·257	29·3	351·4	+15·9	53	242	
	12413	·325	39·2	346·5	+17·5	10	29	
G	12414	·921	74·8	292·1	+15·2	20	74	162*c*
		·824	68·4					172
		·832	108·4					208
		·851	76·9					202
		·920	65·1					198
		·974	107·5					191
		·984	71·7					222
July 1			(−2·7)	(358·9)	(+ 3·0)	(179)	(798)	(3090)
182·320		·941	290·7					572
		·852	276·3					153
C	12401	·974	257·5	61·7	−11·4	9	36	544*c*
	12402	·941	257·3	54·8	−10·8	32	111	721*f*
	12405	·839	249·0	40·1	−15·6	35	159	653*sf*

Group 12410. June 28–30. One or two small spots in the wake of Group 12405.
Group 12411. June 29–July 8. Small spots which develop into a compact stream of normal type. Contrary to the usual life history, however, the leader breaks up first.
Group 12412. June 29–30. A pair of small spots on June 29 of which one is left on June 30.
Group 12413. June 30–July 3. A general area of slight disturbance *f* Group 12411.
Group 12414. June 30–July 5. Return of Group 12372. A small spot with companions for the first few days.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

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1937.			°	°	°			
182·320	12408	·565	296·8	17·7	+17·3	5	22	
	12411	·252	336·1	352·0	+16·3	57	365	
C	12413	·258	15·3	341·8	+17·4	9	34	
	12415	·463	126·3	323·5	−13·0	5	15	
	12416	·491	70·5	317·8	+12·1	2	7	
	12414	·814	73·3	292·2	+15·4	19	96	273*c*
	12417	·988	72·8	264·5	+17·5	12	53	
		·893	109·5					308
		·918	73·3					504
		·972	112·5					163
July 2			(−2·3)	(345·9)	(+3·1)	(185)	(898)	(3891)
183·375		·965	290·2					226
		·946	276·8					239
		·864	297·6					148
	12402	·995	258·2	55·2	−11·4	24	77	309*f*
	12405	·942	251·8	40·3	−15·9	34	156	640*f*
	12411	·389	307·2	350·8	+16·6	98	570	
	12413	·295	338·4	338·6	+19·0	1	4	
G	12415	·295	161·6	326·5	−13·0	1	5	
	12414	·670	70·8	291·2	+15·1	12	44	
	12418	·780	75·2	281·4	+13·5	14	41	
	12417	·932	72·1	263·6	+17·7	12	38	199*f*
		·818	113·6					159
		·856	68·8					322
		·932	113·8					141
		·959	62·2					341
July 3			(−1·8)	(332·0)	(+3·2)	(196)	(935)	(2724)
184·364		·945	297·5					220
		·827	289·9					315
	12405	·991	253·5	39·6	−15·8	32	170	702*f*
	1121a	·966	257·5	32·7	−11·1	8	34	207*c*
C	12411	·555	295·3	350·3	+16·5	86	603	
	12419	·450	139·8	301·3	−16·9	17	45	
	12414	·500	65·4	291·0	+14·9	8	31	
	12418	·624	72·3	281·4	+13·5	14	56	
	12417	·836	70·7	263·1	+17·9	8	33	388*f*
		·853	60·3					298
		·963	62·1					512
July 4			(−1·3)	(318·9)	(+3·3)	(173)	(972)	(2642)
1937.			°	°	°			
185·427		·927	288·8					458
		·852	275·8					256
	12411	·723	289·6	349·8	+16·4	91	511	158*p*
	12419	·351	175·4	303·1	−17·0	11	48	
	12414	·306	49·7	290·9	+14·7	2	10	
C	*1121b*	·404	121·7	284·5	− 9·0	2	9	
	12418	·451	65·9	279·8	+13·7	55	237	
	12417	·696	67·2	262·5	+18·1	9	40	122*f*
	12420	·962	110·0	232·9	−18·2	72	521	571*c*
		·877	61·7					253
		·937	73·7					341
July 5			(−0·9)	(304·8)	(+ 3·4)	(242)	(1376)	(2159)
186·510		·983	289·4					168
	12411	·861	287·3	349·3	+16·6	97	507	624*c*
	1121c	·544	250·3	321·5	− 7·5	8	33	
	12416	·495	291·3	318·7	+13·4	2	15	
	12419	·428	214·2	305·0	−17·3	10	25	
	12418	·234	42·3	281·2	+13·4	70	281	
	12421	·291	56·8	276·1	+12·5	10	25	
	12422	·403	66·3	268·4	+12·5	2	11	
C	12417	·527	60·0	261·9	+18·3	9	27	
	12423	·638	55·2	255·6	+24·1	12	53	
	12420	·873	113·2	233·1	−18·2	74	582	420*c*
	12424	·982	79·6	211·2	+10·9	57	272	390*p*
	12425	·993	97·1	208·0	− 6·6	37	163	
		·854	70·3					259
		·892	103·4					147
		·927	92·9					183
July 6			(−0·4)	(290·5)	(+ 3·5)	(388)	(1994)	(2191)
187·596		·836	248·2					164
	12411	·955	286·6	348·9	+16·9	61	270	641*c*
G	12419	·541	229·5	301·5	−17·2	40	226	
	12418	·196	329·6	281·9	+13·3	70	417	
	12421	·164	3·2	275·6	+13·0	5	19	
	12417	·351	43·0	261·6	+18·3	10	34	
	12423	·440	40·2	258·2	+23·0	103	424	
	12420	·744	118·4	232·8	−18·1	96	460	
	12424	·901	79·6	211·9	+10·9	84	311	426*c*

Group 12415. July 2–3. A pair of small spots on July 2: a single spot on July 3.
Group 12416. July 2–6. A small spot on July 2, a few faint spots on July 6.
Group 12417. July 2–12. Return of Group 12386. A small regular spot showing marked persistence.
Group 12418. July 3–12. A pair of small spots developing into a stream of rather variable components except the leader.
Group 12419. July 4–11. A small stream reduced to one component spot on July 6 but showing a fresh spurt of activity on July 7 and 8.
Group 12420. July 5–16. A typical stream, the leader surviving as a large regular spot.
Group 12421. July 6–9. One or two small spots closely following Group 12418.
Group 12422. July 6–10. Intermittent: a few small, faint spots.
Group 12423. July 6–15. A few small spots on July 6 developing rapidly into a large compact stream of normal type, that remains unusually constant in area.
Group 12424. July 6–18. Return of Group 12380. A stable regular spot which becomes almost absorbed by a newly developed Group 12431.
Group 12425. July 6–15. A small regular spot that dies out rather suddenly.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
187·596	12425	·936	98·6	207·6	− 6·7	34	131	368*c*
	12426	·981	104·8	198·8	−13·8	40	209	566*p*
G	12427	·992	74·8	192·9	+15·5	46	229	150*p*
		·805	80·4					175
		·808	94·0					132
		·928	120·0					215
		·930	47·0					150
		·943	111·2					632
		·971	68·0					332
July 7			(+0·2)	(276·1)	(+ 3·6)	(589)	(2730)	(3951)
188·339		·887	255·2					415
		·821	280·9					291
	12411	·984	286·4	346·4	+16·8	25	140	461*p*
	1121d	·964	245·9	337·7	−22·0	9	26	137*c*
	12419	·651	236·3	300·9	−18·1	54	268	
	12418	·323	301·3	282·7	+13·2	100	554	
	12421	·221	314·9	275·5	+12·6	5	19	
	12417	·269	19·7	260·8	+18·3	6	24	
	12423	·362	23·5	257·3	+23·0	171	896	
	12420	·641	123·9	232·5	−17·8	98	488	
G	12424	·820	79·4	211·4	+10·8	67	346	499*f*
	12425	·861	100·3	207·9	− 6·9	23	114	255*f*
	12428	·878	105·6	206·8	−11·8	0	9	135*c*
	12426	·936	105·9	198·7	−13·5	32	195	429*c*
	12429	·955	98·9	194·5	− 7·4	12	42	90*sf*
	12427	·958	75·2	192·8	+15·2	64	334	1112*c*
	12430	·983	100·7	187·9	− 9·8	78	525	364*c*
		·824	65·7					163
		·895	114·9					871
		·913	44·9					363
		·956	62·1					563
		·983	108·9					380
July 8			(+0·5)	(266·3)	(+ 3·7)	(744)	(3980)	(6528)
189·414		·949	260·0					246
		·946	291·4					109
C	*1121e*	·913	282·5	317·9	+12·9	5	11	285*p*
	12419	·822	244·0	303·1	−18·7	41	202	324*c*
	12418	·542	288·5	283·7	+13·1	87	449	
	12421	·417	292·8	275·1	+12·8	5	17	

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
189·414	12422	·311	302·2	267·6	+13·2	6	23	
	12417	·289	330·4	260·6	+18·2	7	18	
C	12423	·342	347·0	256·8	+23·1	225	1210	
	12420	·489	138·4	232·2	−17·8	91	532	
	1121f	·581	79·2	216·8	+ 9·3	2	5	
	12424	·657	77·6	211·4	+11·0	53	319	
	12425	·712	100·8	208·0	− 7·0	19	110	
	12431	·702	81·0	207·6	+ 9·0	24	127	
	12428	·735	110·2	207·4	−11·9	5	26	
	12426	·830	109·1	198·4	−13·5	40	251	905*c*
	12429	·859	101·2	194·0	− 7·6	11	24	
	12430	·914	102·8	187·4	−10·1	120	677	
	12427	·865	74·4	192·5	+15·4	53	295	713*c*
	12433	·930	78·4	183·5	+12·2	22	100	
	12434	·944	76·7	181·2	+13·8	16	54	
	12432	·990	106·2	171·9	−15·4	45	278	268*c*
		·837	123·0					306
		·897	61·8					597
		·946	114·6					357
July 9			(+1·0)	(252·0)	(+ 3·8)	(877)	(4728)	(4110)
190·435		·987	281·6					279
		·974	292·6					161
G		·900	282·2					374
	12419	·928	247·6	303·4	−19·0	64	259	742*c*
	12418	·726	284·3	284·5	+13·0	62	270	
	12422	·530	290·0	269·2	+13·8	3	5	
	12417	·439	305·0	260·6	+18·1	8	12	
	12423	·439	320·3	256·2	+23·4	249	1223	
	12420	·388	163·8	232·0	−17·9	85	412	
	1121g	·335	67·8	220·2	+11·0	0	3	
	12424	·465	73·6	211·6	+11·0	55	305	
	12425	·530	110·6	208·6	− 7·3	17	101	
	12428	·559	118·0	208·4	−11·8	14	45	
	12431	·509	79·6	208·2	+ 8·6	74	358	
	12426	·685	114·5	198·8	−13·4	24	169	
	12429	·716	104·8	194·4	− 7·7	5	10	
	12427	·726	72·8	192·8	+15·1	40	274	
	12435	·794	67·8	187·3	+19·9	4	11	197*f*
	12430	·802	105·4	187·0	− 9·8	101	432	211*c*
	12433	·805	77·2	185·2	+12·6	24	167	336*c*
	12434	·845	74·8	181·2	+14·9	28	136	

Group 12426. July 7–18. Return of Group 12385. A slowly diminishing regular spot.
Group 12427. July 7–19. A fairly large regular spot showing a drift equatorwards.
Group 12428. July 8–16. A small stream *s* Group 12425 and *p* Group 12426.
Group 12429. July 8–10. A smallish spot *np* Group 12430.
Group 12430. July 8–20. A stream with the follower as the largest and longest-lived component. The leader has disappeared rather suddenly by July 16, but a new cluster of spots (perhaps a separate but closely allied group) develops immediately *sp* the follower.
Group 12431. July 9–18. A stream of active spots, developing closely *sf* Group 12424. It is interesting to note the drift of the leader spot past the regular spot of Group 12424. *See* note to Group 12424.
Group 12432. July 9–20. A regular spot, with a short train of small spots in continual change.
Group 12433. July 9–19. A regular spot with a train of small spots lasting for a few days.
Group 12434. July 9–16. A stream of slight development *nf* Group 12433.
Group 12435. July 10–13. A tiny stream of brief duration.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
190·435	12432	·946	108·0	169·7	−15·6	73	391	574*c*
	12436	·971	65·0	162·3	+25·2	10	37	666*c*
G		·873	116·1					782
		·924	64·1					412
		·955	77·4					354
July 10			(+1·4)	(238·5)	(+ 3·9)	(940)	(4620)	(5088)
191·299		·964	281·9					278
		·931	300·2					150
		·901	237·3					311
		·865	251·0					234
	12419	·975	249·2	301·7	−19·2	40	211	588*c*
	12418	·849	283·0	285·0	+13·1	73	327	533*c*
	12417	·585	296·0	260·6	+18·2	6	11	
	12423	·555	308·0	255·4	+23·4	200	1272	
	12437	·681	217·0	255·0	−29·3	16	37	
	12438	·199	307·1	236·4	+10·8	3	5	
G	12420	·385	193·2	232·4	−17·9	80	465	
	12424	·295	64·2	211·5	+11·2	53	288	
	12425	·369	121·7	208·7	− 7·4	20	85	
	12431	·329	75·2	208·4	+ 8·6	97	507	
	12428	·428	131·2	207·9	−12·5	16	49	
	12426	·550	122·1	198·6	−13·4	28	148	
	12427	·581	69·6	192·9	+15·0	51	290	
	12435	·653	63·4	188·8	+20·1	9	30	
	12430	·671	109·6	187·3	− 9·9	79	389	
	12433	·673	75·7	185·4	+12·5	34	186	
	12434	·726	72·8	181·4	+15·1	17	66	
	12432	·863	110·1	170·2	−15·1	48	317	672*c*
	12436	·918	64·2	161·4	+25·2	11	29	337*f*
	1121h	·964	58·4	153·0	+31·5	4	17	143*c*
		·817	122·7					493
		·859	57·5					246
		·865	81·6					148
		·865	70·3					446
		·967	80·2					187
July 11			(+1·8)	(227·1)	(+ 4·0)	(885)	(4729)	(4766)
192·391		·942	244·9					204
		·916	293·5					317
C	12418	·955	282·5	285·6	+13·2	52	263	1034*c*
	1121i	·956	256·1	284·0	−12·0	15	45	276*c*

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
192·391	12417	·755	290·7	260·4	+18·2	3	7	
	12423	·718	299·5	255·5	+23·7	188	1211	
C	12437	·786	226·1	253·3	−29·9	14	42	96*c*
	1121j	·473	298·9	238·1	+16·9	4	10	
	12438	·396	290·0	234·8	+11·6	4	7	
	12420	·477	220·8	231·6	−17·2	68	397	
	12439	·635	205·9	231·4	−30·9	3	6	
	1121k	·221	350·7	214·8	+16·7	1	2	
	12424	·128	12·9	210·9	+11·2	45	314	
	12440	·385	174·9	210·5	−18·4	2	7	
	12425	·212	162·7	209·0	− 7·5	18	82	
	12431	·103	39·7	208·8	+ 8·6	103	511	
	12428	·309	160·3	206·5	−12·8	10	39	
	12426	·385	141·1	198·3	−13·4	26	149	
	12427	·374	60·7	193·0	+14·4	50	272	
	12435	·449	51·3	190·8	+20·1	5	7	
	12430	·489	119·2	187·0	−10·1	60	327	
	12433	·470	70·6	185·7	+12·6	25	123	
	1121l	·494	63·7	185·3	+16·2	2	11	
	12434	·544	67·0	181·4	+15·7	21	107	
	12432	·723	115·3	170·2	−14·9	50	263	
	12436	·815	61·5	160·3	+25·4	17	42	451*c*
	12441	·988	77·0	131·0	+13·5	41	227	460*c*
	12442	·996	70·3	126·6	+20·0	21	69	296*c*
		·928	52·1					232
		·938	76·5					731
July 12			(+2·3)	(212·6)	(+ 4·1)	(848)	(4540)	(4097)
193·458		·978	282·0					571
		·864	285·4					171
G		·808	306·2					136
	12423	·853	295·3	255·6	+23·6	196	1234	569*c*
	12437	·896	234·2	254·8	−29·3	20	77	239*c*
	12438	·597	284·3	234·6	+11·9	1	3	
	12420	·645	235·6	232·3	−17·8	67	412	
	12424	·244	300·0	210·9	+11·1	48	321	
	12440	·407	210·1	210·7	−16·4	0	4	
	12425	·270	221·2	208·8	− 7·5	12	48	
	12431	·194	293·6	208·8	+ 8·6	76	430	
	12428	·333	205·1	206·8	−13·3	5	22	
	12426	·307	179·2	198·2	−13·6	26	151	
	12427	·193	27·2	193·3	+14·0	47	247	
	12435	·294	24·4	191·1	+19·6	3	7	
	12433	·249	52·2	186·9	+12·9	29	126	

Group 12436. July 10–15. A spot with a companion after July 11.
Group 12437. July 11–14. A small stream showing increase in size when near the west limb.
Group 12438. July 11–13. An ephemeral group of tiny spots.
Group 12439. July 12–16. A group developing near the west limb.
Group 12440. July 12–13. A pair of tiny spots on July 12: a single spot on July 13.
Group 12441. July 12–24. A stream in which the leader grows and changes from its regular outline to a very complex formation; after July 23, when it has considerably decreased, it reverts however to a regular shape. The train, never very conspicuous, has practically died out by July 20. Extensive faculæ accompany the group.
Group 12442. July 12–23. A regular spot which though apparently stable, disintegrates on July 19–20 and with new small spots becomes a temporary cluster.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
193·458	12430	·321	140·0	186·5	−10·1	50	277	
	12443	·336	38·4	185·8	+19·3	4	16	
G	12434	·334	48·6	183·4	+16·7	10	32	
	12432	·550	125·0	170·9	−14·6	36	164	
	12436	·690	55·8	159·3	+26·0	11	22	
	12441	·932	77·2	129·6	+13·5	75	352	522*c*
	12442	·954	70·3	125·9	+20·0	23	98	462*sf*
	12444	·989	104·3	118·6	−13·4	16	59	171*f*
	12445	·986	78·8	117·7	+11·8	35	196	267*c*
	12446	·997	74·6	112·3	+15·7	30	85	
		·853	77·4					275
		·872	106·8					121
		·895	68·8					256
July 13			(+2·8)	(198·5)	(+ 4·2)	(820)	(4383)	(3760)
194·343		·935	284·3					240
		·816	303·3					318
		·787	287·5					374
	12423	·928	294·1	254·5	+23·9	193	1211	907*c*
	12437	·952	237·2	253·3	−29·4	29	119	387*c*
	12439	·833	229·3	233·4	−29·9	7	14	164*c*
	12420	·770	242·6	232·5	−17·7	64	349	558*p*
	12424	·419	287·4	210·7	+11·1	48	272	
	12425	·426	242·1	209·0	− 7·5	9	36	
	12431	·377	283·4	208·5	+ 9·0	78	491	
	12428	·452	227·4	206·7	−13·7	8	43	
	12426	·362	211·5	198·0	−13·7	23	115	
	12427	·203	326·2	193·4	+13·9	38	212	
G	12433	·150	355·9	187·4	+12·9	19	95	
	12430	·257	179·7	186·7	−10·5	63	336	
	1121m	·378	2·7	185·7	+26·4	0	4	
	12443	·256	4·9	185·5	+19·0	3	9	
	12434	·219	21·1	182·1	+16·0	12	21	
	12432	·426	139·7	170·3	−14·8	44	194	
	1121n	·326	72·5	168·5	+ 9·7	3	7	
	12436	·560	48·1	159·4	+25·7	10	17	
	12441	·845	77·1	129·2	+13·2	70	569	525*c*
	12442	·882	69·5	125·4	+20·1	19	107	599*f*
	12445	·935	79·6	117·4	+11·2	76	333	637*f*
	12444	·955	106·9	116·2	−14·7	56	296	345*c*
	12446	·968	75·0	111·0	+15·6	31	227	443*n*
	12447	·996	112·1	104·3	−21·5	37	122	
		·785	68·9					250
July 14			(+3·1)	(186·8)	(+ 4·3)	(940)	(5199)	(5747)

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
195·387		·989	238·7					210
		·904	301·5					234
		·872	285·2					511
	12423	·987	292·8	254·6	+23·2	153	1067	776*c*
	12439	·941	235·9	236·8	−29·9	20	88	231*f*
	12420	·892	248·0	232·8	−17·3	51	278	807*c*
	12424	·610	282·5	210·2	+11·1	43	229	
	12425	·620	252·0	209·3	− 7·5	3	12	
	12431	·584	280·6	208·5	+ 9·7	83	480	
	12428	·610	240·1	205·9	−13·9	3	14	
	12426	·509	233·8	197·9	−13·5	19	80	
G	12427	·385	296·6	193·7	+14·0	28	156	
	12433	·292	301·6	187·7	+13·0	17	60	
	12430	·326	221·6	185·6	− 9·7	51	225	
	12434	·273	317·4	184·0	+15·8	7	15	
	12432	·329	175·0	171·3	−14·7	21	108	
	12436	·434	31·0	158·7	+26·0	5	10	
	12441	·693	75·0	129·7	+13·5	92	652	
	12442	·754	66·8	125·6	+20·2	19	101	174*f*
	12445	·823	79·0	117·7	+11·5	40	199	345*f*
	12444	·866	109·4	115·8	−14·3	40	203	257*c*
	12446	·883	74·6	111·1	+15·6	24	159	678*f*
	12447	·955	114·1	104·0	−21·2	23	123	165*c*
		·944	82·9					284
		·951	121·9					155
July 15			(+3·6)	(173·0)	(+ 4·4)	(742)	(4259)	(4827)
196·341		·948	284·7					463
		·822	235·5					224
G	12439	·983	238·1	235·2	−30·2	37	149	276*c*
	12420	·966	250·2	232·8	−17·8	48	296	821*c*
	12424	·765	280·5	210·2	+11·0	53	213	
	12431	·758	279·5	209·6	+10·1	64	417	
	12428	·779	247·2	208·1	−14·5	4	11	324*p*
	12426	·672	243·4	198·5	−13·9	18	56	
	2427	·566	288·3	193·9	+13·9	20	129	
	12433	·481	289·3	188·1	+13·1	16	44	
	12430	·497	239·5	186·1	−10·5	58	344	
	12434	·389	297·1	181·3	+14·4	6	36	
	12432	·374	204·3	169·5	−15·4	20	107	
	1121o	·354	25·9	150·8	+22·9	0	4	
	12441	·527	71·7	129·6	+13·4	103	713	
	12442	·611	62·1	125·4	+20·2	14	107	
	1244 c	·677	78·0	118·1	+11·4	44	191	

Group 12443. July 13–14. One or two small faint spots.
Group 12444. July 13–24. A pair of spots; the leader rapidly decreases and with small companions makes up a stream which in turn disperses.
Group 12445. July 13–22. A regular spot with a cluster of companions *sp* until July 18 and other small spots on July 19–20.
Group 12446. July 13–24. A regular spot decreasing rather suddenly after July 21. There is a small companion *sp* on July 23.
Group 12447. July 14–26. Return of Group 12396: fourth appearance. A regular spot of remarkable stability.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
196·341	12444	·749	113·6	115·5	−14·2	33	164	
	12446	·766	73·7	110·9	+15·4	32	173	225*f*
G	12447	·881	117·2	103·3	−21·3	29	130	319*f*
		·888	69·5					144
July 16			(+4·1)	(160·4)	(+ 4·5)	(599)	(3284)	(2796)
197·415		·984	247·9					219
		·966	276·6					122
		·910	252·1					870
		·883	237·8					409
	12424	·895	280·1	209·8	+11·1	36	189	539*c*
	12431	·891	279·3	209·4	+10·4	37	298	
	12426	·819	249·4	198·2	−13·9	6	34	109*p*
	12427	·751	284·7	194·5	+14·0	24	117	
	12433	·680	284·6	188·5	+13·2	6	25	
	12430	·678	248·7	186·0	−10·7	50	369	
G	12432	·528	230·9	171·2	−15·2	13	30	
	12441	·304	58·5	130·8	+13·5	111	652	
	12442	·438	50·3	125·2	+20·5	16	76	
	12445	·497	74·3	117·1	+11·8	27	153	
	12444	·588	121·5	115·2	−13·9	27	218	
	12446	·595	71·2	110·7	+14·8	17	111	
	12447	·765	123·2	103·0	−21·3	25	117	218*f*
	12448	·977	84·1	68·3	+ 6·7	21	58	352*c*
	12449	·991	103·7	65·4	−12·9	65	307	404*c*
		·909	83·7					170
		·913	72·2					139
		·933	125·5					101
		·948	116·1					267
		·967	70·7					311
July 17			(+4·5)	(146·2)	(+ 4·6)	(481)	(2754)	(4230)
198·418		·975	251·7					380
		·959	260·0					299
G		·958	241·8					316
		·845	291·5					459
		·834	300·2					455
		·828	238·6					644
	12424	·974	280·5	210·3	+11·3	30	169	658*c*
	12431	·972	279·8	209·7	+10·7	29	249	
	12426	·927	252·6	198·5	−14·2	7	18	325*c*
	12427	·883	283·4	194·9	+14·0	19	98	148*c*
1937.			°	°	°			
198·418	12433	·834	283·0	189·3	+13·4	13	48	304*c*
	12430	·820	253·6	185·9	−10·5	66	339	
G	12432	·699	242·6	172·7	−15·1	6	26	
	12441	·150	17·2	130·3	+12·9	112	844	
	12442	·304	25·6	124·9	+20·5	17	66	
	12445	·295	65·1	117·1	+11·6	17	100	
	12444	·431	137·2	115·4	−13·9	17	132	
	12446	·407	64·0	110·8	+14·6	18	101	
	12447	·637	132·4	102·7	−21·3	21	108	
	12448	·895	84·5	69·3	+ 7·0	10	100	314*f*
	12449	·938	105·4	65·2	−12·7	84	507	772*c*
		·818	85·7					138
		·833	131·2					176
		·860	74·2					235
		·894	120·0					326
		·946	130·2					140
		·962	66·4					281
		·969	78·3					422
July 18			(+5·0)	(132·9)	(+ 4·7)	(466)	(2905)	(6792)
199·336		·977	251·8					329
		·924	247·0					320
		·916	298·4					487
		·910	288·0					862
		·894	238·1					422
	12427	·960	283·0	194·8	+13·8	12	97	628*c*
	12433	·931	282·2	189·6	+13·1	12	38	
	12430	·922	255·9	186·1	−11·0	53	333	507*c*
	12432	·820	247·9	172·4	−15·0	4	14	232*c*
	12441	·230	312·9	130·6	+13·7	120	972	
	12442	·279	347·8	124·3	+20·5	15	100	
G	12444	·331	169·8	117·3	−14·1	12	76	
	12445	·140	28·2	116·8	+11·8	20	80	
	12446	·237	44·0	111·0	+14·5	19	126	
	12447	·525	145·6	102·3	−21·0	24	129	
	12448	·773	84·2	70·0	+ 7·5	20	86	155*f*
	12449	·856	108·0	64·4	−12·7	88	562	586*c*
	12450	·923	112·2	56·7	−18·3	9	18	78*c*
	12451	·975	111·8	46·5	−19·9	23	102	248*c*
		·906	78·4					463
		·926	119·4					67
		·928	69·3					313
		·930	106·2					170
		·980	103·4					101
July 19			(+5·4)	(120·7)	(+ 4·8)	(431)	(2733)	(5968)

Group 12448. July 17–25. A regular spot developing multiple umbræ and diminishing rather rapidly after July 20.
Group 12449. July 17–29. A bi-polar group in which there is less than the usual maximum separation in longitude between leader and follower. The latter increases between July 26 and 27 but disintegrates soon afterwards.
Group 12450. July 19–27. Intermittent. A small spot *sf* Group 12449.
Group 12451. July 19–24. A pair of spots separating in latitude. The southern component survives after July 21.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
200·338		·975	250·2					254
		·972	283·8					625
		·968	242·2					351
		·959	295·4					360
		·872	241·8					423
		·865	280·4					307
		·843	294·2					567
	12430	·984	258·4	185·7	−10·4	50	336	440*c*
	12432	·924	251·9	172·5	−14·7	6	12	220*f*
	12441	·427	292·2	131·4	+13·7	86	683	
G	12442	·372	316·0	123·4	+20·1	35	171	
	12444	·389	213·4	120·2	−14·1	8	32	
	12445	·205	307·0	117·1	+11·9	12	53	
	12446	·177	340·3	111·0	+14·4	19	106	
	12447	·448	168·7	102·1	−21·1	23	126	
	12452	·621	136·6	80·1	−22·4	1	3	
	12448	·605	83·8	70·3	+ 7·7	18	79	
	12449	·731	112·8	63·9	−12·9	77	657 }	326*f*
	12450	·814	116·7	57·7	−18·2	4	12 }	
	12453	·744	81·0	59·5	+10·0	0	4	430*f*
	12451	·911	115·1	46·1	−20·4	35	159	560*c*
	12454	·953	104·2	36·9	−11·9	3	15	222*f*
		·938	107·0					204
July 20			(+5·8)	(107·5)	(+ 4·9)	(377)	(2448)	(5289)
201·369		·963	248·1					791
		·954	289·5					754
G		·891	297·7					231
		·830	305·7					205
	12441	·616	285·7	131·2	+13·5	89	680	
	12442	·530	300·7	122·7	+20·0	19	104	
	12444	·526	233·2	119·4	−13·8	3	20	
	12445	·404	288·5	116·8	+11·9	10	26	
	12446	·333	301·0	110·9	+14·6	17	98	
	12447	·460	196·2	101·7	−21·2	22	126	
	12452	·498	155·7	81·1	−22·0	16	52	
	12448	·397	82·0	70·5	+ 7·8	10	51	
	12449	·570	121·3	64·0	−12·8	94	711	
	12450	·674	123·9	57·9	−17·9	5	10	
	12453	·595	76·7	57·7	+11·9	11	48	

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
201·369	12451	·803	119·3	45·9	−19·8	15	74	264*f*
	12454	·897	106·3	32·3	−12·2	2	6	381*c*
G		·892	114·1					240
		·945	70·4					190
July 21			(+6·3)	(93·8)	(+ 5·0)	(313)	(2006)	(3056)
202·646		·946	304·8					368
		·902	290·8					423
	12441	·804	282·8	130·4	+13·3	90	685	544*p*
	12442	·742	293·0	123·5	+20·4	13	51	
	12444	·731	245·9	120·1	−13·6	7	23	
	12445	·638	282·8	116·2	+12·1	1	6	
	12446	·568	288·4	110·6	+14·5	14	90	
	12447	·577	221·7	101·0	−20·8	17	125	
	12452	·457	187·2	80·4	−21·8	13	29	
G	12448	·114	66·6	70·9	+ 7·7	12	26	
	12449	·378	144·7	64·0	−12·9	96	617	
	12450	·490	142·0	58·5	−17·8	4	8	
	12453	·328	71·3	58·5	+10·8	7	27	
	12451	·645	130·6	45·5	−20·4	8	27	
	1121p	·823	70·0	22·1	+19·3	2	6	146*c*
	12455	·976	59·9	358·7	+30·6	142	1194	721*c*
		·784	124·6					114
		·787	113·2					279
		·913	72·6					145
		·974	75·0					226
July 22			(+6·8)	(76·9)	(+ 5·1)	(426)	(2914)	(2966)
203·511		·990	240·3					106
		·976	297·2					191
C		·948	289·2					374
		·945	307·0					243
		·933	243·8					208
		·774	241·8					176
	12441	·912	282·2	131·6	+13·3	73	657	1309*c*
	12442	·860	290·2	124·5	+20·0	7	17	360*c*
	12444	·856	249·4	121·2	−14·6	17	66	416*c*
	12446	·719	283·8	111·2	+13·5	11	28	
	12447	·689	231·8	100·8	−20·9	19	123	
	12452	·519	206·2	79·8	−22·6	2	8	

Group 12452. July 20–23. A single spot on July 20 and 23: a small cluster on July 21 and 22.

Group 12453. July 20–30. An area of faculæ in which spots of unstable character are the first to appear. On July 25, a bi-polar group with well-defined leader and follower begins to develop.

Group 12454. July 20–21. A small, short-lived spot.

Group 12455. July 22–Aug 5. An immense group whose maximum development takes place on the visible hemisphere. The group comes round the eastern limb as a compact stream of rapidly growing spots. By July 26 there is a very large regular spot as the leader and an even bigger complex spot as the follower almost linked together by nebulous spots. Three days later, the leader has grown still larger by accretion, but the link of spots between it and the follower has disappeared. By August 2, the leader has regained its regular outline (temporarily lost during growth), but the follower has broken up and is represented on August 4 by two partially-formed spots nearly 5° apart in latitude. Both the leader and follower spots are visible separately to the naked eye. This group is one of the two second largest since 1874 when the Greenwich series began, the largest group being Group 9861 in the year 1926. See also Group 12553.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
203·511	12448	·109	291·1	71·4	+7·4	4	20	
	12449	·315	176·4	64·3	−13·1	83	628	
C	12453	·149	47·9	59·1	+10·9	11	70	
	12451	·548	142·8	44·8	−20·9	10	28	
	12455	·924	58·6	358·9	+30·9	161	1464	1133*c*
		·801	70·9					250
		·865	85·0					309
		·939	74·2					723
		·980	114·2					98
July 23			(+7·2)	(65·5)	(+5·2)	(398)	(3109)	(5896)
204·339		·982	290·4					207
		·913	290·4					467
	12441	·974	282·9	131·9	+13·7	69	649	973*f*
	12444	·935	252·8	121·3	−14·0	17	96	424*c*
	12446	·831	283·6	110·7	+14·2	4	14	134*f*
	12447	·792	238·1	100·4	−21·1	23	117	229*c*
G	12448	·289	278·3	71·2	+7·4	5	15	
	12449	·359	206·6	64·0	−13·5	92	544	
	12453	·126	323·8	58·8	+11·0	10	66	
	12451	·468	161·3	45·3	−21·1	5	19	
	12455	·844	56·4	359·7	+30·9	271	2028	1116*c*
		·867	76·0					356
		·949	69·8					261
		·960	116·3					211
July 24			(+7·6)	(54·5)	(+5·2)	(496)	(3548)	(4378)
205·362		·977	254·1					370
		·968	283·0					631
		·857	233·2					188
		·856	283·8					453
	12447	·899	243·1	100·2	−21·3	20	124	323*c*
	12448	·514	275·2	71·9	+7·2	3	7	
G	12449	·499	230·9	64·4	−13·4	113	592	
	12453	·326	286·6	59·4	+10·3	64	282	
	12450	·467	213·3	56·6	−17·8	5	13	
	12456	·415	63·0	18·5	+15·7	3	13	
	12455	·744	51·6	358·1	+31·4	405	2529	526*f*
		·775	74·6					149
		·884	67·2					305
		·905	120·0					320
		·949	105·6					325
		·959	77·6					139
July 25			(+8·0)	(41·0)	(+5·3)	(613)	(3560)	(3729)
1937.			°	°	°			
206·431		·965	286·0					337
		·964	275·0					278
		·892	236·3					418
		·821	278·8					331
	12447	·971	246·5	99·4	−21·2	29	113	223*f*
	12449	·670	243·2	64·7	−13·3	108	592	
	12453	·545	280·5	59·7	+10·2	55	277	
	12450	·621	233·3	58·2	−17·1	3	6	
G	12456	·233	35·4	18·9	+16·3	12	35	
	12455	·632	43·0	356·4	+32·1	469	3179	
	12457	·996	60·8	299·7	+29·5	37	170	
		·848	108·8					303
		·857	123·4					321
		·872	76·8					163
		·974	74·5					250
		·979	108·3					302
July 26			(+8·4)	(26·9)	(+5·4)	(713)	(4372)	(2926)
207·520		·983	241·0					136
		·906	253·9					209
		·904	239·9					413
		·874	270·1					188
	1121q	·929	282·9	81·2	+14·0	3	19	327*c*
	12449	·811	248·9	63·4	−13·5	138	829	435*c*
G	12453	·748	278·1	61·0	+9·7	54	282	466*p*
	12450	·745	241·0	55·3	−17·1	2	7	
	12456	·225	326·2	20·0	+16·1	14	55	
	12455	·502	28·3	356·4	+31·4	515	3070	
	12457	·958	60·5	298·9	+29·8	44	300	399*c*
	12458	·985	102·7	294·1	−11·4	74	395	295*c*
		·911	111·8					242
		·965	113·1					269
July 27			(+8·9)	(12·5)	(+5·5)	(844)	(4957)	(3379)
208·345		·965	255·6					214
		·959	274·4					219
G		·956	284·4					262
		·955	238·8					274
		·901	294·4					196
		·806	237·2					385
	12449	·899	251·6	62·9	−13·9	118	871	691*c*
	12453	·858	278·8	60·9	+10·4	49	205	706*c*
	1121r	·808	249·4	52·3	−13·0	2	4	
	1121s	·731	260·4	47·6	−3·2	1	4	
	12456	·368	301·0	20·7	+16·1	14	39	
	12455	·446	9·6	356·6	+31·5	594	3303	

Group 12456. July 25–31. A small pair of spots.
Group 12457. July 26–Aug. 5. A well-formed regular spot dying out rather quickly. There is a small follower on July 27, 29 and 30.
Group 12458. July 27–Aug. 8. A simple stream or bi-polar group consisting of leader and follower; the latter has died out by August 6.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
208·345	12457	·898	59·3	298·9	+29·9	44	238	389*f*
	12458	·939	103·8	293·6	−11·0	89	425	392*c*
G	*1121t*	·936	75·8	291·7	+15·2	0	7	456*f*
	12459	·947	83·4	290·1	+ 8·0	8	14	217*f*
		·823	115·3					399
		·843	75·3					431
		·910	115·7					395
July 28			(+9·2)	(1·6)	(+ 5·5)	(919)	(5110)	(5626)
209·350		·904	243·7					212
		·856	288·6					165
		·799	240·6					209
	12449	·972	254·6	62·6	−13·5	108	719	600*c*
	12453	·951	279·1	60·7	+10·4	35	110	560*c*
	12456	·581	287·9	23·0	+14·9	4	9	
	12455	·460	347·1	355·1	+32·1	556	3172	
G	*1122a*	·290	70·7	332·1	+10·8	3	5	
	12460	·769	123·2	304·9	−20·8	30	130	204*c*
	12457	·801	56·6	298·0	+29·8	36	228	340*f*
	12458	·843	106·8	293·1	−10·9	88	439	305*c*
	12459	·847	84·2	290·1	+ 7·9	5	17	384*f*
		·763	75·6					88
		·881	75·2					433
		·970	104·9					208
July 29			(+9·6)	(348·2)	(+ 5·6)	(865)	(4829)	(3708)
210·122		·940	246·4					155
		·890	68·6					210
		·868	254·0					160
	12453	·982	280·1	57·8	+11·0	10	23	
	12456	·709	285·5	22·9	+15·0	9	24	
	12455	·505	331·0	354·7	+31·6	583	3176	
K	12460	·665	129·8	304·3	−20·4	26	115	
	12457	·716	52·8	297·1	+29·9	48	253	
	12458	·744	110·3	293·0	−10·9	73	469	
	12459	·739	84·4	290·3	+ 8·0	8	19	
	1122b	·817	78·2	283·2	+12·9	2	8	415*c*
	12461	·923	109·0	273·7	−15·0	27	107	241*c*
	12462	·991	68·0	254·4	+22·5	40	354	257*c*
July 30			(+10·0)	(338·1)	(+ 5·7)	(826)	(4548)	(1438)
1937.			°	°	°			
211·123	12456	·862	283·0	24·6	+14·1	6	13	187*c*
	12455	·611	316·2	354·3	+31·1	486	2980	
	12460	·526	144·0	305·7	−19·6	25	125	
	12457	·585	43·2	297·3	+30·3	36	220	
	12458	·584	117·8	293·2	−10·8	59	410	
	12459	·551	83·6	291·3	+ 8·3	13	28	
K	12463	·765	74·5	275·1	+15·5	10	43	
	12461	·803	111·1	274·7	−13·1	22	75	
	12464	·954	60·9	251·8	+29·5	7	49	1059*c*
	12462	·960	66·0	250·3	+24·6	166	1104	
		·940	107·4					155
		·969	123·0					161
July 31			(+10·4)	(324·8)	(+ 5·8)	(830)	(5047)	(1562)
212·443		·972	282·8					215
	12455	·777	307·1	354·1	+32·0	467	2873	377*p*
	12460	·443	177·3	306·0	−20·2	18	82	
	12457	·444	21·2	296·6	+30·1	34	169	
	12458	·367	139·8	293·4	−10·5	48	300	
	12459	·265	78·5	292·1	+ 8·7	6	20	
	12463	·492	70·7	278·8	+14·5	3	9	
G	12465	·526	65·2	277·3	+17·9	5	20	
	12461	·607	119·7	274·7	−12·5	36	101	
	12464	·843	56·8	252·2	+30·9	65	343	192*c*
	12462	·846	64·7	250·4	+24·5	136	1045	379*c*
	12466	·986	121·8	232·3	−29·9	15	79	397*c*
	12467	·985	109·8	230·1	−18·3	25	76	537*c*
		·895	77·9					127
Aug. 1			(+10·9)	(307·3)	(+ 5·9)	(858)	(5117)	(2224)
213·464		·905	285·2					239
		·861	236·4					224
G	12455	·874	303·8	352·7	+32·2	367	2567	1077*c*
	12460	·477	202·1	304·8	−20·4	21	141	
	12457	·415	355·7	295·9	+30·3	24	156	
	12458	·288	180·8	294·0	−10·8	54	286	
	12459	·054	26·2	292·4	+ 8·7	7	22	
	12463	·299	59·7	278·4	+14·3	0	4	
	12465	·367	53·3	275·8	+18·2	24	106	
	12461	·438	134·9	275·4	−12·3	21	113	

Group 12459. July 28–Aug. 7. A small but long-lived spot.
Group 12460. July 29–Aug. 6. A moderate-sized stream.
Group 12461. July 30–Aug. 7. A stream or elongated cluster of indefinite spots.
Group 12462. July 30–Aug. 11. Return or revival of Group 12423. A large spot preceded by a satellite which has broken into three parts by August 3. Shortly afterwards the parent spot begins to decrease.
Group 12463. July 31–Aug. 2. A pair of spots on July 31: a single spot on August 1 and 2.
Group 12464. July 31–Aug. 12. A stable regular spot followed by a short train until August 6.
Group 12465. Aug. 1–5. A small stream of brief duration.
Group 12466. Aug. 1–7. Return of Group 12439. A decreasing regular spot disappearing as a close pair of nuclei. A cluster of tiny spots south—precedes on August 4.
Group 12467. Aug. 1–11. Return of Group 12420. A small regular spot diminishing to a speck.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
213·164	12464	·734	52·1	251·4	+31·1	74	446	
	12462	·721	61·7	249·9	+24·2	163	1036	
G	12466	·937	125·3	231·8	−30·1	37	240	533c
	12467	·927	112·5	229·6	−18·2	24	91	543c
		·847	135·2					266
		·863	58·8					198
		·875	74·5					241
		·968	81·3					351
Aug. 2			(+11·3)	(293·8)	(+ 5·9)	(816)	(5208)	(3672)
214·361		·970	284·3					230
		·930	241·2					242
		·854	238·9					207
	12455	·948	301·4	353·6	+31·6	331	2128	1460c
	12468	·888	284·7	345·0	+15·8	19	52	395c
	12460	·567	219·3	304·4	−20·4	20	52	
	12457	·462	334·3	295·4	+30·3	15	114	
	12458	·349	216·9	294·2	−10·3	47	232	
	12459	·190	285·4	292·6	+ 8·8	9	19	
	12469	·153	36·3	276·7	+13·0	7	29	
G	*1122c*	·457	166·5	275·5	−20·3	1	3	
	12465	·250	26·1	275·4	+18·8	19	93	
	12461	·328	159·5	275·3	−11·8	37	148	
	1122d	·508	131·1	258·9	−13·9	6	10	
	12464	·616	45·0	251·6	+31·0	77	349	
	12462	·580	56·5	250·2	+23·7	145	1132	
	12466	·864	129·5	232·2	−29·5	35	170	646c
	12467	·842	116·0	229·5	−18·0	25	93	481f
	12470	·944	82·1	210·8	+ 9·4	10	21	744c
		·767	142·5					241
		·860	69·3					333
		·909	103·6					349
		·961	111·3					697
		·964	101·5					220
Aug. 3			(+11·7)	(282·0)	(+ 6·0)	(803)	(4645)	(6185)
215·337		·946	240·4					272
		·937	291·5					123
G		·909	252·6					95
	12468	·963	285·3	344·3	+16·3	23	83	396c
	12455	·958	303·8	342·7	+34·1	86	906	1149c

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
215·337	12460	·721	234·4	307·5	−20·0	6	19	
	12457	·567	318·0	295·1	+30·3	13	70	
	12458	·506	237·0	294·5	−10·4	40	178	
	12459	·403	277·3	292·8	+ 8·5	8	15	
	12469	·177	318·0	276·1	+13·6	19	58	
	12465	·241	335·4	275·2	+18·7	14	40	
G	12461	·328	198·0	275·0	−12·1	41	126	
	12464	·496	32·0	251·4	+30·5	63	335	
	12462	·431	43·4	250·3	+24·0	127	911	
	12466	·778	136·5	231·3	−29·5	25	134	437c
	12467	·721	122·2	229·4	−17·9	22	91	
	12470	·848	82·2	210·8	+ 9·8	7	13	509c
	12471	·977	102·7	193·2	−11·0	94	416	397c
		·820	107·0					299
		·893	115·6					504
		·938	79·4					386
		·945	111·0					276
		·973	72·8					234
		·975	64·3					278
Aug. 4			(+12·0)	(269·1)	(+ 6·1)	(588)	(3395)	(5355)
216·413		·958	284·9					286
		·789	234·1					345
C	12455	·993	303·7	340·1	+34·1	95	504	1078c
	1122c	·977	242·1	327·7	−25·5	9	41	354c
	12460	·847	242·9	307·5	−19·0	8	17	496c
	12458	·688	217·1	294·8	−10·8	42	199	
	12457	·702	308·0	294·5	+30·3	6	22	
	12459	·615	275·9	292·8	+ 8·5	6	14	
	12469	·386	292·8	276·2	+14·2	38	188	
	12461	·451	226·0	274·1	−12·4	15	74	
	12465	·372	310·6	272·2	+19·8	5	19	
	12472	·353	201·5	262·4	−13·0	12	58	
	12464	·419	9·2	250·4	+30·5	76	400	
	12462	·313	14·6	249·9	+23·6	94	768	
	12473	·246	28·3	247·8	+18·5	2	12	
	12474	·605	152·1	236·4	−26·4	6	17	
	12466	·682	147·5	230·0	−29·5	18	54	
	12467	·580	133·9	228·8	−18·1	18	70	
	12471	·901	105·7	192·8	−11·3	75	416	956c
	12475	·903	101·8	191·9	− 7·9	15	46	
		·827	77·2					508
		·858	116·1					625

Group 12468. Aug. 3–4. A pair of spots separating in longitude.
Group 12469. Aug. 3–6. An extended cluster of small variable spots.
Group 12470. Aug. 3–4. One or two tiny spots: a return of Group 12431.
Group 12471. Aug. 4–16. A circular spot, apparently quite stable until August 13–14 when a bright "bridge" crosses the spot from north to south dividing the umbra into two.
Group 12472. Aug. 5–10. A group of stream type—leader and follower spots with a few tiny companions in between.
Group 12473. Aug. 5–8. One or two tiny spots s Group 12462.
Group 12474. Aug. 5–12. A pair of spots on August 5–7: a small stream for the next two days: afterwards, one or two spots.
Group 12475. Aug. 5–13. A small stream cropping Group 12471.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
216·413		·931	124·9					243
		·936	62·1					466
C		·940	73·9					522
		·970	115·8					485
Aug. 5			(+12·5)	(254·8)	(+6·1)	(540)	(2919)	(6364)
217·333		·960	256·2					222
		·922	279·4					293
		·881	240·1					541
		·793	304·6					209
	12460	·930	246·4	307·0	−19·3	7	19	589*p*
	12458	·824	252·0	295·5	−11·0	30	153	
	12459	·770	275·8	293·3	+ 8·4	4	9	
	12469	·579	284·8	277·7	+13·5	10	64	
	12461	·595	238·8	274·0	−12·6	9	47	
	12472	·468	224·8	262·4	−13·5	42	206	
	1122f	·364	300·1	261·8	+16·4	1	3	
	12464	·433	344·8	250·3	+30·7	45	287	
G	12462	·323	341·2	249·2	+23·9	90	683	
	12473	·209	348·2	245·3	+17·9	4	14	
	12474	·538	170·2	236·9	−25·7	12	46	
	12466	·614	161·0	229·5	−29·3	11	23	
	12467	·469	151·0	228·9	−18·1	12	54	
	12475	·779	105·8	193·7	− 8·2	20	67 }	342*c*
	12471	·793	109·6	193·2	−11·4	71	368 }	
	12476	·974	103·8	167·7	−11·9	4	11	330*c*
		·849	73·4					571
		·870	57·0					428
		·902	113·2					408
		·915	122·2					276
		·963	68·3					386
		·975	115·5					329
Aug. 6			(+12·8)	(242·7)	(+ 6·2)	(372)	(2054)	(4924)
218·358		·970	286·4					269
		·956	244·5					480
G		·892	302·6					332
		·867	284·7					458
	12458	·933	255·6	295·9	−11·0	22	112	321*f*
	12459	·898	276·2	293·3	+ 8·3	6	10	184*c*
	12461	·773	248·8	276·4	−12·0	7	21	263*c*
	12472	·639	240·8	263·9	−13·1	83	391	
	1122g	·542	305·6	257·8	+23·8	4	11	
218·358	12464	·521	325·1	249·4	+31·0	60	304	
	12462	·419	318·4	246·8	+24·1	75	430	
G	12473	·346	308·0	245·7	+18·2	3	7	
	12474	·559	193·6	237·5	−26·6	8	22	
	12466	·581	179·5	228·8	−29·1	5	11	
	12467	·418	178·1	228·3	−18·4	8	38	
	12475	·610	113·4	194·7	− 8·9	20	93	
	12471	·646	116·4	193·0	−11·7	57	417	
	1122h	·836	108·2	175·2	−11·5	5	8	163*c*
	12476	·906	106·4	166·6	−12·0	16	51	154*c*
	12477	·975	72·6	150·9	+18·3	11	24	150*c*
		·806	119·9					385
		·831	65·8					295
		·889	125·2					259
		·895	77·0					173
		·937	115·3					316
		·944	65·9					336
Aug. 7			(+13·2)	(229·1)	(+ 6·2)	(390)	(1950)	(4538)
219·382		·983	231·6					122
		·963	299·8					357
		·955	282·3					350
		·902	253·4					480
		·868	285·0					389
	12458	·989	257·8	295·4	−11·0	23	98	367*f*
	12472	·792	248·2	264·4	−13·0	72	397	
	12464	·646	312·8	249·1	+31·3	61	289	
	12462	·570	303·9	246·6	+23·9	42	286	
	12473	·532	294·7	246·1	+18·2	3	5	
	12474	·637	211·5	237·4	−26·9	9	29	
G	12467	·466	206·6	228·2	−18·4	8	23	
	12475	·419	127·2	196·0	− 8·7	20	83	
	12471	·484	128·8	193·0	−11·8	78	411	
	12478	·607	132·8	187·7	−18·7	9	46	
	12476	·761	111·7	169·5	−12·0	4	11	179*f*
	12479	·852	122·4	164·2	−23·3	5	17	262*f*
	12477	·912	73·0	149·3	+18·1	2	6	412*np*
	12480	·967	82·2	139·8	+ 9·1	4	17	301*c*
	12481	·990	113·8	137·4	−22·4	17	93	79*f*
	12482	·977	72·3	136·8	+18·6	16	41	566*p*
		·784	131·8					321
		·786	71·0					343
		·854	60·4					142
		·956	121·8					250
		·961	59·7					304
Aug. 8			(+13·6)	(215·6)	(+ 6·3)	(373)	(1852)	(5224)

Group 12476. Aug. 6–8. A tiny spot with a companion on August 7.
Group 12477. Aug. 7–13. Intermittent: a small definite spot, not seen on August 11 and 12.
Group 12478. Aug. 8–11. Some tiny spots in a stream *sf* Group 12471.
Group 12479. Aug. 8–10. Two or three small spots.
Group 12480. Aug. 8–10. A tiny spot appearing as a close double on August 9.
Group 12481. Aug. 8–20. A stable regular spot with its umbra cloft by a bright "bridge" on August 11–13.
Group 12482. Aug. 8–10. Two or three small spots.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
220·332		·970	254·2					463
		·946	286·4					783
		·837	296·2					250
		·830	285·0					133
	12472	·903	252·6	264·8	−12·7	69	358	404c
	12464	·766	306·4	249·1	+31·5	53	314	
	12462	·712	297·2	246·6	+23·6	34	120	
	12474	·722	220·8	235·1	−27·6	19	63	
	12483	·750	212·8	232·0	−33·4	0	4	
	12467	·579	224·2	228·1	−18·7	5	16	
	12484	·445	181·8	203·9	−19·9	9	41	
G	12475	·287	155·8	196·2	− 8·7	33	119	
	12471	·358	151·5	193·0	−11·9	84	410	
	12485	·263	39·8	192·9	+17·9	5	36	
	12478	·491	149·2	187·7	−18·7	5	28	
	12479	·723	131·4	166·9	−23·4	6	32	241f
	12477	·814	71·8	148·6	+18·5	4	12	327c
	12480	·892	82·8	139·5	+ 9·3	10	35	148c
	12481	·946	117·0	137·0	−22·9	49	216 }	380c
	12487	·973	113·1	130·1	−20·7	60	246 }	
	12482	·918	72·4	135·8	+18·7	11	40	421np
	12486	·945	77·4	131·4	+14·0	14	35	412c
		·900	57·0					457
		·937	125·6					307
		·972	105·6					238
Aug. 9			(+14·0)	(203·0)	(+ 6·4)	(470)	(2125)	(4964)
221·331		·985	290·5					195
		·935	232·3					286
G		·856	285·5					198
		·808	242·5					150
	1122i	·969	284·5	266·4	+15·6	28	92	345c
	12472	·977	255·6	265·4	−12·5	48	309	552c
	12464	·866	302·9	248·1	+31·5	50	290	341nf
	12462	·842	294·5	246·5	+24·0	17	70	593p
	12474	·832	231·6	236·5	−26·7	16	50	219c
	12483	·810	223·1	230·0	−31·3	2	4	262c
	12467	·706	233·7	226·8	−19·6	5	16	
	12484	·497	205·1	202·7	−20·4	16	60	
	12475	·277	200·1	195·3	− 8·6	21	93	
	12485	·198	340·5	193·7	+17·1	9	32	
	12471	·327	188·3	192·6	−12·4	69	438	

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
221·331	12478	·422	175·7	187·9	−18·4	6	30	
	12479	·603	143·5	167·0	−23·0	9	32	
G	12477	·664	67·9	149·3	+19·3	6	12	
	12480	·778	82·4	138·5	+ 9·9	4	11 }	359c
	12486	·835	78·9	132·9	+12·8	23	79 }	
	12481	·865	122·3	137·0	−23·7	50	253	75c
	12482	·803	72·0	136·5	+18·2	7	28	190n
	12487	·909	117·1	129·7	−21·3	36	289 }	341c
	12488	·955	116·8	122·0	−23·1	15	56 }	
		·873	131·8					268
		·877	50·0					208
		·903	108·9					400
		·944	68·7					282
Aug. 10			(+14·3)	(189·8)	(+ 6·4)	(437)	(2244)	(5264)
222·445		·925	246·5					148
	12464	·948	301·1	247·1	+31·5	36	270	475c
	12462	·944	293·5	246·6	+24·3	8	27	679s
	12474	·931	237·5	236·7	−27·0	19	82	414c
	12467	·841	241·1	226·5	−19·9	0	6	119c
	12484	·630	226·1	203·9	−20·1	9	44	
	12485	·409	299·2	197·0	+17·5	6	12	
	12475	·410	235·1	194·8	− 7·4	38	139	
G	12471	·440	223·3	193·0	−12·4	88	444	
	12478	·463	203·5	·186·3	−18·7	3	13	
	12481	·751	130·9	136·7	−24·3	52	268	
	12486	·641	79·9	135·2	+11·4	37	248	
	12487	·789	123·3	130·3	−21·0	33	234 }	230c
	12488	·876	121·9	120·9	−23·8	24	132 }	
	12489	·782	114·5	128·0	−14·5	9	26	133f
	12490	·944	81·5	103·9	+10·1	21	130	311f
		·974	75·5					174
		·980	99·3					157
Aug. 11			(+14·7)	(175·1)	(+ 6·5)	(383)	(2075)	(2840)
223·379		·978	292·8					656
		·957	249·7					371
G		·939	231·5					412
		·916	284·2					310

Group 12483. Aug. 9–10. A tiny spot *sf* Group 12474.
Group 12484. Aug. 9–12. A small short-lived stream.
Group 12485. Aug. 9–14. A small stream reduced to one spot by August 11.
Group 12486. Aug. 9–20. A variable stream of highly active spots. On August 15 the components are so crowded together as to make almost one long spot. A few days later only the leader and follower spots are left with a wide gap between them. Complete continuity with Group 12441 in the previous rotation is uncertain but probable.
Group 12487. Aug. 9–17. An irregular spot, with companions, which divides into two on August 12–13; the two parts separate in longitude as they die out.
Group 12488. Aug. 10–19. Some variable spots, one of them becoming fairly large on August 15–16.
Group 12489. Aug. 11–16. Intermittent; one or two small spots.
Group 12490. Aug. 11–21. A spot which appears to sub-divide on August 12 and again on August 19, or it may be that new close satellites are formed.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
223·379		·856	250·5					209
		·850	239·9					269
G	12464	·989	300·8	246·3	+31·3	46	256	377*nf*
	12474	·987	240·8	238·5	−27·3	6	27	544*f*
	12484	·763	236·7	205·4	−20·0	4	7	199*p*
	12485	·580	291·6	197·1	+17·6	3	5	
	12475	·588	247·2	195·8	− 7·7	24	128	
	12492	·579	242·6	194·1	− 9·9	5	11	
	12471	·585	237·7	193·1	−12·5	71	409	
	12491	·397	290·6	185·2	+14·0	5	17	
	12493	·408	224·0	179·5	−10·8	28	83	
	12481	·650	141·2	136·3	−24·6	41	251	
	12486	·465	78·0	135·3	+11·3	62	354	
	12487	·673	131·4	130·2	−20·9	34	215	
	12489	·660	120·8	127·1	−14·5	1	6	
	12488	·768	128·4	121·9	−23·6	29	136	
	12490	·854	82·2	103·8	+10·0	26	100	319*f*
		·894	72·9					89
		·927	102·2					150
		·940	127·8					139
		·955	111·0					83
		·964	118·0					135
		·968	81·6					143
		·969	73·0					137
Aug. 12			(+15·0)	(162·8)	(+ 6·5)	(385)	(2005)	(4542)
224·486		·984	243·7					345
		·923	282·3					437
G		·914	252·3					321
		·876	240·6					680
		·818	223·8					174
	1122j	·883	259·4	208·7	− 6·1	10	29	91*c*
	12492	·759	252·0	194·9	− 9·0	7	11	
	12475	·741	256·4	194·3	− 5·5	13	64	
	12471	·751	246·8	192·9	−12·5	72	479	
	12491	·602	286·3	184·7	+15·0	1	4	
	12493	·603	242·0	180·8	−10·8	34	128	
	12477	·225	355·2	149·2	+19·5	1	5	
	1122k	·612	173·7	143·6	−30·7	1	4	
	12486	·219	67·3	136·3	+11·3	117	696	
	12481	·554	159·4	135·8	−24·6	48	271	
	12487	·526	149·6	131·7	−20·5	24	135	
	12488	·621	142·0	123·6	−23·2	39	154	
	12490	·703	81·8	103·3	+10·4	16	107	
		·810	107·1					204
		·814	71·4					187
		·882	132·8					222
		·886	79·2					281

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
224·486		·920	119·4					519
		·932	102·7					265
G		·948	85·2					338
		·966	76·2					314
		·981	109·5					358
Aug. 13			(+15·4)	(148·1)	(+ 6·6)	(383)	(2087)	(4736)
225·397		·949	258·9					454
		·946	244·7					708
		·922	281·2					356
	12485	·837	286·5	193·1	+17·4	12	33	251*c*
	12471	·861	250·7	192·4	−12·9	76	522	496*c*
	12493	·758	249·3	182·1	−11·0	16	118	233*c*
	12494	·372	302·5	155·2	+17·8	2	6	
	1122l	·234	319·7	145·2	+16·7	5	16	
	12486	·083	356·3	136·4	+11·4	102	821	
C	12481	·522	177·8	134·8	−24·7	53	333	
	12487	·466	169·9	131·1	−20·6	20	157	
	12489	·357	165·3	130·8	−13·6	5	23	
	12488	·515	159·7	125·0	−22·3	47	176	
	12490	·548	80·3	102·9	+10·8	26	129	
		·851	105·9					316
		·864	80·8					461
		·892	120·5					264
		·911	130·3					146
		·945	111·9					453
		·956	80·7					380
		·979	105·3					257
Aug. 14			(+15·7)	(136·1)	(+ 6·6)	(364)	(2334)	(4775)
226·314		·985	258·5					271
		·983	247·4					303
G		·974	280·1					397
		·946	261·6					459
		·893	234·0					277
		·893	287·3					629
		·849	302·6					280
		·790	232·4					306
	12471	·948	254·1	193·0	−12·7	57	482	909*sf*
	12493	·879	253·6	183·0	−11·0	26	116	259*c*
	12494	·511	293·9	153·3	+17·8	17	45	
	12486	·223	289·7	136·3	+10·8	153	1211	
	12481	·545	198·0	134·6	−24·5	44	297	
	12487	·475	195·0	131·5	−20·5	15	76	
	12488	·477	183·6	125·8	−21·6	34	238	

Group 12491. Aug. 12–13. An ephemeral spot.
Group 12492. Aug. 12–13. A small spot between Groups 12471 and 12475.
Group 12493. Aug. 12–16. A pair of spots becoming a short-lived stream.
Group 12494. Aug. 14–17. A wide pair of spots.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
226·314	12490	·363	77·4	103·0	+10·8	25	107	
		·778	111·0					181
G		·786	78·5					260
		·877	81·0					495
		·887	117·5					429
		·900	68·1					178
		·910	131·8					395
		·923	108·5					399
Aug. 15			(+16·0)	(124·0)	(+6·7)	(371)	(2572)	(6427)
227·335		·964	297·4					246
		·958	239·2					480
		·957	285·7					700
		·892	306·6					222
		·885	239·4					348
		·864	292·4					260
	12471	·995	257·0	192·7	−12·1	34	307	393*s*
	12493	·979	257·6	186·8	−10·7	17	65	329*f*
	12495	·828	246·3	162·0	−15·3	8	22	151*c*
G	12494	·695	288·7	153·9	+17·8	10	26	
	12486	·442	281·8	136·5	+11·2	218	1211	
	12481	·628	215·1	133·7	−24·6	50	265	
	12487	·561	215·3	130·6	−20·9	8	44	
	12489	·477	224·0	130·3	−13·7	3	10	
	12488	·533	208·2	126·0	−21·5	38	208	
	12490	·158	61·7	102·3	+10·6	23	103	
		·798	126·2					256
		·830	114·6					398
		·897	40·4					108
		·935	109·2					254
Aug. 16			(+16·4)	(110·4)	(+ 6·7)	(409)	(2261)	(4145)
228·369		·971	301·9					164
		·971	255·7					281
G		·961	243·1					558
		·935	282·1					238
		·898	233·5					258
		·883	294·3					326
	12495	·921	250·3	160·5	−15·1	3	11	119*c*
	12494	·840	286·4	154·2	+17·5	5	17	206*c*
	12486	·655	279·3	137·9	+11·2	210	1123	
	12481	·738	227·0	133·1	−24·7	47	300	
	12487	·681	229·7	130·3	−20·4	3	12	

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
228·369	12488	·650	224·7	126·1	−21·5	33	172	
	12490	·114	308·1	102·0	+10·8	18	83	
G		·915	112·1					294
		·943	75·5					364
Aug. 17			(+16·7)	(96·8)	(+ 6·8)	(319)	(1718)	(2808)
229·453		·975	253·0					201
		·953	292·5					595
		·945	240·0					406
		·839	291·1					177
		·831	302·8					193
	12486	·832	279·3	139·2	+11·5	194	981	835*c*
	12481	·854	235·3	133·0	−24·8	49	284	272*c*
G	12488	·782	235·1	126·0	−21·7	18	106	
	12490	·327	285·7	101·2	+11·5	24	83	
	12496	·951	66·9	9·5	+24·0	3	29	390*f*
	12497	·960	60·2	7·6	+30·5	16	109	410*c*
	12498	·996	58·4	354·6	+31·9	27	303	
		·857	73·5					263
		·930	83·3					169
Aug. 18			(+17·1)	(82·5)	(+ 6·8)	(331)	(1895)	(3911)
230·338		·925	229·0					296
		·912	297·2					455
		·898	251·6					201
	12486	·935	279·6	140·7	+11·4	180	893	1284*c*
	12481	·927	239·8	132·4	−24·6	73	259	440*c*
	12488	·879	241·1	126·3	−21·3	10	30	
G	12490	·504	280·5	101·0	+11·2	19	146	
	12499	·897	122·3	14·3	−24·9	10	36	148*c*
	12496	·890	66·0	7·8	+24·5	2	5	339*sf*
	12497	·897	58·8	7·6	+30·9	16	104	299*c*
	12500	·943	102·8	2·2	− 9·6	7	31	156*c*
	12498	·972	58·2	352·7	+32·5	219	1191	579*c*
		·969	77·4					145
Aug. 19			(+17·4)	(70·8)	(+ 6·9)	(536)	(2695)	(4342)
231·475		·975	252·6					276
		·944	301·9					206
G		·903	291·4					250
		·899	248·4					237
		·861	311·0					157

Group 12495. Aug. 16–17. A pair of spots on August 16: a single spot on August 17.
Group 12496. Aug. 18–21. One or two small spots.
Group 12497. Aug. 18–25. A spot breaking up into a small cluster on August 20.
Group 12498. Aug. 18–Sept. 1. Return of Group 12455. A very large spot, with triple umbra, followed by extensive faculæ. From August 24 to 29, the spot is nearly cleft in two, but afterwards consolidates.
Group 12499. Aug. 19–29. A stream in high latitude with the most stable spot as the follower.
Group 12500. Aug. 19–29. A small spot on August 19 which rapidly increases to a stream by August 20. The leader, a spot with a double umbra, becomes composite for a few days and then changes to a regular spot by August 26.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
231·475	12486	·977	280·4	134·3	+11·6	94	444	507*c*
	12481	·987	243·8	131·9	−24·3	48	248	327*f*
G	12490	·718	279·0	101·8	+11·2	17	69	
	12499	·774	131·4	15·8	−25·5	32	158	157*c*
	12496	·753	62·8	8·3	+24·8	2	4	314*c*
	12497	·789	55·4	6·6	+31·1	11	52	
	12500	·796	107·4	5·5	− 9·4	47	255	172*c*
	12501	·806	67·0	2·5	+22·5	4	12	120*c*
	12498	·903	56·8	351·9	+32·8	228	1028	1133*f*
	12502	·942	109·8	348·7	−16·0	10	31	180*c*
		·871	78·1					138
		·936	71·2					344
		·952	117·2					201
Aug. 20			(+17·8)	(55·7)	(+ 6·9)	(493)	(2301)	(4719)
232·475		·959	295·0					167
		·937	277·1					209
		·775	288·5					117
	12490	·875	279·7	104·0	+11·8	11	24	268*c*
	12499	·665	141·5	15·4	−25·1	37	166	
G	12496	·603	56·3	8·8	+25·8	3	13	
	12500	·639	112·6	6·0	− 8·6	68	274	
	12497	·678	49·5	5·4	+31·7	7	22	
	12501	·650	63·0	3·8	+22·6	5	15	
	12498	·813	54·1	351·1	+32·8	217	1091	2912*c*
	12502	·853	114·3	348·5	−16·6	10	28	132*c*
	12503	·983	76·4	322·0	+14·5	13	48	341*p*
		·843	73·1					472
Aug. 21			(+18·1)	(42·5)	(+ 6·9)	(371)	(1681)	(4618)
233·385		·972	254·7					182
		·913	282·7					455
G		·874	252·7					221
	12504	·738	289·7	77·7	+19·2	7	44	
	12499	·578	155·6	15·3	−24·9	29	128	
	12500	·476	123·6	7·0	− 8·8	42	269	
	12501	·491	55·7	4·6	+22·3	4	17	
	12497	·579	41·4	3·8	+31·9	3	22	
	12502	·708	120·2	351·3	−15·4	10	29	
	12498	·713	49·8	350·3	+32·8	219	1103	2045*f*
	12505	·916	58·2	324·4	+31·8	9	28	
	12503	·924	77·0	322·2	+14·7	12	55	343*f*
233·385	*1122m*	·957	103·8	319·5	−11·0	3	12	205*c*
	12506	·971	112·6	318·3	−19·9	4	14	197*f*
G		·852	76·6					281
		·888	114·1					221
		·967	120·9					220
Aug. 22			(+18·4)	(30·5)	(+ 7·0)	(342)	(1721)	(4370)
234·335		·981	280·6					171
		·956	289·2					237
		·921	255·8					290
		·874	275·5					465
		·861	233·5					213
		·845	245·1					361
	12504	·868	286·8	78·6	+18·0	50	123	305*c*
	12499	·551	171·2	12·5	−25·9	91	357	
	12500	·313	149·3	8·6	− 8·6	47	212	
	12497	·447	27·6	4·1	+30·1	4	10	
G	12501	·357	41·2	3·2	+22·3	3	12	
	12502	·539	131·0	353·2	−14·3	23	73	
	12498	·598	41·7	349·8	+32·7	223	1111	
	1122n	·497	69·4	349·1	+16·2	0	4	
	12507	·726	76·2	331·3	+14·8	37	77	
	12505	·844	56·4	322·2	+31·9	5	7	1057*n*
	12503	·824	77·4	322·0	+14·3	12	69	361*f*
	12506	·903	116·0	318·5	−19·8	2	6	277*f*
		·879	107·0					213
		·912	125·2					254
		·963	75·0					218
Aug. 23			(+18·6)	(17·9)	(+ 7·0)	(497)	(2061)	(4422)
235·335		·973	257·0					204
		·953	276·6					372
G		·919	226·2					253
		·895	243·0					1000
		·857	280·4					339
	12504	·956	286·2	78·7	+17·5	28	151	512*c*
	12508	·290	303·3	19·2	+15·9	11	29	
	12509	·318	319·8	17·3	+20·9	13	40	
	1122o	·161	295·4	13·2	+10·8	7	12	
	12499	·562	191·4	11·8	−26·4	81	365	
	12500	·286	200·1	10·3	− 8·5	41	206	
	12501	·266	351·5	7·1	+22·2	4	12	

Group 12501. Aug. 20–29. Feeble but sustained activity represented by a few small, variable spots.
Group 12502. Aug. 20–30. At first, one or two small unstable spots which become a definite pair by August 23 and develop into a stream of normal type. The following part of the stream is short-lived.
Group 12503. Aug. 21–30. A small regular spot followed at some distance by a cluster which has died out by August 28.
Group 12504. Aug. 22–24. A group appearing near the west limb.
Group 12505. Aug. 22–30. A small spot on August 22–23: a variable spot or cluster on August 27–30.
Group 12506. Aug. 22–23. A single ephemeral spot.
Group 12507. Aug. 23–Sept. 1. A diminutive stream.
Group 12508. Aug. 24–29. A small stream represented by two definite spots — leader and follower — on August 27 and 28.
Group 12509. Aug. 24–26. A very small, short-lived stream.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
235·335	12502	·402	153·9	354·2	−14·2	71	330	
	12498	·496	27·8	348·8	+32·7	201	1064	
G	*1122p*	·756	151·9	338·9	−35·4	0	7	
	12507	·556	73·4	331·4	+15·0	33	71	
	12503	·713	75·6	319·2	+15·1	22	100	176*c*
		·789	47·2					462
		·819	131·7					208
		·845	119·3					286
		·912	73·4					455
		·936	85·0					319
		·952	118·3					375
		·952	107·9					201
		·963	99·2					117
Aug. 24			(+19·0)	(4·7)	(+ 7·0)	(512)	(2387)	(5279)
236·491		·994	288·9					281
		·973	276·1					232
		·966	244·2					312
		·959	252·6					338
		·928	287·4					297
		·869	242·3					324
	12508	·554	286·9	22·7	+15·2	3	8	
	12509	·506	299·5	17·5	+20·7	5	37	
	12500	·453	233·8	11·1	− 8·9	49	232	
	12499	·641	210·9	11·0	−26·7	77	386	
G	12497	·479	333·5	4·1	+32·2	3	21	
	12501	·358	322·1	3·3	+23·2	5	27	
	12502	·365	195·8	355·3	−13·4	88	459	
	12498	·438	2·7	348·1	+32·9	200	1077	
	12507	·332	64·1	331·6	+15·1	13	58	
	1123a	·589	24·5	331·2	+39·0	3	14	
	12503	·507	71·9	319·7	+15·2	19	84	
		·825	75·3					451
		·833	110·2					154
		·850	61·1					204
		·882	122·7					407
		·931	52·9					209
		·936	74·7					326
		·938	104·2					326
Aug. 25			(+19·3)	(349·5)	(+ 7·1)	(465)	(2403)	(3861)
237·555		·953	250·2					156
	12508	·737	284·2	23·0	+15·2	27	58	
G	12509	·683	293·0	17·5	+20·8	6	37	
	12500	·624	246·2	10·5	− 8·7	63	293	
	12499	·738	222·4	9·3	−27·1	62	318	
	12501	·515	304·8	2·7	+23·4	12	85	

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
237·555	12502	·481	224·8	355·7	−13·2	87	388	
	12498	·470	338·4	347·2	+32·8	213	1020	
G	12507	·141	21·8	332·3	+14·5	8	29	
	12503	·313	61·7	318·9	+15·3	21	86	
	12510	·838	109·2	281·7	−11·8	6	29	347*c*
		·907	75·6					282
		·963	106·2					199
		·971	67·0					646
Aug. 26			(+19·6)	(335·4)	(+ 7·1)	(505)	(2343)	(1630)
238·617	12508	·885	282·5	24·3	+14·4	51	257	367*c*
	12500	·790	252·7	11·0	− 9·0	59	267	310*c*
	12499	·834	230·3	7·5	−27·3	41	163	713*c*
	12501	·708	296·9	4·9	+23·9	6	33	
	12502	·648	240·5	356·6	−12·8	58	263	
	12498	·568	321·5	346·2	+32·5	218	1007	
G	*1123b*	·421	304·6	343·0	+20·4	4	13	
	12507	·206	310·9	330·6	+14·7	6	23	
	12505	·438	1·6	320·6	+33·0	13	49	
	12503	·151	9·7	319·9	+15·6	12	23	
	12510	·681	115·5	282·7	−11·5	3	7	
	12511	·978	80·1	242·6	+11·1	21	85	76*c*
	12512	·975	62·3	242·5	+28·5	36	276	178*c*
		·871	107·9					235
		·914	68·5					556
Aug. 27			(+19·9)	(321·4)	(+ 7·1)	(528)	(2466)	(2435)
239·363		·909	289·4					214
		·833	305·1					340
	12508	·954	282·5	25·0	+14·1	63	284	534*c*
	12500	·892	255·5	12·4	− 9·5	24	206	427*c*
	12499	·893	234·1	6·0	−27·6	14	87	581*p*
	12501	·811	294·1	5·2	+23·6	3	19	136*c*
	12502	·764	246·9	357·4	−12·5	41	214	228*c*
	12498	·659	313·1	346·2	+32·5	157	981	
C	12507	·396	291·7	333·8	+15·0	5	20	
	12503	·246	310·1	322·7	+16·1	7	32	
	12505	·453	344·3	319·8	+32·8	5	25	
	12510	·553	124·1	283·7	−11·7	0	14	
	12512	·931	61·7	242·3	+28·9	38	379	1138*c*
	12511	·944	79·7	240·1	+12·0	44	214	486*c*
		·791	115·6					347
		·832	66·7					1317
		·953	120·9					233
		·955	109·3					201
Aug. 28			(+20·1)	(311·5)	(+ 7·1)	(401)	(2475)	(6182)

Group 12510. Aug. 26–Sept. 4. One or two small spots until August 30; then a small cluster until September 2 when more vigorous spots develop into a stream.
Group 12511. Aug. 27–Sept. 3. Smallish spots, in stream formation, that diminish to tiny markings within a few days.
Group 12512. Aug. 27–Sept. 7. An irregular stream of partially-formed spots. The leader alone remains on September 7. Apparently a return of Group 12464 but complete continuity of activity uncertain.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
240·473		·982	243·2					282
		·921	281·6					151
		·899	303·0					510
		·839	284·8					290
	12508	·986	285·7	18·6	+16·6	23	111	611*c*
	12500	·973	258·0	11·7	− 9·8	37	238	456*f*
	12499	·966	238·4	5·5	−28·0	10	17	258*c*
	12501	·921	292·9	4·7	+23·8	6	18	406*c*
	12502	·902	252·3	358·3	−12·5	44	216	330*c*
G	12498	·780	307·0	344·6	+32·9	190	982	308*c*
	12507	·597	282·9	333·5	+13·5	3	3	
	1123c	·642	316·2	329·0	+33·6	0	3	
	12503	·444	291·9	322·2	+16·0	12	15	
	12505	·549	324·2	319·3	+33·0	8	34	
	12510	·382	148·8	285·3	−11·9	5	15	
	12512	·838	60·6	241·0	+28·4	108	571	258*c*
	12511	·833	81·0	240·0	+11·5	39	190	195*c*
		·898	52·3					348
		·926	115·2					284
		·930	124·8					240
Aug. 29			(+20·4)	(296·9)	(+ 7·2)	(485)	(2413)	(4927)
241·400		·989	259·9					315
		·973	292·5					292
		·966	302·1					355
		·944	284·6					291
		·930	244·0					169
		·853	289·4					249
	12502	·974	255·7	359·2	−12·1	20	189	354*f*
	12498	·873	303·9	344·1	+33·0	172	1010	525*c*
	12507	·706	283·3	329·6	+14·5	10	38	
	12503	·616	287·3	322·2	+16·3	3	9	
G	12505	·661	314·7	318·8	+33·6	1	6	
	12510	·337	181·9	285·3	−12·4	10	26	
	1123d	·478	71·5	256·7	+15·1	3	5	
	12513	·530	58·4	255·5	+22·3	4	14	
	12512	·736	57·4	239·9	+28·5	126	754	
	12511	·706	80·5	239·4	+11·8	19	145	
		·840	119·1					164
		·847	49·3					202
		·896	128·3					204
		·959	80·8					158
		·965	112·0					180
		·972	100·1					142
Aug. 30			(+20·7)	(284·6)	(+ 7·2)	(368)	(2196)	(3600)
1937.			°	°	°			
242·385		·981	253·8					171
		·953	290·2					155
		·793	309·9					419
	12498	·944	302·4	343·0	+32·9	156	933	476*f*
	12507	·848	282·3	330·1	+14·2	22	64	122*c*
	1123e	·836	250·9	325·2	−11·7	0	8	100*f*
	12510	·420	219·6	287·4	−11·9	5	23	
	12513	·339	42·3	257·5	+21·5	1	7	
G	12511	·524	79·3	240·0	+11·7	17	55	
	12512	·612	50·5	239·1	+28·9	108	531	
	12514	·777	87·1	220·4	+ 6·8	11	36	
	12515	·968	71·9	194·8	+19·3	63	347	346*c*
	12516	·983	103·7	194·3	−11·9	13	24	292*np*
		·872	105·5					142
		·897	121·4					148
		·902	131·3					214
		·940	113·3					444
		·976	80·6					297
Aug. 31			(+20·9)	(271·6)	(+ 7·2)	(396)	(2028)	(3326)
243·340		·962	293·6					254
		·910	254·0					162
		·900	239·4					336
		·813	283·8					155
	12498	·986	302·5	341·6	+33·1	146	961	1550*f*
	12507	·942	282·2	330·3	+13·9	10	47	343*c*
	12510	·561	235·8	287·2	−12·0	10	40	
	12517	·532	240·8	286·9	− 8·7	3	8	
G	12511	·296	73·9	242·2	+11·6	6	25	
	12512	·494	39·1	238·2	+29·2	93	579	
	12514	·613	87·8	221·1	+ 7·0	20	52	
	12516	·918	105·9	194·9	−11·5	11	29	513*c*
	12515	·898	72·0	194·4	+19·3	53	331	945*c*
		·794	107·2					145
		·858	117·8					326
		·864	128·6					258
		·958	114·2					187
Sept. 1			(+21·2)	(259·0)	(+ 7·2)	(352)	(2072)	(5174)
244·337		·978	255·4					106
		·968	286·8					400
G		·960	243·2					512
		·955	301·4					498

Group 12513. Aug. 30–31. One or two small faint-spots.
Group 12514. Aug. 31–Sept. 3. A small short-lived stream.
Group 12515. Aug. 31–Sept. 11. A fairly large spot with multiple umbræ breaking up after September 2 and slowly fading out. On September 11, a small pair of spots appears nearby.
Group 12516. Aug. 31–Sept. 6. Return of Group 12471. A small but definite spot.
Group 12517. Sept. 1–3. One or two small spots *n* Group 12510.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
244·337		·933	310·6					1021
		·873	285·4					190
G		·866	234·5					292
	12517	·707	248·6	287·5	− 9·6	5	24	
	12510	·700	243·1	285·5	−12·9	38	229	
	12518	·589	271·1	282·0	+ 6·5	12	25	
	12511	·071	22·4	244·2	+11·0	4	24	
	12512	·404	18·2	237·5	+29·6	75	447	
	12514	·405	89·8	221·8	+ 6·7	8	20	
	12516	·810	109·8	195·0	−11·4	9	17	399*c*
	12515	·782	70·9	194·5	+19·3	45	250	671*f*
	12519	·823	77·2	190·0	+14·6	2	4	
		·768	125·4					177
		·860	119·7					158
		·942	73·0					326
		·947	118·0					228
		·950	57·9					251
		·956	110·0					183
Sept. 2			(+21·4)	(245·8)	(+ 7·2)	(198)	(1040)	(5412)
245·383		·962	308·5					743
		·944	239·2					238
		·928	284·8					266
	1123f	·966	294·9	308·6	+25·9	4	10	228*s*
	12517	·842	253·7	286·8	− 9·6	8	25	230*c*
	12510	·840	249·5	285·6	−12·9	50	222	
	12518	·745	272·6	280·3	+ 6·7	7	10	
	1123g	·436	235·5	253·2	− 7·5	3	14	
	12511	·209	283·8	243·8	+ 9·9	1	5	
	12520	·297	214·9	241·8	− 6·9	5	21	
G	12512	·399	347·9	237·5	+30·0	57	253	
	12514	·180	90·5	221·6	+ 6·9	1	3	
	12516	·658	115·7	195·0	−10·8	5	6	
	12515	·628	67·9	194·1	+19·4	38	211	
	12519	·673	76·7	189·7	+14·2	3	9	
	1123h	·964	79·1	156·5	+12·4	4	13	504*c*
	12521	·985	79·8	151·0	+11·2	96	474	281*c*
		·834	71·1					214
		·868	122·1					375
		·891	56·3					247
		·952	119·7					311
		·966	108·3					150
Sept. 3			(+21·7)	(232·0)	(+ 7·2)	(282)	(1276)	(3787)
1937.			°	°	°			
246·337		·916	287·1					285
	12510	·937	252·8	286·0	−13·3	40	214	663*c*
	12518	·872	274·1	280·4	+ 7·1	5	9	104*c*
	12520	·429	237·5	240·7	− 6·6	3	8	
	12512	·465	326·1	236·7	+29·5	37	251	
	12522	·301	161·7	213·9	− 9·3	8	17	
	12516	·501	126·3	195·2	−10·6	3	9	
G	12515	·460	61·7	194·1	+19·1	28	147	
	12519	·507	72·7	189·5	+14·9	3	17	
	1123i	·888	117·7	162·5	−20·5	2	10	413*s*
	12521	·925	80·6	151·1	+11·4	97	484	502*c*
		·872	68·0					356
		·899	111·3					82
		·961	69·3					273
Sept. 4			(+21·9)	(219·4)	(+ 7·2)	(226)	(1166)	(2678)
247·369		·985	254·7					321
		·950	304·7					172
		·918	290·1					199
		·911	251·8					245
	12518	·964	275·5	280·8	+ 7·2	0	9	133*f*
	12512	·597	310·3	237·0	+28·9	32	118	
G	12522	·327	209·3	215·1	− 9·4	6	22	
	12515	·288	43·7	193·7	+19·0	21	97	
	12519	·271	65·9	191·1	+13·3	5	26	
	12521	·827	81·2	149·6	+11·3	111	534	1081*c*
		·784	128·7					309
		·891	66·3					198
		·922	123·3					218
		·961	68·3					161
		·976	111·9					164
Sept. 5			(+22·1)	(205·8)	(+ 7·2)	(175)	(806)	(3201)
248·324		·974	290·6					239
		·963	254·8					262
C		·935	281·6					183
		·870	292·0					1211
		·817	235·4					322
		·783	278·0					396
	12512	·712	305·6	234·8	+29·9	19	104	502*p*
	1123j	·770	222·7	229·5	−28·7	2	7	257*c*
	12522	·466	232·8	215·1	− 9·6	4	10	

Group 12518. Sept. 2–5. A pair of spots on September 2 of which one component remains afterwards.
Group 12519. Sept. 2–8. A few small spots *s* Group 12515.
Group 12520. Sept. 3–4. A pair of small spots on September 3 of which one is left on September 4.
Group 12521. Sept. 3–15. A large circular spot followed at some distance by a nebulous companion. Other spots increase the train during the next few days. After September 10, an offshoot develops on the southern part of the leader spot but breaks up into a cluster on September 13 and disappears by September 15.
Group 12522. Sept. 4–6. A small, very dark spot.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

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1937.			°	°	°			
248·324	12523	·295	280·2	210·2	+ 9·9	29	107	
	12515	·195	354·4	194·2	+18·4	19	63	
C	12516	·337	182·6	194·0	−12·4	0	16	
	12519	·107	16·8	191·3	+13·1	6	50	
	12521	·670	80·8	150·8	+11·5	110	503	566*f*
	1123k	·942	119·8	128·9	−24·9	3	6	137*f*
	12524	·993	77·8	108·7	+12·9	16	73	241*f*
		·784	66·0					290
		·888	71·4					285
		·896	113·6					300
		·913	59·4					218
		·959	107·4					313
Sept. 6			(+22·4)	(193·1)	(+ 7·2)	(208)	(939)	(5722)
249·382		·972	248·4					104
		·964	289·8					470
		·912	278·0					225
		·872	246·0					172
		·871	233·8					408
		·830	279·8					121
	12512	·870	295·4	239·5	+25·5	5	7	625*c*
	1123l	·823	307·8	231·4	+34·8	8	28	405*c*
	12523	·539	276·4	212·0	+ 9·5	38	195	
G	12515	·318	308·0	194·4	+18·2	8	23	
	12519	·228	298·6	191·0	+13·3	1	17	
	12525	·398	82·0	155·7	+ 9·8	10	32	
	12521	·489	79·8	149·9	+11·2	105	524	
	12526	·759	83·2	129·5	+ 9·8	4	7	151*f*
	12524	·949	78·8	106·8	+12·9	39	223	208*c*
		·761	69·0					154
		·848	54·2					274
		·912	109·8					335
		·914	122·2					152
Sept. 7			(+22·6)	(179·2)	(+ 7·2)	(218)	(1056)	(3804)
250·392		·955	294·6					544
		·951	281·0					362
G		·881	304·6					890
	12523	·722	276·4	212·3	+ 9·6	31	185	
	1123m	·781	240·1	211·0	−17·8	2	4	247*c*
	12515	·512	293·1	195·3	+17·8	6	19	
	12519	·447	285·8	191·9	+13·4	3	24	
	12525	·189	72·6	155·3	+10·3	5	26	

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
250·392	12521	·288	75·6	149·4	+11·0	115	554	
	12526	·579	81·5	130·3	+10·8	23	91	
G	12527	·688	68·8	123·0	+19·7	14	37	
	12524	·856	78·8	106·4	+13·3	105	686	245*c*
		·910	228·3					376
		·928	50·4					210
		·938	249·7					210
		·947	239·8					494
		·956	77·0					341
Sept. 8			(+22·8)	(165·8)	(+ 7·2)	(304)	(1626)	(3919)
251·402		·960	275·4					185
		·955	234·6					345
		·944	306·0					1018
		·939	286·8					372
		·912	252·2					517
		·836	239·6					489
		·763	254·5					211
C	12523	·853	276·4	211·4	+ 9·2	55	258	382*c*
	12515	·681	288·4	195·1	+17·8	3	24	
	12525	·068	308·4	155·6	+ 9·6	16	56	
	12521	·093	36·0	149·3	+11·5	121	607	
	12526	·381	79·0	130·2	+10·8	15	103	
	12527	·473	62·7	126·2	+19·0	26	87	
	12524	·716	78·8	106·6	+13·1	63	413	115*c*
		·908	81·2					388
		·958	70·1					595
Sept. 9			(+23·0)	(152·5)	(+ 7·2)	(299)	(1548)	(4617)
252·336		·964	256·6					285
		·954	307·3					444
G		·949	231·0					160
		·943	244·2					451
		·857	257·0					271
		·834	243·6					326
		·786	228·0					143
	12523	·943	277·0	211·3	+ 9·0	48	422	601*c*
	12515	·815	285·6	195·1	+16·9	4	15	171*f*
	12525	·273	282·5	155·8	+10·3	12	60	
	12521	·173	295·3	149·3	+11·3	131	622	
	1123n	·182	25·1	135·6	+16·6	3	8	
	12526	·170	66·2	131·1	+11·1	30	119	
	12527	·305	45·5	126·9	+19·3	12	56	

Group 12523. Sept. 6–11. A small stream showing increased development near the west limb.
Group 12524. Sept. 6–18. A rapidly developing group resolving into a pair of fairly large spots on September 9. These soon break up, but the chief nucleus of each spot persists to the west limb.
Group 12525. Sept. 7–14. A stream of a few spots appearing in front of Group 12521.
Group 12526. Sept. 7–17. A stream of little importance until after September 12 when considerable changes take place, and two very large spots become the new leader and follower.
Group 12527. Sept. 8–17. A partially-formed regular spot with a small companion.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
252·336	12528	·399	139·8	125·1	−10·7	19	42	
	12524	·555	77·1	106·6	+13·1	75	518	
G		·736	108·8					142
		·854	78·0					193
		·888	68·0					249
		·948	96·0					133
		·954	76·4					203
		·956	112·2					311
Sept. 10			(+23·2)	(140·2)	(+ 7·2)	(334)	(1862)	(4083)
253·338		·958	248·0					397
		·942	261·5					282
		·868	245·8					136
		·856	234·1					256
	12523	·987	278·0	208·4	+ 9·0	27	185	345*c*
	12515	·914	281·6	193·7	+13·5	6	11	653*nf*
	12525	·480	278·8	155·6	+10·5	17	78	
	12521	·396	281·8	150·1	+11·2	131	857	
G	12526	·103	313·9	131·2	+11·3	63	301	
	12527	·213	358·6	127·2	+19·4	12	58	
	12528	·301	177·4	126·1	−10·2	27	102	
	12524	·361	71·7	106·4	+13·2	61	411	
		·791	66·6					96
		·851	98·7					118
		·860	75·8					153
		·897	117·8					334
		·918	108·6					269
		·951	125·6					318
Sept. 11			(+23·4)	(126·9)	(+7·2)	(344)	(2003)	(3357)
254·385		·953	286·7					634
		·939	246·7					390
		·878	233·4					282
	12525	·700	277·2	157·8	+10·2	13	41	
	12521	·605	279·4	150·4	+11·4	125	1037	
	12526	·322	283·6	131·6	+11·2	107	505	
	12528	·380	217·6	126·7	−10·4	19	76	
G	12527	·306	314·8	126·3	+19·4	12	61	
	12524	·165	43·4	106·4	+14·0	48	341	
	12529	·985	77·9	31·9	+13·1	51	271 }	505*c*
	12530	·991	73·6	29·4	+17·1	0	83 }	
		·815	117·4					486
		·878	130·6					183
Sept. 12			(+23·6)	(113·1)	(+ 7·2)	(375)	(2415)	(2480)
1937.			°	°	°			
255·454		·974	252·3					108
		·957	284·2					201
		·936	239·9					532
		·907	292·2					240
		·864	305·6					190
	12525	·831	278·3	155·6	+10·9	16	77	191*c*
G	12521	·774	279·2	150·1	+11·7	118	795	
	12526	·546	279·5	132·2	+11·2	207	1070	
	12527	·499	297·6	126·9	+19·7	8	25	
	12528	·536	237·3	126·2	−10·4	14	51	
	12524	·170	314·8	106·1	+14·0	63	196	
	12529	·927	78·8	30·3	+13·1	41	257 }	845*c*
	12530	·933	73·7	29·1	+17·8	25	99 }	
Sept. 13			(+23·8)	(99·0)	(+ 7·2)	(492)	(2570)	(2307)
256·389		·981	241·5					239
		·967	288·2					166
		·936	304·6					196
		·930	296·0					116
		·876	288·8					122
		·838	297·3					160
	12525	·927	277·9	155·2	+10·0	21	68	259*c*
G	12521	·891	280·0	150·3	+12·1	118	719	410*c*
	12526	·718	278·4	132·9	+11·1	248	1558	
	12528	·696	246·2	127·0	−10·8	10	34	
	12527	·660	292·3	127·0	+20·0	6	12	
	12524	·355	288·8	106·8	+13·3	34	133	
	12529	·823	79·2	30·9	+13·0	44	261 }	698*c*
	12530	·842	73·6	29·0	+17·6	10	38 }	
	12531	·953	113·4	18·6	−19·7	8	23	181*f*
		·981	65·2					159
		·955	101·4					244
Sept. 14			(+24·0)	(86·7)	(+ 7·2)	(499)	(2846)	(2950)
257·334		·927	293·6					364
		·883	244·7					204
G	12521	·964	280·1	149·6	+11·7	124	491	958*c*
	12526	·854	278·8	133·3	+11·2	296	1700	350*c*
	12528	·830	251·6	127·3	−10·9	4	10	157*c*
	12527	·797	289·6	127·0	+19·9	7	19	
	12524	·540	282·6	106·8	+12·8	28	90	
	12529	·683	78·4	31·0	+13·2	40	251	
	12530	·744	74·1	26·1	+16·6	24	88	
	12531	·878	116·8	18·2	−19·4	17	50	198*c*

Group 12528. Sept. 10–15. A small, short-lived stream.
Group 12529. Sept. 12–24. A pair of regular spots of which the smaller is in front.
Group 12530. Sept. 12–20. Possible return of Group 12508. A single spot breaking up rapidly. On September 15, two new spots appear close behind.
Group 12531. Sept. 14–24. A regular spot slowly diminishing to a dot; there is a small follower on September 15.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
257·334		·870	103·6					137
		·921	76·8					150
G		·932	63·4					190
		·955	53·7					149
Sept. 15			(+24·2)	(74·2)	(+ 7·2)	(540)	(2699)	(2857)
258·360		·979	292·7					108
		·929	246·6					265
		·921	255·5					234
		·880	302·4					234
	12526	·945	279·7	132·3	+11·5	221	1735	837*c*
	12527	·902	287·9	125·7	+19·2	10	25	263*c*
	12524	·730	280·5	107·8	+12·6	13	33	
	12529	·498	76·4	30·9	+13·0	43	234	
G	12530	·576	71·3	26·0	+16·6	16	126	
	12531	·734	123·7	20·7	−18·5	20	67	
	12532	·826	128·5	14·8	−26·0	2	4	139*f*
	12533	·958	75·5	346·2	+15·9	7	31	259*f*
		·802	64·3					168
		·805	109·5					242
		·900	55·6					320
		·928	109·5					388
		·943	125·8					139
		·960	66·3					238
		·985	57·7					223
Sept. 16			(+24·3)	(60·6)	(+ 7·2)	(332)	(2255)	(4057)
259·423		·982	257·7					233
		·941	302·1					257
G		·870	257·0					80
	12526	·987	280·7	128·7	+11·9	82	627	496*c*
	12527	·972	287·7	124·4	+18·8	0	8	292*c*
	12524	·876	280·6	108·4	+12·8	4	14	370*c*
	1123o	·864	285·1	106·9	+16·7	2	14	
	12534	·244	150·9	39·8	− 5·1	4	14	
	12529	·281	69·5	31·0	+12·5	37	185	
	12530	·357	63·5	27·3	+15·9	26	123	
	12531	·591	136·0	21·0	−18·6	11	67	
	12532	·707	138·3	15·3	−25·7	1	6	
	12533	·874	75·1	345·2	+16·4	9	18	294*f*
	12535	·972	56·9	328·4	+33·8	56	293	483*c*
		·845	51·9					355

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
259·423		·875	130·7					204
		·898	66·3					165
G		·961	73·5					159
		·961	114·9					191
		·987	104·3					206
Sept. 17			(+24·5)	(46·6)	(+ 7·2)	(232)	(1369)	(3785)
260·344		·951	305·7					101
		·888	253·7					121
		·857	282·3					238
		·853	241·7					188
	12524	·948	281·3	106·7	+12·9	3	6	587*n*
	12534	·243	208·4	41·0	− 5·2	21	56	
	12529	·105	33·9	31·0	+12·1	21	155	
	12530	·209	38·9	26·6	+16·4	18	86	
G	12531	·486	153·2	21·1	−18·7	13	58	
	12536	·487	76·7	5·5	+12·7	18	43	
	12533	·731	73·3	347·5	+17·0	3	12	151*f*
	12535	·918	56·1	328·1	+33·8	50	270	512*c*
	12537	·973	113·8	322·0	−21·1	9	15	173*f*
		·815	138·4					164
		·897	74·5					121
		·907	119·3					181
		·941	107·9					302
		·981	53·3					340
Sept. 18			(+24·7)	(34·4)	(+ 7·1)	(156)	(701)	(3179)
261·391		·957	285·4					296
		·947	254·0					296
C		·927	272·8					173
		·867	283·6					251
		·802	296·4					199
		·795	237·3					254
	12534	·425	242·3	42·7	− 4·8	18	71	
	12538	·323	265·9	39·4	+ 5·4	7	28	
	12529	·200	296·8	31·1	+12·1	31	151	
	12530	·215	320·2	28·8	+16·5	7	24	
	12531	·437	180·2	20·7	−18·7	10	54	
	12536	·255	65·8	6·9	+12·9	52	279	
	12533	·561	70·2	347·3	+16·9	8	16	
	12535	·829	53·6	327·4	+33·8	54	258	534*c*
	12537	·905	117·3	321·3	−21·0	5	10	429*f*
		·808	116·3					192

Group 12532. Sept. 16–17. A small spot.
Group 12533. Sept. 16–24. One or two small spots.
Group 12534. Sept. 17–21. A small group with a brief maximum on September 19.
Group 12535. Sept. 17–30. Return of Group 12498: 3rd appearance. A stable regular spot.
Group 12536. Sept. 18–26. A stream in which the leader, a regular spot, predominates.
Group 12537. Sept. 18–19. A small spot.
Group 12538. Sept. 19–22. A small, short-lived stream.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
261·391		·839	65·9					268
		·936	83·8					290
C		·947	62·7					470
		·957	52·0					685
		·967	122·8					147
Sept. 19			(+24·8)	(20·6)	(+ 7·1)	(192)	(891)	(4484)
262·380		·972	290·6					117
		·965	280·4					190
		·905	292·4					157
		·900	242·0					435
		·899	260·1					122
		·890	229·4					110
		·869	281·2					220
	12534	·630	253·4	44·7	− 4·7	9	20	
	12538	·540	268·4	40·3	+ 5·1	22	66	
	1123p	·476	298·6	33·8	+19·5	1	4	
G	12529	·410	283·8	31·5	+12·1	33	156	
	12530	·368	295·6	27·7	+15·8	5	17	
	12531	·486	205·9	20·5	−18·9	13	46	
	12536	·113	357·4	7·9	+13·6	44	259	
	12533	·384	61·5	347·0	+17·2	8	22	
	12535	·727	48·6	326·6	+34·1	59	266	
	12539	·975	103·8	292·6	−11·7	15	80	320*n*
		·821	121·4					392
		·839	85·4					180
		·879	60·8					352
		·900	49·2					1026
		·917	127·4					89
		·923	74·2					102
Sept. 20			(+25·0)	(7·6)	(+ 7·1)	(209)	(936)	(3812)
263·401		·964	260·5					120
		·958	251·1					194
C		·958	240·3					335
		·955	285·4					271
	12534	·793	259·0	45·2	− 4·2	6	14	113*c*
	12538	·723	269·9	40·4	+ 4·9	19	50	
	12529	·602	280·5	31·2	+11·9	30	139	
	12531	·599	223·7	20·0	−19·2	9	38	
	12540	·408	202·4	3·3	−15·1	4	9	
	12536	·283	295·0	9·3	+13·7	46	228	
	12533	·218	32·8	347·0	+17·6	9	24	
	12535	·612	39·9	325·9	+34·2	35	224	
	12539	·900	106·5	292·6	−11·5	17	82	866*c*
1937.			°	°	°			
263·401	12541	·888	78·3	290·9	+13·6	2	4	100*f*
		·812	46·9					802
C		·819	59·4					255
		·907	49·6					435
		·970	45·7					255
Sept. 21			(+25·1)	(354·1)	(+ 7·1)	(177)	(812)	(3746)
264·340		·940	285·3					65
		·881	260·4					208
		·837	275·3					78
	12538	·865	271·0	41·6	+ 4·4	6	14	113*c*
	12529	·753	279·4	30·8	+11·7	20	100	90*c*
	12531	·717	234·1	19·5	−19·3	11	16	
	12536	·484	284·6	10·3	+13·2	40	204	
	12540	·525	226·1	4·6	−14·8	20	65	
	12533	·210	326·6	348·6	+17·0	2	5	
	12542	·473	188·7	346·1	−20·7	4	13	
G	12535	·522	27·2	325·0	+34·3	51	242	
	1124a	·552	88·0	308·1	+ 6·9	1	2	
	12539	·787	110·7	293·2	−11·5	11	47	221*c*
	12541	·774	78·6	290·7	+13·2	24	60	71*c*
	12543	·989	70·4	258·4	+20·4	7	13	285*c*
		·802	50·2					202
		·898	42·2					147
		·928	110·0					33
		·933	116·9					99
		·969	105·3					111
		·977	78·4					166
Sept. 22			(+25·2)	(341·7)	(+ 7·0)	(197)	(781)	(1889)
265·354		·958	262·5					263
		·943	273·5					272
G		·935	243·1					163
		·818	288·0					300
	12529	·877	279·1	30·1	+11·3	16	78	402*p*
	12531	·838	241·5	19·4	−19·2	10	16	147*c*
	12536	·666	281·3	10·2	+12·7	40	215	
	12540	·671	238·7	4·5	−14·7	36	178	
	1124b	·714	319·9	4·3	+38·8	3	10	
	12533	·348	300·1	346·5	+16·7	5	36	
	12542	·541	207·5	343·8	−21·8	5	27	
	12535	·464	7·8	324·0	+34·2	43	223	
	12544	·295	77·0	311·4	+10·5	0	2	
	12539	·640	117·8	293·1	−11·6	9	26	
	12541	·599	77·7	291·5	+12·9	19	60	

Group 12539. Sept. 20–24. Possible return of Group 12510. A small regular spot dying out rather quickly.
Group 12540. Sept. 21–26. A stream of active spots.
Group 12541. Sept. 21–29. A group of stream type of rather feeble development.
Group 12542. Sept. 22–26. A small group.
Group 12543. Sept. 22–30. Intermittent. A single spot until September 24: a small stream on September 25 and 27: a close pair on September 30.
Group 12544. Sept. 23–24. A single spot on each day differing somewhat in position.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
265·354	12545	·893	79·9	264·5	+12·1	20	43	236*c*
	12543	·934	70·3	258·3	+20·9	6	22	624*c*
G	12546	·971	73·3	250·9	+17·9	18	82	360*f*
		·869	107·7					158
		·968	109·8					229
		·973	81·4					264
Sept. 23			(+25·3)	(328·3)	(+ 7·0)	(230)	(1018)	(3418)
266·342		·912	288·0					477
		·893	257·8					226
		·813	313·4					54
	12529	·961	280·0	30·1	+11·5	7	35	351*c*
	12531	·930	246·4	19·4	−18·9	5	12	197*f*
	12536	·814	280·4	10·6	+13·8	58	237	241*c*
	12540	·815	246·2	5·6	−14·8	73	321	207*c*
	12533	·557	291·0	348·2	+17·3	2	13	
	12542	·644	223·1	343·5	−21·8	21	109	
G	12535	·478	346·9	322·8	+34·5	32	203	
	12544	·137	82·5	307·5	+ 8·0	1	4	
	12539	·490	129·7	292·8	−11·7	9	23	
	12541	·404	74·1	291·9	+12·8	10	37	
	12545	·768	79·8	264·8	+12·3	27	84	210*c*
	12543	·833	69·8	258·8	+20·7	8	13	561*f*
	12546	·912	74·6	248·8	+16·9	32	279	814*f*
		·919	83·3					227
		·922	113·8					202
		·971	62·0					392
		·976	110·5					90
Sept. 24			(+25·4)	(315·3)	(+ 7·0)	(285)	(1370)	(4249)
267·121		·969	287·5					310
		·839	299·3					161
K	12536	·907	280·2	10·7	+12·1	59	229	303*c*
	12540	·901	249·6	5·7	−15·0	63	367	218*c*
	12542	·740	232·0	343·7	−21·7	6	26	81*c*
	12547	·590	224·3	330·7	−18·7	2	12	
	12535	·532	332·5	322·3	+34·7	40	202	
	12541	·236	65·0	292·4	+12·5	6	37	
	12548	·474	126·1	282·2	− 9·8	19	50	
	12545	·638	79·2	265·3	+12·2	19	84	
	12543	·725	69·3	259·1	+19·7	7	43	
	12549	·793	45·9	258·5	+38·5	3	12	
	12546	·815	74·4	250·2	+16·7	42	211	416*c*
1937.			°	°	°			
267·121		·918	61·9					429
		·950	114·5					356
K		·972	103·8					226
		·985	52·2					245
Sept. 25			(+25·5)	(305·0)	(+ 6·9)	(266)	(1273)	(2745)
268·367		·958	291·9					134
		·884	304·7					190
		·844	286·3					146
	12536	·989	281·1	10·9	+11·9	36	236	485*f*
	12540	·980	252·3	4·1	−15·7	9	172	269*c*
	12542	·874	238·7	342·5	−23·0	2	9	235*c*
	12547	·758	236·9	330·6	−19·3	7	30	
	12535	·654	317·2	321·0	+34·5	32	186	
	1124c	·533	346·3	297·7	+37·9	1	5	
	12541	·124	319·9	293·2	+12·3	6	14	
G	12548	·304	158·3	282·0	− 9·5	18	68	
	12545	·398	75·0	265·4	+12·2	16	88	
	12549	·676	36·7	257·4	+38·7	18	52	
	12546	·613	71·1	251·3	+16·9	34	218	
	12550	·983	112·8	212·7	−20·9	5	11	145*c*
		·825	57·9					227
		·873	113·4					315
		·918	123·1					294
		·920	69·7					155
		·933	59·0					260
		·943	80·2					503
		·959	49·2					371
Sept. 26			(+25·7)	(288·5)	(+ 6·9)	(184)	(1089)	(3729)
269·335		·959	303·6					254
		·946	285·4					176
G		·943	241·7					249
		·910	292·6					200
		·889	307·2					261
	12547	·859	241·6	329·2	−20·1	2	4	198*p*
	12535	·757	310·6	319·9	+34·5	27	198	
	12541	·300	291·6	292·4	+12·9	7	17	
	1124d	·384	201·9	284·3	−13·9	1	2	
	12548	·306	199·6	281·7	− 9·8	16	75	
	12545	·199	61·4	265·5	+12·2	14	97	
	12543	·377	50·9	257·7	+20·2	5	18	
	12549	·597	24·4	257·3	+39·4	22	63	

Group 12545. Sept. 23–Oct. 3. A stream of changing spots.
Group 12546. Sept. 23–Oct. 5. A stable regular spot with a tiny follower until September 27. Another small companion is seen on October 2.
Group 12547. Sept. 25–27. One or two very small spots.
Group 12548. Sept. 25–29. A small bi-polar group with marked separation in longitude between leader and follower.
Group 12549. Sept. 25–Oct. 2. A stream, with brief maximum about September 29, in relatively high northern latitude.
Group 12550. Sept. 26–29. A small spot.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
269·335	12546	·441	64·7	251·3	+17·1	37	204	
	12550	·927	116·0	212·9	−20·9	12	17	423*f*
G		·816	127·7					280
		·847	105·8					177
		·859	51·2					391
		·863	78·3					395
		·916	130·2					151
		·922	41·4					172
		·951	51·1					258
		·959	104·2					176
		·971	74·2					330
Sept. 27			(+25·8)	(275·8)	(+ 6·9)	(143)	(695)	(4091)
270·385		·944	249·3					276
		·928	301·5					387
	12535	·862	306·1	319·1	+34·3	22	149	499*nf*
	12541	·532	282·3	293·9	+12·2	5	15	
	12548	·428	228·5	280·8	−10·0	7	19	
	12545	·116	344·5	263·7	+13·2	18	123	
	12549	·545	5·7	257·9	+39·4	38	209	
	12546	·245	42·5	252·0	+17·1	45	202	
G	12550	·827	121·3	212·9	−21·0	4	16	537*f*
	12551	·956	103·8	191·0	−11·0	34	161	437*c*
	12552	·987	108·5	184·0	−16·9	27	148	127*c*
	12553	·990	80·9	179·4	+ 9·9	117	539	404*c*
		·773	48·3					289
		·786	80·5					232
		·851	105·6					209
		·883	49·8					214
		·900	75·5					422
Sept. 28			(+25·9)	(261·9)	(+ 6·8)	(317)	(1581)	(4033)
271·334		·986	288·2					99
		·981	255·3					86
G		·961	239·5					138
		·950	299·1					231
		·926	246·3					88
		·907	279·7					58
		·806	310·9					489
	12535	·931	304·5	317·8	+34·5	30	117	316*n*
	12541	·701	280·3	294·1	+12·1	3	6	
	12548	·590	242·0	281·2	−10·3	2	11	
	12545	·277	293·5	264·4	+12·9	29	72	

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
271.334	12549	·542	350·1	256·2	+38·9	55	225	
	12546	·185	346·0	252·1	+17·0	30	183	
G	12550	·713	128·5	212·9	−20·9	3	6	
	12551	·861	107·5	192·8	−11·2	26	103	456*f*
	12552	·931	110·9	184·5	−16·6	18	98	194*c*
	12553	·936	81·7	179·5	+10·1	175	1141	680*c*
		·781	129·7					170
		·814	73·7					222
		·839	47·2					122
		·855	121·6					319
		·948	69·4					294
		·957	117·9					304
		·982	55·0					88
Sept. 29			(+25·9)	(249·4)	(+ 6·8)	(371)	(1962)	(4354)
272·369		·922	294·8					172
		·898	256·6					88
		·872	309·0					909
		·811	247·4					304
	12535	·984	303·4	317·1	+33·9	25	134	232*n*
	12545	·485	285·6	264·3	+13·4	13	60	
	12543	·424	302·0	258·0	+19·1	2	12	
	12549	·600	334·1	255·3	+38·9	40	129	
	12546	·326	304·5	251·9	+17·0	29	162	
	12554	·651	60·6	197·5	+23·9	1	5	
G	12551	·727	112·7	192·7	−11·4	33	144	
	12552	·835	115·4	183·9	−16·9	14	83	151*f*
	12553	·811	82·9	181·2	+ 9·7	289	1559	467*c*
	12555	·985	79·2	154·7	+11·8	31	189	312*c*
		·815	66·6					255
		·873	123·0					251
		·928	53·8					89
		·936	68·5					377
		·949	107·5					281
		·951	117·6					208
		·968	128·2					263
Sept. 30			(+26·0)	(235·7)	(+ 6·7)	(477)	(2477)	(4359)
273·342		·960	304·5					630
		·932	256·9					228
G		·924	270·1					58
		·918	286·1					201
		·917	245·3					172
		·887	309·9					216

Group 12551. Sept. 28–Oct. 6. A close pair of spots almost amalgamating on some days.
Group 12552. Sept. 28–Oct. 10. A small but very stable regular spot, with a pronounced drift in latitude.
Group 12553. Sept. 28–Oct. 10. An immense complex spot containing a great number of umbral nuclei. As the spot approaches the west limb, it tends to spread out into separate spots, and a large regular spot eventually forms at the head.
Group 12554. Sept. 30–Oct. 8. An unimportant stream, the leader alone surviving after October 6.
Group 12555. Sept. 30–Oct. 13. Return or revival of Group 12521. A large active stream with well-defined spots as leader and follower respectively.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
273·342		·875	319·7					97
	12545	·665	282·1	264·6	+13·0	11	42	
G	12549	·662	325·5	251·6	+38·9	24	78	
	12546	·496	292·8	251·3	+16·9	32	149	
	12556	·423	215·8	237·6	−13·5	12	27	
	12551	·577	120·6	192·6	−11·3	24	135	
	12557	·524	69·7	192·2	+16·3	1	2	
	12552	·715	122·2	183·8	−17·2	18	86	
	12553	·662	82·8	181·3	+ 9·8	323	2188	
	12555	·961	80·1	148·2	+11·4	126	721	626*c*
		·847	50·7					79
		·855	68·0					151
		·897	109·1					95
		·918	131·9					294
		·922	120·8					344
		·935	56·5					118
		·962	66·5					101
Oct. 1			(+26·1)	(222·9)	(+ 6·7)	(571)	(3428)	(3410)
274·400		·975	256·7					256
		·968	308·3					396
		·951	288·8					186
		·934	248·4					262
		·928	320·4					202
	12545	·821	282·3	264·4	+13·8	8	22	101*c*
	12546	·683	287·8	251·5	+16·9	28	135	
	12549	·759	317·4	250·1	+38·9	7	22	164*p*
	12556	·586	235·0	238·4	−13·9	2	12	
G	12558	·557	168·4	201·7	−26·4	2	12	
	12554	·328	29·8	198·7	+23·0	8	45	
	12557	·286	63·7	193·7	+13·6	1	5	
	12551	·415	138·0	192·5	−11·5	25	138	
	12552	·574	134·2	183·4	−17·6	15	84	
	12553	·460	82·4	181·5	+ 9·3	380	2550	
	12555	·878	81·0	147·1	+11·0	135	761	418*c*
		·854	139·3					383
		·875	126·8					219
		·945	112·1					74
		·967	78·2					583
Oct. 2			(+26·2)	(208·9)	(+ 6·6)	(611)	(3786)	(3244)
275·384		·972	244·6					171
		·967	309·2					125
C		·891	291·3					412
		·878	323·4					180
1937.			°	°	°			
275·384		·867	311·8					341
		·862	243·1					165
C	12545	·915	282·8	262·8	+14·4	2	5	460*sp*
	12546	·823	286·1	251·5	+17·0	13	100	190*f*
	12559	·786	279·3	248·1	+11·4	21	95	228*c*
	12556	·740	242·8	238·8	−14·9	3	7	
	12558	·554	185·2	199·2	−26·7	5	26	
	12554	·299	351·3	198·8	+23·7	22	114	
	12557	·195	16·0	192·8	+17·3	1	5	
	12551	·321	169·2	192·5	−11·7	16	103	
	12552	·459	153·0	183·4	−17·6	15	77	
	12553	·245	76·2	182·1	+ 9·7	415	2878	
	12555	·741	81·1	148·0	+11·0	129	737	
	12560	·947	60·8	124·1	+29·7	0	14	
	12561	·987	75·4	114·1	+15·4	25	123	469*c*
		·782	145·8					246
		·795	133·8					195
		·865	112·6					246
		·882	37·6					45
		·883	78·0					874
		·949	60·7					210
		·949	68·5					119
Oct. 3			(+26·2)	(196·0)	(+ 6·6)	(667)	(4284)	(4676)
276·402		·981	281·1					169
		·969	289·1					310
		·960	245·3					165
		·928	294·1					193
		·927	309·7					330
		·871	236·4					180
		·867	248·1					201
		·824	300·4					284
	12546	·927	285·5	251·1	+16·8	17	106	375*f*
	12559	·910	278·3	248·4	+10·2	15	74	232*c*
G	12558	·605	208·7	201·3	−25·8	4	20	
	12554	·399	320·2	198·7	+24·0	21	105	
	12557	·260	312·3	194·0	+16·4	5	21	
	12551	·362	208·5	192·6	−12·1	17	69	
	12552	·415	182·0	183·4	−17·9	14	71	
	12553	·052	13·8	181·8	+ 9·4	501	3219	
	12555	·581	80·6	147·0	+10·7	152	834	
	12560	·846	58·7	126·3	+29·8	4	8	194*f*
	12561	·934	75·7	112·7	+15·7	39	151	461*c*
		·811	77·3					326
		·993	77·5					228
Oct. 4			(+26·3)	(182·5)	(+ 6·5)	(789)	(4678)	(3648)

Group 12556. Oct. 1–3. A pair of spots of which the leader remains on October 3.
Group 12557. Oct. 1–7. Small changing spots representing a disturbed area *np* Group 12553.
Group 12558. Oct. 2–4. A small ephemeral group.
Group 12559. Oct. 3–5. Two or three spots appearing near the west limb.
Group 12560. Oct. 3–4. A tiny spot.
Group 12561. Oct. 3–14. A stream whose axis is highly inclined to the sun's equator during its early development near the east limb. None of the spots are stable.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
277·391		·979	298·5					115
		·960	252·2					341
		·916	243·9					239
		·894	231·3					384
		·885	299·9					428
		·750	278·6					364
	12546	·988	286·1	251·8	+16·9	19	123	674c
	12559	·981	280·1	249·0	+11·1	5	33	
	1124e	·970	308·5	246·3	+38·8	4	8	380c
	12554	·552	304·9	199·1	+24·1	10	67	
C	12557	·442	297·3	193·7	+17·6	0	5	
	12551	·495	231·9	192·8	−11·8	3	32	
	12552	·470	208·7	183·2	−17·9	13	53	
	12553	·233	281·5	182·8	+ 9·0	437	3340	
	1124f	·356	204·2	178·1	−12·4	2	7	
	12555	·372	77·5	147·9	+10·7	120	797	
	12561	·833	75·8	112·9	+15·4	35	198	269c
		·785	56·9					125
		·948	77·3					369
Oct. 5			(+26·3)	(169·5)	(+ 6·5)	(648)	(4663)	(3688)
278·398		·974	247·3					150
		·964	238·1					248
		·957	299·7					228
		·872	305·8					310
		·851	282·8					492
		·837	252·6					324
		·829	238·1					413
		·817	317·0					325
C	12554	·710	297·4	199·6	+23·8	12	87	
	12551	·643	244·6	192·3	−10·8	3	8	
	12552	·590	226·4	182·8	−18·2	11	59	
	12553	·446	277·1	182·7	+ 8·9	450	3324	
	12555	·168	63·5	147·4	+10·6	132	759	
	12561	·676	74·7	113·9	+15·0	55	301	
	12562	·846	77·5	98·1	+14·0	4	8	295f
		·910	108·3					200
Oct. 6			(+26·3)	(156·2)	(+ 6·4)	(667)	(4546)	(2985)
279·404		·957	287·8					299
		·948	276·7					293
C		·947	300·4					239
		·945	244·7					325
		·938	254·3					375
		·909	310·2					251

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
279·404		·890	235·9					638
		·816	250·0					619
C		·795	313·3					194
	12554	·854	292·9	201·2	+22·8	10	37	290c
	12557	·777	286·0	193·8	+16·3	3	10	329p
	12553	·644	276·4	183·1	+ 8·9	453	3111	
	12552	·724	236·8	182·4	−18·5	12	55	
	12555	·108	307·2	147·9	+10·0	133	720	
	12563	·209	47·4	133·8	+14·3	2	8	
	12561	·486	71·0	114·7	+14·7	94	508	
	12562	·703	77·0	98·3	+13·6	8	39	
		·829	112·2					360
		·863	74·8					227
		·893	60·1					138
		·948	72·8					240
		·954	112·2					184
Oct. 7			(+26·4)	(142·9)	(+ 6·3)	(715)	(4488)	(5001)
280·463		·955	285·4					252
		·952	240·5					412
		·935	310·2					373
		·926	252·9					473
		·885	286·9					120
		·851	232·8					258
		·768	215·1					165
	12554	·947	292·0	200·9	+22·8	6	14	346nf
	12553	·827	276·2	185·0	+ 8·7	480	3198	575c
G	12552	·852	243·4	182·2	−18·7	17	55	137c
	12564	·496	292·8	157·3	+16·6	6	13	
	12555	·325	283·4	147·6	+10·3	147	742	
	12565	·393	196·1	135·4	−15·8	6	15	
	12563	·141	327·8	133·3	+13·1	7	36	
	1124g	·157	21·9	125·4	+14·6	2	5	
	12561	·261	58·2	115·7	+14·0	61	291	
	12562	·512	74·0	98·6	+13·5	41	108	
		·887	75·0					179
		·919	104·8					98
		·920	116·0					203
Oct. 8			(+26·4)	(128·9)	(+ 6·3)	(773)	(4477)	(3591)
281·387		·983	293·4					484
		·977	253·5					356
G		·975	285·6					245
		·941	309·4					318
		·928	239·0					325

Group 12562. Oct. 6–14. A short stream of which the leader alone remains after October 11.
Group 12563. Oct. 7–10. A small region of feeble disturbance shown by a few tiny variable spots.
Group 12564. Oct. 8–10. A small cluster *np* Group 12555.
Group 12565. Oct. 8–10. A pair of small spots of which the leader is left on October 10.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
281·387	12566	·924	286·2	184·9	+17·3	17	66	220c
	12553	·920	276·8	184·1	+ 8·7	360	2768	1427c
G	12552	·935	247·2	182·1	−18·7	15	53	198c
	12564	·652	286·2	157·1	+15·2	15	53	
	12555	·516	279·8	147·8	+10·4	105	588	
	12565	·502	218·8	135·9	−17·0	5	21	
	12563	·319	292·8	134·3	+12·9	2	5	
	12561	·130	358·6	117·0	+13·7	48	238	
	12562	·335	66·6	98·4	+13·5	33	125	
	12567	·723	77·6	70·5	+13·2	6	26	
		·857	120·8					213
		·961	84·2					283
		·975	66·9					186
Oct. 9			(+26·4)	(116·8)	(+ 6·2)	(606)	(3943)	(4255)
282·447		·975	241·0					186
		·902	229·6					281
		·894	244·8					184
		·876	295·2					118
	12566	·990	286·4	186·0	+17·1	26	186	409c
	12552	·990	250·0	181·7	−18·7	14	62	203f
	12553	·973	278·8	180·0	+10·0	228	1627	1170c
	12564	·818	284·4	157·8	+15·3	9	31	164c
	12555	·700	278·4	147·4	+10·3	109	568	
G	12565	·661	235·5	137·4	−16·9	5	11	
	12563	·535	283·4	134·8	+12·4	0	2	
	12561	·284	295·4	118·0	+13·0	34	141	
	12562	·133	24·0	99·6	+13·1	44	231	
	12568	·428	151·4	90·6	−15·9	4	11	
	12567	·513	76·2	72·3	+12·4	56	220	
	12569	·912	66·2	36·9	+24·2	9	37	180c
		·858	86·6					233
		·911	77·9					214
		·962	64·4					207
Oct. 10			(+26·4)	(102·8)	(+ 6·2)	(538)	(3127)	(3549)
283·377		·989	278·3					351
		·962	248·2					200
G		·955	231·4					229
1937.			°	°	°			
283·377		·943	294·4					148
		·908	306·0					126
G		·895	285·8					301
		·807	245·3					234
	12555	·837	278·8	147·6	+10·7	90	471	526c
	12561	·468	286·4	117·8	+13·0	24	128	
	12570	·293	303·6	105·1	+15·2	28	116	
	12562	·216	304·2	101·0	+12·9	27	156	
	12568	·384	183·0	91·7	−16·4	35	101	
	12567	·334	69·8	71·9	+12·4	90	487	
	12569	·810	64·6	37·5	+24·0	24	66	200c
	12571	·946	116·0	24·1	−22·1	14	33	} 352c
	12572	·973	115·6	18·1	−23·1	4	19	
	12573	·975	78·2	12·6	+12·8	29	88	275c
	12574	·987	107·4	12·3	−16·0	27	133	393c
		·866	78·4					158
		·930	68·2					234
Oct. 11			(+26·4)	(90·5)	(+ 6·1)	(392)	(1798)	(3727)
284·394		·894	247·3					448
		·825	281·2					482
	12555	·940	279·1	147·6	+10·6	49	315	961c
	12561	·668	282·4	118·9	+12·7	8	63	
	12570	·498	290·0	106·0	+15·1	17	135	
	12562	·427	287·2	101·7	+12·7	12	78	
	12568	·435	213·2	91·3	−15·4	35	206	
C	12567	·142	40·2	71·7	+12·1	78	478	
	12569	·666	60·2	38·0	+24·0	22	41	112f
	12571	·864	119·2	23·2	−21·4	18	81	} 240c
	12572	·909	118·5	17·3	−22·7	11	46	
	12573	·898	78·8	12·8	+12·7	19	80	342c
	12574	·929	110·0	12·0	−16·1	46	161	692f
Oct. 12			(+26·4)	(77·1)	(+ 6·0)	(315)	(1684)	(3277)
285·609		·972	249·1					464
		·945	289·5					168
G		·937	280·6					798
		·889	300·0					287
	12555	·994	279·2	145·6	+ 9·8	48	294	488s

Group 12566. Oct. 9–10. A group developing close to the west limb.
Group 12567. Oct. 9–18. A stream of normal type showing less than the usual separation in longitude between leader and follower.
Group 12568. Oct. 10–17. Two or three spots on October 10 developing rapidly into a large stream; it appears however, to be already decreasing as it nears the west limb.
Group 12569. Oct. 10–17. A small group.
Group 12570. Oct. 11–16. A short-lived stream of active spots developing *np* Group 12562.
Group 12571. Oct. 11–21. A regular spot with a small follower until October 14 preceding Group 12572.
Group 12572. Oct. 11–22. A stream of spots that are unstable at first: later a regular spot heads the group.
Group 12573. Oct. 11–22. Return of Group 12536. A small regular spot which becomes double on October 18 to 19 and then breaks up. There are occasional companions.
Group 12574. Oct. 11–22. Return of Group 12540. A regular spot with spotlets forming south of it on October 13 and north of it on October 16–17.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
285·609	12561	·863	280·7	121·1	+12·2	4	20	241*f*
	12570	·719	285·4	106·8	+15·1	41	196	
G	12562	·666	282·6	102·7	+12·8	9	39	
	12568	·607	235·0	92·0	−15·2	162	795	
	12575	·549	225·2	85·1	−17·3	5	13	
	12567	·196	304·0	70·6	+12·1	115	600	
	12569	·474	48·6	38·4	+23·6	18	52	
	12571	·710	128·4	24·6	−21·3	19	142	
	12572	·762	124·8	19·1	−21·3	41	143	275*c*
	12573	·743	78·2	13·1	+12·7	17	77	261*f*
	12574	·803	116·6	12·6	−17·2	42	290	261*f*
		·896	110·0					324
		·951	73·4					160
		·966	82·6					118
		·968	55·6					196
Oct. 13			(+26·4)	(61·1)	(+ 5·9)	(521)	(2661)	(4041)
286·390		·980	283·0					475
		·905	296·7					229
	12561	·937	280·9	120·8	+12·2	6	18	401*f*
	12570	·837	283·8	107·8	+14·8	40	192	565*c*
	12562	·790	281·7	103·1	+12·8	2	7	
	12568	·721	241·6	91·8	−15·6	111	760	
	12575	·655	235·1	84·8	−17·0	9	24	
	12567	·351	289·9	70·5	+12·4	83	540	
	12569	·357	31·3	39·2	+23·5	8	40	
C	12571	·609	137·0	24·5	−21·0	27	166	
	12572	·665	132·7	19·2	−21·7	28	190	
	12573	·615	76·4	13·1	+12·9	15	70	
	12574	·697	122·0	12·8	−17·0	51	310	
	12576	·945	98·0	340·9	− 5·6	6	20	755*c*
	12577	·973	102·3	335·8	−10·5	9	23	
		·815	116·7					230
		·882	73·5					175
		·939	117·0					130
		·952	52·3					214
		·983	111·4					160
Oct. 14			(+26·3)	(50·8)	(+ 5·9)	(395)	(2360)	(3334)
287·433		·977	284·5					536
	12570	·944	283·3	108·4	+14·5	26	116	415*c*
G	12568	·853	247·5	91·7	−15·7	130	746	285*c*
	12575	·801	243·1	85·3	−17·4	7	44	
	12567	·556	283·7	70·4	+12·4	73	490	
	12569	·298	353·8	39·0	+23·0	5	24	
1937.			°	°	°			
287·433	*1124h*	·434	158·1	27·2	−17·9	2	5	
	12571	·489	156·5	25·0	−20·9	18	100	
G	12572	·542	148·0	19·1	−21·8	44	192	
	12574	·545	133·9	12·9	−16·9	47	334	
	12573	·421	72·3	12·8	+12·7	17	79	
	12576	·875	99·9	337·2	− 5·7	19	82	255*c*
	12578	·983	119·0	322·2	−27·1	24	200	190*c*
		·876	52·3					142
		·881	127·9					145
		·908	106·7					223
		·928	114·4					172
		·966	55·7					329
Oct. 15			(+26·3)	(37·0)	(+ 5·8)	(412)	(2412)	(2692)
288·379		·926	281·8					210
	12570	·994	282·6	109·1	+13·1	18	79	455*f*
	12568	·945	250·7	92·5	−16·1	109	607	536*c*
	12575	·899	247·3	84·7	−17·5	2	5	
	12567	·722	280·9	70·7	+11·8	64	356	
	12569	·384	320·7	39·7	+22·7	5	15	
	12571	·453	180·8	24·9	−21·1	18	80	
	12572	·473	169·9	19·4	−21·9	60	276	
	12573	·230	56·5	13·2	+12·9	12	75	
G	12574	·431	153·4	12·9	−17·0	56	283	
	1124i	·496	135·9	3·6	−15·5	2	10	
	1124j	·625	113·1	349·0	− 9·5	1	3	
	12576	·741	102·8	338·1	− 5·5	30	120	102*c*
	12577	·779	108·3	335·9	−10·4	2	3	122*s*
	12578	·940	120·9	320·4	−26·5	44	190	274*c*
		·842	118·4					127
		·909	53·7					212
		·954	107·5					138
		·973	52·1					245
Oct. 16			(+26·3)	(24·5)	(+ 5·7)	(423)	(2102)	(2421)
289·465		·877	242·7					216
	12568	·990	253·6	90·0	−15·3	45	302	202*c*
G	12567	·872	280·4	71·2	+11·8	64	311	273*c*
	12569	·553	303·1	40·1	+22·3	2	13	
	12571	·510	208·4	25·2	−21·2	13	61	
	12572	·488	197·4	19·2	−22·1	59	339	
	12574	·395	188·4	13·6	−17·3	55	237	
	12573	·142	337·6	13·4	+13·1	11	45	
	12576	·543	109·9	339·5	− 5·8	42	153	
	12579	·748	126·4	329·9	−22·0	10	32	
	12578	·848	126·7	320·7	−26·8	32	148	336*c*

Group 12575. Oct. 13–16. A small spot in the wake of Group 12568.
Group 12576. Oct. 14–25. A sparse stream at the head of which a regular spot has formed by October 17.
Group 12577. Oct. 14–16. A small spot *s* Group 12576.
Group 12578. Oct. 15–27. A stable regular spot with occasional small companions.
Group 12579. Oct. 17–19. A small ephemeral group.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
289·465	12580	·945	99·4	300·5	− 6·9	10	28	174*f*
	12581	·944	78·8	299·0	+12·4	3	6	97*f*
G		·826	50·6					253
		·942	52·0					365
		·944	106·8					140
		·979	60·2					211
Oct. 17			(+26·2)	(10·2)	(+ 5·6)	(346)	(1675)	(2267)
290·476	12567	·960	280·9	71·1	+12·0	38	244	324*c*
	12582	·949	246·6	64·7	−20·1	11	31	193*c*
	12571	·623	225·3	25·1	−21·0	12	89	
	12572	·580	218·0	19·4	−21·9	70	287	
	12573	·316	296·0	13·8	+13·3	17	99	
	12574	·474	215·3	13·5	−17·3	43	197	
	12576	·332	124·6	341·0	− 5·5	43	202	
	12579	·612	136·6	330·2	−21·3	8	25	
	12578	·739	134·0	320·7	−26·3	36	160	207*f*
G	12580	·832	100·8	301·9	− 5·8	4	20	102*c*
	12581	·834	79·0	300·2	+12·2	4	12	116*f*
	12583	·965	112·2	285·5	−19·6	11	28	182*c*
		·858	110·8					193
		·872	48·2					424
		·920	67·9					145
		·925	99·2					129
		·942	55·4					545
		·970	106·8					111
		·975	80·9					170
Oct. 18			(+26·2)	(356·9)	(+ 5·6)	(297)	(1394)	(2841)
291·398		·980	281·9					448
		·879	273·8					182
C		·821	282·1					204
		·820	294·7					183
	12582	·988	248·5	62·9	−20·2	0	28	257*p*
	12571	·744	235·1	25·4	−21·0	13	48	
	12572	·689	229·0	18·7	−22·2	30	253	
	12573	·505	286·7	14·3	+13·1	23	92	
	12574	·599	230·4	13·5	−17·6	29	180	
	12576	·201	163·1	341·3	− 5·6	31	158	
	12579	·483	153·3	331·4	−20·1	6	17	
	12578	·644	144·0	319·8	−26·3	25	148	
	12581	·702	78·3	300·2	+12·1	3	12	
	12583	·901	114·7	284·7	−19·4	13	68	182*c*
	12584	·930	108·7	279·1	−15·1	0	12	150*f*
		·808	43·5					369
		·852	103·2					152
1937.			°	°	°			
291·398		·865	53·7					370
		·904	81·9					273
C		·956	75·5					161
		·957	53·5					218
Oct. 19			(+26·1)	(344·7)	(+ 5·5)	(173)	(1016)	(3149)
292·469		·964	274·6					183
		·935	292·3					215
		·910	280·7					263
		·847	299·0					216
	12571	·869	241·8	25·6	−21·2	9	35	} 258*c*
	12572	·824	238·6	19·7	−21·8	59	225	
	12573	·700	283·7	14·8	+13·4	14	60	
	12574	·752	240·6	13·9	−17·7	25	175	
	12576	·284	226·4	342·5	− 6·0	20	134	
G	12578	·554	161·2	319·2	−26·2	30	152	
	12580	·529	111·4	301·0	− 6·4	2	5	
	12583	·794	120·2	283·9	−19·9	18	43	108*c*
	12584	·826	112·4	278·5	−15·1	11	24	165*c*
	1125a	·817	80·5	275·7	+10·9	0	3	188*c*
		·797	48·4					262
		·904	52·4					277
		·927	68·6					181
		·959	44·5					200
		·970	80·6					335
		·975	71·8					206
Oct. 20			(+26·0)	(330·6)	(+ 5·4)	(188)	(856)	(3057)
293·457		·973	290·0					141
		·954	279·2					189
		·913	295·6					208
		·884	255·4					153
	12571	·949	245·2	25·1	−21·5	6	24	} 359*c*
	12572	·926	243·4	20·6	−22·1	29	206	
	12573	·843	282·6	15·1	+13·5	6	17	307*c*
	12574	·868	245·8	13·6	−17·9	27	175	204*c*
G	12576	·467	246·1	342·8	− 6·1	16	129	
	12578	·523	181·6	318·4	−26·0	27	142	
	12583	·648	128·8	285·3	−19·4	3	12	
	12584	·666	118·6	280·6	−14·3	5	9	
	12585	·931	80·2	248·6	+11·1	26	197	402*c*
		·849	65·8					146
		·945	69·6					293
		·964	104·3					183
		·968	113·0					139
Oct. 21			(+26·0)	(317·5)	(+ 5·3)	(145)	(911)	(2724)

Group 12580. Oct. 17–20. A tiny group not seen on October 19.
Group 12581. Oct. 17–19. A small single spot.
Group 12582. Oct. 18–19. A group seen for only two days before it passes around the west limb.
Group 12583. Oct. 18–21. A pair of spots, only one being seen on October 21.
Group 12584. Oct. 19–21. A small single spot on October 19 and 21: a pair on October 20.
Group 12585. Oct. 21–31. A stream of normal type except that the leader partly breaks up on October 26 and more completely on October 30.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
294·381		·949	256·7					166
		·942	296·1					113
		·871	242·0					168
	12572	·982	246·7	21·2	−21·6	23	67	563*f*
	12573	·935	282.3	15·0	+13·4	3	6	522*c*
	12574	·948	249·2	13·7	−17·8	26	164	262*f*
	12576	·635	253·6	343·0	− 6·2	25	105	
G	12578	·550	201·7	318·4	−25·5	23	170	
	12585	·835	80·3	248·7	+11·0	81	468	264*c*
		·827	67·3					249
		·898	106·3					270
		·901	115·8					202
		·940	63·3					315
		·943	50·1					222
Oct. 22			(+25·9)	(305·4)	(+ 5·2)	(181)	(980)	(3316)
295·489		·988	283·3					173
		·968	248·4					345
	1125b	·979	289·6	9·9	+20·2	71	248	252*c*
	12576	·804	258·2	342·9	− 6·3	18	109	
	12578	·648	218·8	317·4	−25·7	24	123	
G	12585	·668	78·8	249·0	+11·2	91	775	
	12586	·803	121·0	243·4	−21·0	2	7	108*c*
		·921	71·5					168
		·923	59·6					241
Oct. 23			(+25·8)	(290·7)	(+ 5·1)	(206)	(1262)	(1287)
296·427		·936	286·5					123
		·873	303.9					90
		·849	249·3					176
		·846	241.3					180
	12576	·912	260·4	343·0	− 6·5	24	138	370*f*
	12578	·754	229·1	317·4	−25·5	20	110	
	12585	·495	75·8	249·2	+11·4	145	1005	
	12586	·665	127·8	244·6	−19·8	3	10	
	12587	·947	121·9	213·0	−28·0	12	43	311*c*
G	12588	·996	81·6	193·1	+ 8·8	37	119	750*p*
		·856	71·1					264
		·857	57·5					222
		·880	106·2					149
		·942	129·7					97
		·954	71·5					259
		·959	112·2					211
		·974	54·0					200
Oct. 24			(+25·7)	(278·4)	(+ 5·1)	(241)	(1425)	(3402)
1937.			°	°	°			
297·408		·939	302·8					206
		·937	249·0					233
		·837	310·0					150
	12576	·979	262·2	342·7	− 6·5	22	137	410*f*
	12578	·855	235·0	316·5	−26·2	14	93	317*c*
	12585	·289	66·8	249·8	+11·3	154	951	
	12587	·864	126·1	213·6	−27·5	71	280	297*c*
G	12588	·947	80·8	193·8	+10·3	45	221	1169*c*
		·875	69·0					272
		·941	116·3					353
		·949	58·4					138
		·955	49·4					226
		·969	124·8					131
Oct. 25			(+ 25·6)	(265·4)	(+ 5·0)	(306)	(1682)	(3902)
298·449		·941	279·8					64
		·903	307·2					253
	12578	·941	239·5	316·5	−26·5	13	45	421*c*
	12585	·108	9·0	250·7	+11·0	113	778	
	1125c	·582	54·4	220·6	+24·0	5	13	
G	12587	·762	133·2	213·1	−27·5	70	347	212*c*
	12588	·863	81·0	191·9	+10·2	37	173	1926*c*
		·885	122·0					400
		·912	46·0					244
		·943	102·8					462
		·975	115·8					146
Oct. 26			(+25·4)	(251·7)	(+ 4·9)	(238)	(1356)	(4128)
299·402		·945	306·5					316
		·894	246·9					265
		·876	280·8					219
		·863	312·5					192
		·835	321·7					100
		·763	310·1					123
	12578	·981	240·3	313·4	−27·8	39	161	492*c*
	12585	·230	297·7	251·0	+10·8	88	610	
C	12587	·671	142·3	211·6	−27·7	41	220	
	12588	·723	80·3	192·9	+10·3	48	195	1008*c*
	12589	·797	106·1	188·3	− 9·7	2	3	536*c*
	1125c'	·893	104·0	177·7	−10·2	4	19	
		·783	124·7					298
		·823	43·9					229
		·928	119·9					340
		·967	72·6					378
		·969	82·1					263
Oct. 27			(+25·3)	(239·1)	(+ 4·8)	(222)	(1208)	(4759)

Group 12586. Oct. 23–24. A small spot.
Group 12587. Oct. 24–Nov. 4. A stream in which there is marked separation in longitude between leader and follower, the latter spot being the longer-lived.
Group 12588. Oct. 24–Nov. 4. Return of Group 12553. A medley of spots, that are mostly smallish and ill-defined, in a very extensive area of faculæ. As the majority of the spots die out, a small regular spot comes into prominence at the head of the disturbance, which shows a marked drift towards the equator.
Group 12589. Oct. 27–Nov. 1. A small indefinite stream.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
300·334		·970	239·4					158
		·954	257·0					254
		·942	279·0					147
		·935	310·8					448
		·827	307·7					283
G	12585	·436	286·2	252·1	+11·2	97	539	
	12587	·587	154·9	210·7	−27·5	58	253	
	12590	·489	69·3	198·9	+14·1	5	27	
	12589	·610	114·0	192·5	−10·4	24	81	
	12588	·645	82·9	186·8	+ 8·2	45	284	
	12591	·951	78·9	154·6	+12·2	18	90	774*c*
		·867	122·4					329
Oct. 28			(+25·2)	(226·9)	(+ 4·7)	(247)	(1274)	(2393)
301·435		·940	278·1					249
		·938	246·3					346
		·920	308·8					643
		·824	316·6					174
	12585	·654	281·3	253·9	+10·8	71	469	
	12587	·538	174·9	210·2	−27·6	56	241	
	12590	·279	51·7	200·3	+14·4	5	18	
	12589	·400	128·8	194·9	−10·1	12	48	
G	12588	·427	79·1	188·3	+ 8·8	36	315	
	12591	·846	78·1	155·5	+12·5	17	90	485*c*
	12592	·952	103·6	142·8	−11·4	21	77	376*c*
		·937	125·5					223
		·939	79·0					570
		·943	110·7					163
Oct. 29			(+25·1)	(213·3)	(+ 4·6)	(218)	(1258)	(3229)
302·419		·975	249·1					122
		·951	293·5					458
G		·902	314·0					291
		·848	293·0					211
	12585	·842	280·3	256·8	+11·1	69	356	428
	12587	·556	193·5	207·8	−28·2	49	244	
	12593	·088	340·9	201·1	+ 9·3	6	22	
	12589	·263	170·2	196·8	−10·4	4	7	
	12588	·201	72·7	188·3	+ 7·8	47	265	
	12594	·396	128·3	181·1	− 9·9	8	26	
	12591	·706	76·9	154·8	+12·4	13	78	
	12595	·817	83·3	144·6	+ 8·0	27	95	220*c*

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
302·419	12592	·859	106·1	142·3	−11·4	19	119	210*f*
		·890	114·1					216
G		·898	74·5					497
		·902	127·0					172
		·974	74·2					191
Oct. 30			(+24·9)	(199·4)	(+ 4·5)	(242)	(1212)	(3016)
303·423		·972	300·4					100
		·945	290·8					216
		·926	314·2					139
		·876	253·5					117
		·839	296·6					120
	12585	·928	280·4	254·4	+11·3	47	231	416*c*
	12587	·610	209·1	205·6	−27·9	37	189	
	12593	·308	287·0	203·4	+ 9·3	16	50	
	12590	·275	303·3	199·7	+12·9	4	14	
	12589	·293	208·9	194·3	−10·5	18	35	
G	12588	·096	297·4	191·0	+ 6·9	38	201	
	1125d	·211	346·4	189·0	+16·2	4	13	
	12594	·265	162·5	181·5	−10·2	19	55	
	12591	·530	73·8	154·9	+12·2	18	52	
	1125e	·555	63·5	154·7	+18·1	5	13	
	12595	·629	82·8	147·2	+ 7·9	83	326	
	12592	·731	109·6	141·7	−11·0	40	151	
		·796	73·8					253
		·908	73·8					182
		·974	74·3					334
		·981	107·0					232
Oct. 31			(+24·8)	(186·1)	(+ 4·4)	(329)	(1330)	(2109)
304·398		·958	255·0					201
		·950	281·7					646
C		·943	293·8					215
		·882	259·4					85
		·881	240·5					279
	12587	·696	221·0	204·3	−27·9	30	153	
	12593	·508	281·6	203·5	+ 9·6	15	49	
	12589	·447	238·0	195·8	− 9·7	2	11	
	12588	·331	274·7	192·6	+ 5·6	22	172	
	12594	·294	214·0	182·9	− 9·8	14	79	
	12591	·344	65·4	154·7	+12·2	8	33	
	12595	·441	81·2	147·3	+ 7·7	59	442	

Group 12590. Oct. 28–Nov. 4. One or two small unstable spots.
Group 12591. Oct. 28–Nov. 6. Return of Group 12555: 3rd appearance. A regular spot diminishing to a dot; another dot appears near by on November 6.
Group 12592. Oct. 29–Nov. 7. At first a single regular spot; after October 30 new and active spots form just north of it making up a short stream.
Group 12593. Oct. 30–Nov. 3. A small group of unstable spots.
Group 12594. Oct. 30–Nov. 6. A group of stream type coming into sudden and brief prominence on November 2.
Group 12595. Oct. 30–Nov. 8. A fairly large stream differing somewhat from the normal formation.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
304·398	12592	·568	116·8	142·3	−11·1	16	83	
		·800	71·0					120
C		·897	70·5					162
		·942	77·9					401
		·946	108·8					486
Nov. 1			(+24·6)	(173·3)	(+ 4·3)	(166)	(1022)	(2595)
305·462		·976	262·1					248
		·946	271·6					140
		·930	254·8					184
		·915	245·2					325
		·911	299·0					251
		·858	284·6					260
		·853	310·4					178
	12587	·816	230·4	204·6	−28·3	38	187	692*c*
	12593	·713	280·0	204·5	+10·1	9	40	
	12590	·662	287·6	199·8	+14·7	3	6	
G	12588	·557	273·2	193·0	+ 5·3	33	142	
	12596	·651	217·1	185·4	−27·4	6	20	
	12594	·482	240·8	184·4	− 9·8	51	281	
	12591	·162	29·0	154·6	+12·3	9	24	
	12595	·204	74·8	147·8	+ 7·2	92	506	
	12597	·400	148·8	146·8	−15·8	4	7	
	12592	·381	132·4	142·6	−10·8	44	161	
	12598	·987	98·9	79·4	− 8·0	12	54	151*f*
		·787	67·7					122
		·846	76·6					634
		·887	110·5					836
Nov. 2			(+24·4)	(159·2)	(+ 4·2)	(301)	(1428)	(4021)
306·676		·950	304·1					228
		·943	252·8					132
Mt. W.		·912	291·8					409
		·820	252·6					132
		·818	226·8					138
	12587	·935	237·7	206·7	−28·2	57	153	982*c*
	12593	·889	278·4	206·0	+ 9·3	3	6	} 474*c*
	12590	·835	283·2	199·6	+13·3	10	20	
	12588	·782	271·8	194·6	+ 4·0	27	63	370*c*
	12599	·749	300·8	188·4	+25·4	4	10	52*c*
	12594	·690	249·2	184·1	−11·1	77	272	
	1125f	·606	275·2	180·6	+ 8·3	5	14	
	12591	·238	308·6	154·1	+12·5	13	17	
	12595	·100	297·8	148·3	+ 6·7	111	413	
1937.			°	°	°			
306·676	12592	·256	180·8	143·4	−10·7	59	153	
	12598	·910	100·1	78·8	− 7·4	28	58	366*f*
Mt. W.		·831	112·6					407
		·937	78·2					293
		·965	112·4					197
Nov. 3			(+24·2)	(143·2)	(+ 4·1)	(394)	(1179)	(4180)
307·476		·940	293·8					175
		·902	256·2					190
	12587	·964	238·6	202·3	−28·8	13	33	922*c*
	12590	·931	283·1	201·4	+13·7	5	42	549*sp*
	12588	·902	272·4	197·0	+ 3·9	5	21	887*nf*
	12599	·838	299·4	187·2	+26·6	4	8	91*c*
G	12594	·816	254·0	185·4	−10·5	46	223	677*c*
	12591	·391	292·2	154·3	+12·2	5	10	
	12595	·293	279·7	149·5	+ 6·7	50	262	
	12592	·303	216·6	143·2	−10·1	44	191	
	12598	·808	102·0	80·1	− 7·2	11	39	490*f*
		·879	77·4					408
		·919	114·9					466
Nov. 4			(+24·0)	(132·7)	(+ 4·0)	(183)	(829)	(4855)
308·405		·982	278·6					593
		·973	257·2					190
		·931	298·2					230
		·903	312·7					224
		·899	277·6					1457
		·887	242·2					148
		·835	296·7					172
		·811	317·8					135
	12596	·955	239·8	188·5	−27·3	41	144	385*c*
	12594	·927	256·9	186·8	−10·5	25	123	807*c*
C	12591	·581	285·3	155·2	+11·9	4	8	
	12595	·493	276·6	149·8	+ 6·6	26	158	
	12592	·463	239·7	144·2	− 9·9	26	126	
	12597	·479	230·4	142·7	−14·1	2	10	
	1125g	·483	146·4	104·0	−19·9	1	2	
	12598	·672	106·2	79·9	− 7·8	13	36	
		·785	71·5					356
		·829	116·9					400
		·904	82·4					209
		·958	64·2					153
		·980	75·8					234
Nov. 5			(+23·8)	(120·4)	(+ 3·9)	(138)	(607)	(5693)

Group 12596. Nov. 2–6. A pair of small spots on November 2 and another pair on November 5–6 of which the components are larger and more widely separated in longitude.
Group 12597. Nov. 2–6. A small but definite spot on November 2.
Group 12598. Nov. 2–12. A few small spots in a stream.
Group 12599. Nov. 3–4. One or two tiny spots.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
309·397		·963	277·7					776
		·946	305·8					187
		·940	294·8					362
		·903	314·3					239
		·899	241·7					306
		·821	289·5					415
		·820	276·7					332
	12594	·984	258·3	186·0	−10·8	22	88	450*f*
	12596	·989	241·8	185·4	−27·1	59	229	209*c*
C	12591	·708	284·7	151·9	+13·1	0	6	
	12595	·667	276·1	149·1	+ 6·9	19	147	
	12592	·651	252·9	146·2	− 8·0	4	28	
	12597	·607	241·1	140·4	−13·8	5	30	
	12598	·464	111·9	81·8	− 6·5	7	26	
		·818	85·1					283
		·911	75·9					352
		·935	65·9					250
		·988	77·3					214
Nov. 6			(+23·7)	(107·4)	(+ 3·8)	(116)	(554)	(4375)
310·433		·956	243·4					249
		·936	287·6					392
		·931	275·5					396
		·822	285·1					304
	12595	·826	276·0	149·3	+ 7·1	7	66	280*c*
	12592	·818	257·4	147·2	− 8·1	2	7	172*f*
	12598	·264	132·5	82·5	− 6·6	7	36	
C	12600	·932	75·4	25·0	+15·0	0	8	375*c*
	12601	·990	67·9	11·4	+22·3	51	240	466*p*
		·816	75·2					218
		·839	62·4					155
		·950	59·8					161
		·956	108·4					820
Nov. 7			(+23·4)	(93·7)	(+ 3·7)	(67)	(357)	(3988)
311·400		·985	275·6					166
		·956	284·9					257
C		·906	231·0					310
		·900	246·6					363
		·892	257·0					541
		·815	286·9					525
	12595	·920	277·2	147·8	+ 8·0	13	57	415*sp*
	12598	·186	185·2	81·9	− 7·1	9	39	
1937.			°	°	°			
311·400	12600	·814	75·2	26·9	+14·1	7	51	212*c*
	12601	·940	67·8	11·3	+22·0	33	246	680*s*
C	12602	·966	105·7	7·5	−14·2	15	217	283*c*
		·862	110·4					447
		·954	116·0					444
Nov. 8			(+23·2)	(80·9)	(+ 3·5)	(77)	(610)	(4643)
312·469		·977	276·0					478
		·964	254·6					709
		·932	286·7					506
	1125h	·666	289·1	108·3	+15·1	3	12	
	12598	·331	237·6	84·1	− 6·9	6	21	
G	12600	·643	72·2	28·8	+14·0	28	153	
	12601	·844	65·8	11·8	+22·1	29	236	382*f*
	12602	·887	108·0	7·5	−14·2	96	674	378*c*
		·738	117·6					113
		·863	119·1					408
Nov. 9			(+23·0)	(67·8)	(+ 3·4)	(162)	(1096)	(2974)
313·387		·951	284·6					298
		·942	249·2					122
		·895	300·2					268
		·810	246·5					344
		·796	286·0					261
	12598	·506	249·9	83·2	− 7·1	6	23	
	12603	·341	211·3	65·2	−14·2	6	26	
G	12600	·458	67·1	29·1	+13·2	28	124	
	12604	·695	121·9	16·3	−18·8	3	9	
	12601	·726	62·3	11·0	+22·1	44	224	
	12602	·764	112·3	8·0	−14·6	131	856	327*f*
		·851	118·4					129
		·958	99·4					256
		·964	108·5					194
Nov. 10			(+22·8)	(54·7)	(+ 3·3)	(218)	(1262)	(2199)
314·452		·914	250·9					529
		·894	283·3					608
G		·891	300·7					108
		·790	243·3					426
	12598	·699	256·7	83·8	− 6·9	5	13	

Group 12600. Nov. 7–17. Two spots developing into a long sparse stream.
Group 12601. Nov. 7–19. A stable regular spot with a number of small satellites southwards from November 10–14.
Group 12602. Nov. 8–19. A large stream of normal type. The leader spot, however, is less regular in structure than is usual, and it appears cleft by a bright "bridge" on November 15–18.
Group 12603. Nov. 10–15. A stream of normal type passing rapidly through its phases of development.
Group 12604. Nov. 10–13. One or two very small spots *sp* Group 12602.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
314·452	12603	·500	236·3	65·9	−13·2	65	303	
	12600	·217	43·5	32·0	+12·1	17	68	
G	12604	·566	132·1	14·4	−19·3	0	5	
	12601	·577	54·0	10·5	+22·5	37	227	
	12602	·606	119·1	7·7	−14·4	133	993	
		·833	103·1					162
		·965	71·7					214
		·975	84·2					349
Nov. 11			(+22·5)	(40·7)	(+ 3·2)	(257)	(1609)	(2396)
315·443		·955	283·2					262
		·953	250·7					214
		·905	294·5					158
		·871	250·1					266
	12598	·842	259·7	83·9	− 6·9	2	4	95*c*
	12603	·668	245·7	66·2	−13·5	51	308	
	12600	·192	322·9	34·4	+11·8	28	90	
	12604	·426	150·5	14·9	−18·7	2	15	
G	12601	·436	39·3	10·3	+22·6	46	265	
	12602	·454	130·9	6·9	−14·4	162	911	
	12605	·690	128·4	351·8	−22·8	6	12	
	12606	·956	84·2	314·7	+ 6·4	15	37	656*p*
		·865	75·1					156
		·931	66·7					134
		·951	118·5					158
		·987	76·7					133
Nov. 12			(+22·3)	(27·6)	(+ 3·1)	(312)	(1642)	(2232)
316·388		·954	251·1					208
		·903	281·5					214
G		·861	241·6					274
		·804	296·0					239
	12607	·897	258·6	77·8	− 8·9	10	29	324*c*
	12603	·812	251·1	67·2	−13·4	43	231	231*c*
	12600	·339	299·8	32·7	+12·5	23	62	
	12604	·403	180·9	15·6	−20·7	2	7	
	12601	·349	13·5	10·2	+22·7	30	181	
	12602	·332	155·8	7·1	−14·6	124	854	
	12605	·531	141·6	354·5	−21·7	2	5	
	12608	·663	117·1	337·6	−15·2	1	3	
	12606	·865	84·5	315·4	+ 6·3	13	35	522*p*
		·845	63·5					248
		·906	99·2					116

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
316·388		·913	120·4					278
		·917	135·1					130
G		·935	49·8					381
		·938	77·4					282
Nov. 13			(+22·0)	(15·2)	(+3·0)	(248)	(1407)	(3447)
317·453		·944	244·7					230
		·933	281·8					336
		·888	293·5					237
		·828	275·7					166
	12607	·977	259·9	77·9	− 9·2	9	41	245*c*
	12603	·928	254·7	67·6	−13·0	36	233	343*c*
	1125i	·808	241·1	50·2	−21·0	3	15	124*c*
	12600	·572	287·3	34·9	+12·2	14	53	
	12601	·370	337·5	9·9	+22·8	38	187	
G	12602	·315	197·5	6·7	−14·5	138	753	
	1125j	·275	356·3	2·2	+18·8	2	4	
	12608	·485	128·2	338·0	−14·7	10	32	
	12609	·618	77·1	323·5	+10·2	3	4	
	12606	·711	83·8	315·9	+ 6·4	6	13	84*f*
		·800	127·1					391
		·834	76·3					266
		·902	48·1					252
		·910	116·2					151
Nov. 14			(+21·7)	(1·1)	(+ 2·9)	(259)	(1335)	(2825)
318·505		·966	287·4					158
		·939	295·8					300
G		·935	245·1					259
		·930	234·6					213
		·925	263·1					234
		·908	275·7					237
	12603	·990	256·4	67·9	−13·0	62	196	515*sf*
	12600	·775	282·6	37·6	+11·4	24	134	
	12601	·495	314·8	9·6	+22·8	30	166	
	12602	·440	227·6	6·8	−14·7	91	615	
	12608	·351	152·4	337·6	−15·4	5	23	
	12609	·473	71·3	320·3	+11·1	1	4	
	12606	·506	81·8	317·2	+ 6·5	2	13	
		·824	128·4					193
		·834	118·0					154
		·840	102·4					85

Group 12605. Nov. 12–21. One or two small spots that have disappeared by November 14. On November 17–21, one or two new spots appear slightly following the original position.
Group 12606. Nov. 12–18. Two or three small spots, in fairly extensive faculæ — probably the remnants of a large group.
Group 12607. Nov. 13–14. A small pair of spots *np* Group 12603.
Group 12608. Nov. 13–15. A very small, short-lived group.
Group 12609. Nov. 14–20. A small area of disturbance represented by a tiny spot on November 14 and 15, and by a small stream or cluster from November 17–20.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
318·505		·850	44·9					305
		·872	72·5					217
G		·952	113·0					246
		·955	52·2					510
Nov. 15			(+21·4)	(347·3)	(+ 2·7)	(215)	(1151)	(3626)
319·484		·975	246·8					106
		·892	294·0					132
		·834	246·4					206
		·757	239·2					132
	12600	·899	281·6	38·2	+11·5	19	108	395*f*
	12601	·638	303·8	9·4	+22·8	29	159	
	12602	·605	240·7	7·4	−15·0	83	549	
	12606	·208	66·9	323·3	+ 7·2	2	11	
G	12610	·697	124·2	296·4	−20·9	5	18	
	12611	·957	69·0	261·8	+20·8	15	82	378*c*
		·803	43·4					217
		·864	119·2					168
		·925	43·7					283
		·938	54·4					296
		·943	81·2					380
		·957	99·6					148
Nov. 16			(+21·2)	(334·4)	(+2·6)	(153)	(927)	(2841)
320·350		·942	294·5					140
		·913	246·4					294
		·893	256·3					232
		·847	288·9					153
		·832	244·6					257
	12600	·956	281·5	35·7	+11·7	28	160	606*c*
	12601	·756	298·3	8·9	+22·7	32	163	
	12602	·737	246·6	7·2	−15·2	59	404	
	12605	·598	226·5	350·7	−22·0	4	11	
C	12609	·126	353·3	323·8	+ 9·6	8	36	
	12610	·584	133·3	295·9	−21·3	10	67	
	12611	·888	67·5	261·6	+21·0	14	50	425*c*
	12612	·996	106·8	239·3	−16·4	21	90	83*p*
		·838	46·7					182
		·869	81·5					354
		·898	100·6					346
		·908	56·3					112
		·949	48·3					232
		·966	66·1					340
		·968	75·7					612
Nov. 17			(+20·9)	(322·9)	(+ 2·5)	(176)	(981)	(4368)
1937.			°	°	°			
321·294		·975	283·0					281
		·967	258·2					224
		·955	247·6					448
		·938	290·0					187
		·917	235·8					210
	12601	·870	294·9	9·1	+22·7	34	167	365*sf*
	12602	·864	251·0	8·1	−15·0	53	294	466*c*
	12605	·718	236·9	350·5	−21·2	4	22	
C	12609	·270	301·4	324·0	+10·4	16	51	
	12606	·223	290·4	322·6	+ 6·8	2	10	
	12610	·468	150·0	296·0	−21·5	7	30	
	12613	·440	137·4	292·5	−16·6	28	105	
	1126a	·756	75·6	262·1	+12·4	0	2	135*sf*
	12611	·780	64·8	261·6	+20·9	24	78	268*c*
	12612	·961	108·0	238·3	−16·5	57	333	591*f*
		·904	75·0					324
		·927	94·6					133
		·936	64·5					221
Nov. 18			(+20·6)	(310·5)	(+ 2·4)	(225)	(1092)	(3853)
322·386		·971	240·9					178
		·968	284·9					171
		·955	299·1					153
		·917	280·1					94
		·869	299·8					126
	12601	·957	292·8	8·5	+22·5	34	163	403*sf*
	12602	·958	253·3	7·9	−15·2	38	277	805*f*
	12605	·843	243·4	349·6	−20·7	12	22	135*c*
	12609	·492	287·5	324·5	+10·5	20	67	
	12610	·415	177·9	295·2	−22·1	5	26	
G	12613	·328	170·5	292·9	−16·5	33	135	
	12611	·625	58·6	261·5	+20·8	14	64	
	1126b	·748	74·7	248·5	+12·9	2	7	232*f*
	12612	·887	110·7	236·1	−17·1	81	418	1015*c*
		·885	121·7					89
		·920	44·0					316
		·957	69·1					260
		·973	119·7					177
		·975	79·8					97
		·977	57·9					110
Nov. 19			(+20·3)	(296·1)	(+ 2·3)	(239)	(1179)	(4361)
323·459		·991	289·8					159
		·985	252·4					276
G		·923	288·0					163
		·909	263·8					125
	12605	·934	247·6	348·5	−20·0	3	6	239*p*

Group 12610. Nov. 16–19. A small group of feeble development.
Group 12611. Nov. 16–27. A regular spot diminishing to a small nucleus near the west limb.
Group 12612. Nov. 17–30. A large regular spot followed by a few tiny companions.
Group 12613. Nov. 18–22. A small bi-polar group of which the leader remains on November 21.

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U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
323·459	*1126c*	·889	247·2	342·0	−19·1	4	14	150*f*
	12609	·684	284·5	324·3	+11·4	6	18	
G	12613	·368	212·6	293·8	−15·9	19	67	
	12611	·468	45·7	261·1	+20·9	18	64	
	12612	·742	115·2	237·6	−16·9	62	363	674*c*
	12614	·929	99·2	214·5	− 7·7	5	12	202*c*
	12615	·983	84·4	202·7	+ 5·9	11	24	511*n*
		·846	67·6					158
		·876	79·6					130
		·879	42·8					204
		·930	108·6					124
		·931	58·5					147
		·944	70·8					549
		·951	119·8					725
Nov. 20			(+20·0)	(282·0)	(+ 2·1)	(128)	(568)	(4536)
324·569		·841	279·2					435
		·728	274·0					161
	12605	·991	248·8	348·1	−20·7	47	137	271*c*
	12613	·533	237·8	295·0	−14·7	12	65	
	12611	·344	18·8	260·5	+20·9	21	86	
	12612	·587	124·4	236·9	−17·6	47	289	
C	12614	·812	101·2	214·0	− 7·9	3	14	91*c*
	12615	·901	84·6	203·2	+ 5·7	5	24	500*c*
		·850	120·2					445
		·904	69·4					483
		·953	104·0					178
		·957	121·1					357
Nov. 21			(+19·6)	(267·3)	(+ 2·0)	(135)	(615)	(2921)
325·399		·908	277·3					553
		·880	294·1					154
		·848	235·7					246
		·816	315·1					132
	1126d	·903	259·8	320·1	− 8·4	2	10	93*c*
	12613	·668	245·9	295·2	−14·3	9	23	
	1126e	·688	224·7	289·4	−27·6	3	9	
	12611	·330	348·6	260·4	+20·7	14	46	
G	12612	·472	135·9	236·3	−17·9	58	323	
	12615	·798	83·5	203·7	+ 6·3	7	14	318*f*
	12616	·925	76·5	189·2	+13·2	17	99	266*c*
		·831	128·4					863
		·859	105·1					292
		·919	119·1					508
		·929	86·5					248
Nov. 22			(+19·3)	(256·4)	(+ 1·9)	(110)	(524)	(3673)
1937.			°	°	°			
326·440		·964	274·8					274
		·959	291·4					190
		·949	239·6					369
		·839	247·9					242
		·832	237·4					173
	1126f	·994	278·4	326·4	+ 8·6	9	97	368*n*
	1126g	·445	286·8	268·1	+ 9·0	2	5	
	12611	·432	319·2	260·2	+20·7	11	36	
	12612	·350	163·4	236·7	−17·8	46	250	
G	12617	·401	45·4	225·3	+18·0	2	5	
	12615	·632	81·8	203·9	+ 6·5	3	8	
	12616	·810	74·8	189·5	+13·3	11	44	175*c*
	1126h	·880	79·8	181·4	+ 9·8	2	4	274*c*
	12618	·933	80·8	174·0	+ 9·2	5	5	530*f*
		·751	112·2					82
		·832	128·6					716
		·858	104·0					174
		·917	123·0					222
		·923	63·4					324
		·945	112·8					279
Nov. 23			(+19·0)	(242·7)	(+ 1·8)	(91)	(454)	(4392)
327·442		·925	314·4					199
		·924	238·6					183
		·918	250·3					414
	12611	·580	305·0	259·9	+20·7	8	35	
	12612	·350	198·9	236·3	−17·7	48	241	
	12615	·484	80·7	200·9	+ 5·9	3	13	
	12616	·670	71·0	189·0	+13·8	15	73	
	12618	·841	79·6	172·7	+ 9·6	4	10	400*f*
G		·743	135·6					242
		·842	126·4					151
		·892	51·5					293
		·928	117·1					275
		·944	72·4					343
		·969	45·0					121
		·972	84·0					182
Nov. 24			(+18·7)	(229·5)	(+ 1·6)	(78)	(372)	(2803)
328·460		·976	253·1					207
		·968	241·7					149
G		·967	287·9					210
		·949	310·1					198
		·897	291·9					171

Group 12614. Nov. 20–21. A single spot.
Group 12615. Nov. 20–27. A disturbed area marked by one or more small spots.
Group 12616. Nov. 22–26. A small stream or cluster.
Group 12617. Nov. 23–30. Intermittent: a small spot on November 23; nothing is then seen until November 27 when a few short-lived spots then appear.
Group 12618. Nov. 23–27. A pair of small spots on November 24: another pair on November 26 and 27.

POSITIONS and AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
328·460		·858	312·6					211
		·851	324·2					265
G	12611	·731	297·5	259·8	+20·7	11	28	
	12612	·462	224·7	236·0	−17·7	50	249	
	12619	·191	315·1	223·9	+ 9·3	5	11	
	1126i	·470	175·5	213·8	−26·4	2	10	
	12615	·274	72·7	200·9	+ 6·1	4	14	
	1126j	·391	130·5	198·4	−13·2	5	18	
	1126k	·590	141·1	191·9	−25·9	2	6	
	12616	·506	63·3	188·4	+14·4	8	33	
		·863	45·3					395
		·864	120·5					346
		·900	77·3					492
		·935	109·5					409
		·950	99·4					199
Nov. 25			(+18·3)	(216·1)	(+ 1·5)	(87)	(369)	(3252)
329·413		·942	247·2					198
		·897	316·4					410
		·865	280·6					432
	12611	·851	293·5	259·7	+20·5	9	25	285*n*
	12612	·609	237·6	236·1	−17·8	54	248	
	12619	·367	292·1	223·6	+ 9·2	14	41	
	12615	·101	18·3	201·7	+ 6·8	3	23	
G	12620	·239	65·2	190·9	+ 7·1	6	20	
	12616	·354	47·5	187·9	+15·1	3	11	
	12618	·467	74·4	176·6	+ 8·5	3	7	
	1126l	·769	54·8	158·7	+27·3	3	10	
		·856	112·6					387
		·866	79·4					238
		·900	100·5					198
		·925	125·1					175
		·933	67·7					567
Nov. 26			(+18·0)	(203·5)	(+ 1·4)	(95)	(385)	(2890)
330·284		·965	242·3					111
		·951	275·8					186
C		·948	259·7					163
		·940	285·3					268
		·904	313·0					232
		·840	284·8					236
	12611	·932	291·6	259·5	+20·5	5	15	288*nf*
	1126m	·931	302·9	257·4	+30·9	10	41	231*c*
	12612	·735	243·5	235·6	−18·2	46	242	
	12619	·534	285·1	223·3	+ 9·1	30	139	
	12617	·572	300·5	223·1	+17·9	13	43	
1937.			°	°	°			
330·284	12615	·176	310·7	199·7	+ 7·8	3	26	
	1126n	·213	336·5	197·0	+12·5	2	4	
C	12620	·099	10·2	191·0	+ 6·9	10	25	
	12618	·290	59·3	177·4	+ 9·7	4	9	
		·804	73·0					274
		·889	65·3					295
		·954	107·7					179
		·965	72·9					158
Nov. 27			(+17·7)	(192·0)	(+ 1·3)	(123)	(544)	(2621)
331·448		·969	308·6					78
		·951	281·7					181
		·945	300·0					230
		·944	289·1					261
		·862	219·3					145
	12612	·877	248·1	235·6	−18·5	40	233	439*f*
	12617	·769	293·3	224·6	+18·4	13	59	105*c*
	12619	·736	281·7	223·4	+ 9·3	39	195	
G	12620	·257	293·0	190·4	+ 6·8	5	11	
	1126o	·326	169·1	173·0	−17·5	3	14	
	1126p	·254	36·0	167·9	+12·9	2	9	
	1126q	·953	78·7	104·7	+11·1	7	15	473*n*
	12621	·990	100·3	95·5	−10·0	7	31	249*c*
		·768	62·1					119
		·841	113·6					96
		·938	108·4					233
Nov. 28			(+17·3)	(176·7)	(+ 1·1)	(116)	(567)	(2609)
332·495		·977	297·5					175
		·906	313·0					228
		·874	324·9					144
		·861	302·1					106
		·824	234·5					477
	12612	·962	250·6	235·5	−18·3	40	234	790*c*
	12617	·905	291·1	226·2	+19·4	15	50	249*c*
G	12619	·882	280·1	224·3	+ 9·3	25	199	265*c*
	12622	·312	184·8	164·5	−17·0	1	5	
	12623	·315	122·7	147·4	− 8·7	2	9	
	12621	·924	100·9	96·2	− 9·6	9	22	440*n*
		·808	83·3					100
		·855	72·8					406
		·920	59·9					136
		·947	109·1					126
Nov. 29			(+16·9)	(162·9)	(+ 1·0)	(92)	(519)	(3642)

Group 12619. Nov. 25–30. A short-lived, compact stream.
Group 12620. Nov. 26–28. A pair of spots separating in longitude; one spot alone remains on November 28.
Group 12621. Nov. 28–Dec. 4. A small definite spot on November 28–December 1; two or three small unstable spots on December 3 and 4.
Group 12622. Nov. 29–30. A single spot.
Group 12623. Nov. 29–Dec. 1. A small spot on November 29 and December 1.

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U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
333·247		·895	239·2					490
		·875	296·5					195
		·860	230·1					326
		·824	276·4					286
		·794	287·2					327
	12612	·991	251·2	234·3	−18·5	29	213	521*f*
	12619	·951	279·2	224·7	+ 9·0	21	80	385*f*
C	12617	·954	289·8	224·6	+19·1	7	56	287*c*
	12622	·367	213·0	165·0	−16·9	4	11	
	12624	·380	47·1	136·3	+15·8	1	9	
	12621	·834	102·0	97·4	− 9·4	7	32	403*f*
		·719	74·4					151
		·734	115·3					212
		·818	72·6					271
		·891	110·6					148
		·956	100·4					353
Nov. 30			(+16·6)	(153·0)	(+ 0·9)	(69)	(401)	(4355)
334·401		·953	240·5					540
		·930	279·1					603
		·925	291·6					504
		·874	308·7					177
		·871	251·4					242
		·847	232·9					446
G		·824	277·5					465
		·772	287·5					264
	12623	·212	214·0	144·7	− 9·3	5	18	
	12624	·278	350·5	140·5	+16·6	3	13	
	12621	·655	105·8	98·2	− 9·7	9	17	235*f*
		·891	104·9					480
Dec. 1			(+16·1)	(137·8)	(+ 0·8)	(17)	(48)	(3956)
335·519		·965	254·0					184
		·938	236·7					249
		·935	278·3					286
		·903	288·7					145
		·799	281·8					266
G	12625	·840	233·1	173·6	−29·8	12	48	130*c*
	1126r	·346	134·1	108·3	−13·3	5	14	
	12626	·308	58·2	107·7	+ 9·9	2	7	
	12627	·816	112·9	71·0	−18·1	3	11	124*f*
	12628	·964	110·3	49·9	−19·3	17	44	187*f*
		·909	101·7					194
Dec. 2			(+15·7)	(123·0)	(+ 0·6)	(39)	(124)	(1765)
1937.			°	°	°			
336·288		·976	279·0					104
		·970	233·8					93
		·964	287·0					117
		·886	281·8					292
	12625	·901	233·6	171·5	−32·0	2	9	156*f*
C	12626	·228	36·4	105·0	+11·0	1	4	
	12621	·313	123·6	97·6	− 9·4	2	13	
	12627	·695	116·3	72·3	−17·5	1	6	
	12628	·905	111·4	50·1	−19·0	13	58	230*f*
		·953	73·8					246
Dec. 3			(+15·4)	(112·9)	(+ 0·5)	(19)	(90)	(1238)
337·280		·972	280·6					418
		·971	304·0					121
		·920	249·0					357
		·893	310·0					319
		·892	236·9					150
		·890	290·2					275
C		·847	280·4					238
	12625	·972	240·7	173·8	−28·2	8	17	184*s*
	12621	·160	168·0	97·9	− 8·6	7	30	
	12628	·817	113·8	47·8	−19·0	43	83	507*c*
		·806	64·2					202
		·862	75·2					216
		·917	100·8					443
		·921	68·2					480
Dec. 4			(+15·0)	(99·8)	(+ 0·4)	(58)	(130)	(3910)
338·390		·903	243·1					266
		·890	255·8					377
	1126s	·893	243·9	145·6	−23·0	9	37	
	12629	·341	216·5	97·3	−15·5	2	13	
	12628	·665	119·9	47·8	−19·0	11	49	
	12630	·993	68·3	2·6	+21·6	16	102	178*c*
C		·842	113·3					261
		·916	73·7					331
		·951	107·8					688
		·963	118·7					185
		·985	78·0					209
Dec. 5			(+14·5)	(85·2)	(+ 0·3)	(38)	(201)	(2495)

Group 12624. Nov. 30–Dec. 1. A faint spot on November 30: a wide pair on December 1.
Group 12625. Dec. 2–4. A faint stream near the west limb.
Group 12626. Dec. 2–3. A small single spot.
Group 12627. Dec. 2–10. A small spot on December 2 and 3: a small stream on December 7, diminishing to one component spot by December 9.
Group 12628. Dec. 2–10. A small regular spot with a distant companion on December 4–6.
Group 12629. Dec. 5–10. A compact stream with a brief maximum on December 7.
Group 12630. Dec. 5–17. Return of Group 12601. A rather small spot persisting. It dies out on December 11–12, but a small cluster appears in the same place on December 14.

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U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
339·295		·977	277·4					163
		·963	314·4					366
		·956	248·4					407
		·953	235·4					178
		·944	259·7					340
		·913	285·1					407
		·864	294·8					437
	12629	·502	235·4	98·7	−16·4	30	129	
	12631	·470	296·5	98·7	+12·2	5	17	
	12632	·521	145·6	54·4	−25·3	5	29	
C	12628	·509	129·6	48·9	−18·7	11	31	
	1126t	·741	66·7	28·1	+17·0	1	6	
	12630	·948	67·0	3·5	+21·8	23	62	356*c*
		·801	112·4					314
		·827	73·4					176
		·905	110·4					658
		·921	76·5					347
		·924	122·2					249
		·980	112·8					285
Dec. 6			(+14·2)	(73·3)	(+ 0·1)	(75)	(274)	(4683)
340·284		·974	287·4					137
		·933	295·6					110
		·788	289·6					272
	12629	·673	245·6	99·7	−16·1	82	421	
	12631	·652	288·6	99·2	+11·9	13	43	
	12627	·341	202·6	68·1	−18·3	9	18	
	12632	·424	168·6	54·9	−24·5	9	45	
C	12628	·350	152·4	50·4	−18·0	10	26	
	12630	·871	64·8	2·4	+21·7	19	46	279*c*
	12633	·931	114·1	353·7	−22·3	3	5	265*c*
		·825	114·4					351
		·842	73·6					290
		·884	127·8					285
		·976	75·8					151
Dec. 7			(+13·8)	(60·2)	(0·0)	(145)	(604)	(2140)
341·276		·908	242·6					210
		·897	284·9					300
C		·861	241·5					139
	12629	·820	249·7	100·4	−16·6	49	266	316*c*
	12631	·808	284·7	99·9	+11·7	5	28	264*c*
	12627	·501	233·1	71·9	−17·6	5	17	
	12632	·445	200·9	57·2	−24·6	7	28	
	12628	·309	191·0	50·7	−17·7	4	9	

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
341·276	12630	·752	60·5	2·6	+21·6	10	22	
		·836	116·9					190
C		·919	116·9					158
		·935	74·9					354
		·972	84·7					153
Dec. 8			(+13·3)	(47·2)	(− 0·1)	(80)	(370)	(2084)
342·283	12629	·931	251·8	101·2	−16·9	30	155	759*c*
	12631	·897	282·6	96·8	+11·1	4	9	467*c*
	12627	·677	244·7	73·5	−16·9	7	20	
C	12630	·616	52·7	2·2	+21·7	8	33	
		·853	73·5					357
		·945	83·5					388
		·990	111·5					216
Dec. 9			(+12·9)	(33·9)	(−0·2)	(49)	(217)	(2187)
343·292		·979	282·3					276
		·974	252·5					536
		·909	259·1					237
		·877	282·1					162
	12629	·994	252·3	103·9	−17·6	35	101	
	12631	·982	282·1	99·1	+11·8	65	269	
C	12627	·825	249·9	74·4	−16·7	2	4	
	12628	·564	238·6	50·8	−17·4	1	5	
	12630	·484	37·7	2·1	+22·0	5	10	
	12634	·931	113·0	313·8	−21·5	79	417	473*c*
	12635	·924	80·1	313·7	+ 9·0	17	64	353*c*
	12636	·966	94·9	305·8	− 4·8	8	19	449*f*
Dec. 10			(+12·5)	(20·6)	(− 0·4)	(212)	(889)	(2486)
344·282		·907	250·8					333
		·864	278·6					103
		·852	294·5					179
		·774	251·1					149
	12632	·739	236·4	50·0	−24·5	6	25	192*np*
	12630	·394	13·4	2·0	+22·0	2	10	
C	12637	·596	130·7	338·3	−23·2	21	54	
	12635	·771	79·2	317·9	+ 7·9	30	94	209*c*
	12634	·832	115·5	314·2	−21·2	139	764	292*c*
	12636	·885	95·0	305·6	− 4·6	4	14	366*c*
		·906	71·1					92
Dec. 11			(+12·0)	(7·6)	(− 0·5)	(202)	(961)	(1915)

Group 12631. Dec. 6–10. Small unstable spots in a stream or cluster, showing a burst of activity near the west limb.
Group 12632. Dec. 6–11. A slightly disturbed area shown by one or two spots.
Group 12633. Dec. 7–15. A single spot in faculæ on December 7; nothing is then seen until December 12, when a small stream appears.
Group 12634. Dec. 10–21. A large stream developing in the usual manner as it comes round the east limb. After December 12, the leader spot is split by a bright encroachment of the photosphere.
Group 12635. Dec. 10–20. A rather unusual double stream.
Group 12636. Dec. 10–19. A small spot on December 10 and 11; a new group develops in its place on December 14 and soon runs its course.
Group 12637. Dec. 11–14. A small compact stream.

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1937.			°	°	°			
345·433		·950	250·5					463
		·944	292·6					261
		·920	275·7					268
		·822	243·1					519
		·795	294·7					472
G	12633	·370	183·6	353·8	−22·2	7	55	
	12637	·452	151·7	338·9	−23·9	20	106	
	12635	·560	74·3	319·5	+ 8·2	49	190	
	12634	·683	121·7	313·9	−21·5	139	1074	
		·803	97·3					657
		·864	116·3					413
Dec. 12			(+11·5)	(352·4)	(− 0·6)	(215)	(1425)	(3053)
346·313		·960	244·0					213
		·956	252·3					245
		·878	246·6					279
		·861	293·7					365
	12638	·486	298·3	6·7	+12·6	7	50	
C	12633	·422	209·1	353·6	−22·3	13	51	
	12637	·394	176·2	339·2	−23·8	11	52	
	12635	·371	65·5	320·9	+ 8·0	71	402	
	12634	·559	129·7	313·4	−21·6	151	1002	
		·936	74·7					403
Dec. 13			(+11·1)	(340·8)	(− 0·8)	(253)	(1557)	(1505)
347·464		·965	248·0					184
		·962	290·6					164
		·902	293·6					130
		·835	292·8					127
		·835	245·4					400
	12638	·693	290·0	7·4	+13·0	39	123	
	12630	·681	307·4	1·6	+23·6	3	15	
	12633	·576	229·5	353·8	−22·7	10	37	
G	12639	·303	238·4	340·7	−10·0	4	16	
	12637	·442	207·2	338·3	−23·9	5	24	
	12635	·174	22·1	321·8	+ 8·3	75	398	
	12634	·397	150·4	313·5	−21·0	152	836	
	12636	·391	106·0	303·5	− 6·9	12	44	
	12640	·996	63·6	241·9	+26·2	48	532	354*c*
		·842	75·8					409
		·921	62·9					290
		·958	75·0					306
		·979	114·9					146
Dec. 14			(+10·6)	(325·6)	(− 0·9)	(348)	(2025)	(2510)
1937.			°	°	°			
348·283		·938	292·7					164
		·935	282·3					122
		·914	248·3					556
		·808	245·9					435
	12638	·809	286·8	7·2	+12·9	23	112	193*c*
	12630	·776	300·9	0·8	+22·7	8	50	112*c*
	12633	·670	235·3	351·4	−23·1	3	9	
	12639	·457	250·1	340·5	− 9·8	18	67	
	1127a	·352	284·7	334·7	+ 4·2	3	11	
C	12635	·196	322·6	321·7	+ 7·9	62	532	
	12634	·346	178·9	314·4	−21·1	115	721	
	12641	·165	20·1	311·5	+ 7·9	5	20	
	12636	·216	118·7	303·8	− 6·9	19	73	
	12640	·965	63·0	242·6	+25·6	137	1107	566*f*
	12642	·960	112·5	242·2	−21·8	7	23	203*n*
		·863	60·9					323
		·903	74·4					337
		·936	118·7					269
		·947	50·4					306
Dec. 15			(+10·3)	(314·8)	(− 1·0)	(400)	(2725)	(3586)
349·521		·976	251·6					400
		·924	245·9					302
		·845	242·1					360
	12638	·928	284·4	5·4	+12·8	5	28	400*p*
	12630	·907	295·1	1·5	+23·1	30	145	324*c*
	12639	·736	255·7	344·9	−11·2	3	10	
	12635	·421	291·2	321·7	+ 7·7	39	520	
C	12634	·426	215·7	313·9	−21·3	80	658	
	12641	·275	315·5	309·7	+10·1	3	17	
	12636	·151	230·3	305·2	− 6·7	9	53	
	12643	·781	58·7	252·2	+23·0	3	6	89*c*
	12642	·857	115·3	242·0	−22·1	14	44	221*c*
	12640	·894	59·1	239·5	+26·7	151	1318	575*c*
		·812	122·0					116
		·946	72·5					429
		·952	110·3					320
Dec. 16			(+9·7)	(298·5)	(− 1·2)	(337)	(2799)	(3536)
350·332		·978	283·7					221
		·947	246·9					547
C		·881	307·5					252
		·835	241·3					310
	12630	·963	293·1	0·1	+21·8	24	123	252*c*

Group 12638. Dec. 13–16. A small, short-lived group.
Group 12639. Dec. 14–17. A small, short-lived group.
Group 12640. Dec. 14–27. A large composite spot breaking up after December 21. For the first few days, there are one or two spots following.
Group 12641. Dec. 15–21. A small, rather indefinite group showing a considerable increase as it passes out of view round the west limb.
Group 12642. Dec. 15–23. Intermittent; one or sometimes two small spots not seen on December 20–22.
Group 12643. Dec. 16–25. A stream of normal type greatly lengthening as it develops.

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U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
350·332	12639	·797	257·7	340·0	−10·5	2	7	237*c*
	12635	·605	283·9	323·9	+ 7·3	84	461	
C	12634	·547	231·5	315·0	−21·0	65	500	
	12641	·423	292·8	310·9	+ 8·2	22	74	
	12636	·307	253·6	305·0	− 6·2	9	26	
	1127b	·342	314·7	302·2	+12·6	1	7	
	12643	·657	52·7	253·5	+22·3	9	22	
	12642	·740	119·0	243·8	−21·9	7	14	145*f*
	12640	·803	55·9	240·4	+25·8	125	1109	619*c*
		·802	126·2					321
		·824	42·5					165
		·892	69·6					449
		·905	112·9					412
		·975	70·3					254
		·981	120·4					252
Dec. 17			(+9·3)	(287·8)	(− 1·3)	(348)	(2343)	(4436)
351·293		·977	246·7					230
		·921	258·5					253
		·896	240·8					286
		·887	286·3					324
	12635	·762	280·9	324·0	+ 7·4	58	322	314*c*
	12634	·679	240·1	314·1	−20·8	81	469	
	12641	·612	285·1	311·7	+ 8·0	24	103	
	12636	·495	259·7	304·4	− 6·3	5	34	
C	12643	·519	40·5	254·0	+21·8	32	144	
	12642	·598	126·0	244·0	−21·7	2	5	
	12640	·685	48·5	240·6	+25·7	104	908	309*sf*
		·759	64·9					382
		·887	79·9					314
		·910	54·5					169
		·918	67·5					335
		·939	107·5					157
		·940	120·1					409
Dec. 18			(+8·9)	(275·2)	(− 1·4)	(306)	(1985)	(3482)
352·359		·974	259·8					128
		·960	243·7					239
C		·959	292·6					146
		·896	259·1					94
		·778	261·9					206
	12635	·906	278·4	325·4	+ 6·9	37	177	577*c*
	12644	·836	287·8	316·0	+13·9	4	7	61*n*
	12634	·822	245·0	313·9	−21·2	55	460	325*c*
	12641	·787	280·8	312·1	+ 7·5	13	61	204*c*
	12636	·688	261·4	304·2	− 6·9	3	9	
1937.			°	°	°			
352·359	12643	·407	15·8	254·3	+21·5	65	293	
	12642	·457	140·9	243·1	−22·1	2	10	
C	12640	·563	34·9	240·2	+26·0	74	733	
	12645	·995	116·9	177·0	−26·9	19	38	223*p*
		·797	76·4					197
		·826	125·8					202
		·834	53·4					197
		·861	65·5					256
		·896	117·8					328
		·925	40·8					217
		·941	77·8					464
		·950	57·0					158
		·960	125·4					183
Dec. 19			(+8·4)	(261·1)	(− 1·5)	(272)	(1788)	(4405)
353·470		·860	263·5					400
		·815	235·9					153
	12635	·979	277·8	324·2	+ 7·3	21	62	366*f*
	12644	·944	285·6	315·9	+14·1	6	33	82*c*
	12634	·930	247·8	313·7	−21·2	53	471	619*c*
	12641	·918	279·7	312·3	+ 8·2	46	288	301*c*
	12643	·416	341·6	254·6	+21·5	56	343	
	12640	·476	11·8	240·3	+26·0	111	641	
G	12645	·951	117·7	176·2	−26·7	6	35	377*c*
		·762	125·9					197
		·818	81·4					168
		·842	69·9					200
		·853	53·5					141
		·897	126·4					243
		·916	78·7					214
		·955	54·2					126
		·972	96·3					226
Dec. 20			(+7·9)	(246·5)	(− 1·7)	(299)	(1873)	(3813)
354·311		·946	263·7					413
		·831	261·7					140
	12644	·990	284·6	316·1	+14·1	14	113	163*c*
	12634	·983	248·7	314·6	−21·3	56	311	428*f*
	12641	·975	279·1	312·0	+ 8·5	119	517	393*c*
C	12643	·504	321·8	254·9	+21·5	26	230	
	12640	·474	350·3	240·5	+25·9	86	617	
	12645	·889	119·7	175·6	−26·9	14	68	509*c*
	12646	·906	98·4	170·7	− 8·3	10	41	714*f*
		·836	49·9					110
		·951	52·7					166
Dec. 21			(+7·5)	(235·4)	(− 1·8)	(325)	(1897)	(3036)

Group 12644. Dec. 19–21. A group growing near the west limb.
Group 12645. Dec. 19–25. A small regular spot decreasing to a faint marking on December 25; there are companions on December 23.
Group 12646. Dec 21–24. A spot with a small follower which has disappeared by December 23.

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U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
355·282		·956	243·4					239
		·947	264·9					251
	12643	·632	307·2	255·0	+20·8	40	262	
	12640	·543	330·0	240·1	+26·1	111	700	
	12647	·307	359·6	222·7	+15·9	2	4	
	12648	·738	73·0	176·8	+11·1	1	6	157*f*
	12645	·791	123·4	175·0	−27·0	17	42	267*f*
C	12646	·781	98·6	171·6	− 7·9	6	23	404*f*
	12649	·970	95·6	146·8	− 5·9	8	26	474*c*
	12650	·970	99·0	146·8	− 9·2	20	135	
		·885	48·7					179
		·889	71·6					311
		·918	132·0					91
		·941	109·4					235
		·956	54·1					168
		·957	76·5					170
Dec. 22			(+7·0)	(222·6)	(− 1·9)	(205)	(1198)	(2946)
356·391		·943	313·2					64
		·942	277·9					144
		·933	298·5					74
		·923	250·8					218
		·884	287·4					258
	12643	·805	299·0	257·0	+21·6	46	227	264*c*
	12640	·671	314·3	240·2	+26·2	122	753	
	12642	·580	233·3	238·0	−21·9	2	17	
	12648	·530	68·6	178·1	+ 9·3	11	27	
G	12645	·657	131·9	174·6	−27·6	10	32	
	12646	·573	99·6	173·4	− 7·1	2	10	
	12651	·723	100·0	162·1	− 8·6	1	3	
	12652	·846	77·0	151·4	+ 9·8	4	10	239*n*
	12653	·853	113·4	151·3	−20·9	2	7	190*c*
	12649	·857	95·2	149·2	− 5·5	11	29	395*c*
	12650	·886	100·4	146·0	−10·1	28	172	
		·761	102·1					150
		·782	66·3					135
		·904	45·7					202
Dec. 23			(+6·5)	(208·0)	(− 2·0)	(239)	(1287)	(2333)
357·450		·962	286·4					202
		·962	277·8					97
G		·955	242·0					173
		·872	285·8					109

U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
357·450		·800	235·8					161
	12643	·912	294·5	256·7	+21·2	25	117	542*c*
G	12640	·789	305·9	239·2	+25·9	106	748	441*c*
	12647	·574	303·3	224·0	+16·4	5	13	
	12648	·310	54·5	179·4	+ 8·2	37	178	
	12645	·529	143·1	173·3	−27·0	6	18	
	12646	·384	102·9	172·0	− 6·9	2	6	
	12651	·552	102·7	161·2	− 8·8	4	7	
	12652	·697	73·4	151·6	+ 9·8	15	39	
	12649	·686	94·9	151·0	− 4·9	1	4	
	12650	·751	102·5	146·0	−10·8	55	317	308*c*
	12654	·851	97·3	136·0	− 7·4	4	9	101*c*
		·870	70·0					141
		·889	59·4					210
		·912	41·4					214
		·980	106·0					133
Dec. 24			(+6·0)	(194·1)	(− 2·2)	(260)	(1456)	(2832)
358·333		·958	283·9					198
		·893	241·2					230
		·874	318·7					90
	12643	·970	292·9	256·0	+21·5	24	165	388*nf*
	12640	·884	302·8	238·9	+27·3	63	523	517*c*
	12648	·197	13·2	179·8	+ 8·7	39	217	
	12645	·447	160·4	172·7	−27·1	1	4	
	12652	·529	68·4	152·6	+ 9·2	32	183	
C	12653	·562	121·5	152·1	−19·0	12	34	
	12650	·614	105·9	145·5	−11·5	58	463	
	12654	·707	98·5	137·7	− 7·6	1	6	
	12655	·976	76·9	106·1	+12·2	29	225	207*c*
		·830	58·7					152
		·876	38·2					150
		·934	69·9					225
		·943	106·3					247
Dec. 25			(+5·5)	(182·4)	(− 2·3)	(259)	(1820)	(2404)
359·404		·966	240·8					139
		·887	289·9					224
C	12640	·960	299·3	238·4	+27·2	67	463	669*nf*
	12648	·292	309·1	181·5	+ 8·2	21	214	
	12652	·330	52·3	153·0	+ 9·3	37	147	
	12653	·387	138·2	152·5	−19·0	9	42	
	12656	·442	134·8	148·8	−20·4	17	117	

Group 12647. Dec. 22–24. A very small spot not seen on December 23.
Group 12648. Dec. 22–31. A stream differing somewhat in its development from the normal type.
Group 12649. Dec. 22–24. A tiny group *n* Group 12650.
Group 12650. Dec. 22–1938 Jan. 2. A stream of spots.
Group 12651. Dec. 23–24. A tiny spot.
Group 12652. Dec. 23–Jan. 1. A stream of spots not reaching full development.
Group 12653. Dec. 23–Jan. 2. A tiny spot on Dec. 23 developing into a fairly large stream of active components.
Group 12654. Dec. 24–25. One or two small spots *nf* Group 12650.
Group 12655. Dec. 25–Jan. 4. Probable return of Group 12631. A regular spot with very variable companions.
Group 12656. Dec. 26–31. A small stream subsidiary to Group 12653.

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U.T.	Group No.	Measures. Dist.	Measures. Pos. Angle.	Position. Long.	Position. Lat.	Area. Umbræ.	Area. Whole Spots.	Area. Faculæ.
1937.			°	°	°			
359·404	12650	·401	114·0	147·0	−11·5	59	417	
	12655	·894	75·0	106·5	+12·2	42	213	593*f*
C		·843	105·6					164
		·942	107·7					129
Dec. 26			(+5·0)	(168·3)	(−2·4)	(252)	(1613)	(1918)
360·342		·946	289·6					372
		·930	249·3					315
		·900	277·9					147
		·877	306·0					154
		·836	234·8					280
		·820	291·6					271
	12640	·993	298·6	236·8	+28·0	16	77	435*n*
C	12657	·709	263·4	200·9	− 6·4	7	31	
	12648	·451	295·5	180·2	+ 8·9	47	308	
	12652	·211	13·2	153·2	+ 9·3	22	144	
	12656	·325	167·4	151·7	−20·9	17	75	
	12653	·315	158·3	148·9	−19·4	62	271	
	12650	·237	135·2	146·2	−12·5	51	277	
	12655	·788	72·0	106·1	+12·5	27	198	367*f*
Dec. 27			(+4·6)	(156·0)	(− 2·5)	(249)	(1381)	(2341)
361·305		·967	247·1					152
		·925	280·3					298
		·908	295·4					471
		·876	234·7					332
	12657	·843	264·2	200·6	− 6·3	23	93	115*c*
	12648	·622	288·3	179·9	+ 9·1	71	391	
C	12652	·275	319·3	153·7	+ 9·4	23	95	
	12656	·351	199·4	150·5	−21·8	17	141	
	12653	·314	200·7	150·0	−19·6	69	442	
	12650	·175	199·7	146·7	−12·1	41	248	
	12655	·639	66·9	106·5	+12·4	19	187	
		·789	111·3					160
		·903	110·1					139
Dec. 28			(+4·1)	(143·3)	(− 2·6)	(263)	(1597)	(1667)
362·282		·970	274·0					93
		·947	264·0					199
C		·942	280·8					220
		·942	291·6					382
		·942	304·9					168
		·940	244·2					477
		·843	232·5					450
	12648	·772	283·6	179·6	+ 8·7	65	284	164*p*
1937.			°	°	°			
362·282	12652	·451	297·6	154·2	+ 9·6	14	54	
	12656	·476	224·0	151·3	−22·5	25	121	
C	12653	·437	228·6	150·6	−19·2	69	524	
	12650	·331	240·2	147·4	−12·0	36	204	
	12658	·224	182·2	130·9	−15·6	2	16	
	12659	·432	31·8	116·5	+18·8	4	18	
	12655	·477	57·3	106·2	+12·4	26	161	
		·951	112·1					133
Dec. 29			(+3·6)	(130·4)	(− 2·7)	(241)	(1382)	(2286)
363·550		·971	245·4					187
		·966	236·2					238
		·935	307·7					150
		·873	236·6					401
		·828	261·2					346
		·827	311·0					228
	12648	·925	279·4	180·5	+ 7·6	16	99	708*c*
	12652	·699	287·8	156·1	+10·2	13	42	
	12656	·669	238·5	151·7	−22·7	16	101	
G	12653	·642	242·7	150·8	−19·4	63	397	
	12650	·569	253·3	147·4	−11·8	40	204	
	12658	·410	237·8	134·7	−15·2	8	33	
	12659	·374	349·8	117·7	+18·6	3	8	
	12655	·297	25·3	106·3	+12·7	22	133	
	12660	·433	119·2	90·8	−14·8	9	43	
		·922	59·8					166
		·954	70·8					276
		·970	110·2					240
Dec. 30			(+3·0)	(113·7)	(− 2·9)	(190)	(1060)	(2940)
364·290		·968	239·2					400
		·899	236·4					246
		·893	261·2					354
		·884	292·1					143
	12648	·980	277·2	181·8	+ 6·4	15	71	464*n*
	12652	·810	284·8	156·5	+10·1	7	23	191*c*
	12656	·773	242·4	151·9	−23·0	9	90	
C	12653	·760	247·1	151·6	−19·1	49	343	
	12650	·702	256·1	147·9	−11·8	61	278	
	12658	·569	247·4	136·8	−15·1	14	51	
	12659	·433	326·2	118·6	+18·1	10	26	
	12655	·270	349·6	106·8	+12·4	13	82	
	12660	·303	134·1	91·0	−15·1	26	125	
	12661	·983	85·0	25·2	+ 4·3	40	245	200*c*
		·927	65·6					275
Dec. 31			(+2·6)	(104·0)	(− 3·0)	(244)	(1334)	(2273)

Group 12657. Dec. 27–28. A small, short-lived group.
Group 12658. Dec. 29–Jan. 3. A group increasing as it approaches the west limb.
Group 12659. Dec. 29–Jan. 5. A small spot on December 30, developing fairly rapidly into a bi-polar group.
Group 12660. Dec. 30–Jan 7. A pair of spots becoming a stream of normal type which soon declines.
Group 12661. Dec. 31–Jan. 10. A regular spot breaking up into several pieces on January 4–5.

ROYAL OBSERVATORY, GREENWICH.

General Catalogue of Groups of Sun Spots

For the Year

1937

GREENWICH PHOTO-HELIOGRAPHIC RESULTS, 1937.

General Catalogue of Groups of Sun Spots for the Year 1937

Groups of Sun Spots, lasting for two or more days, are numbered in the *first* column in continuation of the Group-numbers given in 1936 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 102.

The *second* column gives the U.T. of the central meridian passage of each group as deduced from its mean longitude (given in the *tenth* column). For those groups, which are in existence at the time of the central meridian passage of their longitude, the time is given to $0^{d}.01$, corresponding to $0^{\circ}\cdot13$ of solar longitude. In other cases, in which groups disappear before or appear after the central meridian, the deduced time is given to $0^{d}.1$.

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

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

The mean Areas for Umbræ and Whole Spots entered in the *eighth* and *ninth* columns are corrected for the effect of foreshortening and are expressed in millionths of the Sun's visible hemisphere.

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

The *twelfth* column gives reference to all Groups contained in Ledgers I and 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 $\xi = 14^{\circ}\cdot37 - 2^{\circ}.60 \sin^2 \phi$ 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 SUN SPOTS.

No. of Group.	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.
	1937		1937	°	1937	°			°	°	
12167	Jan. 5·4	3	Jan. 1	−53	Jan. 3	−26	4	10	174·7	+21·8	
68	6·8	3	4	−30	6	− 8	4	20	155·7	+ 7·9	
69	5·1	6	5	+ 6	10	+72	13	54	177·6	+10·9	II
12170	6·2	6	6	+ 1	11	+74	4	17	163·6	+ 7·3	II.
71	6·88	8	6	− 7	13	+81	79	449	154·7	−17·5	I. 1185 (1)
72	9·06	6	6	−36	11	+32	21	78	126·1	−26·1	II.
73	11·3	3	7	−51	9	−24	4	12	96·6	+10·3	
74	10·2	3	8	−20	10	− 1	7	22	110·6	−34·2	
12175	15·50	12	9	−80	20	+63	15	51	41·2	−12·4	II.
76	10·0	2	10	+ 6	11	+20	4	17	113·8	−24·8	
77	10·89	7	10	− 8	16	+74	18	58	102·0	+ 9·2	II.
78	16·91	13	10	−82	22	+71	89	514	22·7	− 8·4	I. 1186 (1)
79	9·7	4	12	+35	15	+77	29	123	118·2	+17·4	I. 1187 (1)
12180	18·6	5	13	−70	17	−16	18	85	359·9	+23·4	
81	9·9	2	14	+56	15	+74	8	16	114·4	−24·8	
82	20·27	9	14	−76	22	+25	11	66	338·4	−15·3	II.
83	15·0	4	15	+ 5	18	+45	10	49	47·8	+19·0	
84	17·3	2	15	−24	16	−12	4	20	17·8	−24·2	
12185	20·90	11	15	−70	25	+57	19	111	330·1	+22·4	I. 1182 (2)
86	21·70	10	16	−71	25	+50	11	44	319·7	+ 9·6	II.
87	22·4	5	16	−78	20	−28	6	17	310·0	−26·7	
88	24·20	13	17	−83	29	+64	133	854	286·6	−19·8	II.
89	21·18	5	18	−35	22	+13	4	32	326·4	−16·2	
12190	18·0	5	19	+18	23	+71	6	21	8·9	+14·6	
91	25·21	12	19	−76	30	+69	31	146	273·4	−17·5	II.
92	18·6	4	21	+37	24	+76	34	123	1·0	+10·0	
93	19·4	4	21	+26	24	+64	16	46	349·9	+16·2	
94	23·94	9	21	−34	29	+64	63	325	290·1	+18·3	II.
12195	26·29	11	21	−66	31	+70	46	218	259·2	+19·4	II.
96	23·78	4	22	−22	25	+23	4	16	292·2	−16·6	
97	21·6	4	23	+21	26	+63	8	21	320·3	−24·8	
98	27·93	7	23	−59	29	+16	6	19	237·6	+21·3	II.
99	26·02	9	24	−22	Feb. 1	+81	80	482	262·7	+20·4	I. 1188 (1)
12200	24·4	5	25	+12	Jan. 29	+63	32	118	284·5	−10·8	II.
01	30·59	12	25	−67	Feb. 5	+73	29	165	202·6	+24·4	I. 1184 (2)
02	30·5	4	25	−68	Jan. 28	−28	10	29	203·4	−12·8	I. 1183 (2)
03	30·33	12	25	−70	Feb. 5	+81	55	282	206·0	+17·2	II.
04	31·07	13	25	−78	6	+85	253	1734	196·3	−10·1	I. 1189 (1)

GENERAL CATALOGUE OF SUN SPOTS—*continued.*

No. of Group.	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.
	1937		1937	°	1937	°			°	°	
12205	Jan. 31·7	6	Jan. 26	−70	Jan. 31	− 3	22	146	187·7	−12·9	II.
06	31·45	12	26	−67	Feb. 6	+80	18	94	191·2	+ 7·1	II.
07	31·67	8	26	−69	2	+24	11	40	188·3	+16·1	II.
08	Feb. 1·49	12	26	−81	6	+67	25	134	177·6	−14·7	II.
09	Jan. 31·53	11	27	−53	6	+77	59	352	190·2	−23·0	I. 1190 (1)
12210	Feb. 3·30	14	27	−86	Feb. 9	+81	41	244	153·7	−19·2	I. 1185 (2)
11	Jan. 27·7	2	28	+ 8	Jan. 29	+18	4	15	240·0	−31·8	
12	29·04	6	29	0	Feb. 3	+70	34	211	222·9	+22·6	I. 1190 (1)
13	Feb. 3·78	8	29	−71	5	+17	8	26	147·4	+33·3	II.
14	Jan. 29·0	6	30	+15	4	+84	20	78	223·4	−20·9	II.
12215	Feb. 4·54	8	30	−66	6	+22	16	70	137·4	+26·0	II.
16	5·04	12	30	−72	10	+70	25	136	130·8	+22·8	II.
17	5·23	8	30	−76	6	+16	14	51	128·4	−16·4	II.
18	2·44	6	31	−24	5	+35	13	47	165·1	−32·1	II.
19	5·91	11	31	−72	10	+59	14	54	119·3	+18·4	I. 1187 (2)
12220	Jan. 30·3	3	Feb. 1	+27	3	+56	6	16	206·2	+12·4	
21	Feb. 2·3	2	2	+ 2	3	+15	3	9	166·3	−14·3	
22	8·91	7	3	−71	9	+12	13	47	79·9	+17·6	II.
23	8·83	8	3	−73	10	+20	14	59	81·0	−11·7	II.
24	9·78	12	4	−74	15	+75	17	88	68·5	−22·4	II.
12225	1·1	3	5	+55	7	+82	14	84	182·8	−31·0	
26	2·7	3	6	+50	8	+76	24	105	161·6	−25·9	
27	11·2	2/5	6	−61	10	−11	0	2	50·0	−12·7	
28	12·95	12	7	−72	18	+72	13	49	26·7	− 6·3	I. 1186 (2)
29	4·1	2	8	+59	9	+71	12	24	142·8	+21·6	
12230	11·25	10	8	−38	17	+76	67	371	49·1	+19·8	II.
31	12·41	11	8	−56	18	+80	32	156	33·7	+15·3	II.
32	10·93	3/4	10	−10	13	+34	1	4	53·2	+ 5·7	
33	13·12	10	10	−38	19	+82	39	216	24·5	+ 9·4	II.
34	16·05	4/7	11	−59	17	+14	5	15	345·8	−27·3	II.
12235	18·47	13	12	−80	24	+78	35	190	314·0	+14·1	II.
36	10·8	3	15	+61	17	+87	6	18	55·2	−34·4	
37	20·99	9	15	−71	23	+29	11	41	280·7	+20·8	II.
38	22·16	10	16	−75	25	+47	44	250	265·4	+20·4	} I. 1188 (2)
39	23·28	13	17	−76	Mar. 1	+78	75	574	250·6	+21·1	
12240	24·40	13	18	−79	Mar. 2	+78	50	322	235·9	+15·0	II.
41	25·03	12	19	−74	2	+71	17	76	227·6	−11·1	II.
42	25·19	12	19	−74	2	+68	42	260	225·4	+15·8	II.
43	20·2	2	20	+ 2	Feb. 21	+16	2	7	290·7	−21·2	
44	25·3	2	20	−64	21	−50	4	13	224·6	+22·1	I. 1190 (2)

GENERAL CATALOGUE OF SUN SPOTS—*continued.*

No. of Group.	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.
	1937		1937	°	1937	°			°	°	
12245	Feb. 26·03	11	Feb. 20	−74	Mar. 2	+58	31	163	214·4	+20·0	II.
46	26·31	11	20	−78	2	+52	14	64	210·7	+12·1	II.
47	26·79	13	20	−85	4	+71	43	223	204·4	−10·8	I. 1189 (2)
48	23·41	2/3	21	−26	Feb. 23	+ 1	1	8	249·0	−23·6	
49	19·2	2	22	+42	23	+56	4	23	304·7	−13·4	
12250	27·73	7	22	−70	28	+ 8	18	98	192·0	+26·6	II.
51	28·58	12	22	−80	Mar. 5	+62	24	132	180·9	−25·6	I. 1190 (2)
52	28·54	10	23	−64	4	+47	16	77	181·3	+17·8	II.
53	28·8	4	24	−59	Feb. 27	−18	10	53	178·1	−12·7	
54	Mar. 2·09	12	24	−77	Mar. 7	+72	158	793	160·9	+ 8·4	I. 1191 (1)
12255	1·19	8	26	−36	5	+56	21	81	172·8	−24·3	II.
56	Feb. 27·0	2	27	+ 4	Feb. 28	+18	6	14	201·2	+11·6	
57	27·53	2/4	27	− 2	Mar. 2	+38	1	3	194·6	− 9·6	
58	28·47	4	27	−15	2	+26	2	7	182·3	+ 8·5	
59	24·2	3	28	+54	2	+82	28	124	238·5	−21·0	I. 1192 (1)
12260	Mar. 6·0	3	28	−74	2	−48	4	12	109·0	−25·1	
61	2·65	4	Mar. 1	−17	4	+21	6	14	153·6	−24·9	
62	5·14	6/11	1	−47	11	+83	7	35	120·8	−19·0	II.
63	28·6	3	2	+25	4	+47	15	60	180·9	+29·3	
64	8·65	12	3	−69	14	+74	71	431	74·5	+18·5	II.
12265	8·42	11	4	−58	14	+80	24	124	77·5	−29·3	II.
66	10·44	9	5	−67	13	+40	25	130	50·9	+11·6	II.
67	8·01	2	7	− 9	8	+ 5	1	6	82·9	+15·6	
68	11·09	5	7	−48	11	+ 4	11	26	42·3	+23·5	
69	11·6	4/5	7	−55	11	− 5	2	5	35·6	+ 8·5	
12270	12·5	5	7	−70	11	−15	11	35	23·5	+16·2	
71	13·45	13	7	−79	19	+81	28	141	11·3	+13·2	II.
72	12·75	7	8	−57	14	+16	17	71	20·5	+30·4	II.
73	12·9	5	8	−60	12	− 6	7	25	18·8	+11·0	
74	10·4	2	14	+47	15	+67	2	8	51·0	−13·0	
12275	18·38	9	16	−27	24	+80	17	66	306·3	−23·0	II.
76	23·7	4	17	−81	20	−47	5	15	235·9	−24·2	I. 1192 (2)
77	21·74	7	18	−43	24	+28	7	38	262·0	+24·6	II.
78	22·62	4/6	18	−54	23	+10	3	9	250·4	+21·9	I. 1188 (3)
79	16·6	2	19	+38	20	+48	6	14	329·3	+29·4	
12280	25·78	9	20	−72	28	+36	10	48	208·7	−18·3	II.
81	25·93	7	20	−73	26	+ 6	4	16	206·7	−11·3	I. 1189 (3)
82	26·69	10	21	−73	30	+55	24	119	196·6	+ 6·8	II.
83	20·5	5	22	+25	26	+79	20	87	279·0	−25·7	
84	22·3	2	22	+ 2	23	+15	4	16	255·1	+11·2	

GENERAL CATALOGUE OF SUN SPOTS—*continued.*

No. of Group.	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.
	1937		1937	°	1937	°			°	°	
12285	Mar. 28·19	13	Mar. 22	−76	Apr. 3	+77	14	76	176·9	−14·6	II.
86	26·90	10	23	−46	1	+74	36	235	193·9	+17·7	II.
87	28·83	9	23	−72	Mar. 31	+33	7	23	168·4	+17·7	II.
88	28·91	12	23	−73	Apr. 3	+72	60	340	167·4	+ 6·6	I. 1191 (2)
89	29·52	13	23	−80	4	+81	72	453	159·4	+ 9·7	II.
12290	28·4	2	26	−28	Mar. 27	−13	2	4	174·0	− 9·8	
91	25·8	3	27	+21	29	+48	6	19	208·5	+ 8·9	
92	28·8	2	27	−18	28	− 6	1	8	169·0	−14·0	
93	Apr. 2·26	10	27	−78	Apr. 5	+42	17	91	110·0	− 7·8	II.
94	3·44	7	29	−69	4	+14	10	44	94·4	+ 7·7	II.
12295	Mar. 31·11	8	30	− 9	6	+80	66	379	138·4	+ 8·6	II.
96	31·9	2	30	−17	Mar. 31	− 6	4	10	128·4	+21·4	
97	Apr. 3·7	2	30	−55	31	−43	6	16	91·1	−10·9	
98	3·97	11	30	−57	Apr. 9	+71	23	112	87·4	+14·7	II.
99	6·05	9	31	−75	8	+31	15	94	60·0	+22·0	II.
12300	Mar. 31·8	6	Apr. 1	+ 8	6	+74	75	433	129·7	+10·4	II.
01	Apr. 6·14	9	1	−68	9	+49	11	47	58·8	+10·1	II.
02	3·4	3	3	+ 2	5	+25	4	15	95·4	− 9·6	
03	6·67	6	3	−46	8	+27	5	15	51·8	−14·2	II.
04	9·22	14	3	−75	16	+85	64	374	18·2	−22·3	II.
12305	9·51	9	5	−57	13	+54	23	100	14·4	− 9·0	II.
06	2·4	2	7	+67	8	+78	9	30	107·8	−31·2	
07	7·69	7	7	− 8	13	+77	29	162	38·4	+19·5	I. 1193 (1)
08	9·17	6	7	−19	12	+41	6	22	18·8	+29·1	II.
09	7·8	5	9	+20	13	+78	5	19	36·6	−13·1	
12310	12·09	4	10	−22	13	+18	5	29	340·3	+10·4	
11	15·88	11	11	−60	21	+70	24	128	290·3	−11·7	II.
12	17·43	6	15	−26	20	+38	26	112	269·8	−31·0	II.
13	18·89	5	15	−47	19	+ 8	4	20	250·5	−25·2	
14	21·07	12	15	−77	26	+74	28	147	221·7	+10·0	II.
12315	22·49	11	18	−55	28	+83	90	523	203·0	− 9·2	I. 1194 (1)
16	24·6	7	18	−83	24	− 6	13	56	175·3	−16·3	II.
17	20·9	2	19	−20	20	− 7	4	12	223·4	−13·4	
18	22·3	2	19	−38	20	−25	4	12	205·5	+ 6·0	
19	23·23	11	19	−51	29	+76	148	1017	193·1	+25·1	I. 1195 (1)
12320	24·69	13	19	−67	May 1	+82	291	1674	173·9	+19·5	I. 1196 (1)
21	25·04	12	19	−75	Apr. 30	+73	22	113	169·3	+ 8·8	I. 1191 (3)
22	16·0	2	20	+58	21	+73	6	18	289·1	+11·5	I. 1197 (1)
23	22·62	6	22	− 1	27	+64	28	133	201·2	+ 8·0	II.
24	26·74	3/6	23	−47	28	+26	1	4	146·7	+10·4	

GENERAL CATALOGUE OF SUN SPOTS—*continued.*

No. of Group.	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.
	1937		1937	°	1937	°			°	°	
12325	Apr. 24·38	7	Apr. 24	— 4	Apr. 30	+82	47	223	178·0	—10·3	II.
26	24·1	5	25	+16	29	+70	15	52	181·1	+10·6	
27	29·53	10	26	—42	May 5	+81	162	887	109·9	—20·5	I. 1198 (1)
28	28·39	5/6	28	0	3	+68	5	15	125·0	—10·2	
29	May 3·26	3/6	28	—62	3	+ 2	1	3	60·7	+ 3·1	II.
12330	4·99	14	28	—83	11	+83	47	246	37·7	+18·2	I. 1193 (2)
31	5·80	11	30	—68	10	+60	7	19	27·1	—17·1	II.
32	Apr. 28·3	3	May 1	+40	3	+68	9	26	126·7	—18·2	
33	29·1	2/3	1	+30	3	+56	2	6	115·4	—12·4	
34	May 7·0	4	3	—46	6	—10	9	31	11·1	—12·9	
12335	10·47	13	4	—78	16	+78	63	371	325·3	+11·8	II.
36	6·1	2	7	+21	8	+34	2	10	23·4	—29·4	
37	13·19	8	7	—71	14	+19	8	38	289·4	+11·5	I. 1197 (2)
38	11·00	8	9	—24	16	+73	20	91	318·3	—16·8	II.
39	13·7	2	9	—57	10	—43	1	6	282·0	—23·2	
12340	14·4	6	9	—66	14	0	5	14	273·6	+19·6	II.
41	15·57	13	9	—80	21	+78	102	585	257·9	+18·4	II.
42	9·0	5	10	+21	14	+70	18	77	344·3	+ 9·8	
43	16·34	12	10	—78	21	+64	15	56	247·6	—31·4	II.
44	16·17	3	14	—23	16	+ 3	4	26	249·9	+25·0	
12345	19·38	6/7	14	—65	20	+11	5	16	207·4	+22·0	II.
46	19·38	5/7	14	—65	20	+12	4	12	207·5	— 7·5	I. 1194 (2)
47	19·54	12	14	—69	25	+77	17	72	205·3	—18·4	II.
48	20·14	13	14	—75	26	+80	52	320	197·4	+21·8	I. 1195 (2)
49	20·77	14	14	—78	27	+77	196	1220	189·2	—15·3	I. 1199 (1)
12350	21·93	13	15	—78	27	+77	72	424	173·8	+17·9	I. 1196 (2)
51	21·57	13	15	—79	27	+74	35	217	178·5	+26·9	II.
52	14·7	6	16	+24	21	+86	48	275	269·9	—17·0	II.
53	18·7	3	16	—31	18	— 4	3	8	216·0	+14·6	
54	22·2	2	17	—64	18	—51	5	14	170·2	+ 9·6	I. 1191 (4)
12355	24·35	12	18	—79	29	+68	30	159	141·6	+ 9·4	II.
56	18·4	2	19	+13	20	+26	2	6	220·0	+28·6	
57	21·10	2	20	—11	21	+ 4	6	12	184·6	+24·7	
58	22·87	3/5	20	—36	24	+22	3	9	161·3	—16·9	
59	26·18	13	20	—77	June 1	+80	94	460	117·5	—19·6	I. 1198 (2)
12360	22·15	5/6	21	—10	May 26	+58	3	9	170·8	—21·6	
61	25·63	12	21	—57	June 1	+81	21	96	124·8	+12·1	II.
62	27·25	13	21	—77	2	+82	138	811	103·3	+11·0	II.
63	23·85	6/8	22	—22	May 29	+73	2	7	148·3	+12·1	II.
64	24·80	3/7	23	—20	29	+61	1	4	135·7	+ 8·0	

GENERAL CATALOGUE OF SUN SPOTS—*continued.*

No. of Group.	U.T. of Central Meridian Passage.	Duration in Days.	First Seen.		Last Seen.		Mean Area Corrected for Foreshortening.		Mean Position of Group		Reference to Ledger.
			Date.	Longitude from Central Meridian.	Date.	Longitude from Central Meridian.	Umbræ.	Whole Spots.	Longitude.	Latitude.	
	1937		1937	°	1937	°			°	°	
12365	May 25·19	2	May 24	−10	May 25	+ 2	4	16	130·6	+14·4	
66	29·46	8	24	−66	31	+23	15	44	74·0	+ 4·8	II.
67	27·09	3	26	− 7	28	+16	3	9	105·5	−22·9	
67*	30·98	8	29	−23	June 5	+69	22	113	54·0	+16·7	II.
68	June 4·85	14	29	−82	11	+83	123	863	349·5	+12·8	II.
69	May 30·4	5	June 1	+22	5	+81	32	179	61·1	+13·4	II.
12370	June 1·6	6	2	+10	7	+77	20	84	32·2	−16·8	I. 1200 (1)
71	7·73	7	2	−73	8	+ 8	9	32	311·4	+10·7	II.
72	9·03	14	2	−86	15	+83	89	456	294·2	+12·3	I. 1201 (1)
73	4·2	3	4	0	6	+30	6	15	357·9	+10·8	
74	5·55	2/4	4	−17	7	+24	2	5	340·2	+ 9·0	
12375	9·99	12	4	−74	15	+70	20	102	281·4	−15·5	II.
76	3·3	2	5	+26	6	+41	4	11	9·8	+ 7·3	
77	3·9	5	5	+18	9	+69	20	83	1·6	−32·7	
78	8·08	2	7	−11	8	+ 4	4	14	306·8	−13·0	
79	10·6	2	7	−43	8	−29	3	7	274·1	+10·4	
12380	15·55	13	9	−82	21	+77	110	591	208·0	+10·4	I. 1202 (1)
81	12·20	5	10	−22	14	+28	19	69	252·3	+19·4	
82	15·4	2	10	−66	11	−54	4	16	209·8	−12·2	
83	16·01	12	10	−76	21	+74	81	462	201·8	−14·3	II.
84	16·26	13	10	−76	22	+81	90	488	198·4	+21·5	I. 1195 (3)
12385	17·00	13	11	−76	23	+79	177	897	188·6	−14·4	I. 1199 (2)
86	11·4	6	12	+13	17	+82	46	234	263·2	+21·3	I. 1203 (1)
87	17·75	7	12	−70	18	+ 9	6	11	178·8	+16·4	I. 1196 (3)
88	17·97	12	12	−75	23	+78	75	346	175·9	−13·9	II.
89	17·88	12	12	−78	23	+77	29	118	177·1	+ 9·7	II.
12390	13·68	5	13	− 2	17	+47	6	20	232·7	+35·1	
91	19·1	3	13	−77	15	−49	5	19	160·3	+ 8·5	
92	17·8	2	14	−44	15	−32	4	11	178·6	+21·2	
93	21·01	12	15	−76	26	+76	100	549	135·6	+12·2	II.
94	22·77	13	16	−81	28	+74	39	178	112·4	+11·2	II.
12395	18·74	8	17	−19	24	+75	17	65	165·7	+28·1	II.
96	22·98	13	17	−72	29	+82	48	254	109·6	−22·1	I. 1198 (3)
97	19·26	4	18	−13	21	+32	7	26	158·8	+10·8	
98	23·7	3	18	−72	20	−41	6	13	100·7	−11·4	
99	21·8	2	19	−31	20	−17	4	8	125·6	+13·2	
12400	21·0	3	21	+ 3	23	+34	10	30	136·4	− 9·1	
01	26·68	11/12	21	−73	July 2	+76	15	65	60·5	−12·2	II.
02	27·12	13	21	−77	3	+83	80	459	54·8	−10·9	II.
03	22·11	7	22	− 1	June 28	+86	22	100	121·0	+21·6	II.
04	23·70	3	22	−17	24	+ 9	5	14	100·0	−12·6	

GENERAL CATALOGUE OF SUN SPOTS—*continued.*

No. of Group.	U.T. of Central Meridian Passage.	Duration in Days.	First Seen.		Last Seen.		Mean Area Corrected for Foreshortening.		Mean Position of Group		Reference to Ledger.
			Date.	Longitude from Central Meridian.	Date.	Longitude from Central Meridian.	Umbræ.	Whole Spots.	Longitude.	Latitude.	
	1937		1937	°	1937	°			°	°	
12405	June 28·21	13	June 22	−77	July 4	+81	46	233	40·4	−16·2	I. 1200 (2)
06	21·8	2/4	24	+35	June 27	+72	1	4	124·8	+12·8	
07	25·7	2	24	−17	25	− 6	4	8	73·3	+22·8	
08	30·27	9	24	−79	July 2	+32	21	81	13·0	+18·2	II.
09	28·30	3	26	−24	June 28	0	9	34	39·1	+ 7·8	
12410	28·66	3	28	− 6	June 30	+25	7	28	34·4	−18·6	
11	July 1·97	10	29	−34	July 8	+80	65	360	350·6	+16·3	II.
12	4·2	2	29	−65	June 30	−49	10	26	321·2	− 7·8	
13	2·56	4	30	−27	July 3	+ 7	6	19	342·7	+17·8	
14	6·4	6	30	−80	5	−14	14	54	291·5	+14·8	I. 1201 (2)
12415	3·9	2	July 2	−22	3	− 6	3	10	325·0	−13·0	
16	4·41	2/5	2	−28	6	+28	1	4	318·2	+12·8	
17	8·69	11	2	−81	12	+48	8	24	261·6	+18·1	I. 1203 (2)
18	7·09	10	3	−51	12	+73	60	290	282·7	+13·3	II.
19	5·60	8	4	−18	11	+75	35	160	302·5	−17·9	II.
12420	10·89	12	5	−72	16	+72	74	433	232·5	−17·8	I. 1204 (1)
21	7·63	4	6	−14	9	+23	6	20	275·6	+12·7	
22	8·18	3/5	6	−22	10	+31	2	8	268·4	+13.2	
23	9·10	10	6	−35	15	+82	171	970	256·1	+23·5	I. 1205 (1)
24	12·52	13	6	−79	18	+77	52	273	210·9	+11·1	I. 1202 (2)
12425	12·70	10	6	−82	15	+36	17	80	208·5	− 7·3	II.
26	13·47	12	7	−77	18	+66	24	131	198·4	−13·6	I. 1199 (3)
27	13·84	13	7	−83	19	+74	37	210	193·5	+14·4	II.
28	12·81	9	8	−60	16	+48	7	29	207·2	−12·9	II.
29	13·8	3	8	−72	10	−44	9	25	194·3	− 7·6	
12430	14·33	13	8	−78	20	+78	68	378	186·6	−10·2	II.
31	12·68	10	9	−44	18	+77	66	387	208·8	+ 9·3	I. 1202 (2)
32	15·54	12	9	−80	20	+65	29	148	171·0	−15·0	II.
33	14·30	11	9	−68	19	+69	20	92	187·3	+12·9	II.
34	14·71	8	9	−71	16	+21	15	58	182·0	+15·3	II.
12435	14·1	4	10	−51	13	− 7	5	14	189·5	+19·9	
36	16·4	6	10	−76	15	−14	11	26	160·2	+25·6	II.
37	9·3	4	11	+28	14	+66	20	69	254·1	−29·5	
38	10·7	3	11	+ 9	13	+36	3	5	235·3	+11·4	
39	10·8	4/5	12	+19	16	+75	13	51	234·2	−30·2	I. 1206 (1)
12440	12·55	2	12	− 2	13	+12	1	6	210·6	−17·4	
41	18·60	13	12	−82	24	+77	91	676	130·5	+13·4	I. 1207 (1)
42	19·04	12	12	−86	23	+59	18	91	124·6	+20·2	II.
43	14·4	2	13	−13	14	− 1	4	12	185·6	+19·2	
44	19·55	12	13	−80	24	+67	22	121	118·0	−14·1	II.

GENERAL CATALOGUE OF SUN SPOTS—*continued.*

No. of Group.	U.T. of Central Meridian Passage.	Duration in Days.	First Seen.		Last Seen.		Mean Area Corrected for Foreshortening.		Mean Position of Group		Reference to Ledger.
			Date.	Longitude from Central Meridian.	Date.	Longitude from Central Meridian.	Umbræ.	Whole Spots.	Longitude.	Latitude.	
	1937		1937	°	1937	°			°	°	
12445	July 19·61	10	July 13	−81	July 22	+39	27	127	117·1	+11·7	II.
46	20·08	12	13	−86	24	+56	19	112	110·9	+14·7	II.
47	20·77	13	14	−82	26	+72	23	122	101·7	−21·1	I. 1198 (4)
48	23·14	9	17	−78	25	+31	11	49	70·4	+ 7·4	II.
49	23·63	13	17	−81	29	+74	100	652	64·0	−13·2	II.
12450	24·13	7/9	19	−64	27	+43	4	8	57·3	−17·7	II.
51	25·0	6	19	−74	24	− 9	16	68	45·7	−20·4	II.
52	22·39	4	20	−27	23	+14	8	23	80·4	−22·2	
53	23·97	11	20	−48	30	+80	28	127	59·4	+10·6	II.
54	25·8	2	20	−71	21	−62	2	11	34·6	−12·0	
12455	28·76	15	22	−78	Aug. 5	+85	411	2589	356·1	+31·5	I. 1208 (1)
56	26·86	7	25	−22	July 31	+60	9	27	21·2	+15.5	II.
57	Aug. 2·24	11	26	−87	Aug. 5	+40	30	177	296·8	+30·1	II.
58	2·44	13	27	−78	8	+80	53	284	294·2	−10·8	II.
59	2·61	11	28	−72	7	+64	7	17	291·9	+ 8·4	II.
12460	1·56	9	29	−43	6	+64	18	78	305·8	−20·0	II.
61	3·90	9	30	−64	7	+47	24	90	274·8	−12·6	II.
62	5·88	13	30	−84	11	+72	91	634	248·6	+24·0	I. 1205 (2)
63	3·7	3	31	−50	2	−15	4	19	277·4	+14·8	
64	5·78	13	31	−73	12	+84	60	330	250·0	+31·0	I. 1209 (1)
12465	3·88	5	Aug. 1	−30	5	+17	13	56	275·2	+18·7	
66	7·2	7	1	−75	7	0	22	105	230·6	−29·5	I. 1206 (2)
67	7·40	11	1	−77	11	+51	14	52	228·6	−18·5	I. 1204 (2)
68	July 29·6	2	3	+63	4	+75	21	68	344·6	+16·0	
69	Aug. 3·76	4	3	− 5	6	+35	18	85	276·7	+13·6	
12470	8·7	2	3	−71	4	−58	8	17	210·8	+ 9·6	I. 1202 (3)
71	10·10	13	4	−76	16	+82	74	434	192·9	−12·0	I. 1210 (1)
72	4·7	6	5	+ 8	10	+76	54	286	263·9	−13·0	II.
73	6·07	4	5	− 7	8	+30	3	10	246·2	+18·2	
74	6·77	8	5	−18	12	+76	12	42	236·9	−26·8	II.
12475	9·96	9	5	−63	13	+46	23	92	194·7	− 8·0	II.
76	12·0	3	6	−75	8	−46	8	24	167·9	−12·0	
77	13·38	5/7	7	−78	13	+ 1	3	8	149·5	+18·7	II.
78	10·51	4	8	−28	11	+11	6	29	187·4	−18·6	
79	12·1	3	8	−51	10	−23	7	27	166·0	−23·2	
12480	14·2	3	8	−76	10	−51	6	21	139·3	+ 9·4	
81	14·49	13	8	−78	20	+76	48	257	134·9	−24·2	II.
82	14·4	3	8	−79	10	−53	11	36	136·4	+18·5	
83	7·2	2	9	+29	10	+40	1	4	231·0	−32·4	
84	9·3	4	9	+ 1	12	+43	10	38	204·0	−20·1	

GENERAL CATALOGUE OF SUN SPOTS—*continued.*

No. of Group.	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.
	1937		1937	°	1937	°			°	°	
12485	Aug. 9·96	5/6	Aug. 9	−10	Aug. 14	+57	6	20	194·8	+17·5	
86	14·39	12	9	−72	20	+79	119	696	136·2	+11·7	I. 1207 (2)
87	14·81	9	9	−73	17	+34	26	156	130·6	−20·8	II.
88	15·28	10	10	−68	19	+56	29	141	124·4	−22·4	II.
89	14·93	4/6	11	−47	16	+20	3	11	129·0	−14·1	
12490	16·93	11	11	−71	21	+62	21	98	102·6	+10·8	II.
91	10·7	2	12	+22	13	+37	3	11	185·0	+14·5	
92	10·0	2	12	+31	13	+47	6	11	194·5	− 9·4	
93	10·9	5	12	+17	16	+76	24	102	182·4	−10·9	
94	13·0	4	14	+19	17	+57	8	24	154·2	+17·7	
12495	12·5	2	16	+52	17	+64	6	17	161·2	−15·2	
96	24·0	4	18	−73	21	−34	2	13	8·6	+24·8	
97	24·27	7/8	18	−75	25	+15	8	42	5·6	+31·2	II.
98	25·60	15	18	−88	Sept. 1	+83	201	1046	348·0	+32·8	I. 1208 (2)
99	23·84	11	19	−56	Aug. 29	+69	44	198	11·3	−26·3	II.
12500	24·03	11	19	−69	29	+75	44	226	8·8	− 9·0	II.
01	24·38	10	20	−53	29	+68	5	25	4·2	+23·0	II.
02	25·12	11	20	−67	30	+75	42	202	354·4	−13·9	II.
03	27·65	10	21	−80	30	+38	13	53	321·0	+15·4	II.
04	18·8	3	22	+47	24	+74	28	106	78·3	+18·2	
12505	27·66	6/9	22	−66	30	+34	5	17	320·8	+32·7	II.
06	27·8	2	22	−72	23	−59	3	10	318·4	−19·8	
07	26·85	10	23	−47	Sept. 1	+71	15	43	331·4	+14·5	II.
08	23·0	6	24	+14	Aug. 29	+82	31	127	22·8	+15·0	I. 1211 (1)
09	23·4	3	24	+13	26	+42	8	38	17·4	+20·8	
12510	30·37	10	26	−54	Sept. 4	+67	17	82	285·0	−12·2	I. 1212 (1)
11	Sept. 2·66	8	27	−79	3	+12	19	93	241·5	+11·3	II.
12	2·87	12	27	−79	7	+60	61	356	238·8	+28·8	I. 1209 (2)
13	1·5	2	30	−29	Aug. 31	−14	2	10	256·5	+22·0	
14	4·2	4	31	−51	Sept. 3	−10	10	28	221·2	+ 6·8	
12515	6·23	12	31	−77	11	+67	24	128	194·4	+18·2	II.
16	6·20	6/7	31	−77	6	+ 1	6	14	194·7	−11·4	I. 1210 (2)
17	Aug. 30·2	3	Sept. 1	+28	3	+55	5	19	287·1	− 9·3	
18	30·7	4	2	+36	5	+75	6	13	280·9	+ 6·9	
19	Sept. 6·51	7	2	−56	8	+26	3	21	190·6	+13·8	II.
12520	2·7	2	3	+10	4	+21	4	14	241·2	− 6·8	
21	9·59	13	3	−81	15	+75	117	644	150·0	+11·4	I. 1213 (1)
22	4·69	3	4	− 6	6	+22	6	16	214·7	− 9·4	
23	4·9	6	6	+17	11	+82	40	233	211·4	+ 9·4	II.
24	12·86	13	6	−84	18	+72	45	255	106·8	+13·2	II.

GENERAL CATALOGUE OF SUN SPOTS—*continued.*

No. of Group.	U.T. of Central Meridian Passage.	Duration in Days.	First Seen.		Last Seen.		Mean Area Corrected for Foreshortening.		Mean Position of Group		Reference to Ledger.
			Date.	Longitude from Central Meridian.	Date.	Longitude from Central Meridian.	Umbræ.	Whole Spots.	Longitude.	Latitude.	
	1937		1937	°	1937	°			°	°	
12525	Sept. 9·15	8	Sept. 7	−24	Sept. 14	+68	14	55	155·8	+10·2	II.
26	11·00	11	7	−50	17	+82	121	719	131·5	+11·0	II.
27	11·40	10	8	−43	17	+78	11	39	126·1	+19·4	II.
28	11·38	6	10	−15	15	+53	16	52	126·4	−10·6	II.
29	18·62	13	12	−81	24	+75	30	167	30·8	+12·3	II.
12530	18·86	9	12	−84	20	+20	16	75	27·6	+16·6	I. 1211 (2)
31	19·44	11	14	−68	24	+64	12	41	19·9	−19·0	II.
32	19·8	2	16	−46	17	−31	2	5	15·0	−25·8	
33	21·93	9	16	−74	24	+33	6	20	347·1	+16·9	II.
34	17·72	5	17	− 7	21	+51	12	35	42·7	− 4·8	
12535	23·70	14	17	−78	30	+86	41	218	323·7	+34·2	I. 1208 (3)
36	20·28	9	18	−29	26	+82	45	212	8·9	+13·1	I. 1214 (1)
37	23·9	2	18	−72	19	−59	7	12	321·6	−21·0	
38	17·9	4	19	+19	22	+60	14	40	40·4	+ 5·0	
39	26·0	5	20	−75	24	−22	12	52	292·9	−11·6	I. 1212 (2)
12540	20·6	6	21	+ 9	26	+76	34	185	4·6	−15·0	I. 1215 (1)
41	26·08	9	21	−63	29	+45	9	28	292·3	+12·7	II.
42	22·2	5	22	+ 4	26	+54	8	37	343·9	−21·8	
43	28·65	6/9	22	−83	30	+22	4	14	258·4	+20·1	II.
44	24·8	2	23	−17	24	− 8	0	3	309·4	+ 9·2	
12545	28·19	11	23	−64	Oct. 3	+67	16	65	264·5	+12·9	II.
46	29·20	13	23	−77	5	+82	31	177	251·2	+16·9	II.
47	23·2	3	25	+26	Sept. 27	+53	4	15	330·2	−19·4	
48	26·89	5	25	−23	29	+32	12	45	281·6	− 9·9	
49	28·87	8	25	−46	Oct. 2	+41	26	99	255·5	+39·0	II.
12550	Oct. 2·1	4	26	−76	Sept. 29	−36	6	12	212·8	−20·9	
51	3·65	9	28	−71	Oct. 6	+36	20	99	192·4	−11·4	II.
52	4·36	13	28	−78	10	+79	16	76	183·1	−17·8	II.
53	4·42	13	28	−82	10	+77	388	2661	182·3	+ 9·3	I. 1216 (1)
54	3·13	8/9	30	−38	8	+72	10	53	199·3	+23·5	II.
12555	7·05	14	30	−81	13	+84	119	668	147·6	+10·6	I. 1213 (2)
56	Sept. 30·2	3	Oct. 1	+15	3	+43	6	15	238·3	−14·1	
57	Oct. 3·58	6/7	1	−31	7	+51	2	7	193·4	+16·2	II.
58	3·02	3	2	− 7	4	+19	4	19	200·7	−26·3	
59	Sept. 29·4	3	3	+52	5	+80	14	67	248·5	+10·9	
12560	Oct. 8·7	2	3	−72	4	−56	2	11	125·2	+29·8	
61	9·39	12	3	−82	14	+70	37	187	116·7	+13·8	II.
62	10·64	9	6	−58	14	+52	20	88	100·2	+13·2	II.
63	8·08	4	7	− 9	10	+32	3	13	134·0	+13·2	
64	6·3	3	8	+28	10	+55	10	32	157·4	+15·7	

GENERAL CATALOGUE OF SUN SPOTS—*continued.*

No. of Group.	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.
	1937		1937	°	1937	°			°	°	
12565	Oct. 7·9	3	Oct. 8	+ 6	Oct. 10	+35	5	16	136·2	−16·6	
66	4·2	2	9	+68	10	+83	22	126	185·4	+17·2	
67	12·85	10	9	−46	18	+74	67	375	71·1	+12·3	II.
68	11·29	8	10	−12	17	+80	84	461	91·7	−15·8	II.
69	15·31	8	10	−66	17	+30	12	36	38·6	+23·4	II.
12570	10·1	6	11	+15	16	+85	30	151	106·8	+14·9	II.
71	16·36	11	11	−66	21	+68	15	78	24·8	−21·2	II.
72	16·78	12	11	−72	22	+76	38	187	19·2	−22·0	II.
73	17·20	12	11	−78	22	+70	15	66	13·7	+13·0	I. 1214 (2)
74	17·24	12	11	−78	22	+68	40	220	13·1	−17·2	I. 1215 (2)
12575	11·8	4	13	+24	16	+60	6	22	85·0	−17·3	
76	19·66	12	14	−70	25	+77	25	124	341·2	− 5·9	II.
77	20·1	2/3	14	−75	16	−49	4	9	335·8	−10·4	
78	21·38	13	15	−75	27	+74	27	142	318·5	−26·3	II.
79	20·5	3	17	−40	19	−13	8	25	330·5	−21·1	
12580	22·7	3/4	17	−70	20	−30	4	13	301·1	− 6·4	
81	22·8	3	17	−71	19	−44	3	10	299·8	+12·2	
82	13·4	2	18	+68	19	+78	6	30	63·8	−20·2	
83	23·9	4	18	−71	21	−32	11	38	284·8	−19·6	
84	24·3	3	19	−66	21	−37	5	15	279·4	−14·8	
12585	26·48	11	21	−69	31	+68	89	580	251·3	+11·1	II.
86	27·0	2	23	−47	24	−34	2	8	244·0	−20·4	
87	29·72	12	24	−65	Nov. 4	+70	44	195	208·6	−27·9	II.
88	30·99	12	24	−85	4	+64	35	187	191·8	+ 7·4	I. 1216 (2)
89	30·84	6	27	−51	1	+22	10	31	193·8	−10·1	II.
12590	30·37	6/8	28	−28	4	+69	4	16	200·0	+13·8	II.
91	Nov. 2·82	10	28	−72	6	+44	10	41	154·5	+12·4	I. 1213 (3)
92	3·65	10	29	−70	7	+54	28	110	143·6	−10·2	II.
93	Oct. 30·1	5	30	+ 2	3	+63	10	33	203·7	+ 9·5	
94	31·58	8	30	−18	6	+79	33	143	184·0	−10·3	II.
12595	Nov. 3·31	10	30	−55	8	+67	49	247	148·1	+ 7·3	II.
96	Oct. 31·4	3/5	Nov. 2	+26	6	+78	21	79	186·4	−27·3	
97	Nov. 3·67	3/5	2	−12	6	+33	2	9	143·3	−14·6	
98	8·34	11	2	−80	12	+56	10	32	81·8	− 7·1	II.
99	Oct. 31·3	2	3	+45	4	+54	4	9	187·8	+26·0	
12600	Nov. 12·09	11	7	−69	17	+73	20	92	32·3	+12·7	II.
01	13·78	13	7	−82	19	+72	35	199	10·0	+22·5	I. 1217 (1)
02	13·98	12	8	−73	19	+72	94	616	7·4	−14·7	II.
03	9·5	6	10	+10	15	+81	40	220	66·4	−13·5	II.
04	13·38	4	10	−38	13	0	2	9	15·3	−19·4	

GENERAL CATALOGUE OF SUN SPOTS—*continued.*

No. of Group.	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.
	1937		1937	°	1937	°			°	°	
12605	Nov. 15·23	7/10	Nov. 12	−36	Nov. 21	+81	3	9	350·9	−21·4	II.
06	17·71	6/7	12	−73	18	+12	6	17	318·2	+ 6·6	II.
07	8·6	2	13	+63	14	+77	10	35	77·8	− 9·0	
08	16·2	3	13	−38	15	−10	5	19	337·7	−15·1	
09	17·32	6/7	14	−38	20	+42	8	26	323·4	+10·5	II.
12610	19·4	4	16	−38	19	− 1	7	35	295·9	−21·4	
11	22·08	12	16	−73	27	+68	14	51	260·6	+20·8	II.
12	23·91	14	17	−84	30	+81	52	285	236·4	−17·7	II.
13	19·55	5	18	−18	22	+39	20	79	293·9	−15·6	
14	25·6	2	20	−68	21	−53	4	13	214·2	− 7·8	
12615	26·52	8	20	−79	27	+ 8	5	18	202·1	+ 6·4	II.
16	27·5	5	22	−67	26	−16	11	52	188·8	+14·0	
17	24·80	5/8	23	−17	30	+72	6	27	224·8	+18·6	
18	28·6	4/5	23	−69	27	−15	3	6	175·2	+ 9·2	
19	24·9	6	25	+ 8	30	+72	22	111	223·9	+ 9·2	II.
12620	27·38	3	26	−13	28	+14	7	19	190·8	+ 6·9	
21	Dec. 4·5	6/7	28	−81	Dec. 4	− 2	6	19	97·5	− 9·3	II.
22	Nov. 29·4	2	29	+ 2	Nov. 30	+12	2	8	164·8	−17·0	
23	30·77	2/3	29	−16	Dec. 1	+ 7	2	9	146·0	− 9·0	
24	Dec. 1·35	2	30	−17	1	+ 3	2	11	138·4	+16·2	
12625	Nov. 28·7	3	Dec. 2	+51	4	+74	7	25	173·0	−30·0	
26	Dec. 3·8	2	2	−15	3	− 8	2	6	106·4	+10·4	
27	6·40	6/9	2	−52	10	+54	3	8	71·9	−17·5	II.
28	8·09	8/9	2	−73	10	+30	12	34	49·6	−18·5	II.
29	4·3	6	5	+12	10	+83	39	197	99·5	−16·3	II.
12630	11·71	11/13	5	−83	17	+72	11	43	1·9	+22·2	I. 1217 (2)
31	4·4	5	6	+25	10	+78	18	73	98·7	+11·7	I. 1218 (1)
32	7·75	4/6	6	−19	11	+42	4	21	54·1	−24·7	
33	12·37	5/9	7	−66	15	+37	4	17	353·3	−22·5	
34	15·34	12	10	−67	21	+79	97	640	314·0	−21·2	II.
12635	14·79	11	10	−67	20	+78	49	293	321·3	+ 7·8	II.
36	16·05	8/10	10	−78	19	+43	7	27	304·7	− 6·2	II.
37	13·47	4	11	−29	14	+13	14	59	338·7	−23·7	
38	11·3	4	13	+26	16	+67	18	78	6·7	+12·8	
39	13·3	4	14	+15	17	+52	7	25	341·5	−10·4	
12640	20·96	14	14	−84	27	+81	105	802	240·1	+26·2	I. 1219 (1)
41	15·54	7	15	− 3	21	+77	33	154	311·5	+ 8·3	II.
42	20·80	6/9	15	−73	23	+30	4	13	242·2	−21·9	II.
43	19·84	10	16	−46	25	+74	33	181	254·8	+21·7	II.
44	15·2	3	19	+55	21	+81	5	20	316·0	+14·0	

GENERAL CATALOGUE OF SUN SPOTS—*continued.*

No. of Group.	U.T. of Central Meridian Passage.	Duration in Days.	First Seen.		Last Seen.		Mean Area Corrected for Foreshortening.		Mean Position of Group		Reference to Ledger.
			Date.	Longitude from Central Meridian.	Date.	Longitude from Central Meridian.	Umbræ.	Whole Spots.	Longitude.	Latitude.	
	1937-38		1937	°	1937-38	°			°	°	
12645	Dec. 25·9	7	Dec. 19	−84	Dec. 25	−10	9	33	174·6	−27·0	II.
46	26·1	4	21	−65	24	−22	5	20	171·9	− 7·6	
47	22·2	2/3	22	0	24	+30	2	6	223·4	+16·2	
48	25·54	10	22	−46	31	+78	32	180	179·8	+ 8·6	II.
49	27·9	3	22	−76	24	−43	7	20	149·0	− 5·4	
12650	28·01	12	22	−76	Jan. 2	+74	44	262	147·2	−11·3	II.
51	26·9	2	23	−46	Dec. 24	−33	2	5	161·6	− 8·7	
52	27·50	10	23	−57	Jan. 1	+67	17	75	153·9	+ 9·7	II.
53	27·67	10/11	23	−57	2	+78	38	226	151·6	−19·3	I. 1220 (1)
54	28·8	2	24	−58	Dec. 25	−45	2	8	136·8	− 7·5	
12655	31·02	11	25	−76	Jan. 4	+61	22	140	107·5	+12·8	I. 1218 (2)
56	27·72	6	26	−20	Dec. 31	+48	17	108	151·0	−21·9	II.
57	23·9	2	27	+44	28	+57	15	62	200·8	− 6·4	
58	28·8	6	29	0	Jan. 3	+75	29	196	136·2	−15·3	I. 1221 (1)
59	30·15	8	29	−14	5	+73	40	221	119·0	+18·6	I. 1222 (1)
12660	Jan. 1·10	9	30	−23	7	+85	28	131	93·3	−14·7	I. 1223 (1)
61	6·29	11	31	−79	10	+56	23	128	25·0	+ 4·6	II.

GENERAL CATALOGUE OF SUN SPOTS—*continued.*

SUNSPOTS SEEN ON ONE DAY ONLY, 1937.

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 Rotn.	Date	Longitude from Central Meridian	U.T. of Central Meridian Passage	Area Corrected for Foreshortening		Position of Group	
				Umbræ	Whole Spots	Longitude.	Latitude
		°				°	°
1114k	Jan. 2	+27·6	Dec. 31·4	7	20	240·7	−10·4
l	2	−30·0	Jan. 4·7	5	10	183·1	−12·1
m	5	+69·3	Dec. 31·3	6	19	242·1	−26·3
n	5	+49·0	Jan. 1·8	2	8	221·8	+24·4
o	5	+25·1	3·6	2	8	197·9	−20·4
p	7	−51·6	11·3	3	8	96·1	−22·8
q	10	+64·4	5·5	0	13	172·5	+26·7
r	12	+72·5	6·9	0	11	154·6	+13·6
s	14	+37·5	11·5	4	14	93·3	−23·5
t	15	+24·5	13·5	4	16	67·0	−23·6
1115a	20	−35·3	23·1	0	5	301·2	+27·5
b	21	−61·1	26·0	5	16	262·6	+21·0
c	22	−14·7	23·3	1	5	299·1	−31·8
d	22	−59·0	26·6	2	4	254·8	+12·4
e	22	−67·5	27·3	8	33	246·3	−13·2
f	24	+63·8	19·5	0	8	349·0	+22·6
g	25	−34·4	28·0	3	7	236·7	−26·7
h	29	−40·7	Feb. 1·2	1	3	181·3	+11·1
i	Feb. 1	−20·7	3·0	2	10	157·7	−27·1
j	2	−19·9	4·0	7	16	144·3	+12·9
k	5	+10·0	4·6	2	11	137·2	−19·8
l	8	−13·6	9·5	2	15	71·8	+19·6
m	10	−78·5	16·4	0	9	341·2	−21·3
n	11	−58·8	16·0	2	4	347·0	+13·7
o	12	+50·1	8·7	7	22	83·2	−31·7
p	12	+22·7	10·7	1	5	55·8	− 6·3
1116a	19	+75·9	13·7	4	15	17·3	−12·4
b	Mar. 1	+33·9	26·9	2	5	202·7	−16·5
c	2	+61·7	25·7	2	10	218·6	+16·9
d	2	+58·2	26·0	0	8	215·1	− 9·8
e	2	+16·3	Mar. 1·2	2	16	173·2	− 9·0
f	10	+63·4	5·6	4	10	114·8	− 6·9
g	11	+67·4	6·3	5	23	104·8	− 8·6
h	13	−60·7	18·0	9	28	311·0	+23·4
1117a	24	−20·1	26·0	2	10	206·2	− 5·8
b	26	+60·3	21·8	3	10	261·1	+25·4
c	29	+24·1	27·6	2	5	185·0	−21·0
d	29	−29·1	31·6	1	6	131·8	−31·0
e	31	−61·3	Apr. 5·0	2	10	73·5	−30·7
f	Apr. 1	+45·0	Mar. 29·0	3	12	166·3	−17·2
g	6	+22·9	Apr. 4·7	3	14	78·3	− 5·7
h	8	+23·0	6·8	0	5	50·7	+16·4

No. of Rotn.	Date	Longitude from Central Meridian	U.T. of Central Meridian Passage	Area Corrected for Foreshortening		Position of Group	
				Umbræ	Whole Spots	Longitude.	Latitude
		°				°	°
1118a	Apr. 11	−57·6	Apr. 15·8	2	5	291·7	+26·5
b	15	+42·9	12·2	3	8	339·3	+11·0
c	17	+61·5	12·9	8	21	330·0	+20·5
d	17	−25·4	19·4	2	5	243·1	−21·7
e	18	−59·3	22·9	2	12	198·1	+17·8
f	20	+17·9	19·1	0	3	248·3	+32·3
g	20	−17·1	21·7	1	5	213·3	+ 9·7
h	22	+21·9	20·9	2	5	224·0	+17·9
i	23	+40·8	20·3	3	7	232·2	+20·2
j	25	+41·4	22·2	10	19	206·6	−23·4
k	27	+37·2	24·6	6	15	175·0	−15·4
l	28	+20·8	27·0	1	5	143·1	−23·9
m	May 6	− 1·4	May 6·4	1	7	18·6	−13·6
1119a	10	+52·5	6·5	0	4	17·5	−23·6
b	14	+22·1	12·7	3	10	295·6	−13·9
c	14	−33·2	16·9	1	3	240·3	+26·2
d	14	−64·8	19·3	6	12	208·7	+18·5
e	16	−13·6	17·4	2	11	233·4	+13·4
f	20	−23·5	22·1	3	5	171·4	−17·2
g	23	+28·3	21·2	3	8	183·0	+18·1
h	23	+14·9	22·2	3	5	169·6	+ 8·2
i	23	−15·4	24·5	3	6	139·3	+15·6
j	25	+63·0	20·6	2	6	191·7	+ 8·0
k	29	− 2·5	29·5	3	18	73·0	−19·6
l	30	+77·2	24·5	12	43	140·0	−24·7
m	31	+67·8	26·2	7	12	117·1	−14·4
1120a	June 4	+53·1	31·3	8	12	49·4	−13·8
b	10	+43·5	June 7·1	4	10	319·6	−12·7
c	13	− 6·2	13·9	2	10	230·2	+14·1
d	18	−60·8	23·0	0	5	108·9	+19·4
e	19	+ 8·7	18·7	3	10	165·9	+19·8
f	21	+23·6	19·5	1	3	155·0	− 5·3
g	22	+ 0·5	22·3	3	9	118·5	− 7·6
h	24	+35·9	21·7	2	24	126·7	+ 8·9
i	24	− 6·6	24·9	2	6	84·2	+ 9·0
j	27	−59·8	July 1·8	0	5	352·4	+12·8
1121a	July 4	+73·8	June 28·8	8	34	32·7	11·1
b	5	−20·3	July 7·0	2	9	284·5	− 9·0
c	6	+31·0	4·2	8	33	321·5	− 7·5
d	8	+71·4	2·9	9	26	337·7	−22·0
e	9	+65·9	4·4	5	11	317·9	+12·9
f	9	−35·2	12·1	2	5	216·8	+ 9·3

GENERAL CATALOGUE OF SUN SPOTS—*continued.*

SUNSPOTS SEEN ON ONE DAY ONLY, 1937—*continued.*

No. of Rotn.	Date	Longitude from Central Meridian	U.T. of Central Meridian Passage	Area Corrected for Foreshortening		Position of Group	
				Umbræ	Whole Spots	Longitude.	Latitude
		°				°	°
1121g	July 10	−18·3	July 11·8	0	3	220·2	+11·0
h	11	−74·1	16·9	4	17	153·0	+31·5
i	12	+71·4	7·0	15	45	284·0	−12·0
j	12	+25·5	10·5	4	10	238·1	+16·9
k	12	+ 2·2	12·2	1	2	214·8	+16·7
l	12	−27·3	14·5	2	11	185·3	+16·2
m	14	− 1·1	14·4	0	4	185·7	+26·4
n	14	−18·3	15·7	3	7	168·5	+ 9·7
o	16	− 9·6	17·1	0	4	150·8	+22·9
p	22	−54·8	26·8	2	6	22·1	+19·3
q	27	+68·7	22·3	3	19	81·2	+14·0
r	28	+50·7	24·5	2	4	52·3	−13·0
s	28	+46·0	24·9	1	4	47·6	− 3·2
t	28	−69·9	Aug. 2·6	0	7	291·7	+15·2
1122a	29	−16·1	July 30·6	3	5	332·1	+10·8
b	30	−54·9	Aug. 3·3	2	8	283·2	+12·9
c	Aug. 3	− 6·5	3·9	1	3	275·5	−20·3
d	3	−23·1	5·1	6	10	258·9	−13·9
e	5	+72·9	July 30·9	9	41	327·7	−25·5
f	6	+19·1	Aug. 4·9	1	3	261·8	+16·4
g	7	+28·7	5·2	4	11	257·8	+23·8
h	7	−53·9	11·4	5	8	175·2	−11·5
i	10	+76·6	4·5	28	92	266·4	+15·6
j	13	+60·6	8·9	10	29	208·7	− 6·1
k	13	− 4·5	13·8	1	4	143·6	−30·7
l	14	+ 9·1	13·7	5	16	145·2	+16·7
m	22	−71·0	27·8	3	12	319·5	−11·0
n	23	−28·8	25·5	0	4	349·1	+16·2
o	24	+ 8·5	23·7	7	12	13·2	+10·8
p	24	−25·8	26·3	0	7	338·9	−35·4
1123a	25	−18·3	26·9	3	14	331·2	+39·0
b	27	+21·6	26·0	4	13	343·0	+20·4
c	29	+32·1	27·0	0	3	329·0	+33·6
d	30	−27·9	Sept. 1·5	3	5	256·7	+15·1
e	31	+53·6	Aug. 27·3	0	8	325·2	−11·7
f	Sept. 3	+76·6	28·6	4	10	308·6	+25·9
g	3	+21·2	Sept. 1·8	3	14	253·2	− 7·5
h	3	−75·5	9·1	4	13	156·5	+12·4
i	4	−56·9	8·6	2	10	162·5	−20·5
j	6	+36·4	3·6	2	7	229·5	−28·7
k	6	−64·2	11·2	3	6	128·9	−24·9
l	7	+52·2	3·4	8	28	231·4	+34·8
m	8	+45·2	5·0	2	4	211·0	−17·8
n	10	− 4·6	10·7	3	8	135·6	+16·6
o	17	+60·3	12·9	2	14	106·9	+16·7
p	20	+26·2	18·4	1	4	33·8	+19·5

No. of Rotn.	Date	Longitude from Central Meridian	U.T. of Central Meridian Passage	Area Corrected for Foreshortening		Position of Group	
				Umbræ	Whole Spots	Longitude.	Latitude
		°				°	°
1124a	Sept. 22	−33·6	Sept. 24·9	1	2	308·1	+ 6·9
b	23	+36·0	20·6	3	10	4·3	+38·8
c	26	+ 9·2	25·7	1	5	297·7	+37·9
d	27	+ 8·5	26·7	1	2	284·3	−13·9
e	Oct. 5	+76·8	29·6	4	8	246·3	+38·8
f	5	+ 8·6	Oct. 4·7	2	7	178·1	−12·4
g	8	− 3·5	8·7	2	5	125·4	+14·6
h	15	− 9·8	16·2	2	5	27·2	−17·9
i	16	−20·9	18·0	2	10	3·6	−15·5
j	16	−35·5	19·1	1	3	349·0	− 9·5
1125a	20	−54·9	24·6	0	3	275·7	+10·9
b	23	+79·2	17·5	71	248	9·9	+20·2
c	26	−31·1	28·8	5	13	220·6	+24·0
c′	27	−61·4	Nov. 1·1	4	19	177·7	−10·2
d	31	+ 2·9	Oct. 31·2	4	13	189·0	+16·2
e	31	−31·4	Nov. 2·8	5	13	154·7	+18·1
f	Nov. 3	+37·4	Oct. 31·8	5	14	180·6	+ 8·3
g	5	−16·4	Nov. 6·7	1	2	104·0	−19·9
h	9	+40·5	6·3	3	12	108·3	+15·1
i	14	+49·1	10·7	3	15	50·2	−21·0
j	14	+ 1·1	14·4	2	4	2·2	+18·8
1126a	18	−48·4	22·0	0	2	262·1	+12·4
b	19	−47·6	23·0	2	7	248·5	+12·9
c	20	+60·0	15·9	4	14	342·0	−19·1
d	22	+63·7	17·6	2	10	320·1	− 8·4
e	22	+33·0	19·9	3	9	289·4	−27·6
f	23	+83·7	17·1	9	97	326·4	+ 8·6
g	23	+25·4	21·5	2	5	268·1	+ 9·0
h	23	−61·3	28·1	2	4	181·4	+ 9·8
i	25	− 2·3	25·6	2	10	213·8	−26·4
j	25	−17·7	26·8	5	18	198·4	−13·2
k	25	−24·2	27·3	2	6	191·9	−25·9
l	26	−44·8	29·8	3	10	158·7	+27·3
m	27	+65·4	22·3	10	41	257·4	+30·9
n	27	+ 5·0	26·9	2	4	197·0	+12·5
o	28	− 3·7	28·7	3	14	173·0	−17·5
p	28	− 8·8	29·1	2	9	167·9	+12·9
q	28	−72·0	Dec. 3·9	7	15	104·7	+11·1
r	Dec. 2	−14·7	3·6	5	14	108·3	−13·3
s	5	+60·4	Nov. 30·8	9	37	145·6	−23·0
t	6	−45·2	Dec. 9·7	1	6	28·1	+17·0
1127a	15	+19·9	13·8	3	11	334·7	+ 4·2
b	17	+14·4	16·2	1	7	302·2	+12·6

REVIVAL GROUPS of SUN SPOTS, 1937.

Groups of spots occupying the same heliographic position in consecutive rotations of the Sun 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 forms part of a "Revival" series, a reference is given in the last column of the table. Groups that are given in detail in Ledger II are also indicated.

No.	No. of Group	U.T. of Central Meridian Passage	Rotation	Duration in days	First Seen		Last Seen		Area	Mean Position		Reference to Ledger
					Date	Longitude from Central Meridian	Date	Longitude from Central Meridian		Longitude	Latitude	
		1936-37			1936-37	°	1936-37	°		°	°	
1	12139	Dec. 15·0	1113	4	Dec. 18	+43	Dec. 21	+80	151	97	+11	
	173	Jan. 11·3	1114	3	Jan. 7	−51	Jan. 9	−24	12	97	+10	
2	12142	Dec. 20·90	1113	7	Dec. 19	−19	Dec. 25	+63	46	18	−24	II.
	184	Jan. 17·3	1114	2	Jan. 15	−24	Jan. 16	−12	20	18	−24	
3	12143	Dec. 25·10	1114	10/12	Dec. 19	−73	Dec. 30	+70	28	323	−26	II
	197	Jan. 21·6	1115	4	Jan. 23	+21	Jan. 26	+63	21	320	−25	
4	12146	Dec. 26·97	1114	12	Dec. 21	−71	Jan. 1	+68	79	298	+17	} I. 1178 (2)
	150	27·60	1114	7	23	−52	Dec. 29	+23	60	290	+17	
	194	Jan. 23·94	1115	9	Jan. 21	−34	Jan. 29	+64	325	290	+18	II.
	237	Feb. 20·99	1116	9	Feb. 15	−71	Feb. 23	+29	41	281	+21	II.
5	12152	Dec. 27·8	1114	4	Dec. 24	−46	Dec. 27	− 5	24	287	−15	
	196	Jan. 23·78	1115	4	Jan. 22	−22	Jan. 25	+23	16	292	−17	
6	12154	Dec. 30·39	1114	10	Dec. 24	−80	Jan. 2	+42	182	253	+17	I. 1180 (2)
	195	Jan. 26·29	1115	11	Jan. 21	−66	31	+70	218	259	+19	II. }
	199	26·02	1115	9	24	−22	Feb. 1	+81	482	263	+20	I. 1188 (1) }
	238	Feb. 22·16	1116	10	Feb. 16	−75	25	+47	250	265	+20	} I. 1188 (2)
	239	23·28	1116	13	17	−76	Mar. 1	+78	574	251	+21	
	278	Mar. 22·62	1117	4/6	Mar. 18	−54	23	+10	9	250	+22	I. 1188 (3)
	341	May 15·57	1119	13	May 9	−80	May 21	+78	585	258	+18	II.
	381	June 12·20	1120	5	June 10	−22	June 14	+28	69	252	+19	
7	12156	Dec. 24·7	1114	2/3	Dec. 28	+48	Dec. 30	+77	12	328	−16	
	189	Jan. 21·18	1115	5	Jan. 18	−35	Jan. 22	+13	32	326	−16	
8	12158	Jan. 2·58	1114	9	Dec. 28	−70	Jan. 5	+40	56	211	+15	II.
	203	30·33	1115	12	Jan. 25	−70	Feb. 5	+81	282	206	+17	II.
	245	Feb. 26·03	1116	11	Feb. 20	−74	Mar. 2	+58	163	214	+20	II.
9	12162	Jan. 5·15	1114	13	Dec. 29	−78	Jan. 10	+66	200	178	−34	II.
	218	Feb. 2·44	1115	6	Jan. 31	−24	Feb. 5	+35	47	165	−32	II.
10	12175	Jan. 15·50	1114	12	Jan. 9	−80	Jan. 20	+63	51	41	−12	II.
	227	Feb. 11·2	1115	2/5	Feb. 6	−61	Feb. 10	−11	2	50	−13	
	274	Mar. 10·4	1116	2	Mar. 14	+47	Mar. 15	+67	8	51	−13	
	303	Apr. 6·67	1117	6	Apr. 3	−46	Apr. 8	+27	15	52	−14	II.
11	12183	Jan. 15·0	1114	4	Jan. 15	+ 5	Jan. 18	+45	49	48	+19	
	230	Feb. 11·25	1115	10	Feb. 8	−38	Feb. 17	+76	371	49	+20	II.
	268	Mar. 11·09	1116	5	Mar. 7	−48	Mar. 11	+ 4	26	42	+24	
	307	Apr. 7·69	1117	7	Apr. 7	− 8	Apr. 13	+77	162	38	+19	I. 1193 (1)
				9								
12	12188	Jan. 24·20	1115	13	Jan. 17	−83	Jan. 29	+64	854	287	−20	II.
	243	Feb. 20·2	1116	2	Feb. 20	+ 2	Feb. 21	+16	7	291	−21	

REVIVAL GROUPS of SUN SPOTS, 1937—*continued.*

No.	No. of Group	U.T. of Central Meridian Passage	Rotation	Duration in days	First Seen: Date	First Seen: Longitude from Central Meridian	Last Seen: Date	Last Seen: Longitude from Central Meridian	Area	Mean Position: Longitude	Mean Position: Latitude	Reference to Ledger
		1937			1937	°	1937	°		°	°	
13	12201	Jan. 30·59	1115	12	Jan. 25	−67	Feb. 5	+73	165	203	+24	I. 1184 (2)
	250	Feb. 27·73	1116	7	Feb. 22	−70	28	+8	98	192	+27	II.
14	12208	Feb. 1·49	1115	12	Jan. 26	−81	Feb. 6	+67	134	178	−15	II.
	253	28·8	1116	4	Feb. 24	−59	27	−18	53	178	−13	
	285	Mar. 28·19	1117	13	Mar. 22	−76	Apr. 3	+77	76	177	−15	II.
	316	Apr. 24·6	1118	7	Apr. 18	−83	24	−6	56	175	−16	II.
15	12220	Jan. 30·3	1115	3	Feb. 1	+27	Feb. 3	+56	16	206	+12	
	246	Feb. 26·31	1116	11	20	−78	Mar. 2	+52	64	211	+12	II.
	291	Mar. 25·8	1117	3	Mar. 27	+21	29	+48	19	208	+9	
16	12222	Feb. 8·91	1115	7	Feb. 3	−71	Feb. 9	+12	47	80	+18	II.
	264	Mar. 8·65	1116	12	Mar. 3	−69	Mar. 14	+74	431	74	+19	II. }
	267	8·01	1116	2	7	−9	8	+5	6	83	+16	
17	12226	Feb. 2·7	1115	3	Feb. 6	+50	Feb. 8	+76	105	162	−26	
	261	Mar. 2·65	1116	4	Mar. 1	−17	Mar. 4	+21	14	154	−25	
18	12266	Mar. 10·44	1116	9	Mar. 5	−67	Mar. 13	+40	130	51	+12	II.
	301	Apr. 6·14	1117	9	Apr. 1	−68	Apr. 9	+49	47	59	+10	II.
19	12267	Mar. 8·01	1116	2	Mar. 7	−9	Mar. 8	+5	6	83	+16	
	298	Apr. 3·97	1117	11	30	−57	Apr. 9	+71	112	87	+15	II.
20	12272	Mar. 12·75	1116	7	Mar. 8	−57	Mar. 14	+16	71	20	+30	II.
	308	Apr. 9·17	1117	6	Apr. 7	−19	Apr. 12	+41	22	19	+29	II.
21	12274	Mar. 10·4	1116	2	Mar. 14	+47	Mar. 15	+67	8	51	−13	
	303	Apr. 6·67	1117	6	Apr. 3	−46	Apr. 8	+27	15	52	−14	II.
22	12281	Mar. 25·93	1117	7	Mar. 20	−73	Mar. 26	+6	16	207	−11	I. 1189 (3)
	315	Apr. 22·49	1118	11	Apr. 18	−55	Apr. 28	+83	523	203	−9	} I. 1194
	346	May 19·38	1119	5/7	May 14	−65	May 20	+12	12	207	−8	
	382	June 15·4	1120	2	June 10	−66	June 11	−54	16	210	−12	}
	383	16·01	1120	12	10	−76	21	+74	462	202	−14	
	425	July 12·70	1121	10	July 6	−82	July 15	+36	80	209	−7	II. }
	428	12·81	1121	9	8	−60	16	+48	29	207	−13	II.
23	12282	Mar. 26·69	1117	10	Mar. 21	−73	Mar. 30	+55	119	197	+7	II. }
	291	25·8	1117	3	27	+21	29	+48	19	208	+9	
	318	Apr. 22·3	1118	2	Apr. 19	−38	Apr. 20	−25	12	206	+6	}
	323	22·62	1118	6	22	−1	27	+64	133	201	+8	II.
24	12287	Mar. 28·83	1117	9	Mar. 23	−72	Mar. 31	+33	23	168	+18	II.
	320	Apr. 24·69	1118	13	Apr. 19	−67	May 1	+82	1674	174	+19	I. 1196 (1)
25	12290	Mar. 28·4	1117	2	Mar. 26	−28	Mar. 27	−13	4	174	−10	II.
	325	Apr. 24·4	1118	7	Apr. 24	+4	Apr. 30	+82	223	178	−10	
26	12295	Mar. 31·11	1117	8	Mar. 30	−9	Apr. 6	+80	379	138	+9	II.
	324	Apr. 26·74	1118	3/6	Apr. 23	−17	28	+26	4	147	+10	
	355	May 24·35	1119	12	May 18	−79	May 29	+68	159	142	+9	II

REVIVAL GROUPS of SUN SPOTS, 1937—*continued.*

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	
		1937			1937	°	1937	°		°	°	
27	12310	Apr. 12·09	1118	4	Apr. 10	−22	Apr. 13	+18	29	340	+10	
	342	May 9·0	1119	5	May 10	+21	May 14	+70	77	344	+10	
	368	June 4·85	1120	14	29	−82	June 11	+83	863	349	+13	II.
	411	July 1·97	1121	10	June 29	−34	July 8	+80	360	351	+16	II.
	468	29·6	1122	2	Aug. 3	+63	Aug. 4	+75	68	345	+16	
28	12337	May 13·19	1119	8	May 7	−71	May 14	+19	38	289	+11	I. 1197 (2)
	372	June 9·03	1120	14	June 2	−86	June 15	+83	456	294	+12	I. 1201 (1)
29	12351	May 21·57	1119	13	May 15	−79	May 27	+74	217	179	+27	II.
	395	June 18·74	1120	8	June 17	−19	June 24	+75	65	166	+28	II.
	436	July 16·4	1121	6	July 10	−76	July 15	−14	26	160	+26	II.
30	12354	May 22·2	1119	2	May 17	−64	May 18	−51	14	170	+10	I. 1191 (4)
	389	June 17·88	1120	12	June 12	−78	June 23	+77	118	177	+10	II.
	433	July 14·30	1121	11	July 9	−68	July 19	+69	92	187	+13	II. }
	434	14·71	1121	8	9	−71	16	+21	58	182	+15	II. }
	491	Aug. 10·7	1122	2	Aug. 12	+22	Aug. 13	+37	11	185	+14	
	519	Sept. 6·51	1123	7	Sept. 2	−56	Sept. 8	+26	21	191	+14	II.
	557	Oct. 3·58	1124	6/7	Oct. 1	−31	Oct. 7	+51	7	193	+16	II.
	590	30·37	1125	6/8	28	−28	Nov. 4	+69	16	200	+14	II.
31	12361	May 25·63	1119	12	May 21	−57	June 1	+81	96	125	+12	II.
	399	June 21·8	1120	2	June 19	−31	20	−17	8	126	+13	}
	406	21·8	1120	2/4	24	+35	27	+72	4	125	+13	}
32	12362	May 27·25	1119	13	May 21	−77	June 2	+82	811	103	+11	II.
	394	June 22·77	1120	13	June 16	−81	28	+74	178	112	+11	II.
	445	July 19·61	1121	10	July 13	−81	July 22	+39	127	117	+12	II.
33	12365	May 25·19	1119	2	May 24	−10	May 25	+ 2	16	131	+14	
	393	June 21·01	1120	12	June 15	−76	June 26	+76	549	136	+12	II.
	441	July 18·60	1121	13	July 12	−82	July 24	+77	676	131	+13	} I. 1207
	486	Aug. 14·39	1122	12	Aug. 9	−72	Aug. 20	+79	696	136	+12	} I. 1207
	526	Sept. 11·00	1123	11	Sept. 7	−50	Sept. 17	+82	719	131	+11	II.
	563	Oct. 8·08	1124	4	Oct. 7	− 9	Oct. 10	+32	13	134	+13	
34	12371	June 7·73	1120	7	June 2	−73	June 8	+ 8	32	311	+11	II.
	416	July 4·41	1121	2/5	July 2	−28	July 6	+28	4	318	+13	
35	12379	June 10·6	1120	2	June 7	−43	June 8	−29	7	274	+10	
	421	July 7·63	1121	4	July 6	−14	July 9	+23	20	276	+13	
	463	Aug. 3·7	1122	3	31	−50	Aug. 2	−15	19	277	+15	
36	12388	June 17·97	1120	12	June 12	−75	June 23	+78	346	176	−14	II.
	432	July 15·54	1121	12	July 9	−80	July 20	+65	148	171	−15	II.
	476	Aug. 12·0	1122	3	Aug. 6	−75	Aug. 8	−46	24	168	−12	
37	12401	June 26·68	1120	11/12	June 21	−73	July 2	+76	65	61	−12	II.
	449	July 23·63	1121	13	July 17	−81	29	+74	652	64	−13	II.

REVIVAL GROUPS of SUN SPOTS, 1937—*continued.*

No.	No. of Group	U.T. of Central Meridian Passage	Rotation	Duration in days	First Seen: Date	First Seen: Longitude from Central Meridian	Last Seen: Date	Last Seen: Longitude from Central Meridian	Area	Mean Position: Longitude	Mean Position: Latitude	Reference to Ledger
		1937			1937	°	1937	°		°	°	
38	12403	June 22·11	1120	7	June 22	− 1	June 28	+86	100	121	+22	II.
	442	July 19·04	1121	12	July 12	−86	July 23	+59	91	125	+20	II.
39	12419	July 5·60	1121	8	July 4	−18	July 11	+75	160	302	−18	II.
	460	Aug. 1·56	1122	9	29	−43	Aug. 6	+64	78	306	−20	II.
40	12429	July 13·8	1121	3	July 8	−72	July 10	−44	25	194	− 8	
	475	Aug. 9·96	1122	9	Aug. 5	−63	Aug. 13	+46	92	195	− 8	II.
41	12430	July 14·33	1121	13	July 8	−78	July 20	+78	378	187	−10	II.
	471	Aug. 10·10	1122	13	Aug. 4	−76	Aug. 16	+82	434	193	−12	} I. 1210
	516	Sept. 6·20	1123	6/7	31	−77	Sept. 6	+ 1	14	195	−11	
	551	Oct. 3·65	1124	9	Sept. 28	−71	Oct. 6	+36	99	192	−11	II.
	589	30·84	1125	6	Oct. 27	−51	Nov. 1	+22	31	194	−10	II.
42	12435	July 14·1	1121	4	July 10	−51	July 13	− 7	14	190	+20	
	485	Aug. 9·96	1122	5/6	Aug. 9	−10	Aug. 14	+57	20	195	+18	
	515	Sept. 6·23	1123	12	31	−77	Sept. 11	+67	128	194	+18	II.
	557	Oct. 3·58	1124	6/7	Oct. 1	−31	Oct. 7	+51	7	193	+16	II. See No. 30.
43	12470	Aug. 8·7	1122	2	Aug. 3	−71	Aug. 4	−58	17	211	+10	I. 1202 (3)
	523	Sept. 4·9	1123	6	Sept. 6	+17	Sept. 11	+82	233	211	+ 9	II.
44	12490	Aug. 16·93	1122	11	Aug. 11	−71	Aug. 21	+62	98	103	+11	II.
	524	Sept. 12·86	1123	13	Sept. 6	−84	Sept. 18	+72	255	107	+13	II.
	561	Oct. 9·39	1124	12	Oct. 3	−82	Oct. 14	+70	187	117	+14	II.
45	12506	Aug. 27·8	1122	2	Aug. 22	−72	Aug. 23	−59	10	318	−20	
	537	Sept. 23·9	1123	2	Sept. 18	−72	Sept. 19	−59	12	322	−21	
46	12511	Sept. 2·66	1123	8	Aug. 27	−79	Sept. 3	+12	93	242	+11	II.
	559	29·4	1124	3	Oct. 3	+52	Oct. 5	+80	67	248	+11	
	585	Oct. 26·48	1125	11	21	−69	31	+68	580	251	+11	II.
47	12513	Sept. 1·5	1123	2	Aug. 30	−29	Aug. 31	−14	10	256	+22	
	543	28·65	1124	6/9	Sept. 22	−83	Sept. 30	+22	14	258	+20	II.
48	12531	Sept. 19·44	1123	11	Sept. 14	−68	Sept. 24	+64	41	20	−19	II.
	572	Oct. 16·78	1124	12	Oct. 11	−72	Oct. 22	+76	187	19	−22	II.
	604	Nov. 13·38	1125	4	Nov. 10	−38	Nov. 13	0	9	15	−19	
49	12541	Sept. 26·08	1124	9	Sept. 21	−63	Sept. 29	+45	28	292	+13	II.
	581	Oct. 22·8	1125	3	Oct. 17	−71	Oct. 19	−44	10	300	+12	

REVIVAL GROUPS of SUN SPOTS, 1937—*continued.*

No.	No. of Group	U.T. of Central Meridian Passage	Rotation	Duration in days	First Seen: Date	First Seen: Longitude from Central Meridian	Last Seen: Date	Last Seen: Longitude from Central Meridian	Area	Mean Position: Longitude	Mean Position: Latitude	Reference to Ledger
		1937-38			1937-38	°	1937-38	°		°	°	
50	12547	Sept. 23·2	1124	3	Sept. 25	+26	Sept. 27	+53	15	330	−19	
	579	Oct. 20·5	1125	3	Oct. 17	−40	Oct. 19	−13	25	330	−21	
51	12592	Nov. 3·65	1125	10	Oct. 29	−70	Nov. 7	+54	110	144	−10	II.
	623	30·77	1126	2/3	Nov. 29	−16	Dec. 1	+ 7	9	146	− 9	
	650	Dec. 28·01	1127	12	Dec. 22	−76	Jan. 2	+74	262	147	−11	II.
	680	Jan. 24·0	1128	4/5	Jan. 19	−60	23	− 7	11	152	−12	
52	12605	Nov. 15·23	1126	7/10	Nov. 12	−36	Nov. 21	+81	9	351	−21	II.
	633	Dec. 12·37	1127	5/9	Dec. 7	−66	Dec. 15	+37	17	353	− 23	
53	12606	Nov. 17·71	1126	6/7	Nov. 12	−73	Nov. 18	+12	17	318	+ 7	II.
	635	Dec. 14·79	1127	11	Dec. 10	−67	Dec. 20	+78	293	321	+ 8	II.
	667	Jan. 10·80	1128	10	Jan. 6	−61	Jan. 15	+62	66	326	+ 8	II.
54	12611	Nov. 22·08	1126	12	Nov. 16	−73	Nov. 27	+68	51	261	+21	II.
	643	Dec. 19·84	1127	10	Dec. 16	−46	Dec. 25	+74	181	255	+22	II.
55	12617	Nov. 24·80	1126	5/8	Nov. 23	−17	Nov. 30	+72	27	225	+19	
	647	Dec. 22·2	1127	2/3	Dec. 22	0	Dec. 24	+30	6	223	+16	
	673	Jan. 18·43	1128	13	Jan. 12	−81	Jan. 24	+75	2955	225	+17	I. 1224 (1)
56	12618	Nov. 28·6	1126	4/5	Nov. 23	−69	Nov. 27	−15	6	175	+ 9	
	648	Dec. 25·54	1127	10	Dec. 22	−46	Dec. 31	+78	180	180	+ 9	II.
	683	Jan. 21·7	1128	4	Jan. 22	+ 6	Jan. 25	+49	17	181	+ 7	
	715	Feb. 17·49	1129	11	Feb. 12	−71	Feb. 22	+70	142	189	+ 7	II.
57	12625	Nov. 28·7	1126	3	Dec. 2	+51	Dec. 4	+74	25	173	−30	
	645	Dec. 25·9	1127	7	19	−84	25	−10	33	175	−27	II.
58	12638	Dec. 11·3	1127*	4	Dec. 13	+26	Dec. 16	+67	78	7	+13	
	663	Jan. 7·04	1127	12	Jan. 2	−64	Jan. 13	+73	407	15	+13	II.
	693	Feb. 2·42	1128	13	27	−78	Feb. 8	+80	574	28	+13	I. 1225 (1)
59	12652	Dec. 27·50	1127	10	Dec. 23	−57	Jan. 1	+67	75	154	+10	II.
	684	Jan. 23·33	1128	7	Jan. 22	−15	28	+68	52	161	+12	II.

* Rotation 1127 had begun when the spot was first seen.

ROYAL OBSERVATORY, GREENWICH.

Ledgers of Groups of Sun Spots

For the Year

1937

Ledger I—Recurrent Groups

GREENWICH PHOTO-HELIOGRAPHIC RESULTS, 1937.

Ledger I.—Recurrent Groups of Sun Spots for the Year 1937.

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 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°·18, due to the Sun's rotation, constant at all latitudes; this corresponds to Carrington's assumed rotation period of 25·38 days.

The proper motion given in the *seventh* column is derived from the difference of longitude thus computed from the measured positions on any given day and the first day on which the group of spots or single spot is visible, after the correction for the motion appropriate to the latitude has been applied according to the formula, $\xi = 14^\circ{\cdot}37 - 2^\circ{\cdot}60 \sin^2 \phi$. 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 SUN SPOTS for the YEAR 1937

No. 1182. Latitude +22°·5.

Group 12141 in Rotation 1114.
" 12185 " " 1115.

Group 12141. 1936, Dec. 18–30. An extensive stream in which the leader, *a*, becomes a regular spot by December 25. The following part of the stream is a considerable cluster of rapidly changing spots.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ Spots	Corrected Area Whole	Corrected Area Umbræ Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d								
$\bar{14}$·410 C	0	8	(0	35	329°·0	...	+24°·0)	−82°·2
$\bar{13}$·469 G	35	199	60	338	327·0	0·0	+24·3	−70·3
$\bar{12}$·466 G	86	443	89	461	326·6	−0·2	+23·3	−57·5
$\bar{11}$·399 C	87	543	68	426	327·2	+0·6	+23·6	−44·6
$\bar{10}$·461 G	168	711	109	459	327·3	+0·9	+23·7	−30·5
$\bar{9}$·502 G	179	817	103	471	328·4	+2·2	+23·0	−15·7
$\bar{8}$·329 C	154	887	85	502	327·6	+1·6	+23·1	− 5·6
$\bar{7}$·417 G	158	900	88	499	327·7	+1·9	+22·5	+ 8·8
$\bar{6}$·342 C	180	951	106	559	327·9	+2·2	+21·8	+21·2
$\bar{5}$·438 G	155	774	108	538	328·2	+2·7	+21·7	+35·9
$\bar{4}$·445 C	85	441	78	400	329·3	+4·0	+22·1	+50·3
$\bar{3}$·353 C	45	287	61	389	330·5	+5·4	+21·5	+63·4
$\bar{2}$·472 G	17	78	69	334	331·6	+6·7	+21·8	+79·3
Means ...	...	...	85	448	328·3	...	+22·7	...

Spot *a*.

$\bar{14}$·410 C	0	8	(0	35	329·0	...	+24·0)	−82·2
$\bar{13}$·469 G	35	199	60	338	327·0	0·0	+24·3	−70·3
$\bar{12}$·466 G	52	276	53	282	327·4	+0·6	+23·5	−56·7
$\bar{11}$·399 C	54	327	41	249	328·8	+2·2	+23·3	−43·0
$\bar{10}$·461 G	86	415	54	261	329·6	+3·2	+22·8	−28·2
$\bar{9}$·502 G	123	525	70	299	330·3	+4·1	+22·7	−13·8
$\bar{8}$·329 C	108	566	59	311	329·9	+3·9	+22·7	− 3·3
$\bar{7}$·417 G	106	436	59	244	331·7	+5·9	+22·1	+12·8
$\bar{6}$·342 C	87	408	53	249	332·9	+7·2	+21·8	+26·2
$\bar{5}$·438 G	84	389	62	288	333·8	+8·3	+21·5	+41·5
$\bar{4}$·445 C	58	287	57	281	334·1	+8·8	+22·0	+55·1
$\bar{3}$·353 C	37	233	53	336	333·9	+8·8	+21·6	+66·8
$\bar{2}$·472 G	13	65	62	311	334·5	...	+21·9	+82·2

Group 12185. Jan. 15–25. A stable regular spot (*a* of Group 12141) with a tiny follower on January 23.

14·404 G	17	117	31	211	332·1	+10·3	+22·1	−70·4
15·417 G	26	130	28	140	331·6	+ 9·9	+22·3	−57·6
16·452 G	30	199	24	159	331·0	+ 9·5	+22·5	−44·5
17·401 C	23	175	15	117	331·0	+ 9·7	+22·1	−32·1
18·456 G	32	190	19	112	330·5	+ 9·4	+22·1	−18·7
19·420 G	35	202	20	115	330·1	+ 9·2	+22·3	− 6·4
20·388 G	35	184	20	105	329·8	+ 9·1	+22·3	+ 6·1

No. 1182. Group 12185—*continued.*

d								
21·142 K	32	161	19	95	329°·3	+ 8°·7	+22°·6	+15°·5
22·394 C	23	133	15	89	328·9	+ 8·6	+22·5	+31·6
23·314 C	21	63	17	50	328·9	+ 8·8	+22·5	+43·7
24·384 G	4	26	4	28	328·4	+ 8·4	+22·6	+57·3
Means ...	...	...	19	111	330·1	...	+22·4	...

No. 1183. Latitude −11°·3

Group 12160 in Rotation 1114.
" 12202 " " 1115.

Group 12160. 1936, Dec. 28–1937, Jan. 9. A stable regular spot with tiny companions southwards on December 29-31 and January 2-5.

$\bar{4}$·445 C	17	79	42	194	200·5	0·0	− 9·8	−78·5
$\bar{3}$·353 C	27	199	34	253	200·3	−0·3	−10·0	−66·8
$\bar{2}$·472 G	54	294	44	240	200·4	−0·3	−10·0	−51·9
$\bar{1}$·559 G	75	350	47	224	200·4	−0·4	−10·0	−37·6
0·329 C	62	349	35	199	200·5	−0·4	− 9·4	−27·4
1·448 G	78	406	41	211	200·4	−0·5	− 9·6	−12·7
2·349 C	101	454	50	227	200·7	−0·3	− 9·5	− 0·6
3·393 C	71	379	37	197	200·4	−0·7	− 9·6	+12·9
4·510 G	58	341	33	194	200·3	−0·9	− 9·5	+27·5
5·398 C	67	287	44	187	200·2	−1·1	− 9·8	+39·1
6·412 G	52	233	43	193	200·6	−0·8	−10·0	+52·9
7·497 G	26	156	33	197	200·5	−1·0	−10·0	+67·0
8·434 G	13	69	31	166	199·6	−2·0	−10·7	+78·5
Means ...	...	...	40	206	200·4	...	− 9·8	...

Group 12202. Jan. 25-28. A small decreasing regular spot.

24·384 G	7	26	9	34	203·2	+0·2	−12·5	−67·9
25·400 C	17	50	14	42	203·3	+0·2	−12·8	−54·4
26·549 C	15	42	10	27	203·3	+0·1	−12·7	−39·3
27·401 C	8	21	5	12	203·6	+0·3	−13·0	−27·8
Means ...	...	...	10	29	203·4	...	−12·8	...

No. 1184. Latitude +24°·9.

Group 12161 in Rotation 1114.
" 12201 " " 1115.

Group 12161. 1936, Dec. 29–1937, Jan. 9. A stream of bipolar type in which the follow is represented at first by a cluster of small spots, whilst the leader, *a*, is a typical regular spot throughout.

LEDGER I.—RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

No. **1184**. Group 12161—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude	Proper Motion	Latitude	Long. from C.M.
d								
$\bar{3}$·353 C	4	12	5	15	206°·0	0°·0	+26°·4	−61°·1
$\bar{2}$·472 G	82	298	69	249	205·9	+0·2	+26·6	−46·4
$\bar{1}$·559 G	166	702	111	469	207·0	+1·6	+25·3	−31·0
0·329 C	156	869	95	528	206·5	+1·3	+25·1	−21·4
1·448 G	190	983	109	563	206·0	+1·1	+25·1	− 7·1
2·349 C	125	751	72	428	206·1	+1·5	+25·0	+ 4·8
3·393 C	133	645	79	385	205·5	+1·1	+24·7	+18·0
4·510 G	117	541	80	371	206·4	+2·3	+25·0	+33·6
5·398 C	75	423	61	346	205·9	+2·1	+25·3	+44·8
6·412 G	58	352	63	385	205·2	+1·7	+25·1	+57·5
7·497 G	35	203	71	410	205·6	+2·3	+25·4	+72·1
8·434 G	9	26	(48	138	203·2	...	+24·8)	+82·1
Means ...	...	...	74	377	206·0	...	+25·4	...

Spot *a*.

$\bar{3}$·353 C	4	12	5	15	206·0	0·0	+26·4	−61·1
$\bar{2}$·472 G	60	238	49	195	207·0	+1·3	+26·2	−45·3
$\bar{1}$·559 G	127	572	84	378	207·8	+2·4	+25·5	−30·2
0·329 C	108	624	65	374	208·1	+2·9	+25·1	−19·8
1·448 G	138	711	79	405	207·5	+2·6	+25·0	− 5·6
2·349 C	108	655	62	373	207·1	+2·5	+24·9	+ 5·8
3·393 C	112	545	67	327	206·7	+2·3	+24·9	+19·2
4·510 G	99	456	68	315	206·5	+2·4	+25·2	+33·2
5·398 C	71	408	58	335	205·9	+2·1	+25·2	+44·8
6·412 G	54	326	59	359	205·3	+1·8	+25·2	+57·6
7·497 G	35	203	71	410	205·6	+2·3	+25·4	+72·1
8·434 G	9	26	(48	138	203·2	...	+24·8)	+82·1

Group 12201. Jan. 25–Feb. 5. A close pair of spots with companions. The preceding component dies out after January 29.

24·384 G	31	190	51	310	203·7	+5·0	+24·4	−67·4
25·400 C	46	280	47	286	203·7	+5·3	+25·0	−54·0
26·549 C	58	382	44	290	203·6	+5·5	+24·8	−39·0
27·401 C	69	418	46	276	203·2	+5·3	+24·1	−28·2
28·112 K	58	406	35	249	203·0	+5·3	+24·5	−19·0
29·397 C	38	192	22	111	203·1	+5·8	+24·5	− 2·0
30·415 G	35	182	21	107	202·0	+5·0	+24·5	+10·3
31·424 G	24	158	15	101	202·6	+5·8	+24·5	+24·2
32·506 C	35	117	26	86	201·7	+5·2	+24·3	+37·5
33·454 G	13	52	12	50	202·3	+6·1	+24·3	+50·6
34·398 G	13	50	17	66	201·7	+5·7	+24·1	+62·4
35·316 C	4	21	9	48	200·3	+4·6	+24·3	+73·1
Means ...	...	...	29	165	202·6	...	+24·4	...

No. **1185**. Latitude −18°·4.

Group 12171 in Rotation 1114.
" 12210 " " 1115.

Group 12171. Jan. 6-13. A large stream of normal type: *a* and *b* are the leader and follower respectively.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude	Proper Motion	Latitude	Long. from C.M.
d								
5·398 C	17	50	9	26	153°·8	0°·0	−17°·3	− 7°·3
6·412 G	39	119	21	62	154·8	+1·1	−17·3	+ 7·1
7·497 G	160	643	87	353	154·5	+0·8	−17·6	+21·0
8·434 G	187	1061	116	657	154·4	+0·8	−17·6	+33·3
9·426 G	125	817	95	619	155·6	+2·1	−17·6	+47·5
10·537 G	118	672	125	716	154·6	+1·2	−17·4	+61·2
11·395 C	60	410	100	707	155·5	+2·1	−17·6	+73·4
12·395 C	12	75	(34	212	149·7	...	−17·5)	+80·7
Means ...	...	...	79	449	154·7	...	−17·5	...

Spot *a*.

6·412 G	26	82	14	43	156·6	0·0	−17·5	+ 8·9
7·497 G	54	259	30	145	158·0	+1·5	−17·4	+24·5
8·434 G	71	426	46	277	159·1	+2·6	−17·5	+38·0
9·426 G	56	376	46	308	159·7	+3·3	−17·3	+51·6
10·537 G	48	300	58	363	159·3	+3·0	−17·3	+65·9
11·395 C	27	233	55	471	158·5	+2·2	−17·6	+76·4

Spot *b*.

6·412 G	13	37	7	19	151·7	0·0	−16·7	+ 4·0
7·497 G	89	302	48	163	151·9	+0·3	−17·6	+18·4
8·434 G	86	484	51	286	150·7	−0·9	−17·9	+29·6
9·426 G	39	279	27	193	150·0	−1·5	−17·6	+41·9
10·537 G	35	210	32	191	149·5	−1·9	−17·9	+56·1
11·395 C	21	119	27	151	149·1	−2·3	−18·1	+67·0
12·395 C	12	75	34	212	149·7	...	−17·5	+80·7

Group 12210. Jan. 27–Feb. 9. A large spot with a double umbra—possibly *a* of Group 12171.

26·549 C	8	38	(43	202	156·2	...	−19·4)	−86·4
27·401 C	29	213	57	417	155·0	−0·2	−19·8	−76·4
28·112 K	46	287	58	362	154·8	−0·3	−19·8	−67·2
29·397 C	75	385	59	304	154·6	−0·4	−19·4	−50·5
30·415 G	69	425	44	272	154·4	−0·5	−19·3	−37·3
31·424 G	80	447	45	250	154·0	−0·9	−19·2	−24·4

LEDGER I.—RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

No. **1185**. Group 12210—*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					°		°	°
32·506 C	77	445	40	231	153·6	−1·2	−19·3	−10·6
33·454 G	63	547	32	279	153·6	−1·1	−19·0	+ 1·9
34·398 G	74	460	39	244	153·3	−1·4	−18·9	+14·0
35·316 C	63	314	36	179	153·1	−1·5	−18·9	+25·9
36·469 G	30	204	20	137	152·9	−1·6	−19·2	+40·9
37·524 C	40	185	34	159	152·5	−2·0	−18·8	+54·4
38·487 G	20	78	25	97	152·5	−1·9	−19·0	+67·1
39·601 G	4	30	11	82	151·8	...	−18·5	+81·0
Means ...	...	...	41	244	153·7	...	−19·2	...

No. **1186**. Latitude −7°·3.

Group 12178 in Rotation 1114.
" 12228 " " 1115.

Group 12178. Jan. 10–22. A large group of stream type which is fairly well developed on its appearance at the east limb. The leader, *a*, is a regular spot; the follower, *b*, is smaller and elongated in a direction north to south. There is a cluster of companion spots extending southwards, but this has disappeared by January 20.

9·426 G	13	91	(43	298	26·4	...	− 7·5)	−81·7
10·537 G	67	441	104	681	21·6	0·0	− 9·6	−71·8
11·395 C	120	707	120	709	22·4	+0·7	− 8·8	−59·7
12·395 C	131	791	98	587	22·0	+0·1	− 9·0	−47·0
13·392 C	165	969	99	588	21·9	−0·1	− 9·0	−33·9
14·404 G	226	1334	121	712	22·5	+0·3	− 9·8	−20·0
15·417 G	211	1282	106	651	21·6	−0·7	− 9·7	− 7·6
16·452 G	196	1031	99	523	21·2	−1·3	− 9·7	+ 5·7
17·401 C	199	823	106	438	22·1	−0·5	− 8·9	+19·0
18·456 G	103	607	63	372	23·6	+0·8	− 7·5	+34·4
19·420 G	82	430	60	318	24·3	+1·4	− 6·6	+47·8
20·388 G	47	293	47	299	24·3	+1·2	− 6·5	+60·6
21·142 K	28	193	43	293	25·0	+1·8	− 5·4	+71·2
Means ...	...	...	89	514	22·7	...	− 8·4	...

Spot *a*.

9·426 G	13	91	43	298	26·4	...	− 7·5	−81·7
10·537 G	39	268	52	356	25·2	0·0	− 7·2	−68·2
11·395 C	79	445	72	405	25·4	+0·1	− 6·8	−56·7
12·395 C	75	437	52	302	25·3	−0·2	− 7·1	−43·7
13·392 C	100	551	58	320	25·0	−0·6	− 7·2	−30·8
14·404 G	128	629	67	327	25·0	−0·8	− 7·3	−17·5
15·417 G	125	613	62	306	24·9	−1·0	− 7·1	− 4·3
16·452 G	114	588	58	300	24·9	−1·2	− 6·9	+ 9·4
17·401 C	162	597	87	322	25·1	−1·1	− 6·8	+22·0
18·456 G	82	514	51	319	25·1	−1·3	− 6·3	+35·9
19·420 G	69	395	52	296	25·1	−1·4	− 6·3	+48·6

No. **1186**. Group 12178—*continued.*

d					°		°	°
20·388 G	43	282	44	290	24·8	−1·9	− 6·2	+61·1
21·142 K	28	193	43	293	25·0	−1·8	− 5·4	+71·2

Spot *b*.

10·537 G	17	108	37	234	16·2	0·0	−11·5	−77·2
11·395 C	25	171	31	210	15·7	−0·6	−11·4	−66·4
12·395 C	37	223	31	185	15·9	−0·6	−11·0	−53·1
13·392 C	46	291	30	189	16·0	−0·6	−10·7	−39·8
14·404 G	52	328	29	184	16·0	−0·8	−10·8	−26·5
15·417 G	52	341	27	177	16·1	−0·8	−10·5	−13·1
16·452 G	56	283	28	142	16·0	−1·1	−10·7	+ 0·5
17·401 C	29	164	15	84	15·7	−1·5	−10·6	+12·6
18·456 G	17	54	10	30	15·4	−2·0	−10·7	+26·2
19·420 G	13	35	8	22	15·1	−2·4	−10·8	+38·6
20·388 G	4	11	3	9	15·8	−1·9	−11·7	+52·1

Group 12228. Feb. 7–18. A slowly decreasing regular spot, *a* of Group 12178.

37·524 C	13	59	20	91	26·5	−2·7	− 6·3	−71·6
38·487 G	17	89	17	87	25·7	−3·6	− 6·1	−59·7
39·601 G	22	100	15	70	26·0	−3·5	− 6·0	−44·8
40·441 G	33	148	20	89	26·2	−3·4	− 6·0	−33·5
41·498 C	34	116	18	61	26·4	−3·4	− 6·4	−19·4
42·462 G	31	116	16	58	26·7	−3·2	− 6·3	− 6·4
43·341 C	21	80	10	40	26·7	−3·4	− 6·7	+ 5·2
44·357 C	13	52	7	28	27·1	−3·1	− 6·7	+19·0
45·395 G	13	41	8	24	27·3	−3·1	− 6·5	+32·8
46·450 G	13	26	9	19	27·4	−3·1	− 6·1	+46·8
47·331 C	6	13	6	12	27·1	−3·5	− 6·2	+58·1
48·399 C	4	8	6	13	26·8	−4·0	− 6·3	+71·9
Means ...	...	...	13	49	26·7	...	− 6·3	...

No. **1187**. Latitude +17°·9.

Group 12179 in Rotation 1114.
" 12219 " " 1115.

Group 12179. Jan. 12–15. A stream developing near the west limb; *a* is the leading spot.

11·395 C	8	25	5	16	117·0	0·0	+17·5	+34·9
12·395 C	25	108	21	90	117·8	+0·9	+17·3	+48·8
13·392 C	35	135	44	169	118·8	+1·9	+17·2	+63·0
14·404 G	17	78	47	217	119·2	+2·4	+17·4	+76·7
Means ...	...	...	29	123	118·2	...	+17·4	...

LEDGER I.—RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

No. **1187.** Group 12179—*continued.*

Spot *a.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
11·395 C	8	25	5	16	117·0	0·0	+17·5	+34·9
12·395 C	6	31	5	26	120·1	+3·2	+16·5	+51·1
13·392 C	27	104	35	136	120·8	+3·9	+16·9	+65·0
14·404 G	13	61	39	185	120·9	+4·1	+17·2	+78·4

Group 12219. Jan. 31–Feb. 10. A diminishing regular spot (probably *a* of Group 12179) with a tiny companion on February 6.

30·415 G	13	52	25	99	119·9	+4·0	+18·8	−71·8
31·424 G	24	91	26	99	120·0	+4·1	+18·7	−58·4
32·506 C	19	102	15	80	120·1	+4·3	+18·5	−44·1
33·454 G	22	104	14	68	119·8	+4·0	+18·3	−31·9
34·398 G	22	82	13	48	119·6	+3·9	+18·3	−19·7
35·316 C	23	117	13	66	119·3	+3·6	+18·2	− 7·9
36·469 G	17	83	9	46	118·8	+3·2	+18·5	+ 6·8
37·524 C	13	59	8	35	119·0	+3·5	+18·2	+20·9
38·487 G	13	24	9	16	118·6	+3·1	+18·3	+33·2
39·601 G	11	24	9	20	118·5	+3·1	+18·2	+47·7
40·441 G	9	13	10	14	118·6	+3·2	+18·2	+58·9
Means ...	...	...	14	54	119·3	...	+18·4	...

No. **1188.** Latitude +21°·0.

Group 12199 in Rotation 1115.
" 12238 } " " 1116.
" 12239 }
" 12278 " " 1117.

Group 12199. Jan. 24–Feb. 1. A stream originating closely *np a* of Group 12195. *a* and *b* are the leader and follower spots respectively.

23·314 C	10	38	6	23	262·8	0·0	+20·3	−22·4
24·384 G	76	371	43	208	263·6	+1·0	+19·9	− 7·5
25·400 C	104	550	58	311	264·1	+1·6	+20·6	+ 6·4
26·549 C	99	629	60	378	262·9	+0·6	+20·5	+20·3
27·401 C	134	911	88	602	262·6	+0·4	+20·4	+31·2
28·112 K	137	953	104	715	262·8	+0·7	+20·4	+40·8
29·397 C	117	675	123	719	262·0	+0·1	+20·7	+56·9
30·415 G	83	512	154	899	260·7	−1·1	+20·7	+69·0
31·424 G	22	135	(97	593	259·0	...	+21·3)	+80·6
Means ...	...	....	80	482	262·7	...	+20·4	...

No. **1188.** Group 12199—*continued.*

Spot *a.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
23·314 C	6	23	4	14	263·0	0·0	+20·4	−22·2
24·384 G	28	144	16	81	265·6	+2·8	+20·2	− 5·5
25·400 C	46	251	26	143	267·7	+5·0	+20·5	+10·0
26·549 C	27	182	17	113	268·6	+6·1	+20·7	+26·0
27·401 C	25	171	18	121	268·5	+6·1	+20·8	+37·1
28·112 K	26	121	22	100	268·7	+6·4	+20·6	+46·7
29·397 C	33	232	41	285	267·2	+5·1	+20·9	+62·1
30·415 G	22	95	59	253	267·7	+5·7	+20·9	+76·0

Spot *b.*

23·314 C	4	15	2	9	262·1	0·0	+19·2	−23·1
24·384 G	48	227	27	127	262·2	+0·3	+19·9	− 8·9
25·400 C	33	232	18	130	260·6	−1·2	+20·9	+ 2·9
26·549 C	59	355	35	209	259·9	−1·7	+20·8	+17·3
27·401 C	63	393	40	252	259·7	−1·8	+20·7	+28·3
28·112 K	48	311	34	221	259·5	−1·9	+20·5	+37·5
29·397 C	84	443	82	434	259·3	−1·9	+20·5	+54·2
30·415 G	61	417	95	646	259·0	−2·1	+20·7	+67·3
31·424 G	22	135	97	593	259·0	...	+21·3	+80·6

Group 12238. Feb. 16–25. A large grouping of spots indeterminate in character and diminishing rapidly. This group immediately precedes Group 12239 from which it is rather arbitrarily separated at first. The distinction between the two groups becomes quite clear however by February 20.

46·450 G	39	205	96	504	265·7	+6·2	+20·0	−74·9
47·331 C	55	328	74	443	265·2	+5·9	+20·3	−63·8
48·399 C	84	449	76	409	264·3	+5·1	+20·3	−50·6
49·424 C	85	523	60	369	265·3	+6·3	+20·3	−36·1
50·388 G	72	434	45	269	265·2	+6·3	+20·2	−23·5
51·422 G	57	327	33	190	264·8	+6·0	+21·2	−10·3
52·322 C	34	233	19	133	265·4	+6·8	+20·6	+ 2·1
53·473 G	35	206	21	122	265·3	+6·8	+20·8	+17·2
54·376 C	13	63	9	42	266·4	+8·1	+20·1	+30·2
55·682 G	9	26	8	22	266·3	+8·2	+19·8	+47·3
Means ...	...	...	44	250	265·4	...	+20·4	...

Group 12239. Feb. 17–Mar. 1. A large complex spot, the preceding part of which breaks away to form a stream.

47·331 C	17	197	48	556	252·9	−6·4	+21·8	−76·1
48·399 C	76	689	100	909	252·2	−7·0	+21·5	−62·7

LEDGER I.—RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

No. **1188**. Group 12239—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d								
49·424 C	88	886	78	789	252°·4	− 6°·6	+21°·2	−49°·0
50·388 G	191	1280	138	925	251·4	− 7·5	+21·2	−37·3
51·422 G	201	1369	127	854	251·8	− 7·0	+20·9	−23·3
52·322 C	168	1221	97	709	251·9	− 6·7	+20·7	−11·4
53·473 G	141	1228	80	700	251·4	− 7·1	+20·8	+ 3·3
54·376 C	121	743	71	434	250·7	− 7·6	+20·9	+14·5
55·682 G	105	730	70	491	250·6	− 7·5	+21·2	+31·6
56·351 C	78	490	58	368	249·9	− 8·1	+21·1	+39·7
57·383 G	53	307	51	295	248·8	− 9·1	+20·9	+52·2
58·353 C	25	139	34	191	247·6	−10·2	+21·0	+63·8
59·494 C	8	70	27	240	246·8	−10·8	+21·0	+78·0
Means ...	...	...	75	574	250·6	...	+21·1	...

Group 12278. Mar. 18–23. Intermittent. A small single spot on March 18-19 in extensive faculæ: a pair of small spots on March 22-23.

76·468 G	4	9	4	9	251·1	−4·0	+20·8	−54·0
77·391 G	4	11	3	9	250·5	−4·5	+20·6	−42·4
78·396 G	0	0	0	0	...	...	...	...
79·364 C	0	0	0	0	...	...	...	...
80·408 C	9	39	5	23	250·2	−4·4	+23·1	− 3·0
81·398 G	11	27	6	15	249·8	−4·6	+23·2	+ 9·7
Means ...	...	...	3	9	250·4	...	+21·9	...

No. **1189**. Latitude −10°·8.

Group 12204 in Rotation 1115.
" 12247 " " 1116.
" 12281 " " 1117.

Group 12204. Jan. 25–Feb. 6. A large spot with triple umbræ. Two other spots develop rapidly *np*, and by January 30 have practically combined with the original spot to make one great composite structure with three principal umbræ. This composite spot is easily visible to the naked eye.

24·384 G	67	339	145	784	192·7	0·0	−11·1	−78·4
25·400 C	112	767	122	835	194·3	+1·5	−11·3	−63·4
26·549 C	234	1657	171	1213	195·0	+2·1	−10·5	−47·6
27·401 C	276	2115	171	1314	195·6	+2·6	−10·5	−35·8
28·112 K	458	2947	256	1650	196·5	+3·4	−10·3	−25·5
29·397 C	525	3613	267	1835	196·8	+3·6	−10·2	− 8·3
30·415 G	692	4583	348	2309	196·2	+2·9	− 9·8	+ 4·5
31·424 G	746	4498	393	2364	196·2	+2·8	− 9·9	+17·8
32·506 C	600	3687	362	2215	197·2	+2·7	− 9·3	+33·0
33·454 G	464	3105	333	2232	197·7	+4·1	− 9·4	+46·0

No. **1189**. Group 12204—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d								
34·398 G	271	2086	260	2000	198°·4	+4°·7	− 9°·7	+59°·1
35·316 C	138	1338	213	2061	199·0	+5·2	− 9·7	+71·8
36·469 G	22	204	(105	977	197·1	...	−10·1)	+85·1
Means ...	...	...	253	1734	196·3	...	−10·1	...

Group 12247. Feb. 20–Mar. 4. A stable regular spot with small companions on March 1 and 2.

50·388 G	9	54	43	259	203·5	...	−11·0	−85·2
51·422 G	39	170	58	252	203·9	+8·5	−11·0	−71·2
52·322 C	55	275	52	261	204·2	+8·7	−11·1	−59·1
53·473 G	92	359	63	248	203·8	+8·2	−11·1	−44·3
54·376 C	76	390	45	230	204·1	+8·4	−11·0	−32·1
55·682 G	70	444	36	231	204·5	+8·7	−11·4	−14·5
56·351 C	59	426	30	213	204·4	+8·5	−10·9	− 5·8
57·383 G	72	434	37	221	204·5	+8·5	−10·8	+ 7·9
58·353 C	89	409	47	217	204·6	+8·5	−10·5	+20·8
59·494 C	50	340	31	210	204·4	+8·2	−10·7	+35·6
60·398 G	59	307	44	227	205·1	+8·8	−10·6	+48·2
61·552 G	35	171	38	185	204·8	+8·4	−10·5	+63·1
62·117 K	24	126	35	183	204·9	...	−10·6	+70·7
Means ...	...	...	43	223	204·4	...	−10·8	...

Group 12281. Mar. 20–26. A small but persistent spot with a companion on March 26.

78·396 G	4	13	6	21	206·8	+8·8	−11·4	−72·9
79·364 C	9	26	9	25	206·8	+8·7	−11·4	−60·1
80·408 C	6	28	8	35	206·9	+8·7	−11·4	−46·3
81·398 G	4	15	2	9	206·8	+8·5	−11·2	−33·3
82·447 G	2	9	1	5	206·6	+8·2	−11·2	−19·7
83·391 G	4	7	2	4	206·2	+7·7	−11·2	− 7·6
84·375 G	4	24	2	12	206·8	+8·2	−11·2	+ 6·0
Means ...	...	...	4	16	206·7	...	−11·3	...

No. **1190**. Latitude −24°·3.

Group 12209 in Rotation 1115.
" 12251 " " 1116.

Group 12209. Jan. 27–Feb. 6. A stream led by a fairly large regular spot, *a*; the train soon dies out.

LEDGER I.—RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

No. **1190**. Group 12209—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude	Proper Motion	Latitude	Long. from C.M.
d								
26·549 C	50	201	43	170	189°·8	0°·0	−22°·3	−52°·8
27·401 C	75	370	52	255	190·6	+1·0	−22·6	−40·8
28·112 K	131	591	79	359	190·6	+1·2	−22·8	−31·4
29·397 C	129	748	69	402	191·8	+2·7	−22·5	−13·3
30·415 G	157	809	81	421	190·7	+1·9	−22·5	− 1·0
31·424 G	119	875	63	464	190·8	+2·2	−22·7	+12·4
32·506 C	94	510	55	296	190·6	+2·3	−23·4	+26·4
33·454 G	74	464	49	306	190·2	+2·1	−23·4	+38·5
34·398 G	72	443	58	354	189·7	+1·9	−23·7	+50·4
35·316 C	67	403	70	423	189·0	+1·4	−23·6	+61·8
36·469 G	17	217	33	425	188·6	+1·3	−23·8	+76·6
Means ...	...	...	59	352	190·2	..	−23·0	...

Spot *a*.

26·549 C	21	117	17	94	192·0	0·0	−22·2	−50·6
27·401 C	42	217	28	143	193·4	+1·6	−22·6	−38·0
28·112 K	77	351	45	207	193·5	+1·9	−23·0	−28·5
29·397 C	104	464	55	246	193·5	+2·2	−22·6	−11·6
30·415 G	122	590	63	307	192·3	+1·3	−22·4	+ 0·6
31·424 G	119	875	63	464	190·8	0·0	−22·7	+12·4
32·506 C	94	510	55	296	190·6	+0·1	−23·4	+26·4
33·454 G	74	464	49	306	190·2	−0·1	−23·4	+38·5
34·398 G	72	443	58	354	189·7	−0·3	−23·7	+50·4
35·316 C	67	403	70	423	189·0	−0·8	−23·6	+61·8
36·469 G	17	217	33	425	188·6	−0·9	−23·6	+76·6

Group 12251. Feb. 22–Mar. 5. A regular spot (*a* of Group 12209), steady in area until February 28, when it decreases rapidly. Group 12255 develops closely behind it.

52·322 C	17	92	42	226	183·1	...	−24·8	−80·2
53·473 G	18	149	21	177	182·3	−3·0	−24·7	−65·8
54·376 C	34	207	29	178	182·3	−2·7	−25·0	−53·9
55·682 G	57	253	37	164	182·1	−2·6	−25·3	−36·9
56·351 C	51	295	30	174	181·7	−2·8	−25·5	−25·8
57·383 G	57	318	31	175	181·2	−3·1	−25·7	−15·4
58·353 C	68	338	36	179	180·7	−3·3	−25·9	− 3·1
59·494 C	38	260	21	140	180·2	−3·6	−26·0	+11·4
60·398 G	44	219	25	125	180·1	−3·4	−25·9	+23·2
61·552 G	26	118	17	78	179·8	−3·4	−25·9	+38·1
62·117 K	18	73	13	53	179·7	−3·4	−25·7	+45·5
63·419 C	4	8	4	9	179·4	−3·4	−25·7	+62·3
Means ...	...	...	24	132	180·9	...	−25·6	...

No. **1191**. Latitude +8°·3.

Group 12254 in Rotation 1116.
" 12288 " " 1117.
" 12321 " " 1118.
" 12354 " " 1119.

Group 12254. Feb. 24–Mar. 7. A big regular spot followed by nebulous companions. Small portions of this spot break away from its *nf* edge on March 1–2 and March 4–5. The spot, which is unusually large for one of regular structure, is easily visible to the naked eye.

d								
54·376 C	46	283	(113	696	159°·3	...	+ 8°·7)	−76°·9
55·682 G	156	840	173	932	157·2	0·0	+ 8·5	−61·8
56·351 C	198	1080	167	916	158·6	+1·3	+ 8·7	−51·6
57·383 G	233	1259	153	827	159·0	+1·6	+ 8·8	−37·6
58·353 C	308	1387	175	792	160·1	+2·5	+ 8·6	−23·7
59·494 C	346	1485	183	788	160·7	+3·0	+ 8·7	− 8·1
60·398 G	364	1592	190	829	160·7	+2·9	+ 8·5	+ 3·8
61·552 G	296	1432	163	787	161·7	+3·7	+ 8·5	+20·0
62·117 K	306	1365	180	803	162·0	+3·9	+ 8·3	+27·8
63·419 C	195	977	146	733	163·1	+4·8	+ 8·1	+46·0
64·397 C	100	602	103	620	163·5	+5·1	+ 8·0	+59·3
65·328 C	64	407	109	692	163·4	+4·9	+ 7·7	+71·5
Means ...	...	...	158	793	160·9	...	+ 8·4	...

Group 12288. Mar. 23–Apr. 3. A large regular spot, the southern part of which is crossed by a "bridge" and has completely broken away by April 1. Meanwhile the main portion regains a regular outline.

81·398 G	42	248	74	439	167·5	+6·8	+ 6·2	−72·6
82·447 G	95	431	96	435	167·2	+6·4	+ 6·3	−59·1
83·391 G	97	517	73	388	167·4	+6·4	+ 6·3	−46·4
84·375 G	107	666	66	413	167·3	+6·2	+ 6·4	−33·5
85·391 G	124	702	68	386	167·3	+6·1	+ 6·4	−20·1
86·394 G	129	795	67	413	167·4	+6·0	+ 6·6	− 6·8
87·403 G	129	697	67	362	167·5	+6·0	+ 6·7	+ 6·6
88·600 G	84	582	47	326	167·6	+5·9	+ 6·7	+22·5
89·382 G	84	417	51	254	167·5	+5·7	+ 6·6	+32·7
90·401 C	49	322	36	238	167·2	+5·3	+ 6·7	+45·9
91·397 C	34	213	34	215	167·3	+5·2	+ 6·9	+59·1
92·420 G	22	123	39	216	167·1	+4·9	+ 6·8	+72·4
Means ...	...	...	60	340	167·4	...	+ 6·6	...

Group 12321. Apr. 19–30. A stable regular spot.

108·394 G	14	58	30	124	168·4	+4·0	+ 7·9	−75·4
109·410 C	20	109	22	119	168·8	+4·3	+ 8·0	−61·6
110·388 G	29	158	23	123	168·9	+4·3	+ 8·0	−48·6
111·551 G	40	198	25	123	168·9	+4·1	+ 8·3	−33·2

LEDGER I.—RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

No. **1191**. Group 12321—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
112·360 G	36	209	20	117	169·0	+4·1	+ 8·5	−22·4
113·106 K	50	217	26	115	169·5	+4·5	+ 8·5	−12·1
114·347 G	32	183	17	95	169·2	+4·0	+ 8·8	+ 4·0
115·584 G	36	172	20	95	169·6	+4·3	+ 8·9	+20·8
116·417 G	36	199	22	121	169·5	+4·0	+ 9·1	+31·7
117·595 G	18	124	14	95	169·8	+4·2	+ 9·5	+47·5
118·394 C	22	140	22	137	169·7	+4·0	+ 9·7	+58·0
119·511 G	14	54	25	96	169·6	+3·7	+ 9·8	+72·6
Means ...	...	...	22	113	169·3	...	+ 8·8	...

Group 12354. May 17–18. A tiny spot.

136·379 G	5	14	6	17	169·9	+1·7	+ 9·6	−64·0
137·352 G	5	14	4	11	170·4	+2·1	+ 9·6	−50·7
Means ...	...	...	5	14	170·2	...	+ 9·6	...

No. **1192**. Latitude −22°·6.

Group 12259 in Rotation 1116.
" 12276 " " 1117.

Group 12259. Feb. 28–Mar. 2. A group developing near the west limb.

58·353 C	8	25	7	21	237·7	0·0	−21·0	+53·9
59·494 C	34	160	49	228	239·3	+1·8	−20·9	+70·5
60·398 G	22	83	70	270	238·9	...	−21·0	+82·0
Means ...	...	...	28	124	238·5	...	−21·0	...

Group 12276. Mar. 17–20. A small spot followed by fairly extensive faculæ in which another small spot appears on March 20.

75·493 G	2	4	5	10	237·0	...	−24·0	−80·9
76·468 G	4	9	5	11	237·8	+3·6	−23·7	−67·3
77·391 G	4	9	4	8	237·4	+3·4	−23·6	−55·5
78·396 G	9	35	7	27	232·5	−1·3	−25·3	−47·2
Means ...	...	...	5	15	235·9	...	−24·2	...

No. **1193**. Latitude +18°·8.

Group 12307 in Rotation 1117.
" 12330 " " 1118.

Group 12307. Apr. 7–13. A regular spot with a few variable followers.

No. **1193**. Group 12307—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
96·391 G	9	26	5	15	34·7	0·0	+19·8	− 7·6
97·500 G	18	98	10	55	36·2	+1·6	+19·6	+ 8·5
98·440 C	22	121	13	74	39·2	+4·7	+19·4	+23·9
99·426 C	30	217	21	152	38·8	+4·3	+19·6	+36·6
100·410 G	58	286	51	255	39·7	+5·3	+19·3	+50·4
101·417 G	33	174	44	235	40·4	+6·1	+19·3	+64·4
102·400 C	21	121	62	349	39·7	+5·5	+19·4	+76·7
Means ...	...	...	29	162	38·4	...	+19·5	...

Group 12330. Apr. 28–May 11. A stable regular spot with a short-lived cluster *sp* on May 4.

117·595 G	9	36	48	192	39·5	...	+18·5	−82·8
118·394 C	18	118	35	228	39·1	+6·2	+18·5	−72·6
119·511 G	50	258	54	276	38·3	+5·4	+18·4	−58·7
120·372 G	68	312	55	252	38·5	+5·7	+18·4	−47·1
121·552 G	73	404	47	259	38·0	+5·3	+18·2	−32·0
122·404 G	91	481	53	279	37·8	+5·2	+18·2	−20·9
123·532 G	123	533	66	288	37·5	+5·0	+17·9	− 6·0
124·334 G	123	567	66	306	38·0	+5·5	+17·8	+ 4·8
125·331 G	82	441	46	248	37·5	+5·1	+17·8	+17·5
126·631 G	59	302	39	196	37·2	+4·9	+18·3	+34·4
127·615 G	41	290	34	233	37·2	+5·0	+18·2	+47·4
128·381 C	40	209	40	211	36·8	+4·7	+18·2	+57·1
129·489 G	18	100	32	180	36·9	+4·8	+18·4	+71·9
130·418 C	4	9	(21	48	36·1	...	+18·3)	+83·3
Means ...	...	...	47	246	37·7	...	+18·2	...

No. **1194**. Latitude −8°·4.

Group 12315 in Rotation 1118.
" 12346 " " 1119.

Group 12315. Apr. 18–28. A large stream with a regular spot, *a*, as leader and a composite spot, *b*, as the follower.

107·366 C	17	107	15	92	202·6	0·0	− 7·8	−54·8
108·394 G	134	540	88	353	204·1	+1·4	− 9·1	−39·7
109·410 C	161	1064	90	597	203·7	+0·8	− 9·1	−26·7
110·388 G	234	1411	121	735	203·4	+0·4	− 9·1	−14·1
111·551 G	213	1379	107	689	203·2	0·0	− 9·8	+ 1·1
112·360 G	260	1269	134	653	202·9	−0·4	− 9·5	+11·5
113·106 K	236	1131	128	610	202·6	−0·8	− 9·4	+21·0
114·347 G	126	935	80	591	202·2	−1·3	− 9·4	+37·0
115·584 G	86	583	75	499	202·4	−1·3	− 9·7	+53·6
116·417 G	52	344	62	414	203·0	−0·8	− 9·0	+65·2
117·595 G	23	113	91	464	204·9	...	− 8·5	+82·6
Means ...	...	...	90	523	203·0	...	− 9·2	...

LEDGER I.—RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

No. **1194**. Group 12315—*continued.*

Spot *a*.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ Spots	Corrected Area Whole	Corrected Area Umbræ Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
107·366 C	9	44	7	36	203·8	0·0	− 8·3	−53·6
108·394 G	76	328	48	207	206·0	+2·1	− 8·7	−37·8
109·410 C	78	499	42	269	207·7	+3·6	− 8·6	−24·8
110·388 G	130	664	66	339	208·3	+4·1	− 9·1	− 9·2
111·551 G	94	634	47	317	208·2	+3·8	− 9·2	+ 6·1
112·360 G	130	623	68	324	207·6	+3·1	− 9·0	+16·2
113·106 K	125	527	70	295	207·7	+3·1	− 8·7	+26·1
114·347 G	72	438	48	293	207·0	+2·3	− 8·6	+41·8
115·584 G	54	312	51	293	207·1	+2·2	− 8·6	+58·3
116·417 G	29	208	39	281	206·6	+1·6	− 8·3	+68·8
117·595 G	16	86	77	412	206·8	...	− 8·0	+84·5

Spot *b*.

107·366 C	9	63	8	56	201·0	0·0	− 9·1	−56·4
108·394 G	58	212	40	146	200·3	−0·8	− 9·8	−43·5
109·410 C	83	565	48	328	200·2	−1·1	− 9·8	−30·2
110·388 G	104	747	55	396	199·8	−1·6	− 9·9	−17·7
111·551 G	112	713	56	356	199·3	−2·3	− 9·8	− 2·8
112·360 G	130	646	66	329	199·0	−2·7	− 9·7	+ 7·6
113·106 K	84	462	44	240	198·6	−3·2	−10·1	+17·0
114·347 G	54	497	32	298	198·3	−3·6	−10·2	+33·1
115·584 G	32	271	24	206	197·8	−4·3	−10·4	+49·0
116·417 G	23	136	23	133	197·5	−4·7	−10·0	+59·7
117·595 G	7	27	14	52	197·9	−4·5	−10·3	+75·6

Group 12346. May 14–20. Intermittent. A small spot (probably *a* of Group 12315) on May 14–16: a tiny cluster on May 17 and 20.

133·391 G	9	23	11	27	208·3	+1·0	− 7·2	−65·2
134·390 C	11	40	9	32	209·0	+1·6	− 7·3	−51·2
135·392 C	4	11	3	7	209·4	+1·8	− 7·2	−37·6
136·379 G	0	18	0	10	204·1	−3·6	− 7·8	−29·8
137·352 G	0	0	0	0	...	...	...	...
138·452 C	0	0	0	0	...	...	...	...
139·328 G	5	18	3	9	206·6	−1·5	− 8·1	+11·7
Means ...	...	...	4	12	207·5	...	− 7·5	...

No. **1195**. Latitude +22°·8.

Group 12319 in Rotation 1118.
,, 12348 ,, ,, 1119.
,, 12384 ,, ,, 1120.

No. **1195**—*continued.*

Group 12319. Apr. 19–29. A small spot on April 19 (in a large area of scattered faculæ) developing into a large stream. With the partial exception of the leader, which becomes a regular spot, the components are of composite structure and in constant change.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ Spots	Corrected Area Whole	Corrected Area Umbræ Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
108·394 G	2	4	2	4	192·4	0·0	+24·5	−51·4
109·410 C	35	92	26	67	193·7	+1·5	+25·2	−36·7
110·388 G	104	675	67	432	193·6	+1·6	+25·6	−23·9
111·551 G	221	1543	130	903	194·0	+2·2	+25·1	− 8·1
112·360 G	252	1552	147	900	193·5	+1·9	+24·8	+ 2·1
113·106 K	207	1653	123	982	194·7	+3·2	+24·8	+13·1
114·347 G	273	2097	180	1380	194·2	+3·0	+25·4	+29·0
115·584 G	357	2183	294	1795	192·3	+1·3	+24·9	+43·5
116·417 G	249	1838	264	1954	191·5	+0·7	+25·2	+53·7
117·595 G	138	972	252	1757	191·4	+0·8	+25·6	+69·1
118·394 C	31	451	(87	1272	188·2	...	+26·0)	+76·5
Means ...	...	...	148	1017	193·1	...	+25·1	...

Group 12348. May 14–26. A few spots developing rapidly after May 20 into a large stream whose subsequent history is lost early by the passage of the group around the west limb.

133·391 G	9	32	21	74	198·4	+11·0	+23·5	−75·1
134·390 C	18	82	22	101	197·8	+10·6	+23·3	−62·4
135·392 C	24	88	21	76	197·6	+10·6	+23·0	−49·4
136·379 G	23	82	16	56	198·1	+11·3	+22·5	−35·8
137·352 G	20	62	12	38	197·6	+11·0	+22·6	−23·5
138·452 C	13	64	7	35	197·7	+11·4	+21·7	− 8·8
139·328 G	18	41	10	23	197·5	+11·3	+22·1	+ 2·6
140·421 G	41	164	23	92	195·8	+ 9·8	+20·9	+15·3
141·421 G	82	497	51	308	195·8	+10·0	+21·5	+28·6
142·367 G	132	869	98	643	197·0	+11·4	+20·6	+42·3
143·408 G	193	1213	192	1214	198·1	+12·7	+20·4	+57·2
144·333 G	98	748	150	1175	197·7	+12·5	+20·1	+69·0
145·538 G	16	57	(52	186	192·9	...	+21·3)	+80·1
Means ...	...	...	52	320	197·4	...	+21·8	...

Group 12384. June 10–22. A triple formation of spots followed by a sparse train that has died out by June 18. Only two of the three spots at the head of the group remain by June 18. These continue stable in position with respect to one another.

160·402 G	44	278	100	648	199·8	+17·8	+21·2	−76·3
161·329 G	94	508	123	696	197·6	+15·8	+21·5	−66·2
162·402 C	149	768	132	683	197·1	+15·5	+21·3	−52·5
163·394 C	178	873	124	602	196·9	+15·5	+21·3	−39·5
164·417 G	183	1055	108	627	197·5	+16·3	+21·5	−25·4
165·370 G	183	930	100	510	198·5	+17·5	+21·4	−11·8

LEDGER I.—RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

No. **1195.** Group 12384—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
166·358 G	189	971	102	521	198·1	+17·3	+21·6	+ 0·9
167·335 G	156	842	85	462	198·4	+17·8	+21·3	+14·1
168·435 G	101	506	62	309	199·5	+19·1	+21·8	+29·8
169·381 G	81	405	59	291	199·5	+19·3	+21·7	+42·3
170·497 G	44	250	43	243	199·3	+19·3	+21·8	+56·9
171·333 G	32	189	44	259	199·2	+19·4	+21·8	+67·8
172·339 G	18	87	55	268	198·8	...	+21·8	+80·8
Means ...	...	...	90	488	198·4	...	+21·5	...

No. **1196.** Latitude +17°·9.

Group 12320 in Rotation 1118.
" 12350 " " 1119.
" 12387 " " 1120.

Group 12320. Apr. 19–May 1. Some very active spots, in a curved stream, which grow and consolidate so that for a few days the group is practically one extensive spot with multiple umbræ. The following part of this structure then expands and becomes separated by April 28 as a large composite spot, *b*. The position of the leading umbra, *a*, is also given below separately.

108·394 G	9	29	13	43	177·1	0·0	+20·1	−66·7
109·410 C	74	388	70	364	177·6	+0·6	+19·6	−52·8
110·388 G	229	1432	170	1065	175·7	−1·3	+19·7	−41·8
111·551 G	489	2748	302	1704	174·5	−2·4	+19·5	−27·6
112·360 G	567	3191	323	1823	174·1	−2·8	+19·6	−17·3
113·106 K	577	3258	321	1815	174·2	−2·6	+19·8	− 7·4
114·347 G	583	4025	325	2246	173·8	−3·0	+19·7	+ 8·6
115·584 G	721	4016	439	2440	172·7	−4·0	+19·1	+23·9
116·417 G	651	3648	440	2474	172·7	−4·0	+19·7	+34·9
117·595 G	565	2615	500	2311	172·4	−4·2	+19·2	+50·1
118·394 C	344	1899	407	2196	172·7	−3·8	+19·0	+61·0
119·511 G	95	852	179	1602	169·0	−7·5	+18·7	+72·0
120·372 G	20	111	(96	532	167·9	...	+17·8)	+82·3
Means ...	...	...	291	1674	173·9	...	+19·5	...

Position of umbra *a*.

110·388 G	...	...	...	...	179·5	0·0	+19·9	−38·0
111·551 G	...	...	...	...	180·8	+1·4	+19·8	−21·3
112·360 G	...	...	...	...	181·2	+1·8	+19·9	−10·2
113·106 K	...	...	...	...	181·7	+2·4	+19·7	+ 0·1
114·347 G	...	...	...	...	181·6	+2·3	+19·6	+16·4
115·584 G	...	...	...	...	181·7	+2·5	+19·3	+32·9
116·417 G	...	...	...	...	181·7	+2·5	+19·2	+43·9
117·595 G	...	...	...	...	182·1	+3·0	+19·3	+59·8
118·394 C	...	...	...	...	181·5	+2·4	+19·0	+69·8

No. **1196.** Group 12320—*continued.*

Spot *b*.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
117·595 G	389	1824	319	1496	169·9	0·0	+19·0	+47·6
118·394 C	239	1419	249	1476	169·6	−0·3	+18·6	+57·9
119·511 G	95	852	179	1602	169·0	−0·8	+18·7	+72·0
120·372 G	20	111	(96	532	167·9	...	+17·8)	+82·3

Group 12350. May 15–27. Two spots widely separated in longitude. The leader, *a*, is a stable regular spot. The follower, *b*, surrounded by a few companions, is larger but does not last quite so long.

134·390 C	11	49	(30	134	182·2	...	+18·5)	−78·0
135·392 C	58	378	137	896	171·5	−4·1	+17·7	−75·5
136·379 G	80	577	89	672	172·3	−3·2	+17·8	−61·6
137·352 G	127	734	104	601	172·4	−3·1	+18·0	−48·7
138·452 C	111	813	72	532	172·8	−2·6	+17·9	−33·7
139·328 G	171	891	99	515	173·4	−2·0	+18·2	−21·5
140·421 G	182	810	97	435	172·8	−2·5	+18·1	− 7·7
141·421 G	137	694	73	370	173·5	−1·8	+18·1	+ 6·3
142·367 G	100	552	56	311	173·6	−1·6	+18·2	+18·9
143·408 G	68	392	43	249	173·1	−2·0	+17·8	+32·2
144·333 G	62	296	48	227	174·0	−1·1	+17·9	+45·3
145·538 G	23	119	29	152	176·7	+1·7	+17·7	+63·9
146·383 G	9	50	22	123	179·0	+4·0	+17·3	+77·4
Means ...	...	...	72	424	173·8	...	+17·9	...

Spot *a* (probably representing umbra *a* of Group 12320)

134·390 C	11	49	30	134	182·2	+4·0	+18·5	−78·0
135·392 C	18	115	24	154	181·1	+3·0	+18·4	−65·9
136·379 G	32	171	28	152	180·9	+2·9	+18·3	−53·0
137·352 G	36	223	25	156	180·8	+2·8	+18·1	−40·3
138·452 C	31	231	18	136	180·5	+2·6	+17·9	−26·0
139·328 G	46	255	25	140	180·2	+2·3	+17·8	−14·7
140·421 G	50	242	26	128	180·0	+2·2	+17·8	− 0·5
141·421 G	41	233	22	126	179·7	+1·9	+17·8	+12·5
142·367 G	36	228	21	132	179·5	+1·8	+17·7	+24·8
143·408 G	27	173	18	118	179·3	+1·6	+18·0	+38·4
144·333 G	32	150	27	126	179·3	+1·7	+17·6	+50·6
145·538 G	16	96	22	130	179·4	+1·9	+17·6	+66·6
146·383 G	9	50	22	123	179·0	+1·5	+17·3	+77·4

Spot *b* (spot *b* of Group 12320).

135·392 C	40	263	113	742	168·5	−0·4	+17·3	−78·5
136·379 G	48	406	61	520	169·0	+0·2	+17·7	−64·9

LEDGER I.—RECURRENT GROUPS of SUN SPOTS for the YEAR 1937.—*continued.*

No. **1196.** Group 12350. Spot *b*—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude	Proper Motion	Latitude	Long. from C.M.
d								
137·352 G	91	511	79	445	169°·0	+0°·2	+17°·8	−52°·1
138·452 C	80	582	54	396	168·7	0·0	+18·0	−37·8
139·328 G	125	636	74	375	169·3	+0·6	+18·1	−25·6
140·421 G	132	568	71	307	169·3	+0·7	+18·2	−11·2
141·421 G	96	461	51	244	169·2	+0·6	+18·2	+ 2·0
142·367 G	59	301	32	166	169·2	+0·7	+18·2	+14·5
143·408 G	41	219	25	131	169·1	+0·6	+18·2	+28·2
144·333 G	23	123	16	85	168·6	+0·2	+18·1	+39·9
145·538 G	7	23	7	22	168·7	+0·4	+18·4	+55·9

Group 12387. June 12–18. A small spot, probably *a* of Group 12350, followed by a very extensive area of faculæ in which Group 12391 also appears.

162·402 C	4	13	6	20	179·2	+2·6	+16·6	−70·4
163·394 C	5	9	5	9	178·8	+2·3	+16·4	−57·6
164·417 G	9	14	6	10	178·9	+2·4	+16·5	−44·0
165·370 G	14	23	9	14	178·5	+2·1	+16·3	−31·8
166·358 G	12	23	7	13	178·7	+2·3	+16·3	−18·5
167·335 G	9	12	5	6	178·8	+2·5	+16·3	− 5·5
168·435 G	5	9	3	5	178·8	+2·5	+16·3	+ 9·1
Means ...	...	...	6	11	178·8	...	+16·4	...

No. **1197.** Latitude +11°·5.

Group 12322 in Rotation 1118.
„ 12337 „ „ 1119.

Group 12322. Apr. 20–21. A small spot.

109·410 C	4	9	4	9	288·1	0·0	+11·5	+57·7
110·388 G	4	14	7	26	290·1	+1·9	+11·5	+72·6
Means ...	...	...	6	18	289·1	...	+11·5	...

Group 12337. May 7–14. A sparse stream of unstable spots.

126·631 G	2	5	3	8	292·1	+2·5	+10·7	−70·7
127·615 G	0	9	0	9	291·6	+1·9	+11·7	−58·2
128·381 C	7	35	5	27	291·4	+1·6	+11·8	−48·3
129·489 G	25	99	17	66	286·5	−3·3	+12·1	−38·5
130·418 C	33	145	19	84	286·6	−3·3	+11·9	−26·2
131·494 C	22	133	12	71	286·3	−3·7	+11·3	−12·2
132·110 K	21	76	11	40	288·4	−1·7	+11·2	− 2·0
133·391 G	0	2	0	1	292·2	+2·0	+11·0	+18·7
Means ...	...	...	8	38	289·4	...	+11·5	...

No. **1198.** Latitude −20°·8.

Group 12327 in Rotation 1118.
„ 12359 „ „ 1119.
„ 12396 „ „ 1120.
„ 12447 „ „ 1121.

Group 12327. Apr. 26–May 5. A large stream of normal type showing rapid growth. The leader, *a*, divides into two on May 1–2. Contrary to the usual sequence in development, a cluster of spots, *c*, in the middle of the stream outlives the follower, *b*.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude	Proper Motion	Latitude	Long. from C.M.
d								
115·584 G	111	502	78	349	106°·4	0°·0	−20°·4	−42°·4
116·417 G	196	1162	117	699	107·6	+1·3	−20·7	−30·2
117·595 G	337	1833	181	985	108·6	+2·5	−20·6	−13·7
118·394 C	359	2000	188	1048	108·5	+2·5	−20·8	− 3·2
119·511 G	400	2215	216	1194	108·5	+2·6	−20·8	+11·5
120·372 G	350	1919	202	1106	110·9	+5·2	−20·7	+25·3
121·552 G	263	1278	185	903	112·4	+6·8	−20·6	+42·4
122·404 G	177	957	160	855	112·5	+7·0	−20·2	+53·8
123·532 G	88	554	134	842	113·6	+8·3	−19·7	+70·1
124·334 G	43	349	(127	1002	113·9	...	−20·0)	+80·7
Means ...	...	...	162	887	109·9	...	−20·5	...

Spot *a*.

116·417 G	124	669	72	388	110·4	0·0	−20·1	−27·4
117·595 G	149	646	79	342	113·8	+3·5	−20·4	− 8·5
118·394 C	155	703	81	366	114·9	+4·8	−20·2	+ 3·2
119·511 G	145	796	80	438	115·8	+5·8	−20·1	+18·8
120·372 G	158	818	95	491	116·1	+6·2	−20·1	+30·5
121·552 G	141	726	106	544	116·4	+6·7	−19·8	+46·4
122·404 G	114	574	111	557	117·1	+7·5	−19·7	+58·4
123·532 G	59	368	100	626	116·7	+7·3	−19·7	+73·2
124·334 G	18	136	79	597	117·7	...	−19·6	+84·5

Spot *b*.

116·417 G	72	493	45	311	103·0	0·0	−21·1	−34·8
117·595 G	111	683	61	376	102·7	−0·2	−21·2	−19·6
118·394 C	116	793	61	420	102·5	−0·2	−21·6	− 9·2
119·511 G	192	1044	102	553	102·7	+0·1	−21·5	+ 5·7
120·372 G	115	617	63	339	102·3	−0·2	−21·7	+16·7
121·552 G	54	216	33	134	102·2	−0·1	−22·2	+32·2
122·404 G	18	136	13	98	102·6	+0·4	−22·2	+43·9

LEDGER I.—RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

No. **1198**. Group 12327—*continued.*

Spot *c*.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ Spots	Corrected Area Whole	Corrected Area Umbræ Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
117·595 G	77	504	41	267	108·7	0·0	−20·4	−13·6
118·394 C	88	504	46	262	110·0	+1·4	−21·1	− 1·7
119·511 G	63	375	34	203	110·1	+1·7	−21·0	+13·1
120·372 G	77	484	44	276	110·0	+1·7	−21·0	+24·4
121·552 G	68	336	46	225	109·1	+0·9	−20·4	+39·1
122·404 G	45	247	36	200	109·3	+1·3	−20·3	+50·6
123·532 G	27	177	32	207	107·9	0·0	−20·1	+64·4
124·334 G	25	213	48	405	108·4	+0·6	−20·7	+75·2

Group 12359. May 20–June 1. A large stable regular spot, *a* of Group 12327, with one or two small companions northwards on May 27–29.

139·328 G	36	217	81	488	117·9	+10·6	−19·6	−77·0
140·421 G	96	447	108	501	118·0	+10·9	−19·7	−62·5
141·421 G	121	602	97	482	117·9	+10·9	−19·6	−49·3
142·367 G	155	746	102	492	117·7	+10·9	−19·6	−37·0
143·408 G	173	816	99	465	117·6	+10·9	−19·7	−23·3
144·333 G	173	885	93	478	117·5	+11·0	−19·6	−11·2
145·538 G	173	805	92	427	117·6	+11·2	−19·5	+ 4·8
146·383 G	178	836	97	459	117·3	+11·0	−19·3	+15·7
147·326 G	147	751	88	450	117·3	+11·2	−19·5	+28·2
148·356 G	126	613	89	434	117·1	+11·1	−19·4	+41·6
149·311 G	119	518	107	466	117·0	+11·1	−19·7	+54·2
150·336 G	55	279	75	382	116·8	+11·1	−19·8	+67·5
151·334 G	27	128	82	388	116·2	...	−20·1	+80·1
Means ...	...	...	94	460	117·5	...	−19·6	...

Group 12396. June 17–29. A stable regular spot slowly diminishing—probably *a* of Group 12327, 3rd appearance.

167·335 G	30	163	54	293	112·3	+8·9	−22·0	−72·0
168·435 G	53	288	55	300	111·6	+8·4	−22·3	−58·1
169·381 G	69	375	55	296	111·2	+8·1	−22·0	−46·0
170·497 G	83	458	53	293	110·6	+7·7	−22·1	−31·8
171·333 G	94	444	55	262	110·2	+7·4	−21·9	−21·2
172·339 G	81	462	45	254	109·7	+7·0	−21·8	− 8·3
173·345 G	97	485	53	267	109·2	+6·7	−22·0	+ 4·5
174·396 C	81	394	47	229	108·7	+6·3	−22·1	+17·9
175·368 G	72	323	46	207	108·4	+6·1	−22·4	+30·4
176·472 G	53	275	41	214	107·9	+5·8	−22·3	+44·6
177·315 G	44	240	44	238	107·7	+5·7	−22·4	+55·5
178·335 G	21	127	33	201	107·6	+5·7	−22·4	+68·9
179·331 G	9	32	40	140	107·4	...	−22·1	+81·9
Means ...	...	...	48	254	109·6	...	−22·1	...

No. **1198**—*continued.*

Group 12447. July 14–26. A regular spot of remarkable stability; probably the fourth appearance of *a* of Group 12327.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ Spots	Corrected Area Whole	Corrected Area Umbræ Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
194·343 G	7	23	37	122	104·3	...	−21·5	−82·5
195·387 G	14	74	23	123	104·0	+4·5	−21·2	−69·0
196·341 G	28	124	29	130	103·3	+3·9	−21·3	−57·1
197·415 G	32	152	25	117	103·0	+3·8	−21·3	−43·2
198·418 G	32	166	21	108	102·7	+3·6	−21·3	−30·2
199·336 G	41	218	24	129	102·3	+3·3	−21·0	−18·4
200·338 G	41	225	23	126	102·1	+3·3	−21·1	− 5·4
201·369 G	39	225	22	126	101·7	+3·0	−21·2	+ 7·9
202·646 G	28	205	17	125	101·0	+2·5	−20·8	+24·1
203·511 C	27	178	19	123	100·8	+2·4	−20·9	+35·3
204·339 G	28	143	23	117	100·4	+2·1	−21·1	+45·9
205·362 G	18	110	20	124	100·2	+2·1	−21·3	+59·2
206·431 G	14	55	29	113	99·4	+1·4	−21·2	+72·5
Means ...	...	...	23	122	101·7	...	−21·1	...

No. **1199**. Latitude −14°·4.

Group 12349 in Rotation 1119.
" 12385 " " 1120.
" 12426 " " 1121.

Group 12349. May 14–27. An extensive stream containing many components which are usually very variable from day to day. There is, however, a relatively stable regular spot, *b*, at the end of the stream. The leader, *a*, begins as a smallish regular spot but coalesces on May 21–22 with other spot nuclei to form a large composite spot.

133·391 G	9	50	(22	120	195·3	...	−15·7)	−78·2
134·390 C	91	557	145	932	188·4	0·0	−15·3	−71·8
135·392 C	157	1023	155	1021	187·3	−1·1	−15·1	−59·7
136·379 G	257	1989	190	1474	187·6	−0·9	−15·0	−46·3
137·352 G	342	2337	209	1423	188·4	−0·1	−15·2	−32·7
138·452 C	424	2471	231	1339	188·4	−0·1	−15·4	−18·1
139·328 G	416	2209	215	1143	188·9	+0·4	−15·1	− 6·0
140·421 G	486	2838	253	1484	189·9	+1·3	−15·2	+ 9·4
141·421 G	342	2551	192	1438	190·4	+1·8	−15·0	+23·2
142·367 G	336	2106	213	1345	190·8	+2·2	−15·5	+36·1
143·408 G	253	1473	207	1193	190·9	+2·2	−15·2	+50·0
144·333 G	141	884	154	985	190·2	+1·5	−15·8	+61·5
145·538 G	67	281	193	860	189·0	+0·3	−15·4	+76·2
146·383 G	14	39	(33	92	179·0	...	−16·4)	+77·4
Means ...	...	...	196	1220	189·2	...	−15·3	...

LEDGER I.—RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

No. **1199.** Group 12349—*continued.*

Spot *a.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
133·391 G	9	50	22	120	195·3	0·0	−15·7	−78·2
134·390 C	42	203	49	238	195·8	+0·5	−15·7	−64·4
135·392 C	44	219	36	177	196·2	+0·8	−15·6	−50·8
136·379 G	52	310	34	202	196·2	+0·8	−15·8	−37·7
137·352 G	59	303	33	170	196·6	+1·2	−15·7	−24·5
138·452 C	53	284	28	148	196·2	+0·8	−15·8	−10·3
139·328 G	41	301	21	157	196·5	+1·0	−16·0	+ 1·6
140·421 G	50	278	27	150	196·8	+1·3	−15·8	+16·3
141·421 G	146	951	86	561	195·9	+0·4	−15·1	+28·7
142·367 G	128	686	88	473	196·4	+0·8	−15·3	+41·7
143·408 G	132	686	119	617	196·3	+0·7	−15·0	+55·4
144·333 G	59	383	80	521	196·8	+1·2	−15·3	+68·1
145·538 G	23	119	110	570	196·8	...	−15·1	+84·0

Spot *b.*

136·379 G	43	255	35	209	182·4	0·0	−15·8	−51·5
137·352 C	73	333	48	220	182·4	0·0	−15·8	−38·7
138·452 C	71	433	40	242	181·9	−0·6	−15·5	−24·6
139·328 G	87	429	46	227	182·0	−0·5	−15·4	−12·9
140·421 G	87	449	44	229	181·7	−0·8	−15·5	+ 1·2
141·421 G	82	424	43	225	181·2	−1·3	−15·5	+14·0
142·367 G	78	472	44	269	180·6	−2·0	−16·3	+25·9
143·408 G	57	333	38	223	180·5	−2·1	−16·6	+39·6
144·333 G	41	223	34	183	179·9	−2·7	−16·6	+51·2
145·538 G	18	89	23	115	179·3	−3·4	−16·4	+66·5
146·383 G	14	39	33	92	179·0	−3·7	−16·4	+77·5

Group 12385. June 11–23. One or two small spots, *f* Group 12383, developing rapidly into a very large stream, whose axis is inclined 32° to the sun's equator, when the group is on the central meridian. The leader, *a*, is a regular spot with a double umbra at first. The follower, *b*, also becomes regular in outline.

161·329 G	2	5	4	11	187·2	−2·0	−15·9	−75·6
162·402 C	17	76	19	83	188·8	−0·4	−15·8	−60·8
163·394 C	103	417	82	333	187·5	−1·7	−15·2	−48·9
164·417 G	248	1428	160	923	187·1	−2·2	−15·7	−35·8
165·370 G	384	1775	217	1009	186·7	−2·6	−15·3	−23·6
166·358 G	384	1985	202	1045	188·7	−0·6	−14·4	− 8·5
167·335 G	524	2790	274	1458	188·7	−0·7	−13·9	+ 4·4
168·435 G	416	2227	232	1236	189·7	+0·3	−13·1	+20·0
169·381 G	435	2021	272	1266	188·9	−0·5	−13·7	+31·7
170·497 G	304	1488	238	1175	190·0	+0·6	−13·1	+47·6
171·333 G	196	1109	205	1174	190·5	+1·0	−13·0	+59·1
172·339 G	110	534	220	1050	189·9	+0·4	−13·5	+71·9
173·345 G	23	109	(73	345	184·1	...	−17·1)	+79·4
Means ...	...	...	177	897	188·6	...	−14·4	...

No. **1199.** Group 12385—*continued.*

Spot *a.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
162·402 C	13	49	14	51	189·8	0·0	−14·8	−59·8
163·394 C	54	216	41	164	189·6	−0·2	−13·8	−46·8
164·417 G	64	382	39	233	191·1	+1·2	−13·0	−31·8
165·370 G	97	446	52	241	192·7	+2·8	−12·2	−17·6
166·358 G	113	575	58	293	193·5	+3·6	−11·9	− 3·7
167·335 G	179	851	93	443	194·0	+4·1	−11·9	+ 9·7
168·435 G	175	810	100	462	194·8	+4·8	−11·7	+25·1
169·381 G	159	860	105	568	195·8	+5·8	−11·5	+38·6
170·497 G	131	704	114	612	196·2	+6·2	−11·6	+53·8
171·333 G	83	506	102	622	196·4	+6·3	−11·8	+65·0
172·339 G	62	286	156	721	195·9	+5·8	−12·1	+77·9

Spot *b.*

162·402 C	4	27	5	32	186·2	0·0	−17·5	−63·4
163·394 C	49	201	41	169	185·1	−1·1	−17·1	−51·3
164·417 G	184	1046	121	690	185·4	−0·9	−17·1	−37·5
165·370 G	161	782	95	461	184·4	−1·9	−18·0	−25·9
166·358 G	138	787	75	425	184·1	−2·2	−17·6	−13·1
167·335 G	152	702	81	372	184·0	−2·3	−17·8	− 0·3
168·435 G	122	612	67	337	184·1	−2·3	−17·5	+14·4
169·381 G	110	474	66	284	184·1	−2·3	−17·9	+26·9
170·497 G	69	331	49	235	183·9	−2·5	−17·8	+41·5
171·333 G	51	244	45	215	184·0	−2·5	−17·8	+52·6
172·339 G	25	139	33	182	183·7	−2·8	−17·6	+65·7
173·345 G	14	72	42	218	184·1	−2·4	−17·4	+79·4

Group 12426. July 7–18. A slowly diminishing regular spot—*a* of Group 12385.

187·596 G	16	83	40	209	198·8	+8·3	−13·8	−77·3
188·339 G	23	139	32	195	198·7	+8·1	−13·5	−67·6
189·414 C	45	282	40	251	198·4	+7·8	−13·5	−53·6
190·435 G	35	249	24	169	198·8	+8·2	−13·4	−39·7
191·299 G	46	247	28	148	198·6	+8·0	−13·4	−28·5
192·391 C	49	276	26	149	198·3	+7·6	−13·4	−14·3
193·458 G	49	284	26	151	198·2	+7·5	−13·6	− 0·3
194·343 G	42	213	23	115	198·0	+7·3	−13·7	+11·2
195·387 G	32	138	19	80	197·9	+7·1	−13·5	+24·9
196·341 G	26	83	18	56	198·5	+7·7	−13·9	+38·1
197·415 G	7	39	6	34	198·2	+7·4	−13·9	+52·0
198·418 G	5	14	7	18	198·5	+7·7	−14·2	+65·6
Means ...	...	...	24	131	198·4	...	−13·6	...

LEDGER I.—RECURRENT GROUPS of SUN SPOTS for the YEAR 1937.—*continued.*

No. **1200.** Latitude −16°·5.

Group 12370 in Rotation 1119.
" 12405 " " 1120.

Group 12370. June 2–7. A smallish stream of unstable spots.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ Spots	Corrected Area Whole	Corrected Area Umbræ Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d								
152·407 G	7	30	4	16	31°·8	0°·0	−17°·2	+ 9°·9
153·332 G	14	41	8	23	32·1	+0·3	−16·9	+22·5
154·339 G	23	105	15	67	30·8	−1·0	−17·6	+34·5
155·366 G	14	48	11	38	31·8	+0·1	−17·0	+49·1
156·378 G	29	112	34	133	33·1	+1·4	−16·3	+63·8
157·333 G	21	95	48	225	33·6	+1·9	−16·1	+76·9
Means ...	...	...	20	84	32·2	...	−16·8	...

Group 12405. June 22–July 4. A spot whose regular outline is modified by a "bridge" crossing the upper half of the spot and separating a portion of the main umbra. There is a clockwise rotation of the spot that is most marked between June 26 and 30.

172·339 G	23	136	58	343	40·6	+9·2	−17·0	−77·4
173·345 G	54	252	66	308	40·6	+9·2	−16·9	−64·1
174·396 C	58	309	48	256	40·8	+9·4	−16·7	−50·0
175·368 G	83	407	56	273	40·7	+9·4	−16·3	−37·3
176·472 G	92	448	52	255	40·4	+9·1	−16·2	−22·9
177·315 G	83	476	45	257	40·4	+9·1	−15·9	−11·8
178·335 G	97	471	51	250	40·1	+8·8	−15·9	+ 1·4
179·331 G	74	346	41	190	40·2	+8·9	−16·0	+14·7
180·411 C	54	273	33	167	40·3	+9·1	−15·8	+29·1
181·342 G	47	249	34	177	40·1	+8·9	−16·1	+41·2
182·320 C	38	175	35	159	40·1	+8·9	−15·6	+54·2
183·375 G	23	106	34	156	40·3	+9·1	−15·9	+68·3
184·364 C	9	47	32	170	39·6	...	−15·8	+80·7
Means ...	...	...	46	233	40·4	...	−16·2	...

No. **1201.** Latitude +13°·6.

Group 12372 in Rotation 1120.
" 12414 " " 1121.

Group 12372. June 2–15. A large regular spot with a number of companions that die out as the west limb is approached.

152·407 G	5	25	(30	217	295·7	...	+11·5)	−86·2
153·332 G	55	282	123	615	294·4	0·0	+11·2	−75·2
154·339 G	101	588	111	667	293·4	−1·0	+11·5	−62·9
155.366 G	153	817	121	639	293·8	−0·7	+11·2	−48·9
156·378 G	189	898	118	556	295·1	+0·6	+11·3	−34·2
157·333 G	222	1007	123	557	294·6	0·0	+11·2	−22·1

No. **1201.** Group 12372—*continued.*

d								
158·348 G	166	860	86	448	294°·3	−0°·3	+11°·9	− 8°·9
159·338 G	148	784	76	399	294·3	−0·4	+12·4	+ 4·2
160·402 G	147	745	80	402	294·1	−0·6	+12·7	+18·0
161·329 G	118	598	70	354	294·2	−0·6	+13·0	+30·4
162·402 C	80	390	58	281	294·1	−0·7	+13·5	+44·5
163·394 C	58	328	55	312	293·9	−1·0	+13·6	+57·5
164·417 G	28	152	44	239	293·9	−1·0	+13·8	+71·0
165·370 G	12	58	49	236	293·2	...	+13·8	+82·9
Means ...	...	...	89	456	294·2	...	+12·3	...

Group 12414. June 30–July 5. A small spot with companions for the first few days.

180·411 C	9	27	24	72	291·7	−3·9	+13·8	−79·5
181·342 G	16	58	20	74	292·1	−3·6	+15·2	−66·8
182·320 C	22	112	19	96	292·2	−3·5	+15·4	−53·7
183·375 G	18	65	12	44	291·2	−4·6	+15·1	−40·8
184·364 C	13	54	8	31	291·0	−4·8	+14·9	−27·9
185·427 C	4	18	2	10	290·9	−5·0	+14·7	−13·9
Means ...	...	...	14	54	291·5	...	+14·8	...

No. **1202.** Latitude +10°·1.

Group 12380 in Rotation 1120.
" 12424, 12431 " " 1121.
" 12470 " " 1122.

Group 12380. June 9–21. A large regular spot with occasional companions: a small nucleus becomes detached from the southern part of the parent spot on June 17.

159·338 G	23	110	88	420	207·6	...	+10·2	−82·5
160·402 G	60	347	83	482	207·4	0·0	+10·4	−68·7
161·329 G	122	621	111	565	207·5	0·0	+10·4	−56·3
162·402 C	198	1021	136	696	207·4	−0·2	+10·5	−42·2
163·394 C	161	1008	93	585	207·3	−0·4	+10·7	−29·1
164·417 G	221	1132	117	600	207·6	−0·2	+10·7	−15·3
165·370 G	207	1173	106	598	207·8	−0·1	+10·4	− 2·5
166·358 G	267	1375	139	715	207·8	−0·3	+10·3	+10·6
167·335 G	214	1304	118	717	208·0	−0·2	+10·2	+23·7
168·435 G	189	906	123	589	208·4	+0·1	+10·3	+38·7
169·381 G	129	653	104	529	208·6	+0·2	+10·3	+51·4
170·497 G	87	428	110	539	209·0	+0·5	+10·4	+66·6
171·333 G	37	212	83	477	208·8	+0·2	+10·4	+77·4
Means ...	...	...	110	591	208·0	...	+10·4	...

LEDGER I.—RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

No. **1202**—*continued.*

Group 12424. July 6–18. A stable regular spot which becomes almost absorbed by a newly developed Group 12431.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ Spots	Corrected Area Whole	Corrected Area Umbræ Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d								
186·510 C	22	105	57	272	211°·2	+0°·9	+10°·9	−79°·3
187·596 G	74	273	84	311	211·9	+1·5	+10·9	−64·2
188·339 G	77	400	67	346	211·4	+0·9	+10·8	−54·9
189·414 C	81	484	53	319	211·4	+0·8	+11·0	−40·6
190·435 G	99	545	55	305	211·6	+0·9	+11·0	−26·9
191·299 G	102	554	53	288	211·5	+0·7	+11·2	−15·6
192·391 C	90	627	45	314	210·9	0·0	+11·2	− 1·7
193·458 G	92	617	48	321	210·9	−0·1	+11·1	+12·4
194·343 G	88	494	48	272	210·7	−0·4	+11·1	+23·9
195·387 G	69	363	43	229	210·2	−1·0	+11·1	+37·2
196·341 G	69	276	53	213	210·2	−1·1	+11·0	+49·8
197·415 G	32	170	36	189	209·8	−1·7	+11·1	+63·6
198·418 G	14	78	30	169	210·3	−1·3	+11·3	+77·4
Means ...	...	...	52	272	210·9	...	+11·1	...

Group 12431. July 9–18. A stream of active spots developing closely *sf* Group 12424. It is interesting to note the drift of the leader spot, *a*, past the regular spot of Group 12424.

189·414 C	35	181	24	127	207·6	0·0	+ 9·0	−44·4
190·435 G	129	621	74	358	208·2	+0·5	+ 8·6	−30·3
191·299 G	180	948	97	507	208·4	+0·6	+ 8·6	−18·7
192·391 C	204	1012	103	511	208·8	+0·9	+ 8·6	− 3·8
193·458 G	148	836	76	430	208·8	+0·8	+ 8·6	+10·3
194·343 G	143	906	78	491	208·5	+0·4	+ 9·0	+21·7
195·387 G	133	772	83	480	208·5	+0·2	+ 9·7	+35·5
196·341 G	81	548	64	417	209·6	+1·2	+10·1	+49·2
197·415 G	32	269	37	298	209·4	+0·9	+10·4	+63·2
198·418 G	14	117	29	249	209·7	+1·1	+10·7	+76·8
Means ...	...	...	66	387	208·8	...	+ 9·3	...

Spot *a*.

189·414 C	31	152	21	105	208·5	0·0	+ 8·9	−43·5
190·435 G	74	418	42	238	209·3	+0·7	+ 8·6	−29·2
191·299 G	111	624	59	331	209·7	+1·0	+ 8·3	−17·4
192·391 C	101	497	50	248	211·3	+2·5	+ 8·0	− 1·3
193·458 G	83	416	43	216	212·8	+3·9	+ 8·2	+14·3
194·343 G	74	342	41	192	213·5	+4·5	+ 8·3	+26·7
195·387 G	64	271	42	179	213·5	+4·3	+ 8·6	+40·5
196·341 G	44	175	37	145	213·4	+4·1	+ 8·9	+53·0
197·415 G	14	94	18	118	213·1	+3·7	+ 9·3	+66·9
198·418 G	5	46	13	119	212·3	+2·8	+ 9·7	+79·4

No. **1202**—*continued.*

Group 12470. Aug. 3–4. One or two tiny spots, probably the remnants of *a* of Group 12431.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ Spots	Corrected Area Whole	Corrected Area Umbræ Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d								
214·361 G	7	14	10	21	210°·8	−0°·4	+ 9°·4	−71°·2
215·337 G	7	14	7	13	210·8	−0·6	+ 9·8	−58·3
Means ...	...	...	8	17	210·8	...	+ 9·6	...

No. **1203**. Latitude +19°·7.

Group 12386 in Rotation 1120.
„ 12417 „ „ 1121.

Group 12386. June 12–17. A stream of normal type of rapid initial development. The leader, a regular spot, alone remains on June 17.

162·402 C	89	317	49	174	262·5	0·0	+21·8	+12·9
163·394 C	80	455	47	268	262·4	0·0	+21·7	+26·0
164·417 G	74	388	52	270	263·0	+0·7	+21·5	+40·1
165·370 G	57	248	50	224	263·5	+1·3	+21·0	+53·2
166·358 G	23	167	32	234	264·5	+2·4	+20·6	+67·3
167·335 G	9	37	31	127	265·9	...	+19·7	+81·6
Means ...	...	...	46	234	263·2	...	+21·3	...

Group 12417. July 2–12. A small regular spot, probably the leader of Group 12386, showing marked persistence.

182·320 C	4	18	12	53	264·5	...	+17·5	−81·4
183·375 G	9	28	12	38	263·6	+3·3	+17·7	−68·4
184·364 C	9	36	8	33	263·1	+2·9	+17·9	−55·8
185·427 C	13	58	9	40	262·5	+2·4	+18·1	−42·3
186·510 C	16	45	9	27	261·9	+1·9	+18·3	−28·6
187·596 G	18	65	10	34	261·6	+1·7	+18·3	−14·5
188·339 G	12	46	6	24	260·8	+1·0	+18·3	− 5·5
189·414 C	13	34	7	18	260·6	+0·9	+18·2	+ 8·6
190·435 G	14	21	8	12	260·6	+1·0	+18·1	+22·1
191·299 G	9	18	6	11	260·6	+1·1	+18·2	+33·5
192·391 C	4	9	3	7	260·4	+1·0	+18·2	+47·8
Means ...	...	...	8	24	261·6	...	+18·1	...

No. **1204**. Latitude −18°·2.
Group 12420 in Rotation 1121.
„ 12467 „ „ 1122.

Group 12420. July 5–16. A typical stream, the leader surviving as a large regular spot.

LEDGER I.—RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

No. **1204**. Group 12420—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ Spots	Corrected Area Whole	Corrected Area Umbræ Spots	Longitude	Proper Motion	Latitude	Long. from C.M.
d								
185·427 C	38	280	72	521	232°·9	0°·0	−18°·2	−71°·9
186·510 C	72	565	74	582	233·1	+0·3	−18·2	−57·4
187·596 G	127	613	96	460	232·8	0·0	−18·1	−43·3
188·339 G	149	747	98	488	232·5	−0·2	−17·8	−33·8
189·414 C	157	921	91	532	232·2	−0·4	−17·8	−19·8
190·435 G	155	755	85	412	232·0	−0·6	−17·9	− 6·5
191·299 G	146	857	80	465	232·4	−0·1	−17·9	+ 5·3
192·391 C	120	692	68	397	231·6	−0·9	−17·2	+19·0
193·458 G	102	629	67	412	232·3	−0·1	−17·8	+33·8
194·343 G	81	444	64	349	232·5	+0·2	−17·7	+45·7
195·387 G	46	253	51	278	232·8	+0·5	−17·3	+59·8
196·341 G	25	156	48	296	232·8	+0·6	−17·8	+72·4
Means ...	...	...	74	433	232·5	...	−17·8	...

Group 12467. Aug. 1–11. A small regular spot diminishing to a speck.

212·443 G	9	27	25	76	230·1	−1·1	−18·3	−77·2
213·464 G	18	69	24	91	229·6	−1·5	−18·2	−64·2
214·361 G	27	101	25	93	229·5	−1·6	−18·0	−52·5
215·337 G	30	126	22	91	229·4	−1·6	−17·9	−39·7
216·413 C	28	115	18	70	228·8	−2·1	−18·1	−26·0
217·333 G	21	94	12	54	228·9	−2·0	−18·1	−13·8
218·358 G	14	69	8	38	228·3	−2·5	−18·4	− 0·8
219·382 G	14	41	8	23	228·2	−2·5	−18·4	+12·6
210·332 G	9	27	5	16	228·1	−2·6	−18·7	+25·1
211·331 G	7	23	5	16	226·8	−3·8	−19·6	+37·0
212·445 G	0	7	0	6	226·5	−4·0	−19·9	+51·4
Means ...	...	...	14	52	228·6	...	−18·5	...

No. **1205**. Latitude +23°·8.

Group 12423 in Rotation 1121.
,, 12462 ,, ,, 1122.

Group 12423. July 6–15. A few small spots on July 6 developing rapidly into a large compact stream of normal type and remaining unusually constant in area. *a* and *b* are the leader and follower spots respectively.

186·510 C	18	81	12	53	255·6	0·0	+24·1	−34·9
187·596 G	185	760	103	424	258·2	+2·9	+23·0	−17·9
188·339 G	321	1675	171	896	257·3	+2·1	+23·0	− 9·0
189·414 C	425	2283	225	1210	256·8	+1·9	+23·1	+ 4·8
190·435 G	446	2187	249	1223	256·2	+1·5	+23·4	+17·7
191·299 G	328	2091	200	1272	255·4	+0·9	+23·4	+28·3
192·391 C	262	1689	188	1211	255·5	+1·3	+23·7	+42·9
193·458 G	204	1277	196	1234	255·6	+1·6	+23·6	+57·1

No. **1205**. Group 12423—*continued.*

d								
194·343 G	139	884	193	1211	254°·5	+0°·7	+23°·9	+67°·7
195·387 G	52	371	153	1067	254·6	...	+23·2	+81·6
Means ...	...	...	171	970	256·1	...	+23·5	...

Spot *a*.

187·596 G	109	453	60	249	260·4	0·0	+22·2	−15·7
188·339 G	178	795	94	421	260·5	+0·3	+22·3	− 5·8
189·414 C	179	1017	95	539	260·8	+0·8	+22·3	+ 8·8
190·435 G	171	864	97	492	261·0	+1·3	+22·5	+22·5
191·299 G	146	829	92	522	260·7	+1·2	+22·5	+33·6
192·391 C	108	654	82	497	259·8	+0·5	+22·6	+47·2
193·458 G	102	686	107	720	259·3	+0·3	+22·5	+60·8
194·343 G	65	383	103	605	258·6	−0·2	+22·5	+71·8
195·387 G	18	113	69	432	256·7	...	+22·8	+83·7

Spot *b*.

187·596 G	76	307	43	175	255·1	0·0	+23·9	−21·0
188·339 G	143	880	77	475	254·3	−0·6	+23·6	−12·0
189·414 C	246	1266	130	671	253·2	−1·5	+23·5	+ 1·2
190·435 G	229	1023	126	563	252·8	−1·6	+23·4	+14·3
191·299 G	152	1003	90	592	252·5	−1·7	+23·7	+25·4
192·391 C	125	780	85	530	251·9	−2·1	+24·3	+39·3
193·458 G	102	591	89	514	251·6	−2·1	+24·8	+53·1
194·343 G	74	501	90	606	251·9	−1·6	+25·0	+65·1
195·387 G	34	258	84	635	252·2	−1·1	+24·7	+79·2

Group 12462. July 30–Aug. 11. A large spot preceded by a satellite, *a*, which has broken up into three parts by August 3. Shortly afterwards the parent spot begins to decrease.

210·122 K	11	98	(40	354	254·4	...	+22·5)	−83·7
211·123 K	97	634	166	1104	250·3	+0·5	+24·6	−74·5
212·443 G	147	1126	136	1045	250·4	+0·9	+24·5	−56·9
213·464 G	229	1447	163	1036	249·9	+0·6	+24·2	−43·9
214·361 G	236	1834	145	1132	250·2	+1·1	+23·7	−31·8
215·337 G	229	1633	127	911	250·3	+1·4	+24·0	−18·8
216·413 C	177	1458	94	768	249·9	+1·3	+23·6	− 4·9
217·333 G	168	1289	90	683	249·2	+0·8	+23·9	+ 6·5
218·358 G	136	779	75	430	246·8	−1·3	+24·1	+17·7
219·382 G	69	469	42	286	246·6	−1·3	+23·9	+31·0
220·332 G	48	169	34	120	246·6	−1·1	+23·6	+43·6

LEDGER I.—RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

No. **1205.** Group 12462—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ Spots	Corrected Area Whole	Corrected Area Umbræ Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d								
221·331 G	18	76	17	70	246°·5	−1°·0	+24°·0	+56°·7
222·445 G	5	18	8	27	246·6	−0·6	+24·3	+71·5
Means ...	...	...	91	634	248·6	...	+24·0	...

Spot *a* (*a* of Group 12423).

211·123 K	43	227	63	331	254·0	−0·9	+22·6	−70·8
212·443 G	60	357	52	307	254·4	−0·2	+22·8	−53·9
214·464 G	73	353	50	240	253·0	−1·3	+22·8	−40·8
214·361 G	66	387	39	228	252·9	−1·2	+23·1	−29·1
215·337 G	69	238	38	131	252·4	−1·5	+23·2	−16·7

No. **1206.** Latitude −29°·9.

Group 12439 in Rotation 1121.
,, 12466 ,, ,, 1122.

Group 12439. July 12–16. A group developing near the west limb.

192·391 C	4	9	3	6	231·4	0·0	−30·9	+18·8
193·458 G	0	0	0	0	...	...	...	...
194·343 G	7	16	7	14	233·4	+2·9	−29·9	+46·6
195·387 G	14	60	20	88	236·8	+6·8	−29·9	+63·8
196·341 G	14	53	37	149	235·2	+5·6	−30·2	+74·8
Means ...	...	...	13	51	234·2	...	−30·2	...

Group 12466. Aug. 1–7. A decreasing regular spot disappearing as a close pair of nuclei. A cluster of tiny spots south-precedes on August 4.

212·443 G	5	27	(15	79	232·3	...	−29·9)	−75·0
213·464 G	26	169	37	240	231·8	+10·0	−30·1	−62·0
214·361 G	36	172	35	170	232·2	+10·8	−29·5	−49·8
215·337 G	32	169	25	134	231·3	+10·4	−29·5	−37·8
216·413 C	27	80	18	54	230·0	+ 9·6	−29·5	−24·8
217·333 G	18	37	11	23	229·5	+ 9·5	−29·3	−13·2
218·358 G	9	18	5	11	228·8	+ 9·2	−29·1	− 0·3
Means ...	...	...	22	105	230·6	...	−29·5	...

No. **1207.** Latitude +12°·5.

Group 12441 in Rotation 1121.
,, 12486 ,, ,, 1122.

No. **1207**—*continued.*

Group 12441. July 12–24. A stream in which the leader grows and changes from its regular outline to a very complex formation. After July 23, when it has considerably decreased, it reverts however to a regular shape. The train, never very conspicuous, has practically died out by July 20. Extensive faculæ accompany the group.

d								
192·391 C	13	72	(41	227	131°·0	° ...	+13°·5)	−81°·6
193·458 G	55	254	75	352	129·6	0·0	+13·5	−68·9
194·343 G	73	610	70	569	129·2	−0·5	+13·2	−57·6
195·387 G	132	938	92	652	129·7	0·0	+13·5	−43·3
196·341 G	173	1215	103	713	129·6	−0·2	+13·4	−30·8
197·415 G	212	1247	111	652	130·8	+0·9	+13·5	−15·4
198·418 G	221	1656	112	844	130·3	+0·4	+12·9	− 2·6
199·336 G	235	1907	120	972	130·6	+0·6	+13·7	+ 9·9
200·338 G	136	1242	86	683	131·4	+1·3	+13·7	+23·9
201·369 G	141	1081	89	680	131·2	+1·1	+13·5	+37·4
202·646 G	108	809	90	685	130·4	+0·2	+13·3	+53·5
203·511 C	62	544	73	657	131·6	+1·3	+13·3	+66·1
204·339 G	32	299	69	649	131·9	+1·6	+13·7	+77·4
Means ...	...	...	91	676	130·5	...	+13·4	...

Group 12486. Aug. 9–20. A variable stream of highly active spots. On August 15, the components are so crowded together as to make almost one long spot. A few days later only the leader and follower spots are left with a wide gap between them. Complete continuity with Group 12441 in the previous rotation is uncertain but probable.

220·332 G	9	23	14	35	131·4	0·0	+14·0	−71·6
221·331 G	25	87	23	79	132·9	+1·4	+12·8	−56·9
222·445 G	57	382	37	248	135·2	+3·6	+11·4	−39·9
223·379 G	110	632	62	354	135·3	+3·7	+11·3	−27·5
224·486 G	229	1365	117	696	136·3	+4·6	+11·3	−11·8
225·397 C	204	1641	102	821	136·4	+4·6	+11·4	+ 0·3
226·314 G	296	2343	153	1211	136·3	+4·5	+10·8	+12·3
227·335 G	383	2145	218	1211	136·5	+4·6	+11·2	+26·1
228·369 G	308	1648	210	1123	137·9	+5·9	+11·2	+41·1
229·453 G	217	1099	194	981	139·2	+7·2	+11·5	+56·7
230·338 G	128	645	180	893	140·7	+8·6	+11·4	+69·9
231·475 G	41	196	(94	444	134·3	...	+11·6)	+78·6
Means ...	...	...	119	696	136·2	...	+11·7	...

No. **1208.** Latitude +32°·8.

Group 12455 in Rotation 1122.
,, 12498 ,, ,, 1123.
,, 12535 ,, ,, 1124.

LEDGER I.—RECURRENT GROUPS of SUN SPOTS for the YEAR 1937.—*continued.*

No. **1208**—*continued.*

Group 12455. July 22–Aug. 5. An immense group whose maximum development takes place on the visible hemisphere. The group comes round the eastern limb as a compact stream of rapidly growing spots. By July 26, there is a very large regular spot, *a*, as the leader and an even bigger complex spot, *b*, as the follower almost linked together by nebulous spots. Three days later, *a* has grown still larger by accretion, but the link of spots between it and *b* has disappeared. By August 2, *a* has regained its regular outline (temporarily lost during growth), but *b* has broken up and is represented on August 4 by two partially-formed spots nearly 5° apart in latitude. Both *a* and *b* are visible separately to the naked eye. This group is one of the two second largest since 1874 when the Greenwich series began, the largest group being No. 9861 in the year 1926. *See* also Group 12553.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d								
202·646 G	62	525	142	1194	358°·7	0°·0	+30°·6	−78°·2
203·511 C	123	1079	161	1464	358·9	+0·7	+30·9	−66·6
204·339 G	276	2100	271	2028	359·7	+2·0	+30·9	−54·8
205·362 G	536	3349	405	2529	358·1	+1·0	+31·4	−42·9
206·431 G	727	4901	469	3179	356·4	−0·1	+32·1	−30·5
207·520 G	881	5265	515	3070	356·4	+0·5	+31·4	−16·1
208·345 G	1049	5840	594	3303	356·6	+1·3	+31·5	− 5·0
209·350 G	975	5565	556	3172	355·1	+0·4	+32·1	+ 6·9
210·122 K	989	5387	583	3176	354·7	+0·3	+31·6	+16·6
211·123 K	740	4558	486	2980	354·3	+0·5	+31·1	+29·5
212·443 G	557	3518	467	2873	354·1	+1·0	+32·0	+46·8
213·464 G	316	2363	367	2567	352·7	+0·2	+32·2	+58·9
214·361 G	183	1333	331	2128	353·6	+1·6	+31·6	+71·6
215·337 G	50	527	(86	906	342·7	...	+34·1)	+73·6
216·413 C	24	128	(95	504	340·1	...	+34·1)	+85·3
Means ...	...	...	411	2589	356·1	...	+31·5	...

Spot *a*.

202·646 G	37	322	64	554	3·5	0·0	+29·6	−73·4
203·511 C	76	566	84	628	3·5	+0·5	+29·5	−62·0
204·339 G	147	1233	125	1048	3·3	+0·8	+29·7	−51·2
205·362 G	232	1465	155	982	4·7	+2·8	+29·7	−36·3
206·431 G	288	1709	170	1008	5·4	+4·1	+29·8	−21·5
207·520 G	306	1845	168	1015	5·3	+4·6	+30·1	− 7·2
208·345 G	472	2652	260	1459	4·3	+4·1	+30·1	+ 2·7
209·350 G	453	2556	258	1457	4·3	+4·6	+30·1	+16·1
210·122 K	475	2626	290	1602	4·3	+5·1	+29·9	+26·2
211·123 K	389	2208	272	1546	4·0	+5·4	+30·1	+39·2
212·443 G	307	1640	292	1558	4·0	+6·1	+30·2	+56·7
213·464 G	169	962	242	1376	3·4	+6·1	+30·3	+69·6
214·361 G	87	444	225	1150	2·4	...	+30·1	+80·4

Spot *b*.

203·511 C	47	513	77	836	353·4	0·0	+32·5	−72·1
204·339 G	129	867	146	980	352·4	−0·5	+32·7	−62·1
205·362 G	281	1739	233	1443	352·3	0·0	+32·9	−48·7

No. **1208.** Group 12455. Spot *b*—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d								
206·431 G	389	2295	268	1584	351°·0	−0°·7	+33°·3	−35°·9
207·520 G	460	2650	281	1616	349·3	−1·8	+33·6	−23·2
208·345 G	540	2936	313	1703	348·7	−1·9	+33·7	−12·9
209·350 G	522	3009	298	1715	347·3	−2·7	+33·8	− 0·9
210·122 K	514	2761	293	1574	346·8	−2·8	+34·0	+ 8·7
211·123 K	351	2350	214	1434	346·1	−2·9	+34·5	+21·3
212·443 G	250	1878	175	1315	344·8	−3·5	+34·1	+37·5
213·464 G	147	1401	125	1191	343·9	−3·8	+34·2	+50·1
214·361 G	96	889	106	978	343·2	−4·0	+33·8	+61·2
215·337 G	50	527	86	906	342·7	−3·9	+34·1	+73·6

Group 12498. Aug. 18–Sept. 1. A very large spot with triple umbra (probably *a* of Group 12455) followed by extensive faculæ. From August 24 to 29, the spot is nearly cleft in two, but afterwards consolidates.

229·453 G	5	57	(27	303	354·6	...	+31·9)	−87·9
230·338 G	105	570	219	1191	352·7	+5·0	+32·5	−78·1
231·475 G	198	894	228	1028	351·9	+4·9	+32·8	−63·8
232·475 G	255	1284	217	1091	351·1	+4·7	+32·8	−51·4
233·385 G	308	1553	219	1103	350·3	+4·4	+32·8	−40·2
234·335 G	360	1792	223	1111	349·8	+4·5	+32·7	−28·1
235·335 G	347	1835	201	1064	348·8	+4·0	+32·7	−15·9
236·491 G	358	1924	200	1077	348·1	+4·0	+32·9	− 1·4
237·555 G	374	1790	213	1020	347·2	+3·7	+32·8	+11·8
238·617 G	358	1651	218	1007	346·2	+3·3	+32·5	+24·8
239·363 C	238	1487	157	981	346·2	+3·7	+32·5	+34·7
240·473 G	237	1227	190	982	344·6	+2·8	+32·9	+47·7
241·400 G	169	990	172	1010	344·1	+2·8	+33·0	+59·5
242·385 G	104	622	156	933	343·0	+2·3	+32·9	+71·4
243·340 G	50	329	146	961	341·6	...	+33·1	+82·6
Means ...	...	...	201	1046	348·0	...	+32·8	...

Group 12535. Sept. 17–30. A stable regular spot, probably 3rd appearance of *a* of Group 12455.

259·423 G	27	140	56	293	328·4	−2·6	+33·8	−78·2
260·344 G	40	216	50	270	328·1	−2·3	+33·8	−66·3
261·391 C	61	290	54	258	327·4	−2·4	+33·8	−53·2
262·380 G	81	364	59	266	326·6	−2·7	+34·1	−41·0
263·401 C	56	356	35	224	325·9	−2·8	+34·2	−28·2
264·340 G	86	410	51	242	325·0	−3·1	+34·3	−16·7
265·354 G	76	398	43	223	324·0	−3·6	+34·2	− 4·3
266·342 G	56	356	32	203	322·8	−4·2	+34·5	+ 7·5
267·121 K	67	343	40	202	322·3	−4·3	+34·7	+17·3
268·367 G	49	282	32	186	321·0	−4·9	+34·5	+32·5
269·335 G	36	260	27	198	319·9	−5·4	+34·5	+44·1
270·385 G	22	152	22	149	319·1	−5·6	+34·3	+57·2
271·334 G	22	87	30	117	317·8	−6·3	+34·5	+68·4
272·369 G	9	49	(25	134	317·1	...	+33·9)	+81·4
Means ...	...	...	41	218	323·7	...	+34·2	...

LEDGER I.—RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

No. **1209.** Latitude +29°·9.

Group 12464 in Rotation 1122.
„ 12512 „ „ 1123.

Group 12464. July 31–Aug. 12. A stable regular spot followed by a short train until August 6.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
211·123 K	4	30	(7	49	251·8	...	+29·5)	−73·0
212·443 G	71	373	65	343	252·2	0·0	+30·9	−55·1
213·464 G	101	605	74	446	251·4	−0·3	+31·1	−42·4
214·361 G	119	547	77	349	251·6	+0·3	+31·0	−30·4
215·337 G	110	586	63	335	251·4	+0·5	+30·5	−17·7
216·413 C	138	730	76	400	250·4	0·0	+30·5	− 4·4
217·333 G	82	522	45	287	250·3	+0·3	+30·7	+ 7·6
218·358 G	103	525	60	304	249·4	−0·1	+31·0	+20·3
219·382 G	94	444	61	289	249·1	+0·1	+31·3	+33·5
220·332 G	69	408	53	314	249·1	+0·5	+31·5	+46·1
221·331 G	50	293	50	290	248·1	0·0	+31·5	+58·3
222·445 G	23	174	36	270	247·1	−0·5	+31·5	+72·0
223·379 G	14	78	46	256	246·3	...	+31·3	+83·5
Means ...	...	...	60	330	250·0	...	+31·0	...

Group 12512. Aug. 27–Sept. 7. An irregular stream of partially-formed spots. The leader alone remains on September 7, but the one-day spot *11231* might have been incorporated. Apparently a return of Group 12464, but complete continuity of activity uncertain.

238·617 G	16	121	36	276	242·5	+2·2	+28·5	−78·9
239·363 C	27	277	38	379	242·3	+2·4	+28·9	−69·2
240·473 G	116	620	108	571	241·0	+1·6	+28·4	−55·9
241·400 G	169	1017	126	754	239·9	+0·9	+28·5	−44·7
242·385 G	168	835	108	531	239·1	+0·6	+28·9	−32·5
243·340 G	159	997	93	579	238·2	+0·1	+29·2	−20·8
244·337 G	136	815	75	447	237·5	−0·2	+29·6	− 8·3
245·383 G	103	463	57	253	237·5	+0·3	+30·0	+ 5·5
246·337 G	66	446	37	251	236·7	0·0	+29·5	+17·3
247·369 G	51	188	32	118	237·0	+0·7	+28·9	+31·2
248·324 C	27	145	19	104	234·8	−1·0	+29·9	+41·7
249·382 G	5	7	5	7	239·5	+4·1	+25·5	+60·3
Means ...	...	...	61	356	238·8	...	+28·8	...

No. **1210.** Latitude −11°·7.

Group 12471 in Rotation 1122.
„ 12516 „ „ 1123.

Group 12471. Aug. 4–16. A circular spot apparently quite stable until August 13–14, when a bright "bridge" crosses the spot from north to south, dividing the umbra into two.

No. **1210.** Group 12471—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
215·337 G	41	181	94	416	193·2	0·0	−11·0	−75·9
216·413 C	66	364	75	416	192·8	−0·5	−11·3	−62·0
217·333 G	87	449	71	368	193·2	−0·2	−11·4	−49·5
218·358 G	87	641	57	417	193·0	−0·5	−11·7	−36·1
219·382 G	137	721	78	411	193·0	−0·5	−11·8	−22·6
220·332 G	156	760	84	410	193·0	−0·6	−11·9	−10·0
221·331 G	130	826	69	438	192·6	−1·1	−12·4	+ 2·8
222·445 G	158	792	88	444	193·0	−0·8	−12·4	+17·9
223·379 G	114	660	71	409	193·1	−0·8	−12·5	+30·3
224·486 G	96	639	72	479	192·9	−1·0	−12·5	+44·8
225·397 C	78	533	76	522	192·4	−1·6	−12·9	+56·3
226·314 G	37	311	57	482	193·0	−1·1	−12·7	+69·0
227·335 G	7	64	34	307	192·7	...	−12·1	+82·3
Means ...	...	...	74	434	192·9	...	−12·0	...

Group 12516. Aug. 31–Sept. 6. A small but definite spot.

242·385 G	5	9	13	24	194·3	−1·1	−11·9	−77·3
243·340 G	9	23	11	29	194·9	−0·6	−11·5	−64·1
244·337 G	11	20	9	17	195·0	−0·6	−11·4	−50·8
245·383 G	7	9	5	6	195·0	−0·7	−10·8	−37·0
246·337 G	5	16	3	9	195·2	−0·6	−10·6	−24·2
247·369 G	0	0	0	0	...	...	...	...
248·324 C	0	31	0	16	194·0	−1·9	−12·4	+ 0·9
Means ...	...	...	6	14	194·7	...	−11·4	...

No. **1211.** Latitude +15°·8.

Group 12508 in Rotation 1122.
„ 12530 „ „ 1123.

Group 12508. Aug. 24–29. A small stream represented by two definite spots—leader and follower—on August 27 and 28.

235·335 G	21	55	11	29	19·2	0·0	+15·9	+14·5
236·491 G	5	14	3	8	22·7	+3·5	+15·2	+33·2
237·555 G	36	78	27	58	23·0	+3·8	+15·2	+47·6
238·617 G	48	237	51	257	24·3	+5·1	+14·4	+62·9
237·363 C	38	170	63	284	25·0	+5·8	+14·1	+73·5
240·473 G	7	36	23	111	18·6	...	+16·6	+81·7
Means ...	...	...	31	127	22·8	...	+15·0	...

LEDGER I.—RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

No. **1211**.—*continued.*

Group 12530. Sept. 12–20. A single spot breaking up rapidly. On September 15, two new spots appear close behind.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
254·385 G	0	23	0	83	29·4	...	+17·1	−83·7
255·454 G	18	72	25	99	29·1	+10·0	+17·8	−69·9
256·389 G	11	41	10	38	29·0	+ 9·9	+17·6	−57·7
257·334 G	32	118	24	88	26·1	+ 7·0	+16·6	−48·1
258·360 G	27	207	16	126	26·0	+ 6·9	+16·6	−34·6
259·423 G	49	229	26	123	27·3	+ 8·2	+15·9	−19·3
260·344 G	36	167	18	86	26·6	+ 7·5	+16·4	− 7·8
261·391 C	13	48	7	24	28·8	+ 9·7	+16·5	+ 8·2
262·380 G	9	32	5	17	27·7	...	+15·8	+20·1
Means ...	...	...	16	75	27·6	...	+16·6	...

No. **1212**. Latitude −11°·9.

Group 12510 in Rotation 1123.
„ 12539 „ „ 1124.

Group 12510. Aug. 26–Sept. 4. One or two small spots until August 30; then a small cluster until September 2 when more vigorous spots develop into a stream.

237·555 G	7	32	6	29	281·7	0·0	−11·8	−53·7
238·617 G	5	11	3	7	282·7	+0·9	−11·5	−38·7
239·363 C	0	24	0	14	283·7	+1·9	−11·7	−27·8
240·473 G	9	27	5	15	285·3	+3·4	−11·9	−11·6
241·400 G	18	50	10	26	285·3	+3·3	−12·4	+ 0·7
242·385 G	9	41	5	23	287·4	+5·3	−11·9	+15·8
243·340 G	16	66	10	40	287·2	+5·0	−12·0	+28·2
244·337 G	54	327	38	229	285·5	+3·3	−12·9	+39·7
245·383 G	54	241	50	222	285·6	+3·3	−12·9	+53·6
246·337 G	28	150	40	214	286·0	+3·6	−13·3	+66·6
Means ...	...	...	17	82	285·0	...	−12·2	...

Group 12539. Sept. 20–24. A small regular spot dying out rather quickly.

262·380 G	7	36	15	80	292·6	+8·9	−11·7	−75·0
263·401 C	15	72	17	82	292·6	+8·9	−11·5	−61·5
264·340 G	14	58	11	47	293·2	+9·4	−11·5	−48·5
265·354 G	14	40	9	26	293·1	+9·2	−11·6	−35·2
266·342 G	16	40	9	23	292·8	+8·8	−11·7	−22·5
Means ...	...	...	12	52	292·9	...	−11·6	...

No. **1213**. Latitude +11°·5.

Group 12521 in Rotation 1123.
„ 12555 „ „ 1124.
„ 12591 „ „ 1125.

Group 12521. Sept. 3–15. A large circular spot, *a*, followed at some distance by a nebulous companion. Other spots increase the train during the next few days. After September 10, an offshoot develops on the southern part of *a* but breaks up into a cluster on September 13 and disappears by September 15.

d					°	°	°	°
245·383 G	34	168	(96	474	151·0	...	+11·2)	−81·0
246·337 G	75	370	97	484	151·1	0·0	+11·4	−68·3
247·369 G	128	604	111	534	149·6	−1·6	+11·3	−56·2
248·324 C	161	740	110	503	150·8	−0·5	+11·5	−42·3
249·382 G	182	910	105	524	149·9	−1·5	+11·2	−29·3
250·392 G	220	1058	115	554	149·4	−2·1	+11·0	−16·4
251·402 C	243	1209	121	607	149·3	−2·3	+11·5	− 3·2
252·336 G	258	1221	131	622	149·3	−2·4	+11·3	+ 9·1
253·338 G	239	1564	131	857	150·1	−1·7	+11·2	+23·2
254·385 G	199	1650	125	1037	150·4	−1·5	+11·4	+37·3
255·454 G	149	1006	118	795	150·1	−1·9	+11·7	+51·1
256·389 G	108	660	118	719	150·3	−1·7	+12·1	+63·6
257·334 G	66	262	124	491	149·6	−2·5	+11·7	+75·4
Means ...	...	...	117	644	150·0	...	+11·4	...

Spot *a*.

245·383 G	34	168	96	474	151·0	...	+11·2	−81·0
246·337 G	75	365	97	471	151·4	0·0	+11·4	−68·0
247·369 G	123	554	105	471	151·1	−0·4	+11·3	−54·7
248·324 C	152	700	102	469	150·9	−0·7	+11·5	−42·2
249·382 G	168	842	96	480	151·0	−0·7	+11·3	−28·2
250·392 G	197	927	102	482	150·7	−1·1	+11·3	−15·1
251·402 C	217	1027	108	514	150·8	−1·1	+11·8	− 1·7
252·336 G	226	1094	115	558	150·7	−1·3	+11·6	+10·5
253·338 G	221	1460	122	803	150·5	−1·6	+11·3	+23·6
254·385 G	194	1623	122	1022	150·4	−1·8	+11·4	+37·3
255·454 G	149	1006	118	795	150·1	−2·2	+11·7	+51·1
256·389 G	108	660	118	719	150·3	−2·1	+12·1	+63·6
257·334 G	59	235	114	454	150·2	−2·2	+11·8	+76·0

Group 12555. Sept. 30–Oct. 13. A large active stream with well-defined spots *a* and *b* as leader and follower respectively. Possibly a revival and not a true return of Group 12521.

272·369 G	11	67	(31	189	154·7	...	+11·8)	−81·0
273·342 G	72	380	126	721	148·2	−5·2	+11·4	−74·7
274·400 G	130	728	135	761	147·1	−6·4	+11·0	−61·8
275·384 C	171	985	129	737	148·0	−5·6	+11·0	−48·0

LEDGER I.—RECURRENT GROUPS of SUN SPOTS for the YEAR 1937.—*continued.*

No. **1213.** Group 12555—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ Spots	Corrected Area Whole	Corrected Area Umbræ Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
276·402 G	248	1361	152	834	147·0	−6·7	+10·7	−35·5
277·391 C	222	1469	120	797	147·9	−5·9	+10·7	−21·6
278·398 C	259	1485	132	759	147·4	−6·5	+10·6	− 8·8
279·404 C	265	1428	133	720	147·9	−6·1	+10·0	+ 5·0
280·463 G	277	1396	147	742	147·6	−6·5	+10·3	+18·7
281·387 G	179	999	105	588	147·8	−6·9	+10·4	+31·0
282·447 G	154	803	109	568	147·4	−6·8	+10·3	+44·6
283·377 G	98	509	90	471	147·6	−6·7	+10·7	+57·1
284·394 C	32	219	49	315	147·6	−6·8	+10·6	+70·5
285·609 G	11	67	48	294	145·6	...	+ 9·8	+84·5
Means ...	...	...	119	668	147·6	...	+10·6	...

Spot *a*.

272·369 G	11	67	31	189	154·7	...	+11·8	−81·0
273·342 G	36	161	48	213	154·3	+0·9	+11·7	−68·6
274·400 G	43	224	37	190	154·5	+1·0	+11·8	−54·4
275·384 C	52	311	35	208	154·5	+0·9	+11·8	−41·5
276·402 G	56	317	32	181	154·4	+0·7	+11·4	−28·1
277·391 C	60	367	31	191	154·5	+0·7	+11·4	−15·0
278·398 C	65	356	32	178	154·8	+0·9	+11·5	− 1·4
279·404 C	60	331	31	169	154·8	+0·8	+11·5	+11·9
280·463 G	65	368	36	206	154·6	+0·5	+11·5	+25·7
281·387 G	44	269	28	169	154·6	+0·5	+11·5	+37·8
282·447 G	36	195	29	156	154·4	+0·2	+11·5	+51·6
283·377 G	22	138	24	153	154·3	0·0	+11·7	+63·8
284·394 C	13	56	25	110	154·0	−0·4	+11·4	+76·9

Spot *b*.

273·342 G	25	188	62	462	143·6	− 9·8	+11·0	−79·3
274·400 G	49	320	59	387	142·5	−11·0	+10·8	−66·4
275·384 C	76	393	63	326	142·4	−11·2	+11·0	−53·6
276·402 G	98	578	64	376	142·3	−11·4	+10·9	−40·2
277·391 C	108	737	60	413	142·7	−11·1	+11·2	−26·8
278·398 C	125	782	65	407	143·0	−10·9	+11·2	−13·2
279·404 C	120	654	60	327	143·7	−10·3	+11·0	+ 0·8
280·463 G	125	685	65	356	144·1	−10·0	+11·0	+15·2
281·387 G	104	497	59	283	144·5	− 9·6	+10·9	+27·7
282·447 G	84	484	56	324	144·8	− 9·4	+10·7	+42·0
283·377 G	67	351	57	298	145·0	− 9·3	+10·4	+54·5
284·394 C	19	163	24	205	144·4	−10·0	+10·0	+67·3
285·609 G	11	67	48	294	145·6	...	+ 9·8	+84·5

No. **1213**—*continued.*

Group 12591. Oct. 28–Nov. 6. A regular spot diminishing to a dot—*a* of Group 12555.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ Spots.	Corrected Area Whole	Corrected Area Umbræ Spots.	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
300·334 G	11	56	18	90	154·6	−1·2	+12·2	−72·3
301·435 G	18	97	17	90	155·5	−0·4	+12·5	−57·8
302·419 G	18	112	13	78	154·8	−1·2	+12·4	−44·6
303·423 G	31	88	18	52	154·9	−1·2	+12·2	−31·2
304·398 C	15	62	8	33	154·7	−1·5	+12·2	−18·6
305·462 G	18	48	9	24	154·6	−1·6	+12·3	− 4·6
306·676 Mt.W	25	33	13	17	154·1	−2·2	+12·5	+10·9
307·476 G	9	18	5	10	154·3	−2·1	+12·2	+21·6
308·405 C	6	13	4	8	155·2	−1·3	+11·9	+34·8
309·397 C	0	8	0	6	151·9	−4·7	+13·1	+44·5
Means ...	...	...	10	41	154·5	...	+12·4	...

No. **1214.** Latitude +13°·1.

Group 12536 in Rotation 1123.
" 12573 " " 1124.

Group 12536. Sept. 18–26. A stream in which the leader, *a*, predominates as a regular spot.

260·344 G	32	76	18	43	5·5	0·0	+12·7	−28·9
261·391 C	100	543	52	279	6·9	+1·3	+12·9	−13·7
262·380 G	88	518	44	259	7·9	+2·3	+13·6	+ 0·3
263·401 C	89	439	46	228	9·3	+3·6	+13·7	+15·2
264·340 G	70	360	40	204	10·3	+4·6	+13·2	+28·6
265·354 G	62	321	40	215	10·2	+4·4	+12·7	+41·9
266·342 G	68	275	58	237	10·6	+4·8	+13·8	+55·3
267·121 K	50	192	59	229	10·7	+4·8	+12·1	+65·7
268·367 G	11	72	36	236	10·9	...	+11·9	+82·4
Means ...	...	...	45	212	8·9	...	+13·1	...

Spot *a*.

260·344 G	14	40	8	23	6·6	0·0	+12·4	−27·8
261·391 C	52	362	27	185	8·9	+2·2	+13·2	−11·7
262·380 G	56	396	28	198	10·0	+3·3	+13·9	+ 2·4
263·401 C	72	367	37	191	10·5	+3·7	+13·7	+16·4
264·340 G	61	328	35	187	10·6	+3·8	+13·2	+28·9
265·354 G	40	272	27	185	11·0	+4·1	+12·7	+42·7
266·342 G	50	230	44	202	11·2	+4·3	+12·3	+55·9
267·121 K	42	175	51	212	11·5	+4·5	+11·9	+66·5
268·367 G	11	72	36	236	10·9	...	+11·9	+82·4

LEDGER I.—RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

No. 1214—*continued.*

Group 12573. Oct. 11–22. A small regular spot (*a* of Group 12536) which becomes double on October 18 to 19 and then breaks up. There are occasional companions.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude	Proper Motion	Latitude	Long. from C.M.
d					°	°	°	°
283·377 G	13	40	29	88	12·6	+4·7	+12·8	−77·9
284·394 C	17	71	19	80	12·8	+4·8	+12·7	−64·3
285·609 G	22	102	17	77	13·1	+5·1	+12·7	−48·0
286·390 C	24	111	15	70	13·1	+5·0	+12·9	−37·7
287·433 G	31	144	17	79	12·8	+4·7	+12·7	−24·2
288·379 G	24	147	12	75	13·2	+5·0	+12·9	−11·3
289·465 G	22	88	11	45	13·4	+5·1	+13·1	+ 3·2
290·476 G	33	186	17	99	13·8	+5·5	+13·3	+16·9
291·398 C	39	158	23	92	14·3	+5·9	+13·1	+29·6
292·469 G	20	86	14	60	14·8	+6·4	+13·4	+44·2
293·457 G	7	18	6	17	15·1	+6·6	+13·5	+57·6
294·381 G	2	4	3	6	15·0	+6·5	+13·4	+69·6
Means ...	...	...	15	66	13·7	...	+13·0	...

No. 1215. Latitude −16°·1.

Group 12540 in Rotation 1124.*
„ 12574 „ „ 1124.

Group 12540. Sept. 21–26. A stream of active spots.

263·401 C	7	17	4	9	3·3	0·0	−15·1	+ 9·2
264·340 G	34	110	20	65	4·6	+1·3	−14·8	+22·9
265·354 G	54	266	36	178	4·5	+1·2	−14·7	+36·2
266·342 G	83	372	73	321	5·6	+2·3	−14·8	+50·3
267·121 K	54	314	63	367	5·7	+2·4	−15·0	+60·7
268·367 G	4	63	9	172	4·1	+0·8	−15·7	+75·6
Means ...	...	...	34	185	4·6	...	−15·0	...

Group 12574. Oct. 11–22. A regular spot with spotlets forming south of it on October 13 and north of it on October 16–17.

283·377 G	9	44	27	133	12·3	+ 9·2	−16·0	−78·2
284·394 C	34	120	46	161	12·0	+ 8·9	−16·1	−65·1
285·609 G	51	349	42	290	12·6	+ 9·5	−17·2	−48·5
286·390 C	73	443	51	310	12·8	+ 9·7	−17·0	−38·0
287·433 G	78	557	47	334	12·9	+ 9·8	−16·9	−24·1
288·379 G	102	515	56	283	12·9	+ 9·8	−17·0	−11·6
289·465 G	102	438	55	237	13·6	+10·5	−17·3	+ 3·4
290·476 G	75	345	43	197	13·5	+10·4	−17·3	+16·6
291·398 C	47	291	29	180	13·5	+10·5	−17·6	+28·8
292·469 G	33	230	25	175	13·9	+10·9	−17·7	+43·3
293·457 G	27	175	27	175	13·6	+10·6	−17·9	+56·1
294·381 G	17	106	26	164	13·7	+10·7	−17·8	+68·3
Means ...	...	...	40	220	13·1	...	−17·2	...

No. 1216. Latitude +8°·3.

Group 12553 in Rotation 1124.
„ 12588 „ „ 1125.

Group 12553. Sept. 28–Oct. 10. An immense complex spot containing a great number of umbral nuclei. As the spot approaches the west limb, it tends to spread out into separate spots, and a large regular spot eventually forms at the head.

d					°	°	°	°
270·385 G	34	157	(117	539	179·4	...	+ 9·9)	−82·5
271·334 G	125	815	175	1141	179·5	0·0	+10·1	−69·9
272·369 G	336	1801	289	1559	181·2	+1·6	+ 9·7	−54·5
273·342 G	491	3306	323	2188	181·3	+1·5	+ 9·8	−41·6
274·400 G	681	4534	380	2550	181·5	+1·6	+ 9·3	−27·4
275·384 C	803	5562	415	2878	182·1	+2·1	+ 9·7	−13·9
276·402 G	999	6402	501	3219	181·8	+1·6	+ 9·4	− 0·7
277·391 C	844	6451	437	3340	182·8	+2·5	+ 9·0	+13·3
278·398 C	795	5883	450	3324	182·7	+2·2	+ 8·9	+26·5
279·404 C	685	4738	453	3111	183·1	+2·5	+ 8·9	+40·2
280·463 G	535	3652	480	3198	185·0	+4·3	+ 8·7	+56·1
281·387 G	262	2145	360	2768	184·1	+3·2	+ 8·7	+67·3
282·447 G	107	764	(228	1627	180·0	...	+10·0)	+77·2
Means ...	...	...	388	2661	182·3	...	+ 9·3	...

Group 12588. Oct. 24–Nov. 4. A medley of spots that are mostly smallish and ill-defined, in a very extensive area of faculæ. As the majority of the spots die out, a small regular spot comes into prominence at the head of the disturbance which shows a marked drift towards the equator.

296·427 G	6	22	37	119	193·1	...	+ 8·8	−85·3
297·408 G	30	141	45	221	193·8	+10·8	+10·3	−71·6
298·449 G	37	172	37	173	191·9	+ 8·7	+10·2	−59·8
299·402 C	66	269	48	195	192·9	+ 9·6	+10·3	−46·2
300·334 G	69	435	45	284	186·8	+ 3·4	+ 8·2	−40·1
301·435 G	66	572	36	315	188·3	+ 4·7	+ 8·8	−25·0
302·419 G	92	519	47	265	188·3	+ 4·6	+ 7·8	−11·1
303·423 G	77	403	38	201	191·0	+ 7·1	+ 6·9	+ 4·9
304·398 C	42	326	22	172	192·6	+ 8·6	+ 5·6	+19·3
305·462 G	54	233	33	142	193·0	+ 8·9	+ 5·3	+33·8
306·676 MI.W	34	78	27	63	194·6	+10·3	+ 4·0	+51·4
307·476 G	4	18	5	21	197·0	+12·6	+ 3·9	+64·3
Means ...	...	...	35	187	191·8	...	+ 7·4	...

No. 1217. Latitude +22°·4.

Group 12601 in Rotation 1125.
„ 12630 „ „ 1126.

Group 12601. Nov. 7–19. A stable regular spot with a number of small satellites southwards from November 10–14. The spot probably originates as *1125b* near the west limb on October 23.

* *Rotation 1123 ended just before this group was first recorded.*

LEDGER I.—RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

No. **1217**. Group 12601—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
310·433 C	15	70	51	240	11·4	...	+22·3	−82·3
311·400 C	23	170	33	246	11·3	0·0	+22·0	−69·6
212·469 G	31	254	29	236	11·8	+0·7	+22·1	−56·0
313·387 G	61	311	44	224	11·0	+0·1	+22·1	−43·7
314·452 G	61	372	37	227	10·5	−0·2	+22·5	−30·2
315·443 G	83	473	46	265	10·3	−0·2	+22·6	−17·3
316·388 G	57	342	30	181	10·2	−0·2	+22·7	− 5·0
317·453 G	70	346	38	187	9·9	−0·3	+22·8	+ 8·8
318·505 G	53	291	30	166	9·6	−0·4	+22·8	+22·3
319·484 G	44	244	29	159	9·4	−0·4	+22·8	+35·0
320·350 C	42	215	32	163	8·9	−0·7	+22·7	+46·0
321·294 C	34	165	34	167	9·1	−0·4	+22·7	+58·6
322·386 G	20	96	34	163	8·5	−0·7	+22·5	+72·4
Means ...	...	...	35	199	10·0	...	+22·5	...

Group 12630. Dec. 5–17. A rather small spot persisting. It dies out on December 11–12, but a small cluster appears in the same place on December 14.

338·390 C	4	25	16	102	2·6	...	+21·6	−82·6
339·295 C	15	40	23	62	3·5	−2·6	+21·8	−69·8
340·284 C	19	46	19	46	2·4	−3·5	+21·7	−57·8
341·276 C	13	29	10	22	2·6	−3·1	+21·6	−44·6
342·283 C	13	52	8	33	2·2	−3·3	+21·7	−31·7
343·292 C	8	17	5	10	2·1	−3·2	+22·0	−18·5
344·282 C	4	19	2	10	2·0	−3·1	+22·0	− 5·6
345·433 G	0	0	0	0	...	...	...	...
346·313 C	0	0	0	0	...	...	...	...
347·464 G	4	22	3	15	1·6	−3·0	+23·6	+36·0
348·283 C	10	63	8	50	0·8	−3·6	+22·7	+46·0
349·521 C	25	123	30	145	1·5	−2·7	+23·1	+63·0
350·332 C	13	67	24	123	0·1	−3·9	+21·8	+72·3
Means ...	...	...	11	43	1·9	...	+22·2	...

No. **1218**. Latitude +12°·3.

Group 12631 in Rotation 1126.
,, 12655 ,, ,, 1127.

Group 12631. Dec. 6–10. Small unstable spots in a stream or cluster, showing a burst of activity near the west limb.

339·295 C	8	29	5	17	98·7	0·0	+12·2	+25·4
340·284 C	19	65	13	43	99·2	+0·4	+11·9	+39·0
341·276 C	6	33	5	28	99·9	+1·1	+11·7	+52·7
342·283 C	4	8	4	9	96·8	−2·1	+11·1	+62·9
343·292 C	25	104	65	269	99·1	+0·1	+11·8	+78·5
Means ...	...	...	18	73	98·7	...	+11·7	...

No. **1218**—*continued.*

Group 12655. Dec. 25–1938, Jan 4. A regular spot with very variable companions.

d					°	°	°	°
358·333 C	13	100	29	225	106·1	+ 6·0	+12·2	−76·3
359·404 C	38	192	42	213	106·5	+ 6·4	+12·2	−61·8
360·342 C	33	245	27	198	106·1	+ 5·9	+12·5	−49·9
361·305 C	29	287	19	187	106·5	+ 6·2	+12·4	−36·8
362·282 C	46	283	26	161	106·2	+ 5·8	+12·4	−24·2
363·550 G	43	255	22	133	106·3	+ 5·9	+12·7	− 7·4
364·290 C	25	158	13	82	106·8	+ 6·3	+12·4	+ 2·8
365·372 C	33	154	18	83	106·7	+ 6·1	+12·4	+17·0
366·353 C	46	250	29	155	108·7	+ 8·1	+13·2	+31·9
367·292 C	16	123	12	93	110·2	+ 9·5	+13·7	+45·8
368·321 C	2	6	2	7	112·2	+11·4	+14·4	+61·3
Means ...	...	...	22	140	107·5	...	+12·8	...

No. **1219**. Latitude +26°·3.

Group 12640 in Rotation 1127.
,, 12672 ,, ,, 1128.

Group 12640. Dec. 14–27. A large composite spot, breaking up after Dec. 21. For the first few days there are one or two spots following.

347·464 G	9	100	48	532	241·9	...	+26·2	−83·7
348·283 C	73	589	137	1107	242·6	0·0	+25·6	−72·2
349·521 C	138	1181	151	1318	239·5	−2·7	+26·7	−59·0
350·332 C	150	1325	125	1109	240·4	−1·5	+25·8	−47·4
351·293 C	151	1321	104	908	240·6	−1·0	+25·7	−34·6
352·359 C	123	1214	74	733	240·2	−1·1	+26·0	−20·9
353·470 G	195	1122	111	641	240·3	−0·6	+26·0	− 6·2
354·311 C	150	1083	86	617	240·5	−0·2	+25·9	+ 5·1
355·282 C	188	1185	111	700	240·1	−0·3	+26·1	+17·5
356·391 G	182	1124	122	753	240·2	+0·2	+26·2	+32·2
357·450 G	130	920	106	748	239·2	−0·5	+25·9	+45·1
358·333 C	59	493	63	523	238·9	−0·5	+27·3	+56·5
359·404 C	38	263	67	463	238·4	−0·6	+27·2	+70·1
360·342 C	4	19	(16	77	236·8	...	+28·0)	+80·8
Means ...	...	...	105	802	240·1	...	+26·2	...

Group 12672. 1938, Jan. 11–12. A cluster of spots with one surviving member after Jan. 18, *np* Group 12673. Return or revival of Group 12640.

375·406 G	9	48	(26	140	240·9	...	+26·0)	−76·7
376·360 K	30	204	47	317	238·4	+4·8	+26·0	−66·6
377·112 K	50	308	56	357	236·6	+3·2	+26·7	−58·5
378·283 C	42	276	33	218	237·8	+4·8	+26·4	−41·9
379·427 G	26	143	17	93	237·8	+5·2	+26·2	−26·8

LEDGER I.—RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

No. **1219**. Group 12672—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
380·376 C	33	217	20	132	237·9	+5·6	+27·1	−14·2
381·442 G	39	175	23	103	237·1	+5·1	+26·8	− 1·0
382·282 C	21	88	13	53	236·8	+5·1	+26·6	+ 9·7
383·453 G	13	26	8	17	236·6	+5·3	+26·4	+25·0
384·415 G	4	22	3	17	236·4	+5·4	+26·4	+37·4
385·307 C	4	13	4	12	236·0	+5·2	+26·2	+48·8
Means ...	...	...	22	132	237·1	...	+26·5	...

No. **1220**. Latitude −19°·5.

Group 12653 in Rotation 1127.
„ 12678 „ „ 1128.

Group 12653. Dec. 23–1938, Jan. 2. A tiny spot on Dec. 23, developing into a fairly large stream of active components.

356·391 G	2	7	2	7	151·3	0·0	−20·9	−56·7
357·450 G	0	0	0	0	...	...	...	...
358·333 C	21	57	12	34	152·1	+1·0	−19·0	−30·3
359·404 C	17	77	9	42	152·5	+1·5	−19·0	−15·8
360·342 C	117	516	62	271	148·9	−2·0	−19·4	− 7·1
361·305 C	129	835	69	442	150·0	−0·8	−19·6	+ 6·7
362·282 C	126	940	69	524	150·6	−0·1	−19·2	+20·2
363·550 G	95	607	63	397	150·8	+0·2	−19·4	+37·1
364·290 C	63	441	49	343	151·6	+1·1	−19·1	+47·6
365·372 C	43	197	50	225	153·4	+3·0	−19·3	+63·7
366·353 C	15	87	34	200	154·7	+4·4	−18·4	+77·9
Means ...	...	...	38	226	151·6	...	−19·3	...

Group 12678. 1938, Jan. 18–28. A short stream in which the leader is the only important component. Return or revival of Group 12653.

382·282 C	4	29	7	54	155·2	+ 6·5	−17·7	−71·9
383·453 G	39	108	34	95	157·0	+ 8·4	−20·1	−54·6
384·415 G	50	276	33	187	158·7	+10·2	−19·8	−40·3
385·307 C	35	230	21	134	159·7	+11·3	−19·3	−27·5
386·391 G	46	206	25	109	157·1	+ 8·8	−19·6	−15·8
387·436 G	35	178	18	93	157·0	+ 8·8	−19·5	− 2·2
388·280 C	33	150	17	80	162·0	+13·9	−20·1	+13·9
389·283 C	17	71	10	42	161·8	+13·8	−20·4	+26·9
390·422 G	13	43	9	30	162·0	+14·1	−20·1	+42·1
391·457 G	7	17	6	15	160·7	+12·9	−19·9	+54·4
392·131 K	10	40	12	48	163·3	+15·6	−20·7	+65·9
Means ...	...	...	17	81	159·5	...	−19·7	...

No. **1221**. Latitude −14°·5.

Group 12658 in Rotation 1127.
„ 12681 „ „ 1128.

Group 12658. Dec. 29–1938, Jan. 3. A group increasing as it approaches the west limb.

d					°	°	°	°
362·282 C	4	31	2	16	130·9	0·0	−15·6	+ 0·5
363·550 G	15	60	8	33	134·7	+3·8	−15·2	+21·0
364·290 C	23	83	14	51	136·8	+5·8	−15·1	+32·8
365·372 C	54	198	40	150	137·0	+6·0	−15·4	+47·3
366·353 C	52	376	55	397	138·4	+7·4	−15·4	+61·6
367·292 C	29	285	54	527	139·2	+8·2	−15·2	+74·8
Means ...	...	...	29	196	136·2	...	−15·3	...

Group 12681. 1938, Jan. 19–22. A small regular spot disappearing rather suddenly.

383·453 G	9	48	12	66	142·3	+10·8	−14·2	−69·3
384·415 G	9	60	8	53	143·1	+11·6	−13·8	−55·9
385·307 C	13	25	9	18	143·2	+11·7	−13·8	−44·0
386·391 G	9	22	5	13	143·1	+11·6	−13·5	−29·8
Means ...	...	...	8	38	142·9	...	−13·8	...

No. **1222**. Latitude +19°·3.

Group 12659 in Rotation 1127.
„ 12682 „ „ 1128.

Group 12659. Dec. 29–1938, Jan. 5. A small spot on December 30, developing fairly rapidly into a bi-polar group.

362·282 C	8	33	4	18	116·5	0·0	+18·8	−13·9
363·550 G	6	15	3	8	117·7	+1·3	+18·6	+ 4·0
364·290 C	19	48	10	26	118·6	+2·3	+18·1	+14·6
365·372 C	77	364	48	228	119·1	+2·9	+18·6	+29·4
366·353 C	87	483	68	370	121·4	+5·3	+18·6	+44·6
367·292 C	74	384	73	380	120·1	+4·1	+18·5	+55·7
368·321 C	46	319	77	519	119·9	+4·0	+18·7	+69·0
369·305 C	8	30	(17	63	111·3	...	+17·2)	+73·4
Means ...	...	...	40	221	119·0	...	+18·6	...

LEDGER I.—RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

No. **1222.** Group 12659—*continued.*

Spot *a.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
365·372 C	17	129	11	84	122·7	0·0	+19·7	+33·0
366·353 C	56	258	46	212	124·8	+2·2	+19·2	+48·0
367·292 C	33	162	37	181	124·9	+2·4	+19·0	+60·5
368·321 C	29	171	55	325	123·5	+1·1	+19·1	+72·6

Group 12682. 1938, Jan. 20–Feb. 1. A stable regular spot, probably *a* of Group 12659.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
384·415 G	6	60	20	197	120·4	−0·5	+21·1	−78·6
385·307 C	17	119	26	183	119·8	−1·0	+20·9	−67·4
386·391 G	30	178	29	169	119·6	−1·1	+20·4	−53·3
387·436 G	33	202	24	149	119·0	−1·6	+20·5	−40·2
388·280 C	54	276	35	177	118·9	−1·6	+20·5	−29·2
389·283 C	61	297	35	172	118·4	−2·1	+20·2	−16·5
390·422 G	48	302	26	166	117·9	−2·4	+19·9	− 2·0
391·457 G	54	284	31	162	117·8	−2·4	+19·7	+11·5
392·131 K	48	273	28	161	117·8	−2·4	+19·6	+20·4
393·402 G	52	213	36	149	117·2	−2·9	+19·4	+36·6
394·384 C	21	189	18	166	117·5	−2·5	+19·7	+49·8
395·278 C	25	139	30	164	116·7	−3·2	+19·3	+60·8
396·393 G	11	65	28	168	117·2	−2·6	+19·6	+75·9
Means ...	...	...	28	168	118·3	...	+20·1	...

No. **1223.** Latitude −14°·0

Group 12660 in Rotation 1127.
,, 12686 ,, ,, 1128.

Group 12660. Dec. 30–1938, Jan. 7. A pair of spots becoming a stream of normal type which soon declines.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
363·550 G	17	78	9	43	90·8	0·0	−14·8	−22·9
364·290 C	50	241	26	125	91·0	+0·2	−15·1	−13·0
365·372 C	100	448	51	228	91·3	+0·4	−15·1	+ 1·6
366·353 C	50	374	26	198	92·1	+1·2	−15·4	+15·3
367·292 C	44	173	26	100	93·7	+2·8	−14·4	+29·3
368·321 C	54	221	38	156	95·1	+4·1	−14·6	+44·2
369·305 C	19	88	19	86	96·8	+5·8	−13·8	+58·9
370·289 C	17	74	26	114	95·8	+4·8	−14·1	+70·8
371·297 C	2	17	10	81	96·3	...	−13·7	+84·6
Means ...	...	...	28	131	93·3	...	−14·7	...

Group 12686. 1938, Jan. 22–26. A pair of spot centres widely separated in longitude. Probable return of Group 12660.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
386·391 G	4	9	(5	12	103·8	...	−14·1)	−69·1
387·436 G	4	16	4	17	97·8	+ 6·1	−13·0	−61·4
388·280 C	14	63	11	49	98·6	+ 6·9	−13·3	−49·5
389·283 C	17	67	10	43	97·7	+ 5·9	−13·3	−37·2
390·422 G	8	24	4	13	99·0	+ 7·2	−13·8	−20·9
Means ...	...	...	7	30	98·3	...	−13·4	...

ROYAL OBSERVATORY, GREENWICH.

Ledgers of Groups of Sun Spots

For the Year

1937

Ledger II.—Non-Recurrent Groups

GREENWICH PHOTO-HELIOGRAPHIC RESULTS, 1937.

Ledger II.—Non-Recurrent Groups of Sun Spots for the Year 1937.

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 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°·18, due to the Sun's rotation, constant at all latitudes; this corresponds to Carrington's assumed rotation period of 25·38 days.

The proper motion given in the *seventh* column is derived from the difference of longitude thus computed from the measured positions on any given day and the first day on which the group of spots or single spot is visible, after the correction for the motion appropriate to the latitude has been applied according to the formula, $\xi = 14^\circ{\cdot}37 - 2^\circ{\cdot}60 \sin^2\varphi$. 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 II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937

Group 12162.

1936, Dec. 29–1937, Jan. 10. A pair of spots near the east limb; the leader dies out by January 5, but new spots develop south of the follower. A return or, more probably, a revival of Group 12123. See *Recurrent Series 1176 Greenwich Photo-heliographic Results, 1936*.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
$\bar{3}$·353 C	4	17	(10	41	189·5	...	−33·0)	−77·6
$\bar{2}$·472 G	35	131	52	202	183·8	0·0	−33·3	−68·5
$\bar{1}$·559 G	43	188	42	193	181·6	−1·5	−33·4	−56·4
0·329 C	46	233	39	197	180·4	−2·2	−33·6	−47·5
1·448 G	87	549	61	383	179·5	−2·4	−34·7	−33·6
2·349 C	83	550	52	346	178·8	−2·5	−34·3	−22·5
3·393 C	73	387	44	232	177·1	−3·6	−35·2	−10·4
4·510 G	76	333	44	195	176·0	−3·9	−34·8	+ 3·2
5·398 C	52	266	31	160	175·3	−4·1	−35·0	+14·2
6·412 G	26	225	17	147	174·8	−3·9	−35·0	+27·1
7·497 G	47	177	36	134	174·7	−3·3	−34·8	+41·2
8·434 G	26	140	25	132	174·6	−2·8	−34·9	+53·5
9·426 G	11	56	15	74	174·0	−2·8	−34·1	+65·9
Means ...	...	...	38	200	177·6	...	−34·4	...

Group 12169.

Jan. 5–10. A small stream of unstable spots *nf* Group 12165.

4·510 G	9	32	5	17	178·8	0·0	+ 9·4	+ 6·0
5·398 C	0	10	0	5	178·1	−0·8	+ 9·4	+17·0
6·412 G	24	143	14	84	175·6	−3·4	+11·2	+27·9
7·497 G	48	155	34	110	175·9	−3·2	+12·0	+42·4
8·434 G	18	58	17	56	177·3	−1·9	+11·8	+56·2
9·426 G	6	30	10	52	180·1	+0·8	+11·8	+72·0
Means ...	...	...	13	54	177·6	...	+10·9	...

Group 12170.

Jan. 6–11. A very small group, long-lived for its size.

5·398 C	8	25	4	13	162·2	0·0	+ 7·2	+ 1·1
6·412 G	9	32	5	17	161·7	−0·7	+ 7·4	+14·0
7·497 G	9	17	5	10	164·0	+1·5	+ 6·9	+30·5
8·434 G	6	26	4	18	162·3	−0·3	+ 7·1	+41·2
9·426 G	9	30	8	28	164·7	+1·9	+ 7·5	+56·6
10·537 G	0	9	0	17	166·9	+3·9	+ 7·8	+73·5
Means ...	...	...	4	17	163·6	...	+ 7·3	...

Group 12172.

Jan. 6–11. A pair of spots becoming a small stream.

d					°	°	°	°
5·398 C	37	129	24	85	125·6	0·0	−26·2	−35·5
6·412 G	48	191	28	110	127·2	+0·9	−26·0	−20·5
7·497 G	35	147	19	79	127·5	+2·6	−26·2	− 6·0
8·434 G	41	104	22	56	126·1	+1·5	−26·0	+ 5·0
9·426 G	41	171	23	96	125·2	+0·9	−26·0	+17·1
10·537 G	17	69	11	43	124·9	+0·9	−26·1	+31·5
Means ...	...	...	21	78	126·1	...	−26·1	...

Group 12175.

Jan. 9–20. A small stream of which the leader spot alone remains on January 15. On January 19, new spots appear.

8·434 G	6	17	16	47	41·1	...	−11·7	−80·0
9·426 G	9	52	11	65	41·4	0·0	−12·7	−66·7
10·537 G	30	79	24	65	40·8	−0·7	−12·5	−52·6
11·395 C	25	131	17	89	40·0	−1·5	−12·7	−42·1
12·395 C	54	187	31	108	38·7	−2·9	−12·4	−30·3
13·392 C	29	119	15	63	38·5	−3·2	−12·4	−17·3
14·404 G	17	43	9	22	42·4	+0·7	−12·9	− 0·1
15·417 G	13	30	7	16	43·0	+1·2	−12·5	+13·8
16·452 G	9	28	5	16	43·2	+1·3	−12·5	+27·7
17·401 C	4	10	3	7	43·2	+1·2	−12·7	+40·1
18·456 G	26	95	22	79	42·2	+0·2	−11·3	+53·0
19·420 G	12	31	15	37	39·8	−2·3	−12·3	+63·3
Means ...	...	...	15	51	41·2	...	−12·4	...

Group 12177.

Jan. 10–16. A small stream; the leader spot alone remains on January 13, but there is a new small spot in the same area of faculæ on January 15.

9·426 G	35	89	18	46	100·4	0·0	+10·0	− 7·7
10·537 G	67	190	35	99	99·7	−0·8	+ 9·7	+ 6·3
11·395 C	42	154	23	83	101·4	+0·8	+ 8·9	+19·3
12·395 C	21	89	13	55	103·6	+2·8	+ 8·7	+34·6
13·392 C	12	50	9	38	103·8	+2·9	+ 8·5	+48·0
14·404 G	11	39	12	40	101·2	+0·2	+ 9·4	+58·7
15·417 G	9	22	18	44	103·6	+2·5	+ 9·1	+74·4
Means ...	...	...	18	58	102·0	...	+ 9·2	...

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937.—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
Group 12182.								
Jan. 14–22. An imperfectly formed regular spot. There is a small distant follower on January 15–17, and on January 19 a short-lived train of tiny spots. The extensive faculæ associated with the group suggest that the spots were very large on the invisible hemisphere.								
d								
13·392 C	12	85	24	169	339°·6	0°·0	−14°·8	−76°·2
14·404 G	19	131	22	149	338·5	−1·1	−15·0	−64·0
15·417 G	26	136	21	107	338·8	−0·8	−14·8	−50·4
16·452 G	19	134	12	85	338·5	−1·1	−14·6	−37·0
17·401 C	8	21	4	12	339·2	−0·4	−14·9	−23·9
18·456 G	13	73	7	38	337·4	−2·2	−16·3	−11·8
19·420 G	11	39	6	20	336·0	−3·7	−15·5	− 0·5
20·388 G	4	11	2	6	338·9	−0·8	−15·8	+15·2
21·142 K	4	8	2	4	339·1	−0·6	−15·7	+25·3
Means ...	...	...	11	66	338·4	...	−15·3	...
Group 12186.								
Jan. 16–25. A stream of weak development.								
15·417 G	2	9	3	14	318·4	0·0	+ 9·8	−70·8
16·452 G	9	43	9	41	318·4	−0·1	+10·0	−57·1
17·401 C	17	87	12	64	318·1	−0·5	+ 9·7	−45·0
18·456 G	43	162	26	97	318·7	−0·1	+10·0	−30·5
19·420 G	33	135	18	73	319·9	+1·0	+10·4	−16·6
20·388 G	35	113	19	60	319·1	+0·1	+10·2	− 4·6
21·142 K	22	80	11	42	320·9	+1·8	+ 9·4	+ 7·1
22·394 C	14	41	8	23	320·3	+1·1	+ 9·1	+23·0
23·314 C	8	19	5	12	321·4	+2·1	+ 8·9	+36·2
24·384 G	4	13	3	11	321·6	+2·1	+ 8·7	+50·5
Means ...	...	...	11	44	319·7	...	+ 9·6	...
Group 12188.								
Jan. 17–29. A very large group; the leader, *a*, which is by far the largest component, is elongated in a direction north to south, and, developing several umbræ about January 23, disintegrates rapidly. In the rear of the stream is a regular spot, *b*, whose umbra, becoming double on January 20, breaks into two parts on January 22. The sudden collapse of the group is noteworthy.								
16·452 G	24	168	(87	606	292·2	...	−18·2)	−83·3
17·401 C	84	758	163	1488	287·5	0·0	−19·4	−75·6
18·456 G	225	1357	245	1479	286·8	−0·6	−19·2	−62·4
19·420 G	288	1919	228	1509	286·3	−1·0	−19·4	−50·2
20·388 G	354	2385	229	1538	287·0	−0·2	−19·2	−36·7
21·142 K	339	2207	196	1278	286·8	−0·3	−20·4	−27·0
22·394 C	293	1864	154	978	286·3	−0·7	−19·8	−11·0
23·314 C	280	1490	146	774	285·5	−1·4	−20·0	+ 0·3
Group 12188—*continued.*								
d								
24·384 G	198	1092	105	584	286°·0	−0°·7	−19°·5	+14°·9
25·400 C	121	656	70	384	286·0	−0·6	−19·9	+28·3
26·549 C	42	215	30	155	287·8	+1·3	−19·8	+45·2
27·401 C	19	67	17	61	288·0	+1·6	−20·0	+56·6
28·112 K	8	22	9	25	285·8	−0·5	−21·3	+63·8
Means ...	...	...	133	854	286·6	...	−19·8	...
Spot *a*.								
16·452 G	24	168	87	606	292·2	...	−18·2	−83·3
17·401 C	50	408	78	641	291·1	0·0	−18·5	−72·0
18·456 G	134	739	130	717	290·3	−0·7	−18·3	−58·9
19·420 G	178	1259	132	932	289·7	−1·2	−18·6	−46·8
20·388 G	213	1519	132	942	289·4	−1·4	−18·8	−34·3
21·142 K	199	1407	111	788	289·4	−1·3	−19·5	−24·4
22·394 C	191	1350	99	702	288·7	−1·9	−19·1	− 8·6
23·314 C	180	991	94	515	288·2	−2·3	−19·4	+ 3·0
24·384 G	126	802	68	433	288·2	−2·1	−19·4	+17·1
25·400 C	92	535	54	316	287·9	−2·3	−19·4	+30·2
26·549 C	42	215	30	155	287·8	−2·3	−19·8	+45·2
27·401 C	19	67	17	61	288·0	−2·0	−20·0	+56·6
Spot *b*.								
17·401 C	19	146	51	388	282·8	...	−22·1	−80·3
18·456 G	52	238	70	321	280·8	0·0	−22·2	−68·4
19·420 G	56	330	51	300	280·4	−0·3	−22·4	−56·1
20·388 G	46	395	33	280	280·0	−0·6	−22·6	−43·7
21·142 K	56	346	35	218	280·2	−0·3	−23·5	−33·6
22·394 C	40	181	22	100	279·6	−0·8	−22·6	−17·7
23·314 C	50	217	26	115	279·7	−0·6	−22·5	− 5·5
24·384 G	24	113	13	60	280·0	−0·2	−22·1	+ 8·9
25·400 C	21	79	12	44	279·5	−0·6	−22·1	+21·8
Group 12191.								
Jan. 19–30. A fairly large stream *nf* Group 12188.								
18·456 G	2	4	4	8	273·0	0·0	−17·1	−76·2
19·420 G	30	110	34	125	272·2	−0·8	−17·0	−64·3
20·388 G	54	200	43	160	272·5	−0·4	−17·4	−51·2
21·142 K	80	346	54	233	273·2	+0·3	−18·2	−40·6
22·394 C	91	475	51	265	272·6	−0·2	−17·5	−24·7
23·314 C	105	548	55	288	272·7	−0·1	−17·3	−12·5

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ Spots	Corrected Area Whole	Corrected Area Umbræ Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
Group 12191—*continued.*								
d								
24·384 G	83	382	42	195	273°·0	+0°·3	−17°·8	+ 1°·9
25·400 C	67	347	35	184	274·3	+1·6	−17·5	+16·6
26·549 C	33	209	20	125	274·2	+1·6	−17·4	+31·6
27·401 C	29	125	20	86	274·1	+1·5	−17·3	+42·7
28·112 K	14	48	12	41	275·4	+2·8	−17·7	+53·4
29·397 C	4	36	5	48	273·9	+1·4	−17·3	+68·8
Means ...	...	...	31	146	273·4	...	−17·5	...
Group 12194.								
Jan. 21–29. An extended stream of spots of rapid development.								
20·388 G	30	139	20	92	289·8	0·0	+18·8	−33·9
21·142 K	120	675	71	401	290·8	+1·0	+18·2	−23·0
22·394 C	164	917	90	503	291·1	+1·4	+18·4	− 6·2
23·314 C	157	857	85	467	290·9	+1·3	+17·6	+ 5·7
24·384 G	151	667	88	386	290·7	+1·2	+17·7	+19·6
25·400 C	134	725	88	477	290·5	+1·0	+17·5	+32·8
26·549 C	82	409	67	345	292·0	+2·6	+16·6	+49·4
27·401 C	42	210	47	229	289·2	−0·1	+18·9	+57·8
28·112 K	8	20	11	27	286·2	−3·1	+21·1	+64·2
Means ...	...	...	63	325	290·1	...	+18·3	...
Group 12195.								
Jan. 21–31. A stream of normal type of the simplest formation, namely, a pair of spots, *a* and *b*, which separate in longitude while they develop. A few tiny spots lie between the pair on January 23–27. It is interesting to see the relative movement in longitude between *a* and the spots of Group 12199 with which *a* almost merges.								
20·388 G	4	9	6	13	257·7	0·0	+19·1	−66·0
21·142 K	4	12	4	12	257·7	+0·1	+19·9	−56·1
22·394 C	78	316	58	233	257·1	−0·4	+20·1	−40·2
23·314 C	79	487	50	307	257·5	+0·1	+19·6	−27·7
24·384 G	138	554	78	316	257·7	+0·4	+19·6	−13·4
25·400 C	104	566	57	313	258·5	+1·3	+19·8	+ 0·8
26·549 C	123	549	71	318	260·1	+3·0	+19·1	+17·5
27·401 C	88	388	57	249	260·5	+3·5	+18·9	+29·1
28·112 K	71	333	52	242	261·1	+4·1	+18·7	+39·1
29·397 C	27	182	29	196	261·9	+5·1	+19·4	+56·8
30·415 G	21	100	41	198	261·8	+5·1	+19·4	+70·1
Means ...	...	...	46	218	259·2	...	+19·4	...
Group 12195—*continued.*								
Spot *a*.								
d								
22·394 C	35	160	25	114	259°·3	0°·0	+19°·8	−38°·0
23·314 C	33	247	20	151	260·5	+1·3	+19·0	−24·7
24·384 G	70	301	39	169	260·5	+1·4	+19·0	−10·6
25·400 C	77	393	42	216	261·3	+2·3	+19·6	+ 3·6
26·549 C	79	420	46	244	262·1	+3·2	+19·0	+19·5
27·401 C	67	334	44	217	262·6	+3·8	+18·6	+31·2
28·112 K	59	287	44	212	263·4	+4·7	+18·2	+41·4
29·397 C	23	159	26	176	264·0	+5·4	+19·1	+58·9
30·415 G	17	87	36	182	264·8	+6·3	+19·0	+73·1
Spot *b*.								
22·394 C	35	133	27	102	254·5	0·0	+20·6	−42·8
23·314 C	42	207	27	135	254·1	−0·3	+20·4	−31·1
24·384 G	68	253	39	147	254·1	−0·2	+20·5	−17·0
25·400 C	21	150	12	84	253·3	−0·9	+20·7	− 4·4
26·549 C	36	113	21	64	253·1	−1·0	+20·7	+10·5
27·401 C	21	54	13	32	253·1	−0·9	+20·7	+21·7
28·112 K	12	46	8	30	253·2	−0·7	+20·9	+31·2
29·397 C	4	23	3	20	252·5	−1·3	+20·7	+47·4
30·415 G	4	13	5	16	253·2	−0·5	+22·1	+61·5
Group 12198.								
Jan. 23–29. A small persistent spot.								
22·394 C	8	21	9	24	237·9	0·0	+22·1	−59·4
23·314 C	10	50	8	42	237·7	−0·1	+21·7	−47·5
24·384 G	15	46	10	31	237·6	−0·0	+21·4	−33·5
25·400 C	10	27	6	16	237·3	−0·1	+21·4	−20·4
26·549 C	6	15	3	8	237·4	+0·1	+21·2	− 5·2
27·401 C	4	13	2	7	237·6	+0·5	+20·9	+ 6·2
28·112 K	2	4	1	2	237·9	+0·9	+20·7	+15·9
Means ...	...	...	6	19	237·6	...	+21·3	...
Group 12200.								
Jan. 25–29. A group of three spots fairly widely separated.								
24·384 G	9	35	5	18	283·4	0·0	−10·8	+12·3
25·400 C	84	269	47	151	284·2	+0·7	−11·1	+26·5

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ Spots	Corrected Area Whole	Corrected Area Umbræ Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
Group 12200—*continued.*								
d								
26·549 C	63	230	42	154	284°·6	+1°·0	−10°·9	+42°·0
27·401 C	46	213	39	179	285·2	+1·5	−10·0	+53·8
28·112 K	26	83	28	90	285·2	+1·4	−11·0	+63·2
Means ...	...	...	32	118	284·5	...	−10·8	...
Group 12203.								
Jan. 25–Feb. 5. One or two spots developing into a fairly large stream led by a regular spot.								
24·384 G	0	4	0	7	201·5	0·0	+17·9	−69·6
25·400 C	4	17	4	17	202·3	+0·8	+17·5	−55·4
26·549 C	54	282	38	197	204·4	+3·0	+17·2	−38·2
27·401 C	115	468	70	281	205·5	+4·1	+16·6	−25·9
28·112 K	131	580	74	330	206·1	+4·7	+17·0	−15·9
29·397 C	171	832	93	450	206·8	+5·5	+17·5	+ 1·7
30·415 G	169	979	96	554	205·7	+4·4	+17·4	+14·0
31·424 G	143	675	89	423	206·7	+5·5	+17·0	+28·3
32·506 C	75	433	58	333	208·6	+7·4	+17·1	+44·4
33·454 G	39	234	41	246	209·4	+8·2	+17·3	+57·7
34·398 G	24	152	42	264	209·6	+8·5	+17·3	+70·3
35·316 C	8	42	35	184	208·4	...	+17·3	+81·2
Means ...	...	...	55	282	206·0	...	+17·2	...
Group 12205.								
Jan. 26–31. A double spot in the wake of Group 12204.								
25·400 C	29	150	42	216	187·4	0·0	−12·6	−70·3
26·549 C	29	293	25	255	187·4	−0·1	−13·2	−55·2
27·401 C	25	255	17	176	187·7	+0·2	−13·3	−43·7
28·112 K	48	236	29	144	187·3	−0·3	−13·2	−34·7
29·397 C	17	92	9	49	188·0	+0·4	−13·0	−17·1
30·415 G	22	78	11	39	188·4	+0·7	−12·2	− 3·3
Means ...	...	...	22	146	187·7	...	−12·9	...
Group 12206.								
Jan. 26–Feb. 6. A slowly diminishing regular spot. There is a distant cluster of small spots on February 3.								
25·400 C	21	79	28	106	190·9	0·0	+ 8·2	−66·8
26·549 C	21	132	18	111	190·9	−0·2	+ 8·3	−51·7
27·401 C	38	150	26	102	191·0	−0·2	+ 7·8	−40·4
Group 12206—*continued.*								
d								
28·112 K	24	186	14	112	191°·2	−0°·1	+ 7°·3	−30°·8
29·397 C	36	196	19	104	191·5	0·0	+ 7·2	−13·6
30·415 G	39	208	20	106	191·5	−0·2	+ 6·9	− 0·2
31·424 G	28	182	15	96	191·7	−0·1	+ 6·7	+13·3
32·506 C	33	173	19	100	191·6	−0·4	+ 6·3	+27·4
33·454 G	35	174	22	115	189·9	−2·2	+ 6·9	+38·2
34·398 G	30	115	25	97	191·1	−1·1	+ 6·8	+51·8
35·316 C	8	54	10	65	191·8	−0·6	+ 6·4	+64·6
36·469 G	0	4	0	12	191·7	−0·9	+ 6·3	+79·7
Means ...	...	...	18	94	191·2	...	+ 7·1	...
Group 12207.								
Jan. 26–Feb. 2. A feeble group of stream type.								
25·400 C	4	10	6	16	189·0	0·0	+16·2	−68·7
26·549 C	21	59	20	55	188·5	−0·5	+15·8	−54·1
27·401 C	19	54	14	40	188·9	−0·1	+15·5	−42·5
28·112 K	20	69	14	46	187·0	−2·0	+16·2	−35·0
29·397 C	21	102	12	57	187·8	−1·2	+16·5	−17·3
30·415 G	26	128	14	69	189·5	+0·6	+15·5	− 2·2
31·424 G	9	39	5	21	187·8	−1·1	+16·6	+ 9·4
32·506 C	6	23	4	14	187·8	−1·1	+16·8	+23·6
Means ...	...	...	11	40	188·3	...	+16·1	...
Group 12208.								
Jan. 26–Feb. 6. A composite spot.								
25·400 C	6	21	(18	61	176·5	...	−13·9)	−81·2
26·549 C	35	163	43	201	176·1	0·0	−14·1	−66·5
27·401 C	36	339	31	295	176·2	+0·1	−14·3	−55·2
28·112 K	52	331	38	240	176·2	+0·1	−14·5	−45·8
29·397 C	54	368	31	210	177·2	+1·0	−14·2	−27·9
30·415 G	74	341	38	177	177·5	+1·3	−14·4	−14·2
31·424 G	52	252	27	129	177·8	+1·6	−14·4	− 0·6
32·506 C	48	200	25	104	178·4	+2·2	−15·0	+14·2
33·454 G	30	106	17	59	178·2	+1·9	−15·1	+26·5
34·398 G	22	43	14	28	178·4	+2·1	−15·3	+39·1
35·316 C	13	29	10	23	178·7	+2·4	−15·2	+51·5
36·469 G	4	7	5	9	178·8	+2·5	−15·4	+66·8
Means ...	...	...	25	134	177·6	...	−14·7	...

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12213.

Jan. 29–Feb. 5. A small regular spot diminishing to a speck.

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								
28·112 K	8	28	20	69	150°·6	0°·0	+34°·1	−71°·4
29·397 C	4	29	5	35	149·5	−0·3	+33·8	−55·6
30·415 G	9	33	8	30	148·7	−0·5	+33·5	−43·0
31·424 G	9	22	7	17	147·9	−0·7	+33·1	−30·5
32·506 C	13	25	9	17	146·9	−1·1	+33·0	−17·3
33·454 G	9	24	6	16	146·0	−1·4	+33·0	− 5·7
34·398 G	4	17	3	11	145·1	−1·8	+32·9	+ 5·8
35·316 C	4	15	3	10	144·1	−2·2	+32·9	+16·9
Means ...	...	...	8	26	147·4	...	+33·3	...

Group 12214.

Jan. 30–Feb. 4. A pair of spots of which the leader grows rapidly to a regular spot and the follower dies out.

29·397 C	4	17	2	9	220·3	0·0	−20·9	+15·2
30·415 G	24	61	14	37	221·9	+1·7	−20·5	+30·2
31·424 G	39	150	29	110	224·8	+4·8	−20·6	+46·4
32·506 C	21	100	21	101	224·9	+5·0	−21·0	+60·7
33·454 G	20	82	33	134	225·1	+5·4	−21·3	+73·4
34·398 G	4	24	14	87	223·2	...	−21·4	+83·9
Means ...	...	...	20	78	223·4	...	−20·9	...

Group 12215.

Jan. 30–Feb. 6. A regular spot dividing into two on January 31.

29·397 C	13	96	20	148	139·5	0·0	+25·9	−65·6
30·415 G	22	91	22	92	138·7	−0·5	+25·9	−53·0
31·424 G	43	165	34	129	138·3	−0·6	+25·8	−40·1
32·506 C	33	150	22	99	138·0	−0·5	+25·3	−26·2
33·454 G	17	52	10	32	137·5	−0·7	+25·7	−14·2
34·398 G	13	43	8	25	136·8	−1·2	+25·7	− 2·5
35·316 C	6	19	4	11	136·2	−1·5	+26·2	+ 9·0
36·469 G	8	31	6	20	133·8	−3·5	+27·7	+21·8
Means ...	...	...	16	70	137·4	...	+26·0	...

Group 12216.

Jan. 30–Feb. 10. A regular spot with occasional small followers.

29·397 C	13	63	27	129	133·2	0·0	+23·5	−71·9
30·415 G	39	204	46	243	132·0	−1·0	+23·1	−59·7
31·424 G	30	291	26	250	131·6	−1·2	+23·1	−46·8
32·506 C	42	215	29	146	132·3	−0·3	+23·1	−31·9

Group 12216—*continued.*

33·454 G	50	336	31	206	131°·4	−1°·0	+22°·8	−20°·3
34·398 G	63	319	37	186	130·9	−1·3	+22·9	− 8·4
35·316 C	50	289	28	165	129·9	−2·1	+22·7	+ 2·7
36·469 G	42	230	25	138	129·4	−2·4	+22·8	+17·4
37·524 C	25	147	17	100	130·4	−1·2	+22·1	+32·3
38·487 G	15	34	12	28	129·0	−2·4	+22·8	+43·6
39·601 G	9	24	10	28	129·6	−1·6	+22·3	+58·8
40·441 G	4	4	7	7	129·6	−1·4	+22·6	+69·9
Means ...	...	...	25	136	130·8	...	+22·8	...

Group 12217.

Jan. 30–Feb. 6. An unstable spot preceded by a small companion on January 31 and February 1–3.

29·397 C	10	52	19	101	129·5	0·0	−15·5	−75·6
30·415 G	15	78	17	87	127·9	−1·6	−15·4	−63·8
31·424 G	17	52	13	41	127·8	−1·7	−16·0	−50·6
32·506 C	25	94	15	59	128·6	−0·8	−16·5	−35·6
33·454 G	29	89	16	49	129·7	+0·3	−16·7	−22·0
34·398 G	30	80	16	42	128·0	−1·4	−16·8	−11·3
35·316 C	13	25	7	13	127·8	−1·6	−16·7	+ 0·6
36·469 G	11	24	6	13	127·5	−1·9	−17·2	+15·5
Means ...	...	...	14	51	128·4	...	−16·4	...

Group 12218.

Jan. 31–Feb. 5. A small stream with the chief component following.

30·415 G	13	39	8	23	167·9	0·0	−31·8	−23·8
31·424 G	26	122	15	70	167·0	−0·4	−31·7	−11·4
32·506 C	46	142	25	79	165·7	−1·1	−32·3	+ 1·5
33·454 G	26	102	15	58	163·8	−2·4	−32·4	+12·1
34·398 G	15	46	9	28	163·9	−1·8	−32·1	+24·6
35·316 C	8	33	5	22	162·1	−3·1	−32·3	+34·9
Means ...	...	...	13	47	165·1	...	−32·1	...

Group 12222.

Feb. 3–9. A sparse stream of small spots.

33·454 G	4	11	7	20	80·8	0·0	+18·3	−70·9
34·398 G	22	104	26	121	79·1	−1·7	+18·4	−60·2
35·316 C	23	82	20	68	79·9	−0·8	+17·8	−47·3
36·469 G	34	63	23	43	77·5	−3·2	+18·1	−34·5

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
Group 12222—*continued.*								
d								
37·524 C	19	80	11	47	79°·2	−1°·4	+16°·9	−18°·9
38·487 G	4	30	2	16	80·3	−0·3	+17·1	− 5·1
39·601 G	4	26	2	15	82·3	+1·8	+16·7	+11·5
Means ...	...	...	13	47	79·9	...	+17·6	...
Group 12223. Feb. 3–10. A pair of spots, the leader developing into a small regular spot.								
33·454 G	11	30	18	49	78·7	0·0	−11·3	−73·0
34·398 G	26	134	26	130	80·0	+1·2	−11·8	−59·3
35·316 C	31	165	23	120	80·5	+1·6	−11·7	−46·7
36·469 G	22	102	13	59	82·1	+3·2	−11·7	−29·9
37·524 C	29	130	15	68	82·3	+3·3	−12·0	−15·8
38·487 G	17	46	8	23	81·9	+2·8	−12·0	− 3·5
39·601 G	9	22	5	11	82·1	+2·9	−12·1	+11·3
40·441 G	7	20	4	11	80·1	+0·8	−11·3	+20·4
Means ...	...	...	14	59	81·0	...	−11·7	...
Group 12224. Feb. 4–15. A variable stream of unstable spots.								
34·398 G	4	17	7	29	65·3	0·0	−22·9	−74·0
35·316 C	50	272	50	275	67·0	+1·9	−23·1	−60·2
36·469 G	60	282	43	200	68·1	+3·2	−22·6	−43·9
37·524 C	38	200	22	118	68·9	+4·2	−22·5	−29·2
38·487 G	26	87	14	47	68·2	+3·7	−22·3	−17·2
39·601 G	13	76	7	40	68·3	+4·0	−22·2	− 2·5
40·441 G	13	74	7	38	68·4	+4·2	−22·1	+ 8·7
41·498 C	8	52	5	30	71·1	+7·1	−22·3	+25·3
42·462 G	17	61	11	39	69·3	+5·5	−22·1	+36·2
43·341 C	25	189	18	142	68·7	+5·1	−22·3	+47·2
44·357 C	13	67	13	67	68·5	+5·1	−22·4	+60·4
45·395 G	7	17	12	30	69·7	+6·5	−22·3	+75·2
Means ...	...	...	17	88	68·5	...	−22·4	...
Group 12230. Feb. 8–17. A typical stream of normal type. *a* is the leading sunspot.								
38·487 G	4	9	3	6	47·0	0·0	+20·1	−38·4
39·601 G	35	117	21	71	48·2	+1·3	+19·7	−22·6
40·441 G	66	338	37	193	50·2	+3·4	+19·9	− 9·5
Group 12230—*continued.*								
d								
41·498 C	151	813	85	456	50°·0	+3°·3	+19°·9	+ 4°·2
42·462 G	190	910	112	536	49·3	+2·7	+20·0	+16·2
43·341 C	176	952	113	610	48·9	+2·4	+19·9	+27·4
44·357 C	131	785	101	599	49·1	+2·7	+19·6	+41·0
45·395 G	79	551	82	558	49·2	+2·9	+19·7	+54·7
46·450 G	30	170	52	307	49·9	+3·8	+19·6	+69·3
47·331 C	8	40	(24	121	45·2	...	+24·5)	+76·2
Means ...	...	...	67	371	49·1	...	+19·8	...
Spot *a*.								
38·487 G	2	4	1	3	48·1	0·0	+20·0	−37·3
39·601 G	11	46	7	28	49·9	+1·9	+20·0	−20·9
40·441 G	46	230	26	131	51·7	+3·8	+20·1	− 8·0
41·498 C	84	401	47	225	52·8	+5·0	+19·8	+ 7·0
42·462 G	96	410	58	246	53·2	+5·5	+19·8	+20·1
43·341 C	88	500	58	330	53·2	+5·6	+19·2	+31·7
44·357 C	76	420	62	340	53·4	+5·9	+19·0	+45·3
45·395 G	44	268	50	303	53·7	+6·3	+19·1	+59·2
46·450 G	17	113	35	232	53·1	+5·9	+19·4	+72·5
Group 12231. Feb. 8–18. A stream in which the following part is poorly developed; the leader, *a*, is a regular spot.								
38·487 G	13	22	13	21	29·7	0·0	+14·3	−55·7
39·601 G	30	143	21	99	33·0	+ 3·3	+15·1	−37·8
40·441 G	70	282	43	171	32·6	+ 2·9	+15·0	−27·1
41·498 C	67	391	38	216	33·2	+ 3·5	+15·2	−12·6
42·462 G	67	362	36	196	33·8	+ 4·1	+15·5	+ 0·7
43·341 C	71	374	39	209	34·1	+ 4·4	+15·4	+12·6
44·357 C	63	278	38	170	35·0	+ 5·2	+15·8	+26·9
45·395 G	39	227	28	163	35·1	+ 5·3	+15·8	+40·6
46·450 G	35	174	34	169	35·5	+ 5·7	+15·7	+54·9
47·331 C	21	101	30	142	35·2	+ 5·4	+15·4	+66·2
48·399 C	4	23	15	88	35·0	...	+15·8	+80·1
Means ...	...	...	32	156	33·7	...	+15·3	...
Spot *a*.								
39·601 G	26	100	18	68	33·3	0·0	+14·7	−37·5
40·441 G	48	221	29	133	34·0	+0·7	+15·2	−25·7
41·498 C	50	286	28	157	34·8	+1·5	+15·4	−11·0

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
Group 12231. Spot *a*—*continued.*								
d								
42·462 G	54	305	29	165	35°·3	+2°·0	+15°·9	+ 2°·2
43·341 C	63	336	35	188	35·1	+1·8	+15·7	+13·6
44·357 C	59	265	36	162	35·2	+1·9	+15·8	+27·1
45·395 G	39	227	28	163	35·1	+1·7	+15·8	+40·6
46·450 G	35	174	34	169	35·5	+2·1	+15·7	+54·9
47·331 C	21	101	30	142	35·2	+1·8	+15·4	+66·2
48·399 C	4	23	15	88	35·0	...	+15·8	+80·1
Group 12233. Feb. 10–19. A stream of spots halting in its early development.								
40·441 G	4	15	3	10	21·5	0·0	+ 8·0	−38·2
41·498 C	4	23	2	13	22·5	+0·9	+ 8·8	−23·3
42·462 G	13	31	7	16	24·1	+2·4	+ 9·5	− 9·0
43·341 C	50	189	26	98	24·4	+2·5	+ 9·1	+ 2·9
44·357 C	97	490	53	267	24·8	+2·8	+ 9·6	+16·7
45·395 G	81	497	49	303	25·6	+3·5	+ 9·4	+31·1
46·450 G	100	604	75	456	26·2	+4·0	+10·1	+45·6
47·331 C	53	418	52	407	25·4	+3·1	+10·0	+56·4
48·399 C	49	219	84	370	25·8	+3·3	+10·2	+70·9
49·424 C	6	46	(24	187	22·9	...	+10·0)	+81·5
Means ...	...	...	39	216	24·5	...	+ 9·4	...
Group 12234. Feb. 11–17. Intermittent; a small spot on February 11: a pair of spots on February 15; a single spot on February 16, and a small stream on February 17.								
41·498 C	4	8	4	8	346·6	0·0	−27·5	−59·2
42·462 G	0	0	0	0	...	...	...	...
43·341 C	0	0	0	0	...	...	...	...
44·357 C	0	0	0	0	...	...	...	...
45·395 G	22	48	12	26	345·2	0·0	−27·4	− 9·3
46·450 G	4	17	·2	9	347·9	+3·1	−26·9	+ 7·3
47·331 C	25	109	14	60	343·5	−1·0	−27·3	+14·5
Means ...	...	...	5	15	345·8	...	−27·3	...
Group 12235. Feb. 12–24. A regular spot that partly breaks up on February 16–17. The smaller parts resulting from the division have died out by February 21. Meanwhile the largest part regains a regular outline.								
42·462 G	13	70	47	253	313·1	...	+14·5	−80·0
43·341 C	36	189	53	280	313·9	0·0	+14·4	−67·6
Group 12235—*continued.*								
d								
44·357 C	46	273	43	254	314°·0	+0°·1	+14°·0	−54°·1
45·395 G	65	366	46	260	314·1	+0·1	+14·1	−40·4
46·450 G	81	419	49	251	314·1	+0·1	+14·0	−26·5
47·331 C	71	466	40	261	314·0	0·0	+14·1	−15·0
48·399 C	71	454	38	245	313·9	−0·2	+14·0	− 1·0
49·424 C	59	298	32	164	314·0	−0·1	+13·9	+12·6
50·388 G	48	244	28	144	314·0	−0·2	+13·8	+25·3
51·422 G	37	181	26	127	314·1	−0·1	+14·2	+39·0
52·322 C	23	124	20	108	314·4	+0·2	+14·1	+51·1
53·473 G	13	61	19	88	314·9	+0·6	+14·4	+66·8
54·376 C	4	13	11	37	313·8	−0·5	+14·1	+77·6
Means ...	...	...	35	190	314·0	...	+14·1	...
Group 12237. Feb. 15–23. A small definite spot followed by faculæ in which other small spots appear after February 19.								
45·395 G	4	9	8	17	283·6	0·0	+21·3	−70·9
46·450 G	9	28	10	31	283·5	0·0	+21·5	−57·1
47·331 C	8	25	7	21	283·3	0·0	+21·7	−45·7
48·399 C	8	15	5	10	283·1	−0·1	+21·8	−31·8
49·424 C	8	21	5	13	283·0	0·0	+22·1	−18·4
50·388 G	22	70	13	40	278·2	−4·7	+20·2	−10·5
51·422 G	26	174	15	97	277·8	−5·0	+19·9	+ 2·7
52·322 C	36	168	21	97	277·3	−5·3	+19·2	+14·0
53·473 G	22	74	14	47	276·9	−5·6	+19·6	+28·8
Means ...	...	...	11	41	280·7	...	+20·8	...
Group 12240. Feb. 18–Mar. 2. A large spot that divides into two on February 20–21. The two parts separate in longitude, the following part being the larger and nearly of regular outline.								
48·399 C	17	155	56	508	235·9	0·0	+14·8	−79·0
49·424 C	55	370	72	485	236·7	+0·8	+14·5	−64·7
50·388 G	78	525	70	475	236·3	+0·4	+14·5	−52·4
51·422 G	92	558	64	391	235·9	0·0	+14·8	−39·2
52·322 C	105	655	63	393	236·5	+0·5	+14·5	−26·8
53·473 G	121	716	66	391	236·3	+0·3	+14·6	−11·8
54·376 C	116	821	62	442	236·1	+0·1	+14·7	− 0·1
55·682 G	60	524	34	295	236·1	+0·1	+14·7	+17·1
56·351 C	55	331	33	200	236·1	+0·1	+15·1	+25·9
57·383 G	50	254	35	178	235·5	−0·5	+15·4	+38·9
58·353 C	46	207	41	184	235·0	−1·1	+16·0	+51·2
59·494 C	21	101	30	146	235·4	−0·7	+15·7	+66·6
60·398 G	7	31	22	98	235·3	−0·8	+15·5	+78·4
Means ...	...	...	50	322	235·9	...	+15·0	...

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12241.

Feb. 19–Mar. 2. A small regular spot, usually with one or two companions.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude	Proper Motion	Latitude	Long. from C.M.
d								
49·424 C	12	92	20	153	227°·8	0°·0	−10°·6	−73°·6
50·388 G	26	116	27	120	226·9	−1·0	−10·8	−61·8
51·422 G	26	130	20	95	227·4	−0·6	−10·7	−47·7
52·322 C	34	160	21	98	228·1	0·0	−10·8	−35·2
53·473 G	37	184	20	98	228·0	−0·2	−10·8	−20·1
54·376 C	55	190	28	97	228·0	−0·3	−10·8	− 8·2
55·682 G	40	128	20	65	228·0	−0·4	−11·2	+ 9·0
56·351 C	13	84	7	45	227·8	−0·7	−11·2	+17·6
57·383 G	24	88	14	51	227·5	−1·0	−11·6	+30·9
58·353 C	21	84	14	57	227·1	−1·5	−11·7	+43·3
59·494 C	8	17	8	16	227·3	−1·4	−11·6	+58·5
60·398 G	4	13	6	19	227·7	−1·1	−11·4	+70·8
Means ...	...	...	17	76	227·6	...	−11·1	...

Group 12242.

Feb. 19–Mar. 2. A spot of composite structure *f* Group 12240.

49·424 C	21	151	47	340	227·0	0·0	+16·6	−74·4
50·388 G	59	331	73	407	226·3	−0·7	+16·4	−62·4
51·422 G	57	460	48	391	225·9	−1·1	+16·0	−49·2
52·322 C	107	594	74	410	225·9	−1·1	+15·6	−37·4
53·473 G	127	596	75	352	225·5	−1·5	+15·6	−22·6
54·376 C	93	544	51	299	225·3	−1·7	+15·4	−10·9
55·682 G	40	418	22	226	224·7	−2·3	+15·1	+ 5·7
56·351 C	63	414	35	232	224·7	−2·3	+15·3	+14·5
57·383 G	39	254	24	157	224·9	−2·1	+15·7	+28·3
58·353 C	27	173	20	126	224·7	−2·3	+15·9	+40·9
59·494 C	21	99	21	100	225·2	−1·8	+15·7	+56·4
60·398 G	11	48	17	75	225·1	−1·9	+16·0	+68·2
Means ...	...	...	42	260	225·4	...	+15·8	...

Group 12245.

Feb. 20–Mar. 2. A group of stream type, the leader alone surviving after February 26.

50·388 G	28	144	68	346	214·9	0·0	+20·3	−73·8
51·422 G	66	323	86	422	212·8	−2·0	+20·7	−62·3
52·322 C	42	366	39	328	214·4	−0·3	+20·4	−48·9
53·473 G	55	330	37	227	213·8	−0·7	+19·9	−34·3
54·376 C	49	296	30	182	213·8	−0·6	+20·2	−22·4
55·682 G	51	203	29	115	214·0	−0·3	+20·2	− 5·0
56·351 C	44	167	24	94	214·5	+0·3	+20·2	+ 4·3
57·383 G	15	50	9	30	215·5	+1·4	+19·6	+18·9

Group 12245—*continued.*

d								
58·353 C	11	30	7	20	214°·9	+0°·9	+19°·7	+31°·1
59·494 C	8	17	7	14	215·1	+1·2	+19·4	+46·3
60·398 G	4	13	4	14	214·8	+1·0	+19·3	+57·9
Means ...	...	...	31	163	214·4	...	+20·0	...

Group 12246.

Feb. 20–Mar. 2. A feeble group that has nearly died out by February 26; a pair of new spots appear on February 27.

50·388 G	4	24	11	68	210·7	0·0	+11·9	−78·0
51·422 G	4	13	5	16	211·9	+1·1	+11·9	−63·2
52·322 C	8	32	7	27	212·7	+1·9	+11·8	−50·6
53·473 G	13	74	9	50	210·1	−0·8	+11·9	−38·0
54·376 C	19	101	11	60	210·1	−0·9	+12·5	−26·1
55·682 G	20	99	11	53	209·7	−1·4	+11·8	− 9·3
56·351 C	6	25	3	13	213·8	+2·6	+12·1	+ 3·6
57·383 G	53	201	29	109	210·7	−0·5	+11·5	+14·1
58·353 C	46	276	28	166	210·7	−0·6	+12·2	+26·9
59·494 C	30	120	21	84	208·4	−3·0	+12·4	+39·6
60·398 G	18	70	16	62	208·8	−2·7	+12·8	+51·9
Means ...	...	...	14	64	210·7	...	+12·1	...

Group 12250.

Feb. 22–28. A diminishing regular spot with a distant follower on February 24.

52·322 C	8	55	16	109	193·5	0·0	+26·6	−69·8
53·473 G	26	136	31	158	191·9	−1·2	+26·7	−56·2
54·376 C	35	184	32	167	190·5	−2·3	+27·4	−45·7
55·682 G	24	156	16	106	192·3	−0·1	+26·2	−26·7
56·351 C	21	120	13	76	192·2	0·0	+26·6	−18·0
57·383 G	22	92	13	55	192·0	+0·2	+26·3	− 4·6
58·353 C	6	30	4	18	191·8	+0·3	+26·4	+ 8·0
Means ...	...	...	18	98	192·0	...	+26·6	...

Group 12252.

Feb. 23–Mar. 4. A partially-formed regular spot with followers on February 24–26.

53·473 G	20	44	27	59	183·7	0·0	+17·5	−64·4
54·376 C	34	211	33	203	182·3	−1·4	+17·9	−53·9
55·682 G	29	218	20	153	181·2	−2·4	+17·2	−37·8
56·351 C	34	·165	21	104	181·0	−2·5	+17·4	−29·2

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
Group 12252—*continued.*								
d								
57·383 G	20	116	11	66	181°·4	−2°·1	+17°·2	−15°·2
58·353 C	27	120	15	66	180·7	−2·7	+17·6	− 3·1
59·494 C	17	101	10	57	180·5	−2·9	+18·0	+11·7
60·398 G	22	64	13	39	180·8	−2·5	+18·2	+23·9
61·552 G	11	22	8	16	180·7	−2·6	+18·8	+39·0
62·117 K	2	10	2	8	180·8	−2·4	+18·5	+46·6
Means ...	...	...	16	77	181·3	...	+17·8	...
Group 12255. Feb. 26–Mar. 5. A variable stream *f* Group 12251.								
56·351 C	6	23	4	14	174·7	0·0	−23·8	−35·5
57·383 G	24	48	13	27	172·2	−2·2	−23·8	−24·4
58·353 C	21	71	11	38	173·3	−0·9	−24·1	−10·5
59·494 C	53	192	28	100	171·2	−2·7	−24·1	+ 2·4
60·398 G	74	302	41	163	172·4	−1·3	−24·3	+15·5
61·552 G	56	243	34	149	172·9	−0·5	−24·3	+31·2
62·117 K	40	178	26	119	172·5	−0·8	−25·0	+38·3
63·419 C	12	42	11	39	173·2	+0·3	−25·3	+56·1
Means ...	...	...	21	81	172·8	...	−24·3	...
Group 12262. Mar. 1–11. A single spot on March 1; there is then a gap until March 7 when a small stream makes its appearance.								
59·494 C	4	13	3	10	121·8	0·0	−19·3	−47·0
60·398 G	0	0	0	0	...	...	...	...
61·552 G	0	0	0	0	...	...	...	...
62·117 K	0	0	0	0	...	...	...	...
63·419 C	0	0	0	0	...	...	...	...
64·397 C	0	0	0	0	...	...	...	...
65·328 C	17	59	10	34	119·3	−2·0	−18·6	+27·4
66·401 C	17	64	12	44	120·9	−0·3	−18·7	+43·1
67·403 C	22	90	19	82	121·1	0·0	−19·3	+56·5
68·401 G	22	130	30	176	120·8	−0·2	−19·3	+69·4
69·466 G	4	39	14	136	120·6	...	−19·4	+83·2
Means ...	...	...	7	35	120·8	...	−19·0	...
Group 12264. Mar. 3–14. A large group of stream type showing rapid and considerable changes from March 5 to 9; afterwards the following spots die out, and the leader, *a*, remains as a regular spot.								
Group 12264—*continued.*								
d								
61·552 G	9	22	15	37	72°·7	0°·0	+19°·2	−69°·0
62·117 K	22	71	27	86	73·0	+0·4	+19·4	−61·2
63·419 C	63	397	50	304	74·6	+2·0	+18·1	−42·5
64·397 C	112	943	73	612	74·4	+1·9	+18·6	−29·8
65·328 C	187	1143	111	672	73·5	+1·1	+19·2	−18·4
66·401 C	195	1219	109	685	73·9	+1·5	+19·0	− 3·9
67·403 C	140	997	79	569	73·8	+1·5	+18·6	+ 9·2
68·401 G	192	897	117	547	74·2	+2·0	+18·1	+22·8
69·466 G	123	612	87	436	74·4	+2·3	+18·6	+37·0
70·398 G	75	469	68	424	75·6	+3·5	+18·0	+50·5
71·415 G	53	332	74	461	76·9	+4·9	+17·8	+65·2
72·119 K	20	144	47	338	76·9	+5·0	+17·8	+74·5
Means ...	...	...	71	431	74·5	...	+18·5	...
Spot *a*.								
61·552 G	7	15	10	22	75·4	0·0	+19·1	−66·3
62·117 K	12	51	13	56	76·1	+0·7	+18·8	−58·1
63·419 C	34	278	25	203	77·1	+1·8	+18·1	−40·0
64·397 C	61	638	38	402	76·7	+1·5	+18·2	−27·5
65·328 C	100	723	57	412	76·8	+1·7	+17·7	−15·1
66·401 C	110	727	60	400	76·8	+1·7	+17·5	− 1·0
67·403 C	85	652	48	372	77·5	+2·5	+17·7	+12·9
68·401 G	117	607	73	376	77·6	+2·7	+17·7	+26·2
69·466 G	88	462	64	337	77·4	+2·6	+17·9	+40·0
70·398 G	66	414	61	381	77·2	+2·4	+17·9	+52·1
71·415 G	53	332	74	461	76·9	+2·2	+17·8	+65·2
72·119 K	20	144	47	338	76·9	+2·3	+17·8	+74·5
Group 12265. Mar. 4–14. A stream of simple formation in which the leader, a regular spot, alone remains after March 8.								
62·117 K	4	12	4	12	75·9	0·0	−29·4	−58·3
63·419 C	30	170	22	122	74·3	− 1·0	−29·6	−42·8
64·397 C	36	241	22	150	74·0	− 0·9	−29·6	−30·2
65·328 C	47	233	27	131	74·7	+ 0·2	−29·8	−17·2
66·401 C	49	226	26	122	76·3	+ 2·2	−29·8	− 1·5
67·403 C	43	222	24	122	77·3	+ 3·7	−29·7	+12·7
68·401 G	51	249	31	149	78·4	+ 5·2	−29·7	+27·0
69·466 G	35	172	25	122	79·2	+ 6·5	−29·1	+41·8
70·398 G	29	154	26	139	80·2	+ 7·9	−28·9	+55·1
71·415 G	22	112	29	150	80·5	+ 8·6	−28·2	+68·8
72·119 K	12	62	28	143	81·9	+10·3	−28·7	+79·5
Means ...	...	...	24	124	77·5	...	−29·3	...

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12266.

Mar. 5–13. A pair of spots (the leader regular in outline) representing the simplest form of a bi-polar group.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude	Proper Motion	Latitude	Long. from C.M.
d					°	°	°	°
63·419 C	30	127	42	179	50·1	0·0	+11·9	−67·0
64·397 C	43	295	39	275	50·5	+0·3	+11·7	−53·7
65·328 C	57	343	41	246	50·7	+0·4	+11·7	−41·2
66·401 C	58	271	35	161	50·8	+0·4	+11·7	−27·0
67·403 C	30	153	16	83	50·8	+0·4	+11·7	−13·8
68·401 G	31	99	16	52	51·0	+0·5	+11·2	− 0·4
69·466 G	31	125	17	68	51·3	+0·7	+11·0	+13·9
70·398 G	18	88	11	52	51·1	+0·4	+11·5	+26·0
71·415 G	13	75	9	52	51·7	+0·9	+11·5	+40·0
Means ...	...	...	25	130	50·9	...	+11·6	...

Group 12271.

Mar. 7–19. A pair of spots coalescing on March 12 when a train of small spots first makes its appearance.

65·328 C	8	34	25	107	12·9	0·0	+12·4	−79·0
66·401 C	17	68	24	95	11·3	−1·7	+12·8	−66·5
67·403 C	22	139	20	129	10·5	−2·5	+13·2	−54·1
68·401 G	46	194	33	138	10·6	−2·5	+13·1	−40·8
69·466 G	61	392	37	237	10·2	−2·9	+13·1	−27·2
70·398 G	44	264	24	145	11·7	−1·5	+13·1	−13·4
71·415 G	54	316	29	167	10·6	−2·6	+13·2	− 1·1
72·119 K	41	293	22	158	9·8	−3·5	+13·7	+ 7·4
73·392 G	59	249	35	148	12·2	−1·1	+13·2	+26·5
74·391 C	46	210	33	146	11·4	−2·0	+13·7	+38·9
75·493 G	31	141	29	131	12·0	−1·4	+13·9	+54·1
76·468 G	18	64	26	93	12·5	−1·0	+13·5	+67·4
77·391 G	4	18	15	69	13·5	...	+13·5	+80·6
Means ...	...	...	28	141	11·3	...	+13·2	...

Group 12272.

Mar. 8–14. A sparse stream of unimportant spots.

66·401 C	4	17	5	21	20·4	0·0	+30·7	−57·4
67·403 C	26	119	24	108	20·5	+0·6	+30·7	−44·1
68·401 G	31	185	23	135	21·5	+2·1	+30·1	−29·9
69·466 G	39	152	25	98	23·4	+4·5	+29·5	−14·0
70·398 G	48	150	31	96	19·7	+1·2	+31·0	− 5·4
71·415 G	13	44	8	28	19·3	+1·3	+30·3	+ 7·6
72·119 K	6	20	4	13	18·4	+0·7	+30·3	+16·0
Means ...	...	...	17	71	20·5	...	+30·4	...

Group 12275.

Mar. 16–24. A pair of spots with average separation in longitude for a bi-polar group. The leader, a regular spot, alone remains on March 20.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude	Proper Motion	Latitude	Long. from C.M.
d					°	°	°	°
74·391 C	47	145	27	85	305·7	0·0	−23·8	−26·8
75·493 G	57	244	30	130	305·9	+0·4	−23·4	−12·0
76·468 G	44	207	23	108	305·3	0·0	−23·4	+ 0·2
77·391 G	35	169	19	90	305·6	+0·5	−23·2	+12·7
78·396 G	24	117	14	68	307·3	+2·4	−22·7	+27·6
79·364 C	13	73	9	49	307·2	+2·5	−22·8	+40·3
80·408 C	9	28	8	24	306·8	+2·3	−22·7	+53·6
81·398 G	9	18	11	22	306·5	+2·2	−22·7	+66·4
82·447 G	4	7	10	17	306·2	+2·2	−22·7	+79·9
Means ...	...	...	17	66	306·3	...	−23·0	...

Group 12277.

Mar. 18–24. A small bi-polar group of feeble development.

76·468 G	4	9	3	7	262·1	0·0	+24·8	−43·0
77·391 G	20	112	14	76	263·9	+2·0	+24·5	−29·0
78·396 G	26	132	15	81	264·7	+3·1	+24·7	−15·0
79·364 C	25	129	14	76	264·1	+2·8	+25·0	− 2·8
80·408 C	4	13	2	8	265·2	+4·1	+25·7	+12·0
81·398 G	4	27	2	17	259·9	−0·9	+24·0	+19·8
82·447 G	2	4	1	3	253·8	−6·7	+23·5	+27·5
Means ...	...	...	7	38	262·0	...	+24·6	...

Group 12280.

Mar. 20–28. A variable cluster of irregular spots.

78·396 G	4	15	6	22	208·2	0·0	−17·3	−71·5
79·364 C	13	66	12	62	208·5	+0·4	−18·4	−58·4
80·408 C	13	111	9	78	209·4	+1·3	−18·4	−43·8
81·398 G	20	77	12	46	208·1	+0·1	−17·9	−32·0
82·447 G	15	40	8	22	207·9	0·0	−18·1	−18·4
83·391 G	7	49	4	25	208·0	+0·1	−18·0	− 5·8
84·375 G	49	209	25	109	208·8	+1·0	−18·9	+ 8·0
85·391 G	22	100	12	55	209·1	+1·4	−18·7	+21·7
86·394 G	4	18	3	11	210·0	+2·3	−19·1	+35·8
Means ...	...	...	10	48	208·7	...	−18·3	...

Group 12282.

Mar. 21–30. A stream of the simplest formation—leader and follower. The leader alone remains after March 24 and until March 29 when a new companion appears.

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12282—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
79·364 C	28	146	51	275	193·8	0·0	+ 7·2	—73·1
80·408 C	32	205	32	210	193·6	—0·4	+ 7·5	—59·6
81·398 G	46	258	34	192	194·3	+0·2	+ 7·6	—45·8
82·447 G	57	225	34	133	196·4	+2·1	+ 7·2	—29·9
83·391 G	44	225	24	122	196·9	+2·5	+ 7·1	—16·9
84·375 G	47	200	24	104	197·2	+2·6	+ 6·9	— 3·6
85·391 G	31	140	16	73	197·6	+2·9	+ 6·9	+10·2
86·394 G	18	67	10	38	197·8	+2·9	+ 6·6	+23·6
87·403 G	9	36	6	23	199·0	+4·0	+ 5·6	+38·1
88·600 G	8	20	7	18	199·8	+4·6	+ 5·4	+54·7
Means ...	...	...	24	119	196·6	...	+ 6·8	...

Group 12285.

Mar. 22–Apr. 3. A slowly diminishing regular spot with a few companions on March 26–29 and a single companion on April 2 that alone survives on April 3.

80·408 C	9	39	17	74	177·1	0·0	—15·0	—76·1
81·398 G	18	84	19	89	177·4	+0·3	—14·6	—62·7
82·447 G	22	119	17	90	177·4	+0·2	—14·7	—48·9
83·391 G	18	150	11	93	177·1	—0·1	—14·4	—36·7
84·375 G	42	211	23	116	177·3	+0·1	—14·4	—23·5
85·391 G	27	195	14	99	177·4	+0·2	—14·3	—10·0
86·394 G	31	213	16	109	177·4	+0·2	—14·5	+ 3·2
87·403 G	31	155	16	82	177·8	+0·5	—14·5	+16·9
88·600 G	18	111	11	67	178·4	+1·1	—14·1	+33·3
89·382 G	13	58	9	40	178·6	+1·3	—14·0	+43·8
90·401 C	4	22	4	20	178·5	+1·2	—14·2	+57·2
91·397 C	8	28	9	34	173·7	—3·7	—15·0	+65·5
92·420 G	9	38	18	78	171·8	—5·6	—15·8	+77·1
Means ...	...	...	14	76	176·9	...	—14·6	...

Group 12286.

Mar. 23–Apr. 1. On March 23–25 a few small variable spots that develop into a considerable stream.

81·398 G	9	22	7	18	193·9	0·0	+16·5	—46·2
82·447 G	13	66	9	44	192·6	—1·2	+17·4	—33·7
83·391 G	4	22	2	13	192·4	—1·4	+16·8	—21·4
84·375 G	20	71	11	40	191·9	—1·9	+18·9	— 8·9
85·391 G	44	209	24	115	192·8	—0·9	+17·9	+ 5·4
86·394 G	104	613	60	356	194·3	+0·6	+17·5	+20·1
87·403 G	98	593	66	397	195·7	+2·1	+17·6	+34·8
88·600 G	68	490	59	437	195·7	+2·2	+17·5	+50·6
89·382 G	50	368	59	433	195·0	+1·5	+18·5	+60·2
90·401 C	26	215	60	494	195·1	+1·7	+18·8	+73·8
Means ...	...	...	36	235	193·9	...	+17·7	...

Group 12287.

Mar. 23–31. Feeble but persistent activity shown by small variable spots.

d					°	°	°	°
81·398 G	4	9	8	18	167·9	0·0	+17·9	—72·2
82·447 G	18	35	19	37	168·8	+1·0	+16·7	—57·5
83·391 G	11	44	9	34	168·9	+1·1	+17·3	—44·9
84·375 G	18	71	11	45	171·0	+3·2	+17·3	—29·8
85·391 G	18	58	10	34	169·5	+1·8	+17·2	—17·9
86·394 G	4	22	2	12	170·4	+2·7	+17·4	— 3·8
87·403 G	2	16	1	9	167·0	—0·6	+17·7	+ 6·1
88·600 G	4	16	2	9	164·3	—3·2	+20·1	+19·2
89·382 G	2	11	1	7	167·8	+0·3	+18·1	+33·0
Means ...	...	...	7	23	168·4	...	+17·7	...

Group 12289.

Mar. 23–Apr. 4. A group of stream type consisting of a regular spots *a*, as leader and a composite spot, *b*, as follower. *a* has divided into two parts by March 27 and become a cluster.

81·398 G	13	66	(43	216	160·3	...	+10·4)	—79·8
82·447 G	65	348	100	531	157·8	0·0	+10·3	—68·5
83·391 G	99	705	96	684	157·2	—0·7	+10·4	—56·6
84·375 G	165	956	121	701	157·7	—0·3	+ 9·9	—43·1
85·391 G	162	990	98	604	157·7	—0·4	+10·3	—29·7
86·394 G	142	1012	78	554	157·5	—0·8	+10·2	—16·7
87·403 G	168	1055	88	555	158·1	—0·3	+10·2	— 2·8
88·600 G	113	848	61	457	158·0	—0·5	+10·4	+12·9
89·382 G	93	555	54	324	160·1	+1·5	+ 9·6	+25·3
90·401 C	47	312	32	214	160·9	+2·2	+ 9·0	+39·6
91·397 C	30	202	28	190	164·1	+5·3	+ 8·7	+55·9
92·420 G	22	114	33	173	164·2	+5·2	+ 8·3	+69·5
93·378 C	4	39	14	141	163·2	...	+ 7·8	+81·1
Means ...	...	...	72	453	159·4	...	+ 9·7	...

Spot *a*.

81·398 G	13	66	43	216	160·3	0·0	+10·4	—79·8
82·447 G	27	172	34	217	161·6	+1·2	+ 9·7	—64·7
83·391 G	49	336	42	286	162·1	+1·6	+ 9·8	—51·7
84·375 G	67	417	44	275	162·6	+2·0	+ 9·0	—38·2
85·391 G	89	413	51	235	163·2	+2·5	+ 8·7	—24·2
86·394 G	71	404	38	214	163·8	+2·9	+ 8·6	—10·4
87·403 G	75	471	39	245	164·0	+3·0	+ 8·9	+ 3·1
88·600 G	53	373	29	205	164·2	+3·1	+ 8·8	+19·1
89·382 G	53	329	32	197	164·0	+2·8	+ 8·6	+29·2
90·401 C	34	224	24	159	163·9	+2·6	+ 8·6	+42·6
91·397 C	30	202	28	190	164·1	+2·6	+ 8·7	+55·9
92·420 G	22	114	33	173	164·2	+2·6	+ 8·3	+69·5
93·378 C	4	39	14	141	163·2	...	+ 7·8	+81·1

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12289—*continued.*

Spot *b.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude	Proper Motion	Latitude	Long. from C.M.
d					°	°	°	°
82·447 G	27	141	51	265	153·5	0·0	+10·7	−72·8
83·391 G	46	358	50	387	153·6	0·0	+10·8	−60·2
84·375 G	98	539	77	426	153·0	−0·7	+10·9	−47·8
85·391 G	73	577	47	369	153·5	−0·3	+11·0	−33·9
86·394 G	71	608	40	340	153·5	−0·5	+11·1	−20·7
87·403 G	93	584	49	310	153·6	−0·5	+11·2	− 7·3
88·600 G	60	475	32	252	154·1	−0·1	+11·2	+ 9·0
89·382 G	40	226	22	127	154·2	−0·1	+11·0	+19·8
90·401 C	13	88	8	55	154·1	−0·3	+10·9	+32·4

Group 12293.

Mar. 27–Apr. 5. A regular spot, with occasional companions, disappearing rather suddenly as a close pair of small nuclei.

85·391 G	11	67	24	148	109·7	0·0	− 8·1	−77·7
86·394 G	18	109	20	123	110·0	+0·2	− 7·9	−64·2
87·403 G	33	175	26	136	110·2	+0·2	− 7·8	−50·7
88·600 G	40	226	24	138	110·2	0·0	− 7·9	−34·9
89·382 G	58	235	32	129	110·2	−0·1	− 7·7	−24·6
90·401 C	39	211	20	108	109·9	−0·5	− 7·8	−11·4
91·397 C	22	129	11	64	110·1	−0·4	− 7·7	+ 1·9
92·420 G	20	83	10	43	110·3	−0·4	− 7·6	+15·6
93·378 C	6	17	3	10	110·0	−0·8	− 7·8	+27·9
94·427 G	4	18	3	12	109·9	−1·1	− 7·8	+41·7
Means ...	...	...	17	91	110·0	...	− 7·8	...

Group 12294.

Mar. 29–Apr. 4. A few small spots in a stream.

87·403 G	9	36	13	53	92·3	0·0	+ 8·0	−68·6
88·600 G	18	67	15	56	93·3	+0·8	+ 7·8	−51·8
89·382 G	24	107	17	75	92·9	+0·3	+ 7·9	−41·9
90·401 C	22	67	13	38	95·9	+3·2	+ 7·5	−25·4
91·397 C	10	51	5	27	94·6	+1·7	+ 7·7	−13·6
92·420 G	9	54	5	28	95·5	+2·5	+ 7·3	+ 0·8
93·378 C	8	54	4	28	96·2	+3·0	+ 7·5	+14·1
Means ...	...	...	10	44	94·4	...	+ 7·7	...

Group 12295.

Mar. 30–Apr. 6. A few spots developing into a large stream of normal type. The follower spot, *b*, partly coalesces with *a* of Group 12300 which originates on April 1.

Group 12295—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude	Proper Motion	Latitude	Long. from C.M.
d					°	°	°	°
88·600 G	18	62	10	33	136·2	0·0	+ 9·6	− 8·9
89·382 G	27	84	14	44	137·1	+0·8	+ 9·0	+ 2·3
90·401 C	77	301	42	163	137·4	+1·0	+ 8·9	+16·1
91·397 C	112	715	68	434	138·6	+2·0	+ 8·5	+30·4
92·420 G	163	899	121	667	139·5	+2·8	+ 8·0	+44·8
93·378 C	110	651	111	660	140·4	+3·6	+ 7·9	+58·3
94·427 G	51	365	95	649	139·6	+2·6	+ 8·3	+71·4
95·398 C	6	26	(20	85	135·6	...	+ 8·9)	+80·2
Means ...	...	...	66	379	138·4	...	+ 8·6	...

Spot *b.*

91·397 C	56	297	33	175	135·4	0·0	+ 9·4	+27·2
92·420 G	54	303	37	209	135·1	−0·4	+ 9·4	+40·4
93·378 C	35	199	30	173	135·1	−0·6	+ 9·4	+53·0
94·427 G	18	169	25	232	135·3	−0·5	+ 9·2	+67·1
95·398 C	6	26	20	85	135·6	...	+ 8·9	+80·2

Group 12298.

Mar. 30–Apr. 9. A small stream of generally unimportant spots.

88·600 G	16	84	16	86	87·8	0·0	+14·9	−57·3
89·382 G	53	195	42	156	88·0	+0·2	+15·4	−46·8
90·401 C	34	206	22	134	87·5	−0·3	+15·2	−33·8
91·397 C	30	163	17	95	87·0	−0·9	+15·7	−21·2
92·420 G	40	178	22	96	87·3	−0·6	+14·9	− 7·4
93·378 C	32	145	17	78	87·8	−0·1	+13·9	+ 5·7
94·427 G	42	263	24	150	88·0	+0·1	+14·3	+19·8
95·398 C	32	166	20	105	86·8	−1·2	+14·1	+31·4
96·391 C	30	170	24	130	87·6	−0·4	+14·0	+45·3
97·500 G	29	138	32	150	88·0	0·0	+14·2	+60·3
98·440 C	9	30	16	52	86·2	−1·8	+15·0	+70·9
Means ...	...	...	23	112	87·4	...	+14·7	...

Group 12299.

Mar. 31–Apr. 8. A regular spot decreasing rapidly after April 6.

89·382 G	9	42	25	115	59·6	0·0	+24·7	−75·2
90·401 C	22	99	28	115	59·5	+0·1	+22·4	−61·8
91·397 C	17	138	15	121	59·6	+0·4	+22·5	−48·6
92·420 G	22	154	15	108	60·6	+1·5	+22·5	−34·1

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
Group 12299—*continued.*								
d								
93·378 C	24	160	15	98	60°·8	+1°·9	+22°·1	−21°·3
94·427 G	29	174	17	99	60·8	+2·1	+21·5	− 7·4
95·398 C	22	117	13	67	60·5	+2·0	+21·3	+ 5·1
96·391 C	11	37	6	22	60·0	+1·6	+20·9	+17·7
97·500 G	0	11	0	7	58·3	+0·1	+20·1	+30·6
Means ...	...	...	15	94	60·0	...	+22·0	...
Group 12300. Apr. 1–6. A bi-polar group whose two components are fairly large and rather complex in structure, *a* is the leader. This group closely follows Group 12295.								
90·401 C	11	43	6	23	129·7	0·0	+ 9·7	+ 8·4
91·397 C	131	688	73	385	129·5	−0·3	+10·1	+21·3
92·420 G	138	874	90	566	129·7	−0·2	+10·4	+35·0
93·378 C	128	812	101	646	129·4	−0·6	+10·5	+47·3
94·427 G	78	493	91	571	130·3	+0·2	+11·0	+62·1
95·398 C	39	190	91	406	129·5	−0·7	+11·0	+74·1
Means ...	...	...	75	433	129·7	...	+10·4	...
Spot *a*.								
91·397 C	69	318	39	181	132·2	0·0	+10·7	+24·0
92·420 G	76	406	52	276	133·5	+1·2	+11·3	+38·8
93·378 C	52	376	45	323	134·0	+1·6	+11·5	+51·9
94·427 G	38	223	51	301	134·3	+1·8	+11·8	+66·1
95·398 C	22	76	64	222	133·9	+1·3	+12·1	+78·5
Group 12301. Apr. 1–9. A regular spot with a train of small companions from April 4–6.								
90·401 C	4	26	6	37	53·6	0·0	+ 9·4	−67·7
91·397 C	13	58	11	50	55·7	+2·0	+ 9·8	−52·5
92·420 G	18	91	12	60	57·1	+3·3	+ 9·7	−37·6
93·378 C	39	151	23	88	56·2	+2·3	+10·3	−25·9
94·427 G	42	203	22	108	57·4	+3·4	+10·1	−10·8
95·398 C	19	82	10	43	58·9	+4·8	+10·5	+ 3·5
96·391 C	9	26	5	15	62·4	+8·1	+10·7	+20·1
97·500 G	7	18	5	12	63·8	+9·4	+10·7	+36·1
98·440 C	4	9	3	7	64·3	+9·8	+10·0	+49·0
Means ...	...	...	11	47	58·8	...	+10·1	...

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
Group 12303. Apr. 3–8. A small, short-lived group.								
d								
92·420 G	11	31	8	22	48°·2	0°·0	−14°·8	−46°·5
93·378 C	19	48	11	29	49·1	+0·9	−14·4	−33·0
94·427 G	9	22	5	11	52·1	+3·8	−13·8	−16·1
95·398 C	6	26	3	13	52·5	+4·2	−14·0	− 2·9
96·391 C	4	13	2	7	54·4	+6·1	−14·2	+12·1
97·500 G	4	13	2	7	54·4	+6·0	−13·9	+26·7
Means ...	...	...	5	15	51·8	...	−14·2	...
Group 12304. Apr. 3–16. A stream of normal type; there is considerable separation in longitude between the leader, *a*, and the follower *b*.								
92·420 G	17	85	31	150	19·9	0·0	−22·2	−74·8
93·378 C	59	340	63	372	18·8	−0·9	−22·3	−63·3
94·427 G	120	662	92	514	19·4	−0·1	−22·1	−48·8
95·398 C	129	749	83	484	18·8	−0·6	−22·0	−36·6
96·391 C	159	901	91	512	18·2	−1·0	−22·0	−24·1
97·500 G	165	1142	88	609	17·4	−1·6	−22·3	−10·3
98·440 C	158	993	83	519	17·5	−1·3	−22·5	+ 2·2
99·426 C	148	799	80	431	16·8	−1·8	−22·1	+14·6
100·410 G	102	681	60	403	16·9	−1·5	−22·4	+27·6
101·417 G	63	318	45	219	16·3	−1·9	−22·6	+40·3
102·400 C	28	156	25	144	18·3	+0·2	−22·5	+55·3
103·488 G	15	76	25	128	19·6	+1·7	−22·1	+71·0
104·415 C	4	9	(7	16	11·2	...	−23·0)	+74·8
105·400 G	4	22	(18	97	8·6	...	−23·0)	+85·2
Means ...	...	...	64	374	18·2	...	−22·3	...
Spot *a*.								
92·420 G	13	67	21	107	21·9	0·0	−21·2	−72·8
93·378 C	37	184	36	180	22·5	+0·8	−21·1	−59·6
94·427 G	62	292	44	207	23·6	+2·1	−21·0	−44·6
95·398 C	56	281	34	169	24·2	+2·8	−21·0	−31·2
96·391 C	56	333	30	180	24·6	+3·4	−21·2	−17·7
97·500 G	58	330	30	172	24·9	+3·9	−21·4	− 2·8
98·440 C	56	302	30	160	24·8	+4·0	−21·6	+ 9·5
99·426 C	52	254	29	142	24·3	+3·7	−21·7	+22·1
100·410 G	40	242	25	152	24·2	+3·8	−21·7	+34·9
101·417 G	34	130	26	99	24·2	+4·0	−21·8	+48·2
102·400 C	13	87	13	90	23·9	+3·8	−21·8	+60·9
103·488 G	11	54	21	104	24·6	+4·7	−21·7	+76·0

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12304—*continued.*

Spot *b.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
92·420 G	4	18	10	43	15·1	0·0	−24·0	−79·6
93·378 C	22	156	27	192	15·6	+0·7	−23·2	−66·5
94·427 G	58	370	48	307	15·7	+1·0	−23·0	−52·5
95·398 C	60	384	41	261	15·0	+0·4	−23·1	−40·4
96·391 C	84	436	50	257	14·0	−0·4	−22·8	−28·3
97·500 G	89	665	48	359	13·8	−0·4	−22·6	−13·9
98·440 C	93	566	48	294	13·5	−0·5	−22·8	− 1·8
99·426 C	89	519	47	275	13·3	−0·5	−22·5	+11·1
100·410 G	58	412	33	235	13·1	−0·5	−22·5	+23·8
101·417 G	29	188	19	120	12·3	−1·1	−22·8	+36·3
102·400 C	15	69	12	54	11·8	−1·5	−23·1	+48·8
103·488 G	4	22	4	24	11·4	−1·7	−23·0	+62·8
104·415 C	4	9	7	16	11·2	−1·7	−23·0	+74·8

Group 12305.

Apr. 5–13. A stream developing suddenly but soon dying out.

94·427 G	47	174	43	158	10·9	0·0	− 8·1	−57·3
95·398 C	48	208	32	143	11·9	+0·9	− 8·3	−43·5
96·391 C	65	318	37	181	12·6	+1·5	− 8·6	−29·7
97·500 G	45	294	23	152	13·2	+1·9	− 8·9	−14·5
98·440 C	52	212	27	106	14·0	+2·6	− 9·0	− 1·3
99·426 C	35	167	18	87	16·1	+4·6	− 9·3	+13·9
100·410 G	18	58	10	32	17·0	+5·3	− 9·4	+27·7
101·417 G	9	31	6	20	16·8	+5·0	− 9·6	+40·8
102·400 C	9	22	8	18	16·9	+5·0	− 9·6	+53·9
Means ...	...	...	23	100	14·4	...	− 9·0	...

Group 12308.

Apr. 7–12. A few spots in a short stream; only one component remains after April 9.

96·391 C	6	39	4	25	23·1	0·0	+27·0	−19·2
97·500 G	18	45	11	28	20·9	−1·7	+30·1	− 6·8
98·440 C	13	48	8	29	17·8	−4·4	+29·1	+ 2·5
99·426 C	9	48	6	31	17·1	−4·7	+29·5	+14·9
100·410 G	9	27	6	19	17·1	−4·3	+29·5	+27·8
101·417 G	2	4	2	3	16·7	−4·3	+29·4	+40·7
Means ...	...	...	6	22	18·8	...	+29·1	...

Group 12311.

Apr. 11–21. A stream of small spots barely visible on April 14. On April 15, the group re-forms as a stream of normal type.

d					°	°	°	°
100·410 G	13	40	13	40	289·0	0·0	−12·7	−60·3
101·417 G	22	72	16	51	290·4	+1·3	−12·1	−45·6
102·400 C	22	87	13	52	290·4	+1·2	−12·3	−32·6
103·488 G	9	49	5	26	291·5	+2·2	−11·8	−17·1
104·415 C	37	165	18	83	291·5	+2·2	−11·1	− 4·9
105·400 G	85	390	43	199	292·4	+3·0	−11·1	+ 9·0
106·527 C	76	497	42	272	290·9	+1·4	−11·5	+22·4
107·366 C	62	456	38	274	290·9	+1·3	−11·3	+33·5
108·394 G	47	212	34	154	289·8	+0·1	−11·4	+46·0
109·410 C	25	148	24	140	288·9	−0·8	−11·6	+58·5
110·388 G	14	81	20	116	287·6	−2·2	−11·6	+70·1
Means ...	...	...	24	128	290·3	...	−11·7	...

Group 12312.

Apr. 15–20. A short-lived bi-polar group.

104·415 C	30	100	18	61	270·8	0·0	−31·5	−25·6
105·400 G	97	410	55	233	270·4	+0·1	−31·1	−13·0
106·527 C	63	303	35	168	270·0	+0·3	−31·1	+ 1·5
107·366 C	45	248	26	140	269·7	+0·4	−30·7	+12·3
108·394 G	36	110	21	67	269·2	+0·4	−30·7	+25·4
109·410 C	4	9	3	6	268·8	+0·5	−30·9	+38·4
Means ...	...	...	26	112	269·8	...	−31·0	...

Group 12314.

Apr. 15–26. A bi-polar group; the follower spot dies out after April 19.

104·415 C	4	13	10	33	219·0	0·0	+10·1	−77·4
105·400 G	45	233	54	278	220·0	+0·9	+ 9·6	−63·4
106·527 C	79	375	62	291	220·8	+1·6	+ 9·8	−47·7
107·366 C	74	353	47	225	221·5	+2·2	+ 9·6	−35·9
108·394 G	68	315	37	174	221·9	+2·5	+ 9·7	−21·9
109·410 C	39	196	20	102	222·4	+2·8	+ 9·8	− 8·0
110·388 G	36	256	19	133	222·2	+2·5	+ 9·8	+ 4·7
111·551 G	38	198	21	109	222·3	+2·5	+ 9·8	+20·2
112·360 G	45	180	27	108	222·3	+2·4	+ 9·9	+30·9
113·106 K	25	163	17	112	222·6	+2·6	+ 9·9	+41·0
114·347 G	20	131	19	127	222·5	+2·4	+10·4	+57·3
115·584 G	9	36	18	71	222·8	+2·5	+11·0	+74·0
Means ...	...	...	28	147	221·7	...	+10·0	...

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12316.

Apr. 18–24. A regular spot dying out.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ Spots	Corrected Area Whole	Corrected Area Umbræ Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
107·366 C	4	17	(14	58	174·8	...	−15·7)	−82·6
108·394 G	14	47	19	64	174·7	0·0	−16·2	−69·1
109·410 C	17	70	15	61	175·4	+0·7	−16·3	−55·0
110·388 G	18	126	12	86	175·5	+0·8	−16·4	−42·0
111·551 G	22	99	13	56	175·4	+0·7	−16·4	−26·7
112·360 G	18	86	10	46	175·2	+0·6	−16·2	−16·2
113·106 K	13	42	7	21	175·4	+0·8	−16·4	− 6·2
Means ...	...	...	13	56	175·3	...	−16·3	...

Group 12323.

Apr. 22–27. A small, short-lived group consisting of two major components.

111·551 G	43	230	22	117	201·1	0·0	+ 8·0	− 1·0
112·360 G	86	279	45	145	201·1	−0·1	+ 8·0	+ 9·7
113·106 K	92	474	50	258	200·9	−0·4	+ 8·0	+19·3
114·347 G	36	258	23	163	200·7	−0·8	+ 8·0	+35·5
115·584 G	18	86	15	74	201·8	+0·1	+ 8·0	+53·0
116·417 G	9	34	11	40	201·9	+0·1	+ 8·1	+64·1
Means ...	...	...	28	133	201·2	...	+ 8·0	...

Group 12325.

Apr. 24–30. A compact stream in which a large leader spot has developed by April 27.

113·106 K	8	29	4	14	177·7	0·0	−10·2	− 3·9
114·347 G	32	113	16	58	177·9	+0·1	− 9·6	+12·7
115·584 G	90	305	51	174	177·0	−1·0	−10·3	+28·2
116·417 G	140	689	91	448	177·7	−0·4	−10·0	+39·9
117·595 G	70	441	63	397	178·6	+0·4	−10·8	+56·3
118·394 C	44	193	56	248	178·9	+0·6	−11·0	+67·2
119·511 G	16	68	55	247	178·5	...	−11·0	+81·5
Means ...	...	...	47	223	178·0	...	−10·3	...

Group 12329.

Apr. 28–May 3. Intermittent. A small spot on April 28: one or two faint spots on May 2 and 3.

117·595 G	0	5	0	5	60·8	0·0	+ 3·1	−61·5
118·394 C	0	0	0	0	...	...	...	...
119·511 G	0	0	0	0	...	...	...	...

Group 12329—*continued.*

d					°	°	°	°
120·372 G	0	0	0	0	...	...	...	...
121·552 G	5	20	3	10	60·0	−1·5	+ 2·9	−10·0
122·404 G	2	9	1	4	61·2	−0·5	+ 3·2	+ 2·5
Means ...	...	...	1	3	60·7	...	+ 3·1	...

Group 12331.

Apr. 30–May 10. A disturbed area in which are seen one or two spots of unusual persistence for their small size.

119·511 G	10	23	13	30	29·5	0·0	−16·6	−67·5
120·372 G	19	44	16	37	32·9	+3·4	−15·7	−52·7
121·552 G	5	9	4	6	26·4	−3·0	−16·0	−43·6
122·404 G	5	18	3	11	25·9	−3·5	−17·0	−32·8
123·532 G	23	48	12	26	26·5	−2·9	−17·3	−17·0
124·334 G	11	27	6	14	27·0	−2·3	−17·5	− 6·2
125·331 G	14	45	7	23	26·2	−3·1	−17·5	+ 6·2
126·631 G	9	23	5	13	25·9	−3·4	−17·7	+23·1
127·615 G	9	32	6	20	27·1	−2·1	−17·2	+37·3
128·381 C	7	26	5	19	25·7	−3·5	−17·6	+46·0
129·489 G	5	14	5	14	24·6	−4·6	−17·8	+59·6
Means ...	...	...	7	19	27·1	...	−17·1	...

Group 12335.

May 4–16. A regular spot with companions until May 10.

123·532 G	18	173	49	474	325·1	0·0	+11·2	−78·4
124·334 G	48	340	70	493	324·7	−0·5	+11·4	−68·5
125·331 G	89	522	82	480	324·8	−0·4	+11·4	−55·2
126·631 G	100	647	66	427	325·1	−0·3	+11·5	−37·7
127·615 G	136	876	78	499	324·9	−0·5	+11·6	−24·9
128·381 C	145	858	77	455	325·4	−0·1	+11·8	−14·3
129·489 G	127	701	66	365	325·3	−0·3	+11·9	+ 0·3
130·418 C	106	632	56	335	325·5	−0·2	+12·0	+12·7
131·494 C	91	504	53	292	325·6	−0·1	+12·1	+27·1
132·110 K	89	348	57	223	325·7	−0·1	+12·2	+35·3
133·391 G	68	306	58	260	325·7	−0·2	+12·4	+52·2
134·390 C	44	221	55	276	325·3	−0·7	+12·4	+65·1
135·392 C	18	93	48	247	325·4	−0·7	+12·1	+78·4
Means ...	...	...	63	371	325·3	...	+11·8	...

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12338.

May 9–16. A smallish group of bi-polar type showing considerable separation between the leader and following spots.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
128·381 C	53	123	30	69	315·9	0·0	−17·0	−23·8
129·489 G	84	368	45	193	316·6	+0·7	−16·9	− 8·4
130·418 C	62	314	32	163	317·7	+1·9	−17·2	+ 4·9
131·494 C	42	228	23	126	318·1	+2·3	−17·2	+19·6
132·110 K	27	131	16	78	319·0	+3·2	−17·2	+28·6
133·391 G	18	93	13	68	319·1	+3·3	−16·6	+45·6
134·390 C	4	13	4	13	320·2	+4·5	−16·0	+60·0
135·392 C	2	11	3	18	319·8	+4·1	−16·1	+72·8
Means ...	...	...	20	91	318·3	...	−16·8	...

Group 12340.

May 9–14. A small persistent spot.

128·381 C	4	13	6	18	273·5	0·0	+19·3	−66·2
129·489 G	7	23	6	20	273·8	+0·4	+19·6	−51·2
130·418 C	4	13	3	9	274·0	+0·7	+19·6	−38·8
131·494 C	9	24	5	14	273·8	+0·6	+19·8	−24·7
132·110 K	8	21	5	12	273·7	+0·6	+19·8	−16·7
133·391 G	5	14	3	8	273·1	+0·1	+19·6	− 0·4
Means ...	...	...	5	14	273·6	...	+19·6	...

Group 12341.

May 9–21. A large stream in an extensive area of faculæ. The leader, *a*, having a double umbra, undergoes a partial disruption but later regains a regular outline. *a* has for a companion north-following a stable regular spot, *c*. The following part of the stream is never conspicuous and has died out by May 19.

128·381 C	27	132	(88	444	259·6	...	+18·3)	−80·1
129·489 G	104	533	156	805	257·6	0·0	+18·2	−67·4
130·418 C	110	785	104	767	257·4	−0·1	+18·2	−55·4
131·494 C	150	954	107	682	256·9	−0·6	+18·1	−41·6
132·110 K	173	1156	112	744	257·4	0·0	+18·3	−33·0
133·391 G	246	1172	137	653	257·6	+0·3	+17·9	−15·9
134·390 C	194	1160	104	619	258·3	+1·0	+18·2	− 1·9
135·392 C	209	1087	113	590	258·2	+1·0	+17·9	+11·2
136·379 G	194	946	115	557	258·3	+1·2	+18·4	+24·4
137·352 G	153	714	103	481	258·2	+1·1	+18·8	+37·1
138·452 C	69	417	60	363	258·4	+1·4	+18·9	+51·9
139·328 G	53	306	64	374	258·5	+1·6	+19·0	+63·6
140·421 G	18	142	47	383	258·1	+1·3	+19·1	+77·6
Means ...	...	...	102	585	257·9	...	+18·4	...

Group 12341—*continued.*

Spot *a*.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
128·381 C	18	75	51	212	261·4	0·0	+17·1	−78·3
129·489 G	54	272	67	337	261·0	−0·3	+17·2	−64.0
130·418 C	66	440	57	383	261·2	−0·1	+17·2	−51·6
131·494 C	97	601	66	409	260·4	−0·8	+17·3	−38·1
132·110 K	106	751	66	466	260·6	−0·5	+17·3	−29·8
133·391 G	169	775	93	426	259·6	−1·5	+17·3	−13·9
134·390 C	130	787	69	417	259·7	−1·3	+17·2	− 0·5
135·392 C	141	743	76	401	259·4	−1·5	+17·2	+12·4
136·379 G	135	657	80	388	259·2	−1·6	+17·8	+25·3
137·352 G	96	461	65	313	259·2	−1·6	+17·9	+38·1
138·452 C	51	284	45	250	259·2	−1·5	+17·9	+52·7
139·328 G	32	192	40	242	259·5	−1·1	+17·8	+64·6
140·421 G	9	87	26	254	259·4	−1·2	+17·9	+78·9

Spot *c*.

128·381 C	9	57	37	232	258·4	...	+19·6	−81·3
129·489 G	27	145	40	213	257·5	0·0	+20·1	−67·5
130·418 C	27	170	26	165	257·5	+0·1	+19·9	−55·3
131·494 C	35	234	25	168	257·4	0·0	+19·9	−41·1
132·110 K	44	257	29	167	257·5	+0·2	+19·9	−32·9
133·391 G	52	278	29	156	257·5	+0·3	+20·1	−16·0
134·390 C	55	316	30	171	257·3	+0·1	+20·1	− 2·9
135·392 C	57	287	31	158	257·3	+0·2	+20·1	+10·3
136·379 G	50	255	30	150	257·0	0·0	+20·2	+23·1
137·352 G	50	226	34	151	257·1	+0·1	+20·6	+36·0
138·452 C	18	133	15	113	256·7	−0·2	+20·9	+50·2
139·328 G	21	114	24	132	256·5	−0·3	+20·9	+61·6
140·421 G	9	55	21	129	256·5	−0·2	+21·0	+76·0

Group 12343.

May 10–21. A regular spot (with a tiny companion on May 10, 11 and 15), diminishing to a pair of dots.

129·489 G	19	68	48	166	247·4	0·0	−31·7	−77·6
130·418 C	26	95	34	127	247·3	+0·4	−31·8	−65·5
131·494 C	27	91	23	78	249·4	+3·0	−32·3	−49·1
132·110 K	25	116	19	87	249·5	+3·5	−32·3	−40·9
133·391 G	21	87	13	55	249·4	+4·0	−32·0	−24·1
134·390 C	33	100	19	58	249·5	+4·6	−31·6	−10·7
135·392 C	13	49	7	28	248·0	+3·6	−31·3	+ 1·0
136·379 G	11	41	6	24	247·0	+3·2	−31·5	+13·1
137·352 G	9	32	6	20	246·9	+3·6	−30·9	+25·8
138·452 C	9	31	7	23	246·4	+3·6	−30·7	+39·9
139·328 G	2	5	2	4	246·1	+3·8	−30·7	+51·2
140·421 G	0	5	0	6	244·9	+3·1	−30·5	+64·4
Means ...	...	...	15	56	247·6	...	−31·4	...

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12345.

May 14–20. A small group of feeble development.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
133·391 G	5	9	7	12	208·9	0·0	+21·7	−64·6
134·390 C	9	44	8	40	208·6	−0·1	+22·2	−51·6
135·392 C	13	53	9	38	207·9	−0·6	+21·7	−39·1
136·379 G	7	18	4	11	207·7	−0·7	+21·2	−26·2
137·352 G	5	11	3	6	205·6	−2·6	+22·8	−15·5
138·452 C	0	0	0	0	...	...	...	...
139·328 G	2	5	1	3	205·8	−2·1	+22·4	+10·9
Means ...	...	...	5	16	207·4	...	+22·0	...

Group 12347.

May 14–25. A smallish stream preceding Group 12349.

133·391 G	5	14	6	18	204·1	0·0	−18·8	−69·4
134·390 C	27	91	24	80	205·9	+1·9	−18·5	−54·3
135·392 C	48	208	34	145	205·2	+1·2	−18·7	−41·8
136·379 G	43	205	25	121	205·4	+1·5	−18·4	−28·5
137·352 G	41	141	22	76	205·4	+1·6	−18·6	−15·7
138·452 C	44	202	23	105	204·7	+0·9	−18·7	− 1·8
139·328 G	52	242	28	128	204·8	+1·1	−19·1	+ 9·9
140·421 G	25	96	14	55	205·2	+1·6	−18·8	+24·7
141·421 G	9	30	6	20	205·5	+2·0	−18·3	+38·3
142·367 G	11	46	9	38	205·7	+2·2	−17·5	+51·0
143·408 G	10	44	13	55	206·3	+2·9	−17·9	+65·4
144·333 G	2	9	4	20	205·6	+2·3	−17·8	+76·9
Means ...	...	...	17	72	205·3	...	−18·4	...

Group 12351.

May 15–27. A regular spot splitting up after May 22.

134·390 C	13	102	43	335	181·4	0·0	+27·1	−78·8
135·392 C	27	181	40	266	180·8	−0·3	+27·3	−66·2
136·379 G	41	255	40	250	180·3	−0·4	+27·4	−53·6
137·352 G	50	347	38	264	180·2	−0·2	+27·3	−40·9
138·452 C	62	373	40	242	179·3	−0·7	+27·0	−27·2
139·328 G	68	399	40	235	178·8	−0·9	+26·9	−16·1
140·421 G	68	433	39	247	178·3	−1·0	+26·8	− 2·2
141·421 G	78	506	45	293	177·8	−1·2	+26·7	+10·6
142·367 G	59	392	37	243	177·6	−1·1	+26·6	+22·9
143·408 G	50	290	35	203	176·8	−1·5	+26·6	+35·9
144·333 G	32	164	27	139	176·9	−1·1	+26·7	+48·2
145·538 G	23	75	30	97	176·5	−1·1	+26·6	+63·7
146·383 G	0	5	0	11	176·0	−1·3	+26·6	+74·4
Means ...	...	...	35	217	178·5	...	+26·9	...

Group 12352.

May 16–21. A growing compact stream with the largest component in the rear.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
135·392 C	18	88	10	49	270·6	0·0	−16·4	+23·6
136·379 G	36	130	23	83	270·1	−0·5	−16·6	+36·2
137·352 G	73	377	56	291	269·5	−1·0	−17·2	+48·4
138·452 C	53	339	58	379	268·8	−1·7	−17·5	+62·3
139·328 G	46	280	94	571	270·3	−0·2	−17·5	+75·4
140·421 G	5	27	(30	165	266·3	...	−18·7)	+85·8
Means ...	...	...	48	275	269·9	...	−17·0	...

Group 12355.

May 18–29. A regular spot followed by a somewhat smaller one which breaks up into a cluster after May 20 and has died out by May 25.

137·352 G	14	59	37	157	142·5	0·0	+ 9·3	−78·6
138·452 C	36	154	46	201	140·1	−2·5	+ 9·8	−66·4
139·328 G	55	292	45	234	140·2	−2·5	+ 9·8	−54·7
140·421 G	75	431	50	290	140·3	−2·6	+10·0	−40·2
141·421 G	67	431	39	246	140·5	−2·5	+10·1	−26·7
142·367 G	64	360	34	189	141·1	−2·0	+10·0	−13·6
143·408 G	70	317	36	162	141·6	−1·6	+ 9·7	+ 0·7
144·333 G	46	255	24	133	142·5	−0·8	+ 9·4	+13·8
145·538 G	32	164	19	97	142·7	−0·8	+ 9·1	+29·9
146·383 G	18	137	12	93	142·8	−0·8	+ 8·8	+41·2
147·326 G	14	69	12	59	143·1	−0·6	+ 8·6	+54·0
148·356 G	9	32	12	43	143·3	−0·5	+ 8·4	+67·8
Means ...	...	...	30	159	141·6	...	+ 9·4	...

Group 12361.

May 21–June 1. A disturbed area continuing to be shown by individually unstable and short-lived spots. Fresh activity occurs towards the west limb.

140·421 G	0	5	0	5	123·3	0·0	+10·4	−57·2
141·421 G	36	119	25	82	125·6	+2·2	+11·1	−41·6
142·367 G	46	205	27	121	125·8	+2·4	+12·0	−28·9
143·408 G	32	155	17	82	125·6	+2·1	+11·5	−15·3
144·333 G	21	105	11	54	125·9	+2·3	+11·7	− 2·8
145·538 G	18	50	10	27	129·8	+6·1	+12·7	+17·0
146·383 G	14	48	8	27	126·6	+2·8	+14·1	+25·0
147·326 G	23	105	14	66	124·3	+0·5	+13·0	+35·2
148·356 G	32	112	24	85	122·7	−1·2	+12·5	+47·2
149·311 G	27	206	27	204	121·5	−2·5	+12·4	+58·7
150·336 G	38	176	64	302	121·2	−2·9	+12·2	+71·9
151·334 G	9	60	(31	206	117·3	...	+12·1)	+81·2
Means ...	...	...	21	96	124·8	...	+12·1	...

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude	Proper Motion	Latitude	Long. from C.M.
Group 12362.								
May 21–June 2. A large spot, *a*, of regular outline but elongated in an east to west direction. *a* is accompanied by companions, the most stable being a small regular spot, *c*, preceding *a*.								
d								
140·421 G	75	448	187	1127	103°·1	0°·0	+11°·4	−77°·4
141·421 G	166	945	201	1156	102·4	−0·8	+11·6	−64·8
142·367 G	209	1142	176	955	103·4	+0·1	+11·2	−51·3
143·408 G	232	1302	150	842	103·5	+0·1	+10·9	−37·4
144·333 G	264	1447	150	816	103·4	−0·1	+10·8	−25·3
145·538 G	233	1354	120	705	103·3	−0·3	+10·9	− 9·5
146·383 G	229	1292	117	661	103·4	−0·3	+10·9	+ 1·8
147·326 G	215	1305	114	692	103·1	−0·7	+11·0	+14·0
148·356 G	216	1202	125	701	103·4	−0·5	+11·1	+27·9
149·311 G	155	1280	105	864	103·3	−0·6	+10·7	+40·5
150·336 G	117	776	104	683	103·6	−0·4	+10·8	+54·3
151·334 G	76	394	103	531	103·6	−0·5	+11·0	+67·5
152·407 G	11	55	42	210	104·3	...	+10·8	+82·4
Means ...	...	...	138	811	103·3	...	+11·0	...
Spot *a*.								
140·421 G	41	239	92	538	103·9	0·0	+11·0	−76·6
141·421 G	80	470	92	540	103·8	−0·2	+11·0	−63·4
142·367 G	123	627	101	514	103·7	−0·4	+10·7	−51·0
143·408 G	150	844	96	540	103·7	−0·5	+10·7	−37·2
144·333 G	182	1035	102	580	103·6	−0·7	+10·5	−25·1
145·538 G	160	1003	83	522	103·4	−1·0	+10·7	− 9·4
146·383 G	176	1053	90	537	103·3	−1·2	+10·7	+ 1·7
147·326 G	174	1058	92	561	103·1	−1·5	+10·9	+14·0
148·356 G	185	1056	107	612	103·1	−1·6	+11·0	+27·6
149·311 G	137	1168	92	783	103·0	−1·7	+10·5	+40·2
150·336 G	101	710	88	618	103·4	−1·4	+10·7	+54·1
151·334 G	62	339	83	454	103·6	−1·3	+11·0	+67·5
152·407 G	11	55	42	210	104·3	...	+10·8	+82·4
Spot *c*.								
140·421 G	14	91	26	171	106·9	0·0	+13·1	−73·6
141·421 G	36	176	38	187	106·6	−0·4	+12·9	−60·6
142·367 G	36	246	28	189	107·0	−0·1	+12·8	−47·7
143·408 G	46	228	29	141	107·2	0·0	+13·1	−33·7
144·333 G	46	262	26	147	107·4	+0·1	+13·3	−21·3
145·538 G	41	214	21	111	107·2	−0·2	+13·5	− 5·6
146·383 G	39	214	20	111	107·1	−0·4	+13·5	+ 5·5
147·326 G	27	160	15	86	107·0	−0·6	+13·5	+17·9
148·356 G	27	137	16	84	107·0	−0·7	+13·6	+31·5
149·311 G	18	112	13	81	106·8	−0·9	+13·6	+44·0
150·336 G	16	66	16	65	107·4	−0·4	+13·2	+58·1
151·334 G	7	25	11	40	107·3	−0·6	+12·9	+71·2

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude	Proper Motion	Latitude	Long. from C.M.
Group 12363.								
May 22–29. One or two small unstable spots, not seen on May 24 and 26, *np* Group 12355.								
d								
141·421 G	9	27	5	15	145°·3	0°·0	+12°·7	−21°·9
142·367 G	5	14	3	7	147·9	+2·5	+11·2	− 6·8
143·408 G	0	0	0	0	...	...	...	...
144·333 G	2	7	1	4	148·7	+3·2	+12·4	+20·0
145·538 G	0	0	0	0	...	...	...	...
146·383 G	2	5	2	4	149·1	+3·4	+12·3	+47·5
147·326 G	2	9	2	10	149·8	+4·1	+12·7	+60·7
148·356 G	2	7	4	13	148·9	+3·1	+11·1	+73·4
Means ...	...	...	2	7	148·3	...	+12·1	...
Group 12366.								
May 24–31. A small but persistent stream.								
143·408 G	5	9	6	11	75·3	0·0	+ 5·1	−65·6
144·333 G	23	82	20	70	74·9	−0·6	+ 5·1	−53·8
145·538 G	14	30	9	19	75·2	−0·5	+ 4·6	−37·6
146·383 G	41	109	23	62	74·1	−1·7	+ 4·9	−27·5
147·326 G	50	188	26	98	73·9	−2·1	+ 4·8	−15·2
148·356 G	48	114	24	57	73·4	−2·8	+ 4·9	− 2·1
149·311 G	14	64	7	32	73·5	−2·8	+ 4·8	+10·7
150·336 G	5	7	3	4	72·1	−4·4	+ 4·6	+22·8
Means ...	...	...	15	44	74·0	...	+ 4·8	...
Group 12367.*								
May 29–June 5. A rapidly changing group *nf* Group 12369.								
148·356 G	9	18	5	10	52·3	0·0	+16·4	−23·2
149·311 G	18	53	10	28	55·6	+3·3	+16·2	− 7·2
150·336 G	78	316	42	167	56·0	+3·7	+15·9	+ 6·7
151·334 G	82	550	45	302	53·9	+1·7	+16·7	+17·8
152·407 G	57	300	35	186	53·6	+1·4	+17·0	+31·7
153·332 G	41	240	30	175	54·0	+1·8	+16·9	+44·4
154·339 G	9	27	9	27	55·0	+2·8	+17·0	+58·7
155·366 G	0	5	0	7	51·4	−0·7	+17·6	+68·7
Means ...	...	...	22	113	54·0	...	+16·7	...
Group 12368.								
May 29–June 11. A large composite cluster or stream with three chief nuclei.								
148·356 G	9	37	(37	151	353·0	...	+12·9)	−82·5
149·311 G	55	368	96	629	350·3	0·0	+12·5	−72·5

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12368—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
150·336 G	126	662	126	662	350·1	−0·3	+12·9	−59·2
151·334 G	177	1431	130	1073	349·6	−0·8	+12·9	−46·5
152·407 G	240	1766	145	1085	349·0	−1·5	+13·1	−32·9
153·332 G	286	1925	158	1062	348·6	−1·9	+13·0	−21·0
154·339 G	273	2182	142	1130	349·1	−1·5	+12·8	− 7·2
155·366 G	256	1982	133	1019	349·2	−1·5	+12·5	+ 6·5
156·378 G	245	1582	134	864	349·4	−1·3	+12·7	+20·1
157·333 G	195	1304	120	801	349·5	−1·3	+13·0	+32·8
158·348 G	131	904	97	674	349·6	−1·3	+12·8	+46·4
159·338 G	104	726	105	732	349·6	−1·3	+12·7	+59·5
160·402 G	51	352	93	624	349·9	−1·1	+12·9	+73·8
161·329 G	14	55	(57	224	346·7	...	+13·5)	+82·9
Means ...	...	...	123	863	349·5	...	+12·8	...

Group 12369.

June 1–5. A stream in which the leader becomes a fairly large regular spot which alone remains by June 3.

151·334 G	32	119	18	65	58·6	0·0	+12·0	+22·5
152·407 G	46	302	30	196	60·0	+1·3	+13·2	+38·1
153·332 G	62	294	52	250	61·8	+3·1	+14·2	+52·2
154·339 G	21	151	29	205	63·9	+5·1	+14·3	+67·6
155·366 G	7	46	24	158	64·0	...	+14·7	+81·3
Means ...	...	...	32	179	61·1	...	+13·4	...

Group 12371.

June 2–8. A stream of unstable spots preceding Group 12372.

152·407 G	0	7	0	12	308·5	0·0	+10·1	−73·4
153·332 G	9	32	9	33	308·8	+0·2	+ 9·6	−60·8
154·339 G	25	64	18	45	311·8	+3·1	+10·8	−44·5
155·366 G	32	101	19	60	312·3	+3·5	+10·9	−30·4
156·378 G	25	80	13	42	313·1	+4·2	+10·8	−16·2
157·333 G	12	51	6	26	314·1	+5·1	+11·2	− 2·6
158·348 G	2	9	1	5	311·2	+2·1	+11·4	+ 8·0
Means ...	...	...	9	32	311·4	...	+10·7	...

Group 12375.

June 4–15. A regular spot diminishing rapidly as it nears the west limb.

154·339 G	14	46	27	87	282·1	0·0	−15·7	−74·2
155·366 G	25	142	27	152	281·5	−0·6	−15·6	−61·2
156·378 G	27	183	21	141	281·8	−0·3	−15·8	−47·5

Group 12375—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
157·333 G	60	276	38	174	282·2	+0·1	−15·5	−34·5
158·348 G	46	294	26	165	282·1	0·0	−15·5	−21·1
159·338 G	55	294	29	153	282·0	−0·1	−15·4	− 8·1
160·402 G	60	269	31	140	282·0	−0·1	−15·5	+ 5·9
161·329 G	23	175	13	96	281·8	−0·3	−15·4	+18·0
162·402 C	22	116	13	71	281·0	−1·1	−15·6	+31·4
163·394 C	13	36	9	26	280·3	−1·8	−15·5	+43·9
164·417 G	5	14	5	14	280·5	−1·6	−15·5	+57·6
165·370 G	0	2	0	3	279·9	−2·2	−15·5	+69·6
Means ...	...	...	20	102	281·4	...	−15·5	...

Group 12383.

June 10–21. A stream in which the leader, *a*, is a regular spot and the follower a cluster of three spots which disintegrate and die out by June 19.

160·402 G	60	520	130	1128	200·1	0·0	−15·0	−76·0
161·329 G	112	644	134	776	199·6	−0·5	−14·7	−64·2
162·402 C	185	892	151	732	199·4	−0·8	−15·0	−50·2
163·394 C	154	856	101	562	199·4	−0·8	−14·7	−37·0
164·417 G	180	922	102	520	199·9	−0·3	−14·2	−23·0
165·370 G	193	787	101	414	200·9	+0·6	−14·4	− 9·4
166·358 G	92	743	48	386	201·1	+0·8	−14·5	+ 3·9
167·335 G	106	626	58	341	201·3	+1·0	−14·4	+17·0
168·435 G	55	318	34	200	203·2	+2·9	−13·9	+33·5
169·381 G	46	230	36	179	205·2	+4·8	−13·8	+48·0
170·497 G	32	143	36	163	205·1	+4·7	−13·8	+62·7
171·333 G	23	71	45	139	205·8	+5·4	−13·2	+74·4
Means ...	...	...	81	462	201·8	...	−14·3	...

Spot *a*.

160·402 G	23	133	42	243	202·6	0·0	−14·5	−73·5
161·329 G	41	202	43	210	203·6	+1·0	−13·8	−60·2
162·402 C	60	245	44	181	204·1	+1·4	−13·7	−45·5
163·394 C	51	290	31	177	203·9	+1·2	−13·5	−32·5
164·417 G	60	377	32	204	204·3	+1·6	−13·4	−18·6
165·370 G	87	359	45	187	204·7	+1·9	−13·5	− 5·6
166·358 G	41	373	21	194	204·8	+2·0	−13·4	+ 7·6
167·335 G	51	343	28	189	205·0	+2·2	−13·6	+20·7
168·435 G	41	258	26	165	205·0	+2·2	−13·6	+35·3
169·381 G	46	230	36	179	205·2	+2·3	−13·8	+48·0
170·497 G	32	143	36	163	205·1	+2·2	−13·8	+62·7
171·333 G	23	71	45	139	205·8	+2·9	−13·2	+74·4

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12388.

June 12–23. A few small spots developing rather slowly into a stream in which there is marked separation between the leader, *a*, and the follower, *b*. *a* approaches very closely to a component of Group 12385, but stops short of absorbing it. It is probable that the sudden jump forward of *a* in longitude between June 17 and 18 is due to a new spot suddenly forming in front of the original leader.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d								
162·402 C	2	7	4	14	174°·6	0°·0	−14°·4	−75°·0
163·394 C	9	31	11	38	172·0	−2·6	−14·4	−64·4
164·417 G	23	81	19	69	170·9	−3·8	−14·5	−52·0
165·370 G	53	228	35	154	171·7	−3·0	−14·9	−38·6
166·358 G	83	502	47	288	172·9	−1·9	−14·8	−24·3
167·335 G	242	796	128	422	174·4	−0·4	−14·4	− 9·9
168·435 G	179	910	94	478	176·7	+1·9	−13·5	+ 7·0
169·381 G	223	979	124	545	177·4	+2·5	−14·0	+20·2
170·497 G	209	1031	137	675	178·0	+3·1	−13·8	+35·6
171·333 G	125	722	98	571	179·2	+4·2	−13·6	+47·8
172·339 G	88	407	99	470	180·1	+5·1	−12·8	+62·1
173·345 G	42	169	104	434	182·5	+7·5	−12·0	+77·8
Means ...	...	...	75	346	175·9	...	−13·9	...

Spot *a*.

164·417 G	5	14	4	11	174·9	0·0	−14·4	−48·0
165·370 G	23	58	14	37	175·6	+0·7	−14·4	−34·7
166·358 G	28	198	15	109	177·5	+2·5	−13·9	−19·7
167·335 G	150	384	78	200	177·9	+2·9	−13·4	− 6·4
168·435 G	64	439	34	233	181·7	+6·6	−12·9	+12·0
169·381 G	99	448	56	255	182·6	+7·5	−13·2	+25·4
170·497 G	129	649	88	441	182·5	+7·4	−13·1	+40·1
171·333 G	76	492	63	408	183·0	+7·8	−12·6	+51·6
172·339 G	60	314	73	383	182·8	+7·6	−12·1	+64·8
173·345 G	32	146	88	400	183·5	+8·2	−11·7	+78·8

Spot *b*.

165·370 G	30	170	21	117	169·7	0·0	−15·1	−40·6
166·358 G	55	304	32	179	170·1	+0·4	−15·0	−27·1
167·335 G	92	412	50	222	170·4	+0·6	−14·7	−13·9
168·435 G	69	322	36	167	170·5	+0·7	−14·7	+ 0·8
169·381 G	64	310	35	167	170·5	+0·6	−14·6	+13·3
170·497 G	32	184	19	109	170·6	+0·7	−14·6	+28·2
171·333 G	28	110	19	74	170·6	+0·7	−14·7	+39·2
172·339 G	14	44	12	38	170·5	+0·5	−14·8	+52·5
173·345 G	5	14	7	18	171·2	+1·2	−13·3	+66·5

Group 12389.

June 12–23. A disturbed area in which a few small spots make little headway in development until June 20, when a moderate-sized stream results.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d								
162·402 C	4	22	10	54	171°·4	0°·0	+ 8°·1	−78°·2
163·394 C	7	22	9	27	170·4	− 1·1	+ 8·3	−66·0
164·417 G	5	9	4	7	170·7	− 0·9	+ 8·2	−52·2
165·370 G	5	12	3	7	171·4	− 0·3	+ 8·6	−38·9
166·358 G	5	25	3	14	176·0	+ 4·1	+ 9·1	−21·2
167·335 G	23	60	12	31	179·7	+ 7·7	+11·0	− 4·6
168·435 G	5	14	3	7	179·8	+ 7·8	+10·7	+10·1
169·381 G	5	9	3	5	177·9	+ 5·7	+ 9·4	+20·7
170·497 G	60	239	38	153	180·4	+ 8·1	+10·8	+38·0
171·333 G	83	409	67	331	182·9	+10·5	+11·0	+51·5
172·339 G	102	362	117	431	182·9	+10·4	+10·6	+64·9
173·345 G	30	134	76	353	181·5	+ 8·8	+10·4	+76·8
Means ...	...	...	29	118	177·1	...	+ 9·7	...

Group 12393.

June 15–26. A very large regular spot, *a*, from which a considerable part, a_1, breaks away on June 16–17 and drifts forward in longitude, a_1, breaks up in turn into a cluster by June 21, the leading member of which survives after June 24 as a composite spot. Meanwhile *a* regains a regular outline but decreases, slowly at first and then rapidly.

165·370 G	60	363	125	759	134·3	0·0	+11·7	−76·0
166·358 G	143	669	163	763	133·6	−0·8	+11·9	−63·6
167·335 G	188	987	149	783	134·0	−0·4	+12·2	−50·3
168·435 G	204	1168	126	728	134·3	−0·2	+12·2	−35·4
169·381 G	197	1233	109	679	134·5	−0·1	+12·2	−22·7
170·497 G	187	1169	96	603	134·4	−0·3	+12·1	− 8·0
171·333 G	207	1102	106	562	135·0	+0·3	+12·7	+ 3·6
172·339 G	181	778	97	417	135·9	+1·1	+12·8	+17·9
173·345 G	116	808	69	488	136·8	+1·9	+12·6	+32·1
174·396 C	81	583	60	431	136·9	+1·9	+12·5	+46·1
175·368 G	83	286	84	287	137·8	+2·8	+12·4	+59·8
176·472 G	9	42	18	86	139·3	+4·2	+10·8	+76·0
Means ...	...	...	100	549	135·6	...	+12·2	...

Spot *a*.

165·370 G	60	363	125	759	134·3	0·0	+11·7	−76·0
166·358 G	143	669	163	763	133·6	−0·8	+11·9	−63·6
167·335 G	108	580	87	470	133·1	−1·3	+12·3	−51·2
168·435 G	110	736	69	464	133·0	−1·5	+12·5	−36·7
169·381 G	110	653	62	366	133·1	−1·5	+12·6	−24·1
170·497 G	97	626	50	326	133·0	−1·7	+12·5	− 9·4
171·333 G	101	538	52	274	133·2	−1·5	+13·1	+ 1·8
172·339 G	65	300	34	159	133·9	−0·9	+13·1	+15·9

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12393. Spot *a*—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
173·345 G	37	182	21	106	133·9	−1·0	+13·6	+29·2
174·396 C	23	108	16	75	133·2	−1·8	+13·6	+42·4
175·368 G	23	97	21	89	134·6	−0·4	+14·0	+56·6

Spot a_1.

167·335 G	80	407	62	313	135·8	0·0	+12·0	−48·5
168·435 G	94	432	57	264	136·3	+0·4	+11·7	−33·4
169·381 G	87	580	47	313	136·3	+0·3	+11·7	−20·9
170·497 G	90	543	46	277	136·1	+0·1	+11·4	− 6·3
171·333 G	106	564	54	288	136·6	+0·5	+12·1	+ 5·2
172·339 G	116	478	63	258	137·3	+1·1	+12·3	+19·3
173·345 G	79	626	48	382	137·9	+1·7	+12·4	+33·2
174·396 C	58	475	44	356	138·6	+2·3	+12·3	+47·8
175·368 G	60	189	63	198	139·5	+3·1	+11·7	+61·5
176·472 G	9	42	18	86	139·3	+2·8	+10·8	+76·0

Group 12394.

June 16–28. A group of stream type consisting of leader and follower, *a* and *b*, which are both regular spots. There is a companion spot to *a* on June 18, 27 and 28.

166·358 G	7	21	(23	69	116·0	...	+12·0)	−81·2
167·335 G	32	129	54	221	112·5	0·0	+11·9	−71·8
168·435 G	87	417	83	399	111·7	−0·9	+11·9	−58·0
169·381 G	76	333	55	242	111·9	−0·8	+11·5	−45·3
170·497 G	88	388	52	231	111·0	−1·8	+10·7	−31·4
171·333 G	78	414	42	223	111·2	−1·7	+10·5	−20·2
172·339 G	62	353	32	181	110·9	−2·1	+10·6	− 7·1
173·345 G	46	194	23	98	112·4	−0·7	+10·8	+ 7·7
174·396 C	33	208	18	114	113·5	+0·4	+11·2	+22·7
175·368 G	28	152	17	94	113·9	+0·7	+11·2	+35·9
176·472 G	30	130	24	102	113·2	−0·1	+11·5	+49·9
177·315 G	32	141	33	145	112·9	−0·5	+11·4	+60·7
178·335 G	17	46	32	85	113·2	−0·3	+11·4	+74·5
Means ...	...	...	39	178	112·4	...	+11·2	...

Spot *a*.

166·358 G	7	21	23	69	116·0	...	+12·0	−81·2
167·335 G	23	92	32	130	115·2	0·0	+12·1	−69·1
168·435 G	41	150	36	132	114·6	−0·7	+12·1	−55·1
169·381 G	53	218	37	150	114·5	−0·9	+12·1	−42·7
170·497 G	60	218	35	126	114·3	−1·2	+11·7	−28·1
171·333 G	41	221	22	117	114·4	−1·2	+11·6	−17·0

Group 12394—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
172·339 G	39	180	20	92	114·3	−1·4	+11·5	− 3·7
173·345 G	32	157	16	80	114·0	−1·8	+11·4	+ 9·3
174·396 C	29	197	16	108	113·8	−2·0	+11·3	+23·0
175·368 G	28	152	17	94	113·9	−2·0	+11·2	+35·9
176·472 G	25	116	20	92	113·7	−2·3	+11·5	+50·4
177·315 G	32	141	33	145	112·9	−3·2	+11·4	+60·7
178·335 G	17	46	32	85	113·2	−3·0	+11·4	+74·5

Spot *b*.

167·335 G	9	37	22	91	106·0	0·0	+10·5	−78·3
168·435 G	16	92	18	104	106·1	0·0	+10·5	−63·6
169·381 G	23	115	18	92	106·5	+0·3	+10·4	−50·7
170·497 G	28	170	17	105	106·8	+0·5	+ 9·8	−35·6
171·333 G	37	193	20	106	107·2	+0·8	+ 9·7	−24·2
172·339 G	18	164	9	84	107·0	+0·5	+ 9·4	−11·0
173·345 G	14	37	7	18	107·2	+0·6	+ 9·4	+ 2·5
174·396 C	4	11	2	6	107·1	+0·5	+ 9·4	+16·3

Group 12395.

June 17–24. A small stream originating on June 17 with its axis nearly at right angles to the sun's equator; by June 20 the axis is approximately parallel to the equator.

167·335 G	21	51	13	31	165·5	0·0	+28·9	−18·8
168·435 G	9	23	5	13	165·3	+0·2	+29·2	− 4·4
169·381 G	14	60	8	34	165·8	+1·1	+28·6	+ 8·6
170·497 G	32	163	20	99	166·8	+2·5	+27·4	+24·4
171·333 G	28	94	19	64	166·7	+2·7	+27·5	+35·3
172·339 G	37	88	30	71	163·7	+0·1	+28·9	+45·7
173·345 G	23	106	26	121	166·4	+3·2	+27·4	+61·7
174·396 C	9	45	18	90	165·7	+2·9	+26·8	+74·9
Means ...	...	...	17	65	165·7	...	+28·1	...

Group 12401.

June 21–July 2. A stream of small undeveloped spots closely *p* Group 12402.

171·333 G	0	9	0	16	58·5	0·0	−11·9	−72·9
172·339 G	32	116	33	125	57·2	−1·4	−13·1	−60·8
173·345 G	41	171	31	131	57·4	−1·2	−12·8	−47·3
174·396 C	43	152	27	93	58·7	0·0	−12·6	−32·1
175·368 G	34	141	18	77	60·8	+2·0	−12·1	−17·2
176·472 G	32	208	17	108	60·7	+1·8	−12·5	− 2·6
177·315 G	37	203	19	107	62·1	+3·2	−12·2	+ 9·9

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
Group 12401—*continued.*								
a								
178·335 G	21	81	12	46	63°·0	+4°·0	−12°·1	+24°·3
179·331 G	5	14	3	10	65·3	+6·2	−12·4	+39·8
180·411 C	13	43	10	34	60·5	+1·3	−11·0	+49·3
181·342 G	0	0	0	0	...	...	...	...
182·320 C	4	16	9	36	61·7	+2·4	−11·4	+75·8
Means ...	...	...	15	65	60·5	...	−12·2	...
Group 12402. June 21–July 3. A stream of normal type in which the leader, *a*, (a regular spot) is the predominant component.								
171·333 G	42	179	105	443	54·0	0·0	−10·4	−77·4
172·339 G	62	476	76	585	52·8	−1·3	−10·7	−65·2
173·345 G	90	836	73	677	54·1	−0·1	−10·7	−50·6
174·396 C	161	942	103	604	54·0	−0·3	−10·5	−36·8
175·368 G	236	1362	132	763	54·6	+0·2	−11·1	−23·4
176·472 G	208	968	109	504	54·6	+0·1	−11·2	− 8·7
177·315 G	188	941	98	490	55·3	+0·7	−11·3	+ 3·1
178·335 G	150	844	80	452	55·1	+0·4	−11·1	+16·4
179·331 G	97	566	58	338	56·1	+1·3	−11·0	+30·6
180·411 C	62	403	45	293	55·6	+0·7	−10·8	+44·4
181·342 G	56	259	54	251	56·4	+1·4	−11·0	+57·5
182·320 C	22	76	32	111	54·8	−0·3	−10·8	+68·9
183·375 G	5	16	(24	77	55·2	...	−11·4)	+83·2
Means ...	...	...	80	459	54·8	...	−10·9	...
Spot *a*.								
171·333 G	12	53	27	117	55·0	0·0	− 9·5	−76·4
172·339 G	37	148	41	166	55·3	+0·2	−10·3	−62·7
173·345 G	62	284	48	222	56·1	+0·9	−10·4	−48·6
174·396 C	99	562	61	348	56·1	+0·8	−10·7	−34·7
175·368 G	157	887	86	488	56·5	+1·1	−11·1	−21·5
176·472 G	132	672	69	349	56·8	+1·3	−11·3	− 6·5
177·315 G	139	661	72	344	56·8	+1·2	−11·2	+ 4·6
178·335 G	120	675	65	364	56·6	+0·9	−11·0	+17·9
179·331 G	88	529	53	317	56·6	+0·8	−10·9	+31·1
180·411 C	58	390	42	285	56·0	+0·1	−10·8	+44·8
181·342 G	37	192	35	182	55·6	−0·4	−10·8	+56·7
182·320 C	22	76	32	111	54·8	−1·3	−10·8	+68·9
183·375 G	5	16	24	77	55·2	...	−11·4	+83·2
Group 12403. June 22–28. A small stream of simple formation—leader and follower.								
172·339 G	2	7	1	4	117·1	0·0	+19·6	− 0·9
173·345 G	18	39	10	21	120·9	+4·0	+22·0	+16·2
174·396 C	52	221	31	137	122·1	+5·3	+21·6	+31·3
Group 12403—*continued.*								
a								
175·368 G	48	215	35	156	121°·3	+4°·7	+22°·1	+43°·3
176·472 G	30	169	30	170	121·0	+4·6	+22·3	+57·7
177·315 G	14	69	23	111	123·7	+7·4	+22·1	+71·5
178·335 G	2	16	(12	98	124·9	...	+22·5)	+86·2
Means ...	...	...	22	100	121·0	...	+21·6	...
Group 12408. June 24–July 2. From June 24 to 28, a small regular spot preceded by a distant companion: on June 29–30, two unstable clusters: on July 1–2, a small, faint stream.								
174·396 C	13	58	35	153	12·1	0·0	+18·5	−78·7
175·368 G	30	106	39	141	10·9	−1·1	+18·8	−67·1
176·472 G	37	134	32	116	10·5	−1·5	+18·7	−52·8
177·315 G	23	139	16	98	10·1	−1·8	+19·0	−42·1
178·335 G	18	67	11	40	10·0	−1·9	+18·9	−28·7
179·331 G	21	77	11	41	13·7	+1·9	+17·7	−11·8
180·411 C	58	174	30	90	14·9	+3·2	+18·3	+ 3·7
181·342 G	14	46	8	25	17·0	+5·3	+17·0	+18·1
182·320 C	9	36	5	22	17·7	+6·1	+17·3	+31·8
Means ...	...	...	21	81	13·0	...	+18·2	...
Group 12411. June 29–July 8. Small spots which develop into a compact stream of normal type. Contrary to the usual life-history, however, the leader spot, *a*, breaks up before the follower, *b*.								
179·331 G	18	74	11	46	351·4	0·0	+15·5	−34·1
180·411 C	63	206	35	113	351·3	−0·1	+15·7	−19·9
181·342 G	101	466	53	242	351·4	0·0	+15·9	− 7·5
182·320 C	110	708	57	365	352·0	+0·6	+16·3	+ 6·1
183·375 G	180	1047	98	570	350·8	−0·5	+16·6	+18·8
184·364 C	143	995	86	603	350·3	−1·0	+16·5	+31·4
185·427 C	126	704	91	511	349·8	−1·5	+16·4	+45·0
186·510 C	98	513	97	507	349·3	−2·0	+16·6	+58·8
187·596 G	37	164	61	270	348·9	−2·4	+16·9	+72·8
188·339 G	9	51	25	140	346·4	...	+16·8	+80·1
Means ...	...	...	65	360	350·6	...	+16·3	...
Spot *a*.								
181·342 G	53	249	28	129	353·5	0·0	+16·0	− 5·4
182·320 C	56	408	29	212	354·0	+0·5	+16·3	+ 8·1
183·375 G	69	326	38	179	354·2	+0·7	+16·4	+22·2
184·364 C	49	390	31	246	354·1	+0·6	+16·5	+35·2
185·427 C	43	269	33	207	353·7	+0·3	+16·3	+48·9
186·510 C	31	155	34	170	353·3	−0·1	+16·4	+62·8

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
Group 12411—*continued.*								
Spot *b.*								
d								
181·342 G	39	178	20	93	349°·5	0°·0	+16°·0	− 9°·4
182·320 C	54	300	28	153	349·8	+0·3	+16·3	+ 3·9
183·375 G	97	640	52	346	349·2	−0·3	+16·5	+17·2
184·364 C	94	605	55	357	348·1	−1·4	+16·6	+29·2
185·427 C	83	435	58	304	347·7	−1·7	+16·5	+42·9
186·510 C	67	358	63	337	348·0	−1·4	+16·7	+57·5
187·596 G	23	95	34	142	346·8	−2·6	+16·9	+70·7
188·339 G	9	51	25	140	346·4	...	+16·8	+80·1
Group 12418.								
July 3-12. A pair of small spots developing into a stream of rather variable components except the leader, *a.*								
183·375 G	18	51	14	41	281·4	0·0	+13·5	−50·6
184·364 C	22	87	14	56	281·4	−0·1	+13·5	−37·5
185·427 C	99	423	55	237	279·8	−1·7	+13·7	−25·0
186·510 C	134	544	70	281	281·2	−0·4	+13·4	− 9·3
187·596 G	136	818	70	417	281·9	+0·3	+13·3	+ 5·8
188·339 G	190	1048	100	554	282·7	+1·0	+13·2	+16·4
189·414 C	146	753	87	449	283·7	+2·0	+13·1	+31·7
190·435 G	86	367	62	270	284·5	+2·7	+13·0	+46·0
191·299 G	78	346	73	327	285·0	+3·2	+13·1	+57·9
192·391 C	31	154	52	263	285·6	+3·7	+13·2	+73·0
Means ...	...	...	60	290	282·7	...	+13·3	...
Spot *a.*								
186·510 C	58	233	30	119	284·5	0·0	+13·1	− 6·0
187·596 G	60	296	31	151	286·0	+1·4	+13·1	+ 9·9
188·339 G	74	427	40	231	286·3	+1·7	+13·5	+20·0
189·414 C	63	352	39	218	286·9	+2·2	+13·5	+34·9
190·435 G	35	217	27	165	287·3	+2·6	+13·2	+48·8
191·299 G	32	157	32	159	287·3	+2·6	+12·8	+60·2
192·391 C	18	94	33	172	287·2	+2·4	+12·9	+74·6
Group 12419.								
July 4–11. A small stream reduced to one component spot on July 6, but showing a fresh spurt of activity on July 7 and 8.								
184·364 C	31	81	17	45	301·3	0·0	−16·9	−17·6
185·427 C	20	90	11	48	303·1	+1·9	−17·0	− 1·7
186·510 C	18	45	10	25	305·0	+3·8	−17·3	+14·5
187·596 G	67	383	40	226	301·5	+0·4	−17·2	+25·4
Group 12419—*continued.*								
d								
188·339 G	81	404	54	268	300°·9	−0°·2	−18°·1	+34°·6
189·414 C	47	230	41	202	303·1	+2·1	−18·7	+51·1
190·435 G	48	194	64	259	303·4	+2·4	−19·0	+64·9
191·299 G	17	97	40	211	301·7	+0·8	−19·2	+74·6
Means ...	...	...	35	160	302·5	...	−17·9	...
Group 12425.								
July 6–15. A small regular spot that dies out rather suddenly.								
186·510 C	9	40	37	163	208·0	0·0	− 6·6	−82·5
187·596 G	23	92	34	131	207·6	−0·6	− 6·7	−68·5
188·339 G	23	116	23	114	207·9	−0·4	− 6·9	−58·4
189·414 C	27	155	19	110	208·0	−0·4	− 7·0	−44·0
190·435 G	28	171	17	101	208·6	0·0	− 7·3	−29·9
191·299 G	37	157	20	85	208·7	0·0	− 7·4	−18·4
192·391 C	36	161	18	82	209·0	+0·1	− 7·5	− 3·6
193·458 G	23	92	12	48	208·8	−0·2	− 7·5	+10·3
194·343 G	16	65	9	36	209·0	−0·2	− 7·5	+22·2
195·387 G	5	18	3	12	209·3	0·0	− 7·5	+36·3
Means ...	...	...	17	80	208·5	...	− 7·3	...
Group 12427.								
July 7–19. A fairly large regular spot showing a drift equatorwards.								
187·596 G	12	60	(46	229	192·9	...	+15·5)	−83·2
188·339 G	37	194	64	334	192·8	0·0	+15·2	−73·5
189·414 C	54	298	53	295	192·5	−0·3	+15·4	−59·5
190·435 G	55	381	40	274	192·8	+0·1	+15·1	−45·7
191·299 G	83	476	51	290	192·9	+0·2	+15·0	−34·2
192·391 C	92	504	50	272	193·0	+0·3	+14·4	−19·6
193·458 G	92	485	47	247	193·3	+0·7	+14·0	− 5·2
194·343 G	74	416	38	212	193·4	+0·8	+13·9	+ 6·6
195·387 G	51	288	28	156	193·7	+1·1	+14·0	+20·7
196·341 G	32	212	20	129	193·9	+1·3	+13·9	+33·5
197·415 G	32	156	24	117	194·5	+2·0	+14·0	+48·3
198·418 G	18	92	19	98	194·9	+2·4	+14·0	+62·0
199·336 G	7	55	12	97	194·8	+2·3	+13·8	+74·1
Means ...	...	...	37	210	193·5	...	+14·4	...
Group 12428.								
July 8–16. A small stream *s* Group 12425 and *p* Group 12426.								
188·339 G	0	9	0	9	206·8	0·0	−11·8	−59·5
189·414 C	7	36	5	26	207·4	+0·5	−11·9	−44·6

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12428—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
190·435 G	23	74	14	45	208·4	+1·5	−11·8	−30·1
191·299 G	28	88	16	49	207·9	+0·9	−12·5	−19·2
192·391 C	18	74	10	39	206·5	−0·5	−12·8	− 6·1
193·458 G	9	42	5	22	206·8	−0·3	−13·3	+ 8·3
194·343 G	14	76	8	43	206·7	−0·5	−13·7	+19·9
195·387 G	5	23	3	14	205·9	−1·3	−13·9	+32·9
196·341 G	5	14	4	11	208·1	+0·8	−14·5	+47·7
Means ...	...	...	7	29	207·2	...	−12·9	...

Group 12430.

July 8–20. A stream with the follower, *b*, as the largest and longest-lived component. The leader has disappeared rather suddenly by July 16, but a new cluster of spots (perhaps a separate but closely allied group) develops immediately *sp b*.

188·339 G	28	197	78	525	187·9	0·0	− 9·8	−78·4
189·414 C	98	558	120	677	187·4	−0·6	−10·1	−64·6
190·435 G	123	520	101	432	187·0	−1·1	− 9·8	−51·5
191·299 G	118	578	79	389	187·3	−0·9	− 9·9	−39·8
192·391 C	106	575	60	327	187·0	−1·3	−10·1	−25·6
193·458 G	95	525	50	277	186·5	−2·0	−10·1	−12·0
194·343 G	122	646	63	336	186·7	−1·9	−10·5	− 0·1
195·387 G	97	423	51	225	185·6	−3·1	− 9·7	+12·6
196·341 G	101	598	58	344	186·1	−2·7	−10·5	+25·7
197·415 G	75	543	50	369	186·0	−2·9	−10·7	+39·8
198·418 G	76	387	66	339	185·9	−3·1	−10·5	+53·0
199·336 G	42	262	53	333	186·1	−3·0	−11·0	+65·4
200·338 G	19	128	50	336	185·7	−3·5	−10·4	+78·2
Means ...	...	...	68	378	186·6	...	−10·2	...

Spot *b*.

188·339 G	14	81	48	278	185·4	...	− 9·7	−80·9
189·414 C	36	193	49	264	184·4	0·0	− 9·9	−67·6
190·435 G	51	256	45	225	184·8	+0·3	−10·0	−53·7
191·299 G	55	310	38	217	184·7	+0·1	− 9·8	−42·4
192·391 C	54	349	31	202	184·5	−0·2	− 9·8	−28·1
193·458 G	65	372	34	197	184·6	−0·2	− 9·7	−13·9
194·343 G	60	346	31	180	184·6	−0·4	− 9·4	− 2·2
195·387 G	74	345	39	183	184·8	−0·3	− 9·2	+11·8
196·341 G	53	281	30	160	184·9	−0·3	− 9·1	+24·5
197·415 G	41	193	27	127	185·3	0·0	− 8·9	+39·1
198·418 G	32	143	27	122	185·2	−0·2	− 9·1	+52·3
199·336 G	23	117	28	142	185·0	−0·5	− 9·8	+64·3
200·338 G	14	110	36	285	185·3	−0·3	− 9·8	+77·8

Group 12432.

July 9–20. A regular spot, with a short train of small spots in continual change.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
189·414 C	13	81	(45	278	171·9	...	−15·4)	−80·1
190·435 G	46	258	73	391	169·7	0·0	−15·6	−68·8
191·299 G	58	383	48	317	170·2	+0·5	−15·1	−56·9
192·391 C	69	365	50	263	170·2	+0·5	−14·9	−42·4
193·458 G	62	275	36	164	170·9	+1·2	−14·6	−27·6
194·343 G	80	351	44	194	170·3	+0·5	−14·8	−16·5
195·387 G	39	204	21	108	171·3	+1·5	−14·7	− 1·7
196·341 G	36	198	20	107	169·5	−0·3	−15·4	+ 9·1
197·415 G	21	51	13	30	171·2	+1·4	−15·2	+25·0
198·418 G	9	37	6	26	172·7	+2·9	−15·1	+39·8
199·336 G	5	16	4	14	172·4	+2·6	−15·0	+51·7
200·338 G	5	9	6	12	172·5	+2·6	−14·7	+65·0
Means ...	...	...	29	148	171·0	...	−15·0	...

Group 12433.

July 9–19. A regular spot with a train of small spots lasting for a few days.

189·414 C	16	74	22	100	183·5	0·0	+12·2	−68·5
190·435 G	28	199	24	167	185·2	+1·6	+12·6	−53·3
191·299 G	51	277	34	186	185·4	+1·8	+12·5	−41·7
192·391 C	44	219	25	123	185·7	+2·0	+12·6	−26·9
193·458 G	55	241	29	126	186·9	+3·2	+12·9	−11·6
194·343 G	37	187	19	95	187·4	+3·6	+12·9	+ 0·6
195·387 G	32	115	17	60	187·7	+3·8	+13·0	+14·7
196·341 G	28	78	16	44	188·1	+4·2	+13·1	+27·7
197·415 G	9	37	6	25	188·5	+4·5	+13·2	+42·3
198·418 G	14	53	13	48	189·3	+5·3	+13·4	+56·4
199·336 G	9	28	12	38	189·6	+5·5	+13·1	+68·9
Means ...	...	...	20	92	187·3	...	+12·9	...

Group 12434.

July 9–16. A stream of slight development *nf* Group 12433.

189·414 C	11	36	16	54	181·2	0·0	+13·8	−70·8
190·435 G	30	146	28	136	181·2	0·0	+14·9	−57·3
191·299 G	23	92	17	66	181·4	+0·2	+15·1	−45·7
192·391 C	35	180	21	107	181·4	+0·2	+15·7	−31·2
193·458 G	18	60	10	32	183·4	+2·2	+16·7	−15·1
194·343 G	23	42	12	21	182·1	+0·9	+16·0	− 4·7
195·387 G	14	28	7	15	184·0	+2·7	+15·8	+11·0
196·341 G	12	67	6	36	181·3	0·0	+14·4	+20·9
Means ...	...	...	15	58	182·0	...	+15·3	...

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12436.

July 10–15. A spot with a companion after July 11.

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					°	°	°	°
190·435 G	5	18	10	37	162·3	0·0	+25·2	−76·2
191·299 G	9	23	11	29	161·4	−0·6	+25·2	−65·7
192·391 C	20	49	17	42	160·3	−1·4	+25·4	−52·3
193·458 G	16	32	11	22	159·3	−2·1	+26·0	−39·2
194·343 G	16	28	10	17	159·4	−1·7	+25·7	−27·4
195·387 G	9	18	5	10	158·7	−2·1	+26·0	−14·3
Means ...	...	...	11	26	160·2	...	+25·6	...

Group 12442.

July 12–23. A regular spot which, though apparently stable, disintegrates on July 19 and 20 and with new small spots becomes a temporary cluster.

192·391 C	4	13	21	69	126·6	...	+20·0	−86·0
193·458 G	14	60	23	98	125·9	0·0	+20·0	−72·6
194·343 G	18	102	19	107	125·4	−0·4	+20·1	−61·4
195·387 G	25	133	19	101	125·6	−0·1	+20·2	−47·4
196·341 G	23	170	14	107	125·4	−0·2	+20·2	−35·0
197·415 G	28	136	16	76	125·2	−0·2	+20·5	−21·0
198·418 G	32	126	17	66	124·9	−0·4	+20·5	− 8·0
199·336 G	28	193	15	100	124·3	−0·9	+20·5	+ 3·6
200·338 G	64	317	35	171	123·4	−1·7	+20·1	+15·9
201·369 G	32	177	19	104	122·7	−2·3	+20·0	+28·9
202·646 G	18	69	13	51	123·5	−1·3	+20·4	+46·6
203·511 C	7	18	7	17	124·5	−0·2	+20·0	+59·0
Means ...	...	...	18	91	124·6	...	+20·2	...

Group 12444.

July 13–24. A pair of spots; the leader rapidly decreases and with small companions makes up a stream which in turn disperses.

193·458 G	5	18	(16	59	118·6	...	−13·4)	−79·9
194·343 G	34	180	56	296	116·2	0·0	−14·7	−70·6
195·387 G	41	205	40	203	115·8	−0·4	−14·3	−57·2
196·341 G	44	216	33	164	115·5	−0·8	−14·2	−44·9
197·415 G	44	354	27	218	115·2	−1·1	−13·9	−31·0
198·418 G	30	237	17	132	115·4	−1·0	−13·9	−17·5
199·336 G	23	143	12	76	117·3	+0·9	−14·1	− 3·4
200·338 G	14	60	8	32	120·2	+3·8	−14·1	+12·7
201·369 G	5	34	3	20	119·4	+2·9	−13·8	+25·6
202·646 G	9	32	7	23	120·1	+3·6	−13·6	+43·2
203·511 C	18	69	17	66	121·2	+4·6	−14·6	+55·7
204·339 G	12	69	17	96	121·3	+4·7	−14·0	+66·8
Means ...	...	...	22	121	118·0	...	−14·1	...

Group 12445.

July 13–22. A regular spot with a cluster of companions *sp* until July 18 and other small spots on July 19–20.

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					°	°	°	°
193·458 G	12	67	35	196	117·7	...	+11·8	−80·8
194·343 G	55	240	76	333	117·4	0·0	+11·2	−69·4
195·387 G	46	227	40	199	117·7	+0·2	+11·5	−55·3
196·341 G	65	281	44	191	118·1	+0·5	+11·4	−42·3
197·415 G	46	264	27	153	117·1	−0·6	+11·8	−29·1
198·418 G	32	193	17	100	117·1	−0·6	+11·6	−15·8
199·336 G	39	161	20	80	116·8	−1·0	+11·8	− 3·9
200·338 G	23	104	12	53	117·1	−0·8	+11·9	+ 9·6
201·369 G	18	48	10	26	116·8	−1·2	+11·9	+23·0
202·646 G	2	9	1	6	116·2	−1·9	+12·1	+39·3
Means ...	...	...	27	127	117·1	...	+11·7	...

Group 12446.

July 13–24. A regular spot decreasing rather suddenly after July 21; there is a small companion south-preceding on July 23.

193·458 G	5	14	30	85	112·3	...	+15·7	−86·2
194·343 G	16	116	31	227	111·0	0·0	+15·6	−75·8
195·387 G	23	150	24	159	111·1	+0·1	+15·6	−61·9
196·341 G	41	225	32	173	110·9	−0·1	+15·4	−49·5
197·415 G	28	179	17	111	110·7	−0·4	+14·8	−35·5
198·418 G	32	184	18	101	110·8	−0·3	+14·6	−22·1
199·336 G	37	248	19	126	111·0	−0·1	+14·5	− 9·7
200·338 G	37	207	19	106	111·0	−0·1	+14·4	+ 3·5
201·369 G	32	184	17	98	110·9	−0·3	+14·6	+17·1
202·646 G	23	147	14	90	110·6	−0·6	+14·5	+33·7
203·511 C	15	40	11	28	111·2	0·0	+13·5	+45·7
204·339 G	5	16	4	14	110·7	−0·5	+14·2	+56·2
Means ...	...	...	19	112	110·9	...	+14·7	...

Group 12448.

July 17–25. A regular spot developing multiple umbræ and diminishing rather rapidly after July 20.

197·415 G	9	25	21	58	68·3	0·0	+ 6·7	−77·9
198·418 G	9	90	10	100	69·3	+0·9	+ 7·0	−63·6
199·336 G	25	110	20	86	70·0	+1·4	+ 7·5	−50·7
200·338 G	28	126	18	79	70·3	+1·6	+ 7·7	−37·2
201·369 G	18	94	10	51	70·5	+1·6	+ 7·8	−23·3
202·646 G	23	53	12	26	70·9	+1·8	+ 7·7	− 6·0
203·511 C	9	40	4	20	71·4	+2·2	+ 7·4	+ 5·9
204·339 G	9	28	5	15	71·2	+1·9	+ 7·4	+16·7
205·362 G	5	12	3	7	71·9	+2·4	+ 7·2	+30·9
Means ...	...	...	11	49	70·4	...	+ 7·4	...

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12449.

July 17–29. A bi-polar group in which there is less than the usual maximum separation in longitude between the leader and follower, *a* and *b*, respectively. *b* increases between July 26 and 27 but disintegrates soon afterwards.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
197·415 G	18	85	65	307	65·4	...	−12·9	−80·8
198·418 G	60	354	84	507	65·2	0·0	−12·7	−67·7
199·336 G	92	580	88	562	64·4	−0·9	−12·7	−56·3
200·338 G	106	897	77	657	63·9	−1·4	−12·9	−43·6
201·369 G	156	1164	94	711	64·0	−1·4	−12·8	−29·8
202·646 G	177	1143	96	617	64·0	−1·4	−12·9	−12·9
203·511 C	156	1184	83	628	64·3	−1·2	−13·1	− 1·2
204·339 G	172	1015	92	544	64·0	−1·5	−13·5	+ 9·5
205·362 G	198	1033	113	592	64·4	−1·2	−13·4	+23·4
206·431 G	161	883	108	592	64·7	−0·9	−13·3	+37·8
207·520 G	161	969	138	829	63·4	−2·3	−13·5	+50·9
208·345 G	103	765	118	871	62·9	−2·8	−13·9	+61·3
209·350 G	51	343	108	719	62·6	−3·2	−13·5	+74·4
Means ...	...	...	100	652	64·0	...	−13·2	...

Spot *a*.

197·415 G	18	85	65	307	65·4	...	−12·9	−80·8
198·418 G	51	262	69	354	66·3	0·0	−12·5	−66·6
199·336 G	64	327	58	294	66·8	+0·4	−11·9	−53·9
200·338 G	55	423	38	292	67·3	+0·9	−12·3	−40·2
201·369 G	87	559	51	330	67·0	+0·5	−12·2	−26·8
202·646 G	101	582	54	308	67·1	+0·6	−12·7	− 9·8
203·511 C	98	662	52	351	66·9	+0·3	−12·8	+ 1·4
204·339 G	110	564	59	305	66·6	0·0	−12·8	+12·1
205·362 G	92	584	53	339	66·6	−0·1	−12·8	+25·6
206·431 G	87	455	60	314	67·0	+0·3	−12·8	+40·1
207·520 G	60	343	55	316	67·1	+0·3	−12·5	+54·6
208·345 G	39	238	50	307	66·7	−0·1	−12·7	+65·1
209·350 G	14	87	38	238	66·1	−0·8	−12·4	+77·9

Spot *b*.

198·418 G	9	92	15	153	62·3	0·0	−13·8	−70·6
199·336 G	28	253	30	268	61·3	−1·1	−13·4	−59·4
200·338 G	51	474	39	365	60·9	−1·5	−13·4	−46·6
201·369 G	69	605	43	381	61·0	−1·5	−13·5	−32·8
202·646 G	76	561	42	309	61·1	−1·4	−13·5	−15·8
203·511 C	58	522	31	277	61·3	−1·3	−13·4	− 4·2
204·339 G	62	451	33	239	61·0	−1·6	−13·9	+ 6·5
205·362 G	94	391	53	219	61·1	−1·6	−13·8	+20·1
206·431 G	74	428	48	278	61·4	−1·3	−13·8	+34·5
207·520 G	101	626	83	513	61·3	−1·5	−13·9	+48·8
208·345 G	64	527	68	564	61·2	−1·6	−14·2	+59·6
209·350 G	37	256	70	481	60·7	−2·2	−14·0	+72·5

Group 12450.

July 19–27. Intermittent. A small spot *sf* Group 12449.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
199·336 G	7	14	9	18	56·7	0·0	−18·3	−64·0
200·338 G	5	14	4	12	57·7	+1·1	−18·2	−49·8
201·369 G	7	14	5	10	57·9	+1·3	−17·9	−35·9
202·646 G	7	14	4	8	58·5	+2·0	−17·8	−18·4
203·511 C	0	0	0	0	...	...	...	...
204·339 G	0	0	0	0	...	...	...	...
205·362 G	9	23	5	13	56·6	+0·2	−17·8	+15·6
206·431 G	5	9	3	6	58·2	+1·9	−17·1	+31·3
207·520 G	2	9	2	7	55·3	−1·0	−17·1	+42·8
Means ...	...	...	4	8	57·3	...	−17·7	...

Group 12451.

July 19–24. A pair of spots separating in latitude. The southern component survives after July 21.

199·336 G	10	46	23	102	46·5	0·0	−19·9	−74·2
200·338 G	30	135	35	159	46·1	−0·3	−20·4	−61·4
201·369 G	18	88	15	74	45·9	−0·3	−19·8	−47·9
202·646 G	12	41	8	27	45·5	−0·6	−20·4	−31·4
203·511 C	16	47	10	28	44·8	−1·2	−20·9	−20·7
204·339 G	9	34	5	19	45·3	−0·6	−21·1	− 9·2
Means ...	...	...	16	68	45·7	...	−20·4	...

Group 12453.

July 20–30. An area of faculæ in which spots of unstable character are the first to appear. On July 25, a bi-polar group with well-defined leader and follower begins to develop.

200·338 G	0	5	0	4	59·5	0·0	+10·0	−48·0
201·369 G	18	78	11	48	57·7	−1·9	+11·9	−36·1
202·646 G	14	51	7	27	58·5	−1·2	+10·8	−18·4
203·511 C	22	138	11	70	59·1	−0·7	+10·9	− 6·4
204·339 G	21	133	10	66	58·8	−1·1	+11·0	+ 4·3
205·362 G	122	536	64	282	59·4	−0·6	+10·3	+18·4
206·431 G	90	463	55	277	59·7	−0·4	+10·2	+32·8
207·520 G	71	371	54	282	61·0	+0·8	+ 9·7	+48·5
208·345 G	50	208	49	205	60·9	+0·6	+10·4	+59·3
209·350 G	21	69	35	110	60·7	+0·3	+10·4	+72·5
210·122 K	4	9	10	23	57·8	−2·7	+11·0	+79·7
Means ...	...	...	28	127	59·4	...	+10·6	...

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12456.

July 25–31. A small pair of spots.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude	Proper Motion	Latitude	Long. from C.M.
d								
205·362 G	5	23	3	13	18°·5	0°·0	+15°·7	−22°·5
206·431 G	23	69	12	35	18·9	+0·4	+16·3	− 8·0
207·520 G	27	108	14	55	20·0	+1·5	+16·1	+ 7·5
208·345 G	25	73	14	39	20·7	+2·2	+16·1	+19·1
209·350 G	7	14	4	9	23·0	+4·5	+14·9	+34·8
210·122 K	13	34	9	24	22·9	+4·4	+15·0	+44·8
211·123 K	6	13	6	13	24·6	+6·1	+14·1	+59·8
Means ...	...	...	9	27	21·2	...	+15·5	...

Group 12457.

July 26–Aug. 5. A well-formed regular spot dying out rather quickly. There is a small follower on July 27, 29 and 30.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude	Proper Motion	Latitude	Long. from C.M.
206·431 G	7	32	37	170	299·7	...	+29·5	−87·2
207·520 G	25	173	44	300	298·9	0·0	+29·8	−73·6
208·345 G	39	211	44	238	298·9	+0·4	+29·9	−62·7
209·350 G	43	273	36	228	298·0	−0·1	+29·8	−50·2
210·122 K	66	355	48	253	297·1	−0·6	+29·9	−41·0
211·123 K	58	355	36	220	297·3	+0·1	+30·3	−27·5
212·443 G	60	302	34	169	296·6	0·0	+30·1	−10·7
213·464 G	44	284	24	156	295·9	−0·2	+30·3	+ 2·1
214·361 G	27	204	15	114	295·4	−0·3	+30·3	+13·4
215·337 G	21	114	13	70	295·1	−0·2	+30·3	+26·0
216·413 C	9	31	6	22	294·5	−0·3	+30·3	+39·7
Means ...	...	...	30	177	296·8	...	+30·1	...

Group 12458.

July 27–Aug. 8. A simple stream or bi-polar group consisting of leader and follower, *a* and *b* respectively. *b* has died out by August 6.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude	Proper Motion	Latitude	Long. from C.M.
207·520 G	25	134	74	395	294·1	0·0	−11·4	−78·4
208·345 G	62	287	89	425	293·6	−0·6	−11·0	−68·0
209·350 G	94	474	88	439	293·1	−1·2	−10·9	−55·1
210·122 K	98	627	73	469	293·0	−1·4	−10·9	−45·1
211·123 K	95	661	59	410	293·2	−1·3	−10·8	−31·6
212·443 G	90	557	48	300	293·4	−1·2	−10·5	−13·9
213·464 G	103	549	54	286	294·0	−0·7	−10·8	+ 0·2
214·361 G	87	433	47	232	294·2	−0·6	−10·3	+12·2
215·337 G	69	304	40	178	294·5	−0·4	−10·4	+25·4
216·413 C	62	287	42	199	294·8	−0·2	−10·8	+40·0
217·333 G	34	174	30	153	295·5	+0·4	−11·0	+52·8
218·358 G	16	82	22	112	295·9	+0·7	−11·0	+66·8
219·382 G	7	30	23	98	295·4	+0·1	−11·0	+79·8
Means ...	...	...	53	284	294·2	...	−10·8	...

Group 12458—*continued.*

Spot *a*.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude	Proper Motion	Latitude	Long. from C.M.
d								
207·520 G	18	97	43	233	295°·9	0°·0	−11°·2	−76°·6
208·345 G	41	163	53	212	295·8	−0·2	−10·7	−65·8
209·350 G	46	247	40	212	295·8	−0·3	−10·5	−52·4
210·122 K	51	319	36	226	295·7	−0·5	−10·5	−42·4
211·123 K	56	338	34	203	295·9	−0·4	−10·2	−28·9
212·443 G	60	298	32	158	296·1	−0·3	− 9·8	−11·2
213·464 G	62	325	32	169	295·9	−0·6	− 9·9	+ 2·1
214·361 G	55	282	30	152	296·0	−0·6	−10·0	+14·0
215·337 G	46	247	27	146	296·0	−0·7	−10·2	+26·9
216·413 C	42	220	29	154	295·8	−1·0	−10·6	+41·0
217·333 G	34	174	30	153	295·5	−1·4	−11·0	+52·8
218·358 G	16	82	22	112	295·9	−1·1	−11·0	+66·8
219·382 G	7	30	23	98	295·4	−1·7	−11·0	+79·8

Spot *b*.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude	Proper Motion	Latitude	Long. from C.M.
207·520 G	7	37	31	162	290·3	...	−11·5	−82·2
208·345 G	21	124	36	213	290·1	0·0	−11·3	−71·5
209·350 G	48	227	48	227	290·3	+0·1	−11·4	−57·9
210·122 K	47	308	37	243	290·1	−0·2	−11·5	−48·0
211·123 K	39	323	25	207	290·3	−0·1	−11·3	−34·5
212·443 G	30	259	16	142	290·6	+0·1	−11·4	−16·7
213·464 G	32	183	17	95	290·4	−0·2	−11·5	− 3·4
214·361 G	30	144	16	76	290·2	−0·5	−11·1	+ 8·2
215·337 G	23	57	13	32	290·0	−0·8	−10·9	+20·9
216·413 C	11	40	7	26	290·1	−0·8	−10·6	+35·3

Group 12459.

July 28–Aug. 7. A small but long-lived spot.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude	Proper Motion	Latitude	Long. from C.M.
208·345 G	5	9	8	14	290·1	0·0	+ 8·0	−71·5
209·350 G	5	18	5	17	290·1	−0·1	+ 7·9	−58·1
210·122 K	11	26	8	19	290·3	0·0	+ 8·0	−47·8
211·123 K	21	47	13	28	291·3	+0·8	+ 8·3	−33·5
212·443 G	11	39	6	20	292·1	+1·5	+ 8·7	−15·2
213·464 G	14	44	7	22	292·4	+1·6	+ 8·7	− 1·4
214·361 G	18	37	9	19	292·6	+1·7	+ 8·8	+10·6
215·337 G	14	27	8	15	292·8	+1·8	+ 8·5	+23·7
216·413 C	6	14	6	14	292·8	+1·7	+ 8·5	+38·0
217·333 G	5	11	4	9	293·3	+2·0	+ 8·4	+50·6
218·358 G	5	9	6	10	293·3	+1·8	+ 8·3	+64·2
Means ...	...	...	7	17	291·9	...	+ 8·4	...

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12460.

July 29–Aug. 6. A moderate-sized stream.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude	Proper Motion	Latitude	Long. from C.M.
d								
209·350 G	39	165	30	130	304°·9	0°·0	−20°·8	−43°·3
210·122 K	39	172	26	115	304·3	−0·5	−20·4	−33·8
211·123 K	43	212	25	125	305·7	+1·0	−19·6	−19·1
212·443 G	32	147	18	82	306·0	+1·5	−20·2	− 1·3
213·464 G	37	247	21	141	304·8	+0·4	−20·4	+11·0
214·361 G	32	85	20	52	304·4	+0·1	−20·4	+22·4
215·337 G	9	27	6	19	307·5	+3·3	−20·0	+38·4
216·413 C	9	18	8	17	307·5	+3·4	−19·0	+52·7
217·333 G	5	14	7	19	307·0	+3·0	−19·3	+64·3
Means ...	...	...	18	78	305·8	...	−20·0	...

Group 12461.

July 30–Aug. 7. A stream or elongated cluster of indefinite spots.

210·122 K	21	83	27	107	273·7	0·0	−15·0	−64·4
211·123 K	26	90	22	75	274·7	+0·9	−13·1	−50·1
212·443 G	57	160	36	101	274·7	+0·8	−12·5	−32·6
213·464 G	37	202	21	113	275·4	+1·5	−12·3	−18·4
214·361 G	69	279	37	148	275·3	+1·3	−11·8	− 6·7
215·337 G	78	238	41	126	275·0	+1·0	−12·1	+ 5·9
216·413 C	28	131	15	74	274·1	0·0	−12·4	+19·3
217·333 G	14	76	9	47	274·0	−0·2	−12·6	+31·3
218·358 G	9	27	7	21	276·4	+2·2	−12·0	+47·3
Means ...	...	...	24	90	274·8	...	−12·6	...

Group 12472.

Aug. 5–10. A group of stream type—leader and follower spots with a few tiny companions between.

216·413 C	22	109	12	58	262·4	0·0	−13·0	+ 7·6
217·333 G	73	362	42	206	262·4	−0·1	−13·5	+19·7
218·358 G	128	602	83	391	263·9	+1·4	−13·1	+34·8
219·382 G	87	481	72	397	264·4	+1·8	−13·0	+48·8
220·332 G	59	304	69	358	264·8	+2·2	−12·7	+61·8
221·331 G	20	119	48	309	265·4	+2·7	−12·5	+75·6
Means ...	...	...	54	286	263·9	...	−13·0	...

Group 12474.

Aug. 5–12. A pair of spots on August 5–7: a small stream for the next two days: afterwards, one or two spots.

216·413 C	9	27	6	17	236·4	0·0	−26·4	−18·4
217·333 G	21	78	12	46	236·9	+0·8	−25·7	− 5·8

Group 12474—*continued.*

d								
218·358 G	14	37	8	22	237°·5	+1°·8	−26°·6	+ 8°·4
219·382 G	14	44	9	29	237·4	+2·0	−26·9	+21·8
220·332 G	27	87	19	63	235·1	0·0	−27·6	+32·1
221·331 G	18	55	16	50	236·5	+1·8	−26·7	+46·7
222·445 G	14	60	19	82	236·7	+2·3	−27·0	+61·6
223·379 G	2	9	6	27	238·5	+4·5	−27·3	+75·7
Means ...	...	...	12	42	236·9	...	−26·8	...

Group 12475.

Aug. 5–13. A small stream capping Group 12471.

216·413 C	13	40	15	46	191·9	0·0	− 7·9	−62·9
217·333 G	25	85	20	67	193·7	+1·7	− 8·2	−49·0
218·358 G	32	147	20	93	194·7	+2·6	− 8·9	−34·4
219·382 G	37	151	20	83	196·0	+3·7	− 8·7	−19·6
220·332 G	64	229	33	119	196·2	+3·8	− 8·7	− 6·8
221·331 G	41	179	21	93	195·3	+2·7	− 8·6	+ 5·5
222·445 G	69	252	38	139	194·8	+2·1	− 7·4	+19·7
223·379 G	39	206	24	128	195·8	+2·9	− 7·7	+33·0
224·486 G	18	87	13	64	194·3	+1·3	− 5·5	+46·2
Means ...	...	...	23	92	194·7	...	− 8·0	...

Group 12477.

Aug. 7–13. Intermittent: a small definite spot, not seen on August 11 and 12.

218·358 G	5	11	11	24	150·9	0·0	+18·3	−78·2
219·382 G	2	5	2	6	149·3	−1·5	+18·1	−66·3
220·332 G	5	14	4	12	148·6	−2·1	+18·5	−54·4
221·331 G	9	18	6	12	149·3	−1·4	+19·3	−40·5
222·445 G	0	0	0	0	...	...	...	...
223·379 G	0	0	0	0	...	...	...	...
224·486 G	2	9	1	5	149·2	−1·2	+19·5	+ 1·1
Means ...	...	...	3	8	149·5	...	+18·7	...

Group 12481.

Aug. 8–20. A stable regular spot with its umbra cleft by a bright "bridge" on August 11–13.

219·382 G	5	27	17	93	137·4	0·0	−22·4	−78·2
220·332 G	32	142	49	216	137·0	−0·2	−22·9	−66·0
221·331 G	50	256	50	253	137·0	+0·1	−23·7	−52·8

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12481—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ Spots.	Corrected Area Whole	Corrected Area Umbræ Spots.	Longitude and Proper Motion		Latitude	Long. from C.M.
d								
222·445 G	69	357	52	268	136°·7	+0°·1	−24°·3	−38°·4
223·379 G	62	380	41	251	136·3	−0·1	−24·6	−26·5
224·486 G	80	451	48	271	135·8	−0·3	−24·6	−12·3
225·397 C	89	564	53	333	134·8	−1·1	−24·7	− 1·3
226·314 G	73	495	44	297	134·6	−1·1	−24·5	+10·6
227·335 G	78	414	50	265	133·7	−1·7	−24·6	+23·3
228·369 G	64	406	47	300	133·1	−2·1	−24·7	+36·3
229·453 G	52	299	49	284	133·0	−1·9	−24·8	+50·5
230·338 G	55	196	73	259	132·4	−2·3	−24·6	+61·6
231·475 G	16	82	48	248	131·9	−2·5	−24·3	+76·2
Means ...	...	...	48	257	134·9	...	−24·2	...

Group 12487

Aug. 9–17. An irregular spot, with companions, which divides into two on August 12–13. The two parts separate in longtitude as they die out.

220·332 G	23	101	60	246	130·1	0·0	−20·7	−72·9
221·331 G	30	243	36	289	129·7	−0·3	−21·3	−60·1
222·445 G	41	289	33	234	130·3	+0·5	−21·0	−44·8
223·379 G	50	321	34	215	130·2	+0·5	−20·9	−32·6
224·486 G	41	229	24	135	131·7	+2·2	−20·5	−16·4
225·397 C	36	280	20	157	131·1	+1·7	−20·6	− 5·0
226·314 G	27	133	15	76	131·5	+2·2	−20·5	+ 7·5
227·335 G	14	73	8	44	130·6	+1·5	−20·9	+20·2
228·369 G	5	18	3	12	130·3	+1·3	−20·4	+33·5
Means ...	...	...	26	156	130·6	...	−20·8	...

Group 12488.

Aug. 10–19. Some variable spots, one of them becoming fairly large on August 15–16.

221·331 G	9	34	15	56	122·0	0·0	−23·1	−67·8
222·445 G	23	128	24	132	120·9	−0·9	−23·8	−54·2
223·379 G	37	174	29	136	121·9	+0·3	−23·6	−40·9
224·486 G	62	242	39	154	123·6	+2·2	−23·2	−24·5
225·397 C	80	302	47	176	125·0	+3·8	−22·3	−11·1
226·314 G	60	417	34	238	125·8	+4·7	−21·6	+ 1·8
227·335 G	64	353	38	208	126·0	+5·1	−21·5	+15·6
228·369 G	50	260	33	172	126·1	+5·4	−21·5	+29·3
229·453 G	23	132	18	106	126·0	+5·5	−21·7	+43·5
230·338 G	10	29	10	30	126·3	+6·0	−21·3	+55·5
Means ...	...	...	29	141	124·4	...	−22·4	...

Group 12490.

Aug. 11–21. A spot which appears to subdivide on August 12 and again on August 19, or it may be that new close satellites are formed.

d								
222·445 G	14	87	21	130	103°·9	0°·0	+10°·1	−71°·2
223·379 G	27	105	26	100	103·8	−0·2	+10·0	−59·0
224·486 G	23	153	16	107	103·3	−0·8	+10·4	−44·8
225·397 C	44	215	26	129	102·9	−1·3	+10·8	−33·2
226·314 G	46	199	25	107	103·0	−1·3	+10·8	−21·0
227·335 G	46	202	23	103	102·3	−2·1	+10·6	− 8·1
228·369 G	36	166	18	83	102·0	−2·5	+10·8	+ 5·2
229·453 G	46	157	24	83	101·2	−3·4	+11·5	+18·7
230·338 G	32	251	19	146	101·0	−3·7	+11·2	+30·2
231·475 G	23	96	17	69	101·8	−3·0	+11·2	+46·1
232·475 G	11	23	11	24	104·0	−0·9	+11·8	+61·5
Means ...	...	...	21	98	102·6	...	+10·8	...

Group 12497.

Aug. 18–25. A spot breaking up into a small cluster on August 20.

229·453 G	9	62	16	109	7·6	0·0	+30·5	−74·9
230·338 G	14	93	16	104	7·6	+0·5	+30·9	−63·2
231·475 G	14	64	11	52	6·6	0·0	+31·1	−49·1
232·475 G	11	32	7	22	5·4	−0·7	+31·7	−37·1
233·385 G	5	36	3	22	3·8	−1·8	+31·9	−26·7
234·335 G	7	18	4	10	4·1	−1·0	+30·1	−13·8
235·335 G	0	0	0	0	...	...	...	...
236·491 G	5	36	3	21	4·1	+0·1	+32·2	+14·6
Means ...	...	...	8	42	5·6	...	+31·2	...

Group 12499.

Aug. 19–29. A stream in high latitude with the most stable spot, *b*, as the follower.

230·338 G	9	32	10	36	14·3	0·0	−24·9	−56·5
231·475 G	41	200	32	158	15·8	+1·9	−25·5	−39·9
232·475 G	54	247	37	166	15·4	+1·8	−25·1	−27·1
233·385 G	48	210	29	128	15·3	+2·0	−24·9	−15·2
234·335 G	152	600	91	357	12·5	−0·5	−25·9	− 5·4
235·335 G	136	604	81	365	11·8	−0·9	−26·4	+ 7·1
236·491 G	119	593	77	386	11·0	−1·3	−26·7	+21·5
237·555 G	84	428	62	318	9·3	−2·7	−27·1	+33·9
238·617 G	45	182	41	163	7·5	−4·2	−27·3	+46·1
239·363 C	13	79	14	87	6·0	−5·4	−27·6	+54·5
240·473 G	5	9	10	17	5·5	−5·6	−28·0	+68·6
Means ...	...	...	44	198	11·3	...	−26·3	...

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12499—*continued.*

Spot *b.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
234·335 G	59	228	36	139	9·6	0·0	−27·6	− 8·3
235·335 G	68	278	41	170	8·5	−0·8	−28·0	+ 3·8
236·491 G	59	278	38	181	7·8	−1·1	−27·9	+18·3
237·555 G	50	264	36	193	7·0	−1·6	−27·8	+31·6
238·617 G	34	155	30	136	6·2	−2·0	−27·8	+44·8
239·363 C	13	79	14	87	6·0	−2·0	−27·6	+54·5
240·473 G	5	9	10	17	5·5	−2·1	−28·0	+68·6

Group 12500.

Aug. 19–29. A small spot on August 19 which rapidly increases to a stream by August 20. The leader, with a double umbra, becomes composite for a few days and then changes to a regular spot by August 26.

230·338 G	5	21	7	31	2·2	0·0	− 9·6	−68·6
231·475 G	57	308	47	255	5·5	+3·2	− 9·4	−50·2
232·475 G	103	422	68	274	6·0	+3·5	− 8·6	−36·5
233·385 G	73	475	42	269	7·0	+4·4	− 8·8	−23·5
234·335 G	89	406	47	212	8·6	+5·9	− 8·6	− 9·3
235·335 G	78	397	41	206	10·3	+7·5	− 8·5	+ 5·6
236·491 G	87	415	49	232	11·1	+8·1	− 8·9	+21·6
237·555 G	98	456	63	293	10·5	+7·4	− 8·7	+35·1
238·617 G	73	328	59	267	11·0	+7·8	− 9·0	+49·6
239·363 C	22	187	24	206	12·4	+9·1	− 9·5	+60·9
240·473 G	18	109	37	238	11·7	+8·2	− 9·8	+74·8
Means ...	...	...	44	226	8·8	...	− 9·0	...

Group 12501.

Aug. 20–29. Feeble but sustained activity represented by a few small variable spots.

231·475 G	5	14	4	12	2·5	0·0	+22·5	−53·2
232·475 G	7	23	5	15	3·8	+1·5	+22·6	−38·7
233·385 G	7	30	4	17	4·6	+2·5	+22·3	−25·9
234·335 G	5	23	3	12	3·2	+1·3	+22·3	−14·7
235·335 G	7	23	4	12	7·1	+5·4	+22·2	+ 2·4
236·491 G	9	50	5	27	3·3	+1·8	+23·2	+13·8
237·555 G	21	146	12	85	2·7	+1·5	+23·4	+27·3
238·617 G	9	46	6	33	4·9	+3·9	+23·9	+43·5
239·363 C	4	22	3	19	5·2	+4·3	+23·6	+53·7
240·473 G	5	14	6	18	4·7	+4·1	+23·8	+67·8
Means ...	...	...	5	25	4·2	...	+23·0	...

Group 12502.

Aug. 20–30. At first, one or two small unstable spots which become a definite pair by August 23 and develop into a stream of normal type with *a* as the leading spot. The following part of the stream is short-lived.

d					°	°	°	°
231·475 G	7	21	10	31	348·7	0·0	−16·0	−67·0
232·475 G	11	30	10	28	348·5	−0·2	−16·6	−54·0
233·385 G	14	41	10	29	351·3	+2·5	−15·4	−39·2
234·335 G	39	124	23	73	353·2	+4·4	−14·3	−24·7
235·335 G	130	602	71	330	354·2	+5·3	−14·2	−10·5
236·491 G	162	849	88	459	355·3	+6·4	−13·4	+ 5·8
237·555 G	151	677	87	388	355·7	+6·8	−13·2	+20·3
238·617 G	89	401	58	263	356·6	+7·6	−12·8	+35·2
239·363 C	52	272	41	214	357·4	+8·4	−12·5	+45·9
240·473 G	38	185	44	216	358·3	+9·2	−12·5	+61·4
241·400 G	9	87	20	189	359·2	+10·1	−12·1	+74·6
Means ...	...	...	42	202	354·4	...	−13·9	...

Spot *a.*

233·385 G	9	32	6	22	352·7	0·0	−14·5	−37·8
234·335 G	16	78	9	45	355·0	+2·3	−14·3	−22·9
235·335 G	84	383	45	207	356·4	+3·6	−13·4	− 8·3
236·491 G	100	529	54	286	357·7	+4·9	−12·6	+ 8·2
237·555 G	91	442	53	256	358·2	+5·3	−12·4	+22·8
238·617 G	55	287	37	192	358·6	+5·7	−12·3	+37·2
239·363 C	48	235	38	188	359·2	+6·3	−12·1	+47·7
240·473 G	36	176	42	208	359·2	+6·2	−12·3	+62·3
241·400 G	9	87	20	189	359·2	+6·2	−12·1	+74·6

Group 12503.

Aug. 21–30. A small regular spot followed at some distance by a cluster which has died out by August 28.

232·475 G	5	18	13	48	322·0	...	+14·5	−80·5
233·385 G	9	43	12	55	322·2	0·0	+14·7	−68·3
234·335 G	14	78	12	69	322·0	−0·2	+14·3	−55·9
235·335 G	30	139	22	100	319·2	−3·0	+15·1	−45·5
236·491 G	32	145	19	84	319·7	−2·5	+15·2	−29·8
237·555 G	39	162	21	86	318·9	−3·3	+15·3	−16·5
238·617 G	23	45	12	23	319·9	−2·3	+15·6	− 1·5
239·363 C	13	62	7	32	322·7	+0·5	+16·1	+11·2
240·473 G	21	27	12	15	322·2	0·0	+16·0	+25·3
241·400 G	5	14	3	9	322·2	−0·1	+16·3	+37·6
Means ...	...	...	13	53	321·0	...	+15·4	...

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12505.

Aug. 22–30. A small spot on August 22–23; a variable spot or cluster on Aug. 27–30.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
233·385 G	7	23	9	28	324·4	0·0	+31·8	−66·1
234·335 G	5	7	5	7	322·2	−1·7	+31·9	−55·7
235·335 G	0	0	0	0	...	...	...	...
236·491 G	0	0	0	0	...	...	...	...
237·555 G	0	0	0	0	...	...	...	...
238·617 G	23	87	13	49	320·6	−0·8	+33·0	− 0·8
239·363 C	9	44	5	25	319·8	−1·2	+32·8	+ 8·3
240·473 G	14	57	8	34	319·3	−1·1	+33·0	+22·4
241·400 G	2	9	1	6	318·8	−1·0	+33·6	+34·2
Means ...	...	...	5	17	320·8	...	+32·7	...

Group 12507.

Aug. 23–Sept. 1. A diminutive stream.

234·335 G	50	107	37	77	331·3	0·0	+14·8	−46·6
235·335 G	55	118	33	71	331·4	+0·1	+15·0	−33·3
236·491 G	25	109	13	58	331·6	+0·2	+15·1	−17·9
237·555 G	16	57	8	29	332·3	+0·9	+14·5	− 3·1
238·617 G	11	45	6	23	330·6	−0·8	+14·7	+ 9·2
239·363 C	9	37	5	20	333·8	+2·4	+15·0	+22·3
240·473 G	5	5	3	3	333·5	+2·0	+13·5	+36·6
241·400 G	14	55	10	38	329·6	−1·9	+14·5	+45·0
242·385 G	23	68	22	64	330·1	−1·4	+14·2	+58·5
243·340 G	7	32	10	47	330·3	−1·2	+13·9	+71·3
Means ...	...	...	15	43	331·4	...	+14·5	...

Group 12511.

Aug. 27–Sept. 3. Smallish spots, in stream formation, that diminish to tiny markings within a few days.

238·617 G	9	36	21	85	242·6	0·0	+11·1	−78·8
239·363 C	31	138	44	214	240·1	−2·6	+12·0	−71·4
240·473 G	43	203	39	190	240·0	−2·8	+11·5	−56·9
241·400 G	27	207	19	145	239·4	−3·5	+11·8	−45·2
242·385 G	28	93	17	55	240·0	−2·9	+11·7	−31·6
243·340 G	11	48	6	25	242·2	−0·8	+11·6	−16·8
244·337 G	9	48	4	24	244·2	+1·1	+11·0	− 1·6
245·383 G	2	9	1	5	243·8	+0·6	+ 9·9	+11·8
Means ...	...	...	19	93	241·5	...	+11·3	...

Group 12515.

Aug. 31–Sept. 11. A fairly large spot with multiple umbræ breaking up after September 2 and slowly fading out. On September 11, a small pair of spots appears nearby.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
242·385 G	32	177	63	347	194·8	0·0	+19·3	−76·8
243·340 G	47	293	53	331	194·4	−0·3	+19·3	−64·6
244·337 G	56	313	45	250	194·5	−0·2	+19·3	−51·3
245·383 G	59	329	38	211	194·1	−0·5	+19·4	−37·9
246·337 G	50	263	28	147	194·1	−0·4	+19·1	−25·3
247·369 G	41	186	21	97	193·7	−0·8	+19·0	−12·1
248·324 C	37	123	19	63	194·2	−0·2	+18·4	+ 1·1
249·382 G	16	43	8	23	194·4	0·0	+18·2	+15·2
250·392 G	11	32	6	19	195·3	+1·0	+17·8	+29·5
251·402 C	4	35	3	24	195·1	+0·9	+17·8	+42·6
252·336 G	5	18	4	15	195·1	+0·9	+16·9	+54·9
253·338 G	5	9	6	11	193·7	−0·4	+13·5	+66·8
Means ...	...	...	24	128	194·4	...	+18·2	...

Group 12519.

Sept. 2–8. A few small spots *s* Group 12515.

244·337 G	2	5	2	4	190·0	0·0	+14·6	−55·8
245·383 G	5	14	3	9	189·7	−0·3	+14·2	−42·3
246·337 G	5	30	3	17	189·5	−0·6	+14·9	−29·9
247·369 G	9	50	5	26	191·1	+1·0	+13·3	−14·7
248·324 C	11	99	6	50	191·3	+1·1	+13·1	− 1·8
249·382 G	2	34	1	17	191·0	+0·8	+13·3	+11·8
250·392 G	5	43	3	24	191·9	+1·6	+13·4	+26·1
Means ...	...	...	3	21	190·6	...	+13·8	...

Group 12523.

Sept. 6–11. A small stream showing increased development near the west limb.

248·324 C	55	205	29	107	210·2	0·0	+ 9·9	+17·1
249·382 G	64	331	38	195	212·0	+1·7	+ 9·5	+32·8
250·392 G	43	256	31	185	212·3	+1·9	+ 9·6	+46·5
251·402 C	57	265	55	258	211·4	+0·8	+ 9·2	+58·9
252·336 G	32	278	48	422	211·3	+0·6	+ 9·0	+71·1
253·338 G	9	61	(27	185	208·4	...	+ 9·0)	+81·5
Means ...	...	...	40	233	211·4	...	+ 9·4	...

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12524.

Sept. 6–18. A rapidly developing group resolving into a pair of fairly large spots on September 9. These soon break up, but the chief nucleus of each spot persists to the west limb.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
248·324 C	4	18	(16	73	108·7	...	+12·9)	−84·4
249·382 G	25	145	39	223	106·8	0·0	+12·9	−72·4
250·392 G	108	712	105	686	106·4	−0·5	+13·3	−59·4
251·402 C	88	567	63	413	106·6	−0·3	+13·1	−45·9
252·336 G	125	863	75	518	106·6	−0·4	+13·1	−33·6
253·338 G	115	768	61	411	106·4	−0·6	+13·2	−20·5
254·385 G	97	669	48	341	106·4	−0·7	+14·0	− 6·7
255·454 G	122	386	63	196	106·1	−1·0	+14·0	+ 7·1
256·389 G	63	249	34	133	106·8	−0·4	+13·3	+20·1
257·334 G	46	152	28	90	106·8	−0·4	+12·8	+32·6
258·360 G	18	46	13	33	107·8	+0·5	+12·6	+47·2
259·423 G	4	14	4	14	108·4	+1·1	+12·8	+61·8
260·344 G	2	4	3	6	106·7	−0·7	+12·9	+72·3
Means ...	...	...	45	255	106·8	...	+13·2	...

Group 12525.

Sept. 7–14. A stream of a few spots appearing in front of Group 12521.

249·382 G	18	59	10	32	155·7	0·0	+ 9·8	−23·5
250·392 G	9	50	5	26	155·3	−0·5	+10·3	−10·5
251·402 C	31	112	16	56	155·6	−0·3	+ 9·6	+ 3·1
252·336 G	23	115	12	60	155·8	−0·2	+10·3	+15·6
253·338 G	29	136	17	78	155·6	−0·5	+10·5	+28·7
254·385 G	18	59	13	41	157·8	+1·6	+10·2	+44·7
255·454 G	18	86	16	77	155·6	−0·8	+10·9	+56·6
256·389 G	16	52	21	68	155·2	−1·3	+10·0	+68·5
Means ...	...	...	14	55	155·8	...	+10·2	...

Group 12526.

Sept. 7–17. A stream of little importance until after September 12 when considerable changes take place, and two very large spots become the new leader and follower, *a* and *b* respectively.

249·382 G	5	9	4	7	129·5	0·0	+ 9·8	−49·7
250·392 G	38	148	23	91	130·3	+0·7	+10·8	−35·5
251·402 C	28	191	15	103	130·2	+0·5	+10·8	−22·3
252·336 G	59	235	30	119	131·1	+1·3	+11·1	− 9·1
253·338 G	126	597	63	301	131·2	+1·3	+11·3	+ 4·3
254·385 G	203	954	107	505	131·6	+1·6	+11·2	+18·5
255·454 G	343	1783	207	1070	132·2	+2·1	+11·2	+33·2
256·389 G	344	2181	248	1558	132·9	+2·7	+11·1	+46·2

Group 12526—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
257·334 G	310	1783	296	1700	133·3	+3·0	+11·2	+59·1
258·360 G	144	1109	221	1735	132·3	+1·9	+11·5	+71·7
259·423 G	27	207	(82	627	128·7	...	+11·9)	+82·1
Means ...	...	...	121	719	131·5	...	+11·0	...

Spot *a*.

252·336 G	23	95	12	48	133·4	0·0	+11·2	− 6·8
253·338 G	45	276	23	141	134·4	+0·9	+11·4	+ 7·5
254·385 G	70	475	38	256	135·2	+1·6	+11·3	+22·1
255·454 G	212	899	131	557	135·7	+2·0	+11·3	+36·7
256·389 G	199	1071	151	814	136·2	+2·4	+11·0	+49·5
257·334 G	170	967	178	1015	136·5	+2·6	+11·2	+62·3
258·360 G	50	434	100	864	137·2	+3·2	+11·5	+76·6

Spot *b*.

252·336 G	36	140	18	71	129·5	0·0	+11·2	−10·7
253·338 G	81	321	40	160	129·0	−0·6	+11·1	+ 2·1
254·385 G	133	479	69	249	129·1	−0·6	+10·8	+16·0
255·454 G	131	884	76	513	129·0	−0·8	+11·0	+30·0
256·389 G	145	1110	97	744	129·0	−0·9	+10·9	+42·3
257·334 G	140	816	118	685	128·3	−1·7	+11·1	+54·1
258·360 G	94	675	121	871	128·6	−1·5	+11·4	+68·0
259·423 G	27	207	82	627	128·7	...	+11·9	+82·1

Group 12527.

Sept. 8–17. A partially-formed regular spot with a small companion.

250·392 G	20	54	14	37	123·0	0·0	+19·7	−42·8
251·402 C	46	153	26	87	126·2	+3·3	+19·0	−26·3
252·336 G	23	108	12	56	126·9	+4·1	+19·3	−13·3
253·338 G	23	113	12	58	127·2	+4·5	+19·4	+ 0·3
254·385 G	23	118	12	61	126·3	+3·7	+19·4	+13·2
255·454 G	14	43	8	25	126·9	+4·4	+19·7	+27·9
256·389 G	9	18	6	12	127·0	+4·6	+20·0	+40·3
257·334 G	9	23	7	19	127·0	+4·7	+19·9	+52·8
258·360 G	9	22	10	25	125·7	+3·5	+19·2	+65·1
259·423 G	0	4	0	8	124·4	+2·3	+18·8	+77·8
Means ...	...	...	11	39	126·1	...	+19·4	...

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12528.

Sept. 10–15. A small, short-lived stream.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d								
252·336 G	36	77	19	42	125°·1	0°·0	−10°·7	−15°·1
253·338 G	52	195	27	102	126·1	+0·9	−10·2	− 0·8
254·385 G	34	142	19	76	126·7	+1·4	−10·4	+13·6
255·454 G	23	86	14	51	126·2	+0·8	−10·4	+27·2
256·389 G	14	50	10	34	127·0	+1·5	−10·8	+40·3
257·334 G	5	11	4	10	127·3	+1·7	−10·9	+53·1
Means ...	...	...	16	52	126·4	...	−10·6	...

Group 12529.

Sept. 12–24. A pair of regular spots of which the smaller is in front.

254·385 G	18	95	51	271	31·9	...	+13·1	−81·2
255·454 G	32	195	41	257	30·3	0·0	+13·1	−68·7
256·389 G	50	296	44	261	30·9	+0·5	+13·0	−55·8
257·334 G	59	367	40	251	31·0	+0·6	+13·2	−43·2
258·360 G	75	408	43	234	30·9	+0·4	+13·0	−29·7
259·423 G	72	356	37	185	31·0	+0·4	+12·5	−15·6
260·344 G	43	310	21	155	31·0	+0·3	+12·1	− 3·4
261·391 C	61	294	31	151	31·1	+0·4	+12·1	+10·5
262·380 G	61	288	33	156	31·5	+0·7	+12·1	+23·9
263·401 C	48	222	30	139	31·2	+0·3	+11·9	+37·1
264·340 G	26	131	20	100	30·8	−0·1	+11·7	+49·1
265·354 G	16	76	16	78	30·1	−0·9	+11·3	+61·8
266·342 G	4	20	7	35	30·1	−1·0	+11·5	+74·8
Means ...	...	...	30	167	30·8	...	+12·3	...

Group 12531.

Sept. 14–24. A regular spot slowly diminishing to a dot; there is a small follower on September 15.

256·389 G	5	14	8	23	18·6	0·0	−19·7	−68·1
257·334 G	16	47	17	50	18·2	−0·3	−19·4	−56·0
258·360 G	27	92	20	67	20·7	+2·3	−18·5	−39·9
259·423 G	18	108	11	67	21·0	+2·7	−18·6	−25·6
260·344 G	22	101	13	58	21·1	+2·8	−18·7	−13·3
261·391 C	17	96	10	54	20·7	+2·5	−18·7	+ 0·1
262·380 G	22	81	13	46	20·5	+2·4	−18·9	+12·9
263·401 C	15	61	9	38	20·0	+2·0	−19·2	+25·9
264·340 G	16	22	11	16	19·5	+1·6	−19·3	+37·8
265·354 G	11	18	10	16	19·4	+1·6	−19·2	+51·1
266·342 G	4	9	5	12	19·4	+1·7	−18·9	+64·1
Means ...	...	...	12	41	19·9	...	−19·0	...

Group 12533.

Sept. 16–24. One or two small spots.

258·360 G	4	18	7	31	346°·2	0°·0	+15°·9	−74°·4
259·423 G	9	18	9	18	345·2	−1·0	+16·4	−61·4
260·344 G	4	16	3	12	347·5	+1·4	+17·0	−46·9
261·391 C	13	26	8	16	347·3	+1·2	+16·9	−33·3
262·380 G	14	40	8	22	347·0	+0·9	+17·2	−20·6
263·401 C	17	48	9	24	347·0	+1·1	+17·6	− 7·1
264·340 G	4	9	2	5	348·6	+2·6	+17·0	+ 6·9
265·354 G	9	68	5	36	346·5	+0·5	+16·7	+18·2
266·342 G	4	22	2	13	348·2	+2·2	+17·3	+32·9
Means ...	...	...	6	20	347·1	...	+16·9	...

Group 12541.

Sept. 21–29. A group of stream type of rather feeble development.

263·401 C	2	4	2	4	290·9	0·0	+13·6	−63·2
264·340 G	31	76	24	60	290·7	−0·3	+13·2	−51·0
265·354 G	30	95	19	60	291·5	+0·5	+12·9	−36·8
266·342 G	18	68	10	37	291·9	+0·8	+12·8	−23·4
267·121 K	12	71	6	37	292·4	+1·3	+12·5	−12·6
268·367 G	13	27	6	14	293·2	+2·0	+12·3	+ 4·7
269·335 G	13	31	7	17	292·4	+1·1	+12·9	+16·6
270·385 G	9	25	5	15	293·9	+2·6	+12·2	+32·0
271·334 G	4	9	3	6	294·1	+2·7	+12·1	+44·7
Means ...	...	...	9	28	292·3	...	+12·7	...

Group 12543.

Sept. 22–30. Intermittent. A single spot until September 24: a small stream on September 25 and 27: a close pair on September 30.

264·340 G	2	4	7	13	258·4	...	+20·4	−83·3
265·354 G	4	16	6	22	258·3	0·0	+20·9	−70·0
266·342 G	9	14	8	13	258·8	+0·6	+20·7	−56·5
267·121 K	10	60	7	43	259·1	+1·0	+19·7	−45·9
268·367 G	0	0	0	0	...	...	...	...
269·335 G	9	34	5	18	257·7	−0·1	+20·2	−18·1
270·385 G	0	0	0	0	...	...	...	...
271·334 G	0	0	0	0	...	...	...	...
272·369 G	4	22	2	12	258·0	+0·5	+19·1	+22·3
Means ...	...	...	4	14	258·4	...	+20·1	...

LEDGER II.– NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued*.

Group 12545.

Sept. 23–Oct. 3. A stream of changing spots.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude	Proper Motion	Latitude	Long. from C.M.
d								
265·354 G	18	39	20	43	264°·5	0°·0	+12°·1	−63°·8
266·342 G	34	108	27	84	264·8	+0·2	+12·3	−50·5
267·121 K	29	129	19	84	265·3	+0·7	+12·2	−39·7
268·367 G	29	162	16	88	265·4	+0·7	+12·2	−23·1
269·335 G	27	188	14	97	265·5	+0·8	+12·2	−10·3
270·385 G	38	246	18	123	263·7	−1·1	+13·2	+ 1·8
271·334 G	54	137	29	72	264·4	−0·5	+12·9	+15·0
272·369 G	22	105	13	60	264·3	−0·6	+13·4	+28·6
273·342 G	16	63	11	42	264·6	−0·4	+13·0	+41·7
274·400 G	9	25	8	22	264·4	−0·6	+13·8	+55·5
275·384 C	2	4	2	5	262·8	−2·3	+14·4	+66·8
Means ...	...	...	16	65	264·5	...	+12·9	...

Group 12546.

Sept. 23.–Oct. 5. A stable regular spot with a tiny follower until September 27. Another small companion is seen on October 2.

265·354 G	9	40	(18	82	250·9	...	+17·9)	−77·4
266·342 G	26	230	32	279	248·8	0·0	+16·9	−66·5
267·121 K	50	245	42	211	250·2	+1·4	+16·7	−54·8
268·367 G	54	343	34	218	251·3	+2·6	+16·9	−37·2
269·335 G	67	368	37	204	251·3	+2·6	+17·1	−24·5
270·385 G	87	388	45	202	252·0	+3·3	+17·1	− 9·9
271·334 G	58	358	30	183	252·1	+3·4	+17·0	+ 2·7
272·369 G	54	305	29	162	251·9	+3·3	+17·0	+16·2
273·342 G	56	258	32	149	251·3	+2·7	+16·9	+28·4
274·400 G	40	197	28	135	251·5	+2·9	+16·9	+42·6
275·384 C	15	114	13	100	251·5	+3·0	+17·0	+55·5
276·402 G	13	80	17	106	251·1	+2·6	+16·8	+68·6
277·391 C	6	39	(19	123	251·8	...	+16·9)	+82·3
Means ...	...	...	31	177	251·2	...	+16·9	...

Group 12549.

Sept. 25–Oct. 2. A stream, with brief maximum about September 29, in relatively high northern latitude.

267·121 K	4	15	3	12	258·5	0·0	+38·5	−46·5
268·367 G	26	76	18	52	257·4	−0·1	+38·7	−31·1
269·335 G	36	101	22	63	257·3	+0·7	+39·4	−18·5
270·385 G	62	349	38	209	257·9	+2·1	+39·4	− 4·0
271·334 G	90	374	55	225	256·2	+1·2	+38·9	+ 6·8
272·369 G	63	208	40	129	255·3	+1·2	+38·9	+19·6
273·342 G	35	117	24	78	251·6	−1·7	+38·9	+28·7
274·400 G	8	29	7	22	250·1	−2·3	+38·9	+41·2
Means ...	...	...	26	99	255·5	...	+39·0	...

Group 12551.

Sept. 28–Oct. 6. A close pair of spots almost amalgamating on some days.

d								
270·385 G	20	94	34	161	191°·0	0°·0	−11°·0	−70°·9
271·334 G	27	105	26	103	192·8	+1·7	−11·2	−56·6
272·369 G	45	197	33	144	192·7	+1·5	−11·4	−43·0
273·342 G	40	222	24	135	192·6	+1·3	−11·3	−30·3
274·400 G	45	251	25	138	192·5	+1·1	−11·5	−16·4
275·384 C	30	194	16	103	192·5	+1·0	−11·7	− 3·5
276·402 G	31	127	17	69	192·6	+1·1	−12·1	+10·1
277·391 C	6	56	3	32	192·8	+1·2	−11·8	+23·3
278·398 C	4	13	3	8	192·3	+0·6	−10·8	+36·1
Means ...	...	...	20	99	192·4	...	−11·4	...

Group 12552.

Sept. 28–Oct. 10. A small but very stable regular spot with a pronounced drift in latitude.

270·385 G	9	49	27	148	184·0	0·0	−16·9	−77·9
271·334 G	13	72	18	98	184·5	+0·6	−16·6	−64·9
272·369 G	16	92	14	83	183·9	0·0	−16·9	−51·8
273·342 G	25	121	18	86	183·8	0·0	−17·2	−39·1
274·400 G	25	137	15	84	183·4	−0·4	−17·6	−25·5
275·384 C	26	138	15	77	183·4	−0·3	−17·6	−12·6
276·402 G	25	129	14	71	183·4	−0·3	−17·9	+ 0·9
277·391 C	22	93	13	53	183·2	−0·4	−17·9	+13·7
278·398 C	17	95	11	59	182·8	−0·8	−18·2	+26·6
279·404 C	17	77	12	55	182·4	−1·1	−18·5	+39·5
280·463 G	18	58	17	55	182·2	−1·3	−18·7	+53·3
281·387 G	11	38	15	53	182·1	−1·3	−18·7	+65·3
282·447 G	4	18	14	62	181·7	−1·7	−18·7	+78·9
Means ...	...	...	16	76	183·1	...	−17·8	...

Group 12554.

Sept. 30–Oct. 8. An unimportant stream, the leader alone surviving after October 6.

272·369 G	2	7	1	5	197·5	0·0	+23·9	−38·2
273·342 G	0	0	0	0	...	...	...	...
274·400 G	16	85	8	45	198·7	+1·7	+23·0	−10·2
275·384 C	43	220	22	114	198·8	+2·0	+23·7	+ 2·8
276·402 G	38	192	21	105	198·7	+2·1	+24·0	+16·2
277·391 C	17	112	10	67	199·1	+2·7	+24·1	+29·6
278·398 C	17	123	12	87	199·6	+3·4	+23·8	+43·4
279·404 C	11	39	10	37	201·2	+5·3	+22·8	+58·3
280·463 G	4	9	6	14	200·9	+5·2	+22·8	+72·0
Means ...	...	...	10	53	199·3	...	+23·5	...

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12557.

Oct. 1–7. Small changing spots representing a disturbed area *np* Group 12558.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d								
273·342 G	2	4	1	2	192°·2	0°·0	+16°·3	−30°·7
274·400 G	2	9	1	5	193·7	+1·5	+13·6	−15·2
275·384 C	2	9	1	5	192·8	+0·6	+17·3	− 3·2
276·402 G	9	40	5	21	194·0	+1·8	+16·4	+11·5
277·391 C	0	4	0	5	193·7	+1·5	+17·6	+24·2
278·398 C	0	0	0	0	...	...	...	...
279·404 C	4	13	3	10	193·8	+1·7	+16·3	+50·9
Means ...	...	...	2	7	193·4	...	+16·2	...

Group 12561.

Oct. 3–14. A stream whose axis is highly inclined to the sun's equator during its early development near the east limb. None of the spots are stable.

275·384 C	8	38	(25	123	114·1	...	+15·4)	−81·9
276·402 G	28	107	39	151	112·7	0·0	+15·7	−69·8
277·391 C	39	220	35	198	112·9	+0·2	+15·4	−56·6
278·398 C	80	443	55	301	113·9	+1·1	+15·0	−42·3
279·404 C	164	890	94	508	114·7	+1·9	+14·7	−28·2
280·463 G	117	560	61	291	115·7	+2·8	+14·0	−13·2
281·387 G	96	473	48	238	117·0	+4·1	+13·7	+ 0·2
282·447 G	66	269	34	141	118·0	+5·0	+13·0	+15·2
283·377 G	42	225	24	128	117·8	+4·8	+13·0	+27·3
284·394 C	13	93	8	63	118·9	+5·9	+12·7	+41·8
285·609 G	4	20	4	20	121·1	+8·0	+12·2	+60·0
286·390 C	4	13	6	18	120·8	+7·7	+12·2	+70·0
Means ...	...	...	37	187	116·7	...	+13·8	...

Group 12562.

Oct. 6–14. A short stream of which the leader alone remains after October 11.

278·398 C	4	9	4	8	98·1	0·0	+14·0	−58·1
279·404 C	11	56	8	39	98·3	+0·1	+13·6	−44·6
280·463 G	71	187	41	108	98·6	+0·4	+13·5	−30·3
281·387 G	62	235	33	125	98·4	+0·1	+13·5	−18·4
282·447 G	87	459	·44	231	99·6	+1·3	+13·1	− 3·2
283·377 G	53	306	27	156	101·0	+2·6	+12·9	+10·5
284·394 C	22	142	12	78	101·7	+3·3	+12·7	+24·6
285·609 G	13	58	9	39	102·7	+4·2	+12·8	+41·6
286·390 C	2	9	2	7	103·1	+4·6	+12·8	+52·3
Means ...	...	...	20	88	100·2	...	+13·2	...

Group 12567.

Oct. 9–18. A stream of normal type showing less than the usual separation in longitude between the leader *a* and the follower *b*.

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d								
281·387 G	8	36	6	26	70°·5	0°·0	+13°·2	−46°·3
282·447 G	96	380	56	220	72·3	+1·7	+12·4	−30·5
283·377 G	169	919	90	487	71·9	+1·3	+12·4	−18·6
284·394 C	155	949	78	478	71·7	+1·0	+12·1	− 5·4
285·609 G	223	1168	115	600	70·6	−0·2	+12·1	+ 9·5
286·390 C	154	1004	83	540	70·5	−0·4	+12·4	+19·7
287·433 G	120	817	73	490	70·4	−0·5	+12·4	+33·4
288·379 G	89	493	64	356	70·7	−0·3	+11·8	+46·2
289·465 G	62	303	64	311	71·2	+0·1	+11·8	+61·0
290·476 G	22	135	38	244	71·1	−0·1	+12·0	+74·2
Means ...	...	...	67	375	71·1	...	+12·3	...

Spot *a*.

281·387 G	4	18	3	13	71·7	0·0	+12·8	−45·1
282·447 G	56	253	32	144	73·8	+2·6	+11·7	−29·0
283·377 G	84	480	44	250	74·4	+3·2	+11·5	−16·1
284·394 C	82	454	41	227	74·4	+3·1	+11·1	− 2·7
285·609 G	78	464	41	241	74·4	+3·0	+11·2	+13·3
286·390 C	73	360	40	198	74·0	+2·5	+11·3	+23·2
287·433 G	67	404	42	250	73·3	+1·8	+11·3	+36·3
288·379 G	53	289	40	217	73·0	+1·4	+11·0	+48·5
289·465 G	44	212	47	227	72·9	+1·2	+11·3	+62·7
290·476 G	13	95	25	186	72·9	+1·1	+11·5	+76·0

Spot *b*.

281·387 G	4	18	3	13	69·6	0·0	+13·8	−47·2
282·447 G	40	127	24	76	69·5	+0·4	+13·5	−33·3
283·377 G	78	417	42	225	68·8	−0·3	+13·4	−21·7
284·394 C	56	383	29	195	68·4	−0·8	+13·4	− 8·7
285·609 G	109	584	56	298	68·4	−0·9	+13·5	+ 7·3
286·390 C	68	531	36	281	68·1	−1·3	+13·5	+17·3
287·433 G	53	413	31	240	67·6	−1·8	+13·3	+30·6
288·379 G	36	204	24	139	67·5	−2·0	+12·9	+43·0
289·465 G	18	91	17	84	67·5	−2·1	+13·1	+57·3
290·476 G	9	40	13	58	67·4	−2·3	+13·4	+70·5

Group 12568.

Oct. 10–17. Two or three spots on October 10 developing rapidly into a large stream; it appears, however, to be already decreasing as it nears the west limb.

282·447 G	8	20	4	11	90·6	0·0	−15·9	−12·2
283·377 G	65	187	35	101	91·7	+1·1	−16·4	+ 1·2
284·394 C	64	370	35	206	91·3	+0·7	−15·4	+14·2

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
Group 12568—*continued.*								
d								
285·609 G	257	1259	162	795	92°·0	+1°·4	−15°·2	+30°·9
286·390 C	152	1050	111	760	91·8	+1·2	−15·6	+41·0
287·433 G	135	766	130	746	91·7	+1·1	−15·7	+54·7
288·379 G	71	387	109	607	92·5	+1·9	−16·1	+68·0
289·465 G	13	88	(45	302	90·0	...	−15·3)	+79·8
Means ...	...	...	84	461	91·7	...	−15·8	...
Group 12569.								
Oct. 10–17. A small group.								
282·447 G	8	31	9	37	36·9	0·0	+24·2	−65·9
283·377 G	29	77	24	66	37·5	+0·8	+24·0	−53·0
284·394 C	32	61	22	41	38·0	+1·5	+24·0	−39·1
285·609 G	31	86	18	52	38·4	+2·2	+23·6	−22·7
286·390 C	15	75	8	40	39·2	+3·2	+23·5	−11·6
287·433 G	9	47	5	24	39·0	+3·2	+23·0	+ 2·0
288·379 G	9	27	5	15	39·7	+4·1	+22·7	+15·2
289·465 G	4	22	2	13	40·1	+4·7	+22·3	+29·9
Means ...	...	...	12	36	38·6	...	+23·4	...
Group 12570.								
Oct. 11–16. A short-lived stream of active spots developing *np* Group 12562.								
283·377 G	53	224	28	116	105·1	0·0	+15·2	+14·6
284·394 C	30	235	17	135	106·0	+0·9	+15·1	+28·9
285·609 G	56	270	41	196	106·8	+1·7	+15·1	+45·7
286·390 C	43	210	40	192	107·8	+2·6	+14·8	+57·0
287·433 G	17	75	26	116	108·4	+3·2	+14·5	+71·4
288·379 G	4	18	(18	79	109·1	...	+13·1)	+84·6
Means ...	...	...	30	151	106·8	...	+14·9	...
Group 12571.								
Oct. 11–21. A regular spot, with a small follower until October 14, preceding Group 12572.								
283·377 G	9	22	14	33	24·1	0·0	−22·1	−66·4
284·394 C	19	82	18	81	23·2	−0·7	−21·4	−53·9
285·609 G	27	200	19	142	24·6	+0·8	−21·3	−36·5
286·390 C	43	261	27	166	24·5	+0·9	−21·0	−26·3
287·433 G	31	175	18	100	25·0	+1·5	−20·9	−12·0
Group 12571—*continued.*								
d								
288·379 G	33	142	18	80	24°·9	+1°·6	−21°·1	+ 0°·4
289·465 G	22	106	13	61	25·2	+2·0	−21·2	+15·0
290·476 C	18	139	12	89	25·1	+2·1	−21·0	+28·2
291·398 G	17	64	13	48	25·4	+2·5	−21·0	+40·7
292·469 G	9	35	9	35	25·6	+2·9	−21·2	+55·0
293·457 G	4	15	6	24	25·1	+2·5	−21·5	+67·6
Means ...	...	...	15	78	24·8	...	−21·2	...
Group 12572.								
Oct. 11–22. A stream of spots that are unstable at first; later a regular spot heads the group.								
283·377 G	2	9	4	19	18·1	0·0	−23·1	−72·4
284·394 C	9	39	11	46	17·3	−0·6	−22·7	−59·8
285·609 G	53	186	41	143	19·1	+1·4	−21·3	−42·0
286·390 C	41	285	28	190	19·2	+1·6	−21·7	−31·6
287·433 G	74	322	44	192	19·1	+1·7	−21·8	−17·9
288·379 G	106	484	60	276	19·4	+2·2	−21·9	− 5·1
289·465 G	104	595	59	339	19·2	+2·2	−22·1	+ 9·0
290·476 G	115	469	70	287	19·4	+2·5	−21·9	+22·5
291·398 C	43	366	30	253	18·7	+2·0	−22·2	+34·0
292·469 G	67	256	59	225	19·7	+3·2	−21·8	+49·1
293·457 G	22	161	29	206	20·6	+4·3	−22·1	+63·1
294·381 G	9	26	23	67	21·2	+5·0	−21·6	+75·8
Means ...	...	...	38	187	19·2	...	−22·0	...
Group 12576.								
Oct. 14–25. A sparse stream at the head of which a regular spot has formed by October 17.								
286·390 C	4	13	6	20	340·9	0·0	− 5·6	−69·9
287·433 G	18	80	19	82	337·2	−3·9	− 5·7	−59·8
288·379 G	40	162	30	120	338·1	−3·1	− 5·5	−46·4
289·465 G	69	256	42	153	339·5	−1·9	− 5·8	−30·7
290·476 G	80	380	43	202	341·0	−0·6	− 5·5	−15·9
291·398 C	60	309	31	158	341·3	−0·4	− 5·6	− 3·4
292·469 G	39	258	20	134	342·5	+0·6	− 6·0	+11·9
293·457 G	29	228	16	129	342·8	+0·7	− 6·1	+25·3
294·381 G	38	161	25	105	343·0	+0·8	− 6·2	+37·6
295·489 G	22	130	18	109	342·9	+0·5	− 6·3	+52·2
296·427 G	20	114	24	138	343·0	+0·5	− 6·5	+64·6
297·408 G	9	57	22	137	342·7	0·0	− 6·5	+77·3
Means ...	...	...	25	124	341·2	...	− 5·9	...

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
Group 12578.								
Oct. 15–27. A stable regular spot with occasional small companions.								
d								
287·433 G	9	75	24	200	322°·2	0°·0	−27°·1	−74°·8
288·379 G	28	124	44	190	320·4	−1·5	−26·5	−64·1
289·465 G	33	157	32	148	320·7	−0·9	−26·8	−49·5
290·476 G	49	216	36	160	320·7	−0·5	−26·3	−36·2
291·398 C	39	227	25	148	319·8	−1·1	−26·3	−24·9
292·469 G	51	252	30	152	319·2	−1·4	−26·2	−11·4
293·457 G	46	241	27	142	318·4	−1·9	−26·0	+ 0·9
294·381 G	38	283	23	170	318·4	−1·6	−25·5	+13·0
295·489 G	37	189	24	123	317·4	−2·2	−25·7	+26·7
296·427 G	26	145	20	110	317·4	−1·9	−25·5	+39·0
297·408 G	15	97	14	93	316·5	−2·5	−26·2	+51·1
298·449 G	9	31	13	45	316·5	−2·2	−26·5	+64·8
299·402 C	14	57	39	161	313·4	−5·0	−27·8	+74·3
Means ...	...	...	27	142	318·5	...	−26·3	...
Group 12585.								
Oct. 21–31. A stream of normal type except that the leader, *a*, partly breaks up on October 26 and more completely on October 30.								
293·457 G	18	146	26	197	248·6	0·0	+11·1	−68·9
294·381 G	90	515	81	468	248·7	0·0	+11·0	−56·7
295·489 G	135	1155	91	775	249·0	+0·2	+11·2	−41·7
296·427 G	253	1743	145	1005	249·2	+0·3	+11·4	−29·2
297·408 G	295	1813	154	951	249·8	+0·8	+11·3	−15·6
298·449 G	224	1544	113	778	250·7	+1·6	+11·0	− 1·0
299·402 C	170	1180	88	610	251·0	+1·8	+10·8	+11·9
300·334 G	176	974	97	539	252·1	+2·9	+11·2	+25·2
301·435 G	108	704	71	469	253·9	+4·6	+10·8	+40·6
302·419 G	75	387	69	356	256·8	+7·4	+11·1	+57·4
303·423 G	35	174	47	231	254·4	+4·9	+11·3	+68·3
Means ...	...	...	89	580	251·3	...	+11·1	...
Spot *a*.								
293·457 G	9	115	12	147	250·0	0·0	+11·1	−67·5
294·381 G	57	327	48	278	251·3	+1·2	+11·2	−54·1
295·489 G	84	702	54	449	251·7	+1·5	+11·4	−39·0
296·427 G	158	1021	88	572	252·4	+2·1	+11·7	−26·0
297·408 G	189	1012	98	526	253·0	+2·6	+11·4	−12·4
298·449 G	158	968	79	484	253·5	+3·0	+11·3	+ 1·8
299·402 C	119	771	62	401	254·3	+3·7	+10·8	+15·2
300·334 G	149	779	83	436	254·0	+3·4	+11·0	+27·1
301·435 G	99	664	66	445	255·0	+4·3	+10·8	+41·7
302·419 G	75	387	69	356	256·8	+6·0	+11·1	+57·4
303·423 G	35	174	47	231	254·4	+3·5	+11·3	+68·3
Group 12585—*continued.*								
Spot *b*.								
d								
293·457 G	9	31	14	50	244°·9	0°·0	+10°·6	−72°·6
294·381 G	33	188	33	190	244·8	−0·2	+10·5	−60·6
295·489 G	51	453	37	326	244·8	−0·3	+10·7	−45·9
296·427 G	95	722	57	433	245·0	−0·2	+10·9	−33·4
297·408 G	106	801	56	425	245·3	0·0	+10·8	−20·1
298·449 G	66	576	34	294	245·3	−0·1	+10·5	− 6·4
299·402 C	51	409	26	209	245·3	−0·2	+10·8	+ 6·2
300·334 G	27	195	14	103	245·2	−0·3	+11·7	+18·3
301·435 G	9	40	5	24	246·1	+0·5	+11·3	+32·8
Group 12587.								
Oct. 24–Nov. 4. A stream in which there is marked separation in longitude between leader and follower (*a* and *b* respectively), the latter spot being the longer-lived.								
296·427 G	8	28	12	43	213·0	0·0	−28·0	−65·4
297·408 G	71	282	71	280	213·6	+1·0	−27·5	−51·8
298·449 G	88	451	70	347	213·1	+0·9	−27·5	−38·6
299·402 C	62	328	41	220	211·6	−0·3	−27·7	−27·5
300·334 G	94	407	58	253	210·7	−0·8	−27·5	−16·2
301·435 G	93	403	56	241	210·2	−0·9	−27·6	− 3·1
302·419 G	81	405	49	244	207·8	−2·9	−28·2	+ 8·4
303·423 G	57	299	37	189	205·6	−4·7	−27·9	+19·5
304·398 C	43	222	30	153	204·3	−5·7	−27·9	+31·0
305·462 G	44	216	38	187	204·6	−5·0	−28·3	+45·4
306·676 Mt.W	39	106	57	153	206·7	−2·5	−28·2	+63·5
307·476 G	7	18	13	33	202·3	−6·5	−28·8	+69·6
Means ...	...	...	44	195	208·6	...	−27·9	...
Spot *a*.								
296·427 G	4	13	5	18	215·6	0·0	−27·4	−62·8
297·408 G	31	132	29	121	216·7	+1·5	−27·0	−48·7
298·449 G	26	233	19	168	217·3	+2·5	−26·7	−34·4
299·402 C	30	136	19	86	217·7	+3·2	−26·6	−21·4
300·334 G	31	111	18	65	218·3	+4·2	−26·5	− 8·6
301·435 G	18	64	11	38	219·0	+5·3	−26·7	+ 5·7
302·419 G	11	22	7	14	218·0	+4·7	−26·8	+18·6
303·423 G	4	9	3	6	217·8	+4·9	−26·9	+31·7
Spot *b*.								
296·427 G	4	15	7	25	211·4	0·0	−28·4	−67·0
297·408 G	40	150	42	159	210·7	−0·3	−27·1	−54·7
298·449 G	62	218	51	179	209·3	−1·3	−27·9	−42·4

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Date U.T. Place	Projected Area Whole Umbræ	Projected Area Whole Spots	Corrected Area Whole Umbræ	Corrected Area Whole Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
Group 12587. Spot *b*—*continued.*								
d								
299·402 C	32	192	22	134	207°·6	−2°·7	−28°·2	−31°·5
300·334 G	56	260	36	166	206·8	−3·1	−28·3	−20·1
301·435 G	57	286	34	172	207·0	−2·5	−28·4	− 6·3
302·419 G	57	317	34	190	205·3	−3·8	−28·5	+ 5·9
303·423 G	44	268	28	169	204·8	−3·9	−28·1	+18·7
304·398 C	43	222	30	153	204·3	−4·1	−27·9	+31·0
305·462 G	44	216	38	187	204·6	−3·4	−28·3	+45·4
306·676 Mt.W	39	106	57	153	206·7	−0·9	−28·2	+63·5
Group 12589. Oct. 27–Nov. 1. A small indefinite stream.								
299·402 C	1	4	2	3	188·3	0·0	− 9·7	−50·8
300·334 G	40	129	24	81	192·5	+4·1	−10·4	−34·4
301·435 G	22	88	12	48	194·9	+6·4	−10·1	−18·4
302·419 G	7	13	4	7	196·8	+8·2	−10·4	− 2·6
303·423 G	35	68	18	35	194·3	+5·6	−10·5	+ 8·2
304·398 C	4	19	2	11	195·8	+7·0	− 9·7	+22·5
Means ...	...	...	10	31	193·8	...	−10·1	...
Group 12590. Oct. 28–Nov. 4. One or two small unstable spots.								
300·334 G	9	47	5	27	198·9	0·0	+14·1	−28·0
301·435 G	9	35	5	18	200·3	+1·4	+14·4	−13·0
302·419 G	0	0	0	0	...	...	...	...
303·423 G	7	26	4	14	199·7	+0·7	+12·9	+13·6
304·398 C	0	0	0	0	...	...	...	...
305·462 G	4	9	3	6	199·8	+0·7	+14·7	+40·6
306·676 Mt.W	11	22	10	20	199·6	+0·4	+13·3	+56·4
307·476 G	4	31	5	42	201·4	+2·2	+13·7	+68·7
Means ...	...	...	4	16	200·0	...	+13·8	...
Group 12592. Oct. 29–Nov. 7. At first a single regular spot; after October 30, new and active spots form, just north of it, making up a short stream.								
301·435 G	13	48	21	77	142·8	0·0	−11·4	−70·5
302·419 G	20	123	19	119	142·3	−0·6	−11·4	−57·1
303·423 G	55	207	40	151	141·7	−1·3	−11·0	−44·4
304·398 C	26	136	16	83	142·3	−0·8	−11·1	−31·0
305·462 G	81	299	44	161	142·6	−0·6	−10·8	−16·6
306·676 Mt.W	113	294	59	153	143·4	+0·1	−10·7	+ 0·2
Group 12592—*continued.*								
d								
307·476 G	84	367	44	191	143°·2	−0°·3	−10°·1	+10°·5
308·405 C	47	225	26	126	144·2	+0·6	− 9·9	+23·8
309·397 C	6	42	4	28	146·2	+2·5	− 8·0	+38·8
310·433 C	2	8	2	7	147·2	+3·4	− 8·1	+53·5
Means ...	...	...	28	110	143·6	...	−10·2	...
Group 12594. Oct. 30–Nov. 6. A group of stream type coming into sudden and brief prominence on November 2.								
302·419 G	15	48	8	26	181·1	0·0	− 9·9	−18·3
303·423 G	37	106	19	55	181·5	+0·3	−10·2	− 4·6
304·398 C	26	151	14	79	182·9	+1·6	− 9·8	+ 9·6
305·462 G	88	490	51	281	184·4	+3·0	− 9·8	+25·2
306·676 Mt.W	111	393	77	272	184·1	+2·6	−11·1	+40·9
307·476 G	53	260	46	223	185·4	+3·8	−10·5	+52·7
308·405 C	19	93	25	123	186·8	+5·1	−10·5	+66·4
309·397 C	8	32	22	88	186·0	+4·2	−10·8	+78·6
Means ...	...	...	33	143	184·0	...	−10·3	...
Group 12595. Oct. 30–Nov. 8. A fairly large stream differing somewhat from the normal formation.								
302·419 G	31	110	27	95	144·6	0·0	+ 8·0	−54·8
303·423 G	128	502	83	326	147·2	+2·5	+ 7·9	−38·9
304·398 C	106	788	59	442	147·3	+2·4	+ 7·7	−26·0
305·462 G	176	980	92	506	147·8	+2·7	+ 7·2	−11·4
306·676 Mt.W	222	823	111	413	148·3	+3·1	+ 6·7	+ 5·1
307·476 G	97	506	50	262	149·5	+4·2	+ 6·7	+16·8
308·405 C	46	275	26	158	149·8	+4·3	+ 6·6	+29·4
309·397 C	28	220	19	147	149·1	+3·5	+ 6·9	+41·7
310·433 C	8	74	7	66	149·3	+3·5	+ 7·1	+55·6
311·400 C	10	45	13	57	147·8	+1·9	+ 8·0	+66·9
Means ...	...	...	49	247	148·1	...	+ 7·3	...
Group 12598. Nov. 2–12. A few small spots in a stream.								
305·462 G	4	18	12	54	79·4	0·0	− 8·0	−79·8
306·676 Mt.W	23	48	28	58	78·8	−0·8	− 7·4	−64·4
307·476 G	13	46	11	39	80·1	+0·4	− 7·2	−52·6
308·405 C	19	53	13	36	79·9	+0·1	− 7·8	−40·5

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ Spots.	Corrected Area Whole	Corrected Area Umbræ Spots.	Longitude and Proper Motion		Latitude	Long. from C.M.
Group 12598—*continued.*								
d								
309·397 C	13	47	7	26	81°·8	+1°·8	− 6°·5	−25°·6
310·433 C	13	70	7	36	82·5	+2·4	− 6·6	−11·2
311·400 C	17	76	9	39	81·9	+1·6	− 7·1	+ 1·0
312·469 G	11	39	6	21	84·1	+3·6	− 6·9	+16·3
313·387 G	11	39	6	23	83·2	+2·6	− 7·1	+28·5
314·452 G	7	18	5	13	83·8	+3·1	− 6·9	+43·1
315·443 G	2	4	2	4	83·9	+3·0	− 6·9	+56·3
Means ...	...	...	10	32	81·8	...	− 7·1	...
Group 12600.								
Nov. 7–17. Two spots developing into a long sparse stream.								
310·433 C	0	6	0	8	25·0	0·0	+15·0	−68·7
311·400 C	8	59	7	51	26·9	+ 1·8	+14·1	−54·0
312·469 G	44	234	28	153	28·8	+ 3·7	+14·0	−39·0
313·387 G	50	222	28	124	29·1	+ 3·9	+13·2	−25·6
314·452 G	31	131	17	68	32·0	+ 6·7	+12·1	− 8·7
315·443 G	55	177	28	90	34·4	+ 9·1	+11·8	+ 6·8
316·388 G	43	117	23	62	32·7	+ 7·3	+12·5	+17·5
317·453 G	24	87	14	53	34·9	+ 9·5	+12·2	+33·8
318·505 G	30	171	24	134	37·6	+12·1	+11·4	+50·3
319·484 G	17	96	19	108	38·2	+12·6	+11·5	+63·8
320·350 C	17	93	28	160	35·7	+10·1	+11·7	+72·8
Means ...	...	...	20	92	32·3	...	+12·7	...
Group 12602.								
Nov. 8–19. A large stream of normal type. The leader spot, *a*, is however less regular in structure than is usual, and it appears cleft by a bright "bridge" on November 15–18. *b* is the follower spot.								
311·400 C	8	114	15	217	7·5	0·0	−14·2	−73·4
312·469 G	92	642	96	674	7·5	0·0	−14·2	−60·3
313·387 G	166	1093	131	856	8·0	+0·5	−14·6	−46·7
314·452 G	210	1572	133	993	7·7	+0·1	−14·4	−33·0
315·443 G	287	1620	162	911	6·9	−0·7	−14·4	−20·7
316·388 G	232	1599	124	854	7·1	−0·5	−14·6	− 8·1
317·453 G	261	1432	138	753	6·7	−0·9	−14·5	+ 5·6
318·505 G	162	1096	91	615	6·8	−0·9	−14·7	+19·5
319·484 G	131	875	83	549	7·4	−0·3	−15·0	+33·0
320·350 C	80	548	59	404	7·2	−0·5	−15·2	+44·3
321·294 C	54	297	53	294	8·1	+0·4	−15·0	+57·6
322·386 G	22	161	38	277	7·9	+0·1	−15·2	+71·8
Means ...	...	...	94	616	7·4	...	−14·7	...

Date U.T. Place	Projected Area Whole	Projected Area Umbræ Spots	Corrected Area Whole	Corrected Area Umbræ Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
Group 12602—*continued.*								
Spot *a*.								
d								
312·469 G	57	392	55	380	10°·9	0°·0	−13°·9	−56°·9
313·387 G	83	615	61	455	10·3	−0·6	−14·7	−44·4
314·452 G	114	775	70	473	10·1	−0·8	−14·7	−30·6
315·443 G	140	854	77	470	9·7	−1·3	−14·7	−17·9
316·388 G	123	823	65	436	9·8	−1·2	−14·8	− 5·4
317·453 G	149	742	79	393	9·4	−1·6	−14·6	+ 8·3
318·505 G	96	618	55	352	9·3	−1·7	−15·0	+22·0
319·484 G	89	591	57	378	9·1	−2·0	−15·2	+34·7
320·350 C	55	405	41	304	8·1	−3·0	−15·2	+45·2
321·294 C	46	272	46	272	8·5	−2·6	−15·1	+58·0
322·386 G	22	161	38	277	7·9	−3·2	−15·2	+71·8
Spot *b*.								
312·469 G	26	219	31	261	4·6	0·0	−14·4	−63·2
313·387 G	70	377	60	320	3·1	−1·5	−14·8	−51·6
314·452 G	83	591	55	390	3·2	−1·4	−14·1	−37·5
315·443 G	114	464	66	269	2·8	−1·9	−13·9	−24·8
316·388 G	96	618	52	334	3·5	−1·2	−14·4	−11·7
317·453 G	94	596	49	310	3·6	−1·1	−14·3	+ 2·5
318·505 G	53	355	29	195	3·5	−1·2	−14·5	+16·2
319·484 G	31	214	19	128	3·5	−1·3	−14·4	+29·1
320·350 C	17	80	12	55	3·1	−1·7	−14·2	+40·2
321·294 C	8	25	7	22	3·3	−1·5	−14·2	+52·8
Group 12603.								
Nov. 10–15. A stream of normal type passing rapidly through its phases of development.								
313·387 G	11	50	6	26	65·2	0·0	−14·2	+10·5
314·452 G	112	530	65	303	65·9	+0·6	−13·2	+25·2
315·443 G	77	460	51	308	66·2	+0·9	−13·5	+38·6
316·388 G	50	270	43	231	67·2	+1·9	−13·4	+52·0
317·453 G	28	175	36	233	67·6	+2·2	−13·0	+66·5
318·505 G	18	57	(62	196	67·9	...	−13·0)	+80·6
Means ...	...	...	40	220	66·4	...	−13·5	...
Group 12605.								
Nov. 12–21. One or two small spots that have disappeared by November 14. On November 17–21, one or two new spots appear slightly following the original position.								
315·443 G	9	18	6	12	351·8	0·0	−22·8	−35·8
316·388 G	4	9	2	5	354·5	+2·8	−21·7	−20·7
317·453 G	0	0	0	0	...	...	...	...

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12605—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
318·505 G	0	0	0	0	...	...	...	...
319·484 G	0	0	0	0	...	...	...	...
320·350 C	6	17	4	11	350·7	−0·3	−22·0	+27·8
321·294 C	6	30	4	22	350·5	−0·4	−21·2	+40·0
322·386 G	13	24	12	22	349·6	−1·1	−20·7	+53·5
323·459 G	2	4	3	6	348·5	−2·0	−20·0	+66·5
324·569 C	13	38	(47	137	348·1	...	−20·7)	+80·8
Means ...	...	...	3	9	350·9	...	−21·4	...

Group 12606.

Nov. 12–18. Two or three small spots in fairly extensive faculæ—probably the remnants of a large group.

315·443 G	9	22	15	37	314·7	0·0	+6·4	−72·9
316·388 G	13	35	13	35	315·4	+0·6	+6·3	−59·8
317·453 G	9	18	6	13	315·9	+0·9	+6·4	−45·2
318·505 G	4	22	2	13	317·2	+2·0	+6·5	−30·1
319·484 G	4	22	2	11	323·3	+8·0	+7·2	−11·1
320·350 C	0	0	0	0	...	...	...	...
321·294 C	4	19	2	10	322·6	+7·0	+6·8	+12·1
Means ...	...	...	6	17	318·2	...	+6·6	...

Group 12609.

Nov. 14–20. A small area of disturbance represented by a tiny spot on November 14 and 15 and a small stream or cluster from November 17–20.

317·453 G	4	7	3	4	323·5	0·0	+10·2	−37·6
318·505 G	2	7	1	4	320·3	−3·3	+11·1	−27·0
319·484 G	0	0	0	0	...	...	...	...
320·350 C	17	72	8	36	323·8	0·0	+ 9·6	+ 0·9
321·294 C	30	99	16	51	324·0	+0·1	+10·4	+13·5
322·386 G	35	118	20	67	324·5	+0·5	+10·5	+28·4
323·459 G	9	26	6	18	324·3	+0·2	+11·4	+42·3
Means ...	...	...	8	26	323·4	...	+10·5	...

Group 12611.

Nov. 16–27. A regular spot diminishing to a small nucleus near the west limb.

319·484 G	9	48	15	82	261·8	0·0	+20·8	−72·6
320·350 C	13	46	14	50	261·6	−0·1	+21·0	−61·3
321·294 C	30	97	24	78	261·6	0·0	+20·9	−48·9
322·386 G	22	100	14	64	261·5	+0·1	+20·8	−34·6

Group 12611—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
d					°	°	°	°
323·459 G	31	113	18	64	261·1	−0·2	+20·9	−20·9
324·569 C	40	162	21	86	260·5	−0·6	+20·9	− 6·8
325·399 G	26	87	14	46	260·4	−0·6	+20·7	+ 4·0
326·440 G	20	65	11	36	260·2	−0·6	+20·7	+17·5
327·442 G	13	57	8	35	259·9	−0·8	+20·7	+30·4
328·460 G	15	39	11	28	259·8	−0·8	+20·7	+43·7
329·413 G	9	26	9	25	259·7	−0·7	+20·5	+56·2
330·284 C	4	11	5	15	259·5	−0·8	+20·5	+67·5
Means ...	...	...	14	51	260·6	...	+20·8	...

Group 12612.

Nov. 17–30. A large regular spot followed by a few tiny companions.

320·350 C	4	17	(21	90	239·3	...	−16·4)	−83·6
321·294 C	32	188	57	333	238·3	0·0	−16·5	−72·2
322·386 G	73	391	81	418	236·1	−2·1	−17·1	−60·0
323·459 G	82	477	62	363	237·6	−0·6	−16·9	−44·4
324·569 C	76	466	47	289	236·9	−1·2	−17·6	−30·4
325·399 G	104	573	58	323	236·3	−1·8	−17·9	−20·1
326·440 G	87	471	46	250	236·7	−1·3	−17·8	− 6·0
327·442 G	91	455	48	241	236·3	−1·7	−17·7	+ 6·8
328·460 G	89	445	50	249	236·0	−1·9	−17·7	+19·9
329·413 G	87	395	54	248	236·1	−1·8	−17·8	+32·6
330·284 C	63	330	46	242	235·6	−2·3	−18·2	+43·6
331·448 G	39	226	40	233	235·6	−2·2	−18·5	+58·9
332·495 G	22	130	40	234	235·5	−2·5	−18·3	+72·6
333·247 C	8	59	29	213	234·3	...	−18·5	+81·3
Means ...	...	...	52	285	236·4	...	−17·7	...

Group 12615.

Nov. 20–27. A disturbed area marked by one or more small spots.

323·459 G	4	9	11	24	202·7	0·0	+ 5·9	−79·3
324·569 C	4	21	5	24	203·2	+0·3	+ 5·7	−64·1
325·399 G	9	17	7	14	203·7	+0·7	+ 6·3	−52·7
326·440 G	4	13	3	8	203·9	+0·7	+ 6·5	−38·8
327·442 G	6	22	3	13	200·9	−2·4	+ 5·9	−28·6
328·460 G	8	26	4	14	200·9	−2·6	+ 6·1	−15·2
329·413 G	6	44	3	23	201·7	−1·9	+ 6·8	− 1·8
330·284 C	6	50	3	26	199·7	−4·1	+ 7·8	+ 7·7
Means ...	...	...	5	18	202·1	...	+ 6·4	...

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12619.

Nov. 25–30. A short-lived compact stream.

Date U.T. Place	Projected Area Whole Umbræ	Projected Area Whole Spots	Corrected Area Whole Umbræ	Corrected Area Whole Spots	Longitude and Proper Motion		Latitude	Long. from C.M.
d								
328·460 G	9	22	5	11	223°·9	0°·0	+ 9°·3	+ 7°·8
329·413 G	26	76	14	41	223·6	−0·4	+ 9·2	+20·1
330·284 C	51	235	30	139	223·3	−0·8	+ 9·1	+31·3
331·448 G	52	264	39	195	223·4	−0·9	+ 9·3	+46·7
332·495 G	24	187	25	199	224·3	−0·1	+ 9·3	+61·4
333·247 C	13	50	21	80	224·7	+0·2	+ 9·0	+71·7
Means ...	...	...	22	111	223·9	...	+ 9·2	...

Group 12621.

Nov. 28–Dec. 4. A small definite spot on November 28–December 1; two or three small unstable spots on December 3 and 4.

331·448 G	2	9	7	31	95·5	...	−10·0	−81·2
332·495 G	7	17	9	22	96·2	0·0	− 9·6	−66·7
333·247 C	8	36	7	32	97·4	+1·1	− 9·4	−55·6
334·401 G	13	26	9	17	98·2	+1·8	− 9·7	−39·6
335·519 G	0	0	0	0	...	...	...	...
336·288 C	4	25	2	13	97·6	+0·9	− 9·4	−15·3
337·280 C	13	59	7	30	97·9	+1·1	− 8·6	− 1·9
Means ...	...	...	6	19	97·5	...	− 9·3	...

Group 12627.

Dec. 2–10. A small spot on December 2 and 3: a small stream on December 7, diminishing to one component spot by December 9.

335·519 G	4	13	3	11	71·0	0·0	−18·1	−52·0
336·288 C	2	8	1	6	72·3	+1·3	−17·5	−40·6
337·280 C	0	0	0	0	...	...	...	...
338·390 C	0	0	0	0	...	...	...	...
339·295 C	0	0	0	0	...	...	...	...
340·284 C	17	34	9	18	68·1	−2·7	−18·3	+ 7·9
341·276 C	8	29	5	17	71·9	+1·2	−17·6	+24·7
342·283 C	10	29	7	20	73·5	+2·8	−16·9	+39·6
343·292 C	2	4	2	4	74·4	+3·7	−16·7	+53·8
Means ...	...	...	3	8	71·9	...	−17·5	...

Group 12628.

Dec. 2–10. A small regular spot with a distant companion on Dec. 4–6.

335·519 G	9	24	17	44	49·9	0·0	−19·3	−73·1
336·288 C	11	50	13	58	50·1	+0·3	−19·0	−62·8
337·280 C	49	95	43	83	47·8	−2·0	−19·0	−52·0
338·390 C	16	73	11	49	47·8	−1·9	−19·0	−37·4
339·295 C	19	52	11	31	48·9	−0·7	−18·7	−24·4

Group 12628—*continued.*

d								
340·284 C	19	50	10	26	50°·4	+0°·8	−18°·0	− 9°·8
341·276 C	8	17	4	9	50·7	+1·2	−17·7	+ 3·5
342·283 C	0	0	0	0	...	...	...	...
343·292 C	2	8	1	5	50·8	+1·5	−17·4	+30·2
Means ...	...	...	12	34	49·6	...	−18·5	...

Group 12629.

Dec. 5–10. A compact stream with a brief maximum on December 7.

338·390 C	4	25	2	13	97·3	0·0	−15·5	+12·1
339·295 C	52	225	30	129	98·7	+1·4	−16·4	+25·4
340·284 C	122	624	82	421	99·7	+2·4	−16·1	+39·5
341·276 C	56	301	49	266	100·4	+3·1	−16·6	+53·2
342·283 C	21	109	30	155	101·2	+4·0	−16·9	+67·3
343·292 C	8	23	35	101	103·9	+6·7	−17·6	+83·3
Means ...	...	...	39	197	99·5	...	−16·3	...

Group 12634.

Dec. 10–21. A large stream developing in the usual manner as it comes round the east limb. After December 12, the leader spot, *a*, is split by a bright encroachment of the photosphere. *b* is the follower spot.

343·292 C	59	307	79	417	313·8	0·0	−21·5	−66·8
344·282 C	154	848	139	764	314·2	+0·5	−21·2	−53·4
345·433 G	204	1560	139	1074	313·9	+0·4	−21·5	−38·5
346·313 C	253	1670	151	1002	313·4	+0·1	−21·6	−27·4
347·464 G	278	1527	152	836	313·5	+0·3	−21·0	−12·1
348·283 C	217	1354	115	721	314·4	+1·3	−21·1	− 0·4
349·521 C	142	1183	80	658	313·9	+1·0	−21·3	+15·4
350·332 C	109	834	65	500	315·0	+2·3	−21·0	+27·2
351·293 C	119	690	81	469	314·1	+1·5	−20·8	+38·9
352·359 C	63	529	55	460	313·9	+1·5	−21·2	+52·8
353·470 G	39	349	53	471	313·7	+1·4	−21·2	+67·2
354·311 C	21	117	56	311	314·6	+2·5	−21·3	+79·2
Means ...	...	...	97	640	314·0	...	−21·2	...

Spot *a*.

343·292 C	42	207	53	261	315·6	0·0	−21·4	−65·0
344·282 C	98	560	83	476	316·3	+0·8	−20·9	−51·3
345·433 G	148	929	98	613	316·3	+1·0	−21·1	−36·1
346·313 C	167	999	97	579	316·8	+1·7	−21·0	−24·0
347·464 G	178	961	96	519	316·5	+1·5	−20·8	− 9·1
348·283 C	163	1045	86	554	315·9	+1·0	−20·9	+ 1·1
349·521 C	117	953	66	534	315·6	+0·9	−20·8	+17·1
350·332 C	109	834	65	500	315·0	+0·5	−21·0	+27·2

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
Group 12634. Spot *a*—*continued.*								
d								
351·293 C	119	690	81	469	314°·1	−0°·3	−20°·8	+38°·9
352·359 C	63	529	55	460	313·9	−0·3	−21·2	+52·8
353·470 G	39	349	53	471	313·7	−0·4	−21·2	+67·2
354·311 C	21	117	56	311	314·6	+0·7	−21·3	+79·2
Spot *b*.								
343·292 C	13	92	20	144	310·6	0·0	−21·1	−70·0
344·282 C	56	288	56	288	310·0	−0·5	−21·3	−57·6
345·433 G	56	631	41	461	309·5	−0·8	−21·8	−42·9
346·313 C	86	671	54	423	309·0	−1·1	−22·0	−31·8
347·464 G	100	566	56	317	308·4	−1·6	−21·8	−17·2
348·283 C	54	309	29	167	307·9	−2·0	−22·1	− 6·9
349·521 C	25	230	14	124	307·9	−1·8	−22·2	+ 9·4
Group 12635. Dec. 10–20. A rather unusual double stream.								
343·292 C	13	50	17	64	313·7	0·0	+9·0	−66·9
344·282 C	38	121	30	94	317·9	+ 4·1	+7·9	−49·7
345·433 G	82	317	49	190	319·5	+ 5·5	+8·2	−32·9
346·313 C	132	744	71	402	320·9	+ 6·8	+8·0	−19·9
347·464 G	147	779	75	398	321·8	+ 7·5	+8·3	− 3·8
348·283 C	121	1043	62	532	321·7	+ 7·3	+7·9	+ 6·9
349·521 C	71	945	39	520	321·7	+ 7·1	+7·7	+23·2
350·332 C	134	731	84	461	323·9	+ 9·2	+7·3	+36·1
351·293 C	75	418	58	322	324·0	+ 9·2	+7·4	+48·8
352·359 C	32	150	37	177	325·4	+10·4	+6·9	+64·3
353·470 G	8	24	21	62	324·2	+ 9·1	+7·3	+77·7
Means ...	...	...	49	293	321·3	...	+7·8	...
Group 12636. Dec. 10–19. A small spot on December 10 and 11; a new group develops in its place on December 14 and soon runs its course.								
343·292 C	4	10	8	19	305·8	0·0	−4·8	−74·8
344·282 C	4	13	4	14	305·6	−0·4	−4·6	−62·0
345·433 G	0	0	0	0	...	...	...	...
346·313 C	0	0	0	0	...	...	...	...
347·464 G	22	82	12	44	303·5	−3·0	−6·9	−22·1
348·283 C	38	144	19	73	303·8	−2·8	−6·9	−11·0
349·521 C	17	104	9	53	305·2	−1·6	−6·7	+ 6·7
350·332 C	17	50	9	26	305·0	−1·9	−6·2	+17·2
351·293 C	8	59	5	34	304·4	−2·7	−6·3	+29·2
352·359 C	4	13	3	9	304·2	−3·1	−6·9	+43·1
Means ...	...	...	7	27	304·7	...	−6·2	...

Date U.T. Place	Projected Area Whole	Projected Area Umbræ	Corrected Area Whole	Corrected Area Umbræ	Longitude and Proper Motion		Latitude	Long. from C.M.
Group 12641. Dec. 15–21. A small, rather indefinite group showing a considerable increase as it passes out of view round the west limb.								
d								
348·283 C	10	40	5	20	311°·5	0°·0	+ 7°·9	− 3°·3
349·521 C	6	33	3	17	309·7	−2·0	+10·1	+11·2
350·332 C	40	134	22	74	310·9	−0·9	+ 8·2	+23·1
351·293 C	38	163	24	103	311·7	−0·2	+ 8·0	+36·5
352·359 C	17	74	13	61	312·1	0·0	+ 7·5	+51·0
353·470 G	37	230	46	288	312·3	+0·1	+ 8·2	+65·8
354·311 C	54	234	119	517	312·0	−0·3	+ 8·5	+76·6
Means ...	...	...	33	154	311·5	...	+ 8·3	...
Group 12642. Dec. 15–23. Intermittent: one or sometimes two small spots not seen on December 20–22.								
348·283 C	4	13	7	23	242·2	0·0	−21·8	−72·6
349·521 C	15	46	14	44	242·0	0·0	−22·1	−56·5
350·332 C	10	19	7	14	243·8	+2·0	−21·9	−44·0
351·293 C	4	8	2	5	244·0	+2·3	−21·7	−31·2
352·359 C	4	17	2	10	243·1	+1·6	−22·1	−18·0
353·470 G	0	0	0	0	...	...	...	...
354·311 C	0	0	0	0	...	...	...	...
355·282 C	0	0	0	0	...	...	...	...
356·391 G	4	28	2	17	238·0	−2·8	−21·9	+30·0
Means ...	...	...	4	13	242·2	...	−21·9	...
Group 12643. Dec. 16–25. A stream of normal type greatly lengthening as it develops.								
349·521 C	4	8	3	6	252·2	0·0	+23·0	−46·3
350·332 C	13	33	9	22	253·5	+1·4	+22·3	−34·3
351·293 C	56	249	32	144	254·0	+2·1	+21·8	−21·2
352·359 C	119	533	65	293	254·3	+2·6	+21·5	− 6·8
353·470 G	102	625	56	343	254·6	+3·1	+21·5	+ 8·1
354·311 C	46	395	26	230	254·9	+3·5	+21·5	+19·5
355·282 C	61	404	40	262	255·0	+3·8	+20·8	+32·4
356·391 G	54	267	46	227	257·0	+5·9	+21·6	+49·0
357·450 G	26	123	25	117	256·7	+5·8	+21·2	+62·6
358·333 C	12	82	24	165	256·0	+5·3	+21·5	+73·6
Means ...	...	...	33	181	254·8	...	+21·7	...

LEDGER II.—NON-RECURRENT GROUPS of SUN SPOTS for the YEAR 1937—*continued.*

Group 12645.

Dec. 19–25. A small regular spot decreasing to a faint marking on December 25; there are companions on December 23.

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					°	°	°	°
352·359 C	4	8	19	38	177·0	...	−26·9	−84·1
353·470 G	4	22	6	35	176·2	0·0	−26·7	−70·3
354·311 C	13	63	14	68	175·6	−0·3	−26·9	−59·8
355·282 C	21	52	17	42	175·0	−0·6	−27·0	−47·6
356·391 G	15	48	10	32	174·6	−0·6	−27·6	−33·4
357·450 G	11	30	6	18	173·3	−1·5	−27·0	−20·8
358·333 C	2	8	1	4	172·7	−1·8	−27·1	− 9·7
Means ...	...	...	9	33	174·6	...	−27·0	...

Group 12648.

Dec. 22–31. A stream differing somewhat in its development from the normal type.

355·282 C	2	8	1	6	176·8	0·0	+11·1	−45·8
356·391 G	19	46	11	27	178·1	+1·2	+ 9·3	−29·9
357·450 G	69	335	37	178	179·4	+2·3	+ 8·2	−14·7
358·333 C	77	426	39	217	179·8	+2·6	+ 8·7	− 2·6
359·404 C	40	407	21	214	181·5	+4·2	+ 8·2	+13·2
360·342 C	84	549	47	308	180·2	+2·7	+ 8·9	+24·2
361·305 C	110	605	71	391	179·9	+2·3	+ 9·1	+36·6
362·282 C	79	351	65	284	179·6	+1·9	+ 8·7	+49·2
363·550 G	12	76	16	99	180·5	+2·6	+ 7·6	+66·8
364·290 C	6	29	15	71	181·8	+3·8	+ 6·4	+77·8
Means ...	...	...	32	180	179·8	...	+ 8·6	...

Group 12650.

Dec. 22–1938, Jan 2. A stream of spots.

355·282 C	10	67	20	135	146·8	0·0	− 9·2	−75·8
356·391 G	26	161	28	172	146·0	−0·9	−10·1	−62·0
357·450 G	73	423	55	317	146·0	−1·0	−10·8	−48·1
358·333 C	92	734	58	463	145·5	−1·6	−11·5	−36·9
359·404 C	107	758	59	417	147·0	−0·2	−11·5	−21·3
360·342 C	100	541	51	277	146·2	−1·0	−12·5	− 9·8
361·305 C	79	486	41	248	146·7	−0·6	−12·1	+ 3·4
362·282 C	69	387	36	204	147·4	0·0	−12·0	+17·0
363·550 G	65	335	40	204	147·4	−0·1	−11·8	+33·7
364·290 C	87	395	61	278	147·9	+0·3	−11·8	+43·9
365·372 C	40	208	38	204	149·0	+1·3	−11·1	+59·3
366·353 C	21	127	37	224	150·6	+2·8	−11·0	+73·8
Means ...	...	...	44	262	147·2	...	−11·3	...

Group 12652.

Dec. 23–1938, Jan. 1. A stream of spots not reaching full development.

d					°	°	°	°
356·391 G	4	11	4	10	151·4	0·0	+ 9·8	−56·6
357·450 G	22	56	15	39	151·6	+0·1	+ 9·8	−42·5
358·333 C	54	312	32	183	152·6	+1·0	+ 9·2	−29·8
359·404 C	71	278	37	147	153·0	+1·3	+ 9·3	−15·3
360·342 C	43	283	22	144	153·2	+1·3	+ 9·3	− 2·8
361·305 C	44	183	23	95	153·7	+1·7	+ 9·4	+10·4
362·282 C	25	96	14	54	154·2	+2·1	+ 9·6	+23·8
363·550 G	19	60	13	42	156·1	+3·9	+10·2	+42·4
364·290 C	8	27	7	23	156·5	+4·2	+10·1	+52·5
365·372 C	4	12	5	16	156·6	+4·2	+10·4	+66·9
Means ...	...	...	17	75	153·9	...	+ 9·7	...

Group 12656.

Dec. 26–31. A small stream subsidiary to Group 12653.

359·404 C	30	209	17	117	148·8	0·0	−20·4	− 19·5
360·342 C	33	141	17	75	151·7	+3·0	−20·9	− 4·3
361·305 C	33	266	17	141	150·5	+1·9	−21·8	+ 7·2
362·282 C	44	212	25	121	151·3	+2·8	−22·5	+20·9
363·550 G	24	151	16	101	151·7	+3·3	−22·7	+38·0
364·290 C	12	116	9	90	151·9	+3·6	−23·0	+47·9
Means ...	...	...	17	108	151·0	...	−21·9	...

Group 12661.

Dec. 31–1938, Jan 10. A regular spot breaking up into several pieces on January 4–5.

364·290 C	15	92	40	245	25·2	0·0	+ 4·3	−78·8
365·372 C	33	229	40	275	24·7	−0·7	+ 4·4	−65·0
366·353 C	42	250	35	208	24·6	−1·0	+ 4·4	−52·2
367·292 C	58	270	38	178	24·5	−1·2	+ 4·6	−39·9
368·321 C	77	362	43	203	24·5	−1·4	+ 4·6	−26·4
369·305 C	38	261	20	136	24·7	−1·4	+ 4·3	−13·2
370·289 C	29	138	15	70	25·2	−1·0	+ 4·8	+ 0·2
371·297 C	19	73	10	38	24·7	−1·7	+ 4·8	+13·0
372·433 G	6	32	3	18	24·8	−1·8	+ 5·2	+28·1
373·522 G	4	22	3	15	25·4	−1·4	+ 4·7	+43·0
374·404 G	6	30	5	27	26·3	−0·7	+ 4·4	+55·5
Means ...	...	...	23	128	25·0	...	+ 4·6	...

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ROYAL OBSERVATORY, GREENWICH.

Total Areas of Sun Spots and Faculæ

Projected and Corrected for Foreshortening
for each Day, and

Mean Areas and Mean Heliographic Latitude of Sun Spots and Faculæ

for each Rotation of the Sun
and for the Year

1937

TOTAL AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937.

The Mean 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 Kodaikánal, by the letters C and K respectively. On November 3, a plate taken at Mount Wilson is indicated by the letters Mt.W.

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
1937.	d							
January	1·329	C	463	2556	2455	311	1742	2895
	2·448	G	562	2882	3869	356	1878	4480
	3·349	C	410	2275	2040	254	1402	2353
	4·393	C	323	1601	1819	185	921	2387
	5·510	G	302	1407	1917	190	882	2535
	6·398	C	258	1208	1684	174	831	1757
	7·412	G	275	1360	3380	205	1044	3496
	8·497	G	390	1575	4441	304	1341	5090
	9·434	G	323	1564	3659	288	1306	4588
	10·426	G	257	1371	2782	227	1306	3657
	11·537	G	308	1508	3846	304	1648	4957
	12·395	C	255	1433	2714	265	1615	3312
	13·395	C	266	1358	3016	236	1240	3279
	14·392	C	282	1494	2364	218	1159	2889
	15·404	G	364	1996	4888	286	1535	6350
	16·417	G	340	1812	2889	221	1109	3700
	17·452	G	319	1767	2631	259	1547	3412
	18·401	C	355	1954	1820	318	2185	2411
	19·456	G	461	2560	3286	396	2226	3847
	20·420	G	519	2959	3725	398	2253	4374
	21·388	G	598	3529	4165	410	2393	5096
	22·142	K	719	4011	2366	467	2595	2786
	23·394	C	756	4127	3341	472	2488	4138
	24·314	C	745	3741	2138	467	2237	2617
	25·384	G	797	3793	2141	593	2944	3115
	26·400	C	873	4537	3533	653	3440	4377
	27·549	C	973	5505	4119	748	4204	5048
	28·401	C	1060	6355	3294	763	4595	3544
	29·112	K	1260	7184	2832	845	4738	3519
	30·397	C	1294	7871	2461	832	5022	3628
	31·415	G	1583	9280	3908	1050	6015	4758
February	1·424	G	1474	8523	3043	948	5452	3795
	2·506	C	1243	6806	3632	795	4370	3973
	3·454	G	934	5662	2693	703	4188	3705
	4·398	G	709	4215	4347	614	3760	5071
	5·316	C	517	3260	4975	542	3763	6106
	6·469	G	310	1646	5334	333	2308	6430
	7·524	C	212	1030	2515	187	894	3150
	8·487	G	161	523	5758	146	486	6700
1937.	d							
February	9·601	G	139	569	4377	105	449	5126
	10·441	G	214	918	2706	135	553	3538
	11·498	C	270	1407	2444	154	788	3273
	12·462	G	344	1592	1385	238	1129	1796
	13·341	C	379	1979	2583	259	1383	2937
	14·357	C	363	1945	2520	255	1385	3515
	15·395	G	314	1769	3465	249	1395	4293
	16·450	G	315	1656	1946	334	1768	2761
	17·331	C	264	1705	3197	295	2058	4065
	18·399	C	313	2012	3983	380	2552	4822
	19·424	C	336	2395	2505	342	2515	3129
	20·388	G	545	3251	4530	524	3078	5462
	21·422	G	613	3736	3571	487	2855	4554
	22·322	C	645	4032	4679	476	2937	5461
	23·473	G	728	4205	4831	489	2745	5625
	24·376	C	703	4086	2608	533	3105	3099
	25·682	G	683	4167	2937	491	2939	3455
	26·351	C	643	3723	2068	434	2510	2434
	27·383	G	693	3516	2634	437	2241	3412
	28·353	C	728	3351	2880	457	2124	3504
March	1·494	C	667	3063	2994	457	2185	3621
	2·398	G	669	2866	4554	473	2002	5464
	3·552	G	461	2177	4163	297	1386	5075
	4·117	K	436	1883	3406	303	1302	4241
	5·419	C	334	1721	2459	275	1386	3230
	6·397	C	291	2081	2354	237	1657	2990
	7·328	C	394	2260	3361	338	1918	4092
	8·401	C	391	1986	2701	253	1233	3704
	9·403	C	340	1877	1874	220	1200	1890
	10·401	G	421	1938	1456	281	1314	1649
	11·466	G	336	1660	2432	232	1205	2939
	12·398	G	232	1167	2331	170	878	2701
	13·415	G	162	901	1669	158	886	1976
	14·119	K	83	535	3146	104	664	3674
	15·392	G	61	253	1804	37	153	2096
	16·391	C	93	355	1646	60	231	2177
	17·493	G	90	389	2552	64	271	3133
	18·468	G	74	298	2817	61	228	3624
	19·391	G	76	343	3024	62	271	3905

TOTAL AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937—*continued.*

U.T.		Place.	Projected Area.			Area Corrected for Foreshortening.		
			Umbræ	Whole Spots	Faculæ	Umbræ	Whole Spots	Faculæ
1937	d							
March	20·396	G	71	321	2991	52	228	3644
	21·364	C	88	440	2934	95	487	3466
	22·408	C	113	588	1360	99	523	1837
	23·398	G	218	1066	2738	242	1219	3480
	24·447	G	330	1430	3358	324	1435	3587
	25·391	G	302	1781	3245	243	1438	3509
	26·375	G	467	2456	1892	308	1628	2431
	27·391	G	449	2499	1701	271	1535	2093
	28·394	G	459	2880	1577	262	1635	1881
	29·403	G	498	2830	3311	296	1666	4318
	30·600	G	398	2534	2295	259	1644	2482
	31·382	G	432	2134	3434	317	1622	4293
April	1·401	C	339	1832	2131	272	1596	2813
	2·397	C	407	2385	1264	271	1615	1516
	3·420	G	498	2742	3015	408	2216	3979
	4·378	C	438	2469	1599	367	2177	1853
	5·427	G	426	2392	2481	394	2282	3112
	6·398	C	307	1590	889	275	1360	1304
	7·391	C	304	1562	458	188	948	535
	8·500	G	288	1777	1491	175	1045	2039
	9·440	C	262	1430	1178	152	796	1695
	10·426	C	230	1265	874	129	721	964
	11·410	G	222	1214	2307	153	817	2961
	12·417	G	151	689	2430	129	584	2987
	13·400	C	88	427	2932	119	624	3563
	14·488	G	24	125	2889	30	154	3498
	15·415	C	81	302	3598	58	204	4951
	16·400	G	253	1145	2305	184	865	3388
	17·527	C	237	1254	2695	153	787	3402
	18·366	C	224	1308	2540	143	806	2946
	19·394	G	344	1373	2304	256	1017	3137
	20·410	C	389	2135	3114	279	1493	3381
	21·388	G	668	4153	2941	439	2716	3576
	22·551	G	1070	6404	3025	622	3706	3713
	23·360	G	1272	6784	2163	712	3806	2545
	24·106	K	1208	6967	1050	676	3927	1284
	25·347	G	1134	7839	1559	680	4717	1793
	26·584	G	1460	7987	2026	1010	5561	2310
	27·417	G	1385	8070	3369	1043	6257	4292
	28·595	G	1185	6250	3509	1168	6292	4748
	29·394	C	822	4812	2892	801	5146	3663
	30·511	G	594	3502	2788	547	3463	3388
May	1·372	G	485	2461	2496	387	1975	2999
	2·552	G	365	1772	1738	257	1235	2028
	3·404	G	291	1508	1583	236	1200	1733
	4·532	G	275	1365	1935	275	1664	2531
	5·334	G	255	1383	1008	285	1870	1610
	6·331	G	196	1081	1370	141	788	1829
	7·631	G	177	1000	1435	117	658	1686
	8·615	G	188	1214	1765	119	766	1822
	9·381	C	285	1405	2538	253	1252	2769
1937	d							
May	10·489	G	416	1961	2767	390	1842	3741
	11·418	C	374	2112	3616	287	1606	4240
	12·494	C	368	2086	2155	243	1374	2263
	13·110	K	372	1995	2006	246	1312	2324
	14·391	G	421	1891	2485	317	1387	3444
	15·390	C	464	2516	4649	468	2653	5212
	16·392	C	606	3361	4351	588	3433	5142
	17·379	G	702	4286	2820	517	3281	3740
	18·352	G	844	4842	2986	597	3375	3454
	19·452	C	823	4873	3329	545	3224	3434
	20·328	G	944	4939	2997	694	3748	3664
	21·421	G	1101	5920	2447	865	4831	3356
	22·421	G	1054	6432	2722	738	4426	3479
	23·367	G	1142	6493	2823	770	4378	3065
	24·408	G	1112	6109	2749	813	4530	3206
	25·333	G	873	4919	3184	688	4124	3985
	26·538	G	611	2976	2943	562	2596	4338
	27·383	G	510	2539	2399	317	1542	3626
	28·326	G	456	2443	1319	259	1384	1927
	29·356	G	458	2179	2027	325	1523	2632
	30·311	G	393	2507	1583	364	2266	2450
	31·336	G	424	2218	2397	421	2212	2651
June	1·334	G	403	2682	2409	409	2565	3035
	2·407	G	366	2485	2070	286	1922	2918
	3·332	G	467	2814	1843	380	2158	2141
	4·339	G	502	3250	2833	373	2278	3384
	5·366	G	524	3221	2664	356	2118	3438
	6·378	G	556	2997	2601	348	1836	3116
	7·333	G	570	2972	2209	381	1968	2985
	8·348	G	380	2214	2399	245	1448	2882
	9·338	G	335	1928	1718	306	1728	2049
	10·402	G	434	2560	2046	527	3464	3112
	11·329	G	536	2820	3040	541	2842	3962
	12·402	C	830	3876	4701	620	2943	5510
	13·394	C	811	4201	4588	566	2881	5224
	14·417	G	1009	5307	2723	640	3355	2947
	15·370	G	1196	5673	2630	813	3977	3404
	16·358	G	1214	6515	1830	773	4073	2515
	17·335	G	1589	7811	2374	985	4904	2971
	18·435	G	1329	6860	2861	839	4316	3348
	19·381	G	1315	6438	2449	848	4146	3040
	20·497	G	1143	5802	2143	834	4202	2453
	21·333	G	970	5023	3705	882	4559	4866
	22·339	G	836	3944	4825	884	4273	6067
	23·345	G	610	3372	4208	620	3281	5534
	24·396	C	554	3008	2882	399	2162	3842
	25·368	G	619	3001	1485	430	2003	1860
	26·472	G	500	2397	2727	328	1568	3455
	27·315	G	450	2368	2606	295	1540	3072
	28·335	G	347	1694	2709	242	1194	3539
	29·331	G	257	1211	1628	192	847	2163
	30·411	C	280	1215	3280	189	824	3506

TOTAL AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937—*continued.*

U.T.		Place.	Projected Area.			Area Corrected for Foreshortening.		
			Umbræ	Whole Spots	Faculæ	Umbræ	Whole Spots	Faculæ
1937.	d							
July	1·342	G	252	1133	2773	179	798	3090
	2·320	C	239	1246	3318	185	898	3891
	3·375	G	257	1329	2073	196	935	2724
	4·364	C	231	1318	2001	173	972	2642
	5·427	C	304	1589	1799	242	1376	2159
	6·510	C	428	2090	1902	388	1994	2191
	7·596	G	704	3348	2782	589	2730	3951
	8·339	G	971	5102	4738	744	3980	6528
	9·414	C	1214	6533	3468	877	4728	4110
	10·435	G	1369	6748	3853	940	4620	5088
	11·299	G	1357	7351	4112	885	4729	4766
	12·391	C	1260	6840	2888	848	4540	4097
	13·458	G	1088	5933	2774	820	4383	3760
	14·343	G	1113	6152	5000	940	5199	5747
	15·387	G	879	4801	3885	742	4259	4827
	16·341	G	803	4521	2185	599	3284	2796
	17·415	G	625	3707	3139	481	2754	4230
	18·418	G	598	3784	5495	466	2905	6792
	19·336	G	600	3981	4706	431	2733	5968
	20·338	G	532	3493	4124	377	2448	5289
	21·369	G	514	3282	2296	313	2006	3056
	22·646	G	508	3156	2454	426	2914	2966
	23·511	C	459	3350	4868	398	3109	5896
	24·339	G	564	3837	3677	496	3548	4378
	25·362	G	893	5086	3116	613	3560	3729
	26·431	G	1027	6412	2273	713	4372	2926
	27·520	G	1194	7043	2754	844	4957	3379
	28·345	G	1337	7408	4815	919	5110	5626
	29·350	G	1240	6930	3280	865	4829	3708
	30·122	K	1254	6800	1237	826	4548	1438
	31·123	K	1103	6656	1019	830	5047	1562
August	1·443	G	1053	6326	1671	858	5117	2224
	2·464	G	969	6183	3195	816	5208	3672
	3·361	G	923	5346	5101	803	4645	6185
	4·337	G	767	4183	4077	588	3395	5355
	5·413	C	709	3967	4862	540	2919	6364
	6·333	G	580	3333	4111	372	2054	4924
	7·358	G	589	3031	3965	390	1950	4538
	8·382	G	504	2554	4054	373	1852	5224
	9·332	G	562	2569	3902	470	2125	4964
	10·331	G	507	2578	4585	437	2244	5264
	11·445	G	514	2691	2166	383	2075	2840
	12·379	G	535	2793	3246	385	2005	4542
	13·486	G	628	3436	3741	383	2087	4736
	14·397	C	588	3810	3955	364	2334	4775
	15·314	G	594	4086	5408	371	2572	6427
	16·335	G	627	3358	3249	409	2261	4145
	17·369	G	470	2525	2066	319	1718	2808
	18·453	G	354	1824	3197	331	1895	3911
	19·338	G	360	1842	3396	536	2695	4342
	20·475	G	404	1880	3630	493	2301	4719
	21·475	G	462	2100	3851	371	1681	4618
	22·385	G	484	2484	3622	342	1721	4370
1937.	d							
August	23·335	G	773	3290	4125	497	2061	4422
	24·335	G	859	3967	4474	512	2387	5279
	25·491	G	816	4222	2983	465	2403	3861
	26·555	G	835	3881	1124	505	2343	1630
	27·617	G	716	3213	2328	528	2466	2435
	28·363	C	456	2799	5578	401	2475	6182
	29·473	G	518	2524	3860	485	2413	4927
	30·400	G	425	2461	2631	368	2196	3600
	31·385	G	385	1913	2525	396	2028	3326
September	1·340	G	336	1884	4467	352	2072	5174
	2·337	G	309	1639	4336	198	1040	5412
	3·383	G	302	1357	2681	282	1276	3787
	4·337	G	257	1339	2067	226	1166	2678
	5·369	G	240	1074	2527	175	806	3201
	6·324	C	306	1392	5442	208	939	5722
	7·382	G	326	1570	3494	218	1056	3804
	8·392	G	456	2358	3105	304	1626	3919
	9·402	C	497	2532	3705	299	1548	4617
	10·336	G	566	2931	3310	334	1862	4083
	11·338	G	598	3443	2655	344	2003	3357
	12·385	G	592	3710	1887	375	2415	2480
	13·454	G	719	3657	1811	492	2570	2307
	14·389	G	620	3561	2366	499	2846	2950
	15·334	G	543	2763	2290	540	2699	2857
	16·360	G	306	1906	3090	332	2255	4057
	17·423	G	217	1126	2604	232	1369	3785
	18·344	G	223	1005	2499	156	701	3179
	19·391	C	315	1484	3761	192	891	4484
	20·380	G	336	1510	3324	209	936	3812
	21·401	C	282	1305	3256	177	812	3746
	22·340	G	298	1219	1601	197	781	1889
	23·354	G	316	1440	2487	230	1018	3418
	24·342	G	356	1688	3560	285	1370	4249
	25·121	K	321	1510	2123	266	1273	2745
	26·367	G	235	1217	2736	184	1089	3729
	27·335	G	232	1146	3334	143	695	4091
	28·385	G	298	1512	3452	317	1581	4033
	29·334	G	401	1984	3634	371	1962	4354
	30·369	G	562	2853	3739	477	2477	4359
October	1·342	G	759	4520	2538	571	3428	3410
	2·400	G	964	6035	2475	611	3786	3244
	3·384	C	1138	7442	4158	667	4284	4676
	4·402	G	1415	8540	2924	789	4678	3648
	5·391	C	1164	8479	2990	648	4663	3688
	6·398	C	1176	8051	2856	667	4546	2985
	7·404	C	1161	7256	4472	715	4488	5001
	8·463	G	1061	5991	3139	773	4477	3591
	9·387	G	666	4102	2896	606	3943	4255
	10·447	G	554	2840	2363	538	3127	3549
	11·377	G	542	2562	2795	392	1798	3727
	12·394	C	427	2381	2736	315	1684	3277

TOTAL AREAS of SUN SPOTS and FACULÆ for EACH DAY in the YEAR 1937—*continued.*

U.T.		Place.	Projected Area.			Area Corrected for Foreshortening.		
			Umbræ	Whole Spots	Faculæ	Umbræ	Whole Spots	Faculæ
1937.	d							
October	13·609	G	757	3787	3092	521	2661	4041
	14·390	C	572	3521	2435	395	2360	3334
	15·433	G	535	3120	1981	412	2412	2692
	16·379	G	516	2529	1696	423	2102	2421
	17·465	G	452	2117	1778	346	1675	2267
	18·476	G	426	1980	2237	297	1394	2841
	19·398	C	271	1547	2566	173	1016	3149
	20·469	G	258	1210	2599	188	856	3057
	21·457	G	164	1013	2171	145	911	2724
	22·381	G	194	1095	2679	181	980	3316
	23·489	G	225	1584	796	206	1262	1287
	24·427	G	317	2067	2464	241	1425	3402
	25·408	G	420	2390	2890	306	1682	3902
	26·449	G	367	2220	3363	238	1356	4128
	27·402	C	318	1855	4308	222	1208	4759
	28·334	G	399	2048	1879	247	1274	2393
	29·435	G	329	1947	2563	218	1258	3229
	30·419	G	352	1761	2677	242	1212	3016
	31·423	G	509	2016	1647	329	1330	2109
November	1·398	C	288	1789	1901	166	1022	2595
	2·462	G	498	2394	3675	301	1428	4021
	3·676	Mt.W	595	1839	3770	394	1179	4180
	4·476	G	275	1273	4583	183	829	4855
	5·405	C	168	767	4604	138	607	5693
	6·397	C	80	455	3312	116	554	4375
	7·433	C	38	228	3076	67	357	3988
	8·400	C	66	464	3802	77	610	4643
	9·469	G	182	1187	2276	162	1096	2974
	10·387	G	303	1728	2017	218	1262	2199
	11·452	G	421	2632	2059	257	1609	2396
	12·443	G	526	2802	1579	312	1642	2232
	13·388	G	414	2415	3208	248	1407	3447
	14·453	G	426	2165	2584	259	1335	2825
	15·505	G	278	1688	2716	215	1151	3626
	16·484	G	212	1311	2410	153	927	2841
	17·350	C	196	1118	3459	176	981	4368
	18·294	C	252	1138	3011	225	1092	3853
	19·386	G	258	1202	3189	239	1179	4361
	20·459	G	171	775	3428	128	568	4536
	21·569	C	158	815	2552	135	615	2921
1937.	d							
November	22·399	G	171	810	3595	110	524	3673
	23·440	G	140	649	3599	91	454	4392
	24·442	G	136	654	2392	78	372	2803
	25·460	G	151	648	2657	87	369	3252
	26·413	G	155	626	2613	95	385	2890
	27·284	C	186	802	2160	123	544	2621
	28·448	G	133	648	2042	116	567	2609
	29·495	G	72	403	3209	92	519	3642
	30·247	C	43	217	3985	69	401	4355
December	1·401	G	28	85	3693	17	48	3956
	2·519	G	39	128	1481	39	124	1765
	3·288	C	21	99	898	19	90	1238
	4·280	C	66	162	3329	58	130	3910
	5·390	C	32	157	1787	38	201	2495
	6·295	C	104	404	3584	75	274	4683
	7·284	C	215	903	1981	145	604	2140
	8·276	C	104	459	1940	80	370	2084
	9·283	C	48	198	1691	49	217	2187
	10·292	C	121	523	1579	212	889	2486
	11·282	C	243	1123	1974	202	961	1915
	12·433	G	334	2168	3061	215	1425	3053
	13·313	C	442	2690	1195	253	1557	1505
	14·464	G	549	2822	1898	348	2025	2510
	15·283	C	543	3531	2964	400	2725	3586
	16·521	C	426	3657	2822	337	2799	3536
	17·332	C	490	3214	3904	348	2343	4436
	18·293	C	451	2908	3289	306	1985	3482
	19·359	C	370	2546	3850	272	1788	4405
	20·470	G	389	2394	3204	299	1873	3813
	21·311	C	296	1960	2132	325	1897	3036
	22·282	C	298	1766	2423	205	1198	2946
	23·391	G	323	1743	2268	239	1287	2333
	24·450	G	356	1946	2689	260	1456	2832
	25·333	C	332	2220	1935	259	1820	2404
	26·404	C	341	2184	1415	252	1613	1918
	27·342	C	424	2338	1949	249	1381	2341
	28·305	C	449	2762	1473	263	1597	1667
	29·282	C	401	2333	1791	241	1382	2286
	30·550	G	296	1637	2318	190	1060	2940
	31·290	C	308	1630	1640	244	1334	2273

MEAN AREAS of SUN SPOTS and FACULÆ for each ROTATION of the SUN, from 1936, Dec. 22 to 1938, Jan. 7.

The Mean Areas have been formed by taking the means of the areas for each day of observation throughout each Rotation of the Sun, the Projected Areas being the areas as measured on the photographs and expressed in millionths of the Sun's apparent disk, and the Areas Corrected for Foreshortening being expressed in millionths of the Sun's visible hemisphere.

The Rotations adopted in the following table (which is in continuation of those for the years 1873-1936 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
1114	1936	December	22·30	28	382	1926	3044	286	1476	3692
1115	1937	January	18·63	27	700	3901	3319	500	2817	4073
1116		February	14·97	28	455	2490	3026	347	1930	3690
1117		March	14·30	27	286	1557	2150	210	1147	2658
1118		April	10·60	27	550	3086	2370	404	2309	2961
1119		May	7·85	27	599	3341	2644	462	2582	3261
1120		June	4·06	27	729	3766	2810	535	2768	3491
1121		July	1·26	28	761	4306	3331	565	3209	4164
1122		July	28·46	27	682	3724	3525	513	2805	4347
1123		August	24·69	27	452	2343	3054	338	1793	3764
1124		September	20·95	27	636	3672	2861	446	2562	3571
1125		October	18·24	28	315	1674	2760	219	1146	3348
1126		November	14·54	27	138	657	2628	114	539	3170
1127		December	11·86	27	359	2175	2250	261	1598	2716

MEAN AREAS of SUN SPOTS and FACULÆ for the Year 1937.

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
1937	365	509	2795	2851	375	2074	3505

MEAN HELIOGRAPHIC LATITUDE of SUN SPOTS for each ROTATION of the SUN, from 1936, Dec. 21 to 1938, Jan. 7.

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

The Heliographic Latitude of each spot for each day has been multiplied by its area (corrected for foreshortening), and the sum of the products, for Spots North of the Equator, has been divided by the sum of the corresponding areas to form 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		
						°		°	°	°
1114	1936	December	22·30	28	713	19·10	764	18·15	− 0·17	18·61
1115	1937	January	18·63	27	1030	18·88	1787	14·58	− 2·35	16·16
1116		February	14·97	28	1598	15·69	332	18·73	+ 9·77	16·21
1117		March	14·30	27	840	11·17	307	18·04	+ 3·36	13·00
1118		April	10·60	27	1547	19·51	761	16·18	+ 7·74	18·41
1119		May	7·85	27	1657	15·49	925	17·06	+ 3·83	16·05
1120		June	4·06	27	1483	17·26	1285	14·48	+ 2·52	15·97
1121		July	1·26	28	2147	20·12	1062	14·52	+ 8·65	18·27
1122		July	28·46	27	1875	26·01	929	16·33	+ 11·98	22·80
1123		August	24·69	27	1571	18·55	222	14·33	+ 14·48	18·03
1124		September	20·95	27	2111	11·98	451	16·72	+ 6·93	12·82
1125		October	18·24	28	540	11·73	607	16·90	− 3·42	14·47
1126		November	14·54	27	165	15·38	374	17·39	− 7·37	16·78
1127		December	11·86	27	990	18·03	608	17·83	+ 4·39	17·95

MEAN HELIOGRAPHIC LATITUDE of SUN SPOTS for the YEAR 1937.

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		
			°		°	°	°
1937	365	1317	17·63	757	15·96	+ 5·36	17·02

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ROYAL OBSERVATORY, GREENWICH.

Observations of Solar Flocculi

Made with the

Spectrohelioscope

In the Year

1937

GREENWICH PHOTO-HELIOGRAPHIC RESULTS, 1937

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OBSERVATIONS OF SOLAR FLOCCULI MADE WITH THE SPECTROHELIOSCOPE IN THE YEAR 1937.

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

The observations were made at the Royal Observatory, Greenwich, with a spectrohelioscope lent by the Mount Wilson Observatory and described by Dr. Hale in the *Astrophysical Journal*, **70**, 265-311, 1929. The spectrum is formed by a Rowland grating ruled with 14,438 lines to the inch, the observations being made in the light of $H\alpha$. The portion of the grating covered by the solar beam contains about 43,000 lines. The first order spectrum was used throughout the year, the scale being 1 mm. = 4·35 A. The width of the second slit was usually 0·1 mm. The diameter of the monochromatic image of the Sun's disk at the second slit is about 50 mm., of which a strip 6 mm. wide and 28 mm. long is rendered visible by the rotating rectangular prisms. The eyepiece used magnifies twice.

Measures of radial velocity are taken with the "line-shifter", whose scale from 0–10 divisions = 0·37 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.

* 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.

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

(1) The measured component of the radial velocity in km./sec., + indicating motion inwards to the Sun and—outwards from the Sun.

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 type.

(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″ to 20″.

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

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

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

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

OBSERVATIONS OF SOLAR FLOCCULI made with the SPECTROHELIOSCOPE in the YEAR 1937.

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	Jan.	5	10·4	+44	*	0·7	*c*	12162	+ 2	Jan.	5·15	−34	200
2	Jan.	5	10·6	−37	0·6	...	*c*	*1114m*	+68	Dec.	31·3	−26	19
3	Jan.	5	12·2	+31	*	0·7	*s a*	12161	+34	Jan.	2·99	+25	377
4	Jan.	7	9·9	+37	*	1·0	*p*	12169	+28	Jan.	5·1	+11	54
5	Jan.	7	10·1	−30	1·0	0·8	*p*	12162	+27	Jan.	5·15	−34	200
6	Jan.	7	10·4	−70 to +60	*	0·8	*np*	12162	+27				
7	Jan.	7	10·7	−135 to +45	*	1·0	*p*	12162	+28				
10	Jan.	7	10·7	+44	1·0	1·3	*f*	12160	+53	Jan.	3·42	−10	206
11	Jan.	7	11·3	**+105**	0·4	0·0	*sp*	12172	−21	Jan.	9·07	−26	78
12	Jan.	9	10·1	+33	0·2	0·7	*p b*	12171	+33	Jan.	6·88	−18	449
13	Jan.	9	10·8	+38	0·8	0·6	*sp b*	12171	+34				
14	Jan.	10	10·5	+30	1·8	0·3	*s a*	12171	+48				
15	Jan.	10	10·6	+32	0·2	1·1	*s b*	12171	+48				
16	Jan.	20	10·2	+39	*	0·4	*p b*	12188	−50	Jan.	24·20	−20	854
17	Feb.	1	12·5	−35 to +34	0·3	0·7	*n*	12204	+19	Jan.	31·07	−10	1734
18	Feb.	4	9·7	0 to **+85**	3·0	0·0	*f*	12208	+39	Feb.	1·49	−15	134
19	Feb.	6	11·0	−30 to **+60**	*	0·0	*s*	12226	+50 }	Feb.	2·7	−26	105
			12·3	−21 to **+60**					+50 }				
20	Feb.	6	12·5	0	1·8	0·5	*c*	12224	−43	Feb.	9·78	−22	88
21	Feb.	8	12·7	−31 to +42	0·7	0·3	*sf a*	12231	−55	Feb.	12·41	+15	156
22	Feb.	8	12·8	−36 to +31	0·6	0·6	*nf a*	12231	−55				
23	Feb.	9	9·9	−29 to **+60**	*	0·0	*c*	12230	−25	Feb.	11·25	+20	371
24	Feb.	9	11·2	−55	0·8	0·6	*n*	12231	−40	Feb.	12·41	+15	156
24	Feb.	9	11·3	−34					−40				
25	Feb.	10	10·6	−43 to **+49**	*	0·1	*sf a*	12230	−10	Feb.	11·25	+20	371
26	Feb.	10	10·7	−50	*	0·7	*s*	12231	−27	Feb.	12·41	+15	156
27	Feb.	10	10·7	**+12**	0·7	0·1	*n*	12231	−27				
28	Feb.	11	14·7	**+44**	1·0	0·2	*s a*	12230	+ 6	Feb.	11·25	+20	371
29	Feb.	27	9·7	+41	*	0·4	*p*	12254	−37	Mar.	2·09	+ 8	793
30	Feb.	27	11·8	−10 to +22	*	0·4	*p*	12254	−36				
31	Mar.	2	9·8	−33 to +46	0·4	1·0	*sf*	12247	+48	Feb.	26·79	−11	223
32	Mar.	2	10·3	− 4 to **+37**	0·9	0·4	*sf*	12254	+ 4	Mar.	2·09	+ 8	793
33	Mar.	2	10·4	−50	0·6	2·2	*np*	12254	+ 4				
34	Mar.	2	10·4	− 1	2·0	2·0	*np*	12254	+ 4				
35	Mar.	10	10·1	+55	0·6	0·9	*s a*	12264	+23	Mar.	8·65	+18	431
36	Mar.	10	10·2	−38 to +40	*	1·0	*n*	12271	−40	Mar.	13·45	+13	141
37	Mar.	12	10·0	+35	*	0·7	*sf a*	12264	+51	Mar.	8·65	+18	431
38	Mar.	15	11·5	−27 to **+42**	0·5	0·4	*f*	12271	+28	Mar.	13·45	+13	141
39	Mar.	23	10·6	−20 to **+75**	0·8	0·1	*f*	12282	−45	Mar.	26·69	+ 7	119
40	Mar.	23	16·0	−60 to **+60** }	2·6	0·0	*f*	12282	−43				
40	Mar.	23	16·3	−28 to **+60** }					−42				
41	Mar.	25	11·9	+44	*	1·0	*p*	12288	−45	Mar.	28·91	+ 7	340
42	Mar.	25	12·1	− 1	1·8	1·1	*f*	12282	−15	Mar.	26·69	+ 7	119
43	Mar.	31	9·4	−14 to **+35**	1·5	0·0	*s*	12286	+60	Mar.	26·90	+18	235
44	Mar.	31	9·7	−41	0·5	0·5	*f*	12298	−46	Apr.	3·97	+15	112

Reference numbers 8 and 9 not allocated.

OBSERVATIONS OF SOLAR FLOCCULI made with the SPECTROHELIOSCOPE in the YEAR 1937.

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	°	
45	Apr.	1	10·9	+**43**	0·6	0·0	*f*	12299	−61	Apr.	6·05	+22	94
45	Apr.	1	11·3	−30 to +**44**					−61				
46	Apr.	12	15·0	−35	*	0·2	*np*	12307	+67	Apr.	7·69	+20	162
47	Apr.	16	10·0	+**47**	0·7	0·0	*sf*	12311	+ 9	Apr.	15·88	−12	128
48	Apr.	21	11·5	+36	0·6	0·8	*s b*	12320	−41	Apr.	24·69	+20	1674
49	Apr.	21	15·3	−36 to +**42**	*	0·0	*c b*	12320	−39				
50	Apr.	23	14·6	+17 to +**48**	0·4	0·0	*p*	12319	+ 5	Apr.	23·23	+25	1017
51	Apr.	25	11·3	− 7 to +**130**	0·2	0·0	*c b*	12320	+10	Apr.	24·69	+20	1674
52	May	4	13·7	−50 to +26	0·5	0·5	*c*	12327	+70	Apr.	29·53	−20	887
53	May	5	9·0	+**50**	0·7	0·0	*c a*	12327	+81				
54	May	20	9·3	−36	1·7	0·9	*p*	12355	−54	May	24·35	+ 9	159
55	May	20	9·3	+26	0·6	0·7	*nf*	12355	−54				
56	May	20	9·5	−35	0·6	1·2	*f c*	12341	+64	May	15·57	+18	585
57	May	20	9·5	−36	*	1·0	*f a*	12341	+64				
58	May	24	14·6	−45 to +41	1·0	1·4	*n b*	12349	+53	May	20·77	−15	1220
59	May	24	14·6	+50	0·4	1·0	*p b*	12349	+53				
60	May	25	9·1	−55 to +14	0·8	0·2	*p a*	12349	+62				
61	May	25	13·7	+55 to +130	2·2	...	*p*	12350	+48	May	21·93	+18	424
62	May	25	13·7	−35	1·3	...	*n*	12350	+48				
63	May	25	15·5	−60 to +**125**	2·5	0·2	*s a*	12349	+66	May	20·77	−15	1220
64	May	27	8·8	−13 to +46	0·3	...	*f*	12350	+77	May	21·93	+18	424
65	May	27	8·9	+50	1·1	...	*n*	12350	+77				
66	May	28	9·8	−15 to +20	1·3	1·7	*f a*	12362	+15	May	27·25	+11	811
67	May	31	14·6	−65 to +90	*	0·2	*p*	12367*	+10	May	30·98	+17	113
68	June	3	8·8	−47 to +**60**	1·2	0·3	*p*	12368	−21	June	4·85	+13	863
69	June	3	8·9	−24 to +45	0·8	0·2	*sp*	12369	+54	May	30·4	+13	179
70	June	4	8·9	0	0·8	0·6	*f*	12369	+68				
71	June	6	9·5	− 3 to +42	1·2	1·2	*p*	12372	−34	June	9·03	+12	456
72	June	6	9·7	−18 to +**48**	0·3	0·1	*p*	12377	+34	June	3·9	−33	83
73	June	6	9·9	− 3 to +**41**	1·7	0·1	*s*	12372	−34	June	9·03	+12	456
74	June	7	9·8	−41 to +**65**	1·2	0·0	*c*	12372	−21				
75	June	7	10·9	+ 5 to +85	1·0	0·8	*np*	12377	+48	June	3·9	−33	83
76	June	7	11·0	−32 to +90	1·0	1·0	*sp*	12377	+48				
77	June	7	12·2	+ 2 to +65	1·0	1·2	*s*	12372	−20	June	9·03	+12	456
78	June	7	12·3	−36 to +38	0·6	0·8	*s*	12372	−20				
79	June	7	12·7	+28 to +**105**	1·0	0·0	*c*	12372	−20				
80	June	7	12·8	+16 to +**135**	1·0	0·2	*c*	12372	−20				
81	June	7	13·0	−39 to +**50**	2·3	0·0	*p*	12372	−19				
82	June	7	14·1	+ 2 to +110	*	0·0	*c*	12372	−19				
83	June	7	14·2	0 to +**105**	0·6	0·1	*c*	12372	−19				
84	June	9	8·6	−22 to +60	3·2	0·3	*s*	12372	+ 4				
85	June	9	8·8	−75 to +**50**	1·2	0·2	*p*	12372	+ 5				
86	June	10	10·6	−45 to +29	1·0	1·2	*nf*	12380	−68	June	15·55	+10	591
87	June	10	11·4	−23 to +24	1·3	0·4	*f*	12372	+19	June	9·03	+12	456
88	June	11	8·7	−60 to +**34**	1·6	0·1	*sf*	12384	−66	June	16·26	+22	488

OBSERVATIONS OF SOLAR FLOCCULI made with the SPECTROHELIOSCOPE in the YEAR 1937.

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	°	
89	June	12	8·9	−56 to +**30**	1·6	0·1	*sf*	12383	−51	June	16·01	−14	462
90	June	15	13·0	−48 to +85	1·3	...	...	12392	−30	June	17·8	+21	11
91	June	15	14·4	−36 to +44	1·5	1·0	*c*	12385	−20	June	17·00	−14	897
92	June	17	15·1	−**60** to +70	1·6	0·0	*nf*	12385	+ 8				
93	June	21	8·6	−65 to +65	1·0	0·3	*np*	12389	+52	June	17·88	+10	118
94	June	21	9·4	−60 to +55	2·8	0·7	*n*	12389	+52				
95	June	22	9·5	−35 to +36	2·7	1·5	*s*	12396	− 8	June	22·98	−22	254
96	June	23	8·6	−49 to +60	2·0	0·5	*n a*	12402	−50	June	27·12	−11	459
97	June	23	8·7	+28	1·0	0·3	*sp a*	12393	+32	June	21·01	+12	549
98	June	25	9·8	−47 to +60	1·1	1·0	*s a*	12402	−23	June	27·12	−11	459
99	June	28	8·9	0	4·0	1·7	*nf*	12405	+ 2	June	28·21	−16	233
100	June	28	11·4	+54	0·9	1·2	*p a*	12402	+18	June	27·12	−11	459
101	June	29	10·6	+39	0·8	0·4	*s a*	12411	−33	July	1·97	+16	360
102	June	29	11·1	−17 to +37	*	1·1	*nf*	12411	−32				
103	July	1	14·1	−45 to +65	*	0·4	*p*	12411	− 4				
103	July	1	14·2	+100									
104	July	3	10·7	−26	0·7	0·8	*n b*	12411	+20				
105	July	3	11·9	+25	0·4	0·9	*s a*	12411	+20				
106	July	8	9·4	+36	0·6	0·1	*s b*	12423	− 8	July	9·10	+24	970
107	July	8	10·8	+39	0·3	0·3	*c*	12419	+36	July	5·60	−18	160
108	July	8	10·9	−18 to +**42**	0·3	0·2	*c*	12423	− 7	July	9·10	+24	970
109	July	14	8·9	−37 to +27	1·2	0·9	*s*	12430	0	July	14·33	−10	378
110	July	14	9·2	−39	0·9	...	*f*	12437	+67	July	9·3	−30	69
111	July	14	9·2	+65	0·7	...	*p*	12437	+67				
112	July	14	15·6	+50	1·1	0·7	*np*	12441	−54	July	18·60	+13	676
113	July	16	11·9	−41 to +30	1·4	0·6	*n*	12441	−29				
114	July	16	15·2	+41	1·9	1·0	*sf*	12445	−38	July	19·61	+12	127
115	July	16	15·3	−26 to +46	2·2	0·7	*np*	12445	−38				
116	July	16	15·4	+40	1·1	1·0	*f*	12445	−38				
117	July	16	16·0	−4 to +45	1·5	0·4	*np*	12445	−38				
118	July	21	9·9	−33	*	...	*f*	12441	+38	July	18·60	+13	676
119	July	24	9·0	−29 to +**55**	1·2	0·4	*p b*	12455	−54	July	28·76	+32	2589
120	July	24	9·4	+50	*	0·3	*s b*	12455	−54				
121	July	24	9·6	−32 to +**35**	0·7	0·2	*sp b*	12455	−54				
122	July	28	9·2	−60 to +**49**	1·8	0·5	*sf b*	12455	− 3				
123	July	28	10·7	+44	*	1·0	*c*	12455	− 4				
124	July	28	14·5	−50 to +41	1·1	1·7	*f b*	12455	− 2				
125	July	29	10·6	+39	1·0	0·9	*p b*	12455	+ 8				
126	July	29	14·3	+**45**	0·7	0·3	*s a*	12455	+10				
127	July	29	14·4	−47	1·5	0·5	*s b*	12455	+10				
128	July	29	15·4	−25	1·9	1·6	*nf a*	12455	+11				
129	July	29	15·8	+39	2·8	1·1	*p b*	12455	+11				
130	July	29	15·9	+**90**	1·2	0·3	*nf a*	12455	+11				
131	July	29	16·1	−48 to +**31**	0·6	0·0	*sp*	12460	−39	Aug.	1·56	−20	78
132	Aug.	3	9·2	+43	0·5	0·6	*sf a*	12458	+12	Aug.	2·44	−11	284

OBSERVATIONS OF SOLAR FLOCCULI made with the SPECTROHELIOSCOPE in the YEAR 1937.

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	°	
133	Aug.	4	9·0	−29 to +**29**	1·1	0·2	*sf*	12462	−18	Aug.	5·88	+24	634
134	Aug.	4	9·6	−27	1·0	1·8	*p*	12458	+26	Aug.	2·44	−11	284
135	Aug.	5	15·2	−42 to +65	0·8	...	*p*	12460	+56	Aug.	1·56	−20	78
136	Aug.	5	15·8	+41	*	0·6	*c*	12462	− 2	Aug.	5·88	+24	634
137	Aug.	6	8·9	−23 to +37	*	0·3	*s*	12475	−48	Aug.	9·96	− 8	92
138	Aug.	6	14·1	−9 to +50	0·8	0·2	*n*	12472	+23	Aug.	4·7	−13	286
139	Aug.	7	9·0	− 1	4·0	0·5	*c*	12462 12464	+18 +21	Aug. Aug.	5·88 5·78	+24 +31	634 330
140	Aug.	7	9·1	+32	*	0·8	*c*	12472	+35	Aug.	4·7	−13	286
141	Aug.	7	11·9	−62 to +38	1·0	...	*sp*	12462	+20	Aug.	5·88	+24	634
142	Aug.	10	14·5	−105 to +**135**	4·8	0·2	*p*	12481	−49	Aug.	14·49	−24	257
143	Aug.	12	9·7	−47	*	...	*s*	12474	+76	Aug.	6·77	−27	42
144	Aug.	12	11·0	−40 to +**40**	2·2	0·0	*n*	12481 12487	−25 −32	Aug. Aug.	14·49 14·81	−24 −21	257 156
145	Aug.	12	11·1	−36 to +17	1·0	0·7	*p*	12481	−25	Aug.	14·49	−24	257
146	Aug.	12	14·2	−28 to +43	*	0·2	*c*	12486	−25	Aug.	14·39	+12	696
147	Aug.	13	11·5	+31	0·7	2·1	*f*	12471	+45	Aug.	10·10	−12	434
148	Aug.	16	9·3	+25 to +**85**	1·6	0·2	*sp*	12486	+27	Aug.	14·39	+12	696
149	Aug.	16	10·0	+35	0·3	1·0	*np*	12486	+27				
150	Aug.	17	10·9	−26 to +**42**	1·9	0·3	*sf*	12486	+42				
151	Aug.	17	14·0	−9 to +32	1·8	1·8	*n*	12486	+34				
152	Aug.	17	14·1	+ 3	0·9	1·7	*s*	12486	+34				
153	Aug.	19	8·7	−63 to −10	2·0	0·6	*p*	12481	+62	Aug.	14·49	−24	257
154	Aug.	19	8·8	+6 to +65	1·2	...	...	12499	−56	Aug.	23·84	−26	198
155	Aug.	19	9·7	−24 to +20	1·0	0·4	*p*	12481	+62	Aug.	14·49	−24	257
156	Aug.	19	9·8	+52	1·0	...	*s*	12499	−56	Aug.	23·84	−26	198
157	Aug.	20	11·5	+38	0·7	0·8	*sf*	12500	−50	Aug.	24·03	− 9	226
158	Aug.	20	11·8	+36	1·1	0·3	*n*	12498	−64	Aug.	25·60	+33	1046
159	Aug.	23	8·8	−32	0·6	1·4	*s*	12498	−28				
160	Aug.	23	9·4	−44 to +**65**	0·8	0·2	*c*	12502	−24	Aug.	25·12	−14	202
161	Aug.	23	11·5	+**55**	1·0	0·1	*n*	12504	+63	Aug.	18·8	+18	106
162	Aug.	24	9·3	+**35**	0·3	0·4	*sp*	12498	−15	Aug.	25·60	+33	1046
163	Aug.	24	9·5	−17 to +27	2·8	0·7	*np*	12502	−10	Aug.	25·12	−14	202
164	Aug.	30	10·9	−28 to +**33**	0·3	0·1	*s*	12512	−44	Sept.	2·87	+29	356
165	Aug.	31	9·8	−42	0·6	1·1	*p*	12498	+72	Aug.	25·60	+33	1046
166	Sept.	1	14·3	+37	0·4	0·3	*sf*	12512	−17	Sept.	2·87	+29	356
167	Sept.	3	9·2	−19 to +13	5·5	0·8	*nf*	12512	+ 6				
168	Sept.	3	10·9	+43	0·6	0·4	*n*	12515	−37	Sept.	6·23	+18	128
169	Sept.	3	14·6	+47	1·0	...	*f*	*1123f*	+80	Aug.	28·6	+26	10
170	Sept.	3	14·7	−42	0·3	...	*n*	*1123f*	+80				
171	Sept.	4	9·0	−26 to +42	0·8	0·9	*sp*	12521	−68	Sept.	9·59	+11	644
172	Sept.	6	9·4	+55	*	...	*c*	12523	+18	Sept.	4·9	+ 9	233
173	Sept.	6	9·6	+37	0·7	...	*s*	12512	+43	Sept.	2·87	+29	356
174	Sept.	6	9·7	−15 to +23	0·4	0·9	*s*	12512	+43				
175	Sept.	6	9·7	0 to +60	0·6	0·5	*n*	12512	+43				

OBSERVATIONS OF SOLAR FLOCCULI made with the SPECTROHELIOSCOPE in the YEAR 1937.

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	°	
176	Sept.	6	9·8	− 7	2·8	2·4		12521	−41	Sept.	9·59	+11	644
177	Sept.	6	11·7	−10 to +32	2·0	1·1	*p*	12521	−40				
178	Sept.	6	15·4	**+43**	*	0·4	*np*	12521	−38				
179	Sept.	7	9·3	−33 to +60	1·0	0·4	*f*	12524	−72	Sept.	12·86	+13	255
180	Sept.	7	9·7	−325 to +75	5·0	0·0	*n*	12521	−29	Sept.	9·59	+11	644
181	Sept.	7	15·2	−63	1·0	1·9	*nf*	12521	−26				
182	Sept.	8	14·4	+34	0·7	0·6	*p*	12521	−14				
183	Sept.	8	14·4	+ 7	1·3	0·8	*p*	12521	−14				
184	Sept.	14	11·7	−41 to +60	2·5	2·0	*sp a*	12526	+48	Sept.	11·00	+11	719
185	Sept.	21	10·2	+41	*	1·5	*c*	12529	+37	Sept.	18·62	+12	167
186	Sept.	23	8·9	+39	1·0	0·9	*f*	12536	+42	Sept.	20·28	+13	212
187	Sept.	23	9·0	+38	0·8	0·3	*sf*	12540	+36	Sept.	20·6	−15	185
188	Sept.	23	9·2	+43	*	1·1	*f*	12545	−63	Sept.	28·19	+13	65
189	Sept.	23	9·4	− 2	6·4	1·5	*f*	12535	− 4	Sept.	23·70	+34	218
190	Sept.	23	9·5	−40 to **+70**	0·6	0·2	*c*	12536	+42	Sept.	20·28	+13	212
191	Sept.	24	9·9	−41 to **+46**	0·6	0·2	*s*	12540	+51	Sept.	20·6	−15	185
192	Sept.	28	9·6	−95 to +70	0·7	0·2	*s*	12550	−49	Oct.	2·1	−21	12
193	Sept.	29	9·7	−65 to +55	0·9	0·3	*s*	12553	−69	Oct.	4·42	+ 9	2661
194	Sept.	29	13·6	−55	0·7	0·6	*nf*	12553	−67				
195	Sept.	30	11·2	+60	1·1	0·9	*s*	12553	−53				
196	Sept.	30	11·9	+50	0·5	1·8	*nf*	12553	−53				
197	Oct.	1	11·6	−27 to **+50**	0·8	0·0	*p*	12553	−40				
198	Oct.	1	13·0	−9 to **+95**	1·2	0·1	*sf*	12553	−39				
199	Oct.	1	14·2	+55	0·9	0·3	*s*	12553	−38				
200	Oct.	2	10·4	−65 to +65	1·6	0·2	*nf*	12553	−27				
201	Oct.	2	11·6	−38 to **+36**	1·5	0·0	*c*	12553	−26				
202	Oct.	2	11·7	−55 to +37	2·6	0·9	*p*	12553	−26				
203	Oct.	4	9·3	−14 to +55	1·1	0·3	*sf*	12553	− 1				
204	Oct.	4	11·4	−45 to +15	1·8	0·2	*s*	12553	0				
205	Oct.	4	11·5	−34 to +21	1·8	0·7	*f b*	12555	−34	Oct.	7·05	+11	668
206	Oct.	9	9·7	−5 to +18	0·7	0·0	*p*	12553	+68	Oct.	4·42	+ 9	2661
207	Oct.	9	9·7	−34	0·8	0·3	*c*	12553	+68				
208	Oct.	9	9·7	+33	1·7	0·1	*c*	12553	+68				
209	Oct.	9	10·0	−55 to **+85**	1·1	0·2	*n*	12553	+68				
210	Oct.	9	10·0	+9 to **+100**	1·8	0·0	*n*	12553	+68				
211	Oct.	9	10·2	−80 to **+65**	2·0	0·2	*s*	12553	+68				
212	Oct.	15	10·7	+41	0·6	0·7	*s a*	12567	+34	Oct.	12·85	+12	375
213	Oct.	15	11·4	− 1	2·0	0·4	*n b*	12567	+34				
214	Oct.	16	9·9	−35 to +31	1·0	0·4	*f*	12576	−46	Oct.	19·66	− 6	124
215	Oct.	16	9·9	+40	0·7	0·8	*sp*	12576	−46				
216	Oct.	16	10·6	−42	0·5	0·4	*c*	12576	−46				
217	Oct.	16	12·1	−40 to +65	0·6	0·2	*n*	12573	−10	Oct.	17·20	+13	66
218	Oct.	16	12·2	−48 to +32	1·8	0·3	*p*	12573	−10				
219	Oct.	16	12·7	−33 to +30	1·8	1·3	*s*	12573	− 9				
220	Oct.	16	12·9	−11 to +25	0·9	0·9	*s*	12573	− 9				

OBSERVATIONS OF SOLAR FLOCCULI made with the SPECTROHELIOSCOPE in the YEAR 1937.

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	°	
221	Oct.	18	12·0	0	2·3	...	*n*	12582	+68	Oct.	13·4	−20	30
222	Oct.	18	12·1	−10 to +55	0·7	0·3	*np*	12576	−16	Oct.	19·66	− 6	124
223	Oct.	19	10·2	−85 to +55	1·3	...	*f*	12582	+78	Oct.	13·4	−20	30
224	Oct.	19	10·4	−13 to **+24**	1·6	0·2	*sf*	12573	+30	Oct.	17·20	+13	66
225	Oct.	19	12·8	+15	1·0	...	*np*	12583	−58	Oct.	23·9	−20	38
226	Oct.	21	11·8	−32 to +46	* to 0·9	0·6	*nf*	12585	−68	Oct.	26·48	+11	580
227	Oct.	21	14·7	−36	0·4	...	*f*	12585	−67				
228	Oct.	22	10·2	−24 to **+85**	1·1	0·0	*np b*	12585	−56				
229	Oct.	23	12·6	**+33**	*	0·1	*p b*	12585	−42				
230	Oct.	23	12·7	+43	*	1·6	*np*	12578	+28	Oct.	21·38	−26	142
231	Oct.	26	10·9	−24 to **+39**	1·5 to *	0·0	*c*	12588	−60	Oct.	30·99	+ 7	187
232	Oct.	28	9·8	−28	0·9	0·7	*sf*	12588	−39				
233	Oct.	28	10·0	−42 to **+50**	1·0	0·0	*f b*	12587	−15	Oct.	29·72	−28	195
234	Oct.	30	10·2	**+55**	0·3	0·0	*c*	12588	−11	Oct.	30·99	+ 7	187
235	Oct.	30	10·5	−16 to +47	*	0·2	*c*	12595	−54	Nov.	3·31	+ 7	247
236	Nov.	9	12·8	−26 to +24	0·6	0·2	*p b*	12602	−58	Nov.	13·98	−15	616
237	Nov.	10	10·0	−38 to +29	0·7	0·7	*c*	12602	−46				
238	Nov.	19	12·8	−36	0·5	0·6	*p*	12612	−58	Nov.	23·91	−18	285

NOTES.

Reference Number.

2. Associated with a minor bright eruption of intensity 1.

3. Three dots.

6. These are the maximum velocities observed between $10^h\ 14^m$ and $10^h\ 30^m$. The outward velocity appears first: see Table I. in *M.N.* **102**, 6, 1942.

7. Maximum velocities observed between $10^h\ 40^m$ and $10^h\ 50^m$ associated with bright eruption of intensity 1 occuring near the position of No. 6.

11. Associated with a bright eruption of intensity 1.

13. Associated with a small bright eruption of intensity 1.

17. A pair of markings.

18. At zero velocity there is a long thin sinuous filament stretching about 3′ eastwards from the sunspot. At + 85 km./sec., there is a small blob touching the sunspot umbra.

21. The inward (+) component of radial velocity is a little west of the outward (−) component.

22. The + component is west of the − component.

23. Associated with a bright eruption of intensity 1. At − 29 km./sec. there is a single dot: at +60 there are two dots, one of which appears to touch the leader sunspot of the group.

28. A curved marking touching the penumbra of sunspot.

Reference Number.

29. } Small blobs within the penumbra of the large sunspot and
30. } near a small patch of enhanced emission.

31. The + component a short distance north of the − component.

32. At −4 km./sec., the marking 0′·9 long is *sf* the big sunspot; at +37 km./sec., the marking contracts to a dot just within the penumbra of the sunspot.

33. }
34. } Associated with a bright eruption of intensity 1.

36. The + component is east of the − component.

38. The marking appears to flow into the rear sunspot with anti-clockwise direction of motion.

45. Associated with a bright eruption of intensity 2.

47. A short filament ending at a tiny sunspot that is south of the main following spot of the group.

48. Associated in time with a bright eruption of intensity 2.

49. Associated with a brilliant eruption of intensity 3.

50. At +48 km./sec. a blob covers the umbra of the leader sunspot.

51. Associated with a brilliant eruption of intensity 3, seen in *Hβ* as well as in *Hα*

OBSERVATIONS OF SOLAR FLOCCULI made with the SPECTROHELIOSCOPE in the YEAR 1937.

NOTES—*continued.*

Reference Number.

58. The + component is slightly west of the — velocity.

60. At —55 km./sec., a dense V-shaped marking touching the penumbra of the leader sunspot; at +14 km./sec. a short streak somewhat further from the sunspot.

61. The measured velocity for the marking as a whole is +55 km./sec.; a small off-shoot eastwards measures +130 km./sec. This marking, together with No. 62, is associated with a bright eruption of intensity 2.

63. At —60 km./sec., a long, rather diffuse marking stretching to the sun's limb; at +125 the marking appears as a small blob on the outer edge of the penumbra of the sunspot. At 15^h 46^m the measured velocities were —36 to +95 km./sec.

64. As the line-shifter is turned from a setting indicating —13 km./sec. to that indicating +46 km./sec., the visibility of the marking appears to traverse a curved path whose ends are separated by about 10° of solar longitude. The + component is the more westerly.

66. The + component is west of the — component.

67. The + component is east of the — component. Associated with a bright eruption of intensity 1.

69. The + component is west of the — component (nearer the sunspot).

71. The + component is north of the — component.

72. Direction of motion to sunspot — inwards clockwise.

75. The end of the marking nearer the sunspot has the greater inward velocity (+85 km./sec.).

76., 77., 78. } Associated with a bright eruption of intensity 3.

79., 80. } These are separate short-lived markings, the latter appearing about 2 or 3 minutes after the disappearance of the former. Both show slight curvature, the first inwards anti-clockwise into a sunspot: the second, inwards clockwise. Both are associated with a major bright eruption as were the earlier markings, and No. 81.

81. Direction of curvature—inwards, anti-clockwise to a small sunspot preceding the chief leader sunspot of the group. Three minutes after the measure, the marking had disappeared.

82. A tiny blob appearing to trace out a slightly curved path (inwards anti-clockwise) from a tiny bright patch 1′·0 following the main leader sunspot of the group right up to the spot umbra.

85. A series of short, dark lines associated with a bright eruption of intensity 2, near a small sunspot that precedes the main leader spot of Group 12372. A second measure of radial velocity, 7 minutes later, gives —55 to +55 km./sec.

90. Associated with a bright eruption of intensity 2.

92. Associated with a bright eruption of intensity 2. The — component appears to come from a sunspot and a streak of bright emission.

95. The values tabulated were measured at 9^h 33^m; at 9^h 12^m, the velocities measured were —21 to +20 km./sec: at 11^h 57^m the marking had stabilized at a measured velocity of +6 km./sec.

Reference Number.

102. The + component is a little south of the — component.

103. Near a small intense patch of *Hα* emission just preceding a small sunspot.

108. A short dark filament at —18 km./sec. becomes two markings at +42 km./sec. each apparently flowing into a sunspot.

109. This measure was taken at 8^h 57^m; at 8^h 44^m only an outward velocity (—33 km./sec.) was seen near a tiny patch of enhanced emission.

110., 111. } Associated with a bright eruption of intensity 2.

112. Associated with a bright eruption of intensity 1.

114., 115., 116. } Associated with a bright eruption of intensity 2.

118. Associated with a small bright eruption of intensity 1.

119. Active marking still there two hours later.

124. Associated with a bright eruption of intensity 1. The + component slightly north of — component of radial velocity.

129., 130. } Associated with a bright eruption of intensity 2.

133. Direction of motion—inwards clockwise to the follower sunspot.

135. The + component is north-east of the — component.

141. Associated with a bright eruption of intensity 2, *sp* Group 12462 by a few degrees of longitude and latitude.

142. An extensive marking associated with a bright eruption of intensity 2.

143. Associated with a bright eruption of intensity 1.

146. A small blob appearing to move over 0′·1 as the line-shifter is turned indicating —28 to +43 km./sec., the latter being at a position north-east of that of the former velocity. Associated with a bright eruption of intensity 2.

150. At —26 km./sec. a V-shaped marking; at +42 km./sec. a small blob on the penumbra of the following sunspot of the group.

151. The + component is west of the — component.

155. The + component is west of the — component.

159. At 10^h 22^m the marking, which had previously disappeared at 9^h 25^m, has re-appeared with a velocity of —37 km./sec.

164. Associated with a bright eruption of intensity 1.

167. An extensive filament showing differences of radial velocity along its length. The inward (+) velocity is near a sunspot.

169., 170. } Associated with a bright eruption of intensity 1.

173., 174., 175. } Associated with a bright eruption of intensity 1.

177. At +32 the marking contracts to a dot at its eastern extremity.

OBSERVATIONS OF SOLAR FLOCCULI made with the SPECTROHELIOSCOPE in the YEAR 1937.

NOTES—*continued.*

Reference Number.

180. An extensive marking associated with a short-lived but fairly intense bright eruption of intensity 2. The + component is either near the sunspot or actually superimposed above it. The bright emission touches the spot *np*. The extreme ranges of velocity are tabulated, the individual measures being as follows:

9^h 26^m U.T.	−325 to + **2**
9 35	− 65 to +**60**
9 38	− 16 to +75
9 42	− 65 to +19
9 48	− 65 to +36
10 00	− 24 to +45

184. Extreme values between 11^h 30^m and 11^h 56^m are tabulated for a rapidly changing pair of markings, the — and + aspects being very different in shape.

191. The positions on the disk at which −41 and +46 km./sec. are recorded are separated by 0′·9, the + velocity being near the penumbra of a sunspot.

192. Extreme velocities are tabulated; the individual measures of this rapidly changing marking associated with a bright eruption of intensity 1 are as follows:

9^h 32^m	−95 km./sec.
9 42	+39
9 45	+70
9 48	Fading rapidly

193. Individual measures of this marking near some bright patches are as follows:

9^h 35^m	−65 km./sec.
9 43	+44
9 49	+54
9 51½	Disappears suddenly.

195. Associated with a bright eruption of intensity 3.

200. The greatest velocities measured from 10^h 26^m to 11^h 36^m are tabulated. The inward component appears 11 minutes after outward component was first seen.

203. Associated with a bright eruption of intensity 2.

206. The sign of the velocity adjacent to the sunspot was not recorded.

209., 210., 211. Associated with a bright eruption of intensity 1.

214. The + component of velocity showing as a blob is measured 11 minutes after the — component which appears as a marking 1′·0 in length.

216. Associated with a bright eruption of intensity 1.

218. Associated with a bright eruption of intensity 1.

222. The position of the inward component does not quite reach to a sunspot.

223. The + component is north of the — component.

226. At −32 km./sec. there is a small blob: at +46 km./sec. the blob becomes two streaks about 0′·9 apart. A few minutes earlier only an outward component was recorded at −33 km./sec. Associated with a bright eruption of intensity 1.

Reference Number.

231. Direction of motion: inwards to a following sunspot counter-clockwise. The marking contracts to a dot at +39 km./sec.

233. Associated with a bright eruption of intensity 2. At the reading of the line-shifter indicating +50 km./sec., the marking divides and the western component appears to flow into the sunspot. Twelve minutes later, the velocity readings give −33 to +**28**.

234. Associated with a bright eruption of intensity 2.

235., 236., 237. The + component of velocity is east of the — component. The + and — components of velocity are separated by 0′·5, the former being east of the latter.

ADDENDUM TO 1936 RESULTS

109* (1936). Associated with a short-lived brilliant eruption of intensity 3. The results of a set of measures made between 15^h 58^m and 16^h 28^m comprise a typical case discussed in "Characteristic Radial Motions of *Hα* Absorption Markings seen with Bright Eruptions on the Sun's Disc", *Monthly Notices* **102**, 2, 1942.

The individual measures are as follows:—

Time U.T.		Measured Radial Velocity Outwards km./sec.	Inwards km./sec.	Remarks.
15	58½	− 58		
16	00½	− 83		
16	01			Brilliant eruption begins.
16	09	−205		
16	10	−100		
16	11	− 50		
16	14½	− 29		
16	16		+ 45	Brilliant eruption ceases.
16	17	− 29	+ 59	— Component very faint.
16	19		+ 85	
16	20		+ 87	Outward velocity has ceased. + component very dense.
16	21½		+ 67	
16	22		+ 96	Marking very dense.
16	24		+130	
16	26		+166	
16	27		+170	Marking not so large nor as dense.
16	28		+174	
16	29		(+190)	Extrapolated value. Dark markings disappearing.
16	30			All traces have gone.

The sudden increase in outward velocity after the appearance of the brilliant eruption is noteworthy.

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