

AIR MINISTRY.

METEOROLOGICAL OFFICE.

BRITISH METEOROLOGICAL AND MAGNETIC
YEAR BOOK, 1920.—Part IV.

HOURLY VALUES FROM AUTOGRAPHIC
RECORDS: 1920.

COMPRISING

HOURLY READINGS OF TERRESTRIAL MAGNETISM AT ESKDALEMUIR OBSERVATORY

AND

SUMMARIES OF THE RESULTS OBTAINED

IN

TERRESTRIAL MAGNETISM, METEOROLOGY, AND ATMOSPHERIC ELECTRICITY
CHIEFLY BY MEANS OF SELF-RECORDING INSTRUMENTS AT THE OBSERVATORIES
OF THE METEOROLOGICAL OFFICE.

IN CONTINUATION OF

The Reports of the National Physical Laboratory, 1900–1909, and (in similar form) Summaries of Results of Geophysical and Meteorological Observations, 1910, the Reports of the Kew Committee of the Royal Society, 1872–1899, and of the Kew Observatory Committee of the British Association, 1842–1871.

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PREFACE.

FOR the years 1911 to 1913, "Hourly Values from Autographic Records" was published in two sections. The issue of the first section, which contained hourly values of pressure, temperature, humidity, wind, rainfall, and sunshine, is now discontinued. The present volume represents the Section 2 of former years, and is the tenth of the series. It may be regarded as a continuation in extended form of the tables and summaries giving the results of observations in terrestrial magnetism and atmospheric electricity which were included in the Reports of the Committee of Management of the Kew Observatory from 1842 to 1910, and of tables published by the Meteorological Office in the *Quarterly Weather Report* from 1869 to 1880, and thereafter in *Hourly Readings*.

The tables of the present volume fall into three groups. In the first group the mean daily variation of the various meteorological elements is given for each month. The figures refer to the five observatories, Aberdeen, Eskdalemuir, Cahirciveen (Valencia Observatory), Richmond (Kew Observatory), and Falmouth.

In the second group fall Tables I to XLVIII, in which the readings of the magnetographs at Eskdalemuir Observatory for each hour throughout the year are set out, together with appropriate notes; Tables XLIX to LXIV, giving results deduced from these readings and corresponding figures for Kew Observatory; and Tables LXVII and LXVIII, in which magnetic data for various stations, British and foreign, are set out.

In the third group are the three tables which show the mean daily variation of potential gradient at Richmond and Eskdalemuir. The values from which the means have been computed are not published.

The tables are followed by notes on the management of the magnetic and electrical instruments and on results of interest. For notes on the meteorological instruments reference may be made to the Year Book, Part IV, Section 1, 1913. Notes on the Meteorological Summaries are included in this volume.

It will be noticed that the tabulation of the autographic records at the Meteorological Office Observatories which provides the material for this volume also yields information which is not printed here, such as the daily values of the extremes of temperature and other meteorological elements, and the range of magnetic force. For this information reference should be made to the *Geophysical Journal* issued as Part III, Section 2, of the British Meteorological and Magnetic Year Book.

G. C. SIMPSON,
Director.

METEOROLOGICAL OFFICE,
AIR MINISTRY, LONDON, W.C. 2.
31st August, 1923.

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HOURLY VALUES FROM AUTOGRAPHIC RECORDS. 1920.

LIST OF OBSERVATORIES.

	Latitude.	Longitude.	G.M.T. of Local Mean Noon.	Height above M.S.L. in metres.
Central Observatory: Kew Observatory, RICHMOND, Surrey	51° 28' N.	0° 19' W.	h m 12 1	5·5
Magnetic Observatory: ESKDALEMUIR, Dumfriesshire ..	55 19 N.	3 12 W.	12 13	242·0
Western Observatory: Valencia Observatory, CAHIRCIVEEN, Co. Kerry.	51 56 N.	10 15 W.	12 41	9·1
Auxiliary Observatories:				
ABERDEEN (Meteorology)	57 10 N.	2 6 W.	12 8	14·0
FALMOUTH (Meteorology)	50 9 N.	5 4 W.	12 20	50·8

Notes.—(1) The height given is that of the site of the rain-gauge. The heights of other meteorological instruments are shown under the appropriate Tables.

(2) Values printed in *italic* type in the following Tables are obtained by interpolation.

(3) Daily mean values are computed as $\frac{1}{24} \left\{ \frac{1}{2} (0 + 24) + (1 + \dots + 23) \right\}$

HOURLY VALUES FROM AUTOGRAPHIC RECORDS.

PRESSURE AT STATION LEVEL: MONTHLY MEANS OF HOURLY VALUES.

*Readings in millibars at exact hours, Greenwich Mean Time.

Aberdeen : H_b (height of barometer cistern above Mean Sea Level) = 26.8 metres.

1920.

Table with 25 columns (G.M.T., 0-24, Mean) and 12 rows (Jan, Feb, Mar, April, May, June, July, Aug, Sept, Oct, Nov, Dec, Year) for Aberdeen. Values are in millibars.

Eskdalemuir : H_b = 237.3 m.

1920.

Table with 25 columns (G.M.T., 0-24, Mean) and 12 rows (Jan, Feb, Mar, April, May, June, July, Aug, Sept, Oct, Nov, Dec, Year) for Eskdalemuir. Values are in millibars.

Cahirciveen (Valencia Obs.): H_b = 13.7 m.

1920.

Table with 25 columns (G.M.T., 0-24, Mean) and 12 rows (Jan, Feb, Mar, April, May, June, July, Aug, Sept, Oct, Nov, Dec, Year) for Cahirciveen. Values are in millibars.

Richmond (Kew Obs.): H_b = 10.4 m.

1920.

Table with 25 columns (G.M.T., 0-24, Mean) and 12 rows (Jan, Feb, Mar, April, May, June, July, Aug, Sept, Oct, Nov, Dec, Year) for Richmond. Values are in millibars.

*Note. 1. The initial 9 or 10 of the reading is omitted i.e. 1005.06 mb. is written 05.06 and 981.44 mb. becomes 81.44. 2. The latitude correction has been allowed for.

METEOROLOGICAL SUMMARY.

DIURNAL INEQUALITIES OF PRESSURE AT STATION LEVEL.

Departures from the mean of the day adjusted for non-periodic change.

Aberdeen.

Unit = 1 millibar.

1920.

G.M.T.	Midt.	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	
	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	
Jan.	+0.19	+0.26	+0.32	+0.32	+0.05	-0.13	-0.33	-0.24	-0.13	+0.15	+0.40	+0.29	0.00	-0.33	-0.53	-0.57	-0.40	-0.19	-0.02	+0.05	+0.23	+0.21	+0.22	+0.19	+0.19	
Feb.	+0.07	-0.05	-0.23	-0.48	-0.67	-0.78	-0.55	-0.39	-0.07	+0.29	+0.44	+0.41	+0.21	+0.13	-0.04	-0.14	-0.07	+0.04	+0.29	+0.44	+0.39	+0.32	+0.26	+0.20	+0.07	
Mar.	-0.07	+0.02	-0.17	-0.33	-0.42	-0.40	-0.32	-0.11	+0.12	+0.31	+0.38	+0.27	+0.27	+0.15	+0.09	-0.01	-0.08	-0.09	+0.01	+0.07	+0.21	+0.08	+0.05	-0.05	-0.07	
Apr.	+0.22	+0.05	-0.16	-0.37	-0.53	-0.49	-0.44	-0.28	-0.12	-0.03	+0.01	-0.01	+0.06	+0.11	+0.02	-0.07	-0.03	-0.01	+0.14	+0.32	+0.45	+0.46	+0.41	+0.31	+0.22	
May	+0.44	+0.29	+0.11	-0.09	-0.23	-0.28	-0.27	-0.26	-0.14	-0.20	-0.27	-0.33	-0.32	-0.20	-0.19	-0.17	-0.17	-0.10	+0.03	+0.25	+0.44	+0.57	+0.57	+0.49	+0.44	
June	+0.06	0.00	-0.11	-0.19	-0.26	-0.24	-0.16	-0.02	+0.13	+0.21	+0.21	+0.19	+0.14	+0.09	+0.08	-0.02	-0.15	-0.25	-0.22	-0.09	+0.01	+0.21	+0.23	+0.15	+0.06	
July	+0.23	+0.17	+0.08	-0.01	+0.01	+0.05	+0.12	+0.19	+0.21	+0.19	+0.11	+0.03	-0.06	-0.19	-0.25	-0.31	-0.37	-0.43	-0.37	-0.22	-0.05	+0.24	+0.29	+0.35	+0.23	
Aug.	+0.06	-0.04	-0.10	-0.19	-0.32	-0.28	-0.16	+0.05	+0.18	+0.22	+0.11	+0.19	+0.14	+0.13	+0.07	-0.02	-0.13	-0.17	-0.17	-0.07	+0.08	+0.15	+0.17	+0.13	+0.06	
Sép.	+0.18	+0.07	-0.04	-0.24	-0.35	-0.41	-0.31	-0.11	+0.07	+0.16	+0.20	+0.08	-0.01	-0.01	-0.17	-0.22	-0.27	-0.19	0.00	+0.21	+0.33	+0.37	+0.37	+0.29	+0.18	
Oct.	+0.08	-0.05	-0.21	-0.41	-0.48	-0.46	-0.36	-0.09	+0.26	+0.41	+0.47	+0.45	+0.25	+0.11	-0.03	-0.21	-0.33	-0.23	-0.05	+0.10	+0.13	+0.23	+0.23	+0.18	+0.08	
Nov.	-0.55	-0.74	-0.67	-0.77	-0.78	-0.67	-0.54	-0.25	+0.09	+0.29	+0.40	+0.51	+0.46	+0.38	+0.37	+0.39	+0.49	+0.49	+0.49	+0.43	+0.32	+0.13	-0.07	-0.29	-0.55	
Dec.	+0.47	+0.35	+0.24	+0.16	-0.03	-0.23	-0.35	-0.25	-0.12	+0.09	+0.22	+0.22	+0.09	-0.22	-0.36	-0.49	-0.38	-0.27	-0.19	-0.16	+0.03	+0.20	+0.31	+0.40	+0.52	+0.47
Year	+0.12	+0.03	-0.08	-0.22	-0.33	-0.36	-0.31	-0.15	+0.04	+0.17	+0.23	+0.18	+0.08	0.00	-0.09	-0.15	-0.15	-0.11	-0.03	+0.13	+0.23	+0.27	+0.26	+0.21	+0.12	

Eskdalemuir.

1920.

G.M.T.	Midt.	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.
	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.
Jan.	-0.14	-0.15	-0.09	-0.04	-0.18	-0.15	-0.09	-0.12	+0.01	+0.21	+0.30	+0.35	+0.12	-0.10	-0.21	-0.25	-0.14	+0.02	+0.21	+0.19	+0.08	+0.19	+0.05	-0.07	-0.14
Feb.	+0.27	+0.25	+0.05	-0.16	-0.37	-0.29	-0.32	-0.17	+0.04	+0.17	+0.16	+0.20	+0.15	-0.09	-0.28	-0.34	-0.39	-0.21	-0.01	+0.23	+0.25	+0.29	+0.23	+0.34	+0.27
Mar.	+0.18	+0.21	+0.14	-0.01	-0.08	-0.20	-0.29	-0.21	+0.04	+0.20	+0.17	+0.28	+0.20	+0.12	-0.07	-0.20	-0.27	-0.36	-0.15	-0.01	+0.01	+0.04	+0.10	+0.18	+0.18
Apr.	+0.43	+0.25	0.00	-0.23	-0.38	-0.37	-0.22	-0.19	-0.12	-0.08	-0.15	-0.16	-0.21	-0.24	-0.24	-0.31	-0.26	-0.13	0.00	+0.20	+0.51	+0.64	+0.70	+0.57	+0.43
May	+0.17	+0.04	-0.14	-0.29	-0.42	-0.41	-0.26	-0.12	+0.03	-0.03	+0.02	+0.13	+0.22	+0.17	+0.06	-0.03	-0.01	-0.03	0.00	+0.13	+0.25	+0.30	+0.24	+0.17	+0.17
June	+0.19	+0.15	+0.08	-0.02	-0.07	-0.05	+0.10	+0.16	+0.21	+0.17	+0.07	+0.06	+0.05	-0.06	-0.09	-0.19	-0.33	-0.46	-0.41	-0.28	-0.08	+0.23	+0.33	+0.26	+0.19
July	+0.43	+0.29	+0.19	-0.05	-0.09	-0.09	-0.08	-0.06	-0.07	-0.09	-0.27	-0.26	-0.28	-0.30	-0.26	-0.23	-0.30	-0.28	-0.14	+0.06	+0.21	+0.53	+0.58	+0.54	+0.43
Aug.	+0.07	-0.01	-0.19	-0.29	-0.40	-0.31	-0.13	+0.04	+0.15	+0.23	+0.17	+0.17	+0.13	+0.13	+0.08	-0.08	-0.16	-0.15	-0.17	-0.03	+0.13	+0.21	+0.22	+0.18	+0.07
Sép.	+0.20	+0.07	-0.04	-0.20	-0.41	-0.47	-0.24	-0.04	+0.10	+0.25	+0.22	+0.17	+0.10	-0.06	-0.15	-0.25	-0.33	-0.23	-0.11	+0.09	+0.30	+0.39	+0.34	+0.30	+0.20
Oct.	+0.32	+0.27	+0.12	-0.08	-0.17	-0.15	-0.11	+0.15	+0.37	+0.47	+0.42	+0.31	+0.07	-0.22	-0.52	-0.63	-0.69	-0.56	-0.27	-0.05	+0.09	+0.27	+0.28	+0.32	+0.32
Nov.	-0.19	-0.42	-0.55	-0.59	-0.54	-0.43	-0.43	-0.19	+0.13	+0.44	+0.59	+0.64	+0.44	+0.27	+0.19	+0.10	+0.18	+0.23	+0.28	+0.17	-0.03	-0.09	-0.07	-0.13	-0.19
Dec.	+0.48	+0.27	+0.18	+0.04	-0.25	-0.54	-0.66	-0.57	-0.38	-0.17	-0.15	-0.27	-0.52	-0.60	-0.50	-0.18	+0.04	+0.21	+0.37	+0.52	+0.63	+0.05	+0.70	+0.69	+0.48
Year	+0.20	+0.11	-0.02	-0.16	-0.28	-0.29	-0.23	-0.11	+0.04	+0.15	+0.13	+0.13	+0.03	-0.08	-0.16	-0.21	-0.22	-0.16	-0.04	+0.09	+0.19	+0.30	+0.31	+0.28	+0.20

Gahrciveen (Valencia Obs.).

1920.

G.M.T.	Midt.	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.
	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.
Jan.	+0.44	+0.36	+0.39	+0.50	+0.36	+0.09	-0.17	-0.14	+0.01	+0.26	+0.27	+0.30	+0.05	-0.33	-0.60	-0.72	-0.72	-0.64	-0.52	-0.28	+0.04	+0.27	+0.36	+0.40	+0.44
Feb.	+0.31	+0.26	+0.02	-0.20	-0.45	-0.56	-0.54	-0.46	-0.30	-0.05	+0.11	+0.36	+0.39	+0.16	-0.18	-0.38	-0.37	-0.25	+0.01	+0.27	+0.41	+0.48	+0.49	+0.47	+0.31
Mar.	-0.11	-0.19	-0.24	-0.38	-0.39	-0.30	-0.14	+0.02	+0.12	+0.26	+0.25	+0.28	+0.25	+0.16	-0.01	-0.12	-0.23	-0.10	+0.07	+0.19	+0.19	+0.19	+0.17	+0.05	-0.11
Apr.	+0.13	-0.10	-0.39	-0.62	-0.73	-0.78	-0.59	-0.37	-0.22	-0.13	-0.01	+0.10	+0.09	+0.09	+0.15	+0.13	+0.11	+0.18	+0.31	+0.40	+0.58	+0.75	+0.54	+0.38	+0.13
May	+0.40	+0.31	+0.14	-0.04	-0.20	-0.28	-0.23	-0.24	-0.18	-0.17	-0.21	-0.16	-0.11	-0.07	+0.02	+0.03	-0.01	-0.07	-0.10	-0.06	+0.05	+0.37	+0.39	+0.39	+0.40
June	+0.26	+0.13	-0.07	-0.33	-0.53	-0.55	-0.43	-0.31	-0.17	-0.07	-0.07	+0.08	+0.16	+0.22	+0.19	+0.13	+0.03	-0.01	-0.01	+0.04	+0.17	+0.39	+0.41	+0.35	+0.26
July	+0.17	-0.14	-0.35	-0.58	-0.72	-0.69	-0.63	-0.45	-0.23	-0.07	-0.04	+0.03	+0.13	+0.20	+0.25	+0.29	+0.29	+0.28	+0.30	+0.27	+0.35	+0.52	+0.49	+0.37	+0.17
Aug.	+0.25	+0.11	-0.11	-0.31	-0.43	-0.46	-0.33	-0.18	-0.06	+0.02	+0.12	+0.21	+0.21	+0.20	+0.18	+0.09	-0.04	-0.13	-0.10	-0.04	+0.07	+0.24	+0.26	+0.27	+0.25
Sép.	+0.15	+0.05	-0.13	-0.30	-0.41	-0.53	-0.46	-0.27	-0.12	+0.06	+0.13	+0.17	+0.15	+0.17	+0.13	+0.02	-0.09	-0.12	-0.02	+0.07	+0.27	+0.42	+0.36	+0.31	+0.15
Oct.	+0.29	+0.11	-0.17	-0.49	-0.69	-0.71	-0.60	-0.46	-0.17	+0.08	+0.09	+0.13	+0.18	+0.08	-0.05	-0.08	-0.14	0.00	+0.18	+0.41	+0.42	+0.57	+0.57	+0.41	+0.29
Nov.	+0.24	+0.11	-0.13	-0.23	-0.35	-0.39	-0.38	-0.29	-0.10	+0.06	+0.16	+0.36	+0.16	-0.13	-0.28	-0.27	-0.22	-0.06	+0.17	+0.30	+0.29	+0.38	+0.32	+0.25	+0.24
Dec.	-0.75	-0.90	-0.96	-0.74	-0.54	-0.48	-0.27	+0.22	+0.61	+1.05	+1.31	+1.55	+1.20	+0.74	+0.36	+0.30	+0.10	-0.08	-0.14	-0.32	-0.41	-0.51	-0.64	-0.69	-0.75
Year	+0.15	+0.01	-0.17	-0.31	-0.42	-0.47	-0.40	-0.24	-0.07	+0.11	+0.18	+0.29	+0.24	+0.13	+0.01	-0.05	-0.11	-0.08	+0.01	+0.10	+0.20	+0.34	+0.31	+0.25	+0.15

Richmond (Kew Obs.).

1920.

G.M.T.	Midt.	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	1
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HOURLY VALUES FROM AUTOGRAPHIC RECORDS.

TEMPERATURE; MONTHLY MEANS OF HOURLY VALUES.

* Readings, in degrees absolute, at exact hours, Greenwich Mean Time.

Aberdeen : North Wall Screen on Tower : h_t (height of thermometer bulb above the ground)=12.5 metres.

1920.

G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Jan.	76.2	76.2	76.0	75.8	75.6	75.8	76.0	76.1	76.1	76.2	76.4	76.7	77.0	77.3	77.5	77.6	77.2	77.0	76.9	76.8	76.7	76.5	76.5	76.3	76.3	76.5
Feb.	77.7	77.8	77.8	77.6	77.6	77.6	77.6	77.7	77.8	78.1	78.6	79.1	79.7	79.9	80.2	80.1	79.9	79.4	78.9	78.5	78.3	78.2	78.1	78.1	78.0	78.5
Mar.	78.2	78.0	77.8	77.5	77.4	77.4	77.3	77.5	78.1	78.8	79.5	80.0	80.4	80.7	80.7	80.5	80.3	80.1	79.5	79.2	78.6	78.5	78.4	78.0	78.0	78.9
April	78.2	78.0	77.9	77.8	77.7	77.7	78.0	78.5	79.1	79.6	80.1	80.6	80.7	80.6	80.6	80.6	80.6	80.3	80.1	79.7	79.2	78.9	78.6	78.2	78.1	79.1
May	81.0	80.7	80.5	80.3	80.1	80.5	81.2	82.0	82.5	83.0	83.6	84.0	84.2	84.4	84.6	84.5	84.4	84.3	83.9	83.5	82.8	82.2	81.9	81.6	81.3	82.6
June	83.3	83.0	82.8	82.7	82.7	83.2	84.2	85.0	85.2	85.5	85.7	86.0	86.2	86.3	86.3	86.5	86.3	86.0	85.4	84.8	84.3	83.9	83.6	83.3	83.3	84.8
July	84.6	84.3	84.1	83.7	83.7	83.9	84.7	85.4	85.9	86.4	86.8	86.8	87.1	87.4	87.6	87.8	87.7	87.6	87.4	87.0	86.2	85.6	85.3	84.9	84.6	85.9
Aug.	84.2	84.1	83.6	83.4	83.3	83.3	83.7	84.4	85.0	85.6	86.0	86.6	86.7	86.9	87.0	87.1	86.9	86.7	86.4	85.8	85.2	84.9	84.6	84.3	84.2	85.2
Sept.	83.2	83.0	82.7	82.4	82.2	82.2	82.4	83.1	83.8	84.8	85.6	86.0	86.2	86.4	86.4	86.2	85.8	85.5	85.1	84.6	84.3	84.0	83.8	83.5	83.2	84.3
Oct.	83.3	83.2	83.0	82.9	82.8	82.6	82.5	82.4	82.6	83.1	83.6	84.0	84.3	84.5	84.5	84.4	84.1	83.8	83.6	83.4	83.3	83.2	83.2	83.2	83.2	83.4
Nov.	80.9	81.0	81.0	80.8	80.6	80.5	80.3	80.1	80.1	80.2	80.6	81.1	81.7	82.0	82.0	81.8	81.5	81.2	81.2	81.0	80.9	80.9	80.8	80.9	80.9	80.1
Dec.	77.0	76.9	77.0	77.1	77.0	76.9	76.9	76.8	76.9	77.1	77.5	77.9	78.0	78.0	77.9	77.5	77.4	77.3	77.3	77.2	77.2	77.1	77.0	76.9	77.2	77.2
Year	80.6	80.5	80.3	80.2	80.1	80.1	80.4	80.8	81.1	81.5	82.0	82.4	82.7	82.9	82.9	83.0	82.7	82.4	82.2	81.8	81.4	81.2	81.0	80.8	80.7	81.5

Eskdalemuir : Louvred Hut : $h_t=0.9$ m.

1920.

G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Jan.	74.8	74.7	74.7	74.7	74.8	74.8	74.9	75.1	75.2	75.2	75.7	75.9	76.1	76.4	76.4	76.2	76.0	75.8	75.5	75.3	75.2	75.0	74.9	74.9	75.0	75.3
Feb.	75.9	75.7	75.8	75.9	76.0	76.0	76.0	75.9	75.8	76.3	77.0	77.7	78.3	78.6	78.7	78.5	78.3	77.6	77.1	76.8	76.5	76.2	76.1	76.1	76.0	76.8
Mar.	76.4	76.2	76.3	76.3	76.1	76.0	76.1	76.2	76.5	77.2	77.9	78.2	78.7	79.0	79.2	79.1	78.6	78.3	77.7	77.0	76.8	76.6	76.3	76.4	76.4	77.2
April	76.8	76.6	76.4	76.1	76.0	75.8	76.1	77.1	78.0	79.1	79.7	80.2	80.4	80.8	80.8	80.7	80.2	79.8	79.3	78.4	77.7	77.2	76.7	76.6	76.5	78.2
May	79.2	79.0	78.9	78.8	78.7	79.1	79.8	80.7	81.6	82.5	82.9	83.4	83.8	84.1	84.5	84.7	84.4	83.8	83.5	82.5	81.5	80.7	80.3	80.0	79.7	81.6
June	81.9	81.3	80.9	80.8	80.6	81.4	82.4	83.6	84.8	85.7	86.7	87.3	87.8	88.1	87.9	87.9	87.9	87.6	86.9	86.1	84.9	83.6	82.9	82.5	81.9	84.6
July	82.7	82.5	82.4	82.3	82.2	81.9	81.7	82.1	82.2	82.4	82.5	82.6	82.7	82.8	82.8	82.7	82.7	82.7	82.6	82.5	82.4	82.3	82.2	82.1	82.0	82.1
Aug.	82.6	82.4	82.3	82.2	82.1	81.9	81.7	82.1	82.2	82.4	82.5	82.6	82.7	82.8	82.8	82.7	82.7	82.6	82.5	82.4	82.3	82.2	82.1	82.0	81.9	82.0
Sept.	81.2	81.1	80.9	81.0	80.9	81.1	81.2	81.7	82.6	83.7	84.6	85.2	85.7	86.0	86.0	85.8	85.7	85.5	85.2	84.1	83.2	82.6	82.2	82.1	81.7	83.2
Oct.	79.8	79.5	79.3	79.1	79.1	79.1	79.1	79.4	79.9	81.2	82.5	83.6	84.5	84.9	85.2	85.1	84.3	82.7	81.5	80.8	80.3	80.2	80.1	79.9	79.7	81.3
Nov.	78.9	78.9	78.8	78.9	78.7	78.7	78.7	78.6	78.6	78.9	79.6	80.3	80.5	80.8	80.7	80.1	79.6	79.0	78.7	78.7	78.7	78.7	78.7	78.8	78.9	79.2
Dec.	75.1	75.1	75.0	75.1	74.9	74.9	75.0	75.0	75.0	75.0	75.3	75.8	76.4	76.7	76.7	76.5	76.1	75.8	75.5	75.3	75.3	75.4	75.4	75.3	75.1	75.5
Year	78.8	78.6	78.5	78.4	78.3	78.4	78.7	79.2	79.7	80.4	81.1	81.6	82.1	82.4	82.5	82.4	82.1	81.5	81.0	80.4	79.8	79.4	79.1	79.0	78.8	80.1

Cahirciveen (Valencia Obs.) : North Wall Screen : $h_t=1.3$ m.

1920.

G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Jan.	80.3	80.4	80.1	80.2	80.3	80.3	80.2	80.2	80.1	80.3	80.4	80.7	81.0	81.2	81.1	80.9	80.7	80.5	80.3	80.4	80.4	80.4	80.4	80.5	80.4	80.5
Feb.	81.2	81.0	81.0	81.1	81.1	81.0	81.0	81.0	81.0	81.0	81.4	81.8	82.2	82.3	82.5	82.5	82.3	82.0	81.7	81.4	81.3	81.2	81.2	81.2	81.3	81.5
Mar.	80.1	80.0	80.0	79.8	79.5	79.5	79.5	79.4	79.8	80.2	80.9	81.4	81.5	81.7	81.7	81.7	81.6	81.3	80.9	80.2	80.0	80.0	79.9	79.9	80.4	
April	80.3	80.4	80.3	80.2	80.1	80.2	80.2	80.4	81.1	81.6	82.0	82.2	82.4	82.4	82.6	82.7	82.6	82.3	82.0	81.5	81.1	80.8	80.7	80.5	80.4	81.3
May	82.9	82.7	82.6	82.5	82.5	82.4	82.5	83.2	83.8	84.5	84.8	85.1	85.6	85.7	85.8	85.8	85.7	85.5	84.9	84.5	84.0	83.7	83.4	83.2	83.0	84.1
June	85.0	84.8	84.6	84.5	84.4	84.5	85.1	86.0	86.8	87.4	87.8	87.9	88.1	88.3	88.5	88.4	88.6	88.4	88.1	87.7	87.1	86.3	85.8	85.3	85.0	86.6
July	85.7	85.7	85.6	85.6	85.6	85.4	85.6	86.0	86.4	86.7	87.1	87.4	87.5	87.5	87.7	87.6	87.5	87.5	87.1	86.6	86.2	85.9	85.8	85.8	85.7	86.5
Aug.	86.3	86.2	86.2	86.2	86.2	86.1	86.4	87.1	87.8	88.1	88.5	88.8	89.2	89.1	89.1	88.9	88.9	88.7	88.2	87.7	87.2	86.8	86.6	86.5	86.3	87.4
Sept.	86.0	85.9	85.8	85.5	85.5	85.4	85.4	85.9	86.5	87.0	87.6	87.9	88.1	88.1	88.2	88.0	87.6	87.2	86.8	86.5	86.3	86.1	85.9	85.8	85.8	86.6
Oct.	85.0	84.9	84.8	84.8	84.9	84.8	84.8	85.1	85.5	86.2	86.6	86.9	87.1	87.1	87.1	86.8	86.4	86.0	85.6	85.5	85.5	85.4	85.0	85.0	85.0	85.7
Nov.	83.2	83.2	83.2	83.1	83.0	83.0	83.1	83.0	83.0	83.2	83.5	83.8	84.1	84.2	84.2	84.0	83.9	83.5	83.3	83.4	83.3	83.2	83.2	83.2	83.1	83.4
Dec.	79.8	79.9	80.0	80.0	79.8	79.8	79.6	79.8	79.6	79.5	79.7	80.2	80.8	81.1	81.1	81.0	80.7	80.4	80.2	80.2	80.2	80.3	80.1	80.0	80.0	80.2
Year	83.0	82.9	82.9	82.8	82.7	82.7	82.7	83.0	83.3	83.7	84.1	84.4	84.7	84.9	84.9	84.9	84.8	84.5	84.2	83.8	83.6	83.4	83.2	83.1	83.0	83.7

Richmond (Kew Obs.) : North Wall Screen : $h_t=3.0$ m.

1920.

G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Jan.	78.6	78.5	78.4	78.5	78.5	78.4	78.4	78.4	78.3	78.6	78.9	79.4	79.9	80.4	80.5	80.4	80.4	79.8	79.6	79.3	79.0	79.0	78.8	78.8	78.8	79.1
Feb.	78.4	78.1	77.9	77.7	77.6	77.6	77.6	77.5	77.4	78.1	79.1	80.0	81.0	81.8	82.1	82.3	82.2	81.6	80.8	80.1	79.5	79.3	79.0	78.8	78.5	79.4
Mar.	79.7	79.3	78.9	78.7	78.4	78.2	78.3	78.5	79.1	80.4	81.2	82.3	83.2	84.0	84.5	84.7	84.5	83.9	83.0	82.1	81.3	80.8	80.5	80.0	79.8	81.0
April	80.9	80.7	80.6	80.3	80.3	80.4	81.2	82.0	82.8	83.4	84.0	84.5	84.6	84.7	84.9	84.5	84.2	83.6	83.1	82.5	82.0	81.5	81.2	80.9	80.9	82.4
May	83.8	83.3	83.0	82.7	82.3	82.5	83.3	84.5	85.8	87.0	87.8	88.4	89.1	89.4	89.7	89.8	89.8	89.4	88.8	87.8	86.7	85.7	85.0	84.4	83.9	86.3
June	86.3	85.7	85.3	84.9	84.7	85.1	85.9	86.9	87.8	88.5	89.3	90.1	9													

METEOROLOGICAL SUMMARY.

DIURNAL INEQUALITIES OF TEMPERATURE.

Departures from the Mean of the day adjusted for non-periodic change.

Aberdeen :

Unit = 1° centigrade.

1920.

G.M.T.	Midt.	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	
Jan.	0	-0.3	-0.3	-0.5	-0.7	-0.9	-0.7	-0.5	-0.4	-0.3	-0.3	-0.1	+0.1	+0.5	+0.8	+1.0	+1.1	+0.7	+0.4	+0.3	+0.3	+0.1	-0.1	-0.1	-0.2	-0.3
Feb.	0	-0.7	-0.6	-0.6	-0.8	-0.8	-0.8	-0.9	-0.8	-0.7	-0.4	+0.1	+0.6	+1.2	+1.4	+1.7	+1.6	+1.3	+0.8	+0.3	-0.1	-0.3	-0.4	-0.6	-0.6	-0.7
Mar.	0	-0.8	-1.0	-1.1	-1.4	-1.5	-1.5	-1.6	-1.4	-0.8	-0.1	+0.7	+1.1	+1.6	+1.9	+1.9	+1.6	+1.5	+1.3	+0.7	+0.4	-0.2	-0.3	-0.4	-0.7	-0.8
April	0	-1.0	-1.2	-1.3	-1.3	-1.5	-1.5	-1.2	-0.6	-0.1	+0.5	+1.0	+1.4	+1.6	+1.5	+1.5	+1.5	+1.2	+0.9	+0.6	+0.1	-0.2	-0.5	-0.7	-0.9	-1.0
May	0	-1.5	-1.7	-2.0	-2.1	-2.4	-2.0	-1.3	-0.5	0.0	+0.5	+1.1	+1.4	+1.6	+1.8	+2.0	+1.9	+1.8	+1.7	+1.3	+0.8	+0.1	-0.5	-0.8	-1.1	-1.5
June	0	-1.5	-1.8	-2.0	-2.1	-2.1	-1.6	-0.6	+0.2	+0.4	+0.7	+0.9	+1.2	+1.4	+1.4	+1.5	+1.7	+1.5	+1.5	+1.3	+0.6	0.0	-0.5	-0.9	-1.2	-1.5
July	0	-1.3	-1.6	-1.8	-2.2	-2.3	-1.9	-1.2	-0.5	0.0	+0.5	+0.9	+0.9	+1.2	+1.5	+1.7	+1.9	+1.8	+1.7	+1.5	+1.1	+0.3	-0.3	-0.7	-1.0	-1.3
Aug.	0	-1.0	-1.2	-1.6	-1.8	-2.0	-2.0	-1.6	-0.8	-0.2	+0.4	+0.8	+1.3	+1.4	+1.7	+1.7	+1.9	+1.6	+1.4	+1.1	+0.6	0.0	-0.3	-0.6	-0.9	-1.0
Sept.	0	-1.1	-1.3	-1.6	-1.9	-2.1	-2.1	-1.8	-1.2	-0.5	+0.5	+1.3	+1.7	+1.9	+2.1	+2.1	+1.9	+1.5	+1.2	+0.8	+0.3	0.0	-0.3	-0.6	-0.8	-1.1
Oct.	0	-0.2	-0.2	-0.4	-0.5	-0.7	-0.8	-1.0	-1.1	-0.8	-0.3	+0.2	+0.6	+0.9	+1.1	+1.1	+1.0	+0.7	+0.4	+0.2	+0.1	-0.1	-0.1	-0.1	-0.1	-0.2
Nov.	0	-0.1	0.0	0.0	-0.2	-0.4	-0.5	-0.6	-0.9	-0.9	-0.8	-0.3	+0.2	+0.7	+1.1	+1.1	+0.9	+0.5	+0.3	+0.2	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
Dec.	0	-0.3	-0.4	-0.2	-0.1	-0.2	-0.3	-0.4	-0.4	-0.4	-0.2	+0.3	+0.6	+0.7	+0.8	+0.6	+0.3	+0.1	+0.1	0.0	0.0	0.0	-0.1	-0.2	-0.3	-0.3
Year	0	-0.8	-0.9	-1.1	-1.3	-1.4	-1.3	-1.0	-0.7	-0.4	+0.1	+0.5	+0.9	+1.2	+1.4	+1.5	+1.5	+1.2	+1.0	+0.7	+0.3	0.0	-0.3	-0.5	-0.6	-0.8

Eskdalemuir :

1920.

G.M.T.	Midt.	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	
Jan.	0	-0.5	-0.6	-0.5	-0.5	-0.5	-0.4	-0.2	-0.1	-0.1	+0.4	+0.6	+0.8	+1.0	+1.0	+0.8	+0.6	+0.4	+0.1	-0.1	-0.1	-0.4	-0.6	-0.5	-0.5	
Feb.	0	-0.9	-1.0	-0.9	-0.8	-0.7	-0.7	-0.9	-0.9	-0.5	+0.2	+0.9	+1.5	+1.8	+1.9	+1.7	+1.5	+0.8	+0.3	0.0	-0.4	-0.6	-0.8	-0.7	-0.9	
Mar.	0	-0.8	-1.0	-1.0	-0.9	-1.1	-1.2	-1.1	-1.0	-0.7	0.0	+0.7	+1.0	+1.5	+1.8	+2.0	+1.9	+1.4	+1.1	+0.5	-0.2	-0.4	-0.6	-0.9	-0.8	
Apr.	0	-1.5	-1.7	-1.9	-2.1	-2.3	-2.5	-2.2	-1.1	-0.2	+0.8	+1.5	+2.0	+2.3	+2.6	+2.6	+2.6	+2.1	+1.7	+1.2	+0.3	-0.4	-0.9	-1.3	-1.5	-1.5
May	0	-2.2	-2.4	-2.5	-2.7	-2.7	-2.4	-1.7	-0.8	+0.1	+0.9	+1.3	+1.8	+2.2	+2.5	+2.8	+3.0	+2.7	+2.1	+1.8	+0.8	-0.3	-1.1	-1.5	-1.8	-2.2
June	0	-2.7	-3.4	-3.7	-3.9	-4.1	-3.3	-2.3	-1.0	+0.1	+1.1	+2.1	+2.7	+3.2	+3.5	+3.3	+3.3	+3.3	+3.0	+2.2	+1.5	+0.2	-1.0	-1.7	-2.2	-2.7
July	0	-1.7	-1.8	-2.0	-2.1	-2.0	-1.9	-1.4	-0.7	+0.1	+0.5	+1.0	+1.3	+1.7	+1.9	+2.1	+2.1	+2.3	+2.0	+1.5	+0.7	-0.1	-0.9	-1.3	-1.5	-1.7
Aug.	0	-1.9	-2.2	-2.3	-2.4	-2.7	-2.9	-2.5	-1.3	-0.4	+0.5	+1.4	+1.9	+2.5	+2.7	+2.7	+3.0	+2.8	+2.3	+1.7	+0.7	-0.2	-0.9	-1.3	-1.6	-1.9
Sept.	0	-1.8	-2.0	-2.1	-2.1	-2.2	-2.1	-1.9	-1.4	-0.5	+0.6	+1.5	+2.1	+2.5	+2.9	+3.0	+2.6	+2.5	+1.9	+0.9	0.0	-0.6	-1.1	-1.2	-1.6	-1.8
Oct.	0	-1.6	-1.9	-2.1	-2.2	-2.3	-2.2	-2.2	-1.9	-1.4	-0.1	+1.2	+2.3	+3.2	+3.6	+3.9	+3.8	+3.0	+1.4	+0.3	-0.5	-0.9	-1.0	-1.2	-1.4	-1.6
Nov.	0	-0.3	-0.3	-0.4	-0.3	-0.5	-0.5	-0.5	-0.6	-0.6	-0.3	+0.4	+1.1	+1.3	+1.6	+1.5	+0.9	+0.4	-0.2	-0.4	-0.5	-0.5	-0.5	-0.5	-0.4	-0.3
Dec.	0	-0.4	-0.4	-0.5	-0.4	-0.5	-0.6	-0.5	-0.5	-0.4	-0.5	-0.2	+0.4	+0.9	+1.3	+1.2	+1.0	+0.6	+0.3	0.0	-0.2	-0.2	-0.1	-0.1	-0.2	-0.4
Year	0	-1.3	-1.5	-1.7	-1.7	-1.8	-1.7	-1.4	-0.9	-0.4	+0.3	+0.9	+1.5	+2.0	+2.3	+2.3	+2.2	+1.9	+1.4	+0.8	+0.2	-0.3	-0.7	-1.0	-1.2	-1.3

Gahirciveen (Valencia Obs.)

1920.

G.M.T.	Midt.	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	
Jan.	0	-0.1	-0.1	-0.3	-0.2	-0.2	-0.1	-0.3	-0.2	-0.3	-0.2	0.0	+0.2	+0.5	+0.7	+0.6	+0.4	+0.2	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	0.0	-0.1
Feb.	0	-0.3	-0.2	-0.3	-0.3	-0.3	-0.4	-0.5	-0.5	-0.5	-0.1	+0.3	+0.7	+0.9	+1.0	+1.0	+0.7	+0.5	+0.2	-0.1	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3
Mar.	0	-0.4	-0.5	-0.5	-0.7	-1.0	-1.0	-1.0	-1.0	-0.6	-0.2	+0.5	+0.9	+1.0	+1.3	+1.3	+1.3	+1.2	+0.9	+0.5	-0.2	-0.3	-0.4	-0.4	-0.5	-0.4
Apr.	0	-0.9	-0.9	-0.9	-1.0	-1.1	-1.0	-1.0	-0.9	-0.1	+0.3	+0.7	+0.9	+1.2	+1.2	+1.3	+1.4	+1.3	+1.1	+0.7	+0.2	-0.2	-0.5	-0.6	-0.8	-0.9
May	0	-1.1	-1.3	-1.4	-1.5	-1.5	-1.6	-1.5	-0.9	-0.3	+0.4	+0.7	+1.1	+1.6	+1.7	+1.7	+1.7	+1.6	+1.4	+0.8	+0.4	-0.1	-0.4	-0.7	-0.9	-1.1
June	0	-1.7	-1.9	-2.0	-2.1	-2.2	-2.2	-1.6	-0.6	+0.2	+0.7	+1.1	+1.2	+1.5	+1.7	+1.8	+1.8	+2.0	+1.8	+1.5	+1.1	+0.4	-0.3	-0.9	-1.3	-1.7
July	0	-0.8	-0.7	-0.8	-0.9	-0.9	-1.1	-0.9	-0.4	-0.1	+0.2	+0.7	+0.9	+1.0	+1.0	+1.2	+1.1	+1.0	+1.0	+0.6	+0.1	-0.3	-0.6	-0.7	-0.7	-0.8
Aug.	0	-1.1	-1.2	-1.2	-1.3	-1.2	-1.3	-1.0	-0.3	+0.3	+0.7	+1.1	+1.4	+1.7	+1.7	+1.7	+1.5	+1.3	+0.8	+0.2	-0.3	-0.5	-0.8	-0.9	-1.1	-1.1
Sept.	0	-0.7	-0.8	-0.9	-1.1	-1.2	-1.3	-1.2	-0.7	-0.1	+0.4	+1.0	+1.3	+1.5	+1.5	+1.6	+1.4	+1.0	+0.7	+0.2	0.0	-0.3	-0.4	-0.6	-0.7	-0.7
Oct.	0	-0.7	-0.8	-0.9	-0.9	-0.8	-0.7	-0.9	-0.9	-0.6	-0.2	+0.5	+0.9	+1.2	+1.4	+1.4	+1.4	+1.1	+0.7	+0.3	-0.1	-0.2	-0.3	-0.5	-0.6	-0.7
Nov.	0	-0.2	-0.2	-0.2	-0.3	-0.4	-0.4	-0.4	-0.5	-0.5	-0.2	+0.1	+0.3	+0.7	+0.8	+0.8	+0.6	+0.5	+0.1	0.0	0.0	-0.1	-0.1	-0.2	-0.2	-0.2
Dec.	0	-0.2	-0.2	-0.1	-0.1	-0.3	-0.3	-0.5	-0.3	-0.6	-0.6	-0.4	0.0	+0.6	+0.9	+0.9	+0.8	+0.5	+0.2	0.0	0.0	0.0	+0.1	-0.1	-0.3	-0.2
Year	0	-0.7	-0.7	-0.8	-0.9	-0.9	-0.9	-0.7	-0.4	0.0	+0.4	+0.7	+1.1	+1.2	+1.3	+1.2	+1.1	+0.9	+0.5	+0.1	-0.1	-0.3	-0.5	-0.6	-0.7	-0.7

Richmond (Kew Obs.)

1920.

G.M.T.	Midt.	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	
Jan.	0	-0.4	-0.5	-0.6	-0.5	-0.5	-0.6	-0.7	-0.7	-0.7	-0.5	-0.2	+0.4	+0.8	+1.3	+1.4	+1.3	+0.7	+0.5	+0.3	0.0	-0.1	-0.1	-0.3	-0.3	-0.4
Feb.	0	-0.9	-1.3	-1.5	-1.7	-1.8	-1.8	-1.9	-2.0	-1.3	-0.3	+0.6	+1.6	+2.4	+2.7	+2.9	+2.8	+2.2	+1.4	+0.7	+0.1	-0.1	-0.5	-0.7	-0.9	-0.9
Mar.	0	-1.3	-1.7	-2.1	-2.4	-2.6	-2.8	-2.8	-2.6	-2.0	+0.2	+1.2	+2.1	+2.9	+3.5	+3.6	+3.5	+2.9	+1.9	+1.0	+0.3	-0.2	-0.6	-1.0	-1.3	-1.3
April	0	-1.5	-1.7	-1.9	-2.1	-2.2	-2.1	-2.0	-1.3	-0.4	+0.3	+1.0	+1.6	+2.1	+2.2	+2.3	+2.4	+2.1	+1.8	+1.2	+0.7	+0.1	-0.4	-0.9	-1.2	-1.5
May	0	-2.4	-2.9	-3.2	-3.5	-3.9	-3.7	-2.9	-1.7	-0.4	+0.7	+1.6	+2.1	+2.8	+3.1	+3.4	+3.5	+3.5	+3.1	+2.5	+1.5	+0.3	-0.6	-1.3	-1.9	-2.4
June	0	-2.3	-2.8	-3.2	-3.6	-3.8	-3.4	-2.7	-1.6	-0.8	0.0	+0.7	+1.5	+2.2	+2.7	+3.1	+3.3	+3.4	+3.5	+3.1	+2.5	+1.0	-0.2	-1.0	-1.7	-2.3
July	0	-1.9	-2.3	-2.7	-2.9	-2.9	-2.7	-2.1	-1.3	-0.4	+0.5	+1.0	+1.6	+2.0	+2.5	+2.6	+2.6	+2.6	+2.3	+2.1	+1.5	+0.5	-0.4	-1.0	-1.4	-1.9
Aug.	0	-2.1	-2.4	-2.7	-2.9	-3.2	-3.4	-3.0	-2.1	-0.9	+0.3	+1.1	+1.7	+2.3	+2.8	+3.1	+3.3	+3.2	+3.1	+2.7	+1.6	+0.4	-0.3	-1.0	-1.6	-2.1
Sept.	0	-1.8	-2.1	-2.4	-2.7	-2.9	-2.9	-2.3	-1.4	-0.3	+0.7	+1.5	+2.3	+3.0	+3.4	+3.6	+3.5	+3.1	+2.1	+0.9	+0.1	-0.4	-0.9	-1.3	-1.8	-1.8
Oct.	0	-1.5	-1.7	-2.1	-2.4	-2.4	-2.4	-2.5	-2.3	-1.7	-0.6	+0.6	+1.8	+2.8	+3.6	+3.7	+3.5	+3.0	+2.1	+1.2	+0.5	-0.1	-0.7	-1.0	-1.4	-1.5
Nov.	0	-0.8	-1.0	-1.3	-1.5	-1.6	-1.7	-1.7	-1.5	-1.1	-0.1	+1.0	+1.7	+2.3	+2.7	+2.6	+2.1	+1.3	+0.9	+0.4	+0.1	-0.3	-0.3	-0.7	-0.8</	

HOURLY VALUES FROM AUTOGRAPHIC RECORDS.

RELATIVE HUMIDITY: MONTHLY MEANS OF HOURLY VALUES.

Percentages, deduced from thermometer readings at exact hours, Greenwich Mean Time, by Glaisher's method.

Aberdeen: North Wall Screen on Tower: h_t (height of thermometer bulb above the ground) = 12.5 metres.

1920.

G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	24	Mean	
Jan.	82	80	79	82	82	82	81	83	83	82	82	82	82	81	80	78	78	77	77	77	79	80	80	80	80	80	80
Feb.	80	80	78	81	80	80	80	80	80	79	78	77	76	76	74	73	75	76	78	79	80	80	80	79	78	78	78
Mar.	81	81	81	82	82	82	82	82	80	79	76	75	73	73	72	74	76	75	80	81	83	83	83	83	82	79	79
April	84	85	85	87	87	87	85	84	82	80	77	75	75	75	74	74	76	77	78	81	81	84	84	86	84	81	
May	82	82	84	84	85	84	83	80	76	75	72	70	70	70	69	70	71	70	71	72	75	78	79	82	83	76	
June	82	84	83	82	82	81	78	75	76	74	73	72	72	72	71	70	70	71	71	74	76	78	80	82	84	76	
July	83	83	84	85	85	84	83	80	77	75	74	74	75	73	72	72	72	72	74	78	80	81	82	82	83	78	
Aug.	85	86	87	87	87	86	86	84	80	77	75	74	74	73	73	73	73	74	76	79	82	84	85	86	86	80	
Sept.	88	89	89	89	89	88	88	88	85	81	77	75	74	75	75	76	77	79	82	84	86	86	86	87	88	83	
Oct.	88	88	88	88	89	89	89	88	87	86	84	84	82	82	82	83	84	85	86	86	87	87	87	87	87	86	
Nov.	81	81	82	81	81	80	80	81	81	80	79	78	76	76	76	77	78	79	80	80	80	81	81	81	81	80	
Dec.	86	86	87	87	87	84	84	86	86	86	87	85	84	82	83	84	85	85	87	87	85	85	87	85	84	85	
Year	84	84	85	85	85	85	84	82	80	79	77	76	75	75	74	74	76	76	77	79	80	83	82	84	84	80	

Eskdalemuir: Louvred Hut: h_t = 0.9 m.

1920.

G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	24	Mean	
Jan.	89	89	88	86	87	88	88	89	90	90	88	87	87	87	87	88	88	89	88	88	88	88	88	90	88	89	88
Feb.	88	89	89	89	89	89	89	89	89	88	86	85	83	84	83	84	84	85	86	88	88	88	89	89	88	88	87
Mar.	89	89	86	88	88	88	88	88	89	87	84	83	81	82	80	80	83	84	87	88	89	89	90	89	88	86	
April	88	88	88	88	88	89	88	86	84	80	78	76	76	73	73	73	75	78	78	84	85	86	86	87	87	82	
May	87	88	89	91	90	90	88	87	83	80	79	76	75	74	71	71	74	75	76	81	84	86	87	87	88	82	
June	85	87	87	88	89	88	85	81	76	74	71	68	67	66	67	68	68	68	71	74	78	83	84	85	85	77	
July	89	89	90	91	90	91	89	86	81	80	78	78	77	76	77	76	73	75	76	80	84	86	87	89	89	83	
Aug.	89	89	89	89	90	90	89	86	83	79	76	74	72	73	74	73	74	77	80	84	86	88	88	89	89	82	
Sept.	91	91	91	91	92	91	92	92	90	86	82	79	77	75	74	76	77	81	84	86	88	89	89	91	91	86	
Oct.	90	90	90	90	89	89	89	88	89	87	84	80	76	75	72	73	77	82	85	87	88	89	90	91	90	85	
Nov.	86	86	88	85	86	86	85	86	86	86	83	81	79	78	78	80	81	83	85	84	85	85	86	87	86	84	
Dec.	90	89	89	88	89	88	87	90	90	89	89	89	88	87	87	89	89	90	90	90	90	90	90	90	90	89	
Year	88	89	89	89	89	89	88	87	86	84	82	80	78	77	77	77	79	80	82	84	86	87	88	88	88	84	

Cahirciveen (Valencia Obs.): North Wall Screen: h_t = 1.3 m.

1920.

G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	24	Mean	
Jan.	87	86	86	85	84	84	84	84	85	83	83	83	84	83	83	84	85	86	86	86	86	86	86	86	86	86	85
Feb.	84	84	84	84	84	85	86	87	87	87	86	85	83	83	82	82	83	84	84	85	85	85	85	86	85	85	
Mar.	86	85	85	85	85	85	85	87	86	85	83	81	81	81	81	80	81	81	82	85	86	86	85	86	86	84	
April	86	87	87	87	86	86	85	86	83	82	80	80	79	80	80	80	80	80	82	83	84	83	84	85	86	83	
May	87	87	87	87	87	87	88	86	85	83	81	81	79	79	79	79	78	78	80	81	82	83	86	87	87	83	
June	88	88	88	88	88	88	87	84	82	80	79	79	79	78	79	78	77	78	79	80	83	85	87	88	88	83	
July	89	89	89	89	89	89	88	87	85	85	84	83	82	82	82	82	81	81	83	84	85	86	88	88	88	85	
Aug.	87	88	87	88	87	87	88	86	86	83	81	80	78	78	78	79	79	79	81	83	85	86	88	87	87	84	
Sept.	89	89	88	89	89	89	88	89	89	87	87	84	83	83	82	82	82	83	85	87	88	89	89	89	90	87	
Oct.	86	86	87	86	86	86	86	86	87	87	85	83	82	82	82	81	82	83	84	85	85	85	86	86	85	85	
Nov.	85	84	83	85	85	84	84	84	84	84	83	83	82	81	80	81	81	81	82	82	83	84	84	85	85	83	
Dec.	85	84	83	82	82	81	82	80	82	82	82	81	80	79	78	80	80	81	83	83	83	83	84	85	85	82	
Year	87	86	86	86	86	86	86	86	85	84	83	82	81	81	80	81	81	81	83	84	85	85	86	86	87	84	

Richmond (Kew Obs.): North Wall Screen: h_t = 3.0 m.

1920.

G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Jan.	84	84	84	84	84	85	85	86	86	85	85	82	80	77	78	79	81	82	82	83	83	81	82	83	83	83
Feb.	89	89	89	89	90	89	89	89	89	88	86	82	78	76	75	75	74	77	80	83	86	87	87	88	89	84
Mar.	84	85	87	87	88	89	89	89	89	84	80	76	72	68	65	64	64	66	71	75	78	80	82	84	84	79
April	89	89	90	90	90	90	90	87	83	79	76	73	71	72	72	73	73	75	77	79	83	85	86	88	89	82
May	84	86	87	88	89	88	85	80	74	69	65	63	61	60	59	57	58	59	61	66	71	75	78	82	84	73
June	82	84	85	87	87	86	83	78	74	71	69	66	63	62	61	61	61	61	61	64	69	74	79	80	82	73
July	86	88	89	89	90	88	86	83	79	74	72	71	70	69	69	66	68	70	71	74	79	82	85	85	86	78
Aug.	86	87	88	90	90	89	88	85	80	74	70	66	65	63	62	61	62	64	65	70	75	79	81	84	86	76
Sept.	89	90	91	91	92	92	92	90	87	84	78	75	72	69	68	67	67	70	74	80	84	86	87	88		

METEOROLOGICAL SUMMARY.

WIND SPEED: MONTHLY MEANS OF HOURLY VALUES.

Averages, in metres per second, for periods of sixty minutes centered at the exact hours, Greenwich Mean Time.

Aberdeen: H_a (height of anemometer above M.S.L.) = 37 metres.
 h_a (height of anemometer above ground) = 23 metres.

1920.

G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	24	Mean	
Jan.	4.2	4.1	3.9	4.1	4.3	4.2	4.5	4.4	5.0	5.1	5.1	5.1	4.8	5.0	4.9	5.3	5.2	5.1	5.1	5.0	4.5	4.5	4.3	4.3	4.4	4.4	4.7
Feb.	4.4	4.5	4.7	5.0	5.1	5.3	4.8	4.7	5.1	5.1	5.0	5.0	5.1	4.8	5.0	5.2	4.9	4.3	4.1	4.3	3.9	4.1	4.3	4.2	4.2	4.2	4.7
Mar.	4.1	3.8	4.1	3.9	3.8	4.2	4.3	4.7	5.0	5.4	5.6	5.7	5.7	5.5	5.5	5.4	5.0	4.4	4.3	4.4	4.3	4.4	4.2	3.9	4.2	4.2	4.7
April	4.1	3.9	4.0	3.9	3.8	3.8	3.9	4.3	4.4	4.8	4.6	4.7	4.9	4.8	4.9	4.7	4.8	4.6	4.3	3.9	3.8	3.7	3.8	3.9	4.0	4.0	4.3
May	3.1	3.0	3.1	3.1	3.1	2.9	3.3	3.8	4.2	4.8	4.9	5.3	5.2	5.1	4.7	4.7	5.0	4.5	4.3	4.0	3.5	3.0	3.1	3.1	3.1	3.1	4.0
June	2.2	2.4	2.2	2.6	2.3	2.7	2.6	2.8	3.3	3.5	3.8	3.9	4.1	4.4	4.1	4.0	3.9	3.8	3.6	3.0	2.7	2.2	2.1	2.1	2.1	2.2	3.1
July	2.7	2.5	2.5	2.5	2.5	2.4	2.6	3.2	3.2	3.5	3.9	4.1	4.1	4.2	4.1	3.9	3.9	3.8	3.5	3.3	2.8	2.4	2.6	2.7	2.7	3.2	
Aug.	2.5	2.5	2.6	2.6	2.7	2.7	2.7	2.6	3.1	3.2	3.4	3.6	3.9	4.0	4.0	3.9	3.7	3.7	3.4	3.0	2.5	2.5	2.5	2.4	2.5	3.1	
Sept.	2.5	2.4	2.3	2.3	2.4	2.6	2.6	2.8	2.9	3.4	3.6	3.8	3.9	4.1	4.3	4.1	3.8	3.5	3.1	3.0	2.9	2.9	2.9	2.8	2.6	3.1	
Oct.	3.9	3.9	3.7	3.7	3.6	3.5	3.3	3.7	3.6	3.8	4.2	4.3	4.6	4.6	4.6	4.6	4.4	4.1	3.9	3.9	4.1	4.0	4.0	4.0	4.2	4.0	
Nov.	4.4	4.7	4.7	4.7	4.5	4.2	3.9	3.7	3.9	4.3	4.4	4.5	4.7	4.6	4.4	4.4	4.3	4.4	4.3	4.5	4.5	4.6	4.1	4.5	4.3	4.4	
Dec.	3.7	3.5	3.4	3.4	3.6	3.7	3.7	3.8	3.9	3.9	4.1	4.3	4.4	4.2	4.3	4.2	4.1	3.8	4.0	3.8	3.4	3.5	3.4	3.5	3.5	3.5	3.8
Year	3.5	3.4	3.4	3.5	3.5	3.5	3.5	3.7	4.0	4.2	4.4	4.5	4.6	4.6	4.6	4.5	4.4	4.2	4.0	3.8	3.6	3.5	3.4	3.4	3.5	3.9	

Eskdalemuir: H_a = 250 m. h_a = 15 m.

1920.

G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Jan.	6.3	6.4	6.4	6.5	6.8	6.4	6.7	6.8	7.2	7.4	8.1	8.3	8.5	8.3	8.5	8.7	8.4	7.3	6.9	7.1	6.9	6.5	6.4	6.5	6.7	7.2
Feb.	6.8	6.5	6.6	6.7	6.2	6.5	6.8	6.7	6.9	7.0	7.1	7.4	7.6	7.8	8.0	8.1	8.0	7.0	7.0	6.9	6.9	6.6	6.7	6.3	6.6	7.0
Mar.	5.9	5.9	5.9	6.0	6.0	6.0	6.4	6.9	6.7	7.0	7.8	8.0	8.1	8.1	8.2	7.8	7.4	6.9	6.2	6.0	5.9	6.0	5.5	5.6	5.8	6.7
April	4.6	5.0	5.0	4.6	4.5	4.6	4.4	5.0	5.3	5.7	6.1	6.6	7.0	7.4	7.5	7.5	7.0	6.2	6.1	5.7	5.1	4.5	4.6	4.5	4.4	5.6
May	4.8	4.9	5.0	4.8	4.7	4.9	4.6	5.1	6.1	7.1	7.4	7.6	7.8	7.8	8.2	8.1	7.7	7.4	6.9	6.4	6.0	5.6	5.4	5.2	5.0	6.2
June	4.0	3.7	3.3	3.3	3.4	3.4	3.9	4.7	5.0	5.3	5.9	6.5	6.6	6.7	6.9	6.8	6.7	6.4	5.8	5.3	4.7	4.6	4.1	3.7	3.8	5.0
July	3.2	3.1	2.8	3.1	3.1	3.5	3.8	4.2	4.9	5.0	5.6	5.6	5.7	6.1	6.1	6.1	6.4	6.2	5.4	4.8	4.2	3.6	3.5	3.6	3.3	4.6
Aug.	2.6	2.7	2.7	2.7	2.8	2.7	2.6	2.8	3.5	3.9	4.2	4.4	4.5	4.3	4.3	4.4	4.6	4.2	3.8	3.1	2.7	2.5	2.4	2.4	2.5	3.4
Sept.	2.5	2.5	2.6	2.7	2.8	2.8	2.7	2.7	3.4	3.8	4.7	5.2	5.8	6.1	6.1	5.9	5.6	4.8	4.0	3.2	3.0	2.8	2.8	2.8	2.7	3.8
Oct.	2.6	2.5	2.5	2.4	2.4	2.7	2.9	2.8	3.1	3.4	3.6	4.1	4.3	4.4	4.4	4.1	3.7	3.3	3.0	2.7	2.6	2.6	2.8	2.9	2.8	3.1
Nov.	5.7	5.8	5.6	5.3	4.8	4.7	5.0	5.1	5.1	5.3	5.7	6.1	6.3	6.3	6.1	5.9	5.6	5.3	5.0	5.2	5.2	5.3	4.9	5.0	5.5	5.4
Dec.	3.5	3.8	3.8	4.0	4.2	4.3	4.6	4.7	4.7	4.6	4.5	4.1	4.6	5.1	4.4	4.5	4.1	3.6	3.8	3.7	3.7	3.8	3.6	3.5	3.6	4.1
Year	4.4	4.4	4.3	4.3	4.3	4.3	4.5	4.8	5.1	5.4	5.9	6.1	6.2	6.5	6.6	6.5	6.3	5.7	5.3	5.0	4.7	4.5	4.4	4.3	4.4	5.2

Cahirciveen (Valencia Obs.): H_a = 26 m. h_a = 14 m.

1920.

G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Jan.	7.7	8.3	8.0	7.9	7.8	7.8	7.7	8.1	7.1	7.3	8.2	8.3	8.8	9.6	9.7	9.7	9.4	9.4	8.9	9.4	9.4	8.9	8.2	8.1	7.9	8.5
Feb.	6.8	7.1	7.0	6.8	6.8	6.9	6.7	6.5	6.2	6.6	7.0	7.0	7.4	7.5	7.5	7.5	7.0	6.4	6.0	6.0	5.8	6.0	6.0	6.0	6.5	6.7
Mar.	5.9	6.2	6.3	5.9	5.9	6.1	5.9	5.8	6.1	6.2	6.8	7.0	7.0	7.0	7.1	6.6	6.8	6.5	6.0	5.4	5.4	6.1	6.4	5.8	5.8	6.3
April	6.7	6.2	6.1	6.4	6.4	6.3	6.3	6.2	6.5	7.1	7.3	7.7	7.9	7.9	7.7	7.6	7.5	7.4	7.3	7.0	6.6	6.4	6.6	6.5	6.7	6.9
May	4.7	4.8	4.8	4.8	4.9	4.9	4.7	4.9	5.1	5.5	5.9	6.5	6.7	7.2	7.1	7.4	7.3	7.2	6.9	6.2	5.6	5.3	4.9	4.8	4.6	5.7
June	2.9	3.0	2.9	3.1	3.3	3.3	3.6	3.6	4.1	4.3	4.8	5.3	5.5	6.0	5.7	5.9	5.8	5.5	5.1	4.4	4.0	3.6	3.4	3.1	2.9	4.3
July	5.2	5.3	5.0	5.1	5.2	5.0	4.9	5.3	5.5	5.5	5.8	6.0	6.3	6.5	6.7	6.7	6.5	6.2	6.2	6.1	5.8	5.4	5.4	5.2	5.3	5.7
Aug.	3.4	3.3	3.4	3.5	3.4	3.2	3.3	3.3	3.7	4.0	4.4	4.8	4.8	5.2	5.3	5.1	5.2	4.9	4.8	4.3	3.6	3.5	3.4	3.2	3.3	4.0
Sept.	4.6	4.8	4.9	4.7	4.6	4.6	4.7	4.6	4.8	5.0	5.3	5.6	5.9	6.4	6.3	6.1	6.0	5.7	5.4	4.7	4.6	4.6	4.6	4.4	4.5	5.1
Oct.	5.4	5.3	5.4	5.7	5.8	5.7	5.2	5.2	5.1	5.2	5.5	5.6	5.7	5.8	5.8	5.9	5.6	5.3	5.3	4.9	5.1	5.3	5.2	5.5	5.6	5.4
Nov.	6.7	6.8	6.7	6.9	6.8	6.8	6.7	6.6	6.2	6.0	6.2	6.0	6.2	6.6	7.1	7.3	7.5	7.4	7.0	7.1	6.9	6.7	7.2	7.0	6.6	6.8
Dec.	4.9	5.3	5.5	5.7	5.8	6.1	6.1	5.8	5.5	5.2	5.2	4.9	5.0	5.3	5.8	5.7	5.8	5.8	6.0	6.2	6.1	5.6	5.6	5.4	5.0	5.6
Year	5.4	5.5	5.5	5.5	5.6	5.6	5.5	5.5	5.5	5.7	6.0	6.2	6.4	6.7	6.8	6.8	6.7	6.5	6.2	6.0	5.7	5.6	5.6	5.4	5.4	5.9

Richmond (Kew Obs.): H_a = 25 m. h_a = 20 m.

1920.

G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Jan.	4.8	5.1	5.1	5.4	5.1	5.2	4.6	5.0	4.8	5.0	5.9	5.9	5.8	6.3	5.8	5.9	5.0	5.4	5.1	5.2	4.9	5.5	4.8	5.2	4.9	5.3
Feb.	3.1	3.4	3.0	3.2	2.9	3.2	2.9	3.2	3.1	3.3	3.6	4.6	4.7	5.2	4.8	4.9	4.2	4.1	3.6	3.6	3.3	3.6	3.2	3.4	3.1	3.7
Mar.	3.3	3.3	2.9	2.9	2.7	2.9	2.8	3.1	3.1	3.0	4.1	4.7	4.8	5.5	5.2	5.4	4.7	4.7	3.8	4.0	3.6	3.6	3.5	3.5	3.2	3.8
April	2.5	2.8	2.8	2.9	2.8	3.0	2.9	3.6	4.1	4.7	5.2	5.5	5.0	5.3	5.0	5.0	4.4	4.3	3.6	3.5	3.2	3.5	3			

HOURLY VALUES OF AUTOGRAPHIC RECORDS.

RAINFALL : MONTHLY TOTALS OF HOURLY VALUES.

Amounts, in millimetres, for periods of sixty minutes, centered at the exact hours, Greenwich Mean Time.*

Aberdeen : H_r (height of receiving surface above M.S.L.)=H (height of station above M.S.L.)+h_r (height of receiving surface above ground). **1920.**
 = 14.0 metres + 0.6 metres.

G.M.T.	0 to 0.5	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	23.5 to 24	Day.	
Jan.	0.0	0.2	2.1	3.3	2.2	3.2	2.3	0.6	1.6	1.0	0.4	3.1	3.4	1.8	0.5	3.1	2.4	0.2	0.1	0.0	0.0	1.5	0.5	0.0	0.0	0.0	33.5
Feb.	0.3	0.8	0.7	1.9	3.4	1.9	2.4	1.2	0.3	0.8	0.2	1.0	0.7	1.0	0.1	0.5	2.1	0.5	1.7	0.4	1.1	1.1	0.8	1.0	0.1	0.1	26.0
Mar.	0.6	3.2	4.8	5.5	1.3	0.5	2.0	4.4	4.6	1.7	4.6	2.4	0.9	3.4	5.7	4.4	2.3	3.1	2.3	4.2	1.2	2.2	1.2	0.5	0.5	69.3	
April	0.8	3.0	3.1	2.7	1.7	4.2	1.8	2.2	1.0	0.4	0.8	2.2	1.1	1.6	0.9	3.1	3.1	2.9	3.6	1.9	1.3	5.0	2.5	2.5	0.5	53.9	
May	3.8	5.1	4.8	6.1	6.3	7.1	8.3	7.2	4.9	6.2	5.5	5.1	4.0	2.2	1.8	3.0	0.6	0.4	1.5	2.9	2.2	2.4	4.7	4.8	3.2	104.1	
June	0.1	0.1	0.0	1.1	3.2	0.7	2.4	1.8	0.8	0.6	0.4	0.2	1.0	0.6	0.0	0.0	0.1	3.7	1.0	1.1	0.3	0.0	0.3	0.6	0.0	20.1	
July	1.7	0.8	1.2	3.6	3.3	3.5	3.6	4.8	6.7	5.8	8.0	9.4	9.3	4.2	2.2	3.5	1.1	3.3	2.3	1.2	1.3	3.7	1.5	2.3	0.8	89.1	
Aug.	2.6	3.7	1.9	1.4	2.0	1.4	2.6	1.7	1.4	2.0	2.6	2.7	2.9	3.8	4.8	2.1	2.2	1.0	1.5	0.7	0.7	1.0	0.4	1.5	1.8	50.4	
Sept.	0.7	3.6	2.3	0.8	0.3	0.0	0.4	1.0	0.3	0.1	2.5	0.2	2.6	2.0	3.4	1.6	3.0	1.0	3.7	3.1	6.1	1.2	1.1	1.4	1.3	43.7	
Oct.	1.3	0.9	0.5	0.8	6.0	4.1	1.7	7.5	5.7	4.8	4.2	4.2	2.7	3.4	2.9	5.4	1.1	2.4	1.4	1.3	1.9	2.8	2.3	1.9	1.1	72.3	
Nov.	0.2	1.2	2.2	0.4	1.5	0.7	4.6	6.0	2.5	2.3	2.4	2.0	1.7	0.5	0.4	0.1	0.0	0.1	2.9	1.4	2.5	3.4	1.2	0.8	0.5	41.5	
Dec.	1.7	1.9	0.7	2.6	3.8	3.8	4.2	4.0	8.0	7.2	4.9	4.1	4.7	5.4	7.8	4.8	3.3	1.6	2.8	2.9	1.7	2.5	3.3	2.9	1.3	91.9	
Year	13.8	24.5	24.3	30.2	35.0	31.1	36.3	42.4	37.8	32.9	36.5	36.6	35.0	29.9	30.5	31.6	21.3	19.4	25.6	19.2	23.3	25.8	20.8	20.9	11.1	695.8	

Eskdalemuir : H_r = 242.0 m. + 0.4 m.

1920.

G.M.T.	0 to 0.5	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	23.5 to 24	Day.
Jan.	6.3	11.1	5.7	3.2	2.8	4.1	8.0	8.0	12.9	17.7	12.0	16.0	10.0	9.3	8.4	7.9	10.5	3.8	3.6	11.2	15.2	7.1	6.9	7.0	4.5	213.2
Feb.	4.4	12.4	7.6	10.7	10.8	14.9	7.7	8.4	6.7	6.5	5.8	12.8	7.0	9.6	4.8	5.5	4.4	3.6	4.9	3.1	2.2	3.8	4.0	6.3	3.5	171.4
Mar.	4.7	10.5	7.2	14.1	8.6	7.1	5.9	7.0	4.2	4.1	6.8	8.8	6.6	10.4	6.3	8.8	6.4	7.6	10.0	8.9	8.2	8.3	8.8	6.9	2.1	188.3
April	1.1	3.9	3.0	8.4	6.2	6.4	6.5	7.4	6.4	2.3	2.6	6.1	2.8	2.1	3.0	2.0	3.3	6.5	5.8	6.3	4.1	7.3	2.1	1.4	0.7	107.7
May	5.4	11.3	10.0	14.3	15.4	13.1	8.7	8.3	7.6	9.4	7.0	5.0	3.4	6.8	8.9	4.7	6.6	10.1	5.6	10.3	7.9	3.0	4.7	6.2	6.5	200.2
June	1.4	2.7	3.9	0.1	0.6	0.9	1.9	2.4	2.6	1.3	1.6	3.3	0.5	5.4	12.0	3.7	1.0	2.7	3.6	1.0	0.5	3.3	7.2	4.6	2.7	70.9
July	0.7	2.3	3.5	3.3	4.2	3.1	2.9	4.2	5.1	9.2	5.4	5.1	9.4	21.3	13.2	10.7	11.8	10.4	7.3	9.5	2.6	1.8	2.4	2.0	1.4	152.8
Aug.	7.9	6.5	4.2	6.4	5.1	3.7	2.6	2.9	2.2	0.3	2.1	1.2	5.0	5.4	4.9	9.5	6.8	8.4	13.3	7.3	13.0	4.1	8.7	11.0	9.1	151.6
Sept.	2.2	4.6	7.1	1.3	1.5	0.9	0.8	2.7	3.8	2.0	0.6	1.1	0.6	1.6	2.1	2.3	7.7	3.9	3.6	6.7	6.5	5.8	3.5	3.1	0.8	76.8
Oct.	0.2	0.5	1.3	2.9	2.7	2.4	2.5	1.8	2.5	4.6	5.8	3.4	2.6	2.1	1.3	0.7	2.7	0.6	1.4	2.0	0.9	1.8	2.9	3.4	0.8	53.8
Nov.	4.0	12.0	9.0	7.7	3.7	2.2	1.2	1.6	1.3	2.2	1.5	2.2	1.1	2.4	4.1	2.3	4.2	4.5	4.9	5.8	6.3	6.7	5.0	4.9	5.7	106.5
Dec.	3.8	10.7	5.6	7.1	10.0	11.1	11.7	9.9	10.8	3.3	3.6	3.2	4.8	9.2	14.0	9.6	4.6	2.9	4.5	2.7	3.8	2.8	1.0	3.6	3.2	157.5
Year	42.1	88.5	68.1	79.5	71.6	69.9	60.4	64.6	66.1	62.9	54.8	68.2	53.8	85.6	83.0	67.7	70.0	65.0	68.5	74.8	71.2	55.8	57.2	60.4	41.0	1650.7

Gahirciveen (Valencia Obs.) : H_r = 9.1 m. + 0.5 m.

1920.

G.M.T.	0 to 0.5	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	23.5 to 24	Day.
Jan.	3.0	8.8	8.4	8.0	3.9	6.1	4.6	6.4	4.4	2.6	4.5	5.7	3.5	5.7	14.3	17.7	19.7	16.7	10.5	7.4	6.5	8.1	10.3	6.7	3.0	196.5
Feb.	1.6	2.3	1.8	0.9	5.0	6.8	3.1	4.9	4.0	2.3	1.8	3.4	1.3	0.7	2.2	1.0	2.7	1.8	2.4	2.5	1.6	1.3	4.5	2.9	0.9	63.7
Mar.	2.0	6.5	8.1	8.2	4.8	3.6	5.2	7.3	7.6	9.1	9.3	6.8	5.9	4.5	6.8	7.4	4.8	4.3	11.3	8.5	6.3	5.0	6.7	4.3	6.7	161.1
April	3.2	11.1	7.1	5.9	2.9	2.1	6.4	6.9	4.7	8.5	3.7	5.1	6.6	9.4	6.2	7.6	3.8	3.7	6.6	9.5	6.7	4.1	7.5	12.7	4.1	156.1
May	1.1	2.0	3.9	4.6	4.0	6.8	10.5	10.8	8.6	4.5	3.8	5.8	2.7	3.3	6.2	5.3	4.0	8.0	6.4	3.1	4.3	3.5	1.2	3.4	3.8	121.6
June	0.3	0.7	0.5	0.4	1.3	8.3	3.4	4.2	4.9	1.9	6.5	8.2	4.3	3.0	4.2	4.9	5.2	2.5	2.6	0.4	1.4	2.5	2.8	2.7	0.6	77.7
July	5.8	9.9	5.2	9.0	9.8	8.7	3.8	1.4	1.7	2.1	2.3	6.0	3.7	4.9	3.6	3.0	3.2	2.1	6.6	3.1	4.1	3.0	2.8	7.2	10.1	123.1
Aug.	1.3	2.0	2.6	2.9	1.0	2.7	1.5	2.5	0.6	1.8	3.0	3.0	5.0	1.8	4.5	1.9	1.1	0.5	0.3	1.2	3.0	4.6	2.7	1.7	0.7	53.9
Sept.	1.7	2.5	2.6	7.9	5.7	5.5	2.9	3.5	9.5	1.8	10.4	13.7	6.7	1.8	0.9	0.8	1.9	4.9	6.0	5.6	7.0	5.8	6.1	3.7	5.7	124.6
Oct.	6.6	7.7	10.0	5.4	7.2	11.6	7.3	11.6	11.5	12.3	6.9	11.1	14.7	12.0	10.0	6.0	6.5	7.6	9.0	4.0	2.1	4.3	7.6	7.5	2.5	203.0
Nov.	4.7	5.7	7.5	11.3	12.5	11.6	14.3	15.1	10.0	7.5	12.3	5.7	2.8	3.6	7.2	5.1	3.4	3.2	2.4	6.7	6.0	10.4	9.0	4.8	1.9	184.7
Dec.	4.4	5.5	6.9	5.8	5.3	7.5	9.4	7.7	0.7	0.8	2.6	1.5	0.3	1.3	2.4	7.8	14.2	9.2	8.6	5.8	12.8	18.8	20.6	16.8	6.4	183.1
Year	35.7	64.7	64.6	70.3	63.4	81.3	72.4	82.3	68.2	55.2	67.1	76.0	57.5	52.0	68.5	68.5	70.5	64.5	68.2	60.6	64.0	72.7	80.1	76.8	44.0	1649.1

Richmond (Kew Obs.) : H_r = 5.5 m. + 0.5 m.

1920.

G.M.T.	0 to 0.5	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	23.5 to 24	Day.
Jan.	1.6	3.0	1.6	3.7	1.3	0.8	0.7	2.1	2.3	1.4	2.5	1.4	1.1	1.1	2.7	6.1	6.7	1.5	2.6	0.9	0.5	3.8	2.2	2.0	1.5	55.1
Feb.	0.1	0.1	0.8	0.1	0.1	0.2	0.3	0.5	0.7	1.6	0.2	0.2	0.4	0.1	0.1	1.8	0.6	0.2	0.7	0.6	0.2	0.3	0.1	0.2	0.1	10.3
Mar.	0.1	0.3	2.0	0.2	0.2	0.5	2.2	1.4	1.8	2.0	1.2	0.4	0.9	0.1	0.2	0.0	1.5	1.8	1.4	2.0	2.0	4.4	2.3	0.8	0.	

METEOROLOGICAL SUMMARY.

DURATION OF BRIGHT SUNSHINE : MONTHLY MEANS OF HOURLY VALUES.

Amounts for periods of sixty minutes centering at the hours of Local Apparent Time.

Aberdeen : h_s (height of recorder above ground) = 20.7 metres.

1920.

Hour, L.A.T.	4	5	6	7	8	9	10	11	Noon.	13	14	15	16	17	18	19	20	Day.
	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.
Jan.	..	..	..	..	..	·10	·27	·28	·29	·31	·29	·12	..	..	..	..	..	1·66
Feb.	..	..	..	..	·08	·34	·39	·46	·43	·43	·47	·38	·11	..	..	..	..	3·09
Mar.	..	..	·02	·22	·36	·47	·50	·45	·40	·43	·41	·34	·30	·11	..	..	..	4·01
April	..	·05	·20	·34	·36	·31	·34	·32	·24	·29	·27	·28	·26	·19	·12	·01	..	3·58
May	·01	·24	·37	·44	·53	·51	·51	·53	·49	·48	·42	·39	·42	·40	·34	·28	·01	6·37
June	·14	·35	·45	·48	·43	·48	·48	·52	·48	·59	·59	·58	·57	·62	·63	·48	·15	8·02
July	·04	·23	·26	·37	·37	·36	·27	·25	·31	·33	·31	·36	·28	·35	·36	·22	·03	4·70
Aug.	·01	·09	·24	·24	·31	·29	·34	·39	·35	·39	·38	·38	·37	·36	·26	·08	..	4·48
Sept.	..	..	·04	·12	·28	·28	·28	·36	·36	·39	·41	·39	·29	·16	·03	..	..	3·39
Oct.	..	..	..	..	·09	·18	·31	·37	·45	·51	·42	·30	·13	..	..	..	..	2·76
Nov.	..	..	..	..	..	·13	·23	·32	·33	·33	·25	·10	..	..	..	..	..	1·69
Dec.	..	..	..	..	..	·03	·19	·32	·35	·35	·20	·02	..	..	..	..	..	1·46
Year	·02	·08	·13	·18	·23	·29	·34	·38	·37	·40	·37	·30	·23	·18	·15	·09	·02	3·77

Eskdalemuir : h_s = 1.5 m.

1920.

Hour, L.A.T.	4	5	6	7	8	9	10	11	Noon.	13	14	15	16	17	18	19	20	Day.
	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.
Jan.	·12	·21	·18	·23	·22	·15	·07	..	..	..	..	..	1·18
Feb.	·01	·13	·27	·32	·33	·30	·24	·22	·17	·10	..	..	..	..	2·09
Mar.	·10	·18	·19	·21	·31	·25	·30	·23	·21	·13	·06	..	..	..	2·17
April	..	·03	·22	·26	·35	·37	·38	·36	·35	·39	·32	·31	·23	·22	·12	·01	..	3·92
May	..	·11	·23	·28	·33	·36	·35	·35	·29	·36	·40	·36	·33	·21	·30	·14	..	4·40
June	·04	·26	·30	·38	·38	·41	·45	·41	·40	·49	·47	·49	·49	·48	·39	·32	·04	6·20
July	..	·04	·10	·15	·26	·18	·15	·18	·17	·22	·24	·32	·31	·30	·22	·10	·01	2·95
Aug.	..	·07	·17	·22	·27	·29	·30	·37	·44	·32	·27	·33	·24	·18	·08	·01	..	3·56
Sept.	·05	·14	·27	·32	·42	·46	·45	·39	·32	·29	·15	·03	..	..	3·29
Oct.	·03	·30	·41	·39	·38	·45	·42	·47	·42	·33	·04	..	..	..	3·64
Nov.	·05	·23	·31	·37	·28	·29	·19	·12	..	..	..	..	..	1·84
Dec.	·06	·22	·28	·25	·25	·17	·05	..	..	..	..	..	1·28
Year	..	·04	·09	·12	·20	·26	·30	·33	·32	·33	·29	·26	·20	·14	·10	·05	..	3·04

Cahirciveen (Valencia Obs.) : h_s = 12.8 m.

1920.

Hour, L.A.T.	4	5	6	7	8	9	10	11	Noon.	13	14	15	16	17	18	19	20	Day.
	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.
Jan.	·05	·19	·25	·24	·18	·14	·13	..	..	..	..	..	1·18
Feb.	·05	·20	·27	·23	·27	·27	·28	·22	·19	·01	..	..	..	1·99
Mar.	·10	·22	·29	·36	·36	·40	·39	·41	·45	35	·15	·02	..	..	3·50
April	·10	·27	·29	·33	·30	·27	·36	·38	·41	·39	·38	·33	·22	·02	..	4·05
May	..	·04	·23	·25	·34	·30	·38	·43	·48	·41	·43	·45	·47	·40	·32	·14	·01	5·08
June	·02	·26	·32	·39	·40	·44	·43	·45	·51	·51	·50	·47	·43	·40	·38	·28	·04	6·23
July	·01	·07	·14	·16	·14	·18	·25	·28	·27	·34	·32	·35	·36	·40	·20	·18	..	3·65
Aug.	..	·01	·08	·17	·22	·29	·38	·41	·45	·41	·44	·38	·31	·34	·21	·04	..	4·14
Sept.	·14	·11	·20	·32	·33	·25	·39	·38	·37	·35	·23	·03	..	..	3·10
Oct.	·06	·23	·37	·35	·38	·32	·39	·34	·25	·08	..	..	..	2·77
Nov.	·01	·08	22	·23	·26	·22	·22	·16	·05	..	..	..	..	1·45
Dec.	·07	·34	·37	·37	·34	·24	·15	..	..	..	..	..	1·88
Year	..	·03	·07	·12	·15	·22	·32	·33	·35	·35	·35	·32	·26	·20	·12	·06	..	3·25

Richmond (Kew Obs.) : h_s = 13.3 m.

1920.

Hour, L.A.T.	4	5	6	7	8	9	10	11	Noon.	13	14	15	16	17	18	19	20	Day.
	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.
Jan.	·02	·14	·28	·28	·28	·23	·23	·10	·01	..	..	..	..	1·57
Feb.	·09	·21	·26	35	·33	·30	·27	·30	·15	..	..	..	..	2·26
Mar.	·09	·20	·36	·42	·49	·54	·52	·52	·46	·38	·14	·02	..	..	4·14
April	·06	·16	23	·31	·28	·26	·19	21	·21	·28	·17	·16	·10	·01	..	2·63
May	..	·09	·43	·51	·52	·52	·44	·47	·56	·56	·52	·59	·53	·45	·43	·20	..	6·82
June	..	·13	·31	·38	·41	·39	·44	·50	·47	·48	·48	·57	·54	·62	·44	·32	·02	6·50
July	·01	·09	·22	·28	·36	·35	·33	·26	·30	·30	·36	·35	·33	·32	·24	·18	·01	4·29
Aug.	..	·03	·20	·30	·38	·45	·35	·38	·36	·35	·36	·34	·33	·43	·21	·04	..	4·51
Sept.	·03	·11	·25	·27	·32	·40	·35	41	·38	·31	·33	·24	·06	..	..	3·46
Oct.	·02	·13	·27	·36	·43	·54	·58	·52	·48	·25	·04	..	..	..	3·62
Nov.	·01	·13	·24	·28	·26	·26	·24	·20	..	..	..	..	..	1·62
Dec.	·04	·13	·16	·22	·21	·13	·03	..	..	..	..	..	0·92
Year	..	·03	·10	·15	·22	·29	·32	·36	·37	·37	·35	·33	·25	·20	·13	·06	..	3·53

Note.—The hourly duration of Sunshine is obtained from the records of the Campbell-Stokes Recorder, an instrument in which the sun's rays are focussed through a 10 cm. spherical lens of crown glass upon a strip of blue card exposed in a metal bowl, the duration of bright sunshine being shown by the length of the scorch on the card.

For **Falmouth** see p. 53.

HOURLY VALUES FROM AUTOGRAPHIC RECORDS.

I.—TERRESTRIAL MAGNETIC FORCE: NORTH COMPONENT.

Eskdalemuir. (X.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

January, 1920.

15,000 γ (·15 C.G.S. unit) +

Hour G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt	Mean
Day.	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	998	1003	1006	1005	1004	1004	1008	1014	1010	1011	999	984	986	994	994	994	1004	998	974	985	984	993	984	989	988	997
2	988	983	984	988	989	997	1003	998	993	978	978	978	958	971	988	992	995	993	993	988	992	988	988	984	992	987
3	992	986	983	983	988	989	989	991	988	989	983	983	984	988	989	990	996	999	998	992	988	989	992	993	997	989
4	997	991	992	992	987	992	994	997	997	992	989	987	987	987	992	997	997	997	995	991	991	988	992	987	988	992
5	988	989	991	989	989	991	992	992	992	992	988	983	981	980	987	993	992	997	997	997	996	996	998	997	997	991
6	997	993	992	991	991	993	996	997	999	996	992	986	988	988	996	995	991	992	985	978	972	987	993	994	993	991
7	993	985	990	990	995	1000	1000	1003	1002	998	981	966	959	946	965	970	970	965	963	980	988	988	990	990	990	982
8	990	987	986	990	996	1000	1010	1012	1007	1000	991	989	990	995	993	994	995	996	999	995	991	995	999	997	995	996
9	995	995	995	999	1000	1000	1000	1005	1006	1004	989	976	995	968	978	986	969	970	985	999	1001	995	980	972	980	989
10	980	989	985	985	981	989	1018	1005	985	980	979	971	967	962	979	980	982	989	989	980	994	1019	994	982	984	986
11	984	983	983	979	980	983	987	989	989	986	980	974	971	983	994	1004	1005	1011	999	969	984	971	969	994	984	986
12	984	979	979	975	984	984	993	994	994	989	963	968	966	969	976	983	985	993	989	988	988	1008	954	986	988	982
13	988	983	983	983	991	989	989	993	995	987	978	973	969	972	975	984	986	988	988	986	984	988	987	987	988	984
14	988	989	988	993	993	992	992	995	997	993	987	984	983	984	990	998	1002	1003	998	997	988	978	978	979	991	991
15	991	987	990	993	993	998	997	994	998	997	988	983	979	983	990	983	993	992	993	986	986	991	987	998	998	991
16	998	988	991	983	994	1002	1008	1000	984	978	978	974	968	968	973	984	988	988	990	993	994	994	994	995	995	988
17	995	992	988	991	992	996	998	999	998	995	987	977	968	962	962	972	971	958	943	983	963	972	978	982	1001	980
18	1001	982	978	982	985	988	992	987	979	972	967	958	962	956	972	977	986	986	986	987	987	986	987	992	993	980
19	993	991	991	992	994	1004	1005	1003	1003	992	982	977	972	972	972	969	981	984	987	989	994	996	993	993	992	989
20	992	991	990	987	988	992	996	998	1001	999	991	986	981	985	983	991	988	990	992	996	993	991	991	991	1005	991
21	1005	996	985	981	987	1002	1010	997	1005	983	961	962	960	945	943	971	961	956	991	981	985	985	986	1006	977	980
22	977	975	975	976	978	985	986	986	986	981	971	960	959	955	965	975	976	983	986	993	991	992	991	987	1003	979
23	1003	1003	991	993	995	990	996	997	1001	996	981	976	967	961	977	971	975	975	981	980	983	980	997	979	997	985
24	997	991	989	990	992	1001	1005	997	985	965	946	966	967	968	968	976	988	991	992	994	996	995	991	986	997	985
25	997	990	989	996	990	1000	991	994	990	982	974	971	970	970	975	980	976	985	986	994	999	994	990	990	990	986
26	990	991	995	1000	994	996	999	996	994	986	975	962	955	966	970	975	975	980	984	986	986	995	990	991	990	985
27	990	990	990	991	995	997	999	999	995	987	975	972	966	970	977	985	990	994	995	995	995	993	990	990	992	988
28	992	991	991	995	997	1000	1004	1007	1009	999	994	980	970	965	980	980	965	984	994	992	977	975	989	1006	1006	989
29	1006	990	985	982	992	992	994	996	995	991	993	976	975	973	978	986	989	997	1000	999	997	997	999	994	993	990
30	993	995	992	992	995	1006	1007	1011	1004	1005	987	979	960	960	975	984	990	976	985	990	981	985	966	989	985	988
31	985	980	980	980	980	984	986	989	989	982	971	970	970	970	970	980	986	990	990	990	994	991	990	993	993	983
Mean*	993	989	988	988	991	995	999	999	997	991	980	975	971	970	977	983	985	986	987	988	988	990	986	990	992	987

* Mean for 25 days, 2nd, 3rd, 4th, 5th, 25th and 26th omitted.

II.—TERRESTRIAL MAGNETIC FORCE: WEST COMPONENT.

Eskdalemuir. (—Y.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

January, 1920.

4,000 γ (·04 C.G.S. unit) +

Hour G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	Mean
Day.	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	861	870	874	864	863	866	867	868	866	865	864	867	874	878	878	878	878	882	880	871	851	839	844	841	855	866
2	855	857	851	840	856	860	862	862	862	859	872	872	870	877	879	878	874	876	872	872	863	846	835	846	850	863
3	851	862	856	854	856	857	858	858	857	857	858	867	869	873	873	871	867	865	868	863	855	858	854	852	850	861
4	850	861	861	858	862	861	860	860	863	859	869	869	877	879	878	874	869	866	866	863	865	857	842	856	854	863
5	854	857	854	855	857	857	857	857	857	853	857	865	873	874	874	869	869	868	867	863	859	857	857	855	858	861
6	859	858	859	860	862	863	863	863	859	858	862	869	873	874	880	876	879	880	880	873	873	852	847	847	849	865
7	849	853	852	858	880	858	860	860	858	853	854	862	869	882	891	892	896	902	890	869	853	847	851	853	853	866
8	853	855	858	863	864	867	870	866	861	854	858	865	874	880	874	870	869	870	869	868	848	864	859	858	858	864
9	859	862	865	867	868	869	872	872	865	858	854	859	870	889	895	888	884	890	871	870	860	842	794	801	833	863
10	833	849	858	854	854	868	864	857	865	855	849	863	872	886	879	886	871	872	871	864	838	811	832	849	858	859
11	858	856	853	859	860	861	859	858	856	854	854	855	860	875	885	879	872	873	870	843	837	797	812	831	801	854
12	801	842	853	860	848	853																				

III.—TERRESTRIAL MAGNETIC FORCE: VERTICAL COMPONENT.

Eskdalemuir. (Z.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

January, 1920.

44,000 γ (.44 C.G.S. unit) +

Hour G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt	Mean
Day	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	1069	1066	1062	1062	1064	1065	1065	1065	1066	1065	1062	1065	1062	1060	1065	1068	1070	1070	1080	1084	1095	1098	1094	1090	1084	1072
2	1084	1078	1078	*	*	*	*	*	*	*	1068	1070	1072	1070	1072	1077	1078	*	*	*	*	*	*	*	*	—
3	*	*	*	*	*	*	*	*	*	*	1074	1076	1076	1075	1074	1074	1074	1071	1070	1072	1077	1076	1076	1077	1074	—
4	1074	1071	1070	1070	1069	1068	1066	1067	1068	1070	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	—
5	*	*	*	*	*	*	*	*	*	*	1068	1066	1068	1070	1072	1072	1070	1070	1070	1070	1070	1070	1070	1070	1070	—
6	1070	1069	1068	1068	1068	1067	1066	1066	1066	1066	1064	1066	1069	1068	1070	1070	1069	1068	1071	1078	1083	1090	1086	1084	1078	1071
7	1078	1076	1073	1070	1060	1058	1062	1062	1063	1066	1064	1064	1065	1070	1074	1079	1083	1087	1091	1088	1084	1082	1078	1073	1071	1073
8	1071	1070	1069	1067	1066	1064	1062	1060	1062	1062	1060	1059	1060	1060	1064	1066	1066	1066	1066	1066	1066	1070	1065	1064	1063	1064
9	1064	1064	1063	1063	1063	1063	1062	1059	1059	1059	1061	1062	1062	1062	1063	1068	1077	1079	1078	1074	1068	1070	1078	1073	1070	1067
10	1070	1065	1065	1066	1064	1061	1046	1052	1053	1062	1062	1064	1064	1066	1066	1072	1076	1074	1074	1078	1078	1074	1067	1067	1066	1066
11	1066	1066	1066	1066	1065	1066	1066	1066	1066	1066	1062	1063	1064	1062	1060	1062	1062	1061	1064	1078	1082	1082	1086	1066	1052	1067
12	1052	1061	1062	1066	1067	1064	1058	1062	1063	1062	1062	1060	1061	1062	1064	1066	1066	1067	1068	1069	1070	1066	1066	1067	1068	1064
13	1068	1067	1066	1066	1066	1062	1063	1063	1063	1064	1064	1065	1066	1064	1065	1066	1066	1066	1067	1068	1070	1070	1070	1070	1070	1066
14	1066	1065	1064	1063	1063	1053	1062	1062	1062	1064	1063	1062	1062	1058	1060	1062	1062	1061	1062	1064	1068	1078	1074	1066	1061	1064
15	1061	1060	1058	1058	1058	1058	1062	1061	1062	1062	1064	1064	1061	1056	1061	1066	1068	1065	1064	1066	1067	1066	1068	1066	1043	1062
16	1043	1052	1055	1054	1049	1051	1053	1054	1058	1062	1066	1064	1063	1063	1066	1068	1067	1066	1064	1064	1063	1063	1063	1062	1062	1060
17	1062	1062	1061	1058	1058	1058	1058	1062	1062	1064	1066	1066	1065	1066	1067	1070	1074	1091	1106	1098	1086	1086	1082	1074	1059	1071
18	1059	1060	1062	1062	1062	1062	1062	1063	1064	1064	1066	1069	1070	1068	1070	1068	1068	1066	1066	1066	1066	1066	1066	1066	1066	1061
19	1061	1062	1062	1061	1058	1056	1054	1055	1056	1059	1060	1061	1060	1058	1062	1067	1069	1066	1062	1062	1062	1062	1062	1062	1062	1061
20	1062	1061	1059	1058	1058	1058	1058	1058	1058	1055	1054	1056	1057	1058	1058	1058	1059	1059	1058	1058	1062	1064	1066	1066	1062	1059
21	1062	1054	1054	1052	1050	1042	1045	1050	1051	1054	1054	1056	1058	1062	1078	1070	1076	1086	1084	1074	1070	1066	1067	1054	1054	1061
22	1054	1052	1054	1058	1059	1059	1059	1062	1062	1061	1059	1058	1059	1059	1062	1065	1067	1070	1062	1062	1061	1060	1061	1062	1055	1060
23	1055	1050	1052	1054	1054	1055	1052	1053	1053	1054	1053	1052	1050	1052	1052	1050	1052	1056	1062	1065	1070	1069	1060	1057	1043	1055
24	1043	1049	1054	1052	1046	1041	1042	1044	1046	1052	1054	1054	1054	1059	1064	1068	1064	1062	1061	1059	1059	1058	1058	1059	1055	1055
25	1055	1055	1054	1049	1050	1050	1054	1054	1057	1058	1057	1055	1058	*	*	*	*	*	*	*	*	*	*	*	*	—
26	*	*	*	*	*	*	*	*	*	*	1054	1058	*	1060	1060	1066	1066	1064	1062	1062	1063	1063	1059	1056	1054	—
27	1054	1054	1055	1055	1055	1055	1055	1056	1057	1058	1054	1058	1055	1054	1054	1058	1057	1054	1057	1057	1056	1055	1057	1057	1054	1056
28	1054	1053	1052	1052	1052	1052	1051	1052	1054	1051	1051	1051	1051	1051	1055	1062	1060	1058	1060	1070	1085	1078	1066	1046	1057	
29	1046	1051	1053	1052	1046	1050	1052	1053	1054	1055	1054	1054	1053	1054	1054	1053	1053	1053	1053	1054	1054	1054	1054	1054	1054	1053
30	1054	1051	1050	1050	1047	1042	1042	1042	1044	1045	1046	1046	1052	1053	1052	1057	1058	1066	1062	1058	1062	1078	1076	1070	1062	1055
31	1062	1059	1055	1054	1054	1054	1053	1054	1055	1057	1056	1054	1054	1054	1054	1055	1055	1054	1054	1054	1054	1056	1057	1058	1056	1055
Mean†	1060	1060	1060	1059	1058	1057	1056	1057	1058	1060	1059	1060	1060	1060	1062	1064	1066	1067	1068	1068	1069	1071	1070	1066	1060	1062

TABLE IV.—AUXILIARY OBSERVATIONS IN ABSOLUTE MEASURE; DAILY VALUES OF TEMPERATURE IN

Eskdalemuir.

THE EAST ROOM OF MAGNET HOUSE; MAGNETIC NOTES FOR THE MONTH.

January, 1920.

Date	Time G.M.T.		Horizontal Force.	Declination.	Dip.	Temperature in Magnet House.	Magnetic Character of day (0-2).	Date.
	From	To						
Jan.	h. m.	h. m.	γ	° ' "	° ' "	a		
						280+		
						4.6	I	1
						4.5	I	2
						4.5	o	3
						4.5	oc	4
						4.4	oc	5
						4.6	o	6
8	11 32	11 59	16727	17 2 28	69 38.7	4.5	I	7
						4.3	o	8
						4.3	ID	9
						4.2	ID	10
						4.3	2D	11
						4.3	I	12
						4.3	oc	13
14	10 55	11 21	16712	17 0 32	69 38.9	4.3	o	14
						4.3	I	15
						4.2	o	16
						4.2	I	17
						4.1	o	18
19	12 7	12 12	16701	17 2 4		4.1	oc	19
						4.1	o	20
21	10 59	11 26	16682	17 4 5	69 40.2	4.1	ID	21
						4.0	o	22
						4.0	I	23
						4.0	o	24
						4.0	o	25
						3.9	o	26
						4.0	oc	27
						4.0	ID	28
						3.9	o	29
30	10 59	11 25	16694	16 57 40	69 39.4	3.8	I	30
						3.8	o	31

MAGNETIC NOTES.

January, 1920.

The mean character figure 0.45 was higher than in June, July or August, but judged by the mean value of ΣR^2 this was the quietest month of the year. On the 27th, the absolute daily range in V was only 5 γ . The most disturbed days were the 11th, 17th, and 21st. A sudden commencement is shewn at 11d. 13h. gm., but the subsequent disturbance was on a very moderate scale, and was chiefly shewn on the W. component, and lasted only 18 hours. Bays are shewn on the N. trace centering at 2d. 12h. 20m.; 12d. 21h. 10m.; 15d. 23h. 24m.; 17d. 23h. 36m.; 21d. 22h. 35m.; 28d. 23h. 25m.; and on the W. trace centering at 14d. 21h. 9m.; 21d. 17h. 25m.; 22d. 16h. 40m.

EXPLANATORY NOTE.

Extreme values of each component of magnetic force are given for each day in the *Geophysical Journal*.

HOURLY VALUES FROM AUTOGRAPHIC RECORDS.

V.—TERRESTRIAL MAGNETIC FORCE: NORTH COMPONENT.

Eskdalemuir. (X.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

February, 1920.

15,000 γ (.15 C.G.S. units) +

Hour G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	Mean
Day	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	990	989	995	991	994	995	995	993	995	990	982	980	975	978	984	992	990	995	994	992	994	982	989	994	1004	990
2	1004	995	992	994	994	994	995	995	995	989	981	982	980	980	981	982	989	990	990	991	992	999	1000	990	995	990
3	995	994	990	995	995	995	995	995	995	987	984	982	982	984	985	988	989	990	994	992	992	985	995	987	990	992
4	992	992	997	997	997	1000	1005	1008	1005	1000	990	984	980	984	985	980	989	995	999	997	999	1001	1000	998	997	995
5	996	999	999	998	999	1004	1007	1007	1004	999	985	974	962	969	977	984	992	998	999	1000	999	999	999	999	999	994
6	999	998	1000	1002	1003	1006	1008	1011	1008	1004	990	984	979	979	979	984	990	998	1001	1003	1006	1008	999	1047	1008	1000
7	1008	996	*	*	*	*	*	*	*	*	997	969	957	973	974	984	964	979	979	974	*	*	*	*	*	-
8	*	*	*	*	*	*	*	*	*	*	975	973	966	969	974	981	989	986	988	994	993	1003	995	994	991	-
9	991	993	990	991	994	997	999	1000	999	992	986	974	967	970	978	988	998	996	994	996	997	999	1000	994	990	991
10	990	990	994	987	989	994	999	999	998	989	979	979	978	976	976	977	986	994	998	998	995	996	995	999	999	990
11	999	995	993	991	993	989	1018	1018	1013	1004	999	993	986	984	988	994	995	999	999	994	996	1002	999	998	1014	998
12	1014	1008	989	992	995	1000	1003	999	999	993	989	983	984	974	970	984	988	993	993	998	1000	989	998	999	998	993
13	998	998	999	999	1005	1005	1009	1009	1005	998	983	974	965	964	978	984	989	994	996	999	993	985	989	983	1008	992
14	1008	994	994	997	998	1003	1009	999	994	979	979	964	960	965	966	965	974	978	989	975	979	994	993	993	1000	985
15	1000	989	998	994	990	996	999	1003	1001	994	983	979	974	974	980	983	985	989	969	967	981	994	999	999	1003	988
16	1003	999	999	999	1003	1008	1008	1014	1018	1015	999	984	994	989	996	964	949	959	964	975	963	970	979	979	976	988
17	976	984	975	985	989	979	990	990	987	969	964	959	912	950	961	959	964	966	984	1016	1014	974	993	996	978	977
18	978	981	976	975	986	989	993	993	982	973	960	950	941	948	961	969	974	989	993	994	1005	999	995	994	994	979
19	993	993	992	990	989	993	995	998	997	989	974	965	957	954	963	973	982	983	993	994	980	983	980	983	988	991
20	991	992	988	988	988	988	987	997	992	983	973	959	959	972	964	978	988	990	995	992	993	993	995	999	998	985
21	998	999	997	994	999	1003	1004	1002	1001	983	973	958	939	948	970	984	982	988	990	997	998	997	998	1000	995	988
22	995	999	997	998	1002	1003	1005	1007	998	990	973	964	957	958	963	968	978	986	989	998	999	1001	1001	1001	1001	989
23	999	998	999	999	1003	1007	1011	1008	1003	1006	991	978	972	968	972	978	988	995	1002	996	998	1002	1003	1004	1003	995
24	1003	1001	1002	1003	998	1002	1003	1008	1014	1012	985	973	958	958	959	977	973	989	1021	1033	996	953	969	989	966	990
25	966	971	968	973	975	978	987	986	980	976	968	963	953	958	962	971	978	988	987	985	993	983	979	979	978	976
26	978	983	983	983	985	987	988	988	996	1000	988	978	973	970	974	980	988	978	985	970	968	984	988	983	992	983
27	992	993	986	992	992	983	994	992	999	989	976	969	964	963	943	960	979	982	988	994	983	983	982	987	990	982
28	990	993	990	991	995	993	1000	987	990	988	978	978	977	975	974	983	983	982	984	991	994	997	1000	997	998	988
29	998	995	998	998	1001	1001	998	1003	1003	994	979	978	977	982	988	993	991	992	993	998	998	995	991	992	995	993
Mean†	994	994	992	992	994	996	1000	1000	999	992	981	974	967	969	973	979	983	988	991	993	993	991	993	995	995	989

† Mean for 27 days, 7th and 8th omitted.

* Shutter jammed.

VI.—TERRESTRIAL MAGNETIC FORCE: WEST COMPONENT.

Eskdalemuir. (—Y.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

February, 1920.

4,000 γ (.04 C.G.S. unit) +

Hour G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	Mean
Day	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	862	865	861	861	862	860	856	856	856	854	856	872	873	881	882	881	876	876	876	872	866	866	863	861	855	866
2	855	855	852	851	851	855	855	856	853	852	859	869	878	878	878	877	876	878	878	877	872	866	863	857	856	864
3	857	861	859	858	856	859	858	858	857	854	857	868	879	883	881	880	880	880	879	875	872	867	861	862	859	867
4	859	862	862	860	862	862	863	862	861	857	862	872	877	888	893	883	873	870	867	866	867	866	865	865	867	868
5	868	867	868	871	871	869	868	868	865	858	857	862	868	880	889	884	878	874	871	868	868	865	863	864	867	869
6	867	868	869	861	872	873	874	868	863	855	858	866	874	879	884	884	882	883	883	879	876	871	862	831	819	869
7	820	832	*	*	*	*	*	*	*	*	859	865	882	892	892	908	895	884	881	885	*	*	*	*	*	-
8	*	*	*	*	*	*	*	*	*	*	856	864	882	891	896	891	883	879	881	870	865	848	854	854	854	-
9	854	858	864	864	867	865	865	864	859	854	855	864	879	885	890	885	880	873	874	872	869	865	855	851	854	867
10	854	859	856	854	854	859	864	865	863	859	865	870	884	896	901	900	896	881	877	875	864	864	859	854	854	870
11	855	864	864	861	859	856	868	860	860	859	863	870	878	882	885	886	882	880	879	877	874	861	870	865	843	869
12	843	811	849	864	866	866	868	870	866	860	865	865	881	888	881	880	878	875	875	876	874	856	848	865	867	866
13	867	870	867	871	876	867	860	860	860	859	861	871	879	881	888	886	877	875	875	871	868	834	832	843		

TERRESTRIAL MAGNETISM.

VII.—TERRESTRIAL MAGNETIC FORCE: VERTICAL COMPONENT.

Eskdalemuir. (Z.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

February, 1920.

44,000 γ (.44 C.G.S. unit) +

Hour G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	Mean
Day	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	1056	1058	1054	1052	1052	1051	1050	1051	1051	1054	1050	1046	1046	1048	1050	1054	1055	1054	1053	1054	1056	1061	1062	1061	1058	1053
2	1058	1054	1053	1050	1050	1050	1050	1050	1050	1050	1050	1050	1048	1049	1050	1053	1054	1054	1050	1054	1055	1055	1054	1056	1054	1052
3	1054	1053	1052	1050	1050	1049	1048	1048	1048	1047	1044	1042	1042	1042	1046	1054	1054	1048	1050	1052	1054	1054	1058	1058	1054	1050
4	1054	1050	1047	1047	1047	1046	1046	1045	1045	1044	1042	1042	1042	1042	1044	1050	1050	1050	1050	1050	1049	1047	1048	1048	1048	1047
5	1048	1047	1046	1046	1045	1044	1044	1044	1044	1046	1046	1045	1046	1046	1047	1050	1050	1049	1047	1047	1047	1046	1046	1046	1046	1046
6	1046	1046	1045	1045	1045	1044	1043	1042	1042	1042	1040	1038	1039	1040	1042	1046	1046	1046	1045	1044	1045	1046	1050	1042	1034	1044
7	1034	1037	*	*	*	*	*	*	*	*	1038	1038	1042	1046	1048	1053	1062	1066	1061	1062	*	*	*	*	*	—
8	1034	1037	*	*	*	*	*	*	*	*	1042	1038	1038	1038	1039	1046	1050	1050	1050	1050	1050	1050	1050	1048	1048	—
9	1048	1047	1046	1046	1046	1046	1046	1046	1046	1046	1045	1043	1043	1044	1046	1050	1053	1052	1050	1049	1047	1047	1046	1046	1046	1047
10	1046	1044	1039	1040	1042	1042	1042	1041	1042	1044	1042	1040	1039	1039	1042	1046	1047	1047	1047	1047	1050	1049	1049	1048	1046	1044
11	1046	1043	1043	1042	1042	1042	1035	1034	1034	1034	1032	1031	1032	1037	1040	1042	1042	1042	1042	1042	1043	1044	1042	1042	1030	1039
12	1030	1018	1021	1028	1034	1038	1038	1038	1038	1038	1034	1034	1034	1036	1038	1038	1042	1044	1046	1043	1044	1048	1050	1044	1042	1038
13	1042	1041	1038	1038	1030	1034	1034	1035	1035	1034	1031	1032	1034	1042	1042	1044	1046	1044	1042	1042	1042	1050	1051	1046	1034	1040
14	1034	1036	1036	1036	1034	1030	1030	1032	1034	1036	1031	1032	1032	1037	1042	1048	1062	1058	1054	1059	1075	1058	1051	1049	1046	1043
15	1046	1040	1034	1032	1034	1036	1037	1038	1039	1041	1038	1034	1030	1030	1030	1034	1041	1045	1054	1062	1061	1054	1050	1046	1042	1041
16	1042	1042	1040	1038	1038	1037	1036	1034	1034	1034	1029	1027	1030	1035	1046	1098	1094	1082	1078	1119	1083	1071	1056	1048	1043	1053
17	1043	1034	1018	1018	1022	1030	1030	1035	1038	1042	1043	1041	1050	1052	1050	1054	1059	1064	1062	1061	1042	1046	1034	1034	1038	1042
18	1038	1032	1016	1014	1023	1034	1038	1040	1042	1042	1039	1038	1040	1046	1047	1054	1058	1054	1050	1049	1050	1043	1042	1043	1042	1041
19	1042	1039	1038	1040	1041	1042	1041	1040	1041	1042	1038	1064	1066	1070	1071	1072	1075	1082	1086	1083	1082	1082	1082	1078	1074	1061
20	1074	1071	1072	1071	1070	1070	1070	1070	1072	1074	1069	1066	1064	1066	1079	1078	1079	1078	1078	1075	1075	1077	1077	1075	1074	1073
21	1074	1075	1073	1073	1072	1071	1071	1070	1073	1074	1066	1066	1066	1068	1071	1078	1082	1081	1081	1082	1077	1074	1074	1074	1073	1074
22	1073	1070	1071	1071	1071	1071	1071	1071	1074	1075	1070	1066	1064	1066	1074	1079	1080	1079	1079	1074	1073	1071	1071	1071	1072	1072
23	1072	1071	1070	1070	1070	1070	1069	1069	1066	1066	1064	1062	1062	1064	1065	1068	1072	1074	1073	1073	1074	1071	1070	1070	1069	1069
24	1069	1070	1068	1062	1063	1064	1066	1066	1066	1063	1062	1061	1059	1064	1066	1072	1092	1118	1190	1340	1347	1198	1126	1087	1062	1106
25	1062	1041	1022	1036	1052	1062	1066	1070	1076	1079	1079	1078	1075	1076	1075	1078	1078	1078	1079	1080	1079	1086	1098	1086	1082	1071
26	1082	1078	1076	1077	1078	1077	1075	1074	1073	1074	1076	1071	1068	1066	1070	1074	1081	1082	1084	1097	1108	1099	1091	1090	1086	1080
27	1086	1075	1071	1070	1070	1062	1056	1062	1067	1069	1074	1074	1066	1066	1077	1082	1086	1087	1087	1085	1089	1091	1091	1086	1079	1076
28	1079	1063	1066	1067	1068	1066	1069	1070	1072	1071	1066	1066	1068	1072	1075	1078	1081	1081	1081	1080	1078	1077	1078	1077	1074	1072
29	1074	1072	1069	1068	1066	1066	1066	1066	1068	1070	1068	1066	1066	1070	1075	1078	1081	1080	1079	1079	1078	1078	1079	1080	1079	1073
Mean†	1056	1052	1049	1049	1050	1051	1051	1051	1052	1053	1051	1050	1050	1052	1055	1061	1064	1065	1067	1075	1074	1068	1064	1060	1057	1057

† Mean for 27 days, 7th and 8th omitted.

* Shutter jammed.

VIII.—AUXILIARY OBSERVATIONS IN ABSOLUTE MEASURE; DAILY VALUES OF TEMPERATURE IN THE EAST ROOM OF MAGNET HOUSE; MAGNETIC NOTES FOR THE MONTH. February, 1920.

Date	Time G.M.T.		Horizontal Force.	Declination.	Dip.	Temperature in Magnet House.	Magnetic Character of day (0-2).	Date.
	From	To						
Feb.	h. m.	h. m.	γ	° ' "	° ' "	a		
						280+		
						3.8	o	1
						3.8	oc	2
						3.7	oc	3
						3.7	o	4
5	11 19	11 48	16685	16 56 58	69 40.7	3.7	o	5
						3.7	I	6
						3.7	ID	7
						3.6	—	8
						3.6	oc	9
						3.6	o	10
12	10 51	11 18	16711	16 56 18	69 39.0	3.5	o	11
						3.5	I	12
						3.5	I	13
						3.5	ID	14
						3.4	o	15
16	11 34	12 1	16697	17 1 48	69 41.3	3.5	2D	16
17	11 15	14 22	16690	17 0 50	69 40.9	3.4	2D	17
18	14 59	15 13			69 40.8	3.4	I	18
						3.5	o	19
20	11 23	11 46	16697	16 57 42	69 40.8	3.4	o	20
						3.5	I	21
						3.5	o	22
						3.5	oc	23
						3.5	2D	24
						3.4	I	25
26	11 18	11 42	16695	16 55 0	69 39.8	3.5	o	26
						3.4	I	27
						3.4	o	28
						3.4	oc	29

MAGNETIC NOTES.

February, 1920.

The mean character figure was 0.54. The most disturbed days were the 16th, 17th, 24th. The changes in V during the large disturbance which began about 24d. 11h. are noteworthy in that they are almost wholly confined to the positive side of the previously undisturbed value. The recovery to normal was not, as is the case frequently, accompanied by shorter period pulsations. W rose during the first seven hours of the storm and underwent a rapid fall of 146 γ between 19h. 26m. and 19h. 50m. It then remained below the undisturbed value for eight hours. N showed less depression in value than usual. The N trace showed a sudden rise beginning at 6d. 22h. 33m.; again at 7d. 12h. 32m.; and 8d. 20h. 28m. The downward movements of W beginning at 11d. 23h. 37m.; 12d. 20h. 52m., and 13d. 20h. 22m. resemble each other. Bays on the N trace are observed centering at 12d. 0h. 4m., 12d. 1h. 4m.

HOURLY VALUES FROM AUTOGRAPHIC RECORDS.

IX.—TERRESTRIAL MAGNETIC FORCE: NORTH COMPONENT.

Eskdalemuir. (X.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time. 15,000 γ (·15 C.G.S. units) +

March, 1920.

Table with 25 columns (Hour G.M.T., 0-24, Midt., Mean) and 31 rows (Day 1-31). Values range from 830 to 1000.

X.—TERRESTRIAL MAGNETIC FORCE: WEST COMPONENT.

Eskdalemuir. (-Y.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time. 4,000 γ (·04 C.G.S. units) +

March, 1920.

Table with 25 columns (Hour G.M.T., 0-24, Midt., Mean) and 31 rows (Day 1-31). Values range from 750 to 900.

† On the 5th, the trace was off the sheet from 1h 36m to 2h 30m, but it looked as if the marginal value, which was accepted, should be only slightly in error. ‡ Mean for 28 days, 22nd, 23rd and 24th omitted. * Trace off sheet.

XI.—TERRESTRIAL MAGNETIC FORCE : VERTICAL COMPONENT.

Eskdalemuir. (Z.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

March, 1920.

44,000 γ (.44 C.G.S. unit) +

Hour G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	Mean
Day 1	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	1079	1075	1074	1070	1070	1070	1070	1071	1070	1070	1070	1066	1062	1067	1074	1076	1074	1074	1075	1076	1078	1080	1079	1075	1072	1073
2	1072	1066	1066	1067	1066	1067	1067	1068	1069	1068	1066	1060	1058	1055	1070	1071	1073	1073	1074	1074	1071	1072	1071	1071	1070	1069
3	1070	1070	1070	1069	1069	1068	1067	1067	1069	1072	1069	1066	1062	1063	1066	1070	1072	1070	1068	1067	1067	1068	1069	1068	1067	1068
4	1067	1066	1066	1066	1062	1062	1061	1061	1062	1061	1058	1055	1051	1051	1053	1054	1062	1071	1098	1193	1266	1236	1212	1076	978	1089
5	978	955	942	958	999	1006	998	982	982	1010	1042	1058	1070	1078	1094	1111	1117	1115	1114	1098	1094	1100	1094	1086	1102	1048
6	1102	1048	1038	1065	1067	1070	1070	1069	1066	1066	1066	1066	1066	1070	1070	1072	1075	1081	1094	1098	1086	1087	1082	1066	1046	1071
7	1045	1057	1065	1067	1066	1065	1061	1063	1064	1065	1060	1059	1061	1065	1070	1077	1079	1079	1080	1081	1081	1077	1074	1073	1070	1069
8	1070	1069	1041	1049	1057	1062	1066	1067	1065	1065	1064	1058	1058	1065	1072	1077	1081	1085	1081	1082	1083	1084	1078	1068	1057	1068
9	1057	1063	1069	1070	1071	1071	1071	1071	1073	1073	1071	1066	1065	1065	1066	1070	1077	1078	1077	1074	1074	1073	1073	1071	1070	1071
10	1070	1070	1071	1071	1071	1070	1070	1070	1071	1068	1065	1058	1057	1061	1065	1071	1071	1073	1074	1081	1093	1077	1070	1067	1066	1070
11	1066	1066	1067	1067	1067	1067	1067	1068	1069	1066	1061	1057	1053	1053	1059	1065	1069	1073	1072	1073	1075	1070	1069	1061	1058	1066
12	1057	1060	1063	1063	1063	1062	1060	1061	1063	1062	1059	1052	1048	1048	1056	1069	1084	1083	1101	1102	1110	1100	1083	1065	1066	1070
13	1066	1058	1063	1066	1067	1067	1066	1066	1064	1061	1056	1056	1058	1059	1064	1068	1072	1073	1069	1068	1066	1067	1065	1065	1064	1065
14	1064	1057	1052	1055	1058	1056	1051	1052	1056	1052	1052	1051	1051	1082	1132	1128	1136	1211	1194	1132	1104	1093	1084	1083	1083	1086
15	1083	1078	1075	1074	1075	1074	1074	1072	1069	1072	1067	1070	1072	1076	1077	1080	1081	1080	1075	1075	1076	1080	1080	1072	1071	1075
16	1071	1069	1070	1070	1069	1068	1068	1061	1062	1064	1076	1073	1067	1064	1068	1072	1074	1076	1076	1075	1086	1080	1060	1044	1045	1069
17	1045	1053	1064	1064	1066	1067	1068	1070	1071	1068	1061	1057	1056	1057	1060	1069	1076	1080	1076	1072	1069	1068	1068	1068	1067	1066
18	1066	1063	1065	1064	1064	1063	1063	1063	1063	1059	1055	1054	1055	1059	1066	1073	1078	1072	1072	1076	1078	1079	1075	1062	1055	1066
19	1055	1062	1064	1065	1065	1064	1063	1065	1067	1067	1063	1052	1048	1051	1059	1068	1075	1080	1075	1067	1066	1066	1066	1066	1066	1064
20	1066	1066	1065	1066	1064	1063	1063	1066	1068	1067	1059	1051	1049	1051	1057	1063	1066	1077	1083	1080	1075	1071	1071	1067	1066	1066
21	1066	1065	1065	1065	1063	1063	1063	1065	1067	1067	1063	1055	1049	1053	1057	1063	1073	1077	1078	1078	1083	1077	1075	1069	1063	1067
22	1063	1063	1063	1063	1063	1063	1063	1063	1067	1067	1053	1053	1036	1135	1175	1103	1111	1219	987	1234	1247	1158	1115	1117	1096	—
23	1117	*	*	*	*	*	*	988	1040	1073	1101	1102	1091	1116	1148	1151	1139	1111	1099	1111	1087	1075	1053	1048	1083	—
24	1083	*	*	*	*	1002	1041	1059	1070	1075	1076	1075	1070	1090	1099	1087	1107	1171	1127	1111	1080	1071	1068	1011	996	—
25	995	986	982	962	974	1007	1032	1050	1065	1071	1074	1070	1065	1058	1062	1066	1082	1091	1093	1082	1075	1078	1074	1070	1048	1050
26	1048	1042	1058	1064	1066	1066	1066	1070	1074	1074	1067	1058	1054	1051	1058	1065	1070	1070	1070	1068	1070	1068	1068	1066	1066	1064
27	1066	1066	1066	1066	1063	1066	1064	1066	1066	1066	1064	1061	1058	1057	1061	1066	1070	1072	1092	1097	1082	1071	1062	1054	1042	1067
28	1042	1046	1057	1060	1058	1058	1056	1058	1062	1064	1059	1055	1055	1059	1066	1066	1074	1082	1079	1070	1066	1066	1066	1065	1063	1063
29	1063	1063	1063	1063	1062	1062	1062	1062	1064	1062	1057	1052	1046	1050	1056	1061	1063	1063	1064	1066	1065	1066	1066	1063	1062	1061
30	1062	1061	1060	1061	1060	1059	1059	1062	1063	1060	1053	1049	1050	1052	1055	1059	1065	1069	1066	1063	1062	1061	1061	1061	1060	1060
31	1060	1061	1060	1060	1059	1059	1061	1064	1066	1065	1058	1054	1052	1052	1054	1058	1061	1062	1059	1057	1057	1058	1058	1058	1058	1059
Meant†	1059	1056	1056	1057	1059	1061	1061	1062	1063	1064	1062	1059	1057	1059	1065	1072	1077	1079	1084	1085	1085	1082	1077	1067	1061	1067

* Trace off sheet.

† Mean for 28 days, 22nd, 23rd, and 24th omitted.

XII.—AUXILIARY OBSERVATIONS IN ABSOLUTE MEASURE ; DAILY VALUES OF TEMPERATURE IN

Eskdalemuir.

THE EAST ROOM OF MAGNET HOUSE ; MAGNETIC NOTES FOR THE MONTH.

March, 1920.

Date	Time G.M.T.		Horizontal Force.	Declination.	Dip.	Temperature in Magnet House.	Magnetic Character of day (0-2).	Date.	MAGNETIC NOTES.	
	From	To								
Mar.	h. m.	h. m.	γ	''	'	a			March, 1920.	
						280+				
						3.4	0	1		
						3.4	0C	2		
						3.4	0C	3		
						3.4	2	4		
						3.3	2D	5		
						3.3	1	6		
						3.3	1	7		
						3.3	1	8		
9	10 56	11 19	16673	16 56 40	69 41.5	3.3	0	9		
						3.3	1	10		
						3.3	1	11		
						3.3	1	12		
						3.3	0	13		
						3.3	2D	14		
						3.3	1	15		
16	10 54	11 15	16667	16 53 19	69 41.9	3.3	2	16		
						3.3	1	17		
						3.3	0	18		
						3.3	0	19		
						3.3	0	20		
						3.3	1	21		
						3.3	2D	22		
						3.2	2D	23		
24	11 24	11 54	16663	16 59 18	69 42.2	3.2	2D	24		
						3.0	2	25		
						3.0	0	26		
						3.0	1	27		
						3.0	1	28		
29	11 13	11 4								

HOURLY VALUES FROM AUTOGRAPHIC RECORDS.

XIII.—TERRESTRIAL MAGNETIC FORCE: NORTH COMPONENT.

Eskdalemuir. (X.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.
15,000 γ ($\cdot 15$ C.G.S. Units) +

April, 1920.

Hour G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	Mean
Day 1	992	990	990	989	988	989	990	991	987	975	956	944	941	946	955	967	975	981	999	1000	999	999	996	995	994	981
2	994	993	992	992	992	993	995	996	990	976	956	947	940	937	954	972	986	998	1005	1000	997	1025	1001	999	995	985
3	995	992	988	985	988	990	993	992	988	977	961	946	939	948	960	967	984	998	1000	1005	996	1001	1017	995	995	984
4	994	987	989	994	990	993	1005	1002	995	975	955	946	945	945	945	964	959	999	995	999	995	990	996	992	993	984
5	993	992	989	989	991	995	980	985	961	975	962	933	940	940	946	964	970	1003	1005	985	975	983	976	990	990	976
6	989	983	959	949	961	981	969	966	974	964	935	948	936	929	955	958	965	997	989	990	995	999	1004	1003	994	971
7	994	984	983	985	982	983	994	996	982	950	929	925	925	939	955	972	978	991	997	994	998	988	989	995	989	975
8	989	983	974	970	958	984	965	987	984	969	969	985	931	934	955	969	979	984	985	989	990	990	990	991	994	975
9	993	988	985	983	983	990	995	994	984	974	956	944	941	948	956	973	973	989	990	987	993	993	991	993	997	979
10	997	1008	999	987	989	993	998	998	983	968	950	948	945	948	953	966	978	988	996	998	995	993	993	992	993	982
11	993	997	1000	990	995	993	995	992	984	974	959	949	944	949	970	968	979	991	998	997	998	997	998	997	996	984
12	996	997	993	980	988	991	991	989	987	978	965	956	953	954	960	970	984	989	995	994	997	997	997	997	996	983
13	995	993	993	992	992	994	995	996	992	983	970	962	956	957	963	979	986	997	1002	997	992	999	1002	1003	999	987
14	999	1001	1012	1003	998	996	997	990	984	972	960	953	953	953	957	968	974	981	992	997	996	992	999	1002	1002	985
15	1002	997	998	998	1017	1016	1012	987	1011	982	913	887	918	955	923	957	1040	1084	1008	945	951	953	962	959	967	977
16	966	942	942	950	952	962	971	974	970	956	942	937	928	937	951	966	972	976	978	991	977	979	982	977	975	962
17	975	982	981	955	976	966	971	982	990	968	926	899	903	919	942	945	962	972	1030	1001	1000	1016	963	971	943	966
18	943	947	958	955	1000	979	958	978	962	946	932	916	933	932	935	958	955	965	987	997	991	1006	968	1016	963	963
19	1015	980	978	967	965	965	961	955	938	929	936	941	943	945	954	970	984	985	987	984	975	965	961	974	964	964
20	974	970	975	976	1000	988	976	969	945	932	910	905	909	950	951	967	966	975	974	970	978	966	960	957	964	960
21	964	973	973	972	981	956	978	975	960	941	932	923	936	936	944	958	977	994	977	980	980	980	993	1003	1000	967
22	999	989	984	983	981	984	985	985	980	968	945	938	937	943	954	973	969	983	980	983	989	990	981	983	979	974
23	979	989	985	984	983	985	989	989	983	969	950	940	945	946	963	994	999	996	992	993	998	974	994	985	1007	980
24	1007	982	976	978	983	969	1003	981	954	935	911	914	935	934	930	940	962	978	993	1001	996	989	987	983	984	967
25	984	975	977	979	981	984	983	982	974	959	943	937	935	939	946	954	964	976	985	988	989	989	986	983	978	970
26	977	983	980	981	981	983	983	978	973	964	957	958	956	958	963	953	982	977	988	997	998	994	995	994	997	978
27	997	997	993	991	988	988	985	980	977	968	955	948	944	948	903	973	982	987	988	996	994	992	1004	987	988	980
28	988	988	987	987	987	990	990	986	980	969	956	948	949	959	972	982	989	992	995	998	999	998	1000	998	1003	983
29	1003	1011	1003	988	990	990	988	983	975	963	949	945	952	958	972	984	992	999	998	1005	1007	1008	999	963	1001	984
30	1001	999	983	977	987	983	982	977	965	958	949	948	954	960	968	977	988	1001	1002	994	1006	992	1003	969	973	980
Mean	990	986	984	980	985	985	986	985	978	965	947	939	939	945	954	966	978	991	994	992	992	992	990	986	989	976

XIV.—TERRESTRIAL MAGNETIC FORCE: WEST COMPONENT.

Eskdalemuir. (—Y.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.
4,000 γ ($\cdot 04$ C.G.S. Units) +

April, 1920.

Hour G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	Mean
Day 1	859	861	860	857	857	857	850	840	834	832	836	848	866	876	880	879	868	861	864	864	865	867	866	863	862	859
2	862	861	857	855	851	850	845	835	824	823	835	850	871	881	886	886	882	876	875	876	872	850	851	856	857	859
3	857	858	853	856	858	854	850	840	831	827	834	847	870	894	900	895	891	884	875	871	856	861	822	829	845	859
4	845	848	850	848	855	861	855	845	834	833	840	850	876	903	911	906	882	882	866	866	861	823	840	850	858	861
5	858	858	854	855	855	855	877	858	845	846	854	853	861	878	891	882	878	888	883	813	824	824	841	845	891	856
6	891	865	842	872	868	862	845	843	837	838	832	849	869	876	887	887	871	862	862	862	860	844	842	859	845	858
7	845	848	857	857	861	860	854	842	825	823	839	856	869	888	895	889	873	816	824	842	841	855	860	861	860	854
8	859	859	866	861	871	860	857	854	832	828	833	850	875	891	897	890	876	866	860	860	858	859	855	859	856	861
9	856	860	854	852	852	849	849	840	832	826	837	850	870	881	890	891	866	870	864	864	865	864	864	864	864	859
10	864	870	845	838	849	848	848	839	833	833	845	858	869	887	886	881	871	865	864	863	863	860	859	858	858	858
11	858	859	855	849	844	849	850	843	837	833	839	850	865	883	897	887	883	874	869	862	862	863	862	860	857	860
12	857	856	856	866	863	860	852	844	838	834	840	849	865	880	886	884	880	874	870	866	866	865	864	863	859	862
13	859	858	855	854	852	849	844	838	833	829	832	840	849	865	875	877	872	876	872	864	862	865	866	865	862	856
14	862	865	854	848	847	847	848	844	838	839	845	847	854	865	875	881	880	877	870	871	865	858	860	860	861	858
15	861	855	856	846	822	830	855	871	848	845	836	869	872	896	921	924	931	881	846	844	850	863	833	835	822	861
16	822	822	849	833	839	842	838	830	821	817	822	833	854	877	886	882	874	870	866	865	846	859	849	851	849	848
17	849	855	833	844	838	828	840	838	845	832	838	843	866	892	887	878	888	868	857	872	839	812	821	806	801	848
18	801	806	773	817	779	813	854	839	824	819	836	849	868	875	875	884	874	868	866	858	843	835	833	833	817	839
19	817	801	785	819	839	843	842	835	826	825	836	846	860	868	874	875	875	858	854	859	857	833	835	823	816	841
20	816	819	783	795	817	832	841	858	85																	

XV.—TERRESTRIAL MAGNETIC FORCE : VERTICAL COMPONENT.

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

Eskdalemuir. (Z.)

April, 1920.

44,000 γ (.44 C.G.S. unit) +

Hour G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	Mean	
Day 1	1058	1058	1058	1058	1057	1057	1059	1062	1063	1062	1057	1054	1046	1043	1049	1054	1058	1059	1058	1057	1055	1055	1056	1056	1057	1056	1056
2	1057	1057	1057	1055	1055	1055	1055	1057	1057	1057	1053	1049	1046	1046	1046	1050	1053	1056	1058	1058	1059	1054	1053	1053	1054	1054	1054
3	1054	1054	1055	1054	1052	1051	1050	1050	1050	1049	1043	1038	1033	1034	1041	1046	1048	1051	1054	1056	1061	1061	1054	1052	1050	1050	1050
4	1050	1052	1053	1052	1050	1042	1040	1045	1047	1044	1038	1034	1033	1038	1041	1051	1053	1058	1062	1062	1066	1073	1066	1058	1054	1050	1050
5	1054	1050	1051	1053	1053	1051	1046	1042	1045	1043	1042	1043	1046	1046	1055	1078	1074	1090	1118	1117	1105	1093	1081	1051	1026	1063	
6	1026	1021	1028	1014	1022	1030	1042	1046	1050	1047	1053	1053	1049	1054	1067	1068	1074	1076	1071	1062	1062	1066	1053	1044	1047	1050	
7	1047	1050	1051	1053	1054	1052	1053	1056	1056	1055	1047	1045	1042	1042	1047	1055	1059	1065	1079	1077	1069	1059	1057	1051	1049	1055	
8	1049	1049	1046	1041	1038	1035	1038	1034	1046	1047	1046	1034	1026	1027	1038	1047	1056	1057	1056	1053	1053	1053	1053	1052	1048	1045	
9	1049	1048	1049	1052	1052	1052	1055	1055	1054	1051	1045	1042	1037	1039	1044	1056	1067	1067	1066	1062	1058	1055	1054	1052	1050	1053	
10	1050	1032	1019	1030	1042	1046	1049	1051	1051	1046	1037	1036	1037	1037	1043	1048	1051	1052	1052	1054	1053	1053	1052	1050	1050	1045	
11	1050	1047	1035	1035	1037	1040	1043	1046	1046	1043	1039	1039	1035	1028	1034	1042	1044	1048	1052	1051	1051	1050	1048	1048	1047	1043	
12	1048	1047	1047	1044	1034	1032	1036	1040	1040	1042	1042	1042	1036	1030	1036	1040	1042	1045	1049	1049	1049	1048	1048	1047	1047	1042	
13	1047	1046	1046	1046	1045	1046	1047	1046	1045	1044	1040	1036	1032	1028	1030	1033	1037	1040	1045	1049	1055	1051	1047	1045	1044	1043	
14	1044	1043	1031	1032	1036	1034	1040	1041	1040	1036	1033	1032	1028	1028	1030	1034	1040	1042	1044	1045	1048	1047	1044	1042	1038		
15	1042	1038	1020	995	988	1005	1004	1009	1013	1020	1023	1021	1037	1095	1152	1116	1151	1187	1131	1096	1092	1060	1031	1032	1021	1056	
16	1021	1016	1020	1024	1021	1024	1028	1036	1043	1044	1046	1040	1033	1033	1040	1048	1053	1054	1054	1059	1068	1056	1056	1055	1053	1041	
17	1053	1048	1043	1037	1020	1017	1016	1018	1028	1030	1040	1044	1040	1040	1072	1063	1063	1068	1092	1088	1092	1058	1036	1012	962	1045	
18	962	957	961	944	940	972	978	1002	1021	1032	1040	1040	1035	1037	1043	1047	1062	1076	1072	1071	1067	1043	1035	1033	1015	1021	
19	1015	989	981	1000	1020	1030	1036	1044	1044	1040	1040	1039	1036	1034	1035	1040	1044	1059	1063	1051	1051	1053	1044	1032	1015	1034	
20	1015	1004	993	988	980	972	970	977	985	986	999	1004	1016	1032	1053	1087	1093	1090	1083	1078	1068	1045	1030	1028	1022	1024	
21	1022	1013	1003	1011	1011	1016	1010	1013	1015	1016	1012	1009	1011	1016	1024	1036	1048	1047	1040	1032	1029	1028	1024	1020	993	1021	
22	993	1004	1014	1020	1021	1020	1021	1023	1021	1016	1013	1009	1004	1004	1013	1018	1025	1028	1028	1025	1024	1023	1024	1023	1023	1018	
23	1023	1016	1015	1016	1020	1022	1024	1024	1023	1020	1016	1012	1005	1003	1007	1011	1021	1028	1036	1036	1035	1040	1034	1027	1007	1021	
24	1007	971	932	942	959	941	933	949	961	965	975	983	992	1001	1008	1015	1019	1024	1024	1020	1018	1016	1015	1015	1012	987	
25	1012	1012	1014	1014	1015	1016	1017	1017	1015	1011	1005	1000	996	999	1004	1010	1013	1015	1016	1016	1016	1014	1013	1014	1009	1001	
26	1001	1001	1008	1010	1012	1013	1015	1013	1009	1005	1003	1001	1000	1001	1009	1009	1009	1013	1012	1009	1010	1009	1009	1009	1008	1008	
27	1008	1008	1008	1008	1009	1009	1011	1008	1003	997	995	991	996	996	1001	1007	1010	1013	1013	1012	1012	1013	1006	1000	1004	1006	
28	1004	1005	1007	1007	1008	1009	1009	1008	1005	1000	994	991	988	990	995	999	1000	1004	1005	1005	1006	1005	1005	1004	1004	1002	
29	1004	1003	1001	1000	1003	1005	1007	1007	1003	999	995	992	989	990	997	997	1000	1001	1003	1002	1001	1002	1007	997	980	1000	
30	980	982	969	980	991	1000	1003	1003	1001	999	992	991	989	990	993	1000	1003	1007	1016	1030	1036	1021	993	973	975	998	
Mean	1028	1024	1021	1021	1022	1023	1025	1028	1030	1028	1027	1025	1023	1026	1035	1040	1046	1051	1052	1049	1049	1043	1038	1032	1025	1033	

XVI.—AUXILIARY OBSERVATIONS IN ABSOLUTE MEASURE ; DAILY VALUES OF TEMPERATURE IN

Eskdalemuir.

THE EAST ROOM OF MAGNET HOUSE ; MAGNETIC NOTES FOR THE MONTH.

April, 1920.

Date	Time G.M.T.		Horizontal Force.	Declination.	Dip.	Temperature in Magnet House.	Magnetic Character of day (0-2).	Date.
	From	To						
April	h. m.	h. m.	γ	° ' "	° '	a		
						280+		
						3.0	OC	1
						3.0	I	2
						3.0	I	3
						3.1	I	4
						3.0	2D	5
7	11 4	11 31	16637	16 57 3	69 42.8	3.1	I	6
						3.0	I	7
						3.0	O	8
						3.0	O	9
						3.0	I	10
						3.0	OC	11
						3.0	O	12
13	11 16	11 42	16671	16 53 45	69 40.7	3.0	OC	13
						3.0	OC	14
						3.0	2D	15
						3.0	I	16
						3.0	2D	17
						3.1	2D	18
						3.0	I	19
20	11 19	11 46	16651	17 5 55	69 43.0	3.0	2	20
						3.0	I	21
						3.0	O	22
						3.0	I	23
						3.0	2D	24
						3.0	O	25
						3.0	O	26
27	10 47	11 13	16671	16 59 3	69 40.5	3.0	O	27
						3.0	OC	28
						3.0	I	29
						3.0	I	30

MAGNETIC NOTES.

April, 1920.

The month was one of fairly high activity, the mean character figure being 0.80. The most disturbed days were the 15th, 17th, 18th, 20th and 24th. No sudden commencements were recorded, but a movement resembling one occurred at 21d. 22h. om., its real character being hidden owing to the time-gap on the trace. It was not followed by any considerable disturbance. Other rapid movements, consisting of more or less sudden changes in value were recorded in N. at 2d. 20h. 38m., 6d. 21h. 15m., 10d. oh. 50m. The principal disturbance of the month began gradually after oh. on the 15th, was moderate in extent, and of short duration. After a temporary cessation of activity, disturbance began again in the early morning hours of the 17th. The N. trace for the interval between 17d. 20h. 30m. and 18d. 1h. 20m., shows a close resemblance to that of a similar interval beginning at 18d. 20h. 43m.

HOURLY VALUES FROM AUTOGRAPHIC RECORDS.

XVII.—TERRESTRIAL MAGNETIC FORCE: NORTH COMPONENT.

Eskdalemuir. (X.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time. 15,000 γ (.15 C.G.S. Units) +

May, 1920.

Table with 24 columns (Hour G.M.T., 0-23, Midt, Mean) and 31 rows (Day 1-31). Values range from approximately 883 to 1028.

XVIII.—TERRESTRIAL MAGNETIC FORCE: WEST COMPONENT.

Eskdalemuir. (—Y.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time. 4,000 γ (.04 C.G.S. Units) +

May, 1920.

Table with 24 columns (Hour G.M.T., 0-23, Midt, Mean) and 31 rows (Day 1-31). Values range from approximately 811 to 887.

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TERRESTRIAL MAGNETISM.

XIX.—TERRESTRIAL MAGNETIC FORCE: VERTICAL COMPONENT.

Eskdalemuir. (Z.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

May, 1920.

44,000 γ ($\cdot 44$ C.G.S. unit) +

Hour G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	Mean	
Day 1	975	921	892	899	886	895	921	940	956	965	984	987	988	997	1004	1008	1008	1008	1017	1030	1041	1020	1014	1008	996	974	
2	996	980	980	990	996	1001	1002	1001	996	996	994	993	992	998	1006	1016	1016	1012	1020	1016	1012	1007	1005	1004	1000	1001	
3	1000	992	985	995	1000	1000	996	997	992	993	991	988	996	1004	1007	1008	1016	1020	1024	1024	1020	1005	1007	1007	1005	1003	
4	1005	1001	997	1000	1005	1005	1004	1005	1002	1004	995	993	992	996	1001	1019	1025	1029	1029	1024	1023	1021	1019	1018	1017	1009	
5	1017	1014	1013	1017	1018	1018	1018	1018	1013	1010	1008	1005	1002	1005	1009	1021	1025	1027	1025	1024	1023	1022	1021	1021	1021	1017	
6	1022	1023	1022	1022	1023	1023	1023	1022	1020	1018	1014	1010	1005	1004	1008	1011	1017	1022	1024	1023	1023	1023	1024	1023	1022	1019	
7	1023	1023	1023	1023	1024	1026	1024	1022	1020	1016	1011	1007	1005	1006	1012	1019	1022	1023	1023	1023	1024	1023	1022	1021	1020	1019	
8	1020	1021	1020	1021	1021	1023	1020	1019	1014	1011	1007	1007	999	999	1003	1008	1012	1015	1019	1019	1015	1017	1019	1016	1015	1014	
9	1015	1018	1018	1007	992	996	1003	1004	999	1004	1003	999	999	1004	1011	1019	1035	1071	1078	1063	1047	1040	1035	1031	1019	1019	
10	1032	1029	1024	1018	1020	1024	1028	1027	1028	1022	1010	1003	1000	1001	1010	1017	1020	1020	1024	1024	1024	1022	1023	1022	1021	1019	
11	1022	1023	1023	1024	1024	1024	1025	1025	1023	1019	1011	1009	1005	1006	1009	1015	1017	1021	1022	1023	1022	1021	1022	1021	1021	1019	
12	1022	1022	1022	1023	1022	1022	1020	1020	1018	1010	1002	997	995	1002	1010	1014	1018	1020	1021	1025	1026	1027	1026	1022	1020	1017	
13	1021	1016	1016	1016	1019	1016	1015	1013	1011	1011	1007	1003	999	1001	1001	1011	1043	1063	1056	1071	1060	1019	1007	1004	971	1020	
14	971	925	951	991	1003	1007	974	993	1004	1011	1016	1015	1017	1021	1027	1027	1032	1039	1036	1038	1027	1008	1003	1011	1011	1007	
15	1011	1007	1011	1011	1003	988	992	1003	1004	1003	1002	1005	1017	1021	1035	1037	1049	1056	1063	1063	1059	1056	1050	1008	980	968	1021
16	969	965	966	985	1006	1016	1019	1019	1019	1018	1008	1002	1004	1015	1021	1028	1034	1037	1038	1043	1039	1032	1028	1024	1024	1015	
17	1025	1021	1016	1021	1025	1026	1029	1026	1018	1009	1001	1001	1006	1017	1020	1021	1025	1029	1029	1027	1027	1026	1025	1025	1020	1021	
18	1021	1015	1013	1016	1016	1016	1018	1024	1026	1027	1019	1014	1014	1014	1016	1020	1024	1028	1030	1034	1034	1034	1030	1026	1022	1022	
19	1022	1018	1021	1022	1025	1024	1024	1022	1020	1017	1010	1008	1008	1010	1011	1018	1022	1024	1024	1025	1034	1025	1024	1024	1024	1020	
20	1025	1025	1023	1025	1027	1029	1028	1025	1020	1011	1009	1010	1011	1016	1023	1027	1024	1026	1028	1028	1031	1032	1028	1025	1025	1023	
21	1025	1025	1023	1023	1028	1029	1028	1023	1021	1016	1009	1007	1007	1010	1013	1020	1023	1031	1036	1043	1036	1033	1023	1017	1020	1023	
22	1020	1023	1023	1025	1028	1029	1029	1027	1023	1015	1011	1007	1004	1007	1017	1023	1028	1029	1032	1031	1027	1027	1025	1025	1025	1022	
23	1025	1024	1025	1027	1027	1029	1029	1029	1028	1024	1016	1012	1007	1007	1015	1021	1026	1029	1037	1039	1032	1031	1029	1027	1027	1025	
24	1027	1023	1023	1025	1028	1029	1029	1030	1027	1024	1021	1017	1013	1013	1017	1023	1029	1032	1036	1037	1036	1032	1028	1026	1026	1026	
25	1027	1026	1024	1024	1021	1024	1016	1019	1022	1020	1021	1016	1012	1016	1020	1024	1027	1032	1040	1040	1039	1039	1038	1028	1027	1026	
26	1028	1029	1029	1022	1020	1022	1015	1023	1021	1017	1011	1009	1013	1013	1014	1017	1020	1025	1027	1031	1029	1033	1031	1028	1021	1022	
27	1021	1020	1017	1011	1002	998	1013	1017	1017	1014	1010	1009	1011	1017	1025	1032	1033	1033	1033	1031	1031	1032	1031	1029	1029	1020	
28	1029	1029	1029	1030	1032	1041	1032	1029	1025	1019	1015	1013	1009	1026	1037	1044	1058	1082	1113	1085	1069	1050	1015	1006	1017	1038	
29	1017	1027	1034	1036	1022	1024	1033	1031	1035	1035	1030	1029	1030	1029	1030	1038	1043	1047	1047	1048	1049	1042	1038	1023	1029	1033	
30	1033	1033	1034	1035	1035	1034	1033	1031	1031	1029	1025	1019	1021	1024	1027	1036	1038	1040	1038	1038	1039	1040	1037	1033	1029	1033	
31	1029	1030	1031	1032	1030	1029	1033	1033	1030	1025	1023	1022	1018	1024	1029	1034	1035	1039	1037	1037	1037	1038	1037	1036	1035	1031	
Mean	1016	1011	1011	1013	1014	1015	1015	1017	1016	1013	1010	1007	1006	1011	1016	1022	1027	1032	1035	1036	1033	1028	1023	1020	1018	1019	

XX.—AUXILIARY OBSERVATIONS IN ABSOLUTE MEASURE; DAILY VALUES OF TEMPERATURE IN

Eskdalemuir.

THE EAST ROOM OF MAGNET HOUSE; MAGNETIC NOTES FOR THE MONTH.

May, 1920.

Date	Time G.M.T.		Horizontal Force.	Declination.	Dip.	Temperature in Magnet House.	Magnetic Character of day (0-2).	Date.
	From	To						
May	h. m.	h. m.	γ	° ' "	° ' "	a		
						280+		
						3.0	2D	1
						3.0	I	2
						3.0	I	3
4	11 10	11 40	16670	16 57 40	69 40.9	3.0	0	4
5	11 25	11 34			69 40.8	3.0	0	5
						3.1	0C	6
						3.1	0C	7
						3.1	0	8
						3.1	I	9
						3.1	0	10
11	11 14	11 37	16689	16 55 40	69 39.6	3.1	0C	11
						3.2	0	12
						3.1	2D	13
						3.1	2D	14
						3.1	2D	15
18	15 1	15 31	16721	16 58 48	69 38.0	3.1	I	16
						3.1	0	17
						3.1	0	18
						3.1	0	19
						3.1	0	20
						3.2	I	21
						3.2	0C	22
						3.2	0C	23
						3.2	0	24
						3.2	I	25
26	14 27	15 3	16753	16 57 16	69 38.5	3.3	0	26
						3.4	I	27
						3.4	2D	28
						3.4	I	29
						3.4	0	30
						3.4	0	31

MAGNETIC NOTES.

May, 1920.

This was a relatively quiet month, the character mean figure being 0.58. The 7th was an especially quiet day. The principal disturbance on the 13th was preceded by a sudden commencement at 13d. oh. 23m., which was of a slower type. The main features did not develop until 14 hours afterwards. The largest movements on N., took place between 14h. and 22h., and on W. between 14h. on the 13th, and 7h. on the 14th. Disturbance continued more or less active till 4h. on the 16th.

See Explanatory Note, Table IV.

HOURLY VALUES FROM AUTOGRAPHIC RECORDS.

XXI.—TERRESTRIAL MAGNETIC FORCE: NORTH COMPONENT.

Eskdalemuir. (X.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

June, 1920.

15,000 γ (·15 C.G.S. units) +

Table with 25 columns (Hour G.M.T. 0-24) and 30 rows (Day 1-30). Values range from 971 to 1009. Includes a 'Mean' row at the bottom.

Mean for 28 days, 10th and 11th omitted.

*Light failed.

XXII.—TERRESTRIAL MAGNETIC FORCE: WEST COMPONENT.

Eskdalemuir. (-Y.)

Mean Values of Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

June, 1920.

4,000 γ (·04 C.G.S. unit) +

Table with 25 columns (Hour G.M.T. 0-24) and 30 rows (Day 1-30). Values range from 807 to 881. Includes a 'Mean' row at the bottom.

†Mean for 28 days, 10th and 11th omitted.

*Light failed.

TERRESTRIAL MAGNETISM.

XXIII.—TERRESTRIAL MAGNETIC FORCE: VERTICAL COMPONENT.

Eskdalemuir. (Z.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

June, 1920.

44,000 γ (44 C.G.S. Units) +

Hour G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	Mean
Day 1	γ 1036	γ 1037	γ 1037	γ 1037	γ 1039	γ 1038	γ 1039	γ 1039	γ 1036	γ 1033	γ 1030	γ 1031	γ 1027	γ 1023	γ 1021	γ 1027	γ 1032	γ 1040	γ 1045	γ 1044	γ 1044	γ 1039	γ 1035	γ 1037	γ 1037	γ 1035
2	1037	1036	1037	1037	1041	1043	1041	1039	1039	1032	1027	1019	1016	1017	1020	1027	1032	1042	1047	1043	1039	1036	1039	1038	1036	1034
3	1037	1037	1036	1040	1040	1040	1040	1037	1039	1036	1030	1024	1018	1020	1026	1033	1037	1040	1042	1049	1048	1044	1039	1037	1027	1036
4	1027	1028	1028	1032	1035	1038	1038	1038	1032	1028	1024	1020	1017	1021	1024	1032	1041	1050	1056	1058	1058	1049	1043	1040	1040	1036
5	1040	1040	1040	1041	1042	1042	1044	1040	1036	1030	1028	1025	1022	1024	1027	1034	1040	1042	1044	1044	1042	1040	1037	1037	1036	1037
6	1036	1036	1036	1036	1040	1040	1040	1033	1028	1029	1026	1024	1026	1032	1034	1040	1045	1051	1054	1052	1048	1044	1041	1039	1040	1038
7	1041	1041	1041	1042	1042	1042	1041	1038	1031	1029	1029	1028	1026	1025	1030	1037	1042	1045	1045	1049	1049	1047	1045	1043	1042	1039
8	1042	1043	1042	1041	1039	1041	1042	1042	1045	1045	1041	1037	1029	1028	1031	1036	1043	1050	1051	1050	1046	1045	1043	1041	1041	1041
9	1041	1041	1041	1041	1041	1041	1040	1039	1037	1031	1026	1024	1023	1026	1029	1027	1029	1034	1042	1058	1062	1057	1050	1048	1038	1039
10	1038	1025	1017	1016	1013	1005	1008	1018	1022	1016	1014	1030	1053	1059	1065	1097	1134	1148	1134	1098	1077	1053	1025	990	982	1047
11	983	969	982	998	1006	1014	1022	1036	1037	1035	1027	1024	1030	1042	1047	1051	1052	1056	1068	1062	1058	1056	1051	1046	1040	1033
12	1040	1022	1019	1023	1028	1034	1036	1040	1045	1042	1038	1032	1031	1034	1035	1037	1043	1050	1055	1055	1053	1049	1047	1045	1044	1039
13	1044	1045	1043	1043	1042	1044	1044	1042	1040	1034	1036	1036	1035	1037	1038	1040	1046	1050	1054	1058	1059	1055	1051	1047	1046	1044
14	1045	1043	1041	1042	1041	1043	1045	1046	1047	1042	1038	1030	1031	1037	1037	1039	1045	1049	1053	1054	1053	1049	1049	1047	1047	1044
15	1047	1046	1045	1045	1045	1043	1041	1040	1038	1032	1026	1025	1027	1025	1027	1030	1034	1044	1047	1046	1045	1045	1045	1045	1045	1039
16	1045	1044	1045	1045	1044	1045	1045	1043	1037	1033	1029	1025	1025	1030	1033	1038	1045	1047	1046	1045	1045	1045	1044	1043	1043	1040
17	1043	1045	1045	1046	1046	1045	1045	1044	1042	1037	1030	1027	1025	1030	1035	1037	1041	1043	1046	1048	1046	1043	1043	1042	1039	1041
18	1039	1035	1037	1040	1043	1042	1045	1048	1045	1045	1039	1033	1029	1031	1034	1041	1051	1058	1057	1053	1049	1047	1046	1045	1045	1043
19	1045	1044	1045	1046	1049	1051	1050	1047	1045	1040	1035	1026	1019	1018	1025	1029	1039	1046	1056	1057	1052	1051	1051	1049	1039	1042
20	1039	1041	1037	1031	1033	1032	1031	1033	1038	1038	1033	1022	1021	1022	1026	1028	1033	1041	1049	1054	1050	1046	1044	1043	1038	1036
21	1038	1037	1041	1041	1044	1046	1046	1045	1046	1041	1034	1033	1026	1025	1029	1029	1032	1037	1045	1049	1050	1047	1042	1041	1038	1039
22	1038	1037	1037	1038	1041	1041	1040	1034	1034	1034	1029	1025	1017	1021	1025	1029	1037	1043	1046	1049	1049	1047	1043	1041	1041	1037
23	1041	1033	1029	1026	1031	1031	1032	1034	1033	1029	1025	1025	1025	1030	1034	1035	1039	1045	1049	1053	1053	1053	1045	1043	1043	1036
24	1043	1043	1042	1043	1041	1041	1041	1038	1034	1033	1025	1021	1017	1022	1030	1038	1050	1065	1065	1059	1057	1055	1046	1045	1044	1041
25	1044	1040	1041	1043	1044	1044	1049	1049	1049	1045	1037	1029	1027	1029	1033	1041	1051	1052	1054	1054	1055	1050	1046	1045	1045	1044
26	1045	1045	1042	1045	1047	1049	1049	1046	1042	1039	1042	1043	1041	1041	1045	1046	1052	1057	1053	1053	1050	1051	1050	1049	1049	1047
27	1049	1049	1048	1049	1049	1049	1047	1046	1045	1037	1029	1037	1034	1036	1041	1043	1047	1049	1053	1050	1049	1050	1053	1049	1049	1045
28	1049	1049	1049	1049	1050	1050	1050	1049	1048	1041	1033	1030	1027	1026	1030	1033	1037	1042	1054	1062	1064	1061	1054	1049	1046	1045
29	1046	1045	1048	1049	1047	1046	1047	1047	1045	1042	1045	1037	1034	1033	1038	1041	1045	1050	1051	1053	1053	1051	1050	1050	1049	1046
30	1049	1037	1039	1046	1049	1049	1049	1050	1049	1046	1037	1040	1040	1045	1042	1044	1051	1054	1054	1057	1063	1061	1057	1059	1056	1049
Mean †	1042	1040	1040	1041	1042	1043	1043	1042	1040	1037	1033	1029	1026	1028	1031	1035	1041	1047	1050	1052	1051	1048	1046	1044	1042	1040

† Mean for 28 days, 10th and 11th omitted.

XXIV.—AUXILIARY OBSERVATIONS IN ABSOLUTE MEASURE; DAILY VALUES OF TEMPERATURE IN

Eskdalemuir.

THE EAST ROOM OF MAGNET HOUSE; MAGNET NOTES FOR THE MONTH.

June, 1920.

Date	Time G.M.T.		Horizontal Force.	Declination.	Dip.	Temperature in Magnet House.	Magnetic Character of day (0-2).	Date.
	From	To						
June	h. m.	h. m.	γ	° ' "	° ' "	a		
1	10 52	11 22	16685	16 54 50	69 40.6	280+	0	1
						3.5	OC	2
						3.6	0	3
						3.6	ID	4
						3.6	0	5
						3.6	I	6
7	11 13	11 47	16691	16 50 31	69 40.4	3.6	0	7
						3.6	OC	8
						3.7	I	9
						3.7	I	10
						3.8	2D	10
						3.8	ID	11
						3.8	0	12
						3.9	0	13
						3.9	OC	14
15	11 7	11 38	16686	16 51 57	69 39.4	3.9	0	15
						4.0	0	16
						4.0	OC	17
						4.0	0	18
						4.0	0	19
						4.0	0	20
						4.0	0	21
22	10 27	10 56	16684	16 51 47	69 40.1	4.1	OC	22
						4.1	0	23
						4.2	I	24
						4.2	I	25
						4.3	0	26
						4.3	0	27
						4.4	ID	28
29	10 39	11 7	16681	16 48 47	69 39.9	4.4	ID	29
						4.5	I	30

MAGNETIC NOTES.

June, 1920.

A quiet month, with mean character figure 0.37, in which only one day was assigned a "2." A bay centering at 24d. 21h. 42m., on the N. trace is repeated in another centering at 25d. 20h. 46m. Similar movements in V. are noticeable at these times, but none in W.

HOURLY VALUES FROM AUTOGRAPHIC RECORDS.

XXV.—TERRESTRIAL MAGNETIC FORCE : NORTH COMPONENT.

Eskdalemuir. (X.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

July, 1920.

15,000 γ (·15 C.G.S. Units) +

Table with 24 columns (Hour G.M.T., 0-23, Midt., Mean) and 31 rows (Day 1-31). Values range from 969 to 1027.

XXVI.—TERRESTRIAL MAGNETIC FORCE : WEST COMPONENT.

Eskdalemuir. (-Y.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

July, 1920.

4,000 γ (·04 C.G.S. Units) +

Table with 24 columns (Hour G.M.T., 0-23, Midt., Mean) and 31 rows (Day 1-31). Values range from 777 to 889.

() 81920 673 101/3/3440

TERRESTRIAL MAGNETISM.

XXVII.—TERRESTRIAL MAGNETIC FORCE: VERTICAL COMPONENT.
 Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.
 44,000 γ (-44 C.G.S. unit) +

Eskdalemuir. (Z.)

July, 1920.

Hour G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	Mean	
Day 1	1055	1053	1053	1052	1052	1042	1037	1045	1049	1048	1045	1045	1041	1038	1041	1041	1049	1055	1058	1059	1059	1058	1056	1053	1049	1049	1049
2	1049	1049	1049	1051	1051	1053	1050	1050	1049	1045	1041	1038	1036	1035	1037	1044	1049	1054	1058	1057	1054	1054	1053	1053	1051	1048	1048
3	1051	1050	1049	1051	1052	1051	1049	1050	1049	1046	1045	1043	1041	1041	1041	1037	1041	1049	1052	1054	1053	1052	1049	1050	1047	1047	1044
4	1047	1049	1049	1051	1054	1055	1051	1045	1043	1038	1029	1021	1017	1021	1030	1039	1043	1050	1055	1054	1053	1052	1050	1049	1047	1047	1044
5	1047	1048	1049	1051	1052	1052	1051	1051	1049	1046	1042	1041	1032	1033	1038	1044	1049	1049	1046	1049	1049	1047	1047	1047	1047	1048	1046
6	1048	1048	1049	1048	1049	1049	1049	1046	1045	1046	1043	1041	1033	1035	1039	1043	1045	1054	1054	1058	1058	1061	1064	1056	1049	1048	1048
7	1049	1034	1000	1013	1037	1046	1046	1043	1041	1040	1036	1030	1029	1033	1037	1040	1044	1050	1057	1056	1068	1049	1033	1024	1025	1038	1038
8	1025	1023	1032	1041	1047	1051	1050	1052	1043	1045	1043	1043	1041	1041	1041	1045	1057	1062	1061	1056	1057	1059	1054	1049	1044	1047	1049
9	1044	1042	1033	1033	1044	1050	1050	1050	1052	1053	1050	1049	1045	1041	1039	1045	1050	1056	1058	1059	1060	1060	1057	1055	1051	1049	1049
10	1051	1052	1053	1054	1056	1057	1055	1053	1053	1053	1032	1027	1021	1020	1023	1024	1026	1034	1036	1041	1041	1041	1040	1037	1034	1041	1041
11	1034	1054	1054	1055	1055	1057	1057	1055	1055	1051	1041	1041	1037	1041	1045	1048	1053	1057	1059	1058	1055	1052	1052	1054	1050	1051	1051
12	1050	1045	1048	1048	1050	1048	1045	1046	1049	1024	1045	1045	1041	1053	1064	1065	1068	1074	1073	1073	1074	1072	1063	1057	1055	1055	1055
13	1055	1054	1052	1051	1054	1056	1056	1057	1055	1054	1047	1045	1041	1047	1050	1053	1062	1064	1060	1059	1058	1058	1057	1056	1056	1054	1054
14	1056	1054	1055	1056	1054	1057	1057	1057	1054	1045	1041	1038	1041	1047	1050	1051	1053	1053	1057	1060	1069	1070	1066	1061	1056	1054	1054
15	1056	1049	1048	1047	1046	1049	1051	1053	1054	1052	1046	1042	1041	1051	1056	1070	1077	1077	1077	1081	1110	1093	1057	1037	980	1058	1058
16	980	1010	1018	1033	1041	1051	1052	1052	1052	1051	1043	1037	1035	1033	1041	1049	1057	1065	1068	1065	1064	1062	1060	1056	1057	1046	1046
17	1057	1058	1057	1052	1047	1049	1052	1053	1054	1054	1055	1052	1041	1042	1049	1057	1062	1064	1068	1062	1057	1058	1058	1058	1057	1055	1055
18	1057	1058	1057	1058	1061	1062	1060	1058	1054	1047	1033	1037	1037	1041	1052	1074	1085	1093	1105	1103	1098	1088	1078	1038	1041	1064	1064
19	1041	1054	1058	1058	1059	1061	1062	1063	1064	1058	1054	1053	1050	1049	1053	1054	1062	1069	1071	1072	1073	1070	1063	1057	1052	1060	1060
20	1052	1037	1041	1050	1054	1049	1054	1057	1056	1057	1057	1058	1053	1048	1049	1056	1062	1064	1067	1064	1062	1060	1060	1059	1060	1055	1055
21	1060	1060	1059	1060	1061	1063	1067	1067	1064	1062	1062	1061	1058	1057	1058	1061	1066	1066	1066	1066	1067	1068	1066	1062	1061	1060	1063
22	1060	1059	1059	1058	1059	1058	1054	1052	1050	1051	1050	1049	1042	1041	1047	1052	1061	1080	1091	1091	1081	1071	1065	1062	1049	1060	1060
23	1049	1037	1045	1054	1058	1060	1060	1061	1060	1057	1053	1053	1052	1058	1060	1070	1089	1101	1101	1098	1086	1075	1070	1068	1067	1066	1066
24	1067	1064	1060	1051	1054	1061	1062	1060	1061	1061	1061	1061	1060	1052	1055	1062	1068	1075	1075	1075	1077	1077	1073	1062	1056	1064	1064
25	1056	1059	1061	1061	1056	1055	1050	1052	1054	1054	1051	1051	1046	1047	1053	1060	1065	1070	1069	1067	1067	1066	1066	1063	1061	1058	1058
26	1061	1048	1041	1054	1060	1062	1061	1054	1055	1054	1053	1054	1058	1061	1059	1061	1067	1072	1074	1073	1071	1069	1067	1061	1061	1060	1060
27	1061	1061	1063	1065	1067	1069	1069	1069	1068	1062	1058	1049	1049	1057	1061	1061	1067	1073	1076	1076	1071	1071	1069	1068	1065	1065	1065
28	1065	1064	1064	1064	1065	1066	1064	1066	1065	1065	1059	1053	1054	1054	1053	1056	1060	1066	1069	1069	1067	1066	1066	1066	1061	1061	1063
29	1065	1062	1063	1065	1066	1067	1067	1069	1068	1059	1051	1047	1050	1053	1058	1060	1065	1069	1066	1062	1060	1061	1060	1061	1061	1061	1061
30	1061	1060	1061	1062	1063	1065	1062	1058	1057	1049	1044	1043	1045	1045	1046	1052	1061	1068	1068	1064	1061	1061	1061	1062	1058	1057	1057
31	1058	1057	1059	1062	1063	1062	1058	1057	1057	1054	1053	1051	1047	1049	1052	1057	1062	1066	1064	1062	1062	1061	1060	1060	1055	1058	1058
Mean	1051	1050	1050	1052	1054	1056	1055	1055	1054	1051	1047	1045	1042	1044	1048	1053	1059	1064	1066	1066	1066	1063	1059	1055	1051	1054	1054

XXVIII.—AUXILIARY OBSERVATIONS IN ABSOLUTE MEASURE; DAILY VALUES OF TEMPERATURE IN THE EAST ROOM OF MAGNET HOUSE; MAGNETIC NOTES FOR THE MONTH.

Eskdalemuir.

July, 1920.

Date	Time G.M.T.		Horizontal Force.	Declination.	Dip.	Temperature in Magnet House.	Magnetic Character of day (0-2).	Date.
	From	To						
July	h. m.	h. m.	γ	° ' "	° ' "	a		
						280+		
						4.5	o	1
						4.6	oc	2
						4.6	oc	3
						4.6	o	4
						4.6	o	5
6	11 15	11 43	16706	16 54 43	69 38.8	4.7	I	6
						4.7	ID	7
						4.7	I	8
						4.7	o	9
						4.8	o	10
						4.8	o	11
						4.8	ID	12
13	14 53	15 15	16717	16 53 58	69 38.9	4.8	o	13
						4.9	o	14
						4.9	2D	15
						4.9	ID	16
						4.9	o	17
						5.0	I	18
20	11 23	11 48	16686	16 47 58	69 40.0	5.0	o	19
						5.0	o	20
						5.1	oc	21
						5.1	I	22
						5.1	ID	23
						5.2	o	24
						5.3	o	25
						5.3	o	26
27	14 22	14 50	16731	16 51 8	69 38.7	5.3	o	27
						5.3	oc	28
						5.4	oc	29
						5.4	o	30
						5.4	o	31

MAGNETIC NOTES.

July, 1920.

In one respect, this was the quietest month of the year, in that the number of days to which the character figure "o" was assigned was larger than in any other month. The mean character figure was 0.32. A movement which may be regarded as a doubtful sudden commencement was recorded on N. and W

HOURLY VALUES FROM AUTOGRAPHIC RECORDS.

XXIX.—TERRESTRIAL MAGNETIC FORCE: NORTH COMPONENT.

Eskdalemuir. (X.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

August, 1920.

15.000 γ (·15 C.G.S. units) +

Table with 27 columns (Hour G.M.T., 0-23, Midt., Mean) and 32 rows (Day 1-31, Mean). Values range from 977 to 1027.

XXX.—TERRESTRIAL MAGNETIC FORCE: WEST COMPONENT.

Eskdalemuir. (-Y.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

August, 1920.

4.000 γ (·04 C.G.S. unit) +

Table with 27 columns (Hour G.M.T., 0-23, Midt., Mean) and 32 rows (Day 1-31, Mean). Values range from 791 to 851.

(X) 81920 | 083 | 01 33 440

TERRESTRIAL MAGNETISM.

XXXI.—TERRESTRIAL MAGNETIC FORCE: VERTICAL COMPONENT.

Eskdalemuir. (Z.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

August, 1920.

44,000 γ (.44 C.G.S. Units) +

Hour G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	Mean.
Day 1	1055	1058	1058	1058	1053	1049	1048	1048	1048	1047	1043	1043	1041	1039	1045	1050	1058	1062	1066	1066	1063	1062	1062	1058	1058	1053
2	1058	1058	1058	1060	1060	1062	1061	1058	1057	1054	1062	1058	1051	1047	1050	1055	1060	1064	1066	1065	1065	1064	1063	1062	1062	1059
3	1062	1062	1062	1062	1062	1063	1061	1059	1055	1049	1041	1037	1037	1037	1041	1045	1053	1059	1062	1062	1065	1066	1064	1062	1060	1055
4	1060	1058	1048	1039	1043	1050	1046	1043	1043	1040	1046	1045	1038	1045	1053	1069	1070	1075	1078	1078	1074	1072	1064	1057	1056	1056
5	1056	1057	1058	1053	1047	1053	1054	1056	1060	1057	1057	1053	1053	1056	1055	1058	1066	1073	1075	1074	1067	1064	1062	1062	1062	1060
6	1062	1062	1062	1062	1064	1066	1066	1066	1066	1062	1058	1055	1050	1049	1055	1059	1065	1066	1066	1063	1063	1063	1062	1062	1061	1061
7	1061	1061	1050	1048	1052	1058	1058	1057	1056	1056	1055	1053	1046	1045	1048	1053	1061	1065	1064	1066	1065	1062	1062	1061	1044	1056
8	1044	1041	1043	1050	1053	1057	1053	1051	1051	1044	1043	1041	1041	1045	1053	1060	1062	1072	1081	1084	1082	1078	1067	1050	1043	1056
9	1043	1039	1038	1037	1035	1043	1055	1059	1062	1062	1059	1062	1062	1060	1065	1074	1076	1081	1078	1074	1070	1069	1070	1066	1060	1060
10	1060	1058	1049	1051	1053	1058	1057	1060	1063	1062	1062	1058	1058	1065	1068	1068	1074	1075	1074	1078	1078	1070	1068	1062	1058	1064
11	1058	1059	1059	1058	1060	1061	1061	1066	1066	1058	1052	1050	1049	1050	1058	1065	1070	1072	1074	1070	1073	1071	1070	1068	1065	1063
12	1065	1053	1005	1021	1045	1057	1061	1060	1058	1054	1050	1047	1046	1047	1053	1061	1062	1066	1064	1073	1081	1046	989	938	1013	1045
13	1013	1049	1062	1070	1070	1072	1074	1074	1073	1065	1058	1058	1065	1068	1072	1074	1073	1074	1078	1078	1080	1037	1037	1041	1043	1064
14	1043	1054	1059	1062	1067	1068	1070	1070	1062	1062	1057	1051	1054	1057	1086	1100	1091	1086	1081	1083	1083	1074	1066	1059	1053	1069
15	1053	1039	1050	1062	1065	1067	1067	1066	1062	1060	1052	1049	1054	1058	1064	1068	1070	1070	1070	1070	1071	1070	1066	1061	1040	1062
16	1040	1050	1061	1064	1062	1062	1064	1066	1066	1062	1062	1061	1055	1057	1066	1071	1072	1073	1072	1069	1067	1066	1066	1067	1067	1064
17	1067	1067	1068	1068	1068	1070	1071	1073	1073	1070	1062	1057	1054	1057	1061	1064	1064	1066	1067	1067	1067	1066	1065	1065	1064	1066
18	1064	1064	1062	1063	1063	1065	1065	1064	1060	1058	1055	1054	1046	1046	1057	1067	1075	1074	1070	1068	1069	1070	1072	1067	1049	1063
19	1049	1032	1012	998	1017	1041	1054	1062	1066	1066	1059	1054	1042	1041	1053	1065	1071	1076	1071	1070	1066	1066	1066	1066	1064	1053
20	1064	1065	1065	1065	1065	1066	1069	1073	1074	1069	1063	1057	1053	1058	1062	1066	1069	1072	1072	1070	1069	1070	1069	1070	1049	1066
21	1049	1037	1023	1010	1035	1056	1064	1065	1065	1065	1062	1058	1053	1051	1065	1086	1110	1122	1129	1131	1121	1086	1046	1033	1005	1067
22	1005	969	985	981	969	982	1028	1056	1065	1065	1066	1064	1058	1058	1064	1073	1082	1084	1083	1081	1079	1074	1073	1067	1053	1047
23	1052	1041	1036	1050	1060	1067	1069	1069	1068	1066	1064	1061	1054	1056	1063	1071	1077	1079	1077	1075	1076	1075	1073	1064	1044	1064
24	1044	1044	1052	1057	1061	1061	1065	1067	1065	1061	1056	1051	1053	1055	1064	1070	1072	1076	1077	1073	1069	1069	1068	1068	1068	1063
25	1068	1065	1065	1065	1064	1060	1061	1063	1060	1059	1061	1055	1052	1056	1063	1069	1069	1069	1066	1066	1067	1069	1066	1068	1069	1064
26	1069	1068	1068	1067	1066	1066	1068	1069	1071	1066	1059	1057	1051	1051	1052	1060	1061	1064	1065	1064	1063	1065	1066	1069	1069	1064
27	1068	1067	1066	1066	1065	1067	1067	1066	1064	1060	1056	1054	1052	1052	1060	1066	1067	1070	1070	1070	1069	1067	1068	1067	1056	1064
28	1056	1054	1059	1062	1063	1063	1064	1064	1062	1058	1051	1048	1045	1047	1052	1060	1064	1065	1064	1064	1064	1064	1064	1065	1064	1059
29	1064	1064	1064	1064	1063	1060	1060	1061	1059	1052	1049	1048	1048	1051	1060	1068	1071	1070	1068	1064	1062	1060	1063	1064	1064	1061
30	1064	1063	1060	1043	1048	1055	1059	1058	1057	1056	1051	1056	1060	1064	1067	1074	1076	1079	1078	1074	1072	1074	1072	1063	1059	1063
31	1059	1064	1066	1064	1064	1064	1064	1067	1068	1067	1062	1056	1051	1048	1055	1062	1064	1064	1064	1064	1064	1067	1068	1065	1053	1062
Mean	1054	1052	1051	1051	1054	1058	1061	1062	1062	1059	1056	1053	1051	1052	1059	1066	1070	1073	1073	1073	1072	1067	1062	1058	1054	1060

XXXII.—AUXILIARY OBSERVATIONS IN ABSOLUTE MEASURE; DAILY VALUES OF TEMPERATURE IN

Eskdalemuir.

THE EAST ROOM OF MAGNET HOUSE; MAGNETIC NOTES FOR THE MONTH.

August, 1920.

Date	Time G.M.T.		Horizontal Force.	Declination.	Dip.	Temperature in Magnet House.	Magnetic Character of day (0-2).	Date.
	From	To						
Aug.	h. m.	h. m.	γ	° ' "	° ' "	a		
3	14 36	15 6	16716	16 54 23	69 38.4	280+	o	1
						5.3	oc	2
						5.4	o	3
						5.4	i	4
						5.4	o	5
						5.4	oc	6
						5.4	o	7
						5.4	1D	8
						5.4	1D	9
10	14 3	14 41	16694	16 50 43	69 40.2	5.4	o	10
						5.4	o	11
						5.4	2D	12
						5.4	i	13
						5.5	i	14
						5.4	o	15
						5.5	o	16
						5.5	oc	17
18	11 49	12 11	16701	16 53 48	69 39.3	5.5	o	18
						5.5	i	19
						5.6	o	20
						5.6	1D	21
						5.6	1D	22
						5.6	o	23
24	11 37	11 59	16690	16 54 0	69 40.2	5.7	o	24
						5.7	o	25
						5.7	o	26
						5.7	oc	27
						5.8	oc	28
						5.8	o	29
						5.8	i	30
						5.8	o	31

MAGNETIC NOTES.

August, 1920.

In respect of general activity, this month resembled the two previous months. The mean character figure was 0.35. A moderate disturbance was recorded on the 12th. It was preceded by a prominent movement between 1h. and 3h., which may or may not have been connected with the subsequent disturbance. Represented by vector diagrams, it shows a counterclockwise change on the horizontal plane and changes in the clockwise direction on the meridian and prime vertical planes, when these are regarded from the east and the south respectively. An isolated "bay" on the W. trace centred at 20d. 23h. 50m., and is apparently repeated in another centering at 22d. 0h. 36m.

HOURLY VALUES FROM AUTOGRAPHIC RECORDS.

XXXIII.—TERRESTRIAL MAGNETIC FORCE: NORTH COMPONENT.

Eskdalemuir. (X.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

September, 1920.

15,000 γ (.15 C.G.S. unit) +

Table with 25 columns (Hour G.M.T., 0-24, Midt., Mean) and 31 rows (Day 1-31). Values range from 925 to 1000.

XXXIV.—TERRESTRIAL MAGNETIC FORCE: WEST COMPONENT.

Eskdalemuir. (-Y.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

September, 1920.

4,000 γ (.04 C.G.S. unit) +

Table with 25 columns (Hour G.M.T., 0-24, Midt., Mean) and 31 rows (Day 1-31). Values range from 761 to 847.

11131920/093/27/8/140

TERRESTRIAL MAGNETISM.

XXXV.—TERRESTRIAL MAGNETIC FORCE: VERTICAL COMPONENT.

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

September, 1920.

Eskdalemuir. (Z.)

44,000 γ ($\cdot 44$ C.G.S. Units) +

Hour G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	Mean
Day	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	1053	1060	1064	1064	1063	1062	1053	1049	1055	1057	1057	1056	1055	1057	1061	1067	1070	1073	1073	1074	1073	1071	1064	1057	1032	1062
2	1032	1028	1049	1061	1064	1066	1066	1066	1066	1064	1059	1057	1060	1060	1063	1066	1067	1069	1070	1068	1067	1066	1058	1053	1060	1061
3	1060	1063	1065	1066	1066	1065	1053	1035	1036	1035	1040	1044	1057	1072	1081	1107	1110	1106	1112	1110	1068	1062	1045	1016	984	1064
4	984	979	995	999	1013	1031	1033	1046	1055	1061	1061	1061	1065	1067	1075	1088	1093	1117	1130	1115	1085	1077	1046	1032	1044	1056
5	1044	1041	1032	1046	1053	1064	1064	1065	1065	1064	1057	1054	1056	1061	1065	1069	1074	1075	1075	1074	1076	1073	1071	1053	1044	1061
6	1044	1049	1055	1060	1063	1065	1068	1072	1072	1066	1065	1061	1060	1064	1067	1072	1073	1073	1073	1073	1071	1072	1071	1070	1068	1066
7	1068	1067	1068	1069	1069	1070	1071	1073	1073	1069	1066	1061	1055	1053	1059	1064	1067	1067	1067	1066	1067	1070	1040	1042	1040	1064
8	1040	1025	1019	972	1028	1053	1060	1064	1067	1064	1057	1053	1049	1053	1065	1071	1074	1084	1084	1084	1088	1076	1058	1007	969	1053
9	969	999	1005	954	1024	1049	1051	1063	1062	1065	1066	1069	1065	1062	1067	1077	1100	1104	1099	1098	1085	1083	1081	1077	1059	1059
10	1059	1042	1057	1067	1064	1062	1066	1070	1068	1067	1065	1067	1071	1070	1073	1079	1083	1086	1091	1094	1093	1086	1069	1040	1049	1070
11	1049	1059	1070	1072	1073	1075	1077	1079	1077	1073	1069	1063	1063	1071	1081	1091	1099	1092	1082	1079	1081	1077	1068	1071	1070	1075
12	1070	1073	1074	1073	1073	1073	1075	1073	1071	1068	1068	1065	1061	1061	1067	1072	1075	1075	1075	1075	1074	1075	1073	1074	1075	1072
13	1075	1074	1073	1071	1071	1071	1071	1072	1073	1073	1068	1061	1057	1057	1062	1076	1090	1109	1090	1081	1083	1085	1084	1077	1075	1075
14	1075	1077	1078	1078	1077	1076	1077	1079	1077	1074	1071	1069	1063	1063	1068	1076	1082	1085	1081	1078	1073	1073	1072	1065	1060	1074
15	1060	1062	1063	1050	1044	1042	1053	1059	1063	1064	1066	1068	1068	1077	1085	1085	1086	1090	1106	1101	1091	1089	1084	1077	1073	1073
16	1074	1066	1063	1070	1068	1067	1064	1069	1071	1072	1071	1071	1070	1070	1074	1080	1086	1087	1086	1085	1079	1078	1073	1038	1010	1071
17	1010	994	1016	1027	1041	1057	1061	1062	1062	1059	1064	1064	1069	1078	1096	1107	1111	1111	1099	1096	1089	1079	1076	1074	1057	1068
18	1058	1063	1067	1071	1075	1076	1075	1075	1074	1072	1072	1071	1071	1070	1076	1086	1100	1096	1088	1083	1083	1081	1078	1075	1060	1077
19	1060	1063	1068	1070	1070	1071	1074	1078	1075	1081	1077	1069	1065	1067	1073	1079	1086	1088	1083	1081	1081	1079	1076	1069	1069	1075
20	1069	1067	1071	1072	1067	1069	1066	1069	1072	1073	1073	1072	1071	1071	1071	1083	1089	1091	1088	1084	1083	1083	1080	1079	1075	1076
21	1075	1075	1075	1075	1075	1075	1075	1074	1075	1075	1074	1072	1072	1070	1072	1078	1083	1086	1085	1087	1087	1086	1084	1081	1078	1078
22	1079	1078	1078	1073	1074	1070	1071	1071	1073	1074	1074	1075	1072	1076	1077	1078	1078	1081	1092	1122	1125	1049	950	975	942	1067
23	942	987	1059	1068	1076	1079	1080	1081	1080	1079	1078	1077	1076	1076	1079	1080	1082	1082	1082	1080	1081	1082	1084	1086	1087	1072
24	1087	1084	1082	1082	1080	1080	1079	1080	1080	1080	1078	1072	1072	1076	1078	1080	1084	1088	1086	1084	1082	1080	1080	1081	1081	1081
25	1081	1081	1080	1080	1080	1080	1080	1080	1078	1077	1076	1076	1074	1074	1074	1074	1075	1076	1076	1076	1077	1076	1076	1078	1078	1077
26	1079	1079	1079	1078	1078	1077	1077	1077	1079	1079	1077	1073	1069	1070	1071	1071	1072	1073	1075	1075	1077	1077	1077	1078	1079	1076
27	1079	1078	1078	1077	1077	1071	1071	1070	1071	1069	1065	1068	1065	1068	1071	1072	1080	1087	1094	1088	1081	1080	1080	1079	1037	1075
28	1037	1042	1060	1065	1064	1065	1064	1061	1064	1064	1061	1061	1060	1061	1081	1110	1137	1162	1137	1044	886	947	1091	1052	1053	1062
29	1053	1040	967	975	943	962	987	1013	1022	1037	1065	1073	1074	1081	1094	1119	1134	1129	1135	1138	1142	1116	1113	1098	1098	1064
30	1098	1085	1072	1036	1057	1061	1057	1066	1073	1076	1077	1077	1080	1081	1085	1090	1094	1098	1100	1103	1105	1106	1106	1101	1098	1083
Mean	1052	1053	1056	1054	1059	1063	1064	1066	1068	1068	1067	1066	1066	1068	1074	1082	1088	1091	1090	1087	1078	1074	1070	1062	1053	1070

XXXVI.—AUXILIARY OBSERVATIONS IN ABSOLUTE MEASURE; DAILY VALUES OF TEMPERATURE IN

Eskdalemuir.

THE EAST ROOM OF MAGNET HOUSE; MAGNETIC NOTES FOR THE MONTH.

September, 1920.

Date	Time G.M.T.		Horizontal Force.	Declination.	Dip.	Temperature in Magnet House.	Magnetic Character of day (0-2).	Date.
	From	To						
Sept.	h. m.	h. m.	γ	° ' "	° ' "	a		
1	11 4	11 30	16634	16 52 33	69 42.5	280+	I	1
						5.8	0	2
						5.8	2D	3
						5.8	ID	4
						5.8	0	5
						5.8	oc	6
8	11 27	11 50	16694	16 53 48	69 41.2	5.9	I	7
						5.9	I	8
						5.9	I	9
						6.0	I	10
						6.1	I	11
						6.1	oc	12
						6.1	o	13
14	11 2	11 27	16696	16 49 33	69 42.3	6.1	I	14
						6.1	I	15
						6.1	I	16
						6.0	I	17
						6.1	o	18
						6.2	o	19
						6.2	oc	20
21	11 30	11 54	16670	16 51 45	69 41.5	6.2	oc	21
						6.2	2D	22
23	10 15	10 29			69 42.8	6.1	I	23
						6.1	o	24
						6.1	o	25
						6.0	oc	26
						6.0	I	27
28	11 20	11 44	16708	16 48 53	69 40.8	6.0	2D	28
						6.0	2D	29
						6.0	I	30

MAGNETIC NOTES.

September, 1920.

This month was characterised by increased activity, the mean character figure being 0.73. The 25th was an especially quiet day. The principal disturbances were those of 3rd to 4th, 8th to 9th, 22nd to 23rd, and 28th to 29th. During the first of these, a prominent double oscillation on all three components was recorded between 3d. 19h. 18m. and 3d. 20h. om., the range being $> 271\gamma$ N; 151γ W; 41γ V. The movement on N. was especially rapid, being about 17γ per minute during the fall to the minimum. The storm of the 28th to 29th, was preceded by a large but markedly slow sudden commencement at 27d. 23h. om., but the main disturbance did not begin until 28d. 13h. Its range was $> 405\gamma$ N; $> 352\gamma$ W.; and $> 414\gamma$ V.; the three traces going off the sheet at the minima. The vertical force record was of unusual form, in that a minimum occurred at the very early hour of 20h. 10m. (approx.) and the trace afterwards

HOURLY VALUES FROM AUTOGRAPHIC RECORDS.

XXXVII.—TERRESTRIAL MAGNETIC FORCE: NORTH COMPONENT.

Eskdalemuir. (X.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

October, 1920.

15,000 γ (·15 C.G.S. Units) +

Hour G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	Mean
Day 1	984	988	990	993	993	988	982	985	978	967	963	957	963	969	984	978	991	997	1003	970	978	988	989	997	1018	983
2	1018	988	989	965	993	1005	992	988	999	983	963	970	963	970	974	979	988	1001	1009	998	984	994	994	994	990	987
3	990	993	993	994	994	997	996	994	990	973	969	968	968	968	971	983	994	995	991	994	994	997	1000	1004	1008	988
4	1008	998	997	1001	1003	1008	1008	990	969	953	954	945	954	965	968	965	974	970	988	991	996	999	998	1004	1005	984
5	1005	998	994	998	998	1003	994	994	1004	988	966	960	954	955	953	961	988	978	989	993	994	999	999	999	999	986
6	998	998	999	998	999	999	998	1003	998	988	959	958	956	956	984	975	969	975	978	980	993	994	994	994	996	985
7	996	1002	1003	1007	1005	1001	969	1002	994	986	973	970	948	949	949	966	964	975	975	979	998	991	994	993	994	983
8	994	988	992	985	989	998	999	1001	990	981	969	959	963	977	974	964	978	987	994	996	984	994	997	998	1003	986
9	1002	999	996	998	998	1001	1000	1003	998	992	983	973	972	973	980	990	998	1004	1008	1010	1018	1022	1018	1021	1007	998
10	1007	1016	1006	1012	1022	973	925	947	960	948	942	900	914	940	944	962	956	982	973	983	987	1001	997	1002	983	970
11	983	983	988	989	985	990	992	987	987	977	963	963	967	968	971	972	982	988	998	989	990	995	993	992	995	983
12	995	993	995	997	998	992	1008	1004	998	987	973	963	958	967	978	988	993	993	996	989	993	997	1012	1010	1002	991
13	1002	1000	1002	1001	998	996	998	1002	996	987	974	972	973	978	983	987	988	989	993	998	1007	1003	1004	1007	1009	993
14	1008	1005	1003	1003	1004	1005	1002	1001	995	986	974	966	971	979	982	988	987	996	997	997	991	1001	1000	1002	999	993
15	999	1006	998	996	995	1001	1004	1001	996	981	959	953	956	968	966	978	982	990	995	996	1000	1001	998	996	999	988
16	999	997	998	997	1000	1006	1002	1001	991	981	968	962	965	976	987	992	997	1002	1004	1002	1003	1000	995	1001	1003	993
17	1003	1005	1007	1007	1010	1012	1011	1010	1005	996	986	980	981	982	984	986	990	991	996	972	971	981	993	987	998	994
18	997	999	991	991	991	992	995	1004	1000	989	971	960	960	971	980	987	990	996	1000	997	990	995	1002	1000	1012	990
19	1012	1001	999	1000	1000	1010	1013	1010	1006	987	967	958	958	961	964	970	975	984	981	980	980	991	993	998	1000	987
20	1000	998	997	1000	1001	1004	1006	1010	1001	991	980	972	969	971	975	986	991	999	1005	1015	1014	1013	1011	1009	1008	997
21	1008	1006	1005	1005	1005	1006	1005	1003	996	986	977	975	972	980	988	990	991	994	1005	1008	1010	1005	1004	1006	1006	997
22	1005	1005	1007	1004	1011	1014	1012	1009	1003	996	982	977	976	980	980	989	997	999	1001	1005	1000	999	993	993	999	997
23	999	1000	1004	1003	1003	1002	1004	998	997	990	986	974	976	984	987	992	1000	993	999	1002	1010	1009	1027	1002	980	997
24	980	999	995	1005	1004	1020	1004	1005	994	990	980	966	965	971	974	980	986	990	986	992	990	995	993	999	996	990
25	995	990	994	994	993	1003	1004	1009	1009	1004	994	989	987	998	980	968	968	973	965	983	973	988	992	992	995	989
26	995	992	993	992	992	991	992	991	990	984	974	971	970	975	979	983	989	994	979	970	974	1005	993	993	991	986
27	990	995	979	987	998	1007	991	993	992	982	973	970	971	973	977	987	988	1023	978	988	982	983	992	996	996	987
28	996	996	986	1006	1000	997	999	998	989	982	972	964	963	967	973	973	969	975	987	997	997	994	996	994	997	986
29	997	1011	994	1002	1008	1009	1009	1001	984	965	953	952	952	952	964	959	980	983	996	998	998	1000	1000	998	998	986
30	997	993	991	992	995	995	998	996	987	987	982	976	978	982	984	990	995	996	997	997	999	1000	1000	996	995	992
31	995	995	995	992	997	999	1005	999	990	985	973	966	964	968	971	979	990	997	1001	1003	994	991	981	1006	996	989
Mean	999	998	996	997	999	1001	997	998	993	983	971	964	964	970	974	979	985	991	992	993	993	998	998	999	999	989

XXXVIII.—TERRESTRIAL MAGNETIC FORCE: WEST COMPONENT.

Eskdalemuir. (—Y.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

October, 1920.

4,000 γ (·04 C.G.S. Units) +

Hour G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	Mean
Day 1	793	786	772	771	772	782	797	800	800	803	813	825	835	835	846	834	849	849	772	792	803	793	792	755	745	802
2	745	781	797	825	814	818	827	788	800	815	828	830	824	831	830	824	815	813	813	825	821	818	818	818	812	815
3	812	805	814	807	808	809	809	807	803	808	814	819	834	836	839	830	824	815	813	809	811	809	809	803	803	814
4	803	793	799	798	797	810	824	813	808	809	822	833	846	844	851	852	832	805	815	817	814	812	806	808	796	817
5	796	803	810	810	814	821	809	830	822	816	814	829	844	851	856	836	831	819	813	810	810	814	814	814	813	821
6	813	810	809	809	808	808	813	814	812	809	804	819	835	834	851	843	832	824	817	813	812	795	760	776	778	813
7	778	781	781	786	798	811	841	846	827	822	818	827	839	850	843	849	830	828	825	799	803	813	790	784	786	816
8	786	795	803	812	816	803	800	798	797	793	808	821	830	841	841	830	827	819	813	795	808	814	814	815	818	812
9	818	810	809	809	808	809	809	809	806	806	809	815	827	832	839	840	835	833	833	828	828	828	823	784	809	818
10	809	828	803	807	855	818	824	825	835	818	814	820	835	840	835	835	803	793	793	797	798	796	800	804	802	816
11	802	810	808	809	808	809	808	803	802	799	809	819	834	839	835	829	824	818	808	798	808	814	804	806	810	813
12	810	808	812	813	817	822	818	814	809	805	808	825	835	841	840	827	821	819	815	809	807	808	818	793	806	816
13	806	813	811	808	805	809	809	805	802	802	808	819	835	836	839	829	822	815	814	814	814	813	814	814	815	815
14	815	814	814	814	813	811	809	805	797	793	799	809	825	835	834	829	819	819	822	825	820	814	808	803	803	814
15	802	807	803	807	813	817	803	804	802	798	806	818	833	845	837	832	824	818	816	814	813	809	786	796	808	813
16	808	812	817	818	814	812	809	807	801	800	804	814	833	843	844	839	830	825	823	815	798	771	777	796	810	813
17	810	815	815	815	815	814	813	808	804	806	808	823	834	845	843	834	826	823	825	822	771	780	776	776	773	812
18	773	802	805	806	807	807	807	807	798	795	807	819	834	841	839	831	820	814	817	817	804	802	807	808	796	812
19	796	801	810	811	817	813	808	804	798	793																

TERRESTRIAL MAGNETISM.

XXXIX.—TERRESTRIAL MAGNETIC FORCE: VERTICAL COMPONENT.

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

October, 1920.

Eskdalemuir. (Z.)

44,000 γ (.44 C.G.S. Units) +

Hour G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	Mean
Day	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	1099	1092	1077	1079	1080	1080	1081	1078	1077	1079	1080	1079	1080	1081	1084	1092	1100	1121	1160	1129	1116	1100	1084	1060	1039	1090
2	1039	1054	1059	1060	1059	1058	1048	1062	1065	1066	1071	1071	1076	1083	1088	1092	1093	1093	1092	1091	1096	1091	1088	1088	1088	1075
3	1089	1088	1085	1084	1085	1085	1085	1085	1084	1083	1079	1078	1079	1081	1081	1082	1089	1093	1092	1092	1092	1090	1088	1084	1077	1085
4	1077	1070	1069	1069	1068	1065	1061	1067	1075	1076	1076	1077	1081	1092	1098	1108	1119	1124	1111	1103	1099	1093	1090	1086	1077	1086
5	1077	1076	1080	1081	1083	1078	1078	1076	1073	1075	1076	1076	1080	1089	1100	1108	1110	1109	1098	1095	1092	1090	1088	1088	1087	1087
6	1088	1038	1087	1087	1087	1087	1086	1085	1082	1083	1085	1082	1081	1085	1091	1101	1118	1120	1126	1122	1113	1106	1098	1078	1071	1094
7	1071	1069	1068	1062	1062	1062	1060	1052	1059	1062	1069	1073	1085	1097	1103	1111	1123	1121	1121	1125	1103	1097	1097	1093	1082	1085
8	1083	1081	1081	1082	1078	1081	1085	1087	1086	1083	1082	1083	1084	1084	1090	1094	1095	1095	1095	1099	1099	1098	1095	1092	1089	1088
9	1089	1086	1086	1085	1085	1086	1085	1086	1086	1086	1084	1082	1080	1078	1076	1075	1080	1082	1082	1083	1083	1082	1086	1079	1079	1083
10	1079	1054	1062	1065	1039	1016	1038	1041	1053	1066	1079	1091	1103	1115	1119	1128	1140	1136	1120	1115	1109	1099	1085	1067	1067	1084
11	1067	1078	1083	1085	1086	1086	1086	1087	1085	1085	1083	1081	1083	1086	1091	1095	1097	1097	1098	1098	1100	1095	1095	1094	1092	1089
12	1093	1091	1089	1087	1085	1083	1082	1082	1083	1087	1087	1084	1085	1087	1089	1096	1100	1096	1096	1096	1096	1092	1083	1070	1077	1088
13	1078	1083	1084	1085	1086	1087	1086	1088	1088	1087	1088	1088	1088	1088	1090	1092	1096	1096	1093	1092	1091	1089	1088	1087	1087	1086
14	1086	1087	1087	1087	1087	1086	1087	1089	1092	1092	1090	1088	1087	1085	1087	1090	1092	1092	1091	1090	1090	1092	1092	1091	1087	1085
15	1086	1082	1085	1085	1082	1077	1078	1082	1085	1088	1089	1088	1086	1088	1090	1093	1094	1094	1093	1090	1089	1090	1093	1090	1087	1087
16	1088	1087	1086	1086	1086	1087	1087	1089	1091	1091	1088	1085	1080	1079	1084	1086	1089	1089	1089	1090	1094	1094	1087	1085	1085	1087
17	1086	1087	1087	1087	1087	1086	1087	1087	1087	1086	1083	1079	1077	1078	1084	1091	1097	1099	1099	1107	1117	1111	1105	1104	1095	1092
18	1096	1093	1094	1094	1094	1094	1094	1093	1093	1093	1093	1089	1089	1092	1096	1100	1100	1097	1096	1096	1101	1098	1096	1095	1088	1096
19	1088	1086	1088	1088	1087	1088	1089	1090	1092	1093	1089	1088	1090	1092	1096	1101	1105	1108	1108	1114	1116	1109	1105	1098	1094	1096
20	1095	1093	1092	1092	1092	1092	1093	1093	1094	1092	1090	1088	1086	1086	1089	1093	1094	1093	1092	1089	1089	1089	1089	1089	1089	1089
21	1090	1090	1090	1090	1089	1089	1090	1090	1093	1091	1090	1086	1085	1082	1082	1087	1090	1089	1088	1088	1089	1091	1091	1091	1090	1089
22	1090	1089	1087	1086	1082	1082	1083	1086	1088	1087	1085	1084	1085	1082	1084	1087	1089	1090	1094	1094	1094	1099	1107	1103	1096	1089
23	1097	1093	1090	1090	1089	1089	1088	1090	1091	1091	1085	1083	1084	1083	1083	1087	1091	1091	1091	1093	1092	1091	1088	1111	1104	1090
24	1105	1084	1088	1088	1059	1051	1067	1073	1079	1080	1080	1080	1082	1084	1085	1091	1093	1095	1096	1095	1096	1095	1095	1095	1095	1093
25	1093	1094	1092	1089	1089	1088	1087	1086	1087	1086	1085	1084	1084	1084	1105	1133	1142	1139	1150	1140	1125	1114	1110	1111	1106	1104
26	1106	1103	1100	1097	1095	1094	1093	1093	1093	1092	1088	1088	1087	1089	1093	1097	1100	1101	1108	1127	1131	1112	1094	1097	1097	1099
27	1098	1093	1094	1070	1073	1082	1087	1089	1093	1093	1091	1093	1091	1089	1092	1097	1115	1121	1106	1103	1106	1105	1101	1097	1096	1095
28	1097	1094	1077	1068	1075	1080	1083	1086	1093	1095	1094	1094	1093	1094	1097	1106	1118	1123	1114	1107	1102	1100	1098	1095	1094	1095
29	1094	1084	1077	1074	1076	1078	1080	1082	1088	1092	1093	1096	1094	1099	1114	1126	1134	1118	1108	1101	1099	1097	1096	1097	1096	1096
30	1097	1097	1098	1097	1096	1096	1095	1094	1095	1095	1094	1091	1091	1090	1093	1095	1095	1095	1095	1095	1095	1094	1093	1094	1094	1095
31	1095	1095	1094	1094	1093	1094	1093	1093	1094	1093	1088	1088	1088	1090	1096	1097	1096	1096	1096	1096	1104	1109	1092	1075	1080	1093
Mean	1088	1085	1084	1083	1081	1080	1081	1083	1085	1085	1085	1084	1085	1088	1092	1098	1103	1104	1103	1102	1101	1097	1093	1090	1086	1090

XL.—AUXILIARY OBSERVATIONS IN ABSOLUTE MEASURE; DAILY VALUES OF TEMPERATURE IN

Eskdalemuir.

THE EAST ROOM OF MAGNET HOUSE; MAGNETIC NOTES FOR THE MONTH

October, 1920.

Date	Time G.M.T.		Horizontal Force.	Declination.	Dip.	Temperature in Magnet House.	Magnetic Character of day (0-2).	Date.
	From	To						
Oct.	h. m.	h. m.	γ	° ' "	° ' "	a		
						280+		
						6.0	ID	1
						6.0	I	2
						6.0	OC	3
						6.0	I	4
5	11 16	11 44	16681	16 52 53	69 43.3	6.0	I	5
						6.0	I	6
						6.0	I	7
						6.0	o	8
						6.0	o	9
						6.0	ID	10
						6.0	o	11
						6.0	I	12
13	11 7	11 39	16677	16 50 3	69 42.4	6.0	o	13
						6.0	OC	14
						6.0	o	15
						6.0	o	16
						6.1	I	17
						6.0	o	18
19	10 37	11 15	16673	16 47 28	69 43.1	6.1	o	19
						6.1	OC	20
						6.0	OC	21
						6.0	o	22
						6.0	I	23
						6.1	ID	24
25	11 10	12 1	16681	16 48 18	69 40.9	6.0	ID	25
						5.9	I	26
						6.0	ID	27
						6.0	I	28
						6.0	I	29
						6.1	OC	30
						6.0	I	31

MAGNETIC NOTES.

October, 1920.

The month was one of very moderate activity. The mean character figure was 0.55, no day having been assigned a "2". The most disturbed day was the 10th. It showed a prominent decrease in N. between 4h. 26m. and

HOURLY VALUES FROM AUTOGRAPHIC RECORDS.

XLI.—TERRESTRIAL MAGNETIC FORCE: NORTH COMPONENT.

Eskdalemuir. (X.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

November, 1920.

15,000 γ (.15 C.G.S. Units) +

Table with 24 columns (Hour G.M.T. to Mean) and 31 rows (Day 1 to 30). Values range from 932 to 999.

† Mean for 28 days, 26 and 27th omitted.

* Light failed.

XLII.—TERRESTRIAL MAGNETIC FORCE: WEST COMPONENT.

Eskdalemuir. (-Y.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

November, 1920.

4,000 γ (.04 C.G.S. Units) +

Table with 24 columns (Hour G.M.T. to Mean) and 31 rows (Day 1 to 30). Values range from 792 to 827.

† Mean for 28 days, 26th and 27th omitted.

* Light failed.

TERRESTRIAL MAGNETISM.

XLIII.—TERRESTRIAL MAGNETIC FORCE: VERTICAL COMPONENT.

Mean Values of Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

November, 1920.

Eskdalemuir. (Z.)

44,000 γ (.44 C.G.S. Units) +

Hour G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	Mean	
Day 1	1080	1084	1091	1093	1091	1084	1087	1088	1091	1091	1092	1092	1092	1096	1101	1103	1103	1100	1102	1117	1121	1113	1104	1100	1097	1097	
2	1098	1084	1086	1089	1093	1096	1093	1096	1095	1095	1093	1096	1095	1101	1106	1107	1110	1117	1125	1120	1117	1118	1113	1107	1101	1102	
3	1101	1094	1092	1092	1096	1089	1093	1098	1099	1097	1098	1097	1098	1098	1097	1099	1101	1105	1109	1117	1121	1119	1106	1098	1096	1101	
4	1097	1096	1092	1086	1084	1083	1082	1079	1083	1088	1094	1093	1096	1097	1103	1117	1131	1139	1128	1117	1110	1107	1104	1102	1102	1100	
5	1103	1102	1101	1100	1099	1097	1095	1093	1093	1095	1094	1094	1098	1102	1102	1107	1119	1141	1139	1140	1135	1120	1108	1083	1079	1106	
6	1080	1068	1071	1080	1074	1055	1061	1074	1084	1095	1104	1102	1105	1110	1117	1125	1148	1156	1153	1121	1118	1119	1105	1089	1095	1101	
7	1096	1097	1091	1095	1097	1096	1099	1098	1101	1104	1106	1106	1104	1105	1113	1113	1111	1111	1106	1105	1104	1104	1102	1099	1099	1103	
8	1100	1098	1096	1094	1096	1097	1098	1099	1100	1101	1100	1100	1102	1104	1107	1109	1106	1105	1105	1104	1104	1104	1104	1104	1104	1102	1102
9	1104	1097	1097	1098	1097	1096	1094	1090	1090	1090	1091	1094	1097	1100	1103	1108	1107	1106	1105	1105	1105	1106	1106	1101	1099	1098	1099
10	1099	1098	1093	1093	1094	1095	1095	1093	1091	1091	1095	1096	1099	1100	1100	1103	1103	1103	1102	1100	1100	1100	1100	1100	1099	1098	1098
11	1100	1096	1088	1092	1094	1094	1093	1091	1091	1091	1092	1090	1092	1095	1099	1101	1103	1106	1104	1103	1100	1099	1097	1097	1096	1096	
12	1096	1095	1095	1093	1092	1092	1092	1091	1090	1089	1089	1092	1092	1095	1098	1099	1103	1113	1127	1114	1107	1103	1100	1093	1088	1098	
13	1089	1088	1088	1081	1077	1077	1083	1083	1084	1086	1089	1093	1096	1098	1102	1102	1102	1099	1097	1095	1095	1097	1097	1084	1080	1091	
14	1081	1078	1081	1082	1086	1089	1090	1091	1092	1094	1094	1093	1092	1092	1095	1098	1097	1096	1096	1094	1094	1094	1094	1093	1093	1091	
15	1093	1092	1093	1093	1094	1093	1091	1091	1090	1089	1089	1088	1089	1094	1098	1103	1112	1124	1143	1142	1136	1123	1114	1109	1104	1104	
16	1105	1103	1100	1099	1099	1098	1098	1096	1094	1091	1091	1088	1091	1091	1092	1098	1099	1104	1106	1101	1099	1101	1099	1098	1097	1097	
17	1098	1096	1095	1093	1093	1094	1094	1093	1090	1089	1091	1092	1093	1099	1111	1120	1122	1136	1156	1147	1142	1122	1114	1107	1097	1108	
18	1098	1089	1090	1092	1095	1095	1094	1094	1092	1093	1094	1096	1099	1100	1109	1113	1115	1120	1121	1117	1117	1110	1104	1103	1102	1102	
19	1103	1101	1100	1099	1098	1095	1094	1095	1097	1098	1098	1099	1101	1105	1109	1108	1109	1109	1108	1106	1107	1107	1106	1102	1102	1102	
20	1102	1101	1098	1097	1096	1097	1096	1096	1094	1094	1097	1098	1101	1101	1101	1100	1101	1101	1101	1100	1100	1100	1099	1101	1095	1099	
21	1096	1086	1088	1091	1094	1095	1094	1094	1096	1097	1096	1095	1096	1097	1095	1098	1099	1101	1106	1114	1123	1094	1099	1103	1102	1098	
22	1103	1102	1099	1095	1085	1091	1094	1095	1099	1100	1102	1101	1104	1103	1104	1107	1107	1104	1103	1103	1104	1107	1111	1104	1101	1099	
23	1101	1099	1096	1098	1100	1099	1099	1098	1099	1099	1100	1099	1097	1100	1101	1101	1100	1100	1100	1100	1102	1103	1102	1102	1100	1100	
24	1101	1099	1096	1096	1096	1096	1096	1096	1097	1096	1096	1096	1096	1096	1098	1100	1098	1098	1098	1097	1097	1097	1098	1100	1100	1097	
25	1101	1099	1098	1097	1097	1097	1097	1097	1097	1095	1095	1095	1097	1097	1098	1099	1099	1098	1097	1097	1097	1097	1098	1097	1098	1097	
26	1098	1099	1098	1097	1095	1094	1093	1093	1093	1093	1093	1093	1093	1093	1097	1103	1101	1103	1138	1158	1187	1122	1105	1106	1067	1105	
27	1068	1017	1077	1085	1065	1049	1075	1087	1095	1096	1098	1098	1100	1101	1103	1103	1104	1104	1103	1103	1103	1102	1100	1101	1102	1090	
28	1103	1103	1103	1103	1102	1101	1100	1099	1099	1098	1096	1096	1098	1099	1099	1100	1102	1104	1104	1104	1103	1102	1103	1103	1101	1100	1101
29	1100	1100	1100	1100	1099	1099	1098	1097	1097	1098	1100	1103	1106	1106	1106	1108	1111	1108	1108	1108	1107	1104	1103	1103	1101	1103	
30	1101	1102	1102	1101	1100	1099	1099	1099	1099	1099	1101	1099	1099	1099	1104	1104	1104	1104	1104	1106	1108	1108	1106	1104	1102	1098	1102
Mean†	1097	1095	1093	1093	1094	1092	1093	1093	1094	1094	1096	1096	1097	1099	1102	1105	1108	1111	1113	1111	1110	1106	1103	1099	1097	1100	

† Mean for 28 days, 26th and 27th omitted.

XLIV.—AUXILIARY OBSERVATIONS IN ABSOLUTE MEASURE; DAILY VALUES OF TEMPERATURE IN

Eskdalemuir.

THE EAST ROOM OF MAGNET HOUSE; MAGNETIC NOTES FOR THE MONTH.

November, 1920.

Date	Time G.M.T.		Hori- zontal Force.	Declina- tion.	Dip.	Temperature in Magnet House.	Mag- netic Char- acter of day (0-2)	Date.
	From	To						
Nov.	h. m.	h. m.	γ	° ' "	° ' "	a		
1	10 45	11 44	16677	16 46 58	69 41.7	280+	0	1
						6.0	I	2
						6.0	I	3
						6.0	ID	4
5	10 54	12 40		16 48 44	69 41.6	6.0	I	5
						6.0	ID	6
						5.9	I	7
						5.9	OC	8
						5.9	0	9
10	10 29	11 36	16689	16 45 25	69 42.2	5.8	OC	10
						5.9	0	11
						5.7	I	12
						5.7	I	13
						5.6	OC	14
						5.6	I	15
						5.5	0	16
17	11 29	12 17	16704	16 49 55	69 40.6	5.6	ID	17
						5.6	I	18
						5.5	0	19
						5.5	0	20
						5.5	2	21
						5.5	I	22
						5.5	OC	23
						5.4	OC	24
						5.4	0	25
						5.4	2D	26
						5.5	2D	27
						5.4	0	28
						5.3	0	29
30	10 43	11 30	16690	16 46 3	69 41.8	5.3	0	30

MAGNETIC NOTES.

November, 1920.

A quiet month generally, with a mean character figure of 0.60. A sudden commencement was recorded at 26d. 13h. om., followed by a moderate disturbance, but the N. and W. traces were imperfect owing to failure of the light. The V. trace was of the usual kind, the drop in value about midnight being especially prominent. A case of repetition is shewn on the W. traces of a "bay" movement, the times of centering on three successive days being 9d. oh. 40m., 10d. 1h. 30m., 11d. 1h. 27m. The 23rd and 24th were especially quiet days.

HOURLY VALUES FROM AUTOGRAPHIC RECORDS.

XLV.—TERRESTRIAL MAGNETIC FORCE: NORTH COMPONENT.

Eskdalemuir. (X.)

Mean Values of Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.
15,000 γ ($\cdot 15$ C.G.S. Units) +

December, 1920.

Hour G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	Mean
Day 1	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	1002	993	991	993	993	997	998	998	996	989	984	986	984	982	985	988	993	988	987	987	989	994	997	993	994	991
2	993	994	998	998	1001	1009	1003	1007	997	997	997	991	986	979	966	963	984	982	981	977	986	995	1019	980	981	991
3	981	988	984	988	996	982	999	997	992	986	970	977	972	965	977	985	983	983	996	992	991	995	983	1004	987	986
4	987	987	987	989	992	996	1011	1008	993	984	944	954	973	990	989	987	954	972	996	992	967	968	973	1001	967	981
5	966	976	976	985	978	977	980	980	985	981	976	975	964	980	982	983	981	986	990	996	1005	995	1015	983	988	984
6	988	988	994	982	979	967	986	986	978	982	973	967	978	986	985	963	989	980	1007	986	986	991	1017	1004	986	985
7	986	990	991	991	993	987	990	990	986	976	964	967	952	961	965	961	975	979	989	992	991	991	990	999	1011	982
8	1010	997	990	987	991	994	993	996	1000	993	990	980	963	952	969	971	953	966	960	963	974	985	986	991	1006	981
9	1006	990	985	979	983	1009	1006	1004	999	990	980	979	973	975	973	970	972	962	977	989	996	991	989	985	990	986
10	990	990	993	990	990	994	995	994	989	979	970	976	980	984	986	985	989	993	994	991	985	987	988	987	991	988
11	991	990	994	994	996	1004	1005	1004	1001	999	993	987	984	982	982	990	995	996	997	998	995	994	994	994	994	994
12	994	994	994	995	997	1000	1002	1003	1001	1000	997	994	995	999	1003	1000	1000	1000	999	998	998	997	996	994	994	994
13	994	994	995	999	1004	1009	1009	1012	1010	1006	1002	999	993	984	978	967	964	985	984	985	984	990	997	989	988	993
14	988	989	983	991	994	997	999	999	993	990	984	979	986	974	964	982	984	983	995	994	993	987	1001	1003	993	989
15	993	990	993	995	999	1012	1009	1007	999	994	995	992	989	990	993	992	993	993	986	972	983	989	976	986	983	992
16	983	986	988	988	994	1004	1001	997	996	994	985	979	987	989	986	980	980	986	989	994	989	998	1000	994	995	991
17	995	997	998	999	998	998	999	1000	995	992	989	983	978	978	978	975	984	993	999	1002	1002	1000	998	998	998	994
18	998	1004	1002	1004	1009	1010	1012	997	1004	1003	994	993	987	988	995	994	996	998	990	993	997	998	996	1005	999	999
19	998	993	992	997	998	999	1002	999	996	1000	998	994	996	993	992	992	996	1001	998	997	998	997	1012	1008	998	998
20	998	993	993	1002	1008	1006	1009	1011	1016	1019	1022	1017	1009	997	989	988	983	996	1008	1002	992	1000	997	999	1003	1002
21	1003	1003	1001	1003	1003	1004	1003	998	998	999	1001	998	995	993	989	988	992	997	999	1001	1001	1000	998	999	999	999
22	999	999	1002	1003	1003	1004	1006	1005	1004	1003	1004	1006	1007	1007	1003	998	997	998	1002	1003	1002	1002	1000	999	1002	1002
23	1002	1000	1000	1000	1002	1003	1004	1004	1004	1003	1001	1000	1004	1007	1005	1002	1000	1003	1007	1008	1007	1006	1016	1013	1015	1005
24	1015	1003	1004	1009	1013	1013	1013	1012	1013	1012	1008	1003	1007	1009	1005	987	980	998	1003	1000	993	989	990	982	979	1002
25	979	994	994	998	1003	1001	1007	1003	998	986	1003	1000	980	960	978	985	983	984	978	988	987	983	973	989	987	989
26	986	987	989	996	996	1003	1017	1011	965	921	917	914	931	937	940	936	923	939	936	941	949	952	958	977	977	959
27	977	981	981	992	990	984	990	992	982	967	957	971	977	982	968	961	972	961	967	963	956	970	994	998	977	976
28	977	983	987	989	987	994	998	998	994	986	983	981	984	990	992	985	980	986	990	992	989	987	987	991	982	988
29	982	985	988	991	996	998	998	998	995	987	978	978	982	992	995	991	990	993	987	993	996	993	992	996	992	991
30	992	995	996	997	1000	1002	1003	1004	1002	1000	997	998	1002	1006	1006	999	997	998	998	993	992	998	1001	998	997	999
31	997	997	997	994	1009	1014	1007	1008	1003	1001	998	997	997	1004	997	987	994	969	991	998	992	990	993	993	996	997
Mean	992	992	992	994	997	999	1002	1001	996	991	986	985	984	984	984	982	982	985	990	989	989	991	994	995	992	991

XLVI.—TERRESTRIAL MAGNETIC FORCE: WEST COMPONENT.

Eskdalemuir. (—Y.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.
4,000 γ ($\cdot 04$ C.G.S. Units) +

December, 1920.

Hour G.M.T.	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	Mean
Day 1	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1	797	788	797	797	802	803	803	803	803	802	809	816	819	822	818	814	812	804	808	802	800	800	799	797	798	805
2	798	803	804	805	808	809	811	813	818	816	823	821	820	825	828	824	818	810	798	788	797	787	750	759	791	805
3	791	780	793	798	796	813	822	824	814	806	797	804	808	818	818	814	811	805	797	800	794	791	782	790	796	803
4	796	799	802	804	813	827	825	813	803	811	825	824	820	810	819	819	807	788	733	788	765	773	766	740	744	797
5	744	775	782	792	796	798	798	800	798	798	803	809	812	812	811	804	799	798	802	803	808	807	782	785	797	798
6	797	800	802	802	797	808	804	799	796	801	816	811	816	818	815	780	789	794	792	791	790	786	787	785	791	799
7	791	801	802	803	803	803	818	819	813	805	804	811	811	821	818	809	808	802	783	786	799	798	797	796	794	804
8	794	787	788	793	797	801	801	798	798	797	811	808	813	819	819	813	787	791	803	789	782	790	796	792	788	799
9	788	798	797	806	823	808	804	810	818	819	816	817	818	825	820	818	803	809	801	795	787	791	797	797	798	807
10	798	802	801	798	794	798	797	800	798	798	805	813	815	815	812	807	804	804	804	794	791	795	796	796	802	802
11	802	803	802	802	803	803	802	804	802	802	803															

XLVII.—TERRESTRIAL MAGNETIC FORCE: VERTICAL COMPONENT.

Eskdalemuir. (Z.)

Mean Values for Periods of 60 Minutes centered at the Hours of Greenwich Mean Time.

December, 1920.

44,000 γ (0.44 C.G.S. Units) +

Hour G.M.T	0	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	Mean
Day 1	1098	1095	1095	1097	1098	1099	1099	1099	1098	1096	1095	1094	1095	1098	1101	1102	1102	1103	1104	1105	1105	1103	1101	1099	1098	1099
2	1099	1097	1096	1096	1096	1095	1096	1094	1094	1092	1095	1097	1099	1099	1105	1110	1107	1110	1112	1117	1115	1109	1095	1090	1083	1100
3	1084	1069	1080	1088	1092	1088	1081	1083	1088	1093	1101	1101	1102	1103	1104	1105	1105	1106	1108	1106	1107	1105	1103	1096	1091	1096
4	1091	1094	1097	1097	1097	1096	1086	1082	1090	1093	1101	1104	1104	1105	1107	1109	1123	1125	1154	1134	1139	1131	1097	1044	1040	1103
5	1040	1083	1092	1094	1084	1086	1093	1098	1101	1104	1105	1104	1101	1103	1105	1105	1105	1104	1101	1100	1099	1101	1096	1102	1101	1097
6	1102	1102	1102	1103	1105	1101	1101	1102	1104	1102	1098	1103	1106	1108	1110	1123	1126	1118	1113	1106	1107	1106	1096	1088	1092	1105
7	1092	1089	1094	1094	1094	1095	1093	1092	1094	1097	1102	1104	1107	1110	1114	1118	1113	1112	1112	1106	1102	1102	1102	1101	1091	1102
8	1092	1086	1085	1087	1090	1091	1094	1095	1094	1094	1095	1098	1101	1103	1103	1110	1122	1127	1127	1129	1126	1119	1111	1106	1097	1104
9	1097	1095	1097	1095	1084	1079	1084	1087	1088	1091	1094	1097	1100	1103	1106	1112	1119	1121	1119	1114	1108	1104	1102	1102	1101	1100
10	1101	1099	1097	1097	1099	1099	1098	1098	1099	1099	1101	1100	1103	1103	1106	1106	1106	1104	1103	1103	1105	1103	1102	1103	1100	1101
11	1101	1100	1098	1098	1097	1096	1096	1095	1095	1095	1097	1099	1098	1100	1099	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
12	1100	1100	1099	1098	1096	1096	1095	1094	1094	1094	1094	1095	1095	1095	1096	1097	1099	1097	1097	1097	1097	1097	1097	1097	1098	1097
13	1098	1096	1094	1092	1091	1091	1091	1089	1088	1089	1089	1089	1091	1093	1096	1104	1114	1111	1109	1108	1108	1100	1098	1095	1095	1097
14	1096	1094	1093	1088	1093	1094	1093	1093	1094	1093	1097	1100	1097	1100	1108	1105	1105	1105	1101	1100	1099	1100	1099	1091	1091	1097
15	1091	1092	1092	1093	1092	1088	1088	1088	1089	1089	1089	1089	1089	1091	1092	1096	1097	1098	1099	1107	1104	1097	1097	1097	1097	1093
16	1093	1093	1092	1086	1088	1088	1089	1091	1091	1091	1094	1097	1096	1094	1096	1097	1098	1099	1099	1099	1099	1099	1099	1094	1093	1093
17	1093	1092	1092	1092	1092	1092	1092	1092	1090	1088	1088	1088	1090	1096	1094	1096	1097	1096	1096	1093	1092	1092	1091	1091	1091	1091
18	1091	1088	1088	1088	1086	1085	1085	1085	1082	1081	1086	1087	1086	1087	1087	1088	1089	1090	1092	1096	1093	1090	1090	1088	1085	1088
19	1085	1087	1087	1086	1086	1086	1086	1086	1085	1084	1085	1088	1088	1086	1087	1088	1088	1088	1088	1088	1089	1089	1090	1088	1083	1081
20	1081	1084	1085	1084	1080	1081	1080	1080	1077	1076	1076	1076	1080	1081	1082	1082	1086	1088	1086	1086	1093	1092	1087	1087	1084	1083
21	1085	1084	1084	1082	1081	1081	1082	1083	1082	1082	1082	1083	1082	1083	1082	1083	1084	1084	1083	1084	1083	1083	1084	1083	1083	1083
22	1083	1082	1081	1081	1081	1080	1079	1080	1080	1080	1082	1082	1082	1084	1083	1082	1084	1084	1084	1084	1084	1084	1085	1085	1086	1086
23	1086	1085	1083	1082	1081	1081	1081	1081	1081	1081	1082	1082	1081	1082	1081	1081	1082	1082	1080	1080	1080	1081	1082	1084	1081	1082
24	1081	1084	1085	1081	1079	1078	1078	1077	1075	1076	1078	1080	1081	1082	1085	1088	1089	1087	1086	1085	1086	1089	1093	1089	1086	1083
25	1086	1080	1084	1082	1081	1080	1073	1074	1077	1077	1076	1073	1074	1083	1086	1090	1093	1094	1099	1097	1093	1095	1098	1087	1084	1085
26	1084	1085	1082	1080	1077	1073	1065	1066	1072	1071	1091	1102	1112	1126	1146	1163	1171	1182	1159	1139	1120	1094	1074	1040	1053	
27	1053	1073	1073	1071	1074	1075	1073	1073	1078	1085	1091	1087	1083	1089	1097	1101	1101	1104	1104	1109	1118	1114	1106	1078	1081	1089
28	1081	1086	1088	1088	1083	1075	1078	1081	1082	1082	1084	1081	1078	1080	1086	1089	1093	1093	1091	1090	1089	1089	1089	1084	1083	1085
29	1083	1086	1087	1088	1087	1087	1086	1086	1087	1086	1087	1085	1082	1083	1083	1085	1089	1093	1093	1090	1089	1086	1085	1084	1084	1087
30	1083	1083	1083	1083	1083	1083	1083	1083	1081	1080	1079	1080	1080	1082	1082	1081	1082	1084	1085	1088	1088	1087	1085	1084	1083	1083
31	1083	1083	1082	1081	1079	1079	1078	1077	1077	1077	1079	1084	1084	1084	1085	1088	1092	1101	1097	1088	1073	1070	1076	1081	1088	1083
Mean	1088	1089	1089	1089	1088	1087	1086	1087	1087	1088	1090	1091	1092	1094	1097	1099	1102	1103	1103	1101	1100	1097	1094	1088	1087	1093

XLVIII.—AUXILIARY OBSERVATIONS IN ABSOLUTE MEASURE; DAILY VALUES OF TEMPERATURE IN THE EAST ROOM OF MAGNET HOUSE; MAGNETIC NOTES FOR THE MONTH.

Eskdalemuir.

December, 1920.

Date	Time G.M.T.		Horizontal Force.	Declination.	Dip.	Temperature in Magnet House.	Magnetic Character of day (0-2).	Date.
	From	To						
Dec.	h. m.	h. m.	γ	° ' "	° ' "	a		
						280+		
						5.2	OC	1
						5.2	I	2
						5.1	I	3
						5.1	2D	4
						5.1	ID	5
						5.0	ID	6
8	10 26	11 13	16694	16 45	1 69 41.4	5.0	I	7
						5.0	I	8
						5.0	I	9
						5.0	O	10
						4.9	OC	11
						4.9	OC	12
14	11 0	11 29	16669	16 44	8 69 41.9	4.9	I	13
						4.8	I	14
						4.7	I	15
						4.7	O	16
						4.7	O	17
						4.5	O	18
						4.5	O	19
						4.4	I	20
						4.3	O	21
						4.3	OC	22
						4.3	I	23
						4.2	I	24
						4.3	I	25
						4.3	2D	26
28	11 10	11 35	16688	16 46	35 69 41.4	4.2	ID	27
						4.2	I	28
						4.1	O	29
						4.1	OC	30
						4.1	O	31

MAGNETIC NOTES.

December, 1920.

The mean character figure was 0.65. The 21st and 22nd were the two days of lowest absolute daily range during the year (21st $R_N=20$, $R_W=11$, $R_V=4$; 22nd $R_N=12$, $R_W=20$, $R_V=8$). There was only one disturbance of considerable extent, that of the 26th. Its principal features were the fall in N. which began after 7h., and the comparatively early hour (9h.) at which V. began to rise. On the N. trace, a single oscillation centering at 25d. 23h. 35m. is followed by a double oscillation centering at 26d. 23h. 11m., and by a triple oscillation centering at 27d. 22h. 31m.

XLIX.-LI.—DIURNAL INEQUALITIES OF THE GEOGRAPHICAL COMPONENTS OF MAGNETIC FORCE.

(Not corrected for the effect of the North Force on the West Magnetograph, or vice versa, or for the effect of the Horizontal Force on the V.F. Balance.)

Mean Hourly Values, Greenwich Mean Time, for the Months, Year, and Seasons.

Table for North Component (Eskdalemuir) 1920. Columns: Hour (1-24), Midt. Rows: Months (J, F, M, A, M, J, J, A, S, O, N, D), Year (Y), Week (W), Eq., S. Values range from -16.1 to 16.6.

L.—WEST COMPONENT (all days except Jan. 2, 3, 4, 5, 25, 26, Feb. 7, 8, Mar. 22, 23, 24, June 10, 11, Nov. 26, 27).

Table for West Component (Eskdalemuir) 1920. Columns: Hour (1-24), Midt. Rows: Months (J, F, M, A, M, J, J, A, S, O, N, D), Year (Y), Week (W), Eq., S. Values range from -17.6 to 17.6.

LI.—VERTICAL COMPONENT (all days except Jan. 2, 3, 4, 5, 25, 26, Feb. 7, 8, Mar. 22, 23, 24, June 10, 11, Nov. 26, 27).

Table for Vertical Component (Eskdalemuir) 1920. Columns: Hour (1-24), Midt. Rows: Months (J, F, M, A, M, J, J, A, S, O, N, D), Year (Y), Week (W), Eq., S. Values range from -10.4 to 10.4.

* and n mark respectively the mean maximum and minimum hourly values in each month or season.

LII.-LIV.—DIURNAL INEQUALITIES OF THE MAGNETIC COMPONENTS, DECLINATION, INCLINATION, AND HORIZONTAL FORCE.

Mean Hourly Values, Greenwich Mean Time, for the Months, Year, and Seasons.

LII.—DECLINATION (measured positive towards the West) (all days except Jan. 2, 3, 4, 5, 25, 26, Feb. 7, 8, Mar. 22, 23, 24, June 10, 11, Nov. 26, 27). 1920.

Month and Season.	Hour 1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.
J.	-1.71	-0.88	-0.32	-0.20	-0.45	-0.64	-0.81	-1.18	-1.63	-0.64	0.90	2.53	4.36	4.30	3.37	2.59	1.60	1.50	0.55	-0.94	-3.23	̄3.45	-2.96	-2.69
F.	-2.26	-1.79	-1.51	-1.29	-1.30	-1.45	-1.71	-2.19	-2.75	-1.51	0.37	2.79	4.66	4.54	4.99	3.68	2.54	2.05	0.90	-0.95	-0.98	-2.02	-2.79	̄3.06
M.	-2.35	-2.78	-1.78	-1.73	-1.65	-1.68	-1.22	-1.96	-2.59	-0.85	1.51	4.06	6.47	6.85	5.67	3.75	2.34	0.81	-0.73	-1.77	-1.84	-1.66	̄3.71	-2.91
A.	-2.70	-3.84	-2.78	-3.00	-2.21	-2.23	-3.14	̄4.12	-3.60	-0.98	1.80	4.87	7.31	7.70	6.46	4.38	2.15	0.72	-0.51	-0.36	-1.13	-1.61	-1.79	-2.35
M.	-0.42	-1.86	-2.19	-2.41	-3.72	̄5.03	-4.67	-4.07	-2.45	0.36	2.47	4.71	5.84	5.76	4.43	3.14	2.09	1.17	0.28	-0.22	-0.41	-0.76	-0.89	-1.20
J.	-1.16	-1.80	-2.55	-3.17	-4.62	-5.48	̄5.73	-5.42	-4.24	-1.66	1.16	4.31	6.11	6.64	5.98	4.79	3.21	1.97	0.85	0.65	0.56	0.36	-0.28	-0.48
J.	-1.80	-1.72	-2.22	-3.33	-4.40	-5.31	̄5.49	-5.01	-3.70	-0.91	1.55	4.42	6.05	6.68	6.14	4.82	3.30	2.13	1.28	0.30	-0.07	-0.34	-1.25	-1.17
A.	-2.14	-2.16	-2.67	-2.65	-3.60	̄4.60	-4.49	-3.94	-2.65	0.11	3.07	5.74	7.30	6.99	5.32	3.54	1.99	1.05	0.19	-0.34	-0.70	-1.56	-2.26	-1.52
S.	-3.54	-3.04	-3.11	-3.32	-2.42	-1.81	-1.79	-1.82	-1.48	0.86	3.62	6.15	7.37	6.73	5.49	3.25	1.90	0.86	-0.72	-1.74	-1.38	-2.39	̄4.25	-3.22
O.	-2.46	-1.82	-1.76	-1.38	-1.52	-0.96	-1.44	-1.86	-1.67	0.13	2.61	5.00	5.98	6.00	4.52	2.64	0.98	0.55	-0.19	-1.00	-2.05	-3.17	̄3.58	̄3.58
N.	-1.73	-1.09	-1.51	-1.39	-1.36	-0.92	-0.55	-0.42	-0.11	1.39	2.45	3.51	4.11	3.51	2.94	2.21	1.38	0.38	-0.86	-1.78	-2.24	̄2.93	-2.57	-2.44
D.	-1.56	-1.06	-0.50	-0.62	-0.38	-0.03	0.18	0.36	0.86	1.74	2.39	2.83	3.29	2.71	1.99	1.06	0.47	-0.41	-0.97	-1.43	-2.21	̄3.20	-2.90	-2.30
Y.	-1.99	-1.99	-1.91	-2.04	-2.30	-2.51	-2.57	̄2.64	-2.17	-0.16	1.99	4.24	5.71	5.78	4.78	3.32	2.00	1.07	0.09	-0.80	-1.31	-1.89	-2.44	-2.24
W.	-1.82	-1.21	-0.96	-0.88	-0.87	-0.76	-0.72	-0.86	-0.91	0.25	1.53	2.92	4.03	4.02	3.32	2.39	1.50	0.88	-0.10	-1.28	-2.17	̄2.90	-2.81	-2.62
Eq.	-2.76	-2.87	-2.36	-2.36	-1.95	-1.67	-1.90	-2.44	-2.34	-0.21	2.39	5.02	6.78	6.82	5.54	3.51	1.84	0.74	-0.28	-1.22	-1.60	-2.21	̄3.33	-3.02
S.	-1.38	-1.89	-2.41	-2.89	-4.09	̄5.11	-5.10	-4.61	-3.26	-0.53	2.06	4.80	6.33	6.52	5.47	4.07	2.65	1.58	0.65	0.10	-0.16	-0.58	-1.17	-1.09

LIII.—INCLINATION (all days except Jan. 2, 3, 4, 5, 25, 26, Feb. 7, 8, Mar. 22, 23, 24, June 10, 11, Nov. 26, 27). 1920.

Month and Season.	Hour 1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.		
J.	-0.04	-0.03	-0.11	-0.36	-0.64	̄0.94	-0.88	-0.67	-0.17	0.44	0.70	1.08	1.32	1.08	0.59	0.35	0.12	-0.18	-0.24	-0.37	-0.30	-0.02	0.08	-0.24	-0.33	
F.	-0.28	-0.28	-0.34	-0.48	-0.56	̄0.85	-0.82	-0.64	-0.10	0.50	0.83	1.07	1.32	1.08	0.59	0.35	0.12	-0.18	-0.24	-0.37	-0.30	-0.02	0.08	-0.24	-0.33	
M.	-0.23	0.16	-0.17	-0.62	̄0.72	̄0.72	-0.61	-0.31	0.51	1.08	1.32	1.08	0.59	0.35	0.12	-0.18	-0.24	-0.37	-0.30	-0.02	0.08	-0.24	-0.33	-0.21	-0.81	
A.	-0.69	-0.49	-0.33	-0.61	-0.66	-0.69	-0.43	0.20	1.03	2.01	2.22	1.89	1.31	0.88	0.24	-0.23	-0.78	-0.81	-0.71	-0.64	-0.68	-0.65	-0.51	̄0.84	-0.21	
M.	-0.57	-0.42	-0.28	-0.16	-0.10	0.14	0.63	0.99	1.50	1.82	1.88	1.41	0.95	0.43	-0.06	-0.41	-0.89	̄1.43	-1.32	-1.29	-0.96	-0.64	-0.67	-0.55	-0.55	
J.	-0.35	-0.28	-0.18	-0.22	-0.12	0.30	0.76	1.26	1.72	2.01	1.90	1.39	0.93	0.21	-0.46	-1.03	-1.37	̄1.49	-1.37	-1.12	-0.91	-0.73	-0.42	-0.42	-0.42	
J.	-0.35	-0.15	-0.21	-0.14	0.02	0.22	0.58	1.00	1.46	1.61	1.61	1.20	0.79	0.15	-0.32	-0.53	-0.86	-1.12	̄1.33	-1.18	-0.99	-0.52	-0.55	-0.40	-0.40	
A.	-0.52	-0.37	-0.34	-0.26	-0.31	-0.04	0.59	1.17	1.62	1.99	1.96	1.31	0.65	0.27	-0.11	-0.42	-0.75	-1.13	̄1.38	-1.19	-0.83	-0.56	-0.64	-0.73	-0.73	
S.	-0.39	0.23	-0.40	-0.51	-0.55	-0.41	0.66	0.48	0.91	1.32	1.33	0.90	0.33	0.04	0.04	-0.11	-0.16	-0.38	̄0.56	-0.49	-0.36	-0.43	-0.40	-0.49	-0.49	
O.	-0.55	-0.50	-0.61	-0.84	̄0.95	-0.73	-0.69	-0.25	0.46	1.11	1.34	1.11	0.67	0.48	0.46	0.37	0.14	0.04	0.07	0.08	-0.20	-0.24	-0.36	-0.42	-0.42	
N.	-0.31	-0.32	-0.40	-0.53	̄0.77	-0.71	-0.70	-0.50	-0.04	0.40	0.45	0.44	0.30	0.32	0.27	0.53	̄0.55	̄0.55	0.26	0.29	0.06	0.02	-0.09	-0.09	-0.09	
D.	-0.05	-0.10	-0.30	-0.48	-0.70	̄0.94	-0.88	-0.58	-0.24	0.11	0.15	0.18	0.18	0.27	0.59	̄0.70	0.57	0.35	0.44	0.42	0.33	0.08	-0.10	0.00	0.00	
Y.	-0.36	-0.21	-0.31	-0.43	-0.51	-0.45	-0.20	0.18	0.72	1.20	1.31	1.07	0.68	0.35	0.09	-0.10	-0.32	-0.50	̄0.52	-0.39	-0.33	-0.27	-0.33	-0.37	-0.37	
W.	-0.17	-0.18	-0.29	-0.46	-0.67	̄0.86	-0.82	-0.60	-0.14	0.36	0.53	1.06	1.31	1.06	0.48	0.33	0.29	0.35	0.28	0.19	0.18	0.29	0.23	0.19	-0.03	-0.10
Eq.	-0.47	-0.15	-0.38	-0.65	̄0.72	-0.64	-0.42	0.03	0.73	1.38	1.55	1.25	0.73	0.44	0.22	-0.04	-0.26	-0.38	-0.38	-0.27	-0.29	-0.39	-0.40	-0.49	-0.49	
S.	-0.45	-0.31	-0.25	-0.20	-0.13	0.16	0.64	1.11	1.58	1.86	1.84	1.33	0.83	0.27	-0.24	-0.60	-0.97	-1.29	̄1.35	-1.20	-0.92	-0.61	-0.57	-0.53	-0.53	

LIV.—HORIZONTAL FORCE (all days except Jan. 2, 3, 4, 5, 25, 26, Feb. 7, 8, Mar. 22, 23, 24, June 10, 11, Nov. 26, 27). 1920.

Month and Season.	Hour 1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.
J.	0.3	0.5	0.5	3.8	7.6	̄11.7	11.1	8.5	1.6	-7.6	-11.4	̄13.1	-10.9	-3.9	0.9	1.7	1.6	2.5	2.4	-0.4	-1.5	-5.5	-0.8	1.9
F.	2.4	1.2	2.2	4.6	6.1	̄10.2	10.0	7.8	0.0	-9.8	-14.9	̄18.5	-13.1	-7.9	-3.1	-0.1	3.0	5.7	6.1	2.6	0.7	1.0	2.4	1.6
M.	-0.5	-6.3	-0.7	6.5	8.7	8.7	7.3	3.3	-8.6	-17.9	̄22.8	-19.7	-11.8	-6.0	-0.1	6.1	8.0	̄11.7	11.1	6.8	4.0	7.2	4.7	0.5
A.	6.6	2.4	0.1	4.6	6.1	7.0	4.4	-4.3	-17.1	-32.2	̄36.0	-31.8	-21.9	-12.2	-0.6	8.5	18.6	̄19.4	17.4	16.0	14.6	12.0	8.0	10.4
M.	6.0	3.4	2.5	0.8	0.4	-3.1	-10.0	-15.8	-24.2	-30.4	̄32.3	-25.6	-17.1	-7.5	2.0	9.0	17.9	̄27.3	26.0	24.5	17.7	10.9	10.3	7.5
J.	5.1	3.9	2.8	4.0	2.7	-3.4	-10.9	-18.7	-26.9	̄32.9	-32.7	-26.0	-18.4	-6.6	4.9	15.6	22.8	̄25.8	24.7	20.6	16.4	12.6	7.5	6.8
J.	3.6	0.5	2.2	2.2	0.3	-3.0	-8.6	-15.0	-23.1	-26.7	̄27.4	-22.4	-15.7	-4.8	4.1	9.6	16.5	21.1	̄24.1	21.9	18.0	9.6	8.3	4.5
A.	4.7	2.0	1.5	1.4	3.6	0.8	-8.1	-16.8	-24.7	-31.3	̄31.9	-23.3	-12.7	-4.5	3.8	9.8	15.8	21.6	̄25.1	22.0	14.8	9.1	8.6	8.4
S.	-0.1	-8.1	0.5	3.9	5.9	4.2	-1.9	-7.7	-14.2	-20.5	̄21.0	-14.8	-5.6	1.0	3.8	8.4	10.4	13.3	̄14.6	10.3	7.1	6.5	3.0	1.2
O.	6.1	5.1	6.3	9.2	̄10.3	7.5	7.5	1.7	-8.6	-18.5	̄22.0	-18.3	-11.0	-6.4	-3.9	-0.6	3.1	4.4	3.4	2.9	5.8	5.0	5.5	5.2
N.	2.7	2.1	3.3	5.5	̄8.8	8.0	7.8	5.1	-1.5	-7.5	̄8.2	-7.5	-4.6	-3.9	-2.0	-4.8	-3.9	-3.4	0.1	-0.6	1.6	1.0	1.3	0.5

LV.-LVII.—INTERNATIONAL QUIET DAYS—DIURNAL INEQUALITIES OF THE GEOGRAPHICAL COMPONENTS OF MAGNETIC FORCE.

Mean Hourly Values, Greenwich Mean Time, for the Months, Year, and Seasons.

Table LV.—NORTH COMPONENT (Quiet Days). 1920. Columns: Hour (1-24), Midt. Rows: Eskdalemuir. Months: J, F, M, A, M, J, J, A, S, O, N, D. Seasons: Y, W, Eq, S.

Table LVI.—WEST COMPONENT (Quiet Days). 1920. Columns: Hour (1-24), Midt. Rows: Eskdalemuir. Months: J, F, M, A, M, J, J, A, S, O, N, D. Seasons: Y, W, Eq, S.

Table LVII.—VERTICAL COMPONENT (Quiet Days). 1920. Columns: Hour (1-24), Midt. Rows: Eskdalemuir. Months: J, F, M, A, M, J, J, A, S, O, N, D. Seasons: Y, W, Eq, S.

* and n mark respectively the mean maximum and minimum hourly values in each month or season.

LVIII.-LX.—INTERNATIONAL QUIET DAYS—DIURNAL INEQUALITIES.

Mean Hourly Values, Greenwich Mean Time, for the Months, Years, and Seasons.

Month and Season.	Hour	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.
	1	Eskdalemuir. LVIII.—DECLINATION (measured positive towards the West) Quiet Days. 1920.																						
J.	-0.48	-0.65	-0.70	-0.46	-0.67	-0.83	-0.78	-1.04	-1.49	-0.45	1.00	2.45	3.43	3.00	2.11	1.21	0.49	0.42	-0.06	-0.36	-1.25	1.84	-1.66	-1.42
F.	-1.58	-1.35	-1.56	-1.64	-1.56	-1.64	-1.75	-2.07	1.25	0.66	3.05	3.84	4.16	3.86	2.88	2.00	1.62	1.11	0.36	-0.55	-1.50	-2.15	-2.40	
M.	-0.08	-0.42	-0.31	-0.50	-0.76	-1.20	-0.91	-3.51	1.50	0.92	4.28	3.15	5.13	3.35	1.07	-0.30	-0.83	-0.81	-0.83	-0.97	-1.32	-1.50	-1.31	
A.	-0.09	-1.11	-1.53	-2.04	-2.30	-3.11	-4.23	1.88	-4.36	-2.16	0.31	2.98	5.17	4.56	3.10	1.84	0.92	0.53	0.35	0.33	0.25	-0.03	-0.22	
M.	-0.84	-1.39	-1.84	-2.18	-2.95	-3.92	1.42	-4.28	-3.03	-0.79	1.43	3.36	4.61	4.69	3.72	2.51	2.04	1.35	1.10	0.90	0.64	-0.02	-0.21	
J.	-1.37	-2.02	-2.13	-3.32	-4.89	-5.94	1.36	-5.09	-2.99	-0.54	1.70	4.52	6.99	7.82	6.73	4.89	3.09	0.98	-0.20	0.05	-0.13	-0.51	-0.79	
J.	-1.75	-2.01	-2.11	-2.64	-4.35	-5.05	1.18	-4.88	-3.62	-0.71	2.24	5.08	6.59	6.58	5.96	4.22	2.11	1.02	0.30	0.32	-0.11	-0.72	-0.79	
A.	-1.68	-1.87	-2.20	-2.41	-3.12	-3.95	1.30	-3.93	-3.09	-0.19	2.56	4.93	6.58	6.47	4.59	2.55	1.30	0.41	0.15	-0.08	0.10	-0.48	-1.17	
S.	-1.81	-1.49	-1.49	-2.16	-2.46	-1.95	1.22	-2.32	-2.62	-0.71	2.26	4.56	5.57	5.18	4.20	2.03	0.96	0.47	0.37	0.35	-0.45	-1.55	-2.07	
O.	-1.55	-1.02	-1.14	-1.10	-1.25	-1.78	1.10	-2.28	-2.49	-0.96	1.57	4.11	4.82	4.68	3.00	1.52	0.80	0.64	0.40	0.19	-0.72	-1.12	-1.63	
N.	-1.05	-0.80	-0.89	-1.42	-1.26	-1.20	0.76	-0.65	-0.17	1.05	1.88	3.07	3.25	2.39	1.33	0.98	0.57	0.10	-0.28	-0.74	-1.04	-1.24	-1.38	
D.	1.36	-0.94	-0.94	-0.73	-0.73	-1.03	-0.85	-0.67	-0.34	0.85	1.66	2.18	2.15	1.74	1.10	0.80	0.61	0.58	0.10	-0.12	-0.61	-0.86	-1.23	
Y.	-1.14	-1.26	-1.40	-1.72	-2.19	-2.63	1.11	-2.85	-2.55	-0.61	1.52	3.71	4.93	4.80	3.71	2.31	1.29	0.64	0.23	0.03	-0.40	-0.91	-1.16	
W.	-1.12	-0.94	-1.02	-1.06	-1.06	-1.18	-1.04	-1.11	-1.14	0.05	1.30	2.69	3.17	2.82	2.10	1.47	0.92	0.68	0.22	-0.22	-0.86	-1.36	-1.61	
Eq.	-0.88	-1.01	-1.12	-1.45	-1.69	-2.01	-2.44	1.68	-3.32	-1.33	1.27	3.98	5.43	5.18	3.78	1.93	0.83	0.30	0.12	0.02	-0.45	-0.94	-1.20	
S.	-1.41	-1.82	-2.07	-2.66	-3.83	-4.72	1.07	-4.55	-3.18	-0.56	1.98	4.47	6.19	6.39	5.25	3.54	2.14	0.94	0.34	0.30	0.13	-0.43	-0.67	

Month and Season.	Eskdalemuir. LIX.—INCLINATION (Quiet Days). 1920.																							
	Hour	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.
J.	0.04	0.01	0.01	-0.16	-0.43	-0.50	1.56	-0.48	0.05	0.46	0.65	1.72	0.50	0.28	0.10	-0.06	-0.22	-0.24	-0.13	-0.12	-0.05	0.04	0.11	-0.01
F.	0.05	0.07	-0.06	-0.21	-0.32	-0.39	1.43	-0.31	-0.01	0.55	1.70	1.70	0.59	0.34	0.10	-0.12	-0.18	-0.32	-0.25	-0.14	-0.35	-0.12	0.10	0.01
M.	-0.55	-0.60	-0.57	-0.66	-0.75	1.81	-0.70	-0.08	0.67	1.44	1.69	1.40	1.02	0.76	0.23	0.12	0.05	-0.22	-0.42	-0.50	-0.45	-0.33	-0.35	-0.36
A.	-0.80	1.07	-0.62	-0.51	-0.48	-0.39	0.07	0.39	1.04	1.74	2.09	1.91	1.36	0.68	0.28	-0.02	-0.36	-0.81	-0.78	-0.65	-0.66	-0.81	-0.79	-0.76
M.	-0.44	-0.25	-0.25	-0.32	-0.16	0.08	0.39	0.86	1.31	1.54	1.46	1.35	0.86	0.55	0.19	-0.05	-0.95	1.20	-1.10	-1.14	-0.93	-0.65	-0.58	-0.51
J.	-0.50	-0.43	-0.49	-0.59	-0.47	-0.13	0.49	1.46	1.98	2.22	2.10	1.50	1.15	0.53	-0.31	-0.69	-1.23	1.37	-1.33	-0.96	-0.99	-0.74	-0.64	-0.57
J.	-0.35	-0.15	-0.12	-0.19	-0.18	0.14	0.64	1.28	1.77	2.01	1.89	1.34	0.63	-0.17	-0.67	-0.79	-0.89	-1.04	-1.06	1.25	-1.10	-0.68	-0.54	-0.51
A.	-0.43	-0.35	-0.26	-0.25	-0.10	0.17	0.63	1.17	1.61	2.02	1.97	1.35	0.59	-0.01	-0.35	-0.66	-0.94	-1.11	1.36	-1.07	-0.81	-0.61	-0.48	-0.71
S.	-0.45	-0.28	-0.17	-0.43	-0.28	-0.21	-0.24	0.40	0.83	1.30	1.32	1.16	0.69	0.23	0.11	0.21	-0.04	-0.39	-0.59	-0.72	1.74	-0.61	-0.47	-0.57
O.	-0.34	-0.31	-0.36	-0.43	-0.52	-0.45	-0.34	0.28	0.85	1.23	1.29	1.02	0.64	0.42	0.16	0.09	-0.14	-0.34	1.54	-0.45	-0.47	-0.42	-0.42	-0.45
N.	-0.18	-0.08	-0.18	-0.27	1.37	-0.31	1.37	-0.12	0.34	0.55	0.58	1.01	0.64	0.43	0.19	0.03	-0.15	-0.23	-0.27	-0.41	-0.13	-0.09	0.12	0.07
D.	1.30	0.15	0.09	-0.03	-0.29	-0.36	1.39	-0.28	-0.14	-0.01	-0.02	-0.09	-0.09	-0.08	0.04	0.00	0.06	0.03	0.15	0.22	0.13	0.10	0.28	0.22
Y.	-0.30	-0.27	-0.25	-0.34	-0.36	-0.26	-0.08	0.38	0.86	1.25	1.31	1.08	0.69	0.31	0.01	-0.16	-0.42	-0.60	1.64	-0.58	-0.55	-0.41	-0.31	-0.35
W.	0.05	0.04	-0.04	-0.17	-0.35	-0.39	1.44	-0.30	0.06	0.39	0.48	1.49	0.34	0.17	0.11	-0.04	-0.12	-0.19	-0.13	-0.06	-0.10	-0.02	0.15	0.07
Eq.	-0.54	-0.54	-0.43	-0.51	-0.51	-0.47	-0.34	0.25	0.85	1.43	1.60	1.37	0.93	0.52	0.20	0.10	-0.12	-0.44	1.58	1.58	1.58	-0.54	-0.51	-0.54
S.	-0.43	-0.30	-0.28	-0.34	-0.23	0.07	0.54	1.19	1.67	1.95	1.85	1.39	0.81	0.23	-0.29	-0.55	-1.00	-1.18	1.21	-1.11	-0.96	-0.67	-0.56	-0.58

Month and Season.	Eskdalemuir. LX.—HORIZONTAL FORCE (Quiet Days). 1920.																							
	Hour	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.
J.	0.5	0.2	0.3	1.9	5.1	6.1	7.2	6.4	1.0	7.4	9.5	10.9	8.2	4.3	0.4	2.0	3.8	4.1	4.1	2.5	1.4	0.3	0.8	0.2
F.	0.4	1.2	0.3	2.4	4.0	4.9	5.4	3.8	0.8	9.6	12.5	12.7	10.1	5.4	0.5	3.6	4.1	5.7	5.1	3.4	6.4	3.2	0.0	0.8
M.	8.2	8.9	8.6	9.5	11.0	11.9	10.8	2.1	9.3	22.2	22.2	24.4	17.7	12.4	3.2	0.3	1.0	4.5	7.2	8.2	7.7	5.9	6.0	5.8
A.	12.9	13.8	8.6	7.4	7.2	6.8	2.4	-4.6	-15.4	-27.4	33.4	-32.4	-25.0	-13.4	5.5	0.3	6.3	13.9	13.7	12.2	12.1	13.9	13.2	12.5
M.	7.5	4.7	5.1	6.5	4.4	0.8	-4.2	-12.1	-20.4	-25.7	26.1	-25.9	-18.3	-11.4	-3.9	1.1	15.5	20.3	18.9	18.8	15.3	10.9	9.7	8.3
J.	7.4	6.3	7.5	9.6	8.1	3.0	-6.7	-20.7	-29.5	-34.9	35.4	-28.1	-22.0	-11.8	2.5	10.9	21.4	17.9	17.9	20.3	17.8	10.9	8.9	7.9
J.	5.3	2.2	2.3	3.6	3.8	-1.1	-8.2	-18.2	-26.9	31.8	-31.2	-23.3	-12.5	-0.1	8.2	11.7	14.9	17.7	17.9	20.3	17.8	10.9	8.9	7.9
A.	6.2	5.3	4.4	4.4	2.7	-1.2	-8.1	-16.5	-24.4	-31.6	32.2	-24.5	-13.1	-2.1	4.8	10.6	15.7	18.4	21.8	17.3	13.2	10.1	8.1	10.6
S.	6.2	4.3	2.9	6.5	4.4	3.5	5.2	-5.3	-12.4	-19.8	21.3	-19.8	-12.7	-5.1	-1.3	-1.8	2.3	7.2	10.0	11.6	11.9	9.3	6.9	7.7
O.	4.8	4.2	5.0	6.0	7.3	6.4	4.9	-3.7	-12.5	-18.9	20.6	-16.8	-11.3	-7.4	-2.2	0.1	3.3	6.1	9.0	7.9	8.2	7.2	6.8	6.5
N.	2.1	0.3	1.3	3.2	5.0	4.3	4.9	1.4	5.4	-8.2	-8.9	9.2	-4.9	-1.2	-1.2	0.6	3.2	4.2	4.3	3.4	2.4	1.7	1.4	0.9
D.	4.4	-2.6	-1.6	0.2	3.9	4.9	5.1	3.2	1.0	0.7	0.4	0.6	1.3	1.3	0.5	0.5	-0.2	0.3	-1.2	-2.2	-1.1	-0.9	-3.5	-2.9
Y.	4.6	3.8	3.7	5.1	5.6	4.2	1.6	-5.4	-13.1	-19.9	21.6	-19.0	-12.9	-6.1	-0.3	3.3	7.6	10.6	11.1	10.0	9.3	7.1	5.3	5.5
W.	-0.8	-1.1	-0.1	1.9	4.5	5.1	5.7	3.7	-1.6	-6.5	-7.8	8.1	-5.5	-2.4	-0.7	1.7	2.7	3.6	2.7	1.8	2.3	1.1	-1.4	-0.7
Eq.	8.0	7.8	6.3	7.4	7.5	7.2	5.8	-2.9	-12.4	-22.1	25.8	-23.4	-16.7	-9.6	-3.1	-0.5	3.2	7.9	10.0	10.0	10.0	9.1	8.2	8.1
S.	6.6	4.6	4.8	6.0	4.8	0.4	-6.8	-16.9	-25.3	-31.0	31.2	-25.5	-16.5	-6.4	2.9	8.6	16.9	20.2	20.5	18.3	15.7	11.1	9.2	8.9

x and n mark respectively the mean maximum and minimum hourly values in each month or season.

Note—The corrections formerly applied on account of the effect of the N. Force on the W. Magnetograph, etc., have been ignored this year as insignificant.

LXa.-LXc.—SELECTED DISTURBED DAYS—DIURNAL INEQUALITIES OF THE GEOGRAPHICAL COMPONENTS OF MAGNETIC FORCE.

Mean Hourly Values, Greenwich Mean Time, for the Months, Year, and Seasons.

Month and Season.	Hour	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.
	Eskdalemuir. LXa.—NORTH COMPONENT (Disturbed Days). 1920.																							
J.	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
F.	2.7	-0.2	0.1	1.5	7.5	116.7	13.7	12.1	3.9	-5.8	-13.6	-19.4	121.2	-10.8	-1.2	-8.8	-3.0	6.9	-0.4	3.9	4.9	-0.4	8.3	2.7
M.	1.5	0.2	4.5	6.2	7.9	13.1	14.1	15.3	6.6	-4.7	-15.7	129.0	-18.8	-13.0	-16.6	-17.1	-8.3	8.9	19.9	8.8	-5.7	5.8	12.3	3.8
A.	-13.6	172.1	-20.0	31.8	30.3	1.5	-2.4	14.5	-2.1	-11.9	-19.1	1.7	11.6	14.0	-1.8	35.0	138.5	4.6	14.5	-6.7	-10.2	-9.4	-13.9	-14.8
M.	8.4	9.0	3.7	22.3	14.1	14.0	12.0	5.2	-9.1	-41.3	160.1	-44.0	-33.6	-34.2	-16.5	8.7	31.5	135.8	17.2	14.2	21.1	3.1	6.3	12.2
J.	2.6	4.4	4.9	2.3	1.4	1.9	-5.9	-14.4	-27.6	-33.3	150.7	-44.4	-30.7	-16.5	13.8	15.4	22.5	139.0	36.6	37.9	25.7	3.4	10.7	0.9
J.	4.1	-1.4	-0.9	4.9	7.0	5.2	-0.1	-11.6	-29.1	-35.0	135.8	-26.0	-20.6	-12.4	-8.9	3.9	20.3	19.5	128.6	22.4	20.6	17.7	15.8	12.0
A.	5.2	-1.8	5.5	8.0	6.3	3.4	2.3	-8.5	-26.2	-28.7	129.8	-24.7	-19.3	-15.8	-0.7	-0.2	12.5	19.6	132.9	24.7	31.6	2.1	2.6	-0.9
S.	8.6	1.5	-0.7	7.4	12.6	9.1	-0.3	-5.4	-21.2	-41.3	146.1	-29.8	-19.6	-13.1	2.7	11.4	13.8	23.7	129.1	27.2	12.0	-2.3	7.1	13.6
O.	-5.3	130.6	7.3	4.4	15.8	4.9	-2.8	-0.5	-5.5	-20.8	-23.9	-25.4	-7.4	4.5	1.2	14.3	27.9	133.2	25.5	5.6	-10.4	-10.7	-5.2	3.9
N.	16.4	11.4	16.5	120.0	16.0	-1.3	5.0	3.6	-5.1	-13.2	127.4	-24.1	-14.2	-12.8	-9.9	-7.4	7.6	-4.7	-2.8	-4.2	4.5	5.8	10.2	10.3
D.	12.2	10.4	17.0	15.3	117.2	12.5	8.1	8.0	-0.4	-22.8	-13.9	-12.6	-15.7	-19.1	-14.2	127.2	-16.6	-11.4	6.6	4.2	7.4	12.4	14.3	8.2
	5.9	7.6	11.0	9.3	7.8	119.3	17.9	3.2	-10.3	123.8	-23.0	-10.5	-2.0	-4.1	-10.9	-13.0	-9.1	2.6	-7.0	-3.9	-1.2	15.1	16.3	2.8
Y.	4.0	-5.1	4.1	11.1	12.0	8.3	5.1	1.8	-10.5	-23.5	129.9	-24.0	-15.9	-11.1	-5.2	1.3	11.5	14.8	116.7	11.2	8.4	3.5	7.1	4.6
W.	5.5	4.5	8.1	8.1	10.1	115.4	13.4	9.7	-0.1	-14.3	-16.5	117.9	-14.4	-11.8	-10.7	-16.5	-9.3	1.7	4.8	3.2	1.3	8.2	12.8	4.4
Eq.	1.5	-20.6	1.9	19.7	19.0	4.8	3.0	5.7	-5.4	-21.8	132.6	-22.9	-10.9	-7.1	-6.7	12.7	126.3	17.2	13.6	2.2	1.2	-2.8	-0.7	2.9
S.	5.1	0.7	2.2	5.6	6.8	4.9	-1.0	-10.0	-26.0	-34.6	140.6	-31.2	-22.5	-14.4	1.7	7.6	17.3	25.4	131.8	28.1	22.5	5.2	9.0	6.4
Eskdalemuir. LXb.—WEST COMPONENT (Disturbed Days). 1920.																								
J.	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
F.	-16.8	-12.7	-6.2	-3.9	2.2	-0.3	-1.0	-1.5	-7.2	-4.9	2.0	9.9	22.0	26.7	131.0	22.9	15.6	12.9	9.0	-1.7	-24.8	133.1	-19.8	-21.1
M.	-17.3	-14.2	-10.2	-12.1	-8.6	-9.3	-9.8	-9.7	-12.7	-9.4	-0.8	7.7	24.7	139.5	36.1	30.4	25.4	27.7	10.2	130.5	-8.2	-10.1	-18.1	-20.8
A.	-60.2	174.6	-15.3	-11.7	9.5	11.5	22.4	28.3	12.6	16.9	14.1	34.1	40.0	49.9	44.2	156.4	31.0	7.6	-31.4	-24.8	-34.2	-42.0	-43.4	-40.8
M.	-18.6	-31.7	-21.2	134.4	-12.7	8.5	4.2	-7.5	-10.2	-5.0	7.3	15.9	30.8	35.9	36.3	136.4	23.1	2.5	0.2	-6.5	-11.0	-12.6	-15.1	-14.6
J.	2.0	-26.2	-20.1	-16.1	-29.6	-26.6	130.1	-25.9	-13.8	-6.0	2.5	22.9	30.2	36.0	139.7	31.5	22.6	23.0	13.5	-0.3	-0.8	-8.2	-5.1	-14.7
J.	-7.3	-10.2	-15.2	-17.5	-24.9	-30.8	139.8	-33.8	-18.8	-1.8	20.9	30.3	135.3	34.0	32.3	25.0	13.7	9.0	6.0	9.4	11.1	5.7	1.4	
A.	-17.2	-13.1	-16.7	-18.2	-24.1	-26.0	133.1	-23.4	-5.9	7.1	19.4	29.5	36.5	138.8	33.9	29.6	26.4	23.3	1.6	-10.3	-9.2	-14.4	-4.7	
S.	-13.2	-26.3	129.9	-10.8	-16.5	-21.9	-23.0	-23.2	-14.9	-4.3	10.2	26.1	137.1	36.4	34.2	28.5	19.5	17.0	12.3	1.1	-8.2	-14.0	-13.5	-2.6
O.	-32.1	-42.1	-27.2	-20.6	0.6	11.2	9.5	11.1	5.7	13.2	27.8	42.0	47.9	134.7	47.1	34.8	27.8	7.6	-26.1	152.5	-34.8	-30.4	-47.4	-27.7
N.	-11.3	-11.1	-8.4	-2.0	-9.1	0.6	0.2	1.3	-3.9	-1.4	7.8	19.1	28.4	131.0	26.3	12.5	0.0	-5.8	-4.7	-6.2	-9.2	-12.7	-19.5	122.0
D.	-15.2	-5.4	-13.3	-7.4	0.4	10.6	7.4	12.6	5.8	12.3	17.8	23.6	133.8	26.9	17.1	4.3	-0.6	-13.1	-19.6	126.4	-18.6	-13.4	-19.3	-20.1
	-7.6	-0.2	2.8	4.6	9.6	14.8	14.8	8.6	13.4	13.4	14.9	17.3	19.9	120.1	9.3	-1.3	-4.9	-17.1	-14.7	-18.5	-25.3	127.0	-26.6	-20.2
Y.	-17.9	122.3	-15.1	-12.5	-8.6	-4.8	-5.8	-6.6	-6.9	0.0	9.1	21.6	31.2	135.7	32.8	26.9	17.8	8.5	-1.6	-13.2	-14.7	-16.8	-19.7	-17.3
W.	-14.2	-8.1	-6.7	-4.7	0.9	4.0	2.9	2.5	-0.2	2.8	8.5	14.6	25.1	128.3	23.4	14.1	8.9	2.6	-3.8	-19.3	-19.2	120.9	120.9	-20.5
Eq.	-30.6	139.9	-18.0	-17.2	-2.9	7.9	9.1	8.3	1.1	5.9	14.3	27.7	36.8	142.9	38.4	35.0	20.5	3.0	-15.5	-22.5	-22.3	-24.4	-31.3	-26.2
S.	-8.9	-19.0	-20.5	-15.7	-23.7	-26.3	-29.2	130.5	-21.5	-8.8	4.5	22.3	31.8	36.0	136.6	31.5	24.2	20.0	14.5	2.1	-2.5	-5.1	-6.8	-5.1
Eskdalemuir. LXc.—VERTICAL COMPONENT (Disturbed Days). 1920.																								
J.	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
F.	-5.7	-5.9	-5.8	-6.6	-8.2	110.7	-9.1	-8.3	-5.2	-6.0	-4.6	-3.7	-2.7	0.6	2.6	8.0	9.7	9.5	10.9	12.0	114.0	114.0	4.3	-3.1
M.	-15.2	-20.2	122.2	-21.5	-20.5	-20.3	-19.0	-17.8	-17.0	-19.6	-20.6	-18.1	-13.8	-9.8	7.2	15.9	19.6	35.1	138.9	75.9	32.3	5.8	-6.4	-13.7
A.	-21.6	-30.4	-26.8	-14.8	-15.9	-23.0	-30.7	130.8	-24.2	-22.2	-23.6	-25.4	-24.5	21.5	54.4	28.4	30.3	138.2	-2.9	54.7	49.0	10.9	-11.8	-8.9
M.	-29.0	-39.7	-46.3	147.8	-41.9	-43.0	-33.7	-23.4	-18.4	-11.7	-8.8	-4.3	10.2	33.1	31.5	42.2	138.1	57.2	48.9	46.0	25.8	12.1	1.8	-18.9
J.	136.3	-35.7	-25.7	-26.2	-25.0	-27.2	-18.1	-13.3	-11.1	-7.8	-7.6	-5.8	4.6	10.1	17.1	29.1	41.0	147.4	147.4	41.7	20.9	1.3	-6.0	-14.8
J.	116.8	-15.3	-11.4	-10.1	-9.8	-7.6	-3.1	-4.0	-8.5	-12.4	-12.9	-9.1	-5.2	-0.7	9.2	20.1	27.4	130.7	24.5	19.8	11.7	2.2	-7.5	-11.3
A.	-17.7	120.9	-13.7	-6.3	-1.9	-1.9	-1.7	-1.7	-7.9	-8.1	-11.3	-13.1	-7.1	-1.1	6.1	14.3	20.7	22.5	21.9	127.7	17.5	3.9	-4.3	-15.9
S.	-30.2	138.9	-37.6	-29.8	-17.9	-4.4	1.8	4.1	2.2	0.4	-0.9	-3.0	-2.6	5.5	16.6	24.4	31.3	135.4	33.7	18.0	-3.4	-21.3	-17.0	
O.	-30.4	137.1	-33.7	-36.5	-29.2	-25.4	-21.0	-15.5	-10.5	-3.7	0.4	3.2	9.8	20.7	40.3	51.1	60.4	163.4	48.8	4.9	-5.3	-5.7	-19.4	-29.0
N.	-14.8	-15.0	-18.8	-28.4	132.4	-22.2	-21.2	-16.2	-12.5	-9.7	-6.7	-3.5	-0.3	6.7	18.5	28.9	33.9	137.5	29.1	23.8	16.6	9.6	1.2	-4.0
D.	-23.6	-12.4	-11.0	-17.2	124.6	-18.8	-14.7	-11.1	-8.1	-4.5	-5.1	-3.5	-1.0	5.0	12.2	19.6	25.8	133.7	27.1	29.7	11.9	2.9	-1.9	-10.5
	-12.2	-10.4	-10.6	-12.1	-13.3	-15.9	-15.3	-10.4	-8.4	-2.2	0.6	1.9	6.9	13.7	20.9	26.0	127.4	27.0	18.4	17.5	10.1	-5.3	128.7	-25.6
Y.	-21.1	123.5	-22.0	-21.4	-20.0	-18.4	-15.5	-12.4	-10.8	-9.0	-8.5	-7.0	-2.1	8.8	19.7	25.7	32.1	140.5	32.8	32.3	18.5	4.0	-8.3	-14.4
W.	-14.2	-12.2	-12.4	-14.4	116.6	-16.4	-14.5	-11.9	-9.7	-8.1	-7.4	-5.8	-2.7	2.4	10.7	17.4	20.6	26.3	135.1	33.7	17.1	4		

LXd.-LXf.—SELECTED DISTURBED DAYS—DIURNAL INEQUALITIES.

Mean Hourly Values, Greenwich Mean Time, for the Months, Year, and Seasons.

Month and Season.	Hour 1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.
Eskdalemuir. LXd.—DECLINATION (measured positive towards the West).—Disturbed Days. 1920.																								
J.	-3.46	-2.48	-1.22	-0.85	-0.01	-1.05	-1.01	-1.01	-1.64	-0.61	1.22	3.11	5.60	5.91	x6.18	5.04	3.25	2.13	1.80	-0.56	-5.17	n̄6.49	-4.39	-4.30
F.	-3.49	-2.81	-2.27	-2.76	-2.17	-2.62	-2.77	-2.83	-2.89	-1.56	0.78	3.25	5.99	x8.56	8.09	7.00	5.49	4.92	0.83	n̄6.53	-1.27	-2.34	-4.30	-4.32
M.	n̄11.04	-10.36	-1.82	-4.22	0.06	2.17	4.55	4.71	2.60	4.03	3.92	6.60	7.18	8.99	8.81	x9.02	3.81	1.23	-7.05	-4.49	-6.13	-7.70	-7.71	-7.14
A.	-4.17	-6.78	-4.39	n̄8.12	-3.34	0.83	0.14	-1.78	-1.46	1.49	5.04	5.75	8.08	x9.12	8.13	6.65	2.67	-1.66	-0.99	-2.12	-3.42	-2.67	-3.35	-3.60
M.	0.24	-5.43	-4.26	-3.32	n̄5.91	-5.36	-5.57	-4.25	-1.07	0.80	3.52	7.15	7.79	x8.06	7.00	5.27	3.11	2.19	0.47	-2.33	-1.69	-1.83	-1.64	-2.96
J.	-1.67	-1.93	-2.94	-3.74	-5.31	-6.38	-6.66	n̄7.15	-4.92	-1.62	1.78	5.67	7.18	x7.68	7.22	6.13	3.71	1.53	0.07	-0.15	0.62	1.12	0.19	-0.44
J.	-3.69	-2.46	-3.62	-4.06	-5.11	-5.31	n̄6.04	-6.01	-3.04	0.56	3.17	5.29	6.95	x8.11	7.67	6.68	5.09	4.02	2.63	-1.16	-3.90	-1.93	-2.99	-0.87
A.	-3.11	-5.26	n̄5.85	-2.56	-3.99	-4.85	-4.51	-4.25	-1.67	1.60	4.74	6.92	x8.46	7.95	6.57	4.94	3.01	1.94	0.70	-1.40	-2.33	-2.63	-3.08	-1.31
S.	-6.01	-6.48	-5.79	-4.32	-0.82	1.91	2.04	2.21	1.44	3.84	6.89	9.77	9.89	x10.52	9.20	6.01	3.82	-0.48	-6.66	n̄10.69	-6.23	-5.35	-9.04	-5.68
O.	-3.21	-2.86	-2.64	-1.58	-2.74	0.19	-0.25	0.04	-0.46	0.50	3.17	5.20	6.43	x6.88	5.77	2.91	-0.45	-0.85	-0.76	-0.98	-2.07	-2.85	-4.44	n̄4.95
N.	-3.73	-1.69	-3.62	-2.37	-0.94	1.35	0.98	2.01	1.16	3.78	4.32	5.40	x7.59	6.44	4.21	2.45	0.87	-1.90	-4.25	n̄5.46	-4.10	-3.38	-4.64	-4.45
D.	-1.84	-0.48	-0.10	0.35	1.43	1.77	1.85	1.50	3.25	4.04	x4.31	4.03	4.05	4.21	2.48	0.51	-0.43	-3.53	-2.49	-3.42	-4.93	n̄6.21	n̄6.21	-4.14
Y.	-3.77	-4.09	-3.21	-3.13	-2.40	-1.45	-1.44	-1.40	-0.73	1.40	3.57	5.68	7.10	x7.70	6.78	5.22	2.83	0.80	-1.31	-3.27	-3.39	-3.52	n̄4.30	-3.68
W.	-3.13	-1.87	-1.80	-1.41	-0.42	-0.14	-0.24	-0.08	-0.03	1.41	2.66	3.95	5.81	x6.28	5.24	3.75	2.30	0.41	-1.03	-3.99	-3.87	-4.61	n̄4.89	-4.30
Eq.	-6.11	n̄6.62	-3.66	-4.56	-1.71	1.28	1.62	1.30	0.53	2.47	4.76	6.83	7.90	x8.88	7.98	6.15	2.46	-0.44	-3.87	-4.57	-4.46	-4.64	-6.14	-5.34
S.	-2.06	-3.77	-4.17	-3.42	-5.08	-5.48	n̄5.70	-5.42	-2.68	0.34	3.30	6.26	7.60	x7.95	7.12	5.76	3.73	2.42	0.97	-1.26	-1.83	-1.32	-1.88	-1.40
Eskdalemuir. LXe.—INCLINATION (Disturbed Days). 1920.																								
J.	0.02	0.11	-0.03	-0.18	-0.73	n̄1.33	-1.08	-0.95	-0.24	0.32	0.72	0.96	0.86	0.18	-0.47	0.31	0.12	-0.46	0.12	0.08	0.52	x1.02	-0.04	0.17
F.	-0.14	-0.24	-0.64	-0.69	-0.85	-1.17	-1.19	n̄1.24	-0.60	0.00	0.51	1.26	0.37	-0.18	0.54	0.90	0.53	-0.24	0.61	x1.91	1.33	-0.03	-0.59	-0.18
M.	1.51	x5.33	0.91	-2.18	-2.53	-0.89	-1.05	-2.24	-0.72	-0.12	0.36	-1.41	-2.13	-1.34	0.61	n̄2.64	-2.32	1.75	-0.39	2.28	2.54	1.69	1.45	1.52
A.	-0.90	-0.95	-0.98	-1.95	-1.70	n̄2.13	-1.69	-0.77	0.32	2.46	x3.50	2.41	1.81	2.32	1.13	-0.22	-1.02	-0.72	0.11	0.36	-0.50	0.35	-0.06	-0.97
M.	-1.11	-0.66	-0.56	-0.49	-0.13	-0.28	0.51	1.10	1.76	2.07	x3.01	2.26	1.50	0.61	-1.23	-0.88	-0.87	n̄1.77	-1.44	-1.30	-1.12	-0.03	-0.73	-0.14
J.	-0.54	-0.09	0.07	-0.22	-0.21	0.08	0.58	1.42	x2.38	2.30	2.01	1.04	0.61	0.10	0.14	-0.37	-1.11	-0.75	n̄1.40	-1.06	-1.21	-1.30	-1.32	-1.08
J.	-0.44	-0.15	-0.37	-0.32	0.02	0.24	0.40	1.14	x1.94	1.75	1.50	0.89	0.49	0.28	-0.56	-0.29	-0.86	-1.21	n̄2.02	-0.93	-1.40	0.14	0.01	-0.24
A.	-1.05	-0.55	-0.31	-1.00	-0.94	-0.27	0.51	0.90	1.71	x2.75	2.74	1.33	0.47	0.28	-0.42	-0.67	-0.48	-1.01	-1.23	-0.93	-0.17	0.34	-0.73	n̄1.24
S.	0.21	x1.86	-0.78	-0.79	n̄1.75	-1.16	-0.53	-0.57	-0.01	0.99	0.99	0.90	-0.21	-0.83	0.01	-0.33	-0.83	-0.70	0.08	0.78	1.21	1.13	0.77	-0.44
O.	-1.20	-0.89	-1.36	n̄1.95	-1.65	-0.48	-0.85	-0.65	0.09	0.63	x1.44	1.09	0.35	0.39	0.59	0.95	0.36	1.34	0.99	0.98	0.30	0.11	-0.25	-0.34
N.	-1.07	-0.87	-1.11	-1.27	n̄1.72	-1.47	-1.03	-1.03	-0.29	1.12	0.42	0.27	0.33	0.83	0.88	x2.15	1.72	1.82	0.63	0.98	0.18	-0.46	-0.59	-0.40
D.	-0.53	-0.74	-1.02	-0.99	-1.01	n̄1.92	-1.82	-0.63	0.20	1.22	1.20	0.39	-0.09	0.22	1.04	x1.50	1.36	0.84	1.19	1.04	0.82	-0.58	-1.25	-0.43
Y.	-0.44	0.18	-0.52	-1.00	n̄1.10	-0.90	-0.60	-0.29	0.55	1.29	x1.53	0.95	0.36	0.24	0.19	0.03	-0.28	-0.11	-0.23	0.34	0.21	0.20	-0.28	-0.31
W.	-0.43	-0.44	-0.70	-0.78	-1.08	n̄1.47	-1.28	-0.96	-0.23	0.66	0.71	0.72	0.37	0.26	0.50	x1.22	0.93	0.49	0.64	1.00	0.71	-0.01	-0.62	-0.21
Eq.	-0.10	1.34	-0.55	-1.72	n̄1.91	-1.17	-1.03	-1.06	-0.08	0.99	x1.57	0.75	-0.05	0.14	0.59	-0.56	-0.95	0.37	0.20	1.10	0.89	0.82	0.48	-0.06
S.	-0.79	-0.36	-0.29	-0.51	-0.32	-0.06	0.50	1.14	1.95	2.22	x2.32	1.38	0.77	0.32	-0.52	-0.55	-0.83	-1.19	n̄1.52	-1.08	-0.98	-0.21	-0.69	-0.68
Eskdalemuir. LXf.—HORIZONTAL FORCE (Disturbed Days). 1920.																								
J.	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
F.	-2.3	-3.8	-1.7	0.3	7.8	x15.9	12.8	11.1	1.6	-6.9	-12.4	n̄15.6	-13.8	-2.5	7.9	-1.7	1.7	10.3	2.3	3.2	-2.6	-10.0	2.1	-3.6
M.	-3.6	-3.9	1.3	2.4	5.1	9.9	10.7	11.8	2.6	-7.2	-15.3	n̄25.5	-10.7	-1.0	-5.3	-7.5	-0.6	16.6	x22.0	-0.4	-7.8	2.6	6.5	-2.5
A.	-30.5	n̄90.7	-23.6	27.0	31.8	4.8	4.3	22.1	1.7	-6.5	-14.2	11.6	22.7	28.0	11.1	x49.9	45.9	6.7	4.7	-13.7	-19.8	-21.2	-25.9	-26.0
M.	2.6	-0.6	-2.6	11.3	9.8	15.9	12.7	2.8	-11.6	-41.0	n̄55.4	-37.5	-23.2	-22.3	-5.2	18.9	x36.8	35.0	16.5	11.7	17.0	-0.7	1.6	7.5
J.	3.0	-3.4	-1.2	-2.5	-7.3	-6.0	-14.4	-21.3	-30.4	-33.6	n̄47.7	-35.8	-20.6	-5.3	24.7	23.9	28.1	x44.0	39.0	36.1	24.4	0.9	8.7	3.4
J.	1.8	-4.3	-5.3	-0.4	-0.5	-4.0	-9.8	-22.6	-38.6	n̄38.9	-34.8	-18.9	-10.9	-1.7	1.3	13.1	26.7	22.6	x30.0	23.2	22.4	20.1	16.8	11.9
A.	0.0	-5.5	0.5	2.4	-0.9	-4.3	-6.5	-17.7	n̄31.8	-29.2	-26.5	-18.1	-9.9	-4.5	10.6	9.6	20.5	26.4	x38.2	24.1	27.3	-0.6	1.7	-2.2
S.	4.4	-6.2	-9.3	3.9	7.3	2.4	-6.9	-11.9	-24.6	-40.8	n̄41.2	-21.0	-8.0	-2.1	12.5	19.1	18.8	27.6	x31.4	26.3	9.1	-6.3	2.9	12.3
O.	-14.4	n̄41.5	-0.8	-1.7	15.3	7.9	0.1	2.8	-3.7	-16.1	-14.9	-12.2	6.7	20.1	14.7	23.8	x34.7	34.0	16.9	-9.7	-20.0	-19.0	-18.6	-4.2
N.	12.5	7.7	13.4	x18.6	12.7	-1.1	4.9	3.8	-6.0	-13.0	n̄24.0	-17.6	-5.4	-3.4	-1.9	-3.5	7.2	-6.2	-4.0	-5.9	1.7	1.9	4.1	3.5
D.	7.3	8.4	12.5	12.5	x16.6	15.0	9.9	11.3	1.3	-18.3	-8.2	-5.3	-5.3	-10.5	-8.6	n̄24.8	-16.1	-14.6	0.7	-3.6	1.8	8.0	8.1	2.1
Y.	3.5	7.2	11.4	10.2	10.2	x22.7	21.4	5.5	-6.0	n̄19.0	-17.7	-5.1	3.8	1.8	-7.7	-12.8	-10.1	-2.5	-10.9	-9.1	-8.4	6.7	8.0	-3.1
Y.	-1.3	-11.4	-0.5	7.0	9.0	6.6	3.3	-0.2	-12.1	-22.5	n̄26.0	-16.8	-6.2	-0.3	4.5	9.0	16.1	x16.7	15.6	6.9	3.8	-1.5	1.1	-0.6
W.	1.2	2.0	5.9	6.4	9.9	x15.9	13.7	9.9	-0.1	-12.9	n̄13.4	-12.9	-6.5	-3.1	-3.4	-11.7	-6.3	2.5	3.5	-2.5	-4.3	1.8	6.2	-1.8
Eq.	-7.5	n̄31.3	-3.4	13.8	17.4	6.9	5.5	7.9	-4.9	-19.2	-27.1	-13.9	0.2	5.6	4.7	22.3	x31.2	17.4	8.5	-4.4	-5.3	-9.8	-9.7	-4.8
S.	2.3	-4.9	-3.8	0.9	-0.4	-3.0	-9.4	-18.4	-31.4	-35.6	n̄37.6	-23.5	-12.4	-3.4	12.3	16.4	23.5	30.2	x34.7	27.4	20.8	3.5	6.7	4.7

* and n̄ mark respectively the mean maximum and minimum hourly values in each month or season.
 Note—The corrections formerly applied on account of the effect of the N. Force on the W. Magnetograph, etc., have been ignored this year as insignificant.

LXIa.—LXIb.—LXII.—DIURNAL INEQUALITIES OF DECLINATION AND HORIZONTAL FORCE.

Mean Hourly Values, Greenwich Mean Time, for the Months, Year, and Seasons.

Table LXIa.—DECLINATION (measured positive towards the West) (Ordinary days). 1920. Richmond (Kew Observatory). Columns: Month and Season, Hour 1-24, Midt. Rows: J.F.M., A.M., J.J.A.S., O.N.D., Y., W., Eq., S.

Table LXIb.—DECLINATION (Quiet days). 1920. Richmond (Kew Observatory). Columns: Month and Season, Hour 1-24, Midt. Rows: J.F.M., A.M., J.J.A.S., O.N.D., Y., W., Eq., S.

Table LXII.—HORIZONTAL FORCE (Quiet days). 1920. Richmond (Kew Observatory). Columns: Month and Season, Hour 1-24, Midt. Rows: J.F.M., A.M., J.J.A.S., O.N.D., Y., W., Eq., S.

z and n̄ mark respectively the mean maximum and minimum hourly values in each month or season.

LXIII.—RANGE OF MEAN DIURNAL INEQUALITIES FOR THE MONTHS, YEAR, AND SEASONS OF 1920, AT ESKDALEMUIR AND RICHMOND (KEW OBSERVATORY).

Note.—The ranges are those shown in Tables XLIX. to LXII., in the preparation of which the non-cyclic change has been eliminated (see Table LXIIIa).

Month and Season.	ESKDALEMUIR.																		RICHMOND.		
	"All" Days.			Quiet Days.			Disturbed Days.			"All" Days.			Quiet Days.			Disturbed Days.			'Ordinary' Days.	Quiet Days.	
	N.	W.	V.	N.	W.	V.	N.	W.	V.	D.	I.	H.	D.	I.	H.	D.	I.	H.	D.	D.	H.
	γ	γ	γ	γ	γ	γ	γ	γ	γ	'	'	γ	'	'	γ	'	'	γ	'	'	γ
J.	28.7	36.5	14.1	21.9	22.1	6.8	37.9	64.1	24.7	7.81	1.75	24.8	5.27	1.28	18.1	12.67	2.35	31.5	7.12	5.39	18.5
F.	33.7	37.3	25.6	24.1	29.9	10.7	48.9	70.0	106.1	8.60	1.92	28.7	6.71	1.13	19.1	15.09	3.15	47.5	7.52	6.51	17.7
M.	36.2	46.0	28.3	42.5	43.9	14.2	110.6	131.0	119.0	10.56	2.04	34.5	9.97	2.50	39.8	20.06	7.97	140.6	9.05	10.02	35.3
A.	54.9	53.9	33.2	50.0	47.4	19.6	95.9	70.8	105.9	11.82	3.06	55.4	10.59	3.06	47.3	17.24	5.63	92.2	11.36	9.95	41.5
M.	58.9	49.2	29.3	47.0	41.9	22.5	89.7	69.8	83.7	10.87	3.31	59.6	9.11	2.74	46.4	13.97	4.78	91.7	10.14	8.86	36.6
J.	55.3	59.9	25.6	58.9	64.5	26.0	64.4	75.1	47.5	12.37	3.50	58.7	14.18	3.59	59.7	14.83	3.78	68.9	11.66	13.13	51.4
J.	49.8	57.8	24.0	52.1	58.6	14.7	62.7	71.9	48.6	12.17	2.94	51.5	11.77	3.26	52.1	14.15	3.96	70.0	11.39	11.60	47.1
A.	58.6	54.6	22.5	55.1	52.6	16.4	75.2	67.0	74.3	11.90	3.37	57.0	10.88	3.38	54.0	14.31	3.99	72.6	11.23	10.72	48.1
S.	40.2	50.6	38.3	37.4	39.1	11.4	63.8	107.2	100.5	11.62	1.89	35.6	8.79	2.06	33.2	21.21	3.61	76.2	9.43	8.74	28.6
O.	36.7	41.2	23.9	30.7	35.1	8.2	47.4	53.0	69.9	9.58	2.29	32.3	7.92	1.83	29.6	11.83	3.39	42.6	8.82	7.97	29.1
N.	22.4	31.1	20.6	19.6	22.1	8.3	44.4	60.2	58.3	7.04	1.32	17.0	4.99	0.98	14.2	13.05	3.87	41.4	6.15	4.35	14.4
D.	20.0	28.3	16.8	8.8	18.0	6.0	43.1	47.1	56.1	6.18	1.64	18.5	3.54	0.69	9.5	10.52	3.42	41.7	5.08	3.46	13.4
Y.	35.8	38.9	20.7	33.7	36.5	11.8	46.6	58.0	64.0	8.42	1.83	34.6	8.04	1.95	32.7	12.00	2.63	42.7	8.12	7.91	28.3
W.	25.2	31.1	17.1	18.4	21.4	5.4	33.3	49.2	51.7	6.93	1.49	20.9	4.90	0.93	13.8	11.17	2.69	29.3	6.17	4.61	13.9
Eq.	39.2	44.4	28.7	38.2	40.3	11.6	58.9	82.8	93.5	10.15	2.27	37.7	9.11	2.18	35.8	15.50	3.48	62.5	9.34	9.17	31.4
S.	55.7	55.1	25.1	51.9	53.9	19.8	72.4	67.1	61.2	11.63	3.21	56.1	11.46	3.16	51.7	13.65	3.84	72.3	10.90	10.92	44.6

LXIIIa.—NON-CYCLIC CHANGE (24h—0h) FOR THE MONTHS OF 1920 AT TWO OBSERVATORIES.

Month.	ESKDALEMUIR.									RICHMOND.		
	"All" Days.			Quiet Days.			Disturbed Days.			'Ordinary' Days.	Quiet Days.	
	N.	W.	V.	N.	W.	V.	N.	W.	V.	D.	D.	H.
January	γ	γ	γ	γ	γ	γ	γ	γ	γ	'	'	γ
February	0.4	0.5	0.1	0.6	1.2	0.3	4.8	16.8	5.6	0.02	0.22	3.0
March	0.9	1.7	0.3	2.4	3.6	0.8	17.5	25.0	0.3	0.30	0.44	0.6
April	2.2	0.1	1.8	6.0	9.2	2.0	44.3	81.7	65.7	0.17	1.06	6.4
May	0.4	1.5	2.8	5.4	2.0	1.8	4.0	1.6	16.4	0.18	0.04	7.2
June	0.6	1.5	1.6	2.4	0.4	0.6	6.2	3.6	8.8	0.02	0.10	1.5
July	1.4	0.1	0.6	5.0	3.6	1.8	11.3	0.3	2.8	0.11	0.12	2.9
August	0.0	0.5	0.0	4.2	1.8	1.2	11.6	6.6	0.0	0.06	0.10	5.4
September	0.5	0.2	0.0	4.0	4.2	0.8	10.8	8.2	6.4	0.11	0.36	4.5
October	0.8	1.1	1.4	4.8	1.0	7.6	27.0	0.8	18.4	0.12	0.00	0.1
November	0.6	0.2	1.2	2.6	2.0	4.4	6.4	8.2	14.6	0.22	0.22	3.1
December	1.0	0.8	0.2	4.2	3.2	2.8	6.3	4.0	4.4	0.06	0.34	4.4
	0.0	0.0	0.5	0.8	2.0	0.0	1.8	0.2	0.6	0.27	0.18	0.9

LXIIIb.—MEAN VALUES OF THE SQUARES OF THE ABSOLUTE DAILY RANGES OF THE GEOGRAPHICAL COMPONENTS OF TERRESTRIAL MAGNETIC FORCE.*

Eskdalemuir.

(Unit $1\gamma^2$).

1920.

Month and Year.	R_N^2	R_W^2	R_V^2	$R_N^2 + R_W^2$	$R_N^2 + R_W^2 + R_V^2$	Mean Character Figure.
January	4223	5653	1025	9877	10901	0.45
February	5775	9458	6291	15233	21524	0.54
March	43889	34015	25678	77903	103581	0.87
April	12223	10004	6905	22227	29131	0.80
May	10949	6807	3856	17756	21612	0.58
June	7328	6315	1269	13643	14912	0.37
July	8071	7462	2707	15533	18240	0.32
August	10628	8215	4028	18843	22872	0.35
September	23176	16753	16110	39929	56038	0.73
October	6008	8589	3340	14597	17937	0.55
November	5124	4466	2419	9590	12009	0.60
December	5492	5460	2775	10952	13727	0.65
Year 1920	11907	10266	6449	22174	28540	0.57
Year 1919	16237	13779	9179	30113	38890	0.73
Year 1918	15101	12598	7542	27757	35344	0.68
Year 1917	14535	12058	7842	26593	34435	0.65
Year 1916	12508	10172	8269	22680	30949	0.74
Year 1915	10066	9542	3808	19608	23416	0.86
Year 1914	4606	4333	1632	8939	10571	0.71
Year 1913	3097	3320	—	6417	—	0.58
Year 1912	3591	3402	—	6993	—	0.69
Year 1911	7655	6103	2514	13758	16272	0.85

The data for 2, 4, 25 Jan., 8 Feb., 10 June, and 26 Nov. have been excluded, owing to imperfection of record on these dates.

* See footnote on page 63.

LXIV.—HARMONIC COMPONENTS OF THE DIURNAL INEQUALITY.*

Values of a_n, b_n in the series $\Sigma (a_n \cos 15nt^\circ + b_n \sin 15nt^\circ)$, t being reckoned in hours from midnight G.M.T.

Eskdalemuir.

(Longitude of Eskdalemuir Observatory, 3° 12' W.)

1920.

Month and Season.	North Component.								West Component.								Vertical Component.							
	$a_1.$	$b_1.$	$a_2.$	$b_2.$	$a_3.$	$b_3.$	$a_4.$	$b_4.$	$a_1.$	$b_1.$	$a_2.$	$b_2.$	$a_3.$	$b_3.$	$a_4.$	$b_4.$	$a_1.$	$b_1.$	$a_2.$	$b_2.$	$a_3.$	$b_3.$	$a_4.$	$b_4.$
<i>All Days.</i>																								
J.	5.9	4.2	-6.3	-2.1	4.0	-1.3	-0.2	0.5	-9.6	-3.5	-2.7	8.5	-1.1	-0.7	1.5	2.6	1.6	-5.6	-0.6	-1.6	-0.3	-0.2	-1.2	-0.6
F.	9.1	4.8	-7.2	-3.2	3.9	0.1	-0.1	0.7	-9.1	-9.3	-2.5	8.3	-1.0	-3.1	0.4	2.0	2.5	-9.5	-3.8	-3.2	-0.3	-0.1	-0.6	0.4
M.	11.7	-0.1	-10.4	-2.3	3.2	-2.0	0.6	-0.2	-12.5	-9.8	-0.4	9.4	-1.0	-5.6	0.8	1.6	1.6	-10.7	-6.8	-4.1	-0.4	-0.1	-1.9	-0.6
A.	20.0	-3.7	-13.8	-1.1	5.4	-0.8	0.5	1.1	-9.9	-16.3	1.2	9.4	-1.8	-6.8	1.9	1.3	-0.1	-13.6	-6.5	-3.3	1.7	0.2	-0.9	-0.4
M.	18.6	-9.8	-12.5	0.6	1.2	-0.3	0.8	1.6	-5.8	-17.8	5.7	7.2	-2.7	-0.5	0.6	0.6	3.2	-8.7	-7.3	-1.8	0.7	0.3	-0.3	0.3
J.	17.8	-8.7	-13.1	2.3	1.5	-0.1	0.6	0.0	-4.2	-23.7	5.1	10.0	-1.9	-2.8	0.2	0.1	6.7	-3.1	-6.2	-2.2	0.6	0.6	0.0	0.1
J.	16.3	-7.2	-11.1	-0.1	0.5	-0.8	0.2	0.9	-6.8	-22.3	4.5	9.4	-2.6	-1.7	-0.3	0.6	4.0	-5.0	-7.1	-2.2	0.2	0.3	-0.5	-0.6
A.	18.3	-8.4	-12.0	1.4	1.3	-1.7	1.4	1.6	-10.0	-17.8	5.6	8.8	-4.0	-2.5	1.0	1.5	-0.3	-7.1	-7.4	-2.6	1.9	-0.3	-0.6	-0.1
S.	12.3	-4.4	-9.1	0.8	1.1	-2.5	0.4	0.0	-16.9	-11.4	2.4	7.1	-3.0	-4.3	1.6	1.5	-5.9	-11.7	-8.4	-1.1	1.1	0.8	-0.6	-1.2
O.	14.2	2.7	-7.2	-0.1	3.2	-2.0	-0.2	0.6	-12.3	-6.1	1.0	8.1	-3.4	-3.3	1.0	2.7	-0.1	-10.8	-3.2	-0.6	1.3	0.9	-1.0	-0.2
N.	7.5	4.5	-3.7	-1.1	0.7	-2.4	-0.3	1.0	-11.4	-1.9	1.4	4.7	-0.6	-0.5	0.9	1.1	-0.2	-9.2	-2.7	-0.7	-0.1	0.5	0.0	-0.3
D.	4.3	5.3	-3.0	-1.6	0.3	-2.0	1.2	0.4	-10.7	2.4	0.3	3.1	-1.3	0.0	0.5	1.1	-1.5	-7.6	-2.3	0.8	-0.6	0.9	-0.8	-0.1
Y.	13.0	-1.7	-9.1	-0.5	2.2	-1.3	0.4	0.7	-9.9	-11.5	1.8	7.8	-2.1	-2.6	0.8	1.4	1.0	-8.6	-5.2	-1.9	0.5	0.3	-0.7	-0.3
W.	6.7	4.7	-5.0	-2.0	2.2	-1.4	0.2	0.7	-10.2	-3.1	-0.9	6.2	-1.0	-1.1	0.8	1.7	0.6	-8.0	-2.4	-1.2	-0.3	0.3	-0.6	-0.1
Eq.	14.6	-1.3	-10.1	-0.7	3.2	-1.8	0.4	0.4	-12.9	-10.9	1.0	8.5	-2.3	-5.0	1.3	1.8	-1.1	-11.7	-6.2	-2.3	0.9	0.5	-1.1	-0.6
S.	17.8	-8.5	-12.2	1.1	1.1	-0.7	0.7	1.0	-6.7	-20.4	5.2	8.8	-2.8	-1.8	0.4	0.7	3.4	-6.0	-7.0	-2.2	0.9	0.2	-0.3	-0.1
<i>Quiet Days.</i>																								
Y.	12.8	-1.4	-8.5	0.1	2.2	-1.2	0.1	0.7	-5.3	-10.9	3.1	6.6	-2.8	-2.7	0.8	1.4	2.9	-1.5	-2.9	-0.8	1.3	0.3	-0.4	-0.3
W.	4.4	1.6	-4.8	-1.1	1.8	-1.0	-0.3	0.2	-6.7	-4.6	0.5	3.5	-1.8	-1.0	0.8	1.3	0.9	-2.5	-0.3	0.0	0.6	-0.3	-0.3	-0.3
Eq.	15.6	0.8	-8.9	-0.8	3.2	-1.3	-0.5	1.3	-3.8	-9.5	3.2	7.7	-3.5	-4.3	1.4	2.4	2.6	-1.3	-3.0	-1.3	1.7	0.5	-0.8	-0.3
S.	18.4	-6.5	-11.8	2.2	1.4	-1.2	0.9	0.6	-5.4	-18.6	5.8	8.7	-3.0	-2.8	0.1	0.5	5.2	-0.7	-5.5	-1.2	1.6	0.7	-0.2	-0.4
<i>Disturbed Days.</i>																								
Y.	12.1	-3.2	-12.0	0.8	1.8	-2.2	1.6	1.0	-20.6	-10.5	0.2	9.7	0.6	-4.2	1.6	0.3	-4.4	-26.2	-10.6	-3.2	-0.6	1.8	-1.1	0.3
W.	10.8	6.2	-5.6	-2.9	1.5	-2.9	1.1	2.5	-17.8	-1.2	-1.4	9.2	0.2	-2.4	0.8	1.9	-0.7	-20.5	-8.2	-3.3	-3.5	2.9	-2.1	2.1
Eq.	7.3	-3.4	-15.1	3.7	3.5	-1.7	2.3	-2.5	-31.0	-5.7	-3.2	9.4	3.4	-8.3	1.7	-0.8	-7.4	-36.9	-10.6	-0.6	2.3	1.9	-1.0	-1.5
S.	18.2	-12.4	-15.4	1.7	0.5	-2.0	1.2	3.1	-13.2	-24.6	5.2	10.6	-1.7	-1.9	2.3	-0.3	-5.2	-21.1	-12.9	-5.6	-0.5	0.6	-0.1	0.4

LXIVa.—HARMONIC COMPONENTS OF THE DIURNAL INEQUALITY.*

Values of c_n, α_n in the series $\Sigma c_n \sin (15nt^\circ + \alpha_n)$, t being Mean Local Time reckoned in hours from midnight.

Eskdalemuir.

(Longitude of Eskdalemuir Observatory, 3° 12' W.)

1920.

Month and Season.	North Component.								West Component.								Vertical Component.							
	$c_1.$	$\alpha_1.$	$c_2.$	$\alpha_2.$	$c_3.$	$\alpha_3.$	$c_4.$	$\alpha_4.$	$c_1.$	$\alpha_1.$	$c_2.$	$\alpha_2.$	$c_3.$	$\alpha_3.$	$c_4.$	$\alpha_4.$	$c_1.$	$\alpha_1.$	$c_2.$	$\alpha_2.$	$c_3.$	$\alpha_3.$	$c_4.$	$\alpha_4.$
<i>All Days.</i>																								
J.	7.2	54.6	6.7	251.2	4.2	107.4	0.5	342.7	10.3	249.9	8.9	342.6	1.4	236.9	3.0	29.9	5.8	163.8	1.7	201.9	0.3	236.1	1.3	242.9
F.	10.3	62.5	7.8	246.0	3.9	88.1	0.7	353.3	13.0	224.3	8.7	343.2	3.3	197.9	2.0	12.6	9.8	165.2	5.0	230.5	0.3	247.9	0.8	304.1
M.	11.7	90.3	10.6	257.6	3.7	121.6	0.6	108.8	15.9	231.8	9.4	357.7	5.7	190.5	1.8	25.8	10.9	171.4	7.9	238.6	0.4	257.3	2.0	252.5
A.	20.3	100.5	13.9	265.5	5.4	98.4	1.2	26.4	19.0	211.3	9.4	7.1	7.0	194.9	2.3	55.3	13.6	180.4	7.3	242.9	1.7	83.6	1.0	247.2
M.	21.0	117.7	12.5	272.8	1.3	103.8	1.8	27.6	18.7	198.2	9.2	38.3	2.8	260.3	0.9	43.6	9.3	159.8	7.5	255.8	0.8	70.2	0.4	320.4
J.	19.8	115.9	13.3	280.0	1.5	93.2	0.6	93.3	24.1	190.1	11.2	27.1	3.4	214.9	0.3	63.8	7.3	114.8	6.6	251.0	0.9	46.3	0.1	23.5
J.	17.8	113.9	11.1	269.4	0.9	146.8	0.9	10.2	23.3	197.1	10.4	25.9	3.1	237.0	0.6	336.0	6.4	141.1	7.4	252.5	0.3	31.4	0.7	217.5
A.	20.2	114.7	12.0	276.9	2.1	141.4	2.1	40.7	20.4	209.5	10.4	32.5	4.7	238.6	1.9	33.9	7.1	182.3	7.8	250.6	1.9	99.7	0.6	263.5
S.	13.1	109.5	9.1	275.2	2.7	156.1	0.6	89.4	20.4	236.1	7.4	18.8	5.3	214.9	2.2	46.4	13.0	206.7	8.4	262.8	1.4	52.8	1.4	206.9
O.	14.5	79.2	7.2	268.9	3.8	121.9	0.6	342.7	13.7	243.4	8.2	6.7	4.7	226.5	2.8	20.6	10.8	180.5	3.2	258.9	1.5	56.1	1.0	258.2
N.	8.7	59.0	3.9	252.8	2.5	163.7	1.0	343.0	11.5	260.7	4.9	16.7	0.8	230.7	1.4	38.9	9.2	181.1	2.8	255.1	0.5	347.6	0.3	178.5
D.	6.8	39.3	3.4	242.6	2.1	170.6	1.2	71.8	11.0	282.7	3.1	5.3	1.3	272.0	1.2	22.7	7.7	191.3	2.4	289.6	1.1	324.7	0.8	266.0
Y.	13.1	97.6	9.1	266.6	2.6	120.6	0.8	32.4	15.2	221.0	8.0	12.9	3.3	217.9	1.6	31.3	8.6	173.5	5.5	250.1	0.6	58.0	0.7	249.0
W.	8.2	55.1	5.4	248.3	2.6	121.7	0.7	13.4	10.7	253.2	6.2	351.9	1.5	223.4	1.9	25.8	8.0	175.6	2.6	243.8	0.4	309.2	0.6	259.2
Eq.	14.6	95.3	10.1	266.2	3.7	119.4	0.5	47.8	16.9	229.8	8.5	6.9	5.5	205.0	2.2	36.7	11.7	185.4	6.6	249.8	1.0	64.1	1.2	241.3
S.	19.7	115.6	12.2	275.0	1.3	121.8	1.3	35.8	21.5	198.3	10.3	30.6	3.4	236.8	0.8	29.2	6.9	150.3	7.3	252.5	0.9	76.6	0.3	258.3
<i>Quiet Days.</i>																								
Y.	12.9	96.0	8.5	270.6	2.5	118.6	0.7	6.1	12.1	205.8	7.3	25.4	3.9	225.8	1.6	28.3	3.2	117.4	3.0	253.9	1.3	78.1	0.6	231.8
W.	4.7	70.5	5.0	257.3	2.1	118.5	0.3	312.7	8.1	235.6	3.5	7.9	2.0	240.4	1.5	31.6	2.6	160.9	0.3	269.1	0.7	113.8	0.5	223.8
Eq.	15.6	86.9	9.0	264.7	3.5	111.9	1.4	340.3	10.3	201.6	8.3	22.3	5.5	219.7	2.8	29.8	2.9	116.3	3.2	245.9	1.8	75.2	0.9	246.7
S.	19.5	109.3	12.0	280.5	1.9	131.3	1.1	57.8	19.3	196.1	10.4	33.6	4.1	226.7	0.5	9.4	5.2	97.8	5.7	257.7	1.7	67.7	0.4	210.2
<i>Disturbed Days.</i>																								
Y.	12.5	104.9	12.1	274.0	2.8	140.5	1.9	56.2	23.2	243.1	9.7	1.1	4.2	171.6	1.6	81.0	26.5	189.6	11.1	253.2	1.9	342.1	1.1	288.0
W.	12.5	60.2	6.3	242.7	3.3	153.4	2.7	24.1	17.8	266.2	9.3	351.3	2.4	176.2	2.1	24.4	20.5	182.0	8.9	247.9	4.6	309.7	3.0	314.6
Eq.	8.0	115.1	15.5	283.9	3.9	116.0	3.4	136.5	31.5	259.7	9.9	341.2	2.0	157.8	1.9	116.9	37.6	191.3	10.6	266.7	3.0	51.6	1.8	213.4
S.	22.1	124.3	15.5	276.4	2.0	165.8	3.4	21.3	27.9	208.1	11.8	26.2	2.5	221.8	2.3	96.2	21.8	193.9	14.1	246.6	0.8	315.7	0.5	342.7

* See Notes on the Management of Instruments, page 61.

LXVII.—MEAN MONTHLY AND ANNUAL VALUES OF TERRESTRIAL MAGNETIC ELEMENTS AT THE METEOROLOGICAL OFFICE OBSERVATORIES, 1920.

data 1920

1920.	RICHMOND (KEW OBS.) (quiet days D and H , absolute observations I).				ESKDALEMUIR. (all days except those noted in monthly tables).				CAHIRCIVEEN (VALENCIA OBS.) (in general 2 absolute observations per month).			
	North.	West.	Vertical.	Total.	North.	West.	Vertical.	Total.	North.	West.	Vertical.	Total.
					-13	-3	-26	-39				
January	17818	4641	43301	47054	15987	4863	45062	48061	16849	5930	44448	47903
February	17823	4638	43314	47067	15989	4867	45057	48057	16834	5904	44331	47786
March	17813	4630	43282	47033	15980	4862	45067	48063	16828	5901	44355	47805
April	17823	4625	43326	47076	15976	4854	45033	48029	16812	5897	44337	47783
May	17826	4621	43254	47010	15985	4853	45019	48019	16843	5897	44354	47809
June	17827	4617	43327	47078	16001	4840	45040	48042	16842	5890	44316	47773
July	17831	4616	43298	47053	16005	4833	45054	48056	16827	5886	44327	47778
August	17826	4607	43299	47051	16001	4824	45060	48059	16836	5890	44363	47815
September	17814	4601	43314	47060	15989	4816	45070	48064	16832	5899	44342	47796
October	17818	4597	43294	47042	15989	4813	45090	48082	16841	5880	44314	47769
November	17823	4593	43279	47030	15989	4807	45100	48091	16849	5886	44400	47853
December	17826	4590	43280	47032	15991	4803	45093	48085	16856	5890	44345	47805
Year 1920.. . . .	17822	4615	43297	47049	15990	4836	45062	48059	16837	5896	44353	47806
Year 1919.. . . .	17815	4667	43305	47058	15985	4880	45084	48082	16823	5942	44385	47837
Year 1918.. . . .	17814	4720	43361	47115	15973	4925	45067	48067	16810	5987	44407	47858
Year 1917.. . . .	17809	4770	43366	47122	15976	4971	45093	48097	16808	6024	44448	47900
Year 1916.. . . .	17816	4823	43395	47156	15986	5020	45119	48130	16803	6078	44473	47929
Year 1915.. . . .	17808	4874	43376	47141	16001	5075	45173	48191	16785	6130	44519*	47972*
Year 1910.. . . .	17781	5117	43546	47313	15976	5311	45343	49368	16732	6337	44771	48215
Year 1905.. . . .	17743	5272	43742	47496	..	..	..	..	..	..	..	..
1920.	Declination (West).	Inclination (North).	Horizontal Force.	Declination (West).	Inclination (North).	Horizontal Force.	Declination (West).	Inclination (North).	Horizontal Force.			
						-13						
January	14 36.0	66 57.8	18413	16 55.1	69 39.2	16710	19 23.4	68 6.4	17862			
February	14 35.2	66 57.9	18417	16 55.8	69 38.9	16713	19 19.7	68 4.8	17839			
March	14 34.2	66 57.8	18405	16 55.4	69 39.8	16703	19 19.4	68 5.9	17832			
April	14 32.8	66 58.5	18413	16 54.0	69 39.4	16697	19 19.7	68 6.5	17816			
May	14 31.9	66 56.3	18415	16 53.3	69 38.5	16705	19 17.8	68 5.0	17845			
June	14 31.2	66 58.4	18415	16 49.8	69 38.2	16717	19 16.5	68 4.2	17842			
July	14 30.8	66 57.3	18419	16 48.2	69 38.4	16719	19 16.8	68 5.5	17827			
August	14 29.4	66 57.8	18412	16 46.6	69 39.1	16712	19 16.9	68 5.8	17837			
September	14 28.9	66 59.1	18399	16 45.8	69 40.2	16699	19 18.9	68 5.3	17836			
October	14 28.0	66 58.4	18401	16 45.2	69 40.7	16698	19 14.7	68 4.4	17838			
November	14 27.0	66 57.7	18405	16 44.0	69 41.1	16696	19 15.3	68 6.1	17847			
December	14 26.4	66 57.6	18407	16 43.1	69 40.9	16697	19 15.6	68 4.1	17855			
Year 1920.. . . .	14 31.0	66 57.9	18410	16 48.7 49.7	69 39.5	16706	19 17.9	68 5.3	17840			
Year 1919.. . . .	14 40.9	66 57.7	18416	16 58.7	69 39.6	16713	19 27.2	68 6.1	17842			
Year 1918.. . . .	14 50.4	66 58.4	18429	17 8.1	69 39.0	16715	19 36.2	68 6.5	17844			
Year 1917.. . . .	14 59.6	66 58.0	18437	17 17.1 16.3	69 38.6	16732	19 43.0	68 6.9	17855			
Year 1916.. . . .	15 8.8	66 57.5	18457	17 26.1	69 37.6	16756	19 53.1	68 6.6	17869			
Year 1915.. . . .	15 18.4	66 56.6	18463	17 35.9	69 36.9	16786	20 3.8	68 7.9*	17869			
Year 1910.. . . .	16 3.2	66 58.7	18503	18 23.3	69 37.8	16836	20 44.6	68 13.0	17892			
Year 1905.. . . .	16 32.9	67 3.8	18510	..	..	..	..	..	..

* Mean of 11 months.

LXVIIIa.—MEAN VALUES, FOR THE YEARS SPECIFIED, OF THE MAGNETIC ELEMENTS AT OBSERVATORIES.
DERIVED FROM PUBLICATIONS RECEIVED AT KEW OBSERVATORY, RICHMOND.

Place.	Latitude.	Longitude.	1920.				1919.				1918.			
			Declination.	Inclination.	Horizontal Force.	Vertical Force.	Declination.	Inclination.	Horizontal Force.	Vertical Force.	Declination.	Inclination.	Horizontal Force.	Vertical Force.
	N.	° ' "	° ' "	N.	γ	γ	° ' "	N.	γ	γ	° ' "	N.	γ	γ
Sitka (Alaska)	57 3	135 20 W.	..	..	..	..	..	..	..	..	30 24.9 E.	74 23.8	15580	55790
Rude Skov	55 51	12 27 E.	7 57.2 W.	68 59.6	17124	44596	8 7.4 W.	68 58.2	17144	44592	8 17.1 W.	68 56.5	17167	44587
Eskdalemuir	55 19	3 12 W.	16 49.7 W.	69 39.5	16706	45062	16 58.7 W.	69 39.6	16713	45084	17 8.1 W.	69 39.0	16715	45067
Meanook	54 37	113 21 W.	4.8	..	..	..	27 41.1 E.	77 54.2	12944	60400	27 44.3 E.	77 54.5	12938	60393
Stonyhurst	53 51	2 28 W.	15 52.9 W.	68 43.5	17300	44433	15 58.6 W.	68 43.1	17286	44376	16 8.6 W.	68 43.3	17330	44501
Potsdam	52 23	13 4 E.	7 29.4 W.	66 33.5	18606	42912	7 39.7 W.	66 32.3	18625	42913	7 49.3 W.	66 30.9	18646	42913
Seddin	52 17	13 1 E.	7 31.2 W.	66 30.6	18645	42899	7 41.3 W.	66 29.4	18663	42899	7 50.8 W.	66 27.7	18687	42899
De Bilt (Utrecht)	52 5	5 11 E.	11 24.2 W.	66 51.8	18397	43056	11 34.3 W.	66 51.5	18410	43075	11 44.0 W.	66 50.7	18424	43081
Valencia (Ireland)	51 56	10 15 W.	19 17.9 W.	68 5.3	17840	44353	19 27.2 W.	68 6.1	17842	44385	19 36.2 W.	68 6.5	17844	44407
Kew (Richmond)	51 28	0 19 W.	14 31.0 W.	66 57.9	18410	43297	14 40.9 W.	66 57.7	18416	43305	14 50.4 W.	66 58.4	18429	43361
Greenwich	51 28	0 0	14 8.6 W.	66 51.8	18456	43192	14 18.2 W.	66 53.3	18454	43242	14 27.8 W.	66 52.8	18464	43247
Val Joyeux (near Paris)	48 49	2 1 E.	12 53.0 W.	64 41.6	19666	41591	13 2.9 W.	64 43.1	19667	41643	13 12.4 W.	64 43.2	19680	41669
O'Gyalla	47 53	18 12 E.	..	..	..	..	..	..	..	..	5 21.9 W.	..	20917	..
Pola	44 52	13 51 E.	..	..	..	..	..	..	..	..	7 11.0 W.	60 9.0	22113	38533
Agincourt (Toronto)	43 47	79 16 W.	6 45.4 W.	74 44.6	15865	58166	6 41.0 W.	74 44.9	15885	58260	6 38.3 W.	74 44.8	15916	58366
Tortosa	40 49	0 30 E.	11 59.3 W.	57 39.4	23291	36781	12 7.6 W.	57 41.1	23291	36821	12 16.1 W.	57 42.8	23298	36872
Coimbra	40 12	8 25 W.	..	..	..	..	15 29.4 W.	58 25.0	23075	37538	15 35.6 W.	58 26.7	23062	37545
Cheltenham (Maryland)	38 44	76 50 W.	6 18.5 W.	70 55.4	19118	55285	6 15.0 W.	70 54.4	19168	55371	6 12.4 W.	70 53.0	19221	55456
San Fernando	36 28	6 12 W.	..	..	..	..	14 8.5 W.	53 44.6	25101	..	14 12.4 W.	54 2.2	24976	34423
Tsingtau	36 4	120 19 E.	4 12.9 W.	52 7.0	30817	39610	4 9.9 W.	52 7.4	30812	39613	4 8.2 W.	52 6.9	30827	39621
Tucson (Arizona)	32 15	110 50 W.	..	..	..	..	..	..	..	..	13 47.1 E.	59 26.5	26982	45701
Lu-kia-pang	31 19	121 2 E.	..	..	..	..	..	..	..	..	3 18.8 W.	45 31.0	33212	33817
Dehra Dún	30 19	78 3 E.	1 52.0 E.	44 59.9	32951	32949	1 56.1 E.	44 54.8	32962	32863	2 1.4 E.	44 49.6	32980	32782
Helwan	29 52	31 21 E.	..	..	..	..	..	..	..	..	1 38.4 W.	41 6.1	29948	26126
Hong Kong	22 18	114 10 E.	0 20.8 W.	30 46.4	37174	22137	0 19.8 W.	30 47.5	37158	22143	0 17.9 W.	30 48.3	37151	22150
Honolulu (Hawaii)	21 19	158 4 W.	9 53.2 E.	39 25.1	28847	23711	9 50.8 E.	39 25.8	28871	23740	9 48.6 E.	39 26.7	28905	23781
Toungoo	18 56	96 27 E.	0 23.7 W.	23 7.7	39114	16707	0 20.2 W.	23 8.3	39097	16707	0 16.5 W.	23 8.4	39067	16696
Alibag (Bombay)	18 39	72 52 E.	0 20.3 E.	24 54.7	36922	17147	0 24.5 E.	24 49.3	36899	17067	0 28.4 E.	24 43.0	36886	16979
Vieques (Porto Rico)	18 9	65 26 W.	..	..	..	..	..	..	..	..	3 34.0 W.	51 10.9	27985	34783
Antipolo	14 36	121 10 E.	..	..	..	..	0 36.1 E.	16 10.1	38107	11048	0 35.5 E.	16 5.0	38115	10986
Kodai-Kanal	10 14	77 28 E.	1 49.9 W.	4 36.1	37787	3042	1 44.5 W.	4 33.5	37753	3010	1 39.2 W.	4 30.3	37694	2969
Mauritius	20 6	57 33 E.	10 20.3 W.	52 40.1	23093	30278	10 10.5 W.	52 42.8	23112	30356	10 3.2 W.	52 44.9	23149	30447
Pilar (Argentine)	31 40	63 53 W.	..	..	..	..	..	..	..	..	8 5.6 E.	25 39.5	25398	12200
Christchurch, N.Z.	43 32	172 37 E.	17 1.7 E.	68 9.2	22261	55525	16 58.6 E.	68 7.8	22280	55507	16 55.7 E.	68 6.7	22304	55516

LXVIIIb.—ADDITIONAL VALUES FOR EARLIER YEARS.

	N.	° ' "	1917.				1916.				1915.			
			° ' "	N.	γ	γ	° ' "	N.	γ	γ	° ' "	N.	γ	γ
Sodankylä	67 22	26 39 E.	..	..	..	..	..	..	..	..	..	..	..	..
Uccle (Brussels)	50 48	4 21 E.	..	..	..	..	12 28.4 W.	66 2.8	18971	42703	12 38.3 W.	66 1.2	18989	42690
Prague	50 5	14 25 E.	7 5.3 W.	..	..	..	7 14.3 W.	..	..	..	7 24.2 W.	..	..	..
Tsingtau	36 4	120 19 E.	4 7.0 W.	52 6.1	30851	39631	4 4.7 W.	52 7.1	30842	39644	..	..	..	..
Helwan	29 52	31 21 E.	1 45.7 W.	41 1.9	29963	26076	1 53.7 W.	40 57.5	29985	26026	2 3.0 W.	40 54.8	30012	26009
Batavia	6 11	106 49 E.	0 45.9 E.	31 42.0	36724	22682	0 46.0 E.	31 38.5	36698	22613	0 46.1 E.	31 33.6	36676	22528
Melbourne	37 50	144 58 E.	8 3.2 E.	67 50.9	22961	56400	8 6.5 E.	67 48.7	23001	56395	..	..	..	..

A.—DIURNAL INEQUALITIES OF POTENTIAL GRADIENT IN THE OPEN, IN VOLTS PER METRE.

* Mean Hourly Values, Greenwich Mean Time, for the Months, Year, and Seasons (Selected Quiet Days only).

Richmond (Kew Observatory).

1920.

Month and Season.	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	Non-cyclic change, 24-0	No. of Days Used	Mean Values
J.	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m
F.	-82	-144	̄163	-151	-131	-123	-79	-11	37	66	73	35	6	-25	2	54	111	126	135	103	88	67	34	-27	-84	..	v/m
M.	-33	-38	-91	̄99	-82	-54	-50	6	35	25	-10	-2	-15	-34	-56	-11	49	88	101	121	90	65	7	-13	-100	..	368
A.	-95	̄106	-102	-89	-71	-23	26	108	129	98	55	1	-42	-71	-69	-50	-3	6	64	105	89	73	18	-51	+32	..	391
M.	-35	-29	-26	-27	-7	53	138	114	32	-35	-50	-69	̄73	-66	-69	-62	-42	-10	39	54	80	78	15	-4	..	..	319
J.	-25	-19	-18	-11	-16	15	81	65	44	14	-22	̄31	-21	-21	-19	-9	-13	-16	2	26	27	10	-18	-24	+20	..	282
J.	-8	-28	̄39	-29	2	37	76	56	31	8	4	-7	-18	-25	-22	-24	-15	-12	3	-7	22	5	-10	0	-9	..	227
A.	-16	-36	-35	-17	-21	34	89	77	59	31	-1	-28	-40	-54	-48	-53	̄55	-44	-15	20	54	53	25	22	-23	..	173
S.	-27	-38	̄52	-44	-30	1	65	88	76	32	14	-6	-34	-28	-35	-44	-25	14	48	40	28	-11	-7	-24	-34	..	206
O.	-15	-7	-26	̄39	-22	2	28	36	43	28	-15	-13	-13	13	-1	-5	-22	7	29	2	24	5	-17	-21	+3	..	251
N.	70	̄90	-76	-67	-46	-34	-49	-27	-6	16	30	25	24	50	49	96	108	86	52	43	-5	-13	-31	-62	+20	..	242
D.	-84	15	-34	-56	̄94	-71	8	40	90	60	-9	-36	-58	-71	-66	-42	-19	36	41	22	21	42	44	66	+51	..	393
D.	-67	-149	̄151	-126	-120	-107	-20	53	84	68	36	19	14	-19	25	75	66	110	86	74	47	24	31	-54	+14	..	452
Y.	-34	-56	̄68	-63	-53	-23	26	50	54	34	9	-9	-22	-29	-26	-6	12	33	49	50	47	33	8	-16	..	..	471
W.	-27	-79	̄110	-108	-107	-89	-35	22	61	55	23	4	-13	-37	-24	19	52	90	91	80	61	49	29	-7	..	..	315
Eq.	-56	̄58	-57	-56	-36	-1	36	58	49	27	5	-14	-26	-18	-22	-5	10	22	46	51	47	36	-4	-34	..	..	421
S.	-19	-30	̄36	-25	-16	22	78	71	52	21	-1	-18	-28	-32	-31	-33	-27	-14	9	20	33	14	-3	-7	..	..	309
S.	-19	-30	̄36	-25	-16	22	78	71	52	21	-1	-18	-28	-32	-31	-33	-27	-14	9	20	33	14	-3	-7	..	..	214

B.—DIURNAL INEQUALITIES OF POTENTIAL GRADIENT IN THE OPEN, IN VOLTS PER METRE.

Eskdalemuir.

* Mean Hourly Values, Greenwich Mean Time, for the Months, Year, and Seasons (0a Days only).

1920.

Month and Season.	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	24-0	No. of Days Used	Mean Values
J.	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m
F.	59	30	29	-21	-5	-36	-19	82	40	75	-16	-68	-61	-92	-58	-71	̄100	-25	11	-2	20	18	83	133	144	2	259
M.	-42	̄90	-72	-18	-9	-28	-37	-32	8	-25	-13	-13	-5	-1	8	-25	36	46	92	92	67	161	131	168	113	6	307
A.	29	15	-54	-68	-54	-53	27	8	-17	-25	0	-59	-86	̄111	-78	-70	-40	-5	-3	67	161	131	168	113	6	269	
M.	57	39	11	51	2	-26	-27	-38	̄70	-62	-64	-54	-57	-45	-15	-2	32	29	22	44	87	55	30	-59	4	222	
J.	10	-48	-82	-31	-45	-19	-16	-65	̄91	-84	-73	-72	-49	-29	8	16	8	38	93	128	125	141	87	49	-225	6	277
J.	9	15	49	36	8	-8	-7	14	15	3	-17	-35	-41	-35	-35	̄47	-36	-12	9	30	39	23	-2	18	31	11	208
A.	-4	-19	9	-9	-21	-8	2	9	-3	-32	-42	-21	̄44	20	35	-11	-28	-11	-4	22	41	71	36	12	90	4	144
S.	53	37	-13	14	40	49	46	7	-2	-27	-45	-51	-60	-57	̄67	-61	-58	-9	-2	22	53	61	29	42	24	15	224
O.	7	-29	-30	-39	-35	-12	50	15	-15	-89	̄119	-105	-101	-76	-37	-13	15	89	153	136	94	91	41	13	-17	10	280
N.	11	10	15	17	54	52	11	13	-23	-74	-103	-102	̄118	-100	-86	-61	-9	80	119	132	89	46	11	5	-9	18	359
D.	11	16	-19	-7	-33	̄74	-66	-58	-37	-57	-64	-52	-42	-47	-23	1	45	124	150	99	92	41	0	-8	-23	11	316
D.	14	-3	-45	-82	-94	-96	̄105	-74	-41	-33	6	26	46	53	42	58	75	60	62	52	14	35	15	17	-70	9	279
Y.	18	-2	-17	-13	-16	-19	-12	-9	-17	-36	-46	̄51	̄51	-44	-28	-25	-7	34	60	67	72	67	44	33	..	..	262
W.	11	-12	-27	-32	-35	̄58	-57	-20	-7	-10	-22	-27	-15	-22	-8	-9	14	51	79	60	53	39	27	27	..	..	290
Eq.	26	9	-14	-10	-8	-3	16	2	-23	-64	-71	-82	̄90	-86	-61	-40	-8	49	75	89	97	89	69	40	..	..	283
S.	17	-4	-9	3	-5	3	6	-9	-20	-35	-44	-45	̄49	-25	-15	-26	-29	2	26	50	65	74	38	30	..	..	213

C.—DIURNAL INEQUALITIES OF POTENTIAL GRADIENT IN THE OPEN, IN VOLTS PER METRE.

Eskdalemuir.

* Mean Hourly Values, Greenwich Mean Time, for the Months, Year, and Seasons (1a and 2a Days only).

1920.

Month and Season.	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	24-0	No. of Days Used	Mean Values
J.	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m	v/m
F.	-32	33	14	40	80	91	76	15	-12	15	37	-62	-100	-47	-30	-12	54	36	32	-3	-79	̄193	49	5	-85	4	250
M.	-76	-79	-117	-84	-99	-2	18	83	48	63	32	46	121	56	31	-9	26	37	41	53	71	-38	̄123	-103	10	5	212
A.	-63	-70	̄71	-29	-26	-41	-36	12	66	66	28	-1	0	19	51	94	90	24	-69	0	28	4	-32	-45	-36	6	197
M.	-24	24	108	1	13	16	-51	-156	̄85	-55	-52	-38	-66	-16	27	39	56	48	85	83	82	56	-4	6	-286	2	195
J.	-41	̄105	-92	48	70	118	-18	21	3	-14	-1	-31	-75	-67	-104	-47	-30	29	72	38	11	53	57	-52	-18	3	217
J.	-19	-26	-25	-27	-36	̄50	-43	-45	-45	-39	-16	-46	-16	0	22	46	58	48	56	69	54	38	25	5	26	5	136
A.	1	6	-37	̄69	-67	-37	-30	6	4	13	-3	-9	-6	-13	-34	-3	35	32	39	45	39	61	29	31	10	10	86
S.	12	-26	-17	17	3	10	35	24	42	2	-34	-25	̄66	-48	-14	-28	39	5	4	67	32	1	3	115	6	160	
O.	-17	-45	̄55	-39	-44	-40	10	3	-7	20	-18	-32	-30	-25	-35	-21	19	20	46	76	85	79	66	-17	9	6	206
N.	-43	-5	19	9	-22	-30	-38	-7	6	-12	7	49	22	20	27	14	46	46	10	12	-15	-34	-3	̄53	39	2	166
D.	-43	-38	-60	-46	̄116	-57	4	-5	3	-41	-31	-55	-13	21	9	38	67	172	141	35	62	30	-18	-54	23	4	248
D.	47	58	-7	-48	̄124	-103	-65	-53	-60	-53	-21	2	9	-23	-27	-2	-38	38	-12	-10	38	152	229	65	78	8	264
Y.	-25	-23	-28	-19	̄31	-10	1	-9	-11	-3	-7	-17	-17	-10	-5	6	26	48	37	33	37	18	26	-18	..	..	195
W.	-26	-7	-43	-35	̄65	-18	8	10	-5	-4	4	-17	4	2	-4	4	27	71	51	19	23	-12	34	-22	..	..	244
Eq.	̄37	-24	0	-15	-20	-24	-29	̄37	-30	5	-12	-6	-19	-1	17	31	53	34	18	43	45	26	7	-27	..	..	191
S.	-12	-38	̄43	-8	-8	10	25	1	1	-10	-14	-28	-37	-30	-27	-16	-1	38	41	37	44	40	36	-4	..	..	150

* and ̄ mark respectively the mean maximum and minimum hourly values in each month or season.

* See Notes on the Tables of Potential Gradient, page 70.

Notes on the Meteorological Summaries.

In the meteorological tables in the present volume the diurnal variation of pressure, temperature, humidity, rainfall, sunshine and windspeed is shown. The tables differ from those published for the years 1911 to 1917 in that the 1920 values of the various elements are printed, not their departures from normal. These values are averages for the months and the year; the individual readings from which the averages are derived are available for reference at the Meteorological Office. For the years 1874 to 1886 and 1900 to 1913 such hourly readings were published *in extenso*. For the years 1869 to 1889 and 1887 to 1899 five-day means were printed.

The normal hourly values computed for periods ending 1915 will be found in the 1917 volume.

In the tables for pressure, temperature and relative humidity, values at 0h. and 24h. are both given. The small difference between them is due to the fact that the readings at the midnights with which a month opens and closes are in general different. In estimating the mean of all the readings for the month these first and last readings are given half-weight. In preparing the tables of the diurnal inequalities of pressure and temperature the non-cyclic change has been eliminated by the use of the formulæ given in footnotes.

Particulars of the methods of tabulation and of the instruments are published in the Introduction to *Part IV.*, *Section 1* of the *Year Book* for 1913 and in the *Annual Reports of the Meteorological Office* for the years 1867 and 1869. The barographs and the thermographs with dry and wet bulbs are photographic; the speed of the wind is recorded by cup anemometers, except at Eskdalemuir where a tube-anemometer is used for the hourly tabulations; the rain gauges in use are of Beckley's pattern; the duration of bright sunshine is measured by the Campbell-Stokes sunshine recorder.

The values in the tables have been expressed throughout in units based upon the C.G.S. system; tables for conversion to other units were given with the Notes for 1913. They will be found in the *Computer's Handbook*.

Some points of importance in the history of the observations are referred to in the *Notes* for 1917. They are not reproduced here as the present tables cover only the year 1920. It should be mentioned, however, that the system of time-marking previously in use introduced some uncertainty in the readings of the barograms and thermograms. The time marks occur at intervals of two hours and alternate readings used to be made at a time-mark and halfway between two time-marks. From January 1st, 1918, the time-marks have been made half-an-hour before each even hour instead of at the hour so that there is an unbroken curve for the hourly readings.

(a) *Pressure*.—The barometer readings are obtained from the hourly tabulations of photographic records from similar apparatus at all the observatories. Due allowance is made for the variation of gravity with latitude. The pressures refer to station level, *i.e.*, to the level of the cistern of the control-barometer, the readings of the curves being compared three times a day with those of this barometer. Tables for "reduction" of pressure to sea-level are printed in the Introduction to *Part IV.*, *Section 1* of the *Year Book* for 1913.

(b) *Temperature of the Air.*—Temperature is expressed in degrees absolute on the Kelvin Scale. The value of a degree is the same as on the centigrade scale, but the zero is taken to be the absolute zero of temperature, 273°C . below the normal freezing-point of water. The practice of indicating “degrees absolute” by “a” instead of by $^{\circ}\text{A}$ has been adopted recently. Thus the temperature of the freezing point of water is written 273a. Conversion from the centigrade to the absolute scale is a simple addition or subtraction. Tables for converting from the Fahrenheit to the absolute scale are given in the *Computer's Handbook*.

The temperatures shown for all four Observatories have been derived from the tabulation of photographic records from similar mercurial thermometers. At Eskdalemuir the thermometer screen is a large hut with louvred sides. At the other observatories the screen is on the north wall of the observatory building. In the case of Aberdeen the screen in question is the tower of King's College at a height of 12.5m. above ground.

At Valencia Observatory the north wall screen was modernised at the beginning of 1919 by the provision of a double roof, double louvres on all sides and a ventilated bottom to exclude all direct radiation. It was formerly a single louvred wooden shelter.*

(c) *Relative Humidity* is obtained from the tabulation of the photographic records of temperature combined with those of the wet-bulb thermometer. The thermometers are similar at all the Observatories; they have cylindrical bulbs about four inches long. The values of the humidity are calculated by the use of the Meteorological Office tables, which are based upon Glaisher's factors.†

The means for Richmond, Eskdalemuir, and Cahirciveen are obtained from the hourly values of humidity for each day; the means for Aberdeen are calculated from the mean hourly values for the month of the dry and wet-bulb temperatures.

Mention should be made here of a difficulty inherent in the psychrometric method of determining the relative humidity of the air. The depression of the wet-bulb reading depends, not only on the amount of vapour present in the air, but also on the strength of the wind blowing past the thermometers. The tables in use for computing the humidity take no account of the wind, and the results are, therefore, open to criticism.

(d) *Wind.*—The speed of the wind is obtained from the records of similar Robinson anemographs at Richmond, Cahirciveen, Falmouth, and Aberdeen, but at Eskdalemuir the records are made by a Dines Pressure-tube instrument. Anemographs of the latter type are also in operation at the other observatories and the charts are used in other publications of the office, e.g., in the *Monthly Weather Report Annual Summary*.

The records from instruments of the two types, exposed at the same place, give approximately the same values for the mean speed.

More serious than any imperfections in the anemometers themselves is the difficulty in determining the relation between the wind which crosses the Observatory at a particular height and the general flow of air in the neighbourhood. In the extreme case of the anemometer at Falmouth,‡ the recorded speed is probably only half of what would be measured at the same height above ground in open country. The anemometer at Cahirciveen is on a tower at the NE corner of the main building, so that the exposure is less free for winds between SE and SW than for other directions.

(e) *Rainfall.*—In this table totals for the hours have been given instead of means. The first and last entries refer to the half hours beginning and ending at midnight.

* L.H.G. Dines. Meteorological Office Professional Notes No. 23, 1921.

† See *Computer's Handbook* Section I.

‡ Not published now.

(f) *Sunshine*.—The duration of bright sunshine is obtained by the Campbell-Stokes sunshine recorder and is therefore measured by the burning or scorching of a blue card by the focussed sunlight. The values are given in hours and are obtained by dividing the totals for each month by the number of days in the month. It should be noted that the entries refer to Local Apparent Time.

Harmonic Analysis.—The systematic analysis of the records of pressure and temperature of the seven observatories of the Meteorological Office by means of the beautiful harmonic analyser invented by W. Thomson (Lord Kelvin) was a notable enterprise of the period 1871–1882. The results for each month of these years are published in *Harmonic Analysis of Hourly Observations of Air Temperature and Pressure at British Observatories*: Official Publication, No. 93. This volume contains also the harmonic components for the average diurnal variation in the several months for the same period.* Corresponding data for longer periods have not been published by the Office. The annual mean diurnal variation of pressure at the Observatories has been analysed, however, for these Notes for the last few years. Results for 1920 are set out below, the normals for the older observatories being for 1871–1915, those for Eskdalemuir for 1911–1915:—

Harmonic Analysis of Pressure, 1920.

Observatory and Period.	Amplitude in Millibars.				Phase Angle, Greenwich Mean Time.								Phase Angle, Local Mean Time.			
					24-Hour Term.		12-Hour Term.		8-Hour Term.		6-Hour Term.					
	P ₁	P ₂	P ₃	P ₄	A ₁	Max.	A ₂	Max.	A ₃	Max.	A ₄	Max.	A ₁	A ₂	A ₃	A ₄
Aberdeen, 1920 ..	·106	·240	·044	·027	172·8	18 29	147·4	10 5	4·3	1 54	299·1	2 31	174·9	151·6	10·6	307·5
„ Normal ..	·116	·249	·028	·009	157·8	19 29	143·6	10 13	349·5	2 14	335·7	1 55	159·9	147·8	355·8	344·1
Eskdalemuir, 1920 ..	·104	·237	·029	·016	128·3	21 27	147·0	10 6	22·7	1 30	321·1	2 9	131·5	153·4	32·3	333·9
„ Normal	·083	·257	·023	·016	75·1	1 0	141·9	10 16	15·0	1 40	330·6	1 59	78·3	148·3	24·6	343·4
Richmond (Kew Obs.)	·094	·325	·035	·012	33·7	3 45	150·2	9 59	8·7	1 49	253·7	3 16	34·0	150·8	9·6	254·9
„ Normal	·138	·351	·030	·008	28·1	4 7	149·5	10 1	1·6	1 58	274·7	2 55	28·4	150·1	2·6	276·0
Cahirciveen (Val. Obs.)	·181	·275	·021	·007	188·8	17 25	135·3	10 29	334·5	2 34	298·1	2 32	199·1	155·9	5·4	339·3
„ Normal	·151	·307	·034	·004	177·8	18 9	130·9	10 38	331·9	2 37	42·3	0 48	188·1	151·5	2·8	83·5

The notation is explained by two alternative formulæ for the inequality in question :

$$P_1 \sin (15t + A_1)^\circ + P_2 \sin (30t + A_2)^\circ + P_3 \sin (45t + A_3)^\circ + P_4 \sin (60t + A_4)^\circ + \dots$$

and

$$P_1 \cos 15(t - T_1)^\circ + P_2 \cos 30(t - T_2)^\circ + P_3 \cos 45(t - T_3)^\circ + P_4 \cos 60(t - T_4)^\circ + \dots$$

Here t is the time elapsed in hours since midnight and T_1, T_2, T_3, T_4 are the times of maxima of the four harmonic terms. The times of the corresponding minima differ from those of the maxima by twelve, six, four, and three hours respectively. While it has been convenient to record all the times to minutes this degree of accuracy can hardly be claimed.

It is of importance to note that whilst the 12-hour term is known to be fairly consistent throughout the year, the other terms are subject to very large changes from month to month.

It may also be mentioned that the “normal” values of the P 's refer to the normal diurnal variation. The average values of the P 's for individual years would naturally be greater.

* The results have been discussed by Dr. C. Chree, *Q.J.R. Met. Soc.* xliv., 1918, p. 99.

ADDITIONAL INFORMATION.

For a general account of the weather of the year, reference should be made to the Annual Summary of the *Monthly Weather Report*. Daily readings at Richmond, Cahirciveen, and Eskdalemuir are published in the *Geophysical Journal*, corresponding data for Aberdeen in *Daily Readings at Meteorological Stations of the First and Second Orders*. A summary of the monthly values at each of the four observatories is to be found in the Annual Supplement to the last-named publication.

Climatic diagrams based on the average hourly values up to 1910 are given for Aberdeen, Cahirciveen, Falmouth and Richmond in *The Weather Map*.

Graphs of diurnal variation of temperature at the same observatories for the period 1871 to 1895 are given in *Temperature Tables for the British Islands*. The corresponding pressure-graphs are reproduced in a paper by R. H. Curtis.*

Normal values for various elements are given in the *Book of Normals* which is in course of publication.

* *Q.J.R. Met. Soc.*, xxvi., 1900, p. 1.

RAINFALL: MONTHLY TOTALS OF HOURLY VALUES.

Amounts, in millimetres, for periods of sixty minutes* centered at the exact hours, Greenwich Mean Time.

Falmouth : Hr=50.8 m. + 0.6 m.

1920.

G.M.T.	0 to 0.5	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	23.5 to 24	Day.
Jan.	3.7	11.2	7.5	11.2	11.3	7.6	10.2	17.6	14.3	12.1	9.5	17.3	13.4	4.4	5.4	3.2	1.7	2.9	4.3	6.0	7.4	6.7	6.4	6.5	2.1	203.9
Feb.	0.7	0.2	2.1	1.3	0.6	1.1	1.7	1.2	1.3	0.7	0.3	0.7	0.4	0.9	0.3	0.2	0.6	2.7	3.4	1.7	0.9	0.6	0.8	0.9	0.2	25.5
Mar.	1.1	6.1	4.6	2.4	2.9	1.3	3.0	2.4	3.1	4.2	5.2	6.3	5.4	7.8	3.5	10.7	5.8	8.2	9.4	5.3	2.3	1.3	1.3	1.7	2.6	107.9
April	2.4	7.1	4.8	3.9	5.1	5.8	3.2	7.1	4.9	2.8	3.3	3.3	2.0	3.6	6.4	9.6	6.3	2.2	5.7	0.7	3.4	5.2	4.8	5.8	2.9	112.3
May	0.7	2.9	2.7	0.6	3.6	3.8	1.5	2.2	0.7	0.2	0.3	1.0	2.6	5.7	3.2	1.7	4.2	3.1	3.5	6.5	4.5	1.5	0.6	1.9	1.2	60.4
June	0.8	0.5	0.7	0.9	5.1	1.7	2.1	1.3	1.4	6.9	1.4	1.3	1.4	3.6	0.8	0.8	2.1	4.5	3.1	1.2	4.4	3.5	3.3	7.0	1.5	61.3
July	1.4	5.0	4.6	4.2	3.2	8.1	4.4	6.3	6.5	5.1	5.1	2.7	8.7	11.3	11.7	11.4	7.3	2.6	5.4	4.6	1.1	2.5	9.5	6.3	1.7	140.7
Aug.	1.3	1.3	0.0	0.0	0.5	0.1	0.3	2.0	0.1	1.2	0.6	0.8	0.8	2.4	3.9	0.9	1.5	1.6	2.3	1.5	1.4	2.2	3.7	4.2	1.2	35.8
Sept.	0.8	2.2	0.5	1.6	2.7	3.2	9.2	5.8	15.2	4.0	1.3	4.6	2.9	0.2	0.0	0.0	0.9	5.9	0.8	2.9	1.6	6.5	3.8	2.4	0.5	79.5
Oct.	1.2	7.4	9.6	12.7	12.5	13.6	14.4	12.5	21.2	14.0	6.4	7.6	2.2	3.2	0.1	6.8	9.9	1.7	11.2	13.9	6.4	1.3	1.1	0.7	0.8	192.4
Nov.	1.5	1.9	1.6	1.4	1.0	1.7	3.2	1.3	1.7	1.6	0.7	1.8	3.3	5.7	2.3	2.4	2.0	4.1	4.8	4.6	1.6	1.0	1.7	0.8	0.8	54.5
Dec.	5.2	9.2	5.8	7.0	8.8	4.9	6.4	1.9	2.7	3.0	2.0	2.4	4.6	3.2	2.4	2.5	1.5	1.7	10.4	9.6	9.9	11.9	5.3	9.0	8.1	139.4
Year	20.8	55.0	44.5	47.2	57.3	52.9	59.6	61.6	73.1	55.8	36.1	49.8	47.7	52.0	40.0	50.2	43.8	41.2	64.3	58.5	44.9	44.2	42.3	47.2	23.6	1213.6

DURATION OF BRIGHT SUNSHINE: MONTHLY MEANS OF HOURLY VALUES.

Amounts for periods of sixty minutes centered at the hours of Local Apparent Time.

Falmouth : hs=10.4 m.

1920.

L.A.T.	4	5	6	7	8	9	10	11	Noon.	13	14	15	16	17	18	19	20	Day.
Jan.04	.21	.28	.26	.25	.28	.24	.16	.03	..	..	..	..	1.75
Feb.02	.16	.23	.24	.26	.28	.34	.33	.20	.01	..	..	..	2.33
March11	.31	.37	.43	.45	.42	.43	.36	.34	.20	.01	..	..	3.77
April01	.13	.28	.27	.35	.39	.41	.43	.41	.45	.45	.47	.36	.13	..	4.54
May13	.41	.46	.48	.46	.58	.55	.52	.57	.59	.61	.62	.54	.44	.15	7.11
June23	.40	.49	.53	.47	.51	.50	.53	.54	.54	.56	.52	.51	.39	.33	7.10
July17	.31	.33	.33	.36	.37	.39	.46	.45	.38	.39	.52	.43	.31	.15	5.35
August02	.14	.29	.35	.27	.35	.40	.42	.50	.48	.52	.52	.50	.39	.04	5.19
September03	.23	.42	.46	.47	.45	.47	.47	.45	.47	.38	.30	..	..	4.63
October01	.16	.27	.35	.37	.45	.43	.40	.42	.35	.06	..	..	3.27
November12	.30	.35	.33	.29	.34	.34	.24	.06	..	..	..	2.37
December23	.29	.35	.33	.30	.26	.17	..	..	..	..	1.93
Year05	.12	.19	.26	.33	.38	.39	.40	.42	.40	.39	.33	.24	.14	.06	4.10

* The half-hours before and after midnight are tabulated separately.

TERRESTRIAL MAGNETISM :—I. NOTES ON THE MANAGEMENT OF THE INSTRUMENTS AT KEW OBSERVATORY, RICHMOND, AND ON THE CORRESPONDING TABLES, 1920. BY C. CHREE, Sc.D., LL.D., F.R.S., SUPERINTENDENT.

Absolute observations of declination, dip and horizontal force have been taken usually once a week. The instruments employed have been the Jones' unifilar magnetometer with declination magnet KO 90, collimator magnet K.C.I. and mirror magnet AN, and the Barrow dip circle, No. 33, with $3\frac{1}{2}$ -inch needles. In the absolute observations of horizontal force, deflections were made at three distances, 22.5, 30, and 40 cms., and values were calculated for the distribution constants P and Q from all the observations of the year, with the exception of one taken during a disturbed time.

The values obtained of late years have been as follows:—

Year.	P.	Q.	Mean Value at 22.5, 30 and 40 cms. of $\log_{10}(1+Pr^2+Qr^4)$
1910	+ 0.882	— 1354	$\bar{1}\cdot99939$
1911	+ 0.832	— 1377	$\bar{1}\cdot99934$
1912	+ 0.749	— 1286	$\bar{1}\cdot99937$
1913	+ 1.504	— 1528	$\bar{1}\cdot99959$
1914	+ 1.226	— 1343	$\bar{1}\cdot99958$
1915	+ 0.778	— 1245	$\bar{1}\cdot99942$
1916	+ 2.962	— 2044	$\bar{1}\cdot99996$
1917	+ 0.696	— 1236	$\bar{1}\cdot99938$
1918	+ 1.683	— 1565	$\bar{1}\cdot99965$
1919	+ 1.496	— 1525	$\bar{1}\cdot99958$
1920	+ 0.971	— 1280	$\bar{1}\cdot99950$
Means	+ 1.253	— 1435	$\bar{1}\cdot99952$

The addition of 0.00047 to the accepted value of $\log_{10}(1+Pr^2+Qr^4)$ would result in an increase of 10γ in the value of H. Changes in P and Q having the same sign tend to neutralise one another. It is reasonable to suppose that the fluctuations shown in the table are partly accidental. It is thus comforting to know that if mean values derived from the whole eleven years had been employed, no yearly mean except that for 1916 would have been altered by more than 4γ . The outstanding values in 1916 are presumably mainly due to the collimator magnet being dropped. Originally the observations made during 1920 were reduced, employing the values obtained for P and Q in the previous year. The substitution of values appropriate to 1920 entailed a correction of -2γ in the calculated values of H. This result was, however, obtained in time to secure the publication of the corrected values in the *Geophysical Journal*.

The magnetographs have remained in regular operation during the year. The scale value of the declination magnetograph remained as in previous years 1 mm. = $0'87$. On March 19th, 1920, the position of the mirror attached to the magnet was slightly altered so as to bring the trace further up the sheet. Scale value determinations of the horizontal force made at the beginning and end of the year gave 5.9γ and 5.8γ respectively as the equivalents of 1 mm. The former value was accepted for the first six months, the latter for the second six months of the year. A temperature correction of 3.1γ for 1°C was applied to the curve readings as in previous years. The base values of the declination and horizontal force curves were derived in the usual way from the absolute observations. Scale value determinations were also made of the V magnetograph at the beginning of the year, in July, and at the end of the year, the values obtained as the equivalents of 1 mm. being respectively 12.2γ , 11.3γ and 10.5γ .

The disturbance of the magnetic curves by artificial electric currents has been much as in the previous year. The publication of diurnal inequalities in D and H has thus been continued. Particulars of the magnetic "character" of individual days on the international scale "0" (quiet), "1" (moderately disturbed) and "2" (highly disturbed) have been contributed quarterly as in recent years to Prof. van Everdingen, at De Bilt, for inclusion in the international lists. Full details will be found in the *Geophysical Journal*. The accompanying table shows the number of days in each month to which the "characters" 0, 1 and 2 were assigned. It also gives for each month the mean of the "character" figures treated as if ordinary arithmetical quantities. As there is a wide range in the disturbance to which any one figure is attached, the monthly means should be regarded as giving only a general indication of the disturbance prevailing.

1920.	Number of Days having Magnetic "Character."			Mean of "Character" Numbers.
	"0."	"1."	"2."	
January	15	14	2	0.58
February	15	11	3	0.59
March	15	10	6	0.71
April	13	13	4	0.70
May	20	8	3	0.45
June	19	10	1	0.40
July	20	10	1	0.39
August	17	12	2	0.52
September	7	16	7	1.00
October	12	14	5	0.77
November	14	12	4	0.67
December	14	14	3	0.65
Year (Totals and Means) ..	181	144	41	0.62

The mean "character" figure is lower than for 1919, there being a decrease in the number of disturbed days both of greater and lesser disturbance. The standard, however, cannot claim to be an invariable one. May, June and July were the quietest months, and the equinoctial months the most disturbed. The largest disturbances of the year occurred on the following dates: February 16th, 24th; March 4th, 5th, 22nd, 23rd; April 15th; July 15th; September 22nd, 28th; November 26th; December 4th, 26th. The disturbance of March 22nd-23rd was much the largest of the year, and was a really notable one. The D and H traces both went off the sheet, the ranges exceeding $2^{\circ} 2'$ and 805γ respectively. The range in V was fully 800γ .

The D and H traces both showed some very large rapid movements. These included an easterly movement in D of $95'$ in about five minutes, and an oscillation of $76'$ west and $95'$ east in less than twenty minutes. Oscillations of shorter period in D and H also occurred at times, especially during the latter part of the storm, but were not outstanding. The range in V was large, but few of the changes were rapid. September was remarkable rather for the small number of quiet days than for the amplitude of disturbance.

In arriving at the international "character" figures the curves of all three elements are taken into account. Disturbance in V is practically never seen at Kew Observatory unaccompanied by disturbance in D and H, and it is immaterial whether the V curves are taken into consideration or not. But on individual occasions H disturbances may be much more prominent than D disturbances, and conversely. In compiling the weekly chronicle now got out at Kew Observatory for Mining Engineers D only is under consideration, also the object in view is somewhat

different. In assigning international "character" figures the primary object is to classify whole days as quiet or disturbed. In the case of Mining Engineers the precise period of the day which is highly disturbed is of importance. Two-hour periods are dealt with, and when a particular day has "character" 2 assigned to it the periods during which the D curve has that "character" are particularised. The number of disturbed periods at different hours of the day during 1920 was as follows:—

Hour	0h-2h	2h-4h	4h-6h	6h-8h	8h-10h	10h-12h	12h-14h	14h-16h	16h-18h	18h-20h	20h-22h	22h-24h
Disturbed occasions	14	12	11	4	2	2	5	8	14	21	18	17

This represents a total for the year of 128 occasions, i.e. 256 hours, considered highly disturbed, and to these 256 hours the twelve hours 4h to 16h G.M.T. contributed only 64, or exactly one quarter. The monthly totals of disturbed hours varied from 34 in March to only 4 in August.

The data for Mining Engineers are issued within a few days of the end of the week, so that the "characters" have to be settled promptly and for only a few days at a time. Also the D curves only are considered. Thus a considerable difference between these "character" figures and those obtained for De Bilt would not be surprising. The days awarded "characters" 0, 1 and 2 for the Mining Engineers numbered respectively 173, 156 and 37, giving a mean "character" for the year of 0.63, which differs by only 0.01 from that derived after the international method. For individual months, however, the differences between the results of the two methods were considerable.

Prior to 1918 diurnal inequalities were given only for the five international quiet days, and the practice was to smooth the curves by hand. As little smoothing is naturally called for on quiet days, the operation was not onerous. With the publication, however, of diurnal inequalities derived from ordinary days, the procedure was much less satisfactory. To employ different methods for different types of days did not appear desirable. Accordingly all the curves for 1920, whether D or H, have been measured with a scale enabling a mean value to be assigned for 60-minute intervals. These intervals were taken centering at exact hours G.M.T. The old procedure having been to measure at the exact hour, there is no difference as regards the time to which the hourly means refer. But in the event of Fourier co-efficients being calculated at some future date, correction factors not previously required would have to be applied to the results obtained for 1920.

The diurnal inequalities for D from ordinary days are given in Table LXI*a*. Of the 37 days omitted as highly disturbed 23 occurred in the four equinoctial months, 7 in the four summer months and 7 in the winter months.

The diurnal inequalities for D and H from the international quiet days are given in Tables LXI*b* and LXII.

The international quiet days had the following dates:—

January ..	4, 5, 13, 19, 27	July ..	2, 3, 21, 28, 29
February ..	2, 3, 9, 23, 29	August ..	2, 6, 17, 27, 28
March ..	2, 3, 29, 30, 31	September ..	6, 12, 20, 21, 26
April ..	1, 11, 13, 14, 28	October ..	3, 14, 20, 21, 30
May ..	6, 7, 11, 22, 23	November ..	8, 10, 14, 23, 24
June ..	2, 8, 14, 18, 22	December ..	1, 11, 12, 22, 30

In all the inequalities the non-cyclic changes have been allowed for in the usual way, i.e., by assuming them to come in at a uniform rate throughout the day. The units employed are 1' in declination and 1γ (or 1×10^{-5} C.G.S.) in horizontal force. In the case of declination the minus sign means that the magnet points to the east of its mean position for the day. Inequalities are given for each month of the year, for the year as a whole, and for three seasons defined as in previous years. x and n are attached to the maximum and minimum hourly values

There is as usual a distinct difference in type between the diurnal inequalities of D on quiet and ordinary days. Except in June the easterly deviation near midnight is decidedly smaller in the quiet days. The difference is especially marked in the winter months. At that season the principal minimum (i.e., the easterly extreme) tends to appear a little before midnight instead of in the early morning. Both the ordinary and quiet day inequalities show this pre-midnight minimum in January, November and December, and in the ordinary day inequalities it appears also in September and October. The principal maximum is found the whole year round at 12h, 13h or 14h, alike in ordinary and quiet days, occurring at 13h in eight months out of the twelve.

In Table LXII the occurrence of the minimum in H at 1h in December is abnormal. The usual hour of occurrence in December as in other months is 10h or 11h. The occurrence of the maximum value in the morning in January, February, March, November and December is quite normal. In the summer months, as usual, the maximum in the afternoon is much more prominent than the secondary maximum in the forenoon.

Table LXIII gives the inequality ranges and Table LXIII*a* the non-cyclic changes (24h-0h). In the case of D the ordinary day range exceeds the quiet day range in the inequalities for the year, winter, equinox, and nine months out of the twelve. In the winter months the excess is considerable, taking into account the absolute size of the range at that season. In the average summer month the difference is small, the excess of the quiet day range in June being decided.

Comparing the D ranges in 1920 with the corresponding ranges in 1919 we find the latter to be in excess in the case of the year, equinox and summer; but in winter the 1920 range is decidedly the larger. The 1919 range is the larger in seven or in eight months out of the twelve, according as we take ordinary or quiet days. In the case of H , on the other hand, the excess lies with 1920, very slightly in the case of the year and very decidedly in the case of summer. The 1920 range is the larger from February to August inclusive, but the 1919 range the larger in the other five months. Taking both elements into account, we should infer in the later months of 1920 a slight decline in the activity of the forces to which the diurnal inequality is due.

The algebraic means of the non-cyclic changes in Table LXIII*a* are $+0' \cdot 04$ for ordinary and $+0' \cdot 16$ for quiet days in D , and $+3 \cdot 3 \gamma$ in H . As D is falling rather rapidly through secular change, this implies an appreciable westerly tendency on the average quiet day. In H the non-cyclic change was positive in every month; its mean value for the year is fairly normal.

Table LXVII gives the mean monthly and annual values of the magnetic elements. The results for D and H are derived from the curve measurements for the international quiet days. The values for I (Inclination) are derived from the absolute observations corrected to the mean of the day. The other elements are calculated from these. If the ordinary days had been used for D instead of the quiet days, the mean value for the year would have been $0' \cdot 1$ lower. The quiet day value was the higher in nine months out of the twelve, but the difference was only once as high as $0' \cdot 3$, and in six months it was either zero or $0' \cdot 1$.

Comparing the mean values for 1920 and the previous year we observe the exceptionally large fall of $9' \cdot 9$ in D . In H there is a small fall. The value of I is almost stationary, an apparent increase of only $0' \cdot 2$ being hardly significant. There is an apparent small fall in V and a rise in N . The fall in W , following mainly on the decline of D , is large, and its progression throughout the year, as shown by the monthly values, is very uniform.

TERRESTRIAL MAGNETISM:—II. NOTES ON THE MAGNETIC OBSERVATIONS MADE AT THE VALENCIA OBSERVATORY, CAHIRCIVEEN, 1920. BY L. H. G. DINES, M.A., A.M.I.C.E., SUPERINTENDENT.

Absolute observations of declination, horizontal force and inclination were taken at least twice per month and generally more frequently. The instruments used were the same as in previous years, i.e., Dover unifilar, No. 139, and Dover dip circle, No. 118.

All the observations were made at fixed hours, the mean times being 10^h 21^m G.M.T. for the declination; 11^h 39^m for the horizontal force and 14^h 30^m for the inclination. In no case did the time of any individual observation differ from the mean by more than eight minutes.

Only such observations of each element have been used as were taken at times when that element, as recorded by the Kew magnetographs, was subject to no abnormal disturbance.

The deflections of the mirror magnet were taken at two distances of the collimator magnet, 30 and 40 cms., and a single "distribution constant," P, calculated from them. Except in a very few cases, twelve readings of deflection were taken for each complete observation in the manner described in the notes on the observations for 1917.

The value of P was calculated for each month separately by the method employed in 1919 and described in the notes for that year. The extreme variation in the value of P did not exceed the equivalent of $3\frac{1}{2}\gamma$ on the value of H, and this was largely accounted for by a slight accident to the mirror magnet which occurred in October, 1920, and caused a small abrupt change in the distribution constant.

Particulars of the individual observations will be found in the monthly numbers of the *Geophysical Journal*, the values of the horizontal force in which were also based on the values of the distribution constant determined as above.

Table LXVII gives the observed mean monthly and annual values of declination, horizontal force and inclination, and corresponding calculated values for the total force, and the north, west, and vertical components.

NOTES ON THE MANAGEMENT OF THE MAGNETIC INSTRUMENTS AT
ESKDALEMUIR AND ON THE CORRESPONDING TABLES, 1920.

The magnetographs at Eskdalemuir are arranged so as to record changes of the three geographical components of terrestrial magnetic force, viz., the north component, N (or + X), west component, W (or - Y), and the vertically downward component, V (or + Z).

The north and west magnetographs are of the Adie bifilar type. In these instruments torsion of the bifilar suspension (of fine tungsten-steel wire) is used to bring the magnets into an azimuth approximately perpendicular to the direction of the components whose changes they respectively measure. During 1920 no change was made in the suspension, but the base line mirror of the W instrument was altered slightly in position on 17th January, 1920. The vertical magnetograph was that lent by the late Professor Watson and subsequently purchased from his executors. The chief difficulty encountered with this instrument relates to the base line value, which is liable to sudden and large change if any considerable artificial movement is given to the pivoted magnet system, or when the drying agent (calcium chloride) within the instrument case is changed. During 1920 there were several disturbances of the kind. On 19th February and 4th May, 1920, the control magnet, attached in a vertical position to the side of the supporting pier, was lowered. The base line value was thus reduced by about 30 γ on the first of these two dates, and by about 145 γ on the second. The drying agent was changed on 31st December, 1920.

The magnetographs are installed in an underground house in which the diurnal range of temperature is negligible. Temperature is ascertained daily at 9^h 30^m by the thermometers within the instrument cases. The monthly means for the year 1920, compared with the average for 1911-19, were as follows:—

Excess of Mean Temperature above 280a.

Month.	Jan.	Feb.	Mar.	Apl.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Average 1911-19	3.2	2.5	2.1	1.9	2.3	3.3	4.3	5.4	6.1	5.9	5.2	4.1
„ 1920	4.2	3.5	3.2	3.0	3.1	3.9	4.9	5.5	6.0	6.0	5.6	4.6

The annual range of temperature during 1920 was 3°·2 C., the mean for the previous nine years being 4°·4 C.

The constants of the magnetographs were as follows:—

	North.	West.	Vertical.
Time scale :	15.6 mm.	15.6 mm.	15.6 mm.
Time marks	Every two hours, ending at exact hour.		
Error of time mark	Not more than ± 1 min.		
Period of vibration, seconds	13.9	11.0	7.4
Logarithmic decrement .. ..	.345	.572	—
Angular equivalent of 1 mm. on paper, radians ..	.00032	.00032	.0003
Twist of bifilar suspension	35°	90° \pm 5°	—
Ratio $\frac{\text{length of bifilar suspension}}{\text{mean breadth of suspension}}$	51	66	—
Temperature coefficient, per 1° C.	-9 γ	-2 γ	+ 26 γ
Direction of marked pole	West.	North.	—
Azimuth of magnet	270° 9'.5	0° 27'.7	346°

The scale values were determined twice monthly in the manner described in the 1913 *Notes*. The following values, obtained by overlapping means, were employed in reducing the hourly readings :—

Scale Values of the Magnetographs.

Month.	North Instrument. γ per mm.	West Instrument. γ per mm.	Vertical Instrument. γ per mm.
January	4.92	5.33	4.00
February	4.92	5.30	4.01
March	4.91	5.32	4.00
April	4.93	5.32	3.97
May	4.93	5.33	3.98
June	4.92	5.33	4.01
July	4.93	5.34	4.03
August	4.93	5.35	4.04
September	4.94	5.33	4.07
October	4.94	5.32	4.10
November	4.95	5.35	4.09
December	4.96	5.37	4.07

Absolute observations were made weekly in the eastern magnetic hut. The results of these observations are given in the tables of auxiliary observations printed under each month along with the hourly values. Declination and horizontal force were determined on Pier No. 5 by the Elliot magnetometer, No. 60, and dip on Pier No. 6 by the Schulze Inductor, No. 103. In the deflection observations three distances, 25, 30, and 35 cm. were used. The value of the correction, $\log_{10}\left(1 + \frac{P}{25^2} + \frac{Q}{25^4}\right)$ used in the reduction of the horizontal force observations was obtained for a given month by taking the mean for seven months including the given month as fourth of the seven. The values of this correction for the different months of the year were as follows :—

January, .00577; February, .00565; March, .00553; April, .00536; May, .00532; June, .00531; July, .00550; August, .00539; September, .00547; October, .00542; November, .00550; December, .00558.

The preliminary base line values were deduced from the results of the absolute observations, any of the latter obtained during times of considerable disturbance being excluded. The base line values finally adopted were obtained from a curve drawn smoothly through points given by the preliminary values.

The hourly readings are obtained from the magnetograms by means of a ruled glass scale. The reading for any given hour G.M.T. is that ordinate estimated to be the mean reading for 60 minutes centering at the given hour. The product of this ordinate and the scale value is added to the final base value, and the sum so obtained is the hourly value printed in the tables. The mean value for the day is

$$\frac{S}{24}, \text{ where } S = \frac{0+24}{2} + 1 + 2 + \dots + 23.$$

In calculating diurnal inequalities, the non-cyclic change has been eliminated on the assumption that its time-rate is linear. Inequality values are first calculated to 0.01 γ and then rounded off to 0.1 γ . The inequalities in H, D, and I were computed from those of N, W, and V, by means of the formulæ—

$$\begin{aligned}\delta D &= \frac{180 \times 60}{\pi} \left(\frac{\delta W \cos D - \delta N \sin D}{H} \right) \\ \delta H &= \delta N \cos D + \delta W \sin D. \\ \delta I &= \frac{180 \times 60}{\pi} \cos I \left(\frac{\delta V \cos I - \delta H \sin I}{H} \right)\end{aligned}$$

in which δD , δI , are expressed in minutes of arc, and where H , D , and I for any month are the respective mean values for that month as published in Table LXVII.

The values of the harmonic coefficients were computed from the unrounded values of the inequalities. They were corrected where necessary, on account of the fact that the hourly values are not instantaneous values, but are mean values. The factors by which the coefficients have to be multiplied (*vide* Report of the British Association 1883, p. 98) are 1.00286 for a_1 , b_1 , c_1 ; 1.01152 for a_2 , b_2 , c_2 ; 1.02617 for a_3 , b_3 , c_3 ; and 1.04720 for a_4 , b_4 , c_4 . Finally, the values were rounded off to 0.1 γ .

TERRESTRIAL MAGNETISM:—IV. REVIEW OF RESULTS OF MAGNETIC OBSERVATIONS AT ESKDALEMUIR DURING 1920. BY A. CRICHTON MITCHELL, D.Sc., F.R.S.E., SUPERINTENDENT.

1. The following account summarises the principal results of the magnetic observations made during 1920.

Reference may be made to the *Notes on the Management of the Magnetic Instruments* in this and previous issues of the *Year Book* for details regarding the instruments employed and the manner in which the values of the elements are deduced from the magnetograms.

2. *Mean Values of the Magnetic Elements, 1920.*—These are given below in Table I along with the corresponding values for the previous year. The values of N, W, and V have been computed from the hourly values derived from the autographic records, standardised by means of absolute observations. Those of H, D, I, and T have been deduced from the values of N, W, and V.

TABLE I.

Year.	H.	D. (West)	I.	N.	W.	V.	T.
1919 ..	16713	° ' 16 58.7	° ' 69 39.6	γ 15985	γ 4880	γ 45084	γ 48082
1920 ..	16706	° ' 16 49.7 48	° ' 69 39.5	γ 15990	γ 4836	γ 45062	γ 48059

The value of H continued to fall during the year, but the rate was about half the mean rate during the nine preceding years. Declination also diminished, and at a rate very nearly that of the mean of the last nine years. The inclination remained very nearly steady. The north component continued to rise from the minimum in 1918.

The extreme values of N, W, and V recorded during the year are given in Table II. The sign > or < indicates that the trace exceeded the limits of registration.

TABLE II.

Component.	Maximum.		Minimum.		Absolute Annual Range.
	Value.	Date 1920.	Value.	Date 1920.	
North	γ > 16236	22 Mar. { h m 15 50 to 20 10	γ < 15528	23 Mar. { h m 0 20 to 2 0	γ > 708
West	5027	14 Mar. 14 22	< 4363	23 Mar. { h m 0 40 to 3 0	> 664
Vertical.. .. .	45419	24 Feb. 19 34	< 44768	28 Sep. { h m 20 0 to 20 20	> 651

The absolute annual range of N was nearly the same as in the previous year. The ranges of W and of V were considerably greater.

3. *Magnetic Character of the Year.*—As explained in the *Year Book* for 1919, it has been the practice at Eskdalemuir, not only to assign character figures for each day according to the international scheme, but also to tabulate for each day two quantities which are in some manner representative of the activity of the terrestrial magnetic force. These are (1) ΣR^2 , the sum of the squares of the absolute daily ranges of the three geographical components,* and (2) the mean of the 24 hourly values of Σr^2 , the sum of the squares of the hourly ranges of these components.* The character figures assigned to each day of 1920 under the international scheme are shown in the fourth table under each month in this volume. The daily values of ΣR^2 and the daily means of Σr^2 are given in the subjoined Tables III and IV respectively. The mean monthly values of the squares of the absolute daily ranges are shown above in Table LXIIIb†.

TABLE III.

1920	Values of ΣR^2 .											
	(Unit, 100 γ^2)											
	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	147	33	79	66	668	159	108	55	304	732	70	31
2	..	24	62	181	291	173	97	95	170	238	144	217
3	27	19	27	208	417	144	75	145	1249	56	104	109
4	..	38	5747	332	141	352	134	408	852	176	205	835
5	16	41	3429	356	84	109	72	126	128	115	372	296
6	50	156	332	388	63	175	291	65	80	180	536	240
7	108	164	73	227	40	115	703	164	175	214	95	123
8	44	..	174	136	123	78	221	271	792	88	46	219
9	185	35	81	144	356	219	119	296	906	146	52	118
10	193	49	245	175	76	..	104	126	288	544	28	55
11	244	56	115	97	54	333	98	130	247	67	30	18
12	157	172	228	62	73	150	254	1734	67	117	170	13
13	21	115	42	68	769	96	127	228	149	51	54	83
14	91	198	1201	77	464	87	129	306	187	50	28	103
15	110	96	150	1571	554	121	798	121	241	91	126	78
16	59	832	550	176	266	93	289	110	244	41	31	45
17	253	669	114	874	104	82	107	107	400	158	280	21
18	47	179	75	786	98	126	269	200	152	77	128	42
19	35	84	124	300	95	193	121	288	102	95	28	33
20	53	67	101	645	146	156	73	143	63	61	98	78
21	329	108	177	294	132	137	93	515	58	49	426	5
22	98	55	7214	97	92	131	191	534	1729	151	120	6
23	128	41	7666	155	92	112	368	107	651	432	14	70
24	90	2135	2662	499	90	200	164	74	71	386	14	70
25	..	260	828	53	116	118	101	63	39	218	18	134
26	74	88	86	80	90	79	110	74	70	130	..	769
27	22	161	251	153	119	88	71	115	299	343	201	305
28	200	102	71	86	600	216	68	72	4593	156	22	40
29	90	51	89	108	284	122	94	89	2238	202	25	21
30	143	..	59	346	116	161	110	231	266	18	17	10
31	39	..	55	..	84	..	98	99	..	176	..	68
Mean	109	215	1036	291	216	149	182	229	560	179	120	137

* $R_N, R_W,$ and R_V denoting the ranges for a calendar day of the north, west, and vertical components, ΣR^2 is written for $R_N^2 + R_W^2 + R_V^2$.

ΣR^2 determined thus is entered in Table III., and monthly means, such as $\frac{1}{31} \sum_1^{31} (\Sigma R^2)$, are given in Table V.

Similarly $r_n, r_w,$ and r_v denoting hourly ranges, Σr^2 stands for $r_n^2 + r_w^2 + r_v^2$.

$\frac{1}{24} \sum_1^{24} (\Sigma r^2)$ is shown in Table IV., and monthly means such as $\frac{1}{31} \sum_1^{31} \left[\frac{1}{24} \sum_1^{24} (\Sigma r^2) \right]$ in Table V.

For other methods of estimating magnetic activity see *Activity of the Earth's Magnetism and Magnetic Characterisation of Days*, by G. van Dijk. Neder. Met. Inst. No. 102 (Utrecht, 1922).

† The entries in the column headed R_N^2 of Table LXIIIb (p. 47) are the means of the daily range of R_N^2 for all

On March 4th, 5th, 22nd, 23rd, and 24th, September 3rd, 28th, and 29th the trace "went off the sheet" and the actual value of the range could not be determined. For the purposes of Table III, the range on these occasions has been obtained by taking the value at the edge of the sheet as the extreme value, and the entries for these days have been printed in italics.

In preparing Table IV the practice has been to omit from the daily mean any hour during which the trace was "off the sheet." In a few cases, however, when the time "off the sheet" was of short duration the value at the edge of the sheet has been taken as the extreme value.

TABLE IV.

1920	Mean Value of Σr^2 .											
	(Unit, 100 γ^2)											
	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	10.5	1.6	3.1	1.4	33.0	3.6	3.9	2.5	12.1	28.9	4.2	1.2
2	5.9	.8	1.5	3.8	12.9	3.0	1.5	1.2	4.4	9.6	5.7	6.6
3	1.9	.8	.6	5.2	16.1	3.3	2.0	4.7	<i>91.2</i>	2.3	4.7	7.2
4	1.2	1.7	<i>212.6</i>	15.1	4.3	13.1	2.0	17.9	48.9	7.8	8.3	45.1
5	.6	1.0	<i>142.8</i>	28.3	2.0	3.4	1.5	5.0	9.5	3.8	16.1	19.0
6	1.8	4.9	22.3	24.7	1.2	6.9	14.1	1.2	1.9	6.6	24.1	18.9
7	3.5	..	4.4	9.3	.7	2.8	40.4	5.4	6.9	10.3	4.5	5.6
8	1.3	..	7.1	5.8	3.9	1.3	11.5	14.6	41.4	5.2	1.2	9.2
9	6.9	.9	1.6	5.2	13.9	5.6	4.0	12.8	48.3	6.1	2.4	4.8
10	15.0	1.7	9.4	5.4	1.7	..	2.0	9.0	14.5	27.6	1.3	1.4
11	15.9	3.1	4.4	3.1	.9	..	3.3	3.7	11.2	2.9	2.2	.8
12	4.9	6.1	11.6	2.3	1.4	3.4	20.1	93.3	1.8	4.0	6.4	.5
13	1.3	3.9	2.1	1.6	59.3	2.0	2.3	14.4	10.7	1.5	3.7	3.4
14	2.6	10.3	63.6	2.9	26.3	1.6	5.0	16.1	7.4	1.6	.8	6.1
15	6.4	3.0	10.3	73.9	39.4	2.6	41.0	6.5	15.1	2.4	3.4	4.3
16	4.9	38.4	28.4	7.5	10.0	2.2	11.3	2.7	12.0	3.0	2.2	2.9
17	10.6	32.5	4.5	37.8	2.9	2.0	5.0	1.6	18.5	5.2	11.2	.9
18	2.5	7.8	3.2	57.0	3.2	2.7	10.5	8.8	5.5	2.3	6.4	2.4
19	.9	2.1	2.3	11.9	2.8	3.9	2.7	15.0	4.1	3.2	1.4	1.9
20	1.2	1.9	3.0	24.6	3.7	3.7	3.3	4.8	2.9	1.1	2.2	5.9
21	22.7	3.8	6.0	9.0	5.2	2.7	1.8	28.5	2.2	1.5	21.4	.3
22	4.0	1.6	<i>642.3</i>	3.4	2.1	2.9	8.0	36.6	87.2	4.1	7.3	.2
23	6.6	1.0	<i>451.2</i>	7.2	2.4	2.6	20.8	4.5	29.7	9.5	.7	3.2
24	4.2	<i>72.2</i>	<i>125.0</i>	16.5	2.2	6.3	6.7	3.4	2.6	17.7	.6	3.7
25	2.3	14.7	31.5	2.2	4.3	3.2	5.0	2.4	1.0	13.8	.7	8.8
26	2.4	3.5	4.6	3.0	4.8	2.5	4.4	1.8	2.6	6.1	..	37.3
27	.6	4.8	15.3	3.6	8.7	2.4	1.5	2.8	12.0	15.7	..	18.7
28	10.3	3.2	4.6	2.2	33.7	8.9	1.3	1.7	<i>231.0</i>	7.6	1.2	2.9
29	4.0	1.3	2.5	5.8	15.8	5.4	1.6	2.9	<i>90.4</i>	10.0	1.4	.7
30	4.8	..	1.4	17.2	5.5	6.1	2.8	9.3	19.7	.4	1.0	.6
31	1.9	..	1.5	..	1.9	..	2.8	3.7	..	5.5	..	3.5
Mean	5.3	8.5	58.9	13.2	10.5	3.9	7.9	10.9	28.2	7.3	5.2	7.4

In each month, with the exception of March, the mean values of ΣR^2 and of Σr^2 were less than the corresponding values for 1919 and, with the further exception of September, were less than those for 1918. March, 1920, judged by ΣR^2 and Σr^2 , was the most disturbed month of the years 1918-20.

days on which they have been actually obtained. Similarly for R_w^2 and R_v^2 . The entries under $R_w^2 + R_v^2$ are the means of the daily values of these quantities for all days on which both have actually been obtained. Similarly for $R_w^2 + R_v^2 + R_z^2$. It may therefore happen that in any month when the value, e.g. of R_w^2 has not been obtained for a particular day, the entry in the fourth column may not be equal to the sum of the entries in the first and second columns, and similarly for $R_w^2 + R_v^2 + R_z^2$.

A comparison of the three methods of estimating activity may be obtained from a study of Table V.

TABLE V.

Month.	Magnetic Character Figures.			Mean Character Figure.	Mean Value of $\Sigma R^2/100$.	Mean Value of $\Sigma r^2/100$.
	No. of "0" Days.	No. of "1" Days.	No. of "2" Days.			
1920.						
January.. ..	18	12	1	0.45	109	5.3
February	17	9	3	0.52	215	8.5
March	12	11	8	0.87	1035	58.9
April	12	12	6	0.80	292	13.2
May	18	8	5	0.58	216	10.5
June	20	9	1	0.37	149	3.9
July	22	8	1	0.32	182	7.9
August	21	9	1	0.35	229	10.9
September	12	14	4	0.73	560	28.2
October	14	17	0	0.55	179	7.3
November	15	12	3	0.60	120	5.2
December	13	16	2	0.65	137	7.4
Year 1920	194	137	35	0.57	286	13.9
Year 1919	146	170	49	0.73	388	21.1
Year 1918 (364 days)	174	132	58	0.68	353	18.3

The results obtained by all three methods lead to the conclusion that activity in 1920 was less than in either of the two preceding years.

The ratio of the 1920 to the 1919 yearly figures is .78 for the character figures, .74 for ΣR^2 , and .66 for Σr^2 .

As has been already stated, the most disturbed month of the year was March, on each system of representation of activity. With regard to the least disturbed month, agreement is not obtained, for July was the month of lowest mean character figure, while January and June were the months with lowest mean ΣR^2 and Σr^2 respectively.

It is of interest to utilise the values of ΣR^2 and Σr^2 for individual days to select the five quietest and the five most disturbed days in each month, and to compare the selections with those made at De Bilt. When the values of ΣR^2 are used there is agreement in 35 cases out of 60 for quiet days, and in 47 cases out of 60 for the highly disturbed days. The use of Σr^2 yields agreement in 40 cases out of 60 for quiet days and in 48 cases out of 60 for highly disturbed days. The quiet days selected by means of ΣR^2 and Σr^2 agree in 45 cases out of 60, while the disturbed days agree in 51 cases out of 60.

The mean values of ΣR^2 and of the daily means of Σr^2 on days to which different magnetic character figures have been assigned are shown in Table VI. That there is a well-marked distinction between the mean values associated with the three classes of day is clear.

TABLE VI.

Month.	" 0 " Days.		" 1 " Days.		" 2 " Days.	
	$\frac{\Sigma R^2}{100}$	$\frac{\Sigma r^2}{100}$	$\frac{\Sigma R^2}{100}$	$\frac{\Sigma r^2}{100}$	$\frac{\Sigma R^2}{100}$	$\frac{\Sigma r^2}{100}$
1920.	γ^2	γ^2	γ^2	γ^2	γ^2	γ^2
January	53	2.2	178	9.0	244	15.9
February	55	1.8	169	7.0	1212	47.7
March	73	2.3	173	9.1	3662	212.1
April	93	3.1	241	10.2	790	39.7
May	92	2.9	248	10.9	611	38.3
June	121	2.7	210	6.9	..	..
July	103	3.0	323	17.1	798	41.0
August.. .. .	109	3.8	342	18.4	1734	93.3
September	96	4.1	418	21.3	2452	124.9
October	74	2.7	266	10.9	..	..
November	35	1.6	194	8.5	313	21.4
December	28	1.3	143	8.0	802	41.2
Year 1920	81	2.6	239	11.4	1683	67.5
.. 1919	81	2.5	293	15.0	1644	103.9
.. 1918	105	3.4	300	14.9	1190	66.0

As was pointed out in the *Year Book* for 1919, the ratio of ΣR^2 to the mean value of Σr^2 varies with the season of the year and with the character of the day. This is shown quite clearly by Table VII.

TABLE VII.—*Monthly Means of Daily Values of* $\frac{R_N^2 + R_W^2 + R_V^2}{\frac{1}{24} \sum_1^{24} (r_n^2 + r_w^2 + r_v^2)}$

Month.	All Days.	" 0 " Days.	" 1 " Days.	" 2 " Days.
1920.				
January	23.8	25.6	21.9	15.3
February	29.0	31.2	26.6	23.9
March	25.9	34.3	20.5	20.6
April	27.9	32.0	27.0	21.3
May	32.2	40.5	23.1	16.6
June	40.2	44.7	28.9	—
July	34.7	39.7	20.4	19.5
August	29.6	34.4	19.5	18.6
September	23.5	27.9	20.8	19.5
October	27.9	31.0	25.3	—
November	23.2	23.3	23.2	19.9
December	20.8	23.1	19.1	19.5
Year 1920.. .. .	28.2	32.3	23.0	19.5
.. 1919.. .. .	26.6	34.0	22.8	18.8

The yearly means of the ratio do not differ greatly from those of 1919, but Tables VI and VII tend to show that, save in the case of " 0 " days, the proportionate decrease in Σr^2 from 1919 to 1920 was greater than in ΣR^2 . As in 1919, the value of the ratio of ΣR^2 to Σr^2 on " 0 " days was markedly greater in summer than in winter. The seasonal variation of the ratio in the case of " 1 " and " 2 " days is not so apparent.

3a. *Daily Variation of Σr^2 .*—An examination of the daily variations of Σr^2 is of some interest. For this purpose the five international quiet days of each month were used, and the mean values of Σr^2 for the hour periods centred at exact hours, G.M.T., are shown in Table VIII.

TABLE VIII.—Daily Variation of Σr^2 .

 Means of Σr^2 for International Quiet Days for months and seasons.

 Unit $10\gamma^2$.

Months and Seasons.	oh	1	2	3	4	5	6	7	8	9	10	11	Noon	13	14	15	16	17	18	19	20	21	22	23	Midt.	Mean
J.	280	135	47	40	124	91	39	56	59	166	159	91	68	91	111	98	69	37	34	38	69	121	184	130	112	94
F.	210	156	34	78	36	36	34	37	83	129	124	229	159	150	102	106	83	54	61	51	55	73	137	151	141	97
M.	260	106	89	29	28	21	83	113	147	245	242	403	379	278	187	271	129	257	153	75	90	56	53	77	34	152
A.	83	332	586	251	97	56	106	96	199	219	166	289	229	264	411	345	384	281	159	153	76	131	92	104	161	214
M.	82	80	55	63	57	61	79	94	177	221	130	217	212	201	168	244	206	411	259	72	88	97	102	104	64	145
J.	127	120	91	89	138	115	179	197	405	273	189	362	376	341	266	293	643	354	341	139	111	195	81	111	154	231
J.	1004	146	54	74	138	89	76	133	143	181	192	376	311	280	269	101	319	198	117	128	137	204	123	54	56	163
A.	171	91	73	39	44	64	116	178	138	212	198	341	228	309	446	253	228	95	71	150	179	106	87	120	235	165
S.	104	157	113	153	221	239	202	132	234	180	128	306	262	116	202	306	267	171	87	73	64	506	500	167	375	228
O.	154	41	65	53	13	19	46	93	173	149	121	234	232	126	155	211	112	190	96	84	173	101	139	283	250	130
N.	124	233	198	178	82	39	96	72	86	61	59	85	141	145	73	32	40	34	32	31	54	94	75	92	134	90
D.	146	142	70	38	26	37	25	30	29	58	32	56	54	90	93	86	57	54	57	125	82	96	53	110	53	67
Y.	229	145	123	90	84	72	90	103	156	174	145	249	221	199	207	195	211	178	122	93	98	148	135	125	147	148
W.	190	166	87	84	67	51	48	49	64	103	94	115	106	119	95	80	63	45	46	61	65	96	112	121	110	87
Eq.	375	159	213	121	90	83	109	109	188	198	164	308	275	196	239	283	223	224	124	96	101	198	196	158	205	181
S.	121	109	68	66	94	82	113	151	216	222	177	324	281	283	287	223	349	265	197	122	129	151	98	97	127	176

The exceptionally high value at oh. in September is due to the occurrence of a "bay" on the west component trace between 23h. and 24h. on September 19th, thus affecting the reading of the hourly range entered under oh. for September 20th.*

The daily variation in the individual months is irregular, but the seasonal means exhibit certain general features. As might be expected, winter shows greater regularity in the daily variation, as well as lower values of the daily range, of Σr^2 . Principal minima occur twice daily in all seasons, but it is noticeable that the morning minimum occurs earlier in summer, later in winter, and at an intermediate time at Equinox. The afternoon minimum is earliest in winter and latest in summer. The times of maxima are less well defined. Another result, which might be foreseen from the magnetic character of the days taken into consideration, is that the general features of the daily variation closely resemble those obtained from the quiet day inequality data by tabulating for each hour the sum of the squares of the rates of change in the three components of force.

The seasonal means have been submitted to harmonic analysis. In summer the variation of Σr^2 appears to be predominately of the 24-hour type, for the amplitude of this term is six times as great as the largest of the amplitudes of the three remaining terms. The ratio of the amplitudes of the 24, 12, 8, and 6-hour terms in equinoctial months is 3.5 : 3.1 : 1.4 : 1, while for winter months the relative magnitudes of the corresponding amplitudes are 7.2 : 12.0 : 2.4 : 1.

4. *Diurnal Inequalities.*—In accordance with the practice of recent years, diurnal inequalities have been calculated for (1) five international quiet days, (2) five selected disturbed days, and (3) all days, for each month. The details are contained in Tables XLIX to LX†.

In each class of day and in the case of each of the three components of magnetic force the mean diurnal inequality range for the year was less than in either 1919 or 1918, while with the single exception of the inequality range of the west component for disturbed days, the ranges were the smallest of the years 1917–20.

The west and vertical inequality ranges on quiet days in winter were higher than the corresponding ranges in 1919. This is to be attributed to the high values of the inequality ranges of these components in February, the west and vertical inequality ranges being the highest for this month since 1911 and 1914 respectively. The inequality range of the north component on quiet days was high in June, July, and August, being especially so in June.

* The records of the Vertical component were defective on January 4th, 5th, two of the international quiet days. The values of r^2 on January 20th, 31st, two quiet days, were used instead.

† See also Plates II and III.

For the selected disturbed days, the inequality ranges were less than in 1919 in all seasons, with the exception of the north component in winter and the west in equinoctial months. It may be remarked that the west inequality range of 131 γ in March was the highest for that month since 1915, and that the vertical ranges in February and March were higher than usual.

The January and February north component inequality ranges for "all days" were the highest since 1911 for those particular months.

5. *Harmonic Coefficients of the Diurnal Inequality.*—For quiet days the general tendency was for the amplitudes to be less than in 1919, although c_1 and c_2 for the north components in summer, and c_1 for the west and vertical components in winter were greater than the corresponding values in 1919. The phase angles of the 24-hour and 12-hour terms for the west component were somewhat greater in all seasons of 1920 than in 1919, while for the north component the phase of these terms was retarded in winter and accelerated in summer.

In the case of disturbed days, too, the amplitudes were generally smaller than in 1919. It may be noted that for the north component the value of c_1 in winter was the largest in that season since 1915, while the corresponding term in equinoctial months was unusually small. There was no very definite general change in the phase angles of the two principal terms, save in the case of the 24-hour term of the north component in which, relatively to 1919, there was a considerable retardation of phase in all seasons.

For "all days" also the amplitudes were mostly smaller than in 1919, and the relative decrease in value was most marked in c_1 and c_2 for the vertical component. Relatively to 1919, the phase of the 24-hour term for the north and vertical components was retarded in all seasons, the retardation being greatest in winter for the former and in summer for the latter component.

6. *Daily Range.*—The values of mean absolute daily range for each month of the year are given in Table IX, compared with the corresponding means for 1911–19, and the ranges are also expressed as percentages of the mean absolute daily range for the year.

TABLE IX.—*Absolute Daily Range. Mean Monthly Values.*

Month	Mean Absolute Daily Range.						Mean Daily Range expressed as Percentage of Yearly Mean.					
	1920.			Mean, 1911–19.			1920.			Mean, 1911–19.		
	N.	W.	V.	N.	W.	V.	N.	W.	V.	N.	W.	V.
January . . .	58	67	27	61	63	33	%	%	%	%	%	%
February . . .	66	82	43	64	68	36	66	79	52	76	82	73
March . . .	144	130	98	81	83	49	76	98	83	80	89	80
April . . .	102	93	61	91	83	53	165	155	189	101	108	108
May . . .	95	78	50	89	77	49	117	110	118	114	108	117
June . . .	83	78	39	84	81	40	109	92	96	111	100	108
July . . .	83	82	42	84	79	40	95	92	75	105	106	89
August . . .	93	84	48	99	88	62	95	98	81	105	103	89
September . .	126	109	92	93	83	54	107	100	92	124	115	137
October . . .	73	86	46	87	86	58	145	129	177	116	108	120
November . . .	60	59	41	65	66	35	84	102	89	109	112	128
December . . .	64	64	35	58	62	33	69	70	79	81	86	77
Winter . . .	62	68	37	62	65	34	73	76	68	73	81	73
Equinox . . .	62	68	37	62	65	34	71	81	71	78	85	76
Summer . . .	111	105	74	88	84	53	81	128	125	110	110	118
Year . . .	89	80	45	89	81	48	102	95	86	111	105	106
Year . . .	87	84	52	80	77	45	..	..	..	..	..	..

For each component of force, in each season, the mean value of the daily range was less in 1920 than in 1919.

As was remarked on a former occasion, it may be noted that the daily range of the north, relatively to that of the west component, is noticeably smaller in the first two and last two months of the year.

The high values of the mean range of the north and west components in March are noteworthy, for after the values for August 1917, they are the highest for these components for any month of the period 1911-20.

The quietest days of each month of the year were January 5th, February 3rd, March 3rd, April 25th, May 7th, June 8th, July 28th, August 1st, September 25th, October 30th, November 23rd, December 21st, the last of these being the quietest day of the year, with ranges of 20γ, 11γ, 4γ, in N, W, and V respectively.

The frequency distribution of ranges recorded during the year, according to different amounts, is given in Table X.

TABLE X.—*Frequency Distribution of Absolute Daily Range.*

Range γ	No. of Cases, 1920.			Percentage Distribution.					
	N.	W.	V.	North.		West.		Vertical.	
				1920.	1911-19.	1920.	1911-19.	1920.	1911-19.
0-9	0	0	17	0.0	0.1	0.0	0.1	4.7	6.0
10-19	5	1	57	1.4	3.2	0.3	2.3	15.7	18.8
20-29	16	7	86	4.4	5.9	1.9	5.5	23.7	23.8
30-39	20	27	66	5.5	8.0	7.4	7.7	18.2	14.5
40-49	26	30	40	7.1	10.8	8.2	12.4	11.0	8.9
50-59	47	43	16	12.9	13.3	11.8	13.5	4.4	5.1
60-69	64	58	19	17.6	12.8	15.9	13.0	5.3	4.6
70-79	36	57	9	9.9	9.2	15.7	11.1	2.5	3.5
80-89	36	29	4	9.9	7.8	8.0	8.1	1.1	2.7
90-99	23	33	9	6.3	5.8	9.1	6.1	2.5	2.1
100-109	23	20	3	6.3	5.2	5.5	4.7	0.8	1.1
110-119	10	11	3	2.7	3.9	3.0	3.1	0.8	1.1
120-129	14	12	4	3.8	2.7	3.3	2.2	1.1	0.8
130-139	5	4	4	1.4	2.6	1.1	1.8	1.1	0.9
140-149	7	6	3	1.9	1.4	1.6	2.1	0.8	0.6
150-159	4	5	3	1.1	1.2	1.4	1.0	0.8	0.7
160-169	3	1	3	0.8	1.0	0.3	0.7	0.8	0.4
170-179	8	5	2	2.2	0.7	1.4	1.0	0.5	0.5
180-189	2	4	2	0.5	0.9	1.1	0.6	0.5	0.5
190-199	0	1	0	0.0	0.5	0.3	0.6	0.0	0.4
200 and above ..	15	10	13	4.1	3.3	2.7	2.4	3.6	2.8
Days omitted ..	2	2	3	..	..	..	..	..	..

In all three components the frequency distribution of range was very similar to that in 1919, but it may be noted that in the case of the west component, the intervals of maximum frequency were 60-69γ and 70-79γ in 1920, compared with 70-79γ 80-89γ, in 1919.

The frequency of days of considerable disturbance, *i.e.* of days with a range of either horizontal component of 160γ or more, was appreciably less than in 1918 or 1919. In 1920 there were 36 days on which the range of a horizontal component was 160γ or more, while there were 55 such days in 1919.

7. *Principal Magnetic Storms during 1920.*—Table XI gives particulars of the principal magnetic storms recorded during the year. The magnetograms for disturbed days are not published in this volume, but photographic copies may be obtained on application to the Director, Meteorological Office, Air Ministry, Kingsway, London, W.C.2.

TABLE XI.—Principal Magnetic Disturbances Recorded at Eskdalemuir, 1920.

Where the beginning of a disturbance has been marked by a "sudden commencement," the serial number is followed by an asterisk (*), and the time entered in the second column is that of the sudden commencement. To the tabulated values of maximum and minimum the following have to be added :—

N, 15000γ; W, 4000γ; V, 44000γ.

No.	From.	To.	North Component.					West Component.					Vertical Component.				
			Max.	Time.	Min.	Time.	Range.	Max.	Time.	Min.	Time.	Range.	Max.	Time.	Min.	Time.	Range.
1*	Jan. 11 13 9	Jan. 12 7	1019	11 22 42	943	11 19 29	76	897	11 13 30	768	11 21 27	129	1090	11 19 30	1046	12 0 1	44
2	Feb. 16 12	Feb. 18 4	1080	17 19 18	894	17 12 13	186	982	16 14 18	738	17 19 8	244	1145	16 18 51	1012	17 3 16	133
3	" 24 10	" 25 4	1081	24 19 25	919	25 1 40	162	1022	24 18 28	781	24 22 46	241	1419	24 19 34	1011	25 1 35	408
4*	Mar. 4 11 41	Mar. 6 4	1193	4 22 8	<692	5 0 3	>501	1005	4 22 18	<558	4 22 37	>447	1286	4 20 22	<914	5 1 57	>372
5*	" 14 12 54	" 16 24	1092	14 15 34	918	16 12 11	174	1027	14 14 22	787	16 20 14	240	1276	14 18 27	996	16 22 38	280
6*	" 22 9 12	" 26 1	>1236	22 15 50	<528	23 0 20	>708	>979	22 14 0	<363	23 0 40	>616	1361	22 17 29	<835	23 2 0	>526
7	Apr. 15 2	Apr. 16 5	1109	15 17 6	864	15 10 38	245	965	15 13 38	806	15 22 4	159	1225	15 17 4	957	15 3 29	268
8	" 16 16	" 19 2	1067	17 20 40	884	17 11 15	183	911	17 12 54	739	18 1 28	172	1099	17 19 34	918	18 3 27	181
9	" 19 16	" 21 9	1009	20 4 7	895	20 11 0	114	928	20 14 40	742	20 20 14	186	1098	20 15 19	968	20 5 32	130
10	" 30 15	May 2 6	1059	30 22 0	874	1 11 9	185	919	2 0 52	781	1 5 1	138	1049	1 19 30	880	1 3 50	169
11*	May 13 0 23	" 16 4	1117	13 20 35	901	14 9 51	216	934	13 18 4	779	13 21 43	155	1072	13 19 9	917	14 1 10	155
12	" 28 8	" 29 24	1073	28 14 46	898	28 11 13	175	934	28 14 42	805	28 6 20	129	1119	28 17 45	997	29 0 1	122
13	June 9 14	June 11 24	††	††	††	††	††	††	††	††	††	††	1162	10 16 40	959	10 23 20	203
14	July 6 13	July 9 2	1152	7 20 43	929	8 11 33	223	910	7 20 50	765	7 8 28	145	1075	7 20 32	981	7 2 16	94
15	" 15 12	" 16 3	1092	15 19 12	934	15 23 26	158	921	15 17 30	749	15 20 18	172	1122	15 20 18	963	15 23 51	159
16	Aug. 12 1	Aug. 13 1	1155	12 19 56	869	12 22 38	286	919	12 1 36	707	12 22 51	212	1101	12 19 51	885	12 22 40	216
17	" 21 12	" 22 8	1047	21 16 6	904	22 3 24	143	893	21 15 13	721	22 2 8	172	1134	21 19 2	955	22 0 42	179
18	Sept. 3 5	Sept. 5 8	>1160	3 19 34	889	3 19 55	>271	893	3 14 38	713	3 19 53	180	1141	4 17 34	965	4 0 30	176
19	" 7 18	" 9 24	1061	8 22 12	831	9 2 38	230	891	8 13 48	723	8 23 41	168	1111	9 16 20	926	9 2 54	185
20*	" 22 2 18	" 23 2	1080	23 0 25	807	22 22 2	273	870	22 11 51	632	22 23 30	238	1140	22 19 53	894	22 22 4	246
21*	" 27 23 0	" 30 6	1097	28 18 22	<692	{ 28 20 8	>405	881	28 13 40	<529	28 20 6	>352	1182	28 17 26	<768	28 20 0	>414
22	Oct. 1 14	Oct. 2 12	1076	1 17 32	940	2 11 43	136	875	1 16 34	692	1 23 23	183	1186	1 17 40	1032	2 0 4	154
23	" 9 19	" 10 24	1056	9 22 38	889	10 11 35	167	861	10 4 0	760	9 23 5	101	1152	10 16 22	1009	10 4 40	143
24	Nov. 5 15	Nov. 6 24	1075	6 18 35	901	6 10 9	174	844	6 13 24	707	5 17 2	137	1162	6 16 25	1054	6 5 15	108
25*	" 26 13 0	" 27 8?	††	††	††	††	††	††	††	††	††	††	1208	26 20 0	967	27 0 27	241
26	Dec. 4 5	Dec. 5 8	1052	4 23 1	912	5 0 1	140	847	4 6 39	673	4 18 13	174	1187	4 18 8	1003	4 23 18	184
27	" 26 4	" 27 24	1065	27 22 39	882	26 14 19	183	863	26 9 1	685	26 20 51	178	1187	26 16 56	1027	26 23 9	160

† For details, see *Geophysical Journal*, September, 1920.

†† Light failed on N and W.

ATMOSPHERIC ELECTRICITY :—NOTES ON THE TABLES OF POTENTIAL GRADIENT.

At both Kew and Eskdalemuir Observatories potential gradient is determined by means of the Kelvin water-dropping apparatus.

The method of standardizing the records so as to give potential gradient in the open is explained in *Hourly Values*, 1916.

The factors used in the reduction are shown month by month in the *Geophysical Journal*, Tables V and VI, where gradient values for four hours a day are set out.

The data utilised in the preparation of the tables (page 47) are mean values for periods of 60 minutes centered at the hours of Greenwich Mean Time. Means for the selected days of each month are found and from these the mean for the month (given in the last column of the tables) is computed. The departures from this mean are corrected for the non-cyclic change before being entered in the appropriate table.

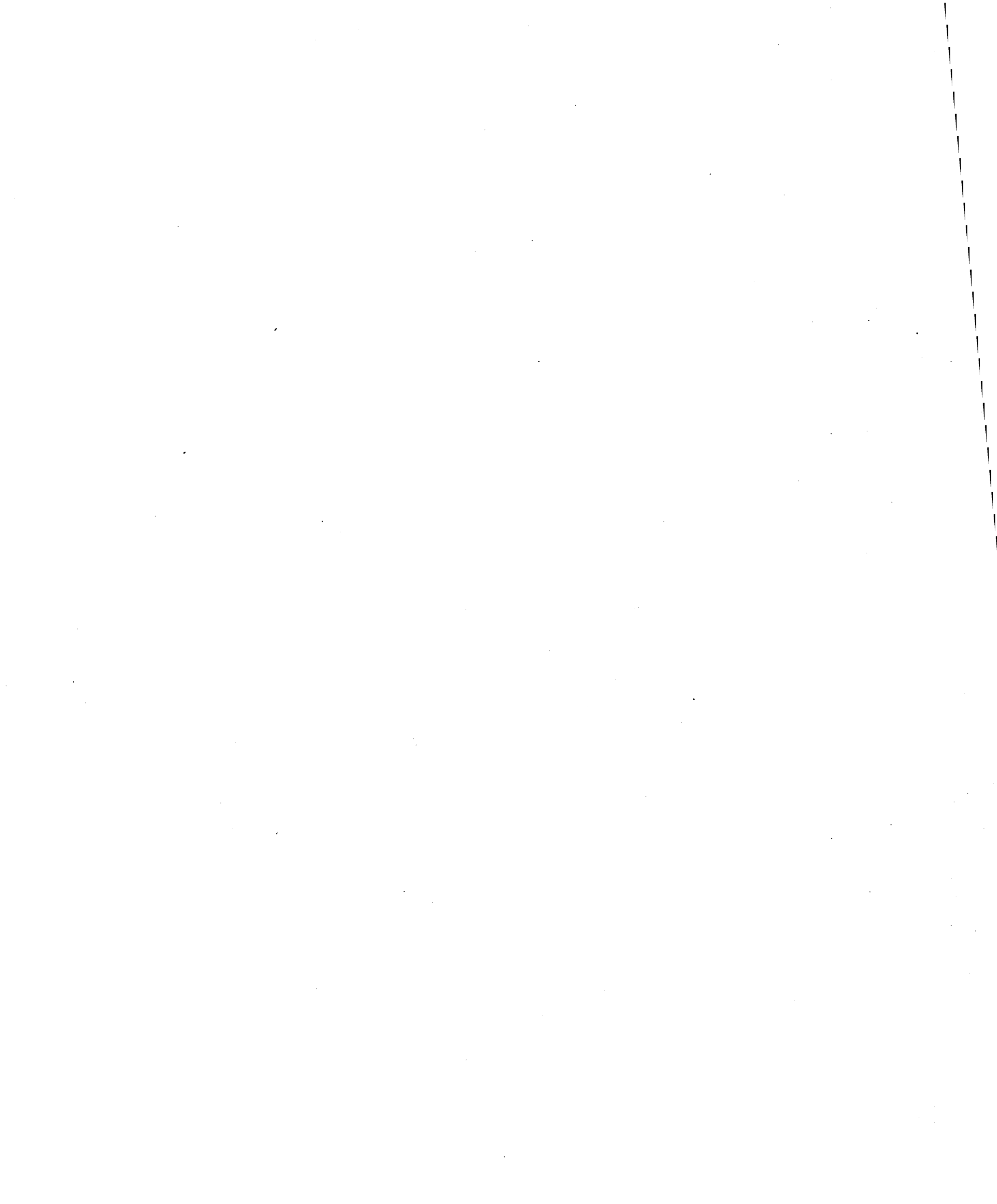
The electrograph at Kew Observatory was moved from the main building at the end of May, 1915. A discussion of the effects of this removal will be found in *Hourly Values*, 1916. The method of testing the insulation of the electrograph at Eskdalemuir is described in *Hourly Values*, 1917.

For Kew Observatory (Table A) the inequalities and the mean Monthly and Annual Values are based on the curves of quiet days, selected from those entirely free from negative potential. Other objects in the selection of quiet days are freedom from large irregular movements, absence of indications of inferior insulation in the electrograph, and the avoidance so far as possible of large non-cyclic changes. The selected quiet days numbered 10 in each month. To obtain this number, however, in April it was necessary to take as "days" several periods of 24 hours which did not commence at midnight. In such cases appropriate allowance was made for the non-cyclic changes but there is no entry in the column headed 24-0.

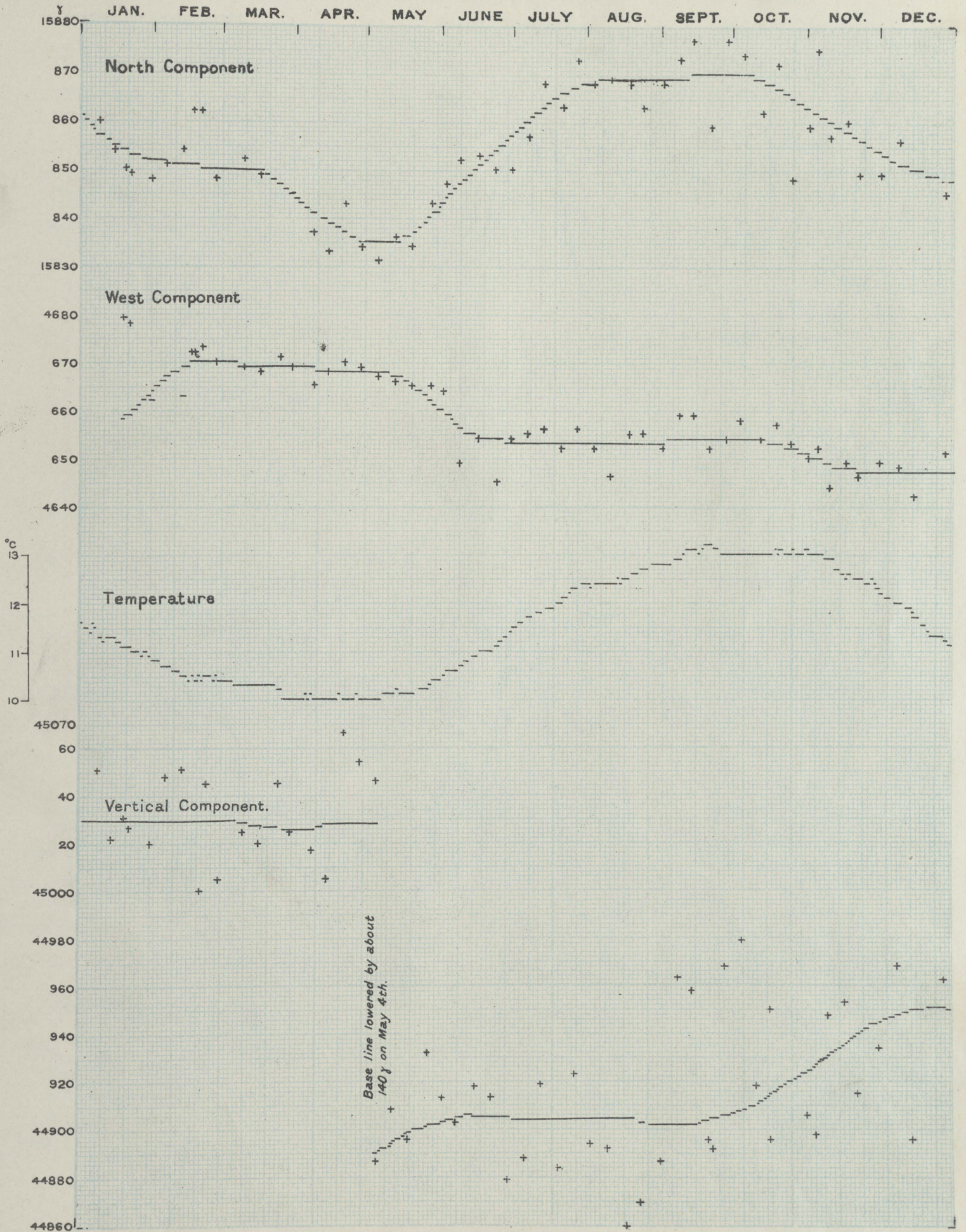
Tables B and C give the corresponding inequalities for Eskdalemuir, the former table for 0a days: the latter for 1a and 2a days combined. The explanation of these symbols is as follows:—

- o, denotes a day during which from midnight to midnight no negative potential was recorded.
- 1, denotes one or more excursions of limited duration to the negative side of the scale.
- 2, denotes negative potential extending in the aggregate over 3 hours or more.
- "a," denotes that within the 25 periods of 60 minutes for which an estimate of the mean potential gradient has to be made in the process of tabulation there was in no case a range of potential gradient in the open exceeding 1000 volts.

In forming these inequalities for Eskdalemuir, only those days were used on which all the 24 hours were available. The number of days employed in the several months in these two tables is specified, being highly variable.



ESKDALEMUIR MAGNETOGRAPHS: BASE VALUES 1920.



DIURNAL VARIATION IN THE COMPONENTS OF MAGNETIC FORCE ON
 QUIET AND DISTURBED DAYS, ESKDALEMUIR 1920.
 (THE YEAR AND THE SEASONS.)

QUIET DAYS Dotted lines.....

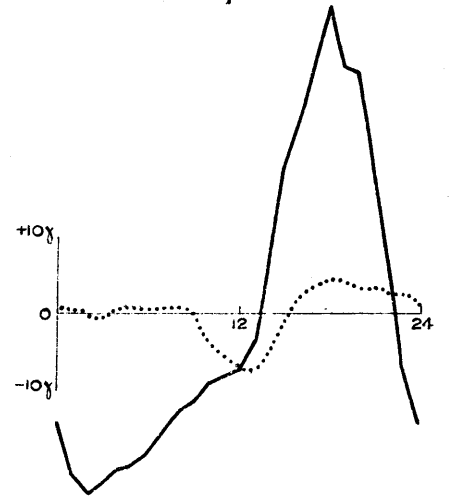
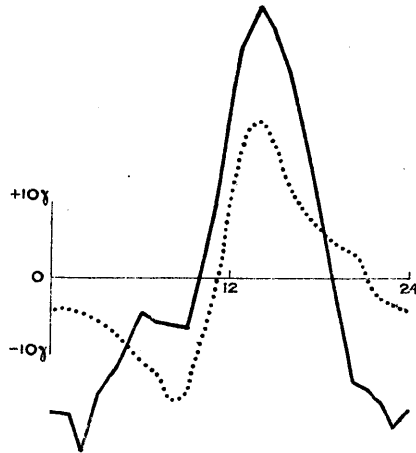
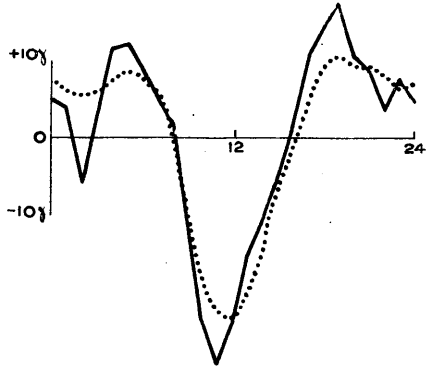
DISTURBED DAYS Continuous lines _____

North Component.

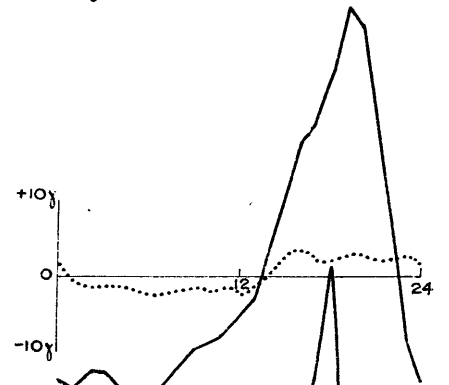
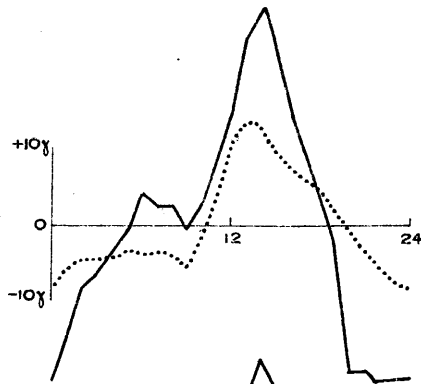
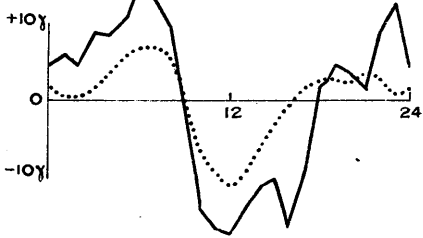
West Component.

Vertical Component.

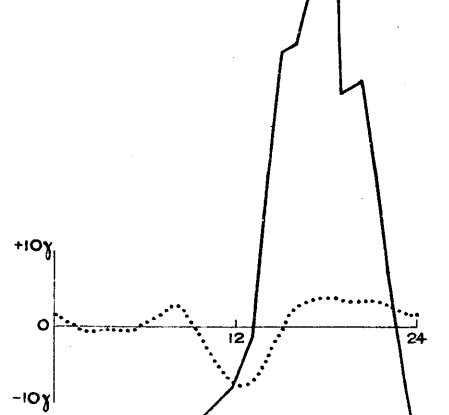
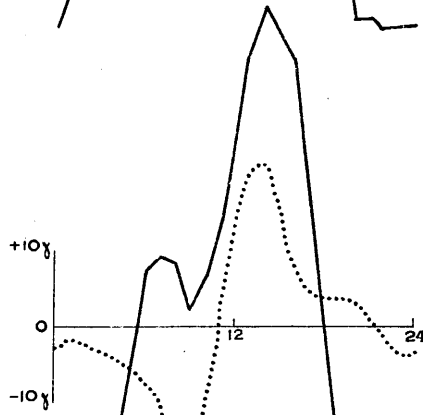
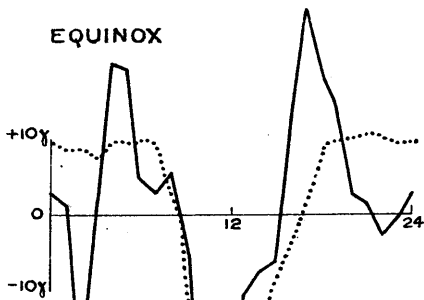
THE YEAR



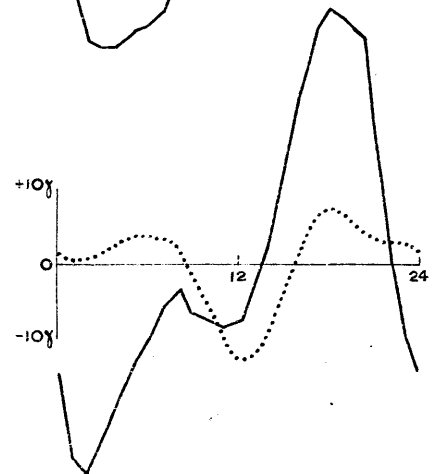
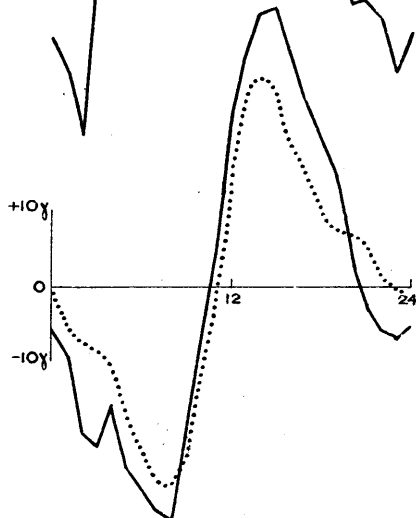
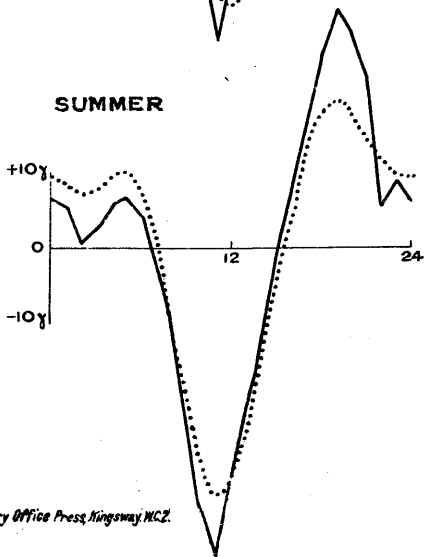
WINTER



EQUINOX



SUMMER



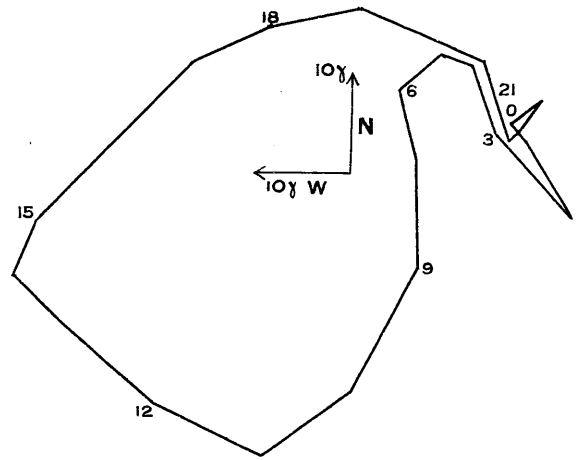
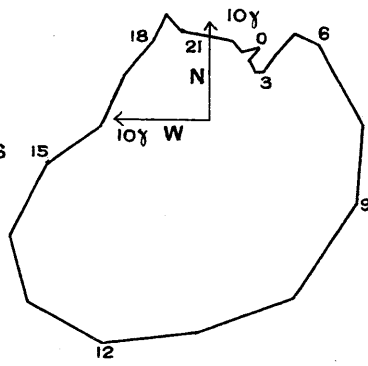
Scales, Force, 1mm = 1γ. Time, 2mm = 1hr.

VECTOR DIAGRAMS ILLUSTRATING DIURNAL VARIATION IN
MAGNETIC FORCE ON QUIET DAYS AND DISTURBED DAYS.
ESKDALEMUIR 1920.

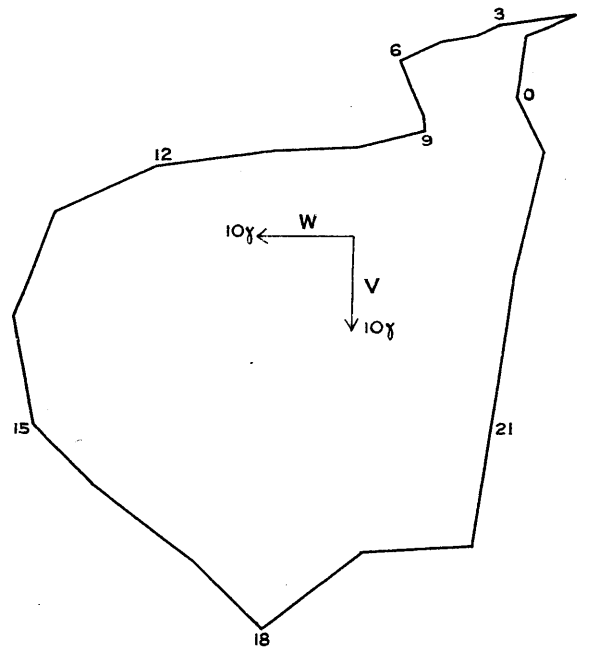
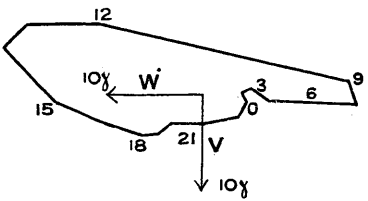
QUIET DAYS.

DISTURBED DAYS.

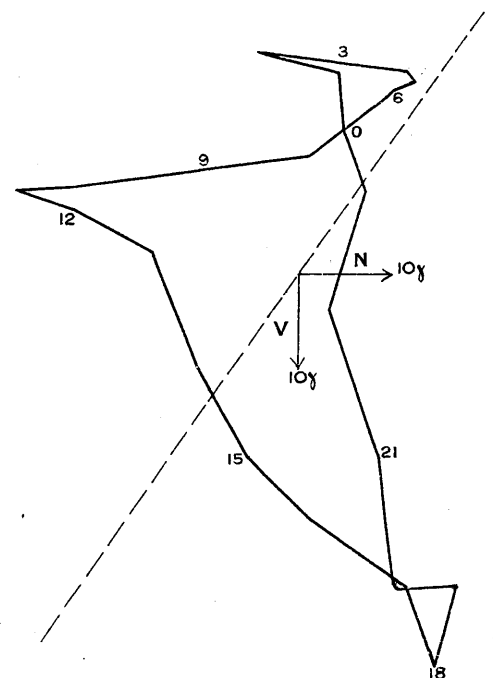
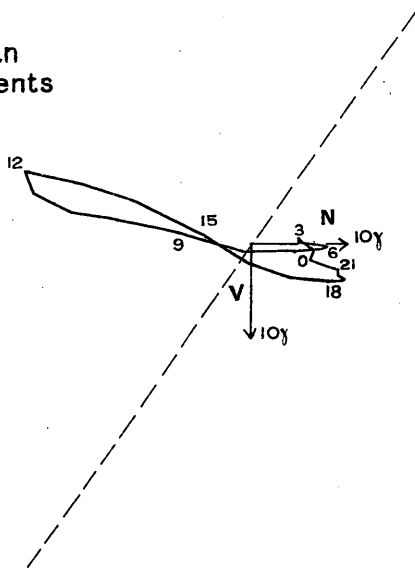
Horizontal Components



Prime Vertical Components



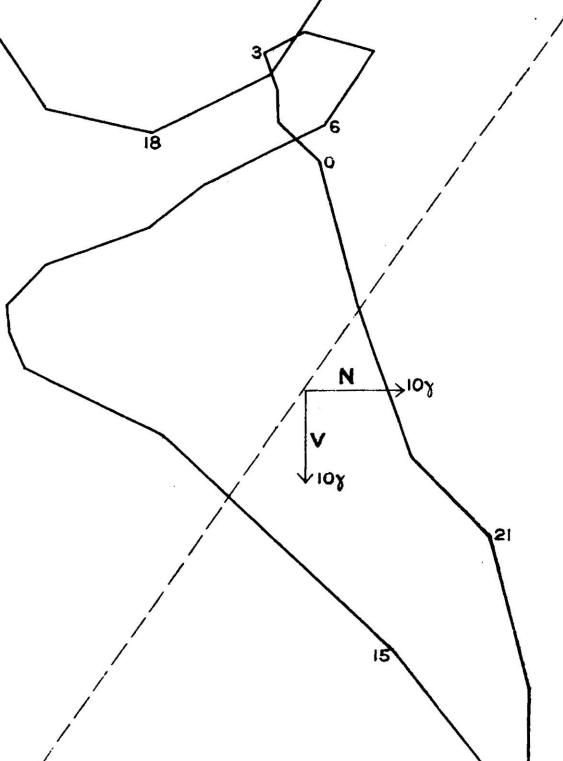
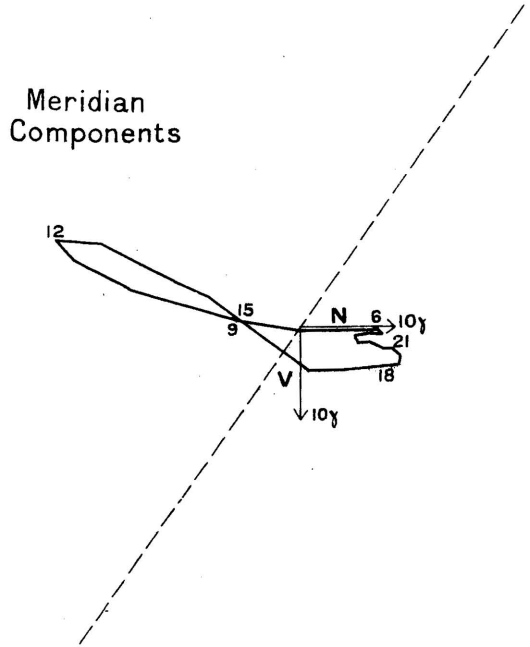
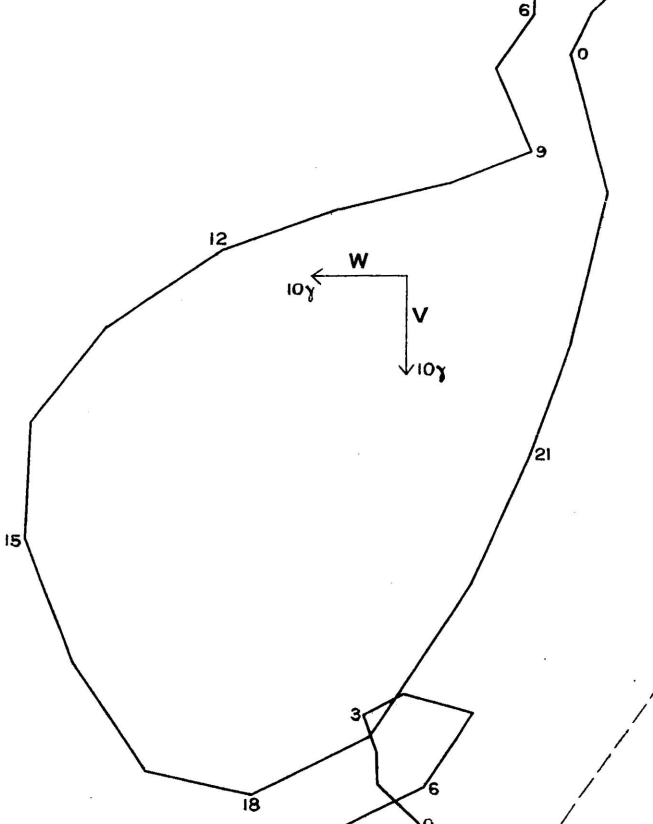
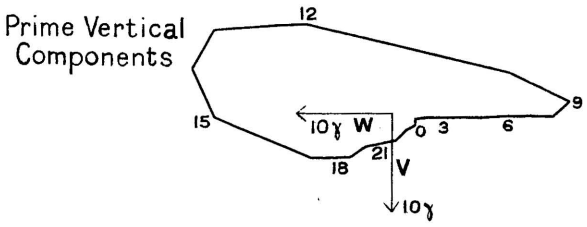
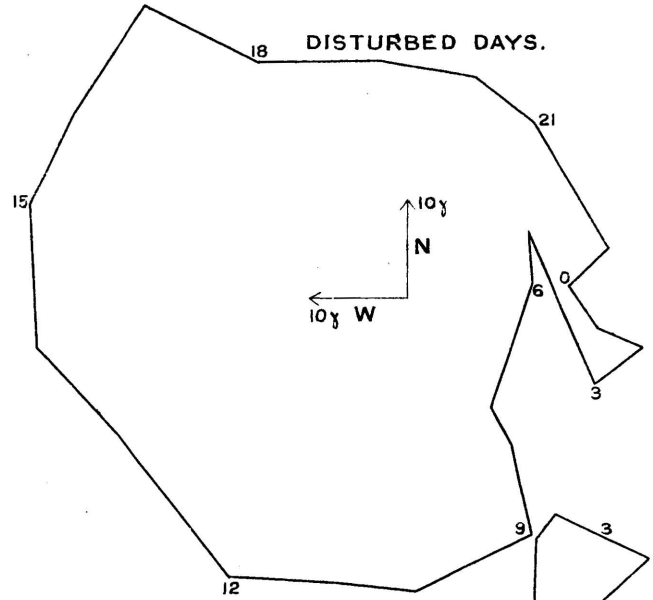
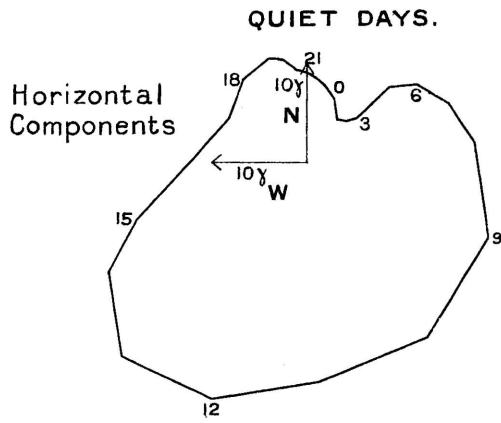
Meridian Components



Scale 0.05.ins = 1γ.



VECTOR DIAGRAMS ILLUSTRATING DIURNAL VARIATION IN
MAGNETIC FORCE ON QUIET DAYS AND DISTURBED DAYS.
ESKDALEMUIR 1919.



Scale 0.05.ins = 1γ.