Kodaikanal Observatory.

BULLETIN No. LXXX.

SUMMARY OF PROMINENCE OBSERVATIONS FOR THE FIRST HALF OF THE YEAR 1926.

In pursuance of the programme of work adopted since 1st January 1923 under the auspices of the International Astronomical Union, all observatories taking spectroheliograms of the Sun have been asked to co-operate with the Kodaikanal Observatory by supplying copies of their photographs on those days when the Kodaikanal records are imperfect or wanting. In response to our requirements for the first half of the year 1926, the Mount Wilson Observatory supplied prominence plates for 19 days and Hα disc plates for 14 days; Meudon Observatory supplied K_3 disc plates for 9 days and Hα disc plates for 4 days.

When incomplete or imperfect photographs for the same day are available from more than one observatory, the best photograph is chosen as representing the solar activity of that day after weighting it according to its quality, and the remaining photographs are ignored.

The mean daily areas and numbers of prominences during the half-year are given below. The means are corrected for incomplete or imperfect observations, the total of 181 days when plates were available being reduced to 175½ effective days.

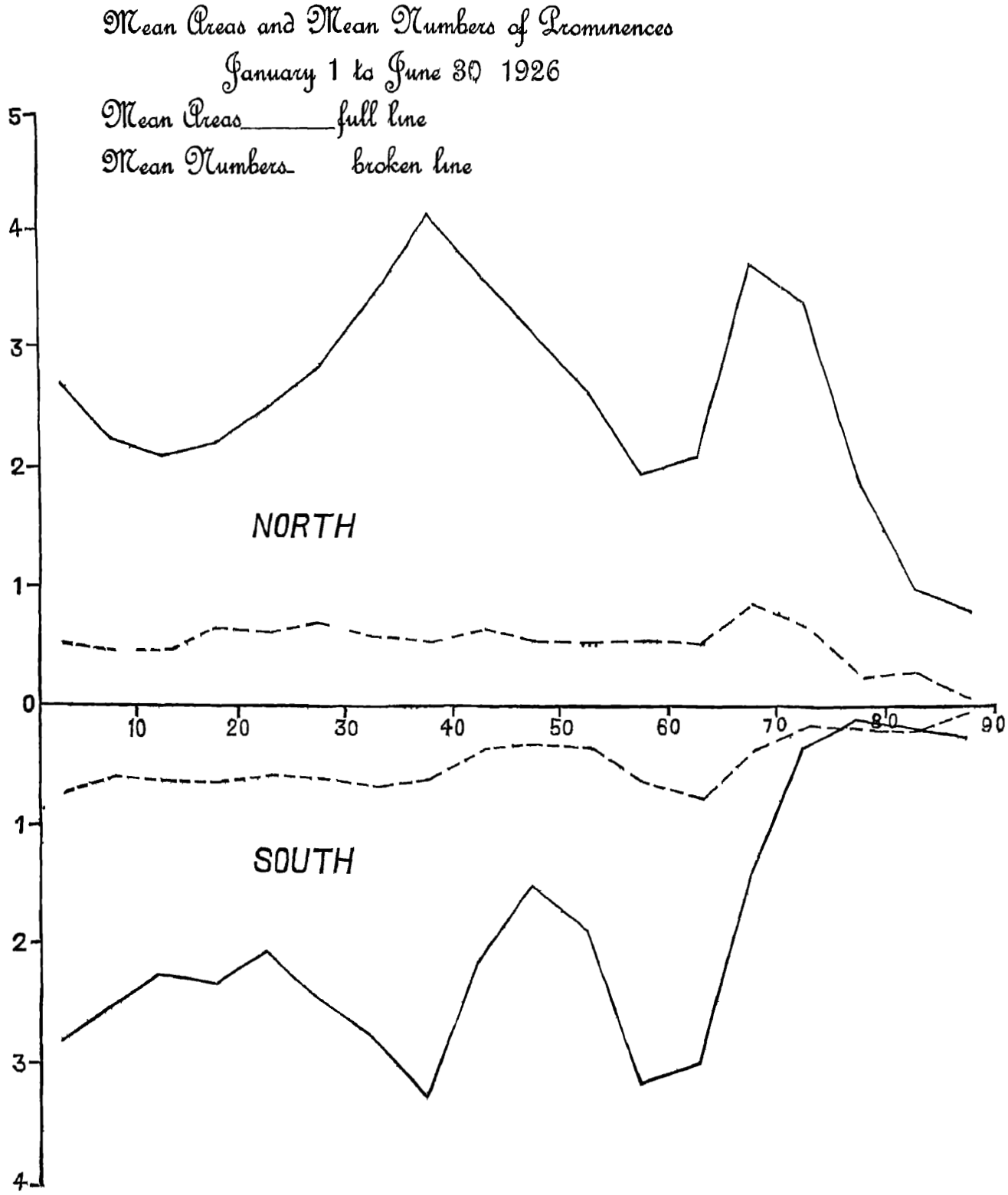
	Mean daily areas (square minutes).	Mean daily numbers.
North	4·62	9·37
South	3·46	8·46
Total ...	8·08	17·83

Compared with the second half of the year 1925, areas show an increase of 45 per cent in the northern hemisphere and an increase of 11 per cent in the southern. In the case of numbers, there is an increase amounting to 12 per cent in the northern hemisphere, and a slight increase in the southern. The excess of activity in the northern hemisphere has become more marked again.

For comparison with bulletins issued prior to the co-operation of other observatories, the means based on Kodaikanal photographs alone are also given, 174 days of observation being counted as 167 effective days.

	Mean daily areas (square minutes).	Mean daily numbers.
North (Kodaikanal photographs only)	4·66	9·57
South do.	3·52	8·65
Total ...	8·18	18·22

The distribution of the prominences in latitude is represented in the following diagram in which the full line gives the mean daily areas and the broken line the mean daily numbers for each zone of 5° of latitude The most active zone is now 35°–40° in both hemispheres The peak in high latitudes has advanced 5° towards the poles compared with the last half of 1925 and in the advance towards the poles the southern hemisphere still lags about 10° behind the northern



The monthly, quarterly and half-yearly areas and numbers, and the mean height and mean extent of the prominences on photographs from all the co-operating observatories are given in Table I. The unit of area is 1 square minute of arc. The mean height is derived by adding together the greatest heights reached by individual prominences and dividing by the total number of prominences observed; the mean extent is derived by adding together the lengths of the base on the chromosphere of individual prominences and dividing by the total number of prominences.

TABLE I.—ABSTRACT FOR THE FIRST HALF OF 1926.

Months.	Number of days (effective).	Areas.	Numbers.	Daily Means.		Mean height.	Mean extent.
				Areas.	Numbers.		
1926.						"	°
January	31	262·9	515	8·5	16·6	45·3	6 37
February	28	235·3	472	8 4	16·9	42·8	6·23
March	31	283·1	581	9·1	18·7	46·5	5·75
April	29½	207·8	562	7·0	19·1	37·2	5·31
May	28¾	219·0	508	7·6	17 7	40·2	5·82
June	27¼	208·8	487	7·7	17·9	41·4	5·71
First quarter	90	781·3	1568	8·7	17·4	45·0	6·10
Second quarter	85½	635·6	1557	7·4	18·2	39·5	5·60
First half-year	175½	1416·9	3125	8·1	17·8	42 2	5·85

Distribution east and west of the Sun's axis.

Areas showed a slight excess in the western hemisphere, while the numbers showed a slight eastern excess, as will be seen from the following table :—

1926 January to June.	East.	West.	Percentage East.
Total number observed	1578	1547	50·5
Total areas in square minutes	678·0	738·8	47·9

Metallic prominences

One hundred and thirty three metallic prominences were observed during the half year more than four times thenumber in the previous half year The proportion in the northern hemisphere was 74 per cent

TABLE II—LIST OF METALLIC PROMINENCES OBSERVED AT KODAIKANAL JANUARY TO JUNE 1926

Date		Hour IST	Base	Latitude		Limb	Height	Line
				North	South			
1926		H M						
January	1	9 24			26	W	10	4924 1 5016 5018 6 b b b b 5316 8 5363 0 D D 6677 7065
	1	9 42	2		21	W	20	4924 1 b b b b 5316 8 D D
	1	9 13		15 5		W	50	6677 7065
	2	9 12			2	W	10	4924 1 b b b b 5316 8 D D
	2	9 55	5	33		W	25	4924 1 b, b, b b, 5316 8, D D
	4	9 10		21		W	150	4924 1 5016 5018 6, b b b b 5197 8 5234 8 5276 2 5284 3 5316 8 5328 7 5361 8 5363 0 [illegible] D D 6677 7065
	5	9 5	21	29 5		W	140	4924 1 5016 5018 6 b, b$_2$ b b 5234 8 5276 2 [illegible] 5535 1 D D$_2$ 6677 7065
	6	9 44	1	25 5		E	90	4924 1 5018 6, 5111 0 b, b b b 5276 2 [illegible] 5363 0 D, D 6677, 7065
	7	9 10		26 5		E	90	4924 1 5016 5018 6 b b$_2$ b b 5262 2 [illegible] 5363 0 D D
	8	9 5		38		E	45	b b b b 5316 8 D D
	8	9 15	3		24 5	E	15	b b b b D , D$_2$
	10	9 20		20		E	10	4924 1 4978 6 5018 6 b , b , b b$_4$ 5197 8 5276 2 [illegible] 5363 0 D D 6677 7065
	11	10 10	4	20		E	10	4924 1 b b b$_3$ b$_4$ 5316 8 D D
	12	8 55	1	17 5		E	145	b b b b 5316 8 D D
	13	9 55		20 5		E	15	b b b b$_4$ D D
	14	9 20		21		E	20	4924 1 b b b b 5316 8 D, D
	14	9 16			31	W	10	4924 1 5018 6 b$_1$ b b b$_4$ 5316 8 D D$_2$
	15	8 55	9	24 5		E	40	b b b b 5316 8 D D
	15	8 58	5		19 5	E	90	4924 1 5016 5018 6 b$_1$ b b b$_4$ 5234 8 5276 2 5316 8 5363 0 5535 1 D D
	15	8 58	3		28 5	E	30	4924 1 5016, 5018 6, b b b b 5234 8 5276 2 5316 8 5363 0 5535 1, D$_1$ D
	15	9 2	10	20 5		E	50	b b b b 5316 8, D D 6677 (Form well seen 1 D$_1$ D d 6677)
	17	9 20	3	31 5		E	30	4924 1 b b b b 5234 8 5316 8 D D
	18	9 30	3	31		E	15	4924 1 b b b b 5316 8 D D
	18	9 30	2	26		E	10	4924 1 b , b b b 5316 8, D D$_2$ 6677 7065
	18	9 10	5	27 5		W	40	4924 1 5016 5018 6 5139 8 b b b b$_4$ [illegible] 5316 8 5363 0 D D
	19	9 40	3	30 5		E	30	4924 1 5016 5018 6 b b , b$_2$ b$_4$ 5316 8 D$_1$ D
	19	9 28			24 5	W	20	4924 1 5016 5018 6 b b b b$_4$ 5316 8 5363 0 D D
	19	9 15	6	29		W	20	5016 b b b b$_4$ 5316 8 D, D$_2$ 6677 7065
	20	9 48	3	30 5		E	20	4924 1 b, b b b$_4$ 5316 8 D, D 6677, 7065
	20	9 42	3		18 5	W	20	4924 1 5018 6 b b b b$_4$ 5316 8 D, D 7065
	20	9 3	3	21 5		W	10	4924 1 b$_1$ b b b 5316 8 D D 6677 7065
	20	9 30	4	27		W	15	4924 1 5018 6 b b b b$_4$ 5234 8 5316 8 D D 6677 7065
	21	10 3		25		E	30	b b b b$_4$ D D
	22	9 42	10	20		W	30	4924 1 5016 5018 6 b b$_2$ b , b$_4$ 5316 8, 5363 0 D D
	23	9 24	3		31 5	W	15	4924 1 5018 6 b, b$_2$ b b$_4$ 5276 2, 5316 8, D D
	24	9 5	4	22		W	15	4924 1 5016 5018 6 b b$_2$, b$_3$, b$_4$ 5197 8, 5234 8 5276 2 5284 2 5316 8 5363 0 5535 1 D D 6677 7065
	30	9 50	1		22 5	W	15	4924 1 5018 6 b$_1$, b b$_2$ b$_4$ 5197 8 5234 8 5276 2 5284 2, 5316 8, 5363 0, 5535 1 D , D 6677, 7065
	30	9 50	1		28 5	W	15	4924 1, 5018 6 b , b$_2$ b , b$_4$, 5197 8, 5234 8 5276 2, 5 84 2 5316 8 5363 0 5535 1 D D 6677 7065
	31	9 2	27	28 5		W	155	4921 9 4924 1, 5018 6, b$_1$, b$_2$, b$_3$, b$_4$, 5197 8 5234 8 5269 8, 5276 2, 5316 8 5328 7 5363 0, 5535 1 D D 6677 7065

Date.		Hour I.S.T.		Base.	Latitude.		Limb.	Height.	Lines
					North.	South.			
1926.		H.	M.	°	°	°		"	
February	1	9	15	17	26 5		W	120	4924·1, 5018·6, b_1. b_2, b_3, b_4, 5234·8, 5276·2, 5316·8, D_1, D_2, 6677, 7065.
	2	9	0	3	24·5		E	70	b_2, b_2, b_3. b_4, 5316·8, D_1, D_2.
	2	8	50	13	34 5		W	110	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5197·8, 5234·8, 5276·2, 5284·2, 5316 8, 5363·0, 5535·1, D_1, D_2, 6677, 7065.
	3	10	15	3	25 5		E	10	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5276·2, 5316·8, 5337·0, 5363·0, D_1, D_2, 6677, 7065.
	3	10	40	4	30		W	40	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5276·2, 5316·8, D_1, D_2, 7065.
	4	10	11	5		19 5	E	25	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5276·2, 5316·8, 5337·0, 5363 0, 5506·1, D_1, D_2, 7065.
	4	9	55	3		24·5	W	45	4924 1, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5276·2, 5316·8, 5363·0, D_1, D_2.
	4	9	18	4	35		W	30	4924 1, 5018·6, b_1, b_2, b_3, b_4, 5234 8, 5276·2, 5316·8, 5363·0.
	5	8	58	8	27		E	25	b_1, b_2, b_3, b_4, 5316·8, D_1, D_2.
	6	9	45	2	45		E	15	b_1, b_2, b_3, b_4, D_1, D_2
	6	9	45	2	40		E	10	4924·1, 5018 6, b_1, b_2, b_3, b_4, 5234·8. 5276·2, 5316·8, 5361·7, D_1 D_2 6677, 7065.
	6	9	45	3	30·5		E	15	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5208·7, 5234·8, 5276·2. 5316 8, 5361·7, D_1, D_2.
	6	10	22	4		20	E	15	5018·6, b_1, b_2, b_3, b_4.
	6	9	8	8	29		W	40	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5276·2, 5316·8. D_1, D_2.
	7	8	52	4	33		E	35	5016, 5018 6, b_1, b_2, b_3, b_4, 5316·8, D_1, D_2, 7065.
	7	8	43	2		18	E	65	4924·1, 5016, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5276·2, 5316·8, 5535·1, D_1, D_2, 6677, 7065.
	10	9	42	1	30·5		E	10	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5276·2, 5316·8, 5363 0, D_1, D_2, 7065.
	10	9	42	2	25		E	20	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5276·2, 5316·8, 5363·0, D_1, D_2, 7065
	10	9	42	2	20		E	10	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5276·2, 5316·8, 5363·0, D_1, D_2, 7065.
	11	8	33	6		25	W	35	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5276·2, 5284·2, 5316·8, 5535·1, D_1, D_2, 6677.
	13	9	52	1	13 5		E	15	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5276 2, 5316·8, 5363·0, D_1, D_2.
	13	10	27			29	W	15	b_1, b_2, b_3, h_4, D_1, D_2, 7065.
	13	10	27	1		21·5	E	15	b_1, b_2, b_3, b_4, D_1, D_2, 7065.
	14	9	58	5	17·5		E	20.	4924 1, 5018·6, b_1, b_2, b_3, b_4, 5197·8, 5204·8, 5206·2, 5208 6, 5227·2, 5316·8, 5328 7, 5363·0. D_1, D_2, 6677, 7065.
	14	9	58	3	26 5		E	10	b_1, b_2, b_3, b_4, 5316 8, D_1, D_2.
	15	10	12	4	17		E	15	5018·6, b_7, b_2, b_3, b_4, 5208·6, 5233·1, 5270·0. 5316 8, D_1, D_2, 6677, 7065.
	16	9	8	4	41		E	50	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5316·8, D_1, D_2, 7065.
	16	9	31	2	28		W	10	5018·6, b_1, b_2, b_3. b_4, 5316·8. D_1, D_2.
	17	10	33	3	46 5		E	35	b_1, b_2, b_3, b_4, D_1, D_2.
	17	10	22	1	15 5		E	15	b_1, b_2, b_3, b_4, D_1, D_2
	18	9	32	2	33		E	10	5018·6, b_1, b_2, b_3, b_4. 5316·8, D_2, D_2.
	21	9	50	9		18·5	W	75	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5234 8, 5276·2, 5316·8. D_1, D_2, 6677, 7065.
	21	9	30	3	9·5		W	10	4924 1, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5276·2, 5316·8, 5363·0, D_2, D_2, 6677. 7065.
	22	10	0	7		33·5	E	40	4924·1, b_1, b_2, b_3, b_4, 5316.8, D_1, D_2.
	22	9	16	2		19	W	45	5018 6, b_1, b_1, b_3, b_4, 5270·1, 5316·8, D_1, D_2.
	23	8	40	4		36	E	65	b_1, b_2, b_3, b_4, 5316·8, D_1, D_2.
	23	8	58	8	16		W	40	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5316·8, D_1, D_2.
	24	9	30			16	W	10	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5276·2, 5316 8, 5363·0, D_1, D_2, 6677, 7065.
	24	9	5	20	32		W	10	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5276·2, 5316·8, 5363·0, 7065.
	25	9	33	4		26	E	15	5018·6, b_1, b_2, b_3, b_4, 5276·2, 5316·8, 5363·0, D_1, D_2.
	25	9	35	4		30	E	10	b_1, b_2, b_3, b_4, 5316·8, D_1, D_2, 6677.
	26	8	57			25	E	10	b_1, b_2, b_3, b_4, D_1, D_2.
March	3	9	45	3		16·5	E	10	4924·1, 5018 6, b_1, b_2, b_3, b_4, 5234·8, 5276·2, 5316·8, 5363·0, D_1. D_2.
	4	9	2	5	23·5		E	15	4924·1, b_1, b_2, b_3, b_4, 5316·8, D_1, D_2, 6677, 7065.

Date.		Hour. I.S.T.	Base.	Latitude. North.	Latitude. South.	Limb.	Height.	Lines.
1926.		H. M.	°	°	°		″	
March	5	9 12	4	20		E	35	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5276·2, 5316·8, 5363·0, D_1, D_2, 7065.
	6	10 15	1	8·5		E	10	b_1, b_2, b_3, b_4, D_1, D_2, 7065.
	6	9 30	1	34·5		W	10	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5316·8, D_1, D_2, 7065.
	8	9 16	2	18		E	20	5018·6, b_1, b_2, b_3, b_4, 5316 8, D_1, D_2.
	9	9 3	2	19		E	30	b_1, b_2, b_3, b_4, 5316·8, D_1, D_2.
	10	9 28	4	29		E	10	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5276·2, 5316·8, 5363·0, D_1, D_2.
	12	8 55	2		31	W	20	4924·1, 5016, 5018·6, b_1, b_2, b_3, b_4, 5197·8, 5234·8, 5276 2, 5284·3, 5316 8, 5363·0, 5425·5, 5535·1, D_1, D_2, 6677, 7065.
	13	10 55	2	20		E	15	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5276·2, 5316·8, 5337·0, 5363·0, D_1, D_2.
	14	8 31	3	21·5		E	25	4924·1, 5016, 5018 6, b_1, b_2, b_3, b_4, 5234·8, 5316·8, D_1, D_2, 6677, 7065.
	15	9 20	5	34·5		E	20	5018·6, b_1, b_2, b_3, b_4, 5316·8, D_1, D_2.
	20	9 45	1		0·5	W	10	4924 1, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5276·2, 5316·8, 5363·0, D_1, D_2.
	21	9 0	4		30	E	20	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5276·2, 5316·8, D_1, D_2.
	22	8 50	5	24·5		W	40	4924·1, 5016, 5018·6, b_1, b_2, b_3, b_4, 5316 8, D_1, D_2, 6677, 7065.
	23	9 26	4		42	E	10	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5276·2, 5316·8, 5363·0, D_1, D_2, 7065.
	23	10 10	2		18	W	10	4924·1, 4934·2, 5018 6, b_1, b_2, b_3, b_4, 5234·8, 5276·2, 5316·8, 5363·0, 5527·0, D_1, D_2, 6677, 7065.
	23	10 37	2	13		W	10	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5276·2, 5316·8, 5363·0, D_1, D_2, 6677, 7065.
	24	8 55	4		42	E	40	4924·1, 5018·6. b_1, b_2, b_3, b_4, 5316·8, D_1, D_2.
	26	9 16		8		W	10	b_1, b_2, b_3, b_4, D_1, D_2.
	27	9 36	6	21		W	15	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5197·8, 5204·7, 5208·5, 5234·8, 5270·6, 5276·2, 5316·8, 5363·0, D_1, D_2, 7065.
	28	9 0	4	20		W	30	b_1, b_2, b_3, b_4, 5316·8, D_1, D_2.
	29	8 49	2		28	W	30	4924·1, 4934·2, 5016, 5018·6, b_1, b_2, b_3, b_4, 5197·8, 5204·7, 5206 2, 5208·5, 5234·8, 5269·7, 5276·2, 5284·3, 5316·8, 5328 2, 5363·0, 5535·1, D_1, D_2, 6677, 7065.
	29	8 36	3	48·5		W	15	4924·1, b_1, b_2, b_3, b_4, 5316·8, D_1, D_2.
April	8	9 40	7		18·5	E	10	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5276 2, 5316·8, 5363·0, D_1, D_2, 6677, 7065.
	12	8 53		32		E	10	b_1, b_2, b_3, b_4, 5316·8, D_1, D_2.
	12	8 30	4		11	W	15	4924·1, 5016, 5018·6, b_1, b_2, b_3, b_4, 5316·8, 5535 1, D_1, D_2, 6677, 7065.
	17	9 46	1		10 5	W	10	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5197·8, 5234·8, 5269·7, 5276·2, 5284·3, 5316·8, 5328 2, 5363·0, D_1, D_2, 6677, 7065.
	18	9 45	11		27·5	W	10	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5276·2, 5316·8, 5363·0, D_1, D_2, 7065.
	19	8 44	5		22 5	W	10	b_1, b_2, b_3, b_4, 5316·8, D_1, D_2.
	21	10 6	1		22·5	E	10	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5276·2, 5316·8, D_1, D_2, 6677, 7065.
	23	9 15	4	40		W	15	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5276·2, 5316·8, 5363·0, D_1, D_2.
	24	9 44	4	40		W	10	4924 1, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5276·2, 5316·8, 5363·0, D_1, D_2.
	25	8 50	4		33	E	15	b_1, b_2, b_3, b_4, 5316·8, D_1, D_2.
	25	8 28	8	44		W	40	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5316·8, 5363·0, 5535·1, D_1, D_2.
	26	9 9	2	33		W	10	b_1, b_2, b_3, b_4, 5316·8, D_1, D_2.
	28	10 46		10		E	10	4924·1, 5016, 5018·6, b_1, b_2, b_3, b_4, 5316·8, D_1, D_2, 6677, 7065.
	29	9 20	5		20·5	E	10	4922·0, 4924·1, 4934·2, 4957·5, 5018·6, 5031·2, 5107·[illegible], 5110·6, b_1, b_2, b_3, b_4, 5197·7, 5204·7, 5206·3, 520[illegible], 5227·4, 5234·8, 5269·9, 5270·6, 5276·2, 5284·2, 5316·8, 5328·2, 5337·0, 5341·2, 5363·0, 5371·7, 5397·3, 5406·[illegible], 5425·4, [illegible], [illegible], 5446·8, 5535·1, D_1, D_2, 6677, 7065.
	30	9 3	5		25·5	E	10	b_1, b_2, b_3, b_4, 5316·8, D_1, D_2, 7065.

Date.		Hour. I.S.T.	Base.	Latitude.		Limb.	Height.	Lines.
				North.	South.			
1926.		H. M.	°	°	°		″	
May	2	9 45	1	22·5		E	15	b_1, b_2, b_3, b_4, D_1, D_2, 7065.
	6	9 38		33		E	10	b_1, b_2, b_3, b_4, D_1, D_2.
	9	9 22	2		32	E	15	b_1, b_2, b_3, b_4, 5316·8, D_1, D_2.
	9	9 35	1	17·5		W	25	b_1, b_2, b_3, b_4, 5316·8, D_1, D_2, 6677.
	12	9 10	4		22	W	10	5018·6, b_1, b_2, b_3, b_4, 5316·8, D_1, D_2, 6677, 7065.
	20	10 1	6	22		W	10	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5276·2, 5316·8, 5363·0, D_1, D_2, 6677, 7065.
	23	9 15	7	31·5		W	30	5018·6, b_1, b_2, b_3, b_4, 5316·8. D_1, D_2.
	31	9 25	3		17·5	E	10	b_1, b_2, b_3, b_4, D_1, D_2.
June	11	9 50			15	W	10	b_1, b_2, b_3, b_4, 5316·8, D_1, D_2, 6677.
	15	9 21	3	17·5		W	10	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5197·8, 5234·8, 5276·2, 5316·8, 5363 0, D_1, D_2, 6677, 7065.
	15	9 49	1	25·5		E	10	4924·1, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5276·2, 5316·8, 5363·0, D_1, D_2, 6677, 7065.
	23	9 9	4	22		E	15	4924·1, 5016·0 5018·6, b_1, b_2, b_3, b_4, 5270 6, 5316·8. 5363·0, D_1. D_2, 6677, 7065.
	24	9 20		26		E	10	4924 1, 5018·6, b_1, b_2, b_3, b_4, 5234·8, 5276·2, 5316·8, 5363·0, D_1, D_2, 7065.

Their distribution in latitude is shown below :—

	1°—10°	11°—20°	21°—30°	31°—40°	41°—50°	Mean latitude.	Extreme latitudes.
North	4	19	35	22	5	26°·7	8° and 48°·5
South	1	15	23	7	2	23°·9	0°·5 and 42°

Seventy-three metallic prominences were on the east limb and sixty on the west.

Displacements of the hydrogen lines.

Particulars of the displacements observed in the chromosphere and prominences are given in the following table :—

TABLE III.—DISPLACEMENTS OF HYDROGEN LINES.

Date.		Hour I.S.T.	Latitude.		Limb.	Displacement.			Remarks.
			North.	South.		Red.	Violet.	Both ways.	
1926.		H. M.	°	°		A.	A.	A.	
January	1	9 4	70		E		0·5		At base.
	1	9 24		26	W	1			At top.
	1	9 13	14·5		W	1			Do.
	2	9 8		18	W	1			Do.
	2	8 52	61		W		Slight		At base.
	2	8 48	78·5		W		Do.		Do.
	3	9 14		16	W	1			At top.
	3	9 8	21		W	3			Do.
	3	9 4	29		W	1			Do.
	3	9 2	32		W		1·5		At base.
	4	9 30	12		W	1			At top.
	4	9 30	16		W		0·5		Do.
	4	9 30	26		W	2			Do.
	4	9 10	30		W		1		At base.
	4	9 19	34		W	1			At top.
	4	8 32	82		W	1			Do.
	5	9 18		38	W		0·5		At base.

Date.		Hour I.S.T.	Latitude.		Limb.	Displacement.			Remarks.
			North.	South.		Red.	Violet.	Both ways.	
1926.		H. M.	°	°		A.	A.	A.	
January	5	9 10	20		W		1		
	5	9 5	29·5		W	2	3		To red at base; to violet at top.
	5	9 1	50		W	Slight			
	6	10 33	66		E		1·5		At top.
	6	9 37	29·5		E		Slight		
	6	9 41	25·5		E	2	3		To red at base ; to violet at top.
	6	9 44	25·5		E	6			At base.
	6	10 55	22		W	Slight			At top.
	7	8 56	49		E	0·5			Do.
	7	9 31	30		E	1			Do.
	7	9 22	21		E	1			Do.
	7	9 00	33		W	2			Do.
	8	8 55		29	W		2		
	10	9 58	83·5		E		1		At top.
	11	10 24	34		E		0·5		Do.
	11	9 55	21		E		1		Do.
	12	9 0		25	W	Slight			Do.
	12	9 0	25		W	Do.			Do.
	13	9 47	32·5		E	2			At base.
	13	9 34		11	W	Slight			At top.
	14	8 46	85		E	Do.			Do.
	14	9 34		16	E		1·5		Do.
	14	9 16		32	W		1·5		At base.
	14	9 0	2·5		W	1			At top.
	14	8 56	24		W		0·5		At base.
	15	8 52	54·5		E		0·5		
	15	8 40	28		W		0·5		
	16	9 22	16		E		1		At top.
	16	9 22	18		E	1·5			At base.
	16	9 22	20·5		E		2		At top.
	16	8 58	48		W		Slight		At base.
	17	8 50	83		E	0·5			At top.
	17	9 20	23·5		E	1			Do.
	17	9 20	20		E		0·5		At base.
	17	9 28	3		E	Slight			Do.
	17	9 34		19	E	1			At top.
	17	8 55	46		W		Slight		At base.
	18	8 44	88		E	Slight			At top.
	18	9 30	26		E	2·5	2		To red at base ; to violet at top.
	18	9 30	20		E	2			At top.
	18	9 24		18	E		1		Do.
	18	9 45	33		W		0·5		Do.
	18	9 10	27·5		W	3	2		To red at top ; to violet at base.
	18	9 50	24		W	2			At top.
	19	9 2	84		E		1		At base.
	19	9 0	77		E		Slight		No prominence.
	19	9 40	30·5		E		1·5		At top
	20	9 16	69·5		E		0 5		No prominence.
	20	9 48	30 5		E	1			At base.
	20	10 20		61	E	1·5			Do.
	20	9 32	23		W	1			At top.
	20	9 35	19		W	0·5			Do.
	21	11 4		36	W	2	2		Do
	21	11 4		22·5	W	1			At base.
	21	11 7		16·5	W	1·5			At top.
	23	8 52	80 5		E		Slight		
	23	9 39	23		E		1·5		At top
	23	9 30		59·5	W		Slight		No prominence.
	23	9 28		48·5	W	Slight			At top.
	23	9 4	32		W	1			Do.
	23	9 1	40		W	0·5			Do.
	23	8 57	58·5		W		Slight		
	24	9 20		46	W	2			At top.
	24	9 5	20		W		Slight		
	30	9 25	83		E	0·5			In chromosphere.
	30	9 20	28		E		Slight		At top.

Date.		Hour I.S.T.	Latitude.		Limb.	Displacement.			Remarks.
			North.	South.		Red.	Violet.	Both ways.	
1926.		H. M.	°	°		A.	A.	A.	
January	30	9 42		30	W			2	At base.
	30	9 42		29	W		2		Do
	30	9 42		28	W	2			At top.
	30	9 39		22·5	W			2	Over the whole prominence.
	30	9 35		21	W		2		At top.
	30	9 35		20·5	W		Slight		Over the whole prominence.
	30	9 34		19	W		1		At base.
	31	9 2	22·5		W	3			At top.
	31	9 4	34·5		W	1			In the middle of prominence.
February	1	8 59	50·5		E	Slight			
	1	8 48		54	E	Do-			
	1	8 45		74	E	Do.			
	1	9 13	14		W	3			
	2	8 55		62	W		Slight		
	3	10 22	27		E	2	3		At base.
	3	10 0	24		E	Slight			Do.
	4	10 33		66	E	1			In chromosphere.
	4	9 37	12		W	1			At top.
	4	9 12	51·5		W	3			Do.
	5	8 54	25		E	Slight			
	5	8 46		18·5	E	Do.			At top.
	6	9 50	32		E	1			Do.
	6	10 17		19·5	E			Slight	Do.
	6	9 30		19·5	W	Slight			Do.
	7	8 43		19	E	Do.	Slight		To red at base ; to violet at top.
	8	8 43	67		E		0·5		At base.
	8	8 38	49		E	1			At top.
	8	9 11	24		E	0 5			Do.
	8	9 6		7	E		Slight		Do.
	8	9 6		13	E	1			Do.
	8	8 49	53·5		W	Slight			Do.
	9	9 3	54·5		W		2		Do.
	10	10 11	62		E	1			At base.
	10	9 49	17		E		1		At top.
	10	9 30		12 5	E	1	2		Do.
	10	9 4		79·5	W	Slight			Do.
	11	8 33		33	W		1		
	11	8 33		24	W		1		At north end.
	12	8 58	76·5		E		0·5		At top.
	12	8 55	72		E		Slight		No prominence.
	12	8 52	69		E	Slight			At top
	12	9 0	71		W	0·5			Do.
	13	10 7	40·5		E		3		Do.
	13	10 7	40 5		E		Slight		At base.
	13	10 5	21·5		E		1		At top.
	13	9 59	1		E	1			Do.
	13	9 22		17	E	1			In a filament in the middle portion.
	14	9 32	51		E	1			At top.
	14	9 6	38		E	1	1·5		Do.
	14	9 40	12		E	3	2		To red at top ; to violet at base.
	14	10 6	10		E	1			At top.
	14	9 20	30		W	Slight			Do.
	14	9 18	60		W		0·5		At base.
	14	9 15	68		W	0·5			
	15	9 42	39		E	1	1		To red at base ; to violet at top.
	15	10 12	17		E	1	2		Do.
	16	9 56	44		E		1		At top.
	16	10 0	29		E		0·5		Do.
	16	9 28	46		W		Slight		At base.
	16	9 20	86		W	0·5	1		To red at top ; to violet at base.
	17	10 38	63		E		1		At top.
	17	10 32	47·5		E	1·5			At base.
	17	10 32	47		E		0·5		At top.
	17	9 38		27	E		Slight		Do.
	18	9 0	50		E	1	1		To red at top ; to violet at base.
	18	9 12	25		W	1·5	1		Do.

Date.		Hour. I.S.T.		Latitude.		Limb.	Displacement.			Remarks.
				North.	South.		Red.	Violet.	Both ways.	
1926.		H.	M.	°	°		A.	A.	A.	
February	19	8	50	35		E	Slight			
	20	9	22		18	W		Slight		At base.
	20	9	15	13		W	1			At top.
	21	9	50		18	W	1			Do.
	21	9	40	0·5		W	1			Do.
	22	8	53	43		E	Slight			Do.
	22	9	0	61		W	1			Do.
	23	8	38		69	W	2			
	25	8	50	62·5		E		0·5		
	25	9	2		26	E		2		Over whole of prominence.
	25	9	35		26	E	2			At base.
	25	9	10	25		W	0·5			At top.
	26	8	57		18	E		Slight		Do.
	28	9	28	7		E	0·5			Do.
	28	9	14	7		W	2			Do.
	28	9	14	12		W		1		At base.
	28	9	8	20		W	1			At top.
March	1	9	16	49		W	1			Do.
	2	8	42	14		W	Slight			Do.
	3	9	55	24		E		1		Do.
	3	9	8		60	W			0·5	Do.
	4	9	45	37·5		E	Slight			Do.
	4	9	2	21		E		1		At base.
	4	9	2	25		E	3			At top.
	4	9	16	68		W	Slight			Do.
	5	9	1		19	E		2		At base.
	5	8	56		40	W	Slight			Do.
	5	9	21		4	W		Slight		
	6	9	58	20		E	0·5			At base.
	6	10	4	15		E		1		At top.
	6	10	7	12		E			Slight	Do.
	6	10	22		16	E		2		Do.
	7	10	0	35·5		E	1			Do.
	7	10	25		11·5	E	1			Do.
	7	10	6	41·5		W	0·5			Do.
	8	9	30		34·5	W	1			Do.
	8	9	26	42·5		W		1		At base.
	9	9	27	26		E		3		At top.
	9	9	40		50·5	W	1·5			
	10	9	28	28·5		E		1		A little below top.
	10	9	27	26		E	1			In the middle of prominence.
	11	11	34	83		E	0·5			At top.
	12	8	40	35		E	1			Over lower part of prominence.
	12	8	27		54	E	2			No prominence.
	12	8	55		31	W		0·5		At base.
	13	11	27	41		E	2·5	1		Do.
	13	10	51	20		E			0·5	At top.
	14	8	50	45		E	Slight	Slight		To red at base ; to violet over middle part.
	14	8	31	25		E		1		At base.
	14	8	31	20		E	2			At top.
	14	8	25		60	W	Slight			At south end of Pr.
	15	9	10	50		E	1			At top.
	15	9	20	24		E		1		At base.
	16	9	23		66	E	1			
	16	9	15		78	W		Slight		No prominence.
	16	9	4	26		W	Slight			
	16	9	0	47		W	Do.			
	17	9	19		49	W	1			At top.
	17	9	21		43·5	W		1		Do.
	17	9	40	19		W	1			Do.
	18	9	0	53		W		Slight		At base.
	20	9	45		1	W	0·5			Do.
	21	8	48	71·5		E		Slight		Do.
	21	9	20		71·5	W	Slight			At top.
	21	9	4	18·5		W	0·5			Do.
	21	8	53	51		W	1			Do.

Date.		Hour I.S.T.		Latitude.		Limb.	Displacement.			Remarks.
				North.	South.		Red.	Violet.	Both ways.	
1926.		H.	M.	°	°		A.	A.	A.	
March	22	8	31	80		E		Slight		
	22	8	29	61·5		E	Slight			
	22	9	2	37·5		E	Do.			
	22	8	40	33·5		W	Do.			
	22	8	37	50		W		Slight		
	23	9	53	51·5		E	Do.			At base.
	23	9	21		60	E			Slight	At top.
	23	10	6		22	W	1			Do.
	23	10	10		19	W		3		Do.
	23	10	10		18	W	1·5			Do.
	23	10	32		9	W	1			Do.
	23	10	37	13		W	1	Slight		Do.
	24	9	3		23	E	Slight			
	24	8	40		79 5	E	Do.			
	24	8	47	28		W	1			At base at southern end of prominence.
	25	8	59	46·5		E	1	Slight		To red at top on the whole of the filament; to violet below it on the head of the main portion.
	25	9	56		8·5	E		1		At top.
	25	9	55		12	E		Slight		Do.
	25	10	5		47·5	E	1			In chromosphere.
	26	8	56		30	E		Slight		At top.
	26	9	10		21	W	1			
	26	9	20	61		W	Slight			
	27	10	29		51	E	0·5			At base.
	27	10	33		76	W		Slight		At top.
	27	10	6		17	W	0·5			Do.
	27	9	33	19		W	Slight			Do.
	27	9	39	22		W	1			Do.
	28	8	47	32·5		E		1		Over whole prominence.
	28	8	44	.9·5		E		Slight		
	28	8	53		38·5	W	Slight			At top.
	29	8	28	67		E			Slight	
	29	8	44		28	W	1	1		To red at base; to violet at top.
	29	8	42	11		W		Slight		
	29	8	32	74		W		Do.		At base.
	30	8	48		1	E	2			No prominence.
	30	9	3	34		W	0 5			
	31	9	38	15·5		E		1		At top.
	31	8	59	64		W		Slight		At base.
	31	9	0	67		W	Slight			At top.
April	1	9	35	25		W	Slight			At top.
	2	8	42	31		E	Do.			
	2	8	48		11	E			Slight	
	3	8.	50	12		E	Slight			At base.
	3	8	45		36·5	E	1·5			
	4	9	23	32		E	1			At base.
	4	9	12		11·5	E	1			At top.
	4	9	31		17.	W	0 5			Do.
	5	9	12	14		E	Slight			At base.
	5	9	43	47·5		W	1			At top.
	8	9	29	1		E		1		At base.
	8	9	38	15		E	1	2		Do.
	8	9	38	17		E		2		At top.
	8	9	13		29·5	W	1			At top of two prominences.
	9	8	34		43	E	Slight			
	9	8	46	42		W		1		
	10	9	31	22		E		1		At top.
	10	9	22		32	W	2			Do.
	11	8	47		21·5	E	3			Over whole prominence.
	11	8	44		31·5	E		Slight		At top.
	11	8	55		26	W		0·5		No prominence.
	12	8	38		9	W		Slight		
	12	8	38		13	W		2		At top.
	12	8	30	67		W	Slight			At base.

Date.		Hour I.S.T.		Latitude.		Limb.	Displacement.			Remarks.
				North.	South.		Red.	Violet.	Both ways.	
1926.		H.	M.	°	°		A.	A.	A.	
April	14	9	0		32	E		1		At top.
	15	9	37		46	W		1		At base.
	15	9	21	3·5		W	2			At top.
	15	9	22	3 5		W	3			
	15	9	12	42·5		W	Slight			At top.
	15	9	12	49		W	1			Do.
	16	8	38		82	E	0·5			No prominence.
	17	10	25		33·5	E		3		At top.
	17	9	44		10·5	W	1·5			Do.
	18	9	10		35	E		1		Do.
	18	9	32		23	W		2		Do.
	18	9	56	18		W	1			Do.
	19	8	37	84		E	2			
	19	8	36	77		E	Slight			
	19	8	50	51·5		E		Slight		
	19	8	47		59·5	W		Do.		
	20	8	51		4	E		Do.		
	20	9	2		11	W		Do.		
	21	10	6		22	E		2		At top.
	21	10	6		22·5	E	1			At base.
	21	9	56		65·5	W	1	1		To red at top ; to violet at base.
	21	9	42		17·5	W	2			At top.
	21	9	31	30		W	1			Do.
	22	9	23		54	E	1			At base.
	22	9	23		54·5	E		1		At top.
	22	9	50	26·5		W		0·5		At base.
	23	9	18		20	W	Slight			At top.
	24	9	48	23·5		W		Slight		At base.
	25	8	18	79		E		Do.		
	25	8	42	50		E	1			
	25	8	37		50	W		Slight		At base.
	25	8	28	46		W		2		At top.
	26	8	48	65·5		E		Slight		
	26	8	47	55·5		E	Slight			
	26	8	46	52		E			Slight	More to red.
	26	8	38		14	E		Slight		At base.
	26	8	33		46	E	Slight			
	26	9	0		26	W	Do.			At base and southern end.
	26	8	52	76		W		2		
	27	9	7		52	W		Slight		At base.
	27	9	10		36	W		1		At base.
	28	8	25	84		E		Slight		
	28	8	46	10		E	1			
	28	8	46		10	E	1			
	28	8	58		24	E		0·5		
	28	9	1		84·5	E	2			No prominence.
	28	9	1		85·5	E			0·5	
	28	8	38		49	W		Slight		
	28	8	31	57		W		Do.		
	29	9	16		18	E	2	1		At base.
	29	9	16		19·5	E	3	2		On the whole prominence.
	29	9	17		21·5	E	3	1		In places.
	29	9	5		85	W		1		At top.
	29	9	5		84·5	W	2			Do.
	30	8	47	50·5		E		Slight		
	30	9	3		19	E	1			
May	2	9	31	30		W		1		At top.
	2	9	28	39		W		1		At base.
	3	8	39	35		E	Slight			
	3	8	43		33	W		Slight		
	5	8	52		29	W		0·5		At base.
	6	9	36	27		E	1			Do.
	7	9	5		20	E	0·5			
	7	9	0		73·5	E		0·5		
	8	10	11	21		E	2			At top.

Date.		Hour I.S.T.		Latitude.		Limb.	Displacement.			Remarks.
				North.	South.		Red.	Violet.	Both ways.	
1926.		H.	M.	°	°		A.	A.	A.	
May	8	10	17		22·5	E		Slight		At base.
	9	9	22		39	E	Slight			
	9	9	21		67	E	2			
	9	9	20		83	W	Slight			
	9	9	25		9	W		3		No prominence.
	9	9	26	13		W		Slight		
	9	9	35	17·5		W	1	1		To red at top; to violet at base.
	10	9	50	29		E		Slight		At top.
	10	9	40		18	W		Do.		Do.
	10	9	37	25		W	Slight			
	11	9	18	29		E	2			At top.
	11	9	55		67	W		1		Do.
	19	9	22	17		E	1·5			Do.
	19	9	16	15		W	1			Do.
	20	9	57	24		W		3		At base.
	26	9	22	50		E	1			At top.
	29	9	20		30	W	Slight			Do.
	29	9	9	87·5		W	Do.			At base.
	30	8	48		61	W	0·5			At top.
	30	8	38	33		W	1			Do.
	31	9	7		26·5	W	2			Do.
June	3	9	23	27·5		E		3		At top.
	3	9	21	24·5		E	3			At base.
	3	9	6		28	E	1			Do.
	6	9	2	68		E	1			At top.
	9	10	15		0·5	E	1			At base.
	11	9	58		11	E		Slight		At top.
	11	9	50		17	W	Slight			
	13	9	20	33		W	0·5			At top.
	15	9	45	25		E		1		Do.
	15	9	21	17·5		W			3	
	17	10	49	67		E		2		At top.
	17	10	45	30·5		E		1		Do.
	17	10	26		52·5	E		2		Do
	19	9	12		40	W	0·5			Do.
	19	9	5	6		W		Slight		
	20	11	31	30		E	3			At top.
	21	8	36		41	W	Slight			
	21	8	34	45		W	Do.			
	22	8	43	23		E	2			At top.
	23	8	48	71		E		1		At base.
	23	9	9	24		E		1·5		At top.
	23	9	9	22		E	3			Do.
	23	9	9	20		E	1			At base.
	24	9	12	24		E		3		At top.
	24	9	12	23		E	3			Do.
	24	9	43	30		W	0·5			Do.
	25	10	38	24		E	Slight.			
	26	9	28	9		E			2	At top.
	27	8	52	26		E	1			At base.
	27	8	47		23	W	0·5			At top.

There was a large increase in the number of displacements, the total number observed being 420 as against 202 in the previous half-year. They were distributed as follows:—

Latitude.	North.	South.
1°—30°	134	92
31°—60°	81	43
61°—90°	47	23
Total ...	262	158

East limb	222
West limb	198
Total ...	420

Two hundred and thirty-one displacements were towards the red, 176 towards the violet and 13 both ways simultaneously.

Reversals and displacements on the Sun's disc.

Three hundred and ninety-eight bright reversals of the Hα line, 264 dark reversals of the D_3 line and 115 displacements of the Hα line were observed on the disc during the half-year. These numbers are large increases on the previous half-year. Their distribution is shown below :—

	North.	South.	East.	West.
Bright reversals of Hα	186	212	200	198
Dark reversals of Dα	115	149	139	125
Displacements of Hα	56	59	61	54

Eighty-three displacements were towards the red, 27 towards the violet and 5 both ways simultaneously.

Prominences projected on the disc as absorption markings.

Photographs of the Sun's disc in Hα light were available from Kodaikanal and the co-operating observatories for a total of 181 days, which were counted as 180 effective days. The mean daily areas of Hα absorption markings (corrected for foreshortening) in millionths of the Sun's visible hemisphere and the mean daily numbers are given below :—

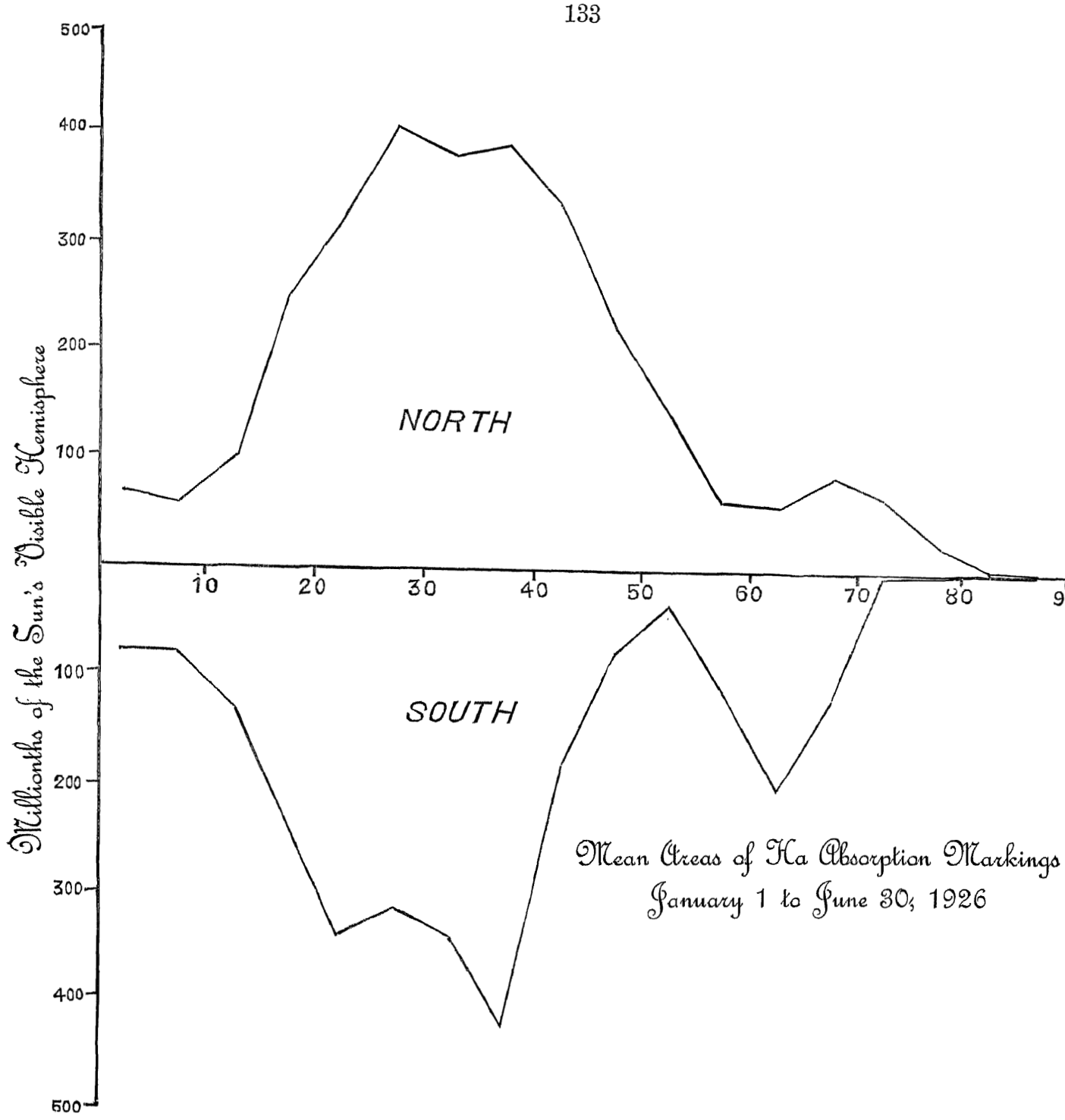
	Mean daily areas.	Mean daily numbers.
North	2946	17·2
South	2650	17·8
Total ...	5596	35·0

Areas have increased by 78 per cent and numbers by 45 per cent compared with the previous half-year.

For comparison with bulletins issued prior to the co-operation of other observatories, the means based on Kodaikanal photographs alone are also given, 173 days of observation being counted as 170 effective days.

	Mean daily areas.	Mean daily numbers.
North (Kodaikanal photographs only)	3009	17·4
South do.	2700	18·2
Total ...	5709	35·6

The distribution of the mean daily areas in latitude is shown in the accompanying diagram. Compared with the previous half-year the high latitude peak has almost disappeared in the northern hemisphere but has intensified in the southern ; it has advanced towards the poles by 5° in both hemispheres.



Mean Areas of Hα Absorption Markings
January 1 to June 30, 1926

As in the case of prominences at the limb, there is a slight eastern excess of numbers and an eastern defect of areas, the percentages east being 50·28 and 47·14, respectively.

Thanks are due to the co-operating observatories for the photographs supplied by them.

THE OBSERVATORY, KODAIKANAL,
19th February 1927.

T. ROYDS,
Director, Kodaikanal and Madras Observatories.

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