RESULTS

OF THE

SPECTROSCOPIC AND PHOTOGRAPHIC OBSERVATIONS

MADE AT THE

ROYAL OBSERVATORY, GREENWICH

IN THE YEAR

1893:

UNDER THE DIRECTION OF

W. H. M. CHRISTIE, M.A., F.R.S.,
ASTRONOMER ROYAL.

(EXTRACTED FROM THE GREENWICH OBSERVATIONS, 1893.)

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ERRATA.

SPECTROSCOPIC AND PHOTOGRAPHIC RESULTS, 1893.

MEASURES OF POSITIONS AND AREAS OF SUN SPOTS AND FACULÆ, 1893.

Page.	Column.	Line.	
4	1	31	*Dele* this line.
		37	*Dele* this line.
		43	Total Area of Umbræ, *for* 65, *read* 60; Total Area of Whole Spots, *for* 403, *read* 379.
15	1	18	Longitude, *for* 74°·5, *read* 84°·5.
23		Footnote.	Group 2881, *for* March 10–20, *read* March 10–21.
48		Footnote.	Group 2991, *for* May 26–28, *read* May 26–29.
49	2	36	Total Area of Whole Spots, *for* 2148, *read* 2144.
52	1	40	Longitude, *for* 78°·2, *read* 77°·2.
54	2	15	Longitude, *for* 10°·8, *read* 10°·9.
62	1	40	Distance from Centre, *for* 0·989, *read* 0·994; Longitude, *for* 328°·6, *read* 326°·4; Latitude, *for* — 15°·7, *read* — 15°·9; Area of Umbra, *for* 38, *read* 51; Area of Whole Spots, *for* 191, *read* 250.
	2	3	Total Area of Umbræ, *for* 112, *read* 125.
			Total Area of Whole Spots, *for* 695, *read* 754.
72	1	41	Total Area of Whole Spots, *insert* brackets.
74	1	5	Longitude, *for* 281°·2, *read* 281°·0.
75	1	22	Longitude, *for* 322°·1, *read* 322°·0; Latitude, *for* — 23°·1, *read* — 17°·5.
78	1	3	Total Area of Whole Spots, *for* 4846, *read* 4866.
91	2	37	Longitude, *for* 301°·5, *read* 301°·6.
103	1	35	Total Area of Umbræ, *insert* brackets.
104	2	21	Longitude, *for* 51°·6, *read* 50°·6.
108	1	10	Greenwich Civil Time, *for* 295·454, *read* 295·431.
	2	1	

SPECTROSCOPIC AND PHOTOGRAPHIC RESULTS, 1893—*cont.*

LEDGERS OF SUN SPOTS, 1893.

Page.	Group.	Date.	
141	2847	Feb. 18.	Area for Whole Spot, *for* 78, *read* 77.
150	2913	Apr. 8.	Area for Whole Spot, *for* 52, *read* 50; Mean Longitude, *for* 82°·1, *read* 82°·0; Longitude from Central Meridian, *for* — 9°·6, *read* — 9°·7.
		Means.	Area for Whole Spot, *for* 43, *read* 42; Mean Longitude, *for* 81°·75, *read* 81°·74.
151	2917	Apr. 9.	Area for Whole Spot, *for* 46, *read* 50.
		Means.	Area for Whole Spot, *for* 41, *read* 42.
154	2940	May 2.	Longitude from Central Meridian, *for* + 51°·0, *read* + 58°·4.
	2945	Apr. 28.	Area for Whole Spot, *for* 9, *read* 21; Mean Longitude, *for* 172°·4, *read* 171°·2; Mean Latitude, *for* + 14°·7, *read* + 15°·3; Mean Longitude from Central Meridian, *for* — 15°·8, *read* — 17°·0.
		Means.	Area for Whole Spot, *for* 15, *read* 17; Mean Longitude, *for* 170°·77, *read* 170°·57; Mean Latitude, *for* + 16°·30, *read* + 16°·40.
157	2967	May 22.	Area for Whole Spot, *for* 58, *read* 558.
		Means.	Area for Whole Spot, *for* 232, *read* 277.
191	3232		
192	3237		
	3238		
	3243		
193	3244		
	3246	Oct. 23.	Greenwich Civil Time, *for* Oct. 23·454, *read* Oct. 23·431.
	3250		
194	3252		
	3253		
	3254		
	3255		

GREENWICH SPECTROSCOPIC AND PHOTOGRAPHIC RESULTS, 1893.

INTRODUCTION.

§ 1. *Measures of Positions and Areas of Sun Spots and Faculæ on Photographs taken at the Royal Observatory, Greenwich, at Dehra Dûn in India, and at the Royal Alfred Observatory, Mauritius, in the year* 1893; *with the deduced Heliographic Longitudes and Latitudes.*

The photographs from which these measures were made were taken either at Greenwich; at Dehra Dûn, North-West Provinces, India; or at the Royal Alfred Observatory, Mauritius.

The photographs of the Greenwich series were taken either with the Dallmeyer or with the Thompson Photoheliograph. The Dallmeyer is an instrument used in the Transit of Venus expedition to New Zealand, and, as now adapted, gives a solar image of 8 inches diameter on the photographic plate. The Thompson is a photographic refractor of 9 inches aperture, presented to the Royal Observatory by Sir Henry Thompson, which has been fitted with an enlarging lens by Ross, and with a camera and shutter for rapid exposure, so as to take photographs of the Sun on a scale of about 8 inches to the solar diameter.

The photographs have been taken throughout the year on gelatine dry plates, either Thomas's "Thickly-coated Landscape" plates, or "Lantern" plates supplied by the same firm. A hydroquinone developer has generally been used, but occasionally the plates have been developed with pyrogallic acid and ammonia.

The Indian photographs, which have been forwarded by the Solar Physics Committee to fill the gaps in the Greenwich series, were taken under the superintendence of the Deputy Surveyor General, Trigonometrical Survey of India, with a Dallmeyer photoheliograph giving an image of the Sun nearly 8 inches in diameter. In the process adopted at Dehra Dûn bromo-iodized collodion has been used in connexion with iron development.

The Mauritius photographs were taken under the superintendence of Dr. C. Meldrum, Director of the Royal Alfred Observatory, Mauritius, with a Dallmeyer photoheliograph, giving an image of the Sun about 8 inches in diameter. At the Mauritius Observatory bromo-iodized gelatine dry plates have been used with alkaline development.

Of the photographs of the Sun taken at Greenwich, those selected for measurement were taken with the Dallmeyer photoheliograph on 123 days, and with the Thompson photoheliograph on 89 days. Indian photographs on 110 days, and Mauritius photographs on 40 days have been received from the Solar Physics Committee to complete the total of 362 days for which there are either Greenwich, Indian, or Mauritius photographs of the Sun available for measurement in 1893.

The *first* column on each page contains the Greenwich Civil Time at which each photograph was taken, expressed by the day of the year and decimals of a day, reckoning from Greenwich mean midnight January 1d. 0h., and also by the day of the month (civil reckoning), which latter is placed opposite the total area of Spots and Faculæ for the day. The photographs taken in India are distinguished by the letter I, and those taken in Mauritius by the letter M.

The *second* column contains the initials of the two persons measuring the photograph; the initial on the left being that of the person who measured the photograph on the left of the centre of the measuring instrument, and that on the right being that of the person who measured on the right of the centre.

The following are the signatures of those persons who measured the photographs for the year 1893 :—

E. W. Maunder - -	M	J. S. Gillingham - -	JG
H. Appleyard - -	HA	C. F. Turner - -	FT
Annie S. D. Russell -	AR	A. J. Wilkin - -	AW
C. C. Lacey - -	CL		

The *third* column gives the No. of the group, and the letter for the spot. The groups are numbered in the order of their appearance.

The *next two* columns give the Distance from the Centre of the Sun in terms of the Sun's Radius, and the Position-Angle from the Sun's Axis, reckoned from the Sun's North Pole in the direction n, f, s, p, both results being corrected for the effects of astronomical refraction.

The measures of the photographs were made with a large position-micrometer specially 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 position-circle which rotates about its centre. By this means small movements in two directions at right angles to each other can be readily given, and the photograph can be accurately centred with respect to the position-circle. When this has been done, a positive eye-piece, having at its focus a glass diaphragm ruled with cross-lines into squares, with sides of one-hundredth of an inch (for measurement of areas), is moved along a slide diametrically across the photograph, the diaphragm being nearly in contact with the photographic film, so that parallax is avoided. The distance of a spot or facula from the centre of the Sun is read off by means of a scale and vernier to 1-250th of an 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 a large position-circle which rotates with the photographic plate. The photograph is illuminated by diffused light reflected from white paper placed at an angle of 45° between the photograph and the plate below.

The following is the process of measurement of a photograph :—By means of the screws attached to the circular plates carrying the pillars which hold the photograph, the image of the Sun is centred as accurately as possible by rotation. The position-circle is then set to the readings 0°, 90°, 180°, and 270° in succession, and the scale readings taken for the two limbs. The scale being so adjusted that its zero coincides with the centre of rotation of the position-circle, the mean of the eight readings for the limb gives the mean radius of the Sun directly.

At the principal focus of the photoheliograph are two cross-spider-lines which serve to determine the zero of position-angles on the photograph.

The zero of position-angles for the Dallmeyer Photoheliograph, employed at Greenwich, has been determined by the measurement of a plate which had been exposed to the Sun's rays 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 plate, and the exposures having been so given that the line joining the cusps passed approximately through the centre of the plate, 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. The following table gives the correction for zero of position for the mean of the two wires as thus determined :—

Date, Greenwich Civil Time.		Correction for Zero.
	d h	° ′
1892 December	10. 11	— 1. 15
1893 January	11. 11	— 1. 15
	28. 11	— 1. 9
February	4. 11	— 1. 0
	17. 10	— 1. 21
March	25. 10	— 1. 9
	25. 11	— 1. 11
May	11. 12	— 0. 37
June	7. 16	— 0. 49
July	22. 11	— 1. 0
August	2. 12	— 0. 40
	30. 11	— 0. 53
September	9. 11	— 0. 52
October	16. 11	+ 1. 20
	19. 10	+ 1. 56
	25. 10	+ 1. 41
November	13. 12	+ 1. 35
	13. 12	+ 1. 35
December	2. 10	+ 0. 36
	21. 11	+ 0. 37
1894 January	13. 11	+ 0. 54
	19. 13	+ 0. 17
February	13. 11	+ 0. 33

The magnifier of the Dallmeyer Photoheliograph was removed and cleaned on 1893 November 25, and the position of the wires altered.

The Dallmeyer Photoheliograph was removed on April 7 from stand No. 3 in the first floor of the New Museum building, and remounted on its own stand in the Photoheliograph dome. Its use in this position had to be given up after September 11, as the New buildings obstructed the view of the Sun. It was, therefore, mounted on the tube of the new 28-inch refractor, the alteration being completed by October 12.

In the use at Greenwich of the Dallmeyer Photoheliograph the position-circle has usually been set to some convenient reading near that for zero, so that the wires are respectively very nearly parallel and perpendicular to the circle of declination, and a correction for zero of position of the photoheliograph for the mean of the two wires has been applied to the zero of the position-circle of the micrometer. The position-circle was set to the reading 354°·0 throughout 1893.

The zero of the position-circle of the micrometer has been determined from the readings of the position-circle for the four extremities of the two wires. The resulting combined correction is applied to all position-circle readings for spots and faculæ, so as to give true position-angles.

The Thompson Photoheliograph is not fitted with a position-circle, and the position-angle of the wires, which, as in the Dallmeyer, are approximately parallel and perpendicular to the circle of declination, cannot be altered. The zero of position-angle has been determined by stopping the driving-clock immediately after the exposure of the plate, and giving a second exposure two minutes later than the first. A second image of a small portion of the Sun is thus secured. The mean of the position-circle reading for two points on the limb of the second image equidistant from the centre of the first image, corrected for the inclination of the Sun's path, gives the position-circle reading for the West point of the image of the Sun.

In the use of the Photoheliographs at Dehra Dûn and in Mauritius the position-circle has always been set to the zero as determined by allowing the diurnal motion to carry a spot or the Sun's limb along the horizontal wire, and the accuracy of the adjustment has been tested at short intervals. No correction for zero of position of the wires has therefore been applied for the reduction of the photographs taken in India or in Mauritius.

The uncorrected distance from the Sun's centre for spots and faculæ is read off directly to 1-250th of an inch by means of a scale and vernier, the zero of the scale of the new micrometer being adjusted to coincide with the centre of the instrument.

Two sets of measures of the Sun's limb and of spots and faculæ on each photograph have been taken and the mean of the two sets adopted.

No correction has been applied to the photographs on account of distortion.

The correction for the effect of refraction has been thus found, the Sun's image

being assumed to be sensibly an ellipse. The refraction being sensibly $c \tan z$ where $c = \sin 57''{\cdot}5 = \frac{1}{3600}$ nearly, and z is the apparent zenith distance, we shall have—

$$\frac{\text{Vertical Diameter}}{\text{Horizontal Diameter}} = \frac{1 - c \sec^2 z}{1 - c} = 1 - c \tan^2 z ;$$

and thus the effect of refraction will be to diminish any vertical ordinate y by the quantity $c \tan^2 z$. Resolving this along and perpendicular to the radius vector r, and putting v for the position-angle of the vertex, we have for δr and $\delta \theta$, the corrections to radius vector and position-angle for the effect of refraction—

$$\delta r = + c \,.\, \tan^2 z \times r \,.\, \cos^2 (\theta - v) = + c \,.\, \tan^2 z \times r \times \frac{1 + \cos 2 (\theta - v)}{2},$$

$$\delta \theta = - c \,.\, \tan^2 z \,.\, \sin (\theta - v) \,.\, \cos (\theta - v) = - c \,.\, \tan^2 z \, \frac{\sin 2 (\theta - v)}{2}$$

The quantity δr thus found is the correction, on the supposition that a horizontal diameter of the Sun is taken as the scale. But, as the mean of two diameters at right angles has been used, the scale itself requires the correction $\delta \mathrm{R} = + c \,.\, \tan^2 z \times \mathrm{R} \times \frac{1}{2} \left\{ \frac{1 + \cos 2 (\theta_0 - v)}{2} + \frac{1 + \cos 2 (\theta_0 + 90° - v)}{2} \right\} = + \frac{1}{2} c \,\mathrm{R} \,.\, \tan^2 z$, where R is the Sun's mean radius and θ_0, $\theta_0 + 90°$ the position-angles of the two diameters measured. Thus the final correction to r becomes—

$$\delta r = + c \,.\, \tan^2 z \times r \times \frac{\cos 2 (\theta - v)}{2}.$$

The quantities $c \tan^2 z$, $-\frac{\sin 2 (\theta - v)}{2}$, and $\frac{\cos 2 (\theta - v)}{2}$ have been tabulated for use as follows, $c \tan^2 z$ being expressed in circular measure and in arc for application to distances and position-angles respectively :—

$c \tan^2 z$.

z.	In Circular Measure.	In Arc.	z.	In Circular Measure.	In Arc.	z.	In Circular Measure.	In Arc.
°		′	°		′	°		′
80	·0089	31	70	·0021	7	60	·0008	3
79	·0073	25	69	·0019	6½	58	·0007	2
78	·0061	21	68	·0017	6	56	·0006	2
77	·0052	18	67	·0015	5½	54	·0005	2
76	·0045	15	66	·0014	5	52	·0005	2
75	·0039	13	65	·0013	4½	50	·0004	1
74	·0034	11½	64	·0012	4	45	·0003	1
73	·0030	10	63	·0011	4	40	·0002	1
72	·0026	9	62	·0010	3	30	·0001	0
71	·0023	8	61	·0009	3			

Factors for Refraction.

$\theta - v$	$\theta - v$	$-\frac{\sin 2(\theta-v)}{2}$	$\frac{\cos 2(\theta-v)}{2}$	$\theta - v$	$\theta - v$	$-\frac{\sin 2(\theta-v)}{2}$	$\frac{\cos 2(\theta-v)}{2}$
°	°			°	°		
0	180	·00	+ ·50	95	275	+ ·09	− ·49
5	185	− ·09	+ ·49	100	280	+ ·17	− ·47
10	190	− ·17	+ ·47	105	285	+ ·25	− ·43
15	195	− ·25	+ ·43	110	290	+ ·32	− ·38
20	200	− ·32	+ ·38	115	295	+ ·38	− ·32
25	205	− ·38	+ ·32	120	300	+ ·43	− ·25
30	210	− ·43	+ ·25	125	305	+ ·47	− ·17
35	215	− ·47	+ ·17	130	310	+ ·49	− ·09
40	220	− ·49	+ ·09	135	315	+ ·50	·00
45	225	− ·50	·00	140	320	+ ·49	+ ·09
50	230	− ·49	− ·09	145	325	+ ·47	+ ·17
55	235	− ·47	− ·17	150	330	+ ·43	+ ·25
60	240	− ·43	− ·25	155	335	+ ·38	+ ·32
65	245	− ·38	− ·32	160	340	+ ·32	+ ·38
70	250	− ·32	− ·38	165	345	+ ·25	+ ·43
75	255	− ·25	− ·43	170	350	+ ·17	+ ·47
80	260	− ·17	− ·47	175	355	+ ·09	+ ·49
85	265	− ·09	− ·49	180	360	·00	+ ·50
90	270	·00	− ·50				

The position-angle of the Vertex v is readily taken from a globe.

The distance from centre in terms of the Sun's radius given in the *fourth* column s then readily found by dividing the measured distance r_0, as corrected for refraction, by the measured mean radius of the Sun, R; and the Position-Angle from the Sun's Axis given in the *fifth* column is obtained by applying to the Position-Angle (from the N. point) corrected for refraction the Position-Angle of the Sun's Axis derived from the "Auxiliary Tables for determining the Angle of Position of the Sun's Axis, and the Latitude and Longitude of the Earth referred to the Sun's Equator," by Warren De La Rue, F.R.S.

The *sixth* and *seventh* columns give the heliographic longitude and latitude of the spot, which are thus computed.* Let r be the measured distance of a spot from the centre of the Sun's apparent disc, R the measured radius of the Sun on the photograph, (R) the tabular semidiameter 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. Then we have—

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

$$\text{whence } \rho = \sin^{-1}\frac{r}{R} - \rho'.$$

* 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.

Log sin ρ and log cos ρ as computed from this formula are given in "Tables for the Reduction of Solar Observations No. 2," by Warren De La Rue, F.R.S. Then, if D, λ are the heliographic latitudes of the Earth and the Spot respectively, referred to the Sun's Equator, and L, l the heliographic longitudes reckoned from the ascending node of the Sun's Equator on the ecliptic, and χ the position-angle from the Sun's axis, we have by the ordinary equations of spherical trigonometry—

$$\sin \lambda = \cos \rho \sin D + \sin \rho \cos D \cos \chi$$
$$\sin (L - l) = \sin \chi \sin \rho \sec \lambda.$$

The quantities L and D are derived from Warren De La Rue's Auxiliary Tables before referred to, in the computation of which the following formulæ have been used—

$$\tan L = \cos I \tan (\odot - N)$$
$$\sin D = \sin I \sin (\odot - N)$$

where I is the inclination of the Sun's Equator to the ecliptic, N the longitude of the ascending node, and $\odot$ the longitude of the Sun.

The position-angle χ is given by the formula—

$$\chi = P + G + H$$

where P is the position-angle from the north point of the Sun, and G and H two auxiliary angles given by the formulæ—

$$\tan G = \tan \omega \cos \odot$$
$$\tan H = \tan I \cos (\odot - N)$$

where ω is the obliquity of the ecliptic.

It will be seen that G is the inclination of two planes through the line joining the centres of the Earth and Sun passing through the poles of the Earth and of the ecliptic respectively, and that H is the inclination of two planes through the same line and the poles of the Sun and of the ecliptic. The values assumed for I, N, ω in the computation of the Tables are 7° 15′, 74° 19′, and 23° 27′·5 respectively.

The Heliographic Longitude of the Spot is found from l, the Heliographic Longitude from Node, by subtracting the Reduction to the Prime Meridian, which is the Longitude of the Node at the epoch of the photograph, referred to the assumed Prime Meridian, the latter being the meridian which passed through the ascending node at mean noon, 1854, Jan. 1. The period of rotation assumed is 25·38 days.

The Heliographic Longitude and Latitude of the Centre of the Sun's Disk at the time of the exposure of each photograph are also given (in brackets) in the *sixth* and *seventh* columns respectively. The Longitude of the Centre of the Disk is found by subtracting the Reduction to the Prime Meridian from L, the Longitude of the Centre from the Node. The Latitude of the Centre is of course the same as D, the Heliographic Latitude of the Earth.

The measures of areas given in the *last three* columns were made with a glass diaphragm ruled into squares, with sides of one hundredth of an inch, and placed as nearly as possible in contact with the photographic film. The integral number of squares and parts of a square contained in the area of a spot or facula was estimated by the observer, two independent sets of measures being made by two observers. The mean of the two sets of measures has been taken for each photograph. The factor for converting the areas, as measured in ten-thousandths of a square inch, into millionths of the Sun's visible hemisphere, allowing for the effect of foreshortening, has been inferred by means of a table of double entry, giving the equivalent of one square for different values of the Sun's radius, and for different distances of the spot or facula from the Sun's centre, as measured by means of the position-micrometer.

The individual spots in a group have in some cases not been measured separately, but combined into a cluster of two or three small spots close together, the position of the centre of gravity and the aggregate area of the cluster being given. The actual number of individual spots is usually stated in the Notes.

§ 2. *Ledgers of Areas and Positions of Groups of Sun Spots deduced from the measurement of the Solar photographs for each day in the year* 1893.

In these Ledgers the daily results for each group are collected together from the measures of the individual spots and given in a condensed form. The first column gives for each day, on which the group was observed, the Greenwich civil time at which each photograph was taken, expressed by the day of the month (civil reckoning) and the decimals of a day reckoning from Greenwich mean midnight. The second and third columns give the sums, for each day, of the projected areas of all the umbræ and whole spots comprised in the group, the projected area being the area as it is measured upon the photograph, uncorrected for foreshortening, and expressed in millionths of the Sun's apparent disk. The fourth and fifth columns give the sums for each day of the areas of all the umbræ and whole spots comprised in the group, corrected for foreshortening, and expressed in millionths of the Sun's visible hemisphere.

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The sixth and seventh columns give the mean longitude and latitude of the group, found by multiplying the longitude and latitude of each separately measured component of the group by its area, and dividing the sum of the products by the sum of the areas. The last column gives the mean longitude of the group from the central meridian, and is found by subtracting the longitude of the centre of the disk from the mean longitude of the group. At the foot of these daily results for each group are given the mean areas of umbræ and whole spots and the mean longitude and latitude for the period of observation.

§ 3. *Total Projected 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* 1893.

This section requires no further explanation.

W. H. M. CHRISTIE.

Royal Observatory, Greenwich.
1895 *December* 20.

MEASURES of POSITIONS and AREAS of SUN SPOTS and FACULÆ on PHOTOGRAPHS taken at the ROYAL OBSERVATORY, GREENWICH, at DEHRA DÛN in INDIA, and at the ROYAL ALFRED OBSERVATORY, MAURITIUS, in the Year 1893.

NOTE.—The Greenwich Civil Time at which the photograph was taken is expressed by the Day of the Year and decimals of a day, reckoning from Midnight, January 1d. 0h.

For convenience of reference the Month and Day of the Month (Civil Reckoning) are added.

The letter I. signifies that the photograph was taken in India; the letter M. that the photograph was taken in Mauritius; the time given is Greenwich Civil Time.

The position-angles are reckoned from the North Pole of the Sun's Axis in the direction N., E., S., W., N.

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
0d·255	AR,JG		0·970	288·6	7·3	+17·2			75
			0·910	241·9	357·2	−26·8			455
I.			0·736	292·3	337·7	+13·8			179
		2787	0·966	257·2	8·4	−13·2	0	24	587c
		2787a	0·954	255·1	5·9	−15·3	6	19	
		2787c	0·945	247·5	3·8	−22·3	0	17	379c
		2792	0·627	234·0	327·0	−24·3	0	4	
		2792	0·616	228·6	324·3	−26·8	0	7	
		2792	0·569	235·2	323·4	−21·7	0	3	293c
		2792a	0·580	230·7	322·7	−24·3	53	395	
		2792	0·531	229·0	319·1	−23·3	2	10	
		2792	0·470	227·9	315·2	−21·4	0	2	109c
		2792c	0·480	221·6	313·6	−24·1	16	102	
		2800a	0·358	138·0	278·7	−18·5	2	14	
		2800b	0·396	129·7	274·7	−17·7	0	17	
		2800	0·385	125·9	274·4	−16·1	0	3	
		2799	0·369	43·2	278·4	+12·3	0	2	
		2799a	0·330	51·0	278·3	+ 8·7	8	55	
		2799	0·334	59·3	276·6	+ 6·6	0	2	67c
		2799	0·367	54·4	275·8	+ 9·1	0	1	
		2799	0·373	57·6	274·8	+ 8·4	0	7	
		2794a	0·313	118·8	277·1	−11·8	0	5	
		2794	0·330	120·1	276·4	−12·7	1	4	
		2794	0·396	113·1	271·5	−12·0	2	6	
		2794b	0·426	114·5	269·9	−13·2	4	11	
		2795	0·510	141·7	272·7	−26·6	0	4	
		2795	0·535	141·3	271·2	−27·6	0	8	
		2795	0·544	140·1	270·2	−27·6	7	19	
		2795	0·548	137·8	269·0	−26·9	0	9	
		2795	0·534	135·2	268·8	−25·2	0	8	
		2795	0·601	138·0	265·9	−29·3	1	7	
		2802	0·547	107·3	261·1	−12·1	0	3	
		2803	0·571	116·6	261·1	−17·5	5	24	163c
		2803	0·623	115·5	257·2	−18·2	0	4	
		2804a	0·619	123·8	259·5	−22·8	0	8	
1893.				°	°	°			
0d·255	AR,JG	2796	0·685	132·0	257·5	−29·9	0	3	
		2796a	0·723	131·7	254·3	−31·2	3	27	106c
I.		2801	0·743	50·6	254·0	+25·5	0	3	
			0·987	67·9	214·8	+21·2			385
			0·934	63·7	228·0	−23·0			278
			0·905	114·9	229·7	−23·9			445
Jan. 1		Centre			(293·3)	(− 3·3)	(110)	(837)	(3521)
1·490	HA,JG		0·973	242·7	353·4	−27·3			377
			0·862	287·9	334·4	+13·6			357
		2792a	0·754	240·7	322·8	−24·0	55	334	291c
		2792c	0·655	236·3	313·5	−24·0	10	86	98c
		2799a	0·233	345·4	280·5	+ 9·6	10	35	
		2799	0·284	354·6	278·6	+13·0	0	4	
		2799	0·208	6·7	275·6	+ 8·5	1	10	
		2800	0·256	174·5	275·5	−18·1	0	2	
		2800b	0·224	172·3	275·2	−16·2	6	35	
		2794	0·145	150·2	272·8	−10·6	0	2	
		2794b	0·201	147·7	270·6	−13·1	0	11	
		2795	0·421	170·8	272·7	−27·9	0	5	
		2795	0·389	168·8	272·2	−25·7	0	12	
		2795	0·409	165·5	270·5	−26·6	0	12	
		2795	0·428	164·7	269·7	−27·7	4	12	
		2803	0·337	136·2	262·9	−17·4	0	7	
		2803	0·367	128·2	259·6	−16·3	2	5	
		2803	0·412	129·9	257·6	−18·5	0	10	
		2804	0·421	140·9	260·4	−22·3	0	4	
		2804a	0·433	142·0	260·2	−23·2	0	7	
		2804	0·469	140·5	258·0	−24·3	0	4	
		2796a	0·564	144·3	254·7	−30·3	0	8	
		2796b	0·578	143·2	253·4	−30·5	0	9	
		2805	0·439	111·7	252·4	−12·4	0	6	
		2806	0·955	65·6	207·5	+22·0	1	15	554p
		2807	0·957	104·8	203·8	−15·1	0	11	250f

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2787, 1892 Dec. 21–1893 Jan. 1. Two regular spots. *a* and *b*, and one or two small spots forming a line nearly perpendicular to the equator. The group has greatly increased in length by Dec. 24. *a* remains unchanged, but *b* has disappeared and fresh spots have appeared, so that the group forms a very long irregular stream inclined at a large angle to the direction of motion. A large regular spot, *c*, *sf* of *a*, has formed by Dec. 27. The intermediate spots diminish on the succeeding days. A third stop *np* of *a* is seen on Jan. 1.

Group 2792, 1892 Dec. 24–1893 Jan. 5. Two large spots, *a* and *b*, on Dec. 24. A third regular spot, *c*, follows on Dec. 25, with numerous outlying spots. *b* becomes irregular in shape on the succeeding days and moves up to *a*, and by Dec. 28 has become a confused nebulous mass attached to the following side of *a*, which is very large and regular. The small spots surrounding *a* seem to become absorbed in it, those surrounding *c* to die out. *a* and *c* alone remain by Jan. 2. One small companion is seen on Jan. 4.

Group 2794, 1892 Dec. 28–1893 Jan. 4. Two small regular spots, *a* and *b*. Two companions are seen on Jan. 1. *a* has disappeared by the succeeding day. *b* alone is left by Jan. 3.

Group 2795, 1892 Dec. 28–1893 Jan. 8. A number of small spots in a scattered irregular group on Dec. 28. The number and position of the members of the group undergo considerable changes on the succeeding days.

Group 2796, 1892 Dec. 29–1893 Jan. 5. A small regular spot, *a*. A second spot, *b*, is seen by Jan. 2, and *a* and *b* are measured as one spot on Jan. 3. Two other companions are seen on Jan. 4.

Group 2799, 1892 Dec. 31–1893 Jan. 8. A scattered group of small spots on Dec. 31. The leading spot, *a*, has increased considerably by the succeeding day. The other spots remain small and irregularly distributed. A small spot, *b*, has appeared *np* of *a* by Jan. 5. *a* alone remains by Jan. 8.

Group 2800, 1892 Dec. 31–1893 Jan. 4. A number of small spots in an irregular group, of which the leader, *a*, is the largest. *b* is the largest spot on Jan 1. *a* has disappeared by Jan. 2, and *b* alone remains.

Group 2801, 1892 Dec. 31–1893 Jan. 1. A group of very small faint spots.

Group 2802, 1893 Jan. 1. A faint irregular spot.

Group 2803, Jan 1–3. Two spots are seen on Jan. 1, a third spot on Jan. 2, one spot only on Jan. 3.

Group 2804, Jan. 1–2. A very small spot, *a*, on Jan. 1. Two very small companions on Jan. 2.

Group 2805, Jan. 2–3 A small spot.

Group 2806, Jan. 2–9. A regular spot.

Group 2807, Jan. 2. A small spot surrounded by faculæ.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of Umbra for each Spot (and for Day).	Spots. Area of Whole for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
1d.490	HA,JG	2808*a*	0·996	71·2	194·0	+18·3	0	95	
			0·837	57·5	226·3	+24·5			113
Jan. 2		Centre			(277·0)	(−3·4)	(89)	(741)	(2040)
2·257	CL, JG		0·946	286·2	336·1	+14·1			203
		2792*a*	0·850	243·9	323·3	−23·8	49	330	
M.		2792*c*	0·762	241·2	313·6	−23·9	15	70	
		2799*a*	0·329	314·7	280·6	+ 9·9	8	31	
		2799	0·276	325·6	276·0	+ 9·6	0	3	
		2800	0·261	211·0	274·9	−16·3	0	6	
		2794*b*	0·184	203·3	271·2	−13·2	0	7	
		2795	0·418	184·3	268·9	−28·0	0	9	
		2795	0·403	188·8	270·8	−26·9	0	3	
		2795	0·339	189·6	270·4	−22·9	0	3	
		2803	0·255	153·5	260·1	−16·6	0	4	
		2796	0·501	156·9	253·7	−30·7	0	18	
		2805	0·279	125·7	253·5	−12·8	0	13	
		2806	0·888	62·9	208·6	+22·0	0	19	234*c*
		2808*a*	0·946	69·9	198·3	+17·7	8	25	
		2808	0·977	69·7	191·3	+19·0	0	83	329*c*
			0·905	105·1	202·3	−15·1			562
Jan. 3		Centre			(266·9)	(−3·5)	(80)	(624)	(1328)
3·195	CL,HA		0·950	284·6	324·8	+12·7			543
			0·909	293·9	316·5	+19·9			403
M.		2792*a*	0·934	246·0	323·0	−23·7	51	331	
		2792	0·919	245·4	320·5	−24·0	0	9	486*c*
		2792*c*	0·868	244·5	313·3	−23·8	13	93	
		2795	0·457	221·4	273·7	−23·4	2	28	
		2795	0·441	221·5	273·1	−22·6	0	5	
		2795	0·474	215·7	272·4	−26·0	0	2	
		2795	0·447	217·3	271·8	−24·2	0	4	
		2795	0·413	216·8	270·1	−22·7	6	25	
		2795	0·460	209·8	269·4	−26·9	0	2	
		2795	0·488	206·8	269·1	−29·2	0	4	
		2795	0·416	213·2	269·0	−23·8	0	6	
		2795	0·473	206·7	268·5	−28·4	2	12	
		2795	0·486	204·9	268·1	−29·5	0	5	
		2795	0·444	205·9	267·1	−26·9	0	6	
		2799*a*	0·487	298·9	280·2	+10·3	9	27	
		2799	0·459	298·6	278·6	+ 9·3	0	3	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of Umbra for each Spot (and for Day).	Spots. Area of Whole for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
3d.195	CL,HA	2799	0·445	297·7	278·0	+ 8·6	0	3	
		2799	0·457	304·9	277·0	+11·8	1	5	
M.		2799	0·415	298·3	276·2	+ 8·0	0	5	
		2799	0·447	307·2	275·9	+12·3	0	4	
		2799	0·446	310·6	274·9	+13·4	0	2	
		2800	0·415	241·0	276·6	−14·9	0	2	
		2800	0·396	235·6	274·4	−16·3	0	3	
		2800	0·402	231·9	273·9	−17·8	0	5	
		2794	0·329	238·9	271·3	−13·2	0	3	
		2796	0·462	178·3	253·1	−31·0	0	2	
		2796	0·477	176·8	252·8	−31·9	2	11	
		2796	0·480	175·2	251·9	−32·0	0	6	
		2796	0·472	173·7	251·1	−31·4	0	3	
		2809	0·106	142·9	250·9	− 8·4	0	19	
		2809	0·118	139·4	250·2	− 8·7	0	3	
		2809	0·140	124·9	248·0	− 8·2	0	15	
		2809	0·130	112·6	247·7	− 6·4	0	2	
		2806	0·789	57·3	208·8	+22·7	10	33	367*c*
		2808	0·859	66·3	198·9	+18·2	0	3	601*c*
		2808*a*	0·868	67·1	197·7	+17·8	13	70	
		2808	0·926	67·8	189·8	+19·0	20	50	
			0·873	59·7	199·1	+24·1			345
			0·903	81·9	190·9	+ 5·7			237
			0·924	73·8	189·0	+13·5			346
Jan. 4		Centre			(254·6)	(−3·6)	(129)	(811)	(3328)
4·187	CL,AR		0·951	291·4	310·8	+19·0			294
			0·937	279·9	310·0	+ 7·9			306
I.			0·923	238·9	307·1	−30·0			258
			0·909	255·7	306·8	−14·5			277
		2792*a*	0·991	246·5	324·4	−23·8	31	415	832*c*
		2792*c*	0·954	245·7	313·7	−24·3	14	83	
		2799*a*	0·663	290·5	280·5	+10·6	11	47	
		2799*b*	0·674	295·0	280·3	+13·6	4	13	
		2799	0·663	296·1	279·2	+14·0	0	16	
		2799	0·644	289·4	279·3	+ 9·4	2	11	327*c*
		2799	0·635	297·8	276·8	+14·2	0	11	
		2799	0·624	299·9	275·4	+15·0	0	5	
		2799	0·617	298·4	275·4	+14·0	0	19	
		2795	0·625	235·6	275·6	−23·7	11	61	
		2795	0·603	235·4	274·0	−23·1	2	16	
		2795	0·605	231·5	273·9	−25·2	5	18	
		2795	0·595	229·7	271·6	−25·8	0	7	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2808, Jan. 2–12. A single spot, *a*, close to the east limb on Jan. 2. A second spot has appeared by the succeeding day. By Jan. 5 there is a stream consisting of four spots, *a*, *b*, and two others, nearly equal in size and some small companions. During the succeeding days *b* grows larger than *a* and approaches it. They are measured as one spot on Jan. 9 and 10. *a* and *b* have died out by Jan. 11, but two other faint spots are seen.
Group 2809, Jan. 4–7. A stream of small spots. Only one spot is seen on Jan. 7.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
4d.187	CL,AR	2795	0·566	228·4	269·3	−25·3	0	12	
		2795	0·552	229·9	268·9	−24·1	13	74	
I.		2795	0·582	223·0	268·2	−28·4	0	4	
		2795	0·572	224·6	268·2	−27·3	0	4	
		2795	0·560	222·7	266·8	−27·6	0	5	
		2796	0·497	198·2	252·0	−31·7	0	16	
		2796	0·488	196·8	251·0	−31·3	0	7	
		2809	0·197	244·9	251·8	− 8·4	3	11	
		2809	0·180	241·4	250·7	− 8·6	3	8	150*c*
		2809	0·169	237·5	249·8	− 8·9	2	4	
		2809	0·158	236·9	249·2	− 8·6	0	2	
		2809	0·143	230·7	247·9	− 8·9	3	13	
		2810	0·343	65·6	223·3	+ 4·6	0	5	
		2810	0·370	60·2	222·7	+ 7·1	3	10	
		2806	0·587	45·5	215·0	+20·9	0	12	
		2806	0·653	47·9	209·9	+22·7	6	38	
		2808*a*	0·755	61·9	197·2	+18·2	11	49	
		2808*b*	0·779	63·2	194·7	+18·0	5	34	
		2808	0·786	64·0	193·8	+17·6	0	3	
		2808	0·807	62·7	192·2	+19·3	9	29	398*c*
		2808	0·834	63·5	189·3	+19·5	5	30	
			0·826	74·8	187·6	+10·3			215
			0·901	63·4	181·4	+22·0			442
Jan. 5		Centre			(241·5)	(−3·7)	(143)	(1092)	(3499)
5·480	CL,JG	2799*b*	0·865	289·0	282·0	+14·3	0	23	
		2799*a*	0·844	285·7	280·3	+11·0	0	23	
		2799	0·833	290·8	278·1	+14·8	0	10	
		2795	0·801	243·0	275·7	−23·8	10	28	
		2795	0·725	239·9	267·9	−24·2	6	21	
		2809	0·476	260·6	252·8	− 7·9	3	18	
		~~2809~~	~~0·471~~	~~260·6~~	~~252·5~~	~~− 7·9~~	~~0~~	~~5~~	
		2809	0·451	259·3	251·1	− 8·3	0	5	
		2811	0·613	318·9	250·7	+23·9	0	5	
		2811	0·593	319·7	249·2	+23·3	0	5	
		2811	0·579	322·1	247·3	+23·5	0	8	
		2806	0·499	27·0	210·5	+22·5	5	25	
		~~2806~~	~~0·498~~	~~27·3~~	~~210·4~~	~~+22·4~~	~~5~~	~~19~~	
		2808*a*	0·575	51·0	196·7	+17·7	8	26	
		2808*b*	0·592	53·1	195·0	+17·3	17	91	
		2808	0·655	53·9	190·6	+19·4	8	74	
		2808	0·667	55·2	189·3	+19·1	3	17	
			0·958	71·3	153·5	+16·6			63
Jan. 6		Centre			(224·6)	(−3·9)	(65) 160	(403) 379	(63)

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
6d.227	CL,JG		0·882	255·4	276·4	−14·7			478
			0·749	252·4	262·4	−15·7			149
I.		2799*b*	0·944	286·6	283·4	+14·3	6	19	
		2799*a*	0·926	283·1	281·0	+10·5	11	36	639*c*
		2799	0·920	286·2	279·6	+13·2	0	27	
		2799	0·917	282·1	279·8	+ 9·4	0	3	
		2795	0·893	244·6	276·8	−24·4	12	54	
		2795	0·843	239·3	269·5	−27·8	0	16	643*c*
		2795	0·823	243·4	268·2	−24·0	1	9	
		2795	0·823	242·4	267·9	−24·8	0	10	
		2811	0·715	310·8	251·1	+24·6	5	13	
		2811	0·703	309·0	251·0	+23·0	2	12	
		2811	0·705	313·4	249·2	+25·6	0	5	
		2811	0·689	312·1	248·6	+24·1	0	9	218*c*
		2811	0·668	312·8	246·9	+23·5	0	8	
		2809	0·630	261·9	253·6	− 8·2	1	5	69*c*
		2812	0·563	306·7	242·6	+16·0	6	14	83*c*
		2812	0·539	311·6	239·6	+17·3	0	8	
		2806	0·455	8·5	210·5	+22·7	5	14	
		2808	0·461	40·1	196·7	+16·7	0	2	
		2808*a*	0·477	38·6	196·5	+18·0	9	25	
		2808*b*	0·488	41·2	195·1	+17·7	16	73	234*c*
		2808	0·556	44·0	190·6	+19·8	20	81	
		2808	0·573	45·7	188·9	+19·9	6	32	
			0·723	52·3	176·4	+23·1			171
			0·907	68·9	152·5	+17·2			158
			0·951	115·2	143·0	−25·2			196
Jan. 7		Centre			(214·7)	(−4·0)	(100)	(475)	(3038)
7·224	CL,JG		0·914	254·0	267·5	−16·3			572
			0·909	287·5	264·6	+14·0			140
I.			0·894	289·3	262·3	+15·2			271
			0·825	230·8	251·8	−34·1			520
		2799*a*	0·990	280·8	282·2	+10·1	0	29	330*nf*
		2795	0·968	245·6	277·1	−24·6	5	31	945*s*
		2795	0·922	245·6	268·1	−24·0	0	6	
		2811	0·828	301·6	251·4	+23·1	4	14	
		2811	0·827	303·1	250·7	+24·2	9	50	352*c*
		2811	0·800	304·7	247·5	+24·2	10	56	
		2812	0·728	296·8	243·9	+16·1	0	9	
		2806	0·467	342·7	210·1	+22·3	0	5	
		2808*a*	0·382	14·0	196·0	+17·6	3	13	116*c*
		2808*b*	0·385	16·3	195·0	+17·5	9	32	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2810, Jan. 5. Two small spots.
Group 2811, Jan. 6–10. Two very small spots on Jan. 6. A stream by the succeeding day. A large regular spot, *a*, has formed by Jan. 9, which is followed by another regular spot, *b*. A third but smaller spot also follows on Jan. 9.
Group 2812, Jan. 7–11. A small faint group *sf* of 2811. Only one spot is visible on Jan. 8, 10, and 11.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
7^{d}·224	CL,JG	2808*b*	0·446	25·5	189·8	+19·6	8	48	} 99*c*
		2808	0·456	28·7	188·1	+19·5	0	5	
I.			0·832	64·3	149·4	+18·6			173
			0·905	106·1	136·8	−16·3			193
			0·905	118·3	138·0	−27·3			367
Jan. 8		Centre			(201·5)	(−4·1)	(48)	(298)	(4078)
8·201	HA,JG		0·949	243·0	259·9	−26·9			369
			0·945	254·5	259·8	−16·0			339
I.			0·919	234·6	253·1	−34·0			390
			0·889	262·5	251·5	− 8·6			323
		2811*a*	0·921	298·0	251·1	+23·7	50	135	} 316*c*
		2811*b*	0·900	299·7	247·6	+24·3	11	40	
		2811	0·892	298·3	246·9	+22·8	4	21	
		2812	0·833	292·5	241·7	+16·0	0	10	} 116*c*
		2812	0·812	293·1	239·5	+15·9	0	4	
		2812	0·804	295·2	238·2	+17·3	10	21	
		2806	0·554	322·2	210·1	+22·0	0	5	
		2808	0·386	342·2	195·8	+17·3	10	39	
		2808	0·422	346·6	194·6	+20·0	0	3	
		2808	0·389	349·6	192·9	+18·2	0	4	
		2808	0·405	357·4	189·8	+19·6	8	39	
			0·877	120·1	129·5	−28·2			652
			0·848	106·2	131·2	−15·5			58
			0·919	57·5	127·9	+27·6			87
Jan. 9		Centre			(188·7)	(−4·2)	(93)	(321)	(2650)
9·496	CL,HA		0·985	262·7	252·0	− 7·9			195
			0·975	236·8	248·9	−33·3			327
			0·912	243·1	236·5	−26·2			268
			0·872	299·3	227·1	+22·8			230
			0·758	301·6	215·0	+20·3			244
		2811*a*	0·992	295·6	251·4	+24·7	0	181	} 293*c*
		2811*b*	0·979	295·5	246·6	+23·8	43	325	
		2812	0·939	291·1	238·7	+18·1	0	8	310*s*
		2808	0·529	312·2	196·3	+16·8	4	12	
		2808	0·549	315·7	195·5	+19·1	0	4	
		2808	0·496	324·1	189·6	+19·5	1	7	
		2813*a*	0·960	97·2	97·7	− 8·1	38	244	
		2814	0·972	74·2	97·1	+14·3	0	35	210*f*
		2815*a*	0·994	7·7	89·2	+ 9·7	30	212	5298*f*
			0·865	127·6	115·9	−34·3			107
an. 10		Centre			(171·7)	(−4·3)	(116)	(1028)	(2713)

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
10^{d}·457	CL,JG		0·888	248·0	221·0	−21·5			95
			0·859	299·2	212·9	+22·2			415
			0·798	305·6	204·4	+24·6			170
		2812	0·986	288·9	237·1	+17·8	0	26	80*c*
		2808	0·683	306·5	194·7	+20·4	0	5	
		2808	0·671	304·7	194·5	+18·9	0	11	
		2816	0·680	311·5	192·5	+23·0	0	4	
		2817	0·432	296·6	181·8	+ 7·1	1	9	
		2813*a*	0·873	97·3	98·1	− 8·5	34	227	} 581*f*
		2813	0·878	102·3	97·6	−12·9	0	5	
		2813	0·882	99·9	97·0	−10·8	0	4	
		2814	0·891	72·3	98·4	+13·6	0	15	386*c*
		2815*a*	0·937	78·3	90·9	+ 9·3	17	124	
Jan. 11		Centre			(159·0)	(−4·4)	(52)	(430)	(1727)
11·196	CL,FT		0·953	247·8	221·9	−22·5			167
			0·926	294·6	213·3	+20·7			235
M.		2808	0·794	299·5	196·5	+19·9	3	8	
		2808	0·772	299·5	194·5	+19·2	0	2	
		2813*a*	0·773	97·2	98·7	− 8·4	38	229	
		2813	0·787	98·5	97·4	− 9·5	0	5	
		2813	0·787	99·9	97·4	−10·6	0	3	
		2814	0·804	69·1	98·8	+13·8	3	8	64*c*
		2815*a*	0·862	75·9	91·5	+ 9·7	23	137	163*nf*
			0·838	100·6	92·4	−11·3			229
			0·956	113·9	76·2	−24·2			60
			0·970	105·0	73·0	−15·6			135
Jan. 12		Centre			(149·3)	(−4·5)	(67)	(392)	(1053)
12·227	HA,JG		0·935	294·9	201·0	+21·3			458
			0·901	103·6	71·3	−14·3			306
M.		2813*a*	0·605	98·1	98·6	− 8·6	29	217	
		2815*a*	0·725	72·1	91·6	+ 8·7	24	136	52*c*
			0·923	64·6	72·4	+21·3			151
Jan. 13		Centre			(135·7)	(−4·6)	(53)	(353)	(967)
13·238	CL,JG		0·961	293·3	193·0	+20·8			675
			0·962	276·0	195·8	+ 4·4			125
I.			0·907	284·0	185·7	+10·6			233
		2813*a*	0·410	100·7	98·4	− 8·7	24	134	} 145*c*
		2813	0·418	97·3	97·8	− 7·3	6	22	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2813, Jan. 10–18. A large composite spot, *a*, whose nucleus is in process of division. Small spots form near its following side, and it rapidly diminishes in size. By Jan. 15 it has become two spots, and it has broken up into a scattered group by the succeeding day.
Group 2814, Jan. 10–12. A very small spot.
Group 2815, Jan. 10–22. A regular spot, *a*. Two small companions are seen on Jan. 18.
Group 2816, Jan. 11. Two very small faint spots measured together.
Group 2817, Jan. 11. A small spot.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
13^{d}·238	CL,JG	2815*a*	0·562	65·0	91·4	+ 9·7	23	130	145*c*
			0·807	105·6	68·9	−15·4			176
I.			0·876	74·9	63·2	+10·8			358
Jan. 14		Centre			(122·4)	(−4·7)	(53)	(286)	(1857)
			0·965	285·2	182·7	+13·3			81
14·200	CL,JG		0·959	296·7	17 ·1	+23·9			151
M.		2813	0·191	108·2	99·3	− 8·1	6	44	
		2813*a*	0·208	112·2	98·6	− 9·2	13	64	
		2813	0·212	101·9	97·8	− 7·2	2	9	
		2815*a*	0·394	52·1	91·5	+ 9·4	24	125	
			0·971	106·5	33·1	−17·2			84
Jan. 15		Centre			(109·8)	(−4·8)	(45)	(242)	(316)
		2813	0·074	223·7	99·3	− 7·9	0	10	
15·213	CL,JG	2813*a*	0·081	209·1	98·7	− 8·9	4	35	
M.		2815*a*	0·257	19·0	91·6	+ 9·1	15	90	
		2818	0·907	107·2	31·2	−17·6	0	25	139*c*
		2819*a*	0·975	102·3	18·7	−13·1	23	232	
		2819	0·990	102·1	14·0	−12·7	25	106	901*c*
		2819	0·991	103·8	13·4	−14·3	0	148	
			0·943	117·5	26·1	−27·5			398
Jan. 16		Centre			(96·4)	(−4·9)	(67)	(646)	(1438)
			0·962	256·3	154·5	−14·5			70
16·470	HA,JG	2813	0·346	256·2	99·6	− 9·5	0	11	
M.		2813	0·343	255·9	99·4	− 9·5	0	10	
		2813	0·316	263·9	98·2	− 6·7	0	4	
		2813	0·311	255·9	97·5	− 9·1	0	10	
		2815*a*	0·319	318·5	92·1	+ 8·9	18	108	
		2818	0·738	109·7	33·1	−17·8	2	10	
		2818	0·746	108·9	32·3	−17·3	0	7	
		2819*a*	0·864	103·0	20·0	−13·7	13	91	
		2819	0·878	102·1	18·3	−13·4	0	4	
		2819	0·897	101·5	15·8	−12·5	23	67	1011*c*
		2819	0·897	103·4	15·8	−14·3	0	5	
		2819	0·923	100·0	12·1	−11·1	0	57	
		2819	0·926	102·7	11·7	−13·6	54	299	
		2819	0·930	105·3	11·1	−16·1	0	23	
			0·891	117·8	17·9	−26·9			336
Jan. 17		Centre			(79·8)	(−5·0)	(110)	(706)	(1417)
1893.									
17^{d}·172	M,HA		0·877	240·0	130·3	−28·6			450
		2813	0·495	262·7	100·2	− 8·0	3	14	
I.		2813	0·493	259·3	99·9	− 9·7	0	11	
		2813	0·468	263·9	98·5	− 7·4	3	18	
		2815	0·465	306·3	93·0	+11·2	0	3	
		2815*a*	0·436	301·9	92·5	+ 8·6	31	127	126*c*
		2815	0·413	304·9	90·6	+ 8·8	0	3	
		2820	0·274	139·3	59·9	−17·0	0	4	
		2820	0·280	142·3	57·4	−14·8	2	5	
		2818	0·622	112·7	33·7	−17·9	4	10	
		2819	0·778	101·6	19·6	−12·2	0	13	
		2819*a*	0·779	103·4	19·6	−13·6	17	118	926*c*
		2819	0·821	102·0	15·4	−12·8	35	199	
		2819	0·858	100·0	11·3	−11·2	34	164	
		2819	0·866	103·3	10·5	−14·1	61	488	
		2821	0·927	104·9	2·4	−15·7	0	8	358*f*
		2822*a*	0·938	97·8	0·6	− 9·1	0	21	
		2822*b*	0·965	98·4	355·4	− 9·4	0	144	253*c*
			0·802	122·5	20·3	−28·8			418
			0·929	115·0	2·5	−25·0			260
Jan. 18		Centre			(70·6)	(−5·1)	(190)	(1350)	(2791)
			0·937	246·5	126·9	−23·8			61
18·181	HA,JG	2815*a*	0·620	290·8	93·1	+ 8·8	24	105	177*c*
I.		2820	0·222	198·8	61·6	−17·2	0	4	
		2820	0·207	198·0	61·1	−16·5	0	4	
		2817	0·444	120·8	33·8	−17·9	0	8	
		2817	0·468	117·7	31·7	−17·2	0	7	
		2819*a*	0·618	105·9	19·7	−13·8	23	92	
		2819	0·651	104·2	17·1	−13·1	11	34	
		2819	0·660	102·0	16·2	−11·8	0	7	
		2819	0·675	104·7	15·2	−13·7	33	148	
		2819	0·679	101·0	14·6	−11·3	9	39	939*c*
		2819	0·692	98·9	13·5	− 9·9	5	41	
		2819	0·710	101·2	12·2	−11·6	32	217	
		2819	0·739	105·5	10·0	−14·9	89	502	
		2819	0·747	101·2	9·0	−11·8	4	18	
		2822*a*	0·824	97·8	1·7	− 9·4	18	94	
		2822	0·860	98·8	357·8	−10·3	0	12	254*c*
		2822*b*	0·880	97·9	355·4	− 9·4	74	223	
			0·751	131·7	15·0	−33·8			105
			0·834	107·6	1·1	−17·5			198
			0·910	119·0	352·6	−28·5			319
Jan. 19		Centre			(57·3)	(−5·2)	(322)	(1555)	(2053)

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The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2818, Jan. 16–20. A faint group. Two spots are seen on Jan. 17.
Group 2819, Jan. 16–27. A very large group of irregular spots. The preceding spot, *a*, is fairly regular and persists from Jan. 16 to Jan. 20. It has completely broken up into a stream of small spots by the succeeding day, but another large spot, *b*, leads. The following spots undergo continual changes and break up into small spots which diminish.
Group 2820, Jan. 18–23. A faint group of scattered spots.
Group 2821, Jan. 18. A very small spot in a large mass of faculæ.
Group 2822, Jan. 18–27. Two spots, *a* and *b*, with a small intermediate spot. *a* has a large proper motion in longitude. It has broken up by Jan. 23 and has disappeared by Jan. 24.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
19^{d}·193	HA,JG		0·918	236·5	109·2	−32·8			241
			0·790	293·2	92·3	+14·6			182
I.			0·795	263·6	83·1	− 8·3			560
		2815*a*	0·773	285·5	92·6	+ 8·4	25	102	167*c*
		2820	0·382	236·9	63·4	−17·0	0	3	
		2820	0·359	235·7	61·9	−16·7	0	1	
		2820	0·355	230·9	60·7	−18·4	0	2	
		2818	0·278	141·3	33·4	−17·8	5	23	
		2819*a*	0·432	110·6	19·4	−13·5	24	100	
		2819	0·477	108·7	16·3	−13·5	18	65	
		2819	0·482	104·2	15·5	−11·4	23	97	
		2819	0·512	107·3	13·9	−13·3	32	134	
		2819	0·512	102·7	13·4	−11·0	15	139	
		2819	0·547	112·4	12·2	−16·5	5	14	
		2819	0·549	102·6	10·9	−11·3	45	196	546*c*
		2819	0·585	113·6	9·8	−17·9	0	14	
		2819	0·573	106·9	9·6	−14·0	49	155	
		2819	0·579	110·0	9·6	−15·7	52	225	
		2819	0·573	98·4	9·0	− 9·2	0	5	
		2819	0·584	102·9	8·5	−11·8	7	31	
		2819	0·609	108·9	7·3	−15·6	0	11	
		2822*a*	0·657	97·5	2·8	− 8·9	24	99	113*c*
		2822	0·746	95·9	355·6	− 7·9	2	11	200*c*
		2822*b*	0·757	97·6	354·6	− 9·2	48	166	
			0·752	109·5	355·9	−18·1			275
			0·863	120·1	346·0	−28·5			373
Jan. 20		Centre			(43·9)	(−5·3)	(374)	(1593)	(2657)
20·485	CL,HA	2815*a*	0·925	282·5	93·0	+ 9·4	17	107	311*n*
		2820	0·701	250·0	70·6	−17·8	0	8	
		2820	0·596	249·5	62·4	−16·4	0	17	
		2820	0·567	246·1	59·8	−17·8	0	10	
		2819	0·173	139·9	20·5	−12·9	4	30	
		2819	0·190	129·8	18·4	−12·3	1	5	
		2819*b*	0·207	123·2	16·9	−11·8	33	305	
		2819	0·239	131·0	16·3	−14·3	0	12	
		2819	0·235	123·8	15·5	−12·8	14	114	
		2819	0·238	113·3	14·2	−10·6	13	176	
		2819	0·289	129·4	13·6	−15·8	0	18	
		2819	0·264	114·2	12·8	−11·4	0	45	
		2819	0·264	111·4	12·6	−10·8	1	16	
		2819	0·294	124·9	12·6	−14·9	0	10	
		2819	0·290	111·6	11·1	−11·3	33	194	
1893.				°	°	°			
20^{d}·485	CL,HA	2819	0·332	127·0	11·0	−16·7	3	19	
		2819	0·319	122·7	10·9	−15·1	26	129	
		2819	0·317	117·6	10·3	−13·6	14	109	
		2819	0·328	109·2	8·7	−11·3	0	21	
		2819	0·375	117·1	6·9	−14·8	0	5	
		2822	0·366	103·0	5·9	− 9·8	0	6	
		2822*a*	0·391	98·5	4·1	− 8·3	11	69	
		2822*b*	0·519	98·2	355·8	− 8·9	21	175	110*c*
		2823*a*	0·754	64·2	342·4	+15·3	0	9	
		2823*b*	0·759	65·5	341·7	+14·5	8	37	
		2823*c*	0·810	66·4	336·8	+15·5	0	26	
Jan. 21		Centre			(27·0)	(−5·4)	(199)	(1672)	(421)
21·229	CL,HA		0·906	257·5	82·4	−13·7			400
			0·850	283·9	73·5	+ 8·8			192
I.			0·841	68·7	323·2	+14·5			260
		2815*a*	0·980	280·4	94·3	+ 9·0	26	116	381*nf*
		2820	0·817	251·7	71·6	−18·1	6	16	
		2820	0·734	252·5	63·8	−16·5	4	23	259*c*
		2820	0·691	250·3	59·9	−17·5	1	9	
		2824	0·419	214·2	32·2	−25·5	1	5	
		2819	0·105	216·0	20·7	−10·3	0	12	
		2819	0·139	205·1	20·6	−12·7	2	12	
		2819	0·115	201·9	19·6	−11·6	0	3	
		2819	0·135	196·0	19·3	−13·0	0	4	
		2819	0·086	191·8	18·1	−10·3	0	8	
		2819	0·190	178·3	16·8	−16·4	6	15	
		2819	0·075	174·3	16·7	− 9·8	0	1	
		2819	0·159	174·9	16·3	−14·6	0	6	
		2819*b*	0·112	174·2	16·4	−11·9	66	515	
		2819	0·215	173·6	15·7	−17·8	1	6	
		2819	0·178	162·3	13·9	−15·2	0	15	
		2819	0·100	143·7	13·7	−10·1	12	66	
		2819	0·135	143·5	12·4	−11·7	4	53	
		2819	0·171	152·0	12·4	−14·1	0	3	
		2819	0·184	154·5	12·4	−15·0	0	4	
		2819	0·222	154·3	11·6	−16·9	4	15	
		2819	0·174	144·0	11·1	−13·5	11	29	
		2819	0·142	130·9	10·9	−10·8	31	140	
		2819	0·194	146·8	10·8	−14·8	12	91	
		2819	0·215	145·8	9·9	−15·7	2	6	
		2819	0·181	133·9	9·5	−12·6	9	138	
		2819	0·196	124·3	7·6	−11·7	0	10	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2823, Jan. 21–29. Three spots, *a*, *b*, *c*, forming a stream with small companions till Jan. 23. By Jan. 24 the spots following *a* have broken up to form a long curved stream. These diminish, and *a* alone is seen on Jan. 28 and 29.
Group 2824, Jan. 22–26. A faint group, not visible on Jan. 23. Three spots are seen on Jan. 24, and two spots on the succeeding days.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
21d·229	CL,HA	2819	0·193	111·7	6·7	− 9·5	0	3	
		2819	0·209	118·4	6·3	−11·1	0	2	
I.		2822*a*	0·219	102·1	4·7	− 8·0	14	52	
		2822	0·292	101·3	0·3	− 8·6	0	3	
		2822*b*	0·369	100·0	355·6	− 8·8	28	165	
		2823*a*	0·643	58·9	342·5	+14·8	13	39	
		2823*b*	0·672	60·9	339·9	+14·7	3	8	
		2823	0·698	57·8	339·0	+17·5	1	7	141*c*
		2823	0·685	62·0	338·6	+14·4	0	6	
		2823*c*	0·717	61·9	336·2	+15·6	26	104	
			0·892	113·2	314·2	−23·1			1094
Jan. 22		Centre			(17·1)	(−5·5)	(283)	(1710)	(2727)
22·224	FT,M	2820	0·892	255·2	67·4	−15·7	1	10	
		2820	0·869	254·5	64·5	−16·2	1	10	
M.		2820	0·854	253·4	62·6	−17·0	5	16	
		2819	0·306	233·3	18·7	−15·8	0	6	
		2819	0·294	231·3	17·7	−15·9	0	8	
		2819*b*	0·253	241·8	17·1	−12·2	36	400	
		2819	0·301	223·3	16·5	−17·9	0	15	
		2819	0·188	229·4	12·4	−12·4	4	17	
		2819	0·244	213·9	12·2	−17·1	0	5	
		2819	0·155	114·5	12·2	− 9·2	15	109	
		2819	0·048	196·0	11·6	− 8·2	0	5	
		2819	0·155	232·8	11·2	−10·8	20	78	
		2819	0·187	216·9	10·6	−14·0	13	120	
		2822	0·050	202·5	5·1	− 8·2	0	7	
		2822	0·052	185·3	4·3	− 8·5	0	3	
		2822	0·052	175·2	3·7	− 8·4	0	2	
		2822*b*	0·157	116·0	355·8	− 9·4	18	114	
		2823*a*	0·478	45·1	343·6	+14·5	4	34	
		2823*b*	0·501	47·3	341·7	+14·7	6	30	
		2823*c*	0·583	53·5	335·0	+15·4	18	107	
			0·872	118·9	304·7	−27·7			564
			0·950	75·3	294·2	+12·1			277
Jan. 23		Centre			(4·0)	(−5·5)	(141)	(1096)	(841)
23·202	CL,FT		0·959	253·5	63·8	−17·4			365
			0·951	285·1	59·5	+12·4			335
M.		2824*a*	0·723	240·1	33·2	−25·2	0	3	
1893.				°	°	°			
23d·202	CL,FT	2824	0·712	239·9	32·3	−25·0	3	8	26
		2824*b*	0·678	238·7	29·1	−24·9	3	6	
		2819	0·512	249·6	19·3	−15·1	0	5	
		2819*b*	0·502	253·5	19·1	−13·1	25	152	
		2819	0·502	247·1	18·3	−16·2	0	3	
		2819	0·490	244·1	17·0	−17·3	0	2	
		2819	0·467	255·2	17·0	−11·8	9	108	
		2819	0·418	255·7	13·9	−11·0	0	5	
		2819	0·405	256·8	13·1	−10·4	3	13	
		2819	0·409	248·8	12·6	−13·7	0	4	
		2819	0·396	251·2	12·1	−12·5	10	64	
		2819	0·387	247·9	11·1	−13·5	6	12	
		2819	0·374	254·6	11·0	−10·9	16	59	
		2819	0·356	260·2	10·3	− 8·7	0	3	
		2819	0·379	244·7	10·2	−14·5	11	53	
		2819	0·361	247·0	9·5	−13·4	5	43	
		2822*b*	0·136	242·3	356·6	− 9·2	15	103	
		2822	0·130	250·6	356·7	− 8·1	0	3	
		2822	0·117	239·0	355·4	− 9·0	1	4	
		2823	0·336	12·2	345·4	+13·5	13	33	
		2823*a*	0·352	17·5	343·4	+14·0	22	93	
		2823	0·360	21·0	342 0	+14·0	2	6	
		2823	0·366	27·6	339·6	+13·3	0	2	
		2823	0·399	25·2	339·5	+15·6	1	2	
		2823	0·376	29·3	338·7	+13·6	3	8	
		2823	0·403	28·2	338·3	+15·3	10	28	
		2823	0·416	30·8	336·9	+15·4	3	7	
		2823	0·423	32·2	336·1	+15·4	2	7	
		2823	0·416	33·8	335·8	+14·7	2	16	
		2823	0·420	36·0	334·0	+14·4	10	36	
		2825	0·551	111·2	317·4	−16·2	1	7	
		2825	0·598	111·2	314·1	−17·0	0	9	
		2826	0·954	107·6	276·4	−18·5	19	108	
		2826	0·970	112·3	272·8	−23·0	0	8	
		2826	0·971	111·0	272·5	−21·7	8	15	773*c*
		2826	0·976	108·1	271·2	−18·9	16	65	
		2826	0·980	111·4	269·9	−22·1	0	40	
		2826	0·991	111·4	265·7	−22·0	0	115	
		2827	0·996	101·4	263·6	−11·8	0	55	98*c*
			0·923	70·8	285·1	+15·3			457
			0·927	100·8	281·2	−12·1			312
			0·964	115·1	274·3	−25·7			219
Jan. 24		Centre			(349·6)	(−5·6)	(219)	(1313)	(2820)

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2825, Jan. 24–Feb. 2. A faint group of scattered small spots on Jan. 24. The group has greatly increased by the succeeding day, when three irregular spots, *a*, *b*, *c*, with small companions are seen. A large spot, *d*, is seen preceding the group by Jan. 26, and *a* has disappeared by the succeeding day. The group forms a lengthening stream, the following spots diminishing. A small spot, *e*, has appeared *sf* of *d* by Jan 31. This has become very large by Feb. 1, and is seen alone near the west limb by Feb. 2.

Group 2826, Jan. 24–Feb. 6. A stream of irregular spots distributed over a considerable space in latitude, as well as in longitude. The principal spot, *a*, is the last of the stream on Jan. 25 but is not recognised after Feb. 3. The preceding spots have coalesced to form a very large composite spot, *b*, by Jan. 27. The entire group has disappeared at the west limb by Feb. 6, with the exception of the last spot, *c*.

Group 2827, Jan. 24–27. A regular spot which diminishes rapidly in size.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued*.

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
24d·266	M, HA	2824	0·857	243·5	35·2	−25·6	6	34	539*c*
		2824	0·796	242·2	28·2	−25·3	11	39	
I.		2819	0·691	260·9	20·9	−10·4	1	14	
		2819*b*	0·667	257·3	18·9	−12·7	69	306	
		2819	0·644	255·5	16·9	−13·7	0	4	
		2819	0·604	259·7	14·2	−10·7	1	12	
		2819	0·587	255·7	12·8	−13·0	0	13	
		2819	0·579	254·1	12·0	−13·8	6	19	
		2819	0·563	257·5	11·2	−11·7	6	25	
		2819	0·555	262·7	10·9	− 8·8	0	6	
		2819	0·540	260·2	9·8	−10·1	0	2	
		2819	0·548	252·2	9·7	−14·4	6	69	
		2819	0·524	247·4	7·4	−16·6	0	11	
		2819	0·501	242·6	5·0	−18·4	0	6	
		2819	0·505	240·3	4·8	−19·5	0	6	
		2822*b*	0·340	258·7	356·9	− 9·2	17	90	
		2823*a*	0·362	337·6	345·3	+13·8	30	124	
		2823	0·359	343·1	343·4	+14·3	2	12	
		2823	0·326	354·9	342·2	+12·6	2	14	
		2823	0·334	349·4	340·8	+13·4	3	11	
		2823	0·363	352·2	340·1	+15·3	0	6	
		2823	0·364	356·3	338·6	+15·5	0	4	
		2823	0·345	357·5	338·1	+14·4	5	22	
		2823	0·368	0·3	337·1	+15·9	7	50	
		2823	0·346	5·3	335·3	+14·4	5	48	
		2825*a*	0·405	121·2	316·0	−17·4	23	88	
		2825*b*	0·432	116·0	313·5	−16·2	7	30	
		2825*c*	0·445	118·8	313·2	−17·5	7	37	
		2828	0·852	101·4	278·5	−12·7	5	18	258*p*
		2826	0·880	108·0	275·5	−18·6	26	134	
		2826	0·904	111·1	272·4	−21·5	3	23	
		2826	0·915	109·8	270·8	−20·4	3	21	
		2826	0·915	107·9	270·7	−18·6	18	126	
		2826	0·921	111·7	269·9	−22·2	33	299	835*c*
		2826	0·936	113·3	267·5	−23·8	0	40	
		2826*a*	0·954	111·6	264·1	−22·3	55	394	
		2827	0·957	100·5	263·5	−11·7	10	51	212*s*
			0·849	66·8	283·0	+16·2			643
Jan. 25		Centre			(337·2)	(− 5·7)	(367)	(2208)	(2487)
25·209	CL,HA		0·929	253·3	33·5	−17·6			322
			0·841	248·5	21·5	−21·2			222
I.			0·861	299·2	18·4	+21·4			225
1893.									
25d·209	CL,HA	2824	0·944	245·2	35·8	−25·3	6	24	351*c*
		2824	0·896	245·0	28·0	−24·9	14	69	
I.		2819	0·837	252·9	21·5	−17·5	0	12	
		2819	0·833	254·1	21·1	−16·5	2	22	
		2819*b*	0·821	258·8	20·1	−12·5	56	271	728*c*
		2819	0·815	252·4	19·1	−17·7	2	7	
		2819	0·749	255·5	13·0	−14·7	0	19	
		2819	0·739	256·8	12·3	−13·6	2	15	
		2819	0·719	258·9	10·7	−12·0	0	9	
		2819	0·721	255·6	10·6	−14·4	0	11	
		2819	0·707	253·9	9·3	−15·5	0	3	316*c*
		2819	0·686	255·1	7·7	−14·4	0	7	
		2819	0·685	251·9	7·3	−16·6	0	10	
		2822*b*	0·540	261·7	357·3	− 9·3	10	46	107*c*
		2823*a*	0·485	312·5	346·2	+13·7	23	96	
		2823	0·455	319·8	342·3	+14·7	2	17	153*c*
		2823	0·427	318·8	341·4	+13·1	1	6	
		2823	0·436	325·3	339·5	+15·3	0	5	
		2823	0·408	327·0	337·9	+14·3	0	8	
		2823	0·419	330·6	337·0	+15·7	5	39	
		2823	0·393	331·2	335·9	+14·4	5	39	
		2825*d*	0·207	148·1	318·2	−15·9	23	107	
		2825	0·236	141·6	316·0	−16·3	2	22	
		2825*a*	0·241	146·1	316·6	−17·2	6	25	
		2825	0·279	141·8	314·3	−18·3	2	8	208*c*
		2825	0·267	139·2	314·2	−17·3	0	18	
		2825*b*	0·255	134·6	313·9	−16·0	6	17	
		2825*c*	0·298	137·1	312·4	−18·2	17	92	
		2829*a*	0·738	60·2	282·8	+17·2	59	286	
		2829	0·741	63·0	281·6	+15·4	0	4	
		2829	0·752	66·4	279·8	+13·4	0	6	
		2829	0·768	63·6	279·2	+15·9	·2	11	
		2829*b*	0·777	62·0	278·9	+17·3	20	49	484*c*
		2829	0·793	63·2	277·1	+17·0	4	30	
		2828	0·707	102·1	279·8	−12·7	2	8	
		2826	0·770	109·6	274·9	−18·7	32	135	
		2826	0·806	108·7	271·3	−18·4	10	66	
		2826	0·817	113·0	270·7	−22·1	104	630	965*c*
		2826	0·849	111·7	267·0	−21·5	3	13	
		2826*a*	0·876	112·7	263·8	−22·7	52	388	
		2827	0·867	100·1	264·3	−11·7	5	31	650*f*
		2830*a*	0·979	73·8	248·7	+14·5	0	57	
		2831*a*	0·997	62·5	242·9	+26·7	0	65	
Jan. 26		Centre			(324·7)	(− 5·8)	(477)	(2803)	(4731)

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2828, Jan. 25–27. A small spot preceding Group 2827.
Group 2829, Jan. 26–Feb. 4. A large spot, *a*, on Jan. 26, followed by a stream of smaller spots, of which *b*, the last but one, is the principal. A second stream parallel to the first has appeared to the north of it by Jan. 28, but has disappeared again by Feb. 2. *b* has died out by Feb. 3, and *a* alone remains by Feb. 4.
Group 2830, Jan. 26–Feb. 6. A regular spot, *a*, with occasionally one or two small companions. The nucleus of *a* has commenced to divide by Feb. 1, and by the succeeding day it has become two distinct spots. The group undergoes still further division, and has formed a stream inclined to the equator at a very obtuse angle by Feb. 4. The leader, *a*, alone remains on the succeeding days.
Group 2831, Jan. 26–Feb. 6. A regular spot, *a*, with small companions on Jan. 30 and 31.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
26d·230	CL,JG		0·933	241·5	19·9	−28·5			323
			0·866	230·9	7·8	−36·4			265
I.		2819	0·947	254·1	23·2	−16·9	0	67	
		2819*b*	0·935	258·5	21·0	−12·8	43	262	
		2819	0·925	252·9	19·4	−18·0	11	86	1756*c*
		2819	0·849	258·4	9·6	−13·0	0	6	
		2819	0·840	257·3	8·6	−13·8	0	10	
		2822*b*	0·723	262·3	357·7	− 9·6	7	30	128*c*
		2823	0·661	300·5	347·3	+14·8	0	5	137*c*
		2823*a*	0·648	298·7	346·9	+13·2	17	90	
		2823	0·568	306·9	339·2	+14·7	0	12	
		2823	0·537	309·3	336·6	+14·5	4	39	
		2825	0·254	223·0	321·7	−16·5	0	6	
		2825*d*	0·231	221·3	320·4	−15·8	19	135	
		2825	0·213	217·0	318·9	−15·7	0	7	
		2825	0·222	209·4	317·8	−17·0	4	19	
		2825	0·204	209·2	317·2	−16·1	5	15	
		2825*b*	0·182	197·0	314·5	−15·8	0	22	
		2825	0·231	190·8	313·9	−19·0	0	8	
		2825*c*	0·223	185·4	312·6	−18·7	16	116	
		2829*a*	0·582	48·9	284·1	+17·2	77	284	
		2829	0·614	55·5	279·8	+15·3	1	9	
		2829	0·628	53·0	279·8	+17·2	8	16	660*c*
		2829*b*	0·649	55·2	277·6	+16·8	25	151	
		2828	0·527	104·7	279·9	−12·7	0	9	
		2826	0·577	116·1	278·1	−19·6	5	20	
		2826*b*	0·643	116·4	273·3	−21·2	129	703	
		2826	0·698	117·8	269·2	−23·4	0	4	
		2826	0·720	117·4	267·2	−23·7	9	52	1140*c*
		2826	0·719	114·3	266·8	−21·4	0	9	
		2826*a*	0·757	115·7	263·6	−23·2	56	293	
		2827	0·726	100·7	264·7	−11·8	0	12	550*f*
		2830	0·903	70·8	249·7	+14·5	0	22	
		2830*a*	0·917	71·5	247·6	+14·4	13	84	743*n*
		2830	0·921	70·3	247·3	+15·6	0	12	
		2831*a*	0·943	60·5	246·4	+25·2	32	156	128*c*
			0·937	119·8	241·9	−29·9			364
Jan. 27		Centre			(311·3)	(−5·9)	(481)	(2771)	(6194)
27·500	M,JG		0·940	257·9	5·2	−13·4			821
			0·866	229·6	350·6	−37·5			86
			0·817	240·9	347·7	−27·0			153
		2823*a*	0·826	291·0	346·9	+13·7	14	104	254*c*
		2825*d*	0·480	249·5	322·2	−14·9	16	97	
1893.				°	°	°			
27d·500	M,JG	2825	0·465	248·2	321·1	−15·2	0	4	
		2825	0·438	246·8	319·2	−15·3	0	10	
		2825*b*	0·376	241·3	314·6	−15·9	1	9	
		2825	0·382	237·2	314·2	−17·5	0	13	
		2825*c*	0·361	230·3	311·6	−18·9	0	55	
		2829*a*	0·428	23·7	284·3	+17·2	43	258	
		2829	0·507	25·5	281·1	+21·4	6	40	
		2829	0·461	34·0	279·0	+16·7	0	8	
		2829	0·538	29·6	278·0	+22·1	12	43	
		2829*b*	0·484	37·7	276·7	+16·8	26	182	
		2826*b*	0·434	129·3	273·5	−21·4	78	767	
		2826	0·506	129·9	269·5	−24·3	0	6	
		2826	0·535	125·9	266·5	−23·5	0	9	
		2826*a*	0·576	122·6	262·9	−23·1	41	344	
		2830*a*	0·762	66·4	248·8	+13·7	9	93	549*c*
		2831*a*	0·834	54·6	246·2	+25·0	18	182	
		2832	0·825	118·6	240·6	−26·8	2	30	448*c*
		2832	0·859	121·0	237·0	−29·5	0	16	
			0·957	63·9	226·0	+22·8			174
			0·963	111·5	219·3	−22·3			306
Jan. 28		Centre			(294·6)	(−5·9)	(266)	(2270)	(2791)
28·330	CL,JG		0·945	258·3	355·1	−13·0			307
			0·876	240·3	343·6	−28·8			198
I.		2823*a*	0·915	287·6	347·1	+13·4	9	22	799*nf*
		2825*d*	0·642	253·8	323·1	−15·0	18	112	
		2825	0·596	252·1	319·5	−15·4	0	7	
		2825	0·599	249·7	319·4	−16·9	0	8	
		2825	0·568	250·0	317·2	−16·2	2	20	203*c*
		2825	0·538	246·4	314·6	−17·5	6	31	
		2825*c*	0·505	242·2	311·6	−18·9	18	66	
		2829*a*	0·393	357·5	284·6	+17·0	61	248	
		2829	0·489	0·2	283·5	+23·1	10	51	
		2829	0·463	3·1	282·1	+21·4	7	41	
		2829	0·402	11·4	278·9	+17·1	0	8	292*c*
		2829	0·490	10·3	278·2	+22·7	5	56	
		2829*b*	0·405	15·7	277·1	+16·9	26	115	
		2826*b*	0·319	151·9	274·3	−22·2	83	532	
		2826	0·277	144·8	273·9	−19·0	26	192	
		2826	0·329	142·4	271·2	−20·9	6	62	
		2826	0·353	144·6	270·9	−22·5	0	8	
		2826	0·378	143·1	269·4	−23·3	0	5	486*c*
		2826	0·364	137·6	268·4	−21·3	0	4	
		2826	0·379	139·9	268·3	−22·6	0	8	
		2826*a*	0·439	132·7	263·2	−22·9	55	264	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2832, Jan. 28·30. An irregular group of very small spots.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
28d·330	CL,JG	2830*a*	0·641	59·6	249·0	+14·0	19	72	188*c*
		2831*a*	0·743	48·2	246·1	+24·9	29	186	184*c*
I.		2832	0·771	125·1	236·7	−30·5	5	9	258*c*
			0·753	58·3	241·2	+18·9			288
			0·864	60·0	229·9	+22·1			84
			0·908	109·6	218·1	−20·3			278
			0·946	64·5	217·0	+21·7			244
Jan. 29		Centre			(283·6)	(−6·0)	(385)	(2127)	(3809)
			0·949	241·9	343·1	−28·6			235
29·298	CL,JG		0·935	288·1	337·4	+14·5			648
I.		2825*d*	0·800	255·9	324·2	−14·9	20	88	
		2825	0·771	255·0	321·4	−15·4	0	8	
		2825	0·739	253·4	318·4	−16·3	0	17	600*s*
		2825	0·710	251·2	315·7	−17·6	4	18	
		2825*c*	0·670	248·4	312·0	−18·9	11	57	
		2829*a*	0·447	328·8	284·9	+16·5	53	289	
		2829	0·500	334·9	284·1	+20·9	0	8	
		2829	0·493	338·0	282·4	+21·1	0	3	
		2829	0·409	341·1	278·9	+16·6	1	9	
		2829	0·492	347·0	277·8	+22·5	14	81	
		2829*b*	0·395	345·0	277·1	+16·3	20	122	
		2826	0·234	196·4	275·0	−19·0	30	105	
		2826*b*	0·291	191·7	274·7	−22·6	105	576	
		2826	0·235	187·6	272·9	−19·5	5	31	
		2826	0·258	181·9	271·5	−21·0	2	27	
		2826	0·287	179·8	270·9	−22·7	3	16	
		2826	0·288	169·6	267·8	−22·5	0	11	
		2826	0·300	162·1	265·3	−22·6	3	25	
		2826*a*	0·321	156·8	263·1	−23·2	51	255	
		2834	0·124	146·6	267·0	−12·0	1	7	
		2834	0·157	146·7	266·0	−12·0	0	4	
		2833	0·277	33·8	262·1	+ 7·2	1	2	
		2833	0·313	40·9	259·1	+ 7·6	0	7	
		2830	0·465	51·2	249·4	+11·2	0	6	119*c*
		2830*a*	0·492	46·8	249·4	+13·9	23	97	
		2831*a*	0·629	37·1	246·5	+24·5	23	123	
		2831	0·630	39·9	245·0	+23·3	0	1	159*c*
		2831	0·627	41·9	244·2	+22·3	0	3	
		2832	0·653	131·9	236·6	−30·9	0	11	
			0·891	59·9	214·2	+23·2			320
			0·854	112·3	212·7	−22·2			275
			0·962	107·0	196·0	−17·9			73
Jan. 30		Centre			(271·0)	(−6·1)	(370)	(2007)	(2429)
1893.									
30d·289	CL,JG		0·715	238·7	300·7	−26·3			191
		2825*d*	0·914	256·7	324·5	−14·7	17	86	
I.		2825	0·895	255·5	321·8	−15·7	10	37	
		2825	0·869	254·7	318·5	−16·3	0	21	960*c*
		2825	0·845	253·3	315·7	−17·4	0	17	
		2825*c*	0·811	251·8	311·9	−18·3	8	33	
		2825*e*	0·784	248·4	308·9	−20·6	0	15	
		2829	0·617	316·3	285·0	+21·0	0	3	
		2829*a*	0·575	311·3	284·6	+16·8	62	249	
		2829	0·538	317·1	280·4	+17·5	5	30	429*c*
		2829	0·572	327·0	277·6	+22·8	3	25	
		2829*b*	0·495	320·1	277·2	+16·5	20	98	
		2326*b*	0·386	223·4	274·5	−22·1	114	527	
		2826	0·327	225·4	272·1	−19·2	0	9	
		2826	0·336	220·6	271·4	−20·7	0	18	310*b*
		2826	0·349	215·7	270·6	−22·4	0	10	
		2826	0·357	211·8	269·7	−23·5	14	83	
		2826	0·337	205·4	266·9	−23·7	0	18	
		2826	0·321	206·2	266·7	−22·7	0	9	
		2826	0·283	209·8	266·5	−20·2	0	3	190*c*
		2826	0·310	203·5	265·6	−22·5	0	20	
		2826	0·276	204·7	264·9	−20·5	0	15	
		2826*a*	0·298	196·2	263·1	−22·7	39	184	
		2834*a*	0·113	150·7	254·7	−11·8	4	16	
		2834*	0·126	140·8	253·3	−11·7	0	2	
		2834**b*	0·167	140·7	251·7	−13·5	8	26	
		2830*a*	0·374	21·3	249·9	+14·3	28	67	
		2831*a*	0·545	19·5	246·4	+24·8	17	114	160*c*
		2831	0·542	22·5	244·8	+24·0	0	11	
		2831	0·535	24·7	243·9	+23·0	0	9	
			0·793	55·6	213·1	+[illegible]·3			248
			0·757	115·2	210·0	−23·0			147
			0·900	68·6	197·3	+16·2			176
			0·876	106·9	196·5	−17·8			50
Jan. 31		Centre			(257·9)	(−6·1)	(349)	(1755)	(2861)
31·278	M,JG		0·959	240·6	319·2	−24·2			353
			0·839	237·6	299·8	−30·3			663
I.		2825*d*	0·982	256·0	324·9	−14·9	17	121	
		2825	0·966	255·9	320·7	−15·2	0	20	828*c*
		2825	0·951	254·5	317·6	−16·6	0	21	
		2825*e*	0·903	249·4	309·6	−21·2	40	186	
		2825	0·887	250·9	307·5	−19·8	0	31	299*c*
		2825	0·880	248·9	306·5	−21·5	6	26	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2833, Jan. 30. Two very small spots.
Group 2834, Jan. 30. Two very small spots.
Group 2834*, Jan. 31–Feb. 3. Two small spots, *a* and *b*, with, on Jan. 31, a very small companion. *a* has disappeared by Feb. 3, and *b* consists of two very small spots which are measured as one.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
31d·278	M,JG	2829*a*	0·711	300·7	284·3	+16·5	54	294	
		2829	0·672	304·0	280·3	+17·0	4	42	290*c*
I.		2829*b*	0·637	306·1	277·2	+16·8	12	44	
		2829	0·677	313·4	276·8	+22·4	0	5	96*c*
		2826	0·528	244·3	274·8	−18·6	20	98	
		2826*b*	0·540	237·5	274·1	−22·2	121	575	
		2826	0·512	240·4	273·0	−20·1	0	10	
		2826	0·498	238·5	271·7	−20·6	8	42	
		2826	0·499	233·4	270·5	−22·9	9	98	
		2826	0·468	238·4	269·8	−19·8	0	5	
		2826	0·432	232·1	266·1	−21·2	0	5	
		2826	0·450	227·1	265·8	−23·6	0	7	
		2826	0·406	231·9	264·6	−20·3	5	18	
		2826*a*	0·414	225·3	263·3	−22·7	24	143	
		2834**a*	0·211	241·0	255·6	−12·0	5	15	
		2834**b*	0·181	219·2	251·5	−14·2	4	14	
		2830*a*	0·356	346·3	249·8	+14·0	25	82	98*c*
		2831*a*	0·512	358·3	245·8	+24·5	13	57	99*c*
		2835	0·537	122·7	215·7	−22·2	0	10	
		2835	0·583	119·2	211·7	−21·7	9	20	
			0·761	50·1	205·0	+24·5			103
			0·824	64·1	194·1	+17·2			160
Feb. 1		Centre			(244·8)	(−6·2)	(376)	(1989)	(2989)
32·205	HA,JG		0·913	241·0	298·3	−29·0			246
			0·812	258·9	287·2	−12·7			278
I.		2825*e*	0·963	249·8	308·1	−21·1	68	378	361*c*
		2829*a*	0·823	294·9	283·6	+16·3	51	258	
		2829	0·790	297·0	280·2	+16·9	0	18	387*c*
		2829*b*	0·764	298·4	277·1	+16·8	4	31	
		2826	0·678	249·4	274·5	−18·5	5	74	
		2826*b*	0·684	243·7	274·1	−22·3	69	540	
		2826	0·646	245·0	271·3	−20·8	5	112	280*c*
		2826	0·633	245·6	270·4	−20·1	0	17	
		2826	0·636	240·6	269·6	−23·2	0	38	
		2826	0·606	242·9	267·6	−21·1	0	9	
		2826	0·594	240·7	266·6	−22·1	0	7	
		2826*a*	0·563	237·5	263·6	−23·0	13	59	98*c*
		2826	0·544	241·1	263·1	−20·6	5	18	
		2834**a*	0·406	253·7	256·1	−12·3	4	11	
		2834**b*	0·355	244·5	252·0	−14·7	0	11	
		2830*a*	0·450	318·6	250·5	+13·7	7	24	
		2830	0·448	321·8	249·3	+14·5	8	40	
		2831*a*	0·549	338·9	245·2	+24·5	10	31	
1893.	HA,JG			°	°	°			
32d·205		2835	0·386	135·8	215·9	−22·0	2	7	
		2835	0·406	130·7	213·5	−21·2	0	9	
I.		2835	0·429	129·9	212·0	−21·8	0	13	
Feb. 2		Centre			(232·7)	(−6·3)	(251)	(1705)	(1650)
33·184	CL,HA		0·881	256·7	281·9	−14·7			308
		2829*a*	0·922	291·1	283·3	+16·6	51	247	
		2829	0·909	293·9	280·8	+18·6	2	11	952*c*
I.		2826	0·816	251·6	274·3	−18·6	7	66	
		2826*b*	0·805	246·5	272·6	−22·5	103	569	
		2826	0·789	248·9	271·3	−20·5	5	49	
		2826	0·765	244·3	268·3	−23·6	0	27	
		2826	0·755	246·4	267·7	−21·8	32	139	
		2826	0·746	248·0	267·1	−20·5	4	10	
		2826	0·731	247·8	265·7	−20·4	2	12	517*c*
		2826	0·713	246·4	264·0	−21·1	13	33	
		2826*a*	0·713	243·5	263·5	−23·1	7	27	
		2826	0·684	246·4	261·6	−20·6	0	9	
		2826	0·655	245·2	258·0	−20·8	0	6	
		2834**b*	0·531	252·8	251·2	−14·4	4	18	
		2830*a*	0·596	301·8	250·9	+12·9	9	33	
		2830	0·593	306·5	249·2	+15·1	5	22	
		2830	0·578	305·0	248·8	+13·8	3	15	125*c*
		2831*a*	0·635	322·6	244·7	+24·5	8	19	159*c*
		2835	0·279	169·7	216·6	−22·2	0	7	
		2835	0·291	161·6	214·0	−22·2	0	3	
		2835	0·292	157·9	212·9	−21·9	0	6	
Feb. 3		Centre			(219·7)	(−6·3)	(255)	(1328)	(2061)
34·496	M,JG		0·763	301·5	245·8	+18·9			160
		2829*a*	0·992	288·1	282·6	+16·9	30	166	936*c*
		2826	0·942	252·5	273·7	−18·6	0	6	
		2826*b*	0·923	248·5	270·3	−22·3	58	889	2023*c*
		2826*c*	0·868	249·9	262·8	−20·6	28	110	
		2830*a*	0·787	292·5	250·6	+13·2	11	62	
		2830	0·775	295·6	248·7	+15·1	0	34	334*c*
		2831*a*	0·777	309·1	243·9	+24·5	3	18	179*c*
		2836	0·446	238·4	226·1	−19·3	0	6	
		2836	0·430	234·0	224·2	−20·6	0	4	
		2835	0·326	203·9	210·7	−23·6	0	3	
			0·837	255·7	259·5	−15·4			239
			0·844	239·2	258·5	−29·3			110
Feb. 4		Centre			(202·5)	(−6·4)	(130)	(1298)	(3981)

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2835, Feb. 1–9. A number of spots, mostly very small, in an irregular group. The spots are very faint on Feb. 3 and 4.
Group 2836, Feb. 4–6. Several very small faint spots in an irregular group, preceding Group 2835.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
35^{d}·490	HA,CL		0·950	256·8	262·0	−14·5			179
			0·849	257·8	247·8	−13·8			256
			0·796	244·1	241·1	−24·5			150
			0·739	228·0	231·1	−34·5			183
		2826	0·990	249·0	272·8	−21·6	31	237	} 1148*c*
		2826*b*	0·977	248·4	268·6	−22·5	118	491	
		2826*c*	0·948	250·0	261·8	−21·0	17	84	
		2830*a*	0·906	287·5	251·6	+12·8	15	80	454*nf*
		2831*a*	0·878	303·0	243·4	+24·8	5	16	385*c*
		2836	0·632	246·9	227·3	−19·5	1	12	} 115*c*
		2836	0·594	247·4	224·6	−18·5	2	7	
		2836	0·583	244·1	223·2	−20·2	0	7	
		2835	0·477	233·8	213·7	−22·5	7	26	} 127*c*
		2835	0·468	227·1	211·4	−24·5	1	10	
		2835	0·450	229·5	211·1	−23·0	6	34	
		2837	0·860	106·8	129·8	−17·7	0	23	232*sp*
		2838	0·976	98·5	111·3	− 9·7	16	125	} 273*c*
		2838	0·983	97·1	109·4	− 8·2	0	82	
		2838*a*	0·984	99·6	108·9	−10·6	14	176	
Feb. 5		Centre			(189·4)	(−6·5)	(233)	(1410)	(3502)
36·465	M, JG		0·956	256·2	250·4	−15·1			261
			0·934	296·1	240·8	+21·5			733
			0·875	237·1	236·1	−31·7			212
			0·854	227·1	230·5	−39·4			108
		2826*c*	0·991	249·2	260·4	−21·4	0	100	408*c*
		2830*a*	0·977	285·0	252·1	+13·1	0	30	272*f*
		2831*a*	0·952	298·8	243·2	+24·8	0	16	
		2836	0·765	251·9	226·3	−18·0	0	6	
		2835	0·646	242·5	214·8	−22·5	0	5	
		2835	0·630	240·2	213·2	−23·5	0	2	
		2835	0·613	240·8	211·9	−22·7	0	2	
		2835	0·600	240·1	210·8	−22·8	7	26	
		2835	0·597	236·6	209·7	−24·6	6	23	
		2839	0·293	230·6	190·2	−17·0	0	6	
		2839	0·267	228·7	188·6	−16·5	0	1	
		2837	0·726	108·1	130·4	−17·5	1	11	} 673*c*
		2838	0·918	95·6	109·7	− 7·7	8	28	
		2838*a*	0·915	98·5	109·9	−10·4	42	328	
		2838	0·938	98·2	106·4	−10·0	0	12	
		2838	0·941	100·6	105·7	−12·2	8	33	
		2838*b*	0·958	98·6	102·7	−10·1	56	331	
Feb. 6		Centre			(176·6)	(−6·5)	(128)	(960)	(2667)
1893.									
37^{d}·193	CL,JG		0·926	234·7	234·1	−25·1			266
			0·845	250·9	224·6	−19·6			194
I.			0·857	299·2	219·8	+20·7			180
		2835	0·746	246·4	214·2	−21·9	0	4	} 186*c*
		2835	0·722	244·9	211·8	−22·5	0	7	
		2835	0·719	246·4	211·8	−21·4	0	6	
		2835	0·715	243·9	211·0	−23·2	6	24	
		2835	0·707	240·7	209·7	−25·2	0	7	
		2837	0·603	109·8	130·6	−17·1	2	11	} 821*c*
		2838*a*	0·836	97·1	109·9	− 9·5	.44	262	
		2838	0·838	94·6	109·7	− 7·5	6	21	
		2838	0·869	97·0	106·2	− 9·3	0	12	
		2838	0·869	99·8	106·1	−11·8	4	25	
		2838*b*	0·894	97·6	103·1	− 9·7	70	328	
Feb. 7		Centre			(166·9)	(−6·6)	(132)	(707)	(1647)
38·274	FT,JG		0·955	250·5	226·6	−20·6			259
			0·931	295·2	216·7	+20·6			276
I.			0·786	301·1	198·1	+19·3			120
		2835	0·859	246·0	211·7	−23·9	0	27	} 435*c*
		2835	0·849	244·6	210·4	−25·0	0	9	
		2835	0·837	245·7	209·1	−23·8	4	14	
		2840	0·853	254·3	211·6	−16·8	0	12	71*c*
		2841*a*	0·644	302·0	187·0	+14·5	13	35	} 110*c*
		2841*b*	0·603	305·3	183·3	+14·7	26	61	
		2837	0·404	118·7	131·1	−17·3	2	4	
		2838	0·670	100·8	110·7	−12·1	0	16	} 593*c*
		2838*a*	0·672	96·9	110·4	− 9·5	40	271	
		2838	0·676	94·7	110·1	− 8·1	7	14	
		2838	0·701	99·2	108·1	−11·1	0	19	
		2838	0·718	97·9	106·7	−10·3	0	4	
		2838	0·724	100·7	106·3	−12·3	5	27	
		2838*b*	0·765	97·0	102·6	− 9·6	67	248	
			0·873	76·1	94·0	+ 8·7			98
			0·867	99·5	92·3	−11·5			96
Feb. 8		Centre			(152·8)	(−6·6)	(164)	(761)	(2058)
39·202	M,JG		0·969	294·6	212·0	+21·8			262
			0·864	294·4	195·9	+17·2			82
I.		2840	0·956	256·2	214·5	−15·1	0	13	
		2840	0·944	255·3	212·2	−16·1	20	102	375*c*
		2835	0·942	247·2	211·9	−23·7	0	24	} 575*c*
		2835	0·922	247·1	208·4	−23·7	0	15	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2837, Feb. 5–9. A small regular spot. Its place on Feb. 9 lies 2° behind its place on Feb. 8. It is not certain whether this is a new spot, or whether the old spot has drifted rapidly.
Group 2838, Feb 5–18. A large and complex stream of spots. On Feb. 6 it consists mainly of two large spots, *a* and *b*, with several small spots in a curved stream between them. The last spot in the group, *b*, is a regular spot, and is the largest until Feb. 8. The members of the group undergo frequent changes and subdivisions.
Group 2839, Feb. 6. Two very small spots.
Group 2840, Feb. 8–9. A small spot on Feb. 8. The spot has greatly increased in size by Feb. 9, and a small companion is seen near it.
Group 2841, Feb. 8–11. A sudden outburst of two regular spots, *a* and *b*. A third spot, *c*, is seen on Feb. 9 and 10.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.	Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).						Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°				1893.				°	°	°			
39d.202	M,JG	2841*a*	0·781	294·3	187·7	+14·2	13	81	} 196*c*	41d.272	HA,CL	2838	0·165	119·1	104·9	−11·3	0	7	
		2841*c*	0·769	296·4	186·0	+15·3	1	8				2838*b*	0·176	108·7	103·6	−10·0	8	82	
I.		2841*b*	0·734	296·3	183·1	+14·0	21	107		I.		2842*a*	0·380	98·2	90·8	− 9·5	22	77	
		2837	0·266	133·4	129·0	−17·1	1	7				2842	0·455	97·8	86·2	− 9·6	3	12	
		2838	0·460	99·1	113·2	−10·1	0	2				2842	0·498	98·2	83·4	−10·0	0	6	
		2838	0·486	93·6	111·4	− 7·6	0	7				2842	0·526	101·5	81·6	−11·8	3	15	
		2838	0·500	101·9	110·8	−11·7	5	29				2843	0·673	108·5	71·5	−17·4	44	166	181*c*
		2838*a*	0·501	98·6	110·5	−10·1	28	223				2844	0·796	104·6	60·4	−15·7	2	8	
		2838	0·542	101·0	107·8	−11·5	3	50				2844	0·812	103·5	58·7	−14·9	0	10	80*c*
		2838	0·556	99·0	106·8	−10·6	8	102		Feb. 11		Centre			(113·3)	(−6·8)	(140)	(1089)	(689)
		2838	0·567	103·0	106·2	−12·8	7	59											
		2838*b*	0·598	97·7	103·8	−10·0	38	235		42·210	CL,JG	2845	0·574	300·2	131·1	+10·9	0	6	
		2838	0·607	95·4	103·1	− 8·6	0	15				2845	0·553	303·4	128·9	+11·7	0	4	
		2842	0·807	95·7	86·5	− 8·5	19	41	} 178*c*	M.		2845	0·541	300·4	129·1	+ 9·9	0	2	
		2842	0·850	98·5	82·0	−10·8	6	19				2845	0·518	305·5	126·3	+11·4	0	9	
		2843	0·935	105·6	70·6	−16·9	69	241	381*c*			2838*a*	0·204	248·5	112·0	−11·0	29	209	
Feb. 9		Centre			(140·6)	(−6·7)	(239)	(1380)	(2049)			2838	0·202	239·0	111·1	−12·7	5	27	
												2838	0·182	241·8	110·3	−11·7	0	3	
												2838	0·172	246·5	110·1	−10·7	0	7	
40·471	M,JG		0·986	246·2	206·0	−24·5			199			2838	0·177	236·6	109·4	−12·3	0	6	
		2841*a*	0·916	288·6	187·1	+14·1	0	37	} 368			2838	0·139	242·3	108·1	−10·4	3	19	
		2841*c*	0·903	289·9	185·0	+14·7	9	60				2838	0·147	228·2	107·3	−12·4	15	215	
		2841*b*	0·882	290·3	182·2	+14·4	15	126				2838	0·090	244·8	105·6	− 9·0	0	4	
		2838*a*	0·225	109·3	111·4	−10·8	44	227				2838	0·108	225·2	105·4	−11·1	0	5	
		2838	0·251	107·1	109·7	−10·7	3	16				2838	0·115	218·0	105·0	−12·0	0	2	
		2838	0·291	106·8	107·4	−11·3	11	108				2838	0·072	238·0	104·4	− 9·0	4	11	
		2838	0·323	112·7	106·0	−13·5	11	48				2838	0·116	209·7	104·3	−12·6	0	3	
		2838	0·326	105·8	105·2	−11·4	8	67				2838	0·089	218·2	104·1	−10·8	0	9	
		2838	0·331	98·6	104·5	− 9·2	0	6				2838	0·062	220·8	103·2	− 9·4	0	17	
		2838*b*	0·353	101·1	103·3	−10·1	16	117				2838*b*	0·075	208·1	103·0	−10·6	0	5	
		2842*a*	0·567	97·1	89·2	− 9·5	19	99				2842*a*	0·164	109·3	91·9	− 9·9	13	80	
		2842	0·623	96·8	85·1	− 9·4	1	8				2842	0·158	97·1	91·8	− 7·8	0	2	
		2842	0·670	96·9	81·6	− 9·6	0	3				2842	0·190	106·1	90·3	− 9·7	0	5	
		2842	0·671	100·3	81·6	−11·9	2	16				2842	0·236	102·9	87·5	− 9·6	0	8	
		2843	0·792	107·2	71·4	−17·7	36	179	353*c*			2842	0·271	101·5	85·3	− 9·6	0	6	
Feb. 10		Centre			(123·8)	(−6·7)	(175)	(1117)	(920)			2842	0·324	108·5	82·7	−12·4	0	4	
												2843	0·511	113·7	71·6	−17·8	31	169	
												2843	0·523	118·1	71·6	−20·2	0	3	
41·272	HA,CL	2841*a*	0·970	286·0	186·7	+13·7	4	110	} 428*c*			2844	0·636	106·1	61·7	−15·5	0	6	
		2841*b*	0·954	286·9	183·1	+13·8	9	108				2844	0·670	105·2	59·0	−15·2	0	11	
I.		2838*a*	0·080	166·0	112·2	−11·3	34	273				2846*a*	0·955	103·5	27·2	−14·9	43	251	} 1568*f*
		2838	0·088	139·9	110·0	−10·7	2	12				2846	0·958	105·7	26·6	−16·9	0	68	
		2838	0·127	146·9	109·2	−12·8	0	15				2846	0·976	106·6	22·2	−17·6	0	63	
		2838	0·143	129·5	106·8	−12·0	9	188				2846	0·977	104·7	22·0	−15·8	0	53	

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The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2842, Feb. 9–18. A pair of spots on Feb. 9. The group has entirely changed its appearance by the succeeding day, and consists of a regular spot, *a*, followed by a curved stream of very small spots. The following spots die out, and *a* moves forward in longitude so as to approach Group 2838.
Group 2843, Feb. 9–20. A large regular spot, *a*. A very small companion is seen on Feb. 12 and 16. The nucleus of *a* is divided by a bridge on Feb. 12 and 13.
Group 2844, Feb. 11–12. Two very small spots.
Group 2845, Feb. 12–13. A group of very small spots.
Group 2846, Feb. 12–23. A very large spot, *a*, followed by a straggling stream of small nebulous spots. The nucleus of *a* is divided by a bridge, and the spot has become double by Feb. 17. It has again subdivided and decreased in size by Feb. 20. It moves forward rapidly in longitude.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
42d·210	CL,JG	2847*a*	0·972	99·7	23·7	−11·0	13	265	
			0·971	67·3	28·6	+20·1			224
M.			0·968	116·2	24·1	−27·0			254
Feb. 12		Centre			(100·9)	(−6·8)	(156)	(1557)	(2046)
43·189	CL,JG	2845	0·727	291·9	131·2	+10·7	0	9	
		2845	0·700	293·9	128·6	+11·3	0	5	
M.		2845	0·660	295·3	125·3	+10·8	0	4	
		2838*a*	0·405	257·0	111·7	−11·8	43	333	
		2838	0·374	257·9	109·8	−10·9	3	13	
		2838	0·351	258·2	108·4	−10·6	0	3	
		2838	0·346	251·6	107·6	−12·8	13	229	
		2838	0·313	262·0	106·2	− 9·0	0	5	
		2838	0·292	260·2	104·9	− 9·5	0	5	
		2838	0·300	250·6	104·8	−12·3	4	24	
		2838*b*	0·259	251·9	102·5	−11·3	4	32	
		2842*a*	0·100	233·4	92·7	−10·3	8	39	
		2842	0·055	184·4	88·3	−10·0	0	7	
		2848	0·079	130·2	74·5	− 9·8	0	5	
		2843	0·333	125·9	71·6	−17·8	28	176	
		2846	0·860	105·4	28·3	−16·7	0	9	
		2846*a*	0·872	103·1	26·8	−14·8	63	244	
		2846	0·893	104·0	24·1	−15·6	0	16	
		2846	0·900	106·1	23·2	−17·5	0	17	
		2846	0·910	100·3	21·9	−12·2	0	61	
		2847	0·861	98·0	28·1	−10·4	0	11	
		2847*a*	0·906	98·3	22·5	−10·4	15	84	
		2849	0·904	65·7	27·9	+18·5	0	10	503*sf*
		2850	0·931	106·8	18·6	−18·1	0	58	1276*c*
		2850	0·945	108·2	16·1	−19·4	9	52	
Feb. 13		Centre			(88·0)	(6·9)	(190)	(1451)	(1779)
44·292	HA,JG		0·843	288·3	128·0	+11·4			202
		2838*a*	0·615	259·5	111·5	−11·9	60	341	
I.		2838	0·558	257·4	107·3	−12·7	16	368	294*c*
		2838	0·502	260·3	103·6	−10·8	1	24	
		2838*b*	0·479	259·3	102·1	−11·2	19	140	
		2842*a*	0·339	258·3	93·1	−10·4	18	83	
		2842	0·306	259·0	91·2	−10·0	0	6	
		2842	0·293	256·7	90·3	−10·5	2	18	
		2843	0·189	170·4	71·6	−17·6	41	157	
		2849	0·778	58·9	28·9	+18·8	2	12	317*f*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
44d·292	HA,JG	2846*a*	0·706	102·7	28·5	−13·8	68	297	
		2846	0·743	103·2	25·4	−14·4	8	55	
I.		2846	0·748	105·7	25·1	−16·3	5	30	
		2846	0·767	105·0	23·3	−15·9	0	12	
		2846	0·779	101·5	22·0	−13·3	0	14	
		2846	0·783	105·2	21·8	−16·2	0	36	1345*c*
		2846	0·800	106·7	20·3	−17·5	5	47	
		2847*a*	0·760	97·0	23·7	− 9·8	17	84	
		2847	0·760	99·3	23·7	−11·5	6	35	
		2847	0·777	98·6	22·2	−11·0	0	15	
		2850	0·830	108·0	17·3	−18·7	6	68	
Feb. 14		Centre			(73·5)	(−6·9)	(274)	(1842)	(2158)
45·252	FT,CL		0·934	285·6	127·5	+11·9			281
		2838*a*	0·773	260·6	111·8	−11·7	46	466	
M.		2838	0·739	258·3	108·7	−13·2	15	163	
		2838	0·708	260·9	106·2	−11·3	35	279	
		2838*b*	0·660	261·1	102·4	−11·1	38	151	
		2842*a*	0·542	261·4	93·8	−10·4	16	102	
		2843	0·265	223·1	71·8	−17·9	28	163	
		2846*a*	0·553	105·6	27·7	−14·3	58	330	
		2846	0·598	105·8	24·5	−15·0	6	30	
		2846	0·610	108·7	23·9	−16·7	3	25	
		2847	0·559	96·8	26·8	− 9·5	0	10	
		2847	0·593	99·1	24·4	−11·0	0	6	
		2847	0·630	107·2	23·3	−10·3	3	26	
		2847	0·616	100·7	22·8	−12·0	0	41	
		2847*a*	0·619	97·7	22·5	−10·2	13	83	
		2847	0·645	97·3	20·6	−10·0	0	3	
		2850	0·679	109·8	18·8	−18·4	2	17	
		2850	0·700	108·6	16·9	−17·9	0	6	
		2850	0·715	110·0	15·8	−19·0	4	27	
			0·846	110·6	3·1	−21·0			444
			0·949	72·0	352·2	+14·7			471
Feb. 15		Centre			(60·9)	(−6·9)	(267)	(1928)	(1196)
46·232	HA,JG	2838*a*	0·894	260·3	111·8	−11·8	35	474	
		2838	0·856	260·7	107·2	−11·5	14	185	347*c*
M.		2838*b*	0·802	261·1	101·6	−11·3	9	110	
		2842*a*	0·717	261·8	93·9	−10·7	10	45	
		2842	0·673	262·7	90·4	−10·1	0	3	84*c*
		2842	0·611	262·6	85·7	−10·1	0	5	
		2843	0·438	241·9	71·8	−18·3	29	147	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2847, Feb. 12–23. A regular spot, *a*, on Feb. 12. A small companion precedes it on Feb. 13. On Feb. 14 and the following days *a* is followed by a short stream of small spots. These have all disappeared by Feb. 18. A number of spots have formed in advance of *a* by Feb. 15, and by Feb. 18 *a* is the last spot of the group. The group is north of and parallel to Group 2846.
Group 2848, Feb. 13. A cluster of very small faint spots.
Group 2849, Feb. 13-14. A small spot.
Group 2850, Feb. 13–19. A number of small spots *sf* of Group 2846, and almost forming a continuation of the stream of small spots in the following portion of that group. It undergoes frequent change.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).	
				°	°	°				
1893.										
46d·232	HA,JG	2843	0·418	236·7	68·6	−19·8	0	3		
		2846*a*	0·361	112·9	27·9	−14·7	38	219		
M.		2846	0·410	110·6	24·6	−14·7	0	13		
		2846	0·425	113·9	24·1	−16·3	0	13		
		2846	0·445	111·4	22·5	−15·7	0	5		
		2847	0·363	98·2	26·6	− 9·5	0	3		
		2847	0·408	98·8	23·8	−10·0	0	10		
		2847*a*	0·436	99·0	22·1	−10·2	12	68		
		2847	0·442	103·2	21·9	−12·1	0	11		
		2847	0·461	98·5	20·4	−10·1	0	5		
		2850	0·530	114·5	17·4	−18·7	0	5		
		2850	0·549	115·4	16·3	−19·6	0	4		
		2850	0·559	114·0	15·4	−19·0	0	6		
		2851*a*	0·989	105·4	325·0	−16·3	0	58		
			0·927	69·7	343·4	+15·9			425	
			0·976	100·5	329·6	−11·7			257	
Feb. 16		Centre			(47·9)	(−7·0)	(147)	(1392)	(1113)	
47·399	FT,HA	2838*a*	0·982	260·0	112·6	−11·1	82	445	} 732*c*	
		2838	0·959	261·5	106·8	−10·1	5	38		
		2838*b*	0·931	260·9	101·8	−11·0	20	81		
		2842*a*	0·875	262·3	94·1	−10·1	15	37		
		2843	0·646	250·3	72·2	−18·0	27	148		
		2846*a*	0·145	155·0	29·0	−14·5	38	174		
		2846	0·169	145·8	27·0	−15·0	18	56		
		2846	0·179	132·2	24·8	−13·8	5	22		
		2846	0·211	137·7	24·1	−15·9	4	50		
		2846	0·210	130·0	23·1	−14·6	0	5		
		2846	0·247	129·6	21·2	−15·9	3	19		
		2847	0·079	124·2	28·8	− 9·6	0	20		
		2847	0·101	114·5	27·3	− 9·3	0	5		
		2847	0·160	115·4	24·2	−10·8	2	15		
		2847	0·176	111·0	23·0	−10·5	3	19		
		2847	0·201	116·9	22·1	−12·1	3	19		
		2847*a*	0·193	108·0	21·9	−10·3	6	79		
		2847	0·209	104·6	20·8	− 9·9	1	4		
		2847	0·220	111·9	20·6	−11·5	0	3		
		2850	0·342	129·1	16·4	−19·2	4	41		
		2851*a*	0·929	104·4	323·5	−16·0	4	65		
			0·760	64·7	347·7	+14·0			283	
			0·854	133·0	338·3	−39·9			143	
			0·849	121·6	335·9	−30·4			276	
			0·894	73·3	331·9	+11·5			365	
Feb. 17		Centre			(32·6)	(−7·0)	(240)	(1345)	(1799)	
1893.										
48d·228	FT,JG	2838*b*	0·982	259·6	101·7	−11·5	13	59	} 298*c*	
		2842*a*	0·947	261·0	93·7	−10·8	4	24		
M.		2843	0·770	251·9	72·0	−18·4	26	146	73*c*	
		2846*a*	0·191	225·9	29·8	−14·5	25	182		
		2846	0·168	213·1	27·1	−15·0	0	12		
		2846	0·136	209·3	25·6	−13·8	0	7		
		2846	0·158	202·6	25·3	−15·3	0	7		
		2846	0·174	196·5	24·6	−16·6	0	6		
		2846	0·154	185·1	22·5	−15·8	0	15		
		2847	0·146	249·9	29·7	− 9·9	0	10		
		2847	0·093	188·6	22·5	−12·2	0	1		
		2847*a*	0·060	186·5	22·1	−10·4	11	66		
		2850	0·195	165·6	18·8	−17·9	0	4		
		2850	0·228	162·1	17·5	−19·5	0	16		
		2850	0·241	154·0	15·3	−19·4	1	6		
		2852	0·856	70·9	326·0	+12·4	0	4	} 224*c*	
		2852*a*	0·870	71·1	324·4	+12·6	0	9		
		2851*a*	0·844	104·6	323·7	−16·1	10	29	6328*f*	
		2853*a*	0·988	73·4	303·2	+15·1	20	130	} 3388*f*	
		2853*b*	0·993	75·5	300·7	+13·4	0	42		
			0·954	119·2	308·1	−29·9			128	
Feb. 18		Centre			(21·7)	(−7·0)	(110)	(775)	(1693	
49·486	CL,FT		0·933	258·0	74·8	−13·7			79	
			0·802	295·2	53·7	+15·3			145	
		2843	0·911	252·9	71·5	−18·4	20	140	2868*f*	
		2846*a*	0·444	251·3	30·8	−14·6	27	152		
		2846	0·449	245·9	30·4	−17·0	0	6		
		2846	0·399	247·4	27·5	−15·4	5	17		
		2846	0·365	248·5	25·5	−14·3	0	5		
		2846	0·321	245·1	22·5	−14·5	0	14		
		2847	0·416	261·2	29·7	−10·1	0	9		
		2847*a*	0·302	258·1	22·5	−10·4	8	49		
		2850	0·316	221·4	17·9	−20·6	0	4		
		2852	0·679	63·7	326·8	+12·0	3	17	} 69*c*	
		2852*a*	0·707	64·2	324·6	+12·5	1	11		
		2851*a*	0·666	106·0	323·5	−15·9	5	19		
		2851	0·693	105·7	321·3	−16·0	0	3		
		2853*a*	0·919	69·8	301·9	+15·4	33	194		
		2853*b*	0·924	71·4	300·8	+14·1	17	55		
		2853*c*	0·955	72·8	295·2	+14·1	53	245	} 677*c*	
		2853*d*	0·971	73·6	291·6	+14·0	22	188		
			0·979	113·9	285·1	−24·8			223	
Feb. 19		Centre			(5·1)	(−7·1)	(194)	(1128)	(1479)	

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The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2851, Feb. 16–23. A small nebulous spot, *a*, which rapidly diminishes in size, and has disappeared by Feb. 22. A very small companion is occasionally seen close to it. Some very small spots are seen near its place on Feb. 22, and others on Feb. 23.
Group 2852, Feb. 18–23. A few small nebulous spots. One small spot, *a*, remains constant for six days. The others are very unstable.
Group 2853, Feb. 18–29. A fine stream containing several large irregular spots, of which the principal have been lettered in order of longitude *a*, *b*, *c*, and *d*. *a*, the leader, moves steadily forward in longitude, from Feb. 21 to Feb. 27, and the stream following it tends to break up, and by Feb. 25 has taken the form of an irregular curve of small spots. *a* alone remains by Feb. 28.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
50d.623	HA,JG		0·657	310·6	318·4	+19·3			198
		2843	0·982	252·6	70·8	−18·4	27	170	430*f*
		2847	0·654	263·3	31·3	− 9·7	6	49	
		2847	0·617	262·8	28·5	−10·0	4	17	
		2847*a*	0·538	263·0	22·9	− 9·7	6	18	303*c*
		2846*a*	0·656	257·0	31·2	−13·9	17	78	
		2846	0·608	254·3	27·4	−15·1	0	17	
		2852*a*	0·525	52·0	325·2	+12·4	3	7	
		2852	0·555	54·0	322·9	+12·5	0	1	
		2851*a*	0·461	111·7	323·8	−16·2	3	23	
		2853*a*	0·790	64·2	302·9	+15·3	35	153	
		2853*b*	0·801	66·3	301·2	+14·2	13	93	
		2853	0·830	66·9	298·3	+14·7	0	15	724*c*
		2853*c*	0·853	68·3	295·5	+14·3	26	210	
		2853*d*	0·883	69·9	291·7	+14·0	35	261	
		2854	0·944	71·1	282·7	+15·2	4	17	
			0·905	105·6	284·7	−17·1			670
Feb. 20		Centre			(350·2)	(−7·1)	(179)	(1129)	(2683) 2325
51·233	M,JG	2847	0·771	263·0	32·9	− 9·9	10	46	
		2847	0·723	262·3	28·7	−10·5	3	24	
M.		2847*a*	0·654	262·8	23·2	−10·1	4	13	
		2846*a*	0·770	257·6	32·7	−14·1	6	20	268*p*
		2846	0·748	257·2	30·7	−14·3	5	22	
		2846	0·720	257·2	28·3	−14·1	0	4	
		2846	0·710	255·3	27·3	−15·4	0	7	
		2852	0·410	38·3	327·1	+11·8	0	4	
		2852*a*	0·438	40·0	325·4	+12·8	0	2	
		2851*a*	0·358	118·7	323·1	−16·6	0	3	
		2851	0·374	117·0	321·9	−16·4	0	1	
		2855	0·583	42·2	317·7	+19·0	3	11	467*c*
		2853*a*	0·710	59·7	302·8	+15·5	24	157	
		2853*b*	0·720	62·3	301·1	+14·2	11	84	
		2853	0·741	61·6	299·7	+15·4	0	5	
		2853*c*	0·784	65·0	295·0	+14·5	44	173	
		2853*d*	0·829	67·6	290·1	+14·1	19	141	
		2856	0·837	75·3	287·4	+ 8·2	0	13	161*c*
		2856	0·855	74·5	285·7	+ 9·3	0	4	
		2854	0·889	68·6	283·2	+15·3	0	5	278*f*
		2857	0·964	103·6	266·4	−15·0	0	19	1015*p*
		2857*a*	0·968	105·5	265·4	−16·7	0	21	
Feb. 21		Centre			(342·1)	(−7·1)	(129)	(779)	(2189)
1893.									
52d.249	CL,FT		0·856	239·4	26·5	−29·7			245
			0·869	298·7	23·0	+20·6			208
M.		2847	0·904	262·6	33·9	− 9·7	8	41	
		2847	0·863	262·5	28·8	−10·1	9	56	
		2847*a*	0·810	262·6	23·2	−10·2	2	9	705*c*
		2846*a*	0·897	257·6	33·2	−14·3	2	13	
		2846	0·879	257·9	30·8	−14·0	6	19	
		2846	0·848	256·2	27·2	−15·5	0	9	
		2858	0·577	302·6	358·3	+11·8	6	17	
		2858	0·575	308·7	356·2	+14·6	2	9	
		2852	0·324	0·8	328·4	+11·6	1	6	
		2852	0·345	4·0	327·3	+12·8	0	6	
		2852*a*	0·347	9·1	325·5	+12·8	0	7	
		2851	0·251	143·6	319·7	−18·7	0	2	
		2851	0·271	142·8	318·7	−19·5	1	3	
		2851	0·283	141·9	318·0	−19·9	0	1	
		2855	0·476	20·4	318·6	+19·3	4	12	112*c*
		2855	0·490	27·3	315·0	+18·7	5	21	
		2853*a*	0·565	47·8	303·0	+15·7	30	165	
		2853*b*	0·575	51·3	301·2	+14·6	12	77	139*c*
		2853	0·596	52·2	299·6	+15·1	2	23	
		2853	0·618	54·4	297·5	+14·9	0	2	
		2853*c*	0·641	56·2	295·4	+14·9	18	116	
		2853	0·660	58·4	293·4	+14·4	5	21	210*c*
		2853	0·667	60·6	292·2	+13·3	1	10	
		2853*d*	0·701	61·5	289·4	+14·0	19	111	
		2856	0·682	69·4	288·7	+ 8·3	5	16	
		2856	0·688	67·7	288·7	+ 9·5	0	11	112*c*
		2856	0·717	70·2	285·8	+ 8·7	0	11	
		2856	0·731	69·8	284·8	+ 9·5	0	3	
		2857	0·881	103·0	266·3	−14·8	7	38	
		2857*a*	0·890	105·4	265·1	−17·0	19	90	781*s*
		2857	0·894	107·2	264·7	−18·6	0	45	
			0·864	61·2	275·0	+20·4			292
			0·962	73·7	257·2	+13·5			150
Feb. 22		Centre			(328·7)	(−7·2)	(164)	(970)	(2954)
53·384	FT,CL		0·950	294·8	20·8	+20·8			233
			0·905	260·1	19·2	−12·0			445
I.			0·880	237·4	14·3	−31·9			200
			0·819	248·9	8·6	−21·4			385
		2847	0·970	261·1	30·4	−10·4	15	147	1055*sf*
		2846	0·959	258·8	28·2	−12·8	0	45	

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The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2854, Feb. 20–21. A small nebulous spot following Group 2853.
Group 2855, Feb. 21–24. One or two small faint evanescent spots.
Group 2856, Feb. 21–March 3. A few small faint spots until Feb. 22. The group has undergone a great change by Feb. 23, and consists on that day of a large regular spot, *a*, followed by a fine stream of spots. On Feb. 24 the last spot of the stream, *b*, is a large composite spot, which has broken up by Feb. 27 into several portions, of which the two principal are *c* and *d*.
Group 2857, Feb. 21–March 5. A stream of spots, mostly small, inclined at an angle of nearly 40° to the equator. A large elliptical spot, *a*, with its major axis in the general direction of the stream, is in the centre of the group on Feb. 22. *a* undergoes a partial rotation so that its major axis is parallel to the equator by Feb. 25. It has become ill-defined and irregular in shape by Feb. 28, and on March 1 the entire group has to be measured as a single spot. *a* is again seen as a separate spot by March 2, and as a regular spot by March 3. *a* alone remains by March 4.
Group 2858, Feb. 22–23. A pair of small spots.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
53d·384	FT,CL	2858	0·765	292·4	359·8	+12·0	2	9	
		2858	0·750	297·1	357·2	+14·8	0	7	
I.		2852*a*	0·398	328·4	326·0	+12·7	1	8	
		2851	0·218	217·1	321·6	−17·1	0	2	
		2851	0·227	212·1	321·0	−18·2	0	4	
		2851	0·236	206·2	320·0	−19·3	0	2	
		2855	0·447	357·2	315·0	+19·2	2	9	
		2853*a*	0·429	23·4	303·5	+16·0	37	168	}
		2853*b*	0·431	28·7	301·4	+15·1	15	61	
		2853	0·445	30·1	300·4	+15·6	2	8	
		2853	0·459	35·6	297·7	+15·0	4	31	} 249*c*
		2853*c*	0·481	38·7	295·6	+15·1	11	83	
		2853*a*	0·491	41·7	294·0	+14·7	10	32	
		2853	0·504	46·5	291·7	+13·6	0	7	
		2853*d*	0·533	48·1	289·6	+14·3	19	96	}
		2856*a*	0·470	51·2	291·9	+10·4	22	83	}
		2856	0·489	54·5	290·0	+ 9·9	18	66	
		2856	0·514	59·7	287·2	+ 8·5	9	22	
		2856	0·529	57·9	286·8	+ 9·8	1	10	} 309*c*
		2856*b*	0·535	60·3	285·8	+ 9·0	25	62	
		2856	0·556	59·9	284·6	+ 9·9	2	6	
		2856	0·564	61·4	283·7	+ 9·4	7	13	}
		2859	0·756	57·1	271·7	+18·9	0	9	} 296*c*
		2859	0·799	59·5	267·2	+19·0	0	13	}
		2857	0·729	102·7	266·7	−14·2	7	25	
		2857	0·753	103·8	264·6	−15·1	10	21	}
		2857*a*	0·756	106·1	264·5	−16·8	32	151	} 731*c*
		2857	0·773	107·3	263·0	−17·9	3	21	}
		2857	0·780	108·9	262·5	−19·2	6	30	}
			0·665	115·2	273·4	−22·0			723
			0·869	73·3	256·0	+10·7			274
			0·850	114·6	255·7	−24·6			608
			0·919	68·4	250·8	+16·6			247
Feb. 23		Centre			(313·7)	(−7·2)	(260)	(1251)	(5755)
54·244	HA,JG		0·933	261·5	12·0	−10·6			188
			0·917	251·5	9·8	−19·8			772
I.			0·920	237·3	9·4	−32·8			124
			0·842	292·0	355·9	+14·1			176
		2855	0·489	331·1	316·8	+18·3	0	2	
		2855	0·467	334·5	314·6	+17·8	0	4	
		2853*a*	0·395	355·6	304·3	+15·9	32	168	
		2853	0·392	0·8	302·2	+15·8	1	14	
		2853*b*	0·378	1·5	301·9	+14·9	14	51	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
54d·244	HA,JG	2853	0·388	3·7	301·0	+15·5	0	5	
		2853	0·394	6·8	299·7	+15·7	0	3	
I.		2853	0·384	9·7	298·7	+15·0	0	15	
		2853*c*	0·389	16·3	296·1	+14·7	7	58	
		2853	0·395	20·8	294·2	+14·5	4	21	
		2853*d*	0·416	30·2	290·1	+14·0	14	81	
		2860	0·277	347·1	306·1	+ 8·4	0	11	
		2860	0·266	350·9	304·9	+ 7·9	1	11	
		2860	0·268	355·6	303·7	+ 8·2	0	7	
		2860*a*	0·263	359·9	302·6	+ 8·0	0	8	
		2856*a*	0·333	29·0	293·1	+ 9·8	29	152	
		2856	0·346	34·9	291·0	+ 9·3	2	30	
		2856	0·378	39·8	288·3	+ 9·9	0	5	
		2856*b*	0·384	44·8	286·7	+ 8·8	34	204	
		2857	0·570	104·5	268·0	−14·1	4	14	}
		2857	0·578	106·0	267·5	−15·1	0	6	}
		2857*a*	0·614	108·3	265·1	−16·9	25	98	} 375*c*
		2857	0·617	106·0	264·7	−15·5	0	17	}
		2857	0·637	109·3	263·5	−17·8	0	13	}
		2857	0·653	110·4	262·4	−18·7	2	29	}
		2861*a*	0·999	109·5	212·5	−19·5	0	79	
			0·868	64·5	247·3	+17·9			283
			0·896	121·9	239·4	−31·7			165
Feb. 24		Centre			(302·5)	(−7·2)	(169)	(1106)	(2083)
55·451	M,JG		0·708	347·9	297·1	+36·6			153
		2862	0·650	300·3	321·6	+13·2	0	7	
		2862	0·642	302·8	320·2	+14·4	0	4	
		2860	0·424	307·8	306·2	+ 8·2	0	8	
		2860*a*	0·380	315·4	302·1	+ 8·7	0	18	
		2853*a*	0·494	322·8	304·6	+16·3	25	162	
		2853	0·478	325·2	302·9	+16·2	0	3	
		2853*b*	0·459	326·5	301·7	+15·5	11	45	
		2853	0·481	329·3	301·3	+17·4	0	4	
		2853	0·458	329·6	300·4	+16·2	0	4	
		2853	0·392	328·2	298·7	+12·4	0	4	
		2853	0·434	334·3	297·7	+15·9	2	8	
		2853*c*	0·407	336·5	296·1	+14·7	2	21	
		2853	0·431	340·5	295·1	+16·7	2	11	
		2853	0·397	343·6	293·1	+15·1	0	2	
		2853*d*	0·361	350·6	290·0	+13·6	16	52	
		2856*a*	0·321	333·7	294·8	+ 9·5	32	206	
		2856	0·301	342·3	291·8	+ 9·4	0	5	
		2856	0·278	347·0	290·1	+ 8·5	0	6	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2859, Feb. 23. Six very small spots in a pair of close clusters ; measured as two spots.
Group 2860, Feb. 24–28. A few small spots in an irregular stream, preceding Group 2856. The last spot, *a*, soon becomes the largest. *a* has coalesced with another spot by Feb. 27, but the two have separated again by Feb. 28.
Group 2861, Feb. 24–March 8. A large regular spot, *a*, with occasionally some small companions. *a* becomes greatly elongated in a direction slightly inclined to the equator, and by March 2 has divided transversely into two distinct spots, *b* and *c*. *c* diminishes rapidly in size and has disappeared by March 8.
Group 2862, Feb. 25–27. A few very small faint spots in an irregular group.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued*.

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
55d·451	M, JG	2856	0·298	348·6	289·9	+ 9·7	0	11	
		2856*b*	0·269	0·0	286·5	+ 8·3	24	177	
		2856	0·283	4·2	285·3	+ 9·2	2	8	
		2857	0·326	113·5	268·6	−14·3	2	13	
		2857	0·351	113·6	267·1	−14·8	0	2	
		2857	0·365	118·6	267·0	−16·9	0	8	
		2857*a*	0·388	117·3	265·5	−17·0	15	89	
		2857	0·416	119·0	264·1	−18·3	0	13	
		2857	0·429	119·9	263·5	−18·9	0	3	
		2857	0·449	117·5	261·8	−18·5	0	15	
		2861*a*	0·926	109·4	217·8	−20·7	43	261	347*c*
		2863	0·980	111·2	206·2	−22·2	0	29	
Feb. 25		Centre			(286·5)	(−7·2)	(176)	(1199)	(500)
56·224	CL,JG		0·937	247·9	346·8	−23·2			108
			0·921	237·9	343·4	−32·3			271
I.			0·930	298·9	338·7	+23·5			132
			0·893	288·7	336·4	+13·1			516
		2862	0·779	293·7	323·3	+13·4	4	17	174*c*
		2862	0·762	294·2	321·7	+13·1	0	2	
		2860	0·570	295·0	307·6	+ 7·8	0	3	
		2860*a*	0·518	302·0	302·6	+ 9·5	10	39	
		2853	0·634	312·8	305·7	+19·2	0	9	
		2853*a*	0·603	309·6	305·1	+16·3	30	150	
		2853	0·568	311·8	302·3	+15·7	8	53	
		2853	0·570	316·0	300·7	+17·6	0	11	
		2853	0·543	314·0	300·1	+15·6	0	8	
		2853	0·532	316·3	298·7	+15·9	1	8	
		2853	0·499	317·4	296·7	+14·7	0	6	
		2853	0·518	321·3	296·0	+17·0	0	11	
		2853	0·467	317·6	295·1	+13·3	0	6	
		2853	0·442	322·4	292·3	+13·5	0	3	
		2853	0·462	325·7	291·9	+15·4	0	3	
		2853*d*	0·421	327·6	289·7	+13·7	9	33	
		2856*a*	0·444	310·1	296·4	+ 9·9	36	178	
		2856	0·403	313·2	293·5	+ 9·1	0	6	
		2856	0·392	316·1	292·2	+ 9·5	5	16	
		2856	0·377	318·7	290·8	+ 9·4	5	30	
		2856	0·350	317·3	290·1	+ 7·9	0	7	
		2856	0·380	322·3	289·9	+10·4	2	12	
		2856	0·364	326·4	288·1	+10·6	1	7	
		2856*b*	0·339	324·5	287·7	+ 8·9	46	241	
		2864	0·321	6·5	274·2	+11·3	0	3	
1893.									
56d·224	CL, JG	2857	0·158	138·7	270·2	−14·0	0	4	
		2857	0·177	136·2	269·1	−14·5	2	7	
I.		2857	0·199	141·5	268·9	−16·1	0	9	
		2857	0·197	135·1	268·1	−15·1	0	6	
		2857	0·217	138·2	267·7	−16·4	0	5	
		2857	0·231	137·7	267·0	−16·9	0	6	
		2857*a*	0·250	133·2	265·4	−16·9	19	93	
		2857	0·275	136·1	264·8	−18·5	0	4	
		2857	0·281	131·0	263·5	−17·6	1	4	
		2857	0·308	128·1	260·6	−17·9	0	7	
		2857	0·314	129·9	261·6	−18·6	4	19	
		2861*a*	0·860	109·2	216·6	−20·1	76	317	476*c*
		2863	0·931	110·6	206·8	−21·8	0	9	1035*c*
		2863	0·942	110·4	204·8	−21·6	18	61	
			0·877	127·1	216·9	−35·8			130
			0·910	61·3	216·8	+22·4			117
			0·891	102·9	212·6	−14·7			226
			0·909	79·7	212·4	+ 6·2			215
Feb. 26		Centre			(276·3)	(−7·2)	(277)	(1413)	(3400)
57·215	FT, M		0·901	261·3	328·3	−11·0			105
			0·866	251·5	323·8	−19·6			216
I.			0·862	237·9	321·7	−31·1			251
		2862	0·905	288·5	325·1	+13·3	5	8	371*c*
		2865	0·867	256·6	324·1	−15·2	0	6	183*c*
		2853	0·785	301·4	308·4	+19·1	2	7	
		2853	0·777	302·3	307·4	+19·4	3	6	
		2853*a*	0·746	298·9	306·0	+15·9	46	179	382*c*
		2853	0·755	303·2	305·2	+19·0	0	3	
		2853	0·706	299·8	302·6	+15·0	3	11	
		2853	0·695	301·2	301·3	+15·4	0	3	
		2853	0·659	304·2	297·7	+15·7	0	1	
		2853	0·655	305·2	297·1	+16·2	0	4	
		2853	0·649	306·1	296·4	+16·4	0	10	
		2853*d*	0·555	307·5	290·2	+13·3	6	17	
		2860	0·692	291·4	304·0	+ 9·1	8	40	
		2856*a*	0·620	296·0	297·7	+ 9·8	44	188	
		2856	0·592	293·7	296·4	+ 7·7	0	2	
		2856	0·594	295·9	296·0	+ 9·0	1	9	
		2856	0·578	294·0	295·4	+ 7·5	0	2	
		2856	0·571	297·3	294·2	+ 9·0	5	9	
		2856	0·552	298·9	292·6	+ 9·2	22	81	
		2856	0·507	301·4	289·3	+ 8·8	35	185	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2863, Feb. 25–March 4. A small faint diffused spot following Group 2863. Two spots are seen on Feb. 26, only one on Feb. 27, and the group is not seen at all on Feb. 28 and March 1. One or two very small faint spots are seen in nearly the same position on March 2, 3 and 4.
Group 2864, Feb. 26. A very small spot.
Group 2865, Feb. 27–28. A very small faint spot on Feb. 27. Two spots are seen on Feb. 28.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
57d·215	FT,M	2856*c*	0·504	305·1	288·1	+10·3	26	93	
		2856*d*	0·474	301·0	287·5	+ 7·5	15	76	
I.		2856	0·479	303·9	287·0	+ 8·9	0	3	
		2857	0·182	220·8	270·4	−15·0	2	5	
		2857	0·160	218·2	269·2	−14·4	0	1	
		2857	0·194	202·6	267·9	−17·5	0	2	
		2857*a*	0·180	194·2	266·1	−17·2	17	68	
		2857	0·211	188·9	265·4	−19·2	0	2	
		2857	0·189	182·2	263·8	−18·1	0	3	
		2857	0·212	174·6	262·2	−19·3	2	5	
		2861*a*	0·731	111·9	217·1	−20·9	75	296	
		2861	0·754	110·2	214·8	−19·9	5	19	1067*c*
		2863	0·845	111·6	205·7	−22·0	7	19	
			0·778	77·5	213·9	+ 5·1			156
Feb. 27		Centre			(263·4)	(−7·2)	(329)	(1363)	(2731)
58·494	CL,M		0·971	288·4	319·6	+15·9			213
			0·871	244·9	307·0	→25·3			361
		2865	0·978	256·9	325·7	−14·3	0	44	218*c*
		2865	0·953	257·2	319·9	−14·4	0	14	
		2853*a*	0·892	292·3	305·5	+16·2	20	158	294*c*
		2860	0·874	285·1	305·1	+ 9·4	0	9	421*c*
		2860*a*	0·856	285·8	302·9	+ 9·6	0	20	
		2856*a*	0·805	288·3	297·2	+10·1	35	174	
		2856	0·761	289·1	293·1	+ 9·4	13	136	571*c*
		2856	0·716	290·5	289·1	+ 9·2	19	132	
		2856*c*	0·704	293·1	287·5	+10·6	21	173	
		2856*d*	0·688	289·1	287·3	+ 7·6	8	96	
		2866	0·572	319·6	269·5	+19·2	0	6	
		2866	0·565	323·7	267·3	+20·3	1	8	
		2857	0·418	250·0	270·4	−14·8	0	6	
		2857	0·388	240·8	267·2	−17·6	0	20	
		2857*a*	0·365	241·9	266·1	−16·7	9	44	
		2857	0·375	235·4	265·5	−19·0	0	7	
		2857	0·361	237·6	265·1	−17·9	0	17	
		2861	0·484	116·1	219·3	−18·7	3	15	
		2861*a*	0·521	118·3	217·3	−20·6	72	352	
		2861	0·521	114·1	216·5	−18·5	8	45	
		2861	0·551	116·2	214·8	−20·2	0	14	
		2867	0·869	83·1	187·0	+ 2·4	5	38	394*c*
		2867	0·904	84·9	182·5	+ 1·5	2	44	
			0·912	74·5	183·2	+10·9			327
Feb. 28		Centre			(246·5)	(−7·2)	(216)	(1572)	(2799)
1893.									
59d·554	FT,M		0·927	249·4	301·3	−21·8			205
		2853*a*	0·969	289·1	304·9	+16·4	21	122	
		2856*a*	0·912	284·4	296·0	+10·0	24	317	
		2856	0·877	286·6	291·1	+10·8	0	3	991*c*
		2856*c*	0·849	287·8	287·7	+11·0	13	159	
		2856	0·845	286·2	287·7	+ 9·6	7	51	
		2856*d*	0·841	284·6	287·6	+ 8·2	7	108	
		2866	0·718	306·1	270·3	+19·3	0	7	
		2866	0·697	309·6	267·3	+20·4	1	7	
		2857	0·580	250·2	267·2	−17·2	6	128	
		2868	0·401	231·9	252·2	−21·0	4	18	
		2861*a*	0·348	133·7	216·9	−20·9	54	366	
		2861	0·327	127·1	216·6	−18·3	0	4	
		2861	0·379	129·5	214·4	−20·7	0	1	
		2867	0·709	80·5	188·3	+ 1·6	6	31	
		286	0·734	80·0	186·3	+ 2·4	0	3	
		2867	0·755	79·5	184·7	+ 3·1	0	2	
		2867	0·779	82·3	182·2	+ 1·4	16	95	168*c*
		2869	0·816	76·5	179·7	+ 6·7	0	4	
		2869	0·817	77·5	179·4	+ 5·9	0	4	106*c*
		2869	0·850	79·6	175·7	+ 4·9	4	10	
		2869	0·855	77·6	175·5	+ 6·7	8	23	
Mar. 1		Centre			(232·5)	(−7·2)	(171)	(1463)	(1470)
60·409	FT,CL		0·924	237·0	288·7	−33·2			214
			0·870	250·0	282·1	−21·0			394
		2856*a*	0·973	282·6	295·9	+10·4	21	291	
		2856	0·934	282·2	288·4	+ 8·6	10	78	
		2856*c*	0·933	284·9	287·8	+11·1	18	116	774*c*
		2856*d*	0·928	281·0	287·7	+ 7·3	0	86	
		2866	0·795	302·1	266·8	+19·9	5	32	68*c*
		2857*a*	0·721	252·2	267·1	−17·8	15	132	
		2857	0·689	249·9	264·2	−19·0	5	21	
		2857	0·679	251·6	263·6	−17·8	3	24	281*c*
		2868*a*	0·605	244·8	256·9	−20·9	9	31	
		2868	0·568	242·6	253·8	−21·3	0	4	
		2868	0·557	240·9	252·7	−22·0	3	19	
		2868	0·546	241·5	252·1	−21·4	2	6	
		2868*b*	0·539	239·7	251·2	−22·1	9	30	
		2861*b*	0·240	166·8	217·8	−20·8	41	208	
		2861	0·207	160·2	217·0	−18·4	0	6	
		2861*c*	0·260	157·9	215·2	−21·2	23	153	
		2863	0·348	138·1	206·7	−22·0	0	13	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2866, Feb. 28–March 3. A few very small faint spots in an irregular group.
Group 2867, Feb. 28–March 10. A few small ill-defined spots in an irregular group on Feb. 28. On March 2 the leader, *a*, increases in size and becomes a regular spot, the other spots forming a stream following it. *a* alone remains by March 8.
Group 2868, March 1–4. A cluster of small spots following Group 2857 on March 1. The group has become a short stream by March 2, *a* and *b*, the first and last spots, being the largest.
Group 2869, March 1–8. A number of very small spots in an irregular group. The spots seen on March 7 and 8 are not the same as those seen previously.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
60d·409	FT,CL	2870	0·414	44·5	204·1	+10·1	0	4	
		2867*a*	0·560	75·9	188·4	+ 1·7	4	19	
		2867	0·577	75·2	187·4	+ 2·4	2	4	
		2867	0·653	79·2	181·5	+ 1·4	14	54	
		2869	0·733	76·1	175·8	+ 5·0	0	14	
		2869	0·738	74·0	175·8	+ 6·6	8	48	
		2869	0·755	73·9	174·4	+ 7·1	0	6	
			0·904	73·7	159·2	+11·3			74
Mar. 2		Centre			(221·2)	(−7·3)	(192)	(1399)	(1805)
61·126	CL,HA		0·941	252·5	283·1	−18·9			614
			0·919	230·2	277·5	−39·4			370
I.		2856	0·986	281·8	290·5	+10·3	29	229	
		2856	0·977	278·8	288·2	+ 6·9	0	103	839*c*
		2856	0·973	286·2	285·8	+13·8	19	74	
		2866	0·914	294·5	273·1	+18·9	0	12	
		2866	0·881	296·9	268·1	+19·5	5	18	315*c*
		2857*a*	0·832	252·9	268·4	−18·3	33	120	
		2857	0·796	250·9	264·6	−19·6	0	5	
		2857	0·789	253·0	264·0	−17·8	1	11	
		2868*a*	0·739	247·5	258·8	−21·5	10	45	
		2868	0·727	241·5	256·7	−25·5	0	7	1181*s*
		2868	0·675	245·0	252·9	−22·1	2	21	
		2868*b*	0·653	244·1	251·0	−22·2	8	21	
		2871	0·248	234·3	218·0	+ 5·6	1	4	
		2861	0·226	211·9	219·0	−18·3	1	8	
		2861*b*	0·264	203·2	218·2	−21·3	45	176	
		2861	0·280	195·6	216·5	−22·8	1	8	
		2861	0·221	195·9	215·5	−19·5	0	2	
		2861*c*	0·248	192·4	215·1	−21·2	30	138	
		2863	0·295	156·9	204·6	−22·9	1	2	
		2863	0·275	154·2	204·4	−21·5	0	4	
		2870	0·315	21·1	205·2	+ 9·8	0	2	
		2867*a*	0·426	69·0	188·4	+ 2·1	11	28	
		2867	0·490	70·9	184·3	+ 2·7	3	10	
		2867	0·524	74·4	181·6	+ 1·8	11	42	
		2867	0·542	74·2	180·5	+ 2·2	0	4	
		2869	0·571	68·4	179·7	+ 5·9	0	4	
		2869	0·610	70·8	176·6	+ 5·6	5	19	
		2869	0·623	68·8	176·1	+ 7·1	6	15	
		2869	0·640	71·2	174·4	+ 6·1	3	9	
Mar. 3		Centre			(211·8)	(−7·3)	(225)	(1141)	(3319)
1893.									
62d·384	CL,HA		0·942	288·9	262·3	+15·0			498
			0·840	297·7	246·7	+18·5			180
I.			0·849	315·9	239·4	+32·4			138
		2857*a*	0·946	253·7	267·8	−17·7	18	63	
		2868*a*	0·898	249·5	259·7	−21·5	6	33	922*s*
		2868*b*	0·818	248·6	250·0	−21·6	5	18	
		2861*b*	0·444	235·9	218·3	−21·1	45	182	
		2861	0·405	233·9	215·6	−20·6	8	36	
		2861	0·385	236·2	214·9	−19·2	0	6	154*c*
		2861*c*	0·395	230·2	214·2	−21·5	14	57	
		2863	0·299	214·7	205·7	−21·4	1	4	
		2867*a*	0·200	32·3	189·1	+ 2·4	16	74	
		2867	0·230	30·8	188·4	+ 4·1	1	3	
		2867	0·269	48·6	183·6	+ 3·1	1	9	
		2867	0·288	57·4	181·2	+ 1·8	1	13	
		2869	0·385	50·3	177·9	+ 7·2	1	7	
		2869	0·405	47·3	177·7	+ 8·9	0	4	
		2869	0·376	54·8	177·3	+ 5·5	8	25	
		2869	0·387	53·8	177·0	+ 6·3	0	4	
		2869	0·406	54·2	175·9	+ 6·8	5	13	
		2872	0·603	110·5	158·9	−18·1	0	4	
		2873	0·916	108·4	128·0	−19·7	22	62	
		2873	0·939	108·2	124·2	−19·6	9	31	540*c*
		2873	0·940	106·6	124·1	−18·1	28	79	
			0·896	71·2	134·8	+13·2			352
			0·970	96·6	118·6	− 8·2			243
Mar. 4		Centre			(195·2)	(−7·3)	(189)	(727)	(3027)
63·194	FT,JG		0·968	285·7	257·3	+13·2			164
			0·929	248·6	253·8	−22·6			351
M.		2857*a*	0·986	253·3	266·4	−17·6	0	24	457*f*
		2861*b*	0·584	243·8	218·5	−21·0	20	154	
		2861	0·566	242·4	216·9	−21·4	0	9	79*c*
		2861	0·548	243·7	215·9	−20·3	0	15	
		2861*c*	0·528	240·4	213·9	−21·5	11	37	
		2867*a*	0·194	329·2	190·2	+ 2·3	6	39	
		2867	0·181	336·9	188·6	+ 2·2	0	9	
		2869	0·266	22·6	178·6	+ 6·9	0	5	
		2869	0·241	26·4	178·3	+ 5·9	0	2	
		2869	0·300	23·2	177·7	+ 8·7	0	4	
		2869	0·271	30·6	176·5	+ 6·2	0	8	
		2874	0·349	132·9	168·7	−20·7	0	8	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2870, March 2–3. A very small spot.
Group 2871, March 3. A very small spot.
Group 2872, March 4–11. A very small spot on March 4. On March 5 a number of small spots in an irregular stream. Two small spots have formed in advance of the stream by March 11.
Group 2873, March 4–11. A number of small spots in an irregular stream, of which *a*, the leader on March 7, is the most persistent. The individual spots vary in number and size from day to day.
Group 2874, March 5. A small faint spot.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
63d·194	FT,JG	2872	0·415	115·7	161·6	−17·1	0	32	
		2872	0·460	116·9	159·0	−18·6	0	19	
M.		2873*a*	0·817	109·7	129·6	−20·3	10	49	} 331*c*
		2873	0·843	109·1	126·8	−20·0	0	13	
		2873	0·850	107·1	125·9	−18·3	10	46	
		2873	0·858	108·0	125·0	−19·2	0	8	
			0·910	96·9	118·5	− 9·3			413
			0·948	107·2	111·9	−18·6			122
Mar. 5		Centre			(184·5)	(−7·3)	(57)	(481)	(1917)
Mar. 6			No	photo	graph.				
65·421	FT,JG		0·937	285·7	222·2	+12·0			79
			0·905	235·8	200·8	−33·9			88
			0·893	280·9	216·9	+ 6·3			122
			0·893	304·0	210·4	+25·9			78
		2861*b*	0·902	250·6	220·3	−20·6	14	126	} 777*f*
		2861	0·863	248·5	215·1	−22·2	0	3	
		2861*c*	0·854	249·3	214·1	−21·4	0	10	
		2867*a*	0·610	284·6	191·3	+ 3·0	14	77	} 69*c*
		2867	0·590	281·6	190·4	+ 0·9	0	3	
		2869	0·512	298·3	182·1	+ 7·6	0	2	
		2869	0·520	302·4	181·5	+ 9·7	0	2	
		2872	0·239	219·9	164·4	−17·6	0	12	
		2872	0·223	221·9	164·1	−16·6	0	3	
		2872	0·192	197·7	158·7	−17·7	4	20	
		2873*a*	0·464	122·3	130·5	−20·9	7	40	
		2873	0·476	119·3	129·1	−19·9	4	14	
		2873	0·478	117·5	128·7	−19·2	1	5	
		2873	0·495	115·0	127·1	−18·4	0	8	
		2873	0·496	118·6	127·7	−20·1	0	9	
		2873	0·506	113·9	126·2	−18·1	0	6	
		2873	0·512	116·0	126·2	−19·3	0	10	
		2873	0·555	115·5	123·1	−19·9	0	4	
			0·813	102·9	100·4	−14·7			151
			0·871	75·5	96·8	+ 8·9			71
Mar. 7		Centre			(155·2)	(−7·2)	(44)	(354)	(1435)
66·523	FT,M		0·864	291·9	196·5	+14·8			267
		2861*b*	0·976	250·0	219·7	−21·0	0	36	493*s*
		2875	0·857	248·2	199·8	−22·3	17	62	
		2875	0·825	244·4	195·7	−25·1	11	41	
		2867*a*	0·791	279·6	191·9	+ 3·1	13	83	287*c*
1893.				°	°	°			
66d·523	FT,M	2869	0·668	287·0	180·5	+ 5·7	0	2	
		2872	0·435	245·7	165·1	−16·9	10	43	
		2872	0·432	242·9	164·4	−17·9	0	3	
		2872	0·410	242·9	163·1	−17·4	0	2	
		2872	0·384	243·7	161·9	−16·5	2	9	
		2872	0·371	241·7	160·6	−16·9	2	20	
		2873*a*	0·293	145·2	130·4	−21·0	4	12	
		2873	0·295	140·1	129·1	−20·1	10	32	
		2873	0·252	118·9	127·6	−14·0	0	6	
		2873	0·309	132·2	126·8	−18·9	4	25	
		2873	0·298	128·1	126·5	−17·6	0	11	
		2873	0·285	121·7	126·2	−15·6	0	3	
		2873	0·343	129·1	124·4	−19·4	10	45	
		2876	0·489	46·9	119·3	+12·7	4	13	
		2876	0·486	48·7	118·9	+12·0	1	4	
		2877	0·786	69·4	92·3	+11·3	1	3	
			0·868	100·3	79·9	−12·5			173
Mar. 8		Centre			(140·7)	(−7·2)	(89)	(455)	(1220)
67·463	CL,JG		0·917	290·5	191·2	+15·6			207
			0·808	286·0	179·8	+ 8·4			238
		2875	0·947	249·6	200·7	−21·6	9	48	} 583*s*
		2875	0·934	248·3	198·3	−22·8	0	21	
		2875	0·915	245·8	195·1	−25·0	0	10	
		2875	0·914	246·7	195·0	−24·2	0	48	
		2867*a*	0·904	276·7	192·1	+ 2·9	10	41	224*c*
		2872	0·634	251·5	167·1	−17·2	4	16	
		2872	0·555	249·1	161·1	−17·5	0	2	
		2872	0·551	249·9	160·9	−17·0	0	11	
		2873*a*	0·231	184·9	129·5	−20·4	2	11	
		2873	0·203	168·3	125·8	−18·6	5	17	
		2873	0·219	167·2	125·4	−19·5	0	22	
		2873	0·202	161·9	124·5	−18·3	0	2	
		2876	0·350	19·9	121·3	+12·0	2	7	
		2876	0·368	21·9	120·2	+12·7	0	4	
		2876	0·357	23·7	119·9	+11·9	0	4	
		2878	0·403	97·0	104·5	− 9·5	0	4	
		2877	0·627	64·3	93·5	+ 9·8	6	15	
		2879*a*	0·976	103·0	49·7	−14·3	0	104	
			0·801	101·6	74·7	−13·5			118
			0·878	109·8	66·5	−20·7			161
			0·942	98·3	57·2	−10·3			119
Mar. 9		Centre			(128·3)	(−7·2)	(38)	(387)	(1650)

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2875, March 8–10. Two regular spots on March 8. Two smaller spots are seen between them on March 9. Only one spot is seen on March 10.
Group 2876, March 8–14. A stream of very small faint spots.
Group 2877, March 8–11. One or two small unstable spots.
Group 2878, March 9–16. A very small spot on March 9. A number of small faint spots in an irregular group on March 10. The group is not seen on March 12 but has revived by the succeeding day. The group undergoes continual change.
Group 2879, March 9–19. A regular spot, *a*. A very small companion is seen on March 11. 15 and 16.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
68d·443	FT,HA		0·924	279·6	181·4	+ 6·0			744
		2875	0·972	246·5	193·3	−24·5	0	29	506*p*
		2867*a*	0·980	274·7	193·0	+ 3·1	0	10	
		2872	0·794	253·9	168·1	−17·2	2	12	151*c*
		2872	0·744	253·8	163·4	−16·8	0	6	
		2873*a*	0·325	224·1	129·2	−20·4	0	7	
		2873	0·267	221·7	126·1	−18·6	3	12	
		2876	0·361	338·6	123·0	+12·4	2	6	
		2878	0·140	110·4	107·7	− 9·9	3	7	
		2878	0·182	103·8	105·0	− 9·6	0	3	
		2878	0·195	109·8	104·6	−10·8	0	3	
		2878	0·194	100·1	104·2	− 9·0	4	17	
		2878	0·155	111·6	100·9	−10·4	0	7	
		2877	0·463	51·7	93·7	+ 9·9	6	18	
		2877	0·498	51·9	91·8	+11·3	0	4	
		2879*a*	0·911	102·5	48·9	−14·3	35	88	
		2880*a*	0·956	101·0	41·4	−12·6	0	66	
		2881*a*	0·962	96·3	40·6	− 8·1	82	512	667*c*
		2881	0·969	94·3	39·7	− 6·0	0	41	
		2881	0·987	97·1	33·8	− 8·2	0	104	
			0·789	95·6	62·9	− 8·8			94
Mar. 10		Centre			(115·3)	(−7·2)	(137)	(952)	(2162)
69·405	CL,HA		0·964	280·4	175·6	+ 8·0			232
		2872	0·949	258·0	175·1	−13·6	0	9	
		2872	0·932	257·0	172·2	−14·7	0	18	431*c*
		2872	0·914	254·9	169·4	−16·7	0	4	
		2872	0·868	254·7	163·4	−16·9	0	4	
		2873	0·497	242·3	130·3	−19·7	2	8	
		2873	0·459	241·1	127·7	−19·3	0	3	
		2873	0·438	241·8	126·5	−18·5	0	1	
		2873	0·412	240·8	124·8	−18·3	2	5	
		2876	0·497	312·4	124·6	+12·8	5	7	
		2878	0·106	238·3	107·9	−10·4	0	2	
		2877	0·377	29·7	91·6	+12·0	0	5	
		2879*a*	0·808	102·4	48·3	−14·3	14	80	
		2879	0·819	102·7	47·2	−14·5	1	4	
		2880*a*	0·867	100·5	41·9	−12·7	7	22	1292*c*
		2880*b*	0·904	104·1	37·2	−15·8	5	17	
		2881*a*	0·874	95·4	41·3	− 8·2	77	384	
		2881	0·891	93·3	39·4	− 6·2	9	90	
		2881	0·898	95·2	38·3	− 7·9	3	32	
		2881	0·926	95·8	34·3	− 8·1	4	57	
Mar. 11		Centre			(102·6)	(−7·2)	(129)	(752)	(1955)

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	c	°			
70d·437	FT,HA			254·0	162·6	−17·4			313
		2876	0·953	298·5	125·3	+12·5	0	8	
		2879*a*	0·659	103·4	47·9	−14·3	10	67	
		2880*a*	0·658	100·7	42·0	−12·7	0	9	
		2880*b*	0·768	104·4	37·7	−15·7	2	14	
		2881*a*	0·730	94·3	41·5	− 8·1	79	403	
		2881	0·735	90·8	39·9	− 5·3	3	42	
		2881	0·756	93·6	38·7	− 7·4	0	23	
		2881	0·779	96·1	35·6	− 9·2	6	63	652*f*
			0·800	111·4	22·9	−22·4			264
			0·910	67·7	22·4	+18·3			136
Mar. 12		Centre	0·944		(89·1)	(−7·2)	(100)	(629)	(1365)
71·473	CL,HA		0·899	287·0	136·8	+11·8			319
			0·862	248·8	135·3	−21·9			158
		2876	0·814	290·8	126·5	+12·3	2	16	
		2876	0·796	291·8	124·5	+12·5	0	6	175*c*
		2876	0·784	292·8	123·2	+12·9	0	11	
		2878	0·552	262·3	109·1	−10·3	5	13	
		2878	0·530	259·8	107·5	−11·5	0	2	
		2878	0·528	262·2	107·5	−10·3	0	2	
		2878	0·510	261·2	106·2	−10·7	0	4	
		2878	0·501	263·3	105·7	− 9·6	0	2	
		2879*a*	0·468	107·4	48·2	−14·4	12	67	
		2880	0·549	103·1	42·3	−13·2	0	4	
		2880	0·548	99·4	42·2	−11·1	0	7	
		2880	0·585	103·6	39·8	−13·8	0	11	
		2880*b*	0·612	106·4	38·1	−15·7	2	11	
		2881	0·539	88·9	42·9	− 5·5	0	3	
		2881*a*	0·553	93·9	41·8	− 8·2	84	394	
		2881	0·559	88·1	41·5	− 4·9	0	2	
		2881	0·566	86·6	41·2	− 4·1	0	4	
		2881	0·578	90·2	40·1	− 6·0	5	57	
		2881	0·607	95·4	37·9	− 9·0	5	78	
		2881	0·643	95·3	35·3	− 8·9	4	30	
		2881	0·648	97·7	34·9	−10·5	1	11	
		2881	0·662	96·7	33·8	− 9·8	0	7	
		2882	0·744	55·9	34·9	+19·2	2	11	92*f*
		2883	0·955	103·5	1·7	−15·0	3	40	230*f*
			0·828	107·3	19·3	−18·4			223
			0·878	65·4	18·8	+17·6			114
			0·909	111·8	9·5	−22·8			197
Mar. 13		Centre			(75·5)	(−7·2)	(125)	(793)	(1508)

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2880, March 10–17. A single spot, *a*, on March 10. A second spot, *b*, has appeared by March 11. Other smaller spots, faint and ill-defined in character, spring up later, but all are short-lived.
Group 2881, March 10–20. A very large regular spot, *a*, followed by a confused cluster of small ill-defined spots. The latter gradually diminish, and have all died out by March 19. A fresh outburst of the following spots is seen on March 20.
Group 2882, March 13–15. A single small spot on March 13. Two or three small spots on the two succeeding days.
Group 2883, March 13–14. A single spot, which rapidly diminishes in size.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
72d·291	CL,JG		0·803	263·4	118·5	− 9·5			298
			0·798	251·6	117·7	−18·9			241
I.		2876	0·856	288·0	120·6	+11·4	2	11	167*c*
		2876	0·848	288·5	119·7	+11·6	0	6	
		2878	0·689	262·2	108·5	−10·5	5	13	
		2878	0·665	263·5	106·6	− 9·6	1	9	
		2878	0·655	260·6	105·8	−11·5	1	7	116*c*
		2878	0·633	261·6	104·1	−10·8	0	10	
		2878	0·644	263·9	102·8	− 9·4	0	7	
		2879*a*	0·294	114·9	48·8	−13·9	11	64	
		2880	0·345	108·9	45·2	−13·1	2	9	
		2880	0·342	105·7	45·1	−12·0	2	16	
		2880	0·346	104·2	44·8	−11·5	0	5	
		2880	0·372	106·8	43·4	−12·8	4	20	
		2880	0·375	103·4	42·9	−11·6	0	3	
		2881*a*	0·374	93·3	42·7	− 7·8	90	330	
		2881	0·387	86·7	42·0	− 5·3	0	12	
		2881	0·425	94·8	39·5	− 8·5	8	101	
		2881	0·471	96·7	36·5	− 9·4	3	17	
		2881	0·480	94·5	35·9	− 8·4	0	5	
		2882	0·615	46·9	36·5	+18·5	4	11	
		2882	0·634	44·2	36·0	+21·2	1	7	52*c*
		2882	0·646	45·9	35·1	+20·5	3	8	
		2883	0·856	102·9	5·3	−14·7	3	16	192*f*
			0·725	105·8	18·3	−16·3			197
			0·860	112·9	5·3	−23·3			368
			0·897	71·3	4·1	+13·3			40
Mar. 14		Centre			(64·7)	(−7·1)	(140)	(687)	(1671)
									166
73·434	CL,HA		0·978	285·2	125·2	+13·2			338
			0·896	253·0	113·9	−18·4			
		2878	0·867	264·0	110·1	− 8·7	8	32	481*p*
		2878	0·829	262·8	106·0	−10·0	5	18	
		2879*a*	0·126	171·8	48·5	−14·2	13	55	
		2879	0·157	159·2	46·3	−15·5	0	2	
		2880	0·112	138·5	45·3	−11·9	0	3	170*c*
		2880	0·131	143·8	45·1	−13·1	0	2	
		2880	0·167	129·5	42·0	−13·1	5	13	
		2880	0·196	124·4	40·1	−13·3	0	10	
		2881	0·111	84·3	43·2	− 6·4	0	3	
		2881*a*	0·133	98·3	42·0	− 8·2	78	394	
		2881	0·186	103·1	39·1	− 9·4	4	73	
		2881	0·218	100·6	37·1	− 9·3	0	3	
		2881	0·248	102·1	35·4	− 9·9	2	19	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
73d·434	CL,HA	2881	0·249	96·9	35·2	− 8·6	0	4	
		2882	0·507	27·2	35·4	+19·8	0	6	
		2882	0·536	28·7	33·6	+21·1	0	7	
			0·744	117·6	3·1	−25·1			278
			0·801	107·3	356·3	−18·1			167
			0·874	65·8	353·2	+17·2			210
			0·877	111·5	348·0	−22·2			234
			0·914	75·9	345·7	+ 9·8			172
			0·976	104·1	331·0	−15·3			238
Mar. 15		Centre			(49·6)	(−7·1)	(115)	(644)	(2454)
									362
74·427	FT,CL		0·951	252·9	109·6	−18·4			443*c*
		2878	0·959	261·7	110·7	−10·0	0	26	
		2884	0·772	251·8	87·0	−18·6	0	9	156*c*
		2884	0·754	250·8	85·2	−19·1	0	3	
		2879	0·267	251·1	51·4	−11·8	0	3	
		2879*a*	0·242	239·0	48·8	−14·1	13	44	
		2880	0·137	223·3	42·0	−12·8	0	4	
		2880	0·104	216·0	40·1	−11·9	0	4	
		2880	0·089	224·9	40·1	−10·5	0	12	
		2881*a*	0·105	260·7	42·5	− 8·1	83	380	
		2881	0·068	233·6	39·7	− 9·4	0	4	
		2881	0·042	172·6	33·4	− 9·5	0	24	
		2885	0·900	102·5	331·7	−14·3	0	8	720*f*
			0·801	115·1	344·0	−24·2			266
			0·892	70·0	336·8	+14·3			602
			0·919	122·8	329·9	−32·8			170
Mar. 16		Centre			(36·5)	(−7·1)	(96)	(521)	(2719)
									254
75·422	HA,JG		0·988	259·3	105·5	−11·7			
		2879*a*	0·442	251·7	48·9	−14·4	8	50	
		2880	0·297	248·5	39·8	−13·1	0	5	
		2881*a*	0·334	265·3	43·0	− 8·3	74	354	
		2881	0·288	270·7	40·2	− 6·6	0	3	
		2881	0·287	259·2	40·0	− 9·9	0	4	
		2881	0·227	260·0	36·4	− 9·1	0	6	
		2886	0·478	115·9	356·6	−18·4	0	2	
		2887	0·793	60·9	336·9	+17·8	0	7	58*c*
		2885	0·785	103·4	331·4	−14·9	0	12	381*c*
		2888*a*	0·888	67·5	324·9	+16·3	12	65	
		2888	0·921	69·2	321·0	+16·0	0	5	285*c*
		2888	0·920	70·6	319·8	+14·7	0	10	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2884, March 16. Two very small spots.
Group 2885, March 16–18. A small spot.
Group 2886, March 17. A very small spot, north of the position where Group 2891 appears on the succeeding day.
Group 2887, March 17. Two very small spots measured as one.
Group 2888, March 17–19. A regular spot, *a*, with a few very small companions. The entire group is measured as one on March 19.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
75d.422	HA,JG	2889	0·987	74·2	305·0	+14·3	34	101	} 329*p*
		2890	0·988	80·2	303·8	+ 8·5	0	32	
		2890	0·989	78·5	303·6	+10·2	0	26	
			0·882	111·5	7·2	−22·3			413
Mar. 17		Centre			(23·4)	(−7·1)	(128)	(682)	(1720)
76·455	HA,JG		0·911	253·1	76·2	−18·3			200
			0·869	262·1	70·6	−10·3			70
		2879*a*	0·527	256·1	48·5	−14·1	9	30	61*c*
		2881*a*	0·546	265·6	43·0	− 8·2	80	376	
		2881	0·497	269·0	39·7	− 6·6	0	3	
		2881	0·490	267·4	39·2	− 7·4	0	2	
		2881	0·434	261·9	35·5	− 9·8	0	1	
		2881	0·433	265·1	35·5	− 8·5	0	2	
		2891	0·222	113·8	357·9	−12·0	0	3	
		2891	0·279	116·2	354·9	−13·8	0	4	
		2891	0·301	117·8	353·9	−14·8	0	1	
		2891	0·304	114·2	353·3	−13·8	0	3	
		2885	0·622	104·7	331·5	−14·6	2	5	
		2888	0·717	60·3	329·7	+15·5	0	6	} 79*c*
		2888	0·771	61·4	325·0	+16·7	8	60	
		2888	0·825	65·7	318·7	+15·5	0	4	133*c*
		2889	0·934	71·9	303·7	+14·1	13	85	}
		2890	0·938	76·8	302·4	+ 9·7	0	8	
		2890	0·940	79·0	301·4	+ 7·8	0	18	} 913*c*
		2892	0·971	75·9	295·8	+11·8	11	127	
			0·905	116·6	304·8	−27·0			176
Mar. 18		Centre			(9·8)	(−7·0)	(123)	(738)	(1632)
77·272	CL,FT		0·927	260·1	67·6	−11·8			118
			0·905	247·9	64·3	−22·9			159
M.		2879*a*	0·765	256·9	49·1	−14·6	2	13	
		2881*a*	0·704	265·2	44·0	− 8·4	67	396	
		2891	0·125	168·5	357·5	−14·0	3	11	
		2891	0·148	159·1	355·9	−15·0	0	2	
		2891	0·146	146·5	354·3	−14·0	2	11	
		2891	0·184	153·1	354·0	−16·4	0	3	
		2891	0·158	142·1	353·3	−14·1	0	5	
		2891	0·175	135·1	351·7	−14·0	0	2	
		2888*a*	0·650	54·5	325·7	+16·3	3	21	
		2889*a*	0·850	68·7	304·5	+14·0	10	73	
		2890	0·815	74·3	306·7	+ 8·5	2	5	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
77d.272	CL,FT	2890	0·850	74·2	303·2	+ 9·5	0	5	
		2890	0·858	76·9	301·8	+ 7·5	0	9	
M.		2892*a*	0·905	73·0	296·9	+12·1	9	44	}
		2892	0·910	74·4	296·0	+11·0	14	59	} 947*f*
		2892	0·916	78·9	294·2	+ 7·3	0	21	
		2892	0·948	78·9	289·2	+ 8·2	0	15	
		2893	0·997	66·7	275·0	+23·0	0	102	
			0·892	44·2	309·5	+35·3			248
			0·900	112·9	294·4	−23·7			177
Mar. 19		Centre			(359·0)	(−7·0)	(112)	(797)	(1649)
78·413	FT,HA		0·845	254·1	42·1	−17·2			301
		2881*a*	0·868	264·5	44·6	− 8·2	73	396	} 549*c*
		2881	0·833	266·5	40·6	− 6·8	0	64	
		2891	0·273	243·0	358·4	−13·9	1	7	
		2891	0·252	237·1	356·6	−14·7	1	3	
		2891	0·216	236·4	354·6	−13·7	1	5	
		2894	0·281	132·0	331·4	−17·6	0	17	
		2889	0·680	63·4	305·7	+12·2	3	16	
		2889*a*	0·706	62·0	304·2	+14·0	19	83	
		2889	0·728	62·5	302·4	+14·4	0	4	
		2890	0·675	69·9	304·4	+ 8·1	0	3	
		2890	0·689	68·0	303·8	+ 9·6	0	5	
		2890	0·694	71·3	302·6	+ 7·6	0	7	
		2892*a*	0·779	69·0	296·3	+11·5	20	100	}
		2892	0·782	75·1	294·6	+ 7·1	0	5	} 359*c*
		2892*b*	0·833	74·6	289·9	+ 8·7	18	56	
		2892*c*	0·867	77·4	285·7	+ 7·2	22	104	
		2893*a*	0·961	63·0	275·1	+23·5	54	433	171*f*
			0·826	120·3	289·7	−28·8			63
			0·887	107·4	280·9	−18·7			425
			0·962	120·7	268·5	−31·4			198
Mar. 20		Centre			(344·0)	(−7·0)	(212)	(1308)	(2066)
79·420	M,HA		0·927	250·1	39·5	−21·0			214
			0·908	299·4	29·8	+23·0			58
			0·833	251·6	27·2	−19·1			119
		2881*a*	0·959	263·3	44·7	− 8·4	60	372	538*c*
		2895	0·745	250·1	18·4	−19·3	0	5	54*c*
		2889	0·534	48·1	306·5	+14·5	0	2	
		2889	0·520	51·0	306·3	+12·8	0	4	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2889, March 17–27. A regular spot, *a*, with occasionally a few very small companions. The nucleus of *a* has become elongated in the direction of motion by March 23, and the spot has broken up by the succeeding day, though it is then still measured as one.
Group 2890, March 17–22. A few very small spots *n* of Group 2889.
Group 2891, March 18–23. A few very small spots forming on March 19 and 20 a curved stream. The group is not seen on March 21 and 22, and but one small spot is seen on March 23.
Group 2892, March 18–30. A very fine stream of spots. The leader, *a*, is divided by a bright bridge on March 20, and has broken up into a number of small spots by March 22. Two other large spots, *b* and *c*, have formed by March 20. *b* is a regular spot with a well-defined nucleus, but undergoes great fluctuations in size; *c* is ill-defined and irregular. The spots following *b* disappear, and it is left alone by March 29.
Group 2893, March 19–31. A very large regular spot, *a*, with small companions on March 21 and 23.
Group 2894, March 20. A small nebulous spot.
Group 2895, March 21. A very small faint spot.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	HELIOGRAPHIC		SPOTS.		FACULÆ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
79d.420	M, HA	2889*a*	0·555	51·5	304·2	+14·0	16	92	
		2889	0·579	51·1	303·0	+15·1	0	2	
		2889	0·589	53·5	301·5	+14·4	0	5	
		2889	0·586	55·8	301·0	+13·3	1	7	
		2890	0·501	60·2	304·8	+ 8·2	0	2	
		2890	0·517	58·2	304·3	+ 9·6	2	6	
		2892*a*	0·639	61·5	295·8	+12·1	15	57	
		2892	0·661	62·7	293·9	+12·1	1	7	
		2892	0·657	65·2	293·5	+10·5	0	9	
		2892	0·654	68·1	293·0	+ 8·6	0	7	
		2892*b*	0·684	67·5	291·0	+ 9·8	15	139	
		2892	0·698	70·9	289·1	+ 8·0	3	15	
		2892	0·721	69·1	287·7	+ 9·8	1	6	
		2892*c*	0·731	73·1	286·0	+ 7·4	28	176	
		2893*a*	0·886	58·5	275·2	+23·8	77	404	}
		2893	0·910	59·6	271·7	+24·0	0	6	} 787*c*
		2893	0·918	63·0	269·4	+21·4	0	10	}
			0·835	110·5	274·1	−20·9			718
			0·869	124·5	272·1	−33·2			112
			0·966	113·3	254·3	−24·2			307
Mar. 21		Centre			(330·7)	(−6·9)	(219)	(1333)	(2907)
80·519	CL, JG		0·903	252·9	21·4	−18·4			351
		2889*a*	0·400	29·8	304·5	+13·5	10	70	
		2890	0·336	34·0	305·3	+ 9·3	0	4	
		2892	0·448	46·3	297·0	+11·4	0	11	
		2892	0·460	47·5	296·0	+11·5	4	19	
		2892	0·479	48·4	294·8	+12·1	0	19	
		2892	0·450	53·8	294·7	+ 9·0	0	9	
		2892	0·501	47·8	293·9	+13·2	0	4	
		2892	0·472	52·9	293·8	+10·1	0	23	
		2892	0·503	50·8	293·2	+ 6·3	0	5	
		2892*b*	0·500	55·1	291·7	+10·3	20	160	
		2892	0·499	60·2	290·4	+ 8·1	9	33	}
		2892	0·523	59·0	289·3	+ 9·4	0	8	}
		2892	0·525	61·4	288·5	+ 8·5	0	9	} 272*c*
		2892*c*	0·547	65·4	286·3	+ 7·1	32	298	}
		2893*a*	0·768	51·3	275·6	+23·5	57	414	833*f*
			0·731	113·8	270·2	−22·0			198
			0·800	132·7	268·5	−37·5			93
			0·901	113·4	251·5	−24·1			255
Mar. 22		Centre			(316·2)	(−6·9)	(132)	(1086)	(2002)
1893.				°	°	°			
81d.475	JG, HA		0·936	250·7	13·9	−20·5			230
		2891	0·769	257·1	354·1	−14·3	0	16	347*s*
		2896	0·156	206·4	307·7	−14·9	0	6	
		2889*a*	0·347	357·9	304·3	+13·3	13	66	
		2892	0·336	21·0	296·6	+11·4	4	12	}
		2892	0·296	27·4	295·7	+ 8·3	1	4	}
		2892	0·351	24·9	295·0	+11·7	0	27	}
		2892	0·381	24·7	294·2	+13·4	0	4	}
		2892*b*	0·355	33·5	292·2	+10·4	31	181	}
		2892	0·336	40·0	291·1	+ 8·1	2	9	} 302*c*
		2892	0·362	40·0	290·0	+ 9·3	8	57	}
		2892	0·360	43·8	289·1	+ 8·3	2	8	}
		2892	0·383	43·7	288·1	+ 9·4	2	7	}
		2892*c*	0·377	51·7	286·3	+ 6·9	39	269	}
		2892	0·421	45·7	285·8	+10·5	1	8	}
		2897	0·166	105·5	294·3	− 9·4	0	12	
		2897	0·204	106·4	292·2	−10·1	4	19	
		2893*a*	0·658	41·3	275·4	+23·5	68	436	}
		2893	0·668	44·5	273·3	+22·4	0	9	} 260*f*
		2893	0·671	47·1	271·9	+21·3	0	2	}
			0·884	62·4	247·1	+20·4			200
			0·836	115·5	247·5	−25·0			289
			0·973	80·8	228·3	+ 7·2			229
Mar. 23		Centre			(303·6)	(−6·9)	(175)	(1152)	(1857)
82·417	FT, M		0·939	288·6	358·0	+14·8			318
			0·897	250·9	355·5	−20·1			473
		2896*a*	0·345	243·9	309·8	−15·1	8	18	
		2896	0·281	240·7	305·8	−14·5	1	9	
		2896*b*	0·282	237·5	305·4	−15·3	4	13	
		2889*a*	0·412	327·6	304·3	+13·7	13	40	
		2892	0·315	348·5	294·9	+11·1	1	13	
		2892*b*	0·304	355·4	292·6	+10·8	27	135	
		2892	0·270	357·1	292·0	+ 8·8	3	14	
		2892	0·284	1·4	290·8	+ 9·6	11	45	
		2892	0·260	14·5	287·4	+ 7·8	8	59	
		2892	0·320	14·7	286·5	+11·2	11	54	
		2892*c*	0·252	21·7	285·8	+ 6·7	32	172	
		2892	0·365	23·7	282·6	+12·7	5	26	
		2892	0·352	25·9	282·2	+11·7	2	13	
		2897	0·085	239·0	295·4	− 9·3	0	1	
		2897	0·061	203·9	292·6	−10·0	1	7	
		2893*a*	0·569	26·2	275·3	+24·0	79	456	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2896, March 23–29. A very small faint spot on March 23. A stream of small spots on March 24, of which the first and last, *a* and *b*, are the largest. The group increases in size very rapidly until March 27.
Group 2897, March 23–24. Two small spots.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
82d.417	FT,M	2898*a*	0·994	75·8	209·6	+13·2	0	107	99 *p*
			0·864	54·3	240·0	+26·1			165
			0·927	78·7	224·9	+ 7·8			292
			0·940	110·5	220·3	−21·5			347
Mar. 24		Centre			(291·2)	(−6·8)	(206)	(1182)	(1694)
83·424	FT,M		0·938	252·0	348·5	−19·2			336
			0·901	295·5	337·3	+19·4			186
			0·829	259·4	334·3	−12·6			159
		2896*a*	0·561	252·9	311·5	−15·1	6	21	
		2896	0·545	252·8	310·4	−15·0	7	29	
		2896	0·526	251·0	308·9	−15·7	0	2	
		2896	0·513	252·7	308·2	−14·7	2	9	
		2896*b*	0·477	249·3	305·4	−15·7	9	59	
		2889*a*	0·547	308·5	303·9	+13·8	6	18	
		2889	0·543	309·7	303·3	+14·1	0	1	
		2889	0·535	312·2	302·0	+14·8	0	1	
		2892	0·421	301·4	299·0	+ 6·3	0	2	
		2892	0·397	303·6	297·2	+ 6·2	0	1	
		2892	0·447	316·8	296·1	+12·5	1	5	
		2892	0·427	315·7	295·5	+11·3	0	3	
		2892	0·404	313·4	295·1	+ 9·6	0	3	
		2892	0·378	312·3	294·2	+ 8·2	0	2	
		2892*b*	0·387	319·7	292·6	+10·5	35	339	
		2892	0·289	321·3	288·3	+ 6·3	1	11	
		2892	0·295	323·6	288·0	+ 7·0	2	49	
		2892	0·332	328·4	288·0	+ 9·7	0	4	
		2892	0·315	327·5	287·7	+ 8·7	1	3	
		2892	0·302	327·4	287·3	+ 8·0	2	9	
		2892	0·346	333·0	287·1	+11·2	2	18	
		2892	0·339	334·5	286·4	+11·1	0	3	
		2892*c*	0·273	328·0	286·2	+ 6·6	22	147	
		2892	0·362	343·5	283·9	+13·4	0	2	
		2892	0·328	345·9	282·5	+11·7	2	5	
		2892	0·342	347·6	282·2	+12·7	1	4	
		2892	0·320	347·6	281·9	+11·4	0	4	
		2893*a*	0·515	4·5	275·4	+24·0	65	463	
		2899	0·902	109·3	213·0	−20·3	0	5	254*c*
		2899	0·917	109·6	210·7	−20·6	0	6	
		2898*a*	0·944	73·6	209·8	+13·0	21	110	615*c*
		2900	0·990	72·5	198·7	+16·2	0	42	
			0·945	118·0	206·2	−28·6			223
Mar. 25		Centre			(277·9)	(−6·8)	(185)	(1380)	(1773)
1893. 84d.182 I.	HA,JG		0·926	258·7	336·4	−13·0			144
			0·895	234·0	329·8	−35·0			67
			0·901	293·1	328·0	+17·4			365
			0·865	251·2	328·0	−19·6			153
			0·830	242·1	322·9	−26·8			83
		2896*a*	0·712	254·5	313·2	−15·7	13	96	113*c*
		2896	0·661	254·7	309·1	−15·1	10	25	
		2896*b*	0·619	252·4	305·6	−16·1	21	116	
		2889*a*	0·664	299·1	304·4	+13·5	12	23	81*c*
		2892	0·566	303·1	296·8	+12·1	0	4	
		2892	0·537	301·1	295·6	+10·1	4	31	
		2892	0·506	299·6	294·2	+ 8·4	0	14	
		2892*b*	0·509	303·4	293·4	+10·2	51	241	
		2892	0·471	300·2	292·0	+ 7·5	0	4	
		2892	0·477	302·8	291·7	+ 8·8	0	12	
		2892	0·475	305·8	290·8	+ 9·9	0	6	
		2892	0·455	305·9	289·7	+ 9·2	4	16	
		2892	0·420	301·8	288·9	+ 6·6	1	10	
		2892	0·443	309·2	288·2	+ 9·9	4	7	236*c*
		2892	0·416	304·7	288·0	+ 6·8	5	42	
		2892	0·405	304·4	287·5	+ 6·8	0	10	
		2892	0·446	312·5	287·4	+11·1	4	23	
		2892*c*	0·388	306·0	286·3	+ 6·8	19	123	
		2892	0·405	321·1	282·9	+11·8	0	5	
		2892	0·409	324·2	282·0	+12·8	0	2	
		2893*a*	0·528	346·5	275·6	+24·1	92	396	78*c*
		2901	0·773	49·6	227·6	+25·0	10	23	98*c*
		2901	0·802	50·4	224·7	+25·9	12	24	
		2899	0·817	109·9	213·2	−20·1	0	10	140*s*
		2899	0·844	109·6	210·3	−20·1	0	4	
		2898*a*	0·887	70·7	208·6	+13·7	17	90	486*c*
		2902	0·926	110·3	199·4	−21·3	0	11	271*p*
		2900	0·967	69·1	196·2	+18·2	5	32	557*c*
		2900*a*	0·971	70·6	194·9	+17·0	18	134	
		2900	0·975	69·3	194·1	+18·4	5	28	
			0·871	116·7	207·8	−26·5			78
			0·941	82·0	198·8	+ 5·2			84
			0·942	123·8	197·4	−34·0			138
			0·977	65·3	194·4	+22·3			89
			0·956	116·2	193·9	−27·0			282
Mar. 26		Centre			(267·9)	(−6·7)	(307)	(1562)	(3543)

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2898, March 24–30. A faint, ill-defined spot, *a*, with a very small companion on March 27, and a larger one on March 29. *a* rapidly diminishes in size from day to day.
Group 2899, March 25–April 5. The group consists of a few spots, mostly very small, up to March 28. The group shows a great expansion by the succeeding day, and has developed into a fine stream, of which *a* and *b* are the two principal spots on March 30. A spot, *c*, immediately following *a*, has attained a considerable area by April 1, and by April 3 only these three large spots remain.
Group 2900, March 25–April 1. A small group which steadily diminishes from day to day. *a*, the last spot of the group on March 27, is the largest spot.
Group 2901, March 26–April 2. A few small spots in an irregular stream. The group undergoes continual change.
Group 2902, March 26. A small faint spot.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
85d·418	M,JG		0·948	249·2	324·0	−21·8			479
		2896*a*	0·876	256·5	313·3	−15·0	14	114	
		2896	0·854	256·6	310·7	−14·9	7	76	
		2896	0·824	255·7	307·4	−15·6	10	55	455*c*
		2896*b*	0·801	256·3	305·0	−15·0	25	166	
		2903	0·853	240·0	309·0	−28·9	0	3	
		2903	0·817	237·7	304·3	−30·0	0	9	195*c*
		2889*a*	0·829	291·6	303·9	+13·7	0	5	
		2889	0·823	292·3	303·1	+14·0	0	3	456*c*
		2892	0·707	289·4	293·8	+ 8·6	0	19	
		2892*b*	0·705	292·0	293·1	+10·3	41	287	393*c*
		2892	0·639	291·8	288·3	+ 8·3	0	5	
		2892*c*	0·600	291·3	285·7	+ 7·0	4	19	129*c*
		2893*a*	0·619	323·9	275·0	+23·8	66	370	258*c*
		2904	0·433	340·8	260·1	+17·4	1	10	
		2904	0·435	346·7	257·6	+18·3	0	5	
		2905	0·340	85·6	231·8	− 4·8	0	3	
		2905	0·370	86·2	230·0	− 4·8	0	5	
		2901	0·619	34·9	228·8	+24·2	0	3	
		2901	0·631	36·2	227·5	+24·4	0	5	
		2901	0·632	38·4	226·3	+23·5	0	2	
		2901	0·673	37·8	224·4	+26·0	1	6	
		2899	0·612	115·7	215·6	−20·8	2	10	78*c*
		2899	0·639	114·0	213·3	−20·3	4	16	
		2899	0·698	109·9	207·9	−18·6	0	7	
		2898	0·726	66·7	208·8	+11·8	0	4	113*c*
		2898*a*	0·734	64·4	208·8	+13·6	11	50	
		2900	0·860	65·1	197·0	+17·4	6	41	512*c*
		2900*a*	0·868	66·7	195·6	+16·4	20	98	
		2906*a*	0·949	103·8	179·1	−15·2	22	196	380*f*
			0·843	118·5	195·2	−27·5			541
			0·930	77·0	185·1	+ 9·4			104
Mar. 27		Centre			(251·6)	(−6·7)	(234)	(1592)	(4093)
86·432	FT,HA		0·936	241·8	308·1	−28·7			150
			0·859	296·4	292·3	+18·7			165
			0·772	237·8	286·1	−28·7			84
		2896*a*	0·957	255·8	312·2	−15·5	24	183	
		2896	0·917	255·4	305·3	−16·0	9	52	244*c*
		2896*b*	0·909	256·9	304·2	−14·6	11	81	
		2892	0·840	284·6	293·3	+ 8·5	0	23	
		2892*b*	0·841	287·0	292·9	+10·4	29	163	494*p*
		2892	0·808	286·3	281·2	+ 9·1	0	11	
1893.									
86d·432	FT,HA	2905	0·130	78·9	230·9	− 5·1	0	4	
		2893*a*	0·731	311·9	274·6	+23·8	56	338	204*c*
		2901	0·544	18·0	227·6	+24·5	12	22	83*c*
		2901	0·567	19·5	226·1	+25·7	0	4	
		2899	0·424	124·3	216·4	−19·9	2	22	
		2899	0·456	122·6	214·1	−20·2	7	22	
		2898*a*	0·586	55·2	208·6	+13·8	6	26	
		2900	0·672	56·6	202·6	+16·3	0	3	
		2900	0·735	58·8	197·1	+17·4	0	11	297*c*
		2900	0·754	59·1	195·5	+17·9	0	8	
		2900*a*	0·754	60·8	194·9	+16·8	17	73	
		2906*a*	0·849	103·4	179·7	−14·9	16	91	370*f*
			0·848	118·8	182·3	−27·8			172
			0·875	75·0	179·4	+ 9·8			188
			0·980	105·8	158·5	−16·8			125
Mar. 28		Centre			(238·2)	(−6·6)	(189)	(1137)	(2576)
87·416	FT,M		0·977	241·3	304·6	−29·4			126
			0·907	248·3	290·8	−22·5			123
			0·916	289·6	288·3	+15·0			277
		2896	0·988	254·7	307·5	−16·1	0	64	195*c*
		2896*b*	0·980	256·8	304·7	−14·2	9	140	
		2892*b*	0·941	283·9	293·3	+10·7	39	170	900*c*
		2893*a*	0·840	304·0	274·6	+23·8	58	335	393*f*
		2904	0·659	311·7	256·7	+20·3	0	4	
		2901	0·525	355·0	228·1	+24·8	5	20	
		2901	0·513	358·2	226·2	+24·1	0	7	
		2901	0·539	0·2	225·1	+25·9	0	5	
		2901	0·535	1·9	224·1	+25·6	0	19	
		2899	0·264	154·9	218·2	−23·3	7	32	
		2899	0·248	149·9	217·7	−18·9	5	13	
		2899	0·274	151·8	217·3	−20·5	4	15	
		2899	0·265	150·3	217·2	−19·8	0	12	
		2899	0·288	149·8	216·3	−20·9	6	16	
		2899	0·246	141·4	216·0	−17·5	0	3	
		2899	0·261	140·9	215·3	−18·1	2	7	
		2899	0·297	143·4	214·4	−20·3	0	17	
		2899	0·281	138·4	213·9	−18·6	0	7	
		2899	0·308	139·2	212·9	−19·9	28	89	
		2899	0·336	137·3	211·2	−20·6	0	6	
		2899	0·369	131·7	208·2	−20·5	0	8	
		2898*a*	0·442	38·0	209·0	+14·0	2	7	
		2898	0·442	45·0	206·7	+11·9	1	17	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2903, March 27. Two very small spots.
Group 2904, March 27–30. A disturbed region, in which two or three very small spots are seen on March 27, 29 and 30. No spots are seen on March 28.
Group 2905, March 27–April 2. Two very small spots on March 27; one on March 28. No spots are seen on March 29, but a very small spot is seen on March 30, and the group increases in size on the succeeding days, forming a short stream.
Group 2906, March 27–April 7. A large regular spot, *a*. It has moved forward in longitude, and a small spot, *b*, has broken off from it, by March 29. *b* shows a marked proper motion in latitude; *b* has disappeared by April 2, and a long curved stream of small spots follows *a*. These diminish rapidly on the succeeding days.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued*.

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
87d·416	FT, M	2900	0·597	48·5	197·4	+17·5	0	5	
		2900	0·618	49·2	195·9	+18·0	0	17	
		2900*a*	0·618	51·4	195·0	+16·9	11	59	
		2906*a*	0·695	104·1	181·2	−14·6	16	108	} 230*c*
		2906*b*	0·719	105·2	179·3	−15·5	0	20	
			0·850	108·4	166·8	−19·1			576
Mar. 29		Centre			(225·2)	(−6·6)	(193)	(1222)	(2820)
88·489	HA, JG		0·873	248·9	271·9	−21·6			444
		2892*b*	0·995	281·3	293·6	+10·5	43	203	578*f*
		2893*a*	0·934	298·3	274·4	+23·8	54	353	404*f*
		2904	0·815	298·0	257·2	+18·3	0	9	} 133*c*
		2904	0·780	298·3	256·8	+17·2	0	11	
		2905	0·355	273·4	231·7	− 4·9	0	5	
		2901	0·579	331·8	228·4	+24·3	0	13	
		2901	0·567	338·8	224·1	+25·5	0	4	
		2899	0·277	208·6	219·1	−20·5	5	10	
		2899*a*	0·250	205·5	217·5	−19·5	28	149	
		2899	0·217	199·0	215·1	−18·3	10	47	
		2899	0·263	191·3	214·2	−21·4	0	3	
		2899	0·236	190·3	213·6	−19·9	2	56	
		2899	0·213	185·2	212·2	−18·7	0	4	
		2899*b*	0·242	182·9	211·7	−20·4	8	38	
		2898*a*	0·373	5·5	208·9	+15·2	0	8	
		2900	0·448	30·6	197·3	+16·3	0	8	
		2900	0·477	31·1	196·1	+17·7	0	12	
		2900*a*	0·478	34·2	194·8	+16·9	4	24	
		2906*a*	0·498	107·0	181·7	−14·0	15	108	
		2906*b*	0·531	108·1	179·6	−15·0	0	13	
		2907	0·913	71·3	148·1	+14·1	0	8	
		2908*a*	0·991	79·1	130·3	+ 9·8	0	43	438*c*
			0·920	71·9	147·0	+13·8			275
Mar. 30		Centre			(211·0)	(−6·5)	(169)	(1129)	(2272)
89·429	M, JG		0·924	248·1	266·7	−22·7			289
		2893*a*	0·982	296·0	273·3	+23·9	39	323	713*f*
		2905	0·603	270·9	235·7	− 4·7	0	3	
		2905	0·548	271·9	231·8	− 4·4	0	8	
		2901	0·689	318·0	229·1	+25·2	4	16	
		2901	0·651	323·9	223·7	+25·8	0	6	
		2899	0·425	234·4	220·1	−20·4	6	22	
		2899*a*	0·394	234·6	218·4	−19·3	41	221	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
				°	°	°			
1893.									
89d·429	M, JG	2899	0·387	230·6	217·1	−20·4	5	24	
		2899	0·364	230·7	215·9	−19·5	4	30	
		2899	0·349	233·5	215·7	−18·1	8	37	
		2899	0·339	235·0	215·5	−17·5	0	2	
		2899	0·371	227·1	215·4	−20·8	0	16	
		2899	0·322	231·5	213·9	−17·8	5	31	
		2899*b*	0·327	224·1	212·5	−19·8	21	229	
		2900	0·403	3·4	197·2	+17·1	0	4	
		2900	0·423	7·0	195·5	+18·3	0	4	
		2900*a*	0·411	9·6	194·5	+17·4	6	23	
		2906*a*	0·313	115·3	181·7	−13·9	14	104	
		2906*b*	0·340	112·2	179·8	−13·6	0	14	
		2907	0·812	68·4	147·9	+13·3	4	14	342*c*
		2908*a*	0·938	77·0	130·8	+ 9·8	14	89	} 512*c*
		2908	0·968	77·0	125·0	+10·8	0	12	
			0·930	97·7	129·7	− 9·6			229
Mar. 31		Centre			(198·6)	(−6·5)	(171)	(1232)	(2085)
90·409	HA, JG		0·977	292·9	259·9	+20·8			374
			0·930	246·8	254·5	−23·8			601
		2905	0·788	269·6	237·7	− 4·3	0	3	
		2905	0·774	269·7	236·4	− 4·3	2	9	
		2905	0·751	269·4	234·4	− 4·7	0	4	
		2905	0·743	270·8	233·6	− 3·7	6	26	93*c*
		2901	0·805	308·5	229·8	+25·5	7	20	} 144*f*
		2901	0·790	309·4	228·0	+25·4	0	2	
		2901	0·783	311·2	226·6	+26·2	0	7	
		2899*a*	0·581	245·8	219·7	−19·1	24	154	
		2899*c*	0·546	244·4	217·0	−19·2	14	121	
		2899	0·522	242·5	215·0	−19·5	0	7	
		2899	0·500	245·1	214·0	−17·8	1	6	
		2899	0·512	239·5	213·7	−20·7	0	5	
		2899*b*	0·489	240·2	212·4	−19·8	37	282	
		2900	0·444	337·4	196·0	+17·8	0	7	
		2900	0·451	339·6	195·2	+18·6	0	2	
		2900*a*	0·428	340·2	194·4	+17·4	0	5	
		2906*a*	0·142	157·1	182·5	−13·8	31	194	
		2906	0·123	143·3	181·4	−12·1	0	5	
		2906*b*	0·155	137·6	179·6	−12·9	4	40	
		2906	0·197	140·9	178·3	−15·1	0	4	
		2907	0·662	61·4	149·2	+13·3	0	13	} 61*c*
		2907	0·675	62·4	147·9	+13·2	0	9	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2907, March 30–April 4. One or two very small faint spots.
Group 2908, March 30–April 6. A nebulous spot, *a*, with a few small companions.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
90d.409	HA,JG	2908*a*	0·842	74·2	130·7	+ 9·6	18	86	} 597*c*
		2908	0·891	74·3	125·0	+10·9	0	7	
			0·869	98·2	125·0	−10·3			357
			0·936	109·7	115·6	−20·7			178
April 1		Centre			(185·7)	(−6·4)	(144)	(1018)	(2405)
91·437	FT,HA		0·938	248·6	242·4	−22·2			261
			0·872	286·6	230·3	+11·1			232
		2905	0·920	270·1	238·9	− 2·4	0	9	}
		2905	0·911	265·4	238·0	− 6·8	0	40	} 335*c*
		2905	0·882	268·6	234·0	− 4·2	0	17	
		2901	0·906	301·5	230·4	+25·0	0	13	317*nf*
		2899	0·757	251·8	220·9	−17·8	0	7	}
		2899*a*	0·749	250·0	220·0	−19·1	19	99	}
		2899*c*	0·718	249·1	217·2	−19·3	12	110	} 301*c*
		2899	0·699	247·5	215·4	−20·1	0	10	}
		2899*b*	0·665	246·5	212·5	−20·2	30	381	}
		2906*a*	0·231	233·4	183·1	−14·1	39	190	
		2906	0·222	224·7	181·4	−15·3	0	4	
		2906	0·197	230·2	181·0	−13·5	0	8	
		2906	0·209	221·3	180·3	−15·2	0	5	
		2906	0·165	219·2	178·2	−13·6	2	10	
		2906	0·174	190·5	174·0	−16·1	6	22	
		2906	0·219	183·6	172·9	−18·9	0	28	
		2906	0·204	181·8	172·5	−18·0	0	4	
		2906	0·187	174·6	171·0	−17·0	0	3	
		2906	0·162	168·8	170·2	−15·4	0	4	
		2907	0·495	47·5	150·1	+13·7	4	12	
		2909	0·652	105·7	131·8	−15·0	0	4	} 117*nf*
		2909	0·670	106·2	130·4	−15·5	0	4	
		2908	0·693	69·7	131·1	+ 9·2	0	5	
		2908*a*	0·699	68·4	130·9	+10·2	11	77	} 380*f*
		2908	0·697	70·5	130·6	+ 8·8	0	11	
			0·888	110·0	109·3	−20·6			443
April 2		Centre			(172·1)	(−6·3)	(123)	(1077)	(2386)
92·457	FT,HA		0·985	266·9	239·0	− 4·2			347
			0·952	299·0	225·4	+25·1			264
			0·818	292·9	209·7	+14·7			389
			0·757	306·0	199·8	+21·7			101

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
92d.457	FT,HA	2899*a*	0·878	251·3	220·3	−19·4	21	111	}
		2899*c*	0·851	250·9	217·0	−19·5	8	92	} 598*c*
		2899*b*	0·812	249·1	212·6	−20·6	43	415	}
		2910	0·638	230·1	192·7	−29·4	0	11	
		2906*a*	0·432	250·6	183·4	−14·0	34	214	
		2906	0·335	237·9	175·8	−16·3	3	22	
		2906	0·328	225·9	173·1	−19·3	0	7	
		2906	0·281	230·9	171·8	−16·3	3	7	
		2906	0·288	225·6	171·1	−17·8	0	8	
		2911	0·497	354·9	161·4	+23·3	1	4	
		2907	0·373	20·2	151·1	+14·1	0	5	
		2912	0·412	31·6	145·9	+14·3	0	5	
		2912	0·437	30·7	145·4	+15·9	0	10	
		2912	0·442	33·5	144·1	+15·4	0	7	
		2908*a*	0·537	59·1	131·0	+ 9·2	12	59	} 194*f*
		2908	0·530	61·6	130·6	+ 9·1	1	11	}
		2913*a*	0·977	110·1	79·8	−21·0	0	21	164*c*
			0·892	106·7	95·2	−17·7			585
April 3		Centre			(158·7)	(−6·3)	(126)	(1009)	(2642)
93·435	FT,JG		0·919	287·9	209·5	+13·7			447
			0·838	297·5	197·3	+19·0			383
			0·732	235·7	189·2	−28·9			214
		2899*a*	0·952	251·4	218·7	−19·6	10	15	}
		2899*c*	0·932	250·9	215·1	−20·1	13	8+	} 880*c*
		2899*b*	0·906	250·6	211·1	−20·2	26	190	
		2907	0·355	348·5	149·9	+14·1	0	5	
		2906*a*	0·620	255·4	183·7	−13·9	33	181	158*c*
		2906	0·588	250·3	180·8	−16·5	0	5	}
		2906	0·539	250·0	177·3	−15·9	2	10	} 73*c*
		2706	0·521	247·4	175·7	−16·9	0	11	
		2908*a*	0·374	41·8	131·1	+10·2	9	57	
		2913*a*	0·899	109·5	81·3	−20·3	6	23	387*c*
April 4		Centre			(145·7)	(−6·2)	(99)	(717)	(2542)
94·600	HA,JG		0·856	241·6	188·2	−27·4			362
		2899*b*	0·980	250·6	210·2	−20·2	0	315	242*f*
		2906*a*	0·800	257·2	183·7	−14·0	37	176	} 280*c*
		2906	0·741	254·6	178·1	−15·6	0	8	
		2906	0·612	249·8	167·2	−17·2	0	12	
		2908*a*	0·283	357·2	131·2	+10·2	5	22	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2909, April 2. A pair of very small faint spots.
Group 2910, April 3. A small spot.
Group 2911, April 3. A very small spot.
Group 2912, April 3. A group of very small faint spots following Group 2907.
Group 2913, April 3–12. A nebulous spot, *a*, followed on April 5 and the succeeding days by a stream of very small spots. *a* and its companions have all disappeared by April 11, but a pair of small spots have formed near the place *a* formerly occupied.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of Umbra for each Spot (and for Day).	Spots. Area of Whole for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
94d·600	HA,JG	2913*a*	0·746	111·5	82·9	−20·1	9	50	} 312*c*
		2913	0·820	112·8	75·9	−22·2	0	13	
		2914*a*	0·988	97·0	48·8	− 7·9	26	229	172*c*
			0·929	101·5	61·6	−13·0			141
April 5		Centre			(130·4)	(−6·2)	(77)	(825)	(1509)
95·517	FT,M		0·963	288·5	189·9	+16·0			386
			0·929	243·3	186·7	−27·0			691
		2906*a*	0·907	257·5	183·9	−13·9	30	172	} 694*c*
		2906	0·815	254·3	172·9	−16·3	0	5	
		2908*a*	0·374	317·1	133·2	+ 9·9	0	42	
		2908	0·368	320·7	132·0	+10·6	0	10	
		2913*a*	0·593	115·5	83·8	−19·8	7	45	
		2913	0·639	113·5	80·0	−19·5	0	15	
		2913	0·684	116·0	76·9	−22·0	1	7	
		2913	0·697	117·5	76·2	−23·3	0	7	
		2913	0·707	115·3	74·9	−22·0	0	15	
		2915	0·646	98·1	78·0	− 9·9	0	8	
		2914	0·912	96·2	52·2	− 8·2	0	8	
		2914*a*	0·931	95·9	49·4	− 7·7	23	200	} 677*c*
		2914*b*	0·974	98·9	40·8	−10·1	13	285	
		2914	0·987	96·9	37·1	− 7·8	0	18	
		2914	0·987	98·3	37·0	− 9·2	0	32	
			0·912	118·9	52·9	−28·8			92
			0·928	106·7	49·6	−17·8			562
April 6		Centre			(118·3)	(−6·1)	(74)	(869)	(3102)
96·413	FT,JG		0·962	241·6	181·3	−28·9			231
			0·736	296·6	149·1	+14·9			128
		2906*a*	0·973	257·0	183·8	−14·0	28	175	} 419*f*
		2906	0·929	256·4	175·3	−14·9	0	14	
		2906	0·913	255·1	172·8	−16·0	0	13	
		2916	0·455	318·9	124·3	+14·3	0	4	
		2913*a*	0·433	124·2	84·2	−19·6	9	44	
		2913	0·467	120·5	81·3	−19·2	5	29	
		2913	0·528	122·9	78·0	−21·9	0	2	
		2913	0·552	122·3	76·2	−22·3	0	6	
		2913	0·565	122·7	75·5	−22·8	0	4	
		2913	0·574	123·9	75·2	−23·8	0	7	
		2913	0·576	121·1	74·3	−22·4	0	6	
		2915*a*	0·438	97·8	80·5	− 8·8	5	23	
		2915	0·485	100·0	77·5	−10·1	0	26	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of Umbra for each Spot (and for Day).	Spots. Area of Whole for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893				°	°	°			
96d·413	FT,JG	2914	0·809	95·7	52·2	− 8·2	0	8	} 331*c*
		2914*a*	0·840	95·1	49·1	− 7·5	26	185	
		2914*b*	0·913	98·1	40·1	− 9·9	36	258	
		2914	0·919	95·9	39·3	− 7·8	0	9	} 832*c*
		2914	0·933	96·5	37·1	− 8·2	17	65	
		2914	0·948	99·5	34·4	−10·9	0	13	
		2917	0·978	100·4	27·8	−11·4	0	53	
			0·826	120·4	52·6	−28·3			104
			0·852	106·4	47·8	−17·1			449
April 7		Centre			(106·4)	(−6·0)	(126)	(944)	(2494)
97·528	M,HA		0·955	253·2	165·2	−17·8			356
			0·869	291·0	148·6	+14·9			321
		2913*a*	0·262	153·5	84·6	−19·5	4	32	
		2913	0·276	146·3	82·4	−19·2	0	6	
		2913	0·360	136·9	76·5	−21·0	0	1	
		2913	0·412	139·2	74·7	−23·8	0	10	
		2913	0·414	136·3	73·7	−23·1	0	1	
		2915*a*	0·185	107·3	81·4	− 9·1	2	18	
		2915	0·214	105·7	79·7	− 9·2	0	4	
		2915	0·233	110·8	79·0	−10·6	0	5	
		2915	0·249	104·4	77·6	− 9·3	0	5	
		2918	0·327	63·8	74·7	+ 2·5	0	5	
		2919	0·660	126·3	54·9	−27·8	1	6	
		2914*a*	0·671	94·3	49·4	− 7·4	30	172	129*c*
		2914*b*	0·778	97·5	40·4	− 9·6	45	274	
		2914	0·800	95·8	38·4	− 8·2	10	68	598*c*
		2917	0·891	99·7	28·3	−11·4	0	23	} 398*c*
		2917	0·906	97·6	26·3	− 9·5	0	11	
			0·845	107·8	34·0	−18·2			376
April 8		Centre			(91·7)	(−6·0)	(92)	(641)	(2178)
98·442	M, JG		0·948	286·5	148·7	+13·6			218
			0·790	262·8	132·1	− 9·3			99
M.			0·806	288·3	130·7	+11·0			149
		2913*a*	0·247	199·0	84·6	−19·3	5	19	
		2913	0·319	166·8	75·1	−23·9	0	4	
		2915*a*	0·070	210·9	81·8	− 9·3	0	28	
		2915	0·058	166·5	78·9	− 9·2	0	2	
		2915	0·086	167·3	78·6	−10·7	0	6	
		2918*a*	0·152	13·6	77·7	+ 2·5	8	41	
		2918	0·153	36·1	74·5	+ 1·2	0	6	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2914, April 5–18. Two large regular spots, *a* and *b*, with a few smaller companions. *b* has originally a considerably higher latitude than *a*, but gradually moves downwards until it is nearly on the same parallel.
Group 2915, April 6–12. A very small faint spot on April 6. A new spot, *a*, has appeared in advance of the original spot by April 7, and the group becomes a small stream, *a* being the leader. The stream has disappeared by April 11, but a very small spot is seen on April 11, and another on April 12.
Group 2916, April 7. A very small spot.
Group 2917, April 7–12. A number of small spots, irregularly arranged, following Group 2914.
Group 2918, April 8–14. A very small faint cluster of spots on April 8. The group rapidly increases in size and becomes a stream. *a*, the leading spot, is the largest, and is regular. Only *a* remains by April 13.
Group 2919, April 8–16. A very small spot on April 8. The group rapidly increases in size, and becomes an irregular stream, *a*, the leading spot being the largest. Faint, ill-defined streamers are attached to the following side of *a*, which moves forward in longitude from day to day. The following spots diminish in size.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
98d·442	M, JG	2918	0·174	36·7	73·8	+ 2·1	6	36	
		2919*a*	0·546	135·6	54·1	−28·2	4	13	
M.		2919	0·592	136·5	51·6	−30·6	0	3	
		2919	0·584	133·5	50·9	−28·8	0	6	
		2914*a*	0·498	94·1	49·8	− 7·1	20	147	
		2914*b*	0·635	97·3	40·2	− 9·2	41	312	
		2914	0·648	94·4	39·2	− 7·4	0	7	
		2914	0·662	95·1	38·2	− 7·8	0	4	
		2917	0·761	99·7	30·0	−11·2	0	2	
		2917	0·777	99·9	28·6	−11·4	0	13	
		2917	0·788	98·8	27·5	−10·6	0	14	315*c*
		2917	0·799	97·4	26·5	− 9·5	0	12	
		2917	0·807	98·6	25·7	−10·4	0	9	
			0·972	104·0	2·4	−15·0			229
Apr. 9		Centre			(79·7)	(−5·9)	(84)	(684)	(1010)
99·433	FT,HA		0·893	257·8	130·2	−13·5			170
		2913*a*	0·377	231·0	84·6	−19·2	1	8	
		2913	0·359	197·0	73·3	−25·7	0	20	
		2915*a*	0·281	254·6	82·5	− 9·9	2	16	
		2915	0·266	256·1	81·7	− 9·2	0	10	
		2915	0·243	256·5	80·4	− 8·9	0	4	
		2918*a*	0·256	304·1	78·8	+ 2·5	11	91	
		29 8	0·242	311·1	77·1	+ 3·5	0	7	
		2918	0·202	312·4	75·1	+ 2·1	0	2	
		2918	0·190	317·6	73·9	+ 2·3	0	15	
		2918	0·169	317·6	73·1	+ 1·4	5	14	
		2919*a*	0·418	154·7	55·0	−27·8	16	118	
		2919	0·454	152·8	52·9	−29·4	0	3	
		2919	0·437	151·3	52·9	−28·1	0	4	
		2919	0·445	149·1	51·7	−28·0	0	6	186*c*
		2919	0·482	149·4	50·2	−30·0	3	17	
		2919	0·481	145·7	48·6	−28·9	5	21	
		2914*a*	0·289	96·1	49·8	− 7·3	29	144	
		2914*b*	0·441	99·4	40·6	− 9·3	31	217	
		2914	0·461	95·9	39·1	− 7·9	0	8	
		2914	0·466	98·5	38·9	− 9·1	7	49	
		2914	0·469	102·0	38·9	−10·7	0	18	
		2914	0·505	99·1	36·4	− 9·6	0	4	
		2917	0·591	101·5	30·5	−11·5	0	9	
		2917	0·618	101·0	28·5	−11·4	0	10	
		2917	0·635	100·6	27·3	−11·2	0	6	
1893.				°	°	°			
99d·433	FT,HA	2917	0·646	98·6	26·3	−10·0	0	12	
		2917	0·674	100·4	24·4	−11·3	0	9	
			0·903	103·9	1·7	−15·0			358
			0·929	115·7	358·2	−26·0			239
Apr. 10		Centre			(66·6)	(−5·8)	(110)	(842)	(953)
100·280	FT, JG		0·975	282·3	131·0	+10·6			800
			0·965	264·3	130·4	− 7·0			167
I.			0·781	253·3	106·5	−16·6			147
		2913*a*	0·559	243·4	87·2	−19·3	3	11	90*c*
		2913	0·550	241·5	86·2	−20·1	0	8	
		2915	0·413	256·8	79·4	−10·6	0	4	
		2918*a*	0·446	286·7	80·6	+ 2·2	13	103	155*c*
		2918	0·365	288·6	75·6	+ 1·3	0	7	
		2918	0·350	293·1	74·1	+ 2·5	0	5	
		2918	0·327	290·7	72·1	+ 2·1	3	16	
		2919*a*	0·383	184·4	57·3	−28·1	23	94	
		2919	0·381	179·2	55·1	−28·1	9	88	
		2919	0·400	172·1	51·8	−29·0	5	38	206*c*
		2919	0·445	169·6	50·0	−31·6	1	8	
		2919	0·419	165·1	48·3	−29·4	10	46	
		2914*a*	0·103	112·5	49·9	− 8·0	36	139	
		2914	0·246	96·3	41·2	− 7·1	0	5	
		2914*b*	0·272	105·3	40·0	− 9·6	54	245	
		2917	0·419	105·2	31·1	−11·5	0	32	
	(C	2917	0·461	104·8	28·4	−11·9	0	11	
		2917	0·514	102·9	24·8	−11·5	0	7	
			0·835	67·6	2·5	+15·1			156
			0·840	119·8	0·0	−27·9			208
			0·836	106·2	358·7	−16·7			583
Apr. 11		Centre			(55·4)	(−5·7)	(157)	(867)	(2512)
101·332	CL,HA		0·839	249·9	98·2	−19·9			131
			0·596	230·4	72·5	−27·2			80
I.		2913*a*	0·721	248·8	86·7	−19·2	0	6	179*s*
		2913	0·668	247·2	82·1	−19·3	0	4	
		2915	0·657	263·1	82·6	− 8·8	0	9	174*sf*
		2918*a*	0·649	281·2	80·9	+ 2·8	17	79	
		2918	0·559	282·9	74·4	+ 2·4	1	16	
		2918	0·534	283·1	72·7	+ 2·1	0	5	
		2919*a*	0·465	214·0	58·6	−28·1	23	115	
		2919	0·421	211·2	55·6	−26·6	13	52	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.	Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).						Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°				1893.				°	°	°			
101d.332	CL,HA	2919	0·415	208·3	54·2	−26·9	0	8		102d.497	CL,FT	2922*a*	0·599	53·3	356·2	+16·1	0	19	
		2919	0·430	206·2	53·9	−28·2	0	7				2922	0·609	56·1	354·7	+15·0	0	7	
I.		2919	0·419	199·6	50·7	−28·8	4	15	} 240*c*			2922	0·629	56·9	353·3	+14·4	0	6	
		2919	0·448	197·1	50·3	−30·9	0	2				2922	0·649	56·9	351·8	+16·2	0	10	
		2919	0·428	197·9	50·2	−29·6	0	14				2923*a*	0·806	104·5	332·4	−15·0	66	390	
		2919	0·412	193·7	47·9	−29·2	9	31				2923*b*	0·842	108·5	328·9	−18·6	8	68	} 1209*c*
		2914*a*	0·148	257·4	49·8	− 7·5	35	161				2923	0·850	107·2	327·9	−17·6	0	24	
		2914	0·118	243·8	47·6	− 8·7	0	3				2924	0·933	105·0	316·7	−16·0	18	78	
		2914	0·015	199·6	41·8	− 6·5	0	2				2925*a*	0·963	73·5	314·1	+14·2	11	67	} 283*c*
		2914*b*	0·065	164·8	40·5	− 9·3	52	200				2925*b*	0·980	74·1	309·7	+14·3	0	50	
		2914	0·023	126·5	40·4	− 6·5	0	3		Apr. 13		Centre			(26·1)	(−5·6)	(230)	(1450)	(2121)
		2914	0·069	139·5	38·9	− 8·7	8	35											
		2920	0·395	162·4	33·8	−27·7	1	8	} 100*c*										
		2920	0·397	158·9	32·3	−27·3	0	8		103·423	FT,HA		0·921	262·5	81·3	− 9·2			189
		2917	0·203	118·1	31·0	−11·1	2	16					0·896	246·2	77·2	−23·7			459
		2921	0·280	137·3	30·1	−17·4	0	7				2918*a*	0·925	274·8	81·0	+ 2·3	3	25	309*f*
		2921	0·302	134·7	28·5	−17·8	1	18				2919*a*	0·753	237·3	59·5	−27·9	14	95	}
		2922	0·778	63·9	355·0	+16·1	0	29	}			2919	0·727	237·8	57·3	−26·8	2	13	
		2922	0·798	64·0	353·1	+16·7	0	14	} 143*c*			2919	0·679	234·8	52·4	−27·3	0	6	} 317*c*
		2922	0·810	65·0	351·8	+16·3	0	25				2919	0·666	233·3	50·9	−27·9	0	23	
		2923*a*	0·940	103·6	330·9	−14·7	39	367	}			2919	0·649	229·7	48·3	−29·3	0	5	
		2923*b*	0·964	107·2	326·2	−18·1	6	151	} 756*p*			2919	0·620	228·9	45·9	−28·6	0	8	
			0·716	112·2	356·9	−19·8			684			2914*a*	0·591	264·8	50·2	− 7·5	33	165	}
Apr. 12		Centre			(41·5)	(−5·7)	(211)	(1410)	(2487)			2914*b*	0·461	261·0	41·2	− 9·0	19	190	} 160*c*
												2914	0·430	262·8	39·3	− 8·1	2	16	
												2914	0·413	267·1	38·3	− 6·2	0	8	
102·497	CL,FT	2918*a*	0·822	276·8	80·7	+ 2·4	9	36				2920	0·491	217·9	33·8	−27·9	0	7	
		2919*a*	0·624	230·8	59·2	−27·9	17	104	}			2921	0·352	234·7	31·3	−16·9	0	10	
		2919	0·584	231·2	56·5	−26·2	10	57				2926	0·166	143·7	8·1	−13·2	1	11	
		2919	0·576	229·3	55·3	−26·9	0	4				2922*a*	0·466	37·8	356·7	+16·3	4	12	
		2919	0·571	227·3	54·3	−27·7	0	4	} 356*c*			2923*a*	0·672	106·1	332·2	−14·9	55	372	556*f*
		2919	0·547	227·9	53·0	−26·5	1	8				2923*b*	0·725	111·7	328·5	−19·4	0	78	
		2919	0·544	223·5	51·1	−28·2	4	45				2923	0·728	109·8	328·0	−18·1	0	5	
		2919	0·530	224·6	50·7	−27·2	1	8				2924	0·838	104·8	316·9	−15·4	13	65	167*n*
		2919	0·508	218·0	46·9	−28·8	6	12	135*c*			2925*a*	0·883	70·8	314·8	+14·1	14	171	} 464*c*
		2914*a*	0·404	264·1	49·9	− 7·5	31	161				2925*b*	0·922	72·4	309·3	+13·9	0	99	
		2914	0·376	262·0	48·1	− 8·2	0	2					0·919	107·8	306·8	−18·5			389
		2914*b*	0·260	255·9	40·8	− 9·1	32	208	}	Apr. 14		Centre			(13·9)	(−5·5)	(160)	(1384)	(3010)
		2914	0·228	257·5	39·0	− 8·3	5	30	} 138*c*										
		2914	0·206	265·7	38·0	− 6·4	0	7		104·477	CL, M		0·943	245·7	70·8	−24·7			249
		2920	0·395	197·8	33·9	−27·6	3	12					0·813	254·9	54·3	−15·4			255
		2921	0·210	200·7	30·5	−16·9	5	20				2919*a*	0·875	241·0	59·7	−27·9	20	94	}
		2921	0·203	185·9	27·3	−17·2	3	13				2919	0·857	241·5	57·5	−27·1	0	8	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2920, April 12–14. Two very small spots. Only one of them is seen on April 13 and 14.
Group 2921, April 12–15. Two small faint spots. One of them has disappeared by April 14, and the other by April 15, but two new spots are seen on that day.
Group 2922, April 12–15. A stream of small faint spots. The leader, *a*, alone remains after April 13.
Group 2923, April 12–23. A large regular spot, *a*. Some smaller spots, of which *b* is the principal, follow it closely from April 12 to April 16.
Group 2924, April 13–16. A regular spot following Group 2923.
Group 2925, April 13–24. Two regular spots, *a* and *b*, on April 13. Other spots appear between them on the succeeding days, forming a stream. *b* and the other spots following *a* diminish in size after April 16; *b* has disappeared by April 22, and *a* alone remains by April 24.
Group 2926, April 14. A small spot.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.	Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).						Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°				1893.									
104d·477	CL, M	2919	0·809	236·6	51·0	−29·9	0	6	359*c*	106d·358	CL, FT		0·882	249·1	36·8	−20·9			335
		2919	0·796	238·2	50·0	−28·3	0	6					0·810	259·5	29·4	−11·6			247
		2914*a*	0·768	264·7	50·3	− 7·5	28	169	231*c*	I.		2914*a*	0·977	263·6	53·2	− 7·4	5	105	513*c*
		2914*b*	0·662	262·6	41·5	− 9·0	32	188	199*c*			2914*b*	0·927	263·1	43·4	− 8·4	19	200	
		2914	0·637	264·0	39·6	− 8·0	0	4				2928	0·465	240·9	0·3	−17·7	0	10	
		2921	0·593	251·3	35·5	−15·4	0	2				2928	0·448	242·0	359·5	−16·9	0	6	
		2921	0·585	248·7	34·5	−16·7	0	4				2928	0·421	232·8	355·9	−19·5	0	7	
		2927	0·493	250·0	29·1	−11·6	0	11				2923*a*	0·167	159·3	331·7	−14·1	83	343	181*c*
		2928	0·210	168·1	357·4	−17·2	0	7				2925*a*	0·488	43·7	314·8	+15·7	25	211	
		2928	0·246	162·4	355·5	−18·9	0	12				2925	0·533	52·5	309·4	+14·2	0	8	
		2928	0·245	143·9	351·4	−16·7	0	8				2925	0·551	50·7	309·0	+15·7	3	62	
		2922*a*	0·374	8·7	356·6	+16·3	0	8				2925*b*	0·549	53·0	308·4	+14·6	3	36	
		2923*a*	0·491	111·0	331·8	−14·9	73	367	302*c*			2929	0·889	78·5	273·9	+ 7·7	0	8	
		2923*b*	0·550	118·2	329·1	−19·7	0	17				2929	0·912	79·5	270·7	+ 7·3	0	12	122*c*
		2924	0·689	106·7	317·0	−15·3	11	50	199*c*			2930*a*	0·949	61·4	268·6	+25·0	40	186	394*c*
		2925*a*	0·755	65·9	314·9	+14·1	41	247					0·895	112·2	272·0	−22·2			218
		2925	0·784	66·6	312·2	+14·5	0	11	656*c*	Apr. 17		Centre			(335·2)	(−5·2)	(178)	(1194)	(2010)
		2925*b*	0·814	68·4	308·9	+14·1	17	111											
			0·764	72·8	312·5	+ 9·4			146										
			0·845	109·2	302·6	−19·1			431	107·428	FT, HA		0·895	258·8	24·8	−12·4			411
			0·922	68·3	296·2	+17·6			213			2914*b*	0·990	262·3	43·3	− 8·4	0	147	163*c*
			0·914	78·1	295·5	+ 8·5			341			2928*a*	0·688	249·5	3·4	−17·8	8	30	
Apr. 15		Centre			(360·0)	(−5·4)	(222)	(1330)	(3581)			2928	0·665	249·6	1·6	−17·4	0	14	
												2928*b*	0·637	249·0	359·4	−17·3	7	49	
105·284	CL, FT		0·873	251·3	50·0	−18·9			216			2923*a*	0·243	228·0	331·8	−14·4	65	308	
		2919*a*	0·949	242·1	61·1	−28·2	21	108	565*c*			2923	0·204	228·4	330·0	−12·9	0	4	
I.		2919	0·878	239·0	49·0	−29·6	10	40				2925*a*	0·365	14·5	315·6	+15·4	20	162	
		2914*a*	0·882	264·0	51·4	− 7·8	46	145	436*c*			2925	0·361	19·8	313·8	+14·6	4	26	
		2914*b*	0·798	262·9	42·4	− 8·9	45	182				2925	0·379	27·7	310·6	+14·4	0	7	
		2928	0·264	215·1	358·4	−17·7	1	10				2925	0·395	29·2	309·5	+15·0	0	4	
		2928	0·268	204·4	356·0	−19·3	2	16				2925*b*	0·392	31·1	309·0	+14·6	6	45	
		2923*a*	0·338	119·1	331·6	−14·5	91	365				2929	0·728	75·6	275·9	+ 6·8	0	10	
		2923*b*	0·429	125·7	327·7	−19·4	0	6				2930*a*	0·852	57·7	269·2	+23·8	11	155	
		2924	0·554	108·8	316·6	−14·7	6	28				2931	0·907	64·8	260·2	+20·2	0	14	456*c*
		2925*a*	0·642	58·7	314·8	+15·1	38	273				2932	0·921	108·2	253·7	−18·8	0	5	128*f*
		2925	0·678	61·6	311·4	+14·6	2	20	345*c*				0·887	109·7	258·6	−19·8			342
		2925	0·681	63·2	310·7	+13·7	0	5		Apr. 18		Centre			(321·0)	(−5·2)	(121)	(980)	(1500)
		2925*b*	0·710	63·1	308·6	+14·7	17	114											
			0·755	110·2	301·1	−18·7			221										
			0·821	62·0	299·3	+19·3			301	108·470	CL, M	2928*a*	0·830	252·4	3·1	−17·4	19	100	
			0·831	72·9	295·5	+11·0			264			2928	0·817	251·9	1·7	−17·7	0	6	561*c*
			0·945	112·0	278·0	−22·5			386			2928*b*	0·788	252·0	358·8	−17·3	29	145	
Apr. 16		Centre			(349·3)	(−5·3)	(279)	(1312)	(2734)			2928	0·780	249·9	357·8	−18·8	0	9	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2927, April 15. A small spot.
Group 2928, April 15–21. A few small faint spots in an irregular group on April 15. The group has greatly increased in size by April 18, and on April 19 it forms a stream consisting of two large spots, *a* and *b*, and a few small companions.
Group 2929, April 17–19. Two small spots on April 17 and 19. Only one is seen on April 18.
Group 2930, April 17–25. A regular spot, *a*, which gradually diminishes in size, and has disappeared by April 25. Several fresh spots have sprung up by April 24.
Group 2931, April 18–28. A small spot on April 18, following Group 2930. Other spots are seen on April 19 forming a curved stream. The stream undergoes a great development after April 21, and by April 23 has become a very large group, *a* and *b* being the two principal spots. *a* diminishes after April 25.
Group 2932, April 18. A very small spot.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
108d·470	CL,M	2923*a*	0·435	247·6	331·7	−14·1	67	318	166*c*
		2925*a*	0·379	339·1	315·3	+15·6	32	184	
		2925	0·361	342·1	313·9	+15·0	4	34	
		2925	0·374	344·6	313·2	+16·0	0	9	
		2925	0·339	348·7	311·2	+14·3	0	3	
		2925*b*	0·344	355·3	309·0	+14·9	6	25	
		2929	0·574	70·0	274·5	+ 7·0	0	3	
		2929	0·602	71·7	272·3	+ 6·7	0	6	
		2930*a*	0·736	50·4	269·1	+24·0	26	158	260*c*
		2931	0·789	58·8	261·3	+20·6	0	8	
		2931	0·797	61·6	259·7	+18·9	0	8	
		2931	0·814	61·9	258·0	+19·2	5	23	
		2931	0·829	57·9	257·9	+22·8	0	11	434*c*
		2931	0·830	60·8	256·8	+20·6	5	22	
		2931	0·840	61·8	255·4	+20·2	5	28	
		2931	0·852	58·7	255·1	+23·2	0	5	
		2933*a*	0·954	71·7	237·3	+15·7	21	74	529*c*
			0·850	112·1	249·7	−21·4			293
			0·907	96·9	242·0	− 8·4			125
			0·919	82·1	241·5	+ 5·2			326
Apr. 19		Centre			(307·3)	(−5·1)	(219)	(1179)	(2694)
109·477	M,HA	2928*a*	0·929	253·4	2·6	−17·3	15	114	
		2928	0·902	251·3	358·4	−19·0	0	6	747*c*
		2928*b*	0·900	253·2	358·2	−17·2	24	184	
		2928	0·895	254·7	357·6	−15·9	0	7	
		2923*a*	0·625	253·6	332·0	−14·1	56	301	166*c*
		2925*a*	0·490	314·5	315·2	+15·4	28	145	
		2925	0·469	315·8	313·7	+14·9	4	20	
		2925	0·478	317·7	313·5	+15·9	0	6	
		2925	0·428	319·6	310·5	+14·1	0	3	
		2925*b*	0·415	324·3	308·4	+14·8	1	7	
		2934	0·315	99·8	275·8	− 7·8	4	14	
		2934	0·324	105·6	275·6	− 9·7	0	2	
		2934	0·346	107·9	274·5	−10·8	0	3	
		2934	0·352	105·4	273·9	−10·1	2	11	
		2934	0·349	98·4	273·7	− 7·7	0	10	
		2934	0·381	102·0	271·9	− 9·2	4	16	
		2930*a*	0·615	39·3	268·9	+23·8	16	125	
		2931	0·658	43·6	264·3	+24·0	0	5	
		2931	0·637	48·1	263·6	+20·8	2	13	
		2931	0·643	50·5	262·3	+19·8	3	28	
1893.				°	°	°			
109d·477	M,HA	2931	0·663	53·5	259·8	+19·0	0	4	
		2931	0·673	55·2	258·5	+18·4	0	13	
		2931	0·724	50·7	256·6	+23·3	0	4	
		2931	0·712	54·7	255·8	+20·4	4	30	
		2933*a*	0·863	68·5	237·7	+15·7	15	79	562*f*
			0·945	111·4	222·8	−21·9			666
			0·983	74·3	216·5	+14·4			146
Apr. 20		Centre			(294·0)	(−5·0)	(178)	(1150)	(2287)
110·425	CL,HA		0·916	247·3	347·7	−22·8			191
			0·717	244·4	325·4	−21·6			248
		2928*b*	0·974	253·5	359·0	−17·2	21	118	478*c*
		2928	0·966	252·7	357·3	−18·0	0	59	
		2923*a*	0·772	255·9	331·8	−14·0	49	286	230
		2925*a*	0·629	301·8	315·0	+15·2	28	172	
		2925	0·607	302·4	313·4	+14·8	8	21	
		2925	0·591	301·2	313·1	+13·6	1	5	174*c*
		2925	0·555	298·3	311·2	+11·0	0	12	
		2925*b*	0·549	306·5	308·5	+14·6	0	8	
		2925	0·514	301·1	308·0	+11·0	0	8	
		2934	0·103	144·3	278·0	− 9·7	2	13	
		2934	0·099	124·8	276·8	− 8·1	1	7	
		2934	0·104	114·3	276·0	− 7·3	0	4	
		2934	0·125	112·8	274·9	− 7·7	1	15	
		2934	0·167	106·3	272·2	− 7·5	0	9	
		2934	0·186	109·6	271·3	− 8·4	0	7	
		2930*a*	0·524	23·0	268·6	+24·0	8	63	
		2931	0·510	31·6	264·9	+20·9	2	12	
		2931	0·510	35·7	263·1	+19·7	3	14	
		2931	0·525	43·0	259·5	+18·0	1	9	182*c*
		2931	0·596	38·8	257·6	+23·1	2	20	
		2931	0·595	41·6	256·4	+21·9	0	5	
		2931	0·579	43·7	256·4	+20·2	4	23	
		2931	0·594	45·7	254·7	+20·1	0	18	
		2933*a*	0·744	63·7	237·8	+15·7	12	69	314*f*
		2935*a*	0·948	108·3	209·7	−18·9	0	24	757*f*
			0·941	72·2	213·7	+14·9			452
Apr. 21		Centre			(281·5)	(−4·9)	(143)	(1001)	(3026)
111·427	FT,M		0·831	249·1	324·0	−20·4			283
		2923*a*	0·896	256·5	332·1	−14·2	36	260	247*c*
		2936	0·875	286·9	327·0	+12·3	0	7	136*c*
		2936	0·838	288·5	322·6	+12·6	0	5	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2933, April 19–25. A regular spot, *a*. A small companion is seen on April 22 and 23.
Group 2934. April 20–26. A ring of small spots on April 20; a stream on April 21 and the succeeding days. Two spots, *a* and *b*, are larger than the rest on April 22, and develop still further on the succeeding days.
Group 2935, April 21–25. A small spot, *a*, on April 21, 22, and 23. A few fresh spots have formed behind *a* on April 23, but diminish and die out on the succeeding days.
Group 2936, April 22. Two very small spots.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	HELIOGRAPHIC		SPOTS.		FACULÆ.	Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	HELIOGRAPHIC		SPOTS.		FACU
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).						Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°				1893.				°	°	°			
111d.427	FT, M	2925*a*	0·770	294·1	314·8	+15·0	33	178	227*c*	112d.459	CL,FT	2931*a*	0·455	345·6	261·6	+21·4	32	205	
		2925	0·743	293·6	312·6	+13·8	0	5				2931	0·488	349·7	260·1	+23·9	10	25	
		2934	0·214	246·3	279·7	— 9·6	0	3				2931	0·455	349·4	259·8	+21·8	6	78	
		2934*a*	0·176	246·0	277·6	— 8·8	0	17				2931	0·478	353·1	258·2	+23·5	24	136	
		2934	0·149	252·5	276·5	— 7·3	1	8				2931*b*	0·441	355·3	256·8	+21·2	62	310	
		2934	0·133	252·0	275·6	— 7·1	0	6				2931	0·459	0·3	254·4	+22·5	4	20	
		2934	0·139	224·9	274·0	—10·4	1	4				2933*a*	0·450	38·5	237·7	+16·0	9	29	
		2934*b*	0·090	231·5	272·4	— 8·0	0	12				2933	0·467	40·0	236·4	+16·4	0	8	
		2930*a*	0·487	0·1	268·2	+24·2	7	61				2935*a*	0·725	111·6	209·4	—18·8	0	8	
		2937	0·116	12·6	266·9	+ 1·7	0	1				2935	0·765	112·0	205·9	—19·8	4	21	
		2937	0·119	32·6	264·6	+ 0·9	0	7				2935	0·785	112·1	204·0	—20·2	0	5	341*sp*
		2931	0·420	8·8	264·4	+19·7	3	15				2935	0·803	112·4	202·3	—20·7	0	12	
		2931	0·437	15·1	261·4	+20·1	6	17				2935	0·804	111·2	202·0	—19·8	0	37	
		2931	0·485	16·0	260·0	+23·0	27	145				2938*a*	0·822	76·1	201·0	+ 8·6	6	52	
		2931	0·509	19·6	257·6	+23·8	6	18				2938*c*	0·840	76·1	199·2	+ 9·0	6	77	210*c*
		2931	0·473	23·4	256·7	+20·9	34	145				2938*b*	0·866	76·5	196·3	+ 9·2	6	39	
		2933*a*	0·596	54·8	238·0	+15·9	11	36				2939*a*	0·898	103·8	190·6	—14·4	26	170	194*c*
		2933	0·618	57·5	235·7	+15·3	0	9					0·890	66·9	195·4	+18·0			298
		2935*a*	0·853	109·0	210·2	—18·7	0	17	821*s*				0·952	119·3	182·7	—29·3			242
		2938*a*	0·926	78·1	201·9	+ 9·1	0	13		Apr. 23		Centre			(254·6)	(—4·7)	(281)	(1886)	(2362)
		2938*a*	0·958	78·6	196·3	+ 9·5	0	14											
		2939*a*	0·973	103·5	191·1	—14·3	28	177	289*c*	113·461	FT,JG		0·919	250·2	308·0	—20·0			339
			0·853	68·7	213·0	+15·3			463				0·826	288·5	294·4	+12·3			229
			0·945	77·3	199·0	+10·3			296			2925*a*	0·968	287·1	314·5	+15·1	20	255	581*f*
			0·962	69·5	197·0	+18·2			179			2934	0·632	260·8	280·3	— 9·3	0	3	
Apr. 22		Centre			(268·3)	(—4·8)	(193)	(1180)	(2941)			2934	0·613	260·7	279·0	— 9·3	0	4	
												2934*a*	0·589	261·9	277·3	— 8·5	2	71	
												2934	0·551	260·4	274·5	— 9·1	0	7	
112·459	CL,FT		0·951	284·5	324·8	+12·2			257			2934*b*	0·534	262·1	273·5	— 8·1	15	69	
		2923*a*	0·975	256·5	332·4	—14·3	27	292	502*f*			2930	0·686	319·1	271·5	+27·1	0	13	
		2925*a*	0·892	289·8	314·8	+15·3	18	160	318*c*			2930	0·667	320·4	269·6	+26·8	0	8	
		2925	0·873	285·6	313·3	+11·0	0	4				2930*a*	0·631	320·4	267·5	+24·9	0	14	
		2934	0·413	257·2	278·6	— 9·6	2	6				2930	0·649	323·2	267·1	+27·1	0	16	
		2934*a*	0·389	260·8	277·3	— 8·0	4	21				2931	0·570	316·6	265·9	+20·2	3	9	
		2934	0·391	258·3	277·3	— 8·9	0	8				2931*a*	0·547	322·2	262·3	+21·2	55	277	
		2934	0·379	256·6	276·4	— 9·4	0	6				2931	0·550	328·1	259·7	+23·4	6	96	
		2934	0·370	261·2	276·1	— 7·6	7	41				2931	0·537	330·8	257·8	+23·4	0	10	
		2934	0·352	257·7	274·9	— 8·7	0	3				2931*b*	0·506	329·6	257·2	+21·4	64	286	
		2934	0·347	264·4	274·8	— 6·4	0	13				2931	0·532	334·1	256·0	+24·0	7	17	
		2934*b*	0·323	258·9	273·2	— 8·1	19	47				2931	0·496	334·7	254·5	+22·0	7	30	
		2930*a*	0·533	336·4	268·1	+24·6	6	27				2931	0·492	337·0	253·3	+22·4	0	8	
		2930	0·558	338·4	267·8	+26·6	0	3				2933*a*	0·359	9·3	237·9	+16·1	3	17	
		2931	0·450	337·2	265·2	+19·8	3	13				2935	0·611	117·4	206·2	—20·1	0	10	150*c*
		2931	0·436	343·5	262·1	+20·0	0	10				2935	0·664	114·7	201·6	—19·7	1	16	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2937, April 22. Two very small spots.

Group 2938. April 22–May 2. Two small spots, *a* and *b*, on April 22, joined by a third spot, *c*, on April 23. Other spots have appeared by April 24, and the group forms a long stream, the leader, *a*, being now a large regular spot. *a* moves forward in longitude very rapidly on the succeeding days, and the following spots diminish, *b* having died out by April 27 and *c* by April 30.

Group 2939, April 22–May 3. A regular spot, *a*, with occasionally some very small companions. *a* diminishes in size.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
113d·461	FT,JG	2938*a*	0·630	71·4	204·4	+ 8·0	16	137	
		2938	0·653	74·5	202·2	+ 6·5	0	22	320*c*
		2938*c*	0·696	72·3	199·3	+ 8·8	14	112	
		2938*b*	0·737	73·0	195·9	+ 9·2	8	50	
		2940	0·703	62·8	201·1	+15·2	1	17	
		2940	0·713	61·6	200·7	+16·3	2	16	316*f*
		2940	0·760	62·0	196·7	+17·7	0	80	
		2939*a*	0·779	104·9	190·5	−14·5	23	153	254*c*
		2941*a*	0·993	65·5	161·1	+23·6	25	198	68*c*
			0·896	121·6	189·5	−30·2			381
			0·845	70·5	186·4	+13·7			164
			0·917	110·4	174·9	−20·5			277
Apr. 24		Centre			(241·3)	(−4·6)	(272)	(2021)	(3079)
114·314	HA,FT		0·958	250·9	303·7	−19·6			250
			0·949	281·6	300·2	+ 9·5			639
I.			0·905	292·2	291·5	+17·8			130
			0·858	253·1	288·8	−16·8			280
			0·806	242·2	281·6	−24·9			131
			0·776	283·5	279·4	+ 7·5			62
		2934	0·786	261·4	281·8	− 9·6	0	9	
		2934*a*	0·744	261·7	278·0	− 9·2	8	66	318*c*
		2934*b*	0·697	262·5	274·1	− 8·4	13	66	
		2934	0·683	260·8	273·0	− 9·6	4	14	
		2930	0·783	309·9	272·1	+26·8	2	12	
		2930	0·778	311·8	270·8	+27·8	10	37	
		2930	0·765	313·0	269·1	+27·9	0	21	
		2930	0·765	314·6	268·4	+28·9	0	22	
		2930	0·738	312·7	267·1	+26·4	0	11	
		2931	0·688	305·4	266·4	+19·8	3	20	
		2931*a*	0·654	309·0	262·7	+20·4	47	357	
		2931	0·642	311·1	261·1	+21·1	2	20	
		2931	0·651	314·9	260·0	+23·3	4	39	
		2931	0·634	316·7	258·2	+23·5	0	24	
		2931*b*	0·615	314·3	258·1	+21·4	63	264	
		2931	0·625	319·3	256·4	+24·2	4	27	
		2931	0·611	318·2	256·1	+23·0	0	2	
		2931	0·599	317·3	255·9	+22·0	4	11	
		2931	0·577	318·0	254·4	+21·2	5	22	
		2931	0·576	319·6	253·6	+21·9	0	19	
		2933*a*	0·383	338·2	238·5	+16·3	2	10	
		2935	0·478	125·5	205·6	−20·2	2	8	
Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
114d·314	HA,FT	2938	0·433	55·3	208·9	+10·0	0	3	
		2938*a*	0·455	61·6	206·2	+ 8·4	50	184	
I.		2938	0·487	67·2	203·2	+ 6·8	4	21	
		2938	0·513	63·2	202·5	+ 9·4	0	3	
		2938	0·512	64·9	202·2	+ 8·6	0	5	262*c*
		2938	0·532	65·5	201·8	+ 8·8	5	17	
		2938	0·549	64·0	200·1	+10·0	8	29	
		2938*c*	0·562	67·6	198·4	+ 8·5	36	172	
		2938*b*	0·610	67·5	195·3	+ 9·8	10	34	152*f*
		2940	0·564	53·8	201·9	+15·4	9	18	
		2940	0·581	52·2	201·5	+16·9	3	14	
		2940	0·592	52·9	200·5	+17·0	0	19	234*c*
		2940	0·639	53·2	197·4	+18·7	0	5	
		2940	0·631	57·5	196·5	+16·0	1	10	
		2940	0·656	53·9	196·0	+19·0	4	26	
		2939*a*	0·655	106·9	189·9	−14·4	33	161	
		2939	0·690	105·1	186·9	−13·7	2	7	
		2942	0·712	70·8	187·1	+10·3	2	17	227*c*
		2942	0·738	72·4	184·6	+ 9·8	1	6	
		2941*a*	0·961	63·0	160·1	+24·4	34	194	100*c*
			0·842	125·5	176·3	−32·0			464
			0·843	110·7	173·3	−19·8			256
			0·879	102·2	168·4	−12·9			196
Apr. 25		Centre			(230·0)	(−4·5)	(375)	(2026)	(3701)
115·452	CL,HA		0·934	248·5	284·0	−21·7			307
		2934	0·932	261·9	283·9	− 9·2	0	25	
		2934*a*	0·897	261·8	278·9	− 9·3	0	44	361*c*
		2934*b*	0·854	263·5	273·7	− 7·8	3	22	
		2934	0·844	262·2	272·6	− 8·9	0	10	
		2931	0·821	299·3	264·9	+20·9	7	53	
		2931*a*	0·806	300·7	262·9	+21·3	13	96	
		2931	0·790	300·9	261·3	+20·9	0	13	
		2931	0·783	304·2	259·5	+23·0	4	14	
		2931*b*	0·761	302·8	258·1	+21·1	43	242	495*c*
		2931	0·736	303·8	255·7	+20·8	0	48	
		2931	0·741	305·2	255·6	+21·9	0	14	
		2931	0·750	308·1	255·1	+24·2	5	27	
		2931	0·723	306·1	253·7	+21·7	0	33	
		2931	0·736	309·7	253·4	+24·5	0	6	
		2943	0·628	247·8	252·3	−17·2	0	6	
		2943	0·595	244·0	249·2	−18·7	0	9	
		2938*a*	0·259	29·5	207·6	+ 8·6	31	195	
		2938	0·269	38·5	205·3	+ 7·8	0	13	

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The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2940. April 24–May 2. A number of small spots in an irregular group. The component spots are very unstable, the group diminishing in size until April 27, recovering suddenly by April 28, and then diminishing again, all the spots but two, *a* and *b*, having disappeared by April 30.
Group 2941. April 24–May 6. A large spot, *a*, followed on April 26 and the succeeding days by an irregular stream of small spots. *a* diminishes in size, but a new spot, *b*, has formed near it by May 2, and soon becomes a large regular spot, and on May 5 and 6 is the only spot left in the group.
Group 2942, April 25. A few very small spots in an irregular cluster.
Group 2943, April 26. Two very small spots.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
115d·452	CL,HA	2938	0·275	48·3	203·1	+ 6·2	0	5	
		2938	0·293	41·4	203·8	+ 8·4	0	4	
		2938	0·344	43·3	201·2	+10·2	0	7	
		2938*c*	0·347	51·2	199·2	+ 8·3	13	142	
		2938*b*	0·395	54·2	196·1	+ 9·1	0	9	
		2940	0·387	30·0	203·5	+15·2	0	7	
		2940	0·409	29·7	202·9	+16·5	0	5	
		2940	0·431	31·4	201·5	+17·2	0	5	
		2940	0·417	34·4	200·9	+15·8	0	4	
		2940	0·453	32·8	200·1	+18·1	0	5	
		2940	0·509	38·6	195·4	+19·2	0	5	
		2944	0·277	115·3	200·3	−11·1	0	11	
		2944	0·326	113·8	197·3	−11·8	0	3	
		2939*a*	0·443	113·9	190·4	−14·3	19	134	
		2939	0·472	110·2	188·0	−13·3	0	8	
		2945	0·732	63·6	172·2	+15·7	0	5	
		2945	0·759	63·6	170·0	+16·6	0	7	
		2941*a*	0·860	59·3	161·5	+23·5	36	150	649*c*
		2941	0·893	62·3	156·6	+22·2	13	66	
		2941	0·919	62·1	152·9	+23·4	0	63	
			0·922	82·4	148·6	+ 5·2			276
			0·964	101·6	140·1	−12·4			200
Apr. 26		Centre			(215·0)	(−4·4)	(187)	(1515)	(2288)
116·472	FT,HA		0·953	261·9	274·2	− 9·1			331
			0·865	242·1	259·8	−26·2			191
		2931	0·919	295·0	264·5	+20·9	7	134	
		2931*a*	0·907	293·7	263·0	+19·3	0	41	
		2931*b*	0·880	296·7	258·7	+20·9	41	196	
		2931	0·857	298·7	255·4	+21·7	0	65	646*c*
		2938*a*	0·252	334·1	208·0	+ 8·8	49	219	
		2938	0·228	340·5	206·0	+ 8·1	0	6	
		2938	0·239	349·7	204·1	+ 9·2	0	9	
		2938	0·247	8·9	199·4	+ 9·8	0	2	
		2938*c*	0·223	11·1	199·1	+ 8·3	16	106	
		2938*b*	0·237	21·2	196·7	+ 8·4	0	3	
		2940	0·354	355·8	203·1	+16·3	0	5	
		2940	0·364	357·6	202·5	+16·9	0	4	
		2940*a*	0·339	359·4	201·8	+15·4	0	3	
		2940	0·355	4·3	200·0	+16·4	0	3	
		2940*b*	0·357	7·1	199·0	+16·4	0	4	
		2944	0·124	158·7	199·0	−10·9	0	4	
		2939*a*	0·258	132·7	190·4	−14·3	20	144	
1893.									
116d·472	FT,HA	2939	0·250	124·9	189·5	−12·4	1	7	
		2939	0·267	123·9	188·5	−12·7	0	8	
		2945	0·609	54·6	170·5	+16·9	0	5	
		2941*a*	0·746	53·6	161·0	+23·0	17	115	
		2941	0·755	55·1	159·7	+22·4	0	4	357*c*
		2941	0·773	56·3	157·7	+22·3	8	56	
		2941	0·814	60·0	152·7	+21·2	2	11	
		2941	0·820	58·1	152·7	+22·8	7	93	
		2946	0·829	83·7	146·2	+ 2·8	0	4	190*n*
		2947*a*	0·898	109·2	138·0	−19·1	2	40	144*c*
		2947	0·923	107·9	134·3	−18·1	0	20	
		2948	0·906	101·1	136·5	−11·9	0	6	304*c*
			0·930	77·3	134·7	+10·2			245
Apr. 27		Centre			(201·6)	(−4·3)	(170)	(1317)	(2408)
117·487	HA,FT		0·865	247·7	247·2	−21·4			256
			0·848	257·4	246·1	−12·9			158
			0·828	278·8	243·2	+ 4·9			117
			0·772	297·1	234·2	+17·7			217
		2931	0·978	291·8	257·6	+20·3	0	45	407*c*
		2931*b*	0·951	292·9	257·0	+20·3	12	215	
		2931	0·912	299·3	248·9	+24·5	0	12	133*n*
		2938*a*	0·406	302·2	208·4	+ 8·5	41	261	
		2938	0·294	319·3	199·3	+ 8·7	0	12	
		2938*c*	0·274	320·9	198·2	+ 8·1	6	66	
		2940	0·439	333·6	200·1	+18·9	1	9	
		2940*a*	0·395	326·3	201·3	+15·0	0	10	
		2940	0·407	331·5	199·9	+16·8	2	16	
		2940	0·387	331·5	199·2	+15·7	0	3	
		2940*b*	0·390	335·1	198·0	+16·5	10	57	
		2940	0·393	338·0	197·0	+17·2	0	9	
		2940	0·436	345·9	194·7	+20·8	0	32	
		2949	0·332	216·3	200·2	−19·6	0	4	
		2949	0·324	212·6	198·9	−20·0	0	4	
		2939*a*	0·177	189·7	190·0	−14·2	23	125	
		2945	0·419	37·0	173·1	+15·4	0	2	
		2945	0·416	40·0	172·2	+14·5	0	7	
		2945	0·451	41·2	170·3	+15·8	0	12	
		2941*a*	0·625	43·9	160·2	+23·0	12	119	
		2941	0·641	46·7	158·0	+22·4	8	62	
		2941	0·661	50·1	155·3	+21·5	4	14	302*c*
		2941	0·680	49·7	154·2	+22·5	2	12	
		2941	0·703	49·6	152·6	+23·7	0	13	
		2941	0·700	51·7	151·9	+22·3	2	66	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2944, April 26–27. Two small spots on April 26. Only one remains by April 27.

Group 2945, April 26–May 1. A number of small faint spots irregularly arranged.

Group 2946, April 27–May 4. A very small spot on April 27. It has greatly increased in size by April 28, and other spots have appeared preceding it, forming an irregular stream. The leading spot, *a*, moves forward rapidly in longitude, and has broken up by May 3.

Group 2947, April 27–May 6. A number of small spots in an irregular stream. The leader, *a*, is the most stable.

Group 2948, April 27–May 8. A few very small spots until April 30, when the group has expanded into a considerable stream. A further increase has taken place by May 1, and a very large spot, *a*, is seen north of the main line of the stream. *a* has divided into two spots, *b* and *c*, by May 2. The group is now a very complex stream, but diminishes on the succeeding days. *b* and *c* are measured together on May 6. Part of the group lies parallel to Group 2947, in the same longitude, and about 5° further north.

Group 2949, April 28–May 2. Two or three very small spots.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued*.

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
117d.487	HA,FT	2946*a*	0·613	79·0	151·3	+ 3·3	5	52	
		2946	0·635	80·6	149·5	+ 2·7	0	4	
		2946	0·678	80·7	146·3	+ 3·2	7	36	
		2948	0·780	101·9	137·1	−11·9	0	5	310*c*
		2948	0·831	101·4	132·1	−11·8	0	7	
		2947*a*	0·780	111·4	138·1	−19·2	8	52	360*c*
		2947	0·828	109·9	133·1	−18·7	2	26	
			0·760	94·2	138·8	− 5·9			60
			0·843	73·7	132·8	+11·3			278
			0·957	98·2	114·9	− 9·1			429
Apr. 28		Centre			(188·2)	(−4·2)	(145)	(1369)	(3027)
			0·925	289·0	240·7	+15·9			211
118·444	CL,JG	2949*	0·951	261·0	247·7	− 9·8	0	10	100*c*
		2949*	0·935	261·2	244·9	− 9·7	0	18	
		2938*a*	0·584	290·7	208·9	+ 8·5	33	200	
		2938	0·567	288·7	208·1	+ 7·0	0	3	
		2938	0·555	291·7	206·8	+ 8·3	4	18	129*c*
		2938*c*	0·435	299·0	198·0	+ 8·4	4	38	
		2940*a*	0·549	307·1	202·4	+15·6	4	17	
		2940	0·548	309·0	201·8	+16·5	0	4	
		2940	0·541	311·3	200·6	+17·2	0	7	
		2940*b*	0·501	314·1	197·4	+16·5	12	51	
		2940	0·512	319·8	195·9	+19·1	0	4	
		2949	0·484	237·4	200·9	−18·8	0	5	
		2949	0·462	236·2	199·3	−18·6	0	3	
		2949	0·467	234·5	199·2	−19·5	1	7	
		2939	0·326	235·5	191·9	−14·6	0	6	
		2939*a*	0·302	234·4	190·1	−14·1	11	59	
		2939	0·293	231·3	189·1	−14·5	3	10	
		2950	0·532	334·4	190·1	+24·6	5	19	
		2950	0·518	338·6	187·5	+24·7	3	11	
		2945	0·334	9·0	172·4	+15·1	0	2	
		2945	0·345	14·1	170·5	+15·4	0	8	
		2945	0·373	14·7	169·8	+17·0	1	7	
		2941*a*	0·518	27·9	160·3	+23·2	20	110	
		2941	0·509	31·3	159·0	+21·7	3	11	
		2941	0·525	31·1	158·5	+22·7	0	5	
		2941	0·536	37·1	155·3	+21·4	1	7	
		2941	0·557	37·9	153·9	+22·2	0	5	
		2941	0·574	40·1	152·1	+22·2	0	29	
		2941	0·588	38·4	152·1	+23·6	0	7	
		2946*a*	0·408	71·2	152·8	+ 3·8	9	42	
		2946	0·430	74·3	151·1	+ 2·9	0	5	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
				°	°	°			
1893.									
118d.444	CL, JG	2946	0·452	70·9	150·2	+ 4·8	0	4	
		2946	0·478	72·2	148·4	+ 4·7	2	8	
		2946	0·508	75·1	146·2	+ 3·9	8	17	
		2948	0·616	103·5	138·0	−11·5	0	2	
		2948	0·627	101·5	137·0	−10·4	0	9	
		2948	0·646	104·9	135·9	−12·7	2	5	104*c*
		2948	0·682	105·5	133·2	−13·5	0	3	
		2948	0·689	102·6	132·3	−11·6	0	8	
		2947*a*	0·628	116·2	139·0	−19·4	10	45	
		2947	0·638	115·4	138·1	−19·1	2	7	
		2947	0·700	112·3	132·7	−18·4	0	8	
		2951*a*	0·986	109·3	94·5	−19·7	23	172	91*f*
			0·861	98·3	116·0	− 9·3			253
			0·907	106·5	110·6	−16·6			142
Apr. 29		Centre			(175·5)	(−4·1)	(161)	(1016)	(1030)
			0·940	289·6	233·3	+16·9			169
119·164	HA,JG		0·819	288·2	218·6	+12·4			97
			0·791	244·0	216·3	−22·8			299
I.			0·781	292·9	214·0	+15·0			142
		2938*a*	0·712	286·0	209·6	+ 8·4	47	196	109*c*
		2938	0·679	287·0	206·9	+ 8·4	0	22	
		2938	0·585	292·4	199·1	+ 9·5	0	5	
		2940*a*	0·670	298·6	203·5	+15·5	2	13	
		2940*b*	0·607	304·7	197·3	+16·7	6	45	112*c*
		2949	0·616	245·3	201·9	−18·1	0	11	
		2949	0·594	244·3	200·2	−18·2	0	6	
		2949	0·584	241·5	198·9	−19·5	0	8	
		2939*a*	0·438	245·0	190·1	−14·3	8	39	68*c*
		2939	0·424	238·3	188·0	−16·5	0	7	
		2950	0·610	321·7	190·5	+24·9	2	19	63*c*
		2945	0·365	349·0	170·2	+16·9	5	23	
		2945	0·368	343·8	172·1	+16·6	0	8	
		2941*a*	0·479	11·3	160·1	+24·0	18	108	
		2941	0·453	14·1	159·2	+22·0	0	8	
		2941	0·484	16·2	157·6	+23·7	0	10	
		2941	0·466	18·1	157·0	+22·2	0	14	
		2941	0·490	23·4	153·9	+22·7	0	8	
		2941	0·505	26·8	151·8	+22·8	2	28	
		2946*a*	0·256	58·9	153·4	+ 3·7	14	65	
		2946	0·285	57·9	152·0	+ 4·8	0	2	
		2946	0·325	61·4	149·4	+ 5·1	3	8	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2949*, April 29. Two small spots.
Group 2950, April 29–May 1. Two small spots. The following spot has disappeared by April 30.
Group 2951, April 29–May 11. A regular spot, *a*, with occasionally a small companion.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.	Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).						Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°				1893.				°	°	°			
119d·164	HA,JG	2946	0·351	65·8	147·4	+ 4·5	2	32		120d·301	HA,JG	2947	0·396	126·1	130·4	−17·2	0	5	
		2946	0·374	67·5	145·8	+ 4·4	4	13				2951*a*	0·853	110·5	93·2	−19·5	44	243	138*c*
I.		2948	0·475	102·3	138·1	− 9·3	11	25		I.		2952	0·923	115·2	84·4	−24·7	0	9	147*c*
		2948	0·521	107·1	135·5	−12·3	14	40				2953	0·930	109·7	82·7	−19·7	0	11	
		2948	0·538	105·8	134·2	−11·9	0	2				2953*a*	0·951	110·8	78·9	−21·0	36	166	275*c*
		2948	0·543	107·3	134·0	−12·7	0	3					0·936	83·0	82·2	+ 5·2	.		140
		2948	0·559	109·6	133·3	−14·1	17	53	149*c*	May 1		Centre			(150·9)	(−3·9)	(294)	(1690)	(3549)
		2948	0·557	105·4	132·9	−11·9	0	8											
		2948	0·573	104·5	131·7	−11·6	6	37											
		2947	0·501	119·6	138·9	−17·8	0	2		121·211	CL,FT		0·978	253·0	217·2	−17·4			203
		2947*a*	0·518	121·8	138·3	−19·3	8	47					0·964	243·7	213·3	−26·4			310
		2947	0·595	115·3	131·7	−18·0	0	17		M.			0·950	287·7	208·6	+15·5			391
		2951*a*	0·952	109·0	93·7	−19·3	38	221	229*c*				0·878	283·2	198·8	+ 9·7			308
			0·792	99·1	113·7	− 9·7			91			2938*a*	0·948	280·2	209·3	+ 8·4	22	190	}
			0·835	109·1	110·1	−18·1			131			2938	0·924	279·4	205·4	+ 7·1	0	13	} 293*c*
Apr. 30		Centre			(166·0)	(−4·0)	(207)	(1153)	(1659)			2938	0·900	280·6	201·9	+ 7·8	0	3	}
												2940	0·878	291·2	197·3	+16·5	1	7	228*n*
120·301	HA,JG		0·927	248·7	218·5	−21·2			601			2949	0·910	252·2	204·1	−17·8	0	5	482*c*
			0·900	290·2	212·3	+16·2			278			2939*a*	0·786	254·4	190·2	−14·6	7	20	}
I.			0·889	239·2	211·5	−29·0			223			2939	0·777	253·9	189·3	−14·9	0	7	} 140*c*
		2938*a*	0·866	282·3	209·5	+ 8·6	41	187	321*c*			2954	0·736	237·5	182·4	−26·0	4	8	
		2938	0·788	284·4	201·3	+ 8·8	0	5				2941	0·581	323·4	161·1	+24·2	2	5	
		2940*a*	0·832	291·2	204·2	+15·1	0	8	385*f*			2941*a*	0·565	323·6	160·2	+23·4	14	36	
		2940*b*	0·782	295·2	198·4	+16·8	0	13	513*c*			2941*b*	0·534	323·0	159·0	+21·6	21	68	
		2949	0·804	250·7	204·2	−19·2	3	8	266*c*			2941	0·508	322·8	157·9	+20·2	0	5	
		2939*a*	0·642	252·0	189·8	−14·4	9	25	83*c*			2941	0·510	327·[illegible]	157·9	+21·7	8	27	
		2950	0·754	309·0	191·1	+25·3	2	17	107*f*			2941	0·529	325·6	157·7	+22·2	1	6	
		2945	0·472	319·2	169·7	+17·2	2	16	}			2941	0·499	326·3	156·1	+20·8	1	6	
		2941*a*	0·492	342·5	160·2	+24·0	16	83	} 72*c*			2941	0·474	334·4	151·6	+21·5	0	2	
		2941	0·458	345·2	158·1	+22·3	0	23	}			2941	0·475	337·0	150·4	+22·1	0	7	
		2946*a*	0·141	333·9	154·4	+ 3·3	16	79				2946*a*	0·309	291·4	155·6	+ 2·8	20	99	
		2946	0·139	22·6	147·8	+ 3·5	0	5				2946	0·207	308·9	148·1	+ 3·7	3	20	
		2946	0·171	18·8	147·7	+ 5·4	0	4				2948	0·097	214·2	142·0	− 8·4	12	52	
		2946	0·159	24·6	147·1	+ 4·4	0	12				2948	0·094	200·5	140·8	− 8·8	3	17	
		2946	0·175	28·6	146·1	+ 5·0	1	8				2948	0·126	190·0	140·2	−10·9	0	4	
		2948	0·198	114·2	140·4	− 8·5	15	42				2948	0·084	179·5	138·8	− 8·6	1	7	
		2948	0·247	110·8	137·5	− 8·8	0	12				2948*b*	0·159	174·7	138·0	−12·8	79	387	
		2948	0·266	115·3	136·8	−10·3	0	9				2948	0·112	166·7	137·4	−10·0	2	6	
		2948*a*	0·313	121·7	135·1	−13·2	86	551				2948	0·147	164·7	136·6	−12·0	2	10	
		2948	0·355	116·8	132·0	−12·9	2	10				2948	0·143	153·1	135·1	−11·1	7	18	
		2948	0·351	112·3	131·6	−11·3	10	100				2948	0·155	149·7	134·3	−11·4	0	6	
		2947*a*	0·335	142·1	138·4	−19·1	6	26				2948	0·181	142·8	132·5	−11·9	1	3	
		2947	0·366	133·1	134·6	−18·1	5	10				2948	0·181	137·7	131·8	−11·4	4	15	
		2947	0·392	132·7	133·2	−19·1	0	3				2948	0·185	129·3	130·6	−10·4	0	1	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2952, May 1–6. A very small spot on May 1 and 2. Several fresh spots have formed behind it by May 3, forming a short straight stream. The following spots die out on the succeeding days.
Group 2953, May 1–10. A regular spot, *a*, with some small companions, following Group 2951.
Group 2954, May 2–3. A very small spot on May 2 ; two on May 3.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued*.

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
121d·211	CL,FT	2948	0·188	165·9	136·2	−14·3	·9	69	
		2948*c*	0·207	165·0	135·7	−15·3	15	95	
M.		2948	0·208	157·4	134·2	−14·9	0	2	
		2948	0·194	154·8	134·0	−13·8	17	30	
		2948	0·220	151·4	132·7	−14·9	2	6	
		2948	0·203	144·6	132·0	−13·3	2	6	
		2947*a*	0·269	179·2	138·7	−19·3	4	11	
		2947	0·243	170·1	136·4	−17·6	0	1	
		2947	0·268	168·0	135·5	−18·9	2	12	
		2947	0·278	159·3	133·0	−18·8	1	2	
		2947	0·292	160·4	133·0	−19·7	2	12	
		2947	0·273	153·5	131·6	−17·9	1	3	
		2955	0·567	50·3	117·7	+17·8	0	3	
		2955	0·585	48·3	111·4	+19·5	1	5	
		2951*a*	0·731	114·1	93·8	−20·0	45	289	
		2951	0·746	114·8	92·7	−20·8	2	6	
		2952	0·824	118·2	85·7	−25·2	4	8	146*f*
		2953	0·836	113·7	83·6	−21·8	0	3	
		2953	0·843	112·5	82·6	−20·9	0	14	314*c*
		2953*a*	0·869	112·9	79·6	−21·7	16	170	
		2956	0·991	116·3	56·0	−26·6	8	86	114*c*
			0·868	88·1	78·9	− 0·3			140
			0·927	116·1	71·9	−25·5			383
			0·961	104·9	64·7	−15·4			320
			0·988	97·2	57·7	− 7·7			136
May 2		Centre			(138·9)	(−3·8)	(346)	(1893)	(3908)
122·269	CL,FT		0·948	248·5	196·1	−21·5			173
			0·927	281·3	191·7	+ 9·1			615
I.			0·931	291·5	190·6	+18·4			612
			0·928	233·7	190·3	−34·8			693
			0·783	293·9	172·9	+16·0			98
		2939	0·907	255·7	187·2	−14·5	0	13	214*c*
		2954	0·876	243·4	184·4	−24·9	0	6	
		2954	0·851	241·9	181·1	−25·7	0	6	353*f*
		2941*a*	0·689	310·4	159·6	+23·4	6	18	
		2941*b*	0·672	308·2	159·3	+21·4	46	218	215*c*
		2941	0·651	309·6	157·4	+21·4	0	10	
		2941	0·630	311·8	155·1	+21·6	30	101	
		2946	0·532	281·1	156·3	+ 2·7	6	20	
		2946	0·515	281·8	155·1	+ 2·9	5	16	
		2946	0·443	288·1	149·8	+ 4·5	0	8	
		2946	0·419	288·1	148·3	+ 4·1	0	37	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
122d·269	CL,FT	2948	0·313	255·0	142·6	− 8·1	12	40	
		2948*b*	0·279	257·2	138·7	−12·3	88	372	
I.		2948*c*	0·275	223·9	136·2	−15·0	21	116	
		2948	0·225	219·2	133·3	−13·7	3	13	
		2948	0·219	214·6	132·2	−14·0	6	39	
		2957	0·371	319·0	139·3	+12·6	2	9	
		2947*a*	0·345	219·0	138·1	−19·1	5	12	
		2947	0·308	219·0	136·6	−17·4	1	8	
		2947	0·311	214·3	135·5	−18·4	0	2	
		2947	0·293	204·3	132·2	−19·1	0	13	
		2951*a*	0·574	119·8	93·1	−19·7	51	260	125*c*
		2952	0·691	122·5	85·2	−24·6	5	8	
		2952	0·751	121·6	79·9	−25·7	0	6	137*c*
		2952	0·797	120·4	75·1	−26·1	6	13	
		2952	0·808	121·8	74·3	−27·5	3	12	267*c*
		2953*a*	0·753	115·3	78·1	−21·3	20	166	193*c*
		2956	0·949	116·6	53·9	−26·4	10	51	
		2956	0·972	117·3	48·7	−27·3	35	307	967*c*
		2958*a*	0·962	104·1	50·5	−14·6	26	104	481*p*
		2959	0·987	96·9	44·1	− 7·4	15	41	
			0·872	119·4	66·4	−27·3			424
			0·886	75·1	64·3	+11·4			143
			0·926	95·4	57·1	− 6·5			422
May 3		Centre			(124·9)	(−3·7)	(402)	(2045)	(6132)
123·431	CL,JG		0·919	239·0	174·5	−29·8			113
			0·834	249·4	165·1	−19·1			146
		2941*b*	0·820	299·6	159·5	+21·5	33	228	
		2941	0·823	301·9	159·0	+23·4	0	13	
		2941	0·784	302·9	155·0	+22·7	0	10	37*c*
		2941	0·766	301·4	153·8	+20·9	7	61	
		2941	0·763	302·6	153·2	+21·6	0	7	
		2946	0·730	277·4	155·9	+ 2·9	0	20	
		2946	0·685	279·1	152·1	+ 3·6	0	7	140*c*
		2946	0·644	279·5	148·9	+ 3·3	0	5	
		2948	0·562	261·6	143·6	− 7·7	12	53	
		2948	0·520	260·8	140·7	− 7·9	2	9	
		2948*b*	0·510	252·5	139·3	−11·9	52	329	
		2948	0·497	259·4	139·1	− 8·4	0	6	
		2948*c*	0·503	247·1	138·1	−14·4	17	154	
		2948	0·464	257·2	136·8	− 9·1	1	16	
		2948	0·469	244·3	135·4	−15·0	0	16	
		2948	0·439	247·9	134·1	−12·7	0	5	245*c*
		2948	0·423	244·4	132·6	−13·8	11	55	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2955, May 2. Two very small spots.
Group 2956, May 2–15. A number of spots in a long irregular stream. The leader, *a*, on May 5 is the largest. *a* moves backward in longitude on the succeeding days, and numerous spots form in advance of it. Of these new spots, *b*, the leader, is the largest on May 7. The smaller spots tend to die out, and *a* and *b* alone remain by May 14. *b* is measured with a spot near it on May 12.
Group 2957, May 3–4. A few very small spots irregularly arranged.
Group 2958, May 3–13. A regular spot, *a*, followed on May 4 to May 6, and on May 8, by a few very small spots.
Group 2959, May 3–10. A small regular spot.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
123d.431	CL,JG	2957	0·572	298·0	140·6	+12·4	3	11	
		2957	0·549	297·4	139·3	+11·4	0	3	80*c*
		2957	0·552	302·5	138·2	+14·1	0	6	
		2957	0·532	299·3	137·8	+11·9	0	6	
		2947*a*	0·527	239·2	138·0	−18·7	4	11	
		2947	0·487	235·9	134·7	−19·0	0	1	
		2947	0·459	233·4	132·5	−19·1	0	3	
		2951*a*	0·382	137·5	93·8	−19·8	34	218	
		2952	0·513	135·1	86·2	−24·5	3	7	
		2952	0·527	134·0	85·1	−24·7	2	9	
		2952	0·591	131·1	80·0	−25·9	0	20	218*c*
		2953	0·516	125·7	83·1	−20·7	0	8	
		2953	0·546	122·9	80·4	−20·4	3	14	
		2953*a*	0·579	123·4	78·4	−21·6	17	90	
		2956	0·845	119·7	54·5	−26·8	13	65	
		2956	0·863	119·4	52·3	−27·0	32	172	806*p*
		2956	0·892	120·5	48·6	−28·7	13	204	
		2958*a*	0·850	105·4	51·8	−15·8	20	112	342*f*
		2958	0·910	104·2	44·2	−14·4	0	13	
		2959	0·897	97·0	45·8	− 7·9	14	50	197*f*
			0·794	100·4	57·2	−10·4			428
			0·874	111·8	49·6	−20·8			258
May 4		Centre			(109·6)	(−3·6)	(293)	(2017)	(3530)
124·435	HA,FT		0·943	238·5	162·4	−30·8			205
			0·915	253·1	162·3	−16·9			280
			0·840	275·5	153·0	+ 2·7			440
		2941*b*	0·920	294·8	159·8	+21·2	55	236	459*nf*
		2948*a*	0·741	262·5	144·1	− 7·9	11	52	
		2948	0·718	261·9	142·1	− 8·3	0	19	
		2948*b*	0·689	256·3	139·4	−11·9	53	330	
		2948*c*	0·684	252·6	138·6	−14·4	13	130	
		2948	0·667	251·9	137·2	−14·6	2	11	318*c*
		2948	0·654	260·0	137·0	− 9·2	0	15	
		2948	0·637	250·2	134·6	−15·2	0	1	
		2948	0·632	249·7	134·2	−15·4	0	28	
		2948	0·610	251·1	132·8	−14·1	4	27	
		2947*a*	0·694	245·8	138·3	−19·1	0	14	
		2960	0·468	321·5	114·2	+18·2	3	31	
		2960	0·441	321·8	112·9	+16·8	0	23	
		2951*a*	0·284	171·2	93·8	−19·8	33	210	
		2952	0·397	155·8	86·1	−24·6	0	7	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
124d.435	HA,FT	2952	0·403	152·8	84·8	−24·3	0	33	
		2953*a*	0·435	136·8	77·8	−21·7	11	105	
		2956*a*	0·742	124·0	52·9	−27·0	21	209	
		2956	0·767	123·5	50·5	−27·4	6	57	549*c*
		2956	0·789	125·6	49·0	−29·7	5	35	
		2956	0·816	124·7	46·0	−29·8	11	68	
		2958*a*	0·717	107·5	51·5	−15·0	14	114	
		2958	0·799	104·9	43·9	−14·0	0	13	344*c*
		2959	0·776	97·2	45·7	− 7·8	6	27	111*f*
		2961	0·924	98·1	28·9	− 8·9	0	17	245*s*
May 5		Centre			(96·4)	(−3·5)	(248)	(1812)	(2951)
125·430	HA,JG		0·932	276·4	151·2	+ 4·7			303
			0·805	290·2	134·0	+14·0			101
		2941*b*	0·981	293·3	159·3	+22·0	0	157	463*f*
		2948	0·868	263·1	143·3	− 7·7	0	38	
		2948*b*	0·830	257·3	138·9	−12·4	61	422	
		2948	0·800	253·9	135·4	−14·8	3	17	766*c*
		2948	0·765	253·6	132·3	−14·7	0	56	
		2947*a*	0·829	249·5	138·0	−18·8	0	8	
		2960*a*	0·636	303·6	116·8	+17·7	8	51	
		2960*b*	0·579	309·2	111·2	+18·4	4	74	
		2951*a*	0·326	212·4	93·7	−19·3	25	180	
		2951	0·323	207·7	92·1	−19·9	0	3	
		2951	0·294	206·7	91·1	−18·6	0	7	
		2952	0·358	183·8	84·6	−24·2	0	19	
		2953	0·301	170·3	80·0	−20·6	0	8	
		2953*a*	0·332	161·9	76·8	−21·7	16	72	99*c*
		2953	0·359	162·2	76·3	−23·3	0	4	
		2956*b*	0·535	134·4	58·3	−25·0	0	7	
		2956	0·541	131·2	56·8	−23·8	0	37	
		2956	0·572	132·5	55·3	−25·7	8	28	
		2956*a*	0·619	131·5	51·9	−27·1	33	198	293*c*
		2956	0·673	131·9	48·1	−29·4	0	5	
		2956	0·698	130·5	45·6	−29·6	4	36	
		2958*a*	0·549	111·7	51·4	−14·6	14	91	90*c*
		2958	0·620	109·5	46·1	−14·7	0	10	
		2958	0·640	107·3	44·3	−13·6	0	9	
		2959	0·607	97·6	45·9	− 7·3	7	35	70*c*
		2961	0·822	97·3	27·9	− 7·9	0	3	
			0·830	100·0	27·2	−10·2			326
May 6		Centre			(83·1)	(−3·4)	(183)	(1575)	(2511)

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2960. May 5–9. Two small spots on May 5. They have coalesced to form *b* by May 6, and a fresh spot, *a*, has formed in advance of them. *a* and *b* move apart from each other, and new spots are seen between them on May 8. *b* has disappeared by May 9.
Group 2961. May 5–6. A small spot.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
126d·457	CL, FT	2948	0·933	256·9	138·5	−13·4	0	41	290c
		2948	0·933	258·3	138·5	−12·1	10	104	
		2960	0·795	293·4	118·9	+16·2	0	22	
		2960	0·721	299·8	110·7	+18·5	0	45	
		2951*a*	0·478	234·6	93·8	−19·0	16	175	
		2953*a*	0·335	198·4	76·1	−21·7	0	44	
		2956*b*	0·411	153·9	58·2	−24·9	7	117	
		2956	0·436	148·5	55·1	−25·0	7	111	
		2956*a*	0·486	146·2	52·0	−26·9	25	222	
		2956	0·566	141·9	46·1	−29·4	0	19	
		2958*a*	0·360	123·1	51·5	−14·4	10	57	
		2959	0·403	100·6	46·2	− 7·3	0	12	
		2962	0·964	103·1	354·8	−13·6	4	78	266*s*
			0·713	95·7	24·2	− 6·4			86
May 7		Centre			(69·6)	(−3·3)	(79)	(1047)	(642)
									144
127·441	HA, FT		0·797	246·1	107·6	−20·8			433*c*
		2948*b*	0·984	258·0	136·5	−12·4	0	158	
		2960*a*	0·914	288·8	120·4	+15·7	0	53	275*c*
		2960	0·877	290·5	115·2	+16·2	0	57	
		2960*b*	0·841	294·2	110·3	+18·3	0	50	
		2951*a*	0·645	243·4	94·1	−19·3	22	130	
		2951	0·629	243·7	93·0	−18·7	8	55	51*c*
		2951	0·612	243·4	91·7	−18·5	0	6	
		2953	0·455	225·0	76·8	−21·7	0	5	
		2953*a*	0·449	223·4	75·9	−22·0	5	26	
		2953	0·446	221·0	75·0	−22·7	0	2	
		2956*b*	0·388	184·6	58·6	−25·9	18	66	
		2956	0·367	174·9	54·6	−24·5	3	89	
		2956*a*	0·414	168·6	51·3	−27·1	19	206	
		2956	0·467	164·3	48·3	−29·8	0	6	
		2958*a*	0·218	155·6	51·3	−14·6	7	47	
		2958	0·223	140·2	48·2	−13·0	0	7	
		2959	0·194	112·9	46·3	− 7·5	3	13	
		2962	0·882	103·6	354·9	−13·6	13	113	1434*s*
			0·849	66·0	2·0	+18·3			124
May 8		Centre			(56·6)	(−3·2)	(98)	(1089)	(2461)
									439*n*
128·426	CL, JG	2960*a*	0·982	287·2	121·0	+16·2	0	81	
		2960	0·953	288·5	113·9	+16·6	6	59	
		2951*a*	0·790	248·0	94·3	−19·2	30	195	162*c*
		2951	0·768	247·)	92·2	−18·9	0	6	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
128d·426	CL, JG	2953*a*	0·599	235·4	75·7	−22·4	5	18	
		2956*b*	0·466	211·3	59·2	−26·4	18	57	
		2956	0·422	205·5	55·1	−25·4	0	11	
		2956	0·398	204·3	53·9	−24·3	3	20	160*c*
		2956	0·420	198·1	51·9	−26·5	7	55	
		2956*a*	0·425	194·7	50·5	−27·3	25	159	
		2956	0·422	191·9	49·2	−27·4	0	9	
		2958*a*	0·242	214·2	51·6	−14·6	11	24	
		2959	0·092	213·6	46·5	− 7·5	0	11	
		2962	0·747	105·2	356·0	−13·4	15	120	500*c*
		2963	0·842	105·4	346·8	−14·6	0	11	
		2964*a*	0·956	103·1	330·6	−13·4	20	97	225*c*
			0·957	79·1	331·5	+ 9·5			184
May 9		Centre			(43·6)	(−3·1)	(140)	(933)	(167*c*
									189
129·435	CL, HA		0·840	243·6	85·1	−23·6			218*sf*
		2951*a*	0·905	250·1	94·2	−19·2	22	145	203*c*
		2953*a*	0·752	242·1	75·9	−22·5	3	14	
		2956*b*	0·599	227·6	59·5	−26·3	15	82	112*c*
		2956	0·579	230·4	59·2	−24·1	0	4	
		2956	0·594	224·4	58·0	−27·6	0	3	
		2956	0·512	224·7	53·2	−24·0	1	14	
		2956	0·517	218·6	51·1	−26·4	5	40	
		2956*a*	0·514	215·3	49·6	−27·4	23	149	174*c*
		2956	0·507	212·7	48·1	−27·9	0	6	
		2956	0·470	213·2	46·6	−25·9	0	12	
		2958*a*	0·406	239·9	51·3	−14·4	5	21	63*c*
		2959	0·291	253·2	46·4	− 7·6	0	6	
		2962	0·571	109·4	356·6	−13·4	24	132	179*nf*
		2964*a*	0·864	104·0	330·7	−13·6	18	100	224*c*
			0·885	76·0	329·3	+10·9			410
			0·909	115·3	326·1	−24·1			136
May 10		Centre			(30·1)	(−2·9)	(116)	(728)	(1908)
									168
130·425	JG, FT		0·867	245·2	75·5	−22·8			101*f*
		2951*a*	0·973	251·2	93·7	−18·9	13	89	
		2965	0·767	288·1	65·1	+11·9	0	7	113*p*
		2956*b*	0·733	236·0	59·5	−26·2	3	64	
		2956	0·645	230·0	50·6	−26·8	2	26	98*c*
		2956*a*	0·635	227·8	49·0	−27·6	12	112	
		2958*a*	0·581	248·9	51·0	−14·4	0	27	
		2962	0·378	119·2	357·4	−13·2	17	116	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2962, May 7–18. A regular spot.
Group 2963, May 9–12. A small spot, not seen on May 10 and 11
Group 2964, May 9–18. A regular spot, *a*. Several small spots have formed north of *a* by May 13, and remain until May 15, after which *a* is again alone.
Group 2965, May 11–13. A small spot on May 11 and 12; a second is seen in advance of it on May 13.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	HELIOGRAPHIC Longitude.	HELIOGRAPHIC Latitude.	SPOTS. Area of UMBRA for each Spot (and for Day).	SPOTS. Area of WHOLE for each Spot (and for Day).	FACULÆ. Area for each Group (and for Day).
1893.				°	°	°			
130d.425	JG,FT	2964*a*	0·734	105·3	330·7	−13·1	24	91	89*c*
			0·832	118·7	323·6	−25·2			167
			0·863	73·5	319·8	+11·2			289
			0·935	102·1	308·0	−12·3			84
May 11		Centre			(17·1)	(−2·8)	(71)	(532)	(1109)
131·446	CL,FT		0·814	260·2	57·8	− 9·6			221
		2965	0·892	285·0	65·1	+12·1	0	14	
		2956*b*	0·853	241·0	59·4	−25·9	23	147	137*c*
		2956*a*	0·759	234·9	48·0	−27·8	17	93	
		2958*a*	0·749	253·2	51·1	−14·3	0	10	68*c*
		2966	0·562	314·2	29·0	+20·6	4	15	
		2966	0·549	314·1	28·3	+20·0	0	4	
		2962	0·213	153·4	358·0	−13·6	20	125	
		2963	0·341	125·3	347·0	−13·9	0	6	
		2964*a*	0·559	109·5	331·0	−13·0	15	123	107*c*
		2967	0·793	103·1	311·6	−12·0	3	15	
		2968	0·967	110·2	288·6	−20·2	0	9	
			0·875	71·0	304·8	+15·1			105
			0·907	81·4	299·3	+ 6·6			219
May 12		Centre			(3·6)	(−2·7)	(82)	(561)	(857)
132·423	JG,HA		0·823	233·0	40·7	−31·3			116
			0·756	292·4	36·7	−14·9			69
		2965	0·987	281·7	70·4	+11·1	0	44	271*c*
		2965	0·971	282·7	65·6	+11·7	0	24	
		2956*b*	0·941	242·7	59·5	−26·6	20	86	
		2956	0·914	243·6	55·1	−25·1	0	19	462*c*
		2956*a*	0·866	238·5	47·4	−28·3	20	112	
		2958	0·874	254·9	51·0	−14·4	0	10	484*c*
		2966	0·699	302·3	29·3	+19·8	3	24	
		2962	0·232	211·9	357·8	−13·9	20	123	
		2964	0·363	114·2	331·0	−11·0	2	26	91*c*
		2964*a*	0·376	118·6	330·9	−12·8	14	90	
		2967	0·635	105·8	312·1	−12·0	0	14	
		2967	0·687	106·2	308·2	−13·0	2	16	98*c*
		2967	0·718	104·6	305·5	−12·3	3	28	
		2968	0·890	112·2	288·9	−20·7	0	16	361*p*
		2969	0·987	67·9	271·7	+21·4	0	46	117*p*
			0·769	72·2	302·4	+11·9			118

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	HELIOGRAPHIC Longitude.	HELIOGRAPHIC Latitude.	SPOTS. Area of UMBRA for each Spot (and for Day).	SPOTS. Area of WHOLE for each Spot (and for Day).	FACULÆ. Area for each Group (and for Day).
1893.				°	°	°			
132d.423	JG,HA		0·881	98·6	289·0	− 8·8			189
			0·960	119·2	278·0	−28·7			296
May 13		Centre			(350·6)	(−2·6)	(84)	(678)	(2672)
133·503	M,HA		0·910	251·7	41·2	−17·7			201
		2956*b*	0·994	244·4	60·3	−25·7	0	51	
		2956*a*	0·955	241·0	47·8	−28·4	13	96	489*s*
		2966	0·864	295·3	32·6	+20·3	0	18	
		2962	0·409	240·9	357·9	−13·8	18	110	
		2964	0·177	160·6	333·0	−12·0	0	2	
		2964*a*	0·202	153·9	331·2	−12·9	11	67	
		2964	0·180	149·5	331·1	−11·4	2	23	
		2967	0·470	112·3	310·1	−12·5	0	5	
		2967	0·496	114·0	308·7	−13·8	0	3	
		2967	0·499	110·1	307·9	−12·0	0	3	
		2967	0·506	111·9	307·7	−13·1	0	5	
		2967	0·534	109·5	305·5	−12·4	0	2	
		2968	0·765	116·3	289·1	−21·5	2	9	
		2970	0·878	111·0	276·2	−19·6	6	22	
		2969	0·934	66·4	270·2	+20·9	15	57	
		2971	0·976	99·2	259·0	− 9·5	0	22	218*f*
			0·919	109·7	270·4	−19·0			317
May 14		Centre			(336·4)	(−2·5)	(67)	(495)	(1225)
134·432	HA,FT		0·898	254·9	27·5	−14·6			271
			0·890	237·4	23·7	−29·8			183
		2956*a*	0·992	241·9	46·8	−28·2	0	115	650*f*
		2966	0·952	293·0	33·7	+21·0	5	45	212*c*
		2966	0·919	293·6	27·9	+20·5	6	20	
		2962	0·576	249·8	357·7	−13·4	13	87	48*c*
		2964*a*	0·221	214·4	331·4	−12·8	12	50	
		2964	0·192	214·2	330·4	−11·5	0	10	
		2964	0·208	209·8	330·2	−12·8	0	3	
		2964	0·186	210·4	329·6	−11·6	0	2	
		2972	0·453	182·8	325·6	−29·2	0	5	
		2967	0·282	131·0	311·5	−13·0	0	2	
		2967	0·281	124·6	310·5	−11·5	0	6	
		2967	0·309	126·1	309·3	−12·8	5	21	
		2967	0·330	121·6	307·5	−12·3	3	24	
		2967	0·363	121·6	305·7	−13·2	0	3	
		2970	0·763	113·6	276·5	−19·3	4	16	112*c*
		2969	0·845	62·7	270·6	+21·3	10	39	481*f*

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2966, May 12–15. One or two small unstable spots.
Group 2967, May 12–22. A few very small spots in an irregular stream up to May 15. A great increase in size has taken place by May 16, and the group forms an almost continuous stream of spots which can only be separated from each other with difficulty. On May 21 the group consists of two large spots, one of which is divided into two portions in measurement, and a very small companion.
Group 2968. May 12–14. A small spot.
Group 2969, May 13–21. A small regular spot.
Group 2970, May 14–16. A small spot.
Group 2971, May 14–17. A small regular spot.
Group 2972, May 15–21. A few small unstable spots irregularly scattered. The group undergoes constant change.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
134^{d}·432	HA,FT	2971	0·905	99·1	259·5	− 9·3	0	22	538*f*
		2973	0·996	73·8	240·4	+15·9	0	64	
			0·766	122·8	278·5	−26·1			344
May 15		Centre			(324·1)	(−2·4)	(58)	(534)	(2839)
135·455	CL, JG		0·981	292·5	22·0	+17·2			179
		2962	0·744	254·4	357·8	−13·1	13	73	91*c*
		2964*a*	0·395	241·9	331·4	−12·8	7	33	
		2972	0·516	207·3	326·3	−29·4	5	24	63*c*
		2972	0·505	201·6	323·0	−30·1	4	13	
		2974	0·340	309·3	326·0	+10·2	2	9	
		2974	0·318	314·1	324·0	+10·5	0	3	
		2967	0·202	192·4	313·1	−13·6	2	21	
		2967	0·187	186·5	311·8	−13·0	1	14	
		2967	0·201	178·3	310·2	−13·8	11	52	
		2967	0·186	170·7	308·8	−12·8	0	17	
		2967	0·181	165·0	307·9	−12·3	1	21	
		2967	0·197	159·7	306·6	−12·9	4	24	
		2970	0·616	119·8	276·2	−19·7	0	5	
		2969	0·722	57·3	270·1	+21·2	5	21	
		2971	0·781	100·3	259·6	− 9·5	8	18	171*c*
		2973	0·940	72·0	242·4	+16·0	5	42	519*f*
			0·802	64·2	262·0	+18·9			180
			0·869	102·1	250·6	−11·7			271
May 16		Centre			(310·6)	(−2·3)	(68)	(390)	(1474)
136·179	CL, FT		0·830	249·1	355·6	−18·5			377
			0·816	237·0	351·4	−27·7			194
I.		2962	0·843	256·0	357·8	−13·0	17	90	226*c*
		2964*a*	0·532	248·6	331·4	−13·1	8	23	124*c*
		2972	0·606	219·1	327·1	−30·0	6	34	176*c*
		2972	0·564	212·9	321·7	−30·2	4	13	
		2974	0·483	296·2	327·0	+10·3	0	5	
		2967*a*	0·299	227·0	314·0	−13·8	6	27	
		2967	0·266	224·8	312·0	−13·0	1	6	
		2967	0·266	216·5	310·4	−14·5	13	99	200*c*
		2967	0·228	213·2	308·3	−13·1	3	28	
		2967	0·217	205·6	306·5	−13·4	6	41	
		2969	0·633	51·0	269·2	+21·5	6	25	81*c*
		2971	0·671	101·6	259·4	− 9·4	6	14	377*f*
		2973	0·866	68·9	243·5	+17·0	8	34	676*f*
			0·717	59·3	260·2	+19·8			213
1893.				°	°	°			
136^{d}·179	CL, FT		0·863	43·3	253·1	+37·3			105
			0·796	81·2	249·0	+ 5·6			153
I.			0·877	56·9	245·4	+27·3			99
			0·877	117·4	243·7	−22·6			134
May 17		Centre			(301·0)	(−2·2)	(84)	(439)	(3135)
137·631	CL, HA		0·946	247·8	352·0	−21·6			143
			0·923	240·0	346·8	−28·3			216
		2962	0·969	258·2	357·4	−12·0	15	141	284*s*
		2964*a*	0·768	255·0	331·1	−12·7	2	11	118*p*
		2972	0·801	234·6	329·8	−28·9	5	23	74*c*
		2974	0·717	287·8	325·7	+11·2	0	4	
		2967	0·580	249·7	315·6	−13·2	0	27	
		2967	0·548	248·4	313·2	−13·3	18	124	
		2967	0·502	246·9	310·0	−13·1	16	198	149*c*
		2967	0·467	244·9	307·4	−13·2	2	24	
		2967	0·489	248·3	306·1	−11·0	0	4	
		2975*a*	0·338	3·4	280·4	+17·7	3	7	
		2975	0·348	13·4	277·0	+17·7	0	6	
		2975	0·359	23·3	273·3	+17·2	0	5	
		2969	0·450	27·9	268·8	+21·4	5	19	
		2976	0·884	78·1	220·7	+ 9·6	3	9	717*nf*
			0·795	63·5	233·0	+19·4			172
			0·929	117·3	215·3	−26·9			372
			0·926	105·7	214·5	−15·3			206
May 18		Centre			(281·8)	(−2·0)	(69)	(602)	(2451)
138·467	FT, JG		0·966	250·9	345·3	−19·0			109
			0·869	254·0	330·3	−14·9			221
			0·835	283·6	326·1	+10·3			124
		2972	0·897	238·1	331·2	−29·2	0	21	98*c*
		2972	0·885	238·0	329·6	−29·0	0	13	
		2972	0·871	235·8	327·0	−30·3	0	5	163*c*
		2972	0·837	236·1	323·0	−28·9	0	27	
		2967	0·722	252·8	315·7	−13·7	19	115	
		2967	0·691	253·1	313·2	−13·0	15	106	
		2967	0·657	255·9	310·9	−10·6	4	12	209*c*
		2967	0·648	252·1	309·8	−12·9	20	264	
		2967	0·627	256·3	308·8	−10·0	0	3	
		2967	0·622	250·4	307·6	−13·6	8	55	
		2975*a*	0·370	332·4	281·0	+17·2	3	7	
		2969	0·393	5·3	268·5	+21·0	2	13	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2973, May 15–17. A single spot.
Group 2974, May 16–18. Two very small spots on May 16. Only one remains by May 17, and this has divided into two portions, but is still measured as one by May 18.
Group 2975, May 18–20. Three very small spots in a straight stream on May 18. The leader, *a*, alone remains by May 19.
Group 2976. May 18–19. A very small spot.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
138d·467	FT,JG	2976	0·779	76·0	220·8	+ 9·6	0	3	
			0·876	118·1	212·2	−25·3			281
			0·895	73·1	208·9	+14·2			862
			0·936	104·3	201·7	−14·1			105
May 19		Centre			(270·7)	(−1·9)	(71)	(644)	(2172)
139·463	CL,FT		0·938	253·6	326·8	−16·0			189
			0·911	237·8	320·1	−29·8			224
		2972	0·922	238·6	322·0	−29·4	0	2	
		2967	0·862	255·5	316·4	−13·4	45	159	
		2967	0·841	255·1	314·1	−13·5	4	38	
		2967	0·804	256·2	310·4	−12·1	17	207	
		2967	0·793	256·5	309·4	−11·8	0	7	499c
		2967	0·791	253·8	308·9	−13·8	9	123	
		2967	0·787	258·0	308·9	−10·5	0	8	
		2967	0·775	255·7	307·6	−12·2	0	10	
		2967	0·772	254·1	307·1	−13·4	0	20	
		2975a	0·495	309·8	280·9	+16·8	0	7	
		2969	0·422	336·1	268·1	+20·8	3	8	
		2977a	0·947	76·1	187·5	+12·6	19	100	453c
		2977	0·958	77·1	185·2	+11·9	0	15	
		2977	0·982	76·4	179·4	+13·0	0	34	
			0·807	64·4	207·4	+19·2			249
			0·794	103·4	205·7	−11·7			128
			0·862	75·6	199·4	+11·4			502
			0·900	116·7	195·6	−24·7			322
			0·894	107·3	195·1	−16·2			186
			0·903	115·5	194·9	−23·7			431
			0·926	67·3	192·3	+20·2			284
May 20		Centre			(257·6)	(−1·8)	(97)	(738)	(3467)
140·166	HA,FT		0·936	288·1	315·9	+16·2			119
			0·817	278·4	304·2	+ 5·9			88
I.		2972	0·993	240·8	331·1	−29·2	0	28	
		2972	0·983	241·1	326·8	−28·7	0	21	42cc
		2972	0·966	240·6	321·8	−28·8	0	28	
		2967	0·938	256·7	317·5	−13·0	37	213	
		2967	0·895	256·9	311·2	−12·4	21	157	648c
		2967	0·876	255·1	308·6	−13·8	15	119	
		2967	0·869	258·2	308·1	−11·1	0	4	
		2969	0·503	320·8	268·0	+21·2	0	5	
		2978	0·381	221·0	263·4	−18·3	0	5	
1893.									
140d·166	HA,FT	2977a	0·890	74·2	186·8	+13·2	17	109	
		2977	0·912	76·4	183·6	+11·7	0	14	298c
I.		2977	0·935	77·4	180·0	+11·1	0	6	
		2977	0·950	74·8	177·6	+13·9	0	59	
			0·724	129·4	208·8	−28·6			110
			0·727	61·5	205·9	+19·0			176
			0·806	73·9	196·1	+11·9			232
			0·814	112·8	195·7	−19·4			314
			0·864	127·3	193·8	−32·5			105
			0·882	65·1	189·5	+20·9			379
			0·974	120·8	172·7	−30·3			232
May 21		Centre			(248·2)	(−1·7)	(90)	(768)	(3121)
141·413	HA,JG		0·850	249·9	288·5	−17·8			114
		2967	0·999	257·3	319·3	−12·8	0	382	513c
		2967	0·977	256·8	309·2	−13·3	5	176	
		2978	0·584	239·8	263·7	−18·4	0	11	55c
		2979	0·245	181·7	232·1	−15·7	0	2	
		2979	0·259	177·1	230·9	−16·5	0	2	
		2980	0·498	58·1	206·0	+13·8	0	7	
		2980	0·533	60·2	203·4	+13·9	0	5	151c
		2977a	0·723	71·0	187·4	+12·5	33	163	
		2977	0·825	72·2	178·0	+13·6	4	19	
		2981	0·898	106·1	168·6	−15·1	0	21	
		2981	0·914	103·9	166·2	−13·3	9	51	564f
		2982	0·977	66·7	155·8	+22·4	0	36	302c
		2982	0·979	64·3	155·7	+24·7	0	20	
			0·889	120·7	172·1	−27·8			114
May 22		Centre			(231·7)	(−1·6)	(51)	(895)	(1813)
142·382	HA,FT		0·971	278·6	294·5	+ 8·0			161
			0·925	249·6	285·4	−19·3			314
			0·911	288·3	282·8	+16·0			145
			0·901	258·2	282·7	−11·3			120
			0·846	237·6	272·5	−27·7			284
			0·888	323·7	266·5	+44·7			203
			0·750	299·8	262·9	+20·9			126
		2978	0·776	248·8	267·9	−17·2	2	32	138c
		2978	0·761	250·2	266·8	−15·9	0	4	
		2978	0·756	245·9	265·6	−18·9	0	6	
		2980	0·324	34·1	208·2	+14·1	3	14	
		2980	0·330	37·8	206·9	+13·7	0	23	
		2980	0·364	42·8	204·2	+14·1	0	20	
		2977a	0·558	65·4	187·8	+12·2	26	154	70c

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2977. May 20–31. A large regular spot, *a*, followed by a very irregular stream of smaller spots. The smaller spots are very unstable and undergo constant change.

Group 2978. May 21–25. A very small faint spot on May 21 and 22. A stream of small spots on May 23, which rapidly increases in size on the succeeding days.

Group 2979. May 22. A pair of very small spots.

Group 2980. May 22–30. A pair of very small spots on May 22. The group increases in size on the succeeding days and has become a stream of irregular spots, of which the leader, *a*, is the largest, by May 24. The last spot on May 26, *b*, becomes very nearly as large as *a*, but diminishes again soon after. A very small spot, *c*, is seen north of the stream on May 28, and grows very rapidly.

Group 2981, May 22–29. Several scattered small irregular spots which undergo continued change.

Group 2982, May 22–June 1. Two small spots closely surrounded by faculæ on May 22. The group increases in size on the succeeding days, and by May 24 consists of two irregular spots, *a* and *b*, connected by a short stream of small spots. *a* and *b* have greatly increased in size by May 25. A large portion has been broken off from *b* by May 26, and *a* is cut into two halves by a bright bridge on May 29. The group steadily diminishes after May 26, and by June 1 consists only of three or four small scattered spots surrounded by dense faculæ.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of Umbra for each Spot (and for Day).	Spots. Area of Whole for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
142d·382	HA,FT	2977	0·631	67·0	182·4	+13·1	0	21	90c
		2977	0·685	68·0	178·2	+13·8	6	15	
		2981	0·785	108·0	168·5	−14·9	0	10	
		2981	0·794	105·7	167·3	−13·3	4	32	
		2981	0·814	105·7	165·4	−13·6	0	7	452c
		2981	0·831	104·7	163·5	−13·0	0	43	
		2981	0·833	106·5	163·5	−14·5	0	8	
		2983	0·863	111·5	160·9	−19·2	0	16	347c
		2982*a*	0·896	62·2	159·0	+24·0	7	85	622c
		2982*b*	0·922	62·5	155·1	+24·5	5	66	
		2984	0·969	100·0	143·4	−10·1	0	10	
			0·822	122·7	168·0	−27·2			229
			0·887	84·0	156·8	+ 4·7			236
			0·952	110·9	147·7	−20·3			303
May 23		Centre			(218·9)	(−1·4)	(53)	(566)	(3840)
143·399	CL,JG	2978	0·896	252·5	268·0	−16·2	19	57	
		2978	0·881	252·0	266·1	−16·5	6	22	
		2978	0·866	252·0	264·2	−16·2	0	7	202c
		2978	0·861	252·8	263·7	−15·4	2	13	
		2978	0·856	251·0	262·9	−16·9	6	32	
		2985	0·281	194·9	209·7	−17·0	0	5	
		2980*a*	0·291	344·0	210·1	+14·9	13	51	
		2980	0·283	347·3	209·1	+14·7	0	6	
		2980	0·289	360·0	205·4	+15·4	0	5	
		2977*a*	0·373	51·0	188·2	+12·3	28	153	
		2977	0·441	56·3	183·4	+13·0	4	33	
		2977	0·503	57·0	179·7	+14·7	0	4	
		2977	0·491	60·2	179·6	+12·9	11	61	
		2977	0·519	59·4	178·1	+14·1	1	6	
		2981	0·632	109·9	167·9	−13·4	0	16	
		2981	0·668	107·8	164·9	−12·7	0	6	80c
		2981	0·680	108·9	164·1	−13·7	1	13	
		2981	0·691	107·5	163·0	−12·9	0	10	
		2983	0·746	114·9	159·8	−19·2	0	3	
		2982*a*	0·778	57·5	159·8	+23·8	12	99	
		2982	0·795	57·8	158·1	+24·1	8	38	401c
		2982	0·819	57·3	155·9	+25·4	0	8	
		2982*b*	0·832	59·4	153·9	+24·2	12	72	
		2984	0·882	101·1	144·0	−10·4	0	9	299p
			0·949	107·3	134·5	−16·8			343
May 24		Centre			(205·4)	(−1·3)	(123)	(729)	(1325)
1893.									
144d·383	JG,HA		0·949	242·8	262·2	−26·1			82
			0·924	293·1	257·5	+20·7			183
			0·902	259·1	256·4	−10·3			337
			0·796	293·6	242·3	+17·9			151
		2978	0·973	253·3	268·6	−16·5	38	352	
		2978	0·965	251·7	266·5	−18·0	5	24	435c
		2978	0·949	253·3	263·3	−16·4	3	20	
		2978	0·943	251·5	262·1	−17·8	4	21	
		2985	0·428	231·5	212·8	−16·5	1	11	
		2985	0·403	226·8	210·2	−17·1	0	4	
		2980*a*	0·418	311·8	211·1	+15·0	16	99	55c
		2980	0·373	315·6	208·0	+14·2	1	9	
		2980*b*	0·368	317·9	207·1	+14·7	0	4	
		2986*a*	0·382	217·7	206·6	−18·6	0	6	
		2986	0·375	215·0	205·5	−19·0	0	7	
		2986	0·357	213·5	204·3	−18·4	3	6	
		2986*b*	0·362	209·1	203·1	−19·5	7	25	
		2977*a*	0·236	17·3	188·3	+11·8	27	146	
		2977	0·275	28·0	184·8	+12·8	0	7	
		2977	0·283	30·9	183·9	+12·8	0	12	
		2977	0·295	41·2	181·0	+11·6	0	5	
		2977	0·315	41·2	180·2	+12·5	5	11	
		2977	0·348	37·1	179·9	+14·9	0	5	
		2977	0·348	40·1	179·1	+14·2	0	3	
		2977	0·356	41·7	178·3	+14·2	0	4	
		2981	0·452	118·9	168·5	−13·7	4	9	
		2981	0·488	119·7	166·5	−15·0	0	2	
		2981	0·481	116·6	166·3	−13·5	0	4	
		2981	0·488	113·1	165·2	−12·1	2	8	145c
		2981	0·502	116·0	164·8	−13·7	7	35	
		2981	0·518	116·1	163·8	−14·2	0	7	
		2981	0·518	113·0	163·3	−12·7	0	4	
		2981	0·541	116·5	162·5	−15·0	0	6	
		2983	0·595	121·0	159·9	−18·8	0	2	
		2982	0·615	51·1	161·5	+21·6	0	8	
		2982	0·634	52·6	159·8	+21·6	0	4	
		2982*a*	0·647	50·1	159·8	+23·4	47	276	
		2982	0·699	51·0	155·7	+25·0	1	6	274c
		2982*b*	0·706	53·6	154·2	+23·8	25	262	
		2982	0·729	55·8	151·6	+23·2	0	8	
		2987	0·692	98·5	149·0	− 6·7	0	6	83c
		2984	0·749	103·1	144·7	−10·6	0	4	
		2988	0·889	107·9	130·7	−16·4	2	16	389p
		2988	0·920	107·6	126·4	−16·6	10	28	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2983, May 23–25. A small spot *sf* Group 2981.
Group 2984, May 23–25. A very small spot.
Group 2985, May 24–25. A very small spot on May 24. A few very small spots on May 25.
Group 2986, May 25–30. A few very small spots on May 25, closely following Group 2985. The group increases in size, and by May 27 has become a stream composed of two large irregular spots, *a* and *b*, and a few very small spots between them. The smaller spots have disappeared by May 30. *b* is divided into two portions by a bright bridge on May 28.
Group 2987, May 25–29. A few small unstable spots irregularly scattered, *np* Group 2984.
Group 2988, May 25–30. A few small unstable spots irregularly scattered. Two close pairs, each measured as one spot, on May 29 and 30.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
144d·383	JG,HA	2989	0·972	98·8	116·2	− 8·8	0	16	90*f*
			0·855	73·9	135·2	+13·0			90
			0·854	75·2	135·1	+11·9			181
			0·936	72·6	124·5	+15·8			302
May 25		Centre			(192·4)	(−1·2)	(208)	(1492)	(2797)
145·682	CL,FT		0·964	257·1	249·4	−12·7			456
			0·903	291·7	237·5	+19·0			684
			0·726	291·2	219·4	+14·4			186
			0·742	228·9	215·2	−29·9			250
		2980*a*	0·661	296·7	213·0	+16·4	0	3	
		2980	0·644	294·8	212·2	+14·7	11	87	
		2980	0·607	296·1	209·3	+14·5	5	15	226*c*
		2980	0·609	297·1	209·2	+15·1	0	3	
		2980	0·574	295·2	207·3	+13·2	0	10	
		2980*b*	0·572	298·8	206·3	+15·0	10	60	
		2986*a*	0·583	238·5	206·7	−18·6	10	43	
		2986	0·574	236·3	205·5	−19·5	0	17	
		2986	0·563	237·8	205·2	−18·4	4	22	
		2986	0·541	235·6	203·2	−18·7	3	21	
		2986	0·547	233·0	202·9	−20·0	3	14	
		2986*b*	0·526	234·9	202·1	− 18·5	8	38	
		2977*a*	0·322	314·6	188·7	+12·0	15	97	110*c*
		2977	0·308	320·1	186·8	+12·5	2	9	
		2977	0·287	318·0	186·4	+11·2	0	2	
		2977	0·301	324·0	185·6	+13·2	0	2	
		2977	0·280	322·1	185·3	+11·6	0	7	
		2981	0·263	146·5	166·6	−13·7	0	9	
		2981	0·282	147·8	166·3	−14·8	2	12	
		2981	0·283	140·7	164·6	−13·7	8	86	
		2981	0·304	144·3	164·6	−15·3	4	31	
		2981	0·319	138·2	162·6	−14·8	4	13	
		2990	0·349	148·5	164·2	−18·3	2	7	
		2990	0·390	144·2	161·3	−19·5	0	5	
		2982	0·470	29·6	160·7	+23·0	69	320	
		2982	0·498	31·8	158·6	+23·9	1	7	
		2982	0·499	33·4	157·8	+23·5	0	7	
		2982	0·508	35·2	156·7	+23·4	0	4	
		2982	0·538	34·7	155·5	+25·1	0	14	
		2982*b*	0·547	38·1	153·5	+24·4	47	276	247*c*
		2982	0·536	40·7	153·0	+22·9	11	74	
		2987	0·421	104·7	151·1	− 7·1	0	6	
		2987	0·444	101·9	149·4	− 6·2	0	2	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
145d·682	CL, FT	2988	0·735	110·5	129·7	−15·6	0	3	
		2988	0·746	110·4	128·8	−15·8	0	6	242*c*
		2988	0·770	110·8	126·7	−16·6	2	11	
		2988	0·783	110·3	125·4	−16·5	0	6	
		2991	0·944	101·6	104·8	−11·3	3	19	222*c*
		2992*a*	0·992	110·2	92·8	−20·2	36	292	230*c*
			0·807	67·8	124·0	+17·0			208
			0·885	68·3	115·3	+18·5			454
			0·879	100·4	114·2	− 9·6			191
			0·930	113·0	108·3	−21·7			283
May 26		Centre			(175·2)	(−1·1)	(260)	(1660)	(3989)
146·427	CL, JG		0·954	289·9	236·4	+18·6			368
			0·820	288·9	218·7	+14·8			253
			0·789	232·8	211·3	−29·1			113
		2980*a*	0·751	290·4	212·0	+14·4	13	89	
		2980	0·726	291·5	209·6	+14·7	6	22	
		2980	0·709	293·0	207·9	+15·3	3	14	355*c*
		2980	0·700	291·9	207·4	+14·3	0	6	
		2980	0·691	293·9	206·3	+15·4	0	10	
		2980*b*	0·674	292·7	205·1	+14·2	24	73	
		2986*a*	0·698	243·7	206·7	−18·7	19	155	
		2986	0·676	239·4	202·8	−20·9	0	6	378*c*
		2986*b*	0·642	241·3	201·8	−18·7	20	77	
		2977	0·463	304·2	188·7	+14·1	0	6	
		2977*a*	0·445	300·4	188·5	+12·0	12	102	169*c*
		2977	0·421	302·3	186·7	+12·0	0	5	
		2977	0·421	305·4	186·0	+13·1	5	21	
		2977	0·415	313·9	183·5	+15·7	0	7	
		2977	0·401	312·0	183·4	+14·5	0	10	
		2977	0·386	314·9	181·9	+14·8	0	3	
		2981	0·214	189·6	167·5	−13·1	2	13	
		2981	0·226	184·6	166·0	−14·0	0	9	
		2981	0·213	179·6	165·4	−13·3	10	45	
		2981	0·247	175·2	164·3	−15·2	0	4	
		2990	0·288	177·2	164·7	−17·6	0	5	
		2982*a*	0·410	10·6	160·8	+22·7	55	297	
		2982	0·431	14·1	158·9	+23·6	0	3	
		2982	0·436	19·2	156·6	+23·2	0	5	280*c*
		2982	0·469	19·7	155·5	+25·1	0	4	
		2982	0·439	25·4	153·8	+22·3	0	11	
		2982*b*	0·472	24·9	153·0	+24·3	33	309	
		2987	0·253	114·2	152·1	− 6·9	0	3	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2989, May 25. A small spot.
Group 2990, May 26–27. Two very small spots on May 26, *sf* Group 2981.
Group 2991, May 25–28. A small spot.
Group 2992, May 26–June 8. A very large composite spot, *a*, followed on May 27 and the succeeding days by a short stream of smaller spots. Some small spots have also formed in advance of *a* by May 31, and others south of it by June 1. The latter prove the most stable.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
146d.427	CL, JG	2987	0·267	111·8	151·1	— 6·7	3	14	
		2987	0·278	113·6	150·7	— 7·4	0	5	
		2987	0·312	105·6	148·0	— 5·8	3	16	
		2988	0·634	113·9	128·6	—15·6	0	10	99*c*
		2988	0·663	113·6	126·4	—16·1	12	59	
		2991	0·872	102·3	105·5	—11·2	0	21	284*c*
		2992*a*	0·961	110·7	92·5	—20·1	49	359	
		2992	0·969	108·4	90·5	—18·1	0	89	306*c*
			0·769	65·4	118·4	+17·9			432
			0·867	117·8	108·4	—24·3			103
May 27		Centre			(165·5)	(— 1·0)	(269)	(1889)	(3140)
147·485	HA,FT		0·905	238·5	212·7	—28·6			241
			0·531	331·8	167·7	+27·0			40
		2980*a*	0·880	287·1	211·5	+14·6	17	76	
		2980	0·869	288·2	210·0	+15·3	0	15	803*c*
		2980*c*	0·824	290·1	204·8	+15·9	0	6	
		2980*b*	0·818	288·6	204·5	+14·6	7	66	
		2986	0·859	251·2	209·2	—16·5	0	6	
		2986*a*	0·848	248·7	207·6	—18·5	14	107	
		2986	0·804	247·0	202·6	—18·8	0	6	
		2986	0·799	245·9	201·9	—19·5	0	8	269*c*
		2986*b*	0·789	247·5	201·3	—18·0	8	41	
		2986*b*	0·786	246·2	200·7	—19·0	4	29	
		2977*a*	0·636	290·6	188·8	+12·2	7	49	
		2977	0·602	294·1	185·7	+13·5	3	15	101*c*
		2981	0·351	232·8	168·0	—13·0	0	11	35*c*
		2981	0·331	228·9	166·2	—13·3	3	17	
		2982*a*	0·433	339·1	161·0	+23·0	42	228	
		2982	0·440	344·5	158·8	+24·2	0	13	
		2982	0·419	348·6	156·5	+23·4	1	11	
		2982*b*	0·429	358·7	152·0	+24·5	26	190	
		2982	0·404	360·0	151·4	+22·9	0	12	
		2987	0·109	188·3	152·3	— 7·0	0	14	
		2987	0·104	150·1	146·2	— 3·8	5	14	
		2988	0·443	124·8	129·3	—15·3	2	6	
		2988	0·438	123·1	126·3	—16·1	11	35	
		2991	0·734	104·7	105·0	—11·3	0	7	
		2992*a*	0·877	112·7	92·1	—20·2	68	388	
		2992	0·884	115·6	91·7	—22·8	0	27	958*c*
		2992	0·883	110·1	90·9	—18·0	0	23	
		2993*a*	0·951	110·8	80·6	—20·0	54	325	
		2993	0·985	113·4	72·1	—23·2	0	89	
		2994	0·967	79·2	76·8	+10·2	18	93	314*c*
May 28		Centre			(151·4)	(—0·8)	(290)	(1927)	(2761)
1893.									
148d.392	HA,JG		0·911	240·4	202·0	—27·0			189
			0·846	294·1	194·3	+19·8			186
		2980*a*	0·957	285·3	211·5	+14·4	5	130	
		2980	0·946	285·5	209·4	+14·4	0	14	549*c*
		2980*c*	0·938	287·8	207·7	+16·4	0	13	
		2980*b*	0·915	286·3	204·3	+14·6	8	39	
		2986*a*	0·933	251·0	207·2	—17·9	13	142	
		2986	0·918	249·4	204·6	—19·1	0	18	
		2986	0·917	248·1	204·3	—20·3	0	10	459*c*
		2986*b*	0·895	248·8	201·3	—19·2	12	113	
		2977*a*	0·782	286·2	189·4	+12·1	12	82	130*c*
		2977	0·751	289·5	186·1	+14·0	2	8	
		2977	0·675	291·5	179·5	+13·7	0	3	
		2977	0·662	294·3	177·9	+15·2	0	4	113*c*
		2981	0·504	245·1	167·2	—12·8	0	5	
		2981	0·487	244·1	166·0	—12·9	0	7	
		2982*a*	0·537	317·5	162·5	+22·6	26	119	119*f*
		2982*a*	0·522	320·7	160·4	+23·1	18	114	
		2982	0·472	331·7	153·5	+23·8	0	15	
		2982	0·450	330·6	153·2	+22·3	0	4	71*c*
		2982	0·493	334·6	152·9	+25·7	0	6	
		2982*b*	0·468	335·5	151·7	+24·4	36	171	
		2987	0·195	241·7	149·3	— 6·0	0	5	
		2988	0·311	145·8	129·1	—14·2	6	17	
		2988	0·359	140·1	125·6	—16·6	7	19	
		2991	0·587	108·6	105·0	—11·3	0	4	
		2992*a*	0·775	115·8	91·6	—20·1	59	376	
		2992	0·781	112·6	90·3	—17·9	7	35	490*c*
		2992	0·818	116·1	87·5	—21·5	0	8	
		2993	0·863	115·4	82·3	—22·1	0	11	
		2993*a*	0·881	112·8	79·6	—20·3	45	327	939*c*
		2993	0·907	112·1	76·0	—20·2	6	47	
		2993	0·937	114·0	71·6	—22·6	13	177	
		2994	0·896	78·2	76·6	+10·2	20	101	270*c*
			0·848	123·9	86·3	—28·6			74
May 29		Centre			(139·4)	(—0·7)	(295)	(2148)	(3589)
149·239	HA,JG		0·936	244·3	195·6	—24·2			99
			0·915	291·6	192·4	+19·4			47
M.		2980*a*	0·993	284·5	210·8	+14·4	4	89	680*c*
		2980*c*	0·987	286·8	208·2	+16·5	23	218	
		2986*a*	0·981	252·4	206·5	—17·4	10	99	232*c*
		2986*b*	0·958	250·3	200·5	—19·0	11	86	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2993, May 28–June 9. A very large irregular composite spot, *a*, followed by smaller spots of a similar character. On June 2 and the succeeding days, curved streams of small spots are seen between *a* and these latter. The following spots diminish after June 3, and *a* after June 7.
Group 2994, May 28–June 6. A regular spot, *a*, which steadily diminishes in size. A very small companion is seen near it on June 5.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
149d·239	HA,JG	2977*a*	0·884	284·5	189·2	+12·5	8	41	81*nf*
		2977	0·864	287·7	186·4	+14·9	1	14	
M.		2982*a*	0·648	308·5	161·5	+23·2	38	213	
		2982*b*	0·561	319·7	151·6	+24·7	20	186	
		2988	0·259	184·5	129·4	−15·5	0	7	
		2988	0·285	170·4	125·4	−16·9	1	8	
		2992*a*	0·663	121·2	91·1	−20·5	60	361	
		2992	0·659	117·9	90·5	−18·4	0	22	
		2992	0·684	123·3	90·1	−22·5	0	3	
		2992	0·699	120·9	88·2	−21·5	0	7	
		2992	0·702	117·5	87·1	−19·3	0	8	442*c*
		2993*a*	0·792	115·9	78·8	−20·6	68	552	
		2993	0·864	117·3	71·5	−23·6	25	161	
		2993	0·861	115·1	71·4	−21·7	7	34	
		2994	0·794	76·8	76·6	+10·1	16	108	53*c*
			0·810	81·6	74·7	+ 6·5			56
			0·871	74·8	68·9	+12·9			138
			0·909	122·1	66·6	−29·1			111
			0·942	112·6	59·3	−21·5			257
			0·947	102·4	57·5	−11·9			226
May 30		Centre			(128·2)	(−0·6)	(292)	(2217)	(2422)
150·426	CL,FT		0·936	296·2	179·3	+24·2			119
			0·915	284·6	177·7	+13·1			387
			0·789	248·0	162·4	−17·5			690
		2977*a*	0·971	282·9	188·0	+12·4	0	27	230*nf*
		2982	0·814	298·9	162·9	+22·8	0	28	
		2982*a*	0·800	299·6	161·4	+22·9	0	14	361*c*
		2982	0·786	300·5	159·8	+23·1	10	73	
		2982*b*	0·714	305·2	152·0	+23·8	12	54	
		2982	0·705	306·9	150·7	+24·6	9	64	480*c*
		2982	0·691	305·2	150·2	+23·0	0	9	
		2992	0·482	140·7	93·3	−22·3	3	8	
		2992	0·507	140·5	92·0	−23·4	6	34	
		2992*a*	0·480	134·9	91·3	−20·2	74	391	229*c*
		2992	0·468	130·6	90·6	−18·1	5	17	
		2992	0·506	128·2	87·8	−18·6	0	39	
		2993	0·579	128·1	83·3	−21·3	0	11	
		2993*a*	0·621	123·1	79·0	−20·2	86	448	
		2993	0·694	123·1	73·6	−22·6	6	23	
		2993	0·702	121·4	72·5	−21·8	0	25	408*c*
		2993	0·727	123·1	71·0	−23·7	11	130	
		2993	0·721	120·4	69·4	−21·7	5	31	
1893.									
150d·426	CL,FT	2994	0·603	71·9	77·0	+10·4	13	91	
		2995	0·713	114·4	69·8	−17·5	1	9	
		2995	0·728	112·8	68·2	−16·7	0	6	200*c*
		2995	0·754	113·1	66·0	−17·5	5	11	
		2996*a*	0·948	71·1	42·4	+17·7	26	199	
		2996	0·966	70·4	38·7	+18·8	9	23	1097*c*
		2996*a*	0·988	71·5	32·3	+18·2	0	23	
			0·759	70·9	65·0	+14·0			186
			0·846	112·9	57·0	−19·5			795
			0·975	75·0	36·1	+14·5			372
May 31		Centre			(112·5)	(−0·5)	(272)	(1788)	(5554)
151·422	HA,FT		0·902	251·6	162·4	−16·7			598
			0·872	276·7	159·6	+ 5·6			179
			0·777	257·4	149·4	−10·0			403
			0·684	245·3	139·6	−16·9			213
		2982	0·891	297·5	159·0	+24·0	0	18	
		2982*b*	0·834	298·8	151·9	+23·4	8	18	1056*c*
		2982	0·817	298·6	150·2	+22·7	0	8	
		2982	0·820	300·2	150·0	+24·0	0	22	
		2992	0·380	166·5	93·8	−22·0	2	20	
		2992	0·404	164·2	92·5	−23·2	2	11	
		2992*a*	0·373	159·7	91·4	−20·8	71	459	
		2992	0·428	162·9	91·4	−24·4	0	8	
		2992	0·342	154·4	90·4	−18·3	0	6	
		2992	0·354	152·3	89·4	−18·6	0	4	
		2992	0·398	152·1	87·9	−20·9	1	4	
		2992	0·419	153·4	87·7	−22·3	0	6	
		2992	0·367	147·7	87·4	−18·4	0	7	
		2993	0·441	137·8	81·1	−19·4	5	51	
		2993	0·442	135·5	80·3	−18·7	0	4	
		2993*a*	0·477	136·9	79·0	−20·7	81	455	
		2993	0·487	132·2	76·9	−19·5	0	10	
		2993	0·505	131·7	75·8	−19·9	8	56	
		2993	0·545	131·1	75·1	−21·3	0	21	263*c*
		2993	0·512	129·4	74·6	−19·3	1	8	
		2993	0·540	133·4	74·3	−22·1	0	3	
		2993	0·559	133·0	73·1	−22·7	7	42	
		2993	0·550	128·2	72·0	−20·2	0	5	
		2993	0·570	130·1	71·4	−21·8	12	49	
		2993	0·594	132·8	70·9	−24·1	11	79	
		2994	0·417	63·3	77·1	+10·3	27	94	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2995, May 31–June 9. A few small spots *n f* Group 2993. The group has greatly increased in size by June 2, and forms a long stream of nebulous unstable spots, some of which attain a great size. Groups 2992, 2993 and 2995 are practically parts of one very large group.
Group 2996, May 31–June 11. A large regular spot, *a*, followed by a few smaller spots in a curved stream. *a* alone remains by June 6.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
151d·422	HA,FT	2995	0·542	122·7	70·9	−17·3	2	9	
		2995	0·579	122·8	68·5	−18·6	3	9	67*c*
		2995	0·580	121·2	68·0	−17·8	0	8	
		2995	0·603	119·9	66·1	−17·8	0	10	
		2996*a*	0·855	68·8	42·7	+17·8	30	206	
		2996	0·884	69·0	39·2	+18·2	3	31	
		2996	0·902	68·1	36·9	+19·4	0	8	1383*c*
		2996	0·907	70·0	35·9	+17·9	0	6	
		2996*b*	0·926	70·2	33·1	+18·1	5	20	
			0·726	129·0	60·2	−27·4			363
			0·731	110·1	54·4	−14·8			338
			0·898	121·6	39·5	−28·2			253
			0·893	99·5	36·8	− 8·6			241
June 1		Centre			(99·3)	(−0·4)	(279)	(1775)	(5357)
152·401	CL,JG		0·971	250·1	161·6	−19·3			212
			0·939	276·3	155·9	+ 5·8			96
			0·929	295·0	152·4	+23·0			999
			0·878	256·3	146·9	−12·1			592
			0·709	245·9	128·8	−16·9			108
		2992	0·389	195·0	92·6	−22·2	3	35	
		2992	0·304	198·0	92·0	−16·9	0	6	205*c*
		2992	0·414	190·3	91·0	−24·1	15	78	
		2992*a*	0·359	191·8	90·9	−20·7	66	465	
		2992	0·316	188·7	89·3	−18·3	0	6	
		2993	0·339	163·7	80·6	−19·1	6	37	
		2993*a*	0·374	160·0	78·6	−20·7	54	500	
		2993	0·386	150·6	74·8	−19·8	0	7	
		2993	0·392	146·7	73·3	−19·2	0	11	
		2993	0·447	151·6	73·1	−23·2	3	58	
		2993	0·416	145·1	71·8	−20·1	0	15	
		2993	0·442	146·4	71·2	−21·7	34	171	
		2993	0·478	147·8	70·3	−24·0	9	69	
		2994	0·249	39·8	77·1	+10·8	12	61	265*c*
		2995	0·395	141·0	71·3	−18·0	7	36	
		2995	0·384	138·1	70·9	−16·7	4	17	
		2995	0·416	138·9	69·7	−18·4	0	9	
		2995	0·407	136·0	69·3	−17·1	0	34	
		2995	0·427	133·7	67·6	−17·3	6	26	
		2995	0·454	134·9	66·6	−18·9	7	41	
		2996*a*	0·734	64·9	42·3	+17·9	24	175	
		2996	0·769	65·2	39·1	+18·6	3	23	
		2996	0·795	64·8	36·8	+19·6	0	5	940*c*
1893.									
152d·401	CL,JG	2996	0·812	66·6	34·7	+18·6	0	10	
		2996*b*	0·832	67·6	32·5	+18·3	7	15	
		2997	0·935	117·6	19·8	−25·7	0	8	
		2997	0·943	119·5	18·6	−27·7	0	18	236*c*
June 2		Centre			(86·4)	(−0·2)	(260)	(1936)	(3653)
153·408	CL,FT		0·969	293·2	147·2	+22·4			364
			0·958	257·4	145·8	−12·1			207
			0·909	288·0	137·0	+16·2			87
			0·845	248·8	128·6	−17·8			146
			0·816	291·8	125·4	+17·5			108
		2992	0·496	219·2	92·8	−22·7	1	9	
		2992	0·482	216·9	91·2	−22·7	6	79	
		2992	0·494	215·2	91·1	−23·8	4	116	
		2992*a*	0·457	219·0	90·9	−20·9	80	398	
		2992	0·395	215·0	86·8	−18·9	0	9	
		2993	0·399	201·0	81·8	−21·9	4	20	
		2993	0·353	200·9	80·6	−19·3	3	13	
		2993	0·399	196·6	80·1	−22·5	0	5	
		2993	0·342	200·0	80·1	−18·8	0	7	
		2993	0·398	195·0	79·4	−22·7	0	2	
		2993*a*	0·369	195·8	79·1	−20·9	55	391	
		2993	0·376	189·1	76·7	−21·9	13	48	
		2993	0·354	188·3	76·1	−20·6	0	3	
		2993	0·382	186·5	75·7	−22·4	0	3	
		2993	0·360	186·7	75·6	−21·0	0	9	
		2993	0·394	184·9	75·1	−23·2	3	11	
		2993	0·389	182·3	74·0	−22·9	4	23	
		2993	0·415	181·8	73·8	−24·5	0	2	
		2993	0·366	181·9	73·7	−22·1	3	25	
		2993	0·383	180·0	73·0	−22·5	0	5	
		2993	0·404	178·3	72·3	−23·8	6	59	
		2993	0·384	176·2	71·4	−22·6	6	33	
		2993	0·349	175·7	71·4	−20·4	0	26	
		2993	0·346	175·0	71·2	−20·2	3	22	
		2993	0·367	174·6	70·9	−21·4	1	4	
		2993	0·411	173·6	70·1	−24·2	5	43	
		2993	0·385	172·3	69·8	−22·5	5	70	
		2993	0·401	171·6	69·4	−23·4	2	9	
		2994	0·203	340·2	77·0	+10·8	10	39	
		2995	0·284	179·1	72·7	−16·6	2	16	
		2995	0·306	174·5	71·2	−17·8	19	162	
		2995	0·291	169·9	70·0	−16·7	0	2	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2997, June 2–6. A few small scattered spots.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
153d·408	CL,FT	2995	0·296	166·3	68·8	−16·8	4	35	
		2995	0·335	168·1	68·8	−19·2	4	22	
		2995	0·311	165·7	68·4	−17·6	1	5	
		2995	0·332	164·9	67·8	−18·7	1	5	
		2995	0·314	161·9	67·2	−17·4	7	34	
		2995	0·337	161·8	66·6	−18·7	2	7	
		2995	0·353	162·1	66·4	−20·6	6	29	
		2995	0·330	158·8	65·8	−18·0	1	4	
		2995	0·362	160·3	65·6	−20·0	3	16	
		2995	0·346	158·1	65·2	−18·8	9	31	
		2998	0·230	11·3	70·4	+12·9	0	3	
		2999*b*	0·329	56·3	57·9	+10·4	2	10	
		2999	0·328	55·5	57·1	+10·6	0	5	
		2999	0·338	58·2	56·1	+10·1	3	14	
		2999*a*	0·376	57·4	54·2	+11·6	15	58	
		3000*a*	0·420	131·8	54·0	−16·3	1	5	
		3000	0·435	131·4	53·2	−16·8	0	3	
		3000	0·456	132·1	52·3	−17·9	0	1	
		3000	0·457	129·0	51·3	−16·8	0	1	
		2996*a*	0·584	58·0	41·8	+17·9	34	181	
		2996	0·619	59·8	38·9	+18·0	0	9	
		2996*b*	0·704	63·4	31·7	+18·3	5	23	
		2997	0·846	120·9	19·4	−25·7	4	12	
		2997	0·866	123·2	17·8	−28·3	0	8	
		2997	0·869	121·6	17·0	−27·1	2	23	112*c*
June 3		Centre			(73·0)	(−6·1)	(349) 339	(2207)	(1024)
154·471	HA,JG		0·874	290·7	118·0	+18·0			155
		2992	0·631	230·5	91·0	−23·6	9	101	119*c*
		2992*a*	0·612	234·1	90·9	−21·0	74	391	
		2993	0·523	226·6	82·9	−21·0	1	10	
		2993	0·462	228·3	80·4	−17·8	0	5	
		2993*a*	0·485	222·9	79·6	−20·7	55	436	
		2993	0·501	216·0	77·7	−23·8	0	8	
		2993	0·471	217·2	76·8	−22·0	0	9	
		2993	0·427	218·9	75·4	−19·3	0	3	
		2993	0·437	212·3	73·5	−21·6	0	6	
		2993	0·455	208·9	72·8	−23·4	6	71	77·2
		2993	0·418	208·9	71·5	−21·4	0	16	
		2993	0·436	204·4	70·3	−23·3	24	121	
		2994	0·361	301·2	78·2	+10·7	4	18	34*c*
		2995	0·380	220·6	73·9	−16·7	8	20	
		2995	0·366	215·0	71·7	−17·4	15	164	
		2995	0·337	215·9	70·8	−15·8	0	3	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
154d·471	HA,JG	2995	0·369	209·7	70·1	−18·6	3	16	
		2995	0·336	206·5	68·0	−17·4	8	54	
		2995	0·354	202·7	67·3	−19·0	2	13	
		2995	0·354	198·2	65·7	−19·6	10	53	
		2995	0·333	198·0	65·2	−18·4	3	18	
		2999*b*	0·190	2·5	58·5	+10·9	13	147	
		2999	0·196	11·1	56·8	+11·0	0	7	
		2999	0·197	19·8	55·1	+10·7	8	39	
		2999*a*	0·220	21·7	54·3	+11·7	14	87	
		3000*a*	0·283	166·8	55·2	−15·9	14	66	
		3000	0·297	158·5	52·5	−16·0	0	5	
		3000	0·325	159·9	52·3	−17·7	0	3	
		3000	0·309	157·6	52·0	−16·5	2	6	
		3000*b*	0·308	154·2	51·0	−16·0	0	8	
		2996*a*	0·415	42·0	42·1	+17·9	24	161	66*c*
		2996*b*	0·534	53·7	32·2	+18·4	3	8	
		3001	0·396	58·4	38·9	+12·0	3	9	
		3001	0·425	60·1	37·0	+12·2	0	6	
		2997	0·723	127·3	19·4	−25·9	2	10	
		2997	0·759	129·8	17·4	−29·0	0	5	67*c*
		2997	0·759	127·4	16·4	−27·4	3	20	
		3002	0·812	108·9	6·4	−15·2	0	7	127*f*
June 4		Centre			(59·0)	(+0·0)	(308)	(2130)	(568)
155·520	CL,FT		0·929	288·5	112·0	+17·2			337
			0·886	257·7	106·6	−10·8			342
			0·879	243·8	103·5	−22·7			441
		2992	0·782	240·3	92·2	−22·7	0	6	
		2992	0·772	238·5	90·8	−23·7	8	47	425*c*
		2992*a*	0·758	241·6	90·4	−21·1	40	394	
		2993	0·692	237·9	83·9	−21·4	1	11	
		2993	0·679	237·2	82·7	−21·5	0	22	
		2993*a*	0·647	236·6	80·1	−20·8	53	399	240*c*
		2993	0·611	233·4	76·6	−21·2	3	22	
		2993	0·578	226·8	72·9	−23·2	12	110	
		2993	0·547	231·1	71·8	−20·0	0	4	
		2993	0·561	224·1	70·1	−23·6	8	97	
		2994	0·559	289·2	77·4	+10·6	3	12	
		2994	0·534	291·5	75·3	+11·3	0	3	
		2995	0·538	236·3	72·8	−17·2	48	339	
		2995	0·503	232·0	69·5	−17·8	10	97	
		2995	0·490	226·6	67·1	−19·5	7	82	
		2995	0·467	228·6	66·5	−17·8	15	147	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 2998, June 3. A very small spot.
Group 2999, June 3–10. A curved stream of small spots, *sp* Group 2996. The last spot, *a*, is the largest. The group has greatly increased by June 4; *b*, the leader, being now larger than *a*. *b*, however, diminishes on the succeeding days, whilst *a* becomes a large regular spot. The group becomes involved in a mass of bright faculæ on June 9, and *a* is not seen after June 8.
Group 3000, June 3–9. A few small scattered spots. Only two, *a* and *b*, remain by June 5. *a* increases in size up to June 5; both *a* and *b* diminish after that date, and *a* remains alone after June 6.
Group 3001, June 4–5. A pair of very small spots on June 4. Only one remains on June 5.
Group 3002, June 4–13. A regular spot, *a*, followed by a short stream of smaller spots. *a* alone remains by June 8.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
155d·520	CL,FT	2995	0·487	223·5	65·9	−20·5	0	4	
		2995	0·470	223·8	65·1	−19·7	12	70	
		2995	0·453	225·2	64·7	−18·4	4	14	
		2999*b*	0·304	306·4	59·3	+10·5	13	97	
		2999	0·281	319·0	55·8	+12·3	0	3	
		2999*a*	0·253	318·9	54·7	+11·1	32	176	
		3000*a*	0·329	211·3	55·2	−16·2	13	89	
		3000*b*	0·294	199·7	50·9	−15·9	3	14	
		2996*a*	0·305	8·9	42·2	+17·6	25	150	
		2996	0·363	12·0	40·4	+20·9	0	2	
		3001	0·229	24·0	39·6	+12·1	2	5	
		2997	0·591	137·7	18·9	−25·8	1	8	116*c*
		2997	0·636	136·4	15·6	−27·3	2	7	
		3002*a*	0·638	113·8	8·0	−14·9	11	57	
		3002	0·658	113·6	6·5	−15·2	3	13	
		3002	0·691	114·1	4·1	−16·3	4	22	
		3003*a*	0·957	80·0	332·2	+ 9·9	21	110	728*c*
		3004*a*	0·982	76·7	326·4	+13·1	32	149	
		3005*a*	0·994	102·5	321·6	−12·4	9	230	
			0·908	119·5	343·1	−26·6			254
			0·918	119·6	341·6	−27·0			190
			0·952	106·1	333·7	−15·4			261
			0·958	105·2	332·4	−14·6			243
June 5		Centre			(45·0)	(+0·1)	(395)	(3912)	(3577)
156·446	HA,JG		0·969	258·3	69·9	− 7·1			278
		2992*a*	0·865	245·2	89·9	−21·1	46	369	466*c*
		2992	0·867	242·5	89·4	−23·3	5	40	
		2993*a*	0·776	242·8	80·1	−20·6	40	410	376*c*
		2993	0·738	240·1	74·8	−21·3	0	8	
		2993	0·696	240·6	72·7	−19·7	1	19	
		2993	0·702	235·4	71·6	−23·2	14	116	
		2993	0·677	237·7	70·4	−20·9	0	9	
		2994	0·714	285·2	77·2	+11·0	3	9	80*n*
		2995	0·702	245·0	74·3	−17·0	15	173	589*c*
		2995	0·661	244·2	71·0	−16·5	4	35	
		2995	0·667	242·3	71·0	−17·8	5	33	
		2995	0·655	240·6	69·6	−18·4	1	18	
		2995	0·634	241·3	68·3	−17·4	6	42	
		2995	0·619	237·7	66·3	−19·0	33	316	
		2999*b*	0·477	292·7	58·7	+10·9	0	27	
		2999	0·440	299·3	54·9	+12·7	0	6	
		2999*a*	0·409	298·1	54·3	+11·4	17	122	
1893.									
156d·446	HA,JG	3000*a*	0·455	232·7	54·8	−15·7	12	50	81*c*
		3000*b*	0·407	226·9	50·7	−15·8	0	8	
		2996*a*	0·340	332·5	42·2	+17·8	25	122	45*c*
		2997	0·536	150·6	15·6	−27·5	0	5	
		3002*a*	0·480	122·9	8·3	−14·8	15	105	154*c*
		3002	0·541	121·6	4·3	−16·2	11	30	
		3003*a*	0·876	77·6	332·4	+11·0	25	89	539*c*
		3004*a*	0·925	75·8	325·9	+13·3	43	215	
		3005*a*	0·954	102·9	321·0	−12·2	50	210	197*c*
		3005	0·966	103·9	318·5	−13·4	0	35	
			0·866	124·1	338·2	−29·0			133
			0·899	108·4	330·3	−16·3			186
June 6		Centre			(32·8)	(+0·3)	(371)	(2621)	(3124)
157·469	CL,HA	2992*a*	0·950	247·4	89·6	−21·5	30	242	
		2993	0·915	245·3	83·3	−22·7	0	8	
		2993*a*	0·894	246·3	80·5	−21·2	43	296	
		2993	0·872	247·1	77·6	−19·7	14	86	
		2993	0·839	246·5	73·7	−19·3	9	40	
		2993	0·824	245·0	71·8	−20·1	0	7	
		2993	0·832	241·1	71·6	−23·4	9	55	
		2993	0·831	239·9	71·2	−24·3	0	4	
		2993	0·810	247·0	70·8	−18·2	3	8	3075*c*
		2993	0·818	239·9	69·8	−23·9	0	15	
		2993	0·809	243·0	69·8	−21·2	3	8	
		2993	0·756	239·7	63·9	−22·0	0	6	
		2995	0·848	249·7	75·3	−16·9	22	192	
		2995	0·830	248·5	73·1	−17·4	0	7	
		2995	0·815	249·5	71·8	−16·3	7	44	
		2995	0·795	247·9	69·5	−17·1	5	20	
		2995	0·764	244·5	65·9	−18·9	55	505	
		2995	0·725	246·9	63·1	−16·2	0	3	
		2999*b*	0·665	285·4	59·8	+10·4	0	22	
		2999	0·629	285·0	57·2	+ 9·6	0	4	157*c*
		2999*a*	0·601	288·8	54·6	+11·5	12	166	
		3000*a*	0·623	243·3	54·5	−15·9	11	73	105*c*
		2996*a*	0·481	308·3	42·5	+17·7	26	146	
		3006	0·403	322·0	34·4	+18·8	2	6	
		3006	0·408	326·0	33·3	+20·1	0	5	
		3006	0·393	324·1	33·3	+18·9	2	8	98*c*
		3006	0·383	326·5	32·2	+18·9	1	9	
		3006	0·392	330·7	31·0	+20·3	3	11	
		3006	0·361	332·0	29·6	+18·9	7	29	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3003, June 5–11. A stream of small spots. The group undergoes continual change and the component spots are very unstable.
Group 3004, June 5–17. A large spot, *a*, *nf* Group 3003, occasionally accompanied by some small companions. *a* becomes regular after June 9.
Group 3005, June 5–17. A very large regular spot, *a*, with one or two small companions until June 11.
Group 3006, June 7–11. A number of small spots in a scattered group. The group undergoes continual change.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
157d.469	CL,HA	3002*a*	0·309	151·5	10·5	−15·3	14	81	
		3002	0·296	146·2	9·6	−13·8	0	8	
		3002	0·326	144·3	8·0	−14·9	0	3	
		3002	0·387	139·8	4·2	−16·8	1	16	
		3002	0·385	137·5	3·7	−16·1	1	5	
		3003	0·723	75·1	334·6	+11·0	2	10	
		3003*a*	0·736	75·0	333·0	+11·3	15	55	
		3003	0·756	74·4	331·4	+12·0	0	26	489*c*
		3004	0·796	75·0	327·7	+12·1	1	12	
		3004*a*	0·813	73·4	326·2	+13·7	28	188	
		3005*a*	0·856	104·4	321·6	−12·0	38	231	
		3005	0·875	105·7	319·5	−13·5	8	29	656*c*
		3007	0·938	103·2	310·4	−12·3	0	12	
			0·839	127·5	329·0	−30·4			272
			0·849	114·9	324·1	−20·7			365
June 7		Centre			(19·3)	(+0·4)	(372)	(2701)	(5217)
158·407	JG,FT		0·903	285·4	70·4	+14·1			141
		2992*a*	0·994	249·1	89·6	−20·7	0	85	
		2993*a*	0·969	248·4	81·1	−20·8	58	242	
		2993	0·956	249·3	78·2	−19·6	6	51	
		2993	0·938	249·2	74·8	−19·3	16	95	
		2995	0·946	251·7	76·6	−17·1	30	135	1988*c*
		2995	0·923	252·2	72·8	−16·2	13	44	
		2995	0·880	248·6	66·3	−18·4	39	442	
		2995	0·872	246·3	64·9	−20·3	9	98	
		2999*b*	0·803	282·6	59·4	+10·4	2	36	
		2999	0·776	282·4	56·9	+ 9·9	0	12	245*c*
		2999*a*	0·756	285·1	54·8	+11·7	13	101	
		3000*a*	0·768	248·6	54·6	−15·9	9	44	112*c*
		2996*a*	0·633	298·2	42·5	+17·8	28	142	
		3006	0·537	306·0	34·0	+18·8	0	12	
		3006	0·492	307·2	31·0	+17·7	0	5	
		3006	0·485	311·8	29·2	+19·3	5	13	
		3002*a*	0·291	193·4	10·8	−15·9	13	76	
		3003	0·555	73·7	334·3	+ 9·3	9	28	
		3003	0·565	70·4	334·1	+11·3	5	15	
		3003	0·583	74·2	332·3	+ 9·5	0	15	
		3003*a*	0·589	71·7	332·2	+11·0	0	48	187*c*
		3003	0·599	69·8	331·8	+12·3	0	14	
		3004	0·652	71·7	327·7	+12·2	0	6	
		3004*a*	0·674	71·0	326·2	+13·0	32	183	
		3005*a*	0·731	107·6	321·5	−12·4	46	241	159*c*
		3005	0·757	109·1	319·5	−14·0	0	28	
1893.				°	°	°			
158d.407	JG,FT	3007	0·840	105·1	310·9	−12·3	12	78	462*c*
		3007	0·846	107·7	310·6	−14·6	11	37	
			0·915	79·1	301·1	+10·2			120
			0·938	107·8	298·4	−16·5			78
June 8		Centre			(6·8)	(+0·5)	(356)	(2326)	(3492)
159·429	HA,FT	2993	0·994	250·5	76·2	−19·3	0	526	1013*f*
		2995	0·964	250·3	66·5	−18·8	17	600	
		2999*b*	0·922	281·5	60·0	+10·9	0	39	469*n*
		2999	0·896	283·0	56·2	+11·8	0	24	
		3000*a*	0·890	252·0	54·6	−15·7	0	9	
		2996*a*	0·781	291·9	42·5	+17·4	15	124	220*c*
		3006	0·693	296·8	33·9	+18·7	0	15	
		3006	0·653	296·0	31·0	+17·1	0	18	126*c*
		3006	0·632	295·0	29·7	+15·9	8	34	
		3002*a*	0·410	224·8	10·8	−16·3	9	46	
		3003	0·348	65·2	334·7	+ 8·9	6	19	
		3003	0·363	61·7	334·4	+10·4	0	4	
		3003*a*	0·402	61·2	332·3	+11·7	3	31	
		3004	0·495	67·6	325·6	+11·4	0	11	
		3004*a*	0·506	64·5	325·5	+13·1	24	163	
		3005*a*	0·569	113·0	321·0	−12·3	43	258	
		3005	0·604	114·3	318·9	−13·9	0	9	
		3007	0·708	112·2	310·7	−15·1	1	67	260*c*
		3007	0·701	108·3	310·6	−12·2	19	85	
		3007	0·719	110·1	309·4	−13·8	0	29	
			0·747	133·5	314·5	−30·4			259
			0·874	66·8	294·5	+20·4			75
			0·895	111·6	291·9	−18·9			216
June 9		Centre			(353·3)	(+0·6)	(145)	(2111)	(2638)
160·440	CL,JG		0·962	251·5	52·9	−17·6			551
			0·889	295·8	40·3	+23·1			397
			0·772	302·7	25·7	+25·1			205
		2999*b*	0·985	281·2	59·8	+11·1	0	12	442*c*
		2999*a*	0·975	280·5	56·9	+10·4	12	72	
		2996*a*	0·896	289·1	42·3	+17·4	22	154	264*nf*
		3008	0·849	256·5	37·0	−11·1	0	6	109*c*
		3006	0·829	292·9	33·8	+19·2	0	7	
		3006	0·807	292·1	31·7	+18·1	2	18	
		3006	0·790	292·9	29·9	+18·3	0	3	370*c*
		3006	0·778	291·3	29·1	+16·9	9	61	
		3006	0·774	292·9	28·4	+18·0	0	8	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3007, June 7–16. Several irregular spots of considerable size, in a straggling group closely following Group 3005. The group undergoes continual change.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
160d.440	CL,JG	3006	0·682	294·3	20·3	+16·8	1	5	} 64*c*
		3006	0·677	296·7	19·4	+18·2	0	3	
		3002*a*	0·576	239·2	10·9	−16·5	12	48	
		3003	0·168	28·3	335·4	+ 9·2	4	12	
		3003*a*	0·224	33·6	332·8	+11·4	0	16	
		3004*a*	0·329	48·3	325·4	+13·3	28	177	
		3005*a*	0·386	125·8	321·4	−12·3	45	245	
		3005	0·429	126·3	319·2	−14·0	0	3	
		3005	0·442	124·4	318·0	−13·8	0	4	
		3007	0·527	121·7	312·4	−15·4	6	26	} 144*c*
		3007	0·539	116·9	310·5	−13·5	21	186	
		3009	0·514	110·5	310·9	− 9·8	0	3	} 81*c*
		3009	0·510	108·4	310·8	− 8·6	2	12	
		3009	0·542	108·6	308·8	− 9·3	6	21	
		3009	0·558	105·9	307·3	− 8·2	0	6	
		3010	0·653	117·3	302·8	−16·9	7	22	} 63*c*
		3010	0·690	115·6	299·6	−16·8	0	6	
			0·935	110·3	272·4	−18·7			608
			0·954	101·3	268·2	−10·6			95
		Centre			(340·0)	(+0·7)	(177)	(1136)	(3393)
June 10									
161·627	CL,FT		0·926	256·1	31·0	−12·5			72
		2996*a*	0·979	287·7	41·8	+17·5	23	123	} 732*nf*
		3006	0·908	288·3	28·2	+16·9	0	16	
		3002*a*	0·760	247·3	11·0	−16·4	11	40	
		3003	0·247	303·9	336·1	+ 8·8	0	6	
		3004	0·228	337·6	329·3	+13·0	0	5	
		3004*a*	0·216	354·4	325·4	+13·3	37	208	
		3005*a*	0·235	169·2	321·6	−12·4	46	249	
		3007	0·278	139·7	313·7	−11·3	0	4	}
		3007	0·338	148·1	313·6	−15·7	0	14	
		3007	0·320	143·8	313·0	−14·0	0	4	} 160*c*
		3007	0·315	138·1	311·8	−12·6	15	109	
		3007	0·350	140·7	311·0	−14·8	7	46	
		3007	0·365	136·0	309·1	−14·3	0	10	}
		3009	0·260	128·8	312·4	− 8·5	0	13	
		3009	0·277	131·8	312·2	− 9·8	0	6	
		3009	0·299	125·6	310·0	− 9·1	6	24	
		3010	0·447	134·1	304·6	−17·2	6	17	
		3011	0·473	60·6	299·2	+14·2	1	8	
		3011	0·529	60·3	295·8	+15·9	0	5	
			0·836	112·8	270·1	−18·3			365

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
161d.627	CL,FT		0·832	105·8	269·3	−12·6			256
			0·900	61·1	263·0	+26·2			90
			0·944	69·4	254·6	+19·7			392
			0·950	105·5	253·5	−14·4			433
June 11		Centre			(324·2)	(+0·9)	(152)	(907)	(2500)
162·613	CL,HA		0·953	289·6	22·6	+18·9			239
			0·945	297·1	20·2	+25·9			332
			0·925	239·9	15·0	−27·1			116
		3002*a*	0·880	250·4	10·9	−16·6	3	37	133*f*
		3004	0·396	304·9	330·7	+14·0	0	3	
		3004	0·339	312·2	326·1	+14·1	0	19	
		3004*a*	0·315	311·7	325·1	+13·1	10	121	
		3005*a*	0·294	217·5	321·7	−12·4	24	229	
		3007	0·299	190·8	314·5	−16·0	0	7	}
		3007	0·227	191·6	313·9	−11·8	0	8	
		3007	0·244	182·7	311·9	−13·1	21	92	} 102*c*
		3007	0·274	182·2	311·8	−14·9	0	18	
		3007	0·275	175·4	309·9	−14·9	0	8	
		3009	0·179	188·2	312·7	− 9·2	0	7	
		3009	0·171	178·2	310·9	− 8·8	5	22	
		3010	0·334	162·1	305·0	−17·5	4	23	
		3011	0·313	42·4	298·7	+14·3	2	33	
		3011	0·346	46·7	296·2	+14·6	0	14	
		3012	0·503	67·3	283·0	+12·0	0	9	
			0·757	115·5	265·4	−18·3			159
			0·899	108·1	248·8	−15·7			376
			0·930	70·1	244·0	+18·8			298
June 12		Centre			(311·2)	(+1·0)	(69)	(650)	(1755)
163·477	FT,JG		0·855	245·1	355·4	−20·4			99
		3002*a*	0·950	252·1	10·2	−16·6	0	13	115*c*
		3013	0·623	280·9	337·7	+ 7·6	2	10	62*c*
		3014	0·553	274·1	333·2	+ 3·1	0	4	
		3004	0·543	293·9	330·4	+13·4	0	7	}
		3004	0·511	297·2	327·7	+14·5	4	19	
		3004	0·502	294·9	327·6	+13·2	0	11	} 123*c*
		3004*a*	0·468	296·3	325·2	+13·0	22	149	
		3005*a*	0·437	237·4	321·9	−12·6	37	223	83*c*
		3007	0·391	220·5	315·1	−16·2	0	4	
		3007	0·340	217·6	312·1	−14·5	2	11	
		3007	0·315	220·5	311·9	−12·7	21	76	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3008, June 10. A very small spot.
Group 3009, June 10–18. A few small spots, irregularly scattered, *n* of Group 3007. The group diminishes in size from day to day, and is not seen on June 15. A fresh outburst has taken place by June 16, and the group now forms a straight stream of considerable size, inclined at a large angle to the equator.
Group 3010, June 10–17. One or two small spots *sf* of Group 3007.
Group 3011, June 11–19. A few small spots in a straggling stream. The group has undergone a great increase by June 19.
Group 3012, June 12. A small spot.
Group 3013, June 13–14. A small spot.
Group 3014, June 13. A very small faint spot.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.	Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).						Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°				1893.				°	°	°			
163d·477	FT,JG	3009	0·297	229·3	313·0	−10·1	0	3		165d·399	CL,HA		0·894	284·0	334·6	+13·1			386
		3009	0·284	232·2	312·9	− 8·9	0	3				3004	0·801	283·5	326·7	+11·6	4	19	190*c*
		3009	0·254	228·7	310·9	− 8·5	4	13				3004*a*	0·787	285·8	325·2	+13·2	15	117	
		3010	0·334	196·6	305·5	−17·5	5	17				3005*a*	0·763	251·8	322·1	−12·9	51	272	179*c*
		3011	0·220	357·3	300·4	+13·8	9	18				3007	0·651	247·1	312·2	−13·6	5	48	97*c*
		3011	0·210	1·0	299·6	+13·2	0	4				3007	0·641	244·4	310·9	−15·0	0	14	
		3011	0·241	5·4	298·5	+15·0	1	6				3010	0·621	237·0	307·5	−18·6	5	14	
		3011	0·253	9·2	297·4	+15·6	2	13				3011	0·470	296·7	299·7	+13·3	5	31	
		3011	0·227	12·7	296·9	+13·8	3	11				3011	0·426	302·5	296·0	+14·4	0	8	
		3011	0·244	13·3	296·5	+14·8	3	7				3011	0·426	308·2	294·6	+16·5	2	29	
		3011	0·260	16·1	295·5	+15·6	9	24				3015*a*	0·453	212·0	289·2	−21·2	15	117	
		3015	0·409	150·5	287·5	−19·7	0	8				3015*b*	0·420	212·4	288·0	−19·4	9	102	240*c*
		3015	0·407	142·6	284·8	−17·7	0	11				3015	0·384	209·0	285·6	−18·3	3	54	
			0·891	67·4	241·8	+14·6			444			3015	0·401	204·7	284·5	−20·0	10	75	
			0·930	114·3	234·0	−22·0			443			3015	0·405	201·7	283·5	−20·8	0	16	
			0·977	77·5	222·4	+12·4			433			3018*a*	0·289	41·9	262·9	+13·6	8	18	
June 13		Centre			(299·8)	(+1·1)	(124)	(665)	(1802)			3016*a*	0·889	71·4	212·7	+17·1	8	40	333*c*
												3017	0·911	107·0	210·2	−14·9	1	38	332*p*
164·415	FT,JG	3013	0·788	278·7	339·0	+ 7·6	0	6	432*n*				0·784	124·3	228·7	−25·2			196
		3013	0·773	278·3	337·6	+ 7·1	0	11					0·802	76·5	221·8	+11·5			211
		3004	0·675	289·2	328·2	+13·7	0	36					0·934	77·7	205·7	+11·9			396
		3004	0·628	286·7	325·1	+11·3	0	9	142*c*	June 15		Centre			(274·3)	(+1·3)	(141)	(1012)	(2560)
		3004*a*	0·633	289·2	325·1	+12·9	14	130											
		3005*a*	0·607	246·8	322·2	−12·8	37	233	157*c*	166·403	CL,FT		0·976	278·2	338·2	+ 8·3			274
		3007	0·490	237·4	312·5	−14·2	3	19	76*c*				0·844	234·4	312·1	−28·4			174
		3007	0·478	239·0	312·2	−13·1	14	79				3004*a*	0·903	283·6	325·0	+12·9	13	59	393*p*
		3007	0·466	233·9	310·2	−14·7	0	9				3005*a*	0·888	254·7	322·2	−12·8	38	253	238*c*
		3009	0·431	246·7	310·9	− 8·8	0	8				3007	0·820	252·1	314·2	−13·7	0	6	
		3010	0·462	233·2	306·8	−18·4	6	12				3007	0·799	252·0	312·1	−13·3	4	16	
		3011	0·306	315·0	300·2	+13·6	4	23				3009	0·758	254·6	308·8	−10·6	27	90	353*c*
		3011	0·267	325·1	296·4	+13·8	0	9				3009	0·742	255·7	307·6	− 9·5	6	34	
		3011	0·283	329·5	295·9	+15·3	0	9				3009	0·720	257·0	306·0	− 8·2	4	41	
		3011	0·284	333·6	294·9	+15·9	7	29				3010	0·770	244·8	307·9	−18·1	6	16	
		3015	0·379	181·6	288·0	−21·0	2	15				3010	0·757	243·8	306·5	−18·4	4	12	250*c*
		3015	0·364	181·1	287·8	−20·0	0	8				3011	0·649	289·6	299·8	+13·7	2	10	
		3015	0·342	180·7	287·7	−18·7	0	6				3011	0·632	291·2	298·3	+14·4	0	12	
		3015	0·367	177·5	286·4	−20·3	0	10				3011	0·592	295·2	294·4	+16·1	0	4	
		3015	0·335	173·3	285·1	−18·1	7	21				3019*	0·553	304·7	289·7	+19·6	0	8	
		3016*a*	0·961	73·7	214·0	+16·0	11	54	583*sp*			3015*a*	0·591	229·5	289·7	−21·2	16	67	
		3017	0·975	105·6	211·2	−14·9	0	35	293*p*			3015*b*	0·556	233·3	288·8	−18·0	18	90	
			0·834	116·8	234·6	−21·3			383			3015	0·558	229·0	287·5	−20·1	13	239	
			0·844	66·5	232·0	+20·3			124			3015	0·521	230·1	285·8	−18·1	7	32	
			0·978	77·9	209·8	+12·1			108			3015	0·511	231·8	285·7	−17·0	1	5	
June 14		Centre			(287·4)	(+1·2)	(105)	(771)	(2298)			3015	0·534	227·0	285·4	−19·9	3	9	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3015, June 13–20. A few small spots in a straggling stream. The group has very greatly increased by June 15; the leading spot, *a*, being a large regular spot, closely followed by a nebulous spot, *b*, and by a considerable stream of smaller spots. *a* and *b* have coalesced by June 18 to form a large composite spot, *c*.
Group 3016, June 14–19. A regular spot, *a*, which diminishes in size from day to day, and has disappeared by June 19. A small companion is seen near it on June 17. Two very small spots are seen near the place of the group on June 19.
Group 3017, June 14-17. A small spot.
Group 3018, June 15–22. A small regular spot, *a*, on June 15. *a* has greatly diminished by June 16, and has disappeared by June 17. Several small spots, forming with *a* a short stream, have appeared by June 16. *b*, the last spot of the group on June 17, is the largest.
Group 3019*, June 16. A very small spot, *sf* Group 3011.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
166d.403	CL,FT	3015	0·513	227·9	284·6	−18·7	9	70	
		3015	0·532	223·7	284·1	−21·2	3	13	
		3015	0·514	224·7	283·5	−20·0	3	9	
		3015	0·509	223·3	282·8	−20·3	4	16	
		3015	0·492	225·6	282·7	−18·7	12	35	
		3018	0·210	341·6	264·9	+13·0	4	15	
		3018*a*	0·208	354·2	262·2	+13·4	0	4	
		3018	0·207	0·8	260·8	+13·4	0	3	
		3018	0·220	2·4	260·5	+14·2	0	6	
		3016*a*	0·760	69·6	213·3	+16·3	12	43	194*c*
		3017	0·797	110·0	210·4	−14·8	8	51	342*sp*
			0·815	75·1	207·3	+13·0			502
			0·935	75·1	192·3	+14·4			364
June 16		Centre			(261·0)	(+1·5)	(217)	(1268)	(3084)
167·428	FT,JG		0·976	283·0	324·7	+13·0			288
			0·940	239·4	313·6	−27·9			97
		3004*a*	0·977	283·2	325·0	+13·2	0	17	
		3005*a*	0·970	256·5	322·5	−12·7	36	224	109*c*
		3009	0·895	256·6	309·9	−11·2	12	61	475*c*
		3009	0·875	259·6	307·7	− 8·3	25	270	
		3010	0·893	249·5	308·5	−17·4	4	13	496*c*
		3011	0·802	287·2	299·7	+14·7	0	15	119*c*
		3011	0·787	286·3	298·3	+13·7	2	13	
		3015	0·718	243·1	289·6	−17·7	12	126	
		3015*c*	0·714	239·4	288·2	−20·0	57	499	
		3015	0·675	237·6	284·6	−19·8	2	14	296*c*
		3015	0·652	238·9	283·4	−18·4	6	70	
		3015	0·663	235·5	283·1	−20·7	3	12	
		3015	0·629	235·1	280·6	−19·6	0	4	
		3018	0·352	304·1	264·8	+12·8	0	7	
		3018	0·342	307·2	263·3	+13·4	1	5	
		3018*b*	0·313	311·1	261·5	+13·4	0	19	
		3019	0·354	67·0	228·3	+ 9·4	0	6	
		3020	0·459	56·4	224·2	+16·1	0	4	
		3020	0·487	57·1	222·3	+16·8	0	11	
		3016*a*	0·595	64·5	213·7	+16·1	8	29	
		3016	0·629	65·1	211·1	+16·6	0	3	
		3017	0·649	115·2	210·3	−14·7	0	23	44*c*
			0·825	124·6	198·1	−26·8			80
			0·898	73·4	184·4	+15·6			247
			0·964	105·3	174·1	−14·3			304
June 17		Centre			(247·5)	(+1·6)	(168)	(1445)	(2555)
1893.				°	°	°			
168d.493	CL,FT		0·720	241·3	275·1	−18·9			136
		3009	0·970	260·1	308·7	− 9·2	0	79	480*c*
		3009	0·968	261·7	308·3	− 7·6	0	57	
		3009	0·976	258·0	305·3	−11·3	0	96	
		3011	0·923	283·5	300·3	+13·1	0	9	
		3011	0·918	285·6	299·4	+15·0	0	18	
		3015	0·854	247·7	289·3	−17·9	0	23	
		3015*c*	0·856	245·1	289·0	−20·1	40	419	
		3015	0·827	246·5	286·2	−18·2	0	13	
		3015	0·820	245·4	285·2	−18·9	0	54	290*c*
		3015	0·815	244·0	284·4	−19·8	6	37	
		3015	0·810	242·3	283·4	−21·0	2	15	
		3015	0·791	243·7	281·9	−19·3	0	14	
		3018	0·556	290·6	265·5	+12·7	0	7	
		3018	0·534	291·3	263·9	+12·6	0	30	
		3018*b*	0·495	294·9	260·8	+13·5	8	29	
		3020*a*	0·284	24·2	226·5	+16·6	0	13	
		3020	0·301	23·5	226·2	+17·6	0	5	
		3016*a*	0·413	52·9	213·5	+16·0	0	12	
			0·726	136·9	198·4	−30·5			89
			0·778	75·1	183·2	+12·6			187
			0·888	107·1	172·4	−14·3			517
			0·938	127·2	169·6	−33·8			200
June 18		Centre			(233·4)	(+1·7)	(56)	(930)	(1899)
169·397	CL,FT		0·925	291·8	287·9	+20·8			253
		3011	0·980	284·4	299·7	+14·5	12	72	560*c*
		3011	0·969	286·6	296·8	+16·5	27	85	
		3015	0·939	250·5	289·4	−17·6	0	19	
		3015*c*	0·936	247·8	288·5	−20·0	29	405	
		3015	0·912	248·7	284·9	−18·6	7	51	
		3015	0·906	247·3	283·8	−19·6	7	43	764*c*
		3015	0·903	245·9	283·0	−20·7	0	5	
		3015	0·892	248·2	282·0	−18·4	4	17	
		3015	0·893	246·7	281·8	−19·8	5	25	
		3018	0·724	286·7	266·6	+13·2	0	4	
		3018	0·711	287·6	265·4	+13·7	0	4	
		3018*b*	0·646	289·9	260·0	+14·1	6	15	
		3021	0·501	312·8	244·6	+21·5	0	6	
		3020*a*	0·278	343·5	226·1	+17·2	1	3	
		3020	0·257	346·8	224·9	+16·2	3	11	
		3020*b*	0·239	348·4	224·2	+15·3	1	6	
		3020	0·237	352·4	223·3	+15·4	0	2	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3019, June 17. A very small spot.
Group 3020, June 17–25. A few very small spots in a curved stream. The group has greatly increased in area by June 20, and forms a straight stream with three principal spots, *a*, *b* and *c*. *a* and *c*, the first and last spots, move apart from each other in longitude
Group 3021, June 19. A very small spot.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.	Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for day).						Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°				1893.				°	°	°			
169d·397	CL,FT	3020*b*	0·258	355·2	222·7	+15·6	0	3		171d·226	HA,FT	3024	0·408	170·7	193·1	−21·6	3	11	
		3022	0·038	274·4	223·6	+ 2·0	1	5				3024	0·453	170·4	192·5	−24·4	0	2	
		3022	0·016	117·1	220·6	+ 1·4	2	9		M.		3026	0·467	130·4	175·6	−15·7	0	10	
		3023	0·326	159·4	214·6	−15·9	0	8				3026	0·490	130·1	174·3	−16·5	1	7	
		3023	0·355	150·9	211·1	−16·3	0	7					0·829	134·6	151·9	−34·1			68
		3016	0·320	30·4	211·7	+17·8	1	6					0·809	60·0	146·7	+25·1			74
		3016	0·340	32·9	210·2	+18·3	0	3					0·890	113·2	137·2	−19·5			124
			0·742	63·8	176·4	+20·3			135				0·892	67·7	135·5	+20·7			167
			0·763	109·1	173·8	−13·2			229				0·913	70·0	132·3	+19·0			191
			0·861	129·6	170·0	−32·1			154	June 21		Centre			(197·2)	(+2·0)	(77)	(422)	(1028)
			0·905	115·3	159·7	−21·9			177										
			0·919	122·5	159·5	−28·7			160										
			0·916	64·5	156·8	+24·0			555	172·408	CL,HA		0·936	258·5	249·9	− 9·9			276
			0·930	104·5	154·2	−12·8			286				0·884	291·0	242·4	+19·5			191
June 19		Centre			(221·4)	(+1·8)	(106)	(814)	(3273)				0·884	249·8	241·3	−16·6			186
													0·831	238·9	232·5	−24·0			247
													0·711	281·2	226·3	+ 9·5			142
170·237	CL,JG	3015*c*	0·983	248·5	288·0	−20·7	31	261	}				0·739	304·0	224·3	+26·0			82
		3015	0·964	248·7	282·8	−19·9	14	99	} 803*c*			3018	0·984	283·6	261·2	+13·8	0	14	173*p*
M.		3015	0·956	248·6	281·2	−19·8	0	8	}			3020*a*	0·770	290·2	230·3	+16·8	27	138	
		3018*b*	0·775	286·8	260·0	+14·1	1	9				3020	0·755	290·7	228·9	+16·9	0	16	
		3020*a*	0·366	315·0	225·9	+16·8	20	68				3020	0·750	289·4	228·7	+15·9	0	9	
		3020	0·360	319·4	224·5	+17·6	0	8				3020	0·724	292·9	225·8	+17·9	2	19	255*c*
		3020*b*	0·334	317·8	223·7	+16·1	0	12				3020*b*	0·708	291·1	224·8	+16·3	11	83	
		3020	0·361	323·2	223·4	+18·6	1	6				3020	0·684	289·8	223·1	+15·0	0	9	
		3020	0·312	319·0	222·5	+15·4	0	3				3020	0·683	291·2	222·8	+15·9	0	3	
		3020	0·338	323·2	222·5	+17·5	0	6				3020*c*	0·658	295·1	220·1	+17·9	42	322	
		3020*c*	0·318	325·6	221·1	+17·0	6	26				3022	0·670	271·3	223·4	+ 2·5	3	10	
		3022	0·179	267·6	220·6	+ 1·4	0	3				3022	0·663	272·5	222·9	+ 3·3	4	16	83*c*
		3024	0·503	145·1	192·2	−22·5	0	7				3022	0·636	272·4	220·9	+ 3·2	1	12	
		3025	0·952	102·1	139·1	−10·9	0	7	102*c*			3022	0·635	270·7	220·8	+ 2·1	3	11	
			0·853	106·8	153·5	−13·2			114			3027	0·440	277·2	207·4	+ 5·1	0	2	
			0·866	63·9	152·6	+23·4			293			3027	0·423	279·7	206·2	+ 6·1	0	2	
June 20		Centre			(210·3)	(+1·9)	(73)	(523)	(1312)			3024	0·472	201·6	192·4	−23·8	0	3	
												3028	0·252	341·3	186·3	+15·9	0	2	
171·226	HA,FT		0·785	294·3	246·6	+20·1			132			3026	0·320	159·5	174·9	−15·2	0	7	57*c*
		3018*b*	0·910	284·5	262·2	+14·0	2	14	272*c*			3029	0·710	70·4	137·8	+15·3	0	4	
M.		3020*a*	0·566	297·4	228·7	+16·8	23	125				3029	0·713	71·3	137·4	+14·8	0	7	
		3020	0·550	300·5	226·9	+17·9	0	6				3030	0·952	114·5	112·1	−22·5	0	14	222*c*
		3020	0·527	301·8	225·2	+17·8	0	17				3030	0·971	113·6	107·7	−22·3	0	17	
		3020*b*	0·506	299·1	224·5	+16·0	10	47					0·809	115·2	131·1	−18·7			183
		3020	0·503	301·7	223·7	+17·1	0	3					0·846	68·7	125·2	+19·1			243
		3020	0·492	301·9	223·0	+16·8	0	5					0·949	71·2	110·4	+18·5			149
		3020*c*	0·469	305·6	220·7	+17·6	38	175		June 22		Centre			(181·5)	(+2·2)	(93)	(720)	(2489)

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3022, June 19–25. A few very small spots on June 19. Only one very small spot remains by June 20, and the group is not seen at all on June 21. A fresh outburst has occurred by June 22, and by June 23 the group consists of a large spot, *a*, followed by a stream of smaller spots, of which *b*, the last spot, is the largest.
Group 3023, June 19. A pair of very small spots.
Group 3024, June 20–22. A very small spot on June 20. A second has appeared by June 21, and the first has disappeared by June 22.
Group 3025, June 20. A very small spot.
Group 3026, June 21–22. Two small spots on June 21, of which one has disappeared by June 22.
Group 3027, June 22–25. A pair of very small spots on June 22. The group is not seen on June 23, but a fresh outburst has occurred by June 25.
Group 3028, June 22–25. A very small spot on June 22. A pair of small spots on June 23 and 25.
Group 3029, June 22–25. A number of small spots irregularly scattered. The group undergoes continual change.
Group 3030, June 22–28. A number of small spots irregularly scattered. The group undergoes continual change and is not seen on June 27.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
173d·442	HA,FT		0·934	272·2	236·8	+ 2·9			249
			0·942	249·9	236·1	−18·0			225
			0·922	240·4	230·8	−26·0			297
			0·889	300·3	227·9	+27·8			298
			0·785	244·8	216·0	−17·9			370
		3020*a*	0·903	287·6	231·7	+16·8	21	113	
		3020	0·891	287·6	230·2	+16·7	0	20	
		3020	0·874	288·3	227·9	+17·1	9	75	
		3020	0·873	287·0	227·9	+15·9	0	12	
		3020*b*	0·849	288·6	224·9	+16·9	11	54	680*c*
		3020	0·838	289·4	223·6	+17·4	0	4	
		3020	0·833	287·1	223·4	+15·5	0	5	
		3020	0·815	290·5	221·0	+17·9	6	32	
		3020*c*	0·795	291·1	219·0	+18·0	32	251	
		3022*a*	0·851	272·1	226·1	+ 3·0	25	112	
		3022	0·835	272·9	224·4	+ 3·7	0	14	
		3022	0·831	271·0	223·9	+ 2·1	1	14	416*c*
		3022	0·819	273·2	222·7	+ 3·9	0	10	
		3022	0·804	270·8	221·3	+ 2·0	0	37	
		3022*b*	0·794	272·2	220·3	+ 3·2	20	54	
		3028	0·384	302·8	187·3	+14·1	2	6	
		3028	0·387	311·4	185·5	+17·0	1	7	
		3031*a*	0·672	144·9	141·1	−31·2	8	35	
		3031	0·679	142·1	139·1	−30·3	0	11	
		3029	0·518	63·6	139·3	+15·3	0	12	
		3029	0·514	65·9	139·1	+14·1	10	44	
		3029	0·555	69·8	135·7	+13·0	2	8	
		3029	0·563	67·6	135·5	+14·3	8	58	
		3032*a*	0·557	112·6	136·5	−10·3	8	25	
		3032	0·566	110·8	135·6	− 9·6	0	1	
		3032	0·588	111·2	134·2	−10·3	0	9	79*c*
		3032	0·613	111·2	132·4	−10·9	0	4	
		3032*b*	0·617	109·3	131·8	− 9·9	4	17	
		3030	0·851	117·9	113·9	−22·1	0	19	
		3030	0·889	116·5	108·9	−22·2	0	11	
		3030	0·886	114·6	108·8	−20·4	2	6	342
			0·858	66·7	110·5	+21·0			267
			0·714	64·4	108·8	+19·6			143
			0·983	113·2	90·6	−22·3			167
June 23		Centre			(167·9)	(+2·3)	(170)	(1080)	(3533)
June 24				No photograph.					

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
175d·357	CL,JG		0·950	251·2	212·4	−17·0			152
			0·941	287·3	212·3	+17·1			230
I.			0·905	281·6	207·1	+11·5			243
			0·877	289·6	202·8	+18·3			122
			0·865	237·3	196·7	−26·3			89
		3020*b*	0·988	287·2	223·7	+17·4	0	87	176*c*
		3020*c*	0·970	287·6	218·3	+17·7	0	89	
		3022*b*	0·981	271·5	221·2	+ 2·0	0	390	200*c*
		3027	0·909	274·6	207·7	+ 5·2	0	19	159*c*
		3028	0·722	287·7	187·6	+14·4	0	3	60*c*
		3028	0·701	291·3	185·3	+16·6	3	9	
		3031*a*	0·559	181·7	143·6	−31·3	16	97	
		3031	0·546	179·2	142·0	−30·5	4	18	
		3031	0·564	177·4	140·8	−31·7	0	5	162*c*
		3031	0·549	173·2	138·2	−30·4	0	32	
		3031	0·544	171·2	137·0	−29·9	10	58	
		3029	0·208	12·4	139·9	+14·2	7	39	
		3029	0·205	27·1	137·0	+13·0	0	7	
		3029	0·256	28·9	135·2	+15·4	2	9	
		3029	0·242	33·9	134·5	+14·0	5	13	
		3033	0·451	168·2	136·7	−23·6	0	5	
		3033*a*	0·477	163·8	134·1	−24·7	0	6	
		3032*a*	0·242	161·2	138·0	−10·7	31	178	
		3032	0·259	155·7	136·3	−11·1	0	5	
		3032	0·263	144·6	133·6	− 9·9	3	6	
		3032	0·256	147·5	133·3	− 9·9	10	43	
		3032	0·270	140·7	132·6	− 9·5	0	5	
		3032	0·296	139·6	131·3	−10·5	35	177	
		3030	0·612	133·1	113·7	−22·4	0	10	
		3030	0·623	130·9	112·1	−21·8	0	5	
		3030	0·684	125·9	106·1	−21·6	0	8	
		3034*a*	0·923	112·1	77·8	−19·2	12	43	951*n*
		3034	0·928	110·8	76·8	−18·2	0	10	
		3035	0·979	117·2	67·1	−26·0	0	34	
		3035	0·986	113·6	64·2	−22·7	0	56	545*f*
		3035*a*	0·987	116·1	64·2	−25·2	0	68	
			0·887	118·9	84·5	−24·0			702
			0·917	78·5	76·2	+11·5			129
June 25		Centre			(142·5)	(+2·5)	(138)	(1534)	(3920)
176·375	CL,HA		0·950	286·9	200·0	+16·9			205
			0·934	240·6	193·3	−26·2			94
I.			0·853	288·9	186·0	+17·4			128

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3031, June 23–July 1. A number of small spots in an irregular stream. The group undergoes rapid changes in appearance and area.
Group 3032, June 23–July 1. A number of small spots in an irregular stream. It has greatly increased in size by June 26, and *a*, *b*, *c*, the three principal spots, are all large. *c* has united with *a* by June 29. The group undergoes continual change.
Group 3033, June 25–29. A stream of small spots parallel to and between Groups 3031 and 3032. Only *a*, the last spot, remains by June 28.
Group 3034, June 25–30. A regular spot, *a*, with a small companion on June 25. *a* diminishes from day to day. It is followed by a short stream of small spots on June 29. The group has broken up by June 30, and only two very small spots remain.
Group 3035, June 25–July 3. A large irregular nebulous spot, *a*, preceded by a short stream of smaller spots. The whole group, but especially *a*, diminishes rapidly from day to day.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs[a]—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
176d·375	CL,HA		0·760	246·8	174·8	−15·6			176
			0·753	248·7	174·6	−14·0			86
I.			0·786	300·3	174·2	+18·9			100
		3031*a*	0·598	202·1	143·7	−31·0	16	119	107*c*
		3031	0·552	193·2	136·8	−29·8	5	108	
		3033	0·455	201·2	138·7	−22·4	6	19	
		3033	0·444	196·0	136·1	−22·6	2	15	51*c*
		3033*a*	0·476	189·5	133·5	−25·3	12	51	
		3032*a*	0·284	213·5	137·7	−11·1	41	170	
		3032*c*	0·245	208·3	135·2	− 9·8	18	93	
		3032	0·239	199·8	133·2	−10·3	0	14	126*c*
		3032*b*	0·237	190·6	131·0	−10·8	22	213	
		3032	0·207	192·2	131·0	− 9·0	13	36	
		3030	0·484	151·4	114·0	−22·5	1	5	
		3034*a*	0·819	115·6	77·3	−19·1	5	29	432*c*
		3035	0·914	120·3	66·9	−26·2	0	19	
		3035	0·923	115·7	64·6	−22·4	12	75	1339*c*
		3035*a*	0·934	118·0	63·3	−24·9	22	198	
			0·707	124·1	99·7	−21·3			239
			0·752	108·3	81·8	−11·8			289
			0·872	78·5	68·1	+11·3			143
June 26		Centre			(128·5)	(+2·6)	(175)	(1164)	(3515)
177·360	CL,HA		0·906	287·1	180·3	+16·6			250
			0·865	250·8	173·5	−15·0			243
M.		3031*a*	0·681	215·7	143·5	−31·1	9	59	
		3031	0·617	208·7	135·8	−30·1	3	16	
		3033	0·568	222·3	140·2	−22·3	4	11	
		3033	0·543	219·5	137·7	−22·2	3	9	
		3033*a*	0·544	210·3	133·5	−25·3	7	28	
		3032*a*	0·433	236·8	137·5	−11·1	25	125	
		3032*c*	0·405	237·1	136·0	−10·1	8	61	
		3032	0·400	233·2	134·9	−11·3	1	5	142*c*
		3032	0·335	231·3	131·2	− 9·5	5	18	
		3032*b*	0·352	226·6	131·0	−11·3	16	191	
		3034*a*	0·701	121·9	76·9	−19·6	8	32	86*nf*
		3035	0·819	125·2	67·8	−26·3	7	20	
		3035	0·827	120·2	65·2	−22·8	12	47	293*c*
		3035*a*	0·851	122·3	63·3	−25·4	18	170	
		3036	0·960	74·3	42·3	+15·8	10	44	205*c*
		3036	0·963	71·9	41·7	+18·1	4	34	
			0·752	127·8	74·9	−25·3			50
1893.									
177d·360	CL,HA		0·880	113·4	57·5	−19·0			365
			0·920	119·6	53·5	−25·7			124
M			0·950	62·9	45·2	+26·6			164
June 27		Centre			(115·9)	(+2·7)	(140)	(870)	(1922)
178·411	CL,FT		0·956	290·7	174·7	+20·6			266
			0·949	252·5	171·9	−15·6			371
			0·869	242·9	158·3	−21·8			258
			0·848	295·7	158·1	+23·1			393
			0·866	234·3	155·2	−28·6			215
			0·819	252·2	155·0	−12·8			221
			0·876	223·5	151·4	−37·5			169
		3037	0·741	286·6	149·0	+14·1	3	7	
		3031*a*	0·789	226·0	143·4	−31·1	4	15	
		3031	0·778	226·0	142·7	−30·1	0	9	351*c*
		3031	0·744	224·5	138·9	−29·7	0	8	
		3031	0·725	221·9	136·0	−30·2	0	24	
		3033	0·716	235·1	141·2	−22·0	2	6	74*c*
		3033*a*	0·658	224·7	132·8	−25·4	7	17	
		3032*a*	0·612	247·7	137·2	−11·1	18	133	
		3032*c*	0·592	248·6	136·0	−10·1	16	94	
		3032	0·598	245·2	135·7	−12·2	7	20	
		3032	0·555	246·0	133·0	−10·6	8	79	239*c*
		3032	0·558	243·7	132·7	−11·8	1	5	
		3032	0·532	246·3	131·6	− 9·9	2	16	
		3032*b*	0·534	243·5	131·1	−11·3	23	131	
		3030	0·442	187·9	105·9	−23·1	0	6	
		3038*a*	0·442	162·1	93·7	−22·0	0	6	
		3038	0·442	159·7	92·6	−21·6	2	9	
		3038	0·495	157·3	90·1	−24·3	0	7	
		3038	0·504	155·7	89·0	−24·5	0	9	
		3039	0·420	125·9	81·9	−11·6	1	10	
		3034*a*	0·546	132·9	77·1	−19·2	6	29	
		3035	0·692	133·1	67·9	−26·5	0	9	
		3035	0·693	126·8	65·4	−22·2	6	37	
		3035	0·708	127·6	64·6	−23·3	2	7	
		3035	0·720	128·1	63·9	−24·1	2	8	277*c*
		3035	0·714	126·8	63·8	−23·1	5	16	
		3035*a*	0·733	129·5	63·4	−25·5	23	132	
		3035	0·727	126·3	62·6	−23·3	0	11	
		3036	0·880	73·3	41·1	+16·0	9	49	
		3036	0·883	70·4	41·0	+18·6	16	36	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3036, June 27–July 6. A very irregular group of spots, mostly small, which vary in number, size, and position from day to day.
Group 3037, June 28. A very small spot.
Group 3038, June 28–July 5. A number of small spots in an irregular group. The group undergoes continual change, and is not seen on July 4. A fresh and great outburst has taken place by July 5.
Group 3039, June 28–July 1. A few very small spots irregularly scattered. Only one spot remains after June 29.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
178d·411	CL,FT	3036	0·908	69·5	37·7	+19·8	5	21	
		3036	0·916	68·3	36·6	+21·0	3	11	
		3040	0·969	70·2	26·5	+19·9	4	15	785*c*
			0·720	119·3	60·8	−18·5			209
			0·799	134·5	60·1	−31·9			271
			0·817	121·0	52·7	−23·0			279
			0·897	62·2	40·3	+26·0			500
			0·992	67·2	18·9	+23·0			402
June 28		Centre			(102·1)	(+2·8)	(175)	(992)	(5280)
179·449	CL,FT		0·928	292·8	155·7	+22·2			537
			0·943	242·7	155·2	−24·5			156
			0·923	253·4	153·9	−14·1			244
			0·849	301·9	143·1	+28·3			214
			0·821	285·7	142·9	+14·5			213
		3031*a*	0·883	232·5	142·9	−30·8	4	19	
		3031	0·861	232·7	140·2	−29·6	7	22	491*c*
		3031	0·860	231·3	139·1	−30·7	0	7	
		3031	0·825	229·8	135·0	−30·1	2	5	
		3033*a*	0·778	233·7	132·2	−25·3	0	7	175*nf*
		3032*a*	0·775	253·1	137·3	−11·1	19	110	
		3032	0·771	250·6	136·5	−12·9	6	35	
		3032	0·761	254·3	136·3	− 9·9	3	23	227*c*
		3032	0·757	252·7	135·7	−11·0	0	33	
		3032	0·733	250·5	133·2	−12·1	0	18	
		3032*b*	0·718	251·8	132·2	−10·8	17	172	
		3038*a*	0·436	192·8	94·4	−22·2	4	17	
		3038	0·422	186·7	91·4	−21·8	0	5	
		3038	0·441	182·6	89·6	−23·2	0	4	
		3038	0·464	181·2	89·0	−24·6	0	8	
		3039	0·258	159·6	83·2	−11·0	0	9	
		3039	0·285	161·8	83·2	−12·7	0	2	
		3039	0·290	155·8	81·4	−12·4	0	1	
		3039	0·309	149·0	79·1	−12·4	0	6	
		3039	0·292	145·9	78·8	−11·1	0	3	
		3034	0·422	155·3	77·7	−19·6	4	16	
		3034	0·435	155·1	77·2	−20·3	1	8	
		3034	0·427	151·9	76·2	−19·2	0	4	
		3034	0·412	150·0	75·9	−18·0	0	1	
		3035	0·558	138·8	65·1	−22·1	4	20	
		3035	0·573	138·9	64·4	−22·8	0	17	
1893.									
179d·449	CL,FT	3035	0·608	141·2	63·5	−25·5	5	36	
		3035	0·622	142·8	63·5	−26·9	0	5	170*c*
		3035*a*	0·606	140·2	63·1	−25·0	13	88	
		3035	0·621	138·9	61·7	−25·2	0	3	
		3041	0·437	67·0	64·2	+12·5	0	4	
		3036	0·751	67·7	41·5	+18·5	3	20	
		3036	0·758	66·8	41·0	+19·3	0	3	
		3036	0·751	71·0	40·9	+16·1	4	16	311*c*
		3036	0·798	67·5	37·1	+19·6	0	5	
		3036	0·813	66·2	35·9	+20·9	4	14	
		3042*a*	0·988	108·6	9·0	−17·9	43	338	219*p*
			0·778	60·2	40·6	+24·7			284
			0·909	64·8	23·7	+24·8			615
June 29		Centre			(88·4)	(+2·9)	(143)	(1104)	(3856)
180·395	CL,JG		0·933	294·8	143·7	+24·2			276
			0·914	283·3	141·6	+13·4			200
			0·900	241·0	135·3	−24·3			152
		3031*a*	0·944	236·0	141·0	−30·6	22	120	
		3031	0·919	236·1	136·7	−29·3	0	7	593*c*
		3031	0·911	235·0	135·1	−29·9	9	51	
		3032*a*	0·883	256·0	136·3	−10·8	19	85	
		3032*b*	0·853	254·6	132·6	−11·4	43	221	325*c*
		3032	0·834	255·2	130·7	−10·6	0	8	
		3038*a*	0·518	215·4	94·6	−22·0	4	28	
		3039	0·278	212·7	84·5	−10·6	0	13	
		3034	0·404	189·2	79·7	−20·4	0	3	
		3034	0·406	182·4	76·8	−20·8	0	5	
		3035	0·457	157·8	65·1	−22·0	5	18	
		3035	0·507	159·0	64·3	−25·2	0	11	
		3035	0·509	156·4	62·9	−24·8	12	58	
		3035	0·520	154·0	61·3	−24·8	0	3	
		3036	0·591	61·9	42·6	+18·6	6	17	
		3036	0·598	66·3	41·2	+16·3	0	15	
		3036	0·614	61·2	41·1	+19·6	5	52	
		3036	0·626	63·5	39·7	+18·6	0	8	300*c*
		3036	0·650	59·5	38·9	+21·6	0	5	
		3036	0·658	62·6	37·5	+19·9	6	30	
		3036	0·684	61·2	35·9	+21·5	0	11	
		3042*a*	0·944	110·0	7·4	−17·7	60	396	358*f*
			0·834	62·4	21·7	+24·5			569
June 30		Centre			(75·8)	(+3·0)	(191)	(1165)	(2773)

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3040, June 28. A small spot.
Group 3041, June 29. A very small spot.
Group 3042, June 29–July 11. A very large regular spot, *a*, with occasionally some small companions. *a* has divided into two spots, *b* and *c*, by July 10.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued*.

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
181d.439	HA,FT		0·927	244·0	126·3	−22·6			225
			0·925	244·3	126·1	−22·3			356
			0·792	295·7	112·2	+22·1			158
			0·761	235·7	104·9	−23·0			167
		3031*a*	0·988	239·2	139·6	−29·7	0	88	325*c*
		3031	0·968	237·2	132·8	−30·6	7	114	
		3032*a*	0·963	258·0	135·2	−10·6	0	36	333*c*
		3032*b*	0·950	257·1	132·5	−11·2	10	104	
		3032	0·940	256·2	130·6	−11·8	11	35	
		3038*a*	0·652	229·6	94·3	−22·3	8	48	187*c*
		3038	0·604	225·6	89·6	−22·0	5	13	
		3039	0·465	239·8	86·0	−10·6	0	8	
		3035	0·439	187·1	65·4	−22·5	2	20	202*c*
		3035	0·382	186·9	64·9	−25·0	0	5	
		3035	0·434	183·9	63·8	−22·3	4	58	
		3035	0·471	181·5	62·8	−24·8	8	25	
		3035	0·479	178·0	60·9	−25·3	0	16	
		3043	0·398	162·0	54·6	−19·0	0	11	
		3036	0·408	49·9	42·9	+18·2	5	16	332*c*
		3036	0·429	49·9	41·8	+19·0	8	47	
		3036	0·420	55·9	40·8	+16·6	0	11	
		3036	0·497	53·8	36·9	+19·9	4	18	
		3036	0·527	55·7	34·5	+20·1	0	17	
		3044	0·639	60·0	13·9	+21·2	0	13	298*c*
		3042*a*	0·851	113·3	7·0	−17·8	46	368	431*f*
			0·731	116·3	19·1	−16·5			165
			0·758	58·2	16·5	+25·8			463
			0·946	101·4	352·0	− 9·7			139
July 1		Centre			(62·0)	(+3·2)	(118)	(1071)	(3781)
182·455	JG,HA		0·891	243·3	107·5	−21·9			196
		3038*a*	0·792	238·6	95·3	−22·1	3	23	211*f*
		3035	0·491	214·2	65·7	−20·7	0	9	
		3036	0·274	20·7	42·8	+18·1	10	36	
		3036	0·361	27·5	38·3	+21·8	6	41	
		3036	0·360	34·6	36·1	+20·4	8	46	
		3036	0·386	31·5	36·1	+22·4	0	2	
		3036	0·391	33·8	35·1	+22·1	3	17	
		3042	0·721	119·6	7·4	−18·3	44	325	357*f*
		3045	0·928	111·5	343·2	−18·5	0	5	127*c*
		3046*a*	0·989	106·4	328·6	−15·7	38	191	102*p*
			0·853	104·0	351·6	−10·1	51	250	101
1893.				°	°	°			
182d.455	JG,HA		0·912	79·5	342·9	+10·9			376
			0·966	71·0	333·5	+19·2			181
July 2		Centre			(48·6)	(+3·3)	(112) 125	(695) 754	(1651)
183·391	CL,JG		0·947	293·3	106·9	+23·1			81
			0·939	244·5	102·4	−22·5			113
			0·767	249·2	83·4	−13·5			299
			0·752	236·2	78·4	−22·2			368
		3038*a*	0·891	242·5	94·7	−22·5	0	14	415*f*
		3035	0·609	228·1	65·0	−20·9	0	4	
		3036	0·276	337·4	42·5	+18·1	6	19	
		3036	0·309	350·1	39·4	+21·0	5	18	
		3036	0·314	352·4	38·6	+21·4	0	3	
		3036	0·289	0·3	36·0	+20·1	4	38	
		3036	0·310	5·2	34·4	+21·3	0	21	
		3036	0·325	6·5	33·8	+22·2	0	3	
		3042*a*	0·599	127·4	6·2	−18·3	44	253	188*c*
		3046*a*	0·956	108·6	325·3	−16·6	41	399	742*c*
		3046	0·978	108·7	320·1	−17·5	0	117	
		3046	0·992	106·3	314·9	−15·7	0	181	
		3047*a*	0·967	103·8	322·2	−12·4	51	220	
		3048	0·984	97·6	317·1	− 6·8	0	92	116*sf*
			0·714	123·5	356·8	−20·5			83
			0·884	114·2	337·5	−19·5			191
			0·858	75·9	337·4	+13·8			415
July 3		Centre			(36·1)	(+3·4)	(151)	(1382)	(3011)
184·418	HA,JG		0·819	75·7	328·1	+13·7			198
			0·963	82·4	308·1	+ 8·3			184
		3036	0·417	307·1	43·0	+17·8	3	13	
		3036	0·417	315·2	40·8	+20·5	0	16	
		3036	0·363	321·5	36·4	+19·8	0	19	
		3042	0·456	143·3	6·0	−18·0	37	263	131*c*
		3049	0·574	140·3	359·2	−22·9	0	8	735*c*
		3046*a*	0·869	111·5	325·2	−16·7	70	541	
		3046	0·917	111·1	318·9	−17·7	11	86	
		3046*b*	0·934	108·0	315·7	−15·4	21	154	
		3046	0·939	110·1	315·2	−17·5	0	88	
		3047*a*	0·879	105·6	322·9	−11·9	51	244	
		3048	0·907	99·0	318·4	− 6·6	7	49	474*c*
		3050	0·965	100·3	308·8	− 9·0	36	191	
			0·858	248·2	78·6	−16·6			943

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3043, July 1. A cluster of very small faint spots.
Group 3044, July 1. A small faint spot.
Group 3045, July 2. A very small spot.
Group 3046, July 2–15. A large composite spot, *a*, followed by a stream of smaller spots, of which *b* is the last. *b* increases in size on the succeeding days, and the space between *a* and *b* is filled with nebulous markings so that the group forms one broad, almost continuous stream. *a* is double, and its two components are measured separately on July 7 and 10.
Group 3047, July 3–14. A large regular spot, *a*, north of Group 2946. It lengthens out in the direction of motion and becomes divided into two spots which are, however, still measured as one. A small companion is seen on July 5 and 8.
Group 3048, July 3–12. A small regular spot, which has divided into two by July 9, but which is still measured as one. The division has closed up again by July 11.
Group 3049, July 4–7. One or two very small spots, *sf*. Group 2942. It is not seen on July 6.
Group 3050, July 4–11. A scattered group of small nebulous spots.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
184d.418	HA,JG		0·846	234·9	73·3	−26·8			188
			0·719	233·3	59·1	−22·7			242
			0·747	222·2	58·2	−30·7			63
July 4		Centre			(22·6)	(+3·5)	(236)	(1672)	(3158)
185·242	FT,JG		0·876	240·5	67·6	−23·5			934
		3038	0·987	246·4	89·8	−22·6	23	126	821*f*
M.		3051	0·918	255·9	76·6	−11·4	3	8	803*p*
		3036	0·589	298·3	44·8	+19·2	3	7	
		3036	0·567	296·2	43·7	+17·5	0	5	
		3036	0·558	298·1	42·7	+18·3	6	11	
		3036	0·543	297·3	41·9	+17·5	0	2	
		3036	0·555	303·6	41·1	+20·9	2	5	
		3036	0·515	297·7	40·0	+17·0	0	6	
		3042*a*	0·384	165·3	5·7	−18·1	43	265	
		3042	0·384	161·2	4·2	−17·6	0	1	
		3042	0·395	160·5	3·7	−18·2	1	21	
		3042	0·423	154·3	0·5	−18·8	0	7	
		3042	0·448	152·8	359·1	−19·8	0	2	
		3049	0·475	160·0	1·5	−22·9	0	1	
		3049	0·497	155·8	358·8	−23·3	2	7	
		3052	0·684	77·1	328·9	+11·4	0	5	
		3046*a*	0·774	115·5	324·8	−17·0	77	606	
		3046	0·793	118·3	323·9	−19·6	2	6	224*c*
		3046	0·825	111·5	319·0	−15·4	0	8	
		3046	0·833	114·1	318·8	−17·7	9	60	
		3046	0·849	114·1	317·0	−18·2	2	10	
		3046*b*	0·860	110·7	315·1	−15·7	24	184	
		3046	0·865	112·9	315·0	−17·7	3	16	633*c*
		3047	0·765	111·3	324·6	−13·7	2	11	
		3047*a*	0·782	108·7	322·5	−12·1	37	205	138*c*
		3048	0·808	101·3	318·8	− 6·9	8	52	102*f*
		3050	0·900	102·0	308·7	− 9·1	24	365	
		3050	0·940	102·9	303·0	−10·8	0	7	677*s*
			0·903	83·6	307·1	+ 7·3			246
			0·953	73·9	299·2	+16·4			187
			0·985	110·3	293·6	−19·3			201
July 5		Centre			(11·6)	(+3·6)	(271)	(2009)	(4966)
186·436	JG,FT		0·924	282·2	63·4	+12·7			197
			0·922	246·4	59·7	−20·0			662
			0·900	233·7	52·6	−30·2			181
			0·661	300·4	33·7	+22·5			204
1893.									
186d.436	JG,FT	3053	0·959	240·0	64·7	−27·3	0	15	182*c*
		3036	0·741	291·0	42·3	+17·9	0	5	
		3036	0·735	294·2	41·2	+20·1	2	5	178*e*
		3042	0·415	212·4	9·2	−16·8	0	12	
		3042*a*	0·400	203·5	5·4	−17·8	51	255	101*c*
		3046*a*	0·602	125·3	325·0	−17·1	107	635	
		3046	0·669	121·9	319·3	−17·7	5	54	
		3046	0·690	121·0	317·5	−17·8	0	15	446*c*
		3046	0·699	119·1	316·2	−17·0	0	8	
		3046*b*	0·709	116·2	314·7	−15·4	27	176	
		3046	0·727	120·4	312·5	−18·6	0	3	
		3047*a*	0·602	116·0	322·3	−12·2	35	215	69*c*
		3048	0·613	106·1	319·6	− 6·8	5	52	54*c*
		3050	0·715	103·0	311·4	− 6·6	0	7	
		3050	0·731	105·0	310·5	− 8·3	8	28	
		3050	0·752	106·7	309·0	− 9·9	0	39	396*e*
		3050	0·775	105·6	306·8	− 9·6	5	34	
		3054*a*	0·963	112·7	284·3	−20·7	11	89	317*p*
			0·766	82·9	305·9	+ 7·8			205
			0·853	73·3	297·7	+16·2			167
July 6		Centre			(355·8)	(+3·7)	(256)	(1647)	(3359)
187·457	CL,HA		0·820	297·0	35·4	+24·1			586
			0·678	303·1	20·9	+24·7			206
		3042*a*	0·519	225·4	5·1	−17·8	36	244	
		3042	0·538	222·1	4·9	−19·9	0	4	
		3055	0·460	217·9	359·6	−17·6	0	4	
		3049	0·503	205·2	355·8	−23·3	0	8	
		3056	0·092	305·1	346·7	+ 6·8	1	10	
		3057	0·232	349·0	345·1	+17·0	0	3	
		3058	0·261	52·9	330·1	+12·7	0	4	
		3058	0·254	56·9	329·9	+11·7	4	16	
		3046*a*	0·438	141·9	326·1	−16·5	56	307	
		3046*a*	0·471	141·2	324·4	−17·8	37	213	
		3046	0·426	135·1	324·4	−13·9	0	5	
		3046	0·508	134·3	320·1	−17·2	2	24	
		3046	0·502	128·5	318·5	−14·7	0	4	
		3046	0·517	131·1	318·5	−16·3	1	3	258*c*
		3046	0·531	132·4	318·0	−17·5	2	8	
		3046	0·514	127·6	317·6	−14·8	0	2	
		3046	0·507	126·1	317·5	−13·9	0	2	
		3046*b*	0·546	126·3	315·4	−15·4	46	274	
		3047*a*	0·426	128·6	322·6	−11·8	31	194	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Groups 3046, 3047, 3048, 3050 and 3063 might be considered as portions of one great group covering a most extensive area.
Group 3051, July 5. A very small spot.
Group 3052, July 5. A very small spot.
Group 3053, July 6. A small spot.
Group 3054, July 6–17. A large regular spot, *a*, accompanied by some smaller spots in a short stream on the *nf* side.
Group 3055, July 7. A very small spot following Group 3042.
Group 3056, July 7. A small spot.
Group 3057, July 7. A very small spot.
Group 3058. July 7–10. Two small faint spots on July 7. Only one is seen on the succeeding days.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
				°	°	°			
1893.									
187d.457	CL,HA	3048	0·410	114·9	320·5	− 6·4	4	15	
		3059*a*	0·458	76·1	315·7	+ 9·7	20	144	
		3059	0·475	77·5	314·5	+ 9·2	0	3	
		3059	0·498	74·1	313·3	+11·2	6	28	140*c*
		3059	0·524	77·4	311·3	+ 9·9	0	4	
		3059*b*	0·543	74·9	310·2	+11·4	3	15	
		3050	0·518	108·6	312·9	− 6·2	0	9	
		3050	0·553	109·6	310·9	− 7·4	5	20	140*c*
		3050	0·580	113·2	309·8	−10·0	0	11	
		3050	0·598	111·9	308·3	− 9·7	10	37	
		3060	0·790	116·2	294·5	−17·8	8	34	
		3054*a*	0·879	115·7	285·0	−20·4	37	238	
		3054	0·900	113·0	281·6	−18·7	6	39	776*c*
		3054	0·910	114·5	280·6	−20·4	0	65	
		3061	0·983	78·8	262·6	+11·7	0	40	376*p*
July 7		Centre			(342·4)	(+3·8)	(315)	(2031)	(2482)
									285
									454
									135
188·472	CL,JG		0·930	297·5	36·3	+26·9			229
			0·910	289·7	34·0	+19·5			435
			0·775	299·9	16·7	+25·3			288
		3062	0·889	243·8	27·5	−21·1	5	22	159*c*
		3062	0·871	242·3	24·8	−21·7	9	50	
		3042*a*	0·671	237·3	5·2	−18·0	34	254	182*c*
		3042	0·684	233·3	4·7	−20·9	0	6	
		3058	0·134	349·1	330·4	+11·4	3	10	
		3046*a*	0·365	170·1	325·2	−17·1	83	534	
		3046	0·310	166·1	324·5	−13·5	0	6	
		3046	0·377	149·7	317·6	−15·1	0	7	
		3046*b*	0·395	149·2	316·8	−15·9	99	678	
		3046	0·423	151·5	316·7	−17·9	0	6	299*c*
		3046	0·434	148·8	315·3	−17·9	4	16	
		3046	0·433	146·5	314·5	−17·3	0	7	
		3047*a*	0·292	158·3	322·6	−11·8	33	199	
		3047	0·289	152·9	321·2	−11·0	0	5	
		3048	0·230	141·7	320·7	− 6·5	3	8	
		3059*a*	0·238	60·2	316·8	+10·6	25	156	
		3059	0·278	63·3	314·3	+10·9	0	11	
		3059	0·277	69·8	313·7	+ 9·2	7	28	
		3059	0·316	64·6	312·0	+11·5	0	4	
		3059*b*	0·334	67·5	310·7	+11·0	8	66	
		3063	0·277	126·4	316·0	− 5·6	4	16	
		3050	0·416	124·0	308·5	− 9·7	5	18	
1893.									
188d.472	CL,JG	3060	0·645	125·4	295·3	−18·6	0	6	
		3060	0·641	124·1	295·2	−17·8	12	54	206*f*
		3054*a*	0·759	120·7	285·1	−19·9	33	214	
		3054	0·791	117·0	281·1	−18·4	0	21	
		3054	0·808	120·2	280·5	−21·4	0	32	360*c*
		3054	0·810	118·8	279·9	−20·4	0	23	
		3061	0·886	76·9	266·6	+13·4	4	16	
		3061	0·910	78·6	263·4	+12·0	9	57	591*c*
		3064	0·931	76·6	260·3	+13·9	25	97	
		3065	0·936	115·2	263·2	−21·9	0	27	152*c*
		3065*a*	0·962	115·6	258·3	−23·3	0	101	
		3066*a*	0·981	108·8	252·1	−17·6	25	141	90*c*
			0·578	72·9	250·6	+17·5			343
July 8		Centre			(328·9)	(+3·9)	(430)	(2896)	(3334)
									285
									454
									135
									204*c*
									228*c*

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3059, July 7–15. A considerable stream of spots, of which *a* and *b*, the first and last spots, are the largest. The intermediate spots vary greatly in number, size, and position, and have greatly diminished by July 13.

Group 3060, July 7–10. A small group preceding Group 3054.

Group 3061, July 7–17. A short stream of small spots. The group diminishes from day to day and is not seen on July 13, but has re-appeared by July 14.

Group 3062, July 8–9. Two small spots.

Group 3063, July 8–9. A very small spot following Group 3048 on July 8. A short stream of very small spots on July 9.

Group 3064, July 8–12. A single spot which diminishes rapidly from day to day.

Group 3065, July 8–15. A composite spot, *a*, preceded by a few small spots. The group diminishes in size from day to day.

Group 3066, July 8–18. A large regular spot, *a*, with a small companion on July 12 and 13. *a* diminishes in size after July 13.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
189d·561	HA,FT	3059	0·140	14·1	312·5	+11·8	0	2	
		3059	0·153	22·1	311·1	+12·1	4	16	
		3059	0·141	27·2	310·8	+11·2	1	3	
		3059	0·130	37·4	309·9	+ 9·9	6	18	
		3059*b*	0·157	30·9	309·8	+11·7	16	67	
		3063	0·156	182·2	317·9	− 4·9	0	3	
		3063	0·180	193·3	316·9	− 6·1	0	4	
		3063	0·163	190·1	316·1	− 5·2	0	4	
		3063	0·201	173·8	313·3	− 7·5	0	8	
		3050	0·253	164·7	310·6	−10·1	0	2	
		3050	0·259	160·6	309·4	−16·0	0	2	
		3050	0·267	157·2	308·5	−10·2	3	7	
		3050	0·264	152·2	307·4	− 9·5	0	7	
		3050	0·283	150·6	306·4	−10·3	0	8	
		3060	0·489	139·8	295·2	−18·1	0	18	
		3060	0·511	139·2	293·9	−18·9	0	2	
		3054*a*	0·617	130·5	284·7	−20·1	42	236	
		3054	0·619	126·3	283·0	−18·0	0	3	260*c*
		3054	0·639	127·9	282·3	−19·7	0	12	
		3054	0·645	125·5	281·0	−18·6	0	11	
		3054	0·680	124·4	278·2	−19·3	0	18	
		3061	0·739	75·3	267·3	+13·5	7	21	
		3061	0·777	77·0	263·8	+12·6	17	53	365*c*
		3064	0·827	75·6	259·0	+14·1	15	57	
		3065	0·843	119·3	262·3	−21·9	3	18	
		3065	0·859	118·1	260·2	−21·5	0	5	248*c*
		3065*a*	0·889	118·9	256·8	−23·3	19	111	
		3067*a*	0·883	73·2	252·8	+16·7	20	139	
		3067	0·902	72·2	250·3	+17·8	10	40	
		3067	0·924	74·6	247·0	+15·7	8	51	331*c*
		3067	0·935	72·3	245·3	+17·9	0	7	
		3066*a*	0·922	111·3	250·3	−17·8	34	209	475*f*
		3068	0·990	85·5	232·5	+ 5·0	22	173	118*f*
			0·844	105·8	258·9	−11·0			221
			0·923	66·4	247·7	+23·3			75
			0·965	77·4	239·4	+13·2			229
July 9		Centre			(314·5)	(+4·0)	(618)	(3564)	(3628)
190·384	CL,HA		0·939	294·8	13·1	+24·7			370
		3042*b*	0·915	247·8	6·6	−18·4	15	99	369*sf*
		3042*c*	0·902	247·1	4·6	−18·6	24	103	
		3058	0·483	289·2	331·4	+12·7	0	11	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
190d·384	CL,HA	3046	0·535	231·5	329·3	−15·7	1	4	
		3046	0·548	226·6	328·3	−18·3	2	11	
		3046*a*	0·509	226·4	326·1	−16·7	44	292	
		3046	0·474	228·1	324·9	−14·6	0	5	
		3046*a*	0·508	221·6	324·3	−18·4	26	181	
		3046	0·471	225·6	323·9	−15·3	2	11	
		3046	1·469	221·7	322·5	−16·5	20	96	
		3046	0·481	219·9	322·4	−17·7	2	48	
		3046	0·451	217·2	320·1	−17·0	7	162	
		3046	0·412	221·7	319·9	−13·9	0	5	
		3046	0·418	216·8	318·6	−15·5	6	91	
		3046	0·436	208·9	316·4	−18·3	0	7	
		3046	0·412	209·1	315·6	−17·0	9	136	
		3046*b*	0·381	210·3	315·0	−15·1	76	367	
		3047*a*	0·425	229·7	322·9	−12·0	32	198	
		3048	0·357	240·6	321·8	− 6·2	6	18	
		3059*a*	0·293	296·6	319·0	+11·4	37	237	
		3059	0·278	302·8	317·4	+12·7	4	26	
		3059	0·239	296·6	316·1	+10·1	5	20	
		3059	0·226	302·1	314·8	+10·9	6	23	
		3059	0·245	311·1	314·5	+13·3	0	1	
		3059	0·231	307·9	314·3	+12·2	3	8	191*c*
		3059	0·197	301·0	313·4	+ 9·9	0	5	
		3059	0·226	313·8	313·2	+13·1	0	3	
		3059	0·190	312·7	311·8	+11·4	2	6	
		3059*b*	0·183	319·5	310·5	+12·0	23	168	
		3059	0·146	312·1	309·9	+ 9·7	0	4	
		3050	0·239	201·5	308·7	− 8·7	0	7	
		3050	0·237	182·5	304·2	− 9·5	0	5	
		3060	0·404	161·0	295·7	−18·3	0	4	
		3054	0·478	143·2	286·1	−18·5	0	11	
		3054	0·489	140·9	284·7	−18·3	0	2	
		3054*a*	0·510	143·3	284·7	−20·2	34	207	
		3054	0·523	140·1	282·8	−19·7	0	9	
		3054	0·536	138·7	281·6	−19·9	0	15	
		3054	0·529	137·1	281·3	−18·9	1	7	
		3054	0·535	136·0	280·6	−18·8	2	9	
		3054	0·569	134·8	278·3	−19·9	0	12	
		3069	0·618	121·1	270·5	−15·1	0	4	
		3069	0·659	120·3	267·4	−16·1	0	5	
		3069	0·649	116·9	267·2	−13·7	0	3	
		3061	0·594	72·4	268·1	+13·7	4	13	
		3061	0·628	74·1	265·4	+13·1	3	14	88*c*
		3061	0·649	75·8	263·7	+12·3	1	5	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3067, July 9–20. A number of small spots in a curved stream. The leader, *a*, has become a very large regular spot by July 12, and a considerable spot, *b*, has formed near the end of the stream. *a* increases on the succeeding days, absorbing the following spots; *b* diminishes and has disappeared by July 17.
Groups 3061, 3064, and 3067 follow each other so closely as to form almost a single stream.
Group 3068, July 9–21. A large regular spot.
Group 3069, July 10–12. A few small spots.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
190d·384	CL,HA	3064	0·712	73·7	258·9	+14·4	11	33	71*c*
		3065	0·750	124·7	262·0	−22·1	3	11	
		3065	0·762	123·6	260·6	−21·9	10	32	
		3065	0·782	123·7	258·9	−22·8	0	3	218*c*
		3065	0·789	122·6	257·9	−22·3	0	3	
		3065*a*	0·806	122·9	256·4	−23·1	13	81	
		3067	0·796	71·2	251·6	+17·4	7	19	
		3067	0·803	73·0	250·8	+16·0	0	18	
		3067*a*	0·806	71·4	250·7	+17·4	6	65	346*c*
		3067	0·835	72·2	247·5	+17·1	5	16	
		3067	0·847	74·3	246·1	+15·4	6	37	
		3067	0·860	72·1	244·7	+17·5	0	13	
		3066*a*	0·843	114·8	250·1	−18·3	33	149	496*f*
		3070	0·917	110·5	239·9	−16·9	0	3	
		3068	0·945	86·1	232·7	+ 5·0	31	172	284*c*
			0·949	91·9	232·3	− 0·5			157
July 10		Centre			(303·6)	(+4·1)	(522)	(3333)	(2590)
									169
191·493	FT,JG		0·831	279·3	345·1	+10·1			394*sf*
		3042*c*	0·978	250·1	4·5	−18·4	21	152	
		3046	0·730	241·7	331·0	−17·1	0	5	
		3046	0·720	239·1	329·4	−18·5	0	10	
		3046	0·704	236·9	327·4	−19·3	0	9	
		3046*a*	0·670	239·5	325·8	−16·5	51	237	
		3046	0·646	237·4	323·4	−16·9	29	335	
		3046	0·594	235·0	319·2	−16·3	17	297	331*c*
		3046*b*	0·539	233·9	315·6	−14·7	71	473	
		3046	0·551	228·3	314·4	−17·6	0	9	
		3046	0·454	233·3	310·6	−11·8	0	3	
		3046	0·454	222·5	307·4	−15·5	0	5	
		3047*a*	0·604	244·0	322·5	−11·8	24	160	76*c*
		3048	0·566	253·3	321·8	− 5·8	5	19	26*c*
		3059	0·510	282·9	319·1	+10·1	0	10	
		3059*a*	0·514	286·6	319·0	+12·1	49	315	
		3059	0·467	285·1	316·1	+10·7	6	20	
		3059	0·449	287·2	314·7	+11·4	7	20	
		3059	0·438	290·2	313·7	+12·5	0	7	
		3059	0·421	283·3	313·3	+ 9·4	9	28	
		3059*b*	0·387	292·9	310·2	+12·5	37	264	
		3059	0·373	286·0	310·1	+ 9·8	0	6	
		3050	0·404	238·2	309·1	− 8·3	0	4	
		3050	0·359	232·0	305·5	− 8·7	0	4	
		3054	0·384	174·4	286·6	−18·2	0	8	
1893.									
191d·493	FT,JG	3054	0·426	174·0	286·2	−20·8	0	6	
		3054*a*	0·415	170·3	284·7	−19·8	30	182	
		3054	0·406	167·1	283·4	−19·0	0	6	
		3054	0·424	164·6	282·1	−19·9	0	40	
		3054	0·428	157·7	279·0	−19·1	0	7	
		3054	0·445	158·7	279·0	−20·3	0	5	
		3069	0·493	133·6	267·2	−15·9	0	12	
		3061	0·371	62·4	269·2	+13·8	2	9	
		3061	0·413	66·3	266·1	+13·4	0	15	
		3061	0·435	69·6	264·3	+12·5	0	3	
		3064	0·520	68·9	259·0	+14·4	4	10	
		3065	0·611	135·3	261·4	−21·9	3	21	
		3065*a*	0·665	132·3	256·7	−23·0	9	45	122*c*
		3065	0·676	131·4	255·6	−23·0	0	6	
		3067*a*	0·597	67·6	253·9	+16·6	27	190	
		3067*a*	0·635	68·5	251·0	+16·7	18	142	
		3067	0·679	65·2	248·2	+19·7	0	6	
		3067	0·698	67·0	246·3	+18·9	0	8	198*c*
		3067*b*	0·697	70·3	245·8	+16·6	11	87	
		3067	0·707	69·0	245·2	+17·7	0	6	
		3066*a*	0·700	121·8	250·2	−18·3	22	122	126*c*
		3070*a*	0·749	114·8	244·2	−15·3	0	18	
		3070	0·753	113·7	243·6	−14·6	0	12	211*c*
		3070	0·782	114·1	241·2	−15·8	0	9	
		3070	0·795	113·7	239·9	−15·9	5	20	
		3068	0·830	87·1	232·9	+ 4·8	31	153	233*f*
		3071*a*	0·946	73·4	217·7	+17·0	0	22	
		3071	0·958	74·7	215·3	+15·9	0	27	356*p*
		3071	0·968	72·7	213·0	+17·8	0	21	
			0·814	121·4	240·4	−22·3			151
			0·842	76·9	231·7	+13·3			577
			0·981	78·6	209·6	+12·0			135
July 11		Centre			(288·9)	(+4·2)	(488)	(3610)	(3105)
192·405	CL,HA		0·925	280·8	344·7	+11·7			248
			0·811	286·6	330·6	+15·9			176
		3046*a*	0·798	245·5	326·1	−17·0	39	217	
		3046	0·816	246·4	325·9	−16·3	1	11	
		3046	0·782	245·6	324·5	−15·9	0	6	
		3046	0·782	243·1	323·8	−17·8	36	334	
		3046	0·745	240·8	319·9	−18·1	4	37	
		3046	0·731	243·2	319·5	−16·1	24	451	433*c*
		3046	0·710	241·1	317·2	−16·7	0	12	
		3046	0·686	239·6	314·9	−16·9	12	78	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3070, July 10–18. A few small spots in an irregular stream. The leader, *a*, moves forward in longitude, and closely approaches Group 3066. Groups 3069, 3065, 3066 and 3070 follow each other so closely as almost to form a single irregular stream.
Group 3071, July 11–22. A composite spot, *a*, with one or two small companions. *a* diminishes in size until July 16, by which date a number of small scattered spots have appeared. *a* has greatly increased in size by July 17, and the following spots form a confused nebulous cluster, which breaks up and disappears as *a* becomes regular and well-defined.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
192d·405	CL,HA	3046*b*	0·674	242·5	314·8	−14·7	75	314	
		3046	0·666	238·7	313·2	−16·7	0	6	
		3047*a*	0·745	249·8	322·3	−11·9	36	148	
		3048	0·729	257·9	322·5	− 5·8	5	13	
		3059*a*	0·677	283·1	319·1	+12·0	60	392	
		3059	0·641	282·6	316·4	+11·4	2	12	
		3059	0·639	280·9	316·3	+10·3	0	6	
		3059	0·620	283·4	314·8	+11·7	8	43	
		3059	0·609	280·1	314·2	+ 9·5	6	23	168*c*
		3059	0·590	286·7	312·2	+13·3	0	4	
		3059*b*	0·555	286·5	309·8	+12·7	41	284	
		3059	0·539	288·9	308·4	+13·7	1	8	
		3054	0·415	202·0	286·3	−18·3	3	20	
		3054*a*	0·428	196·5	284·3	−19·9	40	198	
		3054	0·406	194·0	282·8	−18·8	0	9	
		3054	0·413	192·0	282·1	−19·5	5	24	145*c*
		3054	0·427	189·6	281·2	−20·5	6	27	
		3054	0·423	186·4	279·8	−20·5	3	18	
		3069	0·381	153·5	266·8	−15·7	0	15	
		3061	0·211	36·6	269·5	+14·0	2	9	
		3061	0·205	43·7	268·6	+12·7	0	3	
		3061	0·243	47·3	266·4	+13·7	0	17	
		3064	0·355	59·1	258·6	+14·5	2	7	
		3065	0·508	150·5	261·3	−22·0	3	9	
		3065	0·508	148·8	260·5	−21·5	3	8	
		3065	0·524	146·1	258·7	−21·6	0	2	
		3065*a*	0·560	143·4	255·8	−22·6	11	31	
		3067*a*	0·459	61·1	252·2	+16·7	49	281	
		3067	0·504	61·5	249·3	+17·7	4	13	
		3067	0·536	64·6	246·6	+17·0	0	7	153*c*
		3067*b*	0·562	66·3	244·5	+16·7	15	86	
		3067	0·574	62·8	244·4	+18·8	0	8	
		3066*a*	0·570	131·5	250·3	−18·3	20	112	
		3066	0·587	130·9	249·1	−18·7	3	17	
		3070*a*	0·588	124·5	246·8	−15·7	2	9	
		3070	0·599	122·8	245·6	−15·2	7	41	
		3070	0·618	124·3	244·8	−16·7	2	13	
		3070	0·616	121·2	244·0	−15·0	3	32	
		3070	0·669	119·7	239·9	−15·9	11	56	
		3068	0·699	87·5	232·6	+ 4·8	29	162	130*c*
		3072	0·731	78·9	230·1	+11·0	0	8	193*c*
		3071*a*	0·871	72·9	216·6	+17·0	26	148	
		3071	0·890	73·6	214·1	+16·5	0	13	338*c*
		3071	0·908	71·7	211·8	+18·4	0	30	
1893.				°	°	°			
192d·405	CL,HA		0·776	69·1	227·1	+18·8			267
			0·818	91·0	220·8	+10·7			256
			0·925	79·5	209·1	+11·4			371
July 12		Centre			(276·9)	(+4·3)	(599)	(3832)	(2878)
193·252	CL,FT	3046*a*	0·895	248·8	326·1	−16·7	45	164	
		3046	0·888	250·8	325·7	−14·8	6	39	
M.		3046	0·876	247·1	323·3	−17·6	52	232	
		3046	0·851	245·9	320·2	−17·8	0	16	
		3046	0·845	247·9	320·0	−16·0	48	418	300*c*
		3046*b*	0·791	247·9	314·7	−14·4	78	370	
		3046	0·798	245·2	314·7	−16·7	0	35	
		3047*a*	0·850	253·5	321·8	−11·5	26	152	
		3059*a*	0·807	282·0	319·4	+12·3	72	401	
		3059	0·771	283·4	315·9	+13·1	0	6	
		3059	0·758	281·7	314·8	+11·7	6	28	
		3059*b*	0·700	283·9	309·7	+12·8	40	212	
		3054*a*	0·501	216·4	284·0	−19·5	38	200	
		3054	0·474	216·7	283·0	−18·0	1	3	
		3065*a*	0·483	158·9	254·9	−22·4	8	34	
		3067*a*	0·298	44·6	253·1	+16·5	45	243	
		3067	0·364	49·6	248·8	+17·8	0	4	
		3067*b*	0·406	57·9	244·8	+16·5	17	67	
		3067	0·439	52·9	244·0	+19·4	0	9	
		3066*a*	0·460	145·9	250·0	−18·1	14	110	
		3066	0·476	144·7	248·9	−18·6	2	8	
		3070*a*	0·459	138·1	247·2	−15·7	0	9	
		3070	0·460	134·8	246·1	−14·7	9	22	
		3070	0·475	134·4	245·2	−15·2	4	16	
		3070	0·497	134·7	244·2	−16·3	0	7	
		3070	0·482	132·2	244·1	−15·4	3	9	
		3070	0·502	132·2	243·1	−15·6	1	8	
		3070	0·528	130·7	241·2	−16·1	0	4	
		3070	0·539	129·3	240·1	−15·9	10	30	
		3068	0·543	87·8	232·8	+ 4·9	25	158	
		3071*a*	0·759	70·9	217·2	+17·2	21	131	146*c*
		3071	0·784	71·9	214·7	+16·9	2	5	
		3071	0·812	70·5	212·1	+18·4	0	8	
			0·851	78·2	198·4	+12·4			207
			0·891	71·4	194·0	+18·5			137
July 13		Centre			(256·7)	(+4·4)	(573)	(3158)	(790)

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Faculæ unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3072, July 12–15. A very small spot on July 12. The group is not seen on July 13. A very small spot is seen on July 14, and two on July 15, n.p. of the place of the original spot.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
194d·332	HA,JG		0·914	261·2	316·5	− 6·2			200
		3046	0·955	250·7	321·6	−16·9	83	644	} 830*f*
M.		3046*b*	0·912	252·0	314·8	−14·4	55	325	
		3047*a*	0·949	256·0	321·3	−11·8	9	79	
		3059*a*	0·927	281·1	319·5	+12·0	59	384	} 448*c*
		3059	0·893	280·5	314·8	+11·4	4	16	
		3059*b*	0·849	282·0	309·5	+12·6	19	182	
		3054	0·641	235·6	284·9	−17·5	1	6	} 113*c*
		3054	0·628	234·5	283·7	−17·5	0	4	
		3054*a*	0·641	231·4	283·4	−19·7	31	204	
		3054	0·614	228·2	280·5	−20·1	1	14	
		3073*a*	0·471	227·6	272·3	−14·2	10	21	
		3073	0·443	226·1	270·5	−13·6	0	2	
		3073	0·418	222·1	268·1	−13·7	0	2	
		3061	0·331	301·7	268·2	+14·3	0	6	
		3065*a*	0·454	186·8	254·7	−22·2	4	17	
		3067*a*	0·208	352·8	253·0	+16·4	42	279	
		3067	0·248	357·4	252·1	+18·8	0	11	
		3067	0·198	2·2	250·9	+15·9	3	12	
		3067	0·209	9·4	249·4	+16·3	8	22	
		3067	0·242	20·3	246·4	+17·5	1	4	
		3067*b*	0·240	29·4	244·4	+16·5	15	60	
		3066*a*	0·387	177·4	250·3	−18·1	13	86	
		3070	0·360	170·9	248·0	−16·3	0	6	
		3070*a*	0·348	168·7	247·3	−15·4	6	30	
		3070	0·360	166·9	246·6	−16·0	0	4	
		3070	0·352	164·4	245·8	−15·3	1	10	
		3070	0·370	157·4	243·0	−15·4	0	6	
		3070	0·396	152·4	240·4	−16·0	4	20	
		3070	0·420	153·5	240·1	−17·6	0	8	
		3068	0·314	88·9	233·1	+ 4·7	24	153	
		3072	0·345	65·5	232·7	+12·5	0	3	
		3071*a*	0·590	66·9	217·0	+17·1	16	97	
July 14		Centre			(251·4)	(+4·5)	(409)	(2717)	(1591)
195·333	CL,HA	3046*b*	0·979	254·3	314·5	−14·3	81	357	573*f*
		3059*a*	0·985	281·2	318·7	+11·8	28	297	} 393
M.		3059*b*	0·945	282·6	309·3	+13·4	13	115	
		3059	0·943	281·1	308·9	+12·0	10	29	
		3054*a*	0·777	239·3	283·3	−20·1	31	220	
		3054	0·765	241·3	282·9	−18·3	0	20	
		3054	0·754	238·0	280·9	−20·1	7	97	
		3073*a*	0·640	241·3	273·3	−14·1	5	18	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
195d·333	CL,HA	3061	0·538	286·2	269·9	+12·5	5	17	
		3061	0·501	287·3	267·3	+12·6	0	3	
M.		3065	0·523	210·6	254·8	−22·2	0	10	
		3067*a*	0·309	313·3	251·6	+16·6	51	454	
		3067	0·328	319·3	251·1	+18·9	4	19	
		3067	0·317	323·0	249·7	+19·1	0	9	
		3067	0·282	326·7	247·4	+18·1	3	12	
		3067*b*	0·228	334·8	243·9	+16·5	7	32	
		3066*a*	0·433	207·8	250·3	−17·9	13	83	
		3070*a*	0·380	205·7	247·9	−15·4	6	14	
		3070	0·365	203·3	246·7	−15·0	2	5	
		3070	0·375	201·8	246·4	−15·7	0	2	
		3070	0·356	186·8	240·6	−16·0	0	6	
		3068	0·084	87·8	233·3	+ 4·8	24	155	
		3072	0·167	29·6	233·3	+12·9	1	7	
		3072	0·201	28·2	232·5	+14·8	0	3	
		3071	0·402	53·8	218·2	+18·1	1	3	
		3071*a*	0·415	56·8	216·9	+17·4	20	91	
July 15		Centre			(238·1)	(+4·6)	(312)	(2078)	(966)
196·389	CL,JG		0·939	290·9	294·1	+21·2			106
		3054	0·898	246·8	284·5	−18·4	5	18	} 660*p*
I.		3054*a*	0·888	244·2	282·5	−20·3	67	282	
		3054	0·889	241·5	281·8	−22·6	0	9	
		3073*a*	0·810	248·2	275·0	−14·5	7	17	132*f*
		3061	0·743	282·4	272·0	+12·3	0	8	134*c*
		3067*a*	0·492	296·5	251·5	+16·8	76	380	
		3067	0·488	301·5	250·2	+19·0	11	52	
		3067	0·449	301·4	247·8	+17·8	2	8	
		3067	0·444	304·3	246·9	+18·8	10	62	
		3067	0·451	306·7	246·7	+19·9	1	8	
		3067	0·419	305·7	245·1	+18·5	0	5	
		3067*b*	0·386	302·4	244·0	+16·3	0	13	
		3066*a*	0·568	227·8	250·4	−18·1	14	61	
		3070*a*	0·521	229·6	248·4	−15·4	2	12	
		3068	0·171	269·5	234·0	+ 4·5	42	156	
		3074	0·152	28·3	220·0	+12·3	0	3	
		3071*a*	0·254	26·8	217·3	+17·7	13	55	
		3071	0·248	31·3	216·5	+16·8	0	2	
		3071	0·256	33·3	215·8	+17·0	2	7	
		3071	0·295	31·2	214·9	+19·2	8	24	
		3071	0·272	40·9	213·5	+16·4	0	8	
		3071	0·316	36·9	212·7	+19·2	4	11	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3073, July 14–16. A small spot, *a*, with, on July 14, two very small followers.
Group 3074, July 16. A very small spot.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
196d·389	CL, JG	3071	0·313	40·8	211·8	+18·3	2	4	
			0·854	61·4	173·5	+14·4			114
I.			0·945	105·4	155·3	−12·9			146
			0·954	67·1	151·5	+23·2			309
July 16		Centre			(224·2)	(+4·7)	(266)	(1205)	(1601)
197·543	HA, JG		0·894	251·3	269·7	−14·5			146
			0·850	283·3	267·1	+13·8			440
			0·883	237·5	264·4	−25·6			106
			0·715	233·3	246·8	−21·4			83
		3054*a*	0·973	247·7	282·4	−20·4	21	340	489*c*
		3061	0·900	282·2	273·2	+13·1	0	7	
		3067	0·701	293·4	251·8	+19·7	5	17	
		3067*a*	0·680	290·3	250·6	+17·2	44	419	
		3067	0·679	293·1	250·1	+19·0	8	32	
		3067	0·665	293·9	248·8	+19·3	0	11	
		3067	0·638	292·6	247·0	+17·9	5	65	
		3067	0·639	296·1	246·4	+20·1	0	4	
		3067	0·617	293·0	245·4	+17·8	0	13	245*c*
		3067	0·622	295·3	245·3	+19·3	0	5	
		3066*a*	0·733	239·8	250·5	−18·0	6	29	
		3070*a*	0·709	242·4	249·4	−15·5	0	8	100*c*
		3070	0·645	237·1	243·2	−16·5	0	4	
		3070	0·648	234·7	242·5	−17·9	0	6	70*c*
		3068	0·431	269·7	234·4	+ 4·3	31	171	70*c*
		3071*a*	0·247	326·9	216·9	+16·6	55	199	
		3071	0·208	330·3	215·0	+15·1	0	5	
		3071	0·268	339·0	214·7	+19·2	6	31	
		3071	0·233	337·4	214·3	+17·1	1	7	
		3071	0·215	337·6	213·8	+16·2	7	24	99*c*
		3071	0·237	341·5	213·4	+17·7	1	4	
		3071	0·226	346·3	212·1	+17·4	5	31	
		3071	0·256	349·8	211·6	+19·3	2	31	
			0·823	107·7	155·9	−11·6			186
			0·864	120·3	154·9	−23·0			136
			0·827	64·8	154·5	+23·4			207
			0·890	78·0	145·9	+12·9			104
			0·943	126·1	145·6	−31·7			305
			0·936	104·4	141·3	−11·7			231
			0·980	20·4	138·7	+68·7			233
July 17		Centre			(208·9)	(+4·8)	(197)	(1463)	(3250)
198d·421	JG, FT		0·927	282·9	265·4	+13·8			558
			0·934	255·1	264·3	−12·0			117
			0·907	239·4	256·5	−25·0			299
		3067	0·816	290·9	251·1	+19·8	2	35	
		3067*a*	0·799	288·0	249·7	+17·3	42	414	499*c*
		3067	0·781	292·2	247·5	+20·3	0	29	
		3066*a*	0·842	245·6	250·5	−17·4	5	15	
		3070*a*	0·829	247·6	249·7	−15·4	0	2	358*sf*
		3068	0·604	270·4	234·3	+ 4·2	26	136	92*c*
		3071*a*	0·391	303·6	217·0	+17·1	40	313	
		3071	0·384	310·5	215·1	+19·0	6	48	
		3071	0·348	301·6	215·0	+15·1	0	4	
		3071	0·356	308·8	214·0	+17·5	0	3	
		3071	0·366	312·4	213·7	+18·9	0	3	
		3071	0·331	307·1	213·1	+16·2	8	39	
		3071	0·335	313·8	211·9	+18·1	5	54	
		3071	0·349	317·7	211·6	+19·6	4	14	
		3075*a*	0·911	128·6	140·3	−32·0	7	30	
		3075*b*	0·932	128·1	136·7	−32·8	0	16	357*c*
			0·879	106·5	137·9	−12·0			176
			0·954	121·8	130·3	−28·3			267
July 18		Centre			(197·2)	(+4·9)	(145)	(1155)	(2723)
199·253	HA, FT		0·963	283·5	261·2	+14·3			220
		3067	0·909	290·0	251·6	+20·2	0	20	
		3067*a*	0·898	287·1	250·2	+17·5	43	290	633*c*
		3068	0·744	271·1	234·3	+ 4·1	29	122	
		3071*a*	0·548	294·6	217·6	+17·3	40	267	
		3071	0·524	296·4	215·7	+17·7	0	4	
		3071	0·515	294·4	215·5	+16·5	1	8	
		3071	0·530	299·8	215·4	+19·5	5	28	
		3071	0·503	292·7	215·0	+15·5	0	3	
		3071	0·470	297·2	212·1	+16·8	8	44	
		3071	0·475	300·8	211·7	+18·5	6	21	
		3071	0·485	303·4	211·7	+19·9	0	8	
		3071	0·460	304·7	209·9	+19·6	0	8	
		3076	0·437	162·7	178·4	−19·7	0	5	
		3075*a*	0·839	133·2	140·5	−31·6	7	47	
		3075*b*	0·875	132·2	136·0	−32·9	1	11	262*f*
		3077	0·942	119·8	121·1	−25·9	0	5	69*c*
		3078*a*	0·985	113·2	109·2	−21·8	43	161	
		3078	0·986	110·3	108·5	−19·0	0	51	
July 19		Centre			(186·3)	(+4·9)	(183)	(1103)	(1184)

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3075, July 18–21. A pair of small spots, *a* and *b*, on July 18 and 19. *b* has disappeared by July 20. *a* has a close companion on July 21.
Group 3076, July 19. A very small spot.
Group 3077, July 19. A very small spot.
Group 3078, July 19–31. A large regular spot, *a*, sometimes attended by one or two very small companions.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
200d·675	CL,HA		0·956	246·8	236·9	−20·4			537
			0·933	293·0	236·4	+23·2			318
			0·922	283·0	235·0	+13·9			591
			0·853	290·5	225·5	+20·0			230
			0·887	239·0	223·9	−24·4			293
		3067*a*	0·992	286·9	251·2	+17·4	44	422	788*f*
		3068	0·925	272·0	235·1	+ 3·8	26	127	278*c*
		3071*a*	0·779	288·2	218·1	+17·3	44	303	
		3071	0·765	291·5	216·4	+19·6	2	13	360*c*
		3071	0·720	290·9	212·5	+18·4	6	44	
		3079	0·340	145·8	156·3	−11·4	0	8	
		3079	0·384	139·8	152·9	−12·1	0	8	
		3075*a*	0·686	147·2	142·0	−30·6	4	16	
		3080	0·492	119·4	141·9	− 9·4	0	8	
		3080	0·545	118·6	138·5	−10·7	0	21	
		3080	0·553	115·6	137·2	− 9·5	0	6	
		3081	0·687	108·5	126·4	− 8·8	0	2	
		3081	0·703	107·3	124·9	− 8·4	0	7	
		3078*a*	0·890	117·5	109·6	−21·6	31	132	
		3078	0·892	114·3	108·4	−19·0	3	15	309*c*
		3078	0·896	116·0	108·4	−20·6	0	3	
		3082	0·943	54·9	98·0	+34·7	0	28	144*c*
		3083	0·989	102·0	87·4	−11·0	14	370	543*p*
			0·835	142·8	127·9	−37·8			247
July 20		Centre			(167·5)	(+5·0)	(174)	(1533)	(4638)
201·459	CL,HA		0·947	284·6	228·7	+15·4			562
			0·941	245·0	223·1	−21·4			184
		3068	0·979	272·3	235·2	+ 3·3	25	167	2258*f*
		3071*a*	0·872	286·6	217·7	+16·9	38	282	312*c*
		3071	0·828	289·1	212·4	+18·6	2	8	
		3079	0·286	182·4	157·7	−11·4	0	4	
		3079	0·301	177·[illegible]	156·3	−12·3	0	3	
		3079	0·309	167·6	153·1	−12·4	3	24	
		3075*a*	0·618	159·7	142·7	−30·4	1	5	
		3075	0·635	156·5	140·0	−30·6	0	3	
		3080	0·341	135·0	142·9	− 9·0	2	7	
		3080	0·396	130·7	139·3	−10·0	0	6	
		3081	0·541	115·3	127·4	− 8·9	0	9	
		3081	0·596	111·9	123·1	− 8·5	0	4	
		3078*a*	0·809	121·9	109·4	−21·9	22	166	153*c*
		3078	0·803	117·8	108·6	−18·6	2	9	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
201d·459	CL,HA	3082	0·879	53·5	98·5	+34·2	0	9	88*c*
		3082	0·916	53·5	92·8	+35·3	0	9	
		3083*a*	0·948	103·4	87·3	−10·9	26	190	535*c*
		3084*a*	0·992	66·2	72·9	+24·2	24	141	656*p*
			0·949	112·2	88·7	−19·2			482
July 21		Centre			(157·0)	(+5·1)	(145)	(1046)	(3197)
202·424	HA,FT		0·946	281·1	215·8	+12·2			151
			0·922	275·8	211·7	+ 7·4			121
		3071*a*	0·955	285·9	217·6	+16·7	28	249	496*nf*
		3079	0·360	215·7	156·6	−11·8	6	31	
		3079	0·336	208·2	153·6	−12·0	6	13	
		3079	0·339	204·4	152·5	−12·8	3	7	
		3080	0·238	172·0	142·4	− 8·4	4	9	
		3080	0·270	161·8	139·4	− 9·6	8	33	
		3081	0·361	131·9	128·6	− 8·9	1	4	
		3078*a*	0·693	129·4	109·2	−21·8	25	167	
		3082	0·783	50·2	98·2	+33·7	0	5	86*c*
		3082	0·841	51·2	90·4	+35·0	1	3	
		3083*a*	0·859	106·7	87·4	−11·4	13	92	731*c*
		3083*a*	0·874	106·3	85·6	−11·5	13	55	
		3084*a*	0·950	66·3	72·2	+24·1	25	269	639*c*
		3084	0·959	67·0	70·3	+23·5	0	25	
			0·943	121·8	85·1	−21·3			202
			0·904	114·0	83·6	−19·1			911
July 22		Centre			(144·3)	(+5·2)	(133)	(962)	(3337)
203·234	JG,FT		0·981	288·1	213·4	+18·8			356
		3085	0·865	236·1	186·2	−25·6	0	31	
		3079	0·483	233·7	156·9	−11·7	5	42	
		3079	0·453	230·1	154·3	−11·9	0	6	
		3079	0·442	227·5	153·0	−12·3	9	26	
		3080	0·291	216·6	143·7	− 8·2	3	15	
		3080	0·277	200·0	139·1	− 9·7	0	8	
		3078*a*	0·593	138·7	108·8	−21·6	34	185	
		3083*a*	0·761	110·0	86·8	−11·8	28	154	103*c*
		3084*a*	0·874	65·5	73·4	+23·9	18	137	344*c*
			0·855	115·2	79·2	−18·3			230
			0·956	112·5	64·1	+19·7			248
July 23		Centre			(133·6)	(+5·3)	(97)	(604)	(1281)

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The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3079, July 20–25. A few small spots irregularly scattered. Only one spot is seen on July 24 and 25.

Group 3080, July 20–25. A few small spots irregularly scattered.

Group 3081, July 20–22. A pair of very small spots. The following spot has disappeared by July 22.

Group 3082, July 20–22. A small spot on July 20. A second is seen on July 21 and 22.

Group 3083, July 20–30. A large spot, *a*, with a double nucleus. It is measured as two separate spots on July 22. It has broken up into a stream of small spots by July 25, and rapidly diminishes in size. The group is not seen on July 29, but a small spot is seen in its place on July 30.

Group 3084, July 21–28. A large spot, *a*, which undergoes continual changes of shape and size. Small spots are broken off from it from time to time. The group diminishes in size after July 24. Group 3104 is perhaps a revival of it.

Group 3085, July 23–25. A small spot.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.	Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).						Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°				1893.				°	°	°			
204d·641	JG,CL	3085	0·961	240·5	184·0	−26·4	0	13	176*c*	205d·436	JG,FT	3089	0·963	117·3	35·3	−23·8	8	29	70*c*
		3079	0·735	249·6	159·6	−11·0	5	19	79*c*				0·727	77·6	57·9	+12·7			137
		3080	0·538	246·1	144·8	− 7·9	2	13					0·873	133·0	54·9	−33·0			256
		3078*a*	0·468	166·6	108·5	−21·7	26	173	83*c*				0·898	125·3	48·2	−28·3			130
		3078	0·436	163·4	107·7	−19·2	0	3					0·918	66·9	37·8	+23·3			511
		3083	0·493	117·0	89·0	− 8·1	0	2		July 25		Centre			(104·4)	(+5·4)	(82)	(503)	(2988)
		3083*a*	0·539	122·0	87·5	−11·8	24	116	129*c*										
		3083	0·582	119·9	84·2	−12·2	0	7											
		3084*a*	0·698	61·3	73·4	+23·6	37	204	343*f*										
			0·888	129·5	62·1	−31·2			186	206·391	HA,FT		0·927	255·0	157·9	−11·7			305
			0·871	117·8	59·8	−20·9			254				0·885	294·1	153·6	+23·8			213
			0·825	79·0	59·5	+12·1			79				0·801	237·8	138·4	−21·5			74
			0·953	70·7	42·3	+20·0			171				0·794	223·5	131·2	−30·9			374
July 24		Centre			(115·2)	(+5·4)	(94)	(550)	(1500)			3090	0·778	250·8	140·1	−11·2	0	7	205*p*
												3078*a*	0·519	210·4	108·1	−21·2	27	169	67*c*
												3078	0·489	212·7	107·9	−18·9	0	2	
												3083	0·268	167·7	88·5	− 9·6	0	2	
205·436	JG,FT		0·952	283·6	177·2	+14·6			64			3083	0·306	168·9	88·2	−11·9	0	2	
			0·925	294·1	172·1	+24·3			109			3083*a*	0·300	166·0	87·6	−11·4	3	20	
			0·789	299·0	154·3	+26·0			77			3083	0·286	162·5	86·8	−10·3	0	3	
			0·762	219·4	138·9	−31·5			185			3083	0·315	163·4	86·5	−12·0	2	23	
			0·620	236·3	136·6	−15·5			160			3083	0·299	159·8	85·8	−10·8	4	14	
		3085	0·993	242·6	183·8	−26·3	0	11	277*c*			3083	0·293	157·2	85·2	−10·1	0	2	
		3079	0·852	253·9	160·6	−10·7	0	17	260*sf*			3083	0·278	153·5	84·6	− 8·9	0	5	
		3080	0·679	252·6	145·1	− 7·6	3	9	53*s*			3083	0·297	154·2	84·3	−10·0	0	4	
		3086	0·732	214·9	133·9	−32·1	0	4	119*s*			3084*a*	0·420	42·2	74·0	+23·3	19	99	
		3078*a*	0·455	188·1	108·3	−21·3	33	163				3084	0·450	45·6	71·4	+23·4	3	17	
		3078	0·435	186·9	107·6	−20·1	0	1	86*c*			3091	0·787	130·0	49·7	−26·3	0	10	81*c*
		3078	0·427	185·3	106·8	−19·7	0	2				3089	0·897	120·7	34·2	−24·3	4	13	250*f*
		3083*a*	0·402	136·5	88·1	−11·7	10	46					0·779	141·4	56·5	−32·9			200
		3083	0·376	131·8	88·0	− 9·3	0	3					0·803	68·4	39·1	+20·5			236
		3083	0·401	133·6	87·3	−10·8	0	5					0·843	106·9	36·7	−11·0			107
		3083	0·420	134·5	86·7	−11·9	5	29	81				0·910	61·5	27·0	+28·1			325
		3083	0·434	135·2	86·2	−12·7	0	8		July 26		Centre			(91·8)	(+5·5)	(62)	(392)	(2437)
		3083	0·422	129·8	85·2	−10·5	0	5											
		3083	0·448	131·2	84·3	−12·0	0	5											
		3084	0·560	57·3	73·9	+22·2	0	3		207·408	CL,JG		0·922	255·2	143·6	−11·3			302
		3084*a*	0·572	55·2	73·7	+23·7	22	132					0·867	228·8	127·9	−31·2			481
		3084	0·585	57·1	72·3	+23·1	1	5				3092	0·756	293·5	126·3	+21·3	0	6	103*c*
		3084	0·599	56·6	71·4	+23·8	0	9				3078*a*	0·642	226·2	108·1	−21·5	22	163	292*c*
		3084	0·633	57·8	68·6	+24·1	0	4				3083*a*	0·338	206·6	87·3	−12·0	4	30	
		3087	0·656	133·9	73·8	−22·3	0	7	103*c*			3093	0·313	189·4	81·4	−12·3	0	22	
		3088	0·768	127·3	62·7	−23·7	0	2	310*c*			3093	0·289	177·9	77·8	−11·1	0	12	
		3088	0·777	126·0	61·4	−23·2	0	4				3093	0·300	170·6	75·5	−11·3	0	8	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3086, July 25. A very small spot.
Group 3087, July 25. A very small spot.
Group 3088, July 25. Two very small spots.
Group 3089, July 25–30. A small spot.
Group 3090, July 26. A very small spot.
Group 3091, July 26–August 4. One or two very small spots until July 29 and 30, on which dates the group is not seen. Two very small spots are seen on July 31, and the group rapidly increases in size and has become an important stream, of which *a* and *b*, the first and last spots, are the largest members, by August 4, when it reaches the west limb.
Group 3092, July 27. A very small spot.
Group 3093, July 27–30. A few small spots in a scattered stream, closely following Group 3083.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	HELIOGRAPHIC Longitude.	HELIOGRAPHIC Latitude.	SPOTS. Area of UMBRA for each Spot (and for Day).	SPOTS. Area of WHOLE for each Spot (and for Day).	FACULÆ. Area for each Group (and for Day).
1893.				°	°	°			
207d.408	CL, JG	3093	0·312	154·1	70·5	−10·7	0	11	
		3084	0·296	7·8	75·9	+22·6	2	12	} 95*c*
		3084*a*	0·315	12·8	74·1	+23·4	12	66	
		3091	0·674	141·0	50·3	−26·5	1	6	} 112*c*
		3091	0·703	139·8	47·7	−27·6	0	7	
		3091	0·699	137·6	46·9	−26·1	0	5	
		3089	0·804	126·8	33·4	−24·8	0	19	196*nf*
			0·762	59·0	31·5	+26·9			64
			0·766	58·1	31·3	+27·7			69
			0·942	123·2	14·7	−28·6			131
			0·911	61·8	13·3	+27·9			221
			0·937	74·8	8·4	+16·2			126
			0·986	112·8	1·3	−21·3			86
July 27		Centre			(78·4)	(+5·6)	(41)	(367)	(2278)
208·380	HA, FT		0·974	256·4	140·6	−11·8			273
			0·894	286·5	131·9	+17·3			116
			0·909	274·9	131·1	+ 6·8			125
			0·938	233·3	127·2	−31·5			396
			0·842	291·9	122·3	+21·4			179
		3078*a*	0·767	235·6	108·2	−21·5	27	160	340*c*
		3083	0·471	231·7	87·6	−11·6	0	3	
		3083	0·453	232·6	86·9	−10·5	0	1	
		3093	0·360	219·4	78·9	−10·5	6	27	
		3093	0·358	214·2	77·3	−11·6	0	7	
		3093	0·360	209·6	76·0	−12·6	0	1	
		3093	0·338	212·2	76·0	−10·9	3	7	
		3084	0·396	328·3	78·7	+25·2	0	6	
		3084	0·361	333·4	75·7	+24·4	0	11	
		3084*a*	0·335	336·1	74·0	+23·4	5	19	
		3091	0·578	155·9	50·3	−26·2	0	4	
		3094	0·600	128·6	36·3	−16·9	1	8	} 58*c*
		3094	0·628	127·7	34·2	−17·7	2	8	
		3089	0·694	135·2	33·1	−24·6	2	7	
		3095*a*	0·855	129·3	16·4	−29·1	10	34	156*c*
			0·769	131·0	25·5	−25·9			130
			0·820	58·5	12·7	+28·8			400
			0·839	73·9	8·4	+16·6			173
			0·942	117·6	0·1	−23·6			370
			0·928	101·6	358·9	− 8·5			237
			0·925	83·3	357·5	+ 8·4			218
July 28		Centre			(65·5)	(+5·7)	(56)	(303)	(3171)
209d.226	CL, FT		0·936	291·0	124·2	+21·7			174
			0·933	230·7	114·1	−33·4			216
			0·729	248·4	97·9	−11·4			124
		3078*a*	0·864	240·6	108·2	−21·7	29	161	281*c*
		3093	0·512	238·1	80·4	−10·4	0	11	
		3094	0·482	142·4	36·5	−16·8	0	13	
		3094	0·518	138·6	32·3	−17·4	0	5	
		3089	0·602	146·5	32·9	−24·6	0	13	
		3095*a*	0·774	135·4	16·1	−28·8	7	39	75*c*
			0·834	83·3	357·6	+ 8·8			167
			0·861	105·6	357·1	−10·3			193
			0·897	120·2	356·6	−23·8			259
			0·947	81·0	342·6	+10·4			130
July 29		Centre			(54·3)	(+5·8)	(36)	(242)	(1619)
210·212	JG, HA		0·898	253·4	102·7	−12·1			83
			0·805	236·5	87·7	−22·4			302
			0·833	227·5	86·4	−30·2			86
		3078*a*	0·946	244·7	108·0	−21·6	28	139	351*c*
		3083	0·776	250·8	89·4	−10·9	0	10	313*s*
		3093	0·682	248·8	81·3	− 9·8	0	5	
		3093	0·646	247·5	78·4	− 9·7	2	7	42*c*
		3094	0·392	169·1	37·0	−16·8	1	6	
		3094	0·425	161·1	33·0	−17·9	3	12	
		3089	0·526	164·5	32·4	−24·6	3	7	
		3095*a*	0·668	146·2	16·4	−28·4	12	18	
		3095	0·695	145·4	14·4	−29·6	4	14	
		3096	0·557	61·3	10·0	+20·4	7	44	
		3096	0·589	62·0	7·6	+20·9	4	14	
		3097	0·966	108·5	329·0	−16·2	9	44	
		3097	0·992	111·0	321·4	−19·9	0	146	
		3097*a*	0·994	108·8	320·1	−17·9	0	153	881*c*
		3098*a*	0·986	80·8	320·4	+10·0	0	53	
			0·807	124·4	355·1	−23·1			95
			0·760	109·3	354·6	−10·6			112
			0·869	77·5	340·7	+13·7			175
July 30		Centre			(41·3)	(+5·8)	(73)	(672)	(2440)
211·401	HA, JG		0·897	255·3	87·3	−10·4			693
			0·874	244·8	82·0	−18·6			803
			0·852	233·4	81·4	+34·0			159
			0·764	300·0	73·1	+26·5			499

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3094, July 28–31. Two very small spots. A third is seen between them on July 31.

Group 3095, July 28–August 2. A small regular spot, *a*. It is the leader of a small stream on July 30 and the succeeding days.

Group 3096, July 30–August 1. A few small spots in an irregular stream.

Group 3097, July 30–August 10. A large spot, *a*, which varies greatly in shape. A number of small spots precede it up to August 4. Others follow it on August 4, and the succeeding days. *a* has broken up by August 8 and diminishes rapidly on the succeeding days.

Group 3098, July 30–August 11. A regular spot, *a*. A very small companion is seen on July 31.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
211d401	HA,JG		0·912	211·4	69·6	−46·9			152
			0·723	229·3	62·1	−23·3			179
		3078*a*	0·997	247·8	108·1	−21·5	26	223	319*c*
		3099	0·830	237·5	74·8	−22·6	2	6	
		3099	0·812	236·7	72·7	−22·5	0	3	
		3099	0·811	234·9	71·9	−23·7	1	3	203*p*
		3091*a*	0·650	215·7	50·6	−26·4	3	9	
		3091	0·633	212·1	47·7	−26·8	1	7	
		3091*b*	0·634	210·7	46·9	−27·4	0	4	
		3100	0·579	223·6	50·5	−19·4	1	4	
		3100	0·565	225·1	50·4	−18·1	2	11	
		3094	0·433	208·8	38·1	−16·5	2	5	
		3094	0·420	205·3	36·3	−16·4	0	2	
		3094	0·420	197·9	33·3	−17·6	0	2	
		3095*a*	0·579	165·9	16·4	−28·2	10	38	52*c*
		3095	0·617	160·2	11·7	−29·6	4	17	
		3096	0·342	41·9	11·6	+20·4	6	20	65*c*
		3096	0·379	48·4	8·1	+20·1	0	3	
		3096	0·401	47·2	7·3	+21·4	10	23	
		3097	0·858	112·8	330·4	−16·1	0	4	
		3097	0·885	115·1	327·9	−19·2	0	4	1386*p*
		3097	0·911	114·8	324·4	−19·7	6	42	
		3097	0·908	112·2	324·1	−17·3	2	41	
		3097*a*	0·923	112·8	322·1	−18·4	32	88	
		3101	0·891	69·8	322·5	+20·6	0	4	171*f*
		3102*a*	0·904	99·4	322·1	− 5·9	4	10	362*c*
		3102	0·922	99·6	319·7	− 6·5	1	8	
		3102	0·946	99·3	315·7	− 6·8	3	13	
		3098*a*	0·895	81·6	321·8	+10·1	19	111	
		3098	0·912	79·9	319·4	+11·6	0	3	317*nf*
		3103*a*	0·967	107·8	313·3	−15·1	28	223	951*f*
			0·804	78·6	331·9	+12·7			194
			0·846	108·3	330·4	−12·6			353
			0·923	105·9	320·6	−12·2			338
July 31		Centre			(25·6)	(+5·9)	(163)	(931)	(7196)
212·482	CL,JG		0·952	257·0	81·5	−10·4			235
			0·949	244·9	78·4	−21·5			838
			0·824	299·6	65·0	+27·6			367
			0·840	237·4	61·3	−23·1			340
			0·827	222·4	52·8	−33·1			183
		3104*a*	0·892	297·5	73·7	+27·2	3	11	
		3104	0·874	298·3	71·2	+27·5	1	4	299*sp*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
212d482	CL,JG	3091*a*	0·768	229·2	51·2	−25·5	2	8	182*c*
		3091*b*	0·741	224·0	46·5	−27·3	0	5	
		3100	0·741	238·9	52·9	−18·0	1	6	71*c*
		3100	0·718	234·7	49·6	−19·8	0	4	
		3095	0·564	189·4	17·1	−27·7	3	7	37*c*
		3095*a*	0·569	187·9	16·3	−28·2	7	21	
		3096	0·259	354·7	12·7	+20·9	1	3	
		3096	0·245	356·0	12·2	+20·1	1	3	
		3096	0·254	358·1	11·7	+20·6	0	2	
		3096	0·247	359·2	11·4	+20·2	0	4	
		3096	0·284	13·4	7·1	+21·9	3	12	
		3097	0·756	121·3	328·4	−18·7	2	4	922*c*
		3097	0·789	120·5	325·2	−19·4	0	10	
		3097	0·790	118·8	324·6	−18·3	1	10	
		3097	0·789	116·9	324·0	−16·8	5	37	
		3097*a*	0·809	116·7	322·1	−17·4	35	107	
		3102*a*	0·760	101·8	323·1	− 4·9	2	7	222*c*
		3102	0·829	101·9	316·7	− 6·4	0	12	
		3098*a*	0·756	80·8	321·9	+10·9	19	123	162*c*
		3103*a*	0·884	110·7	312·5	−15·1	31	191	551*c*
			0·776	67·2	321·2	+21·4			110
			0·844	77·0	313·4	+14·1			315
Aug. 1		Centre			(11·2)	(+6·0)	(117)	(591)	(4834)
213·373	CL,HA		0·871	283·4	60·4	+14·6			106
			0·915	240·9	60·0	−23·5			639
			0·899	228·0	52·6	−33·5			213
		3104*a*	0·959	296·5	73·7	+27·1	2	20	608*f*
		3091*a*	0·858	234·1	50·2	−26·4	0	5	251*c*
		3091	0·846	234·6	49·1	−25·5	0	8	
		3091*b*	0·837	231·1	46·7	−27·6	6	29	
		3095	0·622	207·0	18·1	−27·9	1	5	67*c*
		3095*a*	0·620	205·5	17·1	−28·2	3	11	
		3097	0·666	130·4	326·8	−20·5	3	18	157*c*
		3097	0·668	126·8	325·3	−18·6	4	18	
		3097	0·692	128·2	324·4	−20·4	0	6	
		3097	0·674	124·9	324·3	−17·7	8	33	
		3097*a*	0·693	123·5	322·3	−17·7	37	128	
		3102*a*	0·618	106·9	323·2	− 5·5	1	4	
		3098*a*	0·608	80·9	322·1	+10·3	22	119	86*c*
		3103	0·784	119·1	313·5	−18·3	1	4	522*f*
		3103*a*	0·782	115·6	312·6	−15·7	30	175	
		3105*a*	0·832	110·9	306·6	−13·7	1	7	190*c*

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3099, July 31. Three very small spots.

Group 3100, July 31–August 4. Two very small spots. The group is not seen on August 2 and 3.

Group 3101, July 31. A very small spot.

Group 3102, July 31–August 5. A few very small spots in a short stream. The group is not seen on August 3, but has reappeared by August 4.

Group 3103, July 31–August 11. A large regular spot, *a*, divided into two portions by a bright bridge, but always measured as a single spot. Very small companions are seen near it on August 2, 6, 7 and 8.

Group 3104, August 1–2. A small spot, *a*, with a very small companion on August 1. In the same longitude, but a little to the north in latitude, of the place of Group 3084.

Group 3105, August 2–10. A few small spots irregularly arranged. The group rapidly increases in size, and the leader, *a*, is a large composite spot on August 6. The group rapidly diminishes after August 7.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
213d·373	CL,HA	3106	0·929	108·8	294·1	−15·0	7	31	
		3106	0·934	111·9	294·1	−18·0	0	9	577*f*
		3106	0·938	110·7	293·1	−17·0	3	10	
		3107	0·914	76·9	293·0	+14·4	3	8	87*nf*
		3108	0·987	105·7	281·2	−14·3	11	67	86*c*
			0·811	125·0	313·6	−22·8			312
			0·975	102·2	284·0	−10·4			69
			0·984	78·6	279·1	+12·3			100
Aug. 2		Centre			(359·5)	(+6·0)	(143)	(715)	(4070)
214·493	FT,JG		0·981	297·3	65·0	+27·9			450
			0·960	240·2	54·9	−18·9			138
			0·965	233·2	51·8	−33·1			148
			0·835	287·5	41·3	+18·0			95
			0·832	244·6	36·4	−17·2			94
			0·794	297·0	35·8	+25·0			56
		3091*a*	0·948	239·9	50·4	−26·0	6	47	
		3091	0·940	240·0	48·9	−25·5	0	41	
		3091	0·926	238·0	45·8	−26·5	0	8	800*c*
		3091*b*	0·928	236·5	45·7	−27·9	26	120	
		3097	0·516	147·0	327·4	−19·8	0	6	
		3097	0·518	140·2	324·4	−17·7	2	11	
		3097	0·489	135·7	324·1	−14·7	0	6	117*c*
		3097*a*	0·539	137·3	322·2	−17·6	28	142	
		3098*a*	0·385	77·1	322·3	+10·6	18	97	
		3103*a*	0·628	124·4	312·3	−15·6	30	160	221*c*
		3105*a*	0·667	118·0	307·6	−13·4	4	21	
		3105	0·693	116·2	305·2	−13·1	0	8	179*c*
		3105	0·723	114·6	302·4	−13·0	3	8	
		3109*a*	0·724	101·5	299·5	− 4·0	6	14	
		3109	0·738	100·3	298·2	− 3·4	0	3	34*c*
		3107	0·752	74·8	296·1	+15·4	0	6	
		3107	0·763	75·5	295·0	+15·0	0	14	101*c*
		3107	0·810	74·4	290·6	+16·2	0	10	
		3106*a*	0·811	118·1	296·0	−18·4	20	133	
		3106	0·805	113·6	295·1	−14·9	0	5	
		3106	0·812	114·7	294·8	−15·9	0	27	
		3106	0·813	112·9	294·2	−14·6	0	13	698*c*
		3106	0·824	115·4	293·8	−16·9	0	12	
		3106*b*	0·836	114·3	292·3	−16·4	7	55	
		3106	0·850	115·9	291·3	−18·2	4	23	
		3108	0·922	108·5	280·4	−14·4	3	13	136*c*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
214d·493	FT, JG	3110	0·946	116·5	278·4	−22·6	0	10	85*c*
			0·928	77·7	276·0	+13·7			230
			0·959	112·3	274·9	+19·3			273
Aug. 3		Centre			(344·7)	(+6·1)	(157)	(1013)	(3855)
215·511	JG, FT		0·941	288·2	42·2	+19·2			103
			0·936	248·5	37·4	−17·7			136
			0·876	296·1	31·9	+25·7			188
			0·864	234·6	22·9	−26·2			90
			0·754	305·9	16·5	+30·7			110
			0·812	225·9	13·4	−29·8			155
		3091*a*	0·993	243·7	50·6	−25·1	0	62	350*c*
		3100	0·989	249·1	49·8	−19·6	0	24	112*c*
		3091*b*	0·980	239·7	44·5	−28·0	13	101	132*c*
		3111	0·839	244·8	23·7	−17·2	0	4	
		3097	0·440	162·8	323·4	−18·6	0	4	
		3097*a*	0·424	159·7	322·5	−17·2	23	149	
		3097	0·457	160·2	321·9	−19·3	0	3	
		3097	0·444	157·6	321·1	−18·0	0	3	
		3102*a*	0·248	145·1	323·1	− 5·5	0	3	
		3098*a*	0·159	61·9	323·1	+10·4	12	98	
		3103*a*	0·477	139·5	312·6	−15·3	22	148	
		3105*a*	0·500	131·4	308·7	−13·5	5	32	
		3105	0·508	127·9	307·2	−12·5	8	32	
		3105	0·530	127·3	305·8	−13·1	0	6	
		3105	0·548	124·8	303·9	−12·7	0	6	
		3105	0·556	123·1	303·0	−12·2	2	12	
		3109*a*	0·529	107·1	301·0	− 3·6	28	91	
		3109	0·544	109·5	300·4	− 5·1	1	5	
		3109	0·545	104·0	299·5	− 2·3	4	13	
		3109	0·566	107·6	298·7	− 4·6	0	9	
		3109	0·582	108·7	297·8	− 5·6	0	7	
		3109	0·593	107·6	296·8	− 5·2	5	30	
		3109	0·586	104·0	296·7	− 3·0	3	13	
		3107	0·563	71·6	297·8	+15·4	12	52	
		3107	0·585	72·3	296·2	+15·3	0	3	
		3107	0·623	73·9	293·2	+14·9	3	17	
		3107	0·659	72·3	290·6	+16·3	17	82	
		3106*a*	0·673	125·5	296·3	−17·9	38	373	
		3106	0·672	121·5	294·9	−15·6	8	32	
		3106	0·669	119·8	294·6	−14·4	0	13	
		3106	0·688	122·2	294·1	−16·5	0	35	
		3106	0·714	126·4	293·7	−20·1	0	3	214*c*

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3106, August 2–13. A few small scattered spots on August 2, following Group 3105. The group rapidly increases in size, and by August 4 and 5 consists of two very large composite spots, *a* and *b*, connected and followed by a stream of small spots, of which *c* is the last. *a* is itself fairly regular, but a large nebulous area follows it closely and is sometimes measured with it. *b* is measured in two portions on August 9 and 13.

Group 3107, August 2–13. A few small spots on August 2 and 3. The group rapidly increases in size, and has become a straight stream by August 4. The first and last spots, *a* and *b*, are large and stable spots. The intermediate spots undergo great changes, and by August 9 form a curved stream, convex to the equator.

Group 3108, August 2–7. A spot which rapidly diminishes from day to day. A companion is seen near it on August 5. The group is not seen on August 6.

Group 3109, August 3–12. A small spot, with a very small companion on August 3. The group increases rapidly on the succeeding days, and consists of a large regular spot, *a*, followed by a very unstable stream of small spots.

Group 3110, August 3–5. A small spot.

Group 3111, August 4–5. A very small spot on August 4. A group of small spots on August 5.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
215d.511	JG, FT	3106	0·729	124·5	291·8	−19·6	0	10	
		3106*b*	0·719	120·0	291·0	−16·3	33	299	
		3106	0·739	122·4	290·3	−18·6	0	4	
		3106	0·756	121·7	288·6	−18·9	0	13	
		3106*c*	0·784	119·2	285·4	−18·2	0	3	83*c*
		3108	0·815	112·4	280·5	−14·2	3	10	62*c*
		3110	0·862	121·0	278·2	−22·7	0	10	80*c*
		3112*a*	0·993	73·6	246·6	+17·0	20	203	
			0·873	114·9	275·0	−18·2			198
			0·872	76·0	270·3	+15·2			148
			0·959	110·7	261·1	−17·8			106
Aug. 4		Centre			(331·3)	(+6·2)	(260)	(2017)	(2267)
216·418	CL, FT		0·938	295·3	29·4	+25·9			182
			0·942	239·8	23·7	+25·7			178
			0·884	231·3	11·7	+29·8			181
			0·807	301·2	10·9	+28·6			220
			0·777	292·4	9·4	+21·2			158
			0·803	235·0	6·0	−23·0			71
		3111	0·948	248·8	27·1	−17·8	9	21	211*c*
		3111	0·931	248·3	24·2	−17·6	2	11	
		3097	0·447	186·3	322·2	−20·1	0	2	
		3097*a*	0·406	186·6	322·1	−23·1	36	156	
		3097	0·417	183 6	320·8	−18·3	0	4	
		3097	0·407	182·6	320·3	−17·7	0	2	
		3102	0·217	211·0	325·6	− 4·6	0	8	
		3102	0·229	201·0	323·9	− 6·2	0	4	
		3102	0·216	197·1	322·9	− 5·7	0	3	
		3098*a*	0·094	317·3	322·9	+10·1	16	96	
		3103*a*	0·386	162·5	312·3	−15·3	27	145	
		3105	0·382	156·7	310·3	−14·3	2	7	
		3105	0·425	156·1	308·9	−16·7	0	5	
		3105*a*	0·386	150·9	308·1	−13·6	11	59	
		3105	0·377	148·8	307·7	−12·7	6	28	
		3105	0·439	152·6	307·1	−16·8	0	2	
		3105	0·394	147·4	306·7	−13·3	2	14	
		3105	0·409	143·6	304·8	−13·1	3	18	
		3105	0·433	145·8	304·7	−15·0	5	9	
		3105	0·394	141·1	304·6	−11·9	0	7	
		3105	0·414	139·8	303·4	−12·4	7	17	
		3109*a*	0·345	119·7	301·8	− 3·9	20	117	
		3109	0·355	116·1	300·7	− 3·1	3	9	
1893.									
216d.418	CL, FT	3109	0·361	117·8	300·6	− 3·8	0	14	
		3109	0·403	117·4	298·2	− 4·9	0	8	
		3109	0·392	109·9	297·7	− 1·9	1	3	132*c*
		3109	0·413	114·9	297·2	− 4·3	1	2	
		3109	0·424	117·4	297·1	− 5·5	1	3	
		3109	0·431	119 1	297·0	− 6·3	0	4	
		3109	0·425	113·7	296·4	− 4·1	0	4	
		3109	0·436	115·8	296·1	− 5·2	9	69	
		3107*a*	0·379	66·9	298·2	+14·3	10	50	
		3107	0·402	66·3	296·9	+15·0	3	9	
		3107	0·437	66·9	294·7	+15·5	28	88	
		3107	0·462	69·9	292·7	+14·7	0	4	
		3107	0·468	67·7	292·5	+15·8	1	3	
		3107	0·476	65·4	292·4	+16·9	0	6	
		3107	0·481	67·4	291·3	+19·0	6	17	
		3107	0·496	69·8	290·5	+15·3	6	17	
		3107	0·506	67·0	290·2	+16·8	4	12	
		3107*b*	0·523	68·2	288·9	+16·5	17	97	
		3105	0·518	134·5	296·7	−15·5	0	3	
		3106*a*	0·547	138·0	296·6	−18·2	112	605	
		3106	0·539	132·4	294·9	−15·6	1	4	
		3106	0·539	130·4	294·2	−14·8	1	20	
		3106	0·563	132·9	293·8	−16·9	7	68	
		3106	0·576	134·5	293·7	−18·1	4	12	98*c*
		3106	0·599	135·4	292·8	−19·7	1	4	
		3106	0·618	133·7	291·0	−19·8	14	40	
		3106*b*	0·600	128·7	290·1	−16·6	125	755	
		3106*c*	0·672	125·9	284·4	−18·1	7	17	
		3108	0·694	117·8	280·1	−14·1	2	4	
		3108	0·721	118·2	278·2	−15·3	4	8	
		3110	0·770	127·0	277·4	−23·0	2	9	101*c*
		3112*a*	0·955	74·1	245·6	+17·0	24	196	346*c*
		3113*a*	0·982	101·2	241·6	− 9·7	9	56	210*f*
			0·767	120 1	275·1	−18·1			190
			0·895	112·5	259·6	−16·9			223
			0·868	70·6	258·9	+19·9			182
			0·975	85·5	241·7	+ 5·8			106
Aug. 5		Centre			(319·2)	(+6·2)	(549)	(2955)	(2789)
217·454	M, JG		0·954	235·4	10·8	−30·3			141
			0·897	297·0	9·0	+27·0			217
			0·829	278·5	1·8	+10·6			87

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3112, August 4–15. A large regular spot, *a*, with a very small companion on August 8, and the two succeeding days. *a* has begun to divide by August 8, and breaks up rapidly after August 11.
Group 3113, August 5–16. A number of small unstable spots in an irregular stream. The stream is curved like a sickle on August 10. *a*, the leader, undergoes frequent changes.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	HELIOGRAPHIC		SPOTS.		FACULÆ.	Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	HELIOGRAPHIC		SPOTS.		FACULÆ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).						Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°				1893.				°	°	°			
217d.454	M, JG	3097*a*	0·486	213·7	321·9	−17·7	44	142	84*c*	217d.454	M, JG		0·926	117·3	242·9	−22·3			168
		3098*a*	0·309	283·4	323·2	+10·1	17	76					0·912	87·7	239·6	+ 4·7			224
		3103*a*	0·389	198·0	312·6	−15·4	24	140					0·917	80·1	238·5	+11·6			125
		3103	0·357	194·9	310·9	−13·8	0	4		Aug. 6		Centre			(305·5)	(+6·3)	(645)	(4064)	(2438)
		3105*a*	0·339	187·5	308·1	−13·3	17	127											
		3105	0·324	182·8	306·4	−12·6	0	3											
		3105	0·316	179·4	305·3	−12·1	0	11		218·493	JG, FT		0·937	298·2	1·6	+28·6			267
		3105	0·314	176·0	304·2	−11·9	0	3					0·736	239·0	333·0	−17·5			578
		3105	0·324	173·5	303·4	−12·4	4	9				3097	0·617	235·3	323·4	−15·1	0	2	162*c*
		3105	0·342	166·6	300·9	−13·1	0	12				3097	0·585	236·7	321·8	−13·1	0	2	
		3109*a*	0·185	164·6	302·7	− 4·0	24	102				3097*a*	0·612	229·8	321·1	−17·7	37	160	
		3109	0·223	164·2	302·0	− 6·0	0	2				3098*a*	0·515	278·6	322·8	+ 9·9	16	80	
		3109	0·177	159·3	301·9	− 3·2	0	3				3103	0·495	228·5	314·1	−13·2	0	2	
		3109	0·191	158·1	301·4	− 3·9	0	4				3103*a*	0·497	223·6	312·5	−15·0	26	132	
		3109	0·227	142·2	297·5	− 4·1	6	31				3105	0·456	222·5	310·0	−11·0	0	7	
		3109	0·253	145·0	297·1	− 5·7	1	6				3105*a*	0·434	219·6	308·2	−13·3	18	140	
		3109	0·257	142·3	296·5	− 5·5	3	12				3105	0·438	216·1	307·2	−14·5	0	11	
		3109	0·243	139·6	296·5	− 4·4	2	10				3105	0·439	213·5	306·3	−15·2	0	3	
		3109	0·256	137·9	295·6	− 4·7	4	11				3105	0·409	216·0	306·0	−13·1	3	12	
		3107*a*	0·157	35·2	299·8	+14·1	20	105				3105	0·429	211·6	305·2	−15·1	0	2	
		3107	0·214	43·2	296·8	+15·1	27	168				3105	0·389	215·7	305·2	−12·1	0	8	
		3107	0·238	46·4	295·2	+15·6	5	15				3105	0·411	211·8	304·6	−14·1	2	9	
		3107	0·234	49·9	294·9	+14·9	0	3				3105	0·370	211·0	303·0	−12·1	1	7	
		3107	0·242	55·3	293·7	+14·1	0	2				3105	0·386	208·1	302·5	−13·6	0	5	
		3107	0·270	52·4	292·7	+15·6	0	5				3109*a*	0·265	227·5	303·0	− 4·0	21	101	
		3107	0·268	57·4	292·1	+14·4	7	25				3109	0·214	204·4	296·9	− 4·8	12	103	
		3107	0·303	53·6	290·8	+16·5	16	74				3107*a*	0·211	310·5	301·3	+14·2	19	134	
		3107*b*	0·344	56·8	288·1	+16·8	24	171				3107	0·183	314·5	299·5	+13·7	12	62	
		3105*a*	0·447	163·0	297·6	−19·0	153	664				3107	0·211	324·5	299·1	+16·2	0	6	
		3106	0·377	156·4	296·6	−13·9	0	3				3107	0·160	309·6	299·0	+12·2	2	9	
		3106	0·374	152·3	295·3	−13·1	0	2				3107	0·174	324·3	297·8	+14·5	18	154	
		3106	0·384	153·1	295·2	−13·8	1	4				3107	0·173	343·4	294·7	+15·9	6	26	
		3106*b*	0·466	148·6	290·8	−17·3	205	1726				3107	0·158	343·7	294·4	+15·1	7	26	
		3106	0·482	140·0	286·8	−15·7	0	7				3107	0·177	353·1	293·1	+16·5	0	5	
		3106*c*	0·535	139·1	284·0	−17·9	6	18				3107	0·138	352·3	292·9	+14·2	0	2	
		3114	0·496	82·2	275·8	+ 9·3	0	4				3107	0·193	355·3	292·7	+17·4	0	2	
		3112*a*	0·864	73·8	245·5	+17·1	31	194	630*f*			3107	0·163	357·7	292·2	+15·7	9	42	
		3113*a*	0·905	103·6	242·6	− 9·5	4	51				3107	0·142	6·9	290·8	+14·4	8	32	
		3113	0·934	104·4	238·6	−11·0	0	13				3107	0·170	6·5	290·7	+16·1	9	29	
		3113	0·936	103·1	238·0	− 9·9	0	8	344*c*			3107	0·182	2·8	290·3	+16·9	0	8	
		3113	0·940	102·1	237·2	− 9·1	0	11				3107	0·194	8·2	290·1	+17·4	4	29	
		3115*a*	0·964	86·6	230·7	+ 5·0	0	37	345*f*			3107	0·179	10·7	289·8	+16·5	0	5	
		3116	0·986	75·9	224·0	+15·0	0	46				3107*b*	0·194	18·8	288·1	+16·9	37	217	
			0·769	120·8	263·9	−18·7			73			3107	0·143	0·0	283·3	+14·6	0	2	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3114. August 6–8. A very small spot on August 6. A short stream of small spots is seen north of the place of this spot on August 7. The leader of the stream alone remains on August 8.
Group 3115, August 6–10. A small regular spot, *a*, with a companion on August 7 and 8.
Group 3116, August 6–17. A pair of large spots, *a* and *b*. *a* becomes a regular spot, but *b* has broken up into a stream of small spots by August 10.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
218d.493	JG,FT	3106*a*	0·445	192·7	297·7	−19·3	141	636	
		3106*b*	0·408	179·1	291·4	−17·6	216	1967	
		3106	0·447	169·3	286·5	−19·6	0	7	
		3106	0·408	166·7	286·2	−16·9	0	3	
		3106*c*	0·422	161·6	283·8	−17·2	1	8	
		3108	0·409	145·8	278·2	−13·5	0	8	
		3114	0·276	63·5	277·2	+13·3	0	14	
		3114	0·283	68·5	276·2	+12·1	0	1	
		3114	0·405	68·0	269·1	+14·6	0	7	
		3112*a*	0·725	72·5	245·7	+17·1	25	200	210*c*
		3113*a*	0·780	107·6	243·1	− 9·5	15	41	
		3113	0·834	107·7	238·1	−10·9	0	9	232*c*
		3113	0·839	106·1	237·1	− 9·8	0	12	
		3117*a*	0·761	88·9	242·2	+ 5·0	0	23	
		3117*b*	0·779	87·6	240·5	+ 5·9	0	6	146*c*
		3115*a*	0·876	87·6	230·5	+ 5·2	18	69	203*f*
		3115	0·934	87·1	222·6	+ 5·0	0	15	
		3116*a*	0·901	75·0	227·0	+16·3	17	114	
		3116*b*	0·931	75·0	222·6	+16·3	12	90	500*c*
		3118*a*	0·986	107·6	214·0	−16·1	35	322	129*c*
			0·777	123·3	248·0	−20·7			77
			0·811	73·8	237·6	+16·9			283
			0·884	118·9	235·5	−21·8			226
			0·875	68·4	230·8	+21·9			100
Aug. 7		Centre			(291·8)	(+6·4)	(747)	(5128)	(3113)
219·417	HA,JG		0·944	279·4	350·9	+11·0			110
			0·803	281·7	333·3	+13·2			140
			0·628	285·5	318·2	+14·7			97
		3119	0·925	247·0	343·2	−18·4	0	6	
		3119	0·924	245·9	342·7	−19·3	3	16	380*f*
		3097*a*	0·743	238·4	321·2	−18·1	23	105	
		3097	0·744	235·7	320·3	−19·9	5	17	398*p*
		3097	0·719	238·0	319·2	−17·4	2	10	
		3098*a*	0·685	277·3	323·0	+ 9·7	15	63	82*c*
		3103	0·644	240·8	314·7	−13·0	0	2	
		3103*a*	0·634	235·7	312·4	−15·6	24	116	
		3120	0·623	229·2	309·3	−18·4	0	6	
		3105*a*	0·574	234·2	308·2	−14·0	17	129	255*c*
		3105	0·574	232·0	307·4	−15·0	3	15	
		3105	0·559	230·0	305·8	−15·3	0	4	
		3105	0·545	230·1	305·1	−14·6	0	6	
		3109*a*	0·443	246·6	303·6	− 4·3	16	109	
1893.				°	°	°			
219d.417	HA,JG	3109	0·402	243·8	300·7	− 4·3	3	13	
		3109	0·383	240·9	299·1	− 4·7	0	7	
		3109	0·368	239·9	298·1	− 4·6	6	23	
		3109	0·366	233·8	296·8	− 6·3	0	8	
		3109	0·352	235·8	296·5	− 5·3	0	26	
		3107*a*	0·391	290·5	301·7	+13·8	69	349	
		3107	0·339	295·8	297·9	+14·6	12	26	
		3107	0·302	300·6	295·1	+15·0	4	25	
		3107	0·252	303·5	292·1	+14·3	0	6	
		3107	0·261	307·4	292·0	+15·4	3	18	
		3107	0·258	312·2	291·0	+16·3	16	71	
		3107	0·234	309·6	290·3	+14·9	5	18	
		3107	0·252	319·9	289·3	+17·4	0	5	
		3107*b*	0·237	324·0	288·0	+17·3	41	233	
		3106*a*	0·527	213·8	297·7	−19·8	163	786	
		3106	0·432	221·5	296·6	−12·7	0	6	
		3106	0·454	215·3	295·3	−15·6	0	5	
		3106	0·488	209·3	294·2	−18·9	45	374	
		3106	0·450	210·9	293·5	−16·4	0	41	
		3106	0·424	211·3	292·7	−15·0	0	34	
		3106*b*	0·428	204·5	290·2	−16·5	195	983	
		3106	0·485	200·8	290·2	−20·6	7	54	
		3106	0·487	195·4	287·6	−21·5	0	4	
		3106	0·392	197·5	286·6	−15·5	4	19	
		3106	0·423	193·9	285·7	−17·8	0	4	
		3106*c*	0·410	190·0	283·9	−17·4	2	6	
		3114	0·116	19·3	277·4	+12·9	2	9	
		3112*a*	0·578	69·2	245·3	+17·1	25	194	
		3112	0·608	68·3	243·3	+18·2	0	5	
		3113*a*	0·643	112·5	242·8	− 9·1	13	37	
		3113	0·665	113·1	241·3	−10·1	0	3	117*c*
		3113	0·704	113·9	238·6	−11·8	0	6	
		3117*a*	0·595	90·8	243·1	+ 4·7	10	58	
		3117*b*	0·624	89·0	240·9	+ 5·6	3	10	59*c*
		3117	0·641	88·1	239·7	+ 6·2	0	2	
		3115*a*	0·760	88·2	230·0	+ 5·6	5	30	56*c*
		3115	0·832	87·9	223·2	+ 5·3	8	32	183*c*
		3116*a*	0·786	73·7	227·8	+16·8	17	114	
		3116*b*	0·846	74·9	221·6	+16·2	18	124	248*c*
		3118*a*	0·936	109·5	213·4	−15·7	50	344	
		3118	0·965	109·4	207·9	−16·8	0	49	775*c*
		3118	0·978	109·5	204·6	−17·5	0	49	
		3121*a*	0·954	73·4	206·1	+17·8	0	25	
		3121*b*	0·985	73·0	198·3	+17·8	0	27	280*c*

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3117, August 7–11. A pair of small spots, *a* and *b*. Others are occasionally seen forming with *a* and *b* a short stream. *a* has disappeared by August 11
Group 3118, August 7–19. A very large regular spot, *a*, with a number of attendants, mostly on the south side. *a* is involved in dense faculæ near the west limb, and is divided into two portions by a bright bridge on August 17.
Group 3119, August 8–9. Two small spots, measured together on August 9.
Group 3120, August 8. A very small spot.
Group 3121, August 8–12. Two small spots, *a* and *b*. A third is seen on August 9.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
219d.417	HA,JG		0·788	66·0	228·5	+22·8			72
			0·923	68·3	211·7	+22·5			216
Aug. 8		Centre			(279·6)	(+6·4)	(834)	(4846) 4866	(3468)
220·430	M, CL		0·913	281·4	332·7	+13·1			113
			0·845	256·2	322·0	− 8·0			441
			0·792	283·5	318·7	+14·6			332
			0·804	238·0	312·9	−20·8			548
		3119	0·984	250·9	343·0	−17·4	0	36	666*nf*
		3097*a*	0·864	244·6	321·2	−18·1	8	53	299
		3098*a*	0·827	278·1	322·3	+10·3	6	62	94*c*
		3103*a*	0·775	244·5	312·4	−15·0	16	129	} 285*c*
		3105	0·744	244·5	309·8	−14·0	0	3	
		3105*a*	0·718	243·6	307·5	−13·7	9	67	
		3105	0·718	242·1	307·0	−14·7	0	7	
		3109*a*	0·627	255·2	303·5	− 4·1	19	105	
		3109	0·598	254·5	301·3	− 3·9	4	18	
		3109	0·584	253·6	300·2	− 4·1	0	3	
		3109	0·551	252·4	297·8	− 4·0	5	18	
		3109	0·545	249·7	297·0	− 5·3	0	15	
		3109	0·529	252·3	296·4	− 3·6	0	4	
		3107*a*	0·592	284·7	302·2	+13·9	57	317	
		3107*a*	0·557	285·8	299·6	+14·1	5	21	
		3107	0·539	283·3	298·6	+12·6	0	7	
		3107	0·515	285·0	296·8	+13·2	0	5	
		3107	0·484	286·4	294·6	+13·6	1	6	
		3107	0·480	289·7	294·0	+15·1	10	41	
		3107	0·459	286·0	293·0	+13·0	1	4	
		3107	0·445	289·5	291·8	+14·4	7	45	
		3107	0·457	295·4	291·7	+17·1	0	4	
		3107	0·439	293·5	290·8	+16·0	6	63	
		3107	0·411	293·1	289·2	+15·2	1	4	
		3107	0·415	296·2	289·0	+16·5	10	40	
		3107*b*	0·405	300·8	287·6	+18·0	42	211	
		3106*a*	0·631	228·5	296·1	−19·0	213	1179	
		3106	0·562	230·0	292·6	−15·3	0	36	
		3106	0·567	226·2	291·5	−17·2	7	228	
		3106	0·582	219·5	289·4	−20·6	0	29	
		3106*b*	0·520	226·1	288·9	−15·1	93	443	
		3106*b*	0·537	221·0	287·8	−17·8	84	375	
		3106	0·492	218·8	284·9	−16·3	2	28	
		3106*c*	0·489	215·6	283·5	−17·1	1	9	
		3122	0·450	228·7	286·3	−11·1	4	10	
1893.				°	°	°			
220d.430	CL, M	3112*a*	0·389	61·1	245·4	+16·9	34	193	
		3112	0·417	61·7	243·7	+17·4	0	2	
		3113*a*	0·470	122·9	242·8	− 8·8	6	23	
		3113	0·497	123·6	241·4	−10·0	8	35	
		3113	0·508	121·2	240·2	− 9·4	2	6	
		3113	0·538	121·0	238·4	−10·3	0	4	
		3113	0·549	123·2	238·3	−11·8	5	22	
		3117*a*	0·372	94·9	244·5	+ 4·2	3	11	
		3117	0·385	93·0	243·6	+ 4·9	1	10	
		3117*b*	0·419	91·2	241·4	+ 5·4	8	31	
		3115*a*	0·581	90·0	230·7	+ 5·3	3	9	
		3116*a*	0·617	71·1	228·8	+16·7	21	103	154*c*
		3116*b*	0·707	73·3	221·5	+16·4	16	99	162*c*
		3118*a*	0·842	113·9	213·1	−16·1	71	380	} 812*c*
		3118	0·853	116·2	212·7	−18·3	0	9	
		3118	0·866	114·4	210·7	−17·3	8	34	
		3118	0·889	113·1	207·6	−17·1	0	4	
		3121*a*	0·860	73·1	206·6	+17·8	3	17	} 351*c*
		3121*b*	0·917	74·1	199·1	+17·2	8	34	
		3121	0·931	73·2	196·9	+18·0	0	5	
			0·826	66·5	211·0	+23·0			278
			0·936	107·0	199·5	−13·4			88
Aug. 9		Centre			(266·2)	(+6·5)	(808)	(4656)	(4623)
221·445	HA,CL		0·943	257·6	321·5	− 9·4			503
			0·874	287·9	313·9	+18·8			118
			0·904	242·8	312·1	−21·2			590
			0·891	234·9	307·5	−27·2			1458
		3097*a*	0·950	248·3	320·9	−18·2	0	36	236*c*
		3098*a*	0·934	279·0	322·4	+10·7	10	30	166*n*
		3103*a*	0·893	249·2	312·4	−15·3	20	101	} 313*c*
		3105*a*	0·848	249·1	307·2	−13·9	8	27	
		3109*a*	0·791	259·3	303·7	− 4·4	15	89	} 243*c*
		3109	0·774	260·1	302·3	− 3·4	2	25	
		3109	0·740	257·1	298·9	− 5·0	0	5	
		3109	0·726	258·1	297·9	− 4·0	2	10	
		3109	0·708	257·7	296·4	− 4·0	0	9	
		3107*a*	0·764	282·6	302·6	+13·8	53	352	}
		3107	0·750	284·9	301·3	+15·4	2	15	
		3107	0·730	281·5	299·7	+12·8	4	21	
		3107	0·707	281·9	297·7	+13·0	7	71	
		3107	0·690	283·3	296·3	+13·9	0	8	
		3107	0·663	284·8	294·0	+14·6	7	23	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3122, August 9–11. A small spot.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
221d.445	HA,CL	3107	0·641	288·5	291·9	+16·8	0	3	211*c*
		3107	0·633	285·2	291·7	+14·6	3	21	
		3107	0·622	287·0	290·7	+15·6	8	48	
		3107	0·610	284·8	290·0	+14·0	0	4	
		3107	0·612	289·8	289·6	+17·2	0	8	
		3107	0·601	288·6	289·0	+16·3	9	42	
		3107*b*	0·588	292·2	287·5	+18·2	29	181	
		3106*a*	0·753	237·6	294·8	−19·0	173	1303	
		3106	0·764	233·7	294·2	−22·0	0	5	
		3106	0·732	232·3	291·0	−21·5	0	4	
		3106	0·719	232·6	290·2	−20·7	0	29	
		3106	0·703	232·1	288·8	−20·3	0	9	333*c*
		3106*b*	0·677	236·1	288·5	−16·9	172	774	
		3106	0·692	231·6	287·8	−20·1	2	11	
		3106	0·635	235·9	285·6	−15·4	4	14	
		3122	0·637	243·8	288·2	−11·0	2	6	
		3123	0·118	30·6	249·2	+12·3	2	5	
		3123	0·124	40·1	248·0	+11·9	0	2	
		3123	0·119	67·2	246·4	+ 9·1	0	2	
		3112*a*	0·215	33·9	245·5	+16·7	20	152	
		3112	0·273	32·8	243·7	+19·6	1	3	
		3113*a*	0·319	146·2	242·4	− 8·9	7	18	
		3113	0·334	145·8	241·8	− 9·6	10	26	
		3113	0·330	142·9	241·1	− 8·8	12	26	
		3113	0·333	139·7	240·2	− 8·3	0	19	
		3113	0·415	143·9	238·2	−13·3	0	2	
		3113	0·379	138·7	238·0	−10·2	16	48	
		3113	0·401	141·7	238·0	−12·0	4	11	
		3117*a*	0·146	108·1	244·7	+ 3·8	1	6	
		3117	0·169	101·2	243·1	+ 8·3	1	10	
		3117*b*	0·201	95·2	241·2	+ 5·3	2	6	
		3115*a*	0·376	92·1	230·6	+ 5·2	3	5	
		3116*a*	0·427	63·6	229·3	+16·9	16	110	
		3116	0·470	65·6	226·2	+17·0	8	23	121*c*
		3116	0·505	68·1	223·6	+16·5	4	11	
		3116	0·533	69·5	221·5	+16·3	6	32	
		3118	0·710	123·8	214·5	−18·1	4	22	
		3118*a*	0·716	120·6	212·9	−16·4	60	435	447*f*
		3118	0·741	121·6	211·3	−18·0	13	131	
		3121*a*	0·729	71·9	206·3	+17·6	3	11	406*c*
		3121*b*	0·803	73·6	199·2	+17·0	3	19	
			0·905	98·9	189·1	− 5·2			155
			0·946	120·2	187·7	−25·8			175
Aug. 10		Centre			(252·7)	(+6·5)	(728)	(4419)	(5475)

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
222d.426	HA,JG		0·958	285·6	314·0	+16·7			144
			0·954	245·7	308·0	−20·8			447
			0·878	250·0	297·9	−14·0			217
		3098	0·991	280·4	323·0	+11·2	0	59	97*s*
		3103*a*	0·967	252·4	312·3	−15·1	6	69	316*f*
		3109*a*	0·908	262·8	304·0	− 4·2	17	91	
		3109	0·855	262·5	297·7	− 2·9	0	9	367*c*
		3107*a*	0·889	282·3	303·1	+13·9	59	447	
		3107	0·871	282·3	300·8	+13·9	0	10	
		3107	0·862	280·6	299·8	+12·5	0	7	
		3107	0·847	281·7	298·1	+13·4	11	117	393*c*
		3107	0·847	284·4	298·0	+15·7	0	11	
		3107	0·819	283·4	295·1	+14·7	5	23	
		3107	0·785	283·9	291·7	+15·0	0	9	
		3107	0·784	285·6	291·5	+16·3	0	19	
		3107	0·769	287·1	289·9	+17·3	0	7	
		3107	0·767	285·0	289·9	+15·7	0	38	303*c*
		3107	0·758	287·9	288·9	+17·8	0	8	
		3107	0·752	286·1	288·5	+16·4	0	3	
		3107*b*	0·751	289·4	288·0	+18·9	28	153	
		3106*a*	0·882	243·8	296·6	−19·4	177	881	
		3106	0·845	243·3	292·3	−18·3	15	370	1032*c*
		3106*b*	0·803	243·5	288·2	−16·6	155	681	
		3106	0·817	239·4	288·2	−20·2	0	6	
		3122	0·798	250·9	289·8	−10·9	0	8	102*f*
		3124*a*	0·671	212·1	263·6	−28·5	10	73	
		3124	0·664	209·6	261·8	−29·0	0	4	
		3124	0·636	210·3	260·8	−27·0	10	32	
		3124	0·649	207·3	259·6	−28·9	0	3	96*c*
		3123	0·712	302·1	250·4	+12·9	0	6	
		3125	0·228	321·9	248·2	+16·8	0	4	
		3125	0·439	338·7	245·1	+19·4	0	2	
		3112*a*	0·200	333·5	245·1	+16·8	23	135	
		3113	0·272	190·6	242·7	− 8·8	1	8	
		3113*a*	0·277	186·9	241·7	− 9·3	18	108	
		3113	0·284	175·4	238·5	− 9·8	10	34	
		3113	0·303	172·1	237·4	−10·8	0	27	
		3117*b*	0·039	244·1	241·8	+ 5·6	0	6	
		3117	0·024	230·4	240·9	+ 5·7	0	6	
		3116*a*	0·253	42·3	229·6	+17·2	16	102	
		3116	0·293	50·4	226·2	+17·1	4	15	
		3116	0·313	51·7	224·9	+17·5	0	4	
		3116	0·282	65·9	224·6	+13·0	3	9	
		3116	0·321	54·7	224·0	+17·0	0	8	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3123, August 10–11. A few very small spots in a straggling stream. Only the leader remains by August 11.
Group 3124, August 11–15. A few spots, mostly small, in a short stream. The leader, *a*, is the largest on August 11.
Group 3125, August 11–14. A few very small spots near Group 3112. The group is not seen on August 13. A fresh and more considerable outbreak has taken place by August 12.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
222d.426	HA,JG	3116	0·321	60·4	223·0	+15·4	0	4	
		3116	0·334	56·1	223·0	+17·0	3	12	
		3116	0·354	61·1	221·1	+16·1	0	3	
		3116	0·410	69·7	216·5	+14·2	0	6	
		3118	0·566	134·7	215·0	−17·4	2	9	
		3118	0·582	134·3	214·0	−18·0	0	3	
		3118*a*	0·583	130·5	212·4	−16·3	62	386	
		3118	0·607	132·6	211·8	−18·4	7	56	
		3118	0·625	130·9	210·1	−18·4	2	35	
		3121*a*	0·579	68·4	205·5	+17·8	0	7	
		3121*b*	0·663	71·3	198·8	+17·3	0	12	
		3126	0·943	79·9	168·6	+11·7	0	7	146*f*
			0·817	101·7	186·5	− 5·6			81
			0·892	124·1	184·5	−26·3			138
			0·949	105·9	170·6	−12·8			188
Aug. 11		Centre			(239·8)	(+6·6)	(644)	(4152)	(4067)
223·522	CL,JG		0·875	292·3	286·4	+22·7			129
			0·778	284·4	276·4	+15·2			166
			0·805	238·1	272·1	−20·7			194
		3109*a*	0·982	264·3	303·5	− 4·3	10	59	343*f*
		3107*a*	0·974	282·5	303·2	+13·6	106	515	781*c*
		3107	0·940	283·0	296·1	+14·4	15	115	
		3107*b*	0·886	288·1	288·1	+19·1	13	94	
		3105*a*	0·956	248·0	294·5	−18·7	158	1000	813*c*
		3106*b*	0·915	248·2	287·7	−16·9	112	631	
		3124*a*	0·785	225·6	264·7	−28·2	10	52	
		3124	0·773	223·7	262·7	−28·7	11	68	
		3124	0·736	223·9	260·0	−26·6	3	26	264*c*
		3124	0·743	221·3	259·1	−28·4	0	6	
		3124	0·746	220·0	258·5	−29·3	14	46	
		3125	0·412	297·4	247·7	+17·0	0	6	
		3125	0·407	301·1	246·7	+18·3	0	6	
		3112*a*	0·373	299·2	245·1	+16·7	20	90	
		3112	0·369	308·1	243·1	+19·4	4	13	
		3112	0·348	303·1	243·0	+17·2	3	21	
		3112	0·338	300·9	242·8	+16·3	0	5	
		3112	0·346	305·6	242·4	+17·9	0	6	
		3112	0·346	308·4	241·9	+18·7	0	6	
		3113*a*	0·393	227·7	242·3	− 9·0	17	78	
		3113	0·359	219·8	238·7	− 9·5	3	9	
		3113	0·370	216·6	238·2	−10·8	0	47	
		3116*a*	0·205	335·8	230·3	+17·3	13	76	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
223d.522	CL,JG	3116	0·208	347·1	228·1	+18·2	4	10	
		3116	0·193	349·7	227·4	+17·5	6	28	
		3116	0·211	355·7	226·3	+18·7	0	2	
		3116	0·172	8·9	223·7	+16·3	1	9	
		3116	0·175	8·7	223·7	+16·5	1	5	
		3116	0·194	10·0	223·3	+17·6	3	11	
		3116	0·161	17·9	222·4	+15·4	2	5	
		3116	0·196	14·7	222·3	+17·5	0	3	
		3118	0·421	158·4	216·0	−16·4	0	9	
		3118*a*	0·446	150·5	212·1	−16·3	74	412	
		3118	0·474	151·8	211·7	−18·2	3	46	
		3118	0·429	146·7	211·3	−14·5	0	12	186*c*
		3118	0·452	145·3	209·9	−15·4	0	24	
		3118	0·498	149·0	209·6	−18·8	2	7	
		3118	0·486	147·2	209·3	−17·7	4	32	
		3121*a*	0·373	57·6	206·1	+17·7	3	11	
		3121*b*	0·467	64·7	199·2	+17·4	0	4	
		3126	0·821	79·9	169·8	+12·0	0	16	161*f*
		3127	0·978	68·1	145·8	+22·7	0	34	220*c*
			0·801	129·9	182·3	−26·1			131
			0·865	110·2	168·8	−13·8			135
Aug. 12		Centre			(225·3)	(+6·6)	(615)	(3655)	(3523)
224·501	JG,FT		0·898	282·4	276·8	+14·1			224
			0·915	246·1	274·1	−18·7			64
			0·843	253·3	267·2	−10·2			58
		3106*a*	0·994	250·6	293·1	−18·3	0	458	
		3106*b*	0·979	252·5	287·9	−15·5	45	262	317*c*
		3106*b*	0·975	250·1	286·3	−17·6	83	370	
		3107*b*	0·967	288·3	288·7	+19·4	0	28	624*s*
		3124*a*	0·880	232·2	264·5	−28·6	12	160	
		3124	0·856	228·3	259·9	−30·2	0	12	270*c*
		3124	0·839	227·9	257·9	−29·6	10	84	
		3128	0·703	232·3	248·5	−20·0	0	7	
		3128	0·684	230·8	246·5	−20·0	2	11	
		3112*a*	0·550	290·0	244·8	+16·5	6	42	
		3112	0·524	293·0	242·6	+17·6	0	17	
		3113*a*	0·565	242·6	242·7	− 9·2	15	58	
		3113	0·524	238·3	239·1	−10·0	0	20	
		3113	0·521	236·6	238·5	−10·6	0	19	
		3116*a*	0·357	301·6	230·8	+17·1	12	77	
		3116	0·339	306·1	229·0	+17·9	5	21	
		3118*a*	0·396	179·6	212·1	−16·5	86	441	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3126, August 11–14. A small regular spot.
Group 3127, August 12–16. A small regular spot with a very small companion on August 14.
Group 3128, August 13. A pair of small spots.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
224d·501	JG,FT	3118	0·422	173·8	209·6	−18·0	0	24	
		3118	0·400	165·5	206·3	−16·0	0	6	
		3126	0·670	79·4	170·1	+12·1	6	19	157*f*
		3127	0·910	68·1	146·3	+22·7	8	48	65*f*
			0·742	112·8	168·0	−22·5			78
Aug. 13		Centre			(212·3)	(+6·7)	(290)	(2184)	(1857)
225·456	HA,JG		0·978	239·8	272·2	−27·6			66
			0·927	284·6	268·5	+16·0			145
			0·940	258·2	268·1	− 8·6			68
			0·940	244·3	265·0	−21·3			151
		3124*a*	0·949	237·0	264·4	−28·4	28	142	246*c*
		3124	0·932	236·8	261·3	−27·6	3	39	
		3124	0·927	234·0	259·4	−29·7	0	11	80*c*
		3124	0·915	233·7	257·4	−29·3	8	58	
		3125	0·763	286·2	249·5	+16·7	0	10	
		3125	0·757	287·0	248·9	+17·2	0	6	
		3125	0·738	286·9	247·2	+16·9	3	27	190*c*
		3112*a*	0·706	286·9	244·4	+16·6	1	19	
		3112	0·681	288·7	242·2	+17·6	0	5	
		3113*a*	0·723	250·2	243·2	− 9·3	15	66	166*c*
		3116*a*	0·537	291·8	231·1	+17·2	9	61	59*c*
		3116	0·518	293·7	229·5	+17·8	2	9	
		3129	0·429	317·8	218·2	+24·8	3	10	
		3129	0·435	321·2	217·4	+26·1	0	3	
		3118*a*	0·446	207·6	212·2	−16·6	80	438	
		3118	0·457	202·5	210·4	−18·3	0	12	
		3126	0·492	77·1	170·5	+12·1	1	7	
		3130	0·572	82·9	164·8	+ 9·5	0	6	
		3130	0·582	80·5	164·2	+11·0	0	8	
		3127	0·812	66·6	146·1	+22·8	4	25	122*f*
		3127	0·846	66·4	142·3	+23·5	0	7	
		3131*a*	0·989	102·6	120·2	−11·3	31	285	219*c*
		3131	0·992	100·6	118·6	− 9·5	0	50	
Aug. 14		Centre			(199·8)	(+6·7)	(188)	(1304)	(1512)
226·506	CL,HA		0·934	244·9	250·1	−20·5			267
			0·839	271·6	242·9	+ 5·0			275
			0·789	285·5	238·0	+16·4			255
		3124	0·987	239·6	261·2	−28·4	0	113	
		3124	0·974	238·2	256·5	−28·8	0	20	456*c*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
226d·506	CL,HA	3112	0·903	285·5	251·0	+16·9	3	24	217*c*
		3112	0·873	285·2	247·1	+16·6	1	12	
		3113*a*	0·861	255·0	243·0	− 9·2	9	46	258*f*
		3116*a*	0·716	287·5	231·2	+17·2	10	54	54*c*
		3129	0·588	302·1	218·7	+23·9	0	6	
		3118*a*	0·574	227·5	211·9	−16·7	73	457	121*c*
		3118	0·572	222·5	209·8	−18·7	4	17	
		3130	0·314	81·5	167·5	+ 9·1	5	25	
		3130	0·345	84·1	165·6	+ 8·4	0	3	
		3130	0·348	81·0	165·5	+ 9·5	0	3	
		3130	0·373	77·7	164·1	+10·9	2	8	
		3127	0·661	62·9	146·3	+22·8	6	19	129*c*
		3132	0·742	117·4	143·0	−15·0	3	12	
		3132	0·778	116·9	139·8	−15·9	0	7	82*c*
		3131*a*	0·925	105·4	120·5	−11·4	28	232	
		3131	0·931	103·6	119·3	−10·0	8	51	507*nf*
		3131	0·945	104·5	117·1	−11·3	10	64	
		3133*a*	0·993	101·5	104·3	−10·5	0	79	
			0·861	82·9	126·0	+ 9·6			94
			0·932	126·9	125·8	−30·8			206
			0·987	109·6	108·1	−18·0			146
Aug. 15		Centre			(185·8)	(+6·8)	(162)	(1252)	(3067)
227·416	CL,FT		0·944	284·4	245·4	+15·8			389
			0·936	272·7	243·4	+ 4·9			169
			0·883	282·4	236·4	+14·1			210
			0·900	239·4	231·4	−23·7			82
			0·813	294·0	227·4	+23·4			103
			0·795	272·6	226·6	+ 6·2			271
			0·784	285·4	225·5	+16·3			256
		3113*a*	0·943	257·7	242·5	− 9·2	0	16	501*c*
		3116*a*	0·839	286·0	231·1	+17·1	9	36	61*c*
		3118*a*	0·696	237·5	211·4	−16·6	69	496	143*c*
		3118	0·700	233·2	210·1	−19·3	0	14	
		3130	0·095	61·3	169·0	+ 9·4	5	14	
		3130	0·113	67·4	167·7	+ 9·2	0	13	
		3130	0·152	76·5	165·2	+ 8·7	2	17	
		3130	0·184	62·8	164·2	+11·5	1	6	
		3127	0·519	55·2	146·3	+23·2	0	8	
		3131*a*	0·832	108·1	120·3	−11·0	38	285	
		3131	0·861	107·2	117·1	−11·1	6	45	566*c*
		3131	0·868	103·0	115·4	− 7·7	0	6	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3129, August 14–15. Two very small spots on August 14 ; one on August 15.

Group 3130, August 14–22. A pair of very small spots on August 14. The group undergoes considerable changes on the succeeding days, and by August 18 consists of two parallel streams of small spots, both of which are sharply inclined to the equator. The leading spot on August 19, *a*, increases in size, and the following spots diminish and die out.

Group 3131, August 14–25. A large spot, *a*, which appears to continually throw off small spots on its *nf* side. It diminishes rapidly after August 19.

Group 3132, August 15. A pair of small spots.

Group 3133, August 15–27. A large regular spot, *a*, with occasionally one or two very small companions. A short straight stream of small spots is seen south of *a* on August 23, and the succeeding days.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
227d·416	CL,FT	3134	0·926	112·6	110·1	−17·9	0	17	
		3133*a*	0·952	103·4	103·7	−10·5	53	237	408*c*
		3135*a*	0·975	111·5	100·2	−19·1	0	213	496*c*
		3136	0·975	102·9	98·6	−10·9	0	29	
			0·911	128·6	117·9	−30·9			188
Aug. 16		Centre			(173·8)	(+6·8)	(183)	(1452)	(3843)
228·444	HA,JG		0·978	277·0	238·8	+ 8·3			119
			0·974	255·7	234·9	−12·2			65
			0·965	243·8	230·2	−23·0			125
			0·899	273·7	224·5	+ 6·4			228
			0·716	293·3	204·9	+21·4			242
		3116*a*	0·937	286·1	230·6	+17·5	7	21	850*c*
		3118*a*	0·828	245·8	211·7	−15·6	38	258	
		3118*a*	0·833	243·2	211·4	−17·8	10	127	
		3118	0·835	241·2	210·9	−19·4	0	16	567*c*
		3118	0·815	244·3	209·9	−16·3	0	5	
		3118	0·823	240·8	209·6	−19·2	2	24	
		3130	0·172	285·3	169·8	+ 9·4	1	10	
		3130	0·153	286·2	168·7	+ 9·3	5	13	
		3130	0·118	287·6	166·7	+ 8·9	0	3	
		3130	0·089	288·2	164·1	+ 8·5	1	20	
		3131*a*	0·697	114·2	119·9	−11·3	33	292	
		3131	0·721	113·4	117·9	−11·5	5	30	268*c*
		3131	0·732	112·0	116·6	−10·9	0	4	
		3133*a*	0·856	107·6	104·1	−11·2	43	291	306*c*
		3135*a*	0·885	115·4	102·8	−18·6	42	243	
		3135	0·919	114·5	98·0	−19·3	0	15	475*c*
		3135	0·936	115·0	95·5	−20·4	0	31	
		3136	0·903	105·5	98·1	−10·8	0	39	214*c*
		3137*a*	0·960	103·4	88·5	−10·7	77	219	1758
		3138	0·953	82·5	87·3	+ 9·2	4	17	151*c*
			0·826	117·2	109·9	−17·8			170
			0·979	115·3	86·3	−23·0			110
			0·991	63·8	75·7	+26·8			205
Aug. 17		Centre			(160·2)	(+6·9)	(268)	(1678)	(4270)
229·415	JG,FT		0·967	286·6	223·9	+17·8			373
			0·948	276·9	219·4	+ 8·8			122
			0·833	289·4	203·9	+20·0			389
1893.									
229d·415	JG,FT	3118*a*	0·924	249·8	211·4	−15·7	36	256	
		3118*a*	0·926	247·7	211·2	−17·6	0	28	807*s*
		3118	0·914	250·3	210·1	−14·9	0	53	
		3130	0·397	275·0	170·8	+ 8·3	0	2	
		3130*a*	0·374	277·8	169·4	+ 9·3	22	121	
		3130	0·352	282·5	167·8	+10·8	5	15	
		3130	0·345	274·0	167·6	+ 7·9	0	4	
		3130	0·341	287·5	166·7	+12·4	0	5	
		3130	0·328	280·4	166·4	+10·0	0	7	
		3130	0·294	283·5	164·2	+10·6	4	16	
		3130	0·292	287·3	163·9	+11·6	3	9	
		3131*a*	0·546	124·6	120·2	−11·9	39	233	
		3131	0·537	121·5	119·8	−10·1	6	39	180*c*
		3131	0·564	119·9	117·7	−10·3	4	18	
		3139*a*	0·759	136·7	111·4	−27·9	16	61	
		3139	0·752	133·1	110·1	−25·4	0	10	
		3139	0·776	134·9	109·1	−27·8	5	26	95*c*
		3139	0·801	136·8	108·1	−30·4	11	32	
		3133*a*	0·722	112·5	104·8	−11·0	43	262	166*c*
		3135*a*	0·774	120·9	103·1	−18·5	31	284	
		3135	0·813	119·3	99·0	−18·9	11	59	
		3135	0·841	120·6	96·7	−21·1	0	14	623*c*
		3135	0·854	119·3	94·9	−20·6	0	40	
		3135	0·854	117·7	94·4	−19·3	5	23	
		3136	0·791	109·3	98·1	−10·7	0	20	
		3136	0·798	108·3	97·3	−10·1	0	9	182*c*
		3137*a*	0·874	106·2	89·0	−10·6	38	277	549*s*
		3138	0·859	83·3	87·8	+ 9·3	5	22	106*nf*
		3140	0·974	80·4	69·7	+10·9	0	26	116*c*
			0·775	144·5	115·0	−33·2			128
			0·918	117·4	86·2	−21·8			360
			0·949	62·1	75·0	+28·6			264
Aug. 18		Centre			(147·4)	(+6·9)	(284)	(1971)	(4460)
230·453	CL,HA		0·923	288·5	201·8	+19·7			324
		3118*a*	0·983	252·1	210·4	−16·1	18	78	579*sf*
		3141	0·682	242·8	172·0	−12·7	6	20	
		3141	0·666	241·6	170·5	−12·9	0	5	
		3141	0·649	243·3	169·8	−11·4	4	17	112*c*
		3141	0·657	238·8	169·0	−14·3	1	5	
		3141	0·638	240·8	168·3	−12·4	8	17	
		3130*a*	0·592	277·0	170·1	+ 9·7	28	157	
		3130	0·565	278·6	168·2	+10·6	0	8	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Faculæ unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3134, August 16. A small spot.

Group 3135, August 16–26. A large irregular spot, *a*, followed by a very long straggling stream of nebulous and unstable spots. The spots in the middle of the stream have died out by August 21, leaving a few spots at a considerable distance from *a*. The preceding portion of the stream consists chiefly of a considerable spot, *b*, to the north of *a*.

Group 3136, August 16–22. A few very small spots lying between Groups 3133 and 3137, and in the same latitude, and almost uniting them.

Group 3137, August 17–28. A large regular spot, *a*, with occasionally one or two small companions. A portion of *a* is cut off from the main body of the spot by a bright bridge on August 19, and is measured separately.

Group 3138, August 17–21. A small spot.

Group 3139, August 18–26. An irregular stream of spots, of which the leader, *a*, is the largest. The following spots have all died out by August 23, leaving *a* as an isolated regular spot.

Group 3140, August 18–26. A number of spots, mostly small, in an irregular straggling stream. The group diminishes suddenly after August 23, and again after August 25, the leader, *a*, and a very small companion alone remaining on August 26.

Group 3141, August 19–21. A number of small spots in an irregular group suddenly appearing near the West limb.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
230d·453	CL,HA	3130	0·551	281·1	167·1	+11·8	5	34	
		3130	0·531	283·8	165·5	+13·1	0	3	
		3130	0·522	273·7	165·3	+ 7·8	0	3	
		3130	0·517	278·2	164·9	+10·2	0	10	
		3130	0·513	283·2	164·4	+12·7	2	7	
		3130	0·505	275·3	164·1	+ 8·6	2	10	
		3130	0·497	279·9	163·5	+10·9	15	62	
		3130	0·490	276·8	163·1	+ 9·3	0	3	
		3131	0·374	141·3	120·0	−10·2	5	27	
		3131*a*	0·401	144·5	120·0	−12·3	32	239	
		3131	0·387	135·1	117·7	− 9·2	0	3	125*c*
		3131	0·405	137·3	117·5	−10·6	0	19	
		3131	0·432	139·6	117·1	−12·5	0	3	
		3139*a*	0·663	148·8	110·9	−28·1	20	141	
		3139	0·638	145·0	110·0	−25·1	4	10	
		3139	0·703	147·7	108·1	−30·1	0	3	
		3139	0·695	146·9	108·0	−29·3	0	4	169*c*
		3139	0·684	145·6	107·8	−28·1	17	64	
		3139	0·718	146·8	106·6	−30·7	0	5	
		3133*a*	0·557	121·2	104·8	−10·7	50	255	
		3133	0·571	118·4	103·2	− 9·8	0	5	
		3135*a*	0·642	130·3	102·7	−18·6	33	288	
		3135	0·678	130·8	100·6	−20·4	3	16	
		3135	0·684	127·3	98·8	−18·8	16	113	250*c*
		3135	0·740	127·4	94·7	−21·4	8	65	
		3135	0·737	124·3	93·7	−19·2	3	7	
		3136	0·615	116·8	99·9	−10·3	2	8	
		3136	0·618	114·0	99·0	− 8·9	0	3	
		3137	0·750	114·7	89·4	−13·3	0	4	
		3137	0·746	112·1	89·0	−11·4	3	20	
		3137*a*	0·743	110·1	88·8	− 9·9	35	207	150*c*
		3137	0·766	112·0	87·3	−11·9	0	11	
		3138	0·717	82·3	87·6	+10·3	14	38	
		3142	0·786	121·2	88·5	−19·2	0	3	
		3142	0·820	119·8	84·8	−19·5	0	4	114*c*
		3140*a*	0·903	81·9	68·7	+10·3	8	19	
		3140	0·941	80·7	62·8	+11·1	6	36	
		3140	0·946	78·7	61·9	+12·9	0	10	552*c*
		3140	0·954	80·0	60·4	+11·6	5	23	
		3143	0·994	81·5	49·2	+ 9·2	23	138	459*c*
			0·905	123·6	76·6	−26·4			281
			0·906	116·0	73·8	−20·0			294
			0·907	62·1	68·5	+28·2			371
Aug. 19		Centre			(133·7)	(+6·9)	(376)	(2230)	(3780)

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
231d·366	JG,FT		0·969	286·6	198·6	+17·8			438
			0·915	237·1	180·4	−26·2			44
		3141	0·822	249·2	173·5	−12·7	18	88	
		3141	0·803	250·1	171·9	−11·4	9	38	
		3141	0·803	248·3	171·4	−12·8	3	8	232*c*
		3141	0·779	246·7	168·8	−13·2	5	15	
		3141	0·773	247·8	168·6	−12·2	4	13	
		3130*a*	0·753	277·2	170·8	+10·0	25	180	
		3130	0·746	280·0	170·2	+12·1	0	8	
		3130	0·737	277·7	169·5	+10·4	3	14	
		3130	0·722	279·3	168·2	+11·6	4	18	
		3130	0·695	280·1	166·2	+13·4	0	3	
		3130	0·669	280·9	163·8	+12·5	0	17	
		3130	0·668	277·5	163·8	+10·2	3	12	
		3130	0·661	276·1	163·3	+ 9·3	3	10	
		3130	0·661	278·6	163·3	+11·0	12	42	
		3130	0·658	276·9	163·0	+ 9·8	0	3	
		3144	0·530	229·1	146·0	−13·9	0	9	
		3145	0·624	179·8	121·5	−31·5	7	19	
		3145	0·600	177·6	120·0	−29·7	3	12	
		3131	0·299	175·8	120·4	−10·3	3	8	
		3131*a*	0·332	175·7	120·2	−12·3	35	218	
		3131	0·309	169·0	118·3	−10·6	0	8	
		3131	0·311	165·7	117·2	−10·5	3	12	
		3131	0·331	166·0	117·0	−11·7	0	5	
		3131	0·292	161·8	116·4	− 9·1	0	4	
		3139*a*	0·594	163·5	110·8	−27·7	25	109	
		3139	0·557	160·9	110·2	−24·9	4	10	
		3139	0·592	160·7	109·1	−27·1	14	48	
		3139	0·632	159·7	107·2	−29·4	0	3	
		3139	0·620	158·9	107·1	−28·4	17	48	
		3139	0·638	157·3	105·4	−29·2	5	15	
		3133	0·427	132·5	105·6	−10·0	1	5	
		3133*a*	0·412	135·7	104·8	−10·4	45	232	
		3133	0·459	135·0	102·4	−12·3	0	12	
		3135	0·501	149·6	106·2	−18·7	0	1	
		3135	0·502	147·3	105·2	−18·2	1	6	
		3135	0·498	145·0	104·4	−17·3	3	30	
		3135	0·495	143·4	103·8	−16·7	2	6	
		3135*a*	0·524	144·1	102·9	−18·4	41	253	
		3135	0·533	140·9	101·1	−17·8	0	6	
		3135	0·527	139·7	100·9	−17·1	4	14	
		3135	0·546	141·7	100·8	−18·8	0	4	
		3135	0·554	139·5	99·5	−18·4	21	196	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets,
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3142, August 19–26. A few small spots *nf* the detached following portion of Group 3135.
Group 3143, August 19–31. Two spots, *a* and *b*, measured together on August 19. They move apart from each other on the succeeding days. *a* has become a regular spot, and *b* has disappeared by August 26.
Group 3144, August 20–21. One very small spot on August 20; two on August 21.
Group 3145, August 20–22. Two small spots. The following spot has disappeared by August 22.
Groups 3131, 3133, 3134, 3135, 3136, 3137, 3139, 3142, and 3145 form parts of one great general disturbance.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.	Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).						Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°				1893.				°	°	°			
231d·366	JG,FT	3135	0·585	141·5	98·9	−20·8	0	10		232d·520	JG,HA	3130	0·885	279·2	169·1	+11·4	0	2	391*c*
		3135	0·557	136·9	98·3	−17·5	0	5				3130	0·868	279·9	167·0	+12·1	0	7	
		3135	0·589	139·8	97·9	−20·3	0	4				3130	0·841	277·5	164·0	+10·1	7	51	
		3135	0·588	137·4	96·9	−19·2	10	56				3130	0·839	280·0	163·8	+12·2	0	4	
		3135	0·618	138·0	95·5	−21·0	0	5				3144	0·696	240·8	145·0	−14·4	0	5	
		3135	0·631	139·0	95·3	−22·1	0	3				3144	0·677	238·9	143·0	−14·8	0	2	
		3135	0·648	139·5	94·6	−23·2	0	4				3146*a*	0·572	290·4	140·3	+17·3	1	4	
		3135	0·638	137·7	94·2	−21·9	18	70				3146*b*	0·546	292·3	138·2	+17·9	0	5	
		3135	0·618	134·6	94·0	−19·5	0	7				3145	0·664	199·9	121·7	−31·8	5	14	88*c*
		3136	0·518	129·3	97·5	−12·7	0	5				3145	0·629	198·9	119·8	−29·6	0	14	
		3137*a*	0·599	117·5	89·2	−10·2	31	200				3131	0·393	220·1	121·2	−10·7	0	3	
		3137	0·614	119·5	88·8	−11·7	3	9				3131*a*	0·419	216·8	121·1	−12·8	25	164	
		3137	0·624	120·5	88·4	−12·6	0	3				3131	0·385	216·2	119·6	−11·2	5	18	
		3137	0·631	118·7	87·4	−11·9	0	11				3131	0·385	212·9	118·6	−12·0	0	1	
		3137	0·631	117·6	87·1	−11·2	0	6				3131	0·368	213·9	118·3	−10·9	0	5	
		3137	0·653	117·4	85·5	−11·8	0	3				3131	0·341	215·1	117·7	− 9·3	0	6	
		3138	0·554	83·3	87·9	+ 9·6	3	6				3131	0·366	210·6	117·2	−11·4	0	4	
		3142	0·677	128·2	87·6	−18·9	2	6				3139*a*	0·582	185·9	110·2	−28·3	22	136	98*c*
		3142	0·692	126·4	85·9	−18·6	0	4				3139	0·568	184·1	108·9	−27·3	6	26	
		3142	0·705	126·7	85·0	−19·3	0	1				3139	0·605	181·9	107·6	−30·1	2	11	
		3142	0·719	126·8	84·1	−20·0	0	2				3139	0·578	181·2	107·1	−28·2	6	13	
		3140*a*	0·789	81·8	69·3	+10·7	5	28				3139	0·588	180·1	106·4	−28·9	1	8	
		3140	0·824	83·1	65·9	+ 9·6	0	4				3139	0·618	177·6	104·5	−31·0	0	9	
		3140	0·824	81·9	65·8	+10·6	9	57	551*c*			3139	0·601	177·1	104·3	−29·8	4	9	
		3140	0·846	80·1	63·5	+12·1	4	14				3139	0·617	175·5	103·1	−30·3	0	3	
		3140	0·856	81·4	62·4	+11·0	12	68				3133*a*	0·301	176·4	105·2	−10·4	45	209	
		3140	0·859	78·8	62·0	+13·2	0	6				3133	0·265	172·5	104·3	− 8·5	0	6	
		3143*a*	0·940	82·4	51·1	+ 9·5	12	61	188*c*			3133	0·294	168·8	103·0	− 9·7	0	5	
		3143*b*	0·949	83·1	49·6	+ 8·8	13	40				3133	0·317	168·1	102·5	−11·0	0	7	
			0·778	131·3	81·5	−25·5			120			3135	0·438	181·1	105·8	−18·9	3	8	
			0·833	122·7	72·7	−22·2			265			3135	0·415	175·8	104·5	−17·4	3	21	
			0·787	58·3	71·9	+29·0			194			3135*a*	0·438	173·5	103·3	−18·7	32	173	
			0·847	63·9	64·3	+25·7			74			3135*b*	0·419	169·4	101·7	−17·2	18	91	
			0·936	118·4	58·0	−23·5			317			3135	0·441	168·0	100·8	−18·4	2	13	
			0·911	57·9	56·3	+32·1			158			3135	0·492	165·1	98·5	−21·4	2	6	
Aug. 20		Centre			(121·7)	(+7·0)	(445)	(2460)	(2581)			3135	0·468	163·6	98·3	−19·7	2	5	
												3135	0·480	161·4	97·0	−20·1	7	46	
												3135	0·524	157·2	93·7	−22·0	10	81	
												3136	0·334	156·5	98·5	−10·8	0	9	
232·520	JG,HA	3141	0·951	253·5	175·6	−13·3	25	117	432*c*			3137*a*	0·404	136·4	89·9	−10·2	34	207	
		3141	0·941	253·9	173·9	−12·6	6	61				3137	0·444	135·5	87·8	−11·8	4	27	
		3141	0·905	251·3	168·0	−13·7	0	8				3137	0·450	134·4	87·2	−11·7	0	4	
		3130*a*	0·902	278·1	171·2	+10·3	39	231				3138	0·305	81·4	88·6	+ 9·3	0	3	
		3130	0·896	280·3	170·5	+12·4	0	3				3142	0·523	146·9	88·8	−19·2	7	26	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3146, August 21–25. Two very small spots, *a* and *b*, on August 21. Both rapidly increase in size on the succeeding days.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
232d.520	JG,HA	3142	0·548	143·0	85·9	−19·3	0	13	
		3140*a*	0·601	81·1	69·2	+11·0	9	22	
		3140	0·605	79·4	69·0	+12·0	1	9	
		3140	0·635	82·8	66·7	+10·0	7	37	228*c*
		3140	0·652	84·0	65·4	+ 9·2	0	3	
		3140	0·675	80·1	63·7	+11·9	0	14	
		3140	0·691	81·4	62·4	+11·0	9	85	
		3143*a*	0·818	83·4	51·0	+ 9·4	9	24	
		3143*b*	0·839	84·6	48·9	+ 8·4	10	48	219*n*
		3147*a*	0·915	74·7	39·4	+16·8	0	18	
		3147*b*	0·943	73·4	34·9	+18·0	3	10	57*c*
			0·666	146·7	82·1	−27·4			77
			0·774	138·9	75·1	+11·4			153
			0·661	131·9	74·8	−20·2			94
			0·830	126·4	59·1	−24·9			224
			0·926	121·5	45·3	−25·7			213
			0·953	131·2	44·3	−35·8			128
			0·903	67·3	41·3	+23·5			67
Aug. 21		Centre			(106·3)	(+7·0)	(371)	(2174)	(2469)
233·471	CL, FT		0·978	254·1	169·3	−13·9			282
			0·813	245·2	143·6	−15·5			113
		3130*a*	0·971	278·7	170·7	+10·2	0	99	694*f*
		3146*a*	0·743	286·4	141·7	+16·9	6	27	90*c*
		3146*b*	0·710	288·1	138·7	+17·7	3	15	
		3145	0·729	212·4	121·0	−31·7	3	13	
		3131*a*	0·561	233·6	121·3	−13·2	20	114	
		3131	0·542	234·6	119·9	−12·0	4	16½	
		3139*a*	0·619	202·4	109·2	−28·1	15	131	
		3139	0·602	202·8	108·9	−26·8	0	3	
		3139	0·612	199·9	107·4	−28·2	1	11	134*c*
		3139	0·602	198·6	106·3	−27·8	0	5	
		3139	0·591	198·6	106·0	−27·1	0	3	
		3133	0·389	221·0	108·8	−10·3	1	7	
		3133	0·373	220·9	108·1	− 9·6	0	3	
		3133	0·366	218·4	107·1	− 9·8	0	5	
		3133	0·404	213·4	106·9	−12·8	5	29	
		3133*a*	0·354	212·9	105·0	−10·4	41	224	
		3135	0·486	205·2	106·4	−19·2	0	9	
		3135	0·466	203·3	105·0	−18·4	0	9	
		3135·	0·447	202·8	104·2	−17·4	0	14	128*c*
		3135*a*	0·461	199·9	103·3	−18·7	14	124	
		3135*b*	0·430	199·7	102·5	−16·9	11	55	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
233d.471	CL, FT	3135	0·474	189·9	98·8	−20·8	0	6	
		3135	0·453	187·4	97·3	−19·6	0	5	
		3135	0·490	180·1	93·9	−22·2	6	23	
		3135	0·480	177·9	92·7	−21·5	3	17	
		3136	0·314	193·9	98·2	−10·7	0	3	
		3137*a*	0·306	168·2	90·2	−10·4	32	209	
		3137	0·341	161·5	87·5	−11·9	0	3	
		3137	0·359	162·0	87·3	−13·0	0	3	
		3142	0·449	171·5	89·8	−19·2	6	19	
		3140	0·411	81·2	69·5	+10·0	5	15	
		3140	0·421	76·9	69·1	+11·9	0	9	
		3140*a*	0·424	82·6	68·7	+ 9·5	9	33	
		3140	0·439	80·9	67·8	+10·3	3	7	
		3140	0·446	84·4	67·2	+ 8·8	0	4	
		3140	0·449	81·9	67·1	+ 9·9	5	32	156*c*
		3140	0·453	80·0	66·9	+10·8	0	5	
		3140	0·480	81·9	65·1	+10·0	3	8	
		3140	0·496	77·8	64·2	+12·1	1	8	
		3140	0·514	80·1	62·9	+11·1	6	39	
		3143*a*	0·669	83·9	51·6	+ 9·3	14	57	169*c*
		3143*b*	0·696	84·7	49·5	+ 8·8	8	54	
		3147*a*	0·811	74·0	39·4	+17·1	5	36	274*c*
		3147*b*	0·847	73·0	35·6	+18·1	8	30	
			0·743	128·7	55·2	−22·2			198
			0·897	130·9	41·0	−31·9			269
			0·898	63·0	29·9	+27·3			129
Aug. 22		Centre			(93·8)	(+7·0)	(238)	(1541)	(2636)
234·678	CL, JG		0·936	250·7	144·0	−15·3			74
			0·803	224·9	118·3	−29·3			136
		3146*a*	0·896	285·6	142·2	+17·1	22	152	127*c*
		3146*b*	0·866	285·5	138·4	+16·9	15	99	
		3131*a*	0·747	245·3	121·9	−13·1	11	56	118*c*
		3139*a*	0·727	219·4	109·3	−28·1	8	61	270*sp*
		3133	0·588	241·1	109·3	−10·4	0	5	
		3133	0·585	236·1	107·7	−12·9	4	18	
		3133	0·537	242·3	106·5	− 8·2	0	2	
		3133	0·558	234·4	105·5	−12·6	4	13	
		3133*a*	0·538	237·1	105·2	−10·7	34	201	
		3133	0·536	232·8	103·7	−12·4	4	27	
		3133	0·496	239·1	103·3	− 8·3	0	4	
		3135*a*	0·598	224·7	104·2	−18·7	28	160	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3147, August 21–29. A pair of small spots, *a* and *b*. *b* has disappeared by August 24.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
234d·678	CL,JG	3135	0·583	226·1	103·9	−17·4	0	3	
		3135*b*	0·571	225·5	103·0	−17·1	10	60	
		3135	0·555	212·0	96·2	−21·2	0	3	
		3135	0·546	207·8	93·8	−21·9	1	9	
		3135	0·544	206·0	92·8	−22·3	0	6	
		3137*a*	0·362	217·1	90·7	−10·1	37	226	
		3142	0·492	203·2	89·7	−19·8	2	6	
		3142	0·475	203·0	89·2	−18·9	0	5	
		3142	0·476	197·0	86·4	−20·0	2	15	
		3142	0·474	195·9	85·8	−20·0	0	3	
		3140	0·163	66·7	69·2	+10·7	6	17	
		3140*a*	0·162	76·2	68·8	+ 9·2	15	59	
		3140	0·195	79·5	66·8	+ 9·0	0	3	
		3140	0·205	72·6	66·5	+10·5	0	4	
		3140	0·212	80·6	65·7	+ 8·9	5	12	
		3140	0·224	80·4	65·0	+ 9·1	0	4	
		3140	0·232	72·4	64·9	+10·9	0	8	
		3140	0·230	77·4	64·8	+ 9·8	4	12	
		3140	0·245	74·6	64·1	+10·6	5	17	
		3140	0·264	77·3	62·8	+10·2	0	5	
		3143	0·416	84·5	53·2	+ 8·8	0	5	
		3143*a*	0·433	83·0	52·2	+ 9·5	19	78	
		3143*b*	0·474	84·6	49·5	+ 8·8	8	30	
		3148	0·520	125·1	52·3	−11·0	1	12	
		3148	0·531	125·0	51·7	−11·3	0	3	
		3147*a*	0·623	71·1	39·9	+17·3	10	36	131*c*
		3147*b*	0·693	70·8	34·5	+18·4	7	30	111*c*
		3149*a*	0·873	64·3	17·2	+25·9	6	24	
		3149*b*	0·905	64·1	12·8	+26·4	0	16	151*c*
			0·825	139·4	38·0	−33·4			231
			0·922	70·8	9·9	+20·4			147
			0·947	59·1	5·8	+31·5			48
Aug. 23		Centre			(77·9)	(+7·1)	(268)	(1509)	(1544)
235·410	HA,FT		0·885	229·6	119·6	−30·7			147
		3146*a*	0·951	285·7	141·3	+17·1	21	129	261*c*
		3146*b*	0·930	284·6	137·5	+16·2	10	58	
		3131*a*	0·842	249·2	122·0	−13·3	9	28	366*nf*
		3139*a*	0·798	226·0	108·8	−28·3	15	54	431*f*
		3133	0·704	243·4	108·3	−13·0	3	13	
		3133	0·681	244·9	107·0	−11·3	0	5	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
235d·410	HA,FT	3133	0·678	242·9	106·2	−12·4	9	29	117*c*
		3133*a*	0·665	244·6	105·8	−10·9	40	204	
		3133	0·649	240·8	103·6	−12·7	11	63	
		3135	0·695	236·4	105·3	−16·9	0	7	253*c*
		3135*a*	0·692	232·6	103·6	−19·0	40	146	
		3135*b*	0·669	2·342	102·7	−17·2	16	58	
		3135	0·615	219·1	92·8	−22·0	0	5	
		3137*a*	0·470	233·7	90·7	− 9·6	36	210	
		3142	0·567	217·9	89·9	−19·9	2	8	
		3142	0·535	212·5	85·9	−20·0	2	6	
		3140*a*	0·043	328·9	69·5	+ 9·2	8	39	
		3140	0·065	344·5	69·2	+10·7	2	8	
		3140	0·042	37·8	66·7	+ 9·1	0	18	
		3140	0·066	36·7	65·9	+10·1	0	3	
		3140	0·087	50·0	64·3	+10·3	6	16	
		3140	0·143	72·4	60·3	+ 9·5	0	9	
		3150	0·193	52·6	59·2	+13·7	1	7	
		3150	0·225	52·5	57·6	+14·8	2	7	
		3143*a*	0·264	79·6	53·0	+ 9·6	13	87	
		3143*b*	0·317	83·6	49·7	+ 8·8	4	21	
		3147*a*	0·484	66·7	40·6	+17·3	5	30	
		3147*b*	0·559	67·0	35·5	+18·6	3	12	
		3149*a*	0·785	62·2	17·8	+26·1	13	46	
		3149	0·797	62·0	16·6	+26·4	0	8	
		3149	0·801	60·8	16·4	+27·5	0	6	248*c*
		3149	0·812	62·8	14·9	+26·1	0	13	
		3149*b*	0·833	62·6	12·5	+26·7	4	43	
			0·809	147·5	35·3	−37·0			163
			0·856	68·9	9·2	+21·7			137
			0·857	79·8	8·7	+12·4			81
			0·904	104·8	5·8	−10·2			160
			0·925	57·7	0·4	+32·6			157
Aug. 24		Centre			(68·2)	(+7·1)	(275)	(1396)	(2521)
236·450	CL,HA		0·952	234·1	118·4	−31·0			188
			0·873	236·8	107·6	−24·3			159
			0·808	257·1	106·7	− 6·1			162
		3146*a*	0·991	286·9	138·5	+17·7	0	152	114*c*
		3146*b*	0·988	285·4	136·9	+16·3	8	49	
		3151	0·963	274·9	129·3	+ 6·7	4	35	116*c*
		3131*a*	0·945	253·2	122·7	−13·3	0	40	309*c*
		3139*a*	0·889	232·9	108·0	−28·3	9	38	537*s*

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3148, August 23. A close pair of small spots.

Group 3149, August 23–September 3. Two small spots, *a* and *b*, on August 23. Several small spots have sprung up between *a* and *b* by August 25, forming a very curved stream. The intermediate spots of the stream die out on the succeeding days, and *a* is left alone as a large regular spot by September 1.

Group 3150, August 24–25. One or two very small spots *nf* Group 3140.

Group 3151, August 25. A spot closely surrounded by dense faculæ.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued*.

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic. Longitude.	Heliographic. Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
236d.450	CL,HA	3133	0·842	249·4	108·3	−13·1	2	12	
		3133	0·813	249·1	105·4	−12·4	0	3	395*c*
		3133*a*	0·804	250·9	105·0	−10·7	31	180	
		3133	0·792	248·5	103·2	−12·2	7	41	
		3135	0·843	241·2	106·0	−19·6	0	22	
		3135	0·819	244·3	104·6	−16·3	0	3	470*c*
		3135*a*	0·820	240·6	103·5	−19·2	11	72	
		3135*b*	0·804	242·2	102·5	−17·3	6	14	
		3135	0·733	231·6	92·5	−21·5	0	15	363*np*
		3137*a*	0·641	246·4	90·9	− 9·2	39	207	
		3142	0·694	231·2	89·5	−20·0	1	5	
		3140*a*	0·263	280·1	69·7	+ 9·5	6	25	
		3140	0·254	284·4	68·9	+10·5	2	6	
		3140	0·215	270·8	67·0	+ 7·1	2	18	
		3140	0·190	280·8	65·3	+ 9·0	0	5	
		3140	0·178	297·4	63·7	+11·7	0	10	
		3140	0·166	288·3	63·7	+10·0	0	9	
		3140	0·132	295·4	61·4	+10·3	0	4	
		3140	0·145	314·9	60·5	+12·9	0	4	
		3150	0·148	338·1	57·8	+15·0	1	4	
		3143*a*	0·045	25·8	53·4	+ 9·4	14	74	
		3143*b*	0·082	67·7	50·1	+ 8·9	4	10	
		3147*a*	0·286	52·7	40·8	+16·8	6	22	
		3149*a*	0·642	57·6	17·6	+25·8	34	181	
		3149	0·684	58·0	14·2	+26·7	5	21	232*c*
		3149*b*	0·712	59·0	11·6	+26·7	8	41	
		3152	0·947	111·9	347·2	−18·1	0	9	744*c*
		3152	0·956	110·7	345·2	−17·4	0	20	
			0·714	69·2	9·5	+19·7			198
			0·736	78·2	6·9	+13·5			200
			0·833	109·9	1·4	−12·2			108
			0·845	57·5	358·4	+31·1			258
Aug. 25		Centre			(54·5)	(+7·1)	(200)	(1351)	(4553)
237·219	HA,JG		0·977	257·3	119·9	−10·7			100
			0·853	241·0	96·6	−20·2			172
M.		3139*a*	0·947	237·2	108·3	−27·9	5	25	254*s*
		3133*a*	0·897	254·5	105·5	−10·5	23	164	286*c*
		3133	0·891	252·6	104·4	−12·0	11	70	
		3135*a*	0·904	245·5	104·2	−18·6	0	18	192*n*
		3137*a*	0·764	252·3	91·4	− 8·6	30	206	51*c*
		3142	0·794	238·0	89·8	−19·9	0	6	27*c*
		3140*a*	0·430	278·2	69·7	+10·0	2	7	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic. Longitude.	Heliographic. Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
237d.219	HA,JG	3140	0·423	280·7	69·1	+11·0	0	2	
		3143*a*	0·170	287·5	53·6	+ 9·9	13	74	
M.		3143	0·158	310·4	51·3	+12·9	0	7	
		3147*a*	0·184	17·4	40·9	+17·2	1	8	
		3149*a*	0·528	49·5	17·7	+26·4	32	170	
		3149	0·578	52·3	13·5	+26·8	1	15	
		3149	0·590	54·7	12·0	+25·9	0	2	
		3149*b*	0·606	53·4	11·2	+27·1	5	27	
		3149	0·603	54·9	11·0	+26·2	0	4	
		3149	0·613	55·9	10·0	+26·0	1	3	
		3152	0·888	113·4	345·9	−17·0	5	22	360*c*
			0·936	77·6	334·0	+14·1			115
			0·938	103·4	336·6	− 9·9			218
Aug. 26		Centre			(44·2)	(+7·1)	(129)	(830)	(1775)
238·195	CL,FT		0·935	248·2	96·7	−17·4			410
		3133*a*	0·969	256·8	105·0	−10·8	35	149	362*c*
M.		3133	0·970	255·0	104·9	−12·6	0	26	
		3137*a*	0·883	256·1	91·3	− 8·7	30	213	130*c*
		3143*a*	0·381	278·1	53·8	+ 9·8	11	73	
		3147*a*	0·233	316·1	41·1	+16·8	1	6	
		3149*a*	0·400	31·8	17·8	+26·8	19	155	
		3149	0·445	40·6	12·6	+26·5	13	45	
		3149	0·469	42·9	10·5	+26·8	12	80	
		3153	0·602	63·7	356·1	+21·4	3	8	
		3153	0·634	66·1	353·3	+20·6	8	20	
		3152	0·782	118·5	345·7	−16·9	6	20	123*c*
			0·867	110·0	334·7	−13·4			316
Aug. 27		Centre			(31·4)	(+7·2)	(138)	(795)	(1341)
239·426	FT,JG		0·945	278·5	86·8	+10·4			55
			0·948	245·5	82·0	−20·4			97
			0·917	238·3	74·6	−25·3			324
			0·798	301·3	66·3	+29·1			198
			0·772	278·2	66·1	+10·9			330
			0·805	229·3	58·0	−26·4			114
		3137*a*	0·978	259·9	91·6	− 8·2	12	196	199*c*
		3137	0·976	258·9	90·9	− 9·1	3	16	
		3143*a*	0·628	276·8	54·3	+ 9·9	18	92	67*c*
		3147*a*	0·452	292·7	40·9	+16·5	0	9	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Homisphere.

Group 3152, August 25–29. One or two small unstable spots. The group is not seen on August 28.
Group 3153, August 27–31. One or two very small unstable spots. The group is not seen on August 30.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic.		Spots.		Faculæ.	Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic.		Spots.		Area for each Group (and for Day).
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).						Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	
1893.				°	°	°				1893.				°	°	°			
239d·426	FT, JG	3149*a*	0·351	355·7	16·9	+27·6	22	124		241d·453	CL, FT		0·953	280·8	61·5	+12·4			381
		3149	0·333	7·8	12·3	+26·4	5	74					0·910	301·6	53·6	+31·7			130
		3149	0·352	15·2	9·3	+26·9	3	24					0·936	241·6	51·9	−23·4			212
		3153	0·372	48·6	357·9	+21·1	1	9					0·872	228·2	37·4	−30·9			84
		3153	0·439	54·7	352·7	+21·3	0	8				3143*a*	0·910	277·2	54·3	+ 9·5	10	60	128*c*
		3154*a*	0·954	105·1	305·1	−12·0	0	168	} 495*c*			3149*a*	0·537	310·4	15·5	+26·7	22	155	
		3154*b*	0·984	101·6	297·3	−10·0	94	428				3149	0·488	317·9	9·9	+27·9	2	10	
		3155*a*	0·953	77·9	301·9	+13·7	144	651	657*c*			3149	0·472	316·8	9·4	+26·8	5	13	
		3156*a*	0·997	110·0	292·8	−19·2	48	773				3159	0·490	114·0	321·7	− 5·0	1	7	
			0·701	120·2	336·5	−15·0			334			3154*a*	0·701	113·1	307·5	−10·5	58	326	
			0·851	125·3	325·4	−24·9			64			3154	0·768	112·1	301·8	−11·8	4	21	
			0·781	80·0	323·5	+12·3			66			3154	0·787	114·4	300·8	−14·1	7	23	
			0·893	108·2	315·0	−12·7			80			3154	0·781	110·7	300·2	−11·2	7	23	
			0·939	115·2	310·2	−20·6			493			3154	0·793	114·2	300·2	−14·2	0	8	
Aug. 28		Centre			(15·2)	(+7·2)	(347)	(2572)	(3573)			3154	0·797	111·7	299·2	−12·4	0	17	
												3154	0·789	107·6	298·9	− 9·1	0	8	
												3154*b*	0·798	107·7	298·1	− 9·5	68	584	
240·399	HA, JG		0·888	278·7	65·4	+11·0			379			3155*a*	0·721	77·6	302·0	+13·9	118	599	245*c*
			0·904	238·5	59·9	−24·4			259			3156*a*	0·874	116·8	292·8	−19·2	116	652	} 778*sf*
		3143*a*	0·789	276·8	54·6	+ 9·8	16	77	78*nf*			3156	0·898	115·5	289·4	−19·1	8	47	
		3147*a*	0·628	287·5	40·7	+16·5	0	6					0·784	128·0	306·1	−23·5			216
		3149*a*	0·410	328·0	16·3	+27·3	22	141					0·924	123·9	288·6	−27·5			309
		3149	0·369	330·1	13·9	+25·6	0	3		Aug. 30		Centre			(348·3)	(+7·2)	(426)	(2553)	(2483)
		3149	0·362	339·2	10·5	+26·8	0	5											
		3149	0·357	341·7	9·4	+26·9	6	24		242·483	CL, JG		0·892	288·5	38·4	+19·7			158
		3157	0·221	339·5	6·9	+19·1	0	2					0·949	234·4	38·1	−30·5			103
		3153	0·251	14·0	358·5	+21·2	0	4					0·840	230·3	21·4	−27·6			38
		3152	0·500	146·8	345·6	−17·8	2	16				3143*a*	0·980	278·3	54·0	+ 9·5	16	62	155*c*
		3152	0·517	148·3	345·6	−19·1	0	5				3149*a*	0·679	301·7	14·7	+26·4	30	157	} 134*c*
		3158	0·601	125·4	332·0	−14·1	0	7				3149	0·658	300·5	13·3	+25·1	0	6	
		3154*a*	0·855	108·0	306·4	−11·3	36	227				3160	0·481	275·4	3·6	+ 8·9	0	4	
		3154	0·892	109·4	304·3	− 7·8	5	27				3153	0·450	305·1	357·9	+21·6	0	4	
		3154	0·881	106·7	303·1	−11·0	0	8				3161	0·448	200·6	346·7	−17·6	0	3	
		3154	0·888	105·3	302·0	−10·0	1	8	} 392*c*			3161	0·498	202·7	346·5	−20·2	1	3	
		3154	0·890	104·3	301·5	− 9·2	0	4				3161	0·508	201·4	346·1	−21·1	0	3	
		3154*b*	0·921	103·8	297·3	− 9·7	61	440				3161	0·439	203·3	345·1	−16·6	1	5	
		3155	0·841	75·3	304·5	+16·2	0	11				3161	0·434	200·1	343·6	−16·8	0	5	
		3155*a*	0·863	78·1	302·0	+13·9	129	616				3154*a*	0·539	122·8	307·4	−10·5	61	347	
		3155	0·872	81·2	301·0	+11·2	0	8	} 799*f*			3154	0·575	124·1	305·6	−12·5	3	14	
		3155	0·881	80·2	299·9	+12·0	0	8				3154	0·563	121·3	305·5	−10·7	3	33	
		3156*a*	0·956	112·8	293·4	−19·3	91	735	425*c*			3154	0·592	123·7	304·5	−12·9	0	3	
			0·873	121·2	308·3	−22·7			464			3154	0·606	124·2	303·8	−13·7	0	4	
Aug. 29		Centre			(2·2)	(+7·2)	(369)	(2382)	(2796)			3154	0·633	123·4	301·8	−14·3	6	20	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3154, August 28–September 9. A fine group of spots, several of which are large, forming a broad stream. The axis of the group is inclined to the equator at a considerable angle at first, but it rotates in the direction contrary to the hands of a watch till it has become parallel to the equator. The first and last spots, *a* and *b*, are the largest, and they are connected by a continuous stream of small spots on September 3 and 4.
Group 3155, August 28–September 9. A very large regular spot, *a*, of which the major axis moves in a direction contrary to the hands of a watch. It has sometimes a fringe of small spots on its *n* side.
Group 3156, August 28–September 9. A very large regular spot, *a*, which throws off small spots on its *sf* side.
Group 3157, August 29. A very small spot.
Group 3158, August 29. A very small spot.
Group 3159, August 30. A small spot.
Group 3160, August 31. A very small spot.
Group 3161, August 31. A scattered group of very small spots.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				c	°	°			
242^{d}·483	CL, JG	3154	0·625	121·0	301·5	−12·7	7	28	
		3154	0·641	121·2	300·5	−13·4	0	2	
		3154	0·628	117·4	300·3	−10·8	33	163	
		3154*b*	0·665	113·7	296·7	− 9·8	52	357	
		3155	0·514	70·5	304·5	+16·1	0	3	
		3155*a*	0·543	75·2	302·1	+14·0	114	599	
		3155	0·552	70·1	302·0	+16·9	0	3	
		3155	0·560	71·8	301·2	+16·1	0	10	
		3155	0·576	71·1	300·2	+16·7	0	4	
		3156*a*	0·760	123·5	292·6	−19·5	97	665	
		3156	0·783	121·7	290·0	−19·2	5	24	420*nf*
		3156	0·798	121·7	288·7	−19·8	0	31	
		3162*a*	0·985	105·6	257·1	−13·9	22	122	123*c*
			0·648	136·4	306·1	−21·6			79
			0·753	74·8	285·7	+16·2			168
			0·862	121·4	282·2	−22·4			171
			0·875	117·2	279·2	−19·6			130
			0·928	111·1	270·4	−16·5			72
Aug. 31		Centre			(334·7)	(+7·2)	(451)	(2684)	(1751)
243·452	CL, FT		0·945	284·8	33·8	+16·3			109
			0·819	288·1	17·1	+18·9			111
I.		3149*a*	0·808	297·3	14·8	+26·2	26	118	448*f*
		3154	0·363	145·6	309·9	−10·3	1	5	
		3154	0·340	142·0	309·7	− 8·4	1	3	
		3154*a*	0·392	140·9	307·4	−10·7	50	333	
		3154	0·395	135·9	305·8	− 9·5	0	2	
		3154	0·482	136·8	302·1	−13·7	0	1	
		3154	0·467	129·5	300·5	−10·5	49	251	
		3154	0·490	134·1	300·8	−13·2	4	24	
		3154	0·505	136·1	300·8	−14·6	3	10	
		3154	0·524	137·1	300·2	−15·8	0	5	
		3154	0·515	131·1	298·5	−13·1	4	21	
		3154	0·487	125·6	298·3	− 9·8	7	31	
		3154*b*	0·513	123·6	296·3	−10·0	62	362	
		3155*a*	0·358	68·9	301·8	+14·1	155	530	
		3163	0·498	70·5	292·8	+15·9	1	8	
		3163	0·530	72·3	290·4	+15·4	0	1	
		3156*a*	0·639	132·6	292·1	−19·3	103	598	
		3156	0·688	130·2	287·9	−20·4	2	8	
		3162*a*	0·919	108·1	258·2	−13·5	20	105	295*c*
		3162	0·965	108·5	250·2	−15·7	0	17	
			0·786	137·8	284·5	−29·9			225
1893.									
243^{d}·452	CL, FT		0·786	120·9	276·6	−18·8			194
			0·863	116·3	267·5	−18·3			125
I.			0·944	123·8	258·8	−28·6			216
			0·921	73·7	254·0	+17·8			212
			0·932	82·4	252·5	+ 9·7			174
Sept. 1		Centre			(321·9)	(+7·2)	(488)	(2433)	(2109)
			0·858	279·8	8·7	+12·1			131
244·425	HA, FT		0·775	307·7	356·1	+33·3			60
		3149*a*	0·907	295·3	14·6	+25·9	20	129	516*f*
		3164	0·751	231·6	348·4	−22·2	0	2	164*c*
		3164	0·723	232·3	346·6	−20·5	5	9	
		3154	0·264	179·2	308·9	− 8·0	0	2	
		3154*a*	0·317	174·7	307·4	−11·1	74	401	
		3154	0·291	169·6	306·1	− 9·4	2	22	
		3154	0·309	169·8	305·9	−10·5	3	5	
		3154	0·313	165·6	304·6	−10·4	5	25	
		3154	0·298	157·0	302·4	− 8·7	0	2	
		3154	0·394	158·9	300·7	−14·4	2	7	
		3154	0·339	154·2	300·5	−10·6	41	334	
		3154	0·378	156·2	300·1	−13·0	0	13	
		3154	0·416	157·9	299·8	−15·5	0	2	
		3154*b*	0·369	144·0	296·4	−10·3	37	339	
		3155*a*	0·172	45·2	301·9	+14·1	118	511	
		3155	0·241	42·8	293·4	+17·2	0	15	
		3163	0·272	58·4	295·3	+15·2	0	5	
		3163	0·309	59·6	293·1	+15·9	1	6	
		3156*a*	0·527	148·3	292·1	−19·7	106	584	
		3156	0·553	144·4	289·2	−19·9	3	81	
		3156	0·544	141·4	288·2	−18·4	0	6	
		3156	0·544	136·3	286·1	−16·5	0	8	
		3165	0·873	129·5	258·8	−29·2	2	13	257*c*
		3162*a*	0·810	112·6	259·0	−13·5	17	114	
		3162	0·883	112·4	251·2	−15·9	10	31	
		3162	0·921	111·6	245·9	−16·7	0	5	482*nf*
		3162	0·920	109·6	245·6	−14·8	0	8	
			0·868	119·5	255·2	−21·1			83
			0·871	86·5	248·3	+ 6·6			193
			0·886	80·4	246·1	+11·8			144
			0·910	103·4	245·6	− 9·0			74
			0·914	73·4	242·2	+18·1			343
Sept. 2		Centre			(309·1)	(+7·2)	(446)	(2679)	(2447)

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3162, August 31–September 8. A short stream of spots of which *a*, the leader, is the largest. *a* has broken up by September 6.
Group 3163, September 1–6. Two or three very small spots. The group is not seen on September 3 and 4.
Group 3164, September 2. Two small spots.
Group 3165, September 2–4. A small spot.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
245d.378	FT,JG		0·874	306·2	355·6	+34·9			64
			0·811	243·8	345·6	−16·3			290
			0·747	254·0	342·6	− 6·9			66
		3149*a*	0·973	295·0	14·9	+25·9	0	71	283*f*
		3154*a*	0·362	211·0	307·4	−10·9	90	582	
		3154	0·327	202·0	303·6	−10·4	12	92	
		3154	0·315	191·7	300·2	−10·7	17	363	
		3154	0·327	179·6	296·4	−11·8	2	28	
		3154*b*	0 297	178·3	295·0	−10·0	41	238	
		3155*a*	0·158	321·3	302·3	+14·2	106	529	
		3156*a*	0·462	170·4	291·8	−19·8	112	632	181*c*
		3156	0·440	166·0	290·1	−18·0	0	6	
		3166	0·280	193·1	280·7	+ 3·3	0	14	
		3165	0·783	138·3	259·6	−30·0	0	11	302*f*
		3162*a*	0·670	119·8	259·9	−13·7	12	69	53*c*
		3162	0·698	119·1	257·7	−14·2	0	11	
		3162	0·764	118·4	252·3	−16·2	4	31	112*nf*
			0·872	124·8	244·2	−25·5			53
			0·832	74·8	239·8	+16·6			195
Sept. 3		Centre			(296·5)	(+7·2)	(396)	(2677)	(1599)
246·380	CL,HA		0·949	297·0	356·1	+27·9			358
			0·918	248·0	345·9	−16·8			325
			0·878	275·0	345·0	+ 7·5			188
			0·878	257·9	342·9	− 6·9			161
			0·893	241·5	340·5	−21·4			188
			0·817	285·6	338·4	+16·9			179
			0·802	246·0	332·2	−14·3			324
			0·693	290·2	326·7	+19·2			169
		3167	0·741	256·7	329·5	− 4·8	3	9	153*c*
		3167	0·710	257·1	327·0	− 3·8	3	8	
		3154*a*	0·502	234·9	307·9	−10·1	84	536	
		3154	0·496	229·5	305·9	−12·0	2	31	
		3154	0·449	230·6	303·8	− 9·7	21	133	
		3154	0·446	221·7	300·9	−12·4	1	6	
		3154	0·412	223·8	300·1	−10·2	38	243	
		3154*b*	0·374	217·3	296·6	−10·1	40	270	
		3155	0·394	293·3	305·3	+15·7	1	4	
		3155	0·377	298·4	303·5	+17·2	0	3	
		3155*a*	0·341	292·3	302·2	+14·3	121	568	
		3155	0·357	301·4	301·9	+17·6	0	2	
		3156*a*	0·464	200·5	293·1	−18·5	60	420	
		3156	0·476	192·7	289·7	−20·3	29	150	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
246d.380	CL,HA	3156	0·450	189·9	288·0	−18·9	0	5	
		3156	0·476	189·1	287·9	−20·6	1	5	
		3165	0·682	150·4	260·6	−29·5	0	6	94*s*
		3162*a*	0·510	131·1	260·2	−12·8	13	83	
		3162	0·533	130·1	258·6	−13·4	0	9	119*sf*
		3162	0·580	126·6	254·8	−13·8	0	4	
		3162	0·589	124·0	253·4	−12·9	0	3	
		3168*a*	0·916	100·3	218·5	− 6·4	7	21	
		3168	0·930	101·1	216·6	− 7·5	7	39	116*c*
		3168	0·933	102·0	216·2	− 8·4	0	11	
			0·696	38·4	249·6	+39·1			86
			0·688	115·9	244·2	−11·8			161
			0·848	118·8	231·4	−19·7			102
			0·845	111·7	229·5	−13·9			116
			0·823	72·7	227·7	+18·3			196
			0·944	111·3	216·4	−17·3			411
Sept. 4		Centre			(283·3)	(+7·3)	(431)	(2569)	(3446)
247·484	CL,FT		0·979	248·7	343·3	−19·0			402
			0·951	260·4	339·3	− 6·7			76
			0·909	283·3	334·8	+15·1			71
			0·900	251·4	329·7	−13·2			449
			0·847	285·7	327·1	+17·2			129
			0·865	258·7	327·0	− 5·9			89
			0·779	241·6	314·2	−16·7			244
			0·781	229·4	309·4	−25·0			287
		3154*a*	0·670	245·2	306·8	−10·6	102	593	
		3154	0·617	242·9	302·5	−10·2	33	224	
		3154	0·603	239·5	300·6	−11·6	0	11	
		3154	0·584	239·1	299·3	−11·1	13	109	
		3154	0·555	237·4	297·0	−10·9	4	14	
		3154	0·554	235·6	296·4	−11·7	3	46	
		3154*b*	0·529	237·4	295·5	−10·0	45	256	
		3154	0·539	234·7	295·3	−11·6	0	15	
		3154	0·515	233·6	293·6	−11·1	0	6	
		3155	0·571	291·5	302·5	+18·1	1	5	
		3155	0·556	290·0	301·7	+17·1	0	4	
		3155*a*	0·542	284·9	301·3	+14·2	117	598	
		3155	0·548	289·2	301·2	+16·5	0	3	
		3155	0·548	292·3	300·8	+18·2	0	4	
		3163	0·395	294·4	290·6	+16·1	0	8	
		3163	0·355	296·9	287·9	+16·1	0	8	
		3156*a*	0·569	220·3	291·5	−18·9	57	330	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3166, September 5. A small spot.
Group 3167, September 4. Two small spots.
Group 3163. September 4–14. A few small spots on September 4. The group has become a long stream by September 5. *a*, the principal spot, and after September 7, the leader, moves forward rapidly in longitude.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued*.

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
247d·484	CL,FT	3156	0·544	217·2	288·9	−18·8	4	28	
		3156	0·561	215·0	288·7	−20·4	12	103	
		3156	0·548	213·1	287·2	−20·3	2	10	
		3169	0·428	199·9	277·4	−16·5	0	7	
		3162*a*	0·377	155·6	259·5	−12·8	12	41	
		3162	0·396	150·4	257·2	−12·9	3	31	
		3162	0·385	148·8	257·0	−12·0	0	12	
		3162	0·415	147·6	255·5	−13·3	3	9	
		3162	0·441	146·5	254·2	−14·4	7	24	
		3168	0·763	105·9	221·2	− 7·1	2	10	
		3168*a*	0·791	104·9	218·5	− 7·1	27	165	
		3168	0·809	104·7	216·8	− 7·4	0	6	
		3168	0·820	105·9	216·0	− 8·6	2	7	376*c*
		3168	0·831	107·1	215·2	− 9·8	11	113	
		3168	0·832	105·3	214·7	− 8·4	6	16	
		3168	0·836	103·9	214·0	− 7·4	4	25	
			0·792	127·3	225·5	−23·4			147
			0·781	85·0	217·0	+ 8·5			53
			0·844	61·5	211·9	+27·9			145
			0·885	114·5	211·2	−17·7			791
			0·899	67·5	204·2	+23·4			190
			0·925	74·0	200·1	+17·5			156
Sept. 5		Centre			(268·7)	(+7·3)	(470)	(2841)	(3605)
248·406	JG,HA		0·954	261·9	327·8	− 5·4			78
			0·959	252·4	327·1	−14·5			114
			0·927	285·6	325·4	+17·2			71
			0·882	249·4	314·7	−14·3			113
			0·901	239·4	314·1	−23·5			122
			0·829	283·1	313·0	+14·9			64
			0·862	234·3	307·3	−25·7			239
			0·795	241·3	303·3	−17·5			64
		3154*a*	0·791	250·4	305·6	−10·6	92	752	
		3154	0·732	249·0	300·3	− 9·9	0	7	
		3154	0·735	246·9	300·0	−11·5	12	97	246*c*
		3154*b*	0·690	246·0	296·2	−10·7	34	201	
		3155	0·736	285·3	304·0	+16·2	3	10	
		3155*a*	0·704	282·6	301·4	+14·0	96	561	
		3155	0·697	287·2	300·5	+17·2	6	14	147*np*
		3155	0·671	287·6	298·4	+17·2	0	5	
		3170	0·571	243·3	287·4	− 8·6	0	3	
		3170	0·538	241·7	285·0	− 8·3	0	4	
		3163	0·544	289·2	288·8	+16·5	0	10	
1893.				°	°	°			
248d·406	JG,HA	3156*a*	0·691	231·8	291·5	−19·3	43	319	
		3156	0·681	228·3	289·3	−20·8	15	68	103*c*
		3156	0·668	229·3	288·9	−19·6	8	32	
		3156	0·647	229·8	287·8	−18·4	0	6	
		3169	0·563	232·5	283·7	−13·5	3	11	
		3169	0·532	220·3	277·5	−17·1	7	17	
		3162*a*	0·352	189·7	260·0	−12·9	8	41	
		3162	0·359	184·0	258·0	−13·6	4	24	
		3162	0·325	183·8	257·8	−11·5	0	11	
		3162	0·379	174·0	254·2	−14·8	4	18	
		3171	0·524	159·2	245·0	−22·1	4	11	
		3171	0·523	154·9	242·8	−21·1	0	4	
		3168	0·597	112·5	222·9	− 7·1	6	16	
		3168*a*	0·632	110·5	220·0	− 6·9	40	318	
		3168	0·666	111·8	217·9	− 8·6	0	4	159*c*
		3168	0·700	110·4	215·1	− 8·6	4	37	
		3168	0·710	112·4	214·8	−10·2	10	88	
		3168	0·700	108·1	214·6	− 7·1	5	17	
			0·825	118·0	206·7	−18·1			278
			0·837	72·8	199·3	+18·4			135
Sept. 6		Centre			(256·5)	(+7·3)	(404)	(2706)	(1933)
249·392	HA,FT		0·979	287·9	323·3	+19·0			150
			0·941	282·3	314·6	+14·0			136
			0·956	242·6	311·0	−23·5			322
			0·919	235·0	302·0	−28·1			150
			0·849	234·8	293·1	−24·6			73
			0·801	228·3	285·4	−26·8			90
			0·838	204·5	271·9	−43·2			123
		3154*a*	0·917	255·1	307·6	−10·5	65	522	
		3154	0·888	256·1	304·0	− 8·8	9	36	
		3154	0·886	254·0	303·3	−10·5	14	79	
		3154	0·867	253·5	301·0	−10·4	6	60	1026*c*
		3154	0·856	252·4	299·5	−11·0	0	5	
		3154	0·837	251·1	297·2	−11·4	0	41	
		3154*b*	0·826	252·5	296·4	−10·0	41	210	
		3155	0·873	284·6	304·9	+16·3	4	18	
		3155*a*	0·844	282·4	301·56	+14·4	102	486	579*c*
		3155	0·834	285·9	300·4	+17·3	7	28	
		3156*a*	0·817	240·3	292·0	−19·1	46	286	
		3156	0·804	237·2	289·6	−20·8	14	45	235*c*
		3156	0·796	239·2	289·6	−19·0	6	27	
		3156	0·786	239·9	289·0	−18·1	0	3	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3169, September 5–8. Two or three small scattered spots following Group 3156.
Group 3170, September 6. A pair of very small spots.
Group 3171, September 6–7. Two or three small scattered spots.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
				°	°	°			
1893.									
249d·392	HA,FT	3169	0·701	237·8	281·5	−16·2	0	3	
		3169	0·699	236·3	280·8	−17·0	2	7	71*c*
		3169	0·676	233·5	278·1	−17·7	5	20	
		3162*a*	0·443	220·4	260·5	−12·7	7	16	
		3162	0·432	215·9	258·5	−13·4	5	28	
		3162	0·407	216·2	257·7	−12·0	0	8	
		3162	0·418	208·6	255·4	−14·3	0	1	
		3162	0·403	208·6	254·9	−13·5	0	1	
		3162	0·419	206·5	254·6	−14·8	3	10	
		3162	0·390	207·3	254·0	−13·0	0	1	
		3171	0·480	185·9	246·5	−21·1	4	11	
		3171	0·479	181·0	244·0	−21·2	0	2	
		3171	0·494	180·8	243·9	−22·9	1	5	
		3168	0·416	127·1	224·0	− 7·6	7	22	
		3168*a*	0·428	122·6	222·3	− 6·5	57	285	
		3168	0·470	124·6	220·6	− 8·7	0	6	
		3168	0·456	121·2	220·5	− 6·9	2	17	
		3168	0·480	121·1	219·1	− 7·7	10	93	
		3168	0·518	121·3	217·0	− 9·0	4	24	
		3168	0·531	119·8	215·8	− 8·8	5	23	
		3168	0·525	117·6	215·6	− 7·6	2	13	
		3168	0·550	122·1	215·3	−10·5	11	76	
		3168	0·548	116·6	214·0	− 7·8	1	7	
		3172	0·908	105·2	180·7	−10·5	0	9	
		3172	0·911	104·9	180·2	−10·3	0	4	
		3173*a*	0·964	101·4	170·7	− 8·9	109	607	847*sp*
			0·914	80·4	276·8	+11·7			405
Sept. 7		Centre			(243·5)	(+7·3)	(549)	(3145)	(4207)
250·450	CL,JG		0·965	250·3	301·2	−16·8			238
			0·844	290·3	287·4	+21·0			198
			0·897	234·0	284·5	−27·7			134
		3154*a*	0·986	257·5	308·0	−10·9	35	380	
		3154	0·976	259·3	305·4	− 8·8	0	78	
		3154	0·966	257·1	302·6	−10·4	0	118	365*c*
		3154	0·943	254·9	297·7	−11·6	0	21	
		3154*b*	0·935	256·4	296·7	− 9·9	25	136	
		3155*a*	0·947	282·6	301·8	+14·2	94	492	624*c*
		3156*a*	0·917	244·9	291·2	−19·5	28	266	
		3156	0·905	242·0	288·6	−21·5	0	22	572*c*
		3169	0·807	241·9	277·7	−17·5	0	18	116*c*
1893.									
250d·450	CL,JG	3162*a*	0·597	236·9	260·3	−12·7	0	15	
		3168*a*	0·263	160·4	224·5	− 7·0	66	295	
		3168	0·284	156·0	222·9	− 7·7	6	66	
		3168	0·300	149·2	220·7	− 7·7	5	26	
		3168	0·285	144·8	220·1	− 6·2	0	6	
		3168	0·332	145·3	218·6	− 8·6	3	14	
		3168	0·314	141·7	218·3	− 7·0	0	10	
		3168	0·360	141·6	216·6	− 9·2	10	63	
		3168	0·360	135·6	214·9	− 7·8	0	11	
		3168	0·394	140·1	214·8	−10·5	18	77	
		3168	0·398	137·6	213·9	−10·0	0	7	
		3174	0·166	62·0	221·0	+11·7	0	4	
		3174	0·184	54·4	220·8	+13·3	0	8	
		3174	0·214	62·6	218·4	+12·8	5	11	
		3173*a*	0·887	104·6	169·4	− 9·3	119	822	898*c*
		3173	0·954	107·6	160·0	−14·3	0	47	
		3173	0·955	104·5	159·2	−11·5	20	66	
			0·780	109·7	181·5	−10·4			124
			0·826	82·5	173·5	+10·3			121
			0·977	67·8	150·1	+23·2			178
Sept. 8		Centre			(229·6)	(+7·3)	(434)	(3079)	(3568)
251·420	JG,FT		0·947	287·8	289·1	+19·1			327
			0·955	258·7	287·7	− 8·5			121
			0·911	247·2	278·1	−17·3			168
			0·864	284·0	277·0	+15·7			103
			0·877	259·0	276·5	− 6·0			43
			0·727	243·8	258·6	−13·4			159
			0·805	223·7	256·6	−30·1			113
		3154*b*	0·990	258·4	296·7	−10·3	28	163	243*s*
		3155*a*	0·991	283·3	300·3	+14·1	75	344	372*nf*
		3155	0·990	286·5	300·1	+17·4	0	28	
		3156*a*	0·978	247·6	290·8	−20·0	34	249	657*f*
		3168*a*	0·292	209·2	224·9	− 7·6	80	398	
		3168	0·267	204·4	223·1	− 6·9	0	8	
		3168	0·265	197·5	221·3	− 7·4	7	35	
		3168	0·236	195·6	220·3	− 5·9	0	1	
		3168	0·259	192·8	220·0	− 7·4	2	4	
		3168	0·281	191·0	219·8	− 8·8	0	10	
		3168	0·282	185·9	217·4	− 9·0	0	6	
		3168	0·282	182·0	217·3	− 9·1	5	24	
		3168	0·302	180·0	216·7	−10·3	0	5	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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 The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3172, September 7–9. Two very small spots on September 7. The group is not seen on September 8. One very small spot is seen on September 9.
Group 3173, September 7–19. A very large spot, *a*, followed by a fine stream of smaller spots. *a* has two nuclei and is measured as two separate spots on September 10, 17 and 18.
Group 3174, September 8–13. A few small faint spots in an irregular group.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
251d·420	JG,FT	3168	0·297	177·0	215·8	−10·0	0	7	
		3168	0·267	173·4	214·9	− 8·1	3	21	
		3168	0·296	172·8	214·6	− 9·8	3	20	
		3168	0·316	172·0	214·1	−11·0	16	81	
		3168	0·310	169·0	213·3	−10·4	2	22	
		3174	0·115	310·9	221·8	+11·5	0	3	
		3174	0·103	329·8	219·7	+12·3	0	1	
		3174	0·102	351·2	217·6	+13·0	3	8	
		3175	0·432	169·0	211·8	−17·8	0	13	
		3172	0·652	114·9	179·9	−10·1	0	2	
		3172	0·677	114·5	178·0	−10·7	0	3	
		3173*a*	0·773	108·5	168·9	− 9·4	122	809	561*c*
		3173	0·868	110·7	160·1	−14·0	6	34	
		3173	0·878	107·6	158·2	−11·7	14	77	
			0·730	81·6	169·5	+11·0			68
			0·936	69·1	146·3	+22·1			284
Sept. 9		Centre			(216·7)	(+7·2)	(400)	(2376)	(3219)
252·493	CL,HA		0·982	249·6	278·3	−18·4			334
			0·878	250·2	260·6	−13·5			183
			0·888	231·2	255·1	−29·5			106
			0·726	245·1	244·8	−12·5			113
		3168*a*	0·452	237·4	225·1	− 7·4	86	435	
		3168	0·422	235·1	222·9	− 7·2	10	65	
		3168	0·386	231·8	220·3	− 6·9	4	18	
		3168	0·387	224·8	218·6	− 9·0	13	114	
		3168	0·344	219·5	215·3	− 8·3	0	14	
		3168	0·353	215·4	214·5	− 9·6	7	28	
		3168	0·367	212·3	214·1	−10·9	16	84	
		3174	0·331	288·9	221·3	+13·0	0	4	
		3174	0·291	287·9	219·0	+12·0	0	9	
		3175	0·449	200·8	212·2	−17·6	0	8	
		3173*a*	0·586	113·6	169·9	− 7·5	44	529	
		3173*a*	0·603	116·0	169·4	− 9·3	19	126	
		3173	0·630	117·2	168·0	−10·8	0	39	
		3173	0·642	115·3	166·6	−10·1	9	40	
		3173	0·666	118·7	165·9	−12·9	4	17	
		3173	0·663	116·8	165·6	−11·6	8	57	
		3173	0·725	116·1	161·1	−11·9	4	20	
		3173	0·737	112·5	158·8	−11·2	8	51	
Sept. 10		3176*a* Centre	0·937	84·5	132·6 (202·6)	+ 7·7 (+7·2)	0 (232)	44 (1702)	216*f* (952)
1893.									
253d·411	HA,FT		0·948	252·7	263·1	+18·7			352
			0·899	275·0	254·9	+ 7·6			380
			0·832	285·3	247·2	+16·7			326
			0·896	237·1	246·6	−25·2			323
			0·868	246·2	246·2	−16·5			279
			0·803	251·3	241·0	−10·4			130
			0·851	226·5	236·4	−30·9			108
			0·664	293·3	231·0	+20·7			167
		3168*a*	0·606	246·0	224·9	− 7·2	84	535	
		3168	0·544	244·5	220·0	− 7·3	0	5	
		3168	0·539	240·1	218·6	− 9·2	9	92	110*c*
		3168	0·508	234·0	215·1	−10·8	0	4	
		3168	0·494	235·4	214·8	− 9·7	14	43	
		3168	0·499	231·7	213·9	−11·4	10	57	
		3174	0·516	283·1	221·4	+12·9	0	8	
		3174	0·507	280·6	220·9	+11·6	0	8	
		3174	0·471	282·2	218·5	+12·1	3	9	
		3175	0·562	223·9	214·5	−17·2	0	6	
		3173	0·434	132·0	171·5	−10·0	0	3	
		3173*a*	0·427	127·2	170·5	− 8·1	90	480	
		3173	0·521	130·5	166·6	−13·1	4	21	
		3173	0·496	125·8	166·5	−10·2	0	7	
		3173	0·515	127·3	165·9	−11·6	10	74	
		3173	0·578	125·2	161·6	−13·1	4	30	52*c*
		3173	0·564	122·3	161·5	−11·2	0	7	
		3173	0·589	120·5	159·5	−11·2	13	88	
		3173	0·621	124·8	158·8	−14·6	0	5	
		3173	0·666	117·9	153·7	−11·8	3	28	
		3173	0·687	116·2	151·6	−12·0	0	10	
		3176*a*	0·844	85·2	132·6	+ 7·9	13	49	279*f*
		3177*a*	0·991	114·4	112·3	−22·9	15	254	
			0·708	65·5	146·6	+22·3			88
			0·732	83·7	143·1	+ 9·5			84
			0·861	66·8	131·0	+23·6			147
			0·899	106·5	129·2	−11·4			311
Sept. 11		Centre			(190·5)	(+7·2)	(272)	(1823)	(3136)
254·513	CL,JG		0·963	243·6	245·3	−23·0			185
			0·953	251·1	245·0	−15·5			252
			0·876	282·4	237·7	+14·3			276
			0·733	234·0	214·9	−19·9			123
			0·716	234·5	213·8	−18·9			120

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3175, September 9–11. A small spot.
Group 3176, September 10–16. A regular spot, *a*, with a very small companion from September 12–14.
Group 3177, September 11–21. A regular spot, *a*, with sometimes a small companion.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
254d·513	CL,JG	3168*a*	0·777	255·3	224·9	— 6·6	54	347	
		3168	0·753	254·4	222·6	— 6·7	9	58	
		3168	0·742	252·6	221·3	— 7·8	0	3	
		3168	0·717	250·0	218·7	— 8·9	13	74	324*c*
		3168	0·676	248·1	215·2	— 9·0	5	19	
		3168	0·670	244·8	213·9	—10·9	5	21	
		3168	0·655	246·6	213·3	— 9·3	0	15	
		3174	0·735	282·4	223·4	+14·0	0	4	
		3174	0·707	281·1	221·1	+12·9	0	7	
		3174	0·687	282·4	219·4	+13·7	0	3	
		3173	0·313	165·5	171·2	—10·4	6	26	
		3173*a*	0·270	161·2	170·4	— 7·6	78	428	
		3173	0·274	155·1	169·3	— 7·2	0	7	
		3173	0·346	160·4	169·1	—11·8	3	11	
		3173	0·373	156·9	167·3	—12·9	0	5	
		3173	0·351	153·0	166·6	—11·0	13	59	
		3173	0·393	144·5	162·5	—11·6	0	15	
		3173	0·415	146·0	162·2	—13·1	3	8	
		3173	0·409	139·1	160·2	—11·0	11	39	
		3173	0·485	133·4	154·8	—12·7	13	54	
		3173	0·500	131·6	153·5	—12·7	0	1	
		3173	0·503	128·3	152·2	—11·5	5	12	
		3173	0·514	129·1	151·9	—12·3	0	6	
		3178	0·231	151·1	169·5	— 4·5	1	9	
		3179	0·231	34·8	168·0	+18·0	2	6	
		3179	0·267	37·9	165·9	+19·2	0	2	
		3180	0·722	122·9	136·6	—17·5	1	7	
		3176*a*	0·678	86·0	133·0	+ 8·0	8	53	149*c*
		3176	0·720	86·9	129·7	+ 7·2	0	3	
		3177*a*	0·919	118·0	114·9	—22·2	19	129	1169*f*
		3181*a*	0·961	111·9	105·8	—18·7	11	36	504*n*
			0·792	113·5	127·7	—13·6			58
			0·839	85·8	118·6	+ 7·4			38
			0·939	102·7	108·0	— 9·3			274
Sept. 12		Centre			(175·9)	(+7·2)	(260)	(1467)	(3472)
255·519	JG,FT		0·894	289·4	226·6	+20·5			138
			0·834	241·5	213·2	—18·9			193
			0·768	234·4	204·5	—21·2			87
		3168*a*	0·897	258·7	224·8	— 6·8	45	276	350*c*
		3168	0·880	258·3	222·6	— 6·7	7	55	
		3168	0·854	254·7	218·9	— 9·1	2	14	
		3168	0·814	254·2	214·8	— 8·4	0	7	321*c*
		3168	0·812	250·8	213·8	—11·0	0	8	
1893.				°	°	°			
255d·519	JG,FT	3174	0·840	280·4	220·2	+12·6	0	5	207*c*
		3174	0·829	281·9	219·0	+13·9	0	9	
		3182*a*	0·599	265·3	199·2	+ 3·0	4	16	
		3182	0·580	263·0	197·6	+ 1·9	0	4	
		3182	0·574	265·7	197·4	+ 3·5	0	7	
		3183	0·330	276·5	181·9	+ 8·9	2	6	
		3173*a*	0·290	209·0	170·7	— 7·5	74	363	
		3173	0·348	202·7	170·4	—11·5	0	8	
		3173	0·354	199·9	169·7	—12·2	0	2	
		3173	0·341	199·8	169·3	—11·5	0	4	
		3173	0·273	203·4	168·9	— 7·3	2	18	
		3173	0·292	201·7	168·8	— 8·5	5	18	
		3173	0·298	196·1	167·4	— 9·4	0	9	
		3173	0·351	190·9	166·5	—12·9	0	13	
		3173	0·321	191·8	166·4	—11·0	13	50	
		3173	0·308	188·5	165·2	—10·5	0	6	
		3173	0·339	181·1	163·0	—12·5	0	2	
		3173	0·318	172·1	160·1	—11·1	3	9	
		3173	0·371	158·9	154·8	—13·0	5	16	
		3173	0·360	157·3	154·5	—12·2	0	3	
		3173	0·379	154·7	153·1	—12·9	0	1	
		3173	0·369	152·6	152·7	—11·9	1	8	
		3173	0·373	148·6	151·2	—11·4	0	4	
		3178	0·225	210·5	169·1	— 4·0	0	3	
		3178	0·207	207·5	167·1	— 3·4	0	1	
		3179	0·218	345·4	165·9	+19·3	0	5	
		3176*a*	0·495	86·4	132·8	+ 8·0	12	41	
		3176	0·566	86·0	128·0	+ 8·2	0	3	
		3177*a*	0·832	123·4	114·0	—22·5	15	112	602*c*
		3184	0·908	126·2	106·2	—28·6	3	13	
		3181*a*	0·889	115·9	105·0	—19·1	7	59	632*c*
			0·858	106·4	106·1	—10·1			150
			0·950	105·4	93·2	—12·1			169
Sept. 13		Centre			(162·6)	(+7·2)	(200)	(1178)	(2849)
256·626	CL,HA		0·955	292·8	222·1	+23·9			134
			0·956	282·6	221·9	+14·1			186
			0·908	247·0	208·9	—17·4			190
			0·870	239·9	201·9	—21·7			143
			0·810	297·4	201·1	+26·3			101
		3168*a*	0·979	261·6	225·0	— 6·6	29	276	4038*f*
		3182*a*	0·791	268·4	200·1	+ 3·2	3	14	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3178, September 12–14. A small spot north of Group 3173*a*. A second small spot is seen on September 13.
Group 3179, September 12–13. Some very small faint spots.
Group 3180, September 12. A very small spot.
Group 3181, September 12–15. An ill-defined spot, *a*. A very small companion is seen on September 15.
Group 3182, September 13–15. A small spot, *a*, followed by a couple of very small companions on September 13 and 14.
Group 3183, September 13–15. A small and rapidly moving spot, *nf* Group 3182.
Group 3184, September 13–15. A small spot, *sf* Group 3177.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
256d.626	CL,HA	3182	0·766	267·1	197·8	+ 2·4	0	4	71*c*
		3183	0·581	275·1	183·7	+ 8·8	1	8	
		3173*a*	0·449	236·9	170·2	− 7·5	66	366	
		3173	0·420	237·7	168·8	− 6·2	0	4	
		3173	0·469	223·8	168·2	−12·1	0	4	
		3173	0·434	230·4	167·7	− 9·2	2	10	
		3173	0·435	225·7	166·4	−10·8	11	40	
		3173	0·423	221·9	164·7	−11·4	1	22	
		3173	0·371	199·8	155·3	− 9·1	6	19	
		3173	0·338	193·0	152·4	−12·0	1	10	
		3178	0·440	244·9	171·4	− 4·1	0	3	
		3176*a*	0·263	84·9	132·7	+ 8·3	7	28	
		3176	0·310	85·2	129·9	+ 8·3	0	4	
		3177*a*	0·709	132·2	113·5	−22·5	14	92	169*c*
		3184	0·813	133·1	105·7	−28·4	3	6	
		3181*a*	0·761	122·8	105·6	−19·0	5	33	246*f*
			0·839	110·6	94·5	−12·9			179
			0·831	90·1	91·8	+ 3·9			75
			0·922	78·5	80·1	+13·4			274
Sept. 14		Centre			(148·0)	(+7·2)	(149)	(943)	(2171)
257·477	HA,JG		0·987	282·7	218·8	+13·6			97
			0·977	258·9	212·8	− 9·2			205
			0·948	245·5	203·6	−20·4			341
			0·862	291·0	196·6	+21·7			186
			0·740	243·8	179·8	−13·8			194
		3182*a*	0·896	269·6	200·4	+ 2·9	0	5	88*f*
		3183	0·739	275·1	184·6	+ 7·8	0	5	
		3173	0·648	246·5	173·7	− 9·2	0	6	
		3173*a*	0·613	247·4	171·5	− 7·7	57	318	
		3173	0·615	245·5	171·1	− 8·8	0	8	
		3173	0·621	243·0	170·9	−10·4	5	50	
		3173	0·577	247·7	169·2	− 6·5	0	9	178*c*
		3173	0·583	244·1	168·7	− 8·6	3	9	
		3173	0·574	241·4	167·4	− 9·7	0	15	
		3173	0·599	235·1	167·1	−13·8	0	9	
		3173	0·572	238·3	166·4	−11·2	3	13	
		3173	0·470	223·8	156·2	−13·0	4	11	
		3185	0·431	349·3	142·2	+32·1	0	1	
		3185	0·422	352·2	140·6	+31·8	0	3	
		3185	0·444	353·0	140·3	+26·6	0	4	
		3176*a*	0·077	72·6	132·6	+ 8·5	5	25	
		3176	0·107	69·4	130·9	+ 9·3	0	4	
1893.				°	°	°			
257d.477	HA,JG	3177*a*	0·612	142·1	112·9	−22·2	7	80	176*c*
		3177	0·646	141·3	110·7	−23·7	0	5	
		3184	0·730	141·1	105·5	−28·4	0	5	144*nf*
		3181*a*	0·657	131·4	105·4	−19·6	0	12	295*c*
		3181	0·679	130·2	103·4	−19·9	0	6	
		3186*a*	0·972	83·3	59·8	+ 8·2	102	625	414*c*
			0·761	118·3	92·8	−16·0			96
			0·878	136·3	89·4	−34·6			191
			0·903	119·7	80·2	−20·4			309
			0·848	78·0	78·3	+14·0			117
			0·939	60·4	66·2	+30·2			188
Sept. 15		Centre			(136·8)	(+7·2)	(186)	(1228)	(3219)
258·202	HA,JG		0·951	286·0	200·3	+17·4			86
		3173	0·740	248·7	171·6	−10·4	0	40	
	M.	3173*a*	0·725	252·2	171·2	− 7·6	62	320	
		3173	0·702	248·9	168·6	− 9·2	6	48	156*c*
		3173	0·690	247·9	167·3	− 9·5	0	9	
		3173	0·689	245·0	166·6	−11·4	0	5	
		3173	0·587	235·1	156·7	−13·3	0	9	
		3176*a*	0·103	281·0	133·0	+ 8·3	5	20	
		3177*a*	0·541	154·3	112·6	−22·1	12	61	
		3186*a*	0·920	84·2	59·8	+ 8·1	128	500	461*c*
			0·930	119·7	65·1	−24·2			57
			0·936	77·3	56·9	+14·4			91
Sept. 16		Centre			(127·2)	(+7·2)	(213)	(1012)	(851)
259·490	CL,FT		0·815	289·4	164·8	+19·9			51
		3173	0·901	251·3	171·3	−13·4	3	24	
		3173*a*	0·889	258·2	171·3	− 7·1	52	219	
		3173	0·891	255·5	171·0	− 9·5	0	21	227*c*
		3173*a*	0·881	257·1	170·1	− 7·8	10	29	
		3173	0·872	256·3	168·9	− 8·3	2	22	
		3173	0·877	252·5	168·6	−11·6	7	50	
		3173	0·879	250·9	168·5	−13·0	0	9	267*c*
		3173	0·854	252·1	166·0	−11·3	0	10	
		3177*a*	0·488	183·6	112·1	−21·9	7	26	
		3186*a*	0·758	85·3	60·7	+ 8·2	112	571	172*c*
		3186	0·775	86·6	59·2	+ 7·1	7	38	
		3187*a*	0·892	102·2	48·9	− 7·5	12	29	102*c*
		3187	0·914	103·5	46·2	− 9·2	6	26	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3185, September 15. Three very small spots.
Group 3186, September 15–26. A very large composite spot, *a*, with many nuclei distributed through a faint penumbra, and with small nebulous companions. It has broken up into three spots, *b*, *c* and *d*, by September 25.
Group 3187, September 17–27. Two small spots on September 17. Both have increased by September 18, and by September 19 the group consists of a large regular spot, *a*, followed by several small spots in an irregular stream.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of Umbra for each Spot (and for Day).	Spots. Area of Whole for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
259d.490	CL, FT		0·795	129·7	67·8	−25·3			200
			0·897	124·1	54·4	−26·3			174
			0·836	78·1	53·0	+13·8			103
			0·864	56·9	51·8	+32·0			88
Sept. 17		Centre			(110·2)	(+7·1)	(218)	(1074)	(1384)
260·244	CL, FT		0·904	249·3	161·4	−15·3			237
		3173	0·971	254·2	173·9	−13·4	0	35	
M.		3173*a*	0·959	260·4	172·3	− 7·0	28	159	372*c*
		3173*a*	0·953	259·2	171·0	− 8·0	11	54	
		3173	0·945	255·2	168·9	−11·4	7	36	264*c*
		3173	0·931	255·0	166·5	−11·1	0	10	
		3188	0·579	228·4	127·0	−16·2	1	7	
		3188	0·557	227·6	125·5	−15·6	1	6	
		3188	0·561	222·6	123·7	−17·8	1	7	
		3188	0·545	233·4	123·2	−16·7	3	10	
		3177*a*	0·519	201·1	111·9	−21·9	4	17	
		3189	0·451	48·5	78·7	+23·9	1	12	
		3189	0·486	51·1	75·9	+24·2	4	10	
		3186*a*	0·638	85·7	60·5	+ 8·2	97	541	
		3186	0·662	83·7	58·6	+ 9·5	4	32	
		3186	0·677	87·6	57·5	+ 6·9	3	23	
		3187*a*	0·806	104·8	48·7	− 7·5	14	110	
		3187	0·839	104·0	45·3	− 7·7	0	7	154*c*
		3187	0·846	106·1	45·0	− 9·6	12	91	
			0·956	81·5	26·7	+10·2			172
Sept. 18		Centre			(100·3)	(+7·1)	(191)	(1167)	(1199)
261·200	CL, HA		0·974	248·6	160·8	−18·9			105
			0·962	255·8	159·5	−11·6			397
M.		3190	0·992	286·5	171·8	+17·2	0	23	182*c*
		3190	0·983	288·7	168·7	+19·6	6	37	
		3173*a*	0·996	261·8	171·1	− 7·4	23	325	316*c*
		3177*a*	0·611	218·3	111·6	−22·1	3	11	
		3177	0·589	218·4	110·6	−20·9	0	4	
		3189	0·315	24·0	79·6	+23·7	2	8	
		3189	0·337	24·7	78·7	+24·8	0	2	
		3189	0·337	31·5	76·6	+23·6	0	2	
		3189	0·358	34·0	75·0	+24·1	3	6	
		3186	0·425	90·3	62·4	+ 6·3	1	5	
		3186*a*	0·448	86·0	60·9	+ 8·2	83	521	
		3186	0·485	83·8	58·5	+ 9·2	0	14	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of Umbra for each Spot (and for Day).	Spots. Area of Whole for each Spot (and for Day).	F Area for each Group (and for Day).
1893.				°	°	°			
261d.200	CL, HA	3186	0·489	89·8	58·3	+ 6·3	4	24	
		3186	0·494	88·2	57·9	+ 7·1	0	6	
M.		3187*a*	0·655	110·8	49·6	− 7·8	23	135	
		3187	0·674	110·0	48·1	− 7·8	1	5	
		3187	0·695	112·8	47·1	−10·2	0	4	
		3187	0·685	109·2	47·0	− 7·7	0	6	
		3187	0·718	112·0	45·2	−10·4	11	36	
		3187	0·713	109·3	44·9	− 8·4	4	19	
		3187	0·721	105·7	43·5	− 6·1	0	5	
			0·904	130·1	33·5	−31·6			137
			0·869	80·6	26·7	+11·7			187
			0·934	61·3	17·9	+29·3			155
Sept. 19		Centre			(87·6)	(+7·1)	(164)	(1198)	(1479)
262·461	JG, FT		0·932	292·1	140·6	+23·1			105
			0·880	273·6	132·9	+ 6·5			105
			0·861	247·6	126·4	−15·2			244
			0·785	247·7	118·9	−12·6			115
			0·707	221·0	102·0	−26·1			326
		3177*a*	0·756	232·8	111·3	−21·8	5	16	307*sp*
		3189	0·322	339·5	78·1	+24·5	0	4	
		3189	0·336	342·2	76·5	+25·6	0	3	
		3189	0·329	345·2	76·3	+25·5	0	18	
		3189	0·300	345·0	75·8	+23·9	0	8	
		3186	0·168	100·9	61·5	+ 5·2	0	2	
		3186*a*	0·172	81·1	61·1	+ 8·5	77	422	
		3186	0·197	92·2	59·6	+ 6·5	0	4	
		3186	0·219	112·1	59·3	+ 2·3	0	3	
		3186	0·227	82·4	57·9	+ 8·6	0	11	
		3187*a*	0·427	125·0	50·4	− 7·5	14	131	
		3187	0·450	124·1	49·0	− 8·0	0	12	
		3187	0·510	122·8	45·3	− 9·6	3	20	
		3187	0·513	123·3	45·3	− 9·9	3	22	
		3191	0·399	73·5	48·0	+13·0	0	10	
		3192*a*	0·779	131·4	30·7	−25·6	6	36	
		3192	0·791	130·6	29·4	−25·7	0	6	206*c*
		3192	0·811	129·7	27·1	−26·1	7	32	
			0·683	79·4	27·8	+12·4			196
			0·876	137·9	24·8	−35·7			110
			0·882	127·0	18·4	−27·8			119
			0·863	79·9	10·8	+12·3			151
			0·902	62·1	6·5	+28·2			198
Sept. 20		Centre			(71·0)	(+7·1)	(115)	(760)	(2182)

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3188, September 18. Four small spots in a straggling stream.
Group 3189, September 18–20. A few small scattered spots.
Group 3190, September 19. Two small spots.
Group 3191, September 20–28. One or two small spots. The group increases in size especially in the direction of Group 3186, from which it is only separated by a short interval on September 22 and 23. The group has undergone a further expansion by September 24, but is no longer a straight stream.
Group 3192, September 20–23. A short stream of spots. The leader, *a*, is the largest, and is the only one that remains by September 23.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
263^{d}·239	CL,JG		0·921	251·6	124·6	−13·8			182
			0·788	250·3	109·6	−10·8			205
I.			0·781	229·4	101·5	−25·2			304
			0·772	208·3	87·7	−36·4			43
		3177*a*	0·841	237·8	110·7	−22·2	0	10	426*n*
		3186*a*	0·028	344·7	61·1	+ 8·7	100	390	
		3186	0·063	56·2	57·7	+ 9·1	0	6	
		3187*a*	0·314	143·4	49·9	− 7·6	23	147	
		3187	0·400	138·3	45·1	−10·5	7	32	
		3191	0·196	65·0	50·3	+11·7	0	3	
		3191	0·253	63·9	47·3	+13·3	0	7	99*c*
		3192*a*	0·692	139·0	30·5	−25·3	8	31	
		3192	0·742	136·1	25·7	−26·5	5	26	
		3192	0·745	134·7	24·8	−25·8	0	5	
		3193	0·840	131·4	14·8	−28·9	1	15	103*p*
		3194	0·974	102·5	345·7	−10·4	0	14	84*p*
			0·896	141·9	14·6	−40·0			153
			0·870	60·6	0·9	+29·0			183
			0·964	114·1	350·5	−20·9			194
			0·969	107·8	347·9	−15·3			176
Sept. 21		Centre			(60·7)	(+7·1)	(144)	(686)	(2152)
264·579	CL,HA		0·927	278·5	111·6	+10·5			86
			0·911	251·4	105·6	−13·7			627
			0·911	238·6	101·8	−24·8			371
			0·797	248·8	92·4	−12·2			127
			0·868	223·1	89·0	−34·6			169
		3195	0·935	312·4	111·0	+42·0	5	23	125*f*
		3186	0·347	277·2	63·4	+ 9·1	0	4	
		3186*a*	0·306	277·6	60·9	+ 9·0	75	380	
		3186	0·280	267·1	59·4	+ 5·9	0	2	
		3186	0·281	281·9	59·3	+10·0	0	7	
		3186	0·277	271·8	59·2	+ 7·2	0	4	
		3187*a*	0·277	205·5	50·0	− 7·5	19	131	
		3187	0·312	189·1	46·0	−10·9	4	13	
		3191	0·205	296·9	53·8	+12·2	5	19	
		3191	0·184	305·9	51·9	+13·1	2	7	84*c*
		3191	0·151	306·1	50·2	+12·0	1	11	
		3191	0·159	317·2	49·5	+13·6	2	11	
		3192*a*	0·565	160·9	31·3	−25·3	5	20	
		3192	0·628	156·3	26·5	−28·3	0	4	88*c*
		3192	0·612	153·3	25·3	−26·4	4	10	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
264^{d}·579	CL,HA	3194	0·812	107·9	351·6	−10·1	7	43	217*c*
		3194	0·867	106·8	345·6	−10·8	2	10	
		3196	0·914	101·6	338·8	− 7·6	0	17	188*f*
		3197	0·926	107·4	338·1	−13·2	9	27	
		3197	0·937	105·9	336·1	−12·2	0	9	315*c*
		3197	0·948	109·0	334·8	−15·5	6	35	
			0·839	102·9	347·8	− 6·8			74
			0·880	115·9	346·6	−18·8			242
			0·856	97·3	345·1	− 2·5			108
			0·929	71·8	333·9	+19·5			111
Sept. 22		Centre			(43·1)	(+7·0)	(146)	(787)	(2932)
265·089	JG,HA		0·947	244·4	102·7	−21·5			593
			0·899	252·8	97·5	−12·1			168
I.			0·918	228·1	91·6	−33·9			199
			0·745	220·5	69·6	−28·6			74
		3186*a*	0·432	275·6	62·0	+ 8·8	131	383	
		3186	0·408	271·0	60·7	+10·4	1	9	
		3186	0·407	278·4	60·3	+ 9·8	2	22	
		3187*a*	0·351	224·9	50·7	− 7·6	22	122	
		3187	0·358	210·9	47·1	−11·0	4	15	
		3191	0·336	286·7	55·4	+12·1	0	6	
		3191	0·314	288·7	54·0	+12·5	3	14	
		3191	0·292	292·8	52·3	+13·2	0	5	
		3191	0·268	295·1	50·7	+13·2	9	26	
		3191	0·241	297·4	48·9	+13·2	1	4	
		3192*a*	0·541	172·6	31·9	−25·3	6	16	
		3194	0·723	110·2	353·0	− 9·4	5	18	117*nf*
		3194	0·800	108·9	346·0	−11·1	0	13	
		3196	0·845	102·8	340·4	− 6·8	0	11	165*nf*
		3197	0·869	109·0	339·1	−12·7	9	28	
		3197	0·876	109·9	338·5	−13·7	0	8	437*c*
		3197	0·901	109·8	335·4	−14·4	0	15	
		3198	0·908	68·6	330·5	+22·3	0	7	88*c*
			0·840	118·9	345·2	−19·6			313
Sept. 23		Centre			(36·3)	(+7·0)	(193)	(722)	(2154)
266·473	HA,JG		0·966	232·1	84·5	−33·8			135
			0·868	295·3	78·1	+25·3			106
			0·903	240·5	76·5	−22·9			68

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3193, September 21. A small spot.
Group 3194, September 21–23. Two or three very small scattered spots.
Group 3195, September 22. A small spot in a very high latitude.
Group 3196, September 22–28. A few small spots measured together on September 22. The group has considerably increased by September 24, and the preceding spots have coalesced to form a large ill-defined spot by September 25. The group diminishes on the succeeding days.
Group 3197, September 22–27. A few small spots irregularly arranged.
Group 3198, September 23. A very small spot.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
266d·473	HA,JG		0·850	233·6	67·4	−25·8			128
			0·735	283·7	65·5	+14·7			95
		3186*a*	0·687	275·8	61·7	+ 9·0	71	427	300*c*
		3186	0·675	272·6	60·7	+ 6·8	6	43	
		3187*a*	0·581	246·0	50·4	− 7·8	19	123	51*c*
		3191	0·586	280·2	54·0	+11·6	36	152	
		3191	0·581	277·9	53·7	+10·2	0	5	
		3191	0·561	281·1	52·2	+11·9	0	7	185*c*
		3191	0·557	279·3	52·0	+10·9	0	5	
		3191	0·536	282·3	50·4	+12·4	8	42	
		3191	0·508	282·2	48·5	+12·1	14	66	
		3199*a*	0·447	300·2	42·2	+19·3	2	16	
		3199*b*	0·418	303·0	39·8	+19·5	5	17	
		3200*a*	0·660	134·1	347·6	−21·3	4	18	
		3200*b*	0·674	132·4	346·1	−21·1	0	17	
		3196	0·635	109·7	341·2	− 6·8	0	3	
		3196	0·654	103·9	339·7	− 6·8	10	51	
		3196	0·691	106·2	336·4	− 6·0	4	19	
		3197	0·679	117·6	340·1	−12·9	0	5	110*c*
		3197	0·707	117·4	338·0	−13·7	0	8	
		3197	0·752	118·6	334·9	−16·1	0	9	
		3201*a*	0·931	79·0	308·8	+12·7	11	94	
		3202*a*	0·962	103·7	306·1	−11·1	18	126	491*n*
		3203*a*	0·971	78·2	301·0	+13·1	58	318	371*sp*
			0·923	111·2	314·5	−16·5			144
			0·946	118·8	312·8	−24·3			360
			0·967	71·0	301·6	+20·1			467
Sept. 24		Centre			(18·1)	(+6·9)	(266)	(1571)	(3011)
267·375	HA,JG		0·925	238·1	66·8	−26·0			207
			0·840	281·8	63·7	+13·7			131
I.			0·727	245·3	48·5	−12·6			64
		3186*b*	0·836	274·0	63·0	+ 7·1	42	190	407*c*
		3186*c*	0·823	277·3	61·9	+10·0	20	127	
		3186*d*	0·825	272·3	61·8	+ 5·8	16	123	
		3187*a*	0·729	251·7	50·3	− 8·3	23	122	71*s*
		3191	0·739	278·7	54·0	+11·1	19	157	257*c*
		3191	0·684	279·9	49·4	+11·8	22	91	
		3191	0·679	282·1	48·9	+13·2	11	62	
		3204	0·712	286·6	51·3	+16·6	0	5	58*c*
1893.									
267d·375	HA,JG	3199*a*	0·611	293·4	42·5	+19·6	5	33	65*c*
		3199*b*	0·575	294·7	39·6	+19·6	9	23	
I.		3200*a*	0·558	147·2	347·2	−21·4	1	12	
		3196	0·489	116·5	340·1	− 6·4	14	93	
		3196	0·535	114·3	336·8	− 6·7	5	21	
		3196	0·543	111·9	335·8	− 5·7	0	8	
		3196	0·555	109·7	334·6	− 4·9	0	3	
		3197	0·568	126·1	338·1	−13·4	2	10	
		3201*a*	0·844	78·8	308·1	+13·1	16	66	
		3202*a*	0·895	106·2	305·2	−11·1	17	118	567*c*
		3203*a*	0·908	78·4	300·3	+13·4	108	337	265*c*
			0·927	120·1	304·5	−24·5			522
			0·924	67·6	298·0	+23·3			284
Sept. 25		Centre			(6·1)	(+6·9)	(330)	(1601)	(2898)
268·494	CL,FT		0·848	252·0	46·5	−11·3			111
		3186*b*	0·951	276·0	63·8	+ 7·8	34	132	633*c*
		3186*d*	0·947	273·6	62·9	+ 5·6	7	53	
		3186*c*	0·940	278·2	62·0	+10·0	26	109	
		3187*a*	0·873	256·7	50·3	− 8·1	17	97	
		3191	0·879	279·0	53·4	+11·1	9	50	
		3191	0·864	278·5	51·6	+10·7	0	31	
		3191	0·853	280·3	50·4	+12·3	20	113	270*c*
		3191	0·829	281·7	47·8	+13·5	0	21	
		3191	0·829	279·4	47·8	+11·6	6	39	
		3204	0·850	285·8	50·3	+17·0	0	5	
		3199*a*	0·806	290·1	44·9	+20·2	5	25	178*c*
		3199*b*	0·748	290·6	39·3	+19·8	4	17	
		3196	0·279	143·4	341·8	− 6·2	6	46	
		3196	0·330	130·3	336·8	− 5·7	6	38	
		3197	0·405	151·6	340·0	−14·1	0	2	
		3197	0·414	145·2	337·4	−13·2	0	5	
		3201*a*	0·677	77·8	308·7	+13·2	9	62	
		3202*a*	0·752	111·2	306·0	−11·0	13	108	294*c*
		3203*a*	0·772	78·3	300·6	+13·3	59	327	188*c*
		3205	0·887	102·4	290·7	− 7·7	3	8	383*c*
			0·785	131·7	310·7	−26·3			279
			0·772	65·4	301·8	+23·2			299
			0·902	123·2	294·5	−26·0			393
			0·868	71·3	290·8	+19·6			266
			0·934	115·2	287·1	−20·6			376
Sept. 26		Centre			(351·4)	(−6·8)	(224)	(1288)	(3670)

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3199, September 24–28. A pair of small irregular spots, *a* and *b*, *nf* of Group 3191. *b* has disappeared by September 28.
Group 3200, September 24–25. A pair of small spots, *a* and *b*, on September 24. *b* has disappeared by September 25.
Groups 3194, 3196, 3197, and 3200 are somewhat similar groups of unstable and irregular small spots in one faculous disturbed area.
Group 3201, September 24–30. A regular spot, *a*, with one or two very small companions on September 27 and 28. *a* diminishes from day to day.
Group 3202, September 24–October 5. A large regular spot, *a*, with small companions on September 29 and 30 and October 2.
Group 3203, September 24–October 6. A large regular spot, *a*, which forms a wide pair with Group 3201*a*. A number of small spots form a short curved stream near it on its preceding side on September 29. Other small spots follow it on September 30 and the succeeding days.
Group 3204, September 25–26. A very small spot.
Group 3205, September 26–29. A small spot.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued*.

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
269d·540	HA,JG		0·988	277·2	59·3	+ 8·1			315
			0·851	232·7	26·6	−26·6			128
			0·821	224·9	19·7	−30·5			118
		3187*a*	0·963	260·0	50·5	− 7·7	25	93	219*s*
		3191	0·953	281·3	50·8	+12·8	13	76	442*c*
		3191	0·953	279·8	50·7	+11·4	0	184	
		3199*a*	0·921	289·5	45·4	+20·6	13	42	360*c*
		3199*b*	0·877	289·3	39·2	+20·2	4	10	
		3196	0·227	207·2	343·5	− 4·8	1	5	
		3196	0·220	181·7	338·0	− 5·8	6	24	
		3197	0·343	183·0	338·7	−13·1	0	7	
		3206*a*	0·257	89·6	322·7	+ 6·7	5	21	
		3206	0·276	79·4	321·7	+ 9·5	0	9	
		3206*b*	0·297	87·3	320·3	+ 7·3	5	17	
		3206	0·319	80·2	319·1	+ 9·6	3	9	
		3201	0·391	69·5	315·5	+14·2	0	5	
		3201*a*	0·485	74·4	309·0	+13·5	15	61	
		3202*a*	0·590	119·4	306·1	−11·0	18	107	
		3203*a*	0·605	76·9	300·5	+13·3	64	312	127*c*
		3205	0·753	106·9	291·1	− 8·0	2	12	
			0·712	140·1	306·8	−27·2			66
			0·712	129·1	301·4	−21·2			100
			0·821	122·1	289·5	−21·4			338
			0·760	68·0	288·8	+21·0			207
			0·783	71·1	286·2	+19·0			103
			0·887	127·7	284·5	−28·8			133
			0·845	108·6	282·9	−11·7			142
			0·864	62·6	278·4	+27·0			87
			0·960	105·2	266·2	−12·5			291
			0·952	84·1	265·0	+ 7·7			74
Sept. 27		Centre			(337·6)	(+6·8)	(174)	(994)	(3250)
270·264	CL,HA		0·952	288·2	41·1	+19·3			85
			0·851	282·7	26·7	+14·3			177
I.			0·886	234·6	22·0	−27·0			129
		3191	0·985	282·3	49·1	+13·2	0	19	
		3199*a*	0·974	288·6	46·2	+19·6	0	24	
		3196	0·285	218·1	338·1	− 6·3	0	5	
		3206*a*	0·083	87·7	323·2	+ 6·8	23	80	
		3206	0·099	64·2	322·8	+ 9·2	2	7	
		3206	0·118	78·4	321·3	+ 8·0	0	9	
		3206	0·132	95·1	320·4	+ 6·0	0	3	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
270d·264	CL,HA	3206	0·143	81·1	319·8	+ 7·9	2	6	
		3206*b*	0·154	88·5	319·1	+ 6·8	6	52	
I.		3201	0·342	63·8	309·6	+15·0	0	4	
		3201*a*	0·345	68·5	308·8	+13·6	9	54	
		3201	0·483	69·2	300·1	+15·8	0	3	
		3202*a*	0·483	128·9	305·5	−11·4	22	138	
		3203*a*	0·476	74·6	300·0	+13·2	79	333	
		3205	0·637	110·6	291·2	− 7·6	0	7	63*c*
			0·741	126·8	289·7	−21·1			148
			0·834	133·1	283·5	−29·9			277
			0·772	109·8	280·5	−10·7			134
			0·884	118·8	271·8	−21·5			152
			0·937	108·2	261·4	−14·4			404
			0·915	82·0	261·3	+10·0			243
Sept. 28		Centre			(328·0)	(+6·7)	(143)	(744)	(1812)
271·474	CL,FT		0·919	284·7	19·4	+16·1			126
			0·875	293·0	13·1	+23·3			61
			0·805	302·3	3·4	+29·7			84
		3206*c*	0·218	282·5	324·4	+ 9·2	17	48	
		3206*a*	0·206	273·8	323·9	+ 7·3	43	261	
		3206	0·192	284·1	322·8	+ 9·2	1	5	
		3206	0·172	271·8	321·9	+ 6·9	0	4	
		3206	0·160	282·7	321·0	+ 8·6	15	68	
		3206*b*	0·109	276·0	318·2	+ 7·3	28	143	
		3201*a*	0·132	24·5	308·8	+13·6	8	30	
		3202	0·261	169·2	309·2	− 8·1	0	3	
		3202	0·294	169·0	308·7	−10·0	0	3	
		3202*a*	0·325	160·8	305·8	−11·1	11	89	
		3202	0·344	150·8	302·2	−10·8	0	4	
		3203	0·185	61·7	302·5	+11·6	0	2	
		3203	0·234	51·8	301·1	+14·9	0	7	
		3203	0·206	68·4	300·8	+10·9	1	5	
		3203*a*	0·231	60·4	300·2	+13·1	64	270	
		3203	0·263	51·5	299·7	+15·9	2	10	
		3203	0·257	69·1	297·9	+11·7	0	5	
		3205	0·407	124·6	292·4	− 7·0	0	5	117*c*
		3207*a*	0·985	87·6	231·9	+ 3·5	27	236	
			0·922	125·1	252·9	−28·7			302
			0·900	77·4	247·2	+14·2			200
Sept. 29		Centre			(312·0)	(+6·7)	(217)	(1198)	(890)

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3206, September 27–October 4. Four small spots on September 27, of which the two largest are *a* and *b*. The group increases in size very rapidly, and on September 28 *a* and *b* are connectedby two streams of small spots, the group thus enclosing an oval space. The southern stream dies out, but the northern stream increases. *a* is a large regular spot. *b* is at first a double spot, but becomes regular later. *a* has thrown off an arm, *c*, by September 29, which moves forward rapidly in longitude.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
272d.478	JG,FT		0·903	300·0	3·0	+29·9			191
			0·808	246·8	348·6	−14·3			158
			0·820	236·9	346·5	−22·1			267
		3206*c*	0·440	277·4	324·9	+ 9·3	24	135	
		3206*a*	0·424	273·2	324·0	+ 7·4	58	317	
		3206	0·393	277·3	321·9	+ 9·0	3	25	
		3206	0·386	274·1	321·6	+ 7·8	13	65	
		3206	0·366	272·8	320·3	+ 7·3	0	6	
		3206	0·365	277·0	320·2	+ 8·8	0	25	
		3206*b*	0·328	274·6	318·0	+ 7·8	37	232	
		3201*a*	0·209	306·6	308·7	+13·7	0	10	
		3202*a*	0·328	201·0	305·6	−11·1	16	100	
		3202	0·299	185·7	300·5	−10·5	0	8	
		3203	0·115	324·0	302·7	+12·0	3	9	
		3203	0·082	332·0	301·0	+10·8	3	15	
		3203*a*	0·112	346·6	300·3	+12·9	61	310	
		3203	0·163	355·1	299·6	+16·0	3	12	
		3203	0·068	2·2	298·6	+10·6	4	17	
		3208	0·400	51·8	279·3	+20·6	6	15	
		3209	0·475	123·0	275·1	− 8·8	0	10	
		3209	0·528	121·6	271·7	−10·0	6	30	
		3207*a*	0·918	89·2	232·2	+ 3·4	44	230	549*nf*
		3207*b*	0·953	87·6	226·3	+ 4·3	13	115	
			0·780	117·2	252·7	−16·2			89
			0·862	129·8	249·6	−29·2			323
			0·852	75·7	240·0	+15·7			167
			0·967	99·5	225·0	− 7·4			661
Sept. 30		Centre			(298·8)	(+6·7)	(294)	(1686)	(2405)
273·266	JG,FT								
			0·936	298·2	358·3	+28·7			80
I.			0·878	246·3	345·5	−17·2			490
			0·888	238·6	344·3	−24·0			107
			0·834	256·5	343·0	− 7·4			515
		3206*c*	0·607	276·1	325·9	+ 9·0	13	202	
		3206*a*	0·591	271·9	324·7	+ 6·4	93	295	
		3206	0·576	275·0	323·7	+ 8·3	5	53	
		3206	0·552	274·4	322·0	+ 7·9	6	46	
		3206	0·530	275·2	320·5	+ 8·4	0	13	
		3206*b*	0·500	273·4	318·5	+ 7·4	51	264	
		3202*a*	0·426	223·1	305·6	−11·8	27	95	
		3203	0·275	292·4	303·4	+12·4	3	13	
		3203	0·247	285·2	302·3	+10·1	0	5	
273d.266	JG,FT	3203*a*	0·237	297·1	300·7	+12·7	79	266	
		3203	0·221	289·2	300·6	+10·6	0	8	
I.		3203	0·248	310·3	299·7	+15·7	2	14	
		3203	0·196	287·1	299·3	+ 9·8	3	13	
		3203	0·186	294·1	298·3	+10·8	6	16	
		3208	0·288	31·0	279·3	+20·7	3	16	
		3209	0·343	139·4	275·4	− 8·6	0	7	
		3209	0·369	140·6	274·7	−10·1	0	4	
		3209	0·397	133·9	271·6	− 9·6	0	8	
		3207*a*	0·830	90·6	232·4	+ 3·2	69	220	391*nf*
		3207*b*	0·880	88·4	226·7	+ 4·5	12	64	
			0·790	138·6	250·9	−31·1			143
			0·826	129·7	242·9	−27·3			97
			0·835	75·9	231·5	+15·4			109
			0·883	95·0	227·0	− 1·3			163
			0·916	102·0	223·7	− 8·2			476
Oct. 1		Centre			(288·4)	(+6·6)	(372)	(1622)	(2571)
274·466	CL,HA		0·948	253·2	341·3	−13·6			356
			0·954	245·5	340·7	−21·0			310
			0·924	262·0	338·9	− 4·8			249
			0·916	304·0	338·1	+33·6			160
		3206*c*	0·815	276·2	327·4	+ 8·8	12	100	
		3206*a*	0·785	273·7	324·4	+ 6·9	48	268	
		3206	0·764	275·9	322·5	+ 8·7	27	156	234*c*
		3206	0·755	273·2	321·7	+ 6·7	6	47	
		3206*b*	0·714	274·7	318·2	+ 7·9	39	264	
		3202*a*	0·606	241·7	305·3	−11·2	13	68	
		3202	0·596	243·6	305·2	− 9·9	0	4	
		3202	0·568	240·4	302·5	−10·6	0	5	
		3203	0·521	284·0	303·6	+12·8	1	6	
		3203*a*	0·477	284·8	300·6	+12·7	51	279	97*c*
		3203	0·430	282·7	297·7	+11·3	2	13	
		3207*a*	0·644	93·3	232·6	+ 2·9	30	226	
		3207	0·677	92·3	230·0	+ 3·3	1	7	168*c*
		3207	0·678	90·0	229·8	+ 4·8	0	4	
		3207*b*	0·713	90·6	227·1	+ 4·1	5	24	
		3210	0·930	117·8	209·5	−22·8	3	54	260*c*
		3210	0·931	117·0	209·1	−22·2	0	17	
			0·794	106·5	222·3	− 8·9			280
			0·914	112·5	210·4	−17·5			151

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3207, September 29–October 10. A large regular spot, *a*, followed by a second large spot, *b*. *b* diminishes very quickly and has disappeared by October 4, and the group consists of *a*, and two or three very small companions. *a* shows a remarkable shift in latitude between October 5 and 7.
Group 3208, September 30–October 1. A small spot.
Group 3209, September 30–October 1. Two small spots on September 30. A third is seen between them on October 1.
Group 3210, October 2–8. A spot with a small companion on October 2. A pair of small spots on October 3. A few very small scattered spots on October 4. The group has disappeared by October 5, but a few small spots are seen on the next three days.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots: Area of UMBRA for each Spot (and for Day).	Spots: Area of WHOLE for each Spot (and for Day).	Faculæ: Area for each Group (and for Day).
				°	°	°			
1893.									
274d.466	CL,HA		0·929	74·2	203·5	+17·1			142
			0·938	81·0	202·2	+10·7			151
Oct. 2		Centre			(272·5)	(+6·5)	(238)	(1542)	(2558)
275·467	HA,JG		0·891	290·5	322·6	+21·2			129
			0·818	284·1	314·4	+15·2			112
		3206c	0·929	276·4	328·0	+ 8·3	10	69	
		3206a	0·906	274·5	324·5	+ 6·8	41	259	460c
		3206	0·904	277·4	324·4	+ 9·5	0	15	
		3206	0·888	275·2	322·2	+ 7·6	34	227	
		3206b	0·854	275·3	318·2	+ 7·9	32	190	
		3202a	0·756	248·6	305·0	−11·5	14	82	
		3211	0·695	288·2	302·9	+17·3	0	9	
		3211	0·688	286·9	302·4	+16·3	0	5	153nf
		3211	0·668	289·0	300·6	+17·5	5	21	
		3203a	0·664	281·6	300·9	+12·5	55	279	252p
		3212	0·588	250·4	293·0	− 5·9	1	9	
		3207a	0·449	96·3	232·9	+ 3·0	35	220	
		3207	0·481	93·2	230·7	+ 4·2	0	4	
		3207b	0·526	92·0	227·6	+ 4·5	0	6	
		3213	0·675	132·4	227·0	−21·5	0	8	97c
		3213a	0·693	130·1	224·8	−21·1	0	8	
		3210	0·817	122·2	211·5	−21·5	1	15	491sf
		3210	0·839	122·4	209·4	−22·6	0	16	
			0·696	114·0	219·0	−11·5			196
			0·852	133·4	213·0	−31·4			61
			0·903	116·9	199·9	−20·9			102
			0·879	64·7	198·1	+25·3			129
			0·896	84·6	195·4	+ 7·7			264
			0·938	107·6	192·4	−14·0			134
			0·927	91·8	191·6	+ 0·8			156
Oct. 3		Centre			(259·3)	(+6·5)	(228)	(1442)	(2736)
276·477	CL,FT		0·937	260·2	314·2	− 6·8			241
			0·925	238·9	307·2	−25·6			321
			0·827	292·4	301·4	+22·1			146
			0·815	252·5	298·0	−10·3			152
			0·765	236·0	288·5	−20·6			86
		3206a	0·977	275·5	324·1	+ 6·7	30	230	
		3206	0·966	276·6	321·5	+ 8·0	38	331	418c
		3206b	0·948	276·4	317·9	+ 8·1	20	204	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots: Area of UMBRA for each Spot (and for Day).	Spots: Area of WHOLE for each Spot (and for Day).	Faculæ: Area for each Group (and for Day).
				°	°	°			
1893.									
276d.477	CL,FT	3202a	0·878	253·1	304·8	−11·5	21	102	80c
		3211	0·851	285·1	304·6	+16·2	4	13	
		3211	0·834	285·2	302·7	+16·2	0	7	215c
		3211	0·816	286·7	300·7	+17·3	0	4	
		3211	0·805	288·3	299·5	+18·5	4	15	
		3203a	0·814	280·8	300·7	+12·5	53	297	95c
		3212	0·774	255·3	294·7	− 7·1	1	4	
		3207a	0·233	104·6	233·0	+ 2·9	37	227	
		3207	0·277	99·0	230·2	+ 3·7	0	7	
		3207	0·283	105·5	230·2	+ 1·8	0	4	
		3207	0·323	89·8	227·1	+ 6·1	1	6	
		3214	0·336	120·1	229·1	− 3·5	1	5	
		3213	0·542	146·9	227·6	−20·8	3	17	
		3213	0·548	144·9	226·4	−20·5	1	3	
		3213	0·567	146·0	226·1	−21·9	3	7	
		3213	0·523	143·5	224·6	−21·4	2	9	
		3213a	0·575	140·9	223·3	−20·5	6	21	
		3210	0·700	133·1	212·3	−23·2	0	8	
		3210	0·693	131·0	212·0	−21·7	0	2	97c
		3210	0·717	130·8	210·3	−22·1	0	2	
		3210	0·707	129·5	210·2	−21·5	2	12	
		3215	0·762	83·2	196·2	+ 9·3	0	7	
		3216a	0·951	100·3	175·4	− 7·7	26	139	133c
			0·766	122·3	202·8	−19·5			96
			0·809	76·7	191·8	+14·5			60
			0·819	92·0	189·2	−12·7			148
			0·873	112·3	189·1	−15·9			120
			0·940	105·2	178·3	−11·9			128
			0·943	76·7	174·7	+14·6			131
Oct. 4		Centre			(246·0)	(+6·4)	(253)	(1683)	(2667)
277·377	CL,HA		0·875	294·5	294·9	+24·5			271
			0·847	247·3	288·0	−15·3			139
I.			0·851	233·5	283·7	−26·3			282
		3202a	0·962	255·7	306·1	−11·8	12	82	216f
		3211	0·944	284·8	305·6	+16·0	0	29	
		3211	0·920	287·6	301·6	+18·7	8	33	358c
		3203a	0·922	280·8	301·9	+12·4	71	279	
		3217	0·777	289·9	284·7	+19·4	6	23	
		3217	0·736	290·0	280·9	+19·0	6	18	80c
		3207a	0·060	167·6	233·4	+ 3·1	41	207	
		3207	0·072	119·9	230·5	+ 4·3	0	3	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3211, October 3–6. A few very unstable small spots in an irregular stream *n* of Group 3203.
Group 3212, October 3–4. A small spot.
Group 3213, October 3–10. A pair of very small spots on October 3. The group has extended into a stream of small spots by October 4, and *a*, the last spot, is well-defined and regular by October 5. The group suddenly diminishes after October 6, *a* alone remaining as a small spot. A very small companion is seen on October 10.
Group 3214, October 4–5. A very small spot.
Group 3215, October 4. A very small spot.
Group 3216, October 4–15. A regular spot, *a*, which slowly diminishes from day to day.
Group 3217, October 5–7. Two or three small spots, near the W. limb

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of Umbra for each Spot (and for Day).	Spots. Area of Whole for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
277d·377	CL,HA	3207	0·136	96·6	227·3	+ 5·5	0	10	
		3214	0·201	154·8	229·2	− 4·1	0	2	
I.		3213	0·470	167·5	227·9	−20·9	0	7	
		3213	0·473	165·5	226·8	−20·8	11	33	
		3213	0·488	164·6	226·1	−21·7	0	3	
		3213	0·495	161·2	224·3	−21·5	13	39	
		3213*a*	0·491	158·0	222·8	−20·8	15	43	
		3218	0·643	74·1	194·4	+15·1	8	24	} 59*c*
		3218	0·668	73·3	192·6	+15·9	0	8	
		3218*a*	0·692	73·5	190·6	+16·0	10	40	
		3216*a*	0·868	102·3	175·6	− 7·3	34	152	308*c*
			0·814	116·6	184·6	−17·2			80
			0·868	74·6	173·5	+16·6			182
			0·894	93·6	171·2	− 0·4			140
			0·916	110·6	171·2	−16·0			244
			0·943	65·6	162·8	+25·2			114
Oct. 5		Centre			(234·1)	(+6·4)	(235)	(1035)	(2473)
278·207	HA,JG		0·931	294·9	292·0	+25·4			156
			0·933	258·5	290·4	− 8·3			128
I.			0·930	232·6	282·8	−31·3			133
			0·871	252·5	281·0	−11·9			215
			0·748	248·0	268·1	−11·8			98
		3211	0·984	283·3	303·8	+14·2	0	32	} 242*c*
		3211	0·968	286·7	299·6	+17·7	6	49	
		3203*a*	0·974	280·6	300·7	+11·7	76	287	228*n*
		3217	0·902	286·9	287·9	+17·9	0	4	} 252*c*
		3217	0·879	287·7	284·9	+18·6	3	14	
		3217	0·844	288·7	280·7	+19·1	0	4	
		3207*a*	0·195	248·6	233·5	+ 2·2	37	150	
		3207	0·159	246·9	231·5	+ 2·6	1	4	
		3213	0·478	188·3	227·3	−21·8	0	7	
		3213	0·485	181·7	224·0	−22·6	3	10	
		3213	0·488	178·3	222·2	−22·8	0	1	
		3213*a*	0·472	177·4	221·8	−21·7	14	64	
		3210	0·528	158·4	210·9	−23·2	4	15	
		3210	0·558	158·2	209·9	−25·0	0	11	
		3210	0·539	156·7	209·7	−23·4	1	5	
		3218	0·473	71·8	195·6	+14·1	4	12	
		3218	0·509	71·6	193·3	+14·7	1	8	
		3218	0·513	71·7	193·0	+14·7	4	13	
		3218*a*	0·552	71·8	190·3	+15·3	14	50	
1893.									
278d·207	HA,JG	3219	0·659	123·6	188·4	−16·2	4	10	} 52*f*
		3219	0·689	123·6	186·3	−17·3	1	10	
I.		3216*a*	0·767	106·0	175·2	− 8·0	31	126	426*sf*
		3220*a*	0·925	107·1	154·3	−13·2	0	12	} 261*c*
		3221*a*	0·967	106·5	147·2	−14·1	0	11	
		3221*b*	0·982	108·8	143·0	−17·0	0	21	
			0·792	95·9	171·3	− 0·8			67
			0·845	69·3	165·6	+20·8			208
			0·929	103·9	156·8	−10·4			146
Oct. 6		Centre			(223·1)	(+6·3)	(204)	(930)	(2612)
279·502	HA,JG		0·954	296·4	279·4	+27·0			106
			0·927	254·9	271·8	−11·4			170
			0·910	247·1	267·6	−17·8			70
			0·814	225·2	248·0	−30·3			126
		3217	0·982	288·3	286·5	+19·1	0	48	} 145*nf*
		3217	0·966	287·8	282·2	+18·8	4	25	
		3207*a*	0·472	264·3	234·0	+ 2·9	28	174	
		3213*a*	0·516	208·7	221·4	−20·7	7	12	
		3210	0·490	189·9	211·3	−22·5	0	7	
		3210	0·491	187·7	210·2	−22·7	0	7	
		3218	0·208	246·0	197·3	+14·5	3	9	
		3218*a*	0·305	59·0	190·5	+15·1	2	13	
		3216*a*	0·548	115·5	176·2	− 8·1	21	132	
		3222	0·607	69·1	169·8	+17·6	0	6	
		3220*a*	0·819	111·1	154·6	−13·2	4	15	98*c*
		3220	0·848	109·9	151·3	−13·2	0	6	
		3221*a*	0·889	110·6	146·8	−15·1	15	60	} 154*c*
		3221*b*	0·920	111·2	142·7	−16·7	24	53	
		3223*a*	0·963	105·2	134·0	−12·8	13	54	
		3224	0·980	105·5	129·9	−13·8	0	40	} 379*c*
		3224*a*	0·980	103·6	129·5	−11·9	35	144	
			0·894	67·8	142·6	+22·6			48
Oct. 7		Centre			(206·1)	(+6·3)	(156)	(805)	(1296)
280·241	CL, FT		0·936	253·8	263·3	−12·8			145
			0·828	277·3	252·5	+ 9·5			193
I.			0·858	230·2	245·2	−29·3			327
			0·742	287·1	243·9	+16·8			89
		3207*a*	0·615	265·9	234·0	+ 2·4	33	175	
		3207	0·602	264·0	232·9	+ 1·4	1	5	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3218, October 5–9. A few small unstable spots in a short stream. *a*, the last spot, is the largest. The group diminishes from day to day, and *a* remains alone by October 9.

Group 3219, October 6. A pair of small spots.

Group 3220, October 6–13. A small regular spot, *a*, with a very small companion on October 7 and 8. *a* is elongated on October 9 and double on October 10 and 11, but the two components are measured as one spot.

Group 3221, October 6–16. A pair of spots, *a* and *b* with several very small companions on October 10 and 11. *a* is a regular spot, *b* composite and nebulous. *b* has disappeared by October 13, but has revived again by October 15.

Group 3222, October 7. A very small spot.

Group 3223, October 7–13. An irregular spot, *a*, on October 7. It increases in size up to October 9 and becomes regular; after that date it diminishes again. Several small companions are seen near it on October 8, 9, 11 and 12.

Group 3224, October 7–17. A regular spot, *a*, with occasionally some very small companions. *a* diminishes after October 12.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
280d·241	CL, FT	3207	0·573	264·9	231·0	+ 2·2	0	5	
		3207	0·559	265·1	230·0	+ 2·4	0	7	
I.		3213*a*	0·595	220·1	220·5	−21·3	3	13	
		3210	0·540	204·4	210·3	−23·3	0	4	
		3218	0·151	353·3	197·3	+14·8	0	3	
		3218*a*	0·182	33·5	190·4	+14·9	4	12	
		3216*a*	0·426	124·8	175·7	− 8·2	21	128	
		3220*a*	0·720	114·6	154·3	−12·8	4	11	
		3220	0·759	112·6	150·6	−12·6	0	3	
		3221*a*	0·813	113·5	146·0	−15·0	25	108	
		3221*b*	0·855	113·6	141·7	−16·5	19	82	
		3223*a*	0·905	107·2	134·1	−12·7	18	66	1200*c*
		3223	0·923	106·6	131·5	−12·7	6	20	
		3224*a*	0·944	104·7	127·7	−11·6	28	116	
		3224	0·949	106·7	127·2	−13·7	0	14	
		3225	0·972	104·1	121·9	−12·1	0	18	
			0·825	66·1	141·4	+23·1			101
Oct. 8		Centre			(196·3)	(+6·2)	(162)	(790)	(2055)
			0·882	286·8	244·6	+17·7			92
281·303	CL, JG		0·935	235·1	244·0	−29·5			198
I.		3207*a*	0·798	268·1	235·2	+ 2·2	23	137	183*nf*
		3207	0·773	270·4	233·0	+ 4·2	0	7	
		3213*a*	0·731	232·0	220·6	−21·9	0	13	96*p*
		3218*a*	0·213	315·4	191·2	+14·7	2	8	
		3216*a*	0·276	156·2	176·0	− 8·5	13	80	
		3220*a*	0·555	125·4	154·8	−13·3	6	31	
		3221*a*	0·672	121·2	145·9	−15·4	18	117	154*c*
		3221*b*	0·718	121·8	142·3	−16·6	10	93	
		3223*a*	0·762	111·6	136·2	−12·1	12	100	222*c*
		3223	0·777	111·9	134·9	−12·7	0	9	
		3224	0·817	110·5	130·9	−12·8	0	8	
		3224*a*	0·841	108·4	128·0	−11·8	23	105	408*c*
		3225	0·886	107·1	122·6	−12·0	0	9	
			0·957	105·1	111·5	−12·5			427
Oct. 9		Centre			(182·4)	(+6·1)	(107)	(717)	(1780)
			0·916	282·5	235·9	+13·9			128
282·310	HA, FT		0·884	261·5	230·2	− 4·6			122
I.			0·862	276·9	228·9	+ 9·1			182
			0·849	252·6	224·6	−11·3			451
			0·757	233·2	209·9	−22·3			216

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
282d·310	HA, FT	3207*a*	0·920	270·3	235·9	+ 2·7	18	115	441*c*
		3207	0·905	267·7	233·6	+ 0·6	0	5	
I.		3213	0·857	238·5	221·4	−22·9	0	2	150*c*
		3213*a*	0·846	239·3	220·5	−21·8	0	4	
		3216*a*	0·276	207·3	176·4	− 8·1	21	98	
		3220*a*	0·399	143·9	155·2	−12·8	4	11	
		3226	0·360	51·8	151·8	+18·6	5	15	62*c*
		3226*a*	0·394	55·1	149·2	+18·7	4	11	
		3221*a*	0·523	132·9	145·8	−15·2	17	89	
		3221	0·529	130·8	144·8	−14·6	0	1	
		3221	0·542	131·2	144·2	−15·3	0	1	
		3221*b*	0·567	131·2	142·8	−16·4	8	41	
		3221	0·572	129·7	142·0	−15·9	1	4	
		3223*a*	0·585	119·3	137·9	−11·4	14	50	403*c*
		3224	0·680	116·1	130·5	−12·6	0	6	
		3224*a*	0·619	113·5	129·1	−11·2	26	111	
		3224	0·705	117·4	129·0	−14·3	0	3	
		3224	0·722	114·7	127·0	−13·0	0	5	
		3225	0·759	111·0	123·0	−11·5	6	13	
		3227*a*	0·994	66·2	83·5	+24·3	0	144	
			0·842	103·5	113·6	− 7·9			201
			0·860	110·0	113·0	−13·7			477
			0·917	115·9	107·4	−20·8			379
Oct. 10		Centre			(169·1)	(+6·1)	(124)	(729)	(3212)
			0·952	272·7	229·6	+ 4·4			264
283·203	CL, FT		0·933	255·7	224·1	−11·0			278
I.			0·861	239·6	210·5	−22·3			245
		3216*a*	0·403	233·8	176·4	− 8·0	24	108	
		3228	0·368	210·6	168·3	−12·5	3	11	
		3220*a*	0·331	174·0	155·4	−12·2	0	6	
		3226*a*	0·257	31·3	149·2	+18·6	0	6	
		3221*a*	0·416	151·8	145·6	−15·6	15	71	
		3221	0·407	150·6	145·4	−14·8	1	3	
		3221	0·406	149·0	144·9	−14·4	0	1	
		3221	0·434	149·6	144·1	−16·1	0	4	
		3221	0·451	149·9	143·7	−17·0	1	6	
		3221*b*	0·454	148·6	143·0	−16·9	9	15	
		3221	0·455	146·7	142·3	−16·5	1	7	
		3221	0·449	144·7	141·7	−15·6	0	1	
		3223*a*	0·428	133·2	138·8	−11·3	11	27	
		3223	0·442	133·1	138·1	−11·8	0	2	
		3223	0·446	130·5	137·2	−11·1	2	9	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3225, October 8–11. A small regular spot following Group 3224.
Group 3226, October 10–12. Two small spots on October 10. Only one spot, *a*, is left on October 11 and 12.
Group 3227, October 10–22. A large regular spot *a*, with occasionally some small companions.
Group 3228, October 11–14. A close pair of very small spots measured as one on October 11. The preceding component alone remains on October 12.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
283d·203	CL, FT	3224*a*	0·551	121·9	128·9	−11·6	28	107	
		3225	0·623	117·9	123·2	−11·9	1	6	
I.		3229	0·844	107·0	102·2	−10·9	0	7	91*f*
		3227*a*	0·947	66·0	85·5	+24·6	27	263	151*c*
			0·750	113·9	112·6	−13·4			349
			0·841	120·4	106·3	−21·4			296
			0·903	112·4	96·6	−17·2			302
Oct. 11		Centre			(157·3)	(+6·0)	(123)	(660)	(1976)
284·531	CL, FT		0·937	247·2	205·5	−18·9			166
			0·895	239·0	196·9	−24·3			143
			0·812	268·9	194·2	− 5·4			120
			0·803	283·7	193·3	+14·5			142
			0·804	245·9	189·2	−15·3			133
			0·863	228·9	188·8	−30·7			109
		3216*a*	0·634	250·1	176·6	− 7·7	21	101	
		3228	0·573	239·8	170·1	−11·6	6	34	
		3220*a*	0·429	222·6	157·0	−12·7	2	7	
		3226*a*	0·273	323·3	149·7	+18·4	1	6	
		3221*a*	0·389	195·1	145·8	−16·1	11	46	
		3221*b*	0·382	188·1	143·0	−16·2	0	39	
		3223*a*	0·295	182·4	140·5	−11·2	3	16	
		3223	0·293	177·6	139·1	−11·0	0	4	
		3224*a*	0·348	149·7	129·5	−11·6	21	114	
		3224	0·343	142·5	127·6	−10·0	0	4	
		3224	0·383	146·7	127·4	−12·8	1	4	
		3230	0·712	118·4	99·5	−15·3	3	13	92*c*
		3230	0·721	119·3	99·1	−16·2	0	9	
		3231	0·806	102·2	87·6	− 6·2	0	8	69*c*
		3227*a*	0·815	64·2	86·4	+24·3	53	279	647*f*
		3227	0·829	67·0	84·5	+22·3	0	5	
		3227	0·833	64·8	84·3	+24·2	3	13	
		3232*a*	0·989	79·3	57·5	+11·4	38	199	89*c*
			0·798	124·7	91·3	−23·5			165
			0·932	79·6	70·5	+11·8			319
Oct. 12		Centre			(139·8)	(+5·9)	(163)	(901)	(2194)
285·241	HA, JG		0·957	245·2	199·4	−21·7			65
			0·892	277·9	193·8	+ 9·7			30
I.			0·890	284·9	193·6	+15·9			136
			0·889	248·7	189·7	−15·9			106

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
285d·241	HA, JG	3216*a*	0·750	253·4	176·8	− 8·4	23	98	117*c*
		3233	0·745	249·0	175·4	−11·4	3	19	
I.		3233	0·728	249·8	174·2	−10·4	1	7	
		3234	0·757	244·2	175·1	−15·1	0	6	29*c*
		3228	0·693	245·6	170·5	−12·2	6	18	38*c*
		3220*a*	0·547	235·1	157·7	−13·0	0	4	
		3221	0·441	217·4	146·4	−14·9	0	3	
		3221*a*	0·454	213·0	145·3	−16·7	14	44	
		3223*a*	0·343	210·5	140·6	−11·4	4	15	
		3224	0·366	178·7	129·9	−15·6	0	5	
		3224*a*	0·307	176·4	129·3	−12·0	23	105	
		3230	0·637	124·9	97·5	−16·5	0	4	42*c*
		3231	0·691	104·3	88·3	− 5·5	4	17	46*c*
		3231	c·695	105·6	88·2	− 6·5	0	4	
		3231	0·721	104·6	86·0	− 6·3	0	9	
		3227*a*	0·726	61·0	86·2	+24·8	65	288	165*c*
		3235	0·826	65·4	75·6	+23·5	0	6	273*c*
		3235	0·844	62·4	74·1	+26·3	2	8	
		3235	0·858	61·6	72·5	+27·2	0	12	
		3232*a*	0·963	79·5	55·4	+11·7	38	155	125*c*
		3232*b*	0·982	79·1	51·6	+11·8	34	248	
			0·783	128·9	88·2	−25·1			66
			0·919	139·3	78·3	−40·7			103
			0·920	130·5	73·4	−33·6			145
			0·897	80·4	66·3	+11·2			233
Oct. 13		Centre			(130·4)	(+5·8)	(217)	(1075)	(2019)
286·304	CL, HA		0·862	239·2	169·6	−22·7			102
			0·763	244·5	161·7	−15·1			101
I.		3216*a*	0·882	257·4	176·6	− 8·2	16	61	301*c*
		3233	0·888	254·3	176·8	−11·0	0	6	
		3233	0·863	254·5	173·9	−10·3	5	31	
		3234	0·872	249·5	173·8	−14·7	7	32	
		3228	0·836	251·7	170·4	−11·9	0	8	
		3236	0·799	294·6	168·3	+23·0	0	4	149*c*
		3221*a*	0·593	231·9	145·0	−16·3	16	32	
		3224*a*	0·373	216·6	129·5	−11·7	20	99	
		3224	0·383	210·0	127·7	−13·7	1	9	
		3230	0·450	143·7	100·4	−15·6	0	9	
		3230	0·487	143·2	98·7	−17·4	0	6	
		3231	0·488	112·7	89·6	− 5·7	2	9	
		3227*a*	0·573	54·1	85·8	+24·6	74	353	168*c*
		3227	0·589	58·1	83·6	+23·0	0	6	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3229, October 11. A very small spot.
Group 3230, October 12–15. Two or three very small faint unstable spots.
Group 3231, October 12–17. Two or three very small faint unstable spots.
Group 3232, October 12–24. Two large spots, *a* and *b*, followed by a number of smaller spots in an irregular stream. *a* diminishes day by day and has disappeared by October 21. *b* is at first very irregular in shape and is crossed by a bright narrow bridge. It has become a regular spot by October 20, and alone remains on October 22 and the succeeding days.
Group 3233, October 13–15. A few very small spots in a short stream.
Group 3234, October 13–15. A very small faint spot on October 13. The spot increases in size rapidly, and other spots appear near it on the succeeding days.
Groups 3216, 3220, 3221, 3223, 3224, 3225, 3228, 3233, and 3234 lie very close to each other, and form almost a single stream, extending over nearly 50° of longitude.
Group 3235, October 13. Three small spots.
Group 3236, October 14. A very small spot.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
286d.304	CL,HA	3232*a*	0·877	80·1	54·8	+11·5	23	164	
		3232*b*	0·911	79·9	50·3	+11·6	76	262	
I.		3232	0·936	79·3	46·5	+12·1	0	18	1131*c*
		3232	0·941	77·8	45·6	+13·5	14	104	
		3232	0·953	79·9	43·5	+11·4	2	55	
		3237*a*	0·980	75·6	37·0	+15·3	29	292	
		3238*a*	0·992	104·2	35·5	−13·2	17	490	270*p*
			0·705	57·5	74·9	+26·6			157
			0·881	136·6	68·1	−36·0			172
			0·891	123·2	60·5	−26·0			137
Oct. 14		Centre			(116·4)	(+5·8)	(302)	(2050)	(2688)
287·245	FT,JG		0·873	290·2	164·6	+20·4			83
		3216*a*	0·964	259·5	177·1	− 8·5	0	54	116*c*
I.		3233	0·956	256·8	175·1	−10·8	0	44	
		3234	0·952	252·5	173·5	−14·7	0	51	221*sf*
		3234	0·931	252·7	169·9	−13·8	0	12	
		3221*a*	0·727	240·6	145·1	−16·6	8	24	75*c*
		3221*b*	0·704	239·5	143·0	−16·5	2	6	
		3224*a*	0·522	235·9	130·0	−11·8	21	75	
		3230	0·402	166·8	98·4	−17·3	0	1	
		3231	0·293	131·3	91·2	− 5·5	0	2	
		3227*a*	0·422	41·0	86·3	+24·0	57	296	
		3232*a*	0·742	79·8	56·0	+11·4	28	138	
		3232*b*	0·785	79·5	52·1	+11·8	33	198	
		3232	0·792	81·5	51·4	+10·2	0	12	
		3232	0·823	79·2	48·4	+12·1	6	28	
		3232	0·847	77·7	45·8	+13·4	6	23	714*c*
		3232	0·850	80·1	45·5	+11·4	7	60	
		3237	0·876	77·2	42·5	+14·0	1	25	
		3237	0·888	75·5	41·0	+15·5	0	47	
		3237*a*	0·907	75·6	38·5	+15·4	42	202	
		3238*a*	0·929	106·7	38·1	−13·2	59	339	443*f*
		3238	0·931	104·1	37·3	−10·8	0	12	
			0·771	120·0	59·3	−18·6			43
Oct. 15		Centre			(103·9)	(+5·7)	(270)	(1649)	(1695)
288·440	JG,HA	3239	0·895	295·4	151·3	+25·2	0	7	146*f*
		3221*a*	0·871	248·7	145·3	−15·4	4	19	133*c*
		3224*a*	0·716	248·1	130·7	−11·3	11	44	315*p*
		3231	0·215	199·6	92·3	− 6·0	1	7	
		3227	0·327	2·8	87·2	+24·6	0	11	
		3227	0·351	5·0	86·3	+26·0	3	10	
		3227*a*	0·301	6·1	86·2	+22·9	59	296	
1893.									
288d.440	JG,HA	3232*a*	0·525	78·4	56·8	+10·8	14	88	99*c*
		3232*b*	0·588	78·4	52·4	+11·3	52	369	
		3232	0·628	79·0	49·4	+11·2	0	6	
		3232	0·639	76·2	48·8	+13·1	1	5	
		3232	0·646	78·6	48·1	+11·6	3	21	
		3232	0·663	77·4	46·9	+12·5	2	14	
		3232	0·665	80·0	46·5	+10·8	10	38	
		3232	0·680	77·0	45·6	+12·9	3	6	
		3237	0·712	77·5	42·9	+12·8	0	5	
		3237	0·730	76·3	41·5	+13·8	7	39	302*c*
		3237	0·754	72·7	39·7	+16·7	0	6	
		3237	0·752	75·1	39·6	+14·9	0	10	
		3237	0·759	71·1	39·4	+17·9	0	5	
		3237*a*	0·766	75·4	38·4	+14·7	24	160	
		3238*a*	0·805	111·7	38·0	−13·7	54	320	646*f*
		3238	0·834	111·3	35·1	−14·3	2	7	
		3240	0·861	74·4	28·7	+16·3	0	7	64*c*
Oct. 16		Centre			(88·2)	(+5·6)	(250)	(1500)	(1705)
289·463	CL,HA	3239	0·957	294·3	152·0	+24·8	2	12	119*c*
		3224*a*	0·817	252·1	130·6	−11·1	4	17	246*p*
M.		3231	0·325	233·3	93·5	− 5·9	0	4	
		3231	0·313	232·0	92·7	− 5·8	0	3	
		3231	0·285	223·9	89·8	− 6·5	0	3	
		3227	0·353	337·7	86·8	+24·5	0	3	
		3227	0·394	341·3	86·5	+27·3	1	5	
		3227*a*	0·325	337·6	86·1	+22·9	35	251	
		3232*a*	0·376	74·2	56·9	+11·0	10	58	
		3232*b*	0·439	74·2	52·9	+11·8	42	226	
		3232	0·448	69·2	52·9	+14·1	2	9	
		3232	0·458	76·8	51·5	+10·9	6	57	
		3232	0·487	75·5	49·7	+11·9	3	13	
		3232	0·514	75·3	48·0	+12·2	3	13	
		3232	0·522	77·5	47·2	+11·2	6	19	
		3232	0·528	75·3	47·0	+12·4	0	3	
		3237	0·597	72·8	42·4	+14·6	0	3	
		3237	0·629	72·3	40·1	+15·4	0	5	
		3237*a*	0·653	73·3	38·2	+15·0	18	171	
		3238*b*	0·698	115·1	38·1	−13·0	45	205	
		3238*c*	0·719	116·1	37·2	−14·3	22	86	148*s*
		3238	0·735	117·1	35·8	−15·5	0	4	
			0·925	78·4	10·4	+12·8			151
Oct. 17		Centre			(78·4)	(+5·5)	(199)	(1170)	(664)

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3237, October 14–24. A short stream of spots following Group 3232. The last spot, *a*, is much the largest. The group diminishes rapidly, but a few very small spots are seen following *a* on October 21 and the succeeding days. *a* has disappeared by October 23, and only three small spots are left. These have disappeared by October 24, and a small spot which has broken out to the south of the group is all that is seen.
Group 3238, October 14–26. A large regular spot, with a small ill-defined spot on its *sf* side. The two are measured together and called *a* until October 17. The principal spot is then called *b*, and its companion, *c*. *c* has disappeared by October 23. *b* diminishes in area after October 19. One or two small companions are seen near the principal spots on most days.
Group 3239, October 16–17. A very small spot.
Group 3240, October 16. A very small spot following Group 3237.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	HELIOGRAPHIC		SPOTS.		FACULÆ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
290d.406	HA,FT		0·940	255·6	130·0	−11·5			603
			0·875	249·6	120·2	−14·9			642
			0·787	233·6	106·0	−23·9			138
		3241*a*	0·572	227·4	88·4	−17·9	16	48	
		3241	0·577	224·2	87·5	−19·5	1	11	
		3241	0·563	220·6	85·2	−20·2	5	11	
		3241	0·549	221·6	84·9	−19·2	1	4	
		3227	0·509	308·9	87·8	+23·5	1	15	
		3227*a*	0·477	309·7	85·6	+22·6	58	293	
		3242	0·398	327·2	76·0	+24·7	1	4	
		3232*a*	0·132	42·6	57·1	+10·9	11	33	
		3232	0·175	32·7	56·7	+13·8	0	2	
		3232	0·161	60·6	54·1	+ 9·9	0	8	
		3232*b*	0·194	54·6	53·0	+11·8	46	246	
		3232	0·216	63·1	51·0	+10·9	7	55	
		3232	0·234	60·7	50·3	+11·8	0	6	
		3232	0·263	68·8	47·9	+10·7	4	9	
		3232	0·282	62·7	47·5	+12·6	2	12	
		3237	0·364	64·5	42·6	+14·1	0	12	
		3237	0·378	62·0	42·1	+15·3	0	2	
		3237	0·376	66·2	41·6	+13·8	0	18	
		3237	0·407	62·5	40·4	+15·8	0	7	
		3237*a*	0·434	66·5	38·1	+14·9	29	149	
		3238*b*	0·509	127·4	37·9	−13·0	46	210	
		3238*c*	0·540	129·0	36·7	−14·9	13	92	
		3238	0·543	125·2	35·3	−13·4	4	28	
		3243*a*	0·992	111·1	342·3	−20·1	50	218	205*np*
		3244*a*	0·991	97·4	341·0	− 6·5	98	393	206*sp*
			0·788	78·4	10·3	+12·4			219
			0·927	90·9	354·6	+ 1·2			86
Oct. 18		Centre			(62·3)	(+5·4)	(393)	(1886)	(2099)
291·443	CL,JG		0·947	252·9	117·6	−14·3			288
			0·879	246·2	106·2	−17·9			125
			0·894	237·1	105·2	−26·1			140
			0·811	236·1	95·6	−23·2			158
		3241*a*	0·728	238·8	89·5	−18·0	12	50	51*c*
		3241	0·700	232·9	85·2	−20·5	0	2	
		3227*a*	0·637	298·9	85·6	+22·2	43	270	98*c*
		3242	0·548	306·9	77·2	+23·9	0	4	
		3232*a*	0·187	303·3	57·8	+11·2	4	21	
		3232	0·135	309·7	54·8	+10·3	0	4	
		3232*b*	0·139	325·7	53·3	+12·0	37	234	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	HELIOGRAPHIC		SPOTS.		FACULÆ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
291d.443	CL,JG	3232	0·102	339·7	50·8	+10·9	3	29	
		3232	0·133	353·7	49·6	+13·0	0	4	
		3237	0·226	32·1	41·5	+16·3	0	5	
		3237	0·217	35·6	41·2	+15·5	0	6	
		3237*a*	0·247	45·6	38·2	+15·2	16	69	
		3238*b*	0·370	148·9	37·4	−13·1	29	208	
		3238*c*	0·406	148·8	36·2	−15·0	13	92	
		3245	0·866	114·5	352·9	−18·0	0	2	
		3243*a*	0·953	113·8	340·1	−20·7	39	194	395*p*
		3243*b*	0·965	111·0	336·7	−18·6	31	448	
		3244*a*	0·941	99·2	339·6	− 6·7	83	420	
		3244*b*	0·959	98·4	336·3	− 6·4	4	35	747*c*
		3244	0·984	99·1	330·2	− 7·9	0	119	
		3246*a*	0·960	82·4	334·6	+ 8·8	4	59	683*p*
		3246	0·986	83·3	328·0	+ 7·5	47	186	
			0·944	119·6	243·3	−25·6			152
Oct. 19		Centre			(48·7)	(+5·4)	(365)	(2461)	(2837)
292·266	CL,FT		0·916	269·9	104·0	+ 2·1			181
			0·906	248·1	99·3	−17·2			361
I.			0·910	237·1	96·6	−26·9			335
			0·867	257·1	96·3	− 8·4			161
			0·851	226·3	84·4	−32·4			210
		3241*a*	0·834	242·8	89·3	−19·1	7	35	
		3241	0·812	238·0	85·6	−21·9	2	7	235*c*
		3241	0·794	237·8	83·8	−21·3	2	10	
		3241	0·786	237·1	82·8	−21·5	2	6	
		3227*a*	0·754	293·3	85·5	+20·9	61	228	338*c*
		3247	0·637	306·3	72·7	+26·5	0	3	
		3248	0·640	232·3	69·9	−18·5	0	3	
		3232*a*	0·355	285·9	58·0	+10·5	2	12	
		3232	0·350	290·6	57·3	+12·0	5	17	
		3232	0·305	285·4	55·1	+ 9·7	0	1	
		3232*b*	0·287	292·2	53·5	+11·3	44	199	
		3232	0·286	298·1	52·7	+12·8	2	8	
		3232	0·255	287·8	52·0	+ 9·6	2	9	
		3232	0·248	292·1	51·3	+10·5	3	9	
		3237	0·183	323·7	44·2	+13·7	0	3	
		3237	0·164	348·7	39·7	+14·5	1	2	
		3237	0·227	354·7	39·1	+18·3	0	2	
		3237*a*	0·170	356·2	38·5	+15·0	15	67	
		3238	0·318	188·0	40·4	−13·0	0	3	
		3238*b*	0·325	177·5	37·0	−13·6	31	197	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

October 20 and 22. The wires on the Indian photographs taken on these two days are evidently not oriented correctly, and a correction of about + 1°·0 appears to be required to all position-angles.

Group 3241, October 18–22. A few small spots in a short stream. The leader, *a*, is the largest and is a regular spot.

Group 3242, October 18–19. A very small faint spot following Group 3227.

Group 3243, October 18–28. A large but very unstable group. It consists at first of a large spot, *a*, closely followed by a large irregular nebulous spot. The latter has broken up into a number of small spots in a curved stream by October 21. The leading spot of this stream, *b*, passes *a* in longitude. The entire group rapidly diminishes in size, and on October 27 *a* alone remains, as a very small spot.

Group 3244, October 18–30. A very large spot, *a*, followed by a considerable stream of smaller spots. *a* is divided into several parts by bright bridges, and portions of it are occasionally measured as separate spots, *b* and *c*. The smaller spots have all disappeared by October 27.

Group 3245, October 19. A very small spot preceding Group 3243.

Group 3246, October 19–30. Two spots, of which *a*, the leader, is the smaller, on October 19–21. Other spots appear and the group forms on October 23 and the succeeding days a long irregular stream. The following portion of the stream diminishes, and has entirely disappeared by October 27, but the preceding portion has greatly extended, and the group is horse-shoe in form, the included area being filled with faint markings on October 28. The group diminishes again on the succeeding days. *a* has disappeared by October 27.

Groups 3243, 3244, 3246, and 3256 form four parallel streams in almost the same longitude. Some 40° following these, Groups 3250, 3254 and 3255 form a similar set of parallel streams.

Group 3247, October 20. A very small spot.

Group 3248, October 20–21. A very small spot following Group 3241.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of Umbra for each Spot (and for Day).	Spots. Area of Whole for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
292d·266	CL, FT	3238*c*	0·355	174·1	35·6	−15·3	14	46	
		3238	0·378	171·6	34·5	−16·6	0	7	
I.		3238	0·359	170·7	34·4	−15·4	7	22	
		3243*a*	0·885	116·0	340·1	−20·0	43	217	
		3243	0·885	113·8	339·6	−18·2	2	17	
		3243*b*	0·906	112·4	336·5	−17·7	32	435	527*c*
		3243	0·935	112·5	332·2	−18·8	0	9	
		3243	0·947	112·6	330·1	−19·4	10	40	
		3244*a*	0·862	100·0	339·4	− 5·8	132	518	
		3244*b*	0·897	98·8	335·1	− 5·5	12	193	1327*c*
		3244	0·933	99·8	330·1	− 7·1	55	206	
		3246*a*	0·894	81·8	334·2	+ 9·7	20	62	
		3246	0·938	82·9	327·8	+ 8·5	32	187	776*c*
		3249	0·981	97·4	319·9	− 6·2	0	5	
			0·880	112·5	342·5	−24·4			237
			0·916	72·9	331·2	+17·8			127
Oct. 20		Centre			(37·8)	(+5·3)	(538)	(2785)	(4815)
293·428	HA, FT		0·949	252·8	91·7	−14·5			498
			0·932	236·4	84·5	−28·7			193
		3241	0·909	245·7	83·8	−19·5	0	12	
		3227*a*	0·887	292·5	84·6	+22·3	33	221	186*f*
		3248	0·830	243·4	73·8	−18·6	0	5	
		3232	0·570	284·6	56·8	+12·5	2	10	
		3232	0·545	281·6	55·3	+10·7	0	4	
		3232*b*	0·521	284·3	53·4	+11·8	27	152	
		3232	0·520	288·3	52·9	+13·9	0	2	
		3232	0·464	286·0	49·5	+12·0	0	5	
		3237	0·352	302·6	40·3	+15·8	0	5	
		3237*a*	0·321	303·7	38·5	+15·2	11	45	
		3237	0·312	311·7	36·5	+17·0	0	4	
		3238*b*	0·408	217·4	37·2	−13·8	28	162	
		3238*c*	0·413	212·7	35·8	−15·2	4	19	
		3243*a*	0·755	124·1	340·6	−21·1	37	212	
		3243*b*	0·749	121·1	340·0	−18·9	6	21	
		3243	0·773	122·0	338·3	−20·4	2	15	161*c*
		3243	0·775	120·7	337·7	−19·6	6	42	
		3243	0·797	120·5	335·6	−20·3	0	10	
		3243	0·792	118·5	335·4	−18·6	12	51	
		3243	0·840	118·8	330·8	−20·6	2	25	
		3244	0·684	103·8	340·8	− 5·5	0	10	
		3244	0·696	108·8	340·8	− 9·1	0	10	122*c*
		3244	0·686	101·9	340·4	− 4·3	0	22	
		3244	0·713	107·8	339·3	− 8·8	0	6	
1893.				°	°	°			
293d·428	HA, FT	3244*a*	0·707	105·3	339·3	− 6·9	102	582	
		3244*b*	0·749	104·0	335·6	− 6·9	38	201	
		3244	0·773	104·9	333·7	− 8·0	0	7	
		3244	0·813	104·7	330·0	− 8·7	20	114	347*c*
		3246*a*	0·743	82·7	334·4	+ 8·9	13	36	561*f*
		3246	0·817	85·0	327·6	+ 7·1	21	123	
		3250*a*	0·992	76·7	298·9	+13·8	27	219	522*p*
			0·921	99·7	316·6	− 6·8			450
			0·934	107·9	316·0	−14·6			146
			0·979	69·0	303·4	+21·6			158
Oct. 21		Centre			(22·5)	(+5·2)	(391)	(2352)	(3344)
294·243	CL, FT		0·882	295·3	72·8	+24·7			365
			0·884	244·2	69·3	−19·9			115
I.			0·807	281·9	65·5	+12·6			273
			0·838	234·3	60·7	−25·9			153
		3241	0·979	247·6	86·7	−20·6	0	36	223*c*
		3227*a*	0·955	289·9	84·9	+20·5	27	226	166*c*
		3232*b*	0·668	281·2	53·5	+11·3	37	154	
		3237	0·494	294·5	39·5	+16·3	4	13	
		3237*a*	0·473	292·4	38·5	+14·9	9	39	
		3237	0·466	290·0	38·4	+13·7	0	2	
		3237	0·453	285·5	38·0	+11·5	0	2	
		3237	0·468	294·9	37·8	+15·9	1	3	
		3237	0·453	295·2	36·8	+15·7	0	3	
		3238*b*	0·529	231·7	37·0	−14·4	28	169	
		3238	0·525	227·4	35·3	−16·1	0	15	
		3238*c*	0·514	229·2	35·3	−14·9	1	8	
		3243*a*	0·653	130·8	339·9	−20·9	37	195	
		3243*b*	0·643	127·3	339·2	−18·6	7	39	
		3243	0·639	126·2	339·0	−17·8	0	5	254*c*
		3243	0·664	127·3	337·8	−19·4	9	47	
		3243	0·684	124·1	335·2	−18·4	13	30	
		3243	0·749	123·3	330·0	−20·4	3	18	178*c*
		3244*c*	0·552	110·7	340·5	− 6·9	55	261	
		3244	0·551	105·7	339·7	− 4·3	4	28	
		3244	0·589	113·8	338·7	− 9·5	10	31	
		3244*a*	0·594	108·0	337·2	− 6·3	134	609	
		3244	0·647	107·8	333·5	− 7·4	1	7	
		3244	0·634	106·3	333·1	− 6·2	1	9	
		3244	0·697	107·2	329·6	− 8·1	15	83	444*c*
		3246*a*	0·602	81·0	334·8	+ 9·5	9	20	
		3246	0·616	80·8	333·8	+ 9·7	1	6	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3249, October 20. A very small spot.
Group 3250, October 21–November 2. A regular spot, *a*. A stream of small spots accompanies it on the *sp* side on October 23 and the succeeding days, but has disappeared by October 30.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
294d·243	CL,FT	3246	0·687	83·8	328·1	+ 8·0	9	47	623*f*
		3246	0·706	84·5	326·7	+ 7·5	23	81	
I.		3251	0·748	116·3	327·7	−15·7	2	4	
		3252	0·853	101·9	314·6	— 7·4	3	7	695*c*
		3250*a*	0·956	75·8	298·3	+15·0	42	216.	350*p*
			0·806	113·5	321·8	−15·4			63
			0·937	119·6	307·5	−25·4			184
			0·934	67·5	302·6	−22·8			268
Oct. 22		Centre			(11·7)	(+5·1)	(485)	(2413)	(4354)
295·454	CL,JG		0·986	250·4	73·9	−18·3			192
			0·956	297·7	69·2	+27·9			213
431			0·924	284·1	63·9	+14·9			170
			0·870	250·6	53·7	−14·1			51
			0·784	287·1	47·3	+16·5			153
		3232*b*	0·848	282·2	54·1	+13·0	25	148	154*c*
		3237	0·718	288·8	41·2	+16·9	0	6	
		3237	0·690	288·7	38·9	+16·5	4	17	76*c*
		3237	0·670	291·2	36·9	+17·8	0	7	
		3238*b*	0·716	245·5	38·0	−13·5	17	132	
		3238	0·703	245·0	36·9	−13·5	0	4	135*c*
		3253	0·382	16·9	349·0	+26·3	0	5	
		3253	0·337	20·6	348·7	+23·3	1	9	
		3253	0·349	26·9	346·3	+23·0	2	9	
		3243*b*	0·477	148·9	341·0	−19·2	21	90	
		3243*a*	0·511	151·5	340·9	−21·8	15	95	
		3243	0·499	147·9	339·8	−20·1	3	10	
		3243	0·494	145·0	338·7	−19·0	0	29	
		3243	0·526	141·3	335·8	−19·5	6	16	
		3244	0·297	127·9	342·5	— 5·6	1	12	
		3244*c*	0·328	128·8	341·2	— 7·0	31	228	
		3244	0·315	122·0	340·6	— 4·7	0	3	
		3244	0·323	117·1	339·4	— 3·6	1	5	
		3244*a*	0·369	123·4	338·1	— 6·9	86	558	
		3244	0·358	117·7	337·6	— 4·8	2	8	
		3244	0·426	120·0	334·3	— 7·6	0	2	
		3244	0·490	118·7	330·4	— 9·1	6	40	
		3244	0·523	115·9	327·8	— 8·8	0	5	
		3246*a*	0·363	77·5	335·2	+ 9·2	6	14	
		3246	0·381	77·3	334·1	+ 9·4	0	7	
		3246	0·430	82·0	330·7	+ 7·9	0	7	
		3246	0·450	84·5	329·4	+ 6·9	5	19	
		3246	0·489	86·2	326·8	+ 6·2	9	79	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
295d·454	CL,JG	3246	0·545	89·3	323·1	+ 4·6	0	2	
		3246	0·551	86·7	322·7	+ 6·0	1	8	
431		3252	0·635	107·9	318·7	— 7·2	1	20	
		3252	0·655	107·7	317·3	— 7·6	0	7	
		3252	0·680	109·2	315·7	— 9·1	1	5	
		3250	0·803	79·9	302·6	+11·1	4	59	
		3250	0·823	79·8	300·7	+11·2	2	11	
		3250	0·836	80·7	299·3	+10·5	0	5	260*c*
		3250*a*	0·846	77·1	298·3	+13·6	37	169	
		3250	0·846	79·7	298·2	+11·4	0	27	
		3254*a*	0·902	100·7	293·0	— 7·4	17	85	
		3254	0·919	101·0	290·7	— 8·0	0	22	242*c*
		3254*b*	0·934	101·1	288·4	— 8·5	19	149	
		3255*a*	0·918	107·3	291·9	−13·7	3	29	
		3255	0·944	108·4	288·0	−15·5	0	18	183*c*
		3255	0·945	106·7	287·5	−14·0	2	20	
			0·769	112·6	309·3	−13·7			82
			0·842	127·2	307·3	−27·3			171
			0·821	70·9	301·4	+18·5			214
			0·885	115·1	298·1	−19·4			129
			0·913	72·7	290·1	+17·8			221
			0·922	64·2	289·3	+25·7			84
Oct. 23		Centre			(356·1)	(+5·0)	(328)	(2200)	(2730)
296·502	CL,FT	3232*b*	0·949	280·6	53·9	+11·6	24	112	400*c*
		3237	0·846	282·2	39·7	+12·9	0	8	
		3238*b*	0·853	249·8	37·4	−14·4	14	116	279*s*
		3253	0·342	337·4	350·1	+23·2	0	5	
		3253	0·322	337·2	349·6	+22·0	2	6	
		3253	0·319	342·0	348·0	+22·5	1	8	
		3253	0·332	346·0	346·9	+23·6	0	11	
		3243	0·393	178·0	341·1	−18·1	0	9	
		3243*b*	0·408	177·6	340·9	−19·0	10	38	
		3243*a*	0·447	176·7	340·3	−21·5	13	71	
		3243	0·422	174·0	339·2	−19·8	1	3	
		3243	0·416	169·4	337·3	−19·2	0	2	
		3243	0·421	164·8	335·2	−19·0	4	12	
		3244	0·187	187·4	343·3	— 5·7	0	3	
		3244*c*	0·204	175·5	341·0	— 6·8	42	257	
		3244	0·150	170·4	340·5	— 3·6	0	3	
		3244*a*	0·216	160·7	337·8	— 6·8	73	560	
		3244	0·236	148·5	334·8	— 6·7	0	2	
		3244	0·281	151·2	334·1	— 9·3	0	2	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3251, October 22. A very small spot.
Group 3252, October 22–25. A very small spot on October 22. A few small faint spots in a short stream from October 23 to 25.
Group 3253, October 23–26. A few small spots in a short irregular stream.
Group 3254, October 23–November 2. A short stream of spots, of which *a* and *b*, the first and last spots, are the largest. The intermediate spots have disappeared by October 31, and *a* by November 2, leaving *b* alone. *a* is a composite spot, *b* is regular.
Group 3255, October 23–28. A smaller stream than group 3255, and south of it. The leader, *a*, has a considerable proper motion both in longitude and latitude. *a* remains alone by October 26.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
296d·502	CL,FT	3244	0·301	138·4	330·3	− 8·2	0	3	
		3244	0·333	130·8	327·2	− 7·8	0	9	
		3244	0·350	128·1	325·8	− 7·7	0	6	
		3256	0·260	22·5	335·9	+18·7	4	17	
		3256	0·278	27·2	334·2	+19·1	3	7	
		3256	0·294	33·0	332·2	+19·0	2	6	
		3246*a*	0·138	54·3	335·4	+ 9·5	4	13	
		3246	0·213	70·0	330·3	+ 9·0	3	11	
		3246	0·246	80·2	327·8	+ 7·1	0	3	
		3246	0·256	74·9	327·5	+ 8·6	0	7	
		3246	0·258	84·0	327·0	+ 6·3	8	48	
		3246	0·323	88·5	323·1	+ 5·1	0	3	
		3246	0·342	79·7	322·1	+ 8·1	0	5	
		3252	0·430	117·0	319·3	− 6·7	2	12	
		3252	0·454	115·9	317·7	− 6·9	0	2	
		3252	0·536	110·8	311·7	− 6·7	4	12	
		3250	0·629	76·6	303·3	+12·2	3	14	
		3250	0·656	75·7	301·3	+13·0	0	7	
		3250	0·678	77·1	299·5	+12·3	1	9	
		3250*a*	0·697	74·7	298·2	+14·1	32	174	
		3250	0·697	77·3	298·0	+12·3	12	46	
		3254	0·775	104·9	292·9	− 8·3	2	15	} 105*c*
		3254*a*	0·777	103·0	292·4	− 6·9	29	210	
		3254*b*	0·822	102·6	288·1	− 7·4	37	294	
		3255*a*	0·785	111·0	293·3	−13·1	6	39	} 79*c*
		3255	0·844	110·9	287·5	−14·7	2	10	
		3255	0·846	108·7	286·8	−12·9	0	3	
			0·817	72·0	287·5	+17·5			200
			0·972	104·6	267·3	+12·9			105
Oct. 24		Centre			(341·9)	(+4·9)	(338)	(2213)	(1168)
297·246	AW,FT		0·929	283·8	40·7	+14·6			562
		3238*b*	0·925	252·6	37·4	−14·1	0	46	} 436*c*
I.		3238	0·924	251·6	37·1	−15·0	18	86	
		3253	0·425	316·1	350·6	+22·4	2	8	
		3253	0·392	319·4	348·0	+21·9	2	8	
		3253	0·385	321·6	347·0	+22·1	1	8	
		3253	0·367	320·4	346·6	+21·1	0	6	
		3243*b*	0·431	199·5	340·8	−19·1	8	31	
		3243*a*	0·462	196·2	340·0	−21·5	10	45	
		3243	0·393	197·5	339·2	−17·2	0	5	
		3243	0·427	193·6	338·2	−19·7	0	7	
		3243	0·405	187·2	335·2	− 18·8	4	17	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
297d·246	AW,FT	3244	0·228	224·2	341·2	− 4·7	0	9	
		3244*c*	0·250	217·5	340·9	− 6·7	60	305	
I.		3244	0·262	209·4	339·5	− 8·4	0	16	
		3244*a*	0·228	207·0	338·1	− 7·0	121	466	
		3256	0·267	339·4	337·8	+19·2	3	19	
		3256	0·240	338·4	337·4	+17·6	4	20	
		3256	0·258	344·7	336·2	+19·2	3	18	
		3256	0·260	345·9	335·9	+19·3	1	6	
		3256	0·259	350·9	334·6	+19·6	4	13	
		3256	0·255	3·5	331·2	+19·5	0	2	
		3246*a*	0·104	323·9	335·6	+ 9·7	5	16	
		3246	0·073	6·5	331·6	+ 8·9	2	12	
		3246	0·092	74·4	327·0	+ 6·2	3	34	
		3246	0·104	57·5	327·0	+ 8·0	0	7	
		3246	0·172	81·6	322·3	+ 6·2	0	19	
		3252	0·289	134·2	320·1	− 6·9	1	5	
		3252	0·393	118·3	311·8	− 6·2	3	9	
		3250	0·493	72·2	303·4	+12·9	0	13	
		3250	0·516	72·2	301·9	+13·3	0	2	
		3250	0·553	73·7	299·2	+13·0	1	7	
		3250	0·562	73·9	298·6	+13·0	8	26	
		3250*a*	0·574	71·1	298·1	+14·7	47	166	
		3250	0·585	74·0	297·0	+13·2	0	5	
		3254	0·648	104·7	293·2	− 5·7	16	84	} 185*c*
		3254	0·662	108·0	292·8	− 8·1	0	22	
		3254*a*	0·664	106·2	292·3	− 7·0	16	81	
		3254	0·689	103·3	289·9	− 5·6	7	21	
		3254	0·705	109·0	289·7	− 9·7	0	15	
		3254*b*	0·719	105·1	287·9	− 7·4	64	246	
		3255*a*	0·673	116·1	293·8	−13·4	9	32	} 162*c*
		3255	0·751	113·5	287·0	−14·1	0	5	
		3257	0·930	106·9	266·0	−13·8	9	35	130*c*
			0·740	122·7	290·8	−20·0			129
			0·724	66·4	287·3	+20·3			118
			0·862	84·5	272·5	+ 7·2			190
Oct. 25		Centre			(332·1)	(+4·8)	(432)	(2003)	(1912)
298·340	JG,FT		0·966	250·2	30·0	−17·7			206
			0·801	284·7	10·6	+14·6			210
I.		3238*b*	0·983	253·9	35·1	−14·8	0	23	
		3253	0·604	301·8	351·2	+22·4	0	3	
		3243*b*	0·551	221·9	340·5	−19·8	3	13	
		3243*a*	0·563	218·9	339·8	−21·5	7	27	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3256, October 24–30. A few small faint spots in a short stream. The group rapidly increases in size, and on October 26 consists of a large composite spot, *a*, followed by a stream of small spots. These soon disappear, and *a* is left alone, as a solitary regular spot by October 28.
Group 3257, October 25–29. A few small spots in a straight stream. Only *a*, the leader, is seen on October 29.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
298d·340	JG,FT	3243	0·537	221·3	339·6	−19·4	0	3	
		3243	0·511	224·1	339·4	−17·1	0	3	
I.		3243	0·543	217·5	338·3	−21·0	0	5	
		3243	0·515	217·5	337·0	−19·6	0	6	
		3244*c*	0·436	244·0	340·7	− 6·7	53	254	
		3244*a*	0·394	240·3	337·7	− 6·8	124	472	
		3244	0·352	228·3	333·0	− 9·0	1	3	
		3256*a*	0·420	305·6	338·6	+18·5	53	273	
		3256	0·373	309·0	335·3	+18·0	0	4	
		3256	0·366	313·3	333·9	+19·0	3	15	
		3256	0·352	316·0	332·5	+19·1	15	46	
		3256	0·315	312·9	331·5	+16·9	4	15	
		3256	0·336	320·2	330·7	+19·5	4	17	
		3246	0·335	281·4	336·9	+ 8·2	0	3	
		3246*a*	0·324	285·5	336·0	+ 9·4	0	7	
		3246	0·278	282·6	333·4	+ 8·0	0	2	
		3246	0·269	285·4	332·7	+ 8·6	0	6	
		3246	0·246	286·6	331·3	+ 8·6	11	24	
		3246	0·206	287·3	329·0	+ 8·1	6	26	
		3246	0·172	277·5	327·4	+ 5·9	4	15	
		3246	0·174	288·8	327·1	+ 7·8	0	6	
		3246	0·080	286·1	322·0	+ 6·0	0	12	
		3250	0·349	64·9	298·8	+12·9	6	11	
		3250	0·358	66·7	298·0	+12·5	0	2	
		3250*a*	0·374	62·0	297·7	+14·5	36	166	
		3254*a*	0·458	113·7	292·8	− 6·3	22	113	
		3254	0·474	117·2	292·5	− 8·2	2	27	
		3254	0·482	112·1	291·0	− 6·2	0	6	
		3254	0·513	116·9	290·1	− 9·2	0	7	
		3254*b*	0·541	112·5	287·4	− 7·8	51	214	
		3255*a*	0·504	130·0	294·2	−14·5	9	24	
		3257*a*	0·818	111·6	266·0	−14·6	8	29	
		3257	0·828	110·4	264·7	−13·9	0	11	273*c*
		3257	0·837	109·3	263·5	−13·3	0	6	
		3257	0·867	108·3	260·0	−13·3	3	14	
			0·919	73·6	250·7	+16·9			252
			0·966	87·6	242·6	+ 3·5			62
Oct. 26		Centre			(317·6)	(+4·7)	(425)	(1913)	(1003)
299·436	CL,FT		0·917	284·4	9·8	+15·0			75
		3243*a*	0·707	233·5	340·6	−21·2	0	5	
		3244*c*	0·643	253·9	341·5	− 6·6	31	184	
		3244*a*	0·601	252·7	338·3	− 6·5	67	458	
1893.									
299d·436	CL,FT	3256*a*	0·620	293·9	339·7	+18·2	25	183	
		3256	0·582	295·6	336·6	+18·4	0	19	
		3256	0·539	299·4	332·9	+19·3	2	23	
		3246	0·501	279·1	333·1	+ 8·5	4	17	
		3246	0·487	281·0	332·1	+ 9·4	6	42	
		3246	0·477	279·4	331·5	+ 8·5	0	20	
		3246	0·445	278·3	329·5	+ 7·8	24	112	
		3246	0·445	282·0	329·3	+ 9·4	2	11	
		3250	0·160	21·7	299·7	+13·1	1	3	
		3250	0·153	29·3	298·8	+12·2	0	2	
		3250*a*	0·189	27·3	298·1	+14·2	26	137	
		3254*a*	0·242	137·2	293·7	− 5·6	4	51	
		3254	0·263	139·1	293·3	− 6·9	4	11	
		3254*b*	0·342	129·9	287·9	− 8·2	30	171	
		3254	0·340	125·3	287·0	− 6·9	0	11	
		3255*a*	0·366	158·6	295·3	−15·3	3	9	
		3257*a*	0·660	118·9	266·6	−14·9	0	19	
		3257	0·683	116·5	264·3	−14·1	0	3	
		3257	0·703	115·3	262·4	−14·0	0	14	
			0·873	71·1	242·7	+18·7			51
			0·893	89·3	240·1	+ 2·7			200
			0·916	99·6	237·9	− 6·9			125
Oct. 27		Centre			(303·2)	(+4·6)	(229)	(1505)	(451)
300·323	HA,JG		0·839	294·6	347·4	+23·0			64
		3243*a*	0·814	239·6	340·3	−21·3	1	13	688*c*
I.		3244*c*	0·779	257·4	341·4	− 6·9	21	129	249*c*
		3244*a*	0·749	256·8	338·7	− 6·8	140	460	
		3256*a*	0·762	289·9	340·3	+18·0	33	166	141*c*
		3246	0·680	279·6	334·3	+ 9·8	1	15	
		3246	0·661	278·6	332·9	+ 9·0	16	148	518*p*
		3246	0·614	275·9	329·4	+ 7·2	16	64	
		3246	0·614	279·8	329·3	+ 9·5	13	95	
		3250	0·199	309·0	300·6	+11·6	0	2	
		3250*a*	0·201	326·0	298·2	+14·0	34	133	
		3254*a*	0·183	195·3	294·4	− 5·6	14	38	
		3254	0·200	187·5	293·1	− 6·9	1	13	
		3254	0·201	162·2	288·1	− 6·5	0	6	
		3254*b*	0·231	161·7	287·4	− 8·1	34	155	
		3254	0·216	156·5	286·7	− 6·9	1	4	
		3255*a*	0·349	191·9	295·9	−15·4	0	8	
		3258*a*	0·216	132·5	282·5	− 3·9	3	8	
		3258	0·258	126·1	279·6	− 4·3	1	11	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3258, October 28–November 3. A few small spots in an irregular stream. The leader, *a*, moves forward rapidly in longitude, and varies much in size.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued*.

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of Umbra for each Spot (and for Day).	Spots. Area of Whole for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
300d·323	HA,JG	3257*a*	0·525	128·3	266·5	−14·8	4	13	
		3257	0·527	125·9	265·6	−13·9	0	8	
I.			0·740	71·5	244·7	+16·6			109
			0·838	103·6	236·3	− 8·8			236
			0·833	86·7	235·2	+ 5·2			146
Oct. 28		Centre			(291·6)	(+4·5)	(333)	(1489)	(2151)
301·268	CL,FT		0·897	242·2	338·1	−22·5			626
			0·748	254·6	325·7	− 8·4			481
I.		3244*a*	0·880	259·6	339·6	− 7·0	165	625	361*c*
		3256*a*	0·887	287·6	341·4	+17·6	23	121	388*f*
		3246	0·826	279·8	334·8	+10·6	9	32	
		3246	0·826	276·7	334·8	+ 8·0	15	85	
		3246	0·804	277·7	332·6	+ 8·8	13	40	1226*c*
		3246	0·777	277·3	330·1	+ 8·4	6	27	
		3246	0·772	275·2	329·6	+ 6·8	12	65	
		3250	0·464	291·0	305·4	+13·5	1	6	
		3250*a*	0·366	297·6	298·5	+13·9	36	171	
		3254*a*	0·335	238·9	295·8	− 5·7	13	32	
		3254	0·265	224·3	289·8	− 6·6	2	15	
		3254*b*	0·260	212·9	287·3	− 8·2	25	138	
		3258*a*	0·179	212·3	284·6	− 4·3	2	13	
		3258	0·161	187·5	280·3	− 4·7	3	22	
		3257*a*	0·395	147·3	266·4	−15·0	4	12	
			0·900	118·1	219·8	−22·8			129
Oct. 29		Centre			(279·1)	(+4·4)	(329)	(1404)	(3211)
302·428	HA,JG		0·967	245·2	335·5	−22·6			540
			0·897	259·7	326·3	− 7·3			314
			0·799	256·6	315·2	− 8·0			121
		3244*a*	0·969	262·1	338·5	− 6·5	70	458	328*c*
		3256*a*	0·973	287·4	340·8	+17·9	9	70	221*f*
		3256	0·945	288·1	334·8	+18·5	0	9	
		3246	0·946	277·7	335·0	+ 8·7	11	66	938*c*
		3246	0·910	276·0	329·3	+ 7·2	2	78	
		3250*a*	0·584	288·0	298·5	+13·9	26	145	
		3254*a*	0·565	252·9	296·4	− 5·9	2	13	
		3254	0·525	249·9	293·3	− 6·6	0	4	
		3254	0·492	242·5	289·8	− 9·2	0	4	
		3254	0·457	245·1	288·3	− 7·1	0	11	
		3254*b*	0·445	242·8	287·1	− 7·7	9	90	
		3258*a*	0·411	250·1	286·4	− 4·0	8	33	
		3258	0·379	247·5	284·2	− 4·3	3	7	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of Umbra for each Spot (and for Day).	Spots. Area of Whole for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
302d·428	HA,JG	3258	0·329	246·1	281·2	− 3·5	0	3	
		3258	0·328	243·2	280·7	− 4·4	10	25	
		3259	0·347	203·9	272·0	−14·2	0	3	
		3260	0·844	120·9	212·0	−23·0	2	16	33*c*
		3260	0·863	119·3	209·3	−22·5	0	7	
		3261*a*	0·979	98·8	186·4	− 7·7	12	60	1138
Oct. 30		Centre			(263·7)	(+4·3)	(164)	(1102)	(2608)
303·404	CL,JG		0·968	277·3	326·6	+ 8·1			835
			0·942	258·0	319·9	− 9·8			438
			0·835	286·5	307·1	+16·1			208
			0·861	237·6	304·0	−24·9			196
			0·779	297·1	299·9	+23·5			84
		3250*a*	0·742	285·0	298·3	+13·9	29	162	108*c*
		3254*a*	0·740	257·8	297·4	− 6·1	3	11	
		3254*b*	0·628	251·6	287·7	− 8·0	21	99	
		3258*a*	0·610	257·1	287·4	− 4·4	33	108	
		3258	0·594	254·3	285·8	− 5·8	0	8	
		3258	0·513	253·3	280·3	− 4·8	5	16	
		3259	0·505	237·4	276·6	−12·0	0	3	
		3259*a*	0·481	233·5	274·2	−12·7	0	22	
		3260	0·750	125·8	209·8	−22·8	0	3	
		3261*a*	0·918	100·1	185·4	− 7·5	34	134	264*c*
		3262	0·957	102·6	179·3	−10·7	0	31	
			0·905	107·7	188·4	−14·0			111
Oct. 31		Centre			(250·9)	(+4·2)	(125)	(597)	(2244)
304·322	CL,HA		0·955	260·7	310·4	− 7·6			108
			0·949	276·6	310·4	+ 7·6			64
I.			0·889	292·3	300·7	+21·6			230
			0·905	235·4	296·7	−28·7			277
			0·805	247·9	289·1	−15·0			163
			0·774	304·1	285·4	+28·6			119
			0·776	240·1	284·2	−19·9			98
		3250*a*	0·866	283·4	298·6	+13·6	32	162	365*c*
		3254*a*	0·874	260·4	298·6	− 6·3	4	17	278*sf*
		3254*b*	0·777	255·9	288·1	− 8·2	8	48	
		3258*a*	0·769	260·7	288·1	− 4·5	7	33	
		3258	0·750	259·1	286·2	− 5·4	4	27	262*c*
		3258	0·736	260·6	285·2	− 4·1	0	12	
		3258	0·680	258·1	284·9	− 5·0	0	5	
		3258	0·717	259·0	283·5	− 4·9	2	11	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3259, October 30–November 3. A very small spot on October 30. A small spot, *a*, on October 31, and the succeeding days, with a very small companion on October 31.
Group 3260, October 30–31. Two small spots on October 30. The preceding spot has disappeared by October 31.
Group 3261, October 30–November 9. A nebulous spot, *a*, which moves backward in longitude and diminishes in area from day to day. It has a very small companion on November 6.
Group 3262, October 31–November 1. A small spot *sf*, Group 3261.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
304d·322	CL,HA	3259*a*	0·632	243·0	273·9	−13·3	5	21	
		3261*a*	0·822	101·8	184·7	− 7·3	19	127	} 258*c*
I.		3262	0·876	104·6	179·3	−10·7	0	12	
			0·783	112·3	190·4	−14·5			95
			0·891	113·5	179·3	−18·7			153
			0·888	84·9	176·0	+ 6·4			111
Nov. 1		Centre			(238·7)	(+4·1)	(81)	(475)	(2581)
305·187	JG,FT		0·908	298·8	291·1	+27·7			128
			0·907	252·6	290·2	−13·9			279
I.		3250*a*	0·946	282·9	298·5	+13·5	39	167	339*c*
		3254*b*	0·889	258·1	288·7	− 8·6	0	27	}
		3258*a*	0·883	262·7	288·5	− 4·5	19	82	} 597*p*
		3258	0·857	262·5	285·5	− 4·3	0	11	
		3258	0·829	261·8	282·5	− 4·5	0	13	
		3259*a*	0·759	248·2	273·6	−13·6	6	26	} 141*f*
		3261*a*	0·697	104·6	184·7	− 7·2	24	97	
			0·831	84·8	171·1	+ 6·5			136
			0·936	108·2	160·2	−15·5			106
			0·970	85·3	151·3	+ 5·5			163
Nov. 2		Centre			(227·3)	(+4·0)	(88)	(423)	(1889)
306·294	CL, JG		0·943	286·8	283·4	+17·1			80
		3258*a*	0·984	264·5	291·9	− 4·7	0	56	400*f*
I.		3259*a*	0.896	252·7	274·3	−13·6	0	17	133*np*
		3261*a*	0·501	111·5	184·9	− 7·1	12	71	
		3263	0·854	86·7	154·2	+ 4·8	6	30	98*f*
			0·844	111·2	158·2	−15·5			115
			0·949	104·2	142·8	−12·1			219
Nov. 3		Centre			(212·8)	(+3·9)	(18)	(174)	(1045)
307·140	HA,FT		0·941	254·3	249·2	−13·4			292
		3261*a*	0·343	122·5	184·7	− 6·9	20	76	}
I.		3264	0·702	112·2	160·0	−12·5	0	10	} 63*c*
		3264	0·733	110·4	157·1	−12·1	0	17	}
		3263	0·737	86·9	154·2	+ 4·9	7	15	95*c*
			0·892	103·8	140·1	−10·5			415
Nov. 4		Centre			(201·6)	(+3·8)	(27)	(118)	(865)
1893.				°	°	°			
308d·197	CL, JG		0·983	255·0	265·6	−14·0			97
			0·808	257·3	240·2	− 8·0			84
M.		3261*a*	0·198	165·4	184·8	− 7·3	11	62	
		3264	0·514	123·8	161·8	−13·2	5	18	
		3264	0·527	122·8	160·7	−13·2	0	6	
		3264	0·544	121·9	159·5	−13·4	0	5	
		3264	0·570	119·8	157·3	−13·2	10	39	
		3263	0·539	87·9	155·1	+ 4·2	3	11	
			0·911	114·8	125·7	−20·7			119
			0·955	107·3	117·0	−15·3			338
Nov. 5		Centre			(187·7)	(+3·7)	(29)	(141)	(638)
309·203	FT,HA		0·908	288·3	239·2	+18·1			179
			0·933	238·7	238·1	−27·4			96
I.			0·893	256·6	236·1	−10·2			89
			0·870	273·2	234·8	+ 4·6			190
		3261*a*	0·260	222·5	184·6	− 7·5	13	41	
		3261	0·242	217·3	182·9	− 7·5	1	8	
		3264	0·359	145·0	162·2	−13·5	5	21	
		3264	0·412	134·4	156·9	−13·3	8	33	
		3263	0·318	85·3	155·9	+ 4·9	4	9	
		3265	0·522	85·3	143·0	+ 5·5	0	9	
			0·741	109·0	128·9	−11·4			121
			0·810	119·2	125·4	−20·9			59
			0·843	109·1	119·5	−13·9			170
			0·956	115·6	104·9	−23·1			127
Nov. 6		Centre			(174·4)	(+3·6)	(31)	(121)	(1031)
310·499	HA,JG	3261*a*	0·486	248·2	184·2	− 7·2	5	18	
		3264	0·291	187·9	159·6	−13·2	3	7	
		3264	0·280	182·3	158·0	−12·7	0	7	
		3264	0·299	178·6	156·9	−13·8	7	15	
		3263	0·042	54·3	155·4	+ 4·9	0	3	
		3263	0·103	82·2	151·5	+ 4·3	1	6	
		3265*a*	0·285	82·9	141·3	+ 5·4	9	40	
		3265	0·319	81·1	138·9	+ 6·1	0	3	
		3265	0·355	84·9	136·6	+ 5·1	4	20	
		3266	0·973	67·7	80·6	+22·5	8	30	175*c*
			0·859	121·2	103·7	−24·3			116
			0·873	108·7	98·9	−14·4			71

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3263, November 3–7. A small nebulous spot which diminishes in area and moves forward in longitude day by day. Another very small spot follows it on November 7.
Group 3264, November 4–12. A few small spots in an irregular stream. The group increases rapidly after November 7, and by November 9 consists of a large regular spot, *a*, followed by a stream of small spots. *b*, the last spot, increases in size, and the intermediate spots die out, and only *a* and *b* remain by November 11.
Group 3265, November 6–12. A small faint spot on November 6. A few small spots in an irregular stream on November 7. The leader, *a*, is the largest, and is seen alone on November 9 and 11.
Group 3266, November 7–10. A small spot.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
310d.499	HA,JG		0·960	112·7	86·4	−20·6			211
			0·977	104·9	80·7	−14·3			69
Nov. 7		Centre			(157·3)	(+3·5)	(37)	(149)	(642)
311·187	CL,HA		0·911	243·4	209·8	−22·4			97
		3261*a*	0·611	253·2	184·2	− 7·4	4	17	
I.		3264	0·363	215·7	160·7	−13·8	7	35	
		3264	0·360	209·0	158·6	−14·9	5	39	93*c*
		3264	0·335	211·8	158·6	−13·1	0	10	
		3264	0·337	205·2	156·7	−14·3	8	55	
		3265*a*	0·109	71·6	142·3	+ 5·3	14	57	
		3265	0·205	81·2	136·5	+ 5·1	0	9	
		3266	0·931	66·6	80·3	+23·0	6	39	303*c*
			0·791	122·3	102·0	−22·6			153
			0·905	114·0	86·8	−20·0			188
			0·924	105·6	82·5	−13·0			55
Nov. 8		Centre			(148·2)	(+3·4)	(44)	(261)	(889)
312·503	CL,JG	3261*a*	0·815	259·0	184·4	− 7·0	0	12	102*s*
		3264*a*	0·595	242·4	163·7	−13·2	27	143	
		3264	0·546	240·3	159·9	−12·8	0	9	
		3264	0·550	236·7	159·2	−14·6	0	6	
		3264	0·532	238·8	158·6	−13·0	6	32	
		3264*b*	0·512	235·4	156·5	−13·9	3	25	
		3265*a*	0·221	282·3	143·4	+ 5·9	5	16	
		3267	0·655	147·3	106·8	−30·3	3	14	
		3266	0·796	63·6	80·4	+22·8	5	16	53*c*
		3268*a*	0·840	78·5	74·0	+11·4	6	14	
		3268*b*	0·867	78·5	71·0	+11·6	6	35	278*f*
		3269*a*	0·923	97·8	64·3	− 5·9	69	508	
		3269*b*	0·971	97·0	55·4	− 6·0	16	259	774*c*
		3269	0·980	99·6	53·3	− 8·7	0	223	
			0·787	121·7	84·8	−22·1			89
			0·897	62·8	68·8	+25·7			123
Nov. 9		Centre			(130·9)	(+3·3)	(146)	(1312)	(1419)
313·250	JG,FT		0·909	257·5	185·2	−10·0			141
		3264*a*	0·724	247·4	164·4	−13·9	31	171	
I.		3264	0·669	242·8	159·0	−15·3	0	4	163*c*
		3264*b*	0·643	243·8	157·4	−14·0	13	76	
		3265*a*	0·391	277·1	143·9	+ 5·6	11	24	
1893.									
313d.250	JG,FT	3265	0·350	276·8	141·4	+ 5·3	5	24	
		3265	0·309	275·3	139·0	+ 4·6	0	14	
I.		3267	0·596	161·8	108·6	−31·3	0	14	
		3267	0·602	158·6	106·3	−30·9	0	14	
		3266	0·692	59·1	81·1	+23·1	0	18	87*f*
		3268*a*	0·728	77·0	74·9	+11·5	11	39	
		3268*b*	0·772	77·0	71·1	+12·0	0	7	
		3269*a*	0·839	98·9	64·9	− 5·7	132	566	
		3269	0·902	100·1	57·7	− 7·7	0	36	748*c*
		3269*b*	0·914	97·8	55·8	− 5·8	81	284	
		3269	0·931	100·1	53·5	− 8·2	0	193	
		3270*a*	0·974	68·1	44·2	+22·0	0	144	83*p*
			0·822	59·3	69·0	+26·7			123
			0·887	76·5	58·9	+13·4			319
Nov. 10		Centre			(121·1)	(+3·1)	(284)	(1628)	(1664)
314·243	CL,FT	3264*a*	0·854	251·2	164·3	−14·3	27	131	260*c*
		3264*b*	0·788	249·4	157·3	−14·1	6	70	
I.		3271*a*	0·715	292·0	151·9	+17·7	5	44	
		3271*b*	0·686	295·3	148·9	+19·3	10	51	
		3265*a*	0·587	275·5	143·8	+ 5·7	8	29	
		3268*a*	0·545	74·1	75·8	+11·1	15	38	
		3268*b*	0·611	74·3	71·2	+11·9	0	49	
		3269*a*	0·702	101·6	64·4	− 5·9	100	501	
		3269	0·775	100·9	58·2	− 6·5	6	53	
		3269*b*	0·797	99·0	56·8	− 5·3	34	204	
		3269	0·810	101·5	55·0	− 7·5	7	39	801*c*
		3269	0·835	102·9	52·7	− 9·0	0	11	
		3269	0·849	101·4	51·0	− 8·0	0	8	
		3272	0·790	79·3	56·1	+10·3	18	106	
		3272	0·815	78·0	53·8	+11·5	0	8	227*c*
		3270	0·881	69·0	47·2	+19·9	0	16	
		3270*a*	0·911	67·0	43·4	+22·1	28	175	323*c*
		3273	0·955	122·6	40·2	−29·8	0	93	
		3274	0·982	124·6	33·3	−33·1	0	39	140*c*
			0·785	75·8	56·9	+13·0			138
Nov. 11		Centre			(108·0)	(+3·0)	(264)	(1665)	(1889)
315·286	HA,JG		0·866	274·4	154·1	+ 5·3			54
		3264*a*	0·948	254·7	164·1	−13·5	15	157	215*c*
I.		3264*b*	0·906	253·6	157·4	−13·5	0	49	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3267, November 9–10. A small nebulous cluster.
Group 3268, November 9–16. Two nebulous spots, *a* and *b*. Other spots appear between them on the succeeding days, and by November 13 the group has lengthened out into a nebulous stream. The intermediate spots diminish, and only *a* and *b* remain by November 15; only *a* by November 16.
Group 3269, November 9–20. A very large composite spot, *a*, followed by a fine stream of irregular spots of which *b* is the last. The group diminishes in size, the following spots die out, and *a* has become a long narrow rift, crossed by bright bridges, by November 13. It has broken up by November 16, and the fragments are measured separately. The group is closely surrounded by faculæ as it approaches the West limb.
Group 3270, November 10–19. A very unstable group of spots. *a*, the last spot, is the most persistent, and remains alone by November 17.
Group 3271, November 11–13. A pair of spots, *a* and *b*, that move away from each other rapidly.
Group 3272, November 11–20. A confused nebulous cluster on November 11. Several ill-defined spots, of which *a*, *b*, and *c* are the largest, in an irregular stream on November 12. *b* and *c* diminish and have disappeared by November 16, by which date *a* is left as a solitary regular spot.
Group 3273, November 11–16. A nebulous spot.
Group 3274, November 11 17. A nebulous spot *nf* of Group 3273.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
315d·286	HA,JG	3271*a*	0·872	288·4	154·1	+17·4	14	81	} 152*c*
		3271*b*	0·827	292·6	148·4	+20·2	3	64	
I.		3265*a*	0·763	275·0	143·8	+ 5·7	0	18	} 49*c*
		3265	0·741	274·3	141·9	+ 5·1	2	16	
		3268*a*	0·339	64·3	76·1	+11·2	13	83	
		3268	0·355	69·4	74·6	+ 9·9	1	6	
		3268*b*	0·416	66·7	71·3	+12·1	6	32	
		3269*a*	0·520	106·4	64·2	− 5·9	104	410	}
		3269	0·579	103·7	59·9	− 5·5	0	15	
		3269	0·603	104·7	58·4	− 6·4	7	91	} 482*c*
		3269*b*	0·626	102·3	56·5	− 5·3	28	129	
		3269	0·655	105·4	54·8	− 7·7	8	34	}
		3272*a*	0·589	75·3	58·9	+10·9	11	59	}
		3272	0·622	78·5	56·2	+ 9·4	0	7	} 127*c*
		3272*b*	0·648	77·3	54·4	+10·4	13	53	}
		3272*c*	0·699	75·6	50·6	+12·1	10	88	}
		3275	0·771	103·4	45·1	− 8·4	6	30	439*p*
		3270	0·761	64·7	46·9	+20·9	0	53	}
		3270	0·770	61·8	46·8	+23·3	0	7	} 148*c*
		3270*a*	0·805	63·7	42·9	+22·7	23	89	
		3273	0·874	126·4	40·5	−29·5	13	43	
		3274	0·931	128·2	32·8	−33·7	7	105	90*c*
		3276*a*	0·984	68·8	14·4	+21·4	0	59	
			0·813	73·8	40·5	+14·8			148
			0·890	111·2	34·0	−17·3			176
Nov. 12		Centre			(94·2)	(+2·9)	(284)	(1778)	(2080)
316·492	HA,FT	3271*a*	0·973	287·4	155·0	+17·6	4	14	} 381*c*
		3271*b*	0·938	290·7	147·4	+20·4	0	7	
		3268*a*	0·136	4·6	77·7	+10·6	6	42	
		3268	0·160	17·8	75·5	+11·5	0	3	
		3268	0·161	18·2	75·4	+11·6	0	6	
		3268	0·162	31·1	73·4	+10·7	0	7	
		3268*b*	0·195	38·5	71·2	+11·5	5	27	
		3268	0·219	35·7	70·8	+13·0	0	6	
		3269*a*	0·289	123·0	64·2	− 6·3	61	411	
		3269	0·355	117·8	59·9	− 6·8	0	16	
		3269*b*	0·392	112·6	57·1	− 6·0	16	57	
		3272*a*	0·340	65·1	60·1	+10·9	14	72	
		3272	0·383	69·0	57·1	+10·5	0	2	
		3272*b*	0·427	71·9	54·1	+10·1	1	6	
		3272*c*	0·490	68·6	50·5	+12·7	4	23	
		3275	0·523	113·0	49·2	− 9·3	0	7	
1893.									
316d·492	HA,FT	3275	0·520	110·6	49·0	− 8·1	4	28	
		3275	0·559	110·8	46·5	− 9·0	5	19	
		3275	0·581	110·2	44·9	− 9·2	0	21	
		3270	0·576	57·5	47·2	+20·4	0	8	
		3270	0·594	58·8	45·6	+20·2	0	11	
		3270	0·618	54·8	45·1	+23·2	0	4	
		3270	0·636	55·6	43·6	+23·3	0	5	
		3270	0·617	61·1	43·5	+19·6	1	7	
		3270*a*	0·644	57·8	42·4	+22·3	12	42	
		3273	0·763	134·6	39·5	−30·1	0	14	
		3274	0·853	134·4	30·6	−34·7	10	62	47*c*
		3276*a*	0·902	68·5	14·9	+20·5	34	321	} 370*c*
		3276*b*	0·923	68·5	11·7	+20·9	0	13	}
Nov. 13		Centre			(78·3)	(+2·8)	(177)	(1261)	(798)
317·316	HA,JG		0·959	273·8	140·8	+ 4·4			303
			0·799	248·1	117·5	−15·6			107
I.			0·711	238·3	107·2	−19·8			61
		3277	0·587	251·6	101·5	− 8·4	8	52	
		3268*a*	0·233	307·3	78·2	+10·7	6	42	
		3268	0·214	316·0	76·1	+11·5	0	17	
		3268*b*	0·161	338·9	70·8	+11·3	0	19	
		3269	0·186	164·3	64·5	− 7·6	0	18	
		3269*a*	0·169	159·8	64·0	− 6·4	70	389	
		3269	0·211	141·4	59·8	− 6·8	6	26	
		3269*b*	0·233	131·2	57·3	− 6·1	8	77	
		3272*a*	0·184	39·2	60·6	+10·9	14	64	
		3272	0·276	59·2	53·5	+10·7	9	20	
		3272*b*	0·307	59·8	51·8	+11·4	0	6	
		3272*c*	0·334	57·3	50·7	+12·9	9	35	
		3275	0·357	121·5	49·6	− 8·1	2	46	
		3275	0·396	117·4	47·1	− 7·9	0	6	
		3275	0·410	119·5	46·3	− 9·1	8	38	
		3270	0·462	47·6	46·1	+20·6	13	51	
		3270	0·489	52·1	43·3	+19·9	13	66	
		3270*a*	0·529	49·7	41·6	+22·4	12	64	
		3273	0·678	142·2	38·9	−29·9	7	28	51*c*
		3274	0·781	140·0	30·0	−34·5	11	84	83*c*
		3278*a*	0·702	72·6	23·9	+14·0	11	66	} 105*c*
		3278*b*	0·733	69·5	21·8	+16·7	2	49	}
		3276*a*	0·814	66·4	14·8	+20·6	71	318	} 232*f*
		3276*b*	0·838	65·7	12·4	+21·7	0	20	}
Nov. 14		Centre			(67·4)	(+2·7)	(280)	(1601)	(942)

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The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3275, November 12–16. A few small spots, very irregular in shape and unstable in character, following Group 3269.

Group 3276, November 12–24. A large composite spot, *a*, divided by a faculous bridge, and closely followed by a small nebulous spot, *b*, which has united with *a* and is measured with it by November 18. The division in *a* has become more obvious by November 19, and *a* is measured in two parts. The separate parts have fused together again by November 21. *a* has become a regular spot by November 22.

Group 3277, November 14–16. An irregular spot that moves forward in longitude and diminishes in size from day to day.

Group 3278, November 14–16. A pair of irregular nebulous spots, *a* and *b*, which move apart.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
318d·198	CL, FT		0·897	251·5	117·5	−15·3			390
		3277	0·752	256·5	103·3	− 8·3	5	32	
I.		3268*a*	0·415	290·6	79·0	+10·8	4	21	
		3268*b*	0·322	296·2	71·2	+10·6	0	16	
		3269*a*	0·217	223·7	64·4	− 6·4	51	364	
		3269	0·170	222·4	62·4	− 4·6	0	13	
		3269	0·178	208·0	60·6	− 6·4	6	33	
		3269*b*	0·162	192·4	57·8	− 6·5	7	39	
		3272*a*	0·175	325·7	61·5	+10·9	10	66	
		3272*b*	0·153	16·3	53·3	+11·0	0	7	
		3272*c*	0·195	23·0	51·3	+12·9	3	21	
		3275	0·213	147·8	49·2	− 7·8	6	29	
		3275	0·227	140·1	47·4	− 7·4	12	43	
		3275	0·255	141·4	46·6	− 8·9	8	35	
		3270	0·333	24·2	47·5	+20·2	2	9	
		3270	0·351	33·3	44·1	+19·5	5	21	
		3270	0·373	33·1	43·3	+20·7	0	9	
		3270*a*	0·399	34·5	41·8	+21·6	11	46	
		3273	0·596	154·4	38·6	−29·9	4	13	
		3274	0·703	148·7	29·6	−34·5	13	60	209*c*
		3278*a*	0·533	68·4	25·3	+13·5	13	95	
		3278*b*	0·607	64·7	20·9	+17·1	8	62	
		3276*a*	0·689	63·1	15·1	+20·1	44	363	248*c*
		3276*b*	0·705	61·1	12·7	+21·8	0	15	
		3276	0·755	60·9	8·5	+23·3	0	7	
		3279	0·913	79·2	348·5	+10·9	0	22	
		3280*a*	0·974	96·5	339·5	− 5·7	0	82	265*p*
			0·794	63·8	5·7	+22·1			168
			0·939	80·4	346·0	+ 9·9			855
Nov. 15		Centre			(55·8)	(+2·6)	(212)	(1523)	(2135)
319·248	HA, FT		0·900	256·0	104·8	−11·4			104
			0·914	239·0	103·2	−26·8			59
I.		3277	0·892	260·2	104·3	− 7·6	0	7	
		3268*a*	0·611	284·1	78·9	+10·5	1	13	41*c*
		3269	0·432	250·1	66·0	− 6·1	11	61	
		3269	0·408	247·3	64·2	− 6·7	9	68	
		3269	0·383	246·8	63·2	− 6·3	4	13	
		3269	0·377	244·1	61·9	− 7·1	10	37	
		3269	0·315	242·9	58·3	− 5·8	0	5	
		3269	0·300	237·7	56·7	− 6·8	0	5	
		3272*a*	0·363	293·6	61·7	+10·7	22	100	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
319d·248	HA, FT	3275	0·210	217·0	49·3	− 7·1	3	11	44*c*
		3275	0·194	210·3	47·6	− 7·1	0	23	
I.		3275	0·202	200·1	46·0	− 8·4	6	29	
		3270	0·286	347·2	45·8	+18·6	0	3	
		3270	0·305	353·4	44·1	+20·1	1	11	
		3270*a*	0·322	1·2	41·6	+21·2	7	52	
		3273	0·537	173·7	38·1	−29·6	0	10	
		3274	0·630	161·9	28·4	−34·2	3	22	42*c*
		3278*a*	0·337	56·4	25·3	+13·1	4	20	
		3278*b*	0·433	53·5	20·7	+17·2	0	17	
		3276*a*	0·532	55·2	14·4	+19·8	79	314	
		3276*b*	0·572	53·7	12·3	+21·9	5	81	
		3279	0·811	77·8	348·3	+11·3	0	16	566*s*
		3280*a*	0·898	97·6	338·8	− 5·7	24	143	564*c*
		3281	0·987	94·3	321·6	− 3·8	130	566	131*f*
			0·858	113·4	346·1	−18·5			152
			0·865	70·6	343·2	+18·0			101
			0·910	119·5	341·0	−25·4			276
			0·939	79·9	332·2	+10·3			349
			0·949	80·2	330·5	+10·1			286
Nov. 16		Centre			(42·0)	(+2·5)	(319)	(1627)	(2715)
320·182	CL, JG	3269	0·622	256·4	67·0	− 6·5	18	55	208*c*
		3269	0·589	255·0	64·5	− 6·8	10	127	
I.		3269	0·563	258·2	63·1	− 4·7	0	48	
		3269	0·562	253·0	62·4	− 7·5	0	67	
		3272*a*	0·549	285·8	62·1	+10·5	20	100	
		3270*a*	0·372	328·4	41·7	+20·6	9	45	
		3274	0·598	177·4	27·8	−34·2	0	14	
		3276*a*	0·386	40·2	14·5	+19·3	74	319	
		3276*b*	0·426	41·1	12·3	+20·8	0	48	
		3282	0·467	51·4	7·1	+19·0	0	9	
		3280*a*	0·778	99·2	339·4	− 5·7	34	112	262*sp*
		3283*a*	0·876	114·4	331·8	−20·0	0	6	
		3281	0·923	95·1	322·8	− 3·8	80	541	673*c*
		3281	0·957	96·5	317·1	− 5·5	75	284	
			0·758	79·6	340·8	+ 9·4			677
			0·826	120·5	339·1	−23·3			411
			0·820	67·9	336·3	+19·3			220
Nov. 17		Centre			(29·7)	(+2·3)	(320)	(1775)	(2451)

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The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3279, November 15–16. A small nebulous spot.
Group 3280, November 15–25. A regular spot, *a*, which diminishes from day to day. A small companion precedes it on November 19. It is not seen on November 24.
Group 3281, November 16–28. A very large irregular composite spot, which undergoes continual change. A number of small companions are seen near it, and the great spot has frequently to be sub-divided for the purpose of measurement.
Group 3282, November 17. A small nebulous spot following Group 3276.
Group 3283, November 17–25. A very small spot, *a*, on November 17. *a* increases in size and becomes a regular spot. It is followed by a small spot, *b*, and occasionally by a third spot smaller still. *a* diminishes after November 20.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
321d·186	HA,FT		0·908	285·0	81·1	+14·5			254
			0·873	299·9	74·3	+26·9			110
I.		3269	0·780	259·7	66·8	— 6·6	12	46	
		3269	0·762	256·6	64·8	— 8·7	0	13	221*c*
		3269	0·757	258·8	64·7	— 7·0	7	36	
		3269	0·732	257·3	62·3	— 7·7	0	21	
		3272*a*	0·720	282·2	61·9	+10·3	21	103	236*c*
		3270*a*	0·507	308·7	41·3	+20·4	8	21	
		3276*a*	0·297	7·1	14·2	+19·3	53	285	
		3284	0·246	143·3	7·9	— 9·2	0	21	
		3285	0·450	73·9	350·0	+ 9·3	0	2	
		3285	0·478	71·8	349·0	+10·5	0	7	
		3286	0·647	56·7	340·7	+22·5	1	16	
		3286	0·678	56·9	338·3	+23·5	0	3	
		3280*a*	0·609	102·1	339·8	— 5·5	16	71	
		3287*a*	0·752	64·6	330·2	+20·3	2	18	49*c*
		3283*a*	0·748	119·4	332·7	—19·9	15	50	192*c*
		3283*b*	0·788	119·4	329·1	—21·2	5	26	
		3281	0·820	96·2	321·8	— 3·8	145	647	
		3281	0·853	101·1	318·8	— 8·3	2	36	
		3281	0·867	99·8	317·2	— 7·3	4	26	
		3281	0·866	97·9	317·0	— 5·7	63	325	752*c*
		3281	0·869	94·1	316·4	— 2·5	0	14	
		3281	0·885	95·6	314·6	— 3·9	13	62	
			0·754	127·6	335·0	—25·7			131
			0·892	88·8	313·5	+ 2·1			83
			0·929	76·2	308·5	+13·6			230
			0·944	98·0	306·3	— 6·8			89
Nov. 18		Centre			(16·4)	(+2·2)	(367)	(1849)	(2347)
322·472	HA,JG		0·944	295·9	68·8	+25·0			116
			0·825	286·1	54·2	+14·4			238
M.		3269	0·930	261·5	67·2	— 7·1	6	22	
		3269	0·913	264·2	64·9	— 4·4	0	8	851*f*
		3269	0·906	262·0	63·8	— 6·3	0	12	
		3272*a*	0·892	279·5	62·4	+ 9·5	16	129	223*p*
		3270*a*	0·699	296·3	41·0	+19·5	4	16	112*c*
		3276*a*	0·381	316·5	15·4	+18·0	44	197	
		3276	0·370	321·7	13·5	+18·9	9	82	
		3284	0·256	216·6	8·4	— 9·8	2	16	
		3284	0·214	212·1	6·1	— 8·3	1	5	
		3285	0·239	48·7	349·0	+11·2	1	4	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
322d·472	HA,JG	3286	0·456	40·0	341·1	+22·4	2	9	
		3286	0·483	42·4	338·9	+22·8	0	7	
	M.	3280	0·313	109·2	342·3	— 3·9	1	20	
		3280*a*	0·355	110·7	340·1	— 5·2	15	76	
		3287*a*	0·533	53·3	332·5	+20·4	4	23	
		3287	0·553	55·5	330·6	+20·1	0	9	
		3287	0·562	57·9	329·4	+19·1	9	25	
		3287	0·574	55·5	329·2	+20·7	0	22	
		3287	0·592	55·1	328·2	+21·5	1	7	
		3287	0·602	58·7	326·5	+19·9	26	66	
		3287	0·613	56·8	326·2	+21·3	0	14	
		3283*a*	0·550	130·6	333·4	—19·0	11	85	
		3283*b*	0·602	130·3	330·1	—21·0	0	13	
		3283	0·620	129·8	328·8	—21·5	1	10	
		3281	0·597	103·7	324·0	— 6·5	0	2	
		3281	0·634	99·9	320·9	— 4·7	138	1343	
		3281	0·653	104·0	320·0	— 7·4	10	48	
		3281	0·661	97·3	318·6	— 3·2	0	24	
		3281	0·686	104·2	317·5	— 8·1	3	11	
		3281	0·687	96·0	316·5	— 3·6	12	68	
		3281	0·699	97·3	315·7	— 3·6	2	12	
		3281	0·709	96·0	314·8	— 2·8	3	14	
			0·817	78·4	305·2	+10·7			188
			0·871	67·6	300·5	+20·4			126
			0·900	98·1	296·0	— 6·4			189
Nov. 19		Centre			(359·5)	(+2·1)	(321)	(2399)	(2043)
323·324	CL,JG		0·910	258·2	52·7	— 9·9			862
			0·826	292·3	42·0	+19·3			339
	M.		0·824	226·3	33·5	—33·3			105
		3269	0·982	262·3	66·7	— 7·2	0	13	
		3272*a*	0·962	279·4	62·2	+ 9·6	21	92	360*nf*
		3276*a*	0·521	302·9	15·5	+18·1	35	177	
		3276	0·503	305·9	13·6	+18·9	5	40	
		3280*a*	0·192	134·6	340·3	— 5·8	8	57	
		3287*a*	0·393	39·1	333·0	+19·6	16	33	
		3287	0·432	42·7	330·1	+20·3	8	59	
		3287	0·427	44·4	329·8	+19·5	6	35	
		3287	0·439	46·5	328·6	+19·3	0	5	
		3287	0·455	45·2	328·1	+20·4	1	7	
		3287	0·466	43·5	328·1	+21·5	0	3	
		3287	0·475	46·2	326·8	+20·9	10	40	
		3287	0·493	47·4	325·4	+21·2	1	5	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3284, November 18–19. A small spot with, on November 19, a very small companion.
Group 3285, November 18–19. One or two very small faint spots.
Group 3286, November 18–19. A pair of small spots.
Group 3287, November 18–27. A small nebulous spot, *a*, on November 18, followed on the succeeding days by a number of unstable small spots in a straggling stream. *a* increases in size very rapidly, the spots nearest to it appearing to combine with it. The other spots diminish and *a* alone remains by November 26.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for day).
1893.				°	°	°			
323d·324	CL,JG	3287	0·484	49·4	325·3	+20·1	15	68	
		3283*a*	0·440	147·0	333·5	−19·7	17	95	
M.		3283*b*	0·488	143·0	329·9	−21·0	0	5	
		3283	0·516	142·2	328·3	−22·2	0	1	
		3281	0·422	112·1	325·1	− 7·4	1	7	
		3281	0·464	105·3	321·6	− 5·4	142	1551	
		3281	0·509	113·0	319·9	− 9·7	0	7	
		3281	0·491	100·0	319·4	− 3·2	4	33	
		3281	0·521	110·4	318·7	− 8·8	0	6	
		3281	0·550	111·3	317·0	− 9·9	0	4	
		3281	0·539	106·4	316·9	− 7·1	4	22	
		3281	0·530	99·4	316·7	− 3·3	6	42	
		3281	0·537	95·4	316·0	− 1·3	1	5	
		3281	0·546	98·5	315·6	− 3·0	0	9	
			0·806	124·7	300·9	−25·9			122
			0·767	74·4	299·1	+13·1			60
			0·818	108·0	295·3	−13·5			81
			0·836	101·5	292·5	− 8·5			155
			0·871	115·5	291·0	−21·0			110
			0·934	65·9	280·4	+23·2			86
Nov. 20		Centre			(348·2)	(+1·9)	(301)	(2421)	(2280)
324·412	CL,JG		0·968	260·4	48·8	− 8·8			321
			0·946	253·6	43·7	−14·9			128
			0·940	287·4	43·5	+17·0			653
			0·906	230·8	31·6	−33·9			134
			0·847	244·5	28·4	−20·3			74
		3276*a*	0·697	294·6	15·7	+18·2	21	169	63*c*
		3280*a*	0·169	220·6	340·3	− 5·5	8	39	
		3287*a*	0·302	358·7	334·4	+19·3	10	36	
		3287	0·306	4·2	332·6	+19·5	29	118	
		3287	0·312	10·5	330·6	+19·6	4	35	
		3287	0·325	16·5	328·4	+19·9	3	15	
		3287	0·354	22·1	325·8	+20·8	16	151	
		3283*a*	0·370	177·8	333·1	−19·8	10	75	
		3283*b*	0·402	170·5	329·9	−21·5	0	17	
		3281	0·175	129·2	326·2	− 4·5	9	84	
		3281	0·190	104·7	323·5	− 1·0	0	7	
		3281	0·205	115·3	323·3	− 3·2	57	537	
		3281	0·269	121·1	320·7	− 6·2	36	825	
		3281	0·312	106·4	316·6	− 3·3	2	16	
Nov. 21		Centre			(334·0)	(+1·8)	(205)	(2124)	(1373)
1893.				°	°	°			
325d·187	CL,JG		0·927	247·8	29·3	−19·8			134
			0·929	232·1	25·7	−34·0			72
I.			0·874	283·9	24·0	+13·0			147
		3276*a*	0·807	292·0	15·7	+18·6	39	162	262*nf*
		3280*a*	0·311	246·0	340·2	− 5·6	11	40	
		3287*a*	0·344	330·6	333·9	+19·0	72	247	
		3287	0·329	335·3	332·0	+19·0	0	10	
		3287	0·322	347·7	327·9	+20·0	8	51	
		3287	0·327	355·5	325·3	+20·6	33	119	
		3283*a*	0·405	202·8	333·3	−20·2	11	57	
		3283*b*	0·410	194·9	330·2	−21·5	0	6	
		3281	0·124	203·5	326·5	− 4·8	19	75	
		3281	0·047	175·5	323·5	− 1·0	3	9	
		3281	0·094	173·7	323·1	− 3·6	143	568	
		3281	0·165	175·7	323·0	− 7·8	24	173	
		3281	0·201	162·9	320·3	− 9·3	22	91	
		3281	0·160	153·6	319·6	− 6·6	44	480	
		3281	0·162	130·5	316·6	− 4·4	0	44	
			0·753	123·9	280·9	−23·5			186
Nov. 22		Centre			(323·7)	(+1·7)	(429)	(2132)	(801)
326·434	HA,FT		0·983	281·2	26·6	+11·3			211
			0·896	255·9	9·7	−11·8			94
			0·865	294·9	5·0	+22·2			177
		3276*a*	0·933	288·4	15·4	+17·7	29	126	376*c*
		3280*a*	0·560	256·7	340·4	− 6·0	3	9	
		3287*a*	0·532	302·5	335·3	+18·0	42	223	
		3287	0·450	313·0	327·6	+19·3	0	15	
		3287	0·429	314·3	326·2	+18·9	2	12	
		3287	0·423	316·1	325·3	+19·2	0	5	
		3287	0·432	318·5	325·0	+20·3	9	22	
		3287	0·446	322·4	324·3	+22·1	0	6	
		3283*a*	0·559	228·0	333·5	−20·4	4	16	
		3283*b*	0·545	227·2	332·4	−20·2	0	11	
		3283	0·542	222·1	330·3	−22·1	0	3	
		3281	0·357	250·5	327·0	− 5·3	7	32	
		3281	0·351	246·7	326·1	− 6·4	2	11	
		3281	0·326	240·3	323·8	− 7·7	35	168	
		3281	0·288	252·2	323·2	− 3·5	92	556	
		3281	0·315	231·3	321·7	− 9·8	0	2	
		3281	0·318	228·0	321·2	−10·7	0	3	
		3281	0·328	225·3	321·1	−11·7	0	3	
		3281	0·293	228·3	320·1	− 9·6	13	106	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
326d·434	HA,FT	3281	0·262	237·3	320·1	— 6·5	23	464	
		3281	0·224	249·5	319·4	— 2·9	0	9	
		3281	0·299	221·0	318·8	—11·4	0	24	
		3281	0·254	225·2	317·8	— 8·7	0	11	
			0·944	67·5	237·7	+21·7			215
Nov. 23		Centre			(307·3)	(+1·6)	(261)	(1837)	(1073)
327·196	JG,FT	3276*a*	0·981	288·7	15·7	+18·6	0	156	
		3287*a*	0·666	296·9	335·9	+18·7	76	267	293*np*
I.		3287	0·571	305·0	327·0	+20·4	6	70	
		3287	0·550	307·3	325·0	+20·8	0	56	
		3283*a*	0·669	237·2	333·8	—20·0	0	17	
		3281	0·529	254·4	327·9	— 6·9	0	11	
		3281	0·511	258·6	327·2	— 4·5	2	33	
		3281	0·476	255·3	324·6	— 5·6	10	64	
		3281	0·477	250·8	324·1	— 7·7	15	136	
		3281	0·450	258·5	323·3	— 3·8	83	660	
		3281	0·421	248·3	320·3	— 7·5	31	578	
		3288	0·234	317·5	306·4	+11·4	0	22	
			0·915	69·4	232·2	+19·4			112
Nov. 24		Centre			(297·2)	(+1·5)	(223)	(2070)	(405)
328·500	HA,JG		0·909	278·8	345·0	+ 8·5			389
			0·899	260·7	343·3	— 7·8			236
		3280*a*	0·873	263·1	340·3	— 5·4	0	6	
		3287*a*	0·850	291·3	336·5	+18·7	35	237	127*c*
		3287	0·753	296·7	325·8	+20·6	2	12	121*c*
		3283*a*	0·842	245·1	334·1	—20·0	0	13	91*c*
		3281	0·756	260·8	328·4	— 6·1	0	19	
		3281	0·743	263·5	327·5	— 3·9	16	90	
		3281	0·720	260·9	325·4	— 5·6	4	26	234*c*
		3281	0·721	258·4	325·2	— 7·4	19	115	
		3281	0·694	263·0	323·5	— 3·9	81	665	
		3281	0·676	256·7	321·5	— 7·9	15	400	
		3288	0·498	290·6	308·3	+11·2	3	14	
		3289	0·330	237·5	296·3	— 8·9	0	2	
		3289	0·296	244·3	295·5	— 6·1	0	4	
		3289	0·259	237·7	292·7	— 6·7	0	4	
		3290*a*	0·873	70·1	220·6	+17·9	1	13	
		3290	0·897	71·3	217·3	+17·3	1	12	151*c*
		3290*b*	0·909	68·9	216·0	+19·6	5	21	
		3290	0·940	71·2	210·8	+18·1	0	7	
		3291	0·865	80·3	220·5	+ 9·0	0	24	101*c*
Nov. 25		Centre			(280·0)	(+1·3)	(182)	(1684)	(1450)
1893.									
329d·198	FT,JG		0·912	280·9	336·2	+10·4			78
		3287*a*	0·923	289·8	337·0	+18·7	179	395	298*nf*
I.		3281	0·840	263·4	327·5	— 4·9	0	41	
		3281	0·831	260·6	326·3	— 7·1	14	118	885*c*
		3281	0·801	263·9	323·6	— 4·2	122	766	
		3281	0·783	258·3	321·4	— 8·4	38	402	
		3290*a*	0·786	68·1	221·0	+17·8	0	53	
		3290*b*	0·846	66·7	215·1	+20·2	0	22	65*c*
Nov. 26		Centre			(270·8)	(+1·2)	(353)	(1797)	(1326)
330·435	CL,FT		0·859	284·7	313·0	+13·1			106
		3287*a*	0·992	288·7	337·1	+18·7	30	321	326*f*
		3281	0·956	262·6	327·1	— 6·7	33	102	
		3281	0·939	265·2	324·1	— 4·1	91	534	
		3281	0·940	261·6	324·1	— 7·5	3	24	
		3281	0·934	260·5	323·0	— 8·4	32	293	961*c*
		3292	0·882	251·4	314·7	—15·8	0	4	
		3292*a*	0·866	251·9	312·9	—15·0	2	13	
		3290*a*	0·578	61·4	222·7	+16·9	6	59	
		3290	0·599	61·5	221·2	+17·5	3	20	
		3290	0·614	62·5	220·0	+17·3	9	43	
		3290	0·645	59·8	218·4	+19·8	3	27	
		3290	0·654	63·6	216·8	+17·7	0	5	
		3290	0·678	59·6	216·0	+20·9	1	5	
		3290*b*	0·687	60·8	215·0	+20·4	18	99	
		3290	0·690	62·6	214·3	+19·3	4	10	
Nov. 27		Centre			(254·6)	(+1·1)	(235)	(1559)	(1393)
331·209	CL,JG	3281	0·986	265·6	324·3	— 4·2	118	857	1056*c*
		3281	0·982	261·7	321·8	— 6·2	0	102	
I.		3292*a*	0·939	253·2	312·9	—15·4	0	9	89*c*
		3293	0·296	3·5	243·2	+18·1	0	6	
		3293*a*	0·317	9·5	241·1	+19·2	5	12	
		3290*a*	0·450	53·0	222·4	+16·6	29	184	
		3290	0·481	53·4	220·5	+17·5	4	37	
		3290	0·512	52·8	218·9	+18·9	0	4	
		3290	0·532	55·1	217·0	+18·6	0	11	
		3290*b*	0·577	53·8	214·6	+20·7	43	179	
Nov. 28		Centre			(244·3)	(+1·0)	(199)	(1401)	(1145)
332·187	JG,FT	3293	0·350	323·8	243·8	+17·2	0	6	
		3293*a*	0·346	333·9	240·6	+18·9	10	27	
I.		3294	0·203	41·4	223·6	+ 9·6	0	8	
		3290*a*	0·298	27·1	223·3	+16·2	54	286	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3288, November 24–25. A small nebulous spot.
Group 3289, November 25. Three very small spots.
Group 3290, November 25–December 5. A number of small spots in a curved stream on November 25. The group increases in size on the succeeding days, and the first and last spots, *a* and *b*, have become large and irregular by November 28. *b* has greatly broken up by December 2, and only a very small spot remains of it by December 3, but it has again increased by December 4. *a* and *b* move away from each other in longitude.
Group 3291, November 25. A small spot south of Group 3290.
Group [illegible], November 27–28. A small spot, *a*, with a very small companion on November 27.
Group [illegible]3, November 28–December 3. A small nebulous spot, *a*, preceded by a short irregular stream of very small spots, measured as a single spot.
Group [illegible]94, November 29. A very small spot almost in the place of Group 3291.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°				
1893.										
332d·187	JG, FT	3290	0·390	32·6	218·5	+20·0	0	15		
		3290	0·373	35·1	218·4	+18·6	4	57		
I.		3290*b*	0·438	38·3	214·6	+20·9	39	239		
		3295*a*	0·989	69·0	150·4	+20·9	0	158	366*sp*	
			0·950	104·7	160·6	−13·7			270	
Nov. 29		Centre			(231·4)	(+0·9)	(107)	(796)	(636)	
333·190	CL, JG	3293	0·495	303·6	243·6	+16·5	7	38	85*c*	
		3293*a*	0·473	310·6	240·4	+18·6	12	85		
I.		3296	0·354	329·2	229·1	+18·3	3	10		
		3290*a*	0·292	340·0	224·1	+16·6	31	206		
		3290	0·273	346·9	221·9	+16·1	6	29		
		3290	0·295	354·0	220·0	+17·7	3	13		
		3290	0·316	359·4	218·4	+19·1	6	43		
		3290	0·295	13·0	214·2	+17·4	0	14		
		3290*b*	0·341	11·3	214·1	+20·1	30	237		
		3295*a*	0·940	68·4	149·6	+20·4	53	198		
		3295	0·943	70·5	148·8	+18·6	10	137	396*c*	
		3295	0·963	69·4	144·8	+20·0	0	47		
		3297*a*	0·991	69·1	136·4	+20·8	0	224		
			0·859	107·0	160·5	−14·2			228	
			0·867	70·8	159·6	+16·9			245	
Nov. 30		Centre			(218·2)	(+0·7)	(161)	(1281)	(954)	
334·200	FT, HA	3293	0·673	294·0	244·6	+16·3	0	7		
		3293*a*	0·628	299·5	239·9	+18·4	17	83		
I.		3290*a*	0·432	309·9	225·0	+16·6	69	305		
		3290	0·373	329·5	223·3	+19·3	0	44		
		3290	0·365	321·3	218·7	+17·1	0	19		
		3290	0·377	325·2	218·0	+18·6	4	57		
		3290*b*	0·361	336·6	213·6	+19·9	18	224		
		3295*a*	0·848	67·3	149·1	+19·4	73	603		
		3295	0·880	68·3	143·3	+22·0	10	142	580*c*	
		3297	0·916	69·2	140·1	+19·2	0	93		
		3297*a*	0·933	67·8	137·5	+20·9	74	206		
		3298	0·967	72·1	130·4	+17·5	0	27	133*n*	
		3298*a*	0·972	70·3	129·3	+19·3	47	274		
			0·713	73·1	160·8	+12·4			84	
			0·771	60·1	158·5	+23·0			63	
			0·762	110·1	157·4	−14·7			173	
			0·879	57·9	147·5	+28·1			78	
Dec. 1		Centre			(204·9)	(+0·6)	(312)	(2084)	(1111)	
1893.										
335d·431	CL, FT	3293	0·854	289·1	245·8	+16·4	0	25		146*c*
		3293*a*	0·803	293·8	239·5	+19·1	11	32		
		3290*a*	0·649	296·1	226·1	+16·9	44	346		
		3290	0·613	298·9	222·8	+17·5	0	8		
		3290	0·572	298·8	220·0	+16·3	13	101		
		3290	0·566	303·5	218·4	+18·5	0	7		
		3290	0·540	300·0	217·7	+16·0	3	10		
		3290	0·556	305·0	217·4	+18·9	1	8		
		3290	0·528	300·8	216·7	+16·0	0	2		
		3290	0·546	309·4	215·4	+20·6	0	4		
		3290	0·514	303·3	215·2	+16·7	0	5		
		3290	0·498	306·1	213·5	+17·4	3	7		
		3290*b*	0·520	310·8	213·4	+20·2	10	97		
		3295*a*	0·674	61·4	150·2	+19·0	63	529		
		3295	0·711	63·3	146·7	+18·9	13	143		
		3295	0·733	62·9	145·0	+19·7	0	4		
		3297	0·784	60·6	141·0	+22·8	0	4		141*c*
		3297	0·781	62·4	140·9	+21·4	6	20		
		3297	0·785	64·8	139·9	+19·7	9	45		
		3297	0·794	64·7	139·1	+20·0	0	4		
		3297*a*	0·813	64·2	137·3	+20·9	16	139		
		3298*a*	0·869	68·1	130·3	+19·1	31	255		
		3299	0·920	71·5	123·0	+17·1	0	24		514*c*
			0·911	106·2	124·3	−14·5				201
Dec. 2		Centre			(188·7)	(+0·4)	(223)	(1819)		(1002)
336·219	CL, JG		0·861	280·0	237·2	+18·8				89
		3293	0·925	288·7	244·7	+17·3	0	8		
I.		3293*a*	0·894	291·3	239·8	+19·0	0	79		169*c*
		3290*a*	0·774	292·3	226·7	+17·2	83	400		
		3290	0·722	292·7	222·1	+16·4	13	75		233*c*
		3290	0·713	294·3	221·0	+17·3	0	27		
		3290	0·679	293·4	218·5	+15·9	7	63		
		3290	0·671	297·0	217·1	+17·9	0	12		
		3290	0·658	298·1	215·8	+18·2	0	3		
		3290	0·650	300·7	214·5	+19·6	0	4		
		3290*b*	0·650	302·3	214·1	+20·5	0	3		
		3295*a*	0·554	53·3	150·3	+19·5	126	428		
		3295	0·566	56·3	148·7	+18·5	14	170		
		3295	0·602	56·6	146·2	+19·5	11	66		
		3297	0·678	56·2	140·9	+22·4	0	46		
		3297	0·692	58·5	139·1	+21·4	0	23		
		3297*a*	0·714	59·2	137·2	+21·6	24	164		
		3298*a*	0·782	64·9	129·8	+19·5	66	278		146*c*

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3295, November 29–December 11. A very large spot, *a*, with an irregular edge. A large nebulous area lies adjacent to *a*, and is sometimes measured with it.
Group 3296, November 30. A small spot *np* of Group 3290.
Group 3297, November 30–December 10. A number of unstable spots irregularly arranged. The last spot of the group, *a*, which is also the largest, is the most stable, and can be identified until December 7.
Group 3298, December 1–12. A large regular spot, *a*, preceded on December 1 by a small companion.
Group 3299, December 2–7. A small nebulous spot, not seen on December 5.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	HELIOGRAPHIC		SPOTS.		FACULÆ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
336d·219	CL, JG	3299	0·845	69·5	122·5	+17·3	0	20	
I.			0·850	67·7	122·3	+19·0			162
			0·851	109·4	121·8	−16·2			122
Dec. 3		Centre			(178·3)	(+0·3)	(344)	(1869)	(921)
337·193	HA, FT	3290*a*	0·891	290·0	226·8	+17·8	157	405	
		3290	0·844	289·8	221·2	+16·7	6	158	
I.		3290	0·812	289·4	218·3	+16·8	6	46	395*c*
		3290	0·787	292·9	214·8	+17·9	9	97	
		3290*b*	0·774	295·2	213·1	+19·3	4	79	
		3295*a*	0·416	38·4	149·6	+18·7	142	572	131*c*
		3295	0·464	44·0	145·5	+19·6	4	47	
		3300	0·465	143·9	148·3	−21·8	16	51	
		3300	0·476	141·8	147·0	−21·7	7	38	
		3300	0·467	138·4	146·2	−20·2	8	45	
		3297	0·540	45·6	140·9	+22·3	0	30	
		3297	0·569	44·0	139·8	+24·3	0	52	168*c*
		3297	0·556	48·1	139·0	+21·9	0	6	
		3297*a*	0·580	50·2	136·8	+21·9	13	75	
		3298*a*	0·645	59·6	129·5	+19·2	90	239	154*c*
		3299	0·712	65·9	122·8	+17·0	2	23	175*f*
			0·751	112·2	119·2	−16·3			306
			0·905	104·5	101·6	−13·0			230
Dec. 4		Centre			(165·4)	(+0·2)	(464)	(1963)	(1559)
338·363	CL, HA	3290*a*	0·981	288·9	228·1	+18·6	30	213	
		3290	0·947	289·1	220·1	+18·1	13	287	
I.		3290	0·924	290·5	216·1	+18·9	0	25	215*c*
		3290*b*	0·908	292·3	213·4	+20·2	0	20	
		3295*a*	0·330	359·4	150·3	+19·3	39	396	
		3295	0·292	3·9	148·9	+17·0	0	12	
		3295	0·342	11·6	145·9	+19·7	2	53	
		3390	0·371	178·6	149·5	−21·1	1	36	
		3300	0·359	170·1	146·3	−20·5	0	22	
		3300	0·390	169·8	145·8	−22·4	0	16	
		3297	0·419	24·3	139·4	+22·5	1	28	
		3297*a*	0·433	30·4	136·5	+21·9	7	31	
		3298*a*	0·467	45·6	129·5	+19·1	36	214	
Dec. 5		Centre			(150·1)	(+0·1)	(129)	(1353)	(215)

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	HELIOGRAPHIC		SPOTS.		FACULÆ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
339d·446	HA, FT		0·987	289·3	215·7	+19·0			194
		3295	0·425	313·0	154·7	+16·7	1	8	
		3295*a*	0·407	323·8	150·5	+19·0	65	373	
		3295	0·384	327·3	148·4	+18·7	5	76	
		3295	0·377	333·0	146·2	+19·4	1	6	
		3300	0·442	212·1	150·4	−22·0	2	6	
		3300	0·430	209·9	149·1	−21·9	0	4	
		3300	0·421	204·4	146·6	−22·5	3	16	44
		3300	0·394	205·5	146·2	−20·8	0	3	
		3297	0·371	346·8	141·0	+21·0	0	4	
		3297	0·388	350·2	139·9	+22·3	4	13	
		3297	0·372	349·8	139·8	+21·3	0	3	
		3297	0·386	354·9	137·9	+22·4	0	4	
		3297*a*	0·374	358·2	136·5	+21·8	3	14	
		3298*a*	0·342	16·6	129·9	+18·9	33	200	
		3299	0·369	33·3	123·6	+17·8	0	1	
			0·924	101·2	68·9	−10·4			397
Dec. 6		Centre			(135·8)	(−0·1)	(117)	(731)	(635)
340·468	CL, JG	3295	0·590	304·9	153·1	+19·5	0	9	
		3295	0·564	303·8	151·7	+18·1	0	7	134*c*
		3295*a*	0·565	306·9	150·8	+19·6	64	373	
		3295	0·525	308·8	147·8	+18·9	0	18	
		3295	0·487	316·8	143·1	+20·5	0	7	
		3300	0·577	229·5	150·4	−22·1	0	8	
		3297	0·476	322·4	140·5	+21·9	0	25	
		3297	0·460	323·2	139·4	+21·3	0	7	
		3297*a*	0·445	328·8	136·6	+22·1	0	10	
		3298*a*	0·355	339·7	129·8	+19·2	32	181	
		3299	0·328	353·4	124·5	+18·7	0	2	
			0·828	103·2	67·3	−11·0			298
			0·847	73·4	65·8	+13·9			79
			0·923	97·8	55·3	− 7·3			152
			0·964	105·3	48·5	−14·8			137
			0·976	67·1	46·2	+22·3			111
Dec. 7		Centre			(122·3)	(−0·2)	(96)	(647)	(911)
341·197	FT, JG		0·846	280·9	169·8	+ 9·1			65
			0·781	291·9	161·7	+16·8			140
I.		3295	0·698	298·7	153·0	+19·3	4	31	
		3295*a*	0·678	300·1	151·1	+19·6	86	307	
		3295	0·659	297·7	150·3	+17·6	2	32	130*c*
		3295	0·654	300·6	149·1	+19·2	1	7	
		3295	0·638	301·1	147·8	+18·9	0	28	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Faculæ unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Groups 3295, 3297, 3298 and 3299 follow each other closely and almost form a single long winding stream.

Group 3300, December 4–8. A few small spots in an irregular stream. The group diminishes from day to day.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°			
341^{d}·197	FT, JG	3300	0·663	236·1	148·9	−21·9	0	2	
		3297	0·598	306·0	143·6	+20·3	1	10	
I.		3297	0·565	311·1	139·8	+21·5	3	29	
		3297	0·551	315·1	137·5	+22·7	0	7	
		3297	0·541	319·4	135·3	+23·9	3	10	
		3298*a*	0·436	320·5	129·7	+19·3	46	206	
			0·728	105·4	67·2	−11·4			160
			0·749	72·1	65·8	+13·1			44
			0·844	97·3	55·5	− 6·3			94
			0·915	75·3	47·5	+13·3			105
			0·918	106·4	47·1	−15·1			67
			0·956	65·6	41·6	+23·2			99
Dec. 8		Centre			(112·7)	(−0·3)	(146)	(669)	(904)
342·500	CL, JG		0·926	285·7	162·2	+14·3			90
			0·922	293·5	160·4	+21·3			57
			0·838	245·5	149·8	−20·6			77
		3295*a*	0·854	293·4	151·5	+19·5	55	454	234*c*
		3295	0·838	291·5	150·2	+17·6	0	23	
		3297	0·769	300·2	141·3	+22·3	0	8	109*c*
		3297	0·742	299·4	139·1	+20·9	0	8	
		3298*a*	0·633	302·3	129·9	+19·3	30	178	67*c*
		3301	0·268	217·3	105·0	−12·7	0	3	
		3301	0·261	211·5	103·5	−13·3	0	4	
			0·872	62·8	38·2	+23·2			135
			0·899	109·1	32·9	−17·3			145
Dec. 9		Centre			(95·5)	(−0·5)	(85)	(678)	(914)
343·248	CL, HA		0·886	244·8	145·6	−22·4			232
			0·852	257·4	143·4	−11·0			171
I.			0·840	297·1	139·3	+22·1			301
		3295*a*	0·925	290·7	151·5	+18·8	91	737	396*c*
		3297	0·870	297·7	142·6	+23·5	0	2	
		3297	0·838	296·0	139·4	+21·1	0	6	
		3298*a*	0·745	297·0	130·2	+19·3	38	193	55*c*
		3302	0·699	111·0	43·4	−15·0	3	16	56*c*
		3302	0·731	109·2	40·4	−14·3	2	8	
			0·798	58·3	37·7	+24·3			148
			0·825	109·5	31·8	−16·3			257
			0·842	73·6	29·8	+13·4			122
			0·939	67·8	17·8	+20·5			152
Dec. 10		Centre			(85·7)	(−0·6)	(134)	(962)	(1890)
1893.									
344^{d}·335	JG, FT		0·930	293·3	137·5	+21·2			456
			0·909	254·0	135·8	−14·8			95
I.			0·852	252·0	128·5	−15·6			211
		3295	0·988	287·2	151·6	+16·9	0	196	150*c*
		3295*a*	0·988	290·0	151·5	+19·7	23	349	
		3303	0·966	245·4	145·1	−23·9	4	42	218*c*
		3298*a*	0·876	292·3	130·3	+19·2	28	155	158*f*
		3302	0·479	118·9	45·9	−14·0	4	12	
		3302	0·509	122·4	44·9	−16·5	14	65	
		3302	0·504	118·3	44·2	−14·4	7	31	
		3302	0·519	119·1	43·5	−15·1	0	9	
		3302	0·540	122·7	43·1	−17·5	8	32	
		3302	0·545	118·9	41·8	−15·8	6	15	
		3302	0·569	119·4	40·4	−16·8	10	45	
		3302	0·562	116·2	40·1	−14·9	0	17	
		3302	0·591	119·8	39·0	−17·6	9	22	
		3302	0·599	120·8	38·7	−18·4	0	7	
			0·880	64·5	12·8	+21·9			365
			0·975	82·4	354·5	− 7·6			328
Dec. 11		Centre			(71·4)	(−0·7)	(113)	(997)	(1981)
345·425	JG, FT		0·920	252·9	123·0	−16·0			127
		3298*a*	0·962	290·6	129·6	+19·5	29	161	405*f*
I.		3302	0·281	141·4	46·7	−13·4	12	42	
		3302	0·324	146·2	46·2	−16·3	17	53	
		3302	0·307	140·2	45·3	−14·4	1	5	
		3302*a*	0·326	142·2	45·1	−15·6	15	59	
		3302	0·314	137·8	44·5	−14·2	2	11	
		3302	0·344	141·5	44·2	−16·3	4	21	
		3302	0·334	133·9	42·7	−14·1	0	2	
		3302	0·346	131·0	41·5	−13·9	0	5	
		3302	0·352	132·3	41·5	−14·5	1	5	
		3302	0·365	134·2	41·3	−15·4	5	11	
		3302	0·384	136·7	41·1	−16·9	2	6	
		3302	0·372	132·9	40·7	−15·4	2	8	
		3302	0·394	135·0	40·2	−16·9	5	10	
		3302	0·407	136·1	39·8	−17·8	0	2	
		3302	0·415	134·0	38·8	−17·5	15	85	
		3302	0·432	135·5	38·4	−18·7	0	8	
			0·850	57·9	3·7	+26·4			95
			0·893	79·8	354·4	+ 8·8			404
			0·910	111·0	353·0	−19·4			114
			0·928	98·9	349·3	− 8·5			252
Dec. 12		Centre			(57·0)	(−0·8)	(110)	(494)	(1397)

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3301, December 9. A pair of very small spots.
Group 3302, December 10–19. A pair of small spots on December 10. Other small spots are seen by December 11, when the group is composed of a large number of small spots in a straggling stream. A large irregular composite spot, *a*, has formed by December 12, which has divided into a pair of large spots, *b* and *c*, by December 15. The following portion of the group disappears as it approaches the West limb.
Group 3303, December 11. A spot, seen only near the West limb.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
346d·313	CL,HA		0·884	256·0	106·8	−12·8			79
			0·810	235·1	94·1	−28·2			103
I.		3302	0·220	190·0	47·7	−13·5	13	33	
		3302	0·270	186·6	47·2	−16·5	6	34	
		3302	0·209	182·1	45·9	−13·0	1	8	
		3302*a*	0·253	180·3	45·5	−15·6	21	156	
		3302	0·254	172·4	43·4	−15·6	1	15	
		3302	0·281	168·0	41·9	−16·9	5	15	
		3302	0·257	165·2	41·5	−15·3	4	58	
		3302	0·308	164·1	40·3	−18·2	1	5	
		3302	0·292	161·7	39·9	−17·1	3	23	
		3302	0·314	158·6	38·5	−18·0	6	15	
		3302	0·338	159·9	38·4	−19·4	9	18	
		3304*a*	0·951	70·5	334·9	+18·2	27	128	197*n*
		3305*a*	0·978	91·4	328·6	− 1·6	142	426	773*p*
			0·755	54·5	2·8	+25·2			97
			0·782	78·1	354·9	+ 8·6			424
			0·807	113·3	353·9	−19·2			71
			0·852	100·7	347·5	− 9·6			291
			0·923	119·9	340·8	−27·8			204
			0·916	77·5	340·0	+11·0			151
Dec. 13		Centre			(45·4)	(−1·0)	(239)	(934)	(2390)
347·190	CL, FT	3302*a*	0·326	218·7	46·0	−15·7	29	264	
		3302	0·295	224·5	46·0	−13·1	0	6	
I.		3302	0·315	207·3	42·5	−17·3	0	4	
		3302	0·277	207·5	41·4	−15·3	0	61	
		3302	0·297	200·9	40·1	−17·1	4	54	
		3302	0·324	227·3	38·1	−11·6	6	31	
		3302	0·313	192·5	37·9	−18·8	1	6	
		3302	0·327	191·6	37·8	−19·7	0	5	
		3304*a*	0·881	68·1	334·4	+18·6	13	84	251*f*
		3306*a*	0·896	98·5	330·5	− 8·1	0	11	
		3305*a*	0·913	91·1	328·1	− 1·5	68	265	
		3307*a*	0·959	77·3	321·1	+11·9	26	158	
		3308*a*	0·973	79·1	317·9	+10·2	0	99	516*c*
		3308*b*	0·980	76·0	316·1	+13·5	0	42	
		3309*a*	0·991	94·6	311·7	− 4·7	0	383	1298*c*
			0·856	74·2	336·3	+12·9			117
			0·901	121·2	332·9	−28·3			175
Dec. 14		Centre			(33·8)	(−1·1)	(147)	(1473)	(2357)
1893.				°	°	°			
348d·192	JG,HA		0·925	281·8	87·4	+10·4			69
			0·865	296·3	77·2	+21·8			74
I.			0·805	262·7	73·9	− 6·6			142
			0·814	286·3	73·5	+12·5			109
			0·787	252·6	71·2	−14·4			359
		3302	0·506	243·6	48·3	−14·0	7	41	
		3302*b*	0·487	241·4	46·7	−14·5	29	94	
		3302*c*	0·498	237·5	46·5	−16·6	26	154	
		3302	0·467	242·8	45·8	−13·4	0	5	
		3302	0·471	238·4	45·1	−15·3	7	27	
		3302	0·445	237·3	43·3	−15·0	8	19	
		3302	0·428	234·4	42·2	−15·5	15	83	
		3302	0·425	228·6	40·0	−17·4	5	32	
		3304*a*	0·764	64·6	334·2	+18·3	18	85	184*nf*
		3306	0·746	98·9	332·8	− 7·4	1	12	234*c*
		3306*a*	0·772	100·1	330·6	− 8·5	7	23	
		3305*a*	0·789	91·0	328·7	− 1·6	68	267	144*nf*
		3310	0·827	98·1	325·2	− 7·4	3	8	179*f*
		3310	0·843	98·2	323·5	− 7·5	1	4	
		3307*a*	0·862	76·6	322·3	+11·4	39	180	
		3307	0·878	76·4	320·3	+11·3	0	7	536*c*
		3308*a*	0·889	78·2	318·8	+ 9·9	14	66	
		3308*b*	0·902	74·6	317·5	+13·3	18	92	
		3309*a*	0·934	94·7	311·8	− 4·8	193	507	
		3309	0·942	97·7	310·4	− 7·7	0	25	330*c*
		3311	0·980	97·9	302·3	− 8·0	55	432	
			0·808	127·1	1·1	−14·9			107
			0·726	77·9	335·0	+ 8·0			123
			0·905	104·7	316·5	−13·8			99
Dec. 15		Centre			(20·6)	(−1·2)	(514)	(2163)	(2689)
349·200	FT, JG		0·922	264·7	74·3	− 5·4			95
			0·915	284·4	72·3	+12·6			98
I.			0·908	254·3	71·2	+13·6			350
		3302*b*	0·675	249·8	48·0	−14·4	25	212	
		3302*c*	0·682	246·4	47·9	−16·8	18	153	
		3302	0·641	245·3	44·5	−16·5	0	9	
		3302	0·617	246·9	43·1	−15·0	3	16	139*c*
		3302	0·602	246·0	41·9	−15·2	6	24	
		3302	0·604	243·7	41·5	−16·6	6	51	
		3302	0·590	245·9	41·0	−15·0	0	5	
		3304*a*	0·616	56·6	334·6	+18·7	16	58	47*c*

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3304, December 13–22. A large regular spot, *a*, which diminishes from day to day. It has a very small companion on December 19.

Group 3305, December 13–25. A large regular spot, *a*.

Group 3306, December 14–22. A small nebulous spot, *a*, with a small companion on December 15–16. A number of irregular spots, mostly small, have appeared in advance of *a* by December 19. *a* has disappeared by December 20, and the new spots undergo continual changes from day to day.

Group 3307, December 14–25. A large regular spot, *a*, with occasionally some very small companions.

Group 3308, December 14–20. Two spots, *a* and *b*, closely following Group 3307. A third spot, *c*, has appeared by December 16, and the group forms a straight stream not seen on December 30.

Group 3309, December 14–26. A very large regular spot, *a*, occasionally with very small companions. *b* and *c* are inclined at a large angle to the equator. A number of very small spots have appeared by December 18, and the group has become an irregular cluster.

Group 3310, December 15–20. A number of unstable spots, mostly small, in an irregular stream, following Group 3305.

Group 3311, December 15–25. A large group of spots, irregular in distribution and character, following Group 3309. A more stable spot, *a*, has formed in the centre of the group by December 21. *a* alone remains by December 25.

Groups 3305 and 3310; 3307 and 3308; 3309 and 3311 form three similar systems; each consisting of a large regular spot, followed by an irregular stream of smaller spots.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs.—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
349d·200	FT,JG	3306	0·549	100·7	334·5	— 7·0	0	6	
		3306*a*	0·605	102·0	330·7	— 8·2	5	11	
I.		3305*a*	0·619	90·1	329·2	— 1·1	58	259	
		3305	0·672	91·1	325·2	— 1·7	0	7	74*c*
		3310	0·611	95·2	329·9	— 4·2	0	7	
		3310	0·663	98·8	326·2	— 6·8	3	9	
		3310	0·675	98·6	325·2	— 6·8	0	3	
		3310	0·700	97·9	323·2	— 6·5	8	27	
		3307*a*	0·715	72·4	324·3	+11·5	39	194	
		3307	0·720	74·2	322·7	+10·3	2	6	
		3308	0·756	70·6	320·3	+13·6	0	9	440*c*
		3308*a*	0·762	75·5	319·0	+10·1	10	53	
		3308*b*	0·771	71·7	318·8	+13·1	10	64	
		3308*c*	0·790	69·8	317·4	+15·0	0	8	
		3309*a*	0·816	94·9	312·8	— 4·7	110	455	
		3309	0·833	97·7	311·2	— 7·1	0	9	379*s*
		3309	0·843	96·4	310·1	— 6·1	0	5	
		3311	0·878	98·0	306·2	— 7·7	13	57	
		3311	0·892	98·8	304·5	— 8·4	8	19	
		3311	0·893	99·4	304·4	— 9·0	7	21	313*c*
		3311	0·900	98·7	303·5	— 8·3	7	39	
		3311	0·907	97·4	302·5	— 7·3	26	251	
			0·794	107·1	315·9	—14·3			82
			0·901	76·8	304·1	+11·3			42
Dec. 16		Centre			(7·3)	(—1·3)	(380)	(2047)	(2059)
350·266	CL,HA		0·883	262·0	54·9	— 7·8			174
			0·857	290·9	49·8	+17·0			204
I.			0·745	244·7	38·6	—19·5			134
			0·770	304·8	37·3	+25·0			120
		3302*b*	0·842	254·1	49·6	—14·1	31	130	
		3302*c*	0·837	251·1	48·6	—16·5	26	140	
		3302	0·819	252·7	47·0	—14·9	3	21	522*c*
		3302	0·811	252·1	46·1	—15·3	3	14	
		3302	0·802	252·0	45·2	—15·2	2	8	
		3302	0·778	251·4	42·8	—15·2	5	28	
		3312*a*	0·636	247·3	30·5	—15·3	12	31	
		3312	0·623	245·5	29·2	—16·1	0	3	101*c*
		3312	0·621	244·0	28·7	—16·9	3	8	
		3312*b*	0·607	243·6	27·7	—16·8	8	23	
		3304*a*	0·454	40·6	335·1	+18·7	13	56	57*c*
		3306*a*	0·391	108·3	331·3	— 8·3	6	17	
		3305*a*	0·399	88·9	329·8	— 0·8	66	254	
		3310	0·384	96·0	330·8	— 4·2	2	10	
1893.									
350d·266	CL,HA	3310	0·419	98·0	328·7	— 4·6	5	14	
		3310	0·452	102·4	326·9	— 6·9	5	13	
I.		3310	0·472	102·4	325·6	— 7·1	1	14	
		3310	0·492	102·1	324·3	— 7·1	7	56	
		3310	0·498	99·9	323·8	— 6·1	0	9	
		3307*a*	0·522	65·4	324·4	+11·3	42	191	
		3307	0·529	67·8	323·5	+10·3	0	3	
		3308*a*	0·587	69·9	319·3	+10·4	7	30	
		3308*b*	0·608	64·5	318·9	+14·0	3	15	
		3308*c*	0·638	63·0	317·2	+15·7	8	38	
		3309*a*	0·644	95·7	313·4	— 4·8	110	425	166*c*
		3311	0·727	99·2	307·0	— 7·7	24	105	
		3311	0·755	100·9	304·7	— 9·1	5	19	
		3311	0·760	97·4	304·0	— 6·6	21	139	284*c*
		3311	0·764	99·8	303·8	— 8·4	2	14	
		3311	0·771	100·2	303·2	— 8·8	3	21	
		3311	0·786	98·8	301·8	— 7·8	9	73	
Dec. 17		Centre			(353·2)	(—1·4)	(432)	(1922)	(1762)
351·189	HA,JG		0·936	262·1	50·3	— 8·0			127
			0·918	283·8	46·5	+12·0			40
I.			0·909	291·5	44·1	+18·7			50
			0·867	299·9	36·7	+24·7			121
		3302*b*	0·935	255·2	49·8	—14·4	17	98	397*sf*
		3302*c*	0·930	252·5	48·7	—16·8	30	136	
		3312*a*	0·782	250·9	31·1	—15·8	8	56	141*c*
		3312*b*	0·751	248·4	27·9	—17·2	41	103	
		3304*a*	0·365	17·2	334·6	+18·7	18	53	
		3306*a*	0·222	125·6	330·6	— 9·0	6	15	
		3305*a*	0·201	87·0	329·6	— 1·0	63	258	
		3310	0·236	106·2	328·0	— 3·9	4	13	
		3310	0·269	111·0	326·5	— 7·3	3	9	
		3310	0·310	109·3	324·0	— 7·4	9	54	
		3307	0·352	46·3	326·1	+12·5	1	6	
		3307	0·329	53·7	325·5	+ 9·7	8	22	
		3307*a*	0·358	51·3	324·6	+11·4	57	234	
		3307	0·364	56·4	323·3	+10·0	0	11	
		3308	0·397	57·0	321·4	+10·9	0	7	
		3308	0·418	54·2	320·9	+12·6	0	4	
		3308*a*	0·416	60·9	319·5	+10·2	8	28	
		3308*b*	0·447	55·0	319·1	+13·3	3	7	
		3308	0·452	57·7	318·2	+12·4	0	4	
		3308	0·466	55·0	318·0	+14·0	0	13	
		3308*c*	0·507	53·2	316·2	+16·2	7	26	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3312, December 17–20. A pair of spots, *a* and *b*, which tend to move apart and increase in size. A pair of very small companions are seen near them on December 17.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
351d.189	HA,JG	3309*a*	0·471	97·0	313·2	— 4·7	103	431	
		3311	0·563	100·6	307·3	— 7·3	0	7	
I.		3311	0·590	101·5	305·5	— 8·1	16	67	
		3311	0·609	98·5	303·9	— 6·5	31	122	
		3311	0·617	103·1	303·7	— 9·3	2	6	
		3311	0·644	99·5	301·5	— 7·3	10	57	
			0·886	102·9	279·3	—12·1			107
Dec. 18		Centre			(341·1)	(—1·6)	(445)	(1847)	(983)
352·185	CL,FT		0·959	251·9	37·1	—17·8			443
			0·931	298·2	33·0	+25·4			72
I.			0·778	301·5	13·8	+22·7			117
		3302*b*	0·997	254·6	53·5	—15·5	0	129	}
		3302*c*	0·995	252·9	52·2	—17·2	0	173	} 203*c*
		3312*a*	0·908	253·7	32·5	—15·5	13	53	}
		3312*b*	0·871	251·3	27·5	—17·1	28	141	}
		3304	0·412	341·0	336·2	+21·2	0	4	}
		3304*a*	0·369	341·7	335·0	+18·7	10	32	} 29*c*
		3306	0·174	230·1	335·7	— 8·1	21	73	
		3306	0·179	218·9	334·5	— 9·7	2	12	
		3306	0·180	212·0	333·5	—10·4	4	15	
		3306	0·158	215·2	333·3	— 9·1	3	16	
		3306	0·150	201·9	331·2	— 9·7	0	11	
		3306*a*	0·128	202·2	330·8	— 8·5	0	4	
		3305*a*	0·040	289·6	330·2	— 1·0	67	282	
		3310	0·102	148·5	324·9	— 6·7	3	42	
		3307*a*	0·229	11·1	325·4	+11·3	43	230	
		3308	0·270	20·7	322·4	+12·8	0	7	
		3308	0·284	22·5	321·6	+13·5	4	14	
		3308*b*	0·295	26·3	320·3	+13·6	0	3	
		3308*a*	0·246	33·8	320·0	+10·0	3	14	
		3308	0·321	26·7	319·5	+14·9	1	8	
		3308	0·286	32·8	318·9	+12·2	0	5	
		3308	0·313	31·6	318·3	+13·7	0	4	
		3308	0·284	36·3	318·2	+11·6	0	3	
		3308*c*	0·366	32·1	316·4	+16·3	1	7	
		3309*a*	0·257	103·2	313·5	— 5·0	108	466	}
		3311	0·349	108·1	308·5	— 7·8	12	71	}
		3311	0·394	107·2	305·8	— 8·2	13	52	}
		3311	0·406	102·5	304·6	— 6·6	18	96	} 98*c*
		3311	0·430	106·0	303·4	— 8·4	4	26	}
		3311	0·443	108·9	302·9	— 9·8	1	4	}
		3311	0·443	103·4	302·4	— 7·4	10	55	}
1893.				°	°	°			
352d.185	CL,FT	3313*a*	0·979	78·2	250·5	+11·2	0	385	
		3314	0·982	70·6	250·4	+18·7	0	90	
Dec. 19		Centre			(328·0)	(—1·7)	(369)	(2527)	(962)
353·264	CL,HA		0·866	294·8	10·4	+20·3			473
			0·8[illegible]	223·9	3·7	—39·2			97
I.		3312*a*	0·99[illegible]	253·8	35·5	—16·3	18	113	} 229*c*
		3312*b*	0·96[illegible]	252·6	28·3	—17·2	28	129	}
		3304*a*	0·496	315·4	335·2	+19·0	7	19	
		3306	0·410	254·1	337·1	— 8·1	8	35	
		3306	0·365	246·5	333·5	—10·0	1	7	
		3306	0·364	244·0	333·1	—10·9	0	2	
		3306	0·329	243·5	331·0	—10·2	3	20	
		3305*a*	0·295	273·5	330·7	— 0·7	58	274	
		3310	0·226	238·5	324·9	— 8·5	0	8	
		3307*a*	0·301	316·0	325·9	+10·7	43	184	
		3308	0·299	329·8	322·5	+13·1	2	6	
		3308*a*	0·234	329·6	320·6	+ 9·8	1	4	
		3309*a*	0·057	177·8	313·6	— 5·1	101	431	
		3311	0·129	153·5	310·4	— 8·4	2	7	
		3311	0·186	141·4	307·0	—10·2	0	5	
		3311	0·175	131·0	306·1	— 8·4	11	41	
		3311	0·166	122·5	305·6	— 6·9	6	48	
		3311	0·208	124·3	303·7	— 8·5	2	12	
		3311	0·213	118·2	302·8	— 7·5	8	31	
		3313*a*	0·892	76·4	251·8	+11·3	100	348	} 405*c*
		3313*b*	0·926	76·5	247·0	+11·8	67	185	}
		3314	0·911	68·1	250·5	+19·0	20	85	268*c*
		3315*a*	0·975	107·6	236·9	—17·5	19	68	131*c*
		3316*a*	0·986	117·0	233·9	—26·9	99	313	117*c*
		3317*a*	0·991	72·0	232·5	+17·6	0	138	127*f*
			0·903	102·5	249·6	—12·1			92
Dec. 20		Centre			(313·7)	(—1·8)	(604)	(2513)	(1939)
354·447	HA,JG		0·950	294·7	7·3	+22·7			140
			0·864	282·7	356·8	+ 9·9			199
			0·857	250·6	356·0	—17·6			109
			0·837	261·6	354·7	— 8·1			180
		3304*a*	0·677	302·1	335·5	+19·4	2	14	
		3306	0·643	260·6	337·8	— 7·6	3	9	
		3306	0·603	258·1	334·7	— 8·7	13	48	
		3306	0·582	259·4	333·3	— 7·8	4	31	
		3305*a*	0·548	272·4	331·3	— 0·4	52	223	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.

The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3313, December 19–30. A large spot *a*, closely followed by a stream of smaller spots, of which *b* is the largest. A rift connects *a* and *b* together on December 22. *b* has broken up by December 25. *a* remains throughout a large irregular spot, with a large proper motion in longitude.

Group 3314, December 19–24. A spot which has divided into a pair of spots, *a* and *b*, by December 21. A third spot is seen between *a* and *b* on December 22.

Group 3315, December 20–30. A number of spots in a long curved stream. *a*, the leader, increases in size up to December 24 and moves forward in longitude. *b*, the last spot, is at first the largest of the group, but diminishes on the succeeding days. The group resembles Group 3313 in appearance.

Group 3316, December 20–30. A large regular spot, *a*, attended occasionally by a few very small companions.

Group 3317, December 20–26. An irregular group of spots, mostly small. The group has broken up by December 25 into a great number of very small scattered spots. *a*, the last spot, and the largest, has a large proper motion both in longitude and latitude.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
				°	°	°			
1893.									
354^{d}·447	HA,JG	3307*a*	0·514	294·7	326·4	+10·6	29	155	
		3309	0·298	250·4	314·6	− 7·6	0	3	
		3309*a*	0·285	258·7	314·4	− 5·1	77	400	
		3309	0·233	257·9	311·4	− 4·7	0	18	
		3311	0·203	241·8	311·3	− 7·4	0	7	
		3311	0·235	242·1	310·3	− 8·2	5	26	
		3311*a*	0·202	230·8	307·3	− 9·3	13	88	
		3311	0·173	242·2	307·0	− 6·6	0	3	
		3311	0·174	230·0	305·9	− 8·4	6	48	
		3311	0·139	225·9	304·0	− 7·5	2	9	
		3311	0·158	218·0	303·8	− 9·1	0	20	
		3313*a*	0·738	73·5	252·2	+10·7	55	317	
		3313	0·775	71·6	249·5	+12·8	0	8	272*f*
		3313*b*	0·779	73·9	248·7	+11·1	33	115	
		3313	0·801	75·0	246·5	+10·7	2	34	
		3314*a*	0·774	62·4	251·7	+19·6	6	18	
		3314*b*	0·783	64·4	250·3	+18·4	6	14	103*c*
		3315*a*	0·872	109·6	238·7	−18·0	4	43	
		3315	0·905	108·6	234·3	−17·6	0	13	323*c*
		3315*b*	0·949	110·9	227·4	−20·4	34	207	
		3316*a*	0·919	118·6	233·6	−26·9	45	312	297*f*
		3317	0·906	71·0	235·3	+16·2	0	12	368*c*
		3317*a*	0·939	69·7	230·4	+18·3	20	160	
		3318*a*	0·970	92·7	222·4	− 3·1	6	34	272*s*
			0·870	64·7	241·2	+20·7			89
Dec. 21		Centre			(298·2)	(−2·0)	(417)	(2389)	(2352)
355·192	FT,JG		0·941	279·6	357·7	+ 8·3			385
			0·938	286·7	356·4	+14·9			120
I.			0·940	301·6	353·0	+27·9			52
			0·901	267·3	352·4	− 3·3			333
			0·910	245·7	352·3	−22·9			70
			0·894	258·9	351·4	−10·9			216
			0·806	283·0	340·8	+ 9·2			58
		3319	0·898	260·8	352·0	− 9·2	0	2	
		3304*a*	0·784	296·9	335·9	+19·3	3	13	247*np*
		3306	0·745	259·6	336·0	− 9·2	9	36	249*c*
		3306	0·703	256·5	332·2	−11·0	1	8	
		3305*a*	0·692	271·6	331·9	− 0·5	59	247	95*c*
		3307*a*	0·658	288·7	327·5	+10·5	34	150	70*c*
		3307	0·635	287·4	326·0	+ 9·3	0	23	
		3309*a*	0·452	262·7	314·9	− 5·2	113	453	
		3311	0·409	253·7	311·6	− 8·5	3	27	
1893.									
355^{d}·192	FT,JG	3311	0·379	255·4	309·9	− 7·4	4	18	
		3311	0·359	252·9	308·5	− 8·0	0	12	
I.		3311	0·351	256·0	308·3	− 6·8	0	12	
		3311*a*	0·353	248·2	307·6	− 9·5	25	127	
		3311	0·324	249·0	306·0	− 8·7	13	43	
		3311	0·293	251·3	304·5	− 7·4	0	10	
		3313	0·583	67·7	255·1	+11·0	0	9	
		3313*a*	0·608	68·1	253·3	+11·4	86	307	
		3313	0·621	71·7	251·7	+ 9·5	0	7	
		3313	0·644	66·9	251·0	+13·0	0	6	
		3313*b*	0·644	70·1	250·4	+11·0	36	139	
		3313	0·651	72·9	249·4	+ 9·4	0	5	214*c*
		3313	0·669	70·5	248·4	+11·3	3	12	
		3313	0·672	73·0	247·8	+ 9·8	0	12	
		3313	0·686	67·4	247·8	+13·7	0	7	
		3313	0·684	72·2	247·0	+10·4	0	6	
		3313	0·690	71·3	246·7	+11·1	0	15	
		3313	0·701	70·2	246·0	+12·2	1	5	
		3313	0·744	69·2	242·8	+13·8	0	3	365*s*
		3314*a*	0·666	56·0	252·4	+20·1	6	13	
		3314	0·673	57·3	251·5	+19·6	0	4	83*c*
		3314*b*	0·676	58·6	250·9	+18·9	5	11	
		3320	0·733	132·3	249·2	−31·1	2	16	
		3321	0·771	64·9	241·4	+17·7	3	8	
		3321	0·802	62·0	239·3	+20·7	0	5	90*c*
		3321	0·806	63·2	238·6	+19·9	0	5	
		3315*a*	0·771	112·3	239·8	−18·4	24	65	
		3315	0·805	110·2	236·2	−17·4	4	10	138*c*
		3315	0·820	110·2	234·6	−17·6	0	4	
		3315	0·868	112·8	229·7	−20·7	12	46	
		3315	0·871	111·2	229·1	−19·4	0	6	113*c*
		3315*b*	0·885	112·1	227·5	−20·4	58	267	
		3316	0·836	122·0	235·4	−27·5	4	16	
		3316*a*	0·852	120·3	233·1	−26·6	46	274	392*f*
		3317	0·818	67·8	236·2	+16·7	0	4	
		3317	0·853	68·3	232·4	+17·2	13	56	
		3317*a*	0·876	66·3	230·2	+19·5	34	149	562*c*
		3317	0·874	68·1	230·1	+17·9	10	36	
		3318*a*	0·909	92·3	223·1	− 2·9	20	63	
		3318	0·937	92·2	218·9	− 2·8	0	10	
		3318	0·950	94·9	216·6	− 5·4	15	87	510*c*
		3318	0·965	94·3	213·6	− 4·7	60	189	
			0·950	69·5	218·6	+18·7			142
Dec. 22		Centre			(288·3)	(−2·1)	(706)	(3058)	(4504)

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3318, December 21–30. A broad stream of spots. The leader, *a*, increases in size and moves forward in longitude, and becomes regular in character, whilst the following spots diminish.
Group 3319, December 22. A very small spot.
Group 3320, December 22. A small spot.
Group 3321, December 22–29. A number of small spots, mostly unstable, irregularly scattered. *a*, the leader, on December 26 is the most stable spot.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
356d.425	CL,FT		0·936	282·9	340·4	+11·3			118
			0·894	259·4	335·2	−10·4			507
			0·903	294·9	333·4	+21·3			148
			0·872	238·4	329·5	−28·4			100
			0·832	259·3	328·0	−10·1			93
		3305*a*	0·860	271·2	331·2	− 0·1	37	261	
		3307*a*	0·835	283·5	327·4	+10·0	41	247	119*c*
		3309*a*	0·680	265·0	314·8	− 5·0	70	426	
		3311	0·657	259·3	312·7	− 8·6	0	7	
		3311	0·638	259·3	311·3	− 8·5	0	5	
		3311	0·621	261·1	310·1	− 7·2	1	6	
		3311	0·606	258·4	308·9	− 8·7	4	12	
		3311	0·575	257·6	306·6	− 8·9	4	28	
		3311*a*	0·577	255·6	306·5	−10·1	13	83	
		3311	0·556	257·2	305·2	− 8·9	1	5	
		3311	0·540	259·5	304·3	− 7·5	1	6	
		3311	0·528	257·2	303·3	− 8·6	0	5	
		3322	0·602	292·9	306·5	+11·7	9	17	
		3322	0·589	291·9	305·8	+10·8	0	6	
		3322	0·567	293·0	304·1	+10·9	0	2	
		3322	0·562	291·7	304·0	+10·1	0	7	
		3322	0·535	293·2	302·0	+10·2	5	15	
		3322	0·539	294·7	301·9	+11·1	4	14	
		3313	0·349	50·7	256·2	+10·6	2	4	
		3313	0·354	54·9	255·1	+ 9·6	0	3	
		3313*a*	0·389	52·7	253·8	+11·5	64	356	
		3313*b*	0·410	58·3	251·4	+10·3	21	130	
		3313	0·429	60·8	249·8	+10·0	0	7	
		3313	0·440	58·3	249·8	+11·3	6	54	
		3313	0·465	58·6	248·3	+12·0	0	11	
		3313	0·456	62·4	248·0	+10·1	0	4	
		3313	0·482	56·0	247·9	+13·5	0	3	
		3313	0·489	62·3	246·0	+11·1	12	81	
		3313	0·519	59·7	244·8	+13·2	3	7	
		3314*a*	0·496	40·7	252·1	+19·9	0	9	
		3314*b*	0·497	44·8	250·5	+18·5	3	10	
		3321	0·584	54·0	242·4	+18·1	0	6	
		3321	0·594	52·8	242·2	+19·1	0	5	
		3321	0·605	51·9	241·8	+19·9	0	5	
		3321	0·623	57·2	238·9	+17·8	0	3	
		3321	0·643	53·3	238·8	+20·7	2	7	
		3321	0·643	56·4	237·7	+18·9	1	4	
		3315*a*	0·585	119·8	239·8	−18·7	18	76	
		3315	0·602	118·8	238·4	−18·7	6	20	
1893.				°	°	°			
356d.425	CL,FT	3315	0·611	117·8	237·5	−18·4	4	13	
		3315	0·659	116·2	233·7	−18·6	0	14	
		3315	0·692	115·4	230·9	−18·9	3	12	
		3315*b*	0·749	116·0	226·3	−20·6	38	225	
		3316	0·693	128·5	234·7	−27·3	0	5	
		3316*a*	0·719	126·7	231·9	−27·0	26	240	250*f*
		3317	0·665	62·8	234·3	+15·9	0	11	
		3317	0·678	63·0	233·3	+16·1	5	23	
		3317	0·698	61·7	232·1	+17·6	7	41	
		3317	0·712	61·0	231·2	+18·4	0	10	
		3317	0·721	62·9	230·0	+17·5	6	15	
		3317*a*	0·738	60·4	229·3	+19·7	18	99	
		3318*a*	0·748	92·4	223·8	− 3·2	13	26	
		3318	0·765	92·1	222·3	− 3·0	2	4	
		3318	0·771	90·8	221·8	− 2·0	0	17	
		3318	0·784	91·0	220·6	− 2·2	3	9	
		3318	0·808	91·6	218·4	− 2·6	12	42	424*c*
		3318	0·827	94·8	216·5	− 5·2	9	95	
		3318	0·846	94·2	214·5	− 4·8	6	31	
		3318	0·853	95·6	213·7	− 5·9	2	18	
		3318	0·866	94·7	212·3	− 5·2	10	138	
		3323*a*	0·976	100·7	194·7	−10·9	11	97	
		3323	0·987	102·0	191·4	−12·2	0	262	331*c*
			0·889	65·4	212·6	+20·6			607
			0·940	103·5	202·4	−13·4			93
Dec. 23		Centre			(272·1)	(− 2·2)	(503)	(3404)	(2790)
357·400	JG,FT		0·927	259·8	327·0	−10·3			781
			0·928	239·1	325·0	−29·4			211
I.			0·891	284·9	320·7	+12·1			243
			0·818	257·4	313·6	−11·6			110
		3305*a*	0·957	270·3	332·1	− 0·4	70	281	118*f*
		3307*a*	0·943	281·7	328·7	+10·2	59	274	169*c*
		3309*a*	0·834	265·1	315·5	− 5·4	82	400	385*c*
		3311	0·750	258·6	307·3	−10·1	2	6	173*c*
		3311*a*	0·737	258·4	306·2	−10·1	30	112	
		3322	0·789	286·1	309·6	+11·1	16	46	
		3322	0·764	287·0	307·2	+11·4	0	14	
		3322	0·739	286·3	305·2	+10·4	6	33	215*c*
		3322	0·733	288·3	304·3	+11·7	2	24	
		3322	0·702	286·0	302·2	+ 9·5	7	23	
		3313*a*	0·257	18·5	254·4	+11·7	87	331	
		3313	0·239	27·3	252·8	+ 9·9	0	14	
		3313*b*	0·256	26·5	252·6	+10·9	16	52	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3322, December 23–27. A number of spots, mostly small, in an irregular stream. The group increases in size, and two large spots are seen as notches in the limb on December 27.

Group 3323, 1893 December 23—1894 January 5. A large regular spot, *a*, followed by several nebulous areas with many small nuclei distributed through them. These areas undergo many changes. The two largest are called *b* and *c* by December 29, and have become defined into two large regular spots by January 2. *a* has a large proper motion in longitude.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
357d.400	JG, FT	3313	0·243	32·6	251·6	+ 9·5	1	10	
		3313	0·264	30·6	251·4	+10·8	7	40	
I.		3313	0·276	34·0	250·2	+10·9	4	26	
		3313	0·291	36·1	249·2	+11·3	0	7	
		3313	0·271	44·1	248·3	+ 8·9	0	3	
		3313	0·331	38·6	247·0	+12·7	0	10	
		3313	0·327	44·8	245·7	+11·1	18	74	
		3313	0·370	42·0	244·5	+13·7	2	6	
		3313	0·404	44·4	242·3	+14·5	0	7	
		3313	0·431	48·1	239·9	+14·5	0	4	
		3314*a*	0·381	18·8	251·8	+18·8	0	2	
		3314*b*	0·389	20·8	250·8	+19·0	1	10	
		3321	0·426	35·7	244·1	+18·0	0	4	
		3321	0·449	40·2	241·6	+17·8	7	12	
		3321	0·464	38·6	241·5	+19·0	0	6	
		3321	0·480	43·4	239·0	+18·2	1	9	
		3321	0·513	39·8	238·7	+21·8	0	1	
		3321	0·490	43·3	238·5	+18·7	0	4	
		3315	0·415	128·3	239·4	−17·1	2	10	
		3315*a*	0·431	131·3	239·3	−18·6	25	143	
		3315	0·476	125·6	235·3	−18·1	0	5	
		3315	0·491	125·4	234·3	−18·6	1	3	
		3315	0·542	123·1	230·6	−19·2	3	7	
		3315	0·570	124·7	229·2	−20·9	0	4	
		3315	0·591	124·5	227·8	−21·4	0	8	
		3315*b*	0·610	121·9	225·7	−20·7	47	227	
		3316*a*	0·601	135·7	231·1	−27·4	60	265	
		3316	0·629	137·7	230·2	−29·6	3	8	87*c*
		3316	0·629	136·2	229·5	−28·9	0	9	
		3316	0·654	135·9	227·7	−29·9	3	10	
		3317	0·495	52·0	235·4	+15·6	0	4	
		3317	0·516	52·6	234·0	+16·2	8	14	
		3317	0·531	51·6	233·5	+17·1	0	7	
		3317	0·555	51·2	232·2	+18·3	0	5	
		3317	0·546	54·6	231·7	+16·3	1	10	
		3317	0·571	52·0	231·0	+18·5	0	1	
		3317	0·584	51·5	230·4	+19·2	1	4	
		3317	0·575	54·3	230·0	+17·5	3	7	
		3317*a*	0·607	51·2	229·0	+20·3	12	84	
		3317	0·616	54·4	227·4	+19·0	0	3	
		3318*a*	0·572	92·2	224·4	− 3·2	26	122	
		3318	0·574	89·6	224·3	− 1·7	1	8	65*c*
		3318	0·591	91·9	223·1	− 3·0	3	6	
		3318	0·600	90·6	222·5	− 2·2	26	105	
1893.									
357d.400	JG, FT	3318	0·655	91·3	218·4	− 2·6	13	71	
		3318	0·659	93·1	218·1	− 3·7	7	15	
I.		3318	0·676	95·7	216·9	− 5·6	0	42	222*c*
		3318	0·702	94·0	214·8	− 4·5	10	56	
		3318	0·715	96·3	213·8	− 6·1	0	16	
		3318	0·734	94·9	212·2	− 5·1	20	97	
		3324	0·786	124·7	212·3	−28·1	0	9	39*c*
		3324	0·802	126·4	211·3	−29·9	0	16	
		3323*a*	0·908	100·9	194·2	−10·9	60	208	276*c*
		3323	0·941	101·2	189·2	−11·3	18	69	
		3323	0·955	101·3	186·6	−11·5	21	114	
			0·707	132·9	222·4	−30·5			120
			0·792	61·3	211·4	+20·8			415
			0·861	78·8	200·8	+ 8·4			52
Dec. 24		Centre			(259·2)	(−2·3)	(792)	(3637)	(3681)
358·252	FT, HA		0·973	260·4	324·6	− 9·9			329
			0·953	293·4	317·7	+21·4			150
M.			0·942	237·5	314·5	−30·1			167
		3305*a*	0·993	270·6	330·9	+ 0·3	28	176	103*f*
		3307*a*	0·990	280·8	329·0	+10·3	35	180	390*f*
		3307	0·976	282·1	324·4	+11·2	0	23	
		3309*a*	0·923	265·9	315·2	− 4·8	70	427	288*s*
		3311*a*	0·850	260·2	305·9	− 9·6	7	34	419*c*
		3322	0·899	284·3	310·6	+11·7	8	60	
		3322	0·881	285·2	308·2	+12·1	9	22	
		3322	0·871	286·2	306·8	+12·7	2	7	219*c*
		3322	0·843	284·9	303·9	+11·1	6	28	
		3322	0·836	286·7	302·9	+12·4	12	47	
		3313*a*	0·275	336·6	254·4	+12·1	71	350	
		3313	0·249	345·3	251·7	+11·4	2	10	
		3313	0·240	347·5	251·0	+11·0	1	5	
		3313	0·243	3·3	247·2	+11·5	0	3	
		3313	0·274	5·2	246·5	+13·2	4	7	
		3313	0·243	9·3	245·7	+11·4	4	56	
		3313	0·296	12·6	244·2	+14·2	0	2	
		3313	0·274	16·8	243·4	+12·7	0	2	
		3313	0·298	17·1	242·8	+14·0	0	5	
		3321	0·365	13·9	242·7	+18·2	3	7	
		3321	0·358	17·2	241·7	+17·4	1	4	
		3321*a*	0·380	16·0	241·7	+18·8	8	46	
		3321	0·385	20·8	239·7	+18·6	4	17	
		3315*a*	0·313	153·2	239·5	−18·6	16	122	
		3315	0·407	137·9	231·2	−19·9	0	3	
		3315	0·423	137·6	230·3	−20·5	8	24	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3324, 1893 December 24–25. Two or three small spots.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued*.

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.	Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic		Spots.		Faculæ.
					Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).						Longitude.	Latitude.	Area of UMBRA for each Spot (and for Day).	Area of WHOLE for each Spot (and for Day).	Area for each Group (and for Day).
1893.				°	°	°				1893.				°	°	°			
358d·252	FT,HA	3315	0·439	137·6	229·6	−21·2	0	2		358d·252	FT,HA	3325*a*	0·987	97·5	167·3	− 7·8	74	443	
		3315	0·460	136·2	228·1	−21·7	5	20		M			0·945	77·1	178·2	+11·4			692
M		3315*b*	0·477	131·3	225·5	−20·6	29	164		Dec. 25		Centre			(248·0)	(−2·5)	(619)	(3582)	(3122)
		3316	0·471	152·9	234·1	−27·1	0	3											
		3316	0·493	153·1	233·4	−28·4	5	12		359·458	CL, JG	3309*a*	0·995	265·4	316·4	− 4·9	38	269	360*f*
		3316	0·480	151·5	233·1	−27·3	2	16				3322	0·981	281·8	309·9	+11·0	0	203	
		3316	0·507	152·9	232·7	−29·1	1	4				3322	0·953	281·8	303·4	+10·4	12	119	
		3316	0·475	148·3	231·9	−26·1	0	5				3322	0·948	283·9	302·2	+12·3	12	81	319*c*
		3316	0·514	151·0	231·5	−29·0	1	5				3313	0·478	304·9	255·8	+13·4	2	27	
		3316	0·464	146·0	231·4	−24·9	0	5				3313*a*	0·463	302·4	255·5	+12·0	66	370	
		3316	0·520	150·4	231·0	−29·2	0	3				3313	0·417	302·3	253·0	+10·4	0	6	
		3316*a*	0·506	147·6	230·3	−27·6	42	256				3313	0·395	305·0	251·2	+10·6	0	5	
		3316	0·549	149·8	229·4	−30·6	7	16				3313	0·352	315·6	246·6	+12·0	2	14	
		3316	0·527	144·2	227·7	−27·5	0	6				3313	0·361	322·0	245·3	+14·0	0	7	
		3316	0·564	147·3	227·4	−30·5	0	4				3313	0·340	322·8	244·2	+13·1	0	13	
		3316	0·570	146·8	226·8	−30·7	1	5				3321*a*	0·403	332·2	243·5	+18·3	9	41	
		3317	0·428	21·3	238·5	+21·0	0	2				3321	0·380	334·1	242·1	+17·3	0	8	
		3317	0·419	24·5	237·4	+19·8	0	5				3321	0·378	342·3	239·0	+18·4	2	10	
		3317	0·386	34·9	234·8	+16·0	5	11				3321	0·393	345·5	238·1	+19·6	0	5	
		3317	0·431	35·6	232·8	+18·1	0	2				3315*a*	0·303	203·7	239·5	−18·6	17	111	
		3317	0·465	36·4	231·0	+19·5	0	3				3315	0·298	180·4	232·2	−19·8	7	22	
		3317	0·418	43·1	230·8	+15·3	0	3				3315	0·313	173·6	230·6	−20·6	0	5	
		3317	0·446	42·3	229·8	+16·8	1	5				3315	0·353	171·3	228·8	−22·9	1	6	
		3317	0·459	41·0	229·6	+17·8	1	3				3315	0·335	167·3	227·6	−21·6	3	18	
		3317	0·507	37·0	228·9	+21·4	1	4				3315*b*	0·328	160·5	225·4	−20·6	35	204	
		3317*a*	0·506	38·9	228·2	+20·7	10	19				3326*a*	0·147	232·3	238·8	− 7·7	3	11	
		3317	0·513	40·7	227·2	+20·4	0	7				3326*b*	0·106	214·5	235·6	− 7·6	2	9	
		3317	0·508	42·7	226·7	+19·5	0	2				3316	0·423	182·5	233·3	−27·5	6	46	
		3317	0·553	40·7	225·1	+22·4	0	4				3316	0·447	181·1	232·7	−29·1	0	5	
		3318*a*	0·407	91·1	224·1	− 2·8	29	162				3316	0·460	178·4	231·3	−29·9	0	5	
		3318	0·428	93·8	222·8	− 3·9	3	7				3316*a*	0·431	175·1	229·7	−27·9	23	161	
		3318	0·491	91·6	218·7	− 3·0	8	13				3316	0·476	175·0	229·3	−30·8	3	11	
		3318	0·499	89·2	218·2	− 1·8	2	8				3316	0·460	174·5	229·2	−29·7	1	6	
		3318	0·521	96·3	216·8	− 5·4	2	42				3316	0·409	172·7	228·8	−26·4	4	31	
		3318	0·541	98·9	215·6	− 6·9	0	7				3317	0·379	7·2	229·2	+19·3	0	10	
		3318	0·559	95·8	214·2	− 5·3	5	59				3317*a*	0·409	10·5	227·5	+21·0	0	18	
		3318	0·571	94·0	213·3	− 4·4	3	15				3317	0·381	11·4	227·5	+19·3	0	6	
		3318	0·588	95·6	212·2	− 5·3	10	38				3317	0·427	16·3	224·7	+21·5	0	8	
		3324	0·673	131·9	213·3	−28·7	1	6				3318	0·113	76·6	225·8	− 1·1	2	10	
		3324	0·701	133·3	211·8	−30·7	1	6				3318*a*	0·118	95·4	225·4	− 3·2	56	252	
		3323*a*	0·804	101·3	194·9	−10·6	28	213				3318	0·129	78·5	224·9	− 1·1	2	8	
		3323	0·852	102·0	189·9	−11·6	23	73				3318	0·140	112·2	224·6	− 5·6	0	8	
		3323	0·874	101·6	187·4	−11·3	18	189	365*c*			3318	0·158	85·8	223·1	− 1·9	3	10	
		3323	0·892	103·1	185·2	−12·8	2	38				3318	0·177	98·9	222·0	− 4·1	0	10	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3325, 1893 December 25—1894 January 6. A large regular spot, *a*, with occasionally some small companions. *a* moves forward in longitude after December 29.
Group 3326, 1893 December 26–28. A pair of small spots, *a* and *b*. *a* has disappeared by December 28.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
359d·458	CL, JG	3318	0·187	98·1	221·5	— 4·1	0	10	
		3318	0·216	94·9	219·7	— 3·6	1	6	
		3318	0·263	102·1	217·2	— 5·7	2	10	
		3318	0·274	96·7	216·3	— 4·4	0	4	
		3318	0·303	97·7	214·6	— 4·8	0	3	
		3318	0·314	98·1	214·0	— 5·0	9	55	
		3318	0·334	99·9	212·9	— 5·7	0	4	
		3318	0·366	104·1	211·2	— 7·5	0	5	
		3318	0·387	104·1	210·0	— 7·8	0	2	
		3323	0·576	103·3	197·6	— 9·7	0	4	
		3323	0·578	104·1	197·5	—10·2	2	7	68*c*
		3323*a*	0·600	104·1	196·0	—10·4	34	191	
		3323	0·621	103·5	194·4	—10·4	1	8	
		3323	0·644	105·5	192·9	—11·9	2	11	
		3323	0·671	105·5	190·8	—12·3	15	53	
		3323	0·692	104·1	189·0	—11·6	14	78	106*c*
		3323	0·707	106·2	188·1	—13·2	0	7	
		3323	0·726	104·1	186·3	—12·0	37	240	
		3325*a*	0·907	97·0	167·1	— 7·4	63	325	291*c*
		3325	0·921	97·2	165·1	— 7·6	0	19	
		3327	0·954	97·3	159·6	— 7·8	0	42	
		3328*a*	0·983	71·6	154·3	+17·5	58	215	337*c*
		3329*a*	0·983	98·0	152·6	— 8·4	47	257	447*c*
			0·775	75·5	182·8	+ 9·5			164
			0·879	78·2	171·7	+ 9·0			333
Dec. 26		Centre			(232·1)	(—2·6)	(596)	(3725)	(2425)
360·266	CL,HA		0·989	261·4	303·1	— 8·9			139
			0·896	238·9	282·4	—28·8			71
I.			0·870	256·4	281·5	—13·1			96
		3330	0·996	263·6	306·4	— 6·6	0	101	
		3322	0·997	280·6	306·2	+10·3	0	452	419*f*
		3322	0·996	282·6	305·5	+12·3	0	118	
		3313*a*	0·613	292·3	256·7	+11·3	59	273	
		3313	0·618	295·2	256·4	+13·0	1	5	
		3313	0·589	293·9	254·7	+11·5	0	4	
		3313	0·577	293·2	254·0	+10·8	0	16	
		3313	0·572	291·8	254·0	+ 9·9	0	3	
		3313	0·557	296·3	252·1	+12·0	0	2	
		3313	0·493	301·6	246·9	+12·5	5	10	
		3313	0·495	304·7	246·2	+13·8	1	4	
		3313	0·489	304·5	245·9	+13·6	4	21	
		3313	0·462	304·3	244·4	+12·6	0	17	
		3331	0·578	300·7	252·3	+14·8	0	3	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
360d·266	CL,HA	3331	0·581	304·3	251·4	+16·7	3	8	
		3321	0·512	313·0	244·6	+17·8	4	8	
I.		3321*a*	0·515	314·2	244·3	+18·5	4	9	
		3321	0·506	313·8	244·0	+17·9	1	3	
		3321	0·498	314·2	243·4	+17·7	1	7	
		3321	0·475	319·3	240·5	+18·4	0	5	
		3321	0·454	317·6	240·1	+17·0	0	5	
		3321	0·485	323·0	239·5	+20·1	0	10	
		3321	0·454	320·6	239·1	+17·9	0	6	
		3321	0·468	323·4	238·6	+19·4	2	10	
		3321	0·422	324·0	236·5	+17·3	0	4	
		3315*a*	0·407	226·8	239·7	—18·7	13	90	
		3315	0·393	225·6	238·6	—18·4	0	6	
		3315	0·348	213·3	233·1	—19·5	8	15	
		3315	0·303	202·4	228·5	—18·9	1	3	
		3315	0·304	202·1	228·4	—19·0	0	2	
		3315	0·346	196·4	227·5	—22·0	3	8	
		3315	0·309	198·2	227·4	—19·7	0	4	
		3315*b*	0·318	191·6	225·4	—20·8	19	172	
		3326*a*	0·328	254·0	240·0	— 7·8	2	10	
		3326*b*	0·256	249·8	235·5	— 7·7	4	12	
		3332	0·391	323·3	235·5	+15·6	0	2	
		3332	0·395	327·3	234·3	+16·8	0	3	
		3332	0·384	326·7	234·1	+16·0	0	4	
		3332	0·372	326·0	233·9	+15·3	0	3	
		3332	0·404	335·4	231·7	+18·8	0	4	
		3316	0·463	203·3	233·4	—27·7	5	18	
		3316	0·493	194·0	229·5	—31·1	0	5	
		3316*a*	0·452	195·1	229·2	—28·4	21	145	
		3316	0·419	196·1	228·9	—26·3	3	16	
		3316	0·476	192·6	228·4	—30·2	0	2	
		3316	0·453	190·7	227·0	—29·0	0	2	
		3318	0·086	290·7	226·1	— 1·0	3	21	
		3318*a*	0·081	264·9	226·1	— 3·1	41	273	
		3318	0·071	232·7	224·7	— 5·2	0	6	
		3318	0·046	291·5	223·9	— 1·7	1	4	
		3318	0·069	106·2	217·7	— 3·8	3	15	
		3318	0·121	117·2	215·3	— 5·9	5	17	
		3318	0·134	103·8	214·0	— 4·6	7	45	
		3318	0·187	117·2	211·9	— 7·5	1	7	
		3323	0·408	110·5	198·7	—10·7	0	2	
		3323	0·408	109·8	198·6	—10·4	0	4	
		3323	0·417	111·9	198·4	—11·4	0	6	
		3323*a*	0·433	108·7	197·0	—10·4	40	167	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3327, 1893 December 26–30. An isolated spot, which has greatly diminished by December 28, and disappeared by December 29. Two very small spots are seen on December 30.
Group 3328, 1893 December 26—1894 January 2. A large spot, *a*, on December 26 and 27. It has broken up by December 28, the principal portions being the two spots *b* and *a*. *b* and *c* with some small spots near them make up an irregular stream, which diminishes from day to day.
Group 3329, 1893 December 26—1894 January 7. A large spot, *a*, with some very small companions. The nucleus of *a* is divided into two on December 29; and three separate nuclei are seen on January 2. These are seen as three distinct spots. *b*, *c* and *d*, after January 3.
Group 3330, 1893 December 27. A spot only seen as a notch on the West limb. The measures of its position and area are therefore only approximate.
Group 3331, 1893 December 27. Two very small spots, North of Group 3313.
Group 3332, 1893 December 27–28. A few very small faint spots irregularly scattered.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots: Area of UMBRA for each Spot (and for Day).	Spots: Area of WHOLE for each Spot (and for Day).	Faculæ: Area for each Group (and for Day).
1893.				°	°	°			
360d·266	CL,HA	3323	0·455	109·8	195·7	−11·3	4	21	
		3323	0·470	108·8	194·7	−11·1	5	26	
I.		3323	0·476	111·3	194·6	−12·3	0	22	
		3323	0·525	109·2	191·1	−12·3	8	29	
		3323	0·564	106·4	188·1	−11·4	37	293	
		3323	0·599	108·8	186·0	−13·3	4	23	
		3323	0·606	107·0	185·3	−12·4	7	19	
		3323	0·637	107·9	183·1	−13·4	4	14	
		3325	0·774	96·5	170·9	− 6·7	1	10	
		3325*a*	0·812	96·8	167·4	− 7·1	88	363	
		3325	0·834	97·0	165·2	− 7·3	7	52	192*c*
		3327	0·884	97·2	159·5	− 7·6	10	41	
		3328*a*	0·938	69·6	154·1	+18·0	29	176	466*c*
		3329	0·920	95·6	154·7	− 6·3	0	9	
		3329*a*	0·933	97·6	152·7	− 8·1	79	232	486*c*
		3333*a*	0·985	96·5	141·4	− 6·9	12	108	159*c*
			0·746	73·7	175·0	+10·3			191
			0·931	63·4	156·5	+23·5			130
			0·972	112·1	145·3	−22·1			199
Dec. 27		Centre			(221·5)	(−2·7)	(560)	(3635)	(2548)
361·248	CL,FT		0·824	293·6	260·7	+17·5			140
			0·762	301·0	252·8	+21·1			94
I.		3313*a*	0·777	286·4	257·7	+10·9	58	248	
		3313	0·762	287·8	256·1	+11·6	3	10	
		3313	0·729	288·9	252·9	+11·6	0	4	103*c*
		3313	0·714	288·8	251·9	+11·3	2	9	
		3313	0·686	287·1	250·0	+ 9·5	0	3	
		3313	0·684	290·8	249·1	+11·9	3	7	
		3313	0·658	292·5	246·8	+12·4	0	6	
		3313	0·654	294·7	246·0	+13·6	0	4	59*c*
		3313	0·640	294·0	245·2	+12·8	0	5	
		3313	0·627	294·5	244·2	+12·8	0	4	
		3313	0·598	295·4	242·0	+12·5	0	8	
		3313	0·588	298·2	240·6	+13·7	0	3	
		3321	0·668	301·7	245·1	+18·3	0	3	
		3321*a*	0·660	302·1	244·4	+18·2	6	23	
		3321	0·617	304·3	240·8	+17·9	0	3	
		3321	0·609	305·7	239·8	+18·4	0	15	48*c*
		3315*a*	0·566	240·6	239·7	−18·5	17	99	
		3315	0·494	234·9	233·7	−19·0	7	16	
		3315	0·437	226·5	228·1	−20·1	0	11	
		3315	0·445	222·7	227·4	−21·7	1	5	
1893.				°	°	°			
361d·248	CL,FT	3315	0·413	227·1	227·1	−18·9	0	5	
		3315	0·437	220·4	226·2	−22·0	0	6	
I.		3315	0·389	226·3	225·6	−18·2	0	2	
		3315*b*	0·408	221·3	225·1	−20·5	28	148	
		3315	0·413	217·4	224·1	−21·8	3	8	
		3326*b*	0·464	258·6	235·7	− 7·7	1	3	
		3332	0·533	309·8	233·8	+17·4	0	3	
		3332	0·520	311·7	232·4	+17·6	2	7	
		3316	0·566	221·9	233·6	−27·3	0	5	
		3316	0·529	220·1	230·8	−26·4	0	6	
		3316	0·518	219·1	229·8	−26·2	6	12	
		3316	0·561	212·5	229·0	−30·8	0	1	
		3316*a*	0·535	214·5	228·6	−28·7	27	131	
		3316	0·509	214·3	227·3	−27·4	0	6	
		3318*a*	0·311	270·2	226·6	− 2·6	47	229	
		3318	0·284	271·0	224·9	− 2·4	0	3	
		3318	0·260	271·6	223·5	− 2·3	0	2	
		3318	0·241	271·5	222·4	− 2·4	0	2	
		3318	0·189	267·0	219·3	− 3·3	0	3	
		3318	0·160	260·8	217·6	− 4·2	2	8	
		3318	0·124	254·7	215·4	− 4·7	2	7	
		3318	0·120	247·6	214·9	− 5·4	0	7	
		3318	0·106	255·2	214·4	− 4·4	9	28	
		3318	0·121	237·1	214·3	− 6·6	0	7	
		3334	0·451	201·9	219·4	−27·4	2	5	
		3323	0·206	119·3	198·1	− 8·5	0	4	
		3323*a*	0·228	124·7	197·6	−10·2	34	165	
		3323	0·225	117·2	196·9	− 8·6	0	1	
		3323	0·254	125·3	196·4	−11·1	7	36	
		3323	0·261	118·3	195·5	− 9·8	0	5	
		3323	0·252	115·5	195·2	− 8·9	0	3	
		3323	0·268	122·4	195·2	−11·0	4	10	
		3323	0·289	125·9	194·7	−12·5	2	13	
		3323	0·284	121·3	194·2	−11·2	0	2	
		3323	0·289	118·5	193·6	−10·6	0	3	
		3323	0·329	119·0	191·5	−11·9	3	6	
		3323	0·331	115·1	190·8	−10·7	2	4	
		3323	0·349	117·4	190·1	−11·9	10	49	
		3323	0·365	115·0	188·9	−11·5	6	25	
		3323	0·366	112·5	188·5	−10·7	1	6	
		3323	0·366	111·6	188·3	−10·4	0	6	
		3323	0·394	119·0	187·8	−13·6	0	10	
		3323	0·394	115·1	187·2	−12·2	7	131	
		3323	0·397	109·7	186·3	−10·3	2	6	

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3333, 1893 December 27–30. A large nebulous spot, *a*, on December 27. It diminishes very rapidly on the succeeding days. A small companion is seen near it on December 28 and another on December 29.
Groups 3325, 3327, 3329, 3333 form almost one long straight stream.
Group 3334, 1893 December 28–30. A very small spot on December 28. Three very small spots on December 29. Only one remains by December 30.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*continued.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
361^{d}·248	CL, FT	3323	0·402	111·1	186·1	−10·9	20	41	
		3323	0·408	109·0	185·5	−10·2	2	6	
I.		3323	0·427	115·0	185·2	−13·0	17	54	
		3323	0·426	112·4	184·9	−11·9	0	3	
		3323	0·421	110·0	184·9	−10·8	1	6	
		3323	0·476	112·7	181·8	−13·1	0	6	
		3323	0·497	111·5	180·3	−13·0	0	5	
		3325*a*	0·656	97·2	167·7	− 6·9	92	356	
		3325	0·683	96·7	165·6	− 6·6	7	54	123*c*
		3325	0·688	95·7	165·2	− 6·0	1	4	
		3327	0·744	97·8	160·6	− 7·7	0	3	
		3328*b*	0·834	65·8	155·4	+18·3	17	51	
		3328	0·838	64·6	155·4	+19·3	0	6	
		3328	0·842	65·3	154·8	+18·9	3	8	
		3328	0·844	66·2	154·3	+18·3	3	7	702*c*
		3328*c*	0·855	66·3	153·1	+18·4	20	80	
		3328	0·857	68·2	152·4	+17·0	0	4	
		3328	0·868	66·6	151·5	+18·7	0	4	
		3329	0·795	95·7	156·0	− 6·3	0	7	
		3329	0·803	95·0	155·2	− 5·7	0	4	258*c*
		3329	0·805	96·8	155·1	− 7·1	2	11	
		3329*a*	0·825	97·1	153·1	− 7·5	50	244	
		3333	0·905	96·2	143·7	− 6·8	0	5	148*c*
		3333*a*	0·917	96·3	142·1	− 6·9	8	55	
			0·903	113·6	145·2	−22·4			311
Dec. 28		Centre			(208·5)	(−2·8)	(547)	(2639)	(1986)
362·282	HA,JG	3313*a*	0·901	283·4	257·8	+10·7	53	226	
		3313	0·890	284·4	256·3	+11·4	3	12	182*c*
I.		3313	0·877	283·8	254·7	+10·6	4	23	
		3313	0·867	285·2	253·3	+11·6	0	17	
		3313	0·825	287·2	248·5	+12·4	0	14	241*inf*
		3321*a*	0·804	295·5	244·6	+18·4	0	15	201*c*
		3321	0·755	297·2	239·6	+18·1	0	3	
		3315*a*	0·727	246·8	239·6	−18·7	17	83	47*c*
		3315	0·676	246·2	235·3	−18·0	0	4	
		3315	0·664	244·3	234·0	−19·0	0	8	
		3315	0·619	238·6	229·1	−20·7	0	5	
		3315	0·575	236·5	225·7	−20·9	9	26	
		3315	0·590	232·3	225·4	−23·6	0	3	
		3315*b*	0·558	235·2	224·2	−21·1	12	55	

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
362^{d}·282	HA,JG	3316	0·717	231·7	234·6	−28·5	0	3	
		3316	0·683	227·8	230·4	−29·6	0	5	
I.		3316	0·664	230·8	230·1	−27·1	0	7	53*c*
		3316*a*	0·655	226·4	227·7	−29·2	23	148	
		3318*a*	0·529	269·7	226·7	− 2·7	39	217	
		3318	0·470	268·5	222·9	− 3·3	0	3	
		3318	0·390	268·5	217·8	− 3·3	0	13	
		3318	0·348	262·8	215·1	− 5·2	2	22	
		3334	0·553	213·0	215·2	−30·2	3	7	
		3334	0·536	210·3	213·1	−30·2	0	5	
		3334	0·520	209·2	211·8	−29·7	0	1	
		3323*a*	0·146	202·8	198·2	−10·6	37	175	
		3323	0·158	195·2	197·3	−11·7	4	15	
		3323	0·152	184·5	195·6	−11·6	0	2	
		3323	0·129	182·6	195·2	−10·3	0	1	
		3323	0·155	169·0	193·2	−11·6	0	4	
		3323	0·179	152·7	190·1	−12·0	0	22	
		3323	0·161	134·8	188·3	− 9·4	0	10	
		3323	0·185	141·8	188·2	−11·3	3	18	
		3323*b*	0·221	138·9	186·4	−12·4	16	223	
		3323	0·206	133·4	186·0	−11·0	4	19	
		3323	0·256	132·0	183·7	−12·7	0	2	
		3323*c*	0·291	131·2	181·9	−13·8	4	27	
		3335	0·434	58·3	172·9	+10·4	0	6	
		3335	0·446	65·1	170·9	+ 8·2	0	4	
		3325*a*	0·466	100·0	167·5	− 7·2	72	385	
		3325	0·488	96·9	165·9	− 5·9	0	5	
		3328*b*	0·697	60·5	155·5	+17·8	7	34	
		3328	0·720	58·9	154·2	+19·6	0	3	
		3328*c*	0·731	60·8	152·7	+18·7	18	61	146*f*
		3328	0·730	63·2	152·1	+17·1	1	4	
		3328	0·743	63·0	151·1	+17·6	0	5	
		3329	0·636	96·4	155·6	− 6·3	2	4	
		3329	0·644	98·0	153·1	− 7·4	0	9	
		3329*a*	0·670	97·9	153·1	− 7·5	49	229	89*c*
		3333	0·791	99·2	142·8	− 9·1	0	8	
		3333*a*	0·800	96·4	141·9	− 6·9	5	19	79*c*
			0·852	61·8	141·0	+22·0			235
			0·831	116·9	141·0	−23·8			120
			0·849	75·6	138·4	+10·6			32
			0·904	102·4	130·4	−12·5			125
			0·947	61·9	127·5	+25·4			109
			0·973	96·7	118·3	− 7·2			118
Dec. 29		Centre			(194·9)	(−2·9)	(387)	(2219)	(1777)

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3335, 1893 December 29–30. A pair of very small spots.

Measures of Positions and Areas of Sun Spots and Faculæ on Photographs—*concluded.*

Greenwich Civil Time.	Measurers.	No. of Group, and Letter for Spot.	Distance from Centre in terms of Sun's Radius.	Position Angle from Sun's Axis.	Heliographic Longitude.	Heliographic Latitude.	Spots. Area of UMBRA for each Spot (and for Day).	Spots. Area of WHOLE for each Spot (and for Day).	Faculæ. Area for each Group (and for Day).
1893.				°	°	°			
363d·444	HA,FT		0·926	257·1	247·4	−13·1			71
			0·917	294·8	242·7	+21·2			300
I.			0·854	263·3	238·3	− 7·4			99
			0·800	297·4	228·4	+19·5			122
		3313*a*	0·985	282·0	258·7	+11·2	31	250	381*c*
		3313	0·916	286·4	244·2	+13·6	4	11	
		3313	0·907	286·4	242·9	+13·4	11	35	437*c*
		3313	0·895	288·2	241·0	+14·7	8	35	
		3336	0·896	273·2	242·9	+ 1·4	10	32	
		3336	0·877	273·5	240·6	+ 1·5	4	24	60*c*
		3336	0·863	274·5	238·9	+ 2·2	0	9	
		3336	0·853	272·6	237·9	+ 0·6	8	49	
		3315*a*	0·875	250·8	240·0	−18·3	13	78	110*f*
		3315	0·746	244·8	225·7	−20·7	4	10	
		3315	0·748	241·7	225·2	−23·0	0	5	52*c*
		3315*b*	0·730	244·4	224·2	−20·6	3	8	
		3316*a*	0·796	234·9	227·9	−29·4	20	119	149*c*
		3318*a*	0·741	270·1	227·4	− 2·1	51	234	
		3318	0·667	270·4	221·4	− 2·1	4	12	
		3318	0·660	268·0	220·9	− 3·7	0	7	
		3318	0·627	268·6	218·4	− 3·4	6	37	
		3318	0·606	266·9	216·9	− 4·5	0	7	
		3318	0·600	262·4	216·4	− 7·1	0	4	
		3318	0·599	270·6	216·4	− 2·3	0	4	
		3318	0·591	264·0	215·8	− 6·1	0	6	
		3318	0·591	265·2	215·8	− 5·4	0	5	
		3318	0·581	264·9	215·1	− 5·6	0	4	
		3334	0·693	228·8	216·4	−29·6	0	6	
		3323*a*	0·348	246·5	198·1	−11·0	57	268	
		3323	0·309	246·9	196·4	−10·0	0	12	
		3323	0·318	240·0	196·0	−12·2	6	29	
		3323	0·279	240·2	193·9	−11·1	1	7	
		3323	0·209	239·5	190·2	− 9·2	0	5	
		3323	0·204	228·7	188·6	−10·9	5	31	
1893.				°	°	°			
363d·444	HA,FT	3323	0·184	228·6	187·7	−10·1	2	18	
		3323	0·252	211·9	187·6	−15·5	0	4	
I.		3323*b*	0·221	216·5	187·4	−13·4	41	324	
		3323	0·184	221·4	186·8	−11·1	4	10	
		3323	0·199	207·6	185·1	−13·3	12	29	
		3323*c*	0·191	191·4	181·9	−14·0	20	151	
		3335	0·269	21·9	173·9	+11·2	0	5	
		3335	0·240	31·5	172·4	+ 8·6	0	7	
		3325*a*	0·213	113·1	168·3	− 7·9	47	382	
		3325	0·240	103·8	166·2	− 5·8	1	5	
		3325	0·258	103·5	165·1	− 6·6	0	4	
		3327	0·304	102·3	162·4	− 6·7	0	3	
		3327	0·334	107·9	161·0	− 8·9	0	4	
		3328	0·508	49·7	156·0	+16·2	1	4	
		3328*b*	0·526	49·2	155·2	+17·1	5	53	
		3328	0·568	47·1	153·6	+19·8	0	5	
		3328*c*	0·559	50·4	152·9	+17·9	10	20	
		3328	0·555	53·2	152·2	+16·5	0	13	
		3329	0·379	101·2	157·8	− 7·2	3	9	
		3329	0·396	105·7	157·1	− 9·1	0	5	
		3329	0·413	103·1	155·8	− 8·3	2	7	
		3329*a*	0·439	101·5	154·1	− 7·9	51	222	
		3337	0·595	116·5	145·8	−18·0	5	9	
		3337	0·621	117·5	144·2	−19·2	0	8	
		3333*a*	0·605	97·7	142·7	− 7·2	2	8	
		3338	0·895	97·1	116·3	− 7·8	3	12	
		3338	0·916	97·6	113·3	− 8·3	11	66	
		3339	0·926	76·3	113·3	+11·4	0	15	102*f*
		3340	0·963	96·8	105·3	− 7·4	5	32	349*c*
		3341	0·998	103·8	92·7	−14·0	0	73	
			0·802	53·1	134·1	+26·5			107
			0·911	66·7	117·2	+19·6			166
Dec. 30		Centre			(179·7)	(−3·2)	(471)	(2850)	(2505)

The Groups of Spots are numbered in the order of their appearance. When there is no number in the third column it is to be understood that there is a Facula unaccompanied by a Spot. 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. The longitude and latitude of the centre of the disk are given in brackets.
The Areas of Spots and Faculæ are expressed in millionths of the Sun's visible Hemisphere.

Group 3336, 1893 December 30. A short stream of spots *np* Group 3318.
Group 3337, 1893 December 30—1894 January 3. A pair of very small spots on December 30. One very small spot on January 2 and 3.
Group 3338, 1893 December 30. An irregular group of spots.
Group 3339, 1893 December 30. A small spot.
Group 3340, 1893 December 30—1894 January 4. A small spot, with a very small companion on January 4.
Group 3341, 1893 December 30—1894 January 2. A single spot, which has greatly diminished by January 2.

ROYAL OBSERVATORY, GREENWICH.

LEDGERS

OF

AREAS AND POSITIONS OF GROUPS OF SUN SPOTS

DEDUCED FROM THE MEASUREMENT

OF THE

SOLAR PHOTOGRAPHS,

FOR EACH DAY IN THE YEAR

1893.

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS DEDUCED FOR EACH DAY from the MEASUREMENTS of the PHOTOGRAPHS taken at the ROYAL OBSERVATORY, GREENWICH, at DEHRA DÛN IN INDIA, and at the ROYAL ALFRED OBSERVATORY, MAURITIUS, in the YEAR 1893.

NOTE.—The Greenwich Civil Time at which the photograph was taken is expressed by the month, day of the month (civil reckoning), and decimal of a day, reckoned from Greenwich Mean Midnight.

The Projected Area of the Umbræ and Whole Spots 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 Column "Longitude from Central Meridian" gives the Mean heliographic longitude of the group, reckoned from the meridian passing through the centre of the Sun's disk at the moment of observation; longitudes west of the centre being reckoned as positive.

Dates for which no numbers are given indicate days for which no photographic record is at present available.

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2787.							
1892. d					°	°	°
Dec. 21·218	19	112	31	178	7·2	−15·8	− 71·5
22·300	36	233	35	223	6·8	−16·2	− 57·6
23·211	51	278	37	203	6·6	−16·4	− 45·9
24·495	56	390	34	239	4·5	−17·8	− 31·1
25·486	67	453	36	246	5·3	−17·9	− 17·2
26·510	36	350	19	184	5·4	−18·0	− 3·6
27·265	35	275	18	144	6·2	−17·5	+ 7·1
28·213	41	218	23	121	7·2	−17·0	+ 20·6
29·219	26	139	16	86	6·7	−17·3	+ 33·3
30·217	22	103	17	76	6·4	−18·3	+ 46·2
31·273	3	30	3	28	4·3	−20·4	+ 58·0
1893.							
Jan. 1·255	4	36	6	60	6·3	−16·4	+ 73·0
Means ...	...	...	23	149	6·08	−17·42	...
Group 2792.							
1892.							
Dec. 24·495	33	275	73	696	316·9	−22·4	− 78·7
25·486	75	614	89	760	317·4	−22·4	− 65·1
26·510	137	813	116	675	318·7	−22·7	− 50·3
27·265	183	1322	129	927	318·6	−23·1	− 40·5
28·213	253	1577	154	952	318·9	−23·4	− 27·7
29·219	179	1092	99	603	320·4	−23·9	− 13·0
30·217	172	1164	93	625	320·1	−24·0	− 0·1
31·273	187	1060	104	586	320·6	−24·0	+ 14·3
1893.							
Jan. 1·255	118	867	71	523	320·8	−24·2	+ 27·5
2·490	89	571	65	420	320·9	−24·0	+ 43·9
3·257	71	450	64	400	321·6	−23·8	+ 54·7
4·195	50	338	64	433	320·9	−23·7	+ 66·3
5·187	17	165	45	498	322·6	−23·9	+ 81·1
Means ...	...	...	90	623	319·88	−23·50	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2794.							
1892. d					°	°	°
Dec. 28·213	0	20	0	41	270·1	−12·2	− 76·5
29·219	4	34	5	37	270·7	−12·8	− 62·7
30·217	0	29	0	22	271·7	−12·7	− 48·5
31·273	16	66	10	39	274·2	−12·1	− 32·1
1893.							
Jan. 1·255	11	48	7	26	272·7	−12·6	− 20·6
2·490	0	26	0	13	270·7	−12·7	− 6·3
3·257	0	13	0	7	271·2	−13·2	+ 4·3
4·195	0	5	0	3	271·3	−13·2	+ 16·7
Means ...	...	...	3	24	271·58	−12·69	...
Group 2795.							
1892.							
Dec. 28·213	11	100	20	205	271·1	−27·9	− 75·5
29·219	16	113	18	127	271·7	−28·0	− 61·7
30·217	24	173	20	144	270·7	−27·2	− 49·5
31·273	19	120	13	82	269·5	−26·9	− 36·8
1893.							
Jan. 1·255	13	91	8	55	269·6	−27·3	− 23·7
2·490	8	77	4	41	271·0	−26·8	− 6·0
3·257	0	27	0	15	269·6	−26·8	+ 2·7
4·195	19	177	10	99	271·0	−24·7	+ 16·4
5·187	49	324	31	201	271·8	−24·4	+ 30·3
6·480	21	64	16	49	272·4	−24·0	+ 47·8
7·227	12	87	13	89	273·6	−25·0	+ 58·9
8·224	3	20	5	37	275·6	−24·5	+ 74·1
Means ...	...	...	13	95	271·47	−26·13	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2796.							
1892. d					°	°	°
Dec. 29·219	0	32	0	72	256·7	−30·3	− 76·7
30·217	16	58	20	72	256·2	−30·6	− 64·0
31·273	5	40	5	36	254·8	−30·5	− 51·5
1893.							
Jan. 1·255	4	42	3	30	254·6	−31·1	− 38·7
2·490	0	28	0	17	254·0	−30·4	− 23·0
3·257	0	32	0	18	253·7	−30·7	− 13·2
4·195	4	39	2	22	252·3	−31·8	− 2·3
5·187	0	41	0	23	251·7	−31·6	+ 10·2
Means ...	...	...	4	36	254·25	−30·88	...
Group 2799.							
1892.							
Dec. 31·273	7	56	4	33	279·6	+ 9·5	− 26·7
1893.							
Jan. 1·255	16	130	8	67	277·8	+ 8·7	− 15·5
2·490	21	94	11	49	279·3	+ 9·7	+ 2·3
3·257	14	65	8	34	280·2	+ 9·9	+ 13·3
4·195	17	89	10	49	278·7	+10·3	+ 24·1
5·187	27	184	17	122	278·9	+12·3	+ 37·4
6·480	0	59	0	56	280·6	+13·0	+ 56·0
7·227	12	64	17	85	281·0	+12·2	+ 66·3
8·224	0	9	0	29	282·2	+10·1	+ 80·7
Means ...	...	...	8	58	279·81	+10·63	...
Group 2800.							
1892.							
Dec. 31·273	10	49	6	29	277·5	−18·1	− 28·8
1893.							
Jan. 1·255	4	64	2	34	276·3	−17·9	− 17·0
2·490	11	72	6	37	275·2	−16·3	− 1·8
3·257	0	11	0	6	274·9	−16·3	+ 8·0
4·195	0	17	0	10	274·6	−16·8	+ 20·0
Means ...	...	...	3	23	275·70	−17·08	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2801.							
1892. d					°	°	°
Dec. 31·273	0	9	0	8	254·4	+25·2	− 51·9
1893.							
Jan. 1·255	0	4	0	3	254·0	+25·5	− 39·3
Means ...	...	...	0	6	254·20	+25·35	...
Group 2802.							
Jan. 1·255	0	4	0	3	261·1	−12·1	− 32·2
Means ...	...	...	0	3	261·10	−12·10	...
Group 2803.							
Jan. 1·255	7	46	5	28	260·5	−17·6	− 32·8
2·490	4	41	2	22	259·7	−17·7	− 17·3
3·257	0	8	0	4	260·1	−16·6	− 6·8
Means ...	...	...	2	18	260·10	−17·30	...
Group 2804.							
Jan. 1·255	0	13	0	8	259·5	−22·8	− 33·8
2·490	0	28	0	15	259·7	−23·3	− 17·3
Means ...	...	...	0	12	259·60	−23·05	..
Group 2805.							
Jan. 2·490	0	11	0	6	252·4	−12·4	− 24·6
3·257	0	25	0	13	253·5	−12·8	− 13·4
Means ...	...	...	0	10	252·95	−12·60	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2806.							
1893. d					°	°	°
Jan. 2·490	1	9	1	15	207·5	+22·0	− 69·5
3·257	0	17	0	19	208·6	+22·0	− 58·3
4·195	12	40	10	33	208·8	+22·7	− 45·8
5·187	10	78	6	50	211·1	+22·3	− 30·4
6·480	9	43	5	25	210·5	+22·5	− 14·1
7·227	9	26	5	14	210·5	+22·7	− 4·2
8·224	0	10	0	5	210·1	+22·3	+ 8·6
9·201	0	9	0	5	210·1	+22·0	+ 21·4
Means ...	...	...	3	21	209·65	+22·31	...
Group 2807.							
Jan. 2·490	0	7	0	11	203·8	−15·1	− 73·2
Means ...	...	...	0	11	203·80	−15·10	...
Group 2808.							
Jan. 2·490	0	18	0	95	194·0	+18·3	− 83·0
3·257	5	52	8	108	192·9	+18·7	− 74·0
4·195	29	110	33	123	194·5	+18·3	− 60·1
5·187	38	179	30	145	193·9	+18·6	− 47·6
6·480	58	326	36	208	193·2	+18·2	− 31·4
7·227	86	363	51	213	192·6	+18·9	− 22·1
8·224	37	178	20	98	192·2	+18·6	− 9·3
9·201	32	155	18	85	192·9	+18·5	+ 4·2
10·496	9	37	5	23	194·1	+18·0	+ 22·4
11·457	0	25	0	16	194·6	+19·4	+ 35·6
12·196	4	12	3	10	196·1	+19·8	+ 46·8
Means ...	...	...	19	102	193·73	+18·66	...
Group 2809.							
Jan. 4·195	0	76	0	39	249·6	− 8·2	− 5·0
5·187	21	76	11	38	249·9	− 8·7	+ 8·4
6·480	5	41	3	23	252·4	− 8·0	+ 27·8
7·227	2	7	1	5	253·6	− 8·2	+ 38·9
Means ...	...	...	4	26	251·37	− 8·27	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2810.							
1893. d					°	°	°
Jan. 5·187	6	28	3	15	222·9	+ 6·3	− 18·6
Means ...	...	...	3	15	222·90	+ 6·30	...
Group 2811.							
Jan. 6·480	0	30	0	18	248·8	+23·6	+ 24·2
7·227	9	67	7	47	249·7	+24·0	+ 35·0
8·224	26	140	23	120	249·3	+24·1	+ 47·8
9·201	52	160	65	196	249·9	+23·7	+ 61·2
10·496	18	182	43	506	248·3	+24·1	+ 76·6
Means ...	...	...	28	177	249·20	+23·90	...
Group 2812.							
Jan. 7·227	10	36	6	22	241·5	+16·5	+ 26·8
8·224	0	12	0	9	243·9	+16·1	+ 42·4
9·201	12	41	10	35	239·3	+16·8	+ 50·6
10·496	0	6	0	8	238·7	+18·1	+ 67·0
11·457	0	9	0	26	237·1	+17·8	+ 78·1
Means ...	...	...	3	20	240·10	+17·06	...
Group 2813.							
Jan. 10·496	22	139	38	244	97·7	− 8·1	− 74·0
11·457	33	232	34	236	98·1	− 8·6	− 60·9
12·196	48	302	38	247	98·7	− 8·5	− 50·6
13·227	52	344	29	217	98·6	− 8·6	− 37·1
14·238	55	284	30	156	98·3	− 8·5	− 24·1
15·200	41	229	21	117	98·8	− 8·6	− 11·0
16·213	8	88	4	45	98·8	− 8·7	+ 2·4
17·470	0	66	0	35	98·8	− 9·1	+ 19·0
18·172	10	77	6	43	99·4	− 8·2	+ 28·8
Means ...	...	...	22	149	98·58	− 8·54	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Group 2814.

Date. Greenwich Civil Time.	Projected Area of Umbra	Projected Area of Whole Spot.	Area for Group. Umbra.	Area for Group. Whole Spot.	Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
1893. d					°	°	°
Jan. 10·496	0	17	0	35	97·1	+14·3	−74·6
11·457	0	14	0	15	98·4	+13·6	−60·6
12·196	3	9	3	8	98·8	+13·8	−50·5
Means ...	...	...	1	19	98·10	+13·90	...

Group 2815.

Jan. 10·496	7	48	30	212	89·2	+ 9·7	−82·5
11·457	12	88	17	124	90·9	+ 9·3	−68·1
12·196	24	139	23	137	91·5	+ 9·7	−57·8
13·227	33	187	24	136	91·6	+ 8·7	−44·1
14·238	37	216	23	130	91·4	+ 9·7	−31·0
15·200	43	229	24	125	91·5	+ 9·4	−18·3
16·213	29	174	15	90	91·6	+ 9·1	− 4·8
17·470	35	205	18	108	92·1	+ 8·9	+ 12·3
18·172	56	241	31	133	92·5	+ 8·7	+ 21·9
19·181	37	165	24	105	93·1	+ 8·8	+ 35·8
20·193	32	131	25	102	92·6	+ 8·4	+ 48·7
21·485	13	82	17	107	93·0	+ 9·4	+ 66·0
22·229	11	47	26	116	94·3	+ 9·0	+ 77·2
Means ...	...	...	23	125	91·95	+ 9·14	...

Group 2816.

Jan. 11·457	0	7	0	4	192·5	+23·0	+ 33·5
Means ...	...	...	0	4	192·50	+23·00	...

Group 2817.

Jan. 11·457	1	16	1	9	181·8	+ 7·1	+ 22·8
Means ...	...	...	1	9	181·80	+ 7·10	...

Group 2818.

Date. Greenwich Civil Time.	Projected Area of Umbra.	Projected Area of Whole Spot.	Area for Group. Umbra.	Area for Group. Whole Spot.	Mean Longitude of Group.	Mean Latitude of Group.	Longitud. from Central Meridian
1893. d					°	°	°
Jan. 16·213	0	22	0	25	31·2	−17·6	− 65·2
17·470	2	22	2	17	32·8	−17·6	− 47·0
18·172	6	16	4	10	33·7	−17·9	− 36·9
19·181	0	26	0	15	32·8	−17·6	− 24·5
20·193	10	45	5	23	33·4	−17·8	− 10·5
Means ...	...	...	2	18	32·78	−17·70	...

Group 2819.

Jan. 16·213	17	176	48	486	16·1	−13·4	− 80·3
17·470	75	449	90	546	13·7	−13·3	− 66·1
18·172	159	1055	147	982	12·8	−13·3	− 57·8
19·181	291	1550	206	1098	12·5	−13·6	− 44·8
20·193	457	2006	270	1186	12·4	−13·2	− 31·5
21·485	275	2331	142	1208	13·7	−12·3	− 13·3
22·229	304	2212	160	1157	13·8	−12·2	− 3·3
23·224	173	1486	88	763	14·6	−12·1	+ 10·6
24·202	154	948	85	526	14·7	−12·6	+ 25·1
25·266	137	766	89	493	16·0	−13·1	+ 38·8
26·209	71	459	62	386	18·4	−13·3	+ 53·7
27·230	40	316	54	431	20·6	−14·5	+ 69·3
Means ...	...	...	120	772	14·94	−13·08	...

Group 2820.

Jan. 18·172	4	17	2	9	58·5	−15·8	− 12·1
19·181	0	14	0	8	61·4	−16·9	+ 4·1
20·193	0	11	0	6	62·2	−17·4	+ 18·3
21·485	0	56	0	35	63·5	−17·1	+ 36·5
22·229	14	62	11	48	65·7	−17·2	+ 48·6
23·224	9	36	7	36	64·5	−16·4	+ 60·5
Means ...	...	...	3	24	62·63	−16·80	...

Group 2821.

Jan. 18·172	0	6	0	8	2·4	−15·7	− 68·2
Means ...	...	...	0	8	2·40	−15·70	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2822.							
1893. d					°	°	°
Jan. 18·172	0	92	0	165	356·1	− 9·4	− 74·5
19·181	91	334	92	329	357·3	− 9·4	− 60·0
20·193	102	383	74	276	357·6	− 9·0	− 46·3
21·485	56	436	32	250	358·3	− 8·8	− 28·7
22·229	79	415	42	220	357·8	− 8·6	− 19·3
23·224	36	249	18	126	356·7	− 9·3	− 7·3
24·202	30	216	16	110	356·6	− 9·2	+ 7·0
25·266	32	169	17	90	356·9	− 9·2	+ 19·7
26·209	17	77	10	46	357·3	− 9·3	+ 32·6
27·230	10	42	7	30	357·7	− 9·6	+ 46·4
Means ...	...	...	31	164	357·23	− 9·18	...
Group 2823.							
Jan. 21·485	10	91	8	72	340·0	+15·0	− 47·0
22·229	61	236	43	164	338·1	+15·4	− 39·0
23·224	48	287	28	171	337·9	+15·1	− 26·1
24·202	124	441	68	238	340·6	+14·3	− 9·0
25·266	98	541	54	291	341·1	+14·3	+ 3·9
26·209	63	375	36	210	341·7	+14·3	+ 17·0
27·230	33	230	21	146	343·5	+13·7	+ 32·2
28·500	16	118	14	104	346·9	+13·7	+ 52·3
29·330	7	18	9	22	347·1	+13·4	+ 63·5
Means ...	...	...	31	158	341·88	+14·36	...
Group 2824.							
Jan. 22·229	2	8	1	5	32·2	−25·5	+ 15·1
23·224	0	0	0	0	...	...	...
24·202	8	24	6	17	31·3	−25·0	+ 41·7
25·266	21	82	17	73	31·5	−25·4	+ 54·3
26·209	17	78	20	93	30·0	−25·0	+ 65·3
Means ...	...	...	9	38	31·25	−25·23	...
Group 2825.							
1893. d					°	°	°
Jan. 24·202	2	26	1	16	316·0	−16·7	− 33·6
25·266	67	279	37	155	314·8	−17·2	− 22·4
26·209	109	562	56	289	315·4	−16·9	− 9·3
27·230	86	638	44	328	316·8	−17·0	+ 5·5
28·500	29	330	16	188	318·0	−16·3	+ 23·4
29·330	73	394	44	244	318·2	−16·5	+ 34·6
30·298	46	248	35	188	319·0	−16·5	+ 48·0
31·289	32	199	35	209	319·6	−16·2	+ 61·7
Feb. 1·278	46	284	63	405	314·8	−18·7	+ 70·0
2·205	37	208	68	378	308·1	−21·1	+ 75·4
Means ...	...	...	40	240	316·07	−17·30	...
Group 2826.							
Jan. 24·202	23	154	43	351	270·9	−20·4	− 78·7
25·266	103	770	138	1037	268·5	−21·3	− 68·7
26·209	226	1372	201	1232	269·0	−21·7	− 55·7
27·230	293	1591	199	1081	270·4	−21·8	− 40·9
28·500	209	1972	119	1126	270·2	−22·0	− 24·4
29·330	317	2004	170	1075	271·2	−21·7	− 12·4
30·298	382	1989	199	1046	271·4	−22·2	+ 0·4
31·289	310	1661	167	896	271·0	−22·3	+ 13·1
Feb. 1·278	318	1714	187	1001	271·9	−21·9	+ 27·1
2·205	146	1312	97	874	272·4	−21·8	+ 39·7
3·184	215	1172	173	947	271·0	−22·0	+ 51·3
4·496	73	809	86	1005	269·5	−22·1	+ 67·0
5·490	71	338	166	812	269·1	−22·1	+ 79·7
6·465	0	28	0	100	260·4	−21·4	+ 83·8
Means ...	...	...	139	899	269·78	−21·76	...
Group 2827.							
Jan. 24·202	0	10	0	55	263·6	−11·8	− 86·0
25·266	6	30	10	51	263·5	−11·7	− 73·7
26·209	5	31	5	31	264·3	−11·7	− 60·4
27·230	0	17	0	12	264·7	−11·8	− 46·6
Means ...	...	...	14	37	264·03	−11·75	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2828.							
1893. d					°	°	°
Jan. 25·266	5	19	5	18	278·5	−12·7	− 58·7
26·209	3	12	2	8	279·8	−12·7	− 44·9
27·230	0	15	0	9	279·9	−12·7	− 31·4
Means ...	...	...	2	12	279·40	−12·70	...
Group 2829.							
Jan. 26·209	114	516	85	386	281·7	+17·1	− 43·0
27·230	179	734	111	460	281·7	+17·0	− 29·6
28·500	154	941	87	531	280·9	+17·8	− 13·7
29·330	199	933	109	519	281·9	+18·5	− 1·7
30·298	157	910	88	512	281·8	+17·5	+ 10·8
31·289	149	670	90	405	282·1	+17·2	+ 24·2
Feb. 1·278	99	554	70	385	283·0	+16·7	+ 38·2
2·205	63	355	55	307	282·7	+16·4	+ 50·0
3·184	41	203	53	258	283·2	+16·7	+ 63·5
4·496	8	44	30	166	282·6	+16·9	+ 80·1
Means ...	...	...	78	393	282·16	+17·18	...
Group 2830.							
Jan. 26·209	0	24	0	57	248·7	+14·5	− 76·0
27·230	11	96	13	118	248·0	+14·5	− 63·3
28·500	12	121	9	93	248·8	+13·7	− 45·8
29·330	29	111	19	72	249·0	+14·0	− 34·6
30·298	39	179	23	103	249·4	+13·7	− 21·6
31·289	51	124	28	67	249·9	+14·3	− 8·0
Feb. 1·278	46	152	25	82	249·8	+14·0	+ 5·0
2·205	26	113	15	64	249·8	+14·2	+ 17·1
3·184	29	114	17	70	249·9	+13·8	+ 30·2
4·496	14	121	11	96	249·9	+13·9	+ 47·4
5·490	13	68	15	80	251·6	+12·8	+ 62·2
6·465	0	13	0	30	252·1	+13·1	+ 75·5
Means ...	...	...	15	78	249·74	+13·88	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra	Whole Spot.	Umbra.	Whole Spot.			
Group 2831.							
1893. d					°	°	°
Jan. 26·209	0	11	0	65	242·9	+26·7	− 81·8
27·230	21	105	32	156	246·4	+25·2	− 64·9
28·500	20	201	18	182	246·2	+25·0	− 48·4
29·330	39	249	29	186	246·1	+24·9	− 37·5
30·298	36	199	23	127	246·4	+24·4	− 24·6
31·289	28	223	17	134	246·1	+24·6	− 11·8
Feb. 1·278	22	98	13	57	245·8	+24·5	+ 1·0
2·205	17	52	10	31	245·2	+24·5	+ 12·5
3·184	13	30	8	19	244·7	+24·5	+ 25·0
4·496	4	23	3	18	243·9	+24·5	+ 41·4
5·490	5	16	5	16	243·4	+24·8	+ 54·0
6·465	0	10	0	16	243·2	+24·8	+ 66·6
Means ...	...	...	13	84	245·03	+24·87	...
Group 2832.							
Jan. 28·500	2	51	2	46	239·3	−27·7	− 55·3
29·330	6	12	5	9	236·7	−30·5	− 46·9
30·298	0	16	0	11	236·6	−30·9	− 34·4
Means ...	...	...	2	22	237·53	−29·70	...
Group 2833.							
Jan. 30·298	1	17	1	9	259·8	+ 7·5	− 11·2
Means ...	...	...	1	9	259·80	+ 7·50	...
Group 2834.							
Jan. 30·298	2	22	1	11	266·6	−12·0	− 4·4
Means ...	...	...	1	11	266·60	−12·00	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2834.							
1893. d					°	°	°
Jan. 31·289	22	87	12	44	252·9	−12·8	− 5·0
Feb. 1·278	17	55	9	29	253·6	−13·1	+ 8·8
2·205	6	40	4	22	254·1	−13·5	+ 21·4
3·184	7	31	4	18	251·2	−14·4	+ 31·5
Means ...	...	...	7	28	252·95	−13·45	...
Group 2835.							
Feb. 1·278	14	49	9	30	213·0	−21·9	− 31·8
2·205	3	53	2	29	213·4	−21·7	− 19·3
3·184	0	30	0	16	214·7	−22·1	− 5·0
4·496	0	5	0	3	210·7	−23·6	+ 8·2
5·490	24	125	14	70	212·1	−23·0	+ 22·7
6·465	21	92	13	58	210·8	−23·5	+ 34·2
7·193	9	66	6	48	211·3	−23·1	+ 44·4
8·274	4	52	4	50	210·8	−24·1	+ 58·0
9·202	0	28	0	39	210·6	−23·7	+ 70·0
Means ...	...	...	5	38	211·93	−22·97	...
Group 2836.							
Feb. 4·496	0	17	0	10	225·3	−19·8	+ 22·8
5·490	5	42	3	26	225·5	−19·4	+ 36·1
6·465	0	7	0	6	226·3	−18·0	+ 49·7
Means ...	...	...	1	14	225·70	−19·07	...
Group 2837.							
Feb. 5·490	0	24	0	23	129·8	−17·7	− 59·6
6·465	1	16	1	11	130·4	−17·5	− 46·2
7·193	3	17	2	11	130·6	−17·1	− 36·3
8·274	3	6	2	4	131·1	−17·3	− 21·7
9·202	2	13	1	7	129·0	−17·1	− 11·6
Means ...	...	...	1	11	130·18	−17·34	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2838.							
1893. d					°	°	°
Feb. 5·490	12	150	30	383	109·8	− 9·8	− 79·6
6·465	79	514	114	732	106·4	−10·2	− 70·2
7·193	122	646	124	648	106·1	− 9·8	− 60·8
8·274	162	837	119	599	106·9	− 9·8	− 45·9
9·202	148	1204	89	722	107·1	−10·5	− 33·5
10·471	175	1119	93	589	107·8	−11·0	− 16·0
11·272	105	1148	53	577	109·0	−11·4	− 4·3
12·210	109	1068	56	543	109·1	−11·5	+ 8·2
13·189	125	1198	67	644	109·4	−11·8	+ 21·4
14·292	155	1432	96	873	108·0	−12·1	+ 34·5
15·252	184	1432	134	1059	108·5	−11·7	+ 47·6
16·232	57	752	58	769	109·2	−11·7	+ 61·3
17·399	50	254	107	564	110·7	−11·0	+ 78·1
18·228	5	23	13	59	101·7	−11·5	+ 80·0
Means ...	...	...	82	626	107·84	−10·99	...
Group 2839.							
Feb. 6·465	0	13	0	7	190·0	−16·9	+ 13·4
Means ...	...	...	0	7	190·0	−16·90	...
Group 2840.							
Feb. 8·274	0	13	0	12	211·6	−16·8	+ 58·8
9·202	13	76	20	115	212·5	−16·0	+ 71·9
Means ...	...	...	10	64	212·05	−16·40	...
Group 2841.							
Feb. 8·274	61	151	39	96	184·6	+14·6	+ 31·8
9·202	46	256	35	196	185·1	+14·1	+ 44·5
10·471	22	200	24	223	183·8	+14·4	+ 60·0
11·272	7	120	13	218	184·9	+13·7	+ 71·6
Means ...	...	...	28	183	184·60	+14·20	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Group 2842.

Date. Greenwich Civil Time.	Projected Area of Umbra.	Projected Area of Whole Spot.	Area for Group. Umbra.	Area for Group. Whole Spot.	Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
1893. d					°	°	°
Feb. 9·202	29	70	25	60	85·1	− 9·2	− 55·5
10·471	36	202	22	126	87·8	− 9·8	− 36·0
11·272	50	199	28	110	88·6	− 9·9	− 24·7
12·210	25	206	13	105	90·8	− 9·9	− 10·1
13·189	17	91	8	46	92·0	−10·3	+ 4·0
14·292	37	203	20	107	92·5	−10·4	+ 19·0
15·252	26	171	16	102	93·8	−10·4	+ 32·9
16·232	13	75	10	53	92·9	−10·6	+ 45·0
17·399	15	36	15	37	94·1	−10·1	+ 61·5
18·228	3	16	4	24	93·7	−10·8	+ 72·0
Means ...	...	...	16	77	91·13	−10·14	...

Group 2843.

Feb. 9·202	49	173	69	241	70·6	−16·9	− 70·0
10·471	44	218	36	179	71·4	−17·7	− 52·4
11·272	65	246	44	166	71·5	−17·4	− 41·8
12·210	53	293	31	172	71·6	−17·8	− 29·3
13·189	52	331	28	176	71·6	−17·8	− 16·4
14·292	80	306	41	157	71·6	−17·6	− 1·9
15·252	54	316	28	163	71·8	−17·9	+ 10·9
16·232	52	268	29	150	71·7	−18·3	+ 23·8
17·399	41	226	27	148	72·2	−18·0	+ 39·6
18·228	33	186	26	146	72·0	−18·4	+ 50·3
19·486	17	116	20	140	71·5	−18·4	+ 66·4
20·623	10	66	27	170	70·8	−18·4	+ 80·6
Means ...	...	...	34	167	71·53	−17·88	...

Group 2844.

Feb. 11·272	2	21	2	18	59·5	−15·3	− 53·8
12·210	0	24	0	17	60·0	−15·3	− 40·9
Means ...	...	...	1	18	59·75	−15·30	...

Group 2845.

Feb. 12·210	0	35	0	20	128·5	+11·2	+ 27·6
13·189	0	25	0	18	129·2	+10·9	+ 41·2
Means ...	...	...	0	19	128·85	+11·05	...

Group 2846.

1893. d					°	°	°
Feb. 12·210	26	240	43	435	25·7	−15·7	− 75·2
13·189	62	328	63	347	25·7	−14·6	− 62·3
14·292	121	670	86	491	26·4	−14·6	− 47·1
15·252	112	641	67	385	27·2	−14·5	− 33·7
16·232	70	464	38	250	27·4	−14·8	− 20·5
17·399	132	637	68	326	27·1	−14·8	− 5·5
18·228	50	448	25	229	28·8	−14·7	+ 7·1
19·486	57	346	32	194	29·8	−14·7	+ 24·7
20·623	26	145	17	95	30·5	−14·1	+ 40·3
21·233	15	71	11	53	30·8	−14·4	+ 48·7
22·249	8	40	8	41	30·8	−14·4	+ 62·1
23·384	0	26	0	45	28·2	−12·8	+ 74·5
Means ...	...	...	38	241	28·20	−14·51	...

Group 2847.

Feb. 12·210	6	126	13	265	23·7	−11·0	− 77·2
13·189	12	83	15	95	23·1	−10·4	− 64·9
14·292	30	174	23	134	23·5	−10·4	− 50·0
15·252	25	265	16	169	23·0	−10·7	− 37·9
16·232	22	176	12	97	22·3	−10·4	− 25·6
17·399	26	318	15	164	23·2	−10·5	− 9·4
18·228	23	152	11	78	23·2	−10·4	+ 1·5
19·486	16	110	8	58	23·6	−10·4	+ 18·5
20·623	25	132	16	84	28·9	− 9·8	+ 38·7
21·233	23	112	17	83	30·2	−10·1	+ 48·1
22·249	19	104	19	106	30·3	−10·0	+ 61·6
23·384	8	73	15	147	30·4	−10·4	+ 76·7
Means ...	...	...	15	123	25·45	−10·38	...

Group 2848.

Feb. 13·189	0	9	0	5	84·5	− 9·8	− 3·5
Means ...	...	...	0	5	84·50	− 9·8	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2849.							
1893. d					°	°	°
Feb. 13·189	0	9	0	10	27·9	+18·5	−60·1
14·292	3	15	2	12	28·9	+18·8	−44·6
Means ...	...	...	1	11	28·40	+18·65	...
Group 2850.							
Feb. 13·189	6	77	9	110	17·4	−18·7	−70·6
14·292	6	77	6	68	17·3	−18·7	−56·2
15·252	9	70	6	50	17·0	−18·7	−43·9
16·232	0	23	0	15	16·3	−19·1	−31·6
17·399	7	78	4	41	16·4	−19·2	−16·2
18·228	2	50	1	26	17·3	−19·2	− 4·4
19·486	0	7	0	4	17·9	−20·6	+ 12·8
Means ...	...	...	4	45	17·09	−19·17	...
Group 2851.							
Feb. 16·232	0	18	0	58	325·0	−16·3	− 82·9
17·399	3	49	4	65	323·5	−16·0	− 69·1
18·228	11	31	10	29	323·7	−16·1	− 58·0
19·486	7	32	5	22	323·2	−15·9	− 41·9
20·623	5	41	3	23	323·8	−16·2	− 26·4
21·233	0	7	0	4	322·8	−16·5	− 19·3
22·249	1	10	1	6	318·9	−19·3	− 9·8
23·384	0	17	0	8	320·9	−18·2	+ 7·2
Means ...	...	...	3	27	322·73	−16·81	...
Group 2852.							
Feb. 18·228	0	13	0	13	325·0	+12·5	− 56·7
19·486	7	41	4	28	325·9	+12·2	− 39·2
20·623	5	14	3	8	324·9	+12·4	− 25·3
21·233	0	10	0	6	326·5	+12·1	− 15·6
22·249	2	34	1	19	327·0	+12·4	− 1·7
23·384	2	14	1	8	326·0	+12·7	+ 12·3
Means ...	...	...	2	14	325·88	+12·38	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2853.							
1893. d					°	°	°
Feb. 18·228	6	52	20	172	302·6	+14·7	− 79·1
19·486	82	436	125	682	296·6	+14·4	− 68·5
20·623	119	785	109	732	296·5	+14·4	− 53·7
21·233	125	721	98	560	296·9	+14·6	− 45·2
22·249	135	825	87	525	297·4	+14·9	− 31·3
23·384	171	853	98	486	297·9	+15·2	− 15·8
24·244	132	761	72	416	299·2	+15·1	− 3·3
25·451	104	561	58	316	300·5	+15·6	+ 14·0
26·224	80	495	48	301	302·1	+15·9	+ 25·8
27·215	83	331	60	241	304·2	+15·9	+ 40·8
28·494	18	144	20	158	305·5	+16·2	+ 59·0
Mar. 1·554	10	61	21	122	304·9	+16·4	+ 72·4
Means ...	...	...	68	393	300·36	+15·28	...
Group 2854.							
Feb. 20·623	3	12	4	17	282·7	+15·2	− 67·5
21·233	0	5	0	5	283·2	+15·3	− 58·9
Means ...	...	...	2	11	282·95	+15·25	...
Group 2855.							
Feb. 21·233	5	18	3	11	317·7	+19·0	− 24·4
22·249	16	57	9	33	316·3	+18·9	− 12·4
23·384	4	15	2	9	315·0	+19·2	+ 1·3
24·244	0	9	0	6	315·3	+18·0	+ 12·8
Means ...	...	...	4	15	316·08	+18·78	...
Group 2856.							
Feb. 21·233	0	19	0	17	287·0	+ 8·5	− 55·1
22·249	6	60	5	41	287·6	+ 8·8	− 41·1
23·384	144	449	84	262	288·8	+ 9·7	− 24·9
24·244	120	725	65	391	289·5	+ 9·2	− 13·0
25·451	109	790	58	413	290·8	+ 9·0	+ 4·3
26·224	174	912	95	497	291·3	+ 9·3	+ 15·0
27·215	249	1086	148	648	292·0	+ 9·2	+ 28·6
28·494	126	955	96	711	291·2	+ 9·6	+ 44·7

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2856—*continued.*							
1893. d					°	°	°
Mar. 1·554	48	610	51	638	291·8	+ 9·9	+ 59·3
2·409	30	344	49	571	292·0	+ 9·8	+ 70·8
3·126	19	158	48	406	289·1	+10·1	+ 77·3
Means ...	...	...	64	418	290·10	+ 9·37	...
Group 2857.							
Feb. 21·233	0	21	0	40	265·9	−15·9	− 76·2
22·249	24	160	26	173	265·3	−16·9	− 63·4
23·384	76	323	58	248	264·4	−16·8	− 49·3
24·244	49	278	31	177	264·8	−16·8	− 37·7
25·451	30	260	17	143	265·3	−17·0	− 21·2
26·224	49	317	26	164	265·4	−16·9	− 10·9
27·215	41	171	21	86	266·1	−17·2	+ 2·7
28·494	17	175	9	94	266·4	−17·2	+ 19·9
Mar. 1·554	10	210	6	128	267·2	−17·2	+ 34·7
2·409	34	249	23	177	266·3	−17·9	+ 45·1
3·126	39	153	34	136	267·9	−18·3	+ 56·1
4·384	12	41	18	63	267·8	−17·7	+ 72·6
5·194	0	8	0	24	266·4	−17·6	+ 81·9
Means ...	...	...	21	127	266·09	−17·18	...
Group 2858.							
Feb. 22·249	14	43	8	26	357·6	+12·8	+ 28·9
23·384	2	21	2	16	358·7	+13·2	+ 45·0
Means ...	...	...	5	21	358·15	+13·0	...
Group 2859.							
Feb. 23·384	0	27	0	22	269·0	+19·0	− 44·7
Means ...	...	...	0	22	269·00	+19·00	...
Group 2860.							
1893. d					°	°	°
Feb. 24·244	2	71	1	37	304·5	+ 8·1	+ 2·0
25·451	0	47	0	26	303·4	+ 8·5	+ 16·9
26·224	17	72	10	42	303·0	+ 9·4	+ 26·7
27·215	12	58	8	40	304·0	+ 9·1	+ 40·6
28·494	0	30	0	29	303·6	+ 9·5	+ 57·1
Means ...	...	...	4	35	303·70	+ 8·92	...
Group 2861.							
Feb. 24·244	0	78	0	79	212·5	−19·5	− 90·0
25·451	33	199	43	261	217·8	−20·7	− 68·7
26·224	78	326	76	317	216·6	−20·1	− 59·7
27·215	109	431	80	315	217·0	−20·8	− 46·4
28·494	143	730	83	426	217·2	−20·3	− 29·3
Mar. 1·554	102	702	54	371	216·9	−20·9	− 15·6
2·409	123	712	64	367	216·7	−20·9	− 4·5
3·126	148	644	77	332	216·9	−21·2	+ 5·1
4·384	120	508	67	281	217·1	−21·1	+ 21·9
5·194	51	353	31	215	217·5	−21·1	+ 33·0
6	No photograph						
7·421	12	123	14	139	219·7	−20·7	+ 64·5
8·523	0	16	0	36	219·7	−21·0	+ 79·0
Means ...	...	...	49	262	217·13	−20·69	...
Group 2862.							
Feb. 25·451	0	17	0	11	321·1	+13·6	+ 34·6
26·224	5	25	4	19	323·1	+13·4	+ 46·8
27·215	4	7	5	8	325·1	+13·3	+ 61·7
Means ...	...	...	3	13	323·10	+13·43	...
Group 2863.							
Feb. 25·451	0	12	0	29	206·2	−22·2	− 80·3
26·224	12	48	18	70	205·1	−21·6	− 71·2
27·215	8	21	7	19	205·7	−22·0	− 57·7
28·494	0	0	0	0	...	...	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2863—*continued.*							
1893. d					°	°	°
Mar. 1·554	0	0	0	0	...	...	...
2·409	0	24	0	13	206·7	−22·0	− 14·5
3·126	1	13	1	6	204·5	−22·0	− 7·3
4·384	2	9	1	4	205·7	−21·4	+ 10·5
Means ...	...	...	3	18	205·65	−21·87	...
Group 2864.							
Feb. 26·224	0	5	0	3	274·2	+11·3	− 2·1
Means ...	...	...	0	3	274·20	+11·30	...
Group 2865.							
Feb. 27·215	0	6	0	6	324·1	−15·2	+ 60·7
28·494	0	27	0	58	324·3	−14·3	+ 77·8
Means ...	...	...	0	32	324·20	−14·75	...
Group 2866.							
Feb. 28·494	1	24	1	14	267·5	+20·2	+ 21·0
Mar. 1·554	2	20	1	14	268·8	+19·8	+ 36·3
2·409	6	39	5	32	266·8	+19·9	+ 45·6
3·126	4	27	5	30	270·1	+19·3	+ 58·3
Means ...	...	...	3	23	268·30	+19·80	...
Group 2867.							
1893. d					°	°	°
Feb. 28·494	6	76	7	82	184·6	+ 1·9	− 61·9
Mar. 1·554	29	170	22	131	183·8	+ 1·5	− 48·7
2·409	31	122	20	77	183·5	+ 1·5	− 37·7
3·126	44	145	25	84	184·1	+ 2·0	− 27·7
4·384	37	195	19	99	187·5	+ 2·4	− 7·7
5·194	11	93	6	48	189·9	+ 2·3	+ 5·4
6	No photograph.						
7·421	22	129	14	80	191·3	+ 2·9	+ 36·1
8·523	16	101	13	83	191·9	+ 3·1	+ 51·2
9·463	9	35	10	41	192·1	+ 2·9	+ 63·8
10·443	0	4	0	10	193·0	+ 3·1	+ 77·7
Means ...	...	...	14	74	188·17	+ 2·36	...
Group 2868.							
Mar. 1·554	8	33	4	18	252·2	−21·0	+ 19·7
2·409	38	149	23	90	253·7	−21·6	+ 32·5
3·126	28	132	20	94	255·6	−22·1	+ 43·8
4·384	12	50	11	51	256·3	−21·5	+ 61·1
Means ...	...	...	15	63	254·45	−21·55	...
Group 2869.							
Mar. 1·554	13	44	12	41	176·3	+ 6·2	−56·2
2·409	11	92	8	68	175·7	+ 6·3	−45·5
3·126	22	75	14	47	176·3	+ 6·2	−35·5
4·384	26	99	14	53	177·0	+ 6·4	−18·2
5·194	0	35	0	19	177·5	+ 6·9	− 7·0
6	No photograph.						
7·421	0	6	0	4	181·8	+ 8·7	+26·6
8·523	0	3	0	2	180·5	+ 5·7	+39·8
Means ...	...	...	7	33	177·87	+ 6·63	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2870.							
1893. d					°	°	°
Mar. 2·409	0	8	0	4	204·1	+10·1	−17·1
3·126	0	4	0	2	205·2	+ 9·8	− 6·6
Means ...	...	...	0	3	204·65	+ 9·95	...
Group 2871.							
Mar. 3·126	1	8	1	4	218·0	+ 5·6	+ 6·2
Means ...	...	...	1	4	218·00	+ 5·60	...
Group 2872.							
Mar. 4·384	0	6	0	4	158·9	−18·1	−36·3
5·194	0	92	0	51	160·6	−17·7	−23·9
6	No	photo	graph.				
7·421	9	69	4	35	161·1	−17·6	+ 5·9
8·523	26	140	14	77	163·5	−16·9	+22·8
9·463	6	47	4	29	164·3	−17·1	+36·0
10·443	3	23	2	18	166·5	−17·1	+51·2
11·405	0	26	0	35	171·6	−14·9	+69·0
Means ...	...	...	3	36	163·79	−17·06	...
Group 2873.							
Mar. 4·384	44	126	59	172	125·5	−18·9	−69·7
5·194	22	126	20	116	127·5	−19·4	−57·0
6	No	photo	graph.				
7·421	21	169	12	96	128·6	−20·0	−26·6
8·523	53	253	28	134	126·9	−19·1	−13·8
9·463	12	102	7	52	126·4	−19·2	− 1·9
10·443	5	37	3	19	127·4	−19·3	+12·1
11·405	7	30	4	17	128·0	−19·1	+25·4
Means ...	...	...	19	87	127·19	−19·29	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2874.							
1893. d					°	°	°
Mar. 5·194	0	16	0	8	168·7	−20·7	− 15·8
Means ...	...	...	0	8	168·70	−20·70	...
Group 2875.							
Mar. 8·523	30	111	28	103	198·2	−23·4	+ 57·5
9·463	6	93	9	127	197·7	−23·0	+ 69·4
10·443	0	14	0	29	193·3	−24·5	+ 78·0
Means ...	...	...	12	86	196·40	−23·63	...
Group 2876.							
Mar. 8·523	9	29	5	17	119·2	+12·5	− 21·5
9·463	4	30	2	15	120·6	+12·2	− 7·7
10·443	5	12	2	6	123·0	+12·4	+ 7·7
11·405	8	12	5	7	124·6	+12·8	+ 22·0
12·437	0	12	0	8	125·3	+12·5	+ 36·2
13·473	2	41	2	33	125·0	+12·5	+ 49·5
14·291	2	18	2	17	120·3	+11·5	+ 55·6
Means ...	...	...	3	15	122·57	+12·34	...
Group 2877.							
Mar. 8·523	1	4	1	3	92·3	+11·3	− 48·4
9·463	10	24	6	15	93·5	+ 9·8	− 34·8
10·443	11	38	6	22	93·4	+10·2	− 21·9
11·405	0	10	0	5	91·6	+12·0	− 11·0
Means ...	...	...	3	11	92·70	+10·83	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2878.							
1893. d					°	°	°
Mar. 9·463	0	8	0	4	104·5	− 9·5	− 23·8
10·443	13	74	7	37	105·5	− 9·6	− 9·8
11·405	0	4	0	2	107·9	−10·4	+ 5·3
12·437	0	0	0	0	...	...	...
13·473	8	38	5	23	108·0	−10·4	+ 32·5
14·291	10	69	7	46	105·9	−10·4	+ 41·2
15·434	14	52	13	50	108·6	− 9·2	+ 59·0
16·427	0	15	0	26	110·7	−10·0	+ 74·2
Means ...	...	...	4	24	107·30	− 9·93	...
Group 2879.							
Mar. 9·463	0	46	0	104	49·7	−14·3	− 78·6
10·443	29	73	35	88	48·9	−14·3	− 66·4
11·405	18	99	15	84	48·2	−14·3	− 54·4
12·437	15	102	10	67	47·9	−14·3	− 41·2
13·473	22	119	12	67	48·2	−14·4	− 27·3
14·291	21	122	11	64	48·8	−13·9	− 15·9
15·434	26	112	13	57	48·4	−14·2	− 1·2
16·427	25	90	13	47	49·0	−14·0	+ 12·5
17·422	15	90	8	50	48·9	−14·4	+ 25·5
18·455	15	46	9	30	48·5	−14·1	+ 38·7
19·272	2	17	2	13	49·1	−14·6	+ 50·1
Means ...	...	...	12	61	48·69	−14·25	..
Group 2880.							
Mar. 10·443	0	39	0	66	41·4	−12·6	− 73·9
11·405	12	37	12	39	39·9	−14·1	− 62·7
12·437	3	30	2	23	39·4	−14·5	− 49·7
13·473	3	52	2	33	40·0	−13·8	− 35·5
14·291	16	98	8	53	44·3	−12·4	− 20·4
15·434	10	55	5	28	41·9	−13·0	− 7·7
16·427	0	38	0	20	40·5	−11·2	+ 4·0
17·422	0	10	0	5	39·8	−13·1	+ 16·4
Means ...	...	...	4	33	40·90	−13·09	...
Group 2881.							
Mar. 10·443	45	339	82	657	39·5	− 8·0	− 75·8
11·405	90	531	93	563	40·1	− 7·9	− 62·5
12·437	118	709	88	531	40·6	− 8·0	− 48·5
13·473	164	961	99	586	40·6	− 8·1	− 34·9
14·291	187	851	101	465	41·7	− 8·0	− 23·0

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2881—*continued.*							
1893. d					°	°	°
Mar. 15·434	166	974	84	496	41·2	− 8·4	− 8·4
16·427	165	811	83	408	41·9	− 8·2	+ 5·4
17·422	139	694	74	367	42·8	− 8·3	+ 19·4
18·455	134	648	80	384	42·9	− 8·2	+ 33·1
19·272	97	569	67	396	44·0	− 8·4	+ 45·0
20·413	73	399	73	460	44·0	− 8·0	+ 60·0
21·420	34	213	60	372	44·7	− 8·4	+ 74·0
Means ...	...	...	82	474	42·00	− 8·16	...
Group 2882.							
Mar. 13·473	2	14	2	11	34·9	+19·2	− 40·6
14·291	13	41	8	26	35·9	+19·8	− 28·8
15·434	0	21	0	13	34·4	+20·5	− 15·2
Means ...	...	...	3	17	35·07	+19·83	...
Group 2883.							
Mar. 13·473	2	24	3	40	1·7	−15·0	− 73·8
14·291	3	16	3	16	5·3	−14·7	− 59·4
Means ...	...	...	3	28	3·50	−14·85	...
Group 2884.							
Mar. 16·427	0	16	0	12	86·3	−18·7	+ 49·8
Means ...	...	...	0	12	86·30	−18·70	...
Group 2885.							
Mar. 16·427	0	7	0	8	331·7	−14·3	− 64·8
17·422	0	15	0	12	331·4	−14·9	− 52·0
18·455	3	8	2	5	331·5	−14·6	− 38·3
Means ...	...	...	1	8	331·53	−14·60	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of Umbra.	Projected Area of Whole Spot.	Area for Group. Umbra.	Area for Group. Whole Spot.	Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
Group 2886.							
1893. d					°	°	°
Mar. 17·422	0	3	0	2	356·6	−18·4	− 26·8
Means ...	...	...	0	2	356·60	−18·40	...
Group 2887.							
Mar. 17·422	0	9	0	7	336·9	+17·8	− 46·5
Means ...	...	...	0	7	336·90	+17·80	...
Group 2888.							
Mar. 17·422	11	73	12	80	324·0	+16·1	− 59·4
18·455	10	89	8	70	325·0	+16·5	− 44·8
19·272	5	33	3	21	325·7	+16·3	− 33·3
Means ...	...	...	8	57	324·90	+16·30	...
Group 2889.							
Mar. 17·422	11	33	34	101	305·0	+14·3	− 78·4
18·455	10	62	13	85	303·7	+14·1	− 66·1
19·272	11	78	10	73	304·5	+14·0	− 54·5
20·413	30	145	22	103	304·4	+13·7	− 39·6
21·420	28	185	17	112	304·0	+14·0	− 26·7
22·519	18	129	10	70	304·5	+13·5	− 11·7
23·475	23	123	13	66	304·3	+13·3	+ 0·7
24·417	24	72	13	40	304·3	+13·7	+ 13·1
25·424	11	35	6	20	303·8	+13·9	+ 25·9
26·182	17	34	12	23	304·4	+13·5	+ 36·5
27·418	0	9	0	8	303·6	+13·8	+ 52·0
Means ...	...	...	14	64	304·23	+13·80	...
Group 2890.							
Mar. 17·422	0	18	0	58	303·7	+ 9·3	− 79·7
18·455	0	19	0	26	301·7	+ 8·4	− 68·1
19·272	2	21	2	19	303·5	+ 8·3	− 55·5
20·413	0	21	0	15	303·4	+ 8·4	− 40·6
21·420	3	14	2	8	304·4	+ 9·2	− 26·3
22·519	0	8	0	4	305·3	+ 9·3	− 10·9
Means ...	...	...	1	22	303·67	+ 8·82	...

Date. Greenwich Civil Time.	Projected Area of Umbra.	Projected Area of Whole Spot.	Area for Group. Umbra.	Area for Group. Whole Spot.	Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
Group 2891.							
1893. d					°	°	°
Mar. 18·455	0	22	0	11	355·2	−13·4	− 14·6
19·272	9	66	5	34	355·1	−14·3	− 3·9
20·413	5	31	3	15	356·8	−14·0	+ 12·8
21·420	0	0	0	0	...	...	...
22·519	0	0	0	0	...	...	...
23·475	0	21	0	16	354·1	−14·3	+ 50·5
Means ...	...	...	1	13	355·30	−14·00	...
Group 2892.							
Mar. 18·455	8	62	11	127	295·8	+11·8	− 74·0
19·272	19	113	23	139	295·3	+10·5	− 63·7
20·413	67	296	60	265	290·8	+ 9·1	− 53·2
21·420	89	591	63	416	289·6	+ 9·1	− 41·1
22·519	111	1014	65	598	289·3	+ 8·6	− 26·9
23·475	166	1084	90	586	289·3	+ 8·7	− 14·3
24·417	191	1016	100	531	288·3	+ 9·1	− 2·9
25·424	127	1153	69	614	290·1	+ 9·2	+ 12·2
26·182	160	972	92	550	290·7	+ 9·0	+ 22·8
27·418	65	471	45	330	292·6	+10·0	+ 41·0
28·432	31	215	29	197	292·9	+10·1	+ 54·7
29·416	26	116	39	170	293·3	+10·7	+ 68·1
30·489	9	42	43	203	293·6	+10·5	+ 82·6
Means ...	...	...	56	364	291·66	+ 9·72	...
Group 2893.							
Mar. 19·272	0	17	0	102	275·0	+23·0	− 84·0
20·413	30	242	54	433	275·1	+23·5	− 68·9
21·420	72	388	77	420	275·0	+23·7	− 55·7
22·519	74	532	57	414	275·6	+23·5	− 40·6
23·475	103	675	68	447	275·3	+23·5	− 28·3
24·417	129	746	79	456	275·3	+24·0	− 15·9
25·424	112	790	65	463	275·4	+24·0	− 2·5
26·182	156	673	92	396	275·6	+24·1	+ 7·7
27·418	104	583	66	370	275·0	+23·8	+ 23·4
28·432	75	457	56	338	274·6	+23·8	+ 36·4
29·416	63	365	58	335	274·6	+23·8	+ 49·4
30·489	39	255	54	353	274·4	+23·8	+ 63·4
31·429	15	125	39	323	273·3	+23·9	+ 74·7
Means ...	...	...	59	373	274·94	+23·72	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2894.							
1893. d					°	°	°
Mar. 20·413	0	32	0	17	331·4	−17·6	− 12·6
Means ...	...	...	0	17	331·40	−17·60	...
Group 2895.							
Mar. 21·420	0	7	0	5	18·4	−19·3	+ 47·7
Means ...	...	...	0	5	18·40	−19·30	...
Group 2896.							
Mar. 23·475	0	12	0	6	307·7	−14·9	+ 4·1
24·417	24	75	13	40	307·5	−14·9	+ 16·3
25·424	40	206	24	120	307·9	−15·4	+ 30·0
26·182	66	356	44	237	309·0	−15·8	+ 41·1
27·418	64	453	56	411	308·7	−15·1	+ 57·1
28·432	30	217	44	316	309·0	−15·4	+ 70·8
29·416	4	77	9	204	305·6	−14·8	+ 80·4
Means ...	...	...	27	191	307·91	−14·19	...
Group 2897.							
Mar. 23·475	8	60	4	31	293·0	− 9·8	− 10·6
24·417	2	17	1	8	293·0	− 9·9	+ 1·8
Means ...	...	...	3	20	293·00	− 9·85	...
Group 2898.							
Mar. 24·417	0	24	0	107	209·6	+13·2	− 81·6
25·424	14	73	21	110	209·8	+13·0	− 68·1
26·182	16	84	17	90	208·6	+13·7	− 59·3
27·418	15	73	11	54	208·8	+13·5	− 42·8
28·432	10	42	6	26	208·6	+13·8	− 29·6
29·416	5	43	3	24	207·4	+12·5	− 17·8
30·489	0	15	0	8	208·9	+15·0	− 2·1
Means ...	...	...	8	60	208·81	+13·53	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2899.							
1893. d					°	°	°
Mar. 25·424	0	9	0	11	211·7	−20·5	− 66·2
26·182	0	16	0	14	212·4	−20·1	− 55·5
27·418	10	49	6	33	212·9	−20·1	− 38·7
28·432	17	78	9	44	215·3	−20·1	− 22·9
29·416	99	429	52	225	214·8	−20·4	− 10·4
30·489	102	593	53	307	215·7	−19·5	+ 4·7
31·429	167	1139	90	612	215·6	−19·5	+ 17·0
Apr. 1·409	129	979	76	575	215·4	−19·5	+ 29·7
2·437	88	883	61	607	214·7	−19·8	+ 42·6
3·457	79	685	72	618	214·6	−20·2	+ 55·9
4·435	38	316	49	425	214·6	−20·0	+ 68·9
5·600	0	129	0	315	210·2	−20·2	+ 79·8
Means ...	...	...	39	316	213·99	−19·99	...
Group 2900.							
Mar. 25·424	0	12	0	42	198·7	+16·2	− 79·2
26·182	13	95	28	194	195·0	+17·4	− 72·9
27·418	26	139	26	139	196·0	+16·7	− 55·6
28·432	22	127	17	95	195·4	+16·9	− 42·8
29·416	17	127	11	81	195·3	+17·2	− 29·9
30·489	7	78	4	44	195·6	+17·0	− 15·4
31·429	11	57	6	31	195·0	+17·5	− 3·6
Apr. 1·409	0	26	0	14	195·3	+17·8	+ 9·6
Means ...	...	...	12	80	195·79	+17·09	...
Group 2901.							
Mar. 26·182	28	59	22	47	226·1	+25·5	− 41·8
27·418	2	25	1	16	226·4	+24·8	− 25·2
28·432	20	44	12	26	227·3	+24·7	− 10·9
29·416	8	85	5	51	226·0	+25·1	+ 0·8
30·489	0	29	0	17	227·4	+24·6	+ 16·4
31·429	6	32	4	22	227·6	+25·4	+ 29·0
Apr. 1·409	8	37	7	29	228·9	+25·7	+ 43·2
2·437	0	11	0	13	230·4	+25·0	+ 58·3
Means ...	...	...	6	28	227·51	+25·10	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Group 2902.

Date. Greenwich Civil Time.	Projected Area of Umbra.	Projected Area of Whole Spot.	Area for Group. Umbra.	Area for Group. Whole Spot.	Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
					°	°	°
1893. d							
Mar. 26·182	0	8	0	11	199·4	−21·3	− 68·5
Means ...	...	...	0	11	199·40	−21·30	...

Group 2903.

Mar. 27·418	0	14	0	12	305·5	−29·7	+ 53·9
Means ...	...	...	0	12	305·50	−29·70	...

Group 2904.

Mar. 27·418	1	26	1	15	259·3	+17·7	+ 7·7
28·432	0	0	0	0	...	...	...
29·416	0	6	0	4	256·7	+20·3	+ 31·5
30·489	0	25	0	20	257·0	+17·7	+ 46·0
Means ...	...	...	0	10	257·67	+18·57	...

Group 2905.

Mar. 27·418	0	14	0	8	230·7	− 4·8	− 20·9
28·432	0	9	0	4	230·9	− 5·1	− 7·3
29·416	0	0	0	0	...	...	...
30·489	0	10	0	5	231·7	− 4·9	+ 20·7
31·429	0	19	0	11	232·9	− 4·5	+ 34·3
Apr. 1·409	10	56	8	42	234·6	− 4·0	+ 48·9
2·437	0	57	0	66	237·1	− 5·5	+ 65·0
Means ...	...	...	1	19	232·98	− 4·80	...

Group 2906.

					°	°	°
1893. d							
Mar. 27·418	14	125	22	196	179·1	−15·2	− 72·5
28·432	17	96	16	91	179·7	−14·9	− 58·5
29·416	22	183	16	128	180·9	−14·7	− 44·3
30·489	26	209	15	121	181·5	−14·1	− 29·5
31·429	26	222	14	118	181·5	−13·9	− 17·1
Apr. 1·409	71	480	35	243	181·9	−13·6	− 3·8
2·437	90	543	47	278	180·6	−14·8	+ 8·5
3·457	73	467	40	258	181·8	−14·5	+ 23·1
4·435	55	326	35	207	182·9	−14·2	+ 37·2
5·600	45	243	37	196	183·1	−14·3	+ 52·7
6·517	26	152	30	177	183·6	−14·0	+ 65·3
7·413	13	103	28	202	182·5	−14·2	+ 76·1
Means ...	...	...	28	185	181·59	−14·37	...

Group 2907.

Mar. 30·489	0	7	0	8	148·1	+14·1	− 62·9
31·429	4	17	4	14	147·9	+13·3	− 50·7
Apr. 1·409	0	33	0	22	148·7	+13·3	− 37·0
2·437	7	20	4	12	150·1	+13·7	− 22·0
3·457	0	9	0	5	151·1	+14·1	− 7·6
4·435	0	9	0	5	149·9	+14·1	+ 4·2
Means ...	...	...	1	11	149·30	+13·77	...

Group 2908.

Mar. 30·489	0	12	0	43	130·3	+ 9·8	− 80·7
31·429	10	68	14	101	130·1	+ 9·9	− 68·5
Apr. 1·409	19	100	18	93	130·3	+ 9·7	− 55·4
2·437	16	134	11	93	130·9	+10·0	− 41·2
3·457	21	116	13	70	130·9	+ 9·2	− 27·8
4·435	17	104	9	57	131·1	+10·2	− 14·6
5·600	11	42	5	22	131·2	+10·2	+ 0·8
6·517	0	27	0	52	133·0	+10·0	+ 14·7
Means ...	...	...	9	66	130·98	+ 9·88	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS OF SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2909.							
1893. d					°	°	°
Apr. 2·437	0	12	0	8	131·1	−15·3	− 41·0
Means ...	...	...	0	8	131·10	−15·30	...
Group 2910.							
Apr. 3·457	0	16	0	11	192·7	−29·4	+ 34·0
Means ...	...	...	0	11	192·70	−29·40	...
Group 2911.							
Apr. 3·457	2	7	1	4	161·4	+23·3	+ 2·7
Means ...	...	...	1	4	161·40	+23·30	...
Group 2912.							
Apr. 3·457	0	38	0	22	145·1	+15·4	− 13·6
Means ...	...	...	0	22	145·10	+15·40	...
Group 2913.							
Apr. 3·457	0	9	0	21	79·8	−21·0	− 78·9
4·435	5	20	6	23	81·3	−20·3	− 64·4
5·600	13	83	9	63	81·5	−20·5	− 48·9
6·517	13	138	8	89	80·6	−20·6	− 37·7
7·413	25	171	14	98	81·1	−20·3	− 25·3
8·528	7	98	4	52	82·1	−20·4	− 9·6
9·442	10	43	5	23	82·9	−20·1	+ 3·2
Group 2913—*continued.*							
1893. d					°	°	°
Apr. 10·433	2	52	1	28	76·5	−23·8	+ 9·9
11·280	4	31	3	19	86·8	−19·6	+ 31·4
12·332	0	15	0	10	84·9	−19·2	+ 43·4
Means ...	...	...	5	43	81·75	−20·58	...
Group 2914.							
Apr. 5·600	8	73	26	229	48·8	− 7·9	− 81·6
6·517	23	304	36	543	43·8	− 9·1	− 74·5
7·413	71	485	79	538	42·9	− 8·8	− 63·5
8·528	113	683	85	514	43·1	− 8·7	− 48·6
9·442	99	753	61	470	43·0	− 8·5	− 36·7
10·433	123	798	67	440	43·3	− 8·7	− 23·3
11·280	176	757	90	389	43·6	− 9·0	− 11·8
12·332	188	804	95	404	44·1	− 8·5	+ 2·6
13·497	122	769	68	408	44·2	− 8·4	+ 18·1
14·423	92	646	54	379	45·0	− 7·6	+ 31·1
15·477	84	509	60	361	45·6	− 8·3	+ 45·6
16·284	98	359	91	327	46·4	− 8·4	+ 57·1
17·358	17	198	24	305	46·8	− 8·1	+ 71·6
18·428	0	43	0	147	43·3	− 8·4	+ 82·3
Means ...	...	...	60	390	44·56	− 8·46	...
Group 2915.							
Apr. 6·517	0	12	0	8	78·0	− 9·9	− 40·3
7·413	8	86	5	49	78·9	− 9·5	− 27·5
8·528	5	62	2	32	80·2	− 9·4	− 11·5
9·442	0	72	0	36	81·1	− 9·5	+ 1·4
10·433	4	57	2	30	82·0	− 9·5	+ 15·4
11·280	0	7	0	4	79·4	−10·6	+ 24·0
12·332	0	13	0	9	82·6	− 8·8	+ 41·1
Means ...	...	...	1	24	80·31	− 9·60	...
Group 2916.							
Apr. 7·413	0	7	0	4	124·3	+14·3	+ 17·9
Means ...	...	...	0	4	124·30	+14·30	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2917.							
1893. d					°	°	°
Apr. 7·413	0	23	0	53	27·8	−11·4	− 78·6
8·528	0	31	0	34	27·6	−10·8	− 64·1
9·442	0	60	0	46	27·3	−10·5	− 52·4
10·433	0	70	0	46	27·4	−11·0	− 39·2
11·280	0	91	0	50	29·5	−11·6	− 25·9
12·332	4	31	2	16	31·0	−11·1	− 10·5
Means ...	...	...	0	41	28·43	−11·07	...
Group 2918.							
Apr. 8·528	0	9	0	5	74·7	+ 2·5	− 17·0
9·442	27	164	14	83	75·8	+ 2·2	− 3·9
10·433	32	250	16	129	77·5	+ 2·4	+ 10·9
11·280	29	237	16	131	79·0	+ 2·2	+ 23·6
12·332	28	154	18	100	79·4	+ 2·7	+ 37·9
13·497	11	41	9	36	80·7	+ 2·4	+ 54·6
14·423	2	19	3	25	81·0	+ 2·3	+ 67·1
Means ...	...	...	11	73	78·30	+ 2·39	...
Group 2919.							
Apr. 8·528	1	9	1	6	54·9	−27·8	− 36·8
9·442	7	37	4	22	52·9	−28·7	− 26·8
10·433	45	303	24	169	53·5	−28·2	− 13·1
11·280	89	505	48	274	54·1	−28·5	− 1·3
12·332	87	437	49	244	55·3	−28·1	+ 13·8
13·497	64	391	39	242	55·8	−27·5	+ 29·7
14·423	21	207	16	150	56·6	−27·9	+ 42·7
15·477	19	115	20	114	58·6	−28·0	+ 58·6
16·284	23	108	31	148	57·8	−28·6	+ 68·5
Means ...	...	...	26	152	55·50	−28·14	...
Group 2920.							
Apr. 12·332	2	30	1	16	33·1	−27·5	− 8·4
13·497	5	21	3	12	33·9	−27·6	+ 7·8
14·423	0	12	0	7	33·8	−27·9	+ 19·9
Means ...	...	...	1	12	33·60	−27·67	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2921.							
1893. d					°	°	°
Apr. 12·332	1	47	1	25	28·9	−17·7	− 12·6
13·497	15	65	8	33	29·2	−17·0	+ 3·1
14·423	0	19	0	10	31·3	−16·9	+ 17·4
15·477	0	10	0	6	34·8	−16·3	+ 34·8
Means ...	...	...	2	19	31·05	−16·98	...
Group 2922.							
Apr. 12·332	0	83	0	68	353·4	+16·3	− 48·1
13·497	0	66	0	42	354·5	+15·7	− 31·6
14·423	7	21	4	12	356·7	+16·3	− 17·2
15·477	0	14	0	8	356·6	+16·3	− 3·4
Means ...	...	...	1	33	355·30	+16·15	...
Group 2923.							
Apr. 12·332	30	336	45	518	329·5	−15·7	− 72·0
13·497	87	561	74	482	331·7	−15·6	− 54·4
14·423	82	668	55	455	331·6	−15·7	− 42·3
15·477	129	670	73	384	331·7	−15·1	− 28·3
16·284	173	700	91	371	331·5	−14·6	− 17·8
17·358	165	680	83	343	331·7	−14·1	− 3·5
18·428	126	602	65	312	331·8	−14·4	+ 10·8
19·470	120	569	67	318	331·7	−14·1	+ 24·4
20·477	88	471	56	301	332·0	−14·1	+ 38·0
21·425	63	367	49	286	331·8	−14·0	+ 50·3
22·427	32	234	36	260	332·1	−14·2	+ 63·8
23·459	12	132	27	292	332·4	−14·3	+ 77·8
Means ...	...	...	60	360	331·63	−14·66	...
Group 2924.							
Apr. 13·497	13	57	18	78	316·7	−16·0	− 69·4
14·423	14	71	13	65	316·9	−15·4	− 57·0
15·477	17	73	11	50	317·0	−15·3	− 43·0
16·284	10	47	6	28	316·6	−14·7	− 32·7
Means ...	...	...	12	55	316·80	−15·35	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2925.							
1893. d					°	°	°
Apr. 13·497	6	57	11	117	312·2	+14·2	— 73·9
14·423	13	239	14	270	312·8	+14·0	— 61·1
15·477	74	469	58	369	313·0	+14·1	— 47·0
16·284	85	618	57	412	312·9	+14·9	— 36·4
17·358	54	551	31	317	312·8	+15·5	— 22·4
18·428	57	452	30	244	313·9	+15·1	— 7·1
19·470	80	472	42	255	314·4	+15·4	+ 7·1
20·477	57	318	33	181	314·6	+15·3	+ 20·6
21·425	57	355	37	226	314·1	+14·7	+ 32·6
22·427	43	236	33	183	314·7	+15·0	+ 46·4
23·459	17	150	18	164	314·8	+15·2	+ 60·2
24·461	10	130	20	255	314·5	+15·1	+ 73·2
Means ...	...	...	32	249	313·73	+14·88	...
Group 2926.							
Apr. 14·423	1	23	1	11	8·1	−13·2	— 5·8
Means ...	...	...	1	11	8·10	−13·20	...
Group 2927.							
Apr. 15·477	0	19	0	11	29·1	−11·6	+ 29·1
Means ...	...	...	0	11	29·10	−11·60	...
Group 2928.							
Apr. 15·477	0	54	0	27	354·8	−17·8	— 5·2
16·284	7	50	3	26	356·9	−18·7	+ 7·6
17·358	0	41	0	23	358·8	−18·0	+ 23·6
18·428	23	139	15	93	1·0	−17·5	+ 40·0
19·470	57	309	48	260	0·5	−17·4	+ 53·2
20·477	33	259	39	311	359·8	−17·2	+ 65·8
21·425	10	86	21	177	358·4	−17·5	+ 76·9
Means ...	...	...	18	131	358·60	−17·73	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2929.							
1893. d					°	°	°
Apr. 17·358	0	18	0	20	272·0	+ 7·5	— 63·2
18·428	0	14	0	10	275·9	+ 6·8	— 45·1
19·470	0	14	0	9	273·0	+ 6·8	— 34·3
Means ...	...	...	0	13	273·63	+ 7·03	...
Group 2930.							
Apr. 17·358	26	119	40	186	268·6	+25·0	— 66·6
18·428	12	163	11	155	269·2	+23·8	— 51·8
19·470	36	213	26	158	269·1	+24·0	— 38·2
20·477	25	199	16	125	268·9	+23·8	— 25·1
21·425	13	107	8	63	268·6	+24·0	— 12·9
22·427	12	108	7	61	268·2	+24·2	— 0·1
23·459	10	50	6	30	268·1	+24·8	+ 13·5
24·461	0	78	0	51	268·7	+26·4	+ 27·4
25·314	15	133	12	103	269·7	+27·8	+ 39·7
Means ...	...	...	14	104	268·79	+24·87	...
Group 2931.							
Apr. 18·428	0	12	0	14	260·2	+20·2	— 60·8
19·470	17	120	15	105	257·3	+20·4	— 50·0
20·477	14	144	9	97	259·7	+20·3	— 34·3
21·425	22	166	12	101	258·5	+20·7	— 23·0
22·427	135	601	76	340	258·7	+21·9	— 9·6
23·459	248	1411	141	797	258·8	+21·8	+ 4·2
24·461	239	1234	142	733	259·4	+21·7	+ 18·1
25·314	206	1256	132	805	260·2	+21·1	+ 30·2
26·452	92	692	72	546	259·0	+21·4	+ 44·0
27·472	45	395	48	436	260·4	+20·9	+ 58·8
28·487	7	163	12	272	256·7	+20·5	+ 68·5
Means ...	...	...	60	386	258·99	+20·99	...
Group 2932.							
Apr. 18·428	0	4	0	5	253·7	−18·8	−67·3
Means ...	...	...	0	5	253·70	−18·80	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2933.							
1893. d					°	°	°
Apr. 19·470	13	45	21	74	237·3	+15·7	− 70·0
20·477	15	81	15	79	237·7	+15·7	− 56·3
21·425	17	92	12	69	237·8	+15·7	− 43·7
22·427	18	73	11	45	237·5	+15·8	− 30·8
23·459	16	65	9	37	237·4	+16·1	− 17·2
24·461	5	32	3	17	237·9	+16·1	− 3·4
25·314	4	19	2	10	238·5	+16·3	+ 8·5
Means ...	...	...	10	47	237·73	+15·91	...
Group 2934.							
Apr. 20·477	18	106	10	56	273·9	− 8·9	− 20·1
21·425	8	109	4	55	275·1	− 8·2	− 6·4
22·427	5	98	2	50	275·8	− 8·3	+ 7·5
23·459	61	270	32	145	275·4	− 8·0	+ 20·8
24·461	29	253	17	154	275·6	− 8·4	+ 34·3
25·314	36	221	25	155	276·1	− 8·9	+ 46·1
26·452	4	91	3	101	278·4	− 8·9	+ 63·4
Means ...	...	...	13	102	275·76	− 8·51	...
Group 2935.							
Apr. 21·425	0	15	0	24	209·7	−18·9	− 71·8
22·427	0	18	0	17	210·2	−18·7	− 58·1
23·459	5	103	4	83	203·9	−19·9	− 50·7
24·461	1	40	1	26	203·4	−19·9	− 37·9
25·314	4	15	2	8	205·6	−20·2	− 24·4
Means ...	...	...	1	32	206·56	−19·52	...
Group 2936.							
Apr. 22·427	0	13	0	12	325·2	+12·4	+ 56·9
Means ...	...	...	0	12	325·20	+12·40	...
Group 2937.							
1893. d					°	°	°
Apr. 22·427	0	16	0	8	264·9	+ 1·0	− 3·4
Means ...	...	...	0	8	264·90	+ 1·00	...
Group 2938.							
Apr. 22·427	0	18	0	27	199·0	+ 9·3	− 69·3
23·459	20	183	18	168	199·1	+ 8·9	− 55·5
24·461	55	476	38	321	201·1	+ 8·4	− 40·2
25·314	196	802	113	468	201·8	+ 8·6	− 28·2
26·452	82	709	44	375	203·8	+ 8·5	− 11·2
27·472	127	671	65	345	205·0	+ 8·6	+ 3·4
28·487	86	625	47	339	206·4	+ 8·4	+ 18·2
29·444	67	427	41	259	207·1	+ 8·5	+ 31·6
30·164	66	319	47	223	209·1	+ 8·4	+ 43·1
May 1·301	41	196	41	192	209·3	+ 8·6	+ 58·4
2·211	14	136	22	206	208·9	+ 8·3	+ 70·0
Means ...	...	...	43	266	204·60	+ 8·59	...
Group 2939.							
Apr. 22·427	13	84	28	177	191·1	−14·3	− 77·2
23·459	23	150	26	170	190·6	−14·4	− 64·0
24·461	29	191	23	153	190·5	−14·5	− 50·8
25·314	55	255	35	168	189·8	−14·4	− 40·2
26·452	35	253	19	142	190·3	−14·2	− 24·7
27·472	40	310	21	159	190·3	−14·1	− 11·3
28·487	44	243	23	125	190·0	−14·2	+ 1·8
29·444	26	142	14	75	190·1	−14·2	+ 14·6
30·164	15	83	8	46	189·8	−14·6	+ 23·8
May 1·301	15	39	9	25	189·4	−14·4	+ 38·5
2·211	9	33	7	27	190·0	−14·7	+ 51·1
3·269	0	11	0	13	187·2	−14·5	+ 62·3
Means ...	...	...	18	107	189·93	−14·38	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2940.							
1893. d					°	°	°
Apr. 24·461	5	150	3	113	197·9	+17·1	−43·4
25·314	26	146	17	92	199·1	+17·2	−30·9
26·452	0	53	0	31	200·9	+16·9	−14·1
27·472	0	37	0	19	201·4	+16·3	− 0·2
28·487	23	246	13	136	197·8	+17·6	+ 9·6
29·444	27	139	16	83	198·8	+16·5	+23·3
30·164	13	91	8	58	198·7	+16·4	+32·7
May 1·301	0	25	0	21	200·6	+16·2	+49·7
2·211	1	9	1	7	197·3	+16·5	+51·0
Means ...	...	...	6	62	199·17	+16·75	...
Group 2941.							
Apr. 24·461	6	49	25	198	161·1	+23·6	−80·2
25·314	19	110	34	194	160·1	+24·4	−69·9
26·452	49	263	49	279	158·4	+23·2	−56·6
27·472	43	350	34	279	157·2	+22·7	−44·4
28·487	42	428	28	286	157·0	+22·6	−31·2
29·444	40	295	24	174	158·1	+22·8	−17·4
30·164	36	310	20	176	158·1	+23·5	− 7·9
May 1·301	28	187	16	106	159·7	+23·6	+ 8·8
2·211	80	273	47	162	158·5	+22·1	+19·6
3·269	124	526	82	347	158·0	+21·6	+33·1
4·431	48	377	40	319	158·1	+21·5	+48·5
5·435	43	186	55	236	159·8	+21·2	+63·4
6·430	0	62	0	157	159·3	+22·0	+76·2
Means ...	...	...	35	224	158·72	+22·68	...
Group 2942.							
Apr. 25·314	5	32	3	23	186·4	+10·2	−43·6
Means ...	...	...	3	13	186·40	+10·20	...
Group 2943.							
Apr. 26·452	0	24	0	15	250·4	−18·1	+35·4
Means ...	...	...	0	15	250·40	−18·10	...
Group 2944.							
1893. d					°	°	°
Apr. 26·452	0	27	0	14	199·7	−11·3	−15·3
27·472	0	8	0	4	199·0	−10·9	− 2·6
Means ...	...	...	0	9	199·35	−11·10	...
Group 2945.							
Apr. 26·452	0	17	0	12	170·9	+16·2	−44·1
27·472	0	7	0	5	170·5	+16·9	−31·1
28·487	0	37	0	9	172·4	+14·7	−15·8
29·444	1	33	1	17	170·4	+16·0	− 5·1
30·164	9	58	5	31	170·7	+16·8	+ 4·7
May 1·301	3	28	2	16	169·7	+17·2	+18·8
Means ...	...	...	1	15	170·77	+16·30	...
Group 2946.							
Apr. 27·472	0	4	0	4	146·2	+ 2·8	−55·4
28·487	18	141	12	92	149·3	+ 3·2	−38·9
29·444	33	136	19	76	150·6	+ 3·9	−24·9
30·164	43	228	23	120	150·7	+ 4·1	−15·3
May 1·301	34	215	17	108	152·4	+ 3·6	+ 1·5
2·211	43	228	23	119	154·3	+ 3·0	+15·4
3·269	18	143	11	81	151·8	+ 3·6	+26·9
4·431	0	47	0	32	154·0	+ 3·1	+44·4
Means ...	...	...	13	79	151·16	+ 3·41	...
Group 2947.							
Apr. 27·472	2	50	2	60	136·8	−18·8	−64·8
28·487	12	93	10	78	136·4	−19·0	−51·8
29·444	19	92	12	60	138·1	−19·2	−37·4
30·164	13	112	8	66	136·6	−18·9	−29·4
May 1·301	21	84	11	44	136·3	−18·7	−14·6
2·211	22	79	10	41	135·2	−19·1	− 3·7
3·269	11	66	6	35	135·4	−18·7	+10·5
4·431	7	26	4	15	136·7	−18·7	+27·1
5·435	0	20	0	14	138·3	−19·1	+41·9
6·430	0	9	0	8	138·0	−18·8	+54·9
Means ...	...	...	6	42	136·78	−18·90	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Group 2948.

Date. Greenwich Civil Time.	Projected Area of Umbra.	Projected Area of Whole Spot.	Area for Group. Umbra.	Area for Group. Whole Spot.	Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
1893. d					°	°	°
Apr. 27·472	0	5	0	6	136·5	−11·9	− 65·1
28·487	0	14	0	12	134·2	−11·8	− 54·0
29·444	2	42	2	27	135·1	−11·6	− 40·4
30·164	84	283	48	168	134·2	−12·3	− 31·8
May 1·301	215	1378	113	724	134·9	−12·6	− 16·0
2·211	307	1439	156	734	137·4	−12·7	− 1·5
3·269	250	1118	130	580	137·9	−12·7	+ 13·0
4·431	163	1104	95	643	138·6	−12·2	+ 29·0
5·435	121	889	83	613	139·1	−12·2	+ 42·7
6·430	72	604	64	533	138·4	−12·4	+ 55·3
7·457	7	106	10	145	138·5	−12·5	+ 68·9
8·441	0	58	0	158	136·5	−12·4	+ 79·9
Means ...	...	...	58	362	136·78	−12·28	...

Group 2949.

Apr. 28·487	0	14	0	8	199·6	−19·8	+ 11·4
29·444	2	25	1	15	199·8	−19·1	+ 24·3
30·164	0	41	0	25	200·5	−18·6	+ 34·5
May 1·301	3	10	3	8	204·2	−19·2	+ 53·3
2·211	0	4	0	5	204·1	−17·8	+ 65·2
Means ...	...	...	1	12	201·64	−18·90	...

Group 2949*.

Apr. 29·444	0	19	0	28	245·9	− 9·7	+ 70·4
Means ...	...	...	0	28	245·90	− 9·70	...

Group 2950.

Apr. 29·444	13	51	8	30	189·1	+24·6	+ 13·6
30·164	3	30	2	19	190·5	+24·9	+ 24·5
May 1·301	2	22	2	17	191·1	+25·3	+ 40·2
Means ...	...	...	4	22	190·23	+24·93	...

Group 2951.

Date. Greenwich Civil Time.	Projected Area of Umbra.	Projected Area of Whole Spot.	Area for Group. Umbra.	Area for Group. Whole Spot.	Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
1893. d					°	°	°
Apr. 29·444	8	59	23	172	94·5	−19·7	− 81·0
30·164	24	138	38	221	93·7	−19·3	− 72·3
May 1·301	47	258	44	243	93·2	−19·5	− 57·7
2·211	64	403	47	295	93·8	−20·0	− 45·1
3·269	84	429	51	260	93·1	−19·7	− 31·8
4·431	62	402	34	218	93·8	−19·8	− 15·8
5·435	62	401	33	210	93·8	−19·8	− 2·6
6·430	47	360	25	190	93·6	−19·3	+ 10·5
7·457	29	307	16	175	93·8	−19·0	+ 24·2
8·441	45	294	30	191	93·7	−19·1	+ 37·1
9·426	37	247	30	201	94·2	−19·2	+ 50·6
10·435	19	124	22	145	94·2	−19·2	+ 64·1
11·425	6	42	13	89	93·7	−18·9	+ 76·6
Means ...	...	...	31	201	93·78	−19·42	...

Group 2952.

May 1·301	0	7	0	9	84·4	−24·7	− 66·5
2·211	4	9	4	8	85·7	−25·2	− 53·2
3·269	17	52	14	39	77·7	−26·2	− 47·2
4·431	8	60	5	36	82·5	−25·3	− 27·1
5·435	0	72	0	40	85·0	−24·4	− 11·4
6·430	0	36	0	19	84·6	−24·2	+ 1·5
Means ...	...	...	4	25	83·32	−25·00	...

Group 2953.

May 1·301	22	113	36	177	79·1	−20·9	− 71·8
2·211	16	187	16	189	79·9	−21·6	− 59·0
3·269	27	220	20	166	78·1	−21·3	− 46·8
4·431	32	184	20	112	79·0	−21·4	− 30·6
5·435	19	187	11	105	77·8	−21·7	− 18·6
6·430	30	159	16	84	77·1	−21·7	− 6·0
7·457	0	82	0	44	76·1	−21·7	+ 6·5
8·441	10	59	5	33	76·0	−22·0	+ 19·4
9·426	8	28	5	18	75·7	−22·4	+ 32·1
10·435	5	18	3	14	75·9	−22·5	+ 45·8
Means ...	...	...	13	94	77·47	−21·72	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2954.							
1893. d					°	°	°
May 2·211	5	11	4	8	182·4	−26·0	+ 43·5
3·269	0	12	0	12	182·7	−25·3	+ 57·8
Means ...	...	...	2	10	182·55	−25·65	...
Group 2955.							
May 2·211	2	12	1	8	111·6	+18·9	− 27·3
Means ...	...	...	1	8	111·60	+18·90	...
Group 2956.							
May 2·211	2	24	8	86	56·0	−26·6	− 82·9
3·269	24	180	45	358	49·4	−27·2	− 75·5
4·431	59	431	58	441	50·9	−27·9	− 58·7
5·435	54	476	43	369	50·9	−27·8	− 45·5
6·430	71	491	45	311	52·1	−26·9	− 31·0
7·457	70	829	39	469	54·0	−26·1	− 15·6
8·441	73	673	40	367	53·4	−26·3	− 3·2
9·426	96	559	53	311	52·7	−26·7	+ 9·1
10·435	74	522	44	310	52·6	−26·7	+ 22·5
11·425	26	299	17	202	52·5	−27·1	+ 35·4
12·446	46	275	40	240	55·0	−26·6	+ 51·4
13·423	34	187	40	217	52·9	−27·3	+ 62·3
14·503	8	69	13	147	52·1	−27·5	+ 75·7
15·432	0	30	0	115	46·8	−28·2	+ 82·7
Means ...	...	...	35	282	52·24	−27·06	...
Group 2957.							
May 3·269	4	17	2	9	139·3	+12·6	+ 14·4
4·431	5	42	3	26	139·2	+12·6	+ 29·6
Means ...	...	...	3	18	139·25	+12·60	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2958.							
1893. d					°	°	°
May 3·269	15	58	26	104	50·5	−14·6	− 74·4
4·431	22	130	20	125	49·8	−15·4	− 59·8
5·435	19	174	14	127	50·7	−14·9	− 45·7
6·430	23	182	14	110	50·3	−14·5	− 32·8
7·457	19	107	10	57	51·5	−14·4	− 18·1
8·441	13	103	7	54	50·9	−14·4	− 5·7
9·426	22	47	11	24	51·6	−14·6	+ 8·0
10·435	9	38	5	21	51·3	−14·4	+ 21·2
11·425	0	43	0	27	51·0	−14·4	+ 33·9
12·446	0	13	0	10	51·1	−14·3	+ 47·5
13·423	0	10	0	10	51·0	−14·4	+ 60·4
Means ...	...	...	10	61	50·88	−14·57	...
Group 2959.							
May 3·269	4	13	15	41	44·1	− 7·4	− 80·8
4·431	13	44	14	50	45·8	− 7·9	− 63·8
5·435	7	34	6	27	45·7	− 7·8	− 50·7
6·430	11	55	7	35	45·9	− 7·3	− 37·2
7·457	0	22	0	12	46·2	− 7·3	− 23·1
8·441	6	25	3	13	46·3	− 7·5	− 10·1
9·426	0	22	0	11	46·5	− 7·5	+ 2·9
10·435	0	12	0	6	46·4	− 7·6	+ 16·3
Means ...	...	...	6	24	45·86	− 7·54	...
Group 2960.							
May 5·435	6	95	3	54	113·6	+17·6	+ 17·2
6·430	18	198	12	125	113·5	+18·1	+ 30·4
7·457	0	89	0	67	113·4	+17·8	+ 43·8
8·441	0	152	0	160	115·4	+16·7	+ 58·8
9·426	4	67	6	140	118·0	+16·4	+ 74·4
Means ...	...	...	4	109	114·78	+17·32	...
Group 2961.							
May 5·435	0	13	0	17	28·9	− 8·9	−67·5
6·430	0	4	0	3	27·9	− 7·9	−55·2
Means ...	...	...	0	10	28·40	− 8·40	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2962.							
1893. d					°	°	°
May 7·457	2	42	4	78	354·8	−13·6	− 74·8
8·441	12	107	13	113	354·9	−13·6	− 61·7
9·426	20	160	15	120	356·0	−13·4	− 47·6
10·435	38	215	24	132	356·6	−13·4	− 33·5
11·425	32	216	17	116	357·4	−13·2	− 19·7
12·446	38	245	20	125	358·0	−13·6	− 5·6
13·423	40	238	20	123	357·8	−13·9	+ 7·2
14·503	32	200	18	110	357·9	−13·8	+ 21·5
15·432	22	142	13	87	357·7	−13·4	+ 33·6
16·455	17	98	13	73	357·8	−13·1	+ 47·2
17·179	18	98	17	90	357·8	−13·0	+ 56·8
18·631	7	71	15	141	357·4	−12·0	+ 75·6
Means ...	...	...	16	109	357·01	−13·33	...
Group 2963.							
May 9·426	0	12	0	11	346·8	−14·6	− 56·8
10·435	0	0	0	0	...	...	...
11·425	0	0	0	0	...	...	...
12·446	0	12	0	6	347·0	−13·9	−16·6
Means ...	...	...	0	4	346·90	−14·25	...
Group 2964.							
May 9·426	12	58	20	97	330·6	−13·4	− 73·0
10·435	18	101	18	100	330·7	−13·6	− 59·4
11·425	32	124	24	91	330·7	−13·1	− 46·4
12·446	25	203	15	123	331·0	−13·0	− 32·6
13·423	30	215	16	116	330·9	−12·4	− 19·7
14·503	25	180	13	92	331·2	−12·5	− 5·2
15·432	22	129	12	65	331·1	−12·6	+ 7·0
16·455	13	60	7	33	331·4	−12·8	+ 20·8
17·179	14	38	8	23	331·4	−13·1	+ 30·4
18·631	2	15	2	11	331·1	−12·7	+ 49·3
Means ...	...	...	14	75	331·01	−12·92	...
Group 2965.							
May 11·425	0	10	0	7	65·1	+11·9	+ 48·0
12·446	0	13	0	14	65·1	+12·1	+ 61·5
13·423	0	26	0	68	68·7	+11·3	+ 78·1
Means ...	...	...	0	30	66·30	+11·77	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2966.							
1892. d					°	°	°
May 12·446	7	31	4	19	28·9	+20·5	+ 25·3
13·423	4	35	3	24	29·3	+19·8	+ 38·7
14·503	0	19	0	18	32·6	+20·3	+ 56·2
15·432	8	43	11	65	31·9	+20·8	+ 67·8
Means ...	...	...	5	32	30·68	+20·35	...
Group 2967.							
May 12·446	4	18	3	15	311·6	−12·0	− 52·0
13·423	7	84	5	58	307·8	−12·4	− 42·8
14·503	0	34	0	18	308·3	−12·8	− 28·1
15·432	14	106	8	56	308·5	−12·5	− 15·6
16·455	38	290	19	149	309·7	−13·2	− 0·9
17·179	60	392	29	201	309·8	−13·9	+ 8·8
18·631	62	644	36	377	311·2	−13·2	+ 29·4
19·467	97	826	66	555	311·5	−13·1	+ 40·8
20·463	82	659	75	572	311·8	−12·9	+ 54·2
21·166	58	405	73	493	313·3	−13·0	+ 65·1
22·413	2	114	5	58	316·1	−13·0	+ 84·4
Means ...	...	...	29	232	310·87	−12·91	...
Group 2968.							
May 12·446	0	5	0	9	288·6	−20·2	− 75·0
13·423	0	15	0	16	288·9	−20·9	− 61·7
14·503	2	12	2	9	289·1	−21·5	− 47·3
Means ...	...	...	1	11	288·87	−20·87	...
Group 2969.							
May 13·423	0	15	0	46	271·7	+21·4	− 78·9
14·503	11	41	15	57	270·2	+20·9	− 66·2
15·432	10	42	10	39	270·6	+21·3	− 53·5
16·455	7	29	5	21	270·1	+21·2	− 40·5
17·179	9	38	6	25	269·2	+21·5	− 31·8
18·631	8	34	5	19	268·8	+21·4	− 13·0
19·467	4	23	2	13	268·5	+21·0	− 2·2
20·463	5	14	3	8	268·1	+20·8	+ 10·5
21·166	0	9	0	5	268·0	+21·2	+ 19·8
Means ...	...	...	5	26	269·47	+21·19	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued*.

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2970.							
1893. d					°	°	°
May 14·503	5	21	6	22	276·2	−19·6	− 60·2
15·432	5	20	4	16	276·5	−19·3	− 47·6
16·455	0	8	0	5	276·2	−19·7	− 34·4
Means ...	...	...	3	14	276·30	−19·53	...
Group 2971.							
May 14·503	0	10	0	22	259·0	− 9·5	− 77·4
15·432	0	19	0	22	259·5	− 9·3	− 64·6
16·455	10	23	8	18	259·6	− 9·5	− 51·0
17·179	9	21	6	14	259·4	− 9·4	− 41·6
Means ...	...	...	4	19	259·38	− 9·43	...
Group 2972.							
May 15·432	0	10	0	5	325·6	−29·2	+ 1·5
16·455	14	64	9	37	325·1	−29·6	+ 14·5
17·179	17	75	10	47	325·6	−30·1	+ 24·6
18·631	6	28	5	23	329·8	−28·9	+ 48·0
19·467	0	65	0	66	327·2	−29·1	+ 56·5
20·463	0	1	0	2	322·0	−29·4	+ 64·4
21·166	0	29	0	77	326·5	−28·9	+ 78·3
Means ...	...	...	3	37	325·97	−29·31	...
Group 2973.							
May 15·432	0	12	0	64	240·4	+15·9	− 83·7
16·455	13	29	5	42	242·4	+16·0	− 68·2
17·179	8	34	8	34	243·5	+17·0	− 57·5
Means ...	...	...	4	47	252·10	+16·30	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2974.							
1893. d					°	°	°
May 16·455	4	21	2	12	325·5	+10·3	+ 14·9
17·179	0	9	0	5	327·0	+10·3	+ 26·0
18·631	0	6	0	4	325·7	+11·2	+ 43·9
Means ...	...	...	1	7	326·07	+10·60	...
Group 2975.							
May 18·631	5	34	3	18	277·3	+17·6	− 4·5
19·467	5	14	3	7	281·0	+17·2	+ 10·3
20·463	0	12	0	7	280·9	+16·8	+ 23·3
Means ...	...	...	2	11	279·73	+17·20	...
Group 2976.							
May 18·631	3	8	3	9	220·7	+ 9·6	− 61·1
19·467	0	4	0	3	220·8	+ 9·6	− 49·9
Means ...	...	...	2	6	220·75	+ 9·60	...
Group 2977.							
May 20·463	12	87	19	149	185·4	+12·6	− 72·2
21·166	16	153	17	188	183·5	+13·2	− 64·7
22·413	49	246	37	182	186·4	+12·6	− 45·3
23·382	52	307	32	190	186·4	+12·4	− 32·5
24·399	81	464	44	257	185·2	+12·6	− 20·2
25·383	61	373	32	193	186·7	+12·1	− 5·7
26·682	33	223	17	117	188·3	+12·0	+ 13·1
27·427	31	275	17	154	187·4	+12·6	+ 21·9
28·485	16	99	10	64	188·1	+12·5	+ 36·7
29·392	17	123	14	97	188·3	+12·4	+ 48·9
30·239	9	52	9	55	188·5	+13·1	+ 60·3
31·426	0	13	0	27	188·0	+12·4	+ 75·5
Means ...	...	...	21	139	186·85	+12·54	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2978.							
1893. d					°	°	°
May 21·166	0	10	0	5	263·4	−18·3	+ 15·2
22·413	0	18	0	11	263·7	−18·4	+ 32·0
23·382	2	54	2	42	267·5	−17·3	+ 48·6
24·399	30	126	33	131	265·8	−16·3	+ 60·4
25·383	25	205	50	417	267·9	−16·6	+ 75·5
Means ...	...	...	17	121	265·66	−17·38	...
Group 2979.							
May 22·413	0	8	0	4	231·5	−16·1	− 0·2
Means ...	...	...	0	4	231·50	−16·10	...
Group 2980.							
May 22·413	0	19	0	12	204·9	+13·8	−26·8
23·382	6	107	3	57	206·3	+13·9	−12·6
24·399	24	118	13	62	209·6	+14·9	+ 4·2
25·383	30	205	17	112	210·7	+14·9	+18·3
26·682	42	280	26	178	209·7	+14·7	+34·5
27·427	65	300	46	216	208·7	+14·5	+43·2
28·485	24	171	24	163	208·3	+14·7	+56·9
29·392	10	126	13	196	209·7	+14·6	+70·3
30·239	9	94	27	307	209·0	+15·9	+80·8
Means ...	...	...	19	145	208·54	+14·66	...
Group 2981.							
May 22·413	7	61	9	72	166·9	−13·8	− 64·8
23·382	5	116	4	100	165·3	−13·4	− 53·6
24·399	1	69	1	45	165·3	−13·3	− 40·1
25·383	24	130	13	75	165·1	−13·7	− 27·3
26·682	37	286	18	151	164·7	−14·2	− 10·5
27·427	24	138	12	71	165·8	−13·5	+ 0·3
28·485	6	53	3	28	166·9	−13·2	+ 15·5
29·392	0	22	0	12	166·5	−12·9	+ 27·1
Means ...	...	...	8	69	165·81	−13·50	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2982.							
1893. d					°	°	°
May 22·413	0	24	0	56	155·8	+23·2	− 75·9
23·382	10	127	12	151	157·3	+24·2	− 61·6
24·399	39	260	32	217	157·4	+24·0	− 48·0
25·383	109	833	73	564	157·1	+23·6	− 35·3
26·682	219	1197	128	702	156·9	+23·6	− 18·3
27·427	157	1123	88	629	156·8	+23·5	− 8·7
28·485	123	818	69	454	156·8	+23·7	+ 5·4
29·392	137	736	80	429	157·1	+23·5	+ 17·7
30·239	90	632	58	399	155·9	+23·9	+ 27·7
31·426	42	321	31	242	155·7	+23·6	+ 43·2
June 1·422	8	69	8	66	153·0	+23·7	+ 53·7
Means ...	...	...	53	355	156·35	+23·68	...
Group 2983.							
May 23·382	0	17	0	16	160·9	−19·2	− 58·0
24·399	0	4	0	3	159·8	−19·2	− 45·6
25·383	0	4	0	2	159·9	−18·8	− 32·5
Means ...	...	...	0	7	160·20	−19·07	...
Group 2984.							
May 23·382	0	5	0	10	143·4	−10·1	− 75·5
24·399	0	9	0	9	144·0	−10·4	− 61·4
25·383	0	5	0	4	144·7	−10·6	− 47·7
Means ...	...	...	0	8	144·03	−10·37	...
Group 2985.							
May 24·399	0	9	0	5	209·7	−17·0	+ 4·3
25·383	2	27	1	15	212·1	−16·7	+19·7
Means ...	...	...	1	10	210·90	−16·85	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2986.							
1893. d					°	°	°
May 25·383	17	82	10	44	204·1	−19·1	+ 11·7
26·682	46	255	28	155	204·4	−18·8	+ 29·2
27·427	57	348	39	238	205·0	−18·8	+ 39·5
28·485	29	223	26	197	204·9	−18·5	+ 53·5
29·392	20	227	25	283	204·6	−18·6	+ 65·2
30·239	10	89	21	185	203·7	−18·1	+ 75·5
Means ...	...	...	25	184	203·45	−18·65	...
Group 2987.							
May 25·383	0	9	0	6	149·0	− 6·7	− 43·4
26·682	0	15	0	8	150·7	− 6·9	− 24·5
27·427	11	73	6	38	149·8	− 6·4	− 15·7
28·485	10	56	5	28	149·3	− 5·4	− 2·1
29·392	0	9	0	5	149·3	− 6·0	+ 9·9
Means ...	...	...	2	17	149·62	− 6·28	...
Group 2988.							
May 25·383	10	37	12	44	128·0	−16·5	− 64·4
26·682	2	33	2	26	127·2	−16·3	− 48·0
27·427	18	104	12	69	126·7	−16·0	− 38·8
28·485	23	73	13	41	126·7	−16·0	− 24·7
29·392	24	67	13	36	127·3	−15·5	− 12·1
30·239	3	30	1	15	127·3	−16·2	− 0·9
Means ...	...	...	9	39	127·20	−16·08	...
Group 2989.							
May 25·383	0	8	0	16	116·2	− 8·8	− 76·2
Means ...	...	...	0	16	116·20	− 8·80	...
Group 2990.							
1893. d					°	°	°
May 26·682	4	21	2	12	163·0	−18·8	− 12·2
27·427	0	10	0	5	164·7	−17·6	− 0·8
Means ...	...	...	1	9	163·85	−18·20	...
Group 2991.							
May 26·682	2	13	3	19	104·8	−11·3	−70·4
27·427	0	21	0	21	105·5	−11·2	−60·0
28·485	0	10	0	7	105·0	−11·3	−46·2
29·392	0	6	0	4	105·0	−11·3	−34·4
Means ...	...	...	1	13	105·08	−11·28	...
Group 2992.							
May 26·682	9	76	36	292	92·8	−20·2	− 82·4
27·427	28	247	49	448	92·1	−19·7	− 73·4
28·485	65	421	68	438	92·0	−20·2	− 59·4
29·392	84	530	66	419	91·4	−19·9	− 48·0
30·239	90	603	60	401	90·9	−20·4	− 37·3
31·426	152	857	88	489	91·1	−20·3	− 21·4
June 1·422	142	967	76	525	91·4	−20·9	− 7·9
2·401	155	1094	84	590	91·0	−21·2	+ 4·6
3·408	162	1080	91	611	90·9	−21·7	+ 17·9
4·471	132	833	83	492	90·9	−21·5	+ 31·9
5·520	63	584	48	447	90·5	−21·4	+ 45·5
6·446	52	412	51	409	89·9	−21·3	+ 57·1
7·469	19	153	30	242	89·6	−21·5	+ 70·3
8·407	0	19	0	85	89·6	−20·7	+ 82·8
Means ...	...	...	59	421	91·01	−20·78	...
Group 2993.							
May 28·485	34	235	54	414	78·8	−20·7	− 72·6
29·392	57	486	64	562	76·8	−21·1	− 62·6
30·239	116	875	100	747	76·9	−21·3	− 51·3
31·426	165	1010	108	668	76·6	−21·1	− 35·9

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2993—*continued.*							
1893. d					°	°	°
June 1·422	214	1351	125	783	77·1	−21·1	− 22·2
2·401	192	1583	106	868	76·0	−21·2	− 10·4
3·408	212	1548	113	833	76·4	−21·7	+ 3·4
4·471	154	1209	86	685	77·0	−21·5	+ 18·0
5·520	121	1042	77	665	77·1	−21·6	+ 32·1
6·446	72	735	55	562	77·9	−21·1	+ 45·1
7·469	78	520	81	533	77·7	−21·1	+ 58·4
8·407	44	219	80	388	79·2	−20·3	+ 72·4
9·429	0	121	0	526	76·2	−19·3	+ 82·9
Means ...	...	...	81	633	77·21	−21·01	...
Group 2994.							
May 28·485	9	48	18	93	76·8	+10·2	− 74·6
29·392	18	90	20	101	76·6	+10·2	− 62·8
30·239	20	132	16	108	76·6	+10·1	− 51·6
31·426	22	145	13	91	77·0	+10·4	− 35·5
June 1·422	48	172	27	94	77·1	+10·3	− 22·2
2·401	23	117	12	61	77·1	+10·8	− 9·3
3·408	19	77	10	39	77·0	+10·8	+ 4·0
4·471	8	33	4	18	77·2	+10·7	+ 18·2
5·520	5	25	3	15	77·0	+10·7	+ 32·0
6·446	4	13	3	9	77·2	+11·0	+ 44·4
Means ...	...	...	13	63	76·96	+10·52	...
Group 2995.							
May 31·426	7	35	6	26	67·8	−17·3	− 44·7
June 1·422	8	57	5	36	68·3	−17·9	− 31·0
2·401	45	296	24	163	69·0	−17·8	− 17·4
3·408	116	704	59	368	69·1	−18·0	− 3·9
4·471	92	642	49	341	69·7	−17·9	+ 10·7
5·520	163	1296	96	753	69·6	−17·9	+ 24·6
6·446	98	936	64	617	69·3	−18·1	+ 36·5
7·469	110	945	89	771	68·7	−18·2	+ 49·4
8·407	75	642	91	719	68·4	−18·1	+ 61·6
9·429	9	327	17	600	66·5	−18·8	+ 73·2
Means ...	...	...	50	439	68·64	−18·00	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 2996.							
1893. d					°	°	°
May 31·426	17	148	26	245	41·1	+17·9	− 71·4
June 1·422	38	271	38	271	41·3	+17·9	− 58·0
2·401	44	302	34	228	40·9	+18·1	− 45·5
3·408	62	341	39	213	40·7	+17·9	− 32·3
4·471	50	308	27	169	41·6	+17·9	− 17·4
5·520	48	293	25	152	42·2	+17·6	− 2·8
6·446	46	230	25	122	42·2	+17·8	+ 9·4
7·469	46	258	26	146	42·5	+17·7	+ 23·2
8·407	44	220	28	142	42·5	+17·8	+ 35·7
9·429	19	155	15	124	42·5	+17·4	+ 49·2
10·440	20	139	22	154	42·3	+17·4	+ 62·3
11·627	10	51	23	123	41·8	+17·5	+ 77·6
Means ...	...	...	27	174	41·80	+17·74	...
Group 2997.							
June 2·401	0	18	0	26	19·0	−27·1	− 67·4
3·408	6	44	6	43	17·8	−26·9	− 55·2
4·471	6	46	5	35	17·4	−27·2	− 41·6
5·520	5	24	3	15	17·4	−26·5	− 27·6
6·446	0	8	0	5	15·6	−27·5	− 17·2
Means ...	...	...	3	25	17·44	−27·04	...
Group 2998.							
June 3·408	0	5	0	3	70·4	+12·9	− 2·6
Means ...	...	...	0	3	70·40	+12·90	...
Group 2999.							
June 3·408	38	162	20	87	55·1	+11·2	− 17·9
4·471	69	549	35	280	56·7	+11·1	− 2·3
5·520	86	534	45	276	56·3	+10·9	+ 11·3
6·446	30	281	17	155	55·1	+11·4	+ 22·3
7·469	19	305	12	192	55·3	+11·3	+ 36·0
8·407	19	190	15	149	56·1	+11·2	+ 49·3
9·429	0	51	0	63	58·6	+11·2	+ 65·3
10·440	5	37	12	84	57·3	+10·5	+ 77·3
Means ...	...	...	20	161	56·31	+11·10	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3000.							
1893. d					°	°	°
June 3·408	2	20	1	10	53·3	−16·7	− 19·7
4·471	30	169	16	88	54·3	−16·0	− 4·7
5·520	32	196	16	103	54·6	−16·2	+ 9·6
6·446	21	103	12	58	54·2	−15·7	+ 21·4
7·469	13	113	11	73	54·5	−15·9	+ 35·2
8·407	11	57	9	44	54·6	−15·9	+ 47·8
9·429	0	8	0	9	54·6	−15·7	+ 61·3
Means ...	...	...	9	55	54·30	−16·01	...
Group 3001.							
June 4·471	5	28	3	15	38·1	+12·1	− 20·9
5·520	4	11	2	5	39·6	+12·1	− 5·4
Means ...	...	...	3	10	38·85	+12·10	...
Group 3002.							
June 4·471	0	8	0	7	6·4	−15·2	− 52·6
5·520	27	140	18	92	6·9	−15·3	− 38·1
6·446	44	234	26	135	7·4	−15·1	− 25·4
7·469	32	214	16	113	9·2	−15·4	− 10·1
8·407	24	145	13	76	10·8	−15·9	+ 4·0
9·429	16	84	9	46	10·9	−16·3	+ 17·4
10·440	20	78	12	48	10·9	−16·5	+ 30·9
11·627	15	52	11	40	11·0	−16·4	+ 46·8
12·613	3	36	3	37	10·9	−16·6	+ 59·7
13·477	0	9	0	13	10·2	−16·6	+ 70·4
Means ...	...	...	11	61	9·45	−15·93	...
Group 3003.							
June 5·520	13	65	21	110	332·2	+ 9·9	− 72·8
6·446	24	86	25	89	332·4	+11·0	− 60·4
7·469	23	123	17	91	332·7	+11·5	− 46·6
8·407	23	196	14	120	332·9	+10·6	− 33·9
9·429	16	101	9	54	333·3	+10·6	− 20·0
10·440	7	55	4	28	333·9	+10·5	− 6·1
11·627	0	11	0	6	336·1	+ 8·8	+ 11·9
Means ...	...	...	13	71	333·36	+10·41	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3004.							
1893. d					°	°	°
June 5·520	13	58	32	149	326·4	+13·1	− 78·6
6·446	33	165	43	215	325·9	+13·3	− 66·9
7·469	34	234	29	200	326·3	+13·6	− 53·0
8·407	47	280	32	189	326·2	+13·0	− 40·6
9·429	41	299	24	174	325·5	+13·0	− 27·8
10·440	53	338	28	177	325·4	+13·3	− 14·6
11·627	72	417	37	213	325·5	+13·3	+ 1·3
12·613	20	273	10	143	325·4	+13·3	+ 14·2
13·477	46	324	26	186	325·8	+13·2	+ 26·0
14·415	22	269	14	175	325·7	+13·0	+ 38·3
15·399	22	167	19	136	325·4	+13·0	+ 51·1
16·403	11	51	13	59	325·0	+12·9	+ 64·0
17·428	0	7	0	17	325·0	+13·2	+ 77·5
Means ...	...	...	24	156	325·65	+13·17	...
Group 3005.							
June 5·520	2	53	9	230	321·6	−12·4	− 83·4
6·446	30	146	50	245	320·6	−12·4	− 72·2
7·469	47	269	46	260	321·4	−12·2	− 57·9
8·407	63	366	46	269	321·3	−12·6	− 45·5
9·429	70	437	43	267	320·9	−12·4	− 32·4
10·440	84	469	45	252	321·3	−12·4	− 18·7
11·627	89	484	46	249	321·6	−12·4	− 2·6
12·613	46	441	24	229	321·7	−12·4	+ 10·5
13·477	67	401	37	223	321·9	−12·6	+ 22·1
14·415	58	371	37	233	322·2	−12·8	+ 34·8
15·399	66	351	51	272	322·1	−12·9	+ 47·8
16·403	35	234	38	253	322·2	−12·8	+ 61·2
17·428	18	111	36	224	322·5	−12·7	+ 75·0
Means ...	...	...	39	247	321·64	−12·54	...
Group 3006.							
June 7·469	27	128	15	68	31·3	+19·2	+ 12·0
8·407	8	51	5	30	31·4	+18·8	+ 24·6
9·429	13	102	8	67	31·0	+16·8	+ 37·7
10·440	15	134	12	105	29·1	+17·4	+ 49·1
11·627	0	13	0	16	28·2	+16·9	+ 64·0
Means ...	...	...	8	57	30·20	+17·82	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3007.							
1893. d					°	°	°
June 7·469	0	9	0	12	310·4	−12·3	− 68·9
8·407	26	125	23	115	310·8	−13·0	− 55·8
9·429	29	258	20	181	310·4	−13·5	− 42·9
10·440	46	357	27	212	310·7	−13·7	− 29·3
11·627	41	352	22	187	311·7	−13·5	− 12·5
12·613	40	257	21	133	312·0	−13·5	+ 0·8
13·477	44	172	23	91	312·1	−13·1	+ 12·3
14·415	29	188	17	107	312·1	−13·4	+ 24·7
15·399	7	93	5	62	311·9	−13·9	+ 37·6
16·403	5	27	4	22	312·7	−13·4	+ 51·7
Means ...	...	...	16	112	311·48	−13·33	...
Group 3008.							
June 10·440	0	6	0	6	37·0	−11·1	+ 57·0
Means ...	...	...	0	6	37·00	−11·10	...
Group 3009.							
June 10·440	14	70	8	42	309·3	− 9·0	− 30·7
11·627	11	81	6	43	311·0	− 9·0	− 13·2
12·613	11	58	5	29	311·3	− 8·9	+ 0·1
13·477	7	37	4	19	311·5	− 8·8	+ 11·7
14·415	0	14	0	8	310·9	− 8·8	+ 23·5
15·399	0	0	0	0	...	...	...
16·403	50	221	37	165	307·9	− 9·8	+ 46·9
17·428	35	317	37	331	308·1	− 8·8	+ 60·6
18·493	0	111	0	232	307·2	− 9·7	+ 73·8
Means ...	...	...	11	96	309·65	− 9·10	...
Group 3010.							
1893. d					°	°	°
June 10·440	11	43	7	28	302·1	−16·9	− 37·9
11·627	11	30	6	17	304·6	−17·2	− 19·6
12·613	7	44	4	23	305·0	−17·5	− 6·2
13·477	10	33	5	17	305·5	−17·5	+ 5·7
14·415	11	22	6	12	306·8	−18·4	+ 19·4
15·399	8	22	5	14	307·5	−18·6	+ 33·2
16·403	12	36	10	28	307·3	−18·2	+ 46·3
17·428	4	12	4	13	308·5	−17·4	+ 61·0
Means ...	...	...	6	19	305·91	−17·71	...
Group 3011.							
June 11·627	2	22	1	13	297·9	+14·9	− 26·3
12·613	3	90	2	47	298·0	+14·4	− 13·2
13·477	54	156	27	83	297·5	+14·7	− 2·3
14·415	21	133	11	70	297·0	+14·8	+ 9·6
15·399	12	119	7	68	297·1	+14·8	+ 22·8
16·403	2	40	2	26	298·3	+14·4	+ 37·3
17·428	2	34	2	28	299·0	+14·2	+ 51·5
18·493	0	22	0	27	299·7	+14·4	+ 66·3
19·397	18	72	39	157	298·1	+15·6	+ 76·7
Means ...	...	...	10	58	298·07	+14·69	...
Group 3012.							
June 12·613	0	17	0	9	283·0	+12·0	− 28·2
Means ...	...	...	0	9	283·00	+12·00	...
Group 3013.							
June 13·477	2	16	2	10	337·7	+ 7·6	+ 37·9
14·415	0	21	0	17	338·1	+ 7·3	+ 50·7
Means ...	...	...	1	14	337·90	+ 7·45	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3014.							
1893. d					°	°	°
June 13·477	0	7	0	4	333·2	+ 3·1	+ 33·4
Means ...	...	...	0	4	333·20	+ 3·10	...
Group 3015.							
June 13·477	0	35	0	19	285·9	−18·5	− 13·9
14·415	18	113	9	60	286·7	−19·5	− 0·7
15·399	66	655	37	364	287·1	−20·0	+ 12·8
16·403	147	976	89	585	286·9	−19·5	+ 25·9
17·428	113	1024	80	725	287·8	−19·4	+ 40·3
18·493	51	616	48	575	288·0	−19·8	+ 54·6
19·397	41	424	52	565	287·3	−19·7	+ 65·9
20·237	19	157	45	368	286·5	−20·5	+ 76·2
Means ...	...	...	45	408	287·03	−19·61	...
Group 3016.							
June 14·415	6	30	11	54	214·0	+16·0	− 73·4
15·399	7	37	8	40	212·7	+17·1	− 61·6
16·403	16	56	12	43	213·3	+16·3	− 47·7
17·428	12	51	8	32	213·5	+16·1	− 34·0
18·493	0	22	0	12	213·5	+16·0	− 19·9
19·397	2	18	1	9	211·2	+18·0	− 10·2
Means ...	...	...	7	32	213·03	+16·58	...
Group 3017.							
June 14·415	0	16	0	35	211·2	−14·9	− 76·2
15·399	1	32	1	38	210·2	−14·9	− 64·1
16·403	10	62	8	51	210·4	−14·8	− 50·6
17·428	0	35	0	23	210·3	−14·7	− 37·2
Means ...	...	...	2	37	210·53	−14·83	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3018.							
1893. d					°	°	°
June 15·399	15	34	8	18	262·9	+13·6	− 11·4
16·403	7	81	4	28	263·1	+13·4	+ 2·1
17·428	2	59	1	31	262·5	+13·3	+ 15·6
18·493	13	112	8	66	262·7	+13·0	+ 29·3
19·397	9	35	6	23	262·1	+13·9	+ 40·7
20·237	1	11	1	9	260·0	+14·1	+ 49·7
21·226	2	12	2	14	262·2	+14·0	+ 65·0
22·408	0	5	0	14	261·2	+13·8	+ 79·7
Means ...	...	...	4	25	262·09	+13·64	...
Group 3019*.							
June 16·403	0	13	0	8	289·7	+19·6	+ 28·7
Means ...	...	...	0	8	289·70	+19·60	...
Group 3019.							
June 17·428	0	12	0	6	228·3	+ 9·4	− 19·2
Means ...	...	...	0	6	228·30	+ 9·40	...
Group 3020.							
June 17·428	0	27	0	15	222·8	+16·6	− 24·7
18·493	0	34	0	18	226·4	+16·9	− 7·0
19·397	10	47	5	25	224·5	+16·1	+ 3·1
20·237	53	244	27	129	224·3	+16·9	+ 14·0
21·226	124	648	71	378	224·2	+17·1	+ 27·0
22·408	117	852	82	599	223·7	+17·3	+ 42·2
23·442	83	606	79	566	224·0	+17·4	+ 56·1
24	No photograph.						
25·357	0	72	0	176	221·0	+17·6	+ 78·5
Means ...	...	...	33	238	223·88	+16·99	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3021.							
1893. d					°	°	°
June 19·397	0	11	0	6	244·6	+21·5	+ 23·2
Means ...	...	...	0	6	244·60	+21·50	...
Group 3022.							
June 19·397	7	29	3	14	221·7	+ 1·6	+ 0·3
20·237	0	5	0	3	220·6	+ 1·4	+ 10·3
21·226	0	0	0	0	...	...	...
22·408	17	72	11	49	222·0	+ 2·8	+ 40·5
23·442	52	270	46	241	223·7	+ 2·9	+ 55·8
24	No	photo	graph.				
25·357	0	155	0	390	221·2	+ 2·0	+ 78·7
Means ...	...	...	10	116	221·84	+ 2·14	...
Group 3023.							
June 19·397	0	28	0	15	213·0	−16·1	− 8·4
Means ...	...	...	0	15	213·00	−16·10	...
Group 3024.							
June 20·237	0	12	0	7	192·2	−22·5	− 18·1
21·226	6	25	3	13	193·0	−22·0	− 4·2
22·408	0	5	0	3	192·4	−23·8	+ 10·9
Means ...	...	...	1	8	192·53	−22·77	...
Group 3025.							
1893. d					°	°	°
June 20·237	0	5	0	7	139·1	−10·9	− 71·2
Means ...	...	...	0	7	139·10	−10·90	...
Group 3026.							
June 21·226	2	29	1	17	175·1	−16·0	− 22·1
22·408	0	13	0	7	174·9	−15·2	− 6·6
Means ...	...	...	1	12	175·00	−15·60	...
Group 3027.							
June 22·408	0	8	0	4	206·8	+ 5·6	+ 25·3
23·442	0	0	0	0	...	...	...
24	No	photo	graph.				
25·357	0	16	0	19	207·7	+ 5·2	+ 65·2
Means ...	...	...	0	8	207·25	+ 5·40	...
Group 3028.							
June 22·408	0	4	0	2	186·3	+15·9	+ 4·8
23·442	6	25	3	13	186·3	+15·7	+ 18·4
24	No	photo	graph.				
25·357	4	17	3	12	185·9	+16·0	+ 43·4
Means ...	...	...	2	9	186·17	+15·87	...
Group 3029.							
June 22·408	0	16	0	11	137·5	+15·0	− 44·0
23·442	32	204	20	122	137·2	+14·2	− 30·7
24	No	photo	graph.				
25·357	27	133	14	68	137·9	+14·2	− 4·6
Means ...	...	...	11	67	137·53	+14·47	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3030.							
1893. d					°	°	°
June 22·408	0	17	0	31	109·7	−22·4	− 71·8
23·442	2	35	2	36	111·5	−21·8	− 56·4
24	No photograph.						
25·357	0	35	0	23	110·7	−22·0	− 31·8
26·375	1	9	1	5	114·0	−22·5	− 14·5
27·360	0	0	0	0	...	...	...
28·411	0	12	0	6	105·9	−23·1	+ 3·8
Means ...	...	...	1	17	110·36	−22·36	...
Group 3031.							
June 23·442	12	67	8	46	140·6	−31·0	− 27·3
24	No photograph.						
25·357	50	351	30	210	140·8	−30·7	− 1·7
26·375	35	373	21	227	140·4	−30·4	+ 11·9
27·360	18	113	12	75	141·9	−30·9	+ 26·0
28·411	5	74	4	56	139·5	−30·4	+ 37·4
29·449	14	53	13	53	140·5	−30·2	+ 52·1
30·395	22	128	31	178	139·1	−30·3	+ 63·3
July 1·439	4	86	7	202	135·8	−30·2	+ 73·8
Means ...	...	...	16	131	139·83	−30·51	...
Group 3032.							
June 23·442	20	90	12	56	134·4	−10·2	− 33·5
24	No photograph.						
25·357	134	801	79	414	134·5	−10·5	− 8·0
26·375	183	1028	94	526	134·0	−10·6	+ 5·5
27·360	100	740	55	400	133·9	−11·0	+ 18·0
28·411	122	776	75	478	134·3	−10·9	+ 32·2
29·449	59	521	45	391	134·6	−11·1	+ 46·2
30·395	63	321	62	314	133·6	−11·2	+ 57·8
July 1·439	13	109	21	175	132·7	−11·2	+ 70·7
Means ...	...	...	55	344	134·00	−10·84	...

Date Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3033.							
1893. d					°	°	°
June 25·357	0	18	0	11	135·3	−24·2	− 7·2
26·375	35	151	20	85	135·1	−24·2	+ 6·6
27·360	23	79	14	48	135·8	−24·0	+ 19·9
28·411	13	34	9	23	135·0	−24·5	+ 32·9
29·449	0	8	0	7	132·2	−25·3	+ 43·8
Means ...	...	...	9	35	134·68	−24·44	...
Group 3034.							
June 25·357	10	41	12	53	77·6	−19·0	−64·9
26·375	5	33	5	29	77·3	−19·1	−51·2
27·360	12	46	8	32	76·9	−19·6	−39·0
28·411	11	48	6	29	77·1	−19·2	−25·0
29·449	9	52	5	29	77·3	−19·7	−11·1
30·395	0	14	0	8	77·9	−20·6	+ 2·1
Means ...	...	...	6	30	77·35	−19·53	...
Group 3035.							
June 25·357	0	56	0	158	64·8	−24·5	− 77·7
26·375	25	218	34	292	63·9	−24·3	− 64·6
27·360	39	256	37	237	64·1	−25·0	− 51·8
28·411	53	302	38	220	64·0	−24·6	− 38·1
29·449	35	269	22	169	63·5	−24·6	− 24·9
30·395	30	155	17	90	63·5	−24·3	− 12·3
July 1·439	25	220	14	124	63·5	−23·3	+ 1·5
2·455	0	15	0	9	65·7	−20·7	+ 17·1
3·391	0	6	0	4	65·0	−20·9	+ 28·9
Means ...	...	...	18	145	64·22	−23·58	...
Group 3036.							
June 27·360	8	44	14	78	42·0	+16·8	− 73·9
28·411	29	106	33	117	40·0	+18·0	− 62·1
29·449	14	73	11	58	39·6	+18·6	− 48·8
30·395	28	214	17	138	39·9	+19·3	− 35·9

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3036—*continued.*							
1893. d					°	°	°
July 1·439	32	194	17	109	39·9	+19·0	− 22·1
2·455	51	266	27	142	38·3	+20·5	− 10·3
3·391	29	193	15	102	37·5	+20·2	+ 1·4
4·418	6	88	3	48	39·7	+19·5	+ 17·1
5·242	19	61	11	36	42·5	+18·5	+ 30·9
6·436	3	13	2	10	41·8	+19·0	+ 46·0
Means ...	...	...	15	84	40·12	+18·94	...
Group 3037.							
June 28·411	4	9	3	7	149·0	+14·1	+46·9
Means ...	...	...	3	7	149·00	+14·10	...
Group 3038.							
June 28·411	4	54	2	31	91·2	−23·1	− 10·9
29·449	6	59	4	34	92·1	−22·8	+ 3·7
30·395	7	47	4	28	94·6	−22·0	+ 18·8
July 1·439	19	95	13	61	93·3	−22·2	+ 31·3
2·455	4	28	3	23	95·3	−22·1	+ 46·7
3·391	0	13	0	14	94·7	−22·5	+ 58·6
4·418	0	0	0	0	...	...	...
5·242	8	42	23	126	89·8	−22·6	+ 78·2
Means ...	...	...	6	40	93·00	−22·47	...
Group 3039.							
June 28·411	2	18	1	10	81·9	−11·6	− 20·2
29·449	0	40	0	21	81·3	−11·6	− 7·1
30·395	0	26	0	13	84·5	−10·6	+ 8·7
July 1·439	0	15	0	8	86·0	−10·6	+ 24·0
Means ...	...	...	0	13	83·43	−11·10	...

Date Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot	Umbra.	Whole Spot.			
Group 3040.							
1893. d					°	°	°
June 28·411	2	7	4	15	26·5	+19·9	−75·6
Means ...	...	...	4	15	26·50	+19·90	...
Group 3041.							
June 29·449	0	6	0	4	64·2	+12·5	− 24·2
Means ...	...	...	0	4	64·20	+12·50	...
Group 3042.							
June 29·449	14	107	43	338	9·0	−17·9	− 79·4
30·395	40	264	60	396	7·4	−17·7	− 68·4
July 1·439	49	389	46	368	7·0	−17·8	− 55·0
2·455	61	449	44	325	7·4	−18·3	− 41·2
3·391	70	403	44	253	6·2	−18·3	− 29·9
4·418	66	464	37	263	6·0	−18·0	− 16·6
5·242	82	549	44	296	5·4	−18·1	− 6·2
6·436	92	487	51	267	5·6	−17·8	+ 9·8
7·457	61	423	36	248	5·1	−17·8	+ 22·7
8·472	51	388	34	260	5·2	−18·1	+ 36·3
9·561	45	242	39	214	5·6	−18·6	+ 51·1
10·384	33	169	39	202	5·6	−18·5	+ 62·0
11·493	9	64	21	152	4·5	−18·4	+ 75·6
Means ...	...	...	41	276	6·67	−18·10	...
Group 3043.							
July 1·439	0	19	0	11	54·6	−19·0	− 7·4
Means ...	...	...	0	11	54·60	−19·00	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3044.							
1893. d					°	°	°
July 1·439	0	19	0	13	13·9	+21·2	−48·1
Means ...	...	...	0	13	13·90	+21·20	...
Group 3045.							
July 2·455	0	4	0	5	343·2	−18·5	− 65·4
Means ...	...	...	0	5	343·20	−18·50	...
Group 3046.							
July 2·455	12	58	51	250	326·4	−15·9	− 82·2
3·391	24	334	41	697	321·7	−16·5	− 74·4
4·418	93	775	102	869	321·9	−16·6	− 60·7
5·242	141	1073	117	890	322·1	−16·8	− 49·5
6·436	215	1371	139	891	322·4	−16·8	− 33·4
7·457	252	1473	144	842	322·0	−16·5	− 20·4
8·472	345	2323	186	1254	320·4	−16·4	− 8·5
9·561	473	2656	255	1440	320·5	−16·6	+ 6·0
10·384	345	2506	195	1416	320·4	−16·5	+ 16·8
11·493	266	2201	168	1383	320·2	−16·0	+ 31·3
12·405	257	1956	191	1466	320·2	−16·4	+ 43·3
13·252	244	1378	229	1274	319·9	−15·9	+ 54·2
14·332	96	659	138	969	319·3	−16·1	+ 67·9
15·333	34	149	81	357	314·5	−14·3	+ 76·4
Means ...	...	...	146	1000	320·85	−16·24	...
Group 3047.							
July 3·391	26	113	51	220	322·2	−12·4	− 73·9
4·418	48	233	51	244	322·9	−11·9	− 59·7
5·242	48	270	39	216	322·6	−12·2	− 49·0
6·436	56	341	35	215	322·3	−12·2	− 33·5
7·457	56	351	31	194	322·6	−11·8	− 19·8
8·472	63	391	33	204	322·6	−11·8	− 6·3
9·561	61	328	32	173	322·6	−12·1	+ 8·1
10·384	57	355	32	198	322·9	−12·0	+ 19·3

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3047—*continued.*							
1893. d					°	°	°
July 11·493	39	256	24	160	322·5	−11·8	+ 33·6
12·405	47	196	36	148	322·3	−11·9	+ 45·4
13·252	27	162	26	152	321·8	−11·5	+ 56·1
14·332	5	50	9	79	321·3	−11·8	+ 69·9
Means ...	...	...	33	184	322·38	−11·95	...
Group 3048.							
July 3·391	0	34	0	92	317·1	− 6·8	− 79·0
4·418	6	41	7	49	318·4	− 6·6	− 64·2
5·242	10	62	8	52	318·8	− 6·9	− 52·8
6·436	8	82	5	52	319·6	− 6·8	− 36·2
7·457	7	27	4	15	320·5	− 6·4	− 21·9
8·472	5	15	3	8	320·7	− 6·5	− 8·2
9·561	12	23	6	12	320·7	− 6·7	+ 6·2
10·384	11	33	6	18	321·8	− 6·2	+ 18·2
11·493	9	30	5	19	321·8	− 5·8	+ 32·9
12·405	6	18	5	13	322·5	− 5·8	+ 45·6
Means ...	...	...	5	33	320·19	− 6·45	...
Group 3049.							
July 4·418	0	13	0	8	359·2	−22·9	− 23·4
5·242	3	14	2	8	359·1	−23·2	− 12·5
6·436	0	0	0	0	...	...	...
7·457	0	13	0	8	355·8	−23·3	+ 13·4
Means ...	...	...	1	6	358·03	−23·13	...
Group 3050.							
July 4·418	19	101	36	191	308·8	− 9·0	− 73·8
5·242	21	327	24	372	308·6	− 9·1	− 63·0
6·436	16	142	13	108	309·2	− 9·2	− 46·6
7·457	24	124	15	77	309·7	− 8·7	− 32·7
8·472	9	33	5	18	308·5	− 9·7	− 20·4
9·561	5	49	3	26	307·8	−10·5	− 6·7
10·384	0	23	0	12	306·8	− 9·0	+ 3·2
11·493	0	15	0	8	307·3	− 8·5	+ 18·4
Means ...	...	...	12	102	308·34	− 9·21	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3051.							
1893. d					°	°	°
July 5·242	2	6	3	8	76·6	−11·4	+ 65·0
Means ...	...	...	3	8	76·60	−11·40	...
Group 3052.							
July 5·242	0	7	0	5	328·9	+11·4	− 42·7
Means ...	...	...	0	5	328·90	+11·40	...
Group 3053.							
July 6·436	0	8	0	15	64·7	−27·3	+ 68·9
Means ...	...	...	0	15	64·70	−27·30	...
Group 3054.							
July 6·436	6	48	11	89	284·3	−20·7	− 71·5
7·457	40	317	43	342	283·8	−20·2	− 58·6
8·472	43	369	33	290	283·9	−20·0	− 45·0
9·561	66	436	42	280	284·0	−19·9	− 30·5
10·384	65	441	37	272	284·0	−20·0	− 19·6
11·493	55	464	30	254	284·1	−19·8	− 4·8
12·405	104	533	57	296	283·7	−19·8	+ 6·8
13·252	68	354	39	203	284·0	−19·5	+ 18·3
14·332	50	353	33	228	283·3	−19·6	+ 31·9
15·333	49	434	38	337	282·6	−20·0	+ 44·5
16·389	66	284	72	309	282·6	−20·3	+ 58·4
17·543	10	160	21	340	282·4	−20·4	+ 73·5
Means ...	...	...	38	270	283·56	−20·02	...
Group 3055.							
July 7·457	0	8	0	4	359·6	−17·6	+ 17·2
Means ...	...	...	0	4	359·60	−17·60	...
Group 3056.							
1893. d					°	°	°
July 7·457	2	21	1	10	346·7	+ 6·8	+ 4·3
Means ...	...	...	1	10	346·70	+ 6·80	...
Group 3057.							
July 7·457	0	5	0	3	345·1	+17·0	+ 2·7
Means ...	...	...	0	3	345·10	+17·00	...
Group 3058.							
July 7·457	7	38	4	20	329·9	+11·9	− 12·5
8·472	5	21	3	10	330·4	+11·4	+ 1·5
9·561	0	5	0	3	330·6	+11·3	+ 16·1
10·384	0	19	0	11	331·4	+12·7	+ 27·8
Means ...	...	...	2	11	330·58	+11·83	...
Group 3059.							
July 7·457	50	256	29	194	314·8	+10·0	− 27·6
8·472	78	512	40	265	314·8	+10·6	− 14·1
9·561	167	874	86	445	315·5	+11·2	+ 1·0
10·384	152	960	80	501	315·4	+11·6	+ 11·8
11·493	191	1191	108	670	314·9	+12·0	+ 26·0
12·405	183	1188	118	772	315·1	+12·2	+ 38·2
13·252	151	828	118	647	316·0	+12·4	+ 50·3
14·332	69	502	82	582	319·1	+12·2	+ 67·7
15·333	25	201	51	441	315·6	+12·2	+ 77·5
Means ...	...	...	79	502	315·69	+11·60	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of Umbra.	Projected Area of Whole Spot.	Area for Group. Umbra.	Area for Group. Whole Spot.	Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
Group 3060.							
1893. d					°	°	°
July 7·457	10	43	8	34	294·5	−17·8	− 47·9
8·472	18	91	12	60	295·2	−17·9	− 33·7
9·561	0	35	0	20	295·1	−18·2	− 19·4
10·384	0	8	0	4	295·7	−18·3	− 7·9
Means ...	...	...	5	30	295·13	−18·05	...
Group 3061.							
July 7·457	0	15	0	40	262·6	+11·7	− 79·8
8·472	11	62	13	73	264·1	+12·3	− 64·8
9·561	31	96	24	74	264·8	+12·9	− 49·7
10·384	13	50	8	32	266·2	+13·2	− 37·4
11·493	4	49	2	27	266·9	+13·4	− 22·0
12·405	5	55	2	29	267·6	+13·7	− 9·3
13·252	0	0	0	0	...	...	...
14·332	0	11	0	6	268·2	+14·3	+ 16·8
15·333	8	34	5	20	269·5	+12·5	+ 31·4
16·389	0	10	0	8	272·0	+12·3	+ 47·8
17·543	0	6	0	7	273·2	+13·1	+ 64·3
Means ...	...	...	5	29	267·51	+12·94	...
Group 3062.							
July 8·472	13	70	14	72	25·6	−21·5	+56·7
9·561	0	25	0	48	26·2	−21·6	+71·7
Means ...	...	...	7	60	25·90	−21·55	...
Group 3063.							
July 8·472	7	30	4	16	316·0	− 5·6	− 12·9
9·561	0	37	0	19	315·4	− 6·3	+ 0·9
Means ...	...	...	2	18	315·70	− 5·95	...
Group 3064.							
1893. d					°	°	°
July 8·472	18	72	25	97	260·3	+13·9	− 68·6
9·561	17	64	15	57	259·0	+14·1	− 55·5
10·384	15	46	11	33	258·9	+14·4	− 44·7
11·493	6	17	4	10	259·0	+14·4	− 29·9
12·405	3	13	2	7	258·6	+14·5	− 18·3
Means ...	...	...	11	41	259·16	+14·26	...
Group 3065.							
July 8·472	0	75	0	128	259·3	−23·0	− 69·6
9·561	22	126	22	134	257·7	−23·0	− 56·8
10·384	33	160	26	130	258·0	−22·7	− 45·6
11·493	18	109	12	72	258·0	−22·7	− 30·9
12·405	27	83	17	50	257·7	−22·3	− 19·2
13·252	13	60	8	34	254·9	−22·4	− 10·8
14·332	7	30	4	17	254·7	−22·2	+ 3·3
15·333	0	18	0	10	254·8	−22·0	+ 16·7
Means ...	...	...	11	72	256·89	−22·54	...
Group 3066.							
July 8·472	10	56	25	141	252·1	−17·6	− 76·8
9·561	26	163	34	209	250·3	−17·8	− 64·2
10·384	36	160	33	149	250·1	−18·3	− 53·5
11·493	32	175	22	122	250·2	−18·3	− 38·7
12·405	38	209	23	129	250·1	−18·4	− 26·8
13·252	27	210	16	118	249·9	−18·1	− 15·8
14·332	25	160	13	86	250·3	−18·1	− 1·1
15·333	23	151	13	83	250·3	−17·9	+ 12·2
16·389	24	101	14	61	250·4	−18·1	+ 26·2
17·543	8	39	6	29	250·5	−18·0	+ 41·6
18·421	5	16	5	15	250·5	−17·4	+ 53·3
Means ...	...	...	19	104	250·43	−18·00	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Group 3067.

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
1893. d					°	°	°
July 9·561	33	209	38	237	250·9	+16·7	− 63·6
10·384	27	192	24	168	249·0	+16·8	− 54·6
11·493	87	675	56	439	251·0	+16·7	− 37·9
12·405	119	684	68	395	250·2	+16·8	− 26·7
13·252	118	613	62	323	251·1	+16·6	− 14·6
14·332	136	764	69	388	251·3	+16·5	− 0·1
15·333	125	1013	65	526	251·0	+16·8	+ 12·9
16·389	175	925	100	528	250·5	+17·3	+ 26·3
17·543	90	831	62	566	250·0	+17·6	+ 41·1
18·421	53	572	44	478	249·7	+17·5	+ 52·5
19·253	38	275	43	310	250·3	+17·7	+ 64·0
20·675	12	110	44	422	251·2	+17·4	+ 83·7
Means ...	...	...	56	398	250·52	+16·03	...

Group 3068.

July 9·561	6	50	22	173	232·5	+ 5·0	− 82·0
10·384	21	113	31	172	232·7	+ 5·0	− 70·9
11·493	35	171	31	153	232·9	+ 4·8	− 56·0
12·405	41	230	29	162	232·6	+ 4·8	− 44·3
13·252	42	266	25	158	232·8	+ 4·9	− 32·9
14·332	46	291	24	153	233·1	+ 4·7	− 18·3
15·333	48	309	24	155	233·3	+ 4·8	− 4·8
16·389	81	308	42	156	234·0	+ 4·5	+ 9·8
17·543	56	308	31	171	234·4	+ 4·3	+ 25·5
18·421	41	216	26	136	234·3	+ 4·2	+ 37·1
19·253	38	164	29	122	234·3	+ 4·1	+ 48·0
20·675	20	98	26	127	235·1	+ 3·8	+ 67·6
21·459	11	69	25	167	235·2	+ 3·3	+ 78·2
Means ...	...	...	28	154	233·63	+ 4·48	...

Group 3069.

July 10·384	0	18	0	12	268·4	−15·2	− 35·2
11·493	0	21	0	12	267·2	−15·9	− 21·7
12·405	0	28	0	15	266·8	−15·7	− 10·1
Means ...	...	...	0	13	267·47	−15·60	...

Group 3070.

1893. d					°	°	°
July 10·384	0	4	0	3	239·9	−16·9	− 63·7
11·493	6	76	5	59	242·2	−15·4	− 46·7
12·405	39	232	25	151	243·1	−15·6	− 33·8
13·252	47	180	27	105	243·6	−15·5	− 22·1
14·332	21	158	11	84	244·5	−16·0	− 6·9
15·333	15	51	8	27	245·9	−15·5	+ 7·8
16·389	4	20	2	12	248·4	−15·4	+ 24·2
17·543	0	26	0	18	245·7	−16·5	+ 36·8
18·421	0	3	0	2	249·7	−15·4	+ 52·5
Means ...	...	...	9	51	244·78	−15·80	...

Group 3071.

July 11·493	0	41	0	70	215·4	+16·8	− 73·5
12·405	25	182	26	191	215·7	+17·2	− 61·2
13·252	30	188	23	144	216·8	+17·3	− 48·9
14·332	26	157	16	97	217·0	+17·1	− 34·4
15·333	38	172	21	94	216·9	+17·4	− 21·2
16·389	53	210	29	111	215·7	+18·0	− 8·5
17·543	147	639	77	332	215·4	+17·1	+ 6·5
18·421	118	878	63	478	215·7	+17·4	+ 18·5
19·253	102	664	60	391	216·1	+17·5	+ 29·8
20·675	66	459	52	360	217·4	+17·5	+ 49·9
21·459	40	288	40	290	217·6	+16·9	+ 60·6
22·424	17	150	28	249	217·6	+16·7	+ 73·3
Means ...	...	...	36	234	216·44	+17·24	...

Group 3072.

July 12·405	0	11	0	8	230·1	+11·0	− 46·8
13·252	0	0	0	0	...	...	...
14·332	0	5	0	3	232·7	+12·5	− 18·7
15·333	2	19	1	10	233·1	+13·5	− 5·0
Means ...	...	...	0	5	231·97	+12·33	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3073.							
1893. d					°	°	°
July 14·332	18	67	10	25	271·8	−14·1	+ 20·4
15·333	7	28	5	18	273·3	−14·1	+ 35·2
16·389	8	20	7	17	275·0	−14·5	+ 50·8
Means ...	...	...	7	20	273·37	−14·23	...
Group 3074.							
July 16·389	0	7	0	3	220·0	+12·3	− 4·2
Means ...	...	...	0	3	220·00	+12·30	...
Group 3075.							
July 18·421	5	37	7	46	139·0	−32·3	− 58·2
19·253	8	62	8	58	139·6	−31·8	− 46·7
20·675	6	23	4	16	142·0	−30·6	− 25·5
21·459	2	13	1	8	141·7	−30·5	− 15·3
Means ...	...	...	5	32	140·58	−31·30	...
Group 3076.							
July 19·253	0	9	0	5	178·4	−19·7	− 7·9
Means ...	...	...	0	5	178·40	−19·70	...
Group 3077.							
July 19·253	0	4	0	5	121·1	−25·9	− 65·2
Means ...	...	...	0	5	121·10	−25·90	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3078.							
1893. d					°	°	°
July 19·253	15	74	43	212	109·0	−21·1	− 77·3
20·675	32	138	34	150	109·5	−21·3	− 58·0
21·459	29	206	24	175	109·4	−21·7	− 47·6
22·424	37	243	25	167	109·2	−21·8	− 35·1
23·234	56	300	34	185	108·8	−21·6	− 24·8
24·641	45	310	26	176	108·5	−21·7	− 6·7
25·436	59	296	33	166	108·3	−21·3	+ 3·9
26·391	46	292	27	171	108·1	−21·2	+ 16·3
27·408	35	252	22	163	108·1	−21·5	+ 29·7
28·380	35	208	27	160	108·2	−21·5	+ 42·7
29·226	29	164	29	161	108·2	−21·7	+ 53·9
30·212	18	92	28	139	108·0	−21·6	+ 66·7
31·401	4	37	26	223	108·1	−21·5	+ 82·5
Means ...	...	...	29	181	108·57	−21·50	...
Group 3079.							
July 20·675	0	30	0	16	154·6	−11·8	− 12·9
21·459	6	60	3	31	154·0	−12·3	− 3·0
22·424	28	97	15	51	155·3	−12·0	+ 11·0
23·234	24	130	14	74	155·4	−11·9	+ 21·8
24·641	6	26	5	19	159·6	−11·0	+ 44·4
25·436	0	18	0	17	160·6	−10·7	+ 56·2
Means ...	...	...	6	35	156·58	+11·62	...
Group 3080.							
July 20·675	0	61	0	35	139·1	−10·2	− 28·4
21·459	4	24	2	13	141·2	− 9·5	− 15·8
22·424	22	81	12	42	140·0	− 9·3	− 4·3
23·234	5	42	3	23	142·1	− 8·9	+ 8·5
24·641	4	21	2	13	144·8	− 7·9	+ 29·6
25·436	4	13	3	9	145·1	− 7·6	+ 40·7
Means ...	...	...	4	23	142·05	− 8·90	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3081.							
1893. d					°	°	°
July 20·675	0	13	0	9	125·2	− 8·5	−42·3
21·459	0	21	0	13	126·1	− 8·8	−30·9
22·424	2	7	1	4	128·6	− 8·9	−15·7
Means ...	...	...	0	9	126·63	− 8·73	...
Group 3082.							
July 20·675	0	19	0	28	98·0	+34·7	− 69·5
21·459	0	16	0	18	95·6	+34·8	− 61·4
22·424	1	9	1	8	95·3	+34·2	− 49·0
Means ...	...	...	0	18	96·30	+34·57	...
Group 3083.							
July 20·675	4	112	14	370	87·4	−11·0	− 80·1
21·459	17	123	26	190	87·3	−10·9	− 69·7
22·424	26	149	26	147	86·7	−11·4	− 57·6
23·234	37	201	28	154	86·8	−11·8	− 46·8
24·641	41	210	24	125	87·3	−11·8	− 27·9
25·436	27	184	15	101	87·2	−11·7	− 17·2
26·391	17	139	9	75	86·5	−11·1	− 5·3
27·408	8	57	4	30	87·3	−12·0	+ 8·9
28·380	0	8	0	4	87·4	−11·3	+ 21·9
29·226	0	0	0	0	...	...	...
30·212	0	12	0	10	89·4	−10·9	+ 48·1
Means ...	...	...	13	110	87·33	−11·39	...
Group 3084.							
July 21·459	6	37	24	141	72·9	+24·2	− 84·1
22·424	16	186	25	294	72·0	+24·0	− 72·3
23·234	18	134	18	137	73·4	+23·9	− 60·2
24·641	54	294	37	204	73·4	+23·6	− 41·8
25·436	38	249	23	153	73·4	+23·7	− 31·0
26·391	40	211	22	116	73·6	+23·3	− 18·2
27·408	27	149	14	78	74·4	+23·3	− 4·0
28·380	9	68	5	36	75·3	+24·0	+ 9·8
Means ...	...	...	21	145	73·55	+23·75	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3085.							
1893. d					°	°	°
July 23·234	0	32	0	31	186·2	−25·6	+ 52·6
24·641	0	8	0	13	184·0	−26·4	+ 68·8
25·436	0	3	0	11	183·8	−26·3	+ 79·4
Means ...	...	...	0	18	184·67	−26·10	...
Group 3086.							
July 25·436	0	5	0	4	133·9	−32·1	+ 29·5
Means ...	...	...	0	4	133·90	−32·10	...
Group 3087.							
July 25·436	0	11	0	7	73·8	−22·3	− 30·6
Means ...	...	...	0	7	73·80	−22·30	...
Group 3088.							
July 25·436	0	8	0	6	61·8	−23·4	− 42·6
Means ...	...	...	0	6	61·80	−23·40	...
Group 3089.							
July 25·436	4	16	8	29	35·3	−23·8	− 69·1
26·391	4	12	4	13	34·2	−24·3	− 57·6
27·408	0	23	0	19	33·4	−24·8	− 45·0
28·380	3	9	2	7	33·1	−24·6	− 32·4
29·226	0	20	0	13	32·9	−24·6	− 21·4
30·212	6	12	3	7	32·4	−24·6	− 8·9
Means ...	...	...	3	15	33·55	−24·45	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3090.							
1893. d					°	°	°
July 26·391	0	9	0	7	140·1	−11·2	+ 48·3
Means ...	...	...	0	7	140·10	−11·20	...
Group 3091.							
July 26·391	0	13	0	10	49·7	−26·3	− 42·1
27·408	2	28	1	18	48·5	−26·8	− 29·9
28·380	0	7	0	4	50·3	−26·2	− 15·2
29·226	0	0	0	0	...	...	...
30·212	0	0	0	0	...	...	...
31·401	6	30	4	20	48·8	−26·7	+ 23·2
Aug. 1·482	3	16	2	13	49·4	−26·2	+ 38·2
2·373	6	45	6	42	47·6	−27·1	+ 48·1
3·493	23	155	32	216	47·3	−27·0	+ 62·6
4·511	6	56	13	163	46·8	−26·9	+ 75·5
Means ...	...	...	6	49	48·55	−26·65	...
Group 3092.							
July 27·408	0	8	0	6	126·3	+21·3	+ 47·9
Means ...	...	...	0	6	126·30	+21·30	...
Group 3093.							
July 27·408	0	101	0	53	77·6	−11·5	− 0·8
28·380	16	80	9	42	78·1	−10·8	+ 12·6
29·226	0	19	0	11	80·4	−10·4	+ 26·1
30·212	3	18	2	12	79·6	− 9·7	+ 38·3
Means ...	...	...	3	30	78·93	−10·60	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3094.							
1893. d					°	°	°
July 28·380	5	25	3	16	35·3	−17·3	− 30·2
29·226	0	32	0	18	35·3	−17·0	− 19·0
30·212	6	33	4	18	34·3	−17·5	− 7·0
31·401	3	17	2	9	36·6	−16·7	+ 11·0
Means ...	...	...	2	15	35·38	−17·13	...
Group 3095.							
July 28·380	11	36	10	34	16·4	−29·1	− 49·1
29·226	9	50	7	39	16·1	−28·8	− 38·2
30·212	24	47	16	32	15·5	−28·9	− 25·8
31·401	23	89	14	55	14·9	−28·6	− 10·7
Aug. 1·482	16	45	10	28	16·5	−28·1	+ 5·3
2·373	7	26	4	16	17·4	−28·1	+ 17·9
Means ...	...	...	10	34	16·13	−28·60	...
Group 3096.							
July 30·212	19	94	11	58	9·4	+20·5	− 31·9
31·401	30	86	16	46	9·2	+20·9	− 16·4
Aug. 1·482	10	48	5	24	9·5	+21·2	− 1·7
Means ...	...	...	11	43	9·37	+20·87	...
Group 3097.							
July 30·212	5	97	9	343	321·8	−18·5	− 79·5
31·401	32	146	40	179	323·4	−18·4	− 62·2
Aug. 1·482	51	202	43	168	323·0	−17·5	− 48·2
2·373	76	297	52	203	323·4	−18·1	− 36·1
3·493	51	278	30	165	322·6	−17·6	− 22·1
4·511	42	288	23	159	322·5	−17·3	− 8·8
5·418	65	300	36	164	322·0	−17·6	+ 2·8
6·454	77	246	44	142	321·9	−17·7	+ 16·4
7·493	58	259	37	164	321·1	−17·6	+ 29·3
8·417	39	177	30	132	320·9	−18·3	+ 41·3
9·430	8	53	8	53	321·2	−18·1	+ 55·0
10·445	0	23	0	36	320·9	−18·2	+ 68·2
Means ...	...	...	29	159	322·06	−17·91	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3098.							
1893. d					°	°	°
July 30·212	0	18	0	53	320·4	+10·0	− 80·9
31·401	17	102	19	114	321·7	+10·1	− 63·9
Aug. 1·482	24	162	19	123	321·9	+10·9	− 49·3
2·373	36	190	22	119	322·1	+10·3	− 37·4
3·493	33	181	18	97	322·3	+10·6	− 22·4
4·511	23	194	12	98	323·1	+10·4	− 8·2
5·418	31	190	16	96	322·9	+10·1	+ 3·7
6·454	32	146	17	76	323·2	+10·1	+ 17·7
7·493	27	137	16	80	322·8	+ 9·9	+ 31·0
8·417	22	92	15	63	323·0	+ 9·7	+ 43·4
9·430	7	70	6	62	322·3	+10·3	+ 56·1
10·445	7	22	10	30	322·4	+10·7	+ 69·7
11·426	0	16	0	59	323·0	+11·2	+ 83·2
Means ...	...	...	13	82	322·39	+10·33	...
Group 3099.							
July 31·401	3	13	3	12	73·5	−22·9	+ 47·9
Means ...	...	...	3	12	73·50	−22·90	...
Group 3100.							
July 31·401	5	25	3	15	50·4	−18·4	+ 24·8
Aug. 1·482	1	13	1	10	51·6	−18·7	+ 40·4
2·373	0	0	0	0	...	...	...
3·493	0	0	0	0	...	...	...
4·511	0	7	0	24	49·8	−19·6	+ 78·5
Means ...	...	...	1	10	51·60	−18·90	...
Group 3101.							
July 31·401	0	4	0	4	322·5	+20·6	− 63·1
Means ...	...	...	0	4	322·50	+20·60	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3102.							
1893. d					°	°	°
July 31·401	7	23	8	31	318·8	− 6·4	− 66·8
Aug. 1·482	2	23	2	19	319·3	− 5·8	− 51·9
2·373	2	6	1	4	323·2	− 5·5	− 36·3
3·493	0	0	0	0	...	...	...
4·511	0	7	0	3	323·1	− 5·5	− 8·2
5·418	0	29	0	15	324·6	− 5·2	+ 5·4
Means ...	...	...	2	12	321·80	− 5·68	...
Group 3103.							
July 31·401	15	116	28	223	313·3	−15·1	− 72·3
Aug. 1·482	29	180	31	191	312·5	−15·1	− 58·7
2·373	39	224	31	179	312·6	−15·8	− 46·9
3·493	46	249	30	160	312·3	−15·6	− 32·4
4·511	39	259	22	148	312·6	−15·3	− 18·7
5·418	50	269	27	145	312·3	−15·3	− 6·9
6·454	45	267	24	144	312·6	−15·4	+ 7·1
7·493	45	231	26	134	312·5	−15·0	+ 20·7
8·417	37	184	24	118	314·7	−15·6	+ 35·1
9·430	21	163	16	129	312·4	−15·0	+ 46·2
10·445	18	92	20	101	312·4	−15·3	+ 59·7
11·426	3	36	6	69	312·3	−15·1	+ 72·5
Means ...	...	...	24	145	312·71	−15·30	...
Group 3104.							
Aug. 1·482	3	14	4	15	73·0	+27·3	+ 61·8
2·373	1	12	2	20	73·7	+27·1	+ 74·2
Means ...	...	...	3	18	73·35	+27·20	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3105.							
1893. d					°	°	°
Aug. 2·373	1	8	1	7	306·6	−13·7	− 52·9
3·493	9	54	7	37	306·0	−13·2	− 38·7
4·511	26	150	15	88	306·9	−12·9	− 24·4
5·418	67	306	36	166	306·8	−13·4	− 12·4
6·454	38	309	21	165	307·0	−13·1	+ 1·5
7·493	44	365	24	204	307·4	−13·3	+ 15·6
8·417	32	251	20	154	307·9	−14·2	+ 28·3
9·430	12	106	9	77	307·5	−13·8	+ 41·3
10·445	8	29	8	27	307·2	−13·9	+ 54·5
Means ...	...	...	16	103	307·03	−13·61	...
Group 3106.							
Aug. 2·373	7	37	10	50	293·9	−15·9	−65·6
3·493	36	309	31	268	294·5	−17·4	−50·2
4·511	114	1126	79	785	293·8	−17·1	−37·5
5·418	440	2476	272	1528	292·9	−17·3	−26·3
6·454	644	4277	365	2424	289·0	−16·9	−16·5
7·493	650	4771	358	2621	292·9	−18·0	+ 1·1
8·417	727	4055	416	2316	293·5	−18·1	+13·9
9·430	648	3759	400	2327	292·6	−17·8	+26·4
10·445	488	2950	351	2149	292·3	−18·3	+39·6
11·426	368	2049	347	1938	292·8	−18·2	+53·0
12·522	185	1109	270	1631	291·9	−18·0	+66·6
13·501	56	380	128	1090	291·6	−17·6	+79·3
Means ...	...	...	252	1594	292·64	−17·55	...
Group 3107.							
Aug. 2·373	2	7	3	8	293·0	+14·4	−66·5
3·493	0	37	0	30	293·4	+15·5	−51·3
4·511	51	239	32	154	293·4	+15·8	−37·9
5·418	131	532	75	303	292·8	+15·9	−26·4
6·454	192	1097	99	568	293·6	+15·6	−11·9
7·493	260	1545	131	790	294·3	+15·4	+ 2·5
8·417	280	1416	150	751	295·4	+15·3	+15·8
9·430	242	1321	140	768	295·2	+15·4	+29·0
10·445	176	1134	122	797	296·4	+15·1	+43·7
11·426	109	901	103	852	298·1	+15·1	+58·3
12·522	72	405	134	724	301·4	+14·4	+76·1
13·501	0	15	0	28	288·7	+19·4	+76·4
Means ...	...	...	82	481	294·64	+15·61	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3108.							
1893. d					°	°	°
Aug. 2·373	4	22	11	67	281·0	−14·3	−78·5
3·493	2	11	3	13	280·4	−14·4	−64·3
4·511	4	12	3	10	280·5	−14·2	−50·8
5·418	7	17	6	12	278·8	−14·9	−40·4
6·454	0	0	0	0	...	...	...
7·493	0	15	0	8	278·2	−13·5	−13·6
Means ...	...	...	4	18	279·78	−14·26	...
Group 3109.							
Aug. 3·493	9	24	6	17	299·3	− 3·9	− 45·4
4·511	70	278	41	168	299·5	− 3·9	− 31·8
5·418	66	430	35	233	299·5	− 4·3	− 19·7
6·454	80	351	40	181	300·4	− 4·2	− 5·1
7·493	65	394	33	204	299·9	− 4·4	+ 8·1
8·417	45	336	25	186	301·3	− 4·6	+ 21·7
9·430	44	259	28	163	301·8	− 4·2	+ 35·6
10·445	24	174	19	138	302·4	− 4·2	+ 49·7
11·426	14	86	17	100	303·4	− 4·1	+ 63·6
12·522	4	23	10	59	303·5	− 4·3	+ 78·2
Means ...	...	...	25	145	301·10	− 4·21	...
Group 3110.							
Aug. 3·493	0	7	0	10	278·4	−22·6	− 66·3
4·511	0	10	0	10	278·2	−22·7	− 53·1
5·418	2	11	2	9	277·4	−23·0	− 41·8
Means ...	...	...	1	10	278·00	−22·77	...
Group 3111.							
Aug. 4·511	0	5	0	4	23·7	−17·2	+ 52·4
5·418	8	25	11	32	26·1	−17·7	+ 66·9
Means ...	...	...	6	18	24·90	−17·45	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3112.							
1893. d					°	°	°
Aug. 4·511	5	50	20	203	246·6	+17·0	−84·7
5·418	15	117	24	196	245·6	+17·0	−73·6
6·454	31	195	31	194	245·5	+17·1	−60·0
7·493	34	273	25	200	245·7	+17·1	−46·1
8·417	40	321	25	199	245·2	+17·1	−34·4
9·430	63	360	34	195	245·4	+16·9	−20·8
10·445	42	303	21	155	245·5	+16·8	−7·2
11·426	45	263	23	135	245·1	+16·8	+5·3
12·522	51	260	27	141	244·3	+17·1	+19·0
13·501	10	98	6	59	244·2	+16·8	+31·9
14·456	1	34	1	24	243·9	+16·8	+44·1
15·506	4	32	4	36	249·7	+16·8	+63·9
Means ...	...	...	20	145	245·56	+16·94	...
Group 3113.							
Aug. 5·418	4	22	9	56	241·6	−9·7	−77·6
6·454	4	67	4	83	240·8	−9·7	−64·7
7·493	19	76	15	62	241·2	−9·8	−50·6
8·417	20	71	13	46	242·2	−9·5	−37·4
9·430	36	153	21	90	240·8	−10·1	−25·4
10·445	90	281	49	150	240·0	−9·7	−12·7
11·426	57	339	29	177	240·5	−9·6	+0·7
12·522	36	248	20	134	240·6	−9·7	+15·3
13·501	25	162	15	97	241·1	−9·6	+28·8
14·456	21	91	15	66	243·2	−9·3	+43·4
15·506	10	47	9	46	243·0	−9·2	+57·2
16·416	0	11	0	16	242·5	−9·2	+68·7
Means ...	...	...	17	85	241·46	−9·59	...
Group 3114.							
Aug. 6·454	0	6	0	4	275·8	+9·3	−29·7
7·493	0	41	0	22	274·6	+13·7	−17·2
8·417	4	18	2	9	277·4	+12·9	−2·2
Means ...	...	...	1	12	275·93	+11·97	...
Group 3115.							
Aug. 6·454	0	20	0	37	230·7	+5·0	−74·8
7·493	17	77	18	84	226·1	+5·2	−65·7
8·417	16	75	13	62	226·5	+5·4	−53·1
9·430	5	15	3	9	230·7	+5·3	−35·5
10·445	5	10	3	5	230·6	+5·2	−22·1
Means ...	...	...	7	39	228·92	+5·22	...
Group 3116.							
1893. d					°	°	°
Aug. 6·454	0	16	0	46	224·0	+15·0	−81·5
7·493	23	166	29	204	225·1	+16·3	−66·7
8·417	40	274	35	238	224·6	+16·5	−55·0
9·430	56	303	37	202	225·2	+16·6	−41·0
10·445	59	311	34	176	227·1	+16·8	−25·6
11·426	50	310	26	163	227·3	+16·8	−12·5
12·522	58	291	30	149	228·0	+17·3	+2·7
13·501	31	183	17	98	230·4	+17·3	+18·1
14·456	19	118	11	70	230·9	+17·3	+31·1
15·506	14	75	10	54	231·2	+17·2	+45·4
16·416	10	40	9	36	231·1	+17·1	+57·3
17·444	5	15	7	21	230·6	+17·5	+70·4
Means ...	...	...	20	121	227·96	+16·81	...
Group 3117.							
Aug. 7·493	0	39	0	29	241·8	+5·2	−50·0
8·417	21	112	13	70	242·7	+4·9	−36·9
9·430	23	94	12	52	242·5	+5·0	−23·7
10·445	9	42	4	22	243·0	+6·3	−9·7
11·426	0	24	0	12	241·3	+5·7	+1·5
Means ...	...	...	6	37	242·26	+5·42	...
Group 3118.							
Aug. 7·493	12	110	35	322	214·0	−16·1	−77·8
8·417	36	291	50	442	211·8	−16·0	−67·8
9·430	86	461	79	427	212·8	−16·3	−53·4
10·445	106	813	77	588	212·6	−16·8	−40·1
11·426	118	787	73	489	212·2	−16·7	−27·6
12·522	148	965	83	542	211·8	−16·5	−13·5
13·501	158	864	86	471	211·9	−16·6	−0·4
14·456	143	805	80	450	212·2	−16·6	+12·4
15·506	125	777	77	474	211·8	−16·8	+26·0
16·416	99	731	69	510	211·4	−16·7	+37·6
17·444	56	486	50	430	211·4	−16·6	+51·2
18·415	28	263	36	337	211·2	−15·7	+63·8
19·453	7	29	18	78	210·4	−16·1	+76·7
Means ...	...	...	63	428	211·96	−16·42	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3119.							
1893. d					°	°	°
Aug. 8·417	2	17	3	22	342·8	−19·1	+ 63·2
9·430	0	13	0	36	343·0	−17·4	+ 76·8
Means ...	...	...	2	29	342·90	−18·25	...
Group 3120.							
Aug. 8·417	0	9	0	6	309·3	−18·4	+ 29·7
Means ...	...	...	0	6	309·30	−18·40	...
Group 3121.							
Aug. 8·417	0	25	0	52	202·1	+17·8	− 77·5
9·430	9	49	11	56	201·2	+17·5	− 65·0
10·445	8	38	6	30	201·8	+17·2	− 50·9
11·426	0	29	0	19	201·3	+17·5	− 38·5
12·522	6	27	3	15	204·3	+17·6	− 21·0
Means ...	...	...	4	34	202·14	+17·52	...
Group 3122.							
Aug. 9·430	8	17	4	10	286·3	−11·1	+ 20·1
10·445	3	10	2	6	288·2	−11·0	+ 35·5
11·426	0	9	0	8	289·8	−10·9	+ 50·0
Means ...	...	...	2	8	288·10	−11·00	...
Group 3123.							
Aug. 10·445	3	18	2	9	248·3	+11·5	− 4·4
11·426	0	11	0	6	250·4	+12·9	+ 10·6
Means ...	...	...	1	8	249·35	+12·20	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3124.							
1893. d					°	°	°
Aug. 11·426	30	168	20	112	262·6	−28·1	+ 22·8
12·522	50	256	38	198	261·8	−28·4	+ 36·5
13·501	22	257	22	256	262·1	−29·2	+ 49·8
14·456	27	175	39	250	262·1	−28·5	+ 62·3
15·506	0	47	0	133	260·5	−28·5	+ 74·7
Means ...	...	...	24	190	261·82	−28·54	...
Group 3125.							
Aug. 11·426	0	12	0	6	247·2	+17·7	+ 7·4
12·522	0	22	0	12	247·2	+17·7	+ 21·9
13·501	0	0	0	0	...	...	...
14·456	4	58	3	43	248·0	+16·9	+ 48·2
Means ...	...	...	1	15	247·47	+17·43	...
Group 3126.							
Aug. 11·426	0	4	0	7	168·6	+11·7	− 71·2
12·522	0	19	0	16	169·8	+12·0	− 55·5
13·501	8	28	6	19	170·1	+12·1	− 42·2
14·456	2	13	1	7	170·5	+12·1	− 29·3
Means ...	...	...	2	12	169·75	+11·98	...
Group 3127.							
Aug. 12·522	c.	13	0	34	145·8	+22·7	− 79·5
13·501	6	40	8	48	146·3	+22·7	− 66·0
14·456	4	36	4	32	145·3	+23·0	− 54·5
15·506	10	29	6	19	146·3	+22·8	− 39·5
16·416	0	13	0	8	146·3	+23·2	− 27·5
Means ...	...	...	4	28	146·00	+22·88	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3128.							
1893. d					°	°	°
Aug. 13·501	3	26	2	18	247·3	−20·0	+ 35·0
Means ...	...	...	2	18	247·30	−20·00	...
Group 3129.							
Aug. 14·456	6	24	3	13	218·0	+25·1	+ 18·2
15·506	0	10	0	6	218·7	+23·9	+ 32·9
Means ...	...	...	2	10	218·35	+24·50	...
Group 3130.							
Aug. 14·456	0	24	0	14	164·5	+10·4	− 35·3
15·506	14	73	7	39	166·5	+ 9·4	− 19·3
16·416	17	100	8	50	166·8	+ 9·4	− 7·0
17·444	12	93	7	46	166·8	+ 9·0	+ 6·6
18·415	63	334	34	179	168·3	+ 9·7	+ 20·9
19·453	87	490	52	297	167·7	+10·3	+ 34·0
20·366	69	418	50	307	168·5	+10·5	+ 46·8
21·520	41	270	46	298	169·7	+10·4	+ 63·4
22·471	0	48	0	99	170·7	+10·2	+ 76·9
Means ...	...	...	23	148	167·72	+ 9·92	...
Group 3131.							
Aug. 14·456	9	100	31	335	120·0	−11·0	− 79·8
15·506	34	258	46	347	119·7	−11·2	− 66·1
16·416	48	370	44	336	119·8	−11·0	− 54·0
17·444	54	469	38	326	119·7	−11·3	− 40·5
18·415	83	484	49	290	120·2	−11·6	− 27·2
19·453	67	493	37	291	119·8	−12·0	− 13·9
20·366	77	478	41	255	119·9	−12·0	− 1·8
21·520	55	364	30	201	120·7	−12·4	+ 14·4
22·471	40	214	24	130	121·1	−13·1	+ 27·3
23·678	14	75	11	56	121·9	−13·1	+ 44·0
24·410	10	30	9	28	122·0	−13·3	+ 53·8
25·450	0	26	0	40	122·7	−13·3	+ 68·2
Means ...	...	...	30	220	120·63	−12·11	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3132.							
1893. d					°	°	°
Aug. 15·506	4	24	3	19	141·8	−15·3	− 44·0
Means ...	...	...	3	19	141·80	−15·30	...
Group 3133.							
Aug. 15·506	0	19	0	79	104·3	−10·5	− 81·5
16·416	33	147	53	237	103·7	−10·5	− 70·1
17·444	45	304	43	291	104·1	−11·2	− 56·1
18·415	60	365	43	262	104·8	−11·0	− 42·6
19·453	83	428	50	260	104·8	−10·7	− 28·9
20·366	84	449	46	249	104·7	−10·5	− 17·0
21·520	86	436	45	227	105·0	−10·4	− 1·3
22·471	89	499	47	268	105·4	−10·5	+ 11·6
23·678	77	446	46	270	105·3	−11·1	+ 27·4
24·410	92	467	63	314	105·5	−11·5	+ 37·3
25·450	48	281	40	236	104·9	−11·1	+ 50·4
26·219	30	209	34	234	105·2	−10·9	+ 61·0
27·195	17	88	35	175	105·0	−11·1	+ 73·6
Means ...	...	...	42	239	104·82	−10·85	...
Group 3134.							
Aug. 16·416	0	13	0	17	110·1	−17·9	−63·7
Means ...	...	...	0	17	110·10	−17·90	...
Group 3135.							
Aug. 16·416	0	496	0	213	100·2	−19·1	− 73·6
17·444	40	261	42	289	101·8	−18·8	− 58·4
18·415	58	513	47	420	101·1	−18·9	− 46·3
19·453	93	729	63	489	100·5	−19·1	− 33·2
20·366	166	1125	100	680	100·2	−18·8	− 21·5
21·520	139	783	79	444	100·5	−19·1	− 5·8
22·471	59	465	34	262	101·6	−18·8	+ 7·8
23·678	60	385	39	241	103·1	−18·5	+ 25·2
24·410	82	316	56	216	103·2	−18·5	+ 35·0
25·450	20	138	17	126	102·5	−19·3	+ 48·0
26·219	0	16	0	18	104·2	−18·6	+ 60·0
Means ...	...	...	43	309	101·72	−18·86	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date, Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3136.							
1893. d					°	°	°
Aug. 16·416	0	13	0	29	98·6	−10·9	− 75·2
17·444	0	34	0	39	98·1	−10·8	− 62·1
18·415	0	34	0	29	97·9	−10·5	− 49·5
19·453	3	17	2	11	99·7	− 9·9	− 34·0
20·366	0	8	0	5	97·5	−12·7	− 24·2
21·520	0	17	0	9	98·5	−10·8	− 7·8
22·471	0	5	0	3	98·2	−10·7	+ 4·4
Means ...	...	...	0	18	98·36	−10·90	...
Group 3137.							
Aug. 17·444	43	124	77	219	88·5	−10·7	− 71·7
18·415	37	271	38	277	89·0	−10·6	− 58·4
19·453	51	322	38	242	88·8	−10·2	− 44·9
20·366	53	365	34	232	89·0	−10·4	− 32·7
21·520	70	433	38	238	89·6	−10·4	− 16·7
22·471	60	408	32	215	90·1	−10·5	− 3·7
23·678	69	420	37	226	90·7	−10·1	+ 12·8
24·410	62	368	36	210	90·7	− 9·6	+ 22·5
25·450	60	319	39	207	90·9	− 9·2	+ 36·4
26·219	39	266	30	206	91·4	− 8·6	+ 47·2
27·195	28	200	30	213	91·3	− 8·7	+ 59·9
28·426	5	90	12	212	91·5	− 8·3	+ 76·3
Means ...	...	...	37	225	90·13	− 9·78	...
Group 3138.							
Aug. 17·444	2	10	4	17	87·3	+ 9·2	− 72·9
18·415	6	23	5	22	87·8	+ 9·3	− 59·6
19·453	6	17	14	38	87·6	+10·3	− 46·1
20·366	4	9	3	6	87·9	+ 9·6	− 33·8
21·520	0	6	0	3	88·6	+ 9·3	− 17·7
Means ...	...	...	5	17	87·84	+ 9·54	...
Group 3139.							
Aug. 18·415	40	164	32	129	110·0	−28·3	− 37·4
19·453	62	336	41	227	109·8	−28·1	− 23·9
20·366	103	369	65	233	109·3	−27·7	− 12·4
21·520	67	347	41	215	109·0	−28·5	+ 2·7
22·471	25	241	16	153	108·9	−28·1	+ 15·1

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3139—*continued.*							
1893. d					°	°	°
Aug. 23·678	10	83	8	61	109·3	−28·1	+ 31·4
24·410	17	66	15	54	108·8	−28·3	+ 40·6
25·450	8	36	9	38	108·0	−28·3	+ 53·5
26·219	3	16	5	25	108·3	−27·9	+ 64·1
Means ...	...	...	26	126	109·04	−28·14	...
Group 3140.							
Aug. 18·415	0	12	0	26	69·7	+10·9	− 77·7
19·453	14	62	19	88	63·3	+11·3	− 70·4
20·366	33	194	30	177	64·7	+11·0	− 57·0
21·520	39	255	26	170	64·7	+10·9	− 41·6
22·471	57	285	32	160	66·5	+10·4	− 27·3
23·678	69	272	35	141	67·0	+ 9·7	− 10·9
24·410	31	185	16	93	67·0	+ 9·6	− 1·2
25·450	18	157	10	81	66·5	+ 9·5	+ 12·0
26·219	3	16	2	9	69·6	+10·2	+ 25·4
Means ...	...	...	19	105	66·56	+10·39	...
Group 3141.							
Aug. 19·453	30	96	19	64	170·1	−12·4	+ 36·4
20·366	46	190	39	162	172·2	−12·4	+ 50·5
21·520	20	121	31	186	174·7	−13·1	+ 68·4
Means ...	...	...	30	137	172·33	−12·63	...
Group 3142.							
Aug. 19·453	0	8	0	7	86·4	−19·4	− 47·3
20·366	3	19	2	13	86·3	−19·0	− 35·4
21·520	12	65	7	39	87·8	−19·2	− 18·5
22·471	11	34	6	19	89·8	−19·2	− 4·0
23·678	8	50	4	29	87·5	−19·8	+ 9·6
24·410	6	24	4	14	88·2	−19·9	+ 20·0
25·450	2	7	1	5	89·5	−20·0	+ 35·0
26·219	0	8	0	6	89·8	−19·9	+ 45·6
Means ...	...	...	3	17	88·16	−19·55	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of Umbra.	Projected Area of Whole Spot.	Area for Group. Umbra.	Area for Group. Whole Spot.	Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
Group 3143.							
1893. d					°	°	°
Aug. 19·453	5	31	23	138	49·2	+ 9·2	− 84·5
20·366	17	67	25	101	50·5	+ 9·2	− 71·2
21·520	21	80	19	72	49·6	+ 8·7	− 56·7
22·471	33	163	22	111	50·6	+ 9·0	− 43·2
23·678	48	201	27	113	51·5	+ 9·3	− 26·4
24·410	32	206	17	108	52·4	+ 9·4	− 15·8
25·450	36	169	18	84	53·0	+ 9·3	− 1·5
26·219	24	159	13	81	53·4	+10·2	+ 9·2
27·195	20	133	11	73	53·8	+ 9·8	+ 22·4
28·426	28	144	18	92	54·3	+ 9·9	+ 39·1
29·399	19	96	16	77	54·6	+ 9·8	+ 52·4
30·453	8	50	10	60	54·3	+ 9·5	+ 66·0
31·483	7	25	16	62	54·0	+ 9·5	+ 79·3
Means ...	...	...	18	90	52·40	+ 9·45	...
Group 3144.							
Aug. 20·366	0	15	0	9	146·0	−13·9	+ 24·3
21·520	0	11	0	7	144·4	−14·5	+ 38·1
Means ...	...	...	0	8	145·20	−14·20	...
Group 3145.							
Aug. 20·366	15	48	10	31	120·9	−30·8	− 0·8
21·520	7	41	5	28	120·7	−30·7	+ 14·4
22·471	5	18	3	13	121·0	−31·7	+ 27·2
Means ...	...	...	6	24	120·87	−31·07	...
Group 3146.							
Aug. 21·520	2	15	1	9	139·1	+17·6	+32·8
22·471	12	58	9	42	140·6	+17·2	+46·8
23·678	34	234	37	251	140·7	+17·0	+62·8
24·410	20	124	31	187	140·1	+16·8	+71·9
25·450	2	58	8	201	138·1	+17·4	+83·6
Means ...	...	...	17	138	139·72	+17·20	...

Date. Greenwich Civil Time.	Projected Area of Umbra.	Projected Area of Whole Spot.	Area for Group. Umbra.	Area for Group. Whole Spot.	Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
Group 3147.							
1893. d					°	°	°
Aug. 21·520	2	21	3	28	37·8	+17·2	− 68·5
22·471	14	75	13	66	37·7	+17·6	− 56·1
23·678	25	99	17	66	37·4	+17·8	− 40·5
24·410	13	71	8	42	39·1	+17·7	− 29·1
25·450	12	42	6	22	40·8	+16·8	− 13·7
26·219	2	15	1	8	40·9	+17·2	− 3·3
27·195	2	12	1	6	41·1	+16·8	+ 9·7
28·426	0	17	0	9	40·9	+16·5	+ 25·7
29·399	0	10	0	6	40·7	+16·5	+ 38·5
Means ...	...	...	5	28	39·60	+17·12	...
Group 3148.							
Aug. 23·678	2	25	1	15	52·2	−11·1	−25·7
Means ...	...	...	1	15	52·20	−11·10	...
Group 3149.							
Aug. 23·678	7	40	6	40	15·4	+26·1	− 62·5
24·410	21	138	17	116	15·4	+26·4	− 52·8
25·450	70	370	47	243	16·3	+26·0	− 38·2
26·219	65	367	39	221	16·3	+26·5	− 27·9
27·195	79	503	44	280	14·9	+26·8	−16·5
28·426	56	417	30	222	14·5	+27·1	− 0·7
29·399	51	318	28	173	15·1	+27·2	+ 12·9
30·453	51	302	29	178	14·7	+26·8	+ 26·4
31·483	44	239	30	163	14·6	+26·4	+ 39·9
Sept. 1·452	31	139	26	118	14·8	+26·2	+ 52·9
2·425	17	110	20	129	14·6	+25·9	+ 65·5
3·378	0	33	0	71	14·9	+25·9	+ 78·4
Means ...	...	...	26	163	15·13	+26·44	...
Group 3150.							
Aug. 24·410	6	28	3	14	58·4	+14·3	− 9·8
25·450	2	7	1	4	57·8	+15·0	+ 3·3
Means ...	...	...	2	9	58·10	+14·65	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3151.							
1893. d					°	°	°
Aug. 25·450	2	19	4	35	129·3	+ 6·7	+74·8
Means ...	...	...	4	35	129·30	+ 6·70	...
Group 3152.							
Aug. 25·450	0	18	0	29	345·8	−17·6	−68·7
26·219	5	21	5	22	345·9	−17·0	−58·3
27·195	8	25	6	20	345·7	−16·9	−45·7
28·426	0	0	0	0	...	...	...
29·399	3	36	2	21	345·6	−18·1	−16·6
	...	...	3	18	345·75	−17·40	...
Group 3153.							
Aug. 27·195	18	44	11	28	354·1	+20·8	−37·3
28·426	2	30	1	17	355·5	+21·2	−19·7
29·399	0	7	0	4	358·5	+21·2	− 3·7
30·453	0	0	0	0	...	...	...
31·483	0	8	0	4	357·9	+21·6	+23·2
Means ...	...	...	2	11	356·50	+21·20	...
Group 3154.							
Aug. 28·426	34	258	94	596	299·5	−10·5	−75·7
29·399	91	625	103	714	300·6	−10·2	−61·6
30·453	188	1304	144	1010	301·4	−10·1	−46·9
31·483	261	1531	165	971	301·9	−10·5	−32·8
Sept. 1·452	319	1854	181	1048	301·2	−10·5	−20·7
2·425	309	2177	164	1152	301·9	−10·7	− 7·2
3·378	305	2456	162	1303	302·8	−10·7	+ 6·3
4·380	332	2167	186	1219	303·3	−10·1	+22·3
5·484	311	1985	200	1274	302·4	−10·5	+33·7
6·406	180	1359	138	1057	303·3	−10·7	+46·8
7·392	126	873	135	953	303·7	−10·4	+50·2
8·450	30	339	60	733	304·5	−10·4	+74·9
9·420	8	48	28	163	296·7	−10·3	+80·0
Means ...	...	...	135	938	301·78	−10·43	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3155.							
1893. d					°	°	°
Aug. 28·426	88	399	144	651	301·9	+13·7	−73·3
29·399	131	655	129	643	302·0	+13·9	−60·2
30·453	163	830	118	599	302·0	+13·9	−46·3
31·483	190	1031	114	619	302·1	+14·1	−32·6
Sept. 1·452	290	989	155	530	301·8	+14·1	−20·1
2·425	234	1041	118	526	301·7	+14·2	− 7·4
3·378	209	1042	106	529	302·3	+14·2	+ 5·8
4·380	229	1085	122	577	302·2	+14·3	+18·9
5·484	197	1027	118	614	301·3	+14·3	+32·6
6·406	150	844	105	590	301·4	+14·1	+44·9
7·392	122	572	113	532	301·6	+14·6	+58·1
8·450	61	320	94	492	301·8	+14·2	+72·2
9·420	21	104	75	372	300·3	+14·3	+83·6
Means ...	...	...	126	560	301·72	+14·15	...
Group 3156.							
Aug. 28·426	8	127	48	773	292·8	−19·2	−82·4
29·399	54	438	91	735	293·4	−19·3	−68·8
30·453	121	681	124	699	292·6	−19·2	−55·7
31·483	133	935	102	720	292·3	−19·5	−42·4
Sept. 1·452	161	935	105	606	292·0	−19·3	−29·9
2·425	184	1155	109	679	291·6	−19·7	−17·5
3·378	199	1128	112	638	291·8	−19·8	− 4·7
4·380	158	1019	90	580	292·1	−19·0	+ 8·8
5·484	124	772	75	471	290·6	−19·3	+21·9
6·406	101	650	66	425	290·9	−19·5	+34·4
7·392	77	420	66	361	291·5	−19·3	+48·0
8·450	23	234	28	288	291·0	−19·7	+61·4
9·420	14	106	34	249	290·8	−20·0	+74·1
Means ...	...	...	81	556	291·80	−19·45	...
Group 3157.							
Aug. 29·399	0	5	0	2	6·9	+19·1	+ 4·7
Means ...	...	...	0	2	6·90	+19·10	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3158.							
1893. d					°	°	°
Aug. 29·399	0	10	0	7	332·0	−14·1	−30·2
Means ...	...	...	0	7	332·00	−14·10	...
Group 3159.							
Aug. 30·453	2	11	1	7	321·7	− 5·0	− 26·6
Means ...	...	...	1	7	321·70	− 5·00	...
Group 3160.							
Aug. 31·483	0	7	0	4	3·6	+ 8·9	+ 28·9
Means ...	...	...	0	4	3·60	+ 8·90	...
Group 3161.							
Aug. 31·483	4	35	2	19	345·3	−18·1	+ 10·6
Means ...	...	...	2	19	345·30	−18·10	...
Group 3162.							
Aug. 31·483	8	43	22	122	257·1	−13·9	− 77·6
Sept. 1·452	16	92	20	122	257·1	−13·8	− 64·8
2·425	29	175	27	158	256·4	−14·1	− 52·7
3·378	23	158	16	111	257·6	−14·4	− 38·9
4·380	22	168	13	99	259·6	−12·9	− 23·7
5·484	47	214	25	117	257·2	−13·1	− 11·5
6·406	29	174	16	94	258·1	−13·3	+ 1·6
7·392	26	117	15	65	258·1	−13·3	+ 14·6
8·450	0	24	0	15	260·3	−12·7	+ 30·7
Means ...	...	...	17	100	267·94	−13·50	...
Group 3163.							
1893. d					°	°	°
Sept. 1·452	3	16	1	9	292·5	+15·8	− 29·4
2·425	2	22	1	11	294·1	+15·6	− 15·0
3·378	0	0	0	0	...	...	...
4·380	0	0	0	0	...	...	...
5·484	0	29	0	16	289·3	+16·1	+ 20·6
6·406	0	17	0	10	288·8	+16·5	+ 32·3
Means ...	...	...	0	8	291·18	+16·00	...
Group 3164.							
Sept. 2·425	6	14	5	11	346·9	−20·8	+ 37·8
Means ...	...	...	5	11	346·90	−20·80	...
Group 3165.							
Sept. 2·425	2	12	2	13	258·8	−29·2	− 50·3
3·378	0	13	0	11	259·6	−30·0	− 36·9
4·380	0	8	0	6	260·6	−29·5	− 22·7
Means ...	...	...	1	10	259·67	−29·57	...
Group 3166.							
Sept. 3·378	0	27	0	14	280·7	+ 3·3	− 15·8
Means ...	...	...	0	14	280·70	+ 3·30	...
Group 3167.							
Sept. 4·380	7	24	6	17	328·3	− 4·3	+ 45·0
Means ...	...	...	6	17	328·30	− 4·30	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3168.							
1893. d					°	°	°
Sept. 4·380	11	53	14	71	217·1	— 7·7	— 66·2
5·484	62	403	52	342	216·9	— 8·1	— 51·8
6·406	98	723	65	480	218·6	— 7·7	— 37·9
7·392	176	992	99	566	220·1	— 7·6	— 23·4
8·450	206	1101	108	575	221·4	— 7·9	— 8·2
9·420	196	1018	118	642	222·7	— 8·3	+ 5·0
10·493	245	1364	136	758	222·0	— 8·1	+ 19·4
11·411	188	1192	117	736	222·6	— 7·9	+ 32·1
12·513	112	718	86	537	222·7	— 7·3	+ 46·8
13·519	50	331	54	360	223·8	— 7·0	+ 61·2
14·626	12	115	29	276	225·0	— 6·6	+ 77·0
Means ...	...	...	80	486	221·17	— 7·65	...
Group 3169.							
Sept. 5·484	0	12	0	7	277·4	—16·5	+ 8·7
6·406	17	47	10	28	279·9	—15·7	+ 23·4
7·392	10	44	7	30	279·1	—17·4	+ 35·6
8·450	0	21	0	18	277·7	—17·5	+ 48·1
Means ...	...	...	4	21	278·53	—16·78	...
Group 3170.							
Sept. 6·406	0	11	0	7	286·0	— 8·4	+ 29·5
Means ...	...	...	0	7	286·00	— 8·40	...
Group 3171.							
Sept. 6·406	6	26	4	15	244·4	—21·8	— 12·1
7·392	8	33	5	18	245·5	—21·6	+ 2·0
Means ...	...	...	5	17	244·95	—21·70	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3172.							
1893. d					°	°	°
Sept. 7·392	0	11	0	13	180·5	—10·4	— 63·0
8·450	0	0	0	0	...	...	...
9·420	0	8	0	5	178·8	—10·5	— 37·9
Means ...	...	...	0	6	179·65	—10·45	...
Group 3173.							
Sept. 7·392	59	329	109	607	170·7	— 8·9	— 72·8
8·450	123	835	139	935	168·2	— 9·7	— 61·4
9·420	175	1136	142	920	167·7	— 9·8	— 49·0
10·493	149	1387	96	879	168·4	— 8·7	— 34·2
11·411	218	1306	124	753	168·4	— 9·4	— 22·1
12·513	249	1262	132	671	167·4	— 9·0	— 8·0
13·519	194	1013	103	534	168·7	— 8·5	+ 6·1
14·626	155	852	87	475	168·6	— 8·2	+ 20·6
15·477	115	715	72	448	170·6	— 8·5	+ 33·8
16·202	95	596	68	431	170·5	— 8·2	+ 43·3
17·490	69	358	74	384	170·5	— 8·6	+ 60·3
18·244	27	173	46	294	171·6	— 8·6	+ 71·3
19·200	4	61	23	325	171·1	— 7·4	+ 83·5
Means ...	...	...	93	589	169·42	— 8·73	...
Group 3174.							
Sept. 8·450	9	48	5	23	219·7	+12·8	— 9·9
9·420	6	24	3	12	219·7	+12·6	+ 3·0
10·493	0	25	0	13	219·7	+12·4	+ 17·1
11·411	5	44	3	25	220·2	+12·2	+ 29·7
12·513	0	20	0	14	221·4	+13·4	+ 45·5
13·519	0	16	0	14	219·4	+13·4	+ 56·8
Means ...	...	...	2	17	220·02	+12·80	...
Group 3175.							
Sept. 9·420	0	23	0	13	211·8	—17·8	— 4·9
10·493	0	14	0	8	212·2	—17·6	+ 9·6
11·411	0	10	0	6	214·5	—17·2	+24·0
Means ...	...	...	0	9	212·83	—17·53	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3176.							
1893. d					°	°	°
Sept. 10·493	0	31	0	44	132·6	+ 7·7	−70·0
11·411	14	53	13	49	132·6	+ 7·9	−57·9
12·513	12	83	8	56	132·8	+ 8·0	−43·1
13·519	20	77	12	44	132·5	+ 8·0	−30·1
14·626	13	62	7	32	132·3	+ 8·3	−15·7
15·477	11	58	5	29	132·4	+ 8·6	− 4·4
16·202	10	40	5	20	133·0	+ 8·3	+ 5·8
Means ...	...	...	7	39	130·60	+ 8·11	...
Group 3177.							
Sept. 11·411	4	70	15	254	112·3	−22·9	−78·2
12·513	15	102	19	129	114·9	−22·2	−61·0
13·519	17	125	15	112	114·0	−22·5	−48·6
14·626	20	131	14	92	113·5	−22·5	−34·5
15·477	11	136	7	85	112·8	−22·3	−24·0
16·202	20	101	12	61	112·6	−22·1	−14·6
17·490	13	45	7	26	112·1	−21·9	+ 1·9
18·244	6	29	4	17	111·9	−21·9	+11·6
19·200	4	24	3	15	111·3	−21·8	+23·7
20·461	6	21	5	16	111·3	−21·8	+40·3
21·239	0	11	0	10	110·7	−22·2	+50·0
Means ...	...	...	9	74	112·49	−22·19	...
Group 3178.							
Sept. 12·513	2	18	1	9	169·5	− 4·5	− 6·4
13·519	0	9	0	4	168·6	− 3·8	+ 6·0
14·626	0	6	0	3	171·4	− 4·1	+23·4
Means ...	...	...	0	5	169·83	− 4·13	...
Group 3179.							
Sept. 12·513	3	16	2	8	167·5	+18·3	− 8·4
13·519	0	10	0	5	165·9	+19·3	+ 3·3
Means ...	...	...	1	7	166·70	+18·80	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3180.							
1893. d					°	°	°
Sept. 12·513	1	10	1	7	136·6	−17·5	− 39·3
Means ...	...	...	1	7	136·60	−17·50	...
Group 3181.							
Sept. 12·513	6	20	11	36	105·8	−18·7	− 70·1
13·519	7	55	7	59	105·0	−19·1	− 57·6
14·626	7	43	5	33	105·6	−19·0	− 42·4
15·477	0	27	0	18	104·7	−19·7	− 32·1
Means ...	...	...	6	37	105·28	−19·13	...
Group 3182.							
Sept. 13·519	7	44	4	27	198·5	+ 3·0	+ 35·9
14·626	4	19	3	18	199·6	+ 3·0	+ 51·6
15·477	0	5	0	5	200·4	+ 2·9	+ 63·6
Means ...	...	...	2	17	199·50	+ 2·97	...
Group 3183.							
Sept. 13·519	5	12	2	6	181·9	+ 8·9	+ 19·3
14·626	2	13	1	8	183·7	+ 8·8	+ 35·7
15·477	0	7	0	5	184·6	+ 7·8	+ 47·8
Means ...	...	...	1	6	183·40	+ 8·50	...
Group 3184.							
Sept. 13·519	2	11	3	13	106·2	−28·6	− 56·4
14·626	3	7	3	6	105·7	−28·4	− 42·3
15·477	0	7	0	5	105·5	−28·4	− 31·3
Means ...	...	...	2	8	105·80	−28·47	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS.—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3185.							
1893. d					°	°	°
Sept. 15·477	0	15	0	8	140·7	+29·2	+ 3·9
Means ...	...	...	0	8	140·70	+29·20	...
Group 3186.							
Sept. 15·477	49	300	102	625	59·8	+ 8·2	— 77·0
16·202	101	396	128	500	59·8	+ 8·1	— 67·4
17·490	156	796	119	609	60·6	+ 8·1	— 49·6
18·244	158	913	104	596	60·3	+ 8·2	— 40·0
19·200	158	1017	88	570	60·7	+ 8·1	— 26·9
20·461	153	871	77	442	61·0	+ 8·4	— 10·0
21·239	200	787	100	396	61·0	+ 8·7	+ 0·3
22·579	142	755	75	397	60·9	+ 9·0	+ 17·8
23·089	29	748	134	414	61·9	+ 8·9	+ 25·6
24·473	112	689	77	470	61·6	+ 8·8	+ 43·5
25·375	88	494	78	440	62·3	+ 7·6	+ 56·2
26·494	44	192	67	294	63·0	+ 8·2	+ 71·6
Means ...	...	...	96	479	61·08	+ 8·36	...
Group 3187.							
Sept. 17·490	15	47	18	55	47·6	— 8·3	— 62·6
18·244	29	234	26	208	47·0	— 8·4	— 53·3
19·200	57	310	39	210	48·1	— 8·4	— 39·5
20·461	37	327	20	185	49·2	— 8·0	— 21·8
21·239	57	340	30	179	49·0	— 8·1	— 11·7
22·579	44	276	23	144	49·6	— 7·8	+ 6·5
23·089	47	255	26	137	50·3	— 8·0	+ 14·0
24·473	31	199	19	123	50·4	— 7·8	+ 32·3
25·375	32	166	23	122	50·3	— 8·3	+ 44·2
26·494	17	96	17	97	50·3	— 8·1	+ 58·9
27·540	14	51	25	93	50·5	— 7·7	+ 72·9
Means ...	...	...	24	141	49·30	— 8·08	...
Group 3188.							
Sept. 18·244	11	47	6	30	124·7	—16·6	+ 24·4
Means ...	...	...	6	30	124·70	—16·60	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3189.							
1893. d					°	°	°
Sept. 18·244	9	38	5	22	77·4	+24·0	— 22·9
19·200	9	35	5	18	77·6	+23·9	— 10·0
20·461	0	63	0	33	76·4	+25·0	+ 5·4
Means ...	...	...	3	24	77·13	+24·30	...
Group 3190.							
Sept. 19·200	2	20	6	60	169·9	+18·7	+ 82·3
Means ...	...	...	6	60	169·90	+18·70	...
Group 3191.							
Sept. 20·461	0	19	0	10	48·0	+13·0	— 23·0
21·239	0	20	0	10	48·2	+12·8	— 12·5
22·579	20	95	10	48	51·7	+12·6	+ 8·6
23·089	23	107	13	55	52·1	+12·9	+ 15·8
24·473	97	459	58	277	52·1	+11·8	+ 34·0
25·375	73	435	52	310	51·6	+11·7	+ 45·5
26·494	37	267	35	254	50·5	+11·9	+ 59·3
27·540	8	160	13	260	50·7	+11·8	+ 73·1
28·264	0	7	0	19	49·1	+13·2	+ 81·1
Means ...	...	...	20	138	50·44	+12·41	...
Group 3192.							
Sept. 20·461	15	90	13	74	29·1	—25·8	— 41·9
21·239	18	86	13	62	28·0	—25·8	— 32·7
22·579	14	55	9	34	29·0	—26·0	— 14·1
23·089	10	27	6	16	31·9	—25·3	— 4·4
Means ...	...	...	10	47	29·50	—25·73	...
Group 3193.							
Sept. 21·239	1	17	1	15	14·8	—28·9	— 45·9
Means ...	...	...	1	15	14·80	—28·90	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued*.

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3194.							
1893. d					°	°	°
Sept. 21·239	0	7	0	14	345·7	−10·4	− 75·0
22·579	11	60	9	53	350·5	−10·2	− 52·6
23·089	7	40	5	31	350·1	−10·1	− 46·2
Means ...	...	...	5	33	348·77	−10·23	...
Group 3195.							
Sept. 22·579	4	16	5	23	111·0	+42·0	+ 67·9
Means ...	...	...	5	23	111·00	+42·00	...
Group 3196.							
Sept. 22·579	0	14	0	17	338·8	− 7·6	− 64·3
23·089	0	12	0	11	340·4	− 6·8	− 55·9
24·473	21	109	14	73	338·9	− 6·6	− 39·2
25·375	34	217	19	125	339·1	− 6·4	− 27·0
26·494	22	159	12	84	339·5	− 6·0	− 11·9
27·540	14	57	7	29	338·9	− 5·6	+ 1·3
28·264	0	9	0	5	338·1	− 6·3	+ 10·1
Means ...	...	...	7	49	339·10	− 6·47	...
Group 3197.							
Sept. 22·579	10	49	15	71	336·2	−14·2	− 66·9
23·089	9	47	9	51	337·9	−13·4	− 58·4
24·473	0	32	0	22	337·2	−14·5	− 40·9
25·375	3	16	2	10	338·1	−13·4	− 28·0
26·494	0	13	0	7	338·1	−13·5	− 13·3
27·540	0	13	0	7	338·7	−13·1	+ 1·1
Means ...	...	...	4	28	337·70	−13·68	...
Group 3198.							
Sept. 23·089	0	6	0	7	330·5	+22·3	− 65·8
Means ...	...	...	0	7	330·50	+22·30	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3199.							
1893. d					°	°	°
Sept. 24·473	12	59	7	33	41·0	+19·4	+ 22·9
25·375	22	89	14	56	41·3	+19·6	+ 35·2
26·494	11	52	9	42	42·6	+20·0	+ 51·2
27·540	14	43	17	52	44·2	+20·5	+ 66·6
28·264	0	11	0	24	46·2	+19·6	+ 78·2
Means ...	...	...	9	41	43·06	+19·82	...
Group 3200.							
Sept. 24·473	6	52	4	35	346·9	−21·2	− 31·2
25·375	2	20	1	12	347·2	−21·4	− 18·9
Means ...	...	...	3	24	347·05	−21·30	...
Group 3201.							
Sept. 24·473	8	70	11	94	308·8	+12·7	− 69·3
25·375	17	72	16	66	308·1	+13·1	− 58·0
26·494	13	92	9	62	308·7	+13·2	− 42·7
27·540	25	116	15	66	309·5	+13·6	− 28·1
28·264	18	113	9	61	308·4	+13·8	− 19·6
29·474	15	59	8	30	308·8	+13·6	− 3·2
30·478	0	19	0	10	308·7	+13·7	+ 9·9
Means ...	...	...	10	56	308·71	+13·39	...
Group 3202.							
Sept. 24·473	10	70	18	126	306·1	−11·1	− 72·0
25·375	15	106	17	118	305·2	−11·1	− 60·9
26·494	18	143	13	108	306·0	−11·0	− 45·4
27·540	28	172	18	107	306·1	−11·0	− 31·5
28·264	39	241	22	138	305·5	−11·4	− 22·5
29·474	21	190	11	99	305·8	−11·0	− 6·2
30·478	31	205	16	108	305·2	−11·1	+ 6·4
Oct. 1·266	48	172	27	95	305·6	−11·8	+ 17·2
2·466	21	124	13	77	305·1	−11·1	+ 32·6
3·467	18	109	14	82	305·0	−11·5	+ 45·7
4·477	20	99	21	102	304·8	−11·5	+ 58·8
5·377	7	45	12	82	306·1	−11·8	+ 72·0
Means ...	...	...	17	104	305·54	−11·28	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3203.							
1893. d					°	°	°
Sept. 24·473	28	155	58	318	301·0	+13·1	— 77·1
25·375	91	284	108	337	300·3	+13·4	— 65·8
26·494	76	419	59	327	300·6	+13·3	— 50·8
27·540	103	498	64	312	300·5	+13·3	— 37·1
28·264	139	585	79	333	300·0	+13·2	— 28·0
29·474	131	586	67	299	300·2	+13·2	— 11·8
30·478	147	726	74	363	300·3	+12·8	+ 1·5
Oct. 1·266	179	645	93	335	300·6	+12·5	+ 12·2
2·466	94	525	54	298	300·5	+12·6	+ 28·0
3·467	83	420	55	279	300·9	+12·5	+ 41·6
4·477	62	348	53	297	300·7	+12·5	+ 54·7
5·377	55	218	71	279	301·9	+12·4	+ 67·8
6·207	35	132	76	287	300·7	+11·7	+ 77·6
Means ...	...	...	70	313	300·63	+12·81	...
Group 3204.							
Sept. 25·375	0	7	0	5	51·3	+16·6	+ 45·2
26·494	0	6	0	5	50·3	+17·0	+ 58·9
Means ...	...	...	0	5	50·80	+16·80	...
Group 3205.							
Sept. 26·494	2	7	3	8	290·7	— 7·7	— 60·7
27·540	3	16	2	12	291·1	— 8·0	— 46·5
28·264	0	11	0	7	291·2	— 7·6	— 36·8
29·474	0	9	0	5	292·4	— 7·0	— 19·6
Means ...	...	...	1	8	291·35	— 7·58	...
Group 3206.							
Sept. 27·540	23	107	13	56	321·2	+ 7·8	— 16·4
28·264	64	310	33	157	321·5	+ 7·0	— 6·5
29·474	205	1044	104	529	321·9	+ 7·7	+ 9·9
30·478	249	1484	135	805	322·0	+ 8·0	+ 23·2
Oct. 1·266	278	1442	168	873	322·8	+ 7·5	+ 34·4
2·466	173	1087	132	835	322·3	+ 7·5	+ 49·8
3·467	107	697	117	760	322·6	+ 7·5	+ 63·3
4·477	46	405	88	765	321·3	+ 7·6	+ 75·3
Means ...	...	...	99	598	321·95	+ 7·58	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3207.							
1893. d					°	°	°
Sept. 29·474	9	84	27	236	231·9	+ 3·5	— 80·1
30·478	44	255	57	345	230·2	+ 3·7	— 68·6
Oct. 1·266	88	308	81	284	231·1	+ 3·5	— 57·3
2·466	54	398	36	261	232·0	+ 3·1	— 40·5
3·467	63	411	35	230	232·7	+ 3·1	— 26·6
4·477	73	475	38	244	232·7	+ 3·0	— 13·3
5·377	80	436	41	220	233·1	+ 3·2	— 1·0
6·207	74	304	38	154	233·4	+ 2·2	+ 10·3
7·502	49	306	28	174	234·0	+ 2·9	+ 27·9
8·241	54	300	34	192	233·7	+ 2·4	+ 37·4
9·303	27	175	23	144	235·1	+ 2·3	+ 52·7
10·310	14	95	18	120	235·8	+ 2·6	+ 66·7
Means ...	...	...	38	217	232·98	+ 2·96	...
Group 3208.							
Sept. 30·478	12	28	6	15	279·3	+20·6	— 19·5
Oct. 1·266	6	31	3	16	279·3	+20·7	— 9·1
Means ...	...	...	5	16	279·30	+20·65	...
Group 3209.							
Sept. 30·478	9	68	6	40	272·6	— 9·7	— 26·2
Oct. 1·266	0	36	0	19	273·7	— 9·3	— 14·7
Means ...	...	...	3	30	273·15	— 9·50	...
Group 3210.							
Oct. 2·466	2	53	3	71	209·4	—22·7	— 63·1
3·467	1	36	1	31	210·4	—22·1	— 48·9
4·477	4	33	2	24	211·1	—22·1	— 34·9
5·377	0	0	0	0	...	...	...
6·207	9	51	5	31	210·4	—23·9	— 12·7
7·502	0	25	0	14	210·8	—22·6	+ 4·7
8·241	0	7	0	4	210·3	—23·3	+ 14·0
Means ...	...	...	2	25	210·40	—22·78	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of Umbra.	Projected Area of Whole Spot.	Area for Group. Umbra.	Area for Group. Whole Spot.	Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
Group 3211.							
1893. d					°	°	°
Oct. 3·467	8	51	5	35	301·5	+17·3	+ 42·2
4·477	9	45	8	39	301·9	+17·2	+ 55·9
5·377	7	46	8	62	303·5	+17·4	+ 69·4
6·207	3	37	6	81	301·3	+16·3	+ 78·2
Means ...	...	...	7	54	302·05	+17·05	...
Group 3212.							
Oct. 3·467	2	14	1	9	293·0	− 5·9	+ 33·7
4·477	1	5	1	4	294·7	− 7·1	+ 48·7
Means ...	...	...	1	7	293·85	− 6·50	...
Group 3213.							
Oct. 3·467	0	24	0	16	225·9	−21·3	− 33·4
4·477	25	91	15	57	225·3	−20·9	− 20·7
5·377	67	218	39	125	224·7	−21·0	− 9·4
6·207	29	145	17	82	222·5	−21·8	− 0·6
7·502	12	21	7	12	221·4	−20·7	+ 15·3
8·241	5	21	3	13	220·5	−21·3	+ 24·2
9·303	0	18	0	13	220·6	−21·9	+ 38·2
10·310	0	6	0	6	220·8	−22·2	+ 51·7
Means ...	...	...	10	41	222·71	−21·39	...
Group 3214.							
Oct. 4·477	1	9	1	5	229·1	− 3·5	− 16·9
5·377	0	4	0	2	229·2	− 4·1	− 4·9
Means ...	...	...	1	4	229·15	− 3·80	...
Group 3215.							
Oct. 4·477	0	9	0	7	196·2	+ 9·3	− 49·8
Means ...	...	...	0	7	196·20	+ 9·30	...

Date. Greenwich Civil Time.	Projected Area of Umbra.	Projected Area of Whole Spot.	Area for Group. Umbra.	Area for Group. Whole Spot.	Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
Group 3216.							
1893. d					°	°	°
Oct. 4·477	16	87	26	139	175·4	− 7·7	− 70·6
5·377	34	152	34	152	175·6	− 7·3	− 58·5
6·207	41	163	31	126	175·2	− 8·0	− 47·9
7·502	35	220	21	132	176·2	− 8·1	− 29·9
8·241	38	232	21	128	175·7	− 8·2	− 20·6
9·303	25	155	13	80	176·0	− 8·5	− 6·4
10·310	41	191	21	98	176·4	− 8·1	+ 7·3
11·203	45	197	24	108	176·4	− 8·0	+ 19·1
12·531	32	156	21	101	176·6	− 7·7	+ 36·8
13·241	31	131	23	98	176·8	− 8·4	+ 46·4
14·304	15	58	16	61	176·6	− 8·2	+ 60·2
15·245	0	29	0	54	177·1	− 8·5	+ 73·2
Means ...	...	...	21	106	176·17	− 8·06	...
Group 3217.							
Oct. 5·377	15	53	12	41	283·0	+19·2	+ 48·9
6·207	3	21	3	22	284·7	+18·6	+ 61·6
7·502	2	32	4	73	285·0	+19·0	+ 78·9
Means ...	...	...	6	45	284·23	+18·93	...
Group 3218.							
Oct. 5·377	26	107	18	72	192·1	+15·7	− 42·0
6·207	39	141	23	83	191·8	+15·0	− 31·3
7·502	10	43	5	22	193·3	+14·9	− 12·8
8·241	8	28	4	15	191·8	+14·9	− 4·5
9·303	4	16	2	8	191·2	+14·7	+ 8·8
Means ...	...	...	10	40	192·04	+15·04	...
Group 3219.							
Oct. 6·207	7	30	5	20	187·4	−16·8	− 35·7
Means ...	...	...	5	20	187·40	−16·80	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3220.							
1893. d					°	°	°
Oct. 6·207	0	9	0	12	154·3	−13·2	− 65·0
7·502	4	23	4	21	153·7	−13·2	− 52·4
8·241	5	19	4	14	153·5	−12·8	− 42·8
9·303	10	51	6	31	154·8	−13·3	− 27·6
10·310	8	21	4	11	155·2	−12·8	− 13·9
11·203	0	11	0	6	155·4	−12·2	− 1·9
12·531	4	12	2	7	157·0	−12·7	+ 17·2
13·241	0	7	0	4	157·7	−13·0	+ 27·3
Means ...	...	...	3	13	155·20	−12·90	...
Group 3221.							
Oct. 6·207	0	13	0	32	144·4	−16·0	− 74·9
7·502	33	98	39	113	144·9	−15·9	− 61·2
8·241	49	212	44	190	144·1	−15·6	− 52·2
9·303	40	304	28	210	144·3	−16·3	− 38·1
10·310	44	230	26	136	144·8	−15·6	− 24·3
11·203	49	196	27	108	144·8	−15·9	− 12·5
12·531	20	158	11	85	144·3	−16·1	+ 4·5
13·241	25	82	14	47	145·4	−16·6	+ 15·0
14·304	26	52	16	32	145·0	−16·3	+ 28·6
15·245	14	41	10	30	144·7	−16·6	+ 40·8
16·440	4	19	4	19	145·3	−15·4	+ 57·1
Means ...	...	...	20	91	144·73	−16·03	...
Group 3222.							
Oct. 7·502	0	9	0	6	169·8	+17·6	− 36·3
Means ...	...	...	0	6	169·80	+17·60	...
Group 3223.							
Oct. 7·502	7	29	13	54	134·0	−12·8	− 72·1
8·241	20	72	24	86	133·5	−12·7	− 62·8
9·303	15	142	12	109	136·1	−12·1	− 46·3
10·310	23	81	14	50	137·9	−11·4	− 31·2
11·203	24	70	13	38	138·4	−11·3	− 18·9
12·531	6	37	3	20	140·2	−11·2	+ 0·4
13·241	7	28	4	15	140·6	−11·4	+ 10·2
Means ...	...	...	12	53	137·24	−11·84	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3224.							
1893. d					°	°	°
Oct. 7·502	14	75	35	184	129·6	−12·3	− 76·5
8·241	19	87	28	130	127·6	−11·8	− 68·7
9·303	25	123	23	113	128·2	−11·9	− 54·[illegible]
10·310	37	182	26	125	129·1	−11·4	− 40·[illegible]
11·203	46	179	28	107	128·9	−11·6	− 25·[illegible]
12·531	42	228	22	122	129·4	−11·6	− 10·[illegible]
13·241	45	209	23	110	129·3	−12·2	− [illegible]
14·304	39	201	21	108	129·3	−11·9	+ 12·9
15·245	36	127	21	75	130·0	−11·8	+ 26·1
16·440	15	62	11	44	130·7	−11·3	+ 42·5
17·463	4	20	4	17	130·6	−11·1	+ 52·2
Means ...	...	...	22	103	129·34	−11·72	...
Group 3225.							
Oct. 8·241	0	9	0	18	121·9	−12·1	− 74·4
9·303	0	9	0	9	122·6	−12·0	− 59·8
10·310	8	18	6	13	123·0	−11·5	− 46·1
11·203	2	9	1	6	123·2	−11·9	− 34·1
Means ...	...	...	2	12	122·68	−11·88	...
Group 3226.							
Oct. 10·310	15	47	9	26	150·7	+18·6	− 18·4
11·203	0	11	0	6	149·2	+18·6	− 8·1
12·531	2	11	1	6	149·7	+18·4	+ 9·9
Means ...	...	...	3	13	149·87	+18·53	...
Group 3227.							
Oct. 10·310	0	33	0	144	83·5	+24·3	− 85·6
11·203	17	171	27	263	85·5	+24·6	− 71·8
12·531	66	345	56	297	86·3	+24·3	− 53·5
13·241	89	397	65	288	86·2	+24·8	− 44·2
14·304	122	589	74	359	85·8	+24·6	− 30·6
15·245	103	536	57	296	86·3	+24·0	− 17·6
16·440	118	603	62	317	86·2	+23·1	− 2·0
17·463	68	491	36	259	86·1	+23·0	+ 7·7

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3227—*continued.*							
1893. d					°	°	°
Oct. 18·406	103	539	59	308	85·7	+22·6	+ 23·4
19·443	67	419	43	270	85·6	+22·2	+ 36·9
20·266	80	302	61	228	(85·5)	(+20·9)	(+ 47·7)
21·428	31	206	33	221	84·6	+22·3	+ 62·1
22·243	16	136	27	226	(84·9)	(+20·5)	(+ 73·2)
Means ...	...	...	46	267	85·62	+23·62	...
Group 3228.							
Oct. 11·203	5	20	3	11	168·3	−12·5	+ 11·0
12·531	11	56	6	34	170·1	−11·6	+ 30·3
13·241	9	26	6	18	170·5	−12·2	+ 40·1
14·304	0	9	0	8	170·4	−11·9	+ 54·0
Means ...	...	...	4	18	169·83	−12·05	...
Group 3229.							
Oct. 11·203	0	8	0	7	102·2	−10·9	− 55·1
Means ...	...	...	0	7	102·20	−10·90	...
Group 3230.							
Oct. 12·531	5	30	3	22	99·3	−15·7	− 40·5
13·241	0	7	0	4	97·5	−16·5	− 32·9
14·304	0	27	0	15	99·7	−16·3	− 16·7
15·245	0	3	0	1	98·4	−17·3	− 5·5
Means ...	...	...	1	11	98·73	−16·45	...
Group 3231.							
1893. d					°	°	°
Oct. 12·531	0	9	0	8	87·6	− 6·2	− 52·2
13·241	5	42	4	30	87·6	− 5·9	− 42·8
14·304	3	15	2	9	89·6	− 5·7	− 26·8
15·245	0	4	0	2	91·2	− 5·5	− 12·7
16·440	2	14	1	7	92·3	− 6·0	+ 4·1
17·463	0	20	0	10	92·1	− 6·1	+ 13·7
Means ...	...	...	1	11	90·07	− 5·90	...
Group 3232.							
Oct. 12·531	12	61	38	199	57·5	+11·4	−82·3
13·241	34	181	72	403	52·4	+11·8	−78·0
14·304	96	494	115	603	50·0	+11·9	−66·4
15·245	98	563	80	459	51·9	+11·7	−52·0
16·440	134	874	85	547	52·3	+11·3	−35·9
17·463	128	713	72	398	52·7	+11·6	−25·7
18·406	138	726	70	371	52·8	+11·6	− 9·5
19·443	86	579	44	292	53·3	+11·8	+ 4·6
20·266	109	488	58	255	(53·8)	(+11·3)	(+16·0)
21·428	49	295	29	173	53·5	+11·8	+31·0
22·243	55	230	37	154	(53·5)	(+11·3)	(+41·8)
23·454	26	158	25	148	54·1	+13·0	+58·0
24·502	15	71	24	112	53·9	+11·6	+72·0
Means ...	...	...	58	316	53·13	+11·77	...
Group 3233.							
Oct. 13·241	5	36	4	26	175·1	−11·1	+44·7
14·304	5	37	5	37	174·4	−10·4	+58·0
15·245	0	26	0	44	175·1	−10·8	+71·2
Means ...	...	...	3	36	174·87	−10·77	...
Group 3234.							
Oct. 13·241	1	8	0	6	175·1	−15·1	+44·7
14·304	7	32	7	32	173·8	−14·7	+57·4
15·245	0	40	0	63	172·8	−14·5	+68·9
Means ...	...	...	2	34	173·90	−14·77	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3235.							
1893. d					°	°	°
Oct. 13·241	2	28	2	26	73·7	+26·1	−56·7
Means ...	...	...	2	26	73·70	+26·10	...
Group 3236.							
Oct. 14·304	0	4	0	4	168·3	+23·0	+51·9
Means ...	...	...	0	4	168·30	+23·00	...
Group 3237.							
Oct. 14·304	12	119	29	292	37·0	+15·3	−79·4
15·245	37	239	43	274	39·3	+15·3	−64·6
16·440	41	291	31	225	39·1	+14·6	−49·1
17·463	27	273	18	179	38·3	+15·0	−40·1
18·406	52	342	29	188	38·9	+14·8	−23·4
19·443	30	157	16	80	38·6	+15·3	−10·1
20·266	31	148	16	74	(38·8)	(+15·0)	(+ 1·0)
21·428	21	101	11	54	38·5	+15·4	+16·0
22·243	26	109	14	62	(38·6)	(+15·1)	(+26·9)
23·454	6	43	4	30	38·9	+16·9	+42·8
24·502	0	9	0	8	39·7	+12·9	+57·8
Means ...	...	...	19	133	38·70	+15·06	...
Group 3238.							
Oct. 14·304	4	129	17	490	35·5	−13·2	−80·9
15·245	43	261	59	351	38·1	−13·1	−65·8
16·440	66	388	56	327	37·9	−13·7	−50·3
17·463	95	420	67	295	37·8	−13·4	−40·6
18·406	109	566	63	330	37·3	−13·6	−25·0
19·443	79	553	42	300	37·0	−13·7	−11·7
20·266	99	522	52	275	(36·5)	(−14·1)	(− 1·3)
21·428	59	330	32	181	37·1	−13·9	+14·6
22·243	49	324	29	192	(36·8)	(−14·6)	(+25·1)
23·454	24	191	17	136	38·0	−13·5	+41·9
24·502	15	122	14	116	37·4	−14·4	+55·5
25·246	14	103	18	132	37·2	−14·7	+65·1
26·340	0	9	0	23	35·1	−14·8	+77·5
Means ...	...	...	36	242	37·13	−13·82	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3239.							
1893. d					°	°	°
Oct. 16·440	0	6	0	7	151·3	+25·2	+63·1
17·463	1	7	2	12	152·0	+24·8	+73·6
Means ...	...	...	1	10	151·65	+25·00	...
Group 3240.							
Oct. 16·440	0	7	0	7	28·7	+16·3	−59·5
Means ...	...	...	0	7	28·70	+16·30	...
Group 3241.							
Oct. 18·406	39	123	23	74	87·6	−18·6	+ 25·3
19·443	16	72	12	52	89·3	−18·1	+ 40·6
20·266	14	67	13	58	(87·2)	(−20·1)	(+ 49·4)
21·428	0	10	0	12	83·8	−19·5	+ 61·3
22·243	0	15	0	36	(86·7)	(−20·6)	(+ 75·0)
Means ...	...	...	10	46	86·90	−18·73	...
Group 3242.							
Oct. 18·406	1	7	1	4	76·0	+24·7	+ 13·7
19·443	0	6	0	4	77·2	+23·9	+ 28·5
Means ...	...	...	1	4	76·60	+24·30	...
Group 3243.							
Oct. 18·406	13	57	50	218	342·3	−20·1	− 80·0
19·443	40	356	70	642	337·7	−19·2	− 71·0
20·266	76	626	87	718	(337·3)	(−18·5)	(− 60·5)
21·428	83	480	65	376	338·7	−20·4	− 43·8
22·243	104	503	69	334	(338·6)	(−20·1)	(− 33·1)
23·454	80	415	45	240	340·3	−20·3	− 15·8
24·502	50	243	28	135	340·0	−20·3	− 1·9
25·246	41	185	22	105	339·3	−20·0	+ 7·2
26·340	16	94	10	57	339·5	−20·5	+ 21·9
27·436	0	7	0	5	340·6	−21·2	+ 37·4
28·323	1	15	1	13	340·3	−21·3	+ 48·7
Means ...	...	...	41	258	339·86	−20·37	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of Umbra.	Projected Area of Whole Spot.	Area for Group. Umbra.	Area for Group. Whole Spot.	Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
Group 3244.							
1893. d					°	°	°
Oct. 18·406	27	109	98	393	341·0	− 6·5	− 81·3
19·443	59	350	87	574	337·4	− 6·9	− 71·3
20·266	187	856	199	917	(336·4)	(− 6·0)	(− 61·4)
21·428	218	1302	160	952	337·4	− 7·1	− 45·1
22·243	355	1657	220	1028	(337·5)	(− 6·6)	(− 34·2)
23·454	236	1600	127	861	338·6	− 7·0	− 17·5
24·502	224	1649	115	845	338·6	− 6·8	− 3·3
25·246	352	1543	181	796	339·2	− 6·9	+ 7·1
26·340	327	1335	178	729	338·7	− 6·8	+ 21·1
27·436	156	1019	98	642	339·2	− 6·5	+ 36·0
28·323	212	771	161	589	339·3	− 6·8	+ 47·7
29·268	158	597	165	625	339·6	− 7·0	+ 60·5
30·428	35	231	70	458	338·5	− 6·5	+ 74·8
Means ...	...	...	143	724	338·86	− 6·80	...
Group 3245.							
Oct. 19·443	0	2	0	2	352·9	−18·0	− 55·8
Means ...	...	...	0	2	352·90	−18·00	...
Group 3246.							
Oct. 19·443	18	97	51	245	329·6	+ 7·8	− 79·1
20·266	41	188	52	249	(329·4)	(+ 8·8)	(− 68·4)
21·428	42	190	34	159	329·1	+ 7·5	− 53·4
22·243	62	225	42	154	(328·5)	(+ 8·0)	(− 43·2)
23·454	36	238	21	136	328·3	+ 6·8	− 27·8
24·502	30	175	15	90	328·3	+ 7·4	− 13·6
25·246	22	172	10	88	328·2	+ 7·3	− 3·9
26·340	42	197	21	101	329·4	+ 7·7	+ 11·8
27·436	64	357	36	202	330·5	+ 8·3	+ 27·3
28·323	72	496	46	322	331·2	+ 9·2	+ 39·6
29·268	65	297	55	249	332·6	+ 8·2	+ 53·5
30·428	9	109	13	144	331·9	+ 7·9	+ 68·2
Means ...	...	...	33	178	329·91	+ 7·81	...
Group 3247.							
Oct. 20·266	0	4	0	3	(72·7)	(+26·5)	(+ 34·9)
Means ...	...	...	0	3	(72·70)	(+26·50)	...
Group 3248.							
1893. d					°	°	°
Oct. 20·266	0	4	0	3	(69·9)	(−18·5)	(+ 32·1)
21·428	0	6	0	5	73·8	−18·6	+ 51·3
Means ...	...	...	0	4	73·80	−18·60	...
Group 3249.							
Oct. 20·266	0	2	0	5	(319·9)	(− 6·2)	(− 77·9)
Means ...	...	...	0	5	(319·90)	(− 6·20)	...
Group 3250.							
Oct. 21·428	7	57	27	219	298·9	+13·8	− 83·6
22·243	25	129	42	216	(298·3)	(+15·0)	(− 73·4)
23·454	46	299	43	271	299·3	+12·7	− 56·8
24·502	68	362	48	250	298·6	+13·6	− 43·3
25·246	92	360	56	219	298·5	+14·3	− 33·6
26·340	79	332	42	179	297·8	+14·4	− 19·8
27·436	52	277	27	142	298·1	+14·1	− 5·1
28·323	67	265	34	135	298·2	+14·0	+ 6·6
29·268	69	327	37	177	298·7	+13·9	+ 19·6
30·428	42	235	26	145	298·5	+13·9	+ 34·8
31·404	39	219	29	162	298·3	+13·9	+ 47·4
Nov. 1·322	32	163	32	162	298·6	+13·6	+ 59·9
2·187	26	110	39	167	298·5	+13·5	+ 71·2
Means ...	...	...	37	188	298·50	+13·81	...
Group 3251.							
Oct. 22·243	2	5	2	4	(327·7)	(−15·7)	(− 44·0)
Means ...	...	...	2	4	(327·70)	(−15·70)	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3252.							
1893. d					°	°	°
Oct. 22·243	3	8	3	7	(314·6)	(− 7·4)	(− 57·1)
23·454	3	48	2	32	317·9	− 7·6	− 38·2
24·502	10	47	6	26	315·7	− 6·7	− 26·2
25·246	8	26	4	14	314·8	− 6·5	− 17·3
Means ...	...	...	4	20	316·13	− 6·93	...
Group 3253.							
Oct. 23·454	5	43	3	23	347·8	+23·8	− 8·3
24·502	6	58	3	30	348·3	+22·9	+ 6·4
25·246	11	54	5	30	348·1	+21·9	+ 16·0
26·340	0	4	0	3	351·3	+22·4	+ 33·6
Means ...	...	...	3	22	348·85	+22·75	...
Group 3254.							
Oct. 23·454	29	199	36	256	290·1	− 8·1	− 66·0
24·502	81	620	68	519	290·0	− 7·2	− 51·9
25·246	146	680	103	469	290·0	− 7·1	− 42·1
26·340	128	632	75	367	289·5	− 7·4	− 28·1
27·436	72	462	38	244	289·3	− 7·5	− 13·9
28·323	97	418	50	216	289·0	− 7·5	− 2·6
29·268	77	355	40	185	289·0	− 7·6	+ 9·9
30·428	20	216	11	122	288·5	− 7·5	+ 24·8
31·404	37	169	24	110	288·7	− 7·8	+ 37·8
Nov. 1·322	14	77	12	65	290·8	− 7·7	+ 52·1
2·187	0	25	0	27	288·7	− 8·6	+ 61·4
Means ...	...	...	42	235	289·42	− 7·64	...
Group 3255.							
Oct. 23·454	3	48	5	67	289·5	−14·3	− 66·6
24·502	10	62	8	52	291·8	−13·4	− 50·1
25·246	13	55	9	37	292·9	−13·5	− 39·2
26·340	16	42	9	24	294·2	−14·5	− 23·4
27·436	6	17	3	9	295·3	−15·3	− 7·9
28·323	0	14	0	8	295·9	−15·4	+ 4·3
Means ...	...	...	6	33	293·27	−14·40	...
Group 3256.							
1893. d					°	°	°
Oct. 24·502	16	56	9	30	334·8	+18·9	− 7·1
25·246	30	150	15	78	336·5	+18·9	+ 4·4
26·340	144	679	79	370	337·0	+18·6	+ 19·4
27·436	43	358	27	225	338·7	+18·3	+ 35·5
28·323	43	215	33	166	340·3	+18·0	+ 48·7
29·268	22	112	23	121	341·4	+17·6	+ 62·3
30·428	4	39	9	79	340·1	+18·0	+ 76·4
Means ...	...	...	28	153	338·40	+18·33	...
Group 3257.							
Oct. 25·246	6	26	9	35	266·0	−13·8	− 66·1
26·340	13	66	11	60	264·1	−14·0	− 53·5
27·436	0	54	0	36	264·8	−14·5	− 38·4
28·323	8	36	4	21	266·2	−14·5	− 25·4
29·268	6	23	4	12	266·4	−15·0	− 12·7
Means ...	...	...	6	33	265·50	−14·36	...
Group 3258.							
Oct. 28·323	7	37	4	19	280·8	− 4·1	− 10·8
29·268	10	69	5	35	281·9	− 4·6	+ 2·8
30·428	39	126	21	68	283·9	− 4·2	+ 20·2
31·404	61	214	38	132	286·4	− 4·5	+ 35·5
Nov. 1·322	17	117	13	88	286·4	− 4·8	+ 47·7
2·187	18	104	19	106	287·5	− 4·5	+ 60·2
3·294	0	21	0	56	291·9	− 4·7	+ 79·1
Means ...	...	...	14	72	285·54	− 4·49	...
Group 3259.							
Oct. 30·428	0	6	0	3	272·0	−14·2	+ 8·3
31·404	0	44	0	25	274·5	−12·6	+ 23·6
Nov. 1·322	8	32	5	21	273·9	−13·3	+ 35·2
2·187	7	33	6	26	273·6	−13·6	+ 46·3
3·294	0	15	0	17	274·3	−13·6	+ 61·5
Means ...	...	...	2	18	273·66	−13·46	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3260.							
1893. d					°	°	°
Oct. 30·428	2	24	2	23	211·2	−22·8	− 52·5
31·404	0	4	0	3	209·8	−22·8	− 41·1
Means ...	...	...	1	13	210·50	−22·80	...
Group 3261.							
Oct. 30·428	5	25	12	60	186·4	− 7·7	− 77·3
31·404	27	108	34	134	185·4	− 7·5	− 65·5
Nov. 1·322	22	145	19	127	184·7	− 7·3	− 54·0
2·187	35	138	24	97	184·7	− 7·2	− 42·6
3·294	21	123	12	71	184·9	− 7·1	− 27·9
4·140	38	143	20	76	184·7	− 6·9	− 16·9
5·197	22	120	11	62	184·8	− 7·3	− 2·9
6·203	28	95	14	49	184·3	− 7·5	+ 9·9
7·499	9	31	5	18	184·2	− 7·2	+ 26·9
8·187	6	27	4	17	184·2	− 7·4	+ 36·0
9·503	0	14	0	12	184·4	− 7·0	+ 53·5
Means ...	...	...	14	66	184·79	− 7·28	...
Group 3262.							
Oct. 31·404	0	18	0	31	179·3	−10·7	− 71·6
Nov. 1·322	0	12	0	12	179·3	−10·7	− 59·4
Means ...	...	...	0	22	179·30	−10·70	...
Group 3263.							
Nov. 3·294	6	32	6	30	154·2	+ 4·8	− 58·6
4·140	9	20	7	15	154·2	+ 4·9	− 47·4
5·197	4	18	3	11	155·1	+ 4·2	− 32·6
6·203	7	16	4	9	155·9	+ 4·9	− 18·5
7·499	1	17	1	9	152·8	+ 4·5	− 4·5
Means ...	...	...	4	15	154·44	+ 4·66	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3264.							
1893. d					°	°	°
Nov. 4·140	0	37	0	27	158·2	−12·2	− 43·4
5·197	25	112	15	68	159·0	−13·2	− 28·7
6·203	24	98	13	54	159·0	−13·4	− 15·4
7·499	18	55	10	29	157·8	−13·4	+ 0·5
8·187	37	258	20	139	158·4	−14·3	+ 10·2
9·503	59	353	36	215	161·8	−13·3	+ 30·9
10·250	63	358	44	251	162·2	−14·0	+ 41·1
11·243	35	223	33	201	161·9	−14·2	+ 53·9
12·286	10	143	15	206	162·5	−13·5	+ 68·3
Means ...	...	...	21	132	160·09	−13·50	...
Group 3265.							
Nov. 6·203	0	15	0	9	143·0	+ 5·5	− 31·4
7·499	24	119	13	63	139·7	+ 5·3	− 17·6
8·187	28	129	14	66	141·5	+ 5·3	− 6·7
9·503	9	31	5	16	143·4	+ 5·9	+ 12·5
10·250	29	113	16	62	141·8	+ 5·3	+ 20·7
11·243	13	47	8	29	143·8	+ 5·7	+ 35·8
12·286	2	45	2	34	142·9	+ 5·4	+ 48·7
Means ...	...	...	8	40	142·30	+ 5·49	...
Group 3266.							
Nov. 7·499	4	14	8	30	80·6	+22·5	− 76·7
8·187	4	29	6	39	80·3	+23·0	− 67·9
9·503	6	20	5	16	80·4	+22·8	− 50·5
10·250	0	26	0	18	81·1	+23·1	− 40·0
Means ...	...	...	5	26	80·60	+22·85	...
Group 3267.							
Nov. 9·503	5	21	3	14	106·8	−30·3	− 24·1
10·250	0	45	0	28	107·4	−31·2	− 13·7
Means ...	...	...	2	21	107·10	−30·75	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3268.							
1893. d					°	°	°
Nov. 9·503	13	50	12	49	71·9	+11·5	− 59·0
10·250	15	62	11	46	74·3	+11·6	− 46·8
11·243	25	140	15	87	73·2	+11·6	− 34·8
12·286	38	225	20	121	74·8	+11·4	− 19·4
13·492	21	177	11	91	74·8	+11·1	− 3·5
14·316	11	153	6	78	75·9	+11·0	+ 8·5
15·198	6	69	4	37	75·7	+10·7	+ 19·9
16·248	2	20	1	13	78·9	+10·5	+ 36·9
Means ...	...	...	10	65	74·94	+11·18	...
Group 3269.							
Nov. 9·503	62	612	85	990	59·5	− 6·6	− 71·4
10·250	211	1024	213	1079	60·2	− 6·2	− 60·9
11·243	199	1092	147	816	61·4	− 5·9	− 46·6
12·286	243	1113	147	679	61·4	− 5·9	− 32·8
13·492	147	920	77	484	63·2	− 6·3	− 15·1
14·316	163	997	84	510	62·8	− 6·4	− 4·6
15·198	121	877	64	449	63·5	− 6·4	+ 7·7
16·248	62	343	34	189	63·9	− 6·5	+ 21·9
17·182	44	477	28	297	64·3	− 6·6	+ 34·6
18·186	24	152	19	116	65·1	− 7·2	+ 48·7
19·472	4	33	6	42	65·8	− 6·4	+ 66·3
20·324	0	8	0	13	66·7	− 7·2	+ 78·5
Means ...	...	...	75	472	63·15	− 6·47	...
Group 3270.							
Nov. 10·250	0	67	0	144	44·2	+22·0	− 76·9
11·243	24	160	28	191	43·7	+21·9	− 64·3
12·286	27	183	23	149	44·5	+22·1	− 49·7
13·492	20	118	13	77	43·7	+21·7	− 34·6
14·316	65	312	38	181	43·5	+21·0	− 23·9
15·198	33	158	18	85	43·1	+20·8	− 12·7
16·248	16	127	8	66	42·2	+20·9	+ 0·2
17·182	16	84	9	45	41·7	+20·6	+ 12·0
18·186	13	35	8	21	41·3	+20·4	+ 24·9
19·472	5	23	4	16	41·0	+19·5	+ 41·5
Means ...	...	...	15	98	42·89	+21·09	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3271.							
1893. d					°	°	°
Nov. 11·243	20	135	15	95	149·0	+18·6	+ 41·0
12·286	17	152	17	145	151·6	+18·6	+ 57·4
13·492	2	12	4	21	152·5	+18·5	+ 74·2
Means ...	...	...	12	87	151·03	+18·57	...
Group 3272.							
Nov. 11·243	23	140	18	114	55·9	+10·4	− 52·1
12·286	51	311	34	207	54·1	+11·2	− 40·1
13·492	35	190	19	103	57·5	+11·2	− 20·8
14·316	61	239	32	125	56·3	+11·5	− 11·1
15·198	25	185	13	94	58·6	+11·4	+ 2·8
16·248	41	185	22	100	61·7	+10·7	+ 19·7
17·182	33	166	20	100	62·1	+10·5	+ 32·4
18·186	29	142	21	103	61·9	+10·3	+ 45·5
19·472	15	119	16	129	62·4	+ 9·5	+ 62·9
20·324	11	51	21	92	62·2	+ 9·6	+ 74·9
Means ...	...	...	22	117	59·27	+10·63	...
Group 3273.							
Nov. 11·243	0	56	0	93	40·2	−29·8	− 67·8
12·286	12	42	13	43	40·5	−29·5	− 53·7
13·492	0	18	0	14	39·5	−30·1	− 38·8
14·316	11	41	7	28	38·9	−29·9	− 28·5
15·198	6	20	4	13	38·6	−29·9	− 17·2
16·248	0	17	0	10	38·1	−29·6	− 3·9
Means ...	...	...	4	34	39·30	−29·80	...
Group 3274.							
Nov. 11·243	0	15	0	39	33·3	−33·1	− 74·7
12·286	5	77	7	105	32·8	−33·7	− 61·4
13·492	10	65	10	62	30·6	−34·7	− 47·7
14·316	14	105	11	84	30·0	−34·5	− 37·4
15·198	18	86	13	60	29·6	−34·5	− 26·2
16·248	4	34	3	22	28·4	−34·2	− 13·6
17·182	0	22	0	14	27·8	−34·2	− 1·9
Means ...	...	...	6	55	30·36	−34·13	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of Umbra.	Projected Area of Whole Spot.	Area for Group. Umbra.	Area for Group. Whole Spot.	Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
Group 3275.							
1893. d					°	°	°
Nov. 12·286	8	38	6	30	45·1	− 8·4	− 49·1
13·492	15	126	9	75	47·2	− 8·7	− 31·1
14·316	17	165	10	90	48·0	− 8·5	− 19·4
15·198	49	206	26	107	47·6	− 8·0	− 8·2
16·248	16	121	9	63	47·2	− 7·7	+ 5·2
Means ...	...	...	12	73	47·02	− 8·26	...
Group 3276.							
Nov. 12·286	0	22	0	59	14·4	+21·4	− 79·8
13·492	30	288	34	334	14·8	+20·5	− 63·5
14·316	83	391	71	338	14·7	+20·7	− 52·7
15·198	63	554	44	385	14·9	+20·2	− 40·9
16·248	142	659	84	395	14·0	+20·2	− 28·0
17·182	135	667	74	367	14·2	+19·5	− 15·5
18·186	100	542	53	285	14·2	+19·3	− 2·2
19·472	99	518	53	279	14·8	+18·3	+ 15·3
20·324	70	370	40	217	15·1	+18·2	+ 26·9
21·412	31	244	21	169	15·7	+18·2	+ 41·7
22·187	46	193	39	162	15·7	+18·6	+ 52·0
23·434	21	93	29	126	15·4	+17·7	+ 68·1
24·196	0	62	0	156	15·7	+18·6	+ 78·5
Means ...	...	...	42	252	14·89	+19·34	...
Group 3277.							
Nov. 14·316	14	83	8	52	101·5	− 8·4	+ 34·1
15·198	6	42	5	32	103·3	− 8·3	+ 47·5
16·248	0	6	0	7	104·3	− 7·6	+ 62·3
Means ...	...	...	4	30	103·03	− 8·10	...
Group 3278.							
Nov. 14·316	18	160	13	115	23·0	+15·2	− 44·4
15·198	34	257	21	157	23·6	+14·9	− 32·2
16·248	8	67	4	37	23·2	+15·0	− 18·8
Means ...	...	...	13	103	23·27	+15·03	...
Group 3279.							
1893. d					°	°	°
Nov. 15·198	0	18	0	22	348·5	+10·9	− 65·7
16·248	0	18	0	16	348·3	+11·3	− 53·7
Means ...	...	...	0	19	348·40	+11·10	...
Group 3280.							
Nov. 15·198	0	38	0	82	339·5	− 5·7	− 76·3
16·248	22	126	24	143	338·8	− 5·7	− 63·2
17·182	43	141	34	112	339·4	− 5·7	− 50·3
18·186	25	113	16	71	339·8	− 5·5	− 36·6
19·472	30	181	16	96	340·6	− 4·9	− 18·9
20·324	17	112	8	57	340·3	− 5·8	− 7·9
21·412	16	78	8	39	340·3	− 5·5	+ 6·3
22·187	21	76	11	40	340·2	− 5·6	+ 16·5
23·434	5	15	3	9	340·4	− 6·0	+ 33·1
24·196	0	0	0	0	...	...	...
25·500	0	6	0	6	340·3	− 5·4	+ 60·3
Means ...	...	...	11	60	339·96	− 5·58	...
Group 3281.							
Nov. 16·248	43	187	130	566	321·6	− 3·8	− 80·4
17·182	106	373	155	825	320·8	− 4·4	− 68·9
18·186	247	1202	227	1110	319·7	− 4·6	− 56·7
19·472	263	2396	168	1522	320·5	− 4·7	− 39·0
20·324	279	2992	158	1686	321·3	− 5·4	− 26·9
21·412	199	2846	104	1469	321·9	− 4·9	− 12·1
22·187	507	2650	255	1440	321·7	− 5·5	− 2·0
23·434	326	2660	172	1389	322·0	− 5·8	+ 14·7
24·196	250	2653	141	1482	322·4	− 5·7	+ 25·2
25·500	192	1881	135	1315	323·4	− 5·5	+ 43·4
26·198	211	1605	174	1327	323·3	− 5·8	+ 52·5
27·435	108	660	159	953	324·1	− 5·8	+ 69·5
28·209	41	334	118	959	324·0	− 4·4	+ 79·7
Means ...	...	...	161	1234	322·05	− 5·10	...
Group 3282.							
Nov. 17·182	0	15	0	9	7·1	+19·0	− 22·6
Means ...	...	...	0	9	7·10	+19·00	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3283.							
1893. d					°	°	°
Nov. 17·182	0	6	0	6	331·8	−20·0	− 57·9
18·186	27	98	20	76	331·5	−20·3	− 44·9
19·472	20	178	12	108	332·6	−19·5	− 26·9
20·324	30	180	17	101	333·3	−19·8	− 14·9
21·412	18	169	10	92	332·5	−20·1	− 1·5
22·187	19	114	11	63	333·0	−20·3	+ 9·3
23·434	7	51	4	30	332·8	−20·5	+ 25·5
24·196	0	26	0	17	333·8	−20·0	+ 36·6
25·500	0	14	0	13	334·1	−20·0	+ 54·1
Means ...	...	...	8	56	332·82	−20·06	...
Group 3284.							
Nov. 18·186	0	41	0	21	7·9	− 9·2	− 8·5
19·472	5	40	3	21	7·9	− 9·4	+ 8·4
Means ...	...	...	2	21	7·90	− 9·30	...
Group 3285.							
Nov. 18·186	0	17	0	9	349·2	+10·2	− 27·2
19·472	2	8	1	4	349·0	+11·2	− 10·5
Means ...	...	...	1	7	349·10	+10·70	...
Group 3286.							
Nov. 18·186	2	28	1	19	340·3	+22·7	− 36·1
19·472	4	28	2	16	340·1	+22·6	− 19·4
Means ...	...	...	2	18	340·20	+22·65	...
Group 3287.							
Nov. 18·186	3	24	2	18	330·2	+20·3	− 46·2
19·472	68	272	40	166	328·4	+20·2	− 31·1
20·324	103	454	57	255	328·4	+20·2	− 19·8
21·412	116	671	62	355	329·5	+20·1	− 4·5
22·187	214	807	113	427	330·7	+19·6	+ 7·0
23·434	91	482	53	283	333·3	+18·4	+ 26·0
Group 3287—*continued.*							
1893. d					°	°	°
Nov. 24·196	123	608	82	393	332·8	+19·3	+ 35·6
25·500	39	265	37	249	336·0	+18·8	+ 56·0
26·198	139	307	179	395	337·0	+18·7	+ 66·2
27·435	8	84	30	321	337·1	+18·7	+ 82·5
Means ...	...	...	66	286	332·34	+19·43	...
Group 3288.							
Nov. 24·196	0	43	0	22	306·4	+11·4	+ 9·2
25·500	5	24	3	14	308·3	+11·2	+ 28·3
Means ...	...	...	2	18	307·35	+11·30	...
Group 3289.							
Nov. 25·500	0	18	0	10	294·5	− 6·9	+ 14·5
Means ...	...	...	0	10	294·50	− 6·90	...
Group 3290.							
Nov. 25·500	7	47	7	53	216·7	+18·5	− 63·3
26·198	0	90	0	75	219·2	+18·5	− 51·6
27·435	68	409	44	268	218·3	+18·8	− 36·3
28·209	129	712	76	415	218·7	+18·5	− 25·6
29·187	180	1109	97	597	218·1	+18·9	− 13·3
30·190	143	1027	76	542	218·8	+18·3	− 2·8
Dec. 1·200	165	1187	91	649	220·2	+18·1	+ 15·3
2·431	119	949	74	595	222·3	+17·4	+ 33·6
3·219	133	773	103	587	224·6	+17·0	+ 46·3
4·193	175	815	182	785	222·3	+17·7	+ 56·9
5·363	20	307	43	545	222·8	+18·4	+ 72·7
Means ...	...	...	72	465	220·18	+18·19	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of Umbra.	Projected Area of Whole Spot.	Area for Group. Umbra.	Area for Group. Whole Spot.	Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
Group 3291.							
1893. d					°	°	°
Nov. 25·500	0	24	0	24	220·5	+ 9·0	— 59·5
Means ...	...	...	0	24	220·50	+ 9·00	...
Group 3292.							
Nov. 27·435	2	17	2	17	313·3	−15·2	+ 58·7
28·209	0	6	0	9	312·9	−15·4	+ 68·6
Means ...	...	...	1	13	313·10	−15·30	...
Group 3293.							
Nov. 28·209	9	35	5	18	241·8	+18·8	— 2·5
29·187	19	62	10	33	241·2	+18·6	+ 9·8
30·190	33	215	19	123	241·4	+18·0	+ 23·2
Dec. 1·200	27	140	17	90	240·3	+18·2	+ 35·4
2·431	13	64	11	57	242·3	+17·9	+ 53·6
3·219	0	78	0	87	240·3	+18·8	+ 62·0
Means ...	...	...	10	68	241·22	+18·38	...
Group 3294.							
Nov. 29·187	0	15	0	8	223·6	+ 9·6	— 7·8
Means ...	...	...	0	8	223·60	+ 9·60	...
Group 3295.							
Nov. 29·187	0	48	0	158	150·4	+20·9	— 81·0
30·190	43	255	63	382	148·7	+19·7	— 69·5
Dec. 1·200	88	778	83	745	148·0	+19·9	— 56·9
2·431	113	996	76	676	149·4	+19·0	— 39·3
3·219	250	1096	151	664	149·5	+19·2	— 28·8
4·193	263	1115	146	619	149·3	+18·8	— 16·1
5·363	76	861	41	461	149·8	+19·3	— 0·3
6·446	132	852	72	463	150·2	+18·9	+ 14·4

Date. Greenwich Civil Time.	Projected Area of Umbra.	Projected Area of Whole Spot.	Area for Group. Umbra.	Area for Group. Whole Spot.	Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
Group 3295—*continued.*							
1893. d					°	°	°
Dec. 7·468	105	683	64	414	150·6	+19·6	+ 28·3
8·197	138	596	93	405	150·9	+19·4	+ 38·2
9·500	58	500	55	477	151·4	+19·4	+ 55·9
10·248	70	566	91	737	151·5	+18·8	+ 65·8
11·335	7	174	23	545	151·5	+18·7	+ 80·1
Means ...	...	...	74	519	150·09	+19·35	...
Group 3296.							
Nov. 30·190	5	19	3	10	229·1	+18·3	+ 10·9
Means ...	...	...	3	10	229·10	+18·30	...
Group 3297.							
Nov. 30·190	0	62	0	224	136·4	+20·8	— 81·8
Dec. 1·200	54	225	74	299	137·8	+20·7	— 67·1
2·431	38	301	31	212	138·3	+20·7	— 50·4
3·219	33	327	24	233	138·1	+21·7	— 40·2
4·193	21	267	13	163	138·6	+22·7	— 26·8
5·363	14	107	8	59	137·9	+22·2	— 12·2
6·446	13	73	7	38	138·5	+21·9	+ 2·7
7·468	0	74	0	42	139·4	+21·8	+ 17·1
8·197	10	93	7	56	139·4	+21·9	+ 26·7
9·500	0	21	0	16	140·2	+21·6	+ 44·7
10·248	0	8	0	8	140·2	+21·7	+ 54·5
Means ...	...	...	15	116	138·62	+21·61	...
Group 3298.							
Dec. 1·200	22	146	47	301	129·4	+19·1	−75·5
2·431	31	255	31	255	130·3	+19·1	−58·4
3·219	82	346	66	278	129·8	+19·5	−48·5
4·193	137	366	90	239	129·5	+19·2	−35·9
5·363	64	377	36	214	129·5	+19·1	−20·6
6·446	62	377	33	200	129·9	+18·9	— 5·9
7·468	59	341	32	181	129·8	+19·2	+ 7·5
8·197	82	370	46	206	129·7	+19·3	+17·0
9·500	46	276	30	178	129·9	+19·3	+34·4
10·248	51	259	38	193	130·2	+19·3	+44·5
11·335	28	151	28	155	130·3	+19·2	+58·9
12·425	16	89	29	161	129·6	+19·5	+72·6
Means ...	...	...	42	213	129·83	+19·23	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of Umbra.	Projected Area of Whole Spot.	Area for Group. Umbra.	Area for Group. Whole Spot.	Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
Group 3299.							
1893. d					°	°	°
Dec. 2·431	0	19	0	24	123·0	+17·1	−65·7
3·219	0	21	0	20	122·5	+17·3	−55·8
4·193	3	32	2	23	122·8	+17·0	−42·6
5·363	0	0	0	0	...	...	...
6·446	0	2	0	1	123·6	+17·8	−12·2
7·468	0	3	0	2	124·5	+18·7	+ 2·2
Means ...	...	...	0	12	123·28	+17·58	...
Group 3300.							
Dec. 4·193	55	236	31	134	147·2	−21·2	−18·2
5·363	2	136	1	74	147·7	−21·2	− 2·4
6·446	9	53	5	29	147·7	−22·1	+11·9
7·468	0	13	0	8	150·4	−22·1	+28·1
8·197	0	3	0	2	148·9	−21·9	+36·2
Means ...	...	...	7	49	148·38	−21·70	...
Group 3301.							
Dec. 9·500	0	14	0	7	104·1	−13·0	+ 8·6
Means ...	...	...	0	7	104·10	−13·00	...
Group 3302.							
Dec. 10·248	7	33	5	24	42·4	−14·8	− 43·3
11·335	96	427	58	255	42·6	−16·3	− 28·8
12·425	148	626	81	333	43·0	−16·0	− 14·0
13·313	133	734	70	380	44·0	−15·8	− 1·4
14·190	75	818	40	431	43·8	−15·6	+ 10·0
15·192	171	803	97	455	45·2	−15·6	+ 24·6
16·200	89	702	58	470	46·6	−15·5	+ 39·3
17·266	78	381	70	341	48·2	−15·3	+ 55·0
18·189	35	171	47	234	49·2	−15·8	+ 68·1
19·185	0	57	0	302	52·8	−16·5	+ 84·8
Means ...	...	...	53	323	45·78	−15·72	...

Date. Greenwich Civil Time.	Projected Area of Umbra.	Projected Area of Whole Spot.	Area for Group. Umbra.	Area for Group. Whole Spot.	Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
Group 3303.							
1893. d					°	°	°
Dec. 11·335	2	22	4	42	145·1	−23·9	+ 73·7
Means ...	...	...	4	42	145·10	−23·90	...
Group 3304.							
Dec. 13·313	17	81	27	128	334·9	+18·2	− 70·5
14·190	13	81	13	84	334·4	+18·6	− 59·4
15·192	23	110	18	85	334·2	+18·3	− 46·4
16·200	25	92	16	58	334·6	+18·7	− 32·7
17·266	23	100	13	56	335·1	+18·7	− 18·1
18·189	34	99	18	53	334·6	+18·7	− 6·5
19·185	19	68	10	36	335·1	+19·0	+ 7·1
20·264	12	32	7	19	335·2	+19·0	+ 21·5
21·447	3	21	2	14	335·5	+19·4	+ 37·3
22·192	4	16	3	13	335·9	+19·3	+ 47·6
Means ...	...	...	13	55	334·95	+18·79	...
Group 3305.							
Dec. 13·313	60	181	142	426	328·6	− 1·6	− 76·8
14·190	56	218	68	265	328·1	− 1·5	− 65·7
15·192	84	329	68	267	328·7	− 1·6	− 51·9
16·200	91	418	58	266	329·1	− 1·1	− 38·2
17·266	121	467	66	254	329·8	− 0·8	− 23·4
18·189	123	506	63	258	329·6	− 1·0	− 11·5
19·185	135	564	67	282	330·2	− 1·0	+ 2·2
20·264	110	524	58	274	330·7	− 0·7	+ 17·0
21·447	87	372	52	223	331·3	− 0·4	+ 33·1
22·192	86	359	59	247	331·9	− 0·5	+ 43·6
23·425	38	268	37	261	331·2	0·0	+ 59·1
24·400	41	165	70	281	332·1	− 0·4	+ 72·9
25·252	7	43	28	176	330·9	+ 0·3	+ 82·9
Means ...	...	...	64	268	330·17	− 0·79	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3306.							
1893. d					°	°	°
Dec. 14·190	0	11	0	11	330·5	− 8·1	−63·3
15·192	10	46	8	35	331·4	− 8·1	−49·2
16·200	8	29	5	17	332·0	− 7·8	−35·3
17·266	12	32	6	17	331·3	− 8·3	−21·9
18·189	12	30	6	15	330·6	− 9·0	−10·5
19·185	57	261	30	131	334·5	− 8·8	+ 6·5
20·264	23	120	12	64	334·7	− 9·1	+21·0
21·447	31	142	20	88	334·5	− 8·3	+36·3
22·192	14	60	10	44	335·3	− 9·5	+47·0
Means ...	...	...	11	47	332·76	− 8·56	...
Group 3307.							
Dec. 14·190	15	91	26	158	321·1	+11·9	−72·7
15·192	40	191	39	187	322·2	+11·4	−58·4
16·200	57	281	41	200	324·3	+11·5	−43·0
17·266	72	331	42	194	324·4	+11·3	−28·8
18·189	123	512	66	273	324·7	+11·2	−16·4
19·185	84	447	43	230	325·4	+11·3	− 2·6
20·264	83	351	43	184	325·9	+10·7	+12·2
21·447	50	266	29	155	326·4	+10·6	+28·2
22·192	51	263	34	173	327·3	+10·3	+39·0
23·425	45	272	41	247	327·4	+10·1	+55·3
24·400	40	186	59	274	328·7	+10·2	+69·5
25·252	16	63	35	203	328·5	+10·4	+80·5
Means ...	...	...	42	207	325·53	+10·91	...
Group 3308.							
Dec. 14·190	0	64	0	141	317·4	+11·2	−76·4
15·192	29	142	32	158	318·0	+11·9	−62·6
16·200	25	170	20	134	318·2	+12·1	−48·4
17·266	28	130	18	83	318·3	+13·5	−34·9
18·189	32	158	18	89	318·4	+13·0	−22·7
19·185	18	127	9	65	319·9	+13·0	− 8·1
20·264	6	19	3	10	321·7	+11·8	+ 8·0
Means ...	...	...	14	97	318·94	+12·36	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3309.							
1893. d					°	°	°
Dec. 14·190	0	106	0	383	311·7	− 4·7	− 82·1
15·192	140	384	193	532	311·7	− 4·9	− 68·9
16·200	128	544	110	469	312·7	− 4·8	− 54·6
17·266	170	653	110	425	313·4	− 4·8	− 39·8
18·189	180	755	103	431	313·2	− 4·7	− 27·9
19·185	209	898	108	466	313·5	− 5·0	− 14·5
20·264	201	862	101	431	313·6	− 5·1	− 0·1
21·447	148	805	77	421	314·3	− 5·1	+ 16·1
22·192	201	807	113	453	314·9	− 5·2	+ 26·6
23·425	101	622	70	426	314·8	− 5·0	+ 42·7
24·400	91	444	82	400	315·5	− 5·4	+ 56·3
25·252	54	330	70	427	315·2	− 4·8	+ 67·2
26·458	8	56	38	269	316·4	− 4·9	+ 84·3
Means ...	...	...	90	426	313·92	− 4·95	...
Group 3310.							
Dec. 15·192	4	14	4	12	324·6	− 7·4	− 56·0
16·200	17	68	11	46	324·9	− 6·2	− 42·4
17·266	34	208	20	116	325·8	− 6·4	− 27·4
18·189	30	146	16	76	325·0	− 6·8	− 16·1
19·185	5	84	3	42	324·9	− 6·7	− 3·1
20·264	0	16	0	8	324·9	− 8·5	+ 11·2
Means ...	...	...	9	50	325·02	− 7·00	...
Group 3311.							
Dec. 15·192	22	176	55	432	302·3	− 8·0	− 78·3
16·200	55	340	61	387	303·3	− 7·6	− 64·0
17·266	85	487	64	371	304·4	− 7·5	− 48·8
18·189	94	411	59	259	303·9	− 7·2	− 37·2
19·185	107	559	58	304	305·2	− 7·5	− 22·8
20·264	56	284	29	144	305·3	− 7·8	− 8·4
21·447	50	392	26	201	307·0	− 8·7	+ 8·8
22·192	85	465	45	249	307·9	− 8·8	+ 19·6
23·425	39	254	24	157	307·0	− 9·4	+ 34·9
24·400	43	161	32	118	306·3	−10·1	+ 47·1
25·252	7	36	7	34	305·9	− 9·6	+ 57·9
Means ...	...	...	42	241	305·32	− 8·38	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3312.							
1893. d					°	°	°
Dec. 17·266	35	108	23	65	29·2	−16·1	+ 36·0
18·189	64	208	49	159	29·0	−16·7	+ 47·9
19·185	38	184	41	194	28·9	−16·7	+ 60·9
20·264	20	101	46	242	31·7	−16·8	+ 78·0
Means ...	...	...	40	165	29·70	−16·58	...
Group 3313.							
Dec. 19·185	0	160	0	385	250·5	+11·2	− 77·5
20·264	142	459	167	533	250·1	+11·5	− 63·6
21·447	118	623	90	474	250·9	+10·8	− 47·3
22·192	198	831	126	533	251·8	+11·3	− 36·5
23·425	196	1200	108	660	251·8	+11·2	− 20·3
24·400	259	1120	135	584	252·1	+11·4	− 7·1
25·252	157	843	82	440	252·8	+12·0	+ 4·8
26·458	125	782	70	442	254·7	+12·1	+ 22·6
27·266	113	573	70	355	254·9	+11·6	+ 33·4
28·248	84	406	66	311	255·8	+11·1	+ 47·3
29·282	53	260	60	292	256·8	+10·9	+ 61·9
30·444	30	158	54	331	254·7	+11·9	+ 75·0
Means ...	...	...	86	445	253·08	+11·42	...
Group 3314.							
Dec. 19·185	0	35	0	90	250·4	+18·7	− 77·6
20·264	17	71	20	85	250·5	+19·0	− 63·2
21·447	15	40	12	32	251·1	+19·1	− 47·1
22·192	18	41	11	28	251·7	+19·6	− 36·6
23·425	6	32	3	19	251·2	+19·2	− 20·9
24·400	3	22	1	12	251·0	+19·0	− 8·2
Means ...	...	...	8	44	250·98	+19·10	...
Group 3315.							
Dec. 20·264	8	31	19	68	236·9	−17·5	− 76·8
21·447	26	186	38	263	229·6	−19·9	− 68·6
22·192	101	403	98	398	230·1	−20·0	− 58·2
23·425	101	513	69	360	230·7	−19·9	− 41·4
24·400	129	687	78	407	231·2	−19·8	− 28·0

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3315—*continued.*							
1893. d					°	°	°
Dec. 25·252	105	605	58	335	231·2	−19·9	− 16·8
26·458	120	697	63	366	230·3	−20·0	− 1·8
27·266	82	563	44	300	230·5	−20·0	+ 9·0
28·248	100	530	56	300	230·6	−19·8	+ 22·1
29·282	57	278	38	184	232·2	−19·9	+ 37·3
30·444	22	108	20	101	236·6	−19·0	+ 56·9
Means ...	...	...	53	280	231·81	−19·61	...
Group 3316.							
Dec. 20·264	34	107	99	313	233·9	−26·9	− 79·8
21·447	35	248	45	312	233·6	−26·9	− 64·6
22·192	53	307	50	290	233·2	−26·6	− 55·1
23·425	35	341	26	245	232·0	−27·0	− 40·1
24·400	106	467	66	292	230·9	−27·6	− 28·3
25·252	102	585	59	340	230·5	−27·8	− 17·5
26·458	66	480	37	265	230·3	−27·9	− 1·8
27·266	53	337	29	188	229·6	−28·3	+ 8·1
28·248	56	272	33	161	228·9	−28·3	+ 20·4
29·282	34	244	23	163	228·0	−29·1	+ 33·1
30·444	25	145	20	119	227·9	−29·4	+ 48·2
Means ...	...	...	43	244	230·80	−27·80	...
Group 3317.							
Dec. 20·264	0	38	0	138	232·5	+17·6	− 81·2
21·447	14	121	20	172	230·7	+18·2	− 67·5
22·192	56	243	57	245	230·8	+18·7	− 57·5
23·425	49	279	36	199	230·8	+18·4	− 41·3
24·400	41	226	25	139	230·3	+19·0	− 28·9
25·252	32	128	18	70	230·4	+19·2	− 17·6
26·458	0	75	0	42	227·4	+20·4	− 4·7
Means ...	...	...	22	144	230·41	+18·79	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3318.							
1893. d					°	°	°
Dec. 21·447	3	17	6	34	222·4	− 3·1	− 75·8
22·192	58	216	95	349	216·2	− 4·5	− 72·1
23·425	65	422	57	380	215·8	− 4·5	− 56·3
24·400	164	818	106	538	218·9	− 3·7	− 40·3
25·252	107	610	62	351	219·3	− 4·0	− 28·7
26·458	147	784	75	397	222·7	− 3·6	− 9·4
27·266	122	775	61	388	223·6	− 3·4	+ 2·1
28·248	116	569	60	296	224·2	− 3·0	+ 15·7
29·282	69	434	41	255	225·2	− 3·0	+ 30·3
30·444	84	450	61	320	224·9	− 2·6	+ 45·2
Means ...	...	...	62	331	221·32	− 3·54	...
Group 3319.							
Dec. 22·192	0	2	0	2	352·0	− 9·2	+ 63·7
Means ...	...	...	0	2	352·00	− 9·20	...
Group 3320.							
Dec. 22·192	2	21	2	16	249·2	−31·1	− 39·1
Means ...	...	...	2	16	249·20	−31·10	...
Group 3321.							
Dec. 22·192	4	24	3	18	240·0	+19·1	− 48·3
23·425	5	48	3	30	240·5	+19·2	− 31·6
24·400	15	64	8	36	240·5	+18·3	− 18·7
25·252	31	138	16	74	241·3	+18·6	− 6·7
26·458	20	117	11	64	242·2	+18·3	+ 10·1
27·266	21	120	12	67	241·1	+18·4	+ 19·6
28·248	10	66	6	44	242·6	+18·3	+ 34·1
29·282	0	22	0	18	243·8	+18·3	+ 48·9
Means ...	...	...	7	44	241·50	+18·56	...
Group 3322.							
1893. d					°	°	°
Dec. 23·425	29	99	18	61	303·9	+10·9	+ 31·8
24·400	42	186	31	140	306·2	+10·8	+ 47·0
25·252	38	162	37	164	306·8	+11·9	+ 58·8
26·458	15	206	24	403	306·4	+11·1	+ 74·3
27·266	0	96	0	570	306·1	+10·7	+ 84·6
Means ...	...	...	22	268	305·88	+11·08	...
Group 3323.							
Dec. 23·425	5	130	11	359	192·3	−11·8	− 79·8
24·400	76	293	99	391	191·1	−11·1	− 68·1
25·252	77	550	71	513	190·7	−11·2	− 57·3
26·458	156	883	105	599	190·6	−11·4	− 41·5
27·266	187	1072	109	626	191·3	−11·3	− 30·2
28·248	223	1138	118	606	191·1	−11·4	− 17·4
29·282	131	1008	68	518	190·8	−11·7	− 4·1
30·444	282	1707	148	888	190·1	−12·5	+ 10·4
31	No photograph.						
1894.							
Jan. 1	No photograph.						
2·442	100	867	80	682	190·4	−12·9	+ 50·2
3·228	133	713	143	749	191·3	−13·3	+ 61·5
4·183	42	345	60	626	191·6	−13·4	+ 74·4
5·466	8	57	38	273	185·2	−13·4	+ 84·8
Means ...	...	...	88	569	190·54	−12·12	...
Group 3324.							
1893.							
Dec. 24·400	0	31	0	25	211·7	−29·3	− 47·5
25·252	3	16	2	12	212·5	−29·7	− 35·5
Means ...	...	...	1	19	212·10	−29·50	...
Group 3325.							
Dec. 25·252	25	147	74	443	167·3	− 7·8	− 80·7
26·458	53	291	63	344	167·0	− 7·4	− 65·1
27·266	112	497	96	425	167·2	− 7·1	− 54·3
28·248	152	623	100	414	167·4	− 6·9	− 41·1
29·282	127	690	72	390	167·5	− 7·2	− 27·4
30·444	95	762	48	391	168·2	− 7·9	− 11·5
31	No photograph.						

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*continued.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3325—*continued.*							
1894. d					°	°	°
Jan. 1	No	photograph.					
2·442	88	464	51	268	169·5	− 7·5	+ 29·3
3·228	87	408	57	268	170·2	− 8·0	+ 40·4
4·183	87	355	72	293	170·2	− 7·9	+ 53·0
5·466	30	177	43	259	170·7	− 7·3	+ 70·3
6·192	30	95	98	314	172·5	− 7·5	+ 81·7
Means ...	...	...	70	346	168·88	− 7·50	...
Group 3326.							
1893.							
Dec. 26·458	10	38	5	20	237·4	− 7·7	+ 5·3
27·266	12	42	6	22	237·5	− 7·7	+ 16·0
28·248	2	5	1	3	235·7	− 7·7	+ 27·2
Means ...	...	...	4	15	236·87	− 7·70	...
Group 3327.							
Dec. 26·458	0	26	0	42	159·6	− 7·8	− 72·5
27·266	10	38	10	41	159·5	− 7·6	− 62·0
28·248	0	4	0	3	160·6	− 7·7	− 47·9
29·282	0	0	0	0	...	...	...
30·444	0	14	0	7	161·6	− 8·0	− 18·1
Means ...	...	...	2	19	160·33	− 7·78	...
Group 3328.							
Dec. 26·458	22	81	58	215	154·3	+ 17·5	− 77·8
27·266	20	124	29	176	154·1	+ 18·0	− 67·4
28·248	47	171	43	160	154·0	+ 18·4	− 54·5
29·282	36	147	26	107	153·5	+ 18·3	− 41·4
30·444	27	160	16	95	154·2	+ 17·3	− 25·5
31	No	photograph.					
1894.							
Jan. 1	No	photograph.					
2·442	0	40	0	22	154·1	+ 16·2	+ 13·9
Means ...	...	...	29	129	154·03	+ 17·62	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3329.							
1893. d					°	°	°
Dec. 26·458	18	97	47	257	152·6	− 8·4	− 79·5
27·266	57	176	79	241	152·8	− 8·0	− 68·7
28·248	59	302	52	266	153·3	− 7·4	− 55·2
29·282	75	357	51	242	153·2	− 7·5	− 41·7
30·444	99	436	56	243	154·3	− 7·9	− 25·4
31	No	photograph.					
1894.							
Jan. 1	No	photograph.					
2·442	106	868	55	454	155·9	− 8·6	+ 15·7
3·228	177	930	100	523	156·6	− 8·9	+ 26·8
4·183	127	669	84	437	157·0	− 8·7	+ 39·8
5·466	50	339	48	320	158·7	− 7·7	+ 58·3
6·192	38	201	50	266	158·7	− 7·6	+ 67·9
7·275	15	39	71	188	160·9	− 6·5	+ 84·4
Means ...	...	...	63	312	155·82	− 7·93	...
Group 3330.							
1893.							
Dec. 27·266	0	19	0	101	306·4	− 6·6	+ 84·9
Means ...	...	...	0	101	306·40	− 6·60	...
Group 3331.							
Dec. 27·266	4	18	3	11	251·6	+ 16·2	+ 30·1
Means ...	...	...	3	11	251·60	+ 16·20	...
Group 3332.							
Dec. 27·266	0	31	0	16	233·7	+ 16·7	+ 12·2
28·248	4	17	2	10	232·8	+ 17·5	+ 24·3
Means ...	...	...	1	13	233·25	+ 17·10	...

AREAS and HELIOGRAPHIC POSITIONS of GROUPS of SUN SPOTS—*concluded.*

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3333.							
1893. d					°	°	°
Dec. 27·266	4	38	12	108	141·4	— 6·9	— 80·1
28·248	6	49	8	60	142·2	— 6·9	— 66·3
29·282	6	33	5	27	142·2	— 7·6	— 52·7
30·444	4	13	2	8	142·7	— 7·2	— 37·0
Means ...	...	...	7	51	142·13	— 7·15	...
Group 3334.							
Dec. 28·248	4	8	2	5	219·4	—27·4	+ 10·9
29·282	5	22	3	13	214·1	—30·2	+ 19·2
30·444	0	9	0	6	216·4	—29·6	+ 36·7
Means ...	...	...	2	8	216·63	—29·07	...
Group 3335.							
Dec. 29·282	0	17	0	10	172·1	+ 9·5	— 22·8
30·444	0	22	0	12	173·0	+ 9·7	— 6·7
Means ...	...	...	0	11	172·55	+ 9·60	...
Group 3336.							
Dec. 30·444	22	112	22	114	240·0	+ 1·1	+ 60·3
Means ...	...	...	22	114	240·0	+ 1·10	...
Group 3337.							
Dec. 30·444	8	27	5	17	145·0	—18·6	— 34·7
31	No	photo	graph.				
1894.							
Jan. 1	No	photo	graph.				
2·442	0	10	0	5	149·6	—17·9	+ 9·4
3·228	0	6	0	3	149·5	—17·6	+ 19·7
Means ...	...	...	2	8	148·03	—18·03	...

Date. Greenwich Civil Time.	Projected Area of		Area for Group.		Mean Longitude of Group.	Mean Latitude of Group.	Longitude from Central Meridian.
	Umbra.	Whole Spot.	Umbra.	Whole Spot.			
Group 3338.							
1893. d					°	°	°
Dec. 30·444	11	64	14	78	113·8	— 8·2	— 65·9
Means ...	...	...	14	78	113·80	— 8·20	...
Group 3339.							
Dec. 30·444	0	12	0	15	113·3	+11·4	— 66·4
Means ...	...	...	0	15	113·30	+11·40	...
Group 3340.							
Dec. 30·444	3	18	5	32	105·3	— 7·4	— 74·4
31	No	photo	graph.				
1894.							
Jan. 1	No	photo	graph.				
2·442	3	28	2	17	106·2	— 8·3	— 34·0
3·228	0	5	0	3	106·1	— 8·1	— 23·7
4·183	0	8	0	4	105·7	— 7·0	— 11·3
Means ...	...	...	2	14	105·83	— 7·70	...
Group 3341.							
1893.							
Dec. 30·444	0	10	0	73	92·7	—14·0	— 87·0
31	No	photo	graph.				
1894.							
Jan. 1	No	photo	graph.				
2·442	0	16	0	11	97·7	—14·9	— 42·5
Means ...	...	...	0	42	95·20	—14·45	...

ROYAL OBSERVATORY, GREENWICH.

TOTAL PROJECTED 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

1893.

TOTAL PROJECTED AREAS OF SUN SPOTS AND FACULÆ FOR EACH DAY IN THE YEAR 1893.

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 Greenwich Civil Time is expressed by the month, day of the month (civil reckoning) and decimal of a day, reckoned from Greenwich Mean Midnight.

Greenwich Civil Time.	Projected Area.		
	Umbræ.	Whole Spots.	Faculæ.
1893 d			
Jan. 1·3	176	1346	3207
2·5	133	981	1733
3·3	90	700	1020
4·2	131	891	2932
5·2	167	1077	3360
6·5	92	563	36
7·2	139	651	3717
8·2	66	368	3722
9·2	95	365	2224
10·5	57	429	1778
11·5	46	390	1548
12·2	79	463	861
13·2	85	531	774
14·2	93	500	1707
15·2	84	457	171
16·2	54	460	723
17·5	112	742	1228
18·2	236	1504	2796
19·2	419	2089	2322
20·2	601	2575	3419
21·5	354	2996	433
22·2	470	2980	2584
23·2	266	2057	732
24·2	341	1819	1655
25·3	469	2657	2423
26·2	627	3516	5618
27·2	672	3784	6730
28·5	441	3734	2490
29·3	672	3721	4734
30·3	663	3581	2479
31·3	592	2965	3893
Feb. 1·3	562	2907	2970
2·2	299	2134	1776
3·2	306	1580	2220
4·5	99	1018	3264
5·5	130	763	3133
6·5	101	693	1765
7·2	134	730	1669
8·3	230	1059	2231
9·2	288	1819	1614
10·5	277	1740	821
11·3	230	1734	610
12·2	218	1994	1195
13·2	274	2151	1423
14·3	433	2877	2774
15·3	410	2895	978
16·2	214	1775	921
17·4	273	1597	1687
18·2	133	970	1226
19·5	185	1089	1416
20·6	193	1194	2628
21·2	168	984	2032
1893 d			
Feb. 22·2	224	1333	3172
23·4	408	1816	6239
24·2	304	1923	2024
25·5	276	1885	436
26·2	416	2199	2861
27·2	506	2109	3040
28·5	311	2162	2675
March 1·6	223	1851	1179
2·4	273	1739	1779
3·1	305	1360	2807
4·4	252	1035	2643
5·2	84	721	1451
6	...	...	...
7·4	64	496	1593
8·5	134	656	1268
9·5	47	384	1432
10·4	111	652	1537
11·4	135	748	1769
12·4	137	852	1296
13·5	202	1247	1413
14·3	251	1215	1950
15·4	217	1215	2045
16·4	190	978	2253
17·4	177	945	1475
18·5	180	956	1399
19·3	145	913	1468
20·4	206	1166	2003
21·4	227	1398	2552
22·5	202	1684	2369
23·5	300	1975	2097
24·4	370	1950	1296
25·4	303	2278	1267
26·2	456	2296	3303
27·4	300	1980	4332
28·4	224	1284	2560
29·4	245	1431	2513
30·5	183	1275	1486
31·4	240	1680	1586
April 1·4	238	1710	2050
2·4	201	1660	2530
3·5	175	1348	2438
4·4	115	776	2499
5·6	76	570	1428
6·5	62	633	2378
7·4	116	874	2265
8·5	125	892	2216
9·4	142	1128	922
10·4	206	1531	972
11·3	299	1629	2492
12·3	341	1950	3172
13·5	322	2029	2500
1893 d			
April 14·4	234	1925	3249
15·5	322	1932	4184
16·3	396	1882	2866
17·4	261	1607	1853
18·4	217	1428	1244
19·5	323	1742	2750
20·5	250	1579	1881
21·4	189	1297	2916
22·4	259	1499	2814
23·5	412	2515	2117
24·5	380	2634	3089
25·3	564	2988	4038
26·5	261	2129	2091
27·5	258	1838	2230
28·5	232	2004	3107
29·4	239	1459	997
30·2	305	1692	1977
May 1·3	432	2561	3606
2·2	569	2847	3003
3·3	578	2846	5404
4·4	419	2846	4182
5·4	332	2547	3186
6·4	271	2160	2782
7·5	127	1583	546
8·4	159	1470	2184
9·4	199	1199	1585
10·4	163	1030	2344
11·4	97	733	1182
12·4	120	814	912
13·4	115	824	2430
14·5	83	586	858
15·4	82	555	2332
16·5	115	622	1294
17·2	133	705	3814
18·6	93	840	2111
19·5	106	932	2107
20·5	99	774	3139
21·2	74	607	2808
22·4	59	490	1254
23·4	76	733	3723
24·4	175	1059	1311
25·4	279	1918	2727
26·7	395	2398	3994
27·4	392	2639	3769
28·5	340	2207	2499
29·4	368	2422	3563
30·2	347	2507	1782
31·4	405	2529	5584
June 1·4	459	2887	5808
2·4	460	3411	3787
3·4	616	3981	777
1893 d			
June 4·5	548	3825	746
5·5	581	4320	3271
6·4	455	3350	3492
7·5	452	3269	5832
8·4	384	2508	3402
9·4	213	1944	2620
10·4	274	1726	3014
11·6	250	1514	2278
12·6	130	1216	1559
13·5	231	1189	1573
14·4	165	1176	2409
15·4	205	1509	2793
16·4	295	1798	3135
17·4	186	1688	2254
18·5	64	916	1725
19·4	87	664	2752
20·2	73	434	881
21·2	134	714	973
22·4	134	993	2429
23·4	206	1298	3444
24	...	...	...
25·4	224	1696	3144
26·4	284	1813	3729
27·4	199	1279	1894
28·4	244	1440	5093
29·4	150	1188	3791
30·4	191	1168	2594
July 1·4	142	1147	4283
2·5	128	821	1559
3·4	150	1096	2842
4·4	239	1715	3077
5·2	334	2411	4112
6·4	396	2493	3665
7·5	509	3113	2971
8·5	675	4507	3469
9·6	963	5418	3208
10·4	806	5258	2588
11·5	758	5557	3473
12·4	895	5617	3455
13·3	768	4239	843
14·3	500	3207	1500
15·3	375	2579	553
16·4	410	1885	1373
17·5	311	2008	3098
18·4	223	1722	2562
19·3	202	1253	1024
20·7	140	1064	3466
21·5	115	856	2133
22·4	149	922	2809
23·2	140	839	991
24·6	150	868	1649
25·4	132	801	3161

TOTAL PROJECTED AREAS OF SUN SPOTS AND FACULÆ—*concluded.*

Greenwich Civil Time.		Projected Area.			Greenwich Civil Time.		Projected Area.			Greenwich Civil Time.		Projected Area.			Greenwich Civil Time.		Projected Area.		
		Umbræ.	Whole Spots.	Faculæ.			Umbræ.	Whole Spots.	Faculæ.			Umbræ.	Whole Spots.	Faculæ.			Umbræ.	Whole Spots.	Faculæ.
1893	d				1893	d				1893	d				1893	d			
July	26·4	107	676	2546	Sept.	3·4	736	4858	1873	Oct.	13·2	252	1181	1891	Nov.	22·2	808	3840	877
	27·4	72	617	2434		4·4	759	4525	3550		14·3	330	1765	2616		23·4	449	3301	776
	28·4	79	440	2909		5·5	740	4441	3430		15·2	331	1869	1579		24·2	373	3391	273
	29·2	38	285	1542		6·4	581	3853	2157		16·4	381	2263	2030		25·5	242	2278	1480
	30·2	81	425	2192		7·4	604	3391	3762		17·5	323	1944	630		26·2	350	2002	1530
	31·4	145	687	6437		8·5	452	2923	2707		18·4	482	2469	1853		27·4	186	1170	1020
						9·4	450	2679	2381		19·4	395	2591	2015		28·2	178	1087	509
						10·5	394	2821	693		20·3	637	3207	4378		29·2	199	1234	396
Aug.	1·5	140	703	4896		11·4	430	2675	3193		21·4	511	2978	2864		30·2	225	1578	867
	2·4	181	874	3754		12·5	401	2249	2910		22·2	696	3341	4768					
	3·5	210	1303	3423		13·5	302	1701	2814		23·5	495	3283	2553					
	4·5	379	2680	1902		14·6	216	1248	1994		24·5	527	3475	1156	Dec.	1·2	355	2475	1097
	5·4	886	4725	2535		15·5	185	1271	3102		25·2	734	3353	1912		2·4	313	2585	945
	6·5	1144	6996	2030		16·2	226	1133	742		26·3	766	3391	901		3·2	498	2641	1033
	7·5	1254	8499	3398		17·5	254	1247	1435		27·4	394	2552	392		4·2	655	2832	2029
	8·4	1359	7724	3464		18·2	240	1434	882		28·3	506	2267	2722		5·4	177	1788	165
	9·4	1266	7195	4890		19·2	235	1466	792		29·3	406	1781	3553		6·4	216	1357	450
	10·4	1048	6249	5536		20·5	210	1390	2500		30·4	157	1010	1862		7·5	164	1114	886
	11·4	794	5045	3790		21·2	277	1267	2129		31·4	164	775	1688		8·2	230	1062	1012
	12·5	610	3638	3166		22·6	245	1321	2721							9·5	104	811	951
	13·5	320	2053	1424		23·1	125	1242	1947							10·2	127	867	1897
	14·5	237	1477	1311		24·5	325	1894	2685	Nov.	1·3	92	546	2676		11·3	134	774	1479
	15·5	215	1391	2671		25·4	377	1905	2882		2·2	86	410	1636		12·4	164	715	1161
	16·4	206	1535	3326		26·5	238	1445	3676		3·3	27	191	745		13·3	211	995	2157
	17·4	257	1796	3675		27·5	233	1232	2890		4·1	47	200	790		14·2	159	1389	2009
	18·4	375	2464	4299		28·3	259	1287	1763		5·2	51	250	437		15·2	523	2195	2825
	19·5	508	3059	3187		29·5	382	1973	714		6·2	58	224	978		16·2	497	2643	2290
	20·4	670	3755	2381		30·5	491	2786	2012		7·5	55	236	425		17·3	657	2896	2226
	21·5	561	3266	2636							8·2	75	443	882		18·2	726	2994	896
	22·5	405	2513	2699							9·5	153	1101	1080		19·2	672	3444	885
	23·7	423	2329	1763	Oct.	1·3	600	2633	2543		10·3	318	1695	1656		20·3	713	3015	1452
	24·4	393	2022	2748		2·5	346	2187	2340		11·2	339	2008	2080		21·4	580	3232	2009
	25·5	281	1648	4520		3·5	282	1762	3009		12·3	412	2349	2553		22·2	932	4059	4578
	26·2	171	1094	1470		4·5	257	1608	2403		13·5	280	1914	567		23·4	716	4478	2566
	27·2	173	1006	1085		5·4	292	1278	2349		14·3	456	2645	946		24·4	1051	4868	3800
	28·4	222	1482	3047		6·2	240	1046	2212		15·2	364	2511	1936		25·3	761	4257	2378
	29·4	349	2200	2428		7·5	167	881	966		16·2	356	1911	2446		26·5	759	4612	1758
	30·5	534	3178	2226		8·2	198	986	1774		17·2	378	1950	2768		27·3	798	4520	1781
	31·5	646	3854	1776		9·3	147	994	1801		18·2	470	2393	2639		28·2	862	4162	2173
						10·3	189	902	3411		19·5	515	3795	2012		29·3	593	3512	1889
Sept.	1·5	819	4024	2042		11·2	189	872	1848		20·3	510	4167	2127		30·4	711	4225	2148
	2·4	783	4706	2406		12·5	197	1104	2124		21·4	380	4007	985		31	...	...	...

MEAN AREAS of SUN SPOTS and FACULÆ, as measured on PHOTOGRAPHS taken at the ROYAL OBSERVATORY, GREENWICH, at DEHRA DÛN, INDIA, and in MAURITIUS, for each ROTATION of the SUN, from 1892 December 27 to 1893 December 16.

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 1873–1892 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 at mean noon on January 1, 1854, and the assumed period of the Sun's sidereal rotation being 25·38 days. The rotations adopted in the volumes of Greenwich Observations, 1877 to 1883, correspond on the other hand to the sidereal rotation of the Sun, the commencement of each being defined by the coincidence of the assumed prime meridian with the ascending node. 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 GREENWICH CIVIL TIME, reckoning from midnight.

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.		
			d		Umbræ.	Whole Spots.	Faculæ.	Umbræ.	Whole Spots.	Faculæ.
525	1892	December	27·20	28	191	1190	1965	134	856	2096
526	1893	January	23·53	27	343	2122	2360	249	1571	2430
527		February	19·87	26	223	1256	2092	154	907	2236
528		March	19·20	28	228	1496	2290	162	1114	2367
529		April	15·48	27	296	1886	2477	202	1342	2518
530		May	12·72	27	285	1959	2897	203	1456	2955
531		June	8·92	26	190	1329	2691	144	1085	2844
532		July	6·12	27	344	2150	2628	244	1574	2755
533		August	2·33	28	532	3215	2949	381	2383	3152
534		August	29·57	27	428	2544	2286	303	1802	2460
535		September	25·84	27	335	1799	2313	253	1411	2458
536		October	23·13	27	302	1662	1629	212	1197	1685
537		November	19·43	28	319	2075	1259	233	1514	1351

MEAN AREAS of SUN SPOTS, and FACULÆ, as measured on PHOTOGRAPHS taken at the ROYAL OBSERVATORY, GREENWICH, at DEHRA DÛN, INDIA, and in MAURITIUS, for the YEAR 1893.

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
1893	362	327	1983	2287	234	1464	2404

MEAN HELIOGRAPHIC LATITUDE of SUN SPOTS, as measured on PHOTOGRAPHS taken at the ROYAL OBSERVATORY, GREENWICH, at DEHRA DÛN, INDIA, and in MAURITIUS, for each ROTATION of the SUN, from 1892 December 27 to 1893 December 16.

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 Sun's 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 for 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.		
	d			°		°	°	°
525	1892 Dec. 27·20	28	183	15·20	674	16·91	— 10·06	16·55
526	1893 Jan. 23·53	27	318	16·84	1253	16·69	— 9·91	16·72
527	Feb. 19·87	26	411	11·42	497	14·52	— 2·79	13·12
528	Mar. 19·20	28	478	15·63	636	14·82	— 1·77	15·17
529	Apr. 15·48	27	580	17·26	762	16·90	— 2·13	17·06
530	May 12·72	27	453	17·25	1002	18·58	— 7·42	18·16
531	June 8·92	26	262	14·35	822	16·71	— 9·21	16·14
532	July 6·12	27	607	14·44	967	17·10	— 4·95	16·08
533	Aug. 2·33	28	632	14·93	1751	16·08	— 7·87	15·78
534	Aug. 29·57	27	538	12·23	1264	11·72	— 4·57	11·87
535	Sept. 25·84	25*	842	12·04	474	12·40	+ 3·23	12·17
536	Oct. 23·13	27	389	15·18	808	8·30	— 0·67	10·54
537	Nov. 19·43	28	781	18·52	733	7·06	+ 6·14	12·98

* The photographs on two days in this rotation, October 20 and October 22, are not used for the determination of the positions of the spots, but only for their areas.

MEAN HELIOGRAPHIC LATITUDE of SUN SPOTS, as measured on PHOTOGRAPHS taken at the ROYAL OBSERVATORY, GREENWICH, at DEHRA DÛN, INDIA, and in MAURITIUS, for the YEAR 1893.

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.		
			°		°	°	°
1893	360	517	14·91	941	14·26	— 3·93	14·49

NOTE.—In the computations for forming the corresponding Tables given in the Volumes for 1884 and 1885 the latitudes of the Spots were only taken to the nearest whole degree, the next higher whole degree being adopted whenever the fractional part of the latitude amounted to or exceeded ·5. Thus, under 8°, for example, would be included all Spots from 7°·5 to 8°·4, both inclusive; and the corresponding mean latitude should have been taken as 7°·95 instead of 8°. The Mean Heliographic Latitudes, therefore, both for Spots North and Spots South of the Equator, and the Mean Distances from the Equator of all Spots, both for the rotations and for entire years, require a correction of − 0°·05. The Mean Latitude of the entire Spotted Area requires the following correction:—

$$-0^{\circ}\cdot05 \times \frac{\text{Mean Area N.} - \text{Mean Area S.}}{\text{Mean Area N.} + \text{Mean Area S.}}$$

These corrections have been applied in computing the Mean Heliographic Latitudes and Mean distance from the Equator given in the above Tables for 1893, and in corresponding Tables for the years 1886 to 1892.