

Kodaikanal Observatory
Bulletin No. CXLIII
PART I

Summary of Prominence observations for the Second half of 1954

The results of observations of prominences made at Kodaikanal Observatory during the second half of 1954 supplemented by data computed from photographs supplied by Mount Wilson and Meudon Observatories for those days on which Kodaikanal had imperfect or no observations, are given in the Bulletin.

Calcium prominences on the limb.—During the half-year under review, photographs of calcium prominences at the limb were obtained at Kodaikanal on 102 days which were counted as 101½ effective days after giving due weightage to the photographs according to their quality. Spectroheliograms for 77 days were obtained from the Mount Wilson Observatory and for 27 days from the Meudon Observatory. In all complete observations were available for 180 days which were counted as 179½ days.

The mean daily areas (in square minutes of arc) and the mean daily numbers of prominences derived from all the above records are given below.—

		Combined data	
		Mean daily areas (Sq. minutes)	Mean daily numbers
North	. . . . .	1.01	3.01
South	. . . . .	0.80	2.84
TOTAL		1.81	5.85

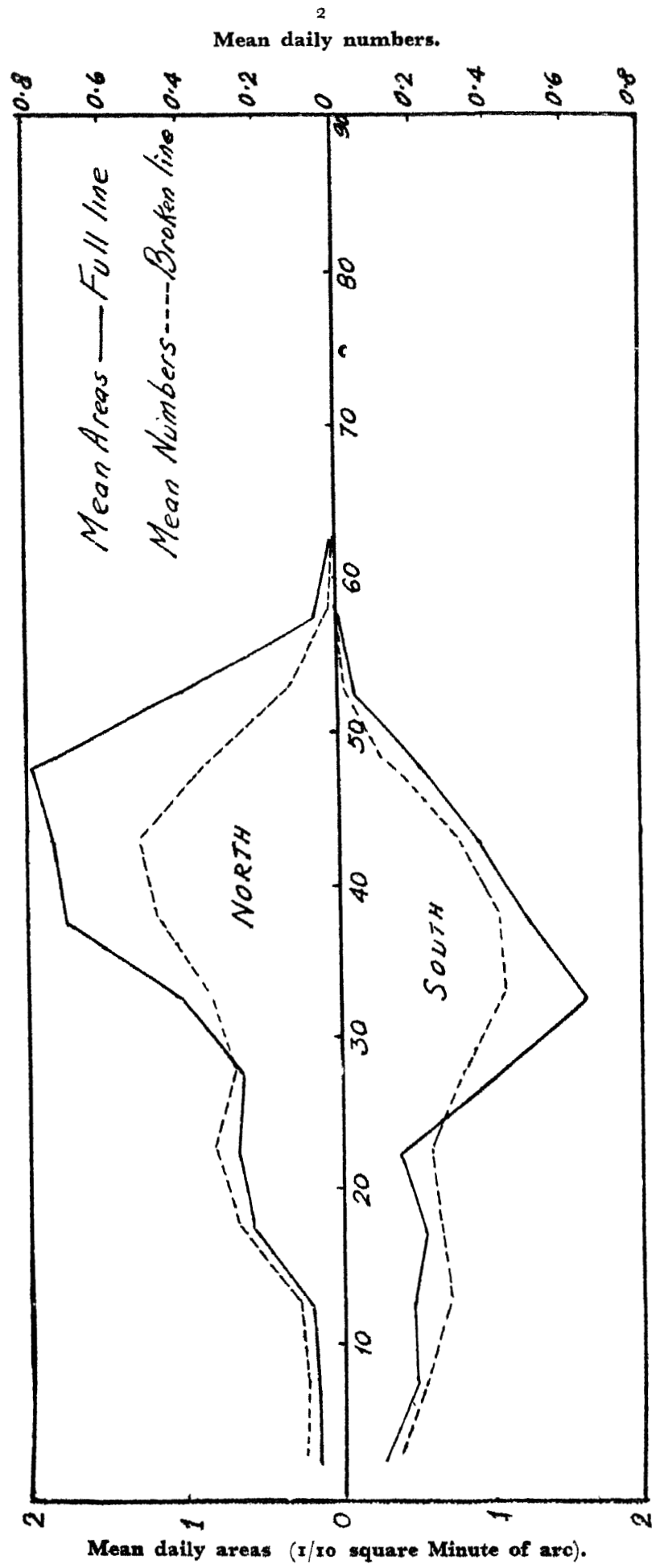
These figures when compared with the corresponding values of the previous half-year show an increase of activity, the increase being 32.1% in areas and 19.2% in numbers.

The values based on Kodaikanal Observations alone are given below for comparison with similar data published in Bulletins prior to 1923, *i.e.*, before the co-operation of the other observatories came into force.

		Kodaikanal data only	
		Mean daily areas (sq. minutes)	Mean daily Numbers
North	. . . . .	0.93	2.97
South	. . . . .	0.91	2.87
TOTAL		1.84	5.84

The distribution of areas and numbers in five-degree ranges of latitude as obtained from the combined data is represented in diagram I. The peak of activity seen in the northern hemisphere in the latitude belt 40°-45° during the previous half year remains more or less unchanged in position as well as in importance. In the southern hemisphere also the peak of activity continues to be in the latitude belt 30°-35°, but is somewhat more pronounced as compared to the previous half-year.

DIAGRAM I
 Mean Areas and Mean Numbers
 of Calcium Prominences.
 July to December 1954.



The monthly, quarterly and half-yearly areas, numbers, heights and extents of prominences derived from all the photographs are shown in the following table.—

1954 Months	Number of days (effective)	Area (Square minutes)	Numbers	Daily means		Mean height "	Mean extent °
				Area (sq minutes)	Numbers		
July	30½	40 10	174	1 30	5 65	43 59	2 09
August	29½	41 05	159	1 39	5 39	54 40	3 09
September	29	60 90	190	2 10	6 55	46 86	3 34
October	31	51 10	171	1 65	5 52	48 71	2 85
November	30	85 90	202	2 86	6 73	50 39	3 37
December	29	45 70	152	1 57	5 24	46 38	2 93
3rd quarter	89½	142 05	523	1 59	5 86	48 06	2 83
4th quarter	90	182 70	525	2 03	5 83	48 78	3 08
2nd Half-year	179½	324 75	1048	1 81	5 85	48 37	2 95

The distribution of prominences about the sun's axis of rotation is given below.—

1954 July-December	East	West	Percentage East
Areas (sq minutes)	136 15	188 60	41 9
Numbers	482	566	45 9

Observations with the Prominence Spectroscope

No metallic or eruptive prominence was observed during the half year. No bright reversal of H-alpha line or dark reversal of D₃ line on the disc near sunspots was observed. No displacement of H-alpha line in prominences was observed with the prominence spectroscope.

The mean heights of 5 prominences observed in H-alpha, D₃ and H-beta lines with the prominence spectroscope and the mean height in the K line of the same prominences as measured on the calcium spectroheliograms are given below:—

K	62° 0
H-alpha	55° 3
D ₃	47° 4
H-beta	37° 4

Observations with the Hale Spectroheliroscope

Details of Doppler displacements in H-alpha line observed in prominences and dark markings are given below:—

	North	South	East	West	Total	Displacements		
						To red	To violet	Both ways
Displacements in Prominences	27	16	20	23	43	.	1	42
Displacements in dark markings	14	4	14	4	18	.	.	18

Solar Flares

Details of solar flares observed during the period are given in the following table:—

Date 1954	Time (I S T)			Mean latitude	Mean longitude from Central meridian	Intensity	Maximum width of H-alpha line observed	Remarks
	Beginning	Maximum	End					
	H M	H M.	H M					
August	10 13		10 30	30° S	65° W	1	0.8	.

Sudden disappearance of Prominences & H-alpha dark markings

Only one instance of sudden disappearance of H-alpha dark markings was observed during the half-year under review. The particulars of this occurrence are as follows —

Nature of Phenomenon	Date and time of phenomenon when last seen			Co-ordinates of Phenomenon		Remarks
	Month	Date	I S T H M	Mean latitude	Mean longitude	
H-alpha dark markings	December	2	08 53	45° N	5° E	Major portion of the dark marking disappeared.

Prominences projected on the disc as absorption markings.

During the period under review photographs of the sun's disc in H-alpha line were obtained at Kodaikanal on 115 days. Spectroheliograms were also received for 65 days from the Mount Wilson Observatory and for 43 days from the Meudon Observatory. On the whole records were available for 183 days which were counted as 181½ effective days after weightage according to the quality of the photographs.

The mean daily areas in millionths of the sun's visible hemisphere (uncorrected for foreshortening) and the mean daily numbers of the H-alpha dark markings as derived from the combined data are given below:—

	Combined data	
	Mean daily area, (Millionths of the sun's visible hemisphere)	Mean daily number
North	496	4 00
South	173	1 85
TOTAL	669	5 85

On comparing with the previous half-year's values, these figures show an increase in activity both in areas and numbers as in the case of prominences. The areas show an increase of 21.8% and the numbers 1.7%.

The figures based solely on Kodaikanal photographs are also given for comparison with similar data:—

	Kodaikanal data only	
	Mean daily area (millionths of the sun's visible hemisphere)	Mean daily numbers
North	501	3.76
South	132	1.35
	633	5.11
TOTAL	633	5.11

The distribution of the areas of the markings in 5-degree ranges of latitude as obtained from the combined data is shown in diagram II. Compared to the previous half-year the peak of activity in the northern hemisphere has advanced by about 5 degrees towards the pole and is centred in the latitude belt 45° - 50° . The activity in the southern hemisphere has been considerably less than in the northern hemisphere. The maximum of activity in the southern hemisphere has also moved by about 5 degrees and is in the belt 40° - 45° , but this peak is somewhat flatter in comparison with that in the previous half-year.

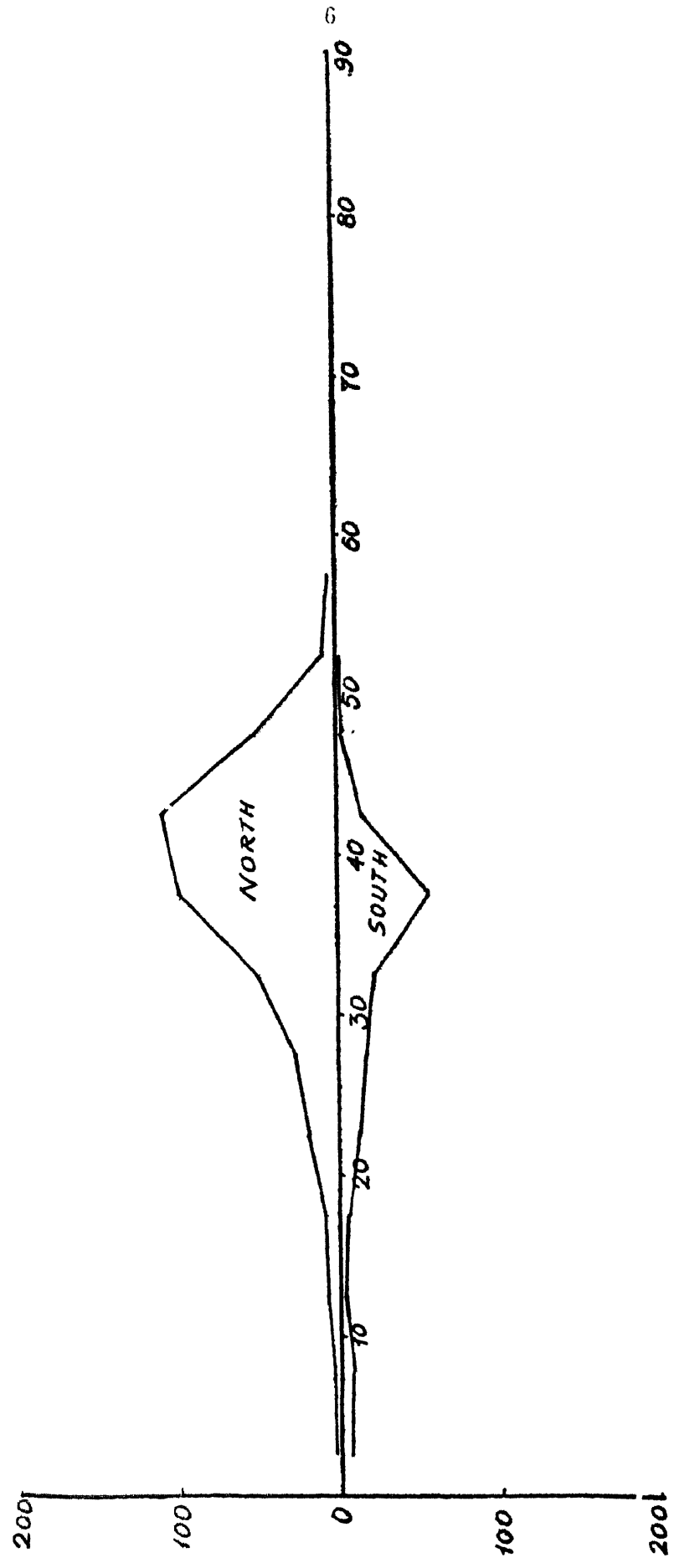
The distribution of total areas and numbers of the dark markings east and west of the sun's axis is given below.—

July-December 1954	East	West	Percentage East
Total area (millionths of the sun's visible hemisphere)	59263	62110	48.8
Total number	491	571	46.2

Unlike the previous half-year both the areas and numbers in the half-year under review show a western excess.

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

DIAGRAM II
Mean Areas of H-alpha Absorption Markings.
July to December 1954.



PART II

Magnetic Observations for the Second Half of 1954

Brief descriptions of the absolute instruments, the variometers and the system of observations are available in Bulletins No CXXXII and CXXXVI of this observatory. The data given in this Bulletin are derived mainly from the records of the La Cour instruments, but in case of failure of La Cour records, the Watson magnetograms have been used.

The instrumental equipment of the observatory has recently been supplemented by the addition of a set of QHM and BMZ instruments. With effect from 1-12-1954, regular weekly observations of horizontal force and declination were made with the QHM and those of vertical force with the BMZ. With effect from the same date, absolute observations of H. F. and Declination with Kew Magnetometer were restricted to once a month and those of V. F. with the Earth Inductor to once a week.

The adopted values of the scale coefficients of the horizontal force, vertical force and declination magnetographs for the second half of 1954 are 80 $\gamma/cm.$, 115 γ/cm and 16' γ/cm respectively.

Trends in Magnetic Variations

The mean value of and the range in the horizontal force for the second half of 1954 were 39,479 γ and 87 γ respectively showing an increase in the mean value and a slight decrease in the range over the corresponding values, viz., 39,475 γ and 88 γ for the first half of 1954. A comparison of monthly ranges in H with those of the second half of 1953 indicated that an upward trend in ranges had begun during the second half of 1954. In the case of the vertical force, the mean value decreased to 2387 γ from the corresponding value of 2401 γ for the previous six months, but the mean range remained the same, viz., 34 γ . For declination, the mean value decreased from 2°35'.1 to 2°34'.4, but the mean range increased from 3'.3 to 3'.5.

KODAIKANAL OBSERVATORY;
August, 1956.

A. K. DAS,
Deputy Director-General of Observatories.

TABLE 1

Hourly Values of Declination, (Westerly), 1954
 (Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

July

2° plus tabular quantities.

Date	Hours G M T.														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1†	35 5	34 2	34 1	34 1	34 7	35 8	36 2	37 4	37 6	36 8	36 2	35 2	34 6	34 6	34 4
2†	35 2	34 4	33 8	33 6	34 2	34 9	36 0	37 1	37 6	37 4	36 2	35 7	35 2	34 9	35 0
3†	35 7	35 5	34 6	34 4	34 1	35 7	36 5	37 6	37 8	37 6	37 3	36 0	35 7	35 7	35 7
4†	34 6	34 1	33 8	34 1	34 4	34 1	35 7	36 8	35 8	35 7	36 6	36 0	35 8	35 5	35 7
5	34 7	34 4	33 9	34 1	34 9	36 0	37 1	37 6	38 9	37 8	37 3	36 2	35 7	35 7	35 7
6	34 6	34 1	33 3	33 0	33 6	34 7	35 8	36 0	36 0	36 0	35 7	35 5	35 5	35 8	36 0
7	34 9	34 7	34 4	34 4	34 7	35 8	36 8	37 1	37 4	37 1	35 7	34 6	34 6	34 9	35 7
8	35 0	34 4	34 1	33 6	34 6	35 8	37 1	38 4	38 2	37 6	37 1	36 5	36 2	36 0	36 2
9†	35 2	34 6	34 1	33 6	34 6	35 5	36 6	37 1	37 6	37 4	37 4	36 8	36 3	36 2	36 2
10†	35 7	35 2	34 6	34 4	36 0	37 0	37 8	39 0	38 9	38 1	37 0	36 0	35 8	35 8	36 0
11	35 7	34 7	34 2	34 1	34 1	34 9	36 5	37 1	37 4	37 9	37 6	37 0	36 6	36 3	36 3
12	34 9	34 4	34 2	34 6	36 3	37 8	38 1	39 0	39 0	38 4	37 6	37 3	36 6	36 5	36 3
13	35 8	34 9	34 4	34 4	34 6	36 3	36 8	37 9	38 4	38 4	37 8	36 8	36 2	36 0	36 0
14††	35 8	35 2	34 6	34 1	35 0	35 7	36 5	36 8	37 0	37 1	36 6	35 7	34 7	35 4	35 8
15	34 7	33 6	33 0	33 3	34 6	36 0	37 3	37 6	37 6	37 3	36 2	35 5	34 7	35 2	35 2
16	34 5	34 1	33 6	33 4	34 2	35 6	36 9	37 2	37 4	37 1	36 4	36 1	35 6	35 5	35 8
17	34 0	33 9	33 9	34 4	35 0	35 8	36 6	37 4	37 6	37 1	36 0	35 5	35 5	35 6	35 6
18	34 0	34 0	33 9	34 4	34 8	35 6	36 6	37 2	37 2	36 8	36 3	35 6	35 0	35 0	35 6
19	34 4	33 9	33 9	34 4	34 8	35 3	35 6	37 7	37 4	36 4	36 0	35 5	35 0	35 0	35 2
20	34 4	34 0	33 9	33 7	34 5	35 6	36 1	36 6	37 1	37 4	36 8	36 3	35 8	35 8	36 1
21	35 5	34 2	33 9	33 9	34 4	35 0	35 8	36 6	37 1	36 8	36 0	35 8	35 8	35 8	35 8
22	34 4	34 0	33 9	34 2	36 6	37 4	37 6	37 4	37 2	37 4	36 9	35 8	35 5	35 5	35 6
23	35 3	34 4	34 0	34 4	35 3	36 6	37 4	37 7	37 7	37 4	36 9	36 0	35 6	35 8	36 0
24	35 5	34 5	34 0	35 5	35 0	35 8	37 2	37 7	37 2	36 6	35 3	34 5	35 3	35 6	36 0
25††	35 5	34 5	35 3	34 4	35 5	36 6	37 1	37 2	36 3	35 6	35 8	35 5	34 5	34 5	35 5
26	35 5	34 4	34 2	33 9	34 4	35 6	36 1	37 2	36 4	35 3	34 4	34 0	34 4	35 0	35 8
27††	35 3	34 2	34 0	34 4	34 8	35 5	36 0	36 6	36 9	36 6	36 1	35 6	35 3	34 7	35 5
28†|	34 7	33 9	34 2	34 8	36 1	36 6	36 4	36 0	35 8	35 8	35 8	35 5	35 3	35 5	36 1
29	35 5	34 2	33 7	34 0	34 8	35 8	36 6	37 4	37 2	36 1	35 0	34 4	34 5	35 3	35 6
30	35 3	34 4	33 9	34 2	35 6	36 6	37 4	37 6	37 2	36 3	35 8	35 6	35 0	35 5	35 6
31	35 3	34 4	34 2	34 2	35 5	36 3	37 1	37 6	37 1	36 1	35 5	34 4	34 4	34 5	34 7
Mean	35 1	34 4	34 1	34 1	34 9	35 9	36 7	37 5	37 5	36 9	36 7	35 7	35 4	35 5	35 7
Mean |	35 5	34 8	34 2	34 0	34 7	35 4	36 5	37 5	37 5	37 2	36 9	36 1	35 8	35 6	35 7
Mean |†	35 4	34 4	34 4	34 4	35 2	36 0	36 4	36 8	36 7	36 4	36 1	35 5	34 9	34 9	35 5

†Five international quiet days

††Five international disturbed days

△Loss of record, day omitted for means

TABLE 1

Hourly Values of Declination (Westerly), 1954
 (Averages for sixty minutes centred at the full hours of Greenwich Mean Time)
 2° plus tabular quantities

Hours G. M. T.									Mean	Maximum		Minimum		Range	Date
15	16	17	18	19	20	21	22	23		Time	Mag	Time	Mag		
										H	M	H	M.		
34.4	34.6	34.6	34.6	34.6	34.7	34.9	35.0	35.2	35.2	07 30	37.6	03 00	33.6	4.0	1††
35.2	35.0	35.0	34.9	34.9	34.9	35.0	35.4	35.7	35.3	07 30	37.6	02 30	33.6	4.0	2†
35.7	35.7	35.5	35.2	35.0	35.0	34.9	34.7	34.7	35.7	07 45	37.8	03 00	33.4	4.4	3†
35.8	35.8	35.8	35.8	35.8	35.5	35.2	35.2	34.9	35.3	08 00	37.6	02 30	33.6	4.0	4†
35.8	35.8	35.8	35.8	35.7	34.9	34.9	34.9	34.7	35.8	07 50	38.9	02 50	33.9	5.0	5
36.0	35.8	35.7	35.7	35.7	35.7	35.2	35.0	35.0	35.2	06 45	36.0	03 00	32.8	3.2	6
35.7	35.7	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.4	07 10	37.6	02 30	34.1	3.5	7
36.0	36.0	35.8	35.8	35.8	35.7	35.5	35.4	35.4	35.9	07 30	38.7	03 00	33.4	5.3	8
36.0	36.2	36.0	36.0	35.8	35.8	35.8	35.8	35.8	35.9	08 00	37.6	03 00	33.6	4.0	9†
36.0	36.0	36.0	35.8	35.8	35.8	35.8	35.7	35.7	36.2	07 30	39.2	03 00	34.4	4.8	10†
36.3	36.3	36.2	36.0	35.8	35.8	35.8	35.7	35.5	36.0	09 00	37.9	03 00	34.1	3.8	11
36.2	36.0	35.8	35.8	35.8	35.8	35.8	35.8	35.8	36.4	07 30	39.2	02 30	34.2	5.0	12
36.2	36.2	36.2	36.2	36.2	36.0	36.0	36.0	36.0	36.2	08 30	38.7	02 50	34.2	4.5	13
36.0	35.7	35.2	35.0	34.7	34.7	34.7	34.9	34.9	35.5	08 45	37.1	02 45	33.6	3.5	14††
35.7	35.7	35.7	35.7	35.2	35.2	35.0	35.0	35.0	35.4	06 45	37.8	02 15	32.8	5.0	15
35.8	35.8	35.6	35.6	35.5	35.0	34.7	34.4	34.4	35.4	07 30	37.4	03 00	33.4	4.0	16
35.6	35.1	35.0	34.8	34.7	34.7	34.5	34.5	34.5	35.3	08 15	37.6	01 30	33.9	3.7	17
35.6	35.6	35.6	35.3	35.2	35.0	34.5	34.5	34.5	35.3	07 15	37.4	02 00	33.9	3.5	18
35.8	36.0	36.0	35.6	35.6	35.5	35.0	34.5	34.5	35.4	07 00	38.2	01 30	33.9	4.3	19
36.1	36.0	36.0	35.8	35.8	35.8	35.8	35.6	35.6	35.7	09 10	37.6	03 00	33.4	4.2	20
35.8	35.6	35.6	35.6	35.3	35.3	35.2	35.2	34.8	35.5	08 15	37.2	02 15	33.9	3.3	21
35.6	35.6	35.6	35.8	35.5	35.5	35.5	35.5	35.5	35.8	06 00	37.7	01 15	34.0	3.7	22
36.0	36.0	36.0	36.0	35.8	35.8	35.8	35.6	35.6	36.0	08 20	38.5	02 00	33.9	4.6	23
35.8	35.8	35.8	35.8	35.6	35.6	35.6	35.6	35.6	35.7	06 45	37.9	02 45	34.0	3.9	24
35.8	35.8	36.0	35.8	35.6	35.6	35.6	35.6	35.6	35.6	07 30	37.2	02 20	34.0	3.2	25††
35.8	36.0	36.1	36.0	35.8	35.8	35.8	35.8	35.6	35.4	07 05	37.6	03 00	33.9	3.7	26
35.5	35.6	35.6	36.0	36.0	36.0	35.5	35.0	35.0	35.5	07 45	37.1	02 15	33.9	3.2	27††
36.4	36.3	36.4	36.3	36.1	36.0	36.0	36.0	35.8	35.7	05 45	36.8	01 00	33.9	2.9	28††
35.6	35.8	36.0	35.8	35.6	35.6	35.6	35.6	35.6	35.5	07 40	38.2	02 20	33.7	4.5	29
35.8	35.8	35.8	35.6	35.6	35.6	35.6	35.5	35.5	35.7	07 25	37.6	01 45	33.9	3.7	30
35.5	35.6	35.6	35.6	35.5	35.5	35.0	35.0	35.0	35.4	07 15	37.6	02 30	34.0	3.6	31
35.8	35.8	35.7	35.6	35.5	35.5	35.3	35.3	35.2	35.6					4.0	Mean
35.7	35.7	35.7	35.5	35.5	35.4	35.3	35.4	35.4							Mean†
35.6	35.6	35.6	35.5	35.4	35.4	35.3	35.3	35.3							Mean††

†Five international quiet days.
 ††Five international disturbed days.
 ΔLoss of record; day omitted for means.

TABLE 2

Hourly Values of Declination (Westerly), 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

August

2° plus tabular quantities

Date	Hours G. M. T														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14

1	34.7	33.9	33.6	34.2	35.7	36.3	36.9	37.9	38.2	37.3	36.3	35.8	35.5	34.4	35.2
2	35.2	34.4	33.9	34.1	35.5	36.6	37.6	37.9	37.1	36.6	36.0	35.8	35.7	35.7	35.7
†3	35.5	34.7	33.9	34.1	35.3	35.5	36.9	37.3	37.3	37.1	36.9	36.0	35.3	35.2	35.2
†4	34.7	33.9	33.7	33.9	35.1	35.8	36.5	36.8	36.8	36.3	35.7	35.2	34.7	34.7	34.7
†5	34.1	33.9	33.6	33.1	35.0	36.3	37.6	37.9	38.1	37.6	36.3	35.5	35.2	35.2	35.2
††6	34.5	33.9	33.4	33.6	33.7	35.3	36.3	37.1	37.3	36.8	36.5	36.0	35.3	34.2	34.7
7	34.2	33.7	32.8	33.3	34.4	35.2	35.3	36.3	36.8	37.3	36.5	35.2	34.2	34.4	34.7
†8	33.9	33.4	33.1	33.6	35.0	35.5	36.3	36.9	36.9	36.8	36.0	35.3	35.3	35.5	35.5
9	34.2	33.6	33.1	33.3	35.0	35.7	36.3	35.8	35.2	35.0	34.7	34.5	34.9	34.7	34.7
10	34.4	34.1	34.5	34.9	36.0	36.6	37.1	37.1	36.9	36.5	35.5	35.5	35.2	35.2	35.3
11	34.7	34.2	33.3	33.1	34.1	35.7	36.0	36.3	36.1	35.2	33.9	33.3	33.3	34.1	34.7
12	33.9	33.3	32.6	32.9	34.7	36.0	36.6	36.9	36.8	36.1	35.2	34.4	34.2	34.7	34.7
†13	34.1	33.3	32.6	33.6	35.3	36.3	36.6	36.9	36.8	36.3	35.2	34.7	34.7	34.9	35.3
14	34.6	33.6	32.8	33.1	34.2	36.0	36.9	37.1	36.5	36.1	35.3	34.7	34.5	34.5	34.9
15	34.4	33.7	33.1	33.6	34.1	35.2	36.3	36.5	36.3	36.1	35.5	35.0	34.7	34.7	34.7
16	33.9	32.6	32.6	33.9	34.2	35.0	36.1	36.3	36.1	35.1	33.9	32.9	32.9	33.2	33.9
17	34.0	33.1	32.1	32.4	33.9	35.3	36.4	37.1	36.6	35.0	34.5	34.3	34.2	34.5	34.5
18	34.0	33.5	33.4	33.5	34.5	36.1	37.4	37.7	37.4	36.6	35.9	34.8	33.7	33.9	33.9
19	33.9	33.1	32.1	32.3	34.3	35.8	37.4	37.9	36.9	36.1	35.5	34.7	34.3	34.3	34.7
20	34.0	33.4	32.7	33.1	35.0	36.1	36.9	37.4	37.2	36.3	35.9	35.0	34.3	34.5	34.5
21	34.7	33.4	32.9	33.1	33.9	35.1	36.4	36.4	36.6	36.6	35.6	34.5	34.3	34.3	34.3
††22	34.2	33.9	33.4	33.7	34.2	35.8	36.1	36.1	35.5	35.6	35.5	35.0	35.0	34.7	33.9
23	33.9	33.4	32.9	32.9	33.9	34.5	35.8	36.6	36.7	36.1	35.5	35.0	34.5	34.3	34.5
††24	34.5	33.7	33.4	33.7	34.2	35.6	36.1	35.8	35.5	35.6	35.5	35.0	34.8	34.7	33.9
25	33.9	33.4	32.9	33.4	33.9	35.0	36.1	36.3	36.1	35.9	35.3	34.8	34.5	34.5	34.5
††26	34.5	33.5	32.9	34.2	34.8	35.8	36.1	36.1	35.8	35.0	34.8	33.9	33.7	33.9	33.9
27	34.2	33.1	32.9	32.9	33.7	35.5	36.5	37.5	37.1	36.4	35.5	34.0	33.7	33.9	34.0
28	33.7	33.1	31.8	31.8	34.5	34.8	37.7	38.0	37.9	36.4	35.1	34.0	33.5	33.7	34.2
††29	34.0	33.2	32.9	32.6	34.3	35.8	36.3	36.6	36.6	36.1	35.1	34.5	34.3	34.3	34.5
30	34.2	33.9	33.4	33.7	34.5	35.8	37.1	37.7	37.4	36.4	36.0	34.5	33.9	33.9	34.0
31	34.5	33.7	33.2	33.2	33.7	35.3	36.6	37.1	36.8	35.5	35.0	34.0	34.0	34.2	34.5
Mean	34.3	33.6	33.1	33.4	34.5	35.7	36.6	36.9	36.7	36.2	35.5	34.8	34.5	34.5	34.6
Mean†	34.7	33.8	33.4	33.7	35.1	35.9	36.8	37.2	37.2	36.8	36.0	35.3	35.0	35.1	35.2
Mean††	34.3	33.6	33.2	33.6	34.2	35.7	36.2	36.3	36.1	35.8	35.5	34.9	34.6	34.4	34.2

†Five international quiet days.

††Five international disturbed days.

ΔLoss of record; day omitted for means.

TABLE 2

Hourly Values of Declination (Westerly), 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

August

2° plus tabular quantities.

Hours G. M. T.									Mean	Maximum		Minimum		Range	Date
15	16	17	18	19	20	21	22	23		Time	Mag	Time	Mag		
										H M	'	H M.	'		
35.3	35.5	35.5	35.5	35.5	35.5	35.5	35.3	35.3	35.6	08 00	38.4	02 10	33.4	5.0	1
35.7	35.7	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.7	06 50	38.4	02 30	33.9	4.5	2
35.3	35.3	35.3	35.2	35.2	35.0	34.7	34.7	34.7	35.5	07 15	37.3	02 40	33.7	3.6	3†
34.7	35.0	35.2	35.2	35.0	35.0	34.7	34.7	34.2	35.1	07 00	36.9	02 00	33.7	3.2	4†
35.3	35.7	35.5	35.5	35.3	35.3	35.2	35.0	35.0	35.5	06 30	38.4	02 15	33.1	5.3	5†
35.2	35.2	35.2	35.3	35.3	35.3	35.3	35.3	35.0	35.2	06 50	37.6	02 30	33.1	4.5	6††
35.0	35.2	35.2	35.2	35.0	34.7	34.7	34.7	34.4	34.9	09 20	37.3	01 45	32.6	4.7	7
35.7	35.5	35.3	35.3	35.2	35.0	35.0	34.9	34.7	35.2	07 00	37.1	02 00	33.1	4.0	8†
34.9	34.9	34.9	34.7	34.7	34.7	34.7	34.7	34.7	34.7	06 40	36.3	02 00	33.1	3.2	9
35.3	35.3	35.5	35.5	35.3	35.3	35.3	35.2	35.2	35.5	06 15	37.3	01 45	33.9	3.4	10
34.7	34.7	34.7	34.7	34.4	34.4	34.2	34.2	34.1	34.5	07 00	36.6	03 00	32.8	3.8	11
34.9	34.9	35.0	34.9	34.7	34.7	34.7	34.7	34.7	34.8	07 15	37.3	02 15	32.6	4.7	12
35.5	35.3	35.3	35.2	35.2	35.0	34.7	34.7	34.7	35.1	06 50	37.1	01 30	32.5	4.6	13†
34.9	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.9	07 00	37.6	02 00	32.8	4.8	14
34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.8	07 30	36.8	02 00	32.8	4.0	15
34.0	34.0	34.3	34.3	34.2	34.2	34.2	34.2	34.2	34.2	07 30	36.6	01 30	32.4	4.2	16
34.5	34.5	34.5	34.5	34.5	34.3	34.3	34.3	34.2	34.5	06 30	37.1	01 45	32.1	5.0	17
34.0	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.2	34.8	07 00	37.9	02 20	32.9	5.0	18
35.0	35.0	35.0	35.0	35.0	35.0	34.7	34.5	34.5	34.9	06 30	38.2	02 15	31.9	6.3	19
34.5	34.5	34.5	34.5	34.7	34.7	34.7	34.8	34.8	34.9	07 30	37.7	02 00	32.6	5.1	20
34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.3	34.3	34.7	06 00	36.6	02 30	32.4	4.2	21
34.0	34.5	34.5	34.5	34.3	34.3	34.2	34.0	33.9	34.6	07 30	36.1	02 00	32.9	3.2	22††
34.5	34.5	34.8	34.5	34.3	34.5	34.5	34.5	34.5	34.6	07 15	36.7	02 00	32.9	3.8	23
33.9	34.5	34.5	34.5	34.5	34.3	34.2	34.0	33.9	34.6	05 00	36.1	01 45	32.9	3.2	24††
34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.6	07 30	36.6	02 00	32.6	4.0	25
34.0	34.2	34.3	34.3	34.2	34.5	34.2	34.2	34.2	34.5	07 00	36.1	01 45	32.9	3.2	26††
34.0	34.2	34.2	34.2	33.9	33.9	33.7	33.7	33.7	34.4	06 50	37.7	01 45	32.9	4.8	27
34.7	34.5	34.5	34.3	34.2	34.2	34.0	34.0	34.2	34.5	06 50	38.1	02 30	31.8	6.3	28
34.8	34.8	34.5	34.5	34.5	34.5	34.3	34.3	34.3	34.7	07 05	36.9	02 30	32.4	4.5	29††
34.4	34.4	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.9	08 30	37.7	02 25	32.9	4.8	30
34.5	34.5	33.9	33.9	33.9	33.9	33.9	33.9	33.9	34.5	07 00	37.4	03 00	32.9	4.5	31
34.7	34.8	34.8	34.8	34.7	34.7	34.6	34.5	34.5	34.9					4.4	Mean
35.3	35.4	35.3	35.3	35.2	35.1	34.9	34.8	34.7							Mean†
34.4	34.6	34.6	34.6	34.6	34.6	34.4	34.4	34.3							Mean††

†Five international quiet days.
 ††Five international disturbed days
 ΔLoss of record; day omitted for means.

TABLE 3

Hourly Values of Declination (Westerly), 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

September

2° plus tabular quantities

Date	Hours G M T														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1††	33.7	33.2	31.9	32.1	34.0	35.1	35.9	36.7	36.7	35.6	34.1	33.5	33.7	34.1	33.7
2	34.9	33.5	33.0	33.0	33.8	33.8	34.3	34.8	35.3	35.4	34.9	34.8	33.5	33.3	33.8
3	34.9	33.3	33.0	33.7	34.9	35.3	36.7	37.5	37.5	36.9	36.4	35.3	34.5	34.9	35.1
4	35.4	34.8	33.3	33.5	33.5	34.9	36.5	36.7	36.9	36.5	35.6	34.8	33.8	33.7	33.7
5	34.8	33.7	33.2	32.7	33.8	35.4	36.4	36.7	36.4	35.9	35.4	34.6	34.3	33.7	33.7
6	33.8	33.3	32.7	32.7	33.7	35.3	35.9	36.5	36.5	35.9	35.3	34.3	33.8	33.5	33.5
7	33.5	32.7	31.7	32.7	33.5	34.8	35.3	35.4	35.3	34.8	33.7	32.9	32.7	32.7	32.7
8†	33.2	32.7	32.1	31.9	32.7	33.8	35.3	36.4	36.7	36.2	34.9	34.3	33.2	33.0	32.9
9	33.2	32.5	31.9	32.1	32.1	33.3	34.8	35.3	35.1	34.3	33.3	32.7	32.5	32.7	32.7
10	32.9	32.1	31.6	32.1	33.5	34.6	35.4	35.7	35.4	34.9	34.0	33.7	34.3	34.3	34.0
11	34.3	33.5	33.3	33.7	34.6	35.6	36.4	36.9	36.2	35.1	33.7	33.5	32.7	33.0	33.5
12†	33.7	32.7	32.2	33.2	34.6	35.6	35.9	35.9	35.6	34.5	33.0	32.4	33.0	33.5	34.0
13†	33.2	32.2	31.6	32.1	34.1	35.3	35.9	36.5	36.7	35.9	34.9	33.7	33.7	34.0	34.6
14††	34.3	33.3	32.7	33.2	33.5	34.6	36.2	37.2	37.4	36.7	36.1	35.6	34.5	33.3	34.0
15	34.6	34.3	34.3	34.3	35.9	36.7	38.3	38.6	37.8	36.2	34.5	33.7	34.0	34.3	35.1
16	34.4	33.8	33.8	34.9	36.0	36.5	36.7	36.8	36.7	35.7	34.9	34.3	34.1	34.1	34.0
17	34.4	33.8	33.1	32.3	34.1	34.9	35.9	37.1	37.1	36.5	35.7	34.9	34.6	34.6	34.6
18	34.3	34.1	33.8	33.9	34.9	35.9	36.8	38.1	38.1	37.3	35.7	34.1	34.1	34.6	34.9
19†	34.4	34.1	34.1	33.9	34.6	35.4	36.5	37.3	37.3	36.7	35.7	34.9	34.1	34.3	34.4
20††	34.9	34.7	33.6	33.8	34.3	35.4	36.5	36.5	36.2	35.5	34.1	33.5	33.5	33.3	33.3
21††	33.3	32.5	32.5	32.7	35.4	36.5	37.1	37.3	37.3	35.7	34.9	34.3	34.3	34.4	34.4
22	34.9	34.1	33.8	33.8	36.0	38.1	38.4	38.1	37.1	35.9	35.5	34.9	34.3	34.9	34.9
23†	34.7	34.1	33.3	33.6	33.9	37.0	38.1	38.4	37.3	35.9	35.7	35.4	34.9	35.4	34.9
24	35.4	34.6	34.1	33.9	34.4	35.7	37.3	37.1	36.5	35.5	34.4	34.1	35.4	36.0	36.0
25	35.7	35.2	34.4	34.4	35.5	36.7	36.8	38.1	37.1	36.0	35.7	35.5	35.4	35.4	35.5
26	35.5	34.9	34.3	34.3	35.4	36.0	37.3	37.5	37.0	36.5	35.7	34.9	34.9	35.2	35.2
27	35.5	35.1	34.1	34.1	35.1	35.9	37.0	37.0	36.9	35.7	34.6	35.1	35.5	35.7	35.7
28	35.5	35.1	34.1	34.9	37.1	38.9	38.9	38.9	38.1	36.7	35.7	35.5	34.9	35.7	35.7
29††	35.4	34.7	34.3	34.6	35.4	36.3	37.1	37.8	37.5	36.5	34.9	34.1	33.9	34.4	34.9
30	34.9	34.4	34.3	34.4	36.0	36.5	36.5	37.0	36.7	35.4	34.4	34.4	34.6	34.9	34.9
Mean	34.5	33.8	33.2	33.4	34.5	35.7	36.5	37.0	36.7	35.9	34.9	34.3	34.4	34.2	34.3
Mean†	33.8	33.2	32.7	32.9	34.0	35.4	36.3	36.9	36.7	35.8	34.8	34.1	33.8	34.0	34.2
Mean††	34.3	33.7	33.0	33.3	34.5	35.6	36.6	37.1	37.0	36.0	34.8	34.2	34.0	33.9	34.1

†Five international quiet days

††Five international disturbed days

△Loss of record, day omitted for means.

TABLE 3

Hourly Values of Declination (Westerly), 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

September

2° plus tabular quantities

Hours G M T.									Mean	Maximum		Minimum		Range	Date		
15	16	17	18	19	20	21	22	23		Time	Mag	Time	Mag				
									H	M	'	H	M	'	'		
33.8	33.7	33.8	33.8	33.8	33.7	34.6	34.3	34.1	31.1	07	30	37.5	02	30	31.9	5.6	1††
34.1	34.0	34.3	34.3	34.3	34.3	34.8	34.9	34.6	34.2	08	00	35.5	03	00	32.9	2.6	2
34.9	34.9	34.9	35.1	35.1	35.6	35.6	35.3	35.4	35.3	06	30	37.5	02	00	32.7	4.8	3
33.7	33.7	33.7	33.7	34.3	34.6	34.8	34.8	34.9	34.7	07	30	37.0	02	30	33.0	4.0	4
33.8	33.8	33.8	33.8	33.8	33.8	33.8	33.8	33.8	34.4	07	00	36.7	03	00	32.7	4.0	5
33.5	33.0	33.0	32.7	33.3	33.7	33.5	33.5	33.5	34.0	07	05	36.9	02	30	32.7	4.2	6
33.0	33.0	33.0	33.0	33.0	33.0	33.2	33.0	33.0	33.4	07	15	35.9	01	45	31.7	4.2	7
32.9	33.0	33.0	32.9	32.9	33.0	33.2	33.3	33.3	33.6	08	30	36.9	02	30	31.9	5.0	8†
32.4	32.5	32.7	32.7	32.7	32.7	33.0	33.2	33.0	33.1	06	45	35.4	02	30	31.9	3.5	9
33.7	33.7	33.8	33.8	33.7	33.7	33.8	33.8	34.1	33.9	06	30	35.9	02	00	31.6	4.3	10
33.7	33.7	33.8	33.8	33.8	33.7	33.8	34.1	34.0	34.2	06	45	36.9	02	40	33.2	3.7	11
34.0	33.8	33.8	33.7	33.8	33.8	33.7	33.7	33.5	33.9	06	00	35.9	01	30	32.2	3.7	12†
34.6	34.6	34.6	34.8	34.8	34.8	34.8	34.8	34.9	34.5	07	30	36.7	02	10	31.6	5.1	13†
34.3	34.3	34.5	34.6	34.6	34.8	34.8	35.1	35.1	34.8	07	26	37.3	02	00	31.9	5.4	14††
35.1	35.6	35.1	35.6	35.6	35.3	35.1	34.9	35.1	35.4	06	50	38.6	11	30	33.5	5.1	15†
34.1	34.3	34.1	34.3	34.4	34.1	34.1	34.1	34.4	31.8	05	18	36.8	01	40	33.0	3.8	16
34.9	34.9	34.9	34.9	34.7	34.9	34.9	34.4	34.4	34.9	07	46	37.1	03	00	32.2	4.9	17
34.9	34.9	34.9	34.7	34.7	34.9	34.6	34.9	34.9	35.2	07	30	38.1	11	30	33.6	4.5	18
34.4	34.4	34.6	34.6	34.9	34.9	34.9	34.6	34.6	35.0	07	30	37.3	03	00	33.6	3.7	19†
33.3	32.7	34.1	33.8	34.1	34.1	33.9	33.8	33.8	34.3	07	10	36.5	11	18	32.4	4.1	20††
34.9	35.2	35.4	35.7	35.7	35.7	35.4	35.5	35.7	35.1	07	30	37.3	01	40	32.2	5.1	21††
34.9	34.9	35.1	35.4	35.4	35.4	35.4	34.9	35.4	35.5	06	30	38.4	02	00	33.5	4.9	22
35.4	35.4	35.4	35.4	35.5	35.5	35.4	35.4	35.4	35.5	06	42	38.6	02	40	33.3	5.3	23†
36.0	35.7	35.7	35.7	35.5	35.7	35.5	35.5	35.5	35.5	06	50	37.3	02	40	33.1	4.2	24
35.7	35.7	35.7	35.7	35.5	35.7	35.5	35.4	35.5	35.7	07	10	38.1	03	00	34.1	4.0	25
35.4	35.5	35.5	35.5	35.7	35.4	35.5	35.7	35.5	35.6	06	50	37.5	02	08	33.8	3.7	26
35.7	35.7	35.4	35.4	35.7	35.7	35.7	35.7	35.7	35.6	06	50	37.0	03	00	33.5	3.5	27
35.7	35.7	35.7	35.7	35.7	35.5	35.5	35.7	35.7	36.1	05	30	38.9	02	00	33.6	5.3	28
35.1	35.2	35.9	36.0	35.5	35.5	35.7	35.5	34.9	35.5	07	10	37.8	11	10	33.5	4.3	29††
35.3	35.5	35.5	35.7	35.7	35.7	35.7	35.5	35.4	35.4	07	30	37.0	02	00	33.9	3.1	30
34.4	34.4	34.5	34.6	34.6	34.6	34.7	34.6	34.6	34.8						4.3	Mean	
34.3	34.2	34.3	34.3	34.4	34.4	34.4	34.4	34.3								Mean†	
34.3	34.2	34.7	34.8	34.7	34.8	34.9	34.8	34.7								Mean††	

†Five international quiet days

††Five international disturbed days.

△Loss of record; day omitted for means

TABLE 4

Hourly Values of Declination (Westerly), 1954
(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

October

2° plus tabular quantities

Date	Hours G M T														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1††	33.9	33.9	33.3	33.4	33.7	35.0	35.5	35.5	35.3	34.7	33.7	33.7	33.7	33.7	33.9
2	33.9	33.9	33.7	34.1	35.0	35.5	36.1	37.1	36.9	35.8	35.3	35.0	34.4	33.9	34.2
3††	34.2	34.4	33.7	33.7	32.9	33.7	34.5	35.2	35.2	34.2	33.9	33.6	33.6	33.9	33.6
4	33.6	32.1	32.3	32.1	32.9	33.9	35.0	34.7	35.0	34.2	33.7	33.1	33.1	33.7	33.9
5	33.7	33.7	32.8	33.1	33.7	35.2	35.5	36.3	35.8	35.0	34.4	33.9	33.9	33.9	33.9
6	33.9	33.7	33.4	33.3	34.7	34.5	34.9	35.0	34.9	34.1	32.7	32.3	32.9	32.9	32.1
7	33.9	34.2	33.9	33.4	34.7	35.3	35.5	35.5	35.5	34.7	33.9	33.9	33.6	33.1	33.1
8	33.9	33.6	33.1	33.1	33.7	34.7	35.0	35.2	35.0	34.2	33.9	33.7	33.6	32.5	32.5
9†	34.1	33.6	33.1	33.4	33.7	34.1	35.2	35.3	35.0	34.7	34.4	33.9	33.9	33.7	33.7
10†	33.7	33.1	33.1	33.4	33.7	34.5	35.8	36.5	35.9	34.7	33.7	33.6	33.7	33.9	33.9
11	34.4	33.7	33.6	32.9	32.6	34.5	35.8	35.3	34.1	33.1	33.1	32.6	33.1	33.6	33.6
12†	33.7	33.4	33.1	33.3	34.4	35.8	36.9	36.5	35.2	33.9	33.4	33.1	33.6	33.9	33.9
13†	33.7	33.3	32.3	32.9	34.2	35.3	36.6	36.3	35.5	34.9	33.9	33.9	34.7	34.7	34.4
14	34.4	33.9	33.9	33.1	33.1	34.7	36.3	36.3	35.5	35.2	34.4	33.6	33.1	33.1	33.1
15†	33.9	33.6	33.6	33.1	33.3	34.7	35.3	35.3	35.2	34.2	33.6	33.6	33.4	33.4	33.6
16	33.6	33.4	33.3	33.3	34.4	35.2	35.2	35.2	34.9	34.1	33.6	33.6	33.6	33.6	33.6
17	33.6	33.4	33.6	33.4	33.6	34.6	34.9	34.9	34.9	33.9	33.6	33.6	33.4	32.8	32.8
18††	33.6	33.9	34.4	34.9	35.0	35.2	34.4	33.3	32.6	32.8	32.8	31.7	31.2	32.0	32.0
19	33.6	33.6	33.4	33.4	33.6	34.4	35.2	35.2	34.9	33.8	33.4	32.6	32.0	32.5	32.8
20	33.6	33.6	33.6	33.4	33.4	33.3	34.4	34.2	33.3	32.5	31.9	31.2	31.8	32.5	33.1
21	34.4	34.1	33.9	33.8	33.8	34.6	35.2	35.2	34.6	33.6	33.1	32.8	32.8	33.3	33.3
22	34.1	33.8	33.6	33.6	33.8	34.6	35.2	35.2	34.2	33.3	32.3	32.3	32.8	33.3	33.3
23††	32.8	32.8	32.8	33.0	34.1	35.2	35.2	35.2	35.0	34.2	32.8	32.3	32.8	32.8	32.8
24††	32.8	33.3	33.4	33.3	33.4	33.6	33.6	33.4	33.1	32.3	32.8	32.5	32.0	32.0	32.8
25	34.7	34.4	34.4	33.6	32.8	32.8	32.8	32.0	32.0	32.3	32.8	32.0	31.7	31.7	32.0
26	33.4	33.6	33.4	33.1	33.3	33.9	35.0	35.0	33.6	32.5	32.6	32.8	33.0	32.8	32.8
27	33.4	33.6	33.6	33.3	33.4	34.4	34.7	35.2	34.6	33.4	32.0	31.8	33.1	32.8	32.8
28	33.6	33.6	33.4	33.4	33.4	33.4	33.6	33.6	33.4	33.3	32.0	32.2	32.8	32.8	33.1
29	33.6	33.6	33.6	33.6	33.6	34.6	35.2	35.2	34.9	34.4	33.6	33.4	33.3	33.4	33.6
30	34.2	34.4	34.4	33.6	33.6	33.6	33.9	33.6	33.6	33.6	33.4	33.1	32.8	33.4	32.8
31	33.6	33.6	33.6	33.4	33.6	35.2	35.0	33.9	33.9	33.6	33.6	33.6	33.6	33.4	33.1
Mean	33.8	33.6	33.5	33.4	33.7	34.5	35.1	35.0	34.6	33.9	33.4	33.1	33.1	33.2	33.2
Mean†	33.8	33.4	33.0	33.2	33.9	34.9	36.0	36.0	35.4	34.5	33.8	33.6	33.9	33.9	33.9
Mean††	33.5	33.7	33.5	33.7	33.8	34.5	34.6	34.5	34.2	33.6	33.2	32.8	32.7	32.9	33.0

†Five international quiet days.

††Five international disturbed days.

△Loss of record; day omitted for means.

TABLE 4

Hourly Values of Declination, 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

October

2° plus tabular quantities

Hours G M T									Mean	Maximum		Minimum		Range	Date
15	16	17	18	19	20	21	22	23		Time	Mag	Time	Mag		
										H M.		H. M			
33.9	33.7	33.7	33.9	33.6	33.7	33.7	33.9	33.9	34.0	05 50	36.1	02 20	33.3	2.8	1††
34.2	34.1	33.9	34.1	34.1	34.5	34.7	35.0	35.2	34.7	07 30	37.1	02 20	33.7	3.4	2
32.5	32.3	33.1	32.6	32.6	33.3	33.4	33.6	33.4	33.6	07 30	35.2	15 30	32.3	2.9	3††
33.4	33.1	33.1	33.1	33.3	33.3	33.4	33.6	33.7	33.5	08 30	35.2	03 00	31.5	3.7	4
33.7	33.7	33.7	33.7	33.7	33.7	33.9	33.9	33.9	34.1	07 30	36.5	02 20	32.6	3.9	5
32.1	32.3	32.3	32.9	32.5	32.3	32.3	33.4	33.3	33.3	05 50	35.5	13 46	32.1	3.4	6
33.6	33.4	33.4	33.3	33.4	33.1	33.4	33.7	33.9	33.0	07 30	35.8	13 30	33.1	2.7	7
32.5	32.6	33.1	33.6	33.7	33.7	33.7	33.9	33.9	33.7	06 30	35.5	13 30	32.5	3.0	8
33.7	33.9	33.9	33.9	33.9	33.9	34.1	33.7	33.9	34.0	06 30	35.5	02 20	33.1	2.4	9†
33.9	33.9	33.9	33.7	33.9	33.9	33.9	33.9	34.2	34.1	06 30	36.5	02 20	33.1	3.4	10†
33.6	33.7	33.6	33.6	33.6	33.6	33.6	33.7	33.9	33.7	05 54	36.0	11 10	32.6	3.4	11
33.9	33.7	33.7	33.6	33.6	33.1	33.4	33.6	33.7	34.0	05 50	37.1	01 56	32.9	4.2	12†
34.4	34.4	34.2	34.2	34.1	33.9	34.2	34.4	34.5	34.4	06 10	36.6	02 00	32.3	4.3	13†
33.1	33.1	33.1	33.1	32.9	33.1	33.6	33.6	33.7	33.9	06 30	36.8	14 00	32.9	3.9	14
33.7	33.7	33.7	33.7	33.6	33.6	33.6	33.7	33.9	33.9	06 50	35.3	03 30	32.6	2.7	15†
33.1	32.8	32.8	32.8	32.8	33.1	33.4	33.4	33.4	33.7	06 30	35.2	15 50	32.8	2.4	16
32.8	32.8	32.8	33.0	33.0	33.0	33.0	33.0	33.3	33.5	06 10	34.9	16 10	32.8	2.1	17
32.0	32.3	32.5	32.5	32.8	32.8	33.1	33.4	33.6	33.1	05 30	35.2	11 30	31.2	4.0	18††
32.3	32.0	32.5	32.8	32.8	32.8	33.3	33.6	33.6	33.3	06 30	35.2	11 50	32.0	3.2	19
33.3	33.6	33.6	33.6	33.6	33.6	33.6	34.1	34.4	33.3	06 50	34.6	11 30	31.2	3.4	20
33.3	33.4	33.4	33.4	33.4	33.6	33.6	33.6	33.9	33.7	07 30	35.2	10 30	32.3	2.9	21
33.4	33.4	33.0	32.5	32.8	32.8	33.0	32.8	32.8	33.4	06 50	35.2	10 30	32.0	3.2	22
32.6	32.5	32.3	32.0	32.0	32.0	32.0	32.2	32.5	33.1	06 10	35.2	18 50	32.0	3.2	23††
32.5	32.8	32.8	32.3	32.0	33.3	33.4	33.6	33.6	32.9	04 58	34.2	12 50	32.0	2.2	24††
32.0	32.3	32.3	32.3	32.5	32.8	32.8	32.8	33.4	32.7	02 40	34.9	12 30	31.5	3.4	25
32.8	32.5	32.2	32.2	32.3	32.3	32.8	32.8	33.3	33.1	06 30	35.0	17 30	32.0	3.0	26
32.6	32.8	32.8	32.8	32.8	33.3	33.3	33.4	33.6	33.3	06 30	35.2	10 30	31.5	3.7	27
33.1	33.3	33.4	33.4	33.4	33.4	33.4	33.4	33.6	33.3	06 10	33.6	10 50	32.0	1.6	28
33.4	33.6	33.6	33.6	33.8	33.6	33.8	33.9	34.1	33.9	05 50	35.2	11 30	33.0	2.2	29
32.8	32.8	33.1	33.3	33.3	33.3	33.4	33.6	33.6	33.5	02 00	34.7	14 30	32.3	2.4	30
32.8	32.8	32.8	32.8	33.1	33.1	33.4	33.8	33.8	33.5	05 30	35.2	14 50	32.3	2.9	31
33.1	33.1	33.2	33.2	33.2	33.3	33.4	33.6	33.7	33.6					3.1	Mean
33.9	33.9	33.9	33.8	33.8	33.7	33.8	33.9	34.0							Mean†
32.7	32.7	32.9	32.7	32.6	33.0	33.1	33.3	33.4							Mean††

†Five international quiet days.

††Five international disturbed days.

△Loss of record; day omitted for means.

TABLE 5

Hourly values of Declination (Westerly), 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

November

2° plus tabular quantities

Date	Hours G M T														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,
1††	34.2	34.2	33.4	33.4	33.4	33.6	34.0	34.0	34.2	33.2	33.1	33.1	33.2	33.2	33.1
2††	35.0	35.0	35.8	34.4	33.6	33.4	33.4	33.4	33.2	33.1	33.1	33.1	33.2	32.8	32.6
3††	34.2	34.7	34.7	34.2	35.0	34.7	34.5	34.7	33.7	33.4	33.4	33.7	33.6	33.4	33.4
4	34.2	33.9	33.4	33.6	34.2	34.0	34.8	34.5	34.0	34.0	34.5	34.2	33.9	33.4	33.6
5	35.0	34.8	34.5	33.7	33.2	33.6	34.5	34.8	34.0	33.1	33.4	33.4	33.1	33.1	33.1
6	34.2	34.2	34.2	33.2	32.6	32.9	33.2	33.1	32.4	32.1	32.4	32.6	32.8	33.1	33.2
7	35.0	35.0	35.0	34.2	33.7	34.2	34.2	33.7	33.4	33.4	33.4	33.7	33.9	33.9	33.9
8	34.8	35.0	35.0	34.2	33.7	34.2	35.0	35.0	34.7	33.7	33.4	33.4	34.2	34.0	33.4
9†	34.2	34.2	34.2	34.0	34.2	34.7	35.0	34.8	33.9	33.4	33.4	33.7	34.0	33.9	33.4
10†	34.2	31.7	34.4	33.7	33.7	34.7	35.0	34.8	34.2	33.4	33.2	33.2	33.4	33.4	33.4
11	34.2	34.7	34.4	33.6	33.4	33.4	33.4	33.2	32.8	32.4	32.6	32.8	32.8	33.1	33.2
12	34.5	34.8	35.0	34.2	35.6	35.8	35.8	35.0	34.5	34.7	34.7	34.5	34.0	33.6	33.4
13	34.7	35.0	34.7	34.2	33.9	33.4	34.0	34.4	33.4	33.2	33.2	33.4	33.9	33.7	33.7
14	34.7	34.8	34.4	33.7	33.4	34.2	35.0	34.5	33.9	33.2	33.2	33.4	33.4	33.4	33.4
15†	33.4	34.2	34.2	33.9	34.0	33.4	33.4	33.9	34.4	33.4	32.6	32.6	32.6	32.9	33.1
16†	34.0	34.0	33.8	32.4	31.9	32.4	32.9	33.2	33.0	33.0	32.9	32.4	32.4	32.4	32.4
17†	33.2	33.2	33.2	32.4	32.4	32.7	34.0	34.0	34.5	33.8	33.2	33.0	32.9	32.7	32.7
18	33.2	33.4	33.4	33.2	34.7	34.2	34.2	34.5	34.6	34.0	33.7	33.8	34.0	33.8	33.4
19	34.5	34.8	34.8	34.6	34.2	34.0	34.3	34.6	34.2	33.4	33.4	33.2	33.0	32.9	32.9
20††	33.2	34.2	34.8	34.3	34.2	33.7	33.2	33.2	32.4	32.4	32.4	32.4	32.4	31.9	31.6
21	34.0	34.5	34.8	34.8	34.5	34.5	34.2	34.0	33.4	33.0	33.0	33.4	32.9	32.7	32.9
22	34.3	34.6	34.8	34.5	33.7	34.8	34.0	33.7	33.2	33.0	32.9	32.9	32.9	33.0	33.2
23	34.8	35.1	35.6	35.1	34.6	34.3	33.5	33.5	33.2	32.7	32.9	33.0	33.0	33.2	33.7
24	34.3	34.8	34.8	34.3	34.0	34.2	34.2	33.5	33.2	33.2	33.2	33.2	33.2	33.2	33.2
25	34.5	34.6	34.8	34.6	34.8	34.5	34.5	34.6	34.5	33.5	33.2	33.2	33.2	33.2	33.5
26	35.3	35.3	35.6	35.6	34.8	34.8	34.5	33.8	33.7	33.5	33.7	34.0	33.8	33.7	33.8
27	34.6	34.8	35.3	35.1	34.8	34.8	34.6	34.5	33.5	33.2	33.5	33.5	34.2	33.5	34.0
28	34.8	35.3	35.4	35.4	36.1	35.6	34.8	34.5	33.2	33.2	33.2	33.2	33.2	33.0	33.0
29	34.6	34.8	35.6	35.0	34.6	34.6	34.5	34.5	33.4	33.0	33.2	33.2	33.2	33.2	33.5
30††	34.8	35.4	35.4	35.1	34.8	34.8	34.5	34.6	34.5	34.3	33.8	33.2	33.2	33.5	33.8
Mean	34.4	34.6	34.6	34.1	34.0	34.1	34.2	34.1	33.7	33.3	33.3	33.3	33.3	33.3	33.3
Mean†	33.8	34.1	34.0	33.3	33.2	33.6	34.1	34.1	34.0	33.4	33.1	33.0	33.1	33.1	33.0
Mean††	34.3	34.7	34.8	34.3	34.2	34.0	34.0	34.2	33.6	33.3	33.2	33.1	33.1	33.0	32.9

| Five international quiet days

†† Five international disturbed days

△ Loss of record; day omitted for means.

TABLE 5

Hourly Values of Declination (Westerly), 1954
(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

November

2° plus tabular quantities.

Hours G M T									Mean	Maximum		Minimum		Range	Date
15	16	17	18	19	20	21	22	23		Time	Mag	Time	Mag		
'	'	'	'	'	'	'	'	'	'	H M	'	H M	'	'	
33.2	33.4	33.2	33.4	33.2	33.4	33.7	34.7	31.7	33.6	22 10	34.8	10 10	32.4	2.4	1††
33.1	33.2	33.4	33.4	33.4	33.4	33.4	34.2	34.2	33.6	01 52	35.8	14 30	32.4	3.4	2††
33.4	33.6	33.4	33.4	33.4	33.7	33.7	34.2	34.2	33.9	06 10	34.8	14 30	33.2	1.6	3††
33.9	34.2	34.2	34.2	34.2	34.2	34.5	34.7	35.0	34.1	23 30	35.0	14 50	33.1	1.9	4
33.2	33.2	33.2	33.4	33.2	33.4	33.4	34.0	34.2	33.7	06 50	35.0	09 10	32.3	2.5	5
33.2	33.2	33.2	33.2	33.4	33.4	34.0	34.2	34.7	33.3	23 30	34.7	09 26	31.8	2.9	6
34.0	34.2	34.2	34.2	34.2	34.4	34.5	31.7	34.8	34.2	01 00	35.0	09 50	32.8	2.2	7
33.4	33.2	33.1	33.2	33.2	33.2	33.4	33.6	31.2	33.9	02 00	35.0	19 10	32.9	2.1	8
33.6	33.7	33.7	33.9	32.9	34.0	34.2	34.2	34.5	34.0	06 10	35.0	09 10	32.9	2.1	9†
33.4	33.4	33.4	33.4	33.9	33.4	33.6	33.7	34.2	33.8	05 50	35.0	10 06	32.6	2.4	10†
33.2	33.2	33.1	33.1	33.4	33.4	33.6	34.0	34.7	33.4	01 00	34.7	09 50	32.0	2.7	11
33.4	34.0	34.0	33.9	33.7	33.4	33.6	34.2	34.4	34.3	04 30	35.8	20 10	33.1	2.7	12
34.0	34.0	34.2	34.2	34.2	34.0	34.2	34.7	34.7	34.0	01 40	35.0	09 30	32.8	2.2	13
33.4	33.4	33.2	33.1	33.1	32.9	33.1	33.2	33.4	33.6	05 30	35.0	20 10	32.6	2.4	14
33.2	33.2	33.4	33.4	33.4	33.4	33.4	34.0	34.2	33.5	07 30	34.4	10 10	32.0	2.4	15†
32.4	32.6	32.6	32.7	32.7	32.9	32.9	33.0	33.2	32.8	01 00	34.0	03 30	31.8	2.2	16†
32.6	32.9	33.0	33.0	33.2	33.2	33.2	33.2	33.2	33.1	08 30	34.6	03 00	32.2	2.4	17†
33.2	33.2	33.2	33.2	33.5	33.8	34.0	34.0	34.3	33.7	06 50	34.6	15 10	33.2	1.4	18
32.9	32.6	32.6	32.7	32.9	32.9	33.0	33.2	33.2	33.5	02 00	34.8	18 30	32.4	2.4	19
32.4	32.4	32.9	33.0	33.0	33.0	33.2	33.2	33.7	33.0	02 48	35.0	13 30	31.6	3.4	20††
33.0	33.0	33.2	33.2	33.2	33.2	33.5	34.0	34.3	33.6	02 30	34.8	13 18	32.6	2.2	21
33.2	33.5	34.0	34.0	31.3	34.5	34.6	34.6	34.8	33.9	02 40	34.8	11 30	32.9	1.9	22
34.0	33.5	32.9	32.7	33.2	33.5	33.4	33.2	33.8	33.7	02 00	35.6	08 58	31.8	3.8	23
33.2	33.2	33.5	33.8	34.0	34.0	34.0	34.0	34.5	33.8	07 40	34.8	08 50	33.0	1.8	24
34.0	34.0	34.0	34.0	31.0	34.0	34.5	34.8	35.0	34.2	23 30	35.0	11 58	33.0	2.0	25
34.0	34.3	34.0	34.0	34.0	34.0	34.0	34.0	33.8	34.3	02 40	35.6	08 30	33.2	2.4	26
34.0	34.3	34.5	34.3	34.5	34.5	34.5	34.6	31.8	34.3	02 40	35.3	12 30	32.7	2.6	27
33.5	34.0	34.0	34.0	34.3	34.5	34.5	34.5	34.6	34.2	04 50	36.1	12 50	33.0	3.1	28
33.8	34.0	34.0	31.0	34.5	34.5	34.6	34.6	34.6	34.1	02 20	35.6	08 50	33.0	2.6	29
34.0	34.0	34.0	34.6	34.5	34.6	34.6	34.8	31.8	34.4	02 00	35.4	12 30	33.0	2.4	30††
33.7	33.5	33.5	33.5	33.6	33.7	33.8	34.1	34.3	33.8					2.4	Mean
33.0	33.2	33.2	33.3	33.3	33.4	33.5	33.6	33.9							Mean†
33.2	33.3	33.4	33.6	33.5	33.6	33.7	34.2	34.3							Mean††

† Five international quiet days.

†† Five international disturbed days.

△ Loss of record ; day omitted for means.

TABLE 6

Hourly Values of Declination (Westerly), 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

December

2° plus tabular quantities

Date	Hours G. M. T.														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	34.4	34.4	34.6	34.6	33.8	33.0	33.0	33.0	33.0	32.8	32.8	32.8	33.0	33.0	33.0
2	34.4	34.4	34.6	34.6	34.4	34.4	33.8	33.0	32.7	32.7	32.7	32.7	32.8	33.0	33.0
3	34.4	34.4	34.6	34.6	34.8	34.9	34.9	34.6	34.4	33.8	33.0	33.5	33.8	33.8	33.8
4	34.4	34.4	34.4	34.1	34.3	34.4	34.3	34.3	34.3	34.1	33.3	33.0	33.0	33.0	33.0
5	34.6	34.9	35.2	35.4	35.7	35.9	36.0	35.6	34.6	34.6	34.3	33.8	33.6	33.8	33.8
6	34.6	34.6	34.6	34.6	34.6	34.9	35.2	34.6	34.3	33.8	33.5	33.5	33.6	33.6	33.8
7††	34.6	34.6	34.8	34.8	34.6	34.6	34.6	34.4	33.2	32.8	32.8	33.0	33.3	33.8	33.8
8	34.4	34.4	34.6	34.6	34.4	34.3	34.0	33.3	33.0	33.0	32.8	32.8	33.0	33.3	33.5
9	34.6	34.9	35.4	35.9	35.9	35.4	34.6	34.3	33.3	33.0	33.0	33.0	33.3	33.8	33.8
10†	34.4	34.3	34.4	34.4	34.1	33.8	34.0	33.3	32.5	31.9	32.8	33.0	33.0	33.5	33.6
11†	34.3	34.3	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.1	33.5	33.0	33.2	33.6	33.6
12	34.6	34.9	35.6	35.7	35.9	35.4	35.6	35.2	34.8	34.6	34.6	34.4	34.1	34.3	34.1
13	34.6	34.8	35.2	35.4	35.2	34.8	34.6	34.0	33.8	33.8	33.2	33.2	33.6	33.6	33.8
14†	34.3	34.4	34.6	34.3	34.3	34.4	34.4	34.4	34.3	33.6	33.5	33.3	33.0	33.0	33.0
15†	34.0	34.1	34.1	33.8	34.4	34.6	34.6	34.9	35.2	34.4	33.6	33.0	32.8	33.0	33.5
16†	33.8	33.5	33.5	33.8	34.3	34.5	34.3	34.3	34.3	34.1	33.3	32.7	32.7	33.3	33.5
17††	34.9	35.1	35.3	35.3	35.1	35.1	35.1	34.3	32.9	31.1	32.7	32.7	32.2	31.9	31.3
18††	34.3	34.3	34.3	33.8	33.0	32.7	32.7	32.7	32.7	32.7	32.9	32.9	33.2	33.0	32.7
19	34.1	34.3	34.3	34.3	34.3	34.3	34.1	33.3	32.7	32.7	32.7	32.5	32.7	32.7	32.7
20††	34.6	34.8	34.8	34.1	33.8	33.7	33.5	33.3	32.7	33.0	33.3	32.9	32.7	32.7	33.2
21	34.9	35.1	35.1	34.5	34.3	34.3	34.3	34.1	33.3	32.7	32.4	32.4	32.7	32.9	33.0
22	34.3	34.8	34.8	34.3	34.3	34.6	35.1	35.3	34.3	33.8	33.0	32.9	33.3	33.5	33.5
23	34.6	35.1	35.6	34.8	34.3	34.3	34.3	34.1	34.0	33.5	32.7	32.5	32.5	32.5	32.5
24	34.3	34.3	34.5	34.8	34.3	34.3	34.5	34.5	34.3	34.3	34.1	34.0	34.0	33.8	33.5
25	35.3	35.4	35.6	35.1	34.0	34.5	34.5	34.1	33.0	32.7	32.7	32.9	33.5	33.5	33.5
26	34.3	34.9	35.4	34.8	34.8	35.3	34.8	33.2	32.5	32.7	32.7	32.9	33.7	33.8	34.0
27††	34.8	35.1	35.4	35.1	34.8	35.1	34.3	33.2	32.5	32.5	32.5	32.7	33.5	32.4	32.7
28	34.3	34.9	35.4	35.1	34.3	34.3	34.3	33.5	32.4	32.1	31.7	31.6	32.4	32.7	32.9
29	34.3	34.8	34.8	34.6	34.6	35.1	35.4	34.6	33.3	32.7	32.5	32.7	33.7	34.0	34.0
30	34.9	35.4	35.9	35.3	35.1	35.9	35.9	35.3	33.8	32.5	32.2	32.7	33.2	33.3	33.5
31	34.1	34.3	34.3	34.1	34.3	35.7	37.2	36.5	35.1	33.7	32.7	32.7	33.5	33.7	33.5
Mean	34.5	34.6	34.8	34.7	34.5	34.6	34.6	34.2	33.6	33.6	33.0	33.0	33.2	33.3	33.3
Mean†	34.2	34.1	34.2	34.2	34.3	34.4	34.4	34.3	34.2	33.6	33.3	33.0	32.9	33.3	33.4
Mean††	34.6	34.8	34.9	34.6	34.3	34.2	34.0	33.6	32.8	33.0	32.8	32.8	33.0	32.8	32.7

† Five international quiet days

†† Five international disturbed days.

△ Loss of record; day omitted for means.

TABLE 6

Hourly values of Declination (Westerly), 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

December

2° plus tabular quantities

Hours G M T										Maximum		Minimum		Range	Date	
15	16	17	18	19	20	21	22	23	Mean	Time	Mag	Time	Mag			
										H	M	H	M			
33.2	33.5	33.6	33.8	33.8	34.1	34.3	34.3	34.4	33.6	02	40	35.1	10 10	32.8	2.3	1
33.0	33.0	33.3	33.6	33.6	33.8	34.0	34.1	34.3	33.6	01	50	35.4	09 30	32.5	2.9	2
33.8	33.8	33.8	33.8	33.8	34.0	34.3	34.4	34.6	34.1	02	48	35.1	09 50	33.0	2.1	3
33.2	33.8	33.8	33.8	33.6	33.8	34.1	34.3	34.4	33.9	02	10	34.6	11 30	33.0	1.6	4
33.8	33.8	33.5	33.6	33.8	34.0	34.3	34.3	34.4	34.5	05	50	36.0	11 30	33.3	2.7	5
33.8	33.8	33.8	33.8	33.8	34.0	34.2	34.3	34.4	34.1	05	50	35.6	10 10	33.3	2.3	6
34.0	34.1	34.1	34.1	34.1	33.8	33.8	34.0	34.3	31.1	03	00	35.4	08 30	32.7	2.7	7††
33.6	33.6	33.6	33.6	33.8	33.8	33.8	34.3	34.3	33.7	02	52	35.2	10 30	32.7	2.5	8
33.8	33.8	33.6	33.6	33.6	33.8	33.8	34.3	34.3	34.1	03	00	36.5	09 30	33.0	3.5	9
33.8	33.8	33.8	33.8	33.8	33.8	34.0	34.1	34.3	33.7	03	00	35.1	08 50	31.7	3.4	10†
33.8	33.8	34.1	34.3	34.3	34.4	34.4	34.4	34.6	34.2	23	40	34.9	10 50	33.0	1.9	11†
34.1	34.1	33.8	33.8	33.8	34.0	34.3	34.4	34.4	34.6	03	30	36.2	18 30	33.6	2.6	12
33.8	33.8	33.8	33.8	33.8	33.8	33.8	33.8	34.1	34.1	03	00	35.7	10 30	33.0	2.7	13
33.0	33.2	33.6	33.6	33.8	33.8	33.8	33.8	33.8	33.8	03	00	35.2	12 26	32.8	2.4	14†
33.6	33.6	33.8	33.8	34.0	34.1	34.0	34.1	34.3	34.0	08	10	35.4	11 50	32.7	2.7	15†
33.7	33.8	34.0	34.1	34.1	34.1	34.1	34.3	34.5	33.9	23	40	34.9	11 46	32.5	2.4	16†
32.1	32.5	33.0	33.3	33.5	34.0	34.0	34.1	34.3	33.6	03	08	35.6	14 10	31.1	4.5	17††
32.7	32.7	32.9	33.2	33.3	33.5	33.8	34.0	34.1	33.3	01	00	34.5	08 46	32.5	2.0	18††
32.5	32.7	33.2	33.2	33.3	34.0	34.0	34.1	34.3	33.4	23	40	34.5	11 10	32.4	2.1	19
33.5	33.5	33.5	33.8	33.8	34.0	34.1	34.5	34.9	33.7	02	00	35.1	13 10	32.7	2.4	20††
33.2	33.3	33.5	33.5	33.5	33.8	34.0	34.1	34.1	33.7	01	36	35.1	10 50	32.1	3.0	21
33.5	33.5	33.7	33.8	34.0	34.0	34.1	34.3	34.3	34.0	06	30	35.4	11 30	32.7	2.7	22
32.7	32.7	32.9	33.2	33.3	33.7	33.8	34.1	34.3	33.7	02	12	35.6	10 30	32.4	3.2	23
34.0	34.0	34.1	34.1	34.3	34.3	34.5	34.6	35.4	34.3	02	20	34.9	14 10	33.5	1.4	24
33.7	33.8	34.0	34.1	34.6	34.1	34.1	34.3	34.3	34.5	02	20	35.7	09 50	32.5	3.2	25
34.0	34.1	34.1	34.3	34.3	34.3	34.3	34.3	34.8	34.1	01	56	35.6	07 46	32.4	3.2	26
32.7	33.3	33.5	33.7	33.8	34.0	34.1	34.1	34.1	33.7	01	48	35.9	13 10	31.6	4.3	27††
33.0	33.3	33.5	33.5	33.7	33.8	34.0	34.1	34.5	33.5	01	52	35.6	10 12	30.9	4.7	28
34.0	34.0	34.1	34.1	34.1	34.1	34.1	34.3	34.5	34.1	05	50	35.4	10 10	32.2	3.2	29
33.5	33.5	33.5	33.5	33.7	33.7	33.8	34.0	34.1	34.1	05	50	35.9	09 50	31.9	4.0	30
33.7	33.8	34.0	34.1	34.1	34.1	34.1	34.3	34.3	34.2	06	30	37.3	10 30	32.5	4.8	31
33.4	33.6	33.7	33.7	33.8	33.9	34.1	34.2	34.4	33.9						2.6	Mean
33.6	33.6	33.9	33.9	34.0	34.0	34.1	34.1	34.3								Mean†
33.0	33.2	33.4	33.6	33.7	33.9	34.0	34.1	34.3								Mean††

† Five international quiet days.

†† Five international disturbed days.

△ Loss of record, day omitted for means.

TABLE 7

Hourly values of Horizontal Force, 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

July

39,000 γ plus tabular quantities

Date	Hours G M T														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1††	492	479	478	480	502	502	490	498	508	498	470	457	454	457	458
2†	472	472	473	478	498	514	524	518	510	494	478	468	470	478	474
3†	478	476	478	491	512	534	536	542	540	532	512	488	488	488	486
4†	490	484	494	500	522	537	545	548	512	522	502	486	482	478	478
5	484	481	482	489	502	535	554	564	550	522	486	475	474	480	481
6	490	491	492	498	512	522	530	522	510	491	466	450	448	460	470
7	474	476	486	494	514	530	537	536	528	508	472	444	448	458	466
8	476	481	485	489	506	512	514	510	502	492	486	471	464	468	472
9†	476	476	482	494	512	530	544	546	538	519	502	487	478	476	478
10†	494	492	496	507	529	542	540	532	518	494	478	477	482	483	478
11	486	492	497	503	514	514	510	507	500	501	494	482	490	497	494
12	490	491	501	510	534	556	566	561	546	527	514	508	506	503	500
13	486	486	488	498	512	527	530	534	524	510	495	478	482	484	482
14††	486	490	498	506	516	518	517	510	518	509	502	484	470	476	486
15	478	481	497	513	534	550	556	532	502	478	463	442	446	462	454
16	478	481	490	505	518	526	524	518	510	502	493	486	476	478	478
17	474	476	490	505	514	519	530	527	518	490	474	472	473	478	476
18	490	507	502	506	511	528	538	527	518	500	484	476	476	481	484
19	480	483	489	491	519	514	550	540	538	522	498	474	468	478	483
20	482	478	475	489	503	514	526	514	510	490	473	465	470	478	478
21	478	484	496	507	516	526	534	513	504	498	500	510	498	488	484
22	484	489	492	502	521	534	542	534	522	506	490	474	470	478	478
23	488	490	494	503	512	522	524	521	516	518	516	498	480	484	481
24	486	482	494	506	526	540	548	542	512	482	474	470	475	484	486
25††	488	490	504	524	518	542	528	511	481	470	478	460	443	450	458
26	482	482	484	497	506	521	530	520	507	486	471	470	465	466	470
27††	486	494	496	500	498	508	513	511	516	514	507	486	475	472	470
28††	486	489	496	504	510	496	470	451	458	470	477	470	447	451	463
29	476	478	480	494	510	529	530	521	516	487	466	457	467	472	475
30	484	486	497	510	529	542	546	545	529	514	498	486	478	478	484
31	486	486	490	503	534	563	571	555	514	492	476	468	468	472	475
Mean	483	485	490	500	515	528	532	526	516	501	487	475	471	475	477
Mean†	482	480	485	494	515	531	538	537	530	512	494	481	480	481	479
Mean††	488	488	494	503	509	515	516	497	496	492	487	471	458	461	467

† Five international quiet days

†† Five international disturbed days.

△ Loss of record, day omitted for means.

TABLE 7

Hourly values of Horizontal Force, 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

July

39,000 γ plus tabular quantities

									Mean	Maximum		Minimum		Range	Date
15	16	17	18	19	20	21	22	23		Time	Mag	Time	Mag		
γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	H M	γ	H M	γ	γ	
462	464	468	470	470	473	474	474	473	477	01 58	510	11 10	152	58	1††
473	473	470	470	472	469	474	476	478	482	06 02	528	11 12	464	64	2†
484	482	482	487	488	489	476	492	491	498	07 14	548	00 34	474	74	3†
482	482	484	484	484	482	482	482	482	498	07 18	552	13 10	476	76	4†
480	486	487	444	484	486	488	492	490	496	06 51	568	11 46	470	98	5
468	470	470	475	468	468	474	476	477	483	05 58	540	11 58	444	96	6
466	472	474	476	476	476	476	476	476	485	06 10	542	11 02	440	102	7
474	476	476	474	472	470	472	476	476	483	06 02	548	12 02	462	56	8
482	482	486	488	488	490	492	492	494	497	06 30	558	13 02	474	84	9†
482	484	481	488	490	492	486	489	489	497	05 38	544	11 10	470	74	10†
496	498	494	499	498	500	502	500	500	499	01 42	518	11 18	481	37	11
490	470	470	478	484	486	487	486	481	506	06 20	572	17 02	468	104	12
482	482	484	485	487	487	486	485	488	495	07 02	542	11 10	476	66	13
479	486	471	475	478	478	481	482	478	491	08 06	526	12 26	466	60	14††
455	470	474	486	478	478	478	481	480	486	05 42	560	11 22	428	132	15
478	480	480	484	481	474	467	465	470	489	06 46	528	22 06	462	66	16
476	476	476	474	480	479	778	481	490	489	06 10	538	11 50	470	68	17
484	481	482	483	484	482	482	482	481	495	05 51	546	11 26	471	75	18
494	502	500	502	488	494	486	481	480	499	05 42	555	12 10	466	90	19
476	475	476	476	478	478	480	480	482	485	05 52	540	11 26	460	80	20
480	472	480	482	481	489	488	487	488	495	05 26	545	16 02	470	75	21
482	482	482	483	484	486	484	481	488	495	05 46	546	11 46	464	82	22
481	484	484	484	484	486	488	487	486	496	04 32	532	11 42	478	54	23
482	484	484	483	484	484	484	485	484	494	05 42	556	11 10	466	90	24
465	470	474	480	482	481	483	478	480	482	05 06	556	11 50	438	118	25††
480	482	482	482	482	484	484	486	488	488	05 20	540	12 32	456	84	26
468	478	480	486	484	484	484	487	486	491	05 22	520	14 46	466	54	27††
459	454	474	470	470	474	477	478	476	474	03 50	516	12 22	444	72	28††
472	476	478	482	481	482	482	484	483	487	06 02	540	11 10	454	86	29
480	482	482	486	486	487	487	488	483	499	06 26	551	12 20	474	77	30
475	476	480	484	484	484	486	482	481	495	05 40	576	11 40	466	110	31
477	478	480	481	482	482	482	483	483	491					79	Mean
481	481	481	483	484	484	482	486	487							Mean †
467	470	473	476	477	478	480	480	479							Mean ††

† Five international quiet days

†† Five international disturbed days.

△ Loss of record; day omitted for means.

TABLE 8

Hourly values of Horizontal Force, 1954

(Averages for sixty minutes centered at the full hours of Greenwich Mean Time)

August

39,000 γ plus tabular quantities

Date	Hours G M T														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	488	489	490	497	510	518	530	542	548	538	542	486	462	453	461
2	486	490	498	504	510	512	510	502	494	484	478	476	481	484	480
3†	484	488	496	504	521	527	532	532	526	523	516	491	486	484	484
4†	497	502	511	530	548	566	566	554	530	524	512	198	486	482	466
5†	489	490	496	508	522	530	542	540	538	530	518	500	486	484	488
6††	487	486	488	504	534	534	540	538	522	506	197	181	170	454	451
7	475	476	490	510	537	546	540	535	526	515	479	458	458	465	458
8†	483	486	494	510	513	522	534	538	526	516	500	482	478	486	485
9	492	496	502	508	530	546	543	538	523	508	190	484	487	487	484
10	490	495	506	526	535	550	551	527	520	503	491	488	487	486	482
11	492	492	494	506	523	538	544	538	522	502	478	466	470	482	484
12	486	484	490	502	516	526	534	534	526	510	491	486	486	486	484
13†	482	484	494	513	520	532	534	524	518	503	500	498	500	501	499
14	487	491	498	506	522	531	538	546	539	522	494	475	478	486	487
15	494	494	503	516	526	534	542	535	522	508	498	491	494	496	491
16	493	500	513	530	546	552	545	522	512	481	468	460	468	462	456
17	486	492	503	514	530	540	548	534	521	486	478	474	482	486	484
18	483	486	486	499	521	542	558	562	548	531	514	491	480	484	484
19	484	482	484	502	522	544	550	538	529	511	500	482	479	486	490
20	496	494	506	516	536	548	550	544	537	522	513	500	492	488	486
21	494	502	514	530	558	554	562	526	516	494	482	460	475	482	478
22††	490	483	478	484	486	488	497	518	518	516	510	488	471	474	476
23	484	484	490	508	521	540	548	544	534	518	505	492	484	476	479
24††	502	500	510	521	527	552	540	524	500	494	492	487	487	489	472
25	482	484	498	515	526	532	534	524	513	502	492	488	488	488	484
26††	492	495	508	518	545	561	534	534	533	521	508	486	484	484	480
27	498	492	495	498	513	528	550	558	550	530	498	476	474	486	481
28	486	488	507	527	545	548	545	546	543	530	510	480	472	482	492
29††	491	490	492	504	526	553	553	538	522	490	467	466	480	478	476
30	491	488	498	516	546	558	557	545	522	511	500	479	471	482	478
31	484	484	491	508	534	545	547	544	526	515	508	500	496	496	492
Mean	489	490	498	511	528	539	542	536	526	511	498	483	480	482	480
Mean†	487	490	499	513	527	535	542	538	528	519	509	494	487	487	484
Mean††	492	491	495	506	524	538	533	530	519	505	495	482	479	476	472

† Five international quiet days

†† Five international disturbed days.

△ Loss of record, day omitted for means.

TABLE 8

Hourly values of Horizontal Force, 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

August

39,000 γ plus tabular quantities

Hours G M T									Mean	Maximum		Minimum		Range	Date
15	16	17	18	19	20	21	22	23		Time	Mag	Time	Mag		
γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	H M	γ	H. M.	γ	γ	
464	469	472	474	478	486	482	483	484	494	08 10	551	12 54	448	103	1
476	481	478	476	478	479	479	481	483	488	04 30	516	11 02	472	44	2
486	487	486	487	491	486	489	492	494	500	06 31	536	13 46	482	54	3†
463	466	473	476	479	487	486	486	490	503	06 14	572	15 18	460	112	4†
486	494	490	490	492	481	479	478	490	502	06 18	544	21 40	473	71	5†
465	470	470	473	480	474	497	482	478	491	07 06	552	13 26	446	106	6††
466	475	478	477	486	488	482	484	486	491	05 02	550	11 46	449	101	7
481	482	484	489	489	488	488	489	488	497	06 50	548	11 50	470	78	8†
479	478	482	484	484	489	484	487	484	499	05 31	556	15 46	473	83	9
482	487	486	490	492	492	494	495	496	502	04 58	560	14 32	478	82	10
484	486	481	484	486	481	486	489	487	496	05 40	548	10 50	462	86	11
483	483	482	484	486	486	484	484	481	496	04 58	510	14 42	478	62	12
497	490	487	494	496	498	499	498	491	503	04 31	518	00 20	480	68	13†
492	490	492	490	492	492	491	490	488	501	06 50	556	11 26	472	84	14
492	484	486	487	492	502	494	492	487	503	06 34	548	16 10	482	66	15
460	465	474	472	474	486	482	482	486	491	05 26	564	13 40	452	112	16
482	480	480	482	484	484	484	484	484	496	06 38	560	10 31	470	90	17
479	482	480	484	487	490	494	490	486	502	06 40	568	14 54	476	92	18
491	491	492	488	494	492	494	498	494	501	05 26	556	11 42	476	80	19
481	478	486	486	490	492	492	492	492	505	06 31	562	16 02	474	88	20
478	481	483	484	486	482	484	487	490	499	05 50	576	10 16	452	124	21
476	480	483	486	489	490	488	491	487	490	07 50	521	13 20	470	54	22††
478	476	473	471	476	491	491	491	490	498	05 50	551	17 06	472	79	23
468	476	476	478	478	487	480	480	483	496	04 50	564	14 40	462	102	24††
484	486	484	481	484	487	490	497	492	497	05 32	540	14 12	480	60	25
478	474	482	483	484	486	497	489	492	502	04 50	578	15 35	470	108	26††
484	487	486	487	484	482	481	484	487	500	07 02	568	11 20	471	97	27
494	498	498	496	492	492	492	490	486	506	06 50	556	11 40	468	88	28
479	483	482	480	490	488	486	484	492	496	06 06	564	10 22	460	104	29††
474	467	470	472	476	481	486	484	484	497	05 14	564	11 54	466	98	30
486	480	475	478	492	491	494	500	500	503	05 38	556	17 18	470	86	31
480	481	482	483	486	488	488	488	488	498					86	Mean
483	481	484	487	489	488	488	489	491							Mean†
473	477	479	480	481	485	490	485	486							Mean††

† Five international quiet days.

†† Five international disturbed days.

△ Loss of record; day omitted for means.

TABLE 9

Hourly values of Horizontal Force, 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

September

39,000 γ plus tabular quantities

Date	Hours G. M. T														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1 ††	482	478	478	496	520	522	528	502	509	487	468	461	474	466	442
2	465	468	476	480	488	506	502	496	498	482	462	445	452	461	464
3	466	470	488	504	521	538	534	522	509	486	467	442	442	456	452
4	462	468	478	508	533	538	539	526	515	501	482	477	458	462	451
5	468	472	478	494	516	530	29	510	490	482	489	453	454	450	454
6	472	468	468	478	501	522	524	525	519	504	494	486	482	487	480
7	460	458	468	490	502	518	514	498	478	466	460	450	454	464	468
8 †	464	464	458	477	499	528	548	541	528	510	493	484	480	475	474
9	466	466	476	500	517	540	550	527	504	484	461	456	463	474	462
10	470	470	477	500	517	530	525	510	495	478	468	470	482	483	470
11	472	472	483	500	525	533	538	525	496	483	472	464	452	441	440
12 †	464	466	480	504	525	540	530	518	493	478	461	458	466	478	480
13 †	482	482	498	516	525	528	533	514	503	494	483	476	478	477	478
14 ††	466	458	464	498	488	496	493	506	502	502	498	470	434	416	422
15	468	472	482	504	530	549	557	548	525	480	440	432	426	440	446
16	466	460	477	496	512	532	536	507	490	462	458	456	464	460	446
17	463	458	466	486	509	530	544	544	531	506	490	482	476	480	478
18	472	470	476	502	528	557	578	573	541	512	480	450	456	471	472
19 †	473	472	474	488	518	538	558	558	533	507	486	470	471	474	472
20 ††	485	486	501	510	522	540	526	532	510	498	477	456	448	458	434
21 ††	438	446	467	476	502	505	491	489	483	458	452	434	442	450	446
22	462	464	483	504	530	542	531	512	483	468	472	467	468	464	474
23 †	478	472	476	494	526	540	543	530	506	475	468	466	466	466	461
24	474	470	482	516	546	554	546	520	496	482	477	470	478	480	487
25	482	477	490	516	550	568	554	524	474	454	464	480	474	464	462
26	472	476	490	512	550	568	564	546	506	480	474	472	474	478	474
27	481	478	494	517	546	568	572	550	512	482	473	477	490	496	490
28	480	484	483	514	536	541	526	494	464	450	458	458	460	466	462
29 ††	480	476	470	500	534	564	574	552	526	494	452	462	463	455	454
30	462	460	482	510	536	538	522	486	454	436	435	456	470	472	474
Mean	470	469	479	500	522	537	537	523	502	483	470	463	463	466	462
Mean †	472	471	477	496	519	535	542	532	513	493	478	471	472	474	473
Mean ††	470	469	476	496	513	525	522	516	506	488	469	457	452	449	440

† Five international quiet days.

†† Five international disturbed days.

Δ Loss of record, day omitted for means.

TABLE 9

Hourly values of Horizontal Force, 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

September

39,000 γ plus tabular quantities

Hours G M T									Mean	Maximum		Minimum		Ran	Date
15	16	17	18	19	20	21	22	23		Time	Mag	Time	Mag		
γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	H. M.	γ	H. M.	γ		
458	440	438	442	442	453	466	465	460	473	06 10	534	15 26	436	98	1††
458	456	461	454	458	462	464	468	466	471	05 42	520	10 42	440	80	2
456	440	437	446	451	474	462	460	461	474	05 36	548	11 31	424	124	3
460	450	466	467	468	470	470	469	472	483	05 26	560	16 10	438	122	4
463	466	464	464	474	472	472	470	470	479	05 26	536	12 50	443	93	5
468	443	427	430	443	461	446	452	458	477	06 18	536	17 46	424	112	6
472	472	477	478	468	468	474	463	464	474	05 38	532	11 06	448	84	7
474	471	464	469	466	466	474	466	468	485	05 58	562	16 46	460	102	8†
448	444	454	456	458	460	472	470	466	478	05 50	552	15 18	440	112	9
460	460	456	456	458	460	462	466	470	479	05 06	536	17 15	454	82	10
438	442	444	452	446	448	451	469	464	473	06 10	544	15 46	437	107	11
480	477	477	478	478	480	480	480	480	485	05 02	547	10 30	452	95	12†
480	476	477	480	482	485	488	493	492	493	06 02	536	16 32	472	64	13†
413	432	442	446	458	458	461	464	474	465	09 38	512	15 06	408	104	14††
458	457	458	468	466	464	466	467	470	478	05 54	560	12 02	422	138	15
460	453	456	470	470	463	466	470	466	475	05 55	546	14 10	440	106	16
478	478	478	478	478	482	480	474	472	489	06 20	552	00 21	456	96	17
468	466	466	466	477	474	470	479	477	491	06 46	584	11 06	446	138	18
474	472	474	482	484	486	486	480	480	492	06 42	562	11 46	466	96	19†
427	398	426	418	434	438	439	431	438	468	05 50	566	16 06	384	182	20††
442	462	448	468	458	468	458	458	460	463	04 02	516	11 14	428	88	21††
458	456	460	472	468	472	476	476	478	481	04 54	540	15 28	452	88	22
462	464	466	464	467	472	472	472	472	482	05 40	546	14 36	456	90	23†
486	478	483	482	481	486	485	486	483	493	05 20	562	11 10	468	94	24
466	478	474	468	474	470	478	466	470	487	05 32	576	03 46	452	124	25
482	478	476	481	483	482	480	480	481	494	05 50	576	11 26	466	110	26
484	474	458	458	484	483	470	474	480	495	05 42	581	18 06	456	125	27
476	478	482	480	481	478	480	477	480	483	04 40	552	08 58	445	107	28
456	482	481	468	466	496	486	468	464	489	05 40	578	11 12	446	132	29††
470	470	474	480	482	494	490	494	486	481	04 26	550	09 22	429	121	30
462	460	462	464	467	471	471	470	471	481					107	Mean
474	472	472	475	475	478	480	478	478							Mean†
435	443	448	448	452	463	462	457	459							Mean††

† Five international quiet days

†† Five international disturbed days

△ Loss of record, day omitted for means.

TABLE 10

Hourly values of Horizontal Force, 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

October

39,000 γ plus tabular quantities

Date	Hours G. M. T.														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1††	170	462	459	466	490	490	491	474	452	423	416	422	430	430	435
2	438	440	444	476	500	518	522	524	505	484	462	458	456	455	454
3††	451	441	439	470	495	524	526	516	494	471	466	462	466	460	456
4	434	433	439	448	502	528	535	528	500	472	440	432	442	442	458
5	419	418	468	481	521	550	552	546	514	482	458	458	462	462	462
6	470	471	490	520	513	545	531	512	487	460	443	446	449	434	430
7	154	453	470	490	521	534	525	509	498	481	468	465	448	441	452
8	452	453	468	489	506	518	525	514	499	484	470	467	459	436	434
9†	468	461	471	490	516	521	523	506	478	470	468	472	474	470	468
10†	467	470	486	504	542	570	566	528	491	470	465	470	478	475	475
11	468	474	492	514	550	581	562	522	490	457	458	466	464	468	468
12†	472	470	489	518	546	546	565	546	513	484	474	475	483	484	482
13†	478	477	482	510	546	570	577	555	524	494	478	478	482	482	483
14	476	478	486	506	549	573	581	566	538	510	483	470	464	462	454
15†	462	466	478	497	524	536	526	510	489	470	462	468	467	472	476
16	472	478	494	514	540	557	557	542	518	498	491	487	488	486	479
17	463	468	486	512	524	529	527	519	482	492	487	482	476	476	478
18††	464	471	494	502	518	544	534	514	495	488	482	436	418	430	410
19	457	456	462	468	476	502	510	512	502	482	473	458	457	419	435
20	410	411	417	459	469	481	496	480	446	422	405	397	398	406	408
21	430	432	437	460	475	501	508	495	479	458	446	432	434	431	432
22	443	443	451	476	486	487	477	470	454	435	427	415	453	446	446
23††	434	438	440	462	461	466	470	466	485	458	418	412	105	398	414
24††	418	424	429	429	424	413	394	373	370	381	394	397	378	360	378
25	418	420	433	440	445	450	424	405	408	424	418	398	387	390	398
26	426	429	450	474	492	523	530	510	477	450	442	418	454	446	438
27	433	442	458	460	504	514	516	503	502	462	402	410	434	433	422
28	430	434	450	477	486	502	506	494	474	464	450	444	442	445	443
29	447	447	455	471	502	523	529	518	508	483	477	458	454	455	455
30	450	448	453	454	450	447	454	456	462	461	457	450	416	416	430
31	446	445	452	464	485	512	490	488	478	470	447	448	446	436	420
Mean	451	452	463	481	503	518	517	503	484	466	452	449	448	446	444
Mean†	469	469	481	504	535	549	551	529	500	478	469	473	477	477	477
Mean††	418	447	450	466	478	487	483	469	459	444	435	426	419	416	418

† Five international quiet days

†† Five international disturbed days

△ Loss of record, day omitted for means

TABLE 10

Hourly values of Horizontal Force, 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

October

39,000 γ plus tabular quantities

Hours G M T									Mean	Maximum		Minimum		Range	Date
15	16	17	18	19	20	21	22	23		Time	Mag	Time	Mag		
γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	H M	γ	H M	γ	γ	
436	432	438	435	428	430	440	440	440	447	01 22	521	16 56	403	116	1††
456	451	454	452	450	449	460	463	466	468	06 50	526	00 17	436	90	2
450	442	436	430	441	447	454	462	457	465	05 22	531	18 10	424	107	3††
449	441	442	444	448	451	451	450	449	462	05 58	518	11 20	425	123	4
458	454	461	458	458	463	471	462	465	478	05 42	551	00 28	447	107	5
418	418	436	442	441	444	454	452	450	466	04 14	550	16 28	408	112	6
463	446	448	451	449	450	454	456	456	470	01 42	536	12 46	437	99	7
428	438	449	452	465	460	458	460	463	469	05 50	528	15 32	420	108	8
465	466	467	467	468	468	466	468	469	478	05 42	524	09 32	462	62	9†
472	469	466	465	466	468	468	467	469	486	07 18	572	09 28	460	112	10†
466	466	465	463	467	470	470	471	474	485	05 02	582	09 14	444	138	11
480	478	476	474	474	475	476	478	477	493	05 22	570	00 26	465	105	12†
481	478	474	476	473	475	477	476	478	496	05 46	579	18 42	464	115	13†
456	458	458	458	456	458	470	460	460	489	05 42	583	14 20	414	139	14
478	478	477	473	472	476	474	476	471	482	05 14	514	09 46	456	88	15†
460	443	459	466	462	460	458	460	460	489	06 02	558	16 10	436	122	16
478	473	474	476	476	473	462	457	458	484	05 04	530	22 22	416	81	17
425	449	449	434	438	444	446	450	450	466	05 34	556	13 58	396	160	18††
425	424	431	457	452	452	457	460	463	463	06 10	516	15 10	414	102	19
416	416	418	419	420	422	426	428	430	433	05 50	501	11 26	388	116	20
431	429	431	434	434	440	442	440	442	449	05 54	514	16 26	424	90	21
447	440	424	420	418	418	418	426	431	445	04 50	490	17 40	408	82	22
405	392	410	416	414	402	398	410	422	429	07 32	488	12 40	390	98	23††
369	372	405	378	376	382	390	398	406	393	03 22	432	13 06	352	80	24††
416	418	416	419	428	430	430	427	427	420	04 51	460	12 31	371	86	25
434	422	416	418	437	434	430	431	434	452	05 14	531	17 31	408	126	26
411	422	424	430	429	430	431	432	432	448	05 40	525	10 22	391	131	27
442	445	445	444	443	445	445	446	446	456	06 02	507	00 32	428	79	28
452	450	455	456	458	457	456	448	450	469	05 54	533	01 10	441	89	29
424	430	438	434	432	432	438	451	447	445	07 50	464	14 50	416	48	30
408	403	399	402	410	410	434	439	432	444	05 37	517	17 10	392	125	31
442	440	443	443	445	446	449	450	451	462					105	Mean
475	474	472	471	471	472	472	473	473							Mean†
417	417	428	419	419	421	426	432	435							Mean††

† Five international quiet days.

†† Five international disturbed days.

^ Loss of record; day omitted for means.

TABLE II

Hourly values of Horizontal Force, 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

November

39,000 γ plus tabular quantities

Date	Hours G M T														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1††	440	440	446	460	480	482	470	464	461	450	441	437	436	422	406
2††	438	430	446	466	462	469	463	468	462	454	436	436	429	410	408
3††	442	438	449	472	481	478	470	458	456	441	440	432	426	419	429
4	432	435	446	458	464	468	472	467	458	455	453	448	444	440	436
5	448	454	454	450	459	470	470	476	472	456	451	446	438	437	438
6	444	448	454	462	474	498	496	488	476	466	454	442	438	435	439
7	453	454	458	474	482	486	493	475	466	459	462	462	458	451	447
8	446	447	462	478	496	513	520	504	485	473	466	464	464	458	453
9†	454	461	470	485	495	506	506	488	478	478	478	476	476	470	464
10†	455	459	478	494	513	528	525	518	502	480	464	464	466	464	452
11	468	476	488	510	523	530	523	506	490	474	466	474	468	461	456
12	478	485	502	510	515	516	518	508	494	486	486	466	458	441	438
13	456	462	467	485	501	516	520	518	496	478	464	458	464	462	460
14	465	464	474	486	518	536	536	518	494	473	464	459	456	459	456
15†	454	460	470	480	491	511	520	514	506	494	479	469	460	458	460
16†	459	458	461	470	484	502	514	517	518	508	486	474	471	466	466
17†	472	477	486	501	508	522	529	526	530	522	502	490	484	472	472
18	466	474	483	494	497	498	487	489	497	498	498	501	493	482	471
19	472	474	489	494	495	490	486	489	490	496	482	472	459	456	452
20††	446	454	466	478	478	474	481	486	467	458	442	432	424	410	406
21	466	451	464	474	474	471	466	466	465	471	474	465	456	450	451
22	457	466	485	488	489	493	483	492	485	477	472	460	456	452	450
23	455	466	480	490	514	517	504	496	493	482	474	470	478	474	472
24	440	442	455	464	482	494	486	479	466	460	451	452	448	444	440
25	464	467	484	502	500	498	490	478	476	474	472	470	460	469	470
26	472	482	499	516	525	530	523	510	486	472	466	466	461	456	456
27	462	470	492	517	535	538	537	534	526	517	517	496	482	479	477
28	479	482	494	514	518	517	506	494	490	488	487	485	466	445	442
29	454	462	482	494	502	504	498	490	474	479	476	470	457	458	456
30††	465	473	482	502	503	484	486	480	478	482	482	479	469	464	464
Mean	457	460	472	486	495	501	499	493	484	477	469	464	458	452	450
Mean†	459	463	473	486	498	514	519	513	507	496	482	475	471	466	463
Mean††	446	467	458	476	481	477	474	471	464	457	448	443	437	425	423

† Five international quiet days.

†† Five international disturbed days

△ Loss of record, day omitted for means.

TABLE II

Hourly values of Horizontal Force, 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

November

39,000 γ plus tabular quantities

Hours G. M. T									Mean	Maximum		Minimum		Range	Date
15	16	17	18	19	20	21	22	23		Time	Mag	Time	Mag		
γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	H M	γ	H M	γ	γ	
434	410	413	418	414	426	430	422	426	439	05 20	484	19 32	402	82	1††
403	417	418	432	442	437	441	442	412	440	03 32	480	14 36	397	83	2††
419	425	424	426	428	432	438	432	432	441	04 06	486	15 06	414	72	3††
440	442	448	442	440	443	448	418	417	449	04 34	477	00 26	430	47	4
439	440	440	439	440	442	446	446	446	450	07 22	480	12 42	435	45	5
438	431	434	443	451	438	440	442	448	453	05 50	504	16 10	426	78	6
448	454	452	449	447	450	450	451	450	460	05 46	506	14 40	444	62	7
445	442	438	438	435	443	454	450	454	463	05 42	524	19 06	434	90	8
453	450	450	454	450	451	451	454	455	469	05 54	510	15 32	446	64	9†
457	456	454	454	454	458	459	462	468	474	05 20	534	16 46	450	84	10†
450	450	445	451	462	463	464	476	478	477	05 14	534	16 54	442	92	11
442	446	447	443	444	450	445	448	450	472	05 40	531	14 18	434	97	12
462	462	462	464	468	460	456	465	469	474	05 58	528	10 34	454	74	13
449	437	436	438	437	440	445	448	448	468	05 10	544	16 40	432	112	14
462	462	457	458	458	460	462	459	462	474	05 54	523	00 22	451	72	15†
463	463	464	464	464	469	468	470	470	477	07 10	520	01 24	456	64	16†
470	470	466	468	468	469	466	465	465	487	08 10	540	23 10	462	78	17†
464	465	466	482	480	479	476	475	469	483	04 10	504	17 04	458	46	18
455	448	441	440	434	433	435	446	440	465	05 20	508	20 20	424	84	19
413	418	438	440	433	434	435	439	443	446	06 50	492	13 22	402	90	20††
449	448	457	456	456	440	456	454	454	460	03 10	478	00 50	445	33	21
452	452	450	452	455	450	452	452	454	466	05 02	501	20 22	448	56	22
444	416	405	425	450	446	431	434	436	465	05 02	519	16 10	391	128	23
440	445	448	450	456	459	456	461	461	457	01 50	408	14 26	434	64	24
470	471	469	469	467	464	462	464	466	474	05 10	504	11 56	452	52	25
466	466	470	468	470	466	464	458	455	479	05 20	536	12 32	450	86	26
474	469	471	470	471	484	480	478	478	494	05 10	548	00 40	458	90	27
458	462	458	458	454	458	452	454	454	476	05 50	522	13 46	436	86	28
462	453	458	462	466	473	471	470	459	472	03 46	506	16 26	446	60	29
459	457	458	474	471	472	470	467	466	475	04 20	510	16 10	452	58	30††
449	448	448	451	452	453	454	454	455	466					74	Mean
461	460	458	460	459	461	461	462	464							Mean†
446	425	430	438	438	440	443	440	442							Mean††

† Five international quiet days.

†† Five international disturbed days.

△ Loss of record, day omitted for means.

TABLE 12

Hourly values of Horizontal Force, 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

December

39,000 γ tabular quantities

Date	Hours G M T														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	456	459	473	491	487	492	486	487	490	483	478	475	465	463	462
2	462	464	479	491	495	494	486	484	478	483	480	465	459	456	456
3	464	466	476	486	499	507	506	503	508	500	488	480	480	477	476
4	470	471	481	499	511	523	523	512	503	496	481	464	462	468	463
5	464	470	480	492	499	500	496	488	482	486	486	480	470	466	469
6	462	471	478	484	497	504	497	474	464	470	475	477	472	470	469
7††	466	474	490	504	513	527	524	524	496	480	490	486	476	474	475
8	456	456	464	478	490	495	494	492	491	491	480	472	459	458	460
9	464	474	491	518	528	539	533	518	512	504	496	482	481	477	476
10†	464	464	479	500	509	508	502	491	484	488	492	482	472	470	470
11†	469	474	488	500	512	523	530	526	513	496	483	480	476	478	477
12	476	480	493	509	520	532	522	512	504	492	478	470	464	460	461
13	451	456	468	480	499	507	508	497	486	473	460	456	461	464	467
14†	449	450	452	470	483	492	508	514	498	491	476	466	462	460	458
15†	460	456	456	466	474	486	494	498	494	493	486	473	466	464	465
16†	464	468	474	486	500	522	532	536	532	518	502	486	478	478	478
17††	486	488	490	504	496	520	526	499	478	468	468	458	432	420	409
18††	452	448	450	444	436	446	452	468	472	476	470	468	462	457	446
19	456	459	461	470	475	492	498	496	494	494	488	472	469	462	452
20††	460	461	456	460	466	471	476	469	472	480	479	469	456	453	462
21	473	478	486	494	508	520	528	536	526	512	492	480	468	470	468
22	468	471	470	480	494	510	524	528	521	508	487	475	467	464	460
23	462	467	474	492	510	520	510	496	491	488	477	472	465	468	469
24	469	468	480	492	504	501	500	494	488	469	470	472	474	478	472
25	472	478	485	499	501	508	507	492	468	449	460	475	484	478	468
26	462	470	480	508	519	518	496	470	460	451	441	448	465	470	470
27††	471	472	497	507	516	515	504	477	453	428	416	424	444	424	420
28	454	459	475	490	495	509	516	520	488	451	427	490	443	456	447
29	469	468	484	504	523	540	532	510	472	445	439	452	469	469	459
30	460	467	478	492	520	536	540	523	486	457	442	460	478	472	470
31	467	472	490	508	520	536	531	512	476	445	437	452	469	469	466
Mean	464	467	477	490	500	510	509	501	492	480	472	468	466	464	462
Mean†	461	462	470	484	496	506	513	513	504	497	488	477	471	470	470
Mean††	467	469	477	484	485	496	496	487	474	466	465	461	454	446	442

† Five international quiet days

†† Five international disturbed days

△ Loss of record, day omitted for means.

TABLE 12

Hourly values of Horizontal Force, 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

December

39,000 γ plus tabular quantities

Hours G M T									Mean	Maximum		Minimum		Range	Date		
15	16	17	18	19	20	21	22	23		Time	Mag	Time	Mag				
γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	H	M	γ	H	M	γ	γ	
462	456	459	462	461	465	462	462	462	471	07	26	494	15	50	454	40	1
459	454	458	461	459	462	463	460	460	470	04	50	496	13	06	448	48	2
473	472	470	466	462	462	464	468	470	480	07	36	512	18	42	460	52	3
468	470	470	468	461	461	464	462	464	480	04	46	526	19	18	456	70	4
462	454	448	453	454	456	458	451	462	472	04	22	502	16	36	444	58	5
466	466	468	468	462	467	470	468	467	474	05	02	508	08	04	456	52	6
480	475	467	468	464	458	452	456	456	482	05	42	542	21	10	449	93	7††
461	464	464	462	465	464	461	456	457	470	04	10	500	22	20	454	46	8
470	469	469	469	464	464	464	462	466	487	05	18	542	19	20	460	82	9
470	469	469	468	467	468	469	470	470	479	04	34	510	00	22	462	48	10†
476	477	476	474	470	472	473	476	476	487	05	58	528	00	31	468	60	11†
461	461	452	414	441	448	454	451	452	477	05	26	534	18	02	438	96	12
464	462	460	460	461	450	454	450	448	468	05	14	513	19	54	444	69	13
454	460	462	460	460	460	461	460	460	469	05	22	516	15	02	452	64	14†
464	462	462	462	466	468	466	465	466	471	07	18	502	01	36	453	49	15†
475	474	478	478	478	480	481	480	480	490	07	06	538	00	18	462	76	16†
427	419	443	411	442	448	452	448	448	463	05	10	537	13	54	402	135	17††
450	444	445	448	448	449	452	454	460	454	09	02	478	03	20	430	48	18††
442	446	442	452	453	455	453	453	456	466	06	10	502	14	26	438	64	19
466	462	456	453	453	448	454	460	476	463	05	42	486	19	26	446	40	20††
466	462	464	464	462	466	470	469	467	485	06	50	542	18	24	460	82	21
460	456	454	454	460	460	460	460	462	477	07	02	534	18	10	452	82	22
471	469	461	455	453	456	460	462	464	476	05	02	531	18	50	452	79	23
469	469	468	468	468	472	472	475	472	478	04	20	510	16	02	467	43	24
471	472	467	468	461	462	458	461	462	475	05	42	514	09	02	448	66	25
468	470	468	475	478	478	476	480	486	475	04	54	528	10	02	440	88	26
425	432	437	443	445	448	448	445	452	456	04	20	523	09	22	414	109	27††
446	449	453	459	459	461	460	462	468	466	06	14	526	10	28	424	102	28
461	453	454	454	455	456	454	458	460	473	05	10	550	10	06	437	113	29
470	467	466	464	462	463	462	466	468	478	05	42	548	09	36	436	112	30
466	460	469	464	466	470	470	472	470	478	05	22	540	09	46	436	104	31
462	461	461	461	460	461	462	462	464	474							73	Mean
468	468	469	468	468	470	470	470	470									Mean†
450	446	450	451	450	450	452	453	458									Mean††

† Five international quiet days

†† Five international disturbed days.

△ Loss of record; day omitted for means.

TABLE 13

Hourly Values of Vertical Force, 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

July

2,000 γ plus tabular quantities

Date	Hours G M T														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1††	408	402	406	410	409	402	396	394	392	394	396	402	403	404	406
2†	403	406	407	407	409	406	398	392	391	390	396	399	403	402	400
3†	404	407	410	411	420	410	404	403	401	397	397	398	399	398	397
4†	402	403	405	405	407	408	405	395	390	396	397	399	399	396	398
5	403	406	406	406	406	404	399	398	396	401	409	411	408	400	395
6	403	405	407	394	395	402	398	390	388	393	392	391	398	401	403
7	406	409	409	409	408	402	399	394	392	392	390	399	405	405	410
8	406	410	411	406	401	395	384	383	390	393	396	393	394	397	399
9†	399	401	400	398	404	397	389	383	381	384	387	388	391	393	396
10†	407	407	407	406	402	394	388	385	392	398	404	407	410	401	402
11	406	407	411	406	405	405	398	406	405	404	404	399	400	400	397
12	401	404	401	395	389	393	399	397	395	391	397	397	400	398	397
13	407	408	405	406	400	392	390	383	384	382	390	398	404	401	399
14††	405	406	404	399	388	386	386	386	389	388	391	396	398	403	402
15	404	405	401	395	394	389	382	385	395	407	407	400	400	400	398
16	405	407	405	404	395	391	389	383	377	377	378	385	392	397	397
17	401	406	409	411	409	411	406	397	400	406	407	405	404	404	404
18	413	415	403	399	390	385	380	381	384	387	393	397	390	385	383
19	388	388	387	385	387	390	380	376	383	382	386	388	388	387	385
20	390	391	392	391	386	388	392	391	386	388	396	397	393	384	383
21	383	386	383	381	387	396	398	394	401	403	397	390	384	382	381
22	389	389	391	391	384	381	381	382	381	383	384	386	385	383	381
23	387	388	386	382	383	384	387	389	387	388	387	377	379	379	380
24	387	386	387	382	380	372	365	360	369	381	391	392	384	380	381
25††	388	393	393	385	377	374	374	375	381	380	383	381	381	381	385
26	388	389	390	387	381	374	364	361	375	384	385	385	374	371	377
27††	387	388	381	372	375	372	372	374	376	376	377	381	381	381	382
28††	389	390	386	385	378	382	395	408	413	401	387	374	375	382	388
29	388	390	388	386	386	384	378	377	382	381	381	379	385	385	385
30	387	388	384	378	373	369	367	362	365	372	376	379	382	384	384
31	386	386	383	378	372	357	351	353	355	369	386	391	390	387	385
Mean	397	399	398	395	393	390	387	385	387	389	392	392	393	392	392
Mean†	403	405	406	405	408	403	397	392	391	393	396	398	400	398	399
Mean††	395	396	394	390	385	383	385	387	390	388	387	387	388	390	393

† Five international quiet days

†† Five international disturbed days.

△ Loss of record, day omitted for means.

TABLE 13

Hourly Values of Vertical Force, 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

July

2,000 γ plus tabular quantities

Hours G M T									Mean	Maximum		Minimum		Range	Date
15	16	17	18	19	20	21	22	23		Time	Mag	Time	Mag		
γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	H M	γ	H M	γ	γ	
408	408	409	408	408	407	406	403	402	403	03 20	413	07 28	388	25	1††
403	404	404	406	404	404	404	403	403	402	04 25	410	09 00	386	24	2†
399	400	402	404	403	403	402	402	401	403	01 08	423	13 35	394	29	3†
399	399	400	400	400	400	400	400	400	400	03 20	411	07 49	385	26	4†
395	397	401	402	400	403	402	402	402	402	10 45	418	15 12	395	23	5
402	403	402	403	403	405	406	405	405	400	21 10	408	07 48	382	26	6
405	406	406	405	405	404	404	401	405	403	03 16	410	09 57	386	24	7
400	401	402	401	400	399	399	400	398	398	02 14	414	07 00	379	35	8
398	402	403	404	405	406	404	405	405	397	03 25	408	07 42	378	30	9†
405	404	405	406	405	404	403	404	404	402	02 55	411	07 16	384	27	10†
398	399	400	402	402	401	401	402	402	403	07 17	413	13 23	396	17	11
395	394	400	403	405	404	403	401	402	398	23 26	413	08 50	389	24	12
399	402	403	403	403	404	403	403	405	399	23 02	409	09 17	379	30	13
401	400	398	403	404	403	403	403	401	398	21 41	408	05 27	379	29	14††
398	405	406	406	403	401	400	402	402	399	09 30	410	06 15	377	33	15
399	401	401	404	403	402	399	399	399	395	18 15	412	09 06	376	36	16
404	406	407	408	408	407	408	409	409	406	05 09	415	07 05	393	22	17
381	384	385	387	386	385	384	383	386	389	00 52	416	06 18	375	41	18
390	388	386	387	383	386	386	384	385	386	05 10	391	06 30	370	21	19
381	382	382	382	382	381	381	382	381	387	10 35	403	15 13	380	23	20
378	378	384	382	384	386	384	384	386	387	08 50	404	12 25	375	29	21
381	384	384	385	387	386	385	385	386	385	03 10	393	14 05	377	16	22
382	385	386	385	386	386	386	385	386	385	07 00	391	11 25	373	18	23
382	384	384	385	385	385	385	384	381	381	10 37	392	07 20	355	37	24
388	385	387	389	388	388	386	383	385	381	01 24	395	07 16	367	28	25††
383	383	384	383	383	382	382	383	381	381	01 44	392	06 40	353	39	26
387	388	388	388	387	388	387	386	387	382	16 07	389	04 54	362	27	27††
385	383	389	386	386	386	387	387	387	388	07 41	415	10 53	367	48	28††
381	386	387	388	386	388	386	386	386	385	20 05	391	12 20	375	16	29
384	384	385	387	387	386	386	385	385	380	17 50	393	07 02	356	37	30
384	387	388	389	388	388	389	385	386	380	11 06	392	05 52	347	45	31
393	394	395	396	395	395	395	394	395	393					29	Mean
401	402	403	404	403	403	403	403	403							Mean†
394	393	394	395	395	394	394	392	392							Mean††

† Five international quiet days.

†† Five international disturbed days

△ Loss of record, day omitted for means.

TABLE 14

Hourly Values of Vertical Force, 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

August

2,000 γ plus tabular quantities

Date	Hours G M T														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	389	389	387	386	383	382	380	380	379	376	373	380	387	384	387
2	388	387	384	378	376	380	385	391	393	394	396	395	394	391	387
3†	389	391	389	385	379	373	370	370	368	367	367	372	379	380	382
4†	389	392	393	388	379	374	369	362	364	373	375	377	377	377	375
5†	388	389	389	386	377	369	361	360	360	364	369	374	377	378	377
6††	384	383	379	371	372	377	380	383	384	383	383	385	381	374	378
7	379	381	376	370	361	354	358	369	367	362	361	376	381	381	380
8†	385	386	384	382	377	372	368	365	358	360	362	366	375	378	376
9	384	385	382	375	380	375	369	376	382	382	385	380	379	376	375
10	385	386	379	370	366	364	362	357	361	363	372	373	376	379	377
11	386	387	385	381	368	362	360	361	362	366	371	380	380	377	376
12	382	385	383	381	377	373	370	367	363	369	375	381	380	379	379
13†	386	384	380	371	364	359	358	362	365	368	372	378	380	379	378
14	380	386	381	374	365	363	361	359	361	363	363	367	377	383	380
15	384	383	378	367	353	350	353	355	361	365	369	372	377	377	378
16	387	388	384	382	378	375	368	369	375	380	388	388	388	373	373
17	388	388	384	378	371	364	357	352	354	360	373	380	379	379	380
18	387	387	387	383	380	369	357	352	355	357	365	380	381	379	379
19	383	388	389	385	378	367	369	371	374	371	380	382	383	382	381
20	386	388	388	383	373	363	357	362	365	372	374	376	376	376	376
21	388	389	389	382	374	360	356	345	352	352	358	365	381	382	381
22††	387	385	390	389	390	384	387	389	384	383	382	381	384	384	383
23	385	389	391	387	384	373	367	365	370	370	372	371	375	377	381
24††	387	389	386	381	377	379	379	375	381	390	391	386	382	380	372
25	387	390	386	381	376	368	367	369	374	376	378	378	378	380	386
26††	390	391	387	381	374	357	354	363	367	367	380	386	385	380	381
27	390	390	387	378	380	371	367	366	367	369	371	385	385	382	380
28	387	391	385	378	369	359	356	355	359	368	369	368	374	381	382
29††	389	392	389	382	368	360	355	354	358	360	379	391	388	381	379
30	386	387	387	383	375	365	358	356	359	366	368	368	372	378	376
31	386	388	389	386	384	377	374	369	369	377	383	379	377	375	376
Mean	386	388	385	380	374	368	366	365	367	370	374	378	380	379	379
Mean|	385	388	387	382	375	369	365	364	363	366	369	373	378	378	378
Mean††	387	388	386	381	376	371	371	373	375	377	383	386	384	380	379

| Five international quiet days.

†† Five international disturbed days

△ Loss of record, day omitted for means

TABLE 14

Hourly values of Vertical Force, 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

August

2,000 γ plus tabular quantities

Hours G M T									Mean	Maximum		Minimum		Range	Date
15	16	17	18	19	20	21	22	23		Time	Mag	Time	Mag		
γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	H M	γ	H M	γ	γ	
386	386	387	389	389	392	387	387	387	385	19 42	394	09 48	360	31	1
388	389	389	391	391	389	388	389	388	388	09 30	397	03 42	369	28	2
382	383	384	385	387	385	385	386	386	380	01 30	392	08 47	363	29	3†
378	381	386	387	386	392	389	388	388	381	19 57	395	07 45	351	44	4†
377	380	379	379	381	378	378	379	386	376	18 25	390	06 15	358	32	5†
381	383	380	383	383	381	388	377	377	380	21 07	405	13 12	368	37	6††
385	386	386	386	390	389	386	384	385	376	19 08	394	05 06	352	42	
377	379	381	384	384	382	382	384	384	376	21 32	390	07 53	356	34	8†
376	379	380	380	381	385	380	382	381	380	09 47	395	06 22	367	28	9
378	380	381	382	385	385	385	385	386	376	22 22	387	07 15	354	33	10
378	379	380	379	382	381	382	382	381	376	21 10	390	05 40	359	31	11
379	380	381	382	385	383	382	381	381	381	03 12	387	09 43	362	25	12
377	377	378	383	382	382	381	383	382	375	18 25	389	06 30	357	32	13†
378	380	380	382	380	383	381	381	380	375	11 52	392	06 40	355	37	14
378	378	380	380	383	386	384	383	382	373	19 40	392	05 07	350	42	15
377	382	383	382	383	384	384	383	387	381	09 53	399	06 30	362	37	16
380	381	382	384	384	383	384	385	385	376	10 58	390	06 53	350	40	17
378	381	382	384	385	385	383	382	381	377	20 40	392	06 51	351	41	18
382	382	381	381	383	382	384	384	384	380	22 00	393	05 08	361	32	19
376	380	385	384	386	386	385	385	388	378	16 45	392	06 38	355	37	20
382	382	383	384	384	384	386	386	388	376	22 03	391	06 40	344	47	21
385	387	389	389	389	387	387	387	384	386	03 23	396	13 20	381	15	22††
382	382	381	383	383	387	385	383	382	379	20 10	395	06 38	361	34	23
376	382	384	384	385	387	383	383	384	383	09 51	398	13 53	370	28	24††
384	384	385	386	385	387	386	386	388	381	22 43	391	05 51	363	28	25
383	382	385	387	387	387	390	385	386	380	20 58	396	05 23	350	46	26††
382	383	381	383	382	381	380	383	384	380	11 28	391	07 55	365	26	27
383	388	383	386	385	386	385	384	384	377	15 16	394	06 45	354	40	28
381	384	383	383	388	385	384	384	387	379	11 08	397	06 40	351	46	29††
372	373	377	379	383	385	383	383	381	375	19 20	396	06 46	355	41	30
															31
376	378	378	381	387	385	387	389	387	381	21 40	396	07 30	368	28	
380	382	382	384	385	385	381	384	384	379					35	Mean
378	380	382	384	384	384	383	384	385							Mean†
381	384	384	385	386	385	386	383	384							

† Five international quiet days

†† Five international disturbed days

△ Loss of record, day omitted for means

TABLE 15

Hourly Values of Vertical Force, 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

September

2,000 γ plus tabular quantities

Date	Hours G M T														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1††	389	389	388	383	376	371	367	359	365	373	380	381	381	371	365
2	389	391	350	381	381	385	376	372	373	375	373	377	380	377	372
3	380	381	376	368	358	353	344	344	346	349	358	366	372	371	371
4	382	389	385	381	377	355	355	359	361	369	377	382	378	383	381
5	386	391	386	380	360	360	358	355	369	370	368	369	372	374	381
6	386	390	385	378	375	369	359	362	366	361	369	374	381	382	380
7	383	381	376	367	360	353	353	361	368	378	398	402	397	393	391
8†	385	391	387	382	373	362	356	351	355	361	370	373	377	382	383
9	385	389	386	381	363	361	352	349	356	370	383	391	391	385	381
10	387	383	386	382	369	363	356	356	363	370	371	375	376	375	372
11	382	385	383	377	375	371	369	369	374	384	387	378	370	371	372
12†	383	382	372	360	349	348	348	357	367	379	380	374	371	374	376
13†	388	392	379	367	356	350	346	350	360	363	371	373	373	373	375
14††	378	383	372	361	349	342	345	347	355	368	370	364	360	362	368
15	381	385	380	372	364	361	350	348	352	352	361	373	373	375	375
16	385	387	381	366	350	356	359	363	373	382	392	394	388	374	372
17	382	386	382	368	362	351	340	340	342	353	365	373	376	376	376
18	382	388	385	374	369	361	353	341	335	351	357	364	374	376	373
19†	382	385	386	385	385	375	364	360	362	367	373	377	375	374	374
20††	383	388	383	374	365	359	347	349	357	367	373	377	377	380	371
21††	386	389	379	367	357	347	342	358	365	363	373	370	375	382	375
22	388	387	381	370	352	353	353	359	368	374	376	376	378	375	383
23†	387	388	383	375	357	353	353	359	364	366	368	370	371	373	374
24	381	386	383	376	371	355	353	365	374	386	387	378	375	375	379
25	380	384	383	376	372	368	349	345	357	373	379	379	376	377	377
26	382	384	387	380	371	361	352	347	345	353	369	375	376	375	376
27	379	380	381	372	356	344	338	345	354	365	375	375	373	371	371
28	383	388	373	366	352	345	350	355	367	376	383	381	380	377	376
29††	383	388	388	376	368	354	342	339	348	360	367	375	377	375	372
30	377	381	383	383	372	361	351	353	367	377	381	385	383	380	380
Mean	381	387	382	374	365	358	353	353	361	368	374	377	377	376	376
Mean†	385	388	381	374	364	358	353	355	362	367	372	373	373	375	376
Mean††	384	387	382	372	363	355	349	350	358	366	373	373	374	374	370

† Five international quiet days

†† Five international disturbed days.

△ Loss of record, day omitted for means

TABLE 15

Hourly Values of Vertical Force, 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

September

2,000 γ plus tabular quantities

Hours G.M.T.									Mean	Maximum			Minimum			Range	Date
15	16	17	18	19	20	21	22	23		Time	Mag	Time	Mag	Y			
368	376	373	377	379	383	385	384	380	377	21 38	397	07 17	358	39	1††		
371	369	372	371	377	380	380	381	380	378	04 42	394	15 35	367	27	2		
373	366	369	377	379	387	376	377	379	367	19 46	399	06 07	343	56	3		
384	380	390	389	388	389	386	388	386	379	16 35	398	05 10	347	51	4		
384	384	384	383	390	386	385	385	386	377	18 44	392	06 49	354	28	5		
375	369	368	375	383	388	378	381	382	376	19 25	398	09 02	360	38	6		
392	391	392	390	384	385	389	384	383	381	11 20	406	05 25	352	54	7		
383	383	382	385	383	384	384	382	383	377	18 08	394	06 25	350	44	8†		
378	383	385	386	386	385	386	389	387	378	10 51	400	06 53	346	54	9		
371	375	371	374	375	375	376	376	379	373	21 10	390	06 30	354	36	10		
376	382	383	384	383	383	383	385	383	379	17 30	401	06 35	368	33	11		
379	380	383	383	383	384	384	384	384	373	21 45	393	05 48	347	46	12†		
378	378	380	384	385	385	385	387	387	374	22 30	396	06 20	345	51	13†		
370	380	385	384	385	384	385	385	387	370	22 28	400	04 51	338	62	14††		
384	381	381	385	384	384	384	384	381	373	21 45	392	06 21	347	45	15		
381	378	382	387	385	384	385	385	381	378	10 23	401	03 56	349	52	16		
376	377	379	381	382	386	380	377	377	370	20 06	396	07 35	339	57	17		
373	374	374	377	381	378	377	382	381	370	21 35	392	07 54	334	58	18		
375	374	377	379	381	380	382	380	382	376	03 15	394	07 18	359	35	19†		
374	366	381	378	382	386	385	380	386	374	19 58	401	06 08	341	60	20††		
375	386	379	389	383	386	379	382	383	374	18 02	398	05 49	339	59	21††		
376	378	381	386	384	387	387	384	386	376	17 08	394	04 02	351	43	22		
375	376	376	375	378	381	380	380	381	373	20 10	389	06 08	352	37	23†		
381	379	383	386	386	386	382	381	380	378	09 25	392	05 37	352	40	24		
383	387	381	382	384	381	385	380	380	376	20 32	392	06 50	342	50	25		
376	377	377	379	380	379	379	377	377	372	18 30	393	06 46	344	49	26		
371	367	366	371	382	379	374	376	380	369	18 40	393	06 15	336	57	27		
382	380	384	383	384	381	384	381	382	375	22 05	389	05 30	341	45	28		
375	377	384	384	377	378	390	385	375	372	21 23	400	06 50	337	64	29††		
377	380	380	383	385	389	384	384	381	377	19 12	397	06 30	348	49	30		
377	378	379	382	383	383	383	382	382	375					48	Mean		
378	378	380	381	382	383	383	383	383							Mean†		
372	377	380	382	381	383	385	383	382							Mean††		

† Five International quiet days
 †† Five International disturbed days
 Δ Loss of record, day omitted for means.

TABLE 16
Hourly Values of Vertical Force, 1954
(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)
2,000 γ plus tabular quantities

Date	Hours G M T.														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1††	387	387	386	381	371	369	367	367	367	364	368	377	370	379	385
2	390	391	389	383	383	361	355	355	358	363	368	376	378	377	377
3††	379	384	386	379	375	366	356	355	356	368	379	382	385	384	381
4	383	392	392	374	357	342	340	347	355	365	383	386	385	388	387
5	387	388	383	377	363	355	348	350	357	363	370	377	378	379	380
6	391	392	393	388	375	360	364	368	369	370	369	376	382	378	377
7	388	388	385	385	376	369	368	369	376	380	381	381	379	381	387
8	393	396	397	392	379	369	368	368	366	369	372	380	379	373	379
9†	392	392	384	379	371	360	357	361	370	377	380	384	386	387	386
10†	389	392	385	376	370	349	346	358	369	378	381	382	382	386	388
11	385	385	385	381	378	364	358	367	377	385	387	384	380	385	387
12†	393	393	393	388	380	364	362	367	374	380	382	382	382	384	386
13†	390	394	393	386	377	363	359	364	371	375	381	382	381	382	385
14	394	395	398	393	383	368	359	360	366	367	368	378	380	382	382
15†	390	391	390	390	391	381	380	391	390	382	381	382	383	389	391
16	395	395	395	391	392	384	381	374	373	382	381	389	391	394	391
17	394	394	389	384	387	383	380	378	373	376	376	381	384	389	389
18††	387	387	394	389	395	395	381	376	375	376	378	366	376	389	380
19	395	395	392	392	392	386	384	383	384	383	384	383	388	386	384
20	396	397	397	397	404	397	386	381	375	380	382	377	377	383	385
21	394	393	394	394	397	390	385	386	386	385	384	384	386	389	389
22	397	398	399	398	397	391	390	403	406	402	403	401	391	390	393
23††	398	398	395	390	392	399	402	405	407	390	378	389	389	390	399
24††	395	398	395	390	387	387	395	398	402	404	393	387	384	383	393
25	398	398	387	384	385	379	385	386	399	399	388	387	388	393	400
26	399	399	399	399	396	388	385	379	376	381	388	394	394	393	391
27	399	399	400	400	390	379	380	387	391	379	370	386	391	391	387
28	394	394	397	397	394	388	383	378	380	386	385	391	391	392	394
29	394	395	394	397	392	383	383	381	383	380	384	383	386	389	392
30	393	389	393	388	387	402	404	404	397	394	391	392	393	392	388
31	395	395	393	390	387	386	387	389	387	381	378	386	390	389	386
Mean	392	393	392	388	384	376	373	376	378	380	381	383	384	386	387
Mean†	391	392	389	384	378	363	361	368	375	378	381	382	383	386	387
Mean††	389	391	391	386	384	383	380	380	381	380	379	380	383	385	388

† Five international quiet days

†† Five international disturbed days

⊥ Loss of record, day omitted for means

TABLE 16

Hourly Values of Vertical Force, 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

October

2,000 γ plus tabular quantities

Hours G M T.									Mean	Maximum		Minimum		Range	Date		
15	16	17	18	19	20	21	22	23		Time	Mag	Time	Mag				
γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	H	M	γ	H	M	γ	γ	
383	379	383	383	381	384	384	389	390	379	17	18	399	07	30	363	36	1††
378	378	379	379	382	383	384	384	383	376	22	17	395	07	28	354	41	2
381	378	379	379	386	387	390	392	390	378	22	07	401	07	23	354	47	3††
382	379	380	384	387	388	390	387	387	377	20	44	396	06	20	339	57	1
382	383	387	386	387	391	392	385	388	377	20	25	399	06	30	346	53	5
376	380	386	392	390	391	390	388	388	381	17	18	408	05	25	355	53	6
391	383	386	387	391	392	392	392	392	383	15	00	404	06	15	368	36	7
380	385	392	391	392	388	385	386	391	382	19	08	401	06	20	365	36	8
387	389	392	392	392	393	388	389	389	382	18	13	397	05	40	356	41	9†
389	390	389	388	390	390	387	387	386	380	19	15	398	05	44	345	53	10†
389	390	392	393	393	393	393	393	393	384	03	15	397	05	48	357	40	11
387	388	389	390	389	388	389	390	390	384	03	15	393	06	40	358	35	12†
386	385	386	391	390	390	394	393	393	383	21	22	399	06	00	358	41	13†
385	387	388	389	389	390	394	386	388	382	20	33	403	06	00	358	45	14
393	394	394	394	394	394	394	394	393	389	03	10	398	09	42	377	21	15†
383	382	390	398	395	384	392	392	394	388	18	06	406	08	10	372	34	16
391	390	391	391	391	389	393	383	384	385	18	30	400	08	16	372	28	17
390	399	397	392	395	396	395	395	395	387	16	05	413	11	15	365	48	18††
383	387	391	402	395	395	395	395	395	390	18	06	409	15	10	381	28	19
388	388	388	389	391	392	393	392	393	389	04	00	408	07	54	373	35	20
389	391	393	396	394	397	396	396	394	391	04	15	402	10	22	380	22	21
394	391	387	390	392	392	394	395	398	395	08	20	410	17	38	384	26	22
395	398	398	401	401	390	390	395	399	395	07	33	412	10	10	377	35	23††
391	390	407	389	389	389	395	395	398	393	16	40	422	13	46	381	41	24††
405	402	400	401	403	401	400	399	399	395	18	37	413	05	30	376	37	25
392	388	390	394	402	396	398	398	399	393	19	02	409	08	17	375	34	26
385	392	395	398	395	393	394	395	394	390	17	40	404	09	45	370	34	27
393	394	393	395	396	397	395	395	394	392	03	20	405	07	25	377	28	28
393	394	395	396	397	396	394	391	394	390	03	08	404	09	35	378	26	29
389	397	399	397	396	395	397	401	395	395	06	30	409	14	38	387	22	30
387	387	392	393	397	396	405	402	395	391	01	13	416	09	38	373	43	31
388	388	391	392	392	392	392	392	392	386							37	Mean
388	389	390	391	391	391	390	391	390									Mean |
388	389	393	389	390	389	391	393	394									Mean † |

† Five international quiet days
 †† Five international disturbed days
 Δ Loss of record, day omitted for means

TABLE 17

Hourly Values of Vertical Force, 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

November

2,000 γ plus tabular quantities

Date	Hours G M T														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1††	396	397	395	396	388	380	380	384	380	378	375	379	379	380	380
2††	393	385	391	393	394	393	393	390	382	376	376	379	382	381	383
3††	389	386	386	382	374	367	371	374	375	380	382	379	382	385	389
4	390	390	388	382	385	378	381	385	386	383	383	386	387	388	388
5	391	394	391	395	395	395	396	392	384	377	377	383	384	386	387
6	389	394	397	398	397	392	390	395	394	389	387	387	384	387	388
7	388	388	391	394	400	399	399	397	397	394	391	388	383	382	382
8	387	387	391	392	395	387	384	382	381	381	383	383	387	375	375
9†	390	389	392	392	395	390	388	390	395	391	388	387	388	388	387
10†	389	388	390	391	395	391	389	385	383	382	385	387	387	390	390
11	393	393	394	393	394	390	391	398	399	397	389	388	388	386	388
12	393	393	394	393	388	397	398	391	384	385	386	386	385	381	382
13	389	391	391	391	393	392	389	385	388	389	388	388	388	388	389
14	391	390	392	391	391	382	383	379	377	382	386	385	385	389	387
15†	394	393	395	402	409	408	402	395	389	387	384	384	386	389	390
16†	392	391	395	401	404	405	399	395	395	385	384	386	387	389	391
17†	395	395	396	394	390	385	380	379	376	377	380	385	387	387	390
18	391	390	393	396	399	399	400	406	399	393	390	390	391	390	388
19	390	390	390	388	394	408	408	399	395	393	387	387	387	388	390
20††	392	391	394	399	407	408	411	409	393	384	380	382	388	386	389
21	396	394	395	397	399	403	407	404	400	395	394	391	393	393	395
22	395	396	397	397	399	401	400	394	386	382	386	386	388	388	389
23	395	395	397	398	408	400	396	395	397	395	392	393	395	393	394
24	390	390	391	395	394	392	390	387	386	385	388	393	395	395	394
25	396	395	395	395	401	404	405	408	403	397	394	389	389	395	394
26	396	394	395	398	397	393	389	388	390	393	396	395	391	390	393
27	391	391	390	390	388	391	390	388	387	384	388	387	394	394	394
28	391	389	387	391	393	391	391	389	389	388	388	384	382	378	384
29	392	390	392	405	408	414	414	410	403	395	389	384	389	389	391
30††	394	392	392	383	383	391	390	389	390	392	392	385	388	388	388
Mean	392	391	393	394	395	394	394	392	389	387	386	386	387	387	388
Mean †	392	391	394	396	399	396	392	389	388	384	384	385	387	389	390
Mean ††	393	390	392	391	389	388	389	389	384	382	381	381	384	384	386

† Five international quiet days.

†† Five international disturbed days

△ Loss of record, day omitted for means.

TABLE 17

Hourly values of Vertical Force, 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

November

2,000 γ plus tabular quantities

Hours G.M.T									Mean	Maximum		Minimum		Range	Date
15	16	17	18	19	20	21	22	23		Time	Mag	Time	Mag		
γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	H. M.	γ	H. M.	γ	γ	
390	380	386	388	387	390	389	386	387	385	14 58	406	09 40	372	34	1†
385	390	390	395	395	390	391	390	389	388	18 00	405	09 30	373	32	2††
387	391	386	388	390	391	391	390	390	384	15 37	406	05 26	366	40	3††
389	391	393	389	388	390	390	389	391	387	17 00	402	05 34	377	25	4
388	388	389	388	389	391	390	390	389	389	06 23	404	09 40	376	28	5
389	388	390	395	392	386	387	388	388	390	03 20	408	11 47	383	25	6
383	386	386	386	386	387	386	384	383	389	05 55	408	13 36	381	27	7
387	388	388	390	389	391	393	390	391	387	07 25	399	08 10	380	19	8
384	388	390	391	389	390	390	390	390	390	04 07	401	15 30	384	16	9†
391	389	390	392	393	392	392	392	392	389	03 15	403	08 35	381	22	10†
386	386	388	392	394	393	393	396	394	392	18 30	407	13 15	385	22	11
390	391	390	389	390	391	388	385	386	389	05 20	406	13 08	379	27	12
391	390	392	393	393	389	389	393	393	390	03 20	400	11 28	384	16	13
386	386	390	392	393	394	395	394	394	388	03 28	399	08 13	376	23	14
392	391	391	392	393	394	394	392	392	393	03 40	415	10 16	383	32	15†
391	392	393	394	395	395	394	394	394	393	05 10	414	09 30	380	34	16†
388	390	390	390	390	391	390	391	390	387	03 15	401	09 37	373	28	17†
387	391	393	398	395	393	391	390	390	389	07 07	411	14 07	386	25	18
391	390	390	390	390	388	391	394	391	392	05 20	415	11 55	383	32	19
395	396	403	400	396	396	396	396	396	395	06 35	416	09 37	379	37	20††
394	395	399	396	397	396	394	393	394	396	06 40	412	11 05	388	24	21
389	391	393	393	392	391	392	392	393	392	04 35	410	08 28	381	29	22
385	380	381	394	401	395	387	389	389	393	03 52	413	16 40	374	39	23
396	398	398	398	401	400	397	397	396	394	19 25	410	09 10	384	26	24
395	396	395	395	396	393	393	393	394	396	06 46	414	11 34	388	26	25
397	397	399	398	397	397	394	390	390	391	03 15	407	12 35	384	23	26
394	396	397	394	401	402	397	395	393	392	19 55	411	11 10	381	30	27
393	394	391	391	393	396	390	391	390	389	03 06	401	12 40	377	24	28
387	390	392	392	395	390	389	391	391	395	06 20	420	11 58	382	38	29
388	392	396	392	391	390	391	390	394	390	17 32	406	04 54	376	30	30††
390	390	392	393	393	392	391	391	391	391					28	Mean
389	390	391	392	392	392	392	392	392							Mean†
390	390	392	393	392	391	392	390	391							Mean††

† Five international quiet days.

†† Five international disturbed days.

△ Loss of record; day omitted for means.

TABLE 18

Hourly Values of Vertical Force, 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

December

2,000 γ plus tabular quantities

Date	Hours G. M. T.														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	392	388	387	388	390	389	390	397	399	397	394	392	395	397	398
2	400	400	400	401	401	403	405	407	404	400	397	389	389	390	393
3	395	395	390	389	383	381	381	385	390	389	389	391	392	393	395
4	395	396	396	398	390	389	389	388	385	385	382	382	388	393	393
5	393	392	386	384	383	384	389	393	398	393	391	389	390	391	392
6	393	396	390	385	389	390	397	406	402	393	391	390	390	393	394
7††	391	394	394	396	393	389	391	400	399	398	393	390	390	390	391
8	391	391	392	392	394	395	400	403	398	394	397	395	394	397	400
9	397	395	395	399	394	399	400	402	400	395	391	387	390	391	392
10†	391	390	383	379	373	375	380	393	398	394	386	386	390	392	394
11†	398	398	398	399	400	396	389	384	381	381	388	395	394	393	393
12	395	395	392	392	391	381	383	379	374	377	385	389	392	391	392
13	394	395	395	395	392	392	389	387	381	380	387	394	395	396	396
14†	395	394	393	393	390	381	381	381	381	382	384	387	393	393	394
15|	395	395	399	399	399	399	399	397	394	393	393	395	395	395	396
16†	397	399	396	393	388	386	382	380	377	379	385	390	393	394	395
17††	398	401	402	402	400	401	385	381	379	378	387	389	385	385	386
18|†	396	397	398	398	402	406	406	406	403	396	393	396	397	397	395
19	401	402	404	405	402	401	397	397	398	400	401	398	396	396	393
20††	399	399	399	401	398	398	407	415	414	407	399	396	394	399	403
21	402	401	398	396	391	390	395	396	388	387	392	395	394	398	398
22	401	402	401	397	395	391	389	390	390	387	383	386	391	395	395
23	398	398	396	398	400	392	393	395	393	389	391	396	397	399	400
24	398	398	395	390	388	382	378	377	378	385	393	395	398	400	399
25	396	396	397	402	397	396	393	393	399	411	413	405	399	400	399
26	400	399	398	397	386	381	389	399	396	404	406	405	400	398	399
27††	400	396	398	398	392	396	408	413	417	411	411	403	398	390	391
28	398	396	397	397	400	399	392	391	392	403	416	411	401	401	403
29	401	399	398	398	393	383	380	389	402	414	414	406	400	399	395
30	399	399	399	401	399	400	402	402	407	423	422	415	408	401	401
31	402	401	401	401	386	371	371	378	391	413	424	413	404	402	401
Mean	397	397	396	396	393	391	391	394	394	395	396	395	395	395	396
Mean |	395	395	394	393	390	388	386	388	386	386	387	391	393	393	394
Mean ††	397	397	398	399	397	398	399	403	402	398	397	395	393	392	393

† Five international quiet days

†† Five international disturbed days.

△ Loss of record, day omitted for means

TABLE 18

Hourly Values of Vertical Force, 1954

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

December

2,000 γ plus tabular quantities

Hours G M T									Mean	Maximum		Minimum		Range	Date			
15	16	17	18	19	20	21	22	23		Time	Mag	Time	Mag					
γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	H	M	γ	H.	M	γ	γ		
398	399	402	402	402	400	397	398	398	395	07	28	407	04	45	385	22	1	
395	393	395	395	389	389	390	391	392	396	06	55	416	12	04	388	28	2	
395	395	392	391	391	390	391	392	392	390	22	12	399	06	15	381	18	3	
395	395	396	397	395	395	395	393	392	392	03	11	401	10	25	380	21	4	
391	389	390	390	393	393	393	391	393	390	07	53	402	04	19	382	20	5	
394	391	396	394	393	393	393	391	392	393	07	23	416	03	48	389	27	6	
397	393	390	391	392	387	386	389	390	392	07	32	408	18	10	385	23	7†	
101	402	400	400	402	401	399	395	397	397	06	53	-111	12	20	390	21	8	
391	392	392	393	393	393	392	392	391	394	06	55	403	10	52	386	17	9	
398	398	398	399	398	399	399	399	399	391	08	30	401	01	45	372	29	10†	
396	399	398	398	396	396	398	398	399	394	04	10	404	03	36	380	24	11†	
393	395	391	389	392	393	393	395	395	389	20	45	407	08	18	373	34	12	
395	396	398	398	399	395	396	395	395	393	19	08	409	08	42	378	31	13	
394	397	397	397	397	399	396	395	396	391	03	15	400	07	45	380	20	14†	
396	395	395	396	399	399	397	397	397	396	03	15	409	09	28	392	17	15†	
395	396	396	396	397	396	396	395	395	391	18	52	402	08	10	372	30	16†	
394	391	401	397	396	397	397	395	396	393	04	50	412	09	08	376	36	17††	
397	396	397	398	398	398	400	401	403	399	05	45	413	10	06	392	21	18††	
394	397	401	400	401	402	398	398	400	399	04	50	409	14	28	388	21	19	
402	398	397	396	396	396	396	401	405	401	07	20	423	12	08	389	31	20†	
399	399	401	401	402	403	402	401	401	397	20	25	409	08	30	386	23	21	
396	396	396	397	398	398	396	396	396	391	18	35	404	09	53	382	22	22	
402	398	398	397	398	399	398	396	397	397	03	15	413	08	40	388	25	23	
398	399	399	400	402	402	398	396	396	393	19	30	408	07	35	376	32	24	
402	402	399	403	400	402	400	402	400	400	09	22	422	06	28	391	31	25	
398	398	398	401	400	403	403	403	403	398	22	55	408	05	10	379	29	26	
397	403	404	405	403	403	403	400	401	402	07	36	423	13	02	389	34	27††	
403	405	406	407	406	406	403	404	403	402	10	00	425	07	53	390	35	28	
399	395	397	399	399	399	398	399	398	398	09	38	425	05	53	379	46	29	
400	399	399	400	400	402	402	404	402	404	09	20	438	13	08	398	40	30	
400	400	400	399	399	400	399	399	398	398	10	00	430	05	40	370	60	31	
397	397	398	398	398	398	397	397	397	396							28	Mean	
396	397	397	397	397	398	397	397	397										Mean†
397	396	398	397	397	396	396	397	399										Mean†

† Five international quiet days

†† Five international disturbed days

△ Loss of record, day omitted for means.

TABLE 19
 PRINCIPAL MAGNETIC STORMS
 (July to December, 1954)

Greenwich date, 1954	Storm time		Sudden commencement			Degree of activity (4)	Maximal activity Greenwich day	Ranges			
	G M T of beginning h m	G M T of ending(1) d h	Type(2)	Amplitude 3				D '	H γ	Z γ	
				D '	H γ						Z γ
October, 18	04 24	18 18				m	18	4	168	41	
October, 23	07 22	25 20	s c (Probable)			m	24	3	136	38	
December, 17	02 30	18 16				m	17	3	136	41	

The following symbols and conventions have been used according to recognised practice —

- 1 Approximate time of ending of storm construed as the time of cessation of reasonably marked disturbance movements in the traces
- 2 s c—sudden commencement, ()—gradual commencement
- 3 Signs of amplitudes of 'D' and 'Z' taken algebraically, (D—reckoned negative being westerly)
(Z—reckoned positive being vertically downwards);
- 4 Storm described by three degrees of activity, (m) for moderate (when range is less than 250γ),
(ms) for moderately severe (when range is between 251γ and 400γ);
(s) for severe (when range is above 400γ)

Correction Slip.

Kodaikanal Observatory Bulletin CXLIII.

Part II.

Page	Table.	Read	instead of
7(para.3)		16.0/cm	16.0 r/cm
7(para.4)		trend	treand
13	3 15th hr.of the 30th	35.4	35.3
15	4 Hourly Values of Declination (Westerly)1954.		
15	4(Mean for 7th)	23.9	33.0
16	5(6th hr.of 3rd)	34.8	34.5
	6th hr.of 4th	34.5	34.8
	6th hr.of 5th	34.7	34.5
16	5(4th hr.of 12th)	34.7	34.7
17	5(19th hr.of 9th)	33.9	32.9
	(19th hr.of 10th)	33.4	33.9
21	7(18th hr.of 5th)	484	444
	Mean for 18th hr.	482	481
	Mean for the 5th	498	496
	21st hr.of the 17th	478	778
25	9	Range	Ran
34	14 14th hr.of the 25th	381	386
42	18 01st hr.of the 24th.	396	398