

METEOROLOGICAL OFFICE.

BRITISH METEOROLOGICAL AND MAGNETIC YEAR BOOK, 1917.
PART IV.

HOURLY VALUES FROM AUTOGRAPHIC RECORDS:
1917.

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 those three years, and is the seventh 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 are set out.

In the third group are the three tables on page 64. These tables 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, but notes on the Meteorological Summaries are included in this volume.

It is proper to add that in all matters concerning the scientific work of the observatories full advantage is taken of the advice of the Gassiot Committee, which was appointed for that purpose by the President and Council of the Royal Society in 1910, in accordance with the scheme approved by the Lords Commissioners of H. M. Treasury when the transfer of the administration of the observatories at Kew and Eskdalemuir was effected.

In particular, reference may be made to one point of great importance, namely, the units employed for the representation of the various quantities.

The letter of the Royal Society, dated 14th April 1910, which conveyed to the Meteorological Committee the information of the appointment of the Gassiot Committee, communicated also the following information as to the proceedings at the first meeting held on 13th April 1910:—

“The question of the units employed in the international publication of meteorological observations was discussed, and it was unanimously resolved—

“(1) That in the opinion of the Gassiot Committee of the Royal Society it is essential that all meteorological returns compiled for international use should be expressed in terms of an international system of units founded on the metric system.

“(2) That a system in which the measure of barometric pressure is expressed in megadynes per square centimetre, and of temperature in absolute degrees Centigrade, would be a satisfactory one.”

In furtherance of the views expressed in these resolutions, and therefore departing from the traditional practice of printing meteorological results in Inch-Fahrenheit units in the same volume which gave electrical and magnetic results in C.G.S. units, the meteorological data have been given in C.G.S. units with temperature in absolute degrees.

In 1911, the first year of the British Meteorological and Magnetic Year Book, this principle was carried out in Part III., Section 1 (the *Geophysical Journal*), and in the two sections of Part IV. In 1912 it was adopted for Part III., Section 1 (*Daily Readings*). The expression of pressure in millibars in the *Monthly Weather Report* and in the maps of the *Weekly Weather Report*, Section 2, dates from 1914. Rainfall has been given in millimetres in the Monthly and Weekly Reports since the beginning of 1915; the use of Absolute Temperatures in the descriptive summaries and in the Tables of District-Values in those publications commenced in 1916.

Tables for conversion of meteorological data between Inch-Fahrenheit units and the units used in this publication are given in the 1913 volume and in the *Computer's Handbook*.

In carrying out the arrangement of the tables endeavour has been made to provide (1) that at the head of each column there shall be found an indication of the denomination of the units employed, and (2) that wherever the same quantity is represented the same unit shall be employed, so that the decimal point as regards a particular quantity always has the same meaning.

The exigencies of printing have made it necessary in the tables of diurnal inequalities to reduce the width of the column used to indicate the months and seasons to the space necessary for two letters at most. No difficulty can be experienced by the reduction of the names of the months to their initial letters, J., F., etc., standing for *January*, *February*, and so on, and in the same way Y. will easily be appreciated as representing *Year*. But “W.,” “Eq.,” and “S.,” standing for *Winter*, *Equinox*, and *Summer*, require some explanation. The Winter, which “W” represents in these tables, includes the months of *November*, *December*, *January*, *February*; the Summer, *May*, *June*, *July*, *August*; and the Equinox, the remaining four months of the year, viz., *September*, *October*, *March*, and *April*.

In the magnetic tables X has been used to denote the North Component and $-Y$ the West Component, in accordance with the International practice of employing X and Y to denote the North and East Components. In the notes, however, the letters N and W have been generally employed, so as to avoid any confusion between numerical and algebraic increases in the South-North and East-West Components.

The year 1917 was the second in which "Summer Time" was introduced. The reader need not take this into consideration, however, as all the observations at the observatories are referred to Greenwich Mean Time.

Some explanation of the insistence in this volume on the references to Richmond and Cahirciveen in connection with Kew Observatory and Valencia Observatory may be desirable.

Kew Observatory is in the Old Deer Park. This Park adjoins the Royal Gardens, Kew, but access to it is by Richmond, not by Kew, so that visitors coming by railway have to be warned not to book to either of the Kew stations. It is of interest to recall that there was once an observatory at Kew, and that some of Bradley's observations which led to the discovery of aberration were made there; the site, in front of Kew Palace, is marked by a sundial.* In the instructions prepared by the King's Observer, Dr. S. C. Demainbray, for the observation of the transit of Venus in 1769, the present observatory is referred to as Richmond Observatory.

The name of Valencia Observatory can be justified on historical grounds, though not geographically. The observatory was established on Valencia Island in 1867, and the instruments were transferred to Westwood House, Cahirciveen, in 1892. The distance between the two sites is about three miles.

The publication of meteorological and geophysical data for the year 1917 is arranged in accordance with the following scheme:—

(a) DAILY WEATHER REPORT.—

The *Daily Weather Report* for 1917 contains meteorological information from nearly 130 stations in or near Europe, of which about 75 are situated in the British Isles. The data for most of the foreign stations, and nearly half the British, include morning and evening observations upon which the weather charts of North-Western Europe and the Eastern Atlantic are based. Some general information for the 24-hour period is given for all British and most foreign stations.

In accordance with regulations for the Defence of the Realm, the *Daily Weather Report* could not be supplied to the public until fourteen days after the date of issue.

(b) BRITISH METEOROLOGICAL AND MAGNETIC YEAR BOOK.—

The serial statistical publications of the Meteorological Office which have been grouped together under this title are as follows:—

* "The History of the Kew Observatory," R. H. Scott, London, *Royal Soc. Proc.*, vol. xxxix., p. 1, 1885.

Part I.—*Weekly Weather Report*, comprising Section I., Weekly results of observations of the meteorological elements for stations and districts in the British Isles; Section II., Daily Synoptic Charts of the North Atlantic Ocean and adjoining continents; Annual and Quarterly Appendices. Issued on Friday of each week. Price 6d. per number. Annual subscription (which includes the Monthly Weather Report) 30s., postage paid. The issue of Section II. has been suspended since August 1914.

Part II.—*Monthly Weather Report*, prepared for issue at the end of the month to which it refers, and uniform with a summary issued annually. Price 6d. per number.

Part III.—(1) *Daily Readings* at Stations of the First and Second Orders. Issued in monthly parts within about five weeks of the close of each month. Price 6d. each part. Annual Volume 5s.

(2) *Geophysical Journal* of the Observatories of the Meteorological Office. Issued in monthly parts. Price 1s. each part.

Part IV.—*Hourly Values* from Autographic Records. Meteorology, Terrestrial Magnetism, and Atmospheric Electricity. Issued at the end of each year. Price 7s. 6d.

Part V.—*Réseau Mondial* (Monthly and Annual Summaries of Pressure, Temperature, and Precipitation at Land Stations, generally two for each Ten-degree Square of Latitude and Longitude) has been issued for 1910, 1911, 1912, and 1913. The 1914 volume is now in the printer's hands.

The publications include the results of the work of the observatories in the departments of Meteorology, Terrestrial Magnetism, Atmospheric Electricity, and Seismology.

It can scarcely be hoped that all the difficulties in the way of adequate presentation and co-ordination of data for different branches of geophysics have been overcome, but, so far as possible, precautions have been taken to enable the reader to know exactly where he stands when he takes up any question which depends upon a comparison of the results of the observatories of the Meteorological Office *inter se*, or with those of other institutions or other countries.

NAPIER SHAW,

Director.

TABLE OF CONTENTS.

	PAGE
Preface	2
Table of Contents	6
Geographical Position of the Observatories	7
Summary of Results in Meteorology :	
Monthly Means for each Hour for Five Observatories	8
Table of Results of Observations of Terrestrial Magnetism :	
Hourly Readings, Eskdalemuir, with absolute observations, base line values, etc.	30
Diurnal Inequalities, Eskdalemuir	54
International Quiet Days : Diurnal Inequalities, Eskdalemuir	56
Selected Disturbed Days : " " "	58
International Quiet Days : " " Kew Observatory	60
Range of Diurnal Inequalities	60
Harmonic Components of the Diurnal Inequality, Eskdalemuir	61
Mean Monthly and Annual Values for Meteorological Office Observatories	62
Mean Annual Values for Magnetic Observatories of the Globe	63
Summary of Results of Observations of Atmospheric Electricity :	
Diurnal Inequality of Potential Gradient at Kew Observatory	64
" " " " " Eskdalemuir, (0, <i>a</i> days only)	64
" " " " " " (1, <i>a</i> and 2, <i>a</i> days only)	64
Notes on the Meteorological Summaries	65
Terrestrial Magnetism :	
I. Notes on the Management of the Instruments at Kew Observatory, Richmond, and on the corresponding Tables	72
II. Notes on the Magnetic Observations made at the Valencia Observatory, Cahirciveen	76
III. Notes on the Management and Manipulation of the Instruments at Eskdalemuir Observatory	77
IV. Review of Results of Magnetic Observations made at Eskdalemuir during 1917	80
Atmospheric Electricity :	
Potential Gradient at Kew Observatory and at Eskdalemuir in 1917	87

HOURLY VALUES FROM AUTOGRAPHIC RECORDS. 1917.

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.

HOURLY VALUES OF THE METEOROLOGICAL ELEMENTS:

PRESSURE IN MILLIBARS

Hour, G.M.T.	0.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Noon.
JANUARY.													
ABERDEEN: Normal 1000+	7.68	7.55	7.54	7.46	7.33	7.19	7.17	7.23	7.46	7.67	7.85	7.86	7.67
1917 Departure.	+ 3.79	+ 3.84	+ 3.97	+ 4.13	+ 4.42	+ 4.53	+ 4.58	+ 4.70	+ 4.95	+ 4.89	+ 4.89	+ 4.84	+ 4.90
ESKDALEMUIR: [Normal] 900+	83.41	83.30	83.37	83.34	83.26	83.16	83.17	83.29	83.44	83.64	83.73	83.69	83.45
1917 Departure.	+ 2.19	+ 2.08	+ 2.06	+ 2.08	+ 2.13	+ 2.20	+ 2.24	+ 2.32	+ 2.41	+ 2.48	+ 2.47	+ 2.46	+ 2.54
CAHRCIVEEN: Normal 1000+	12.74	12.57	12.45	12.45	12.30	12.16	12.09	12.15	12.36	12.63	12.91	13.05	12.89
1917 Departure.	+ 0.67	+ 0.75	+ 0.82	+ 0.88	+ 0.96	+ 0.97	+ 0.96	+ 0.92	+ 0.82	+ 0.84	+ 0.60	+ 0.50	+ 0.34
RICHMOND: Normal 1000+	16.16	16.01	16.04	15.97	15.83	15.70	15.73	15.88	16.15	16.38	16.59	16.58	16.22
1917 Departure.	- 4.81	- 4.83	- 4.79	- 4.75	- 4.62	- 4.58	- 4.60	- 4.60	- 4.54	- 4.54	- 4.58	- 4.58	- 4.55
FEBRUARY.													
ABERDEEN: Normal 1000+	7.49	7.34	7.26	7.05	6.92	6.85	6.86	6.96	7.20	7.32	7.46	7.53	7.47
1917 Departure.	+ 9.05	+ 9.08	+ 9.06	+ 9.04	+ 9.02	+ 9.05	+ 9.07	+ 9.00	+ 9.06	+ 9.10	+ 9.14	+ 9.21	+ 9.27
ESKDALEMUIR: [Normal] 900+	78.62	78.50	78.41	78.20	78.13	78.10	78.20	78.29	78.56	78.72	78.78	78.90	78.91
1917 Departure.	+ 12.93	+ 12.89	+ 12.83	+ 12.90	+ 12.82	+ 12.88	+ 12.78	+ 12.65	+ 12.67	+ 12.74	+ 12.87	+ 12.84	+ 12.77
CAHRCIVEEN: Normal 1000+	11.47	11.39	11.23	11.07	10.86	10.81	10.86	10.91	11.16	11.38	11.58	11.68	11.72
1917 Departure.	+ 7.28	+ 7.25	+ 7.20	+ 7.21	+ 7.20	+ 7.22	+ 7.23	+ 7.21	+ 7.18	+ 7.31	+ 7.23	+ 7.25	+ 7.21
RICHMOND: Normal 1000+	14.68	14.55	14.45	14.22	14.12	14.11	14.14	14.27	14.54	14.67	14.79	14.84	14.62
1917 Departure.	+ 5.33	+ 5.32	+ 5.35	+ 5.45	+ 5.49	+ 5.53	+ 5.50	+ 5.48	+ 5.46	+ 5.49	+ 5.46	+ 5.52	+ 5.44
MARCH.													
ABERDEEN: Normal 1000+	6.77	6.64	6.51	6.27	6.15	6.10	6.17	6.28	6.47	6.56	6.67	6.70	6.67
1917 Departure.	+ 0.10	+ 0.07	+ 0.07	+ 0.01	+ 0.06	+ 0.08	+ 0.02	- 0.01	- 0.01	- 0.09	- 0.25	- 0.36	- 0.37
ESKDALEMUIR: [Normal] 900+	78.32	78.20	78.08	77.83	77.69	77.66	77.79	77.99	78.24	78.42	78.54	78.61	78.66
1917 Departure.	+ 3.34	+ 3.27	+ 3.24	+ 3.26	+ 3.25	+ 3.25	+ 3.24	+ 3.21	+ 3.13	+ 3.03	+ 2.88	+ 2.84	+ 2.82
CAHRCIVEEN: Normal 1000+	11.60	11.47	11.34	11.10	10.90	10.86	10.93	11.04	11.24	11.38	11.53	11.57	11.57
1917 Departure.	- 1.32	- 2.01	- 2.04	- 2.09	- 2.26	- 2.30	- 2.33	- 2.38	- 2.42	- 2.48	- 2.53	- 2.50	- 2.51
RICHMOND: Normal 1000+	12.75	12.68	12.52	12.29	12.21	12.22	12.35	12.51	12.73	12.85	12.90	12.84	12.69
1917 Departure.	- 2.42	- 2.62	- 2.74	- 2.86	- 2.90	- 2.87	- 2.80	- 2.81	- 2.90	- 2.90	- 2.97	- 3.00	- 2.96
APRIL.													
ABERDEEN: Normal 1000+	9.60	9.42	9.28	9.10	8.99	8.98	9.16	9.29	9.43	9.48	9.54	9.51	9.51
1917 Departure.	- 3.13	- 3.23	- 3.34	- 3.33	- 3.25	- 3.22	- 3.10	- 3.01	- 2.91	- 2.80	- 2.75	- 2.71	- 2.63
ESKDALEMUIR: [Normal] 900+	88.65	88.53	88.44	88.31	88.22	88.18	88.34	88.46	88.55	88.54	88.50	88.38	88.29
1917 Departure.	- 6.36	- 6.46	- 6.55	- 6.56	- 6.56	- 6.47	- 6.59	- 6.58	- 6.52	- 6.39	- 6.32	- 6.06	- 5.90
CAHRCIVEEN: Normal 1000+	11.75	11.62	11.41	11.23	11.10	11.05	11.19	11.36	11.54	11.60	11.70	11.75	11.73
1917 Departure.	+ 4.04	+ 4.80	+ 4.80	+ 4.84	+ 4.80	+ 4.82	+ 4.77	+ 4.85	+ 4.90	+ 5.03	+ 5.06	+ 4.98	+ 4.94
RICHMOND: Normal 1000+	13.00	12.84	12.69	12.57	12.48	12.53	12.76	12.92	13.01	13.05	13.04	12.91	12.70
1917 Departure.	- 1.05	- 0.94	- 0.81	- 0.74	- 0.76	- 0.77	- 0.78	- 0.76	- 0.67	- 0.56	- 0.41	- 0.38	- 0.38
MAY.													
ABERDEEN: Normal 1000+	12.04	11.87	11.73	11.57	11.51	11.54	11.66	11.75	11.86	11.88	11.90	11.90	11.89
1917 Departure.	+ 3.37	+ 3.33	+ 3.40	+ 3.38	+ 3.37	+ 3.37	+ 3.40	+ 3.30	+ 3.36	+ 3.34	+ 3.35	+ 3.27	+ 3.23
ESKDALEMUIR: [Normal] 900+	87.64	87.52	87.41	87.25	87.16	87.20	87.29	87.40	87.48	87.43	87.33	87.22	87.14
1917 Departure.	+ 1.16	+ 1.14	+ 1.08	+ 1.09	+ 0.99	+ 1.06	+ 1.07	+ 1.03	+ 1.09	+ 1.07	+ 1.09	+ 1.20	+ 1.18
CAHRCIVEEN: Normal 1000+	14.22	14.02	13.82	13.63	13.48	13.46	13.61	13.74	13.88	13.95	14.01	14.06	14.08
1917 Departure.	- 1.79	- 1.78	- 1.78	- 1.73	- 1.78	- 1.76	- 1.83	- 1.88	- 1.97	- 1.97	- 2.05	- 2.15	- 2.26
RICHMOND: Normal 1000+	15.01	14.88	14.75	14.62	14.58	14.69	14.87	14.99	15.06	15.02	14.95	14.85	14.67
1917 Departure.	- 0.20	- 0.21	- 0.19	- 0.06	- 0.12	- 0.08	- 0.10	- 0.12	- 0.14	- 0.14	- 0.18	- 0.28	- 0.33
JUNE.													
ABERDEEN: Normal 1000+	12.20	12.05	11.91	11.75	11.73	11.75	11.85	11.94	12.03	12.02	12.04	12.04	12.03
1917 Departure.	- 0.17	- 0.11	- 0.06	- 0.07	- 0.05	- 0.05	+ 0.06	+ 0.03	+ 0.05	+ 0.03	+ 0.08	+ 0.14	+ 0.19
ESKDALEMUIR: [Normal] 900+	86.91	86.77	86.62	86.46	86.41	86.43	86.53	86.64	86.73	86.71	86.66	86.60	86.59
1917 Departure.	+ 0.65	+ 0.64	+ 0.63	+ 0.73	+ 0.78	+ 0.96	+ 0.99	+ 1.10	+ 1.08	+ 1.07	+ 1.07	+ 1.12	+ 1.13
CAHRCIVEEN: Normal 1000+	14.61	14.43	14.23	14.03	13.91	13.94	14.08	14.20	14.36	14.45	14.52	14.57	14.62
1917 Departure.	- 0.46	- 0.46	- 0.48	- 0.50	- 0.53	- 0.43	- 0.40	- 0.32	- 0.40	- 0.34	- 0.35	- 0.26	- 0.11
RICHMOND: Normal 1000+	15.32	15.21	15.06	14.94	14.96	15.06	15.21	15.32	15.41	15.35	15.31	15.26	15.10
1917 Departure.	+ 0.87	+ 0.96	+ 0.99	+ 1.01	+ 1.04	+ 1.10	+ 1.17	+ 1.20	+ 1.12	+ 1.13	+ 1.09	+ 1.09	+ 1.04

Notes.—The Geographical Co-ordinates of the Observatories are as follows:—

	Lat.	Long.	G.M.T. of Local Mean Noon.	Height of Barometer Cistern above M.S.L. in metres.
Aberdeen	57° 10' N.	2° 6' W.	12 ^h 8 ^m	26.8
Eskdalemuir	55° 19' N.	3° 12' W.	12 ^h 13 ^m	237.3
Cahirciveen (Valencia Observatory)	51° 56' N.	10° 15' W.	12 ^h 41 ^m	13.7
Richmond (Kew Observatory)	51° 28' N.	0° 19' W.	12 ^h 1 ^m	10.4

NORMALS AND DEPARTURES THEREFROM IN 1917.

JANUARY TO JUNE.

13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	Midt.	Mean.	Hour, G.M.T.
													JANUARY.
mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	mb.	Normal. ABERDEEN.
7.41	7.32	7.29	7.41	7.46	7.59	7.63	7.74	7.74	7.77	7.70	7.66	7.53	1917 Dep. " "
+ 4.88	+ 4.80	+ 4.78	+ 4.71	+ 4.54	+ 4.41	+ 4.24	+ 4.18	+ 4.15	+ 4.08	+ 4.02	+ 4.11	+ 4.48	[Normal.] ESKDALEMUIR.
83.13	82.92	82.83	82.89	82.95	83.03	83.08	83.21	83.20	83.24	83.26	83.30	83.25	1917 Dep. " "
+ 2.49	+ 2.47	+ 2.50	+ 2.45	+ 2.39	+ 2.38	+ 2.30	+ 2.36	+ 2.41	+ 2.41	+ 2.44	+ 2.42	+ 2.35	Normal. CAHRCIVEEN.
12.55	12.27	12.21	12.29	12.38	12.53	12.65	12.77	12.82	12.84	12.81	12.77	12.54	1917 Dep. " "
+ 0.30	+ 0.22	+ 0.18	+ 0.09	+ 0.17	+ 0.14	+ 0.19	+ 0.25	+ 0.40	+ 0.41	+ 0.51	+ 0.43	+ 0.53	Normal. RICHMOND.
15.86	15.66	15.67	15.77	15.85	15.99	16.10	16.20	16.22	16.23	16.19	16.12	16.04	1917 Dep. " "
- 4.59	- 4.51	- 4.52	- 4.49	- 4.50	- 4.55	- 4.68	- 4.79	- 4.86	- 4.90	- 4.93	- 4.97	- 4.66	
													FEBRUARY.
7.24	7.11	6.98	7.05	7.13	7.36	7.42	7.50	7.48	7.51	7.46	7.45	7.25	Normal. ABERDEEN.
+ 9.34	+ 9.25	+ 9.27	+ 9.29	+ 9.27	+ 9.24	+ 9.25	+ 9.29	+ 9.27	+ 9.29	+ 9.33	+ 9.30	+ 9.18	1917 Dep. " "
78.69	78.47	78.32	78.26	78.23	78.43	78.47	78.47	78.44	78.48	78.42	78.41	78.45	[Normal.] ESKDALEMUIR.
+ 12.77	+ 12.85	+ 12.88	+ 12.94	+ 13.07	+ 13.18	+ 13.23	+ 13.28	+ 13.37	+ 13.38	+ 13.41	+ 13.42	+ 12.98	1917 Dep. " "
11.47	11.21	10.98	10.95	10.99	11.20	11.40	11.46	11.46	11.50	11.44	11.42	11.26	Normal. CAHRCIVEEN.
+ 7.23	+ 7.20	+ 7.31	+ 7.36	+ 7.42	+ 7.41	+ 7.45	+ 7.48	+ 7.64	+ 7.58	+ 7.64	+ 7.63	+ 7.32	1917 Dep. " "
14.30	14.03	13.92	13.95	14.05	14.33	14.46	14.56	14.63	14.67	14.62	14.62	14.40	Normal. RICHMOND.
+ 5.44	+ 5.49	+ 5.44	+ 5.45	+ 5.46	+ 5.48	+ 5.54	+ 5.60	+ 5.64	+ 5.65	+ 5.72	+ 5.71	+ 5.49	1917 Dep. " "
													MARCH.
6.51	6.36	6.26	6.25	6.31	6.55	6.71	6.84	6.84	6.86	6.81	6.67	6.51	Normal. ABERDEEN.
- 0.38	- 0.54	- 0.63	- 0.69	- 0.71	- 0.75	- 0.72	- 0.74	- 0.73	- 0.67	- 0.64	- 0.60	- 0.34	1917 Dep. " "
78.51	78.38	78.27	78.24	78.26	78.45	78.57	78.70	78.66	78.64	78.59	78.52	78.31	[Normal.] ESKDALEMUIR.
+ 2.71	+ 2.65	+ 2.50	+ 2.30	+ 2.28	+ 2.22	+ 2.27	+ 2.27	+ 2.36	+ 2.37	+ 2.32	+ 2.33	+ 2.77	1917 Dep. " "
11.44	11.23	11.05	10.99	11.00	11.18	11.39	11.57	11.67	11.74	11.71	11.67	11.31	Normal. CAHRCIVEEN.
- 2.45	- 2.52	- 2.46	- 2.43	- 2.43	- 2.53	- 2.59	- 2.60	- 2.52	- 2.69	- 2.61	- 2.61	- 2.41	1917 Dep. " "
12.41	12.14	11.98	11.90	11.98	12.27	12.49	12.68	12.75	12.80	12.76	12.72	12.49	Normal. RICHMOND.
- 2.91	- 2.99	- 2.95	- 2.94	- 2.98	- 2.95	- 2.88	- 2.82	- 2.88	- 2.94	- 3.03	- 3.23	- 2.90	1917 Dep. " "
													APRIL.
9.44	9.36	9.22	9.21	9.21	9.37	9.55	9.81	9.85	9.85	9.79	9.72	9.42	Normal. ABERDEEN.
- 2.54	- 2.43	- 2.30	- 2.23	- 2.15	- 2.15	- 2.22	- 2.24	- 2.35	- 2.38	- 2.46	- 2.58	- 2.69	1917 Dep. " "
88.23	88.12	87.98	87.97	87.98	88.11	88.32	88.62	88.73	88.79	88.79	88.80	88.38	[Normal.] ESKDALEMUIR.
- 5.84	- 5.80	- 5.65	- 5.62	- 5.55	- 5.52	- 5.59	- 5.72	- 5.65	- 5.77	- 5.70	- 5.78	- 6.06	1917 Dep. " "
11.65	11.60	11.41	11.31	11.27	11.34	11.43	11.65	11.84	11.87	11.80	11.76	11.51	Normal. CAHRCIVEEN.
+ 5.02	+ 4.96	+ 4.98	+ 5.02	+ 5.03	+ 5.00	+ 4.89	+ 4.91	+ 4.99	+ 4.99	+ 5.15	+ 5.24	+ 4.94	1917 Dep. " "
12.53	12.28	12.07	11.98	12.02	12.19	12.46	12.85	13.00	13.08	13.09	13.06	12.67	Normal. RICHMOND.
- 0.37	- 0.33	- 0.35	- 0.30	- 0.27	- 0.31	- 0.37	- 0.36	- 0.36	- 0.36	- 0.31	- 0.31	- 0.51	1917 Dep. " "
													MAY.
11.84	11.80	11.69	11.65	11.60	11.69	11.81	12.03	12.18	12.23	12.17	12.09	11.83	Normal. ABERDEEN.
+ 3.18	+ 3.11	+ 3.08	+ 3.03	+ 2.94	+ 2.90	+ 2.84	+ 2.78	+ 2.75	+ 2.78	+ 2.75	+ 2.82	+ 3.13	1917 Dep. " "
87.04	86.94	86.83	86.76	86.73	86.85	87.02	87.30	87.56	87.71	87.71	87.65	87.25	[Normal.] ESKDALEMUIR.
+ 1.17	+ 1.17	+ 1.10	+ 1.04	+ 1.01	+ 0.90	+ 0.95	+ 0.92	+ 0.86	+ 0.71	+ 0.69	+ 0.61	+ 1.02	1917 Dep. " "
14.05	14.03	13.94	13.87	13.83	13.84	13.92	14.06	14.30	14.39	14.33	14.24	13.94	Normal. CAHRCIVEEN.
- 2.24	- 2.30	- 2.40	- 2.47	- 2.49	- 2.51	- 2.49	- 2.52	- 2.52	- 2.64	- 2.65	- 2.64	- 2.18	1917 Dep. " "
14.50	14.34	14.16	14.05	14.00	14.11	14.31	14.68	14.96	15.09	15.10	15.03	14.68	Normal. RICHMOND.
- 0.28	- 0.39	- 0.38	- 0.40	- 0.38	- 0.43	- 0.36	- 0.43	- 0.43	- 0.42	- 0.35	- 0.44	- 0.28	1917 Dep. " "
													JUNE.
11.95	11.92	11.82	11.77	11.70	11.77	11.85	12.02	12.21	12.30	12.26	12.20	11.95	Normal. ABERDEEN.
+ 0.27	+ 0.34	+ 0.35	+ 0.34	+ 0.36	+ 0.44	+ 0.37	+ 0.40	+ 0.43	+ 0.54	+ 0.61	+ 0.70	+ 0.21	1917 Dep. " "
86.53	86.49	86.35	86.30	86.24	86.31	86.45	86.62	86.87	86.95	86.94	86.86	86.59	[Normal.] ESKDALEMUIR.
+ 1.13	+ 1.11	+ 1.13	+ 1.15	+ 1.20	+ 1.22	+ 1.22	+ 1.31	+ 1.39	+ 1.44	+ 1.48	+ 1.51	+ 1.09	1917 Dep. " "
14.60	14.56	14.50	14.44	14.37	14.36	14.43	14.51	14.68	14.83	14.75	14.65	14.42	Normal. CAHRCIVEEN.
+ 0.05	+ 0.12	+ 0.25	+ 0.33	+ 0.37	+ 0.40	+ 0.49	+ 0.57	+ 0.61	+ 0.47	+ 0.56	+ 0.50	- 0.02	1917 Dep. " "
14.92	14.75	14.61	14.47	14.40	14.48	14.64	14.92	15.25	15.38	15.41	15.33	15.03	Normal. RICHMOND.
+ 1.09	+ 1.04	+ 0.97	+ 0.94	+ 1.01	+ 1.04	+ 1.08	+ 1.09	+ 1.13	+ 1.14	+ 1.18	+ 1.21	+ 1.07	1917 Dep. " "

The values for 1917 are given by the departure from the normal; + indicates excess, - defect.
 The pressures are for station level, corrected for temperature and gravity, measured at each exact hour, G.M.T.
 The normals are for the period 1871-1915. (Eskdalemuir 1911-15 only).

$$\text{Mean values are calculated by the formula, mean} = \frac{1}{24} \left\{ (1 + \dots + 23) + \frac{1}{2}(0 + 24) \right\}$$

HOURLY VALUES OF THE METEOROLOGICAL ELEMENTS :

PRESSURE IN MILLIBARS.

Hour, G.M.T.	0.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Noon.
JULY.													
ABERDEEN: Normal 1000+	9.85	9.69	9.54	9.36	9.34	9.36	9.46	9.55	9.64	9.63	9.64	9.66	9.66
1917 Departure.	+ 5.39	+ 5.43	+ 5.36	+ 5.34	+ 5.34	+ 5.34	+ 5.36	+ 5.36	+ 5.33	+ 5.33	+ 5.34	+ 5.32	+ 5.32
ESKDALEMUIR: [Normal] 900+	86.77	86.63	86.51	86.37	86.33	86.30	86.39	86.42	86.55	86.55	86.48	86.43	86.41
1917 Departure.	+ 3.59	+ 3.66	+ 3.62	+ 3.59	+ 3.60	+ 3.71	+ 3.70	+ 3.77	+ 3.72	+ 3.70	+ 3.68	+ 3.69	+ 3.59
CAHRCIVEEN: Normal 1000+	14.36	14.18	13.96	13.74	13.59	13.59	13.70	13.81	13.97	14.04	14.10	14.17	14.23
1917 Departure.	+ 1.65	+ 1.72	+ 1.67	+ 1.62	+ 1.58	+ 1.55	+ 1.49	+ 1.54	+ 1.47	+ 1.51	+ 1.48	+ 1.51	+ 1.50
RICHMOND: Normal 1000+	14.60	14.46	14.32	14.20	14.21	14.30	14.46	14.59	14.68	14.65	14.60	14.54	14.41
1917 Departure.	+ 3.24	+ 3.22	+ 3.14	+ 3.10	+ 3.08	+ 3.05	+ 2.95	+ 3.00	+ 2.89	+ 2.86	+ 2.91	+ 2.95	+ 2.98
AUGUST.													
ABERDEEN: Normal 1000+	8.70	8.53	8.41	8.23	8.14	8.14	8.27	8.37	8.49	8.54	8.57	8.59	8.57
1917 Departure.	- 7.51	- 7.46	- 7.56	- 7.59	- 7.61	- 7.69	- 7.85	- 7.89	- 8.00	- 8.08	- 8.11	- 8.19	- 8.25
ESKDALEMUIR: [Normal] 900+	85.82	85.70	85.62	85.46	85.35	85.37	85.50	85.57	85.67	85.69	85.65	85.60	85.56
1917 Departure.	- 9.18	- 9.31	- 9.50	- 9.62	- 9.77	- 9.86	- 10.00	- 9.94	- 9.92	- 9.89	- 9.82	- 9.75	- 9.69
CAHRCIVEEN: Normal 1000+	13.02	12.85	12.64	12.44	12.25	12.20	12.33	12.48	12.65	12.75	12.86	12.91	12.92
1917 Departure.	- 7.36	- 7.36	- 7.34	- 7.40	- 7.38	- 7.33	- 7.39	- 7.42	- 7.51	- 7.61	- 7.76	- 7.81	- 7.86
RICHMOND: Normal 1000+	14.15	14.00	13.87	13.74	13.66	13.72	13.91	14.05	14.17	14.20	14.16	14.06	13.91
1917 Departure.	- 7.51	- 7.61	- 7.75	- 7.84	- 7.90	- 7.94	- 7.94	- 7.90	- 7.85	- 7.77	- 7.61	- 7.44	- 7.33
SEPTEMBER.													
ABERDEEN: Normal 1000+	10.79	10.67	10.56	10.36	10.24	10.20	10.24	10.48	10.63	10.71	10.75	10.69	10.66
1917 Departure.	- 3.31	- 3.35	- 3.43	- 3.43	- 3.43	- 3.45	- 3.31	- 3.37	- 3.35	- 3.36	- 3.32	- 3.37	- 3.32
ESKDALEMUIR: [Normal] 900+	89.25	89.13	89.02	88.83	88.73	88.70	88.84	89.00	89.16	89.26	89.23	89.14	89.05
1917 Departure.	- 3.55	- 3.67	- 3.70	- 3.72	- 3.72	- 3.67	- 3.70	- 3.67	- 3.69	- 3.73	- 3.73	- 3.77	- 3.76
CAHRCIVEEN: Normal 1000+	14.41	14.25	14.04	13.82	13.65	13.59	13.71	13.94	14.14	14.29	14.44	14.44	14.41
1917 Departure.	+ 1.11	+ 1.13	+ 1.09	+ 1.05	+ 1.02	+ 1.09	+ 1.11	+ 1.19	+ 1.24	+ 1.29	+ 1.27	+ 1.31	+ 1.35
RICHMOND: Normal 1000+	15.80	15.69	15.53	15.38	15.29	15.31	15.52	15.72	15.90	16.02	16.00	15.88	15.72
1917 Departure.	+ 1.71	+ 1.70	+ 1.81	+ 1.88	+ 1.92	+ 1.97	+ 1.90	+ 1.98	+ 2.07	+ 2.14	+ 2.20	+ 2.03	+ 2.05
OCTOBER.													
ABERDEEN: Normal 1000+	7.52	7.38	7.25	7.04	6.97	6.92	7.03	7.19	7.43	7.52	7.63	7.62	7.55
1917 Departure.	- 11.95	- 11.73	- 11.54	- 11.32	- 11.07	- 10.98	- 11.00	- 10.84	- 10.74	- 10.78	- 10.89	- 11.04	- 11.15
ESKDALEMUIR: [Normal] 900+	85.68	85.55	85.42	85.15	85.02	85.04	85.12	85.31	85.54	85.55	85.57	85.60	85.47
1917 Departure.	- 12.13	- 11.90	- 11.59	- 11.40	- 11.10	- 10.94	- 10.83	- 10.78	- 10.80	- 10.85	- 11.01	- 11.15	- 11.30
CAHRCIVEEN: Normal 1000+	10.73	10.60	10.45	10.21	10.08	10.08	10.13	10.25	10.56	10.74	10.89	10.93	10.90
1917 Departure.	- 1.94	- 1.92	- 1.75	- 1.65	- 1.71	- 1.73	- 1.89	- 1.95	- 2.23	- 2.35	- 2.53	- 2.72	- 2.77
RICHMOND: Normal 1000+	12.71	12.61	12.43	12.23	12.19	12.18	12.27	12.51	12.78	12.88	12.89	12.84	12.59
1917 Departure.	- 5.26	- 5.28	- 5.19	- 5.04	- 4.85	- 4.65	- 4.62	- 4.52	- 4.50	- 4.50	- 4.49	- 4.62	- 4.61
NOVEMBER.													
ABERDEEN: Normal 1000+	6.79	6.63	6.58	6.42	6.35	6.30	6.35	6.46	6.72	6.81	6.95	6.92	6.74
1917 Departure.	- 0.06	- 0.06	- 0.08	+ 0.03	+ 0.08	+ 0.23	+ 0.66	+ 0.36	+ 0.41	+ 0.43	+ 0.48	+ 0.46	+ 0.46
ESKDALEMUIR: [Normal] 900+	80.80	80.59	80.52	80.33	80.16	80.11	80.09	80.19	80.42	80.52	80.56	80.53	80.35
1917 Departure.	+ 4.32	+ 4.24	+ 4.15	+ 4.23	+ 4.58	+ 4.92	+ 5.18	+ 5.38	+ 5.45	+ 5.36	+ 5.51	+ 5.54	+ 5.56
CAHRCIVEEN: Normal 1000+	11.34	11.19	11.02	10.91	10.75	10.72	10.74	10.82	11.09	11.33	11.51	11.58	11.39
1917 Departure.	+ 9.08	+ 9.15	+ 9.23	+ 9.28	+ 9.28	+ 9.31	+ 9.32	+ 9.29	+ 9.22	+ 9.27	+ 9.20	+ 9.21	+ 9.17
RICHMOND: Normal 1000+	13.09	12.91	12.85	12.70	12.61	12.61	12.66	12.83	13.13	13.26	13.41	13.33	13.02
1917 Departure.	+ 5.56	+ 5.47	+ 5.40	+ 5.37	+ 5.51	+ 5.54	+ 5.67	+ 5.82	+ 5.96	+ 6.07	+ 6.15	+ 6.18	+ 6.30
DECEMBER.													
ABERDEEN: Normal 1000+	4.32	4.18	4.17	4.05	3.92	3.80	3.81	3.87	4.07	4.26	4.50	4.46	4.28
1917 Departure.	+ 11.70	+ 11.71	+ 11.80	+ 11.95	+ 12.11	+ 12.15	+ 12.30	+ 12.46	+ 12.60	+ 12.77	+ 12.90	+ 12.90	+ 13.01
ESKDALEMUIR: [Normal] 900+	75.23	75.15	75.21	75.18	75.03	74.88	74.81	74.80	74.97	75.13	75.22	75.17	74.95
1917 Departure.	+ 17.70	+ 17.63	+ 17.48	+ 17.37	+ 17.34	+ 17.51	+ 17.66	+ 17.78	+ 17.88	+ 18.01	+ 18.33	+ 18.43	+ 18.61
CAHRCIVEEN: Normal 1000+	9.59	9.39	9.24	9.23	9.07	8.95	8.92	8.99	9.19	9.46	9.77	9.91	9.69
1917 Departure.	+ 15.37	+ 15.42	+ 15.44	+ 15.29	+ 15.20	+ 15.20	+ 15.31	+ 15.39	+ 15.46	+ 15.59	+ 15.54	+ 15.63	+ 15.60
RICHMOND: Normal 1000+	12.72	12.55	12.58	12.49	12.34	12.22	12.29	12.40	12.65	12.88	13.14	13.02	12.69
1917 Departure.	+ 9.56	+ 9.57	+ 9.43	+ 9.41	+ 9.33	+ 9.48	+ 9.48	+ 9.57	+ 9.47	+ 9.53	+ 9.38	+ 9.40	+ 9.32
YEAR.													
ABERDEEN: Normal 1000+	8.65	8.50	8.39	8.22	8.13	8.09	8.17	8.28	8.45	8.53	8.63	8.62	8.56
1917 Departure.	+ 0.60	+ 0.62	+ 0.64	+ 0.68	+ 0.75	+ 0.78	+ 0.85	+ 0.84	+ 0.90	+ 0.91	+ 0.89	+ 0.88	+ 0.89
ESKDALEMUIR: [Normal] 900+	83.93	83.80	83.72	83.56	83.46	83.43	83.51	83.61	83.77	83.85	83.85	83.82	83.74
1917 Departure.	+ 1.22	+ 1.18	+ 1.15	+ 1.16	+ 1.19	+ 1.29	+ 1.31	+ 1.36	+ 1.38	+ 1.38	+ 1.42	+ 1.45	+ 1.46
CAHRCIVEEN: Normal 1000+	12.49	12.33	12.15	11.99	11.83	11.78	11.86	11.97	12.18	12.33	12.48	12.55	12.51
1917 Departure.	+ 2.19	+ 2.23	+ 2.24	+ 2.23	+ 2.20	+ 2.22	+ 2.19	+ 2.21	+ 2.15	+ 2.18	+ 2.10	+ 2.08	+ 2.05
RICHMOND: Normal 1000+	14.17	14.03	13.92	13.78	13.71	13.72	13.85	14.00	14.19	14.27	14.32	14.25	14.03
1917 Departure.	+ 0.41	+ 0.40	+ 0.39	+ 0.41	+ 0.43	+ 0.48	+ 0.48	+ 0.53	+ 0.52	+ 0.57	+ 0.57	+ 0.57	+ 0.58

NORMALS AND DEPARTURES THEREFROM IN 1917.

JULY TO DECEMBER AND YEAR.

13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	Midt.	Mean.	Hour, G.M.T.
													JULY.
mb. 9.61 + 5.30 86.35 + 3.53 14.24 + 1.49 14.26 + 2.96	mb. 9.60 + 5.28 86.29 + 3.44 14.25 + 1.48 14.12 + 2.92	mb. 9.54 + 5.32 86.22 + 3.40 14.20 + 1.45 13.99 + 2.92	mb. 9.46 + 5.38 86.13 + 3.37 14.13 + 1.44 13.84 + 2.88	mb. 9.40 + 5.28 86.07 + 3.38 14.07 + 1.42 13.75 + 2.85	mb. 9.47 + 5.26 86.10 + 3.28 14.09 + 1.33 13.79 + 2.90	mb. 9.56 + 5.13 86.21 + 3.28 14.16 + 1.34 13.94 + 2.90	mb. 9.72 + 5.15 86.41 + 3.31 14.27 + 1.41 14.22 + 2.83	mb. 9.87 + 5.15 86.64 + 3.33 14.45 + 1.51 14.52 + 2.89	mb. 9.95 + 5.11 86.71 + 3.26 14.55 + 1.41 14.67 + 2.82	mb. 9.89 + 5.14 86.71 + 3.29 14.51 + 1.42 14.69 + 2.83	mb. 9.82 + 5.16 86.65 + 3.43 14.40 + 1.45 14.64 + 2.82	mb. 9.60 + 5.29 86.41 + 3.53 14.10 + 1.50 14.33 + 2.95	Normal. ABERDEEN. 1917 Dep. " " [Normal.] ESKDALEMUIR. 1917 Dep. " " Normal. CAHRCIVEEN. 1917 Dep. " " Normal. RICHMOND. 1917 Dep. " "
													AUGUST.
- 8.53 - 8.21 85.56 - 9.64 12.93 - 7.97 13.76 - 7.26	8.49 - 8.21 85.50 - 9.60 12.92 - 8.05 13.60 - 7.22	8.40 - 8.16 85.44 - 9.56 12.83 - 8.04 13.45 - 7.17	8.34 - 8.25 85.37 - 9.53 12.74 - 8.19 13.32 - 7.11	8.30 - 8.29 85.36 - 9.45 12.69 - 8.15 13.25 - 7.10	8.36 - 8.26 85.42 - 9.38 12.70 - 8.20 13.33 - 7.13	8.48 - 8.27 85.57 - 9.41 12.77 - 8.09 13.53 - 7.15	8.72 - 8.31 85.88 - 9.51 12.96 - 8.02 13.90 - 7.19	8.78 - 8.21 86.02 - 9.56 13.14 - 7.86 14.07 - 7.30	8.81 - 8.13 86.08 - 9.70 13.15 - 7.88 14.18 - 7.41	8.74 - 8.12 86.07 - 9.78 13.09 - 7.85 14.19 - 7.51	8.66 - 8.07 86.01 - 9.87 12.99 - 7.90 14.12 - 7.54	8.48 - 8.02 85.62 - 9.65 12.76 - 7.76 13.84 - 7.50	Normal. ABERDEEN. 1917 Dep. " " [Normal.] ESKDALEMUIR. 1917 Dep. " " Normal. CAHRCIVEEN. 1917 Dep. " " Normal. RICHMOND. 1917 Dep. " "
													SEPTEMBER.
10.56 - 3.35 88.95 - 3.74 14.35 + 1.42 15.49 + 2.00	10.46 - 3.40 88.81 - 3.67 14.24 + 1.39 15.29 + 2.00	10.33 - 3.44 88.67 - 3.66 14.07 + 1.50 15.10 + 2.00	10.30 - 3.49 88.59 - 3.57 13.96 + 1.55 15.01 + 1.95	10.33 - 3.55 88.59 - 3.52 13.95 + 1.52 15.04 + 1.87	10.50 - 3.46 88.72 - 3.43 14.04 + 1.51 15.19 + 1.88	10.70 - 3.33 88.93 - 3.28 14.16 + 1.54 15.45 + 1.92	10.89 - 3.17 89.13 - 3.16 14.39 + 1.63 15.72 + 2.04	10.88 - 3.10 89.21 - 3.09 14.47 + 1.69 15.79 + 2.09	10.89 - 2.94 89.27 - 3.03 14.44 + 1.66 15.84 + 2.09	10.82 - 2.84 89.27 - 3.03 14.37 + 1.68 15.79 + 2.13	10.74 - 2.77 89.20 - 2.95 14.27 + 1.69 15.71 + 2.23	10.57 - 3.32 88.98 - 3.54 14.14 + 1.37 15.56 + 1.98	Normal. ABERDEEN. 1917 Dep. " " [Normal.] ESKDALEMUIR. 1917 Dep. " " Normal. CAHRCIVEEN. 1917 Dep. " " Normal. RICHMOND. 1917 Dep. " "
													OCTOBER.
7.38 - 11.26 85.25 - 11.39 10.69 - 2.75 12.33 - 4.68	7.28 - 11.60 85.10 - 11.49 10.54 - 2.76 12.17 - 4.73	7.18 - 11.51 84.96 - 11.66 10.41 - 2.70 12.08 - 4.87	7.21 - 11.72 84.95 - 11.95 10.40 - 2.82 12.10 - 4.97	7.31 - 11.89 85.11 - 12.28 10.45 - 2.82 12.25 - 5.11	7.56 - 12.15 85.35 - 12.47 10.65 - 2.70 12.56 - 5.27	7.62 - 12.30 85.47 - 12.58 10.81 - 2.61 12.69 - 5.41	7.69 - 12.28 85.56 - 12.64 10.88 - 2.56 12.80 - 5.44	7.69 - 12.42 85.59 - 12.62 10.93 - 2.46 12.89 - 5.55	7.68 - 12.45 85.58 - 12.51 10.94 - 2.49 12.89 - 5.60	7.59 - 12.39 85.52 - 12.36 10.84 - 2.39 12.81 - 5.68	7.55 - 12.21 85.47 - 12.17 10.73 - 2.26 12.75 - 5.66	7.39 - 11.54 85.35 - 11.66 10.59 - 2.35 12.53 - 4.99	Normal. ABERDEEN. 1917 Dep. " " [Normal.] ESKDALEMUIR. 1917 Dep. " " Normal. CAHRCIVEEN. 1917 Dep. " " Normal. RICHMOND. 1917 Dep. " "
													NOVEMBER.
6.56 + 0.37 80.21 + 5.36 11.09 + 9.23 12.76 + 6.31	6.47 + 0.35 80.11 + 5.25 10.88 + 9.13 12.55 + 6.37	6.39 + 0.46 80.06 + 5.32 10.70 + 9.10 12.53 + 6.31	6.49 + 0.62 80.17 + 5.23 10.79 + 9.00 12.62 + 6.32	6.56 + 0.56 80.31 + 5.18 10.89 + 9.04 12.76 + 6.35	6.72 + 0.55 80.53 + 5.00 11.11 + 8.94 12.96 + 6.34	6.74 + 0.34 80.61 + 4.89 11.25 + 8.75 13.04 + 6.20	6.77 + 0.24 80.69 + 4.61 11.33 + 8.80 13.12 + 6.08	6.77 + 0.24 80.71 + 4.34 11.37 + 8.75 13.17 + 6.03	6.74 - 0.14 80.70 + 4.24 11.37 + 8.87 13.15 + 5.90	6.67 - 0.37 80.64 + 4.09 11.35 + 9.04 13.10 + 5.80	6.66 - 0.39 80.62 + 4.18 11.35 + 9.14 13.04 + 5.75	6.62 + 0.26 80.41 + 4.91 11.11 + 9.11 12.92 + 5.97	Normal. ABERDEEN. 1917 Dep. " " [Normal.] ESKDALEMUIR. 1917 Dep. " " Normal. CAHRCIVEEN. 1917 Dep. " " Normal. RICHMOND. 1917 Dep. " "
													DECEMBER.
4.06 + 13.12 74.66 + 18.68 9.37 + 15.62 12.40 + 9.27	4.02 + 13.11 74.50 + 18.76 9.15 + 15.58 12.24 + 9.13	4.00 + 13.13 74.51 + 18.81 9.08 + 15.65 12.29 + 9.15	4.17 + 13.05 74.66 + 18.79 9.16 + 15.61 12.41 + 9.07	4.20 + 12.91 74.67 + 18.82 9.36 + 15.61 12.50 + 9.25	4.34 + 12.87 74.78 + 18.95 9.51 + 15.65 12.63 + 9.30	4.37 + 12.93 74.83 + 19.01 9.59 + 15.77 12.76 + 9.44	4.45 + 12.82 75.00 + 18.82 9.67 + 15.77 12.88 + 9.46	4.44 + 12.72 75.10 + 18.73 9.68 + 15.92 12.91 + 9.64	4.46 + 12.76 75.25 + 18.60 9.69 + 15.88 12.94 + 9.57	4.41 + 12.68 75.36 + 18.44 9.62 + 15.93 12.94 + 9.59	4.38 + 12.69 75.48 + 18.25 9.58 + 15.93 12.84 + 9.53	4.19 + 12.62 74.97 + 18.26 9.39 + 15.57 12.62 + 9.41	Normal. ABERDEEN. 1917 Dep. " " [Normal.] ESKDALEMUIR. 1917 Dep. " " Normal. CAHRCIVEEN. 1917 Dep. " " Normal. RICHMOND. 1917 Dep. " "
													YEAR.
8.42 + 0.90 83.59 + 1.44 12.37 + 2.08 13.79 + 0.59	8.35 + 0.85 83.47 + 1.43 12.24 + 2.04 13.61 + 0.55	8.26 + 0.86 83.37 + 1.43 12.12 + 2.06 13.49 + 0.54	8.28 + 0.83 83.36 + 1.38 12.08 + 2.05 13.45 + 0.53	8.29 + 0.77 83.38 + 1.37 12.10 + 2.06 13.49 + 0.53	8.44 + 0.74 83.51 + 1.36 12.21 + 2.04 13.65 + 0.53	8.54 + 0.69 83.63 + 1.36 12.33 + 2.06 13.82 + 0.52	8.68 + 0.68 83.80 + 1.32 12.46 + 2.09 14.04 + 0.51	8.73 + 0.63 83.90 + 1.32 12.57 + 2.18 14.18 + 0.50	8.75 + 0.66 83.95 + 1.29 12.61 + 2.13 14.24 + 0.46	8.69 + 0.65 83.94 + 1.28 12.55 + 2.20 14.22 + 0.46	8.63 + 0.68 83.91 + 1.29 12.49 + 2.21 14.16 + 0.43	8.44 + 0.78 83.66 + 1.34 12.25 + 2.14 13.93 + 0.50	Normal. ABERDEEN. 1917 Dep. " " [Normal.] ESKDALEMUIR. 1917 Dep. " " Normal. CAHRCIVEEN. 1917 Dep. " " Normal. RICHMOND. 1917 Dep. " "

HOURLY VALUES OF THE METEOROLOGICAL ELEMENTS:

TEMPERATURE (in degrees absolute).

Hour, G.M.T.	0.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Noon.
JANUARY.													
ABERDEEN: Normal 200+	a. 76.16	a. 76.13	a. 76.07	a. 76.05	a. 75.98	a. 75.98	a. 75.94	a. 75.95	a. 75.96	a. 76.10	a. 76.32	a. 76.78	a. 77.11
1917 Departure.	- 0.49	- 0.52	- 0.57	- 0.71	- 0.71	- 0.74	- 0.88	- 0.87	- 0.84	- 0.67	- 0.73	- 0.96	- 1.00
ESKDALEMUIR: [Normal] 200+	75.05	75.00	74.97	74.83	74.73	74.60	74.63	74.55	74.56	74.63	75.15	75.57	76.04
1917 Departure.	- 1.64	- 1.71	- 1.58	- 1.50	- 1.49	- 1.49	- 1.56	- 1.62	- 1.52	- 1.69	- 1.89	- 1.93	- 2.02
CAHRCIVEEN: Normal 200+	79.81	79.82	79.76	79.77	79.73	79.74	79.69	79.72	79.69	79.77	79.94	80.30	80.61
1917 Departure.	- 2.21	- 2.35	- 2.25	- 2.41	- 2.58	- 2.55	- 2.64	- 2.59	- 2.46	- 2.50	- 2.60	- 2.44	- 2.46
RICHMOND: Normal 200+	76.45	76.37	76.29	76.28	76.20	76.18	76.10	76.11	76.08	76.31	76.78	77.38	77.86
1917 Departure.	- 1.22	- 1.20	- 1.14	- 1.12	- 1.10	- 1.16	- 1.30	- 1.23	- 1.27	- 1.37	- 1.66	- 1.99	- 2.21
FEBRUARY.													
ABERDEEN: Normal 200+	76.13	76.06	75.98	75.91	75.82	75.79	75.76	75.76	75.80	76.13	76.62	77.24	77.69
1917 Departure.	- 0.98	- 0.98	- 1.11	- 1.03	- 1.01	- 0.84	- 0.83	- 1.03	- 1.05	- 0.82	- 0.59	- 0.48	- 0.41
ESKDALEMUIR: [Normal] 200+	75.39	75.30	75.18	75.12	75.02	74.93	74.95	74.85	74.95	75.36	76.04	76.70	77.26
1917 Departure.	- 3.41	- 3.56	- 3.25	- 3.26	- 3.06	- 3.13	- 3.24	- 3.18	- 3.11	- 3.23	- 3.29	- 3.60	- 3.59
CAHRCIVEEN: Normal 200+	79.57	79.58	79.51	79.48	79.41	79.39	79.32	79.37	79.33	79.60	79.97	80.49	80.87
1917 Departure.	- 2.30	- 2.29	- 2.48	- 2.51	- 2.46	- 2.49	- 2.58	- 2.72	- 2.77	- 2.87	- 2.50	- 2.18	- 2.07
RICHMOND: Normal 200+	76.78	76.66	76.52	76.44	76.34	76.31	76.23	76.23	76.28	76.85	77.48	78.34	78.91
1917 Departure.	- 2.19	- 2.27	- 2.31	- 2.46	- 2.60	- 2.63	- 2.85	- 2.98	- 2.92	- 3.14	- 3.07	- 3.01	- 2.85
MARCH.													
ABERDEEN: Normal 200+	76.45	76.34	76.23	76.16	76.04	75.97	75.92	76.06	76.48	77.24	77.88	78.48	78.86
1917 Departure.	- 1.05	- 1.11	- 1.09	- 1.08	- 0.99	- 1.03	- 1.08	- 1.31	- 1.18	- 1.37	- 1.51	- 1.44	- 1.55
ESKDALEMUIR: [Normal] 200+	75.22	75.06	75.02	74.90	74.87	74.72	74.69	74.75	75.38	76.12	76.95	77.62	78.10
1917 Departure.	- 2.52	- 2.47	- 2.45	- 2.49	- 2.51	- 2.53	- 2.41	- 2.39	- 2.36	- 2.08	- 1.83	- 1.97	- 1.99
CAHRCIVEEN: Normal 200+	79.62	79.55	79.43	79.37	79.26	79.22	79.13	79.16	79.39	80.04	80.62	81.19	81.55
1917 Departure.	- 1.02	- 1.04	- 1.22	- 0.96	- 0.89	- 0.85	- 0.83	- 0.71	- 0.67	- 0.79	- 0.68	- 0.96	- 0.95
RICHMOND: Normal 200+	77.37	77.21	76.97	76.81	76.62	76.54	76.42	76.59	77.21	78.24	79.17	80.15	80.77
1917 Departure.	- 1.68	- 1.71	- 1.67	- 1.79	- 1.66	- 1.67	- 1.71	- 1.75	- 1.85	- 2.21	- 2.39	- 2.61	- 2.71
APRIL.													
ABERDEEN: Normal 200+	77.91	77.73	77.55	77.43	77.30	77.24	77.45	78.22	78.93	79.72	80.23	80.67	80.91
1917 Departure.	- 1.86	- 1.73	- 1.69	- 1.68	- 1.76	- 1.66	- 1.58	- 1.87	- 1.97	- 2.02	- 1.96	- 2.14	- 2.07
ESKDALEMUIR: [Normal] 200+	76.66	76.36	76.23	76.10	75.95	75.78	76.17	77.22	78.73	79.94	80.71	81.19	81.84
1917 Departure.	- 2.68	- 2.52	- 2.56	- 2.84	- 2.75	- 2.52	- 2.74	- 2.94	- 3.37	- 3.78	- 3.67	- 3.90	- 3.95
CAHRCIVEEN: Normal 200+	80.94	80.80	80.65	80.56	80.41	80.36	80.29	80.69	81.31	82.10	82.65	83.25	83.59
1917 Departure.	- 1.99	- 2.20	- 2.14	- 2.22	- 2.19	- 2.28	- 2.23	- 2.17	- 1.81	- 1.69	- 1.73	- 1.70	- 1.65
RICHMOND: Normal 200+	79.41	79.13	78.79	78.57	78.32	78.21	78.34	79.20	80.20	81.44	82.36	83.37	83.97
1917 Departure.	- 2.08	- 2.25	- 2.18	- 2.20	- 2.23	- 2.26	- 2.30	- 2.35	- 2.54	- 2.79	- 2.88	- 2.94	- 3.02
MAY.													
ABERDEEN: Normal 200+	80.02	79.84	79.62	79.44	79.29	79.65	80.36	81.24	81.75	82.28	82.64	83.01	83.22
1917 Departure.	+ 0.44	+ 0.50	+ 0.43	+ 0.44	+ 0.38	+ 0.38	+ 0.47	+ 0.43	+ 0.32	+ 0.17	+ 0.23	+ 0.19	+ 0.09
ESKDALEMUIR: [Normal] 200+	78.95	78.59	78.37	78.16	78.13	78.40	79.33	80.38	81.63	82.53	83.43	84.06	84.72
1917 Departure.	+ 0.60	+ 0.63	+ 0.43	+ 0.52	+ 0.49	+ 0.30	+ 0.32	+ 0.56	+ 0.37	+ 0.72	+ 0.72	+ 0.78	+ 0.69
CAHRCIVEEN: Normal 200+	82.84	82.66	82.48	82.35	82.19	82.15	82.35	83.20	83.95	84.77	85.21	85.73	85.98
1917 Departure.	+ 0.73	+ 0.67	+ 0.67	+ 0.62	+ 0.73	+ 0.60	+ 0.61	+ 0.60	+ 0.84	+ 0.96	+ 1.37	+ 1.52	+ 1.32
RICHMOND: Normal 200+	82.15	81.73	81.33	81.09	80.81	81.00	81.57	82.81	83.85	85.00	85.81	86.70	87.23
1917 Departure.	+ 2.04	+ 2.10	+ 1.99	+ 1.90	+ 1.93	+ 1.75	+ 1.73	+ 1.79	+ 2.01	+ 2.37	+ 2.76	+ 3.15	+ 3.22
JUNE.													
ABERDEEN: Normal 200+	82.92	82.64	82.39	82.23	82.19	82.77	83.62	84.43	84.88	85.34	85.68	86.02	86.13
1917 Departure.	+ 0.57	+ 0.49	+ 0.55	+ 0.33	+ 0.33	+ 0.50	+ 0.59	+ 0.55	+ 0.78	+ 0.81	+ 1.14	+ 1.15	+ 1.16
ESKDALEMUIR: [Normal] 200+	81.77	81.39	81.29	81.02	81.00	81.45	82.48	83.58	84.70	85.50	86.33	86.88	87.45
1917 Departure.	- 0.61	- 0.41	- 0.77	- 0.82	- 0.98	- 0.78	- 0.13	+ 0.43	+ 0.45	+ 0.58	+ 0.28	- 0.01	+ 0.10
CAHRCIVEEN: Normal 200+	85.28	85.12	84.95	84.85	84.72	84.75	85.11	85.86	86.50	87.20	87.65	88.16	88.41
1917 Departure.	- 0.20	- 0.18	- 0.19	- 0.20	- 0.17	- 0.22	- 0.06	- 0.08	+ 0.06	- 0.07	- 0.49	- 0.57	- 0.55
RICHMOND: Normal 200+	85.44	85.02	84.62	84.31	84.05	84.51	85.13	86.18	87.14	88.26	89.03	89.95	90.49
1917 Departure.	+ 1.82	+ 1.72	+ 1.56	+ 1.63	+ 1.46	+ 1.58	+ 1.71	+ 2.06	+ 2.28	+ 2.41	+ 2.49	+ 2.46	+ 2.77

The Temperature is obtained photographically from a mercurial thermometer with a large cylindrical bulb, 10 cm. long, and a long stem. The column of mercury in the stem is broken at a convenient point by a small air space, which moves up or down with the rise or fall of temperature. The bulb is exposed in a louvered screen attached to the North wall of the Observatory, except at Eskdalemuir, where the screen stands in the open, and the stem is bent in twice at right angles, so that whilst one vertical portion containing the air speck is within the room where the photographic record is obtained, the other with the bulb itself is in the open air and at least 60 cm. from the wall. Two such thermometers are in the screen, one being used as a dry bulb and the other as a wet bulb; the screen also contains two control thermometers with bulbs of the same size.

NORMALS AND DEPARTURES THEREFROM IN 1917.

JANUARY TO JUNE.

13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	Midt.	Mean.	Hour, G.M.T.
													JANUARY.
a. 77.38 - 1.12 76.20 - 2.17 80.89 - 2.43 78.30 - 2.36	a. 77.43 - 1.26 76.33 - 2.24 80.90 - 2.47 78.43 - 2.54	a. 77.33 - 1.28 76.18 - 2.23 80.88 - 2.41 78.39 - 2.54	a. 77.05 - 1.16 75.83 - 2.14 80.65 - 2.24 78.01 - 2.38	a. 76.80 - 1.00 75.51 - 1.92 80.32 - 2.20 77.59 - 2.08	a. 76.62 - 0.97 75.42 - 1.82 80.11 - 2.16 77.28 - 1.88	a. 76.54 - 0.91 75.26 - 1.72 80.03 - 2.15 77.12 - 1.78	a. 76.40 - 0.82 75.21 - 1.78 79.93 - 2.16 76.95 - 1.74	a. 76.34 - 0.76 75.04 - 1.64 79.91 - 2.24 76.83 - 1.69	a. 76.27 - 0.77 75.13 - 1.84 79.83 - 2.35 76.69 - 1.65	a. 76.23 - 0.63 74.98 - 1.79 79.85 - 2.49 76.61 - 1.57	a. 76.16 - 0.61 74.92 - 1.83 79.78 - 2.49 76.47 - 1.58	a. 76.46 - 0.86 75.22 - 1.75 80.07 - 2.40 76.94 - 1.68	Normal. ABERDEEN. 1917 Dep. " " [Normal.] ESKDALEMUIR. 1917 Dep. " " Normal. CAHIRCIVEEN. 1917 Dep. " " Normal. RICHMOND. 1917 Dep. " "
													FEBRUARY.
78.06 - 0.38 77.43 - 3.42 81.13 - 1.82 79.37 - 2.60	78.16 - 0.38 77.63 - 3.44 81.18 - 1.72 79.55 - 2.48	78.10 - 0.45 77.42 - 3.26 81.19 - 1.83 79.59 - 2.33	77.82 - 0.58 77.26 - 3.36 81.00 - 1.93 79.28 - 2.14	77.39 - 0.68 76.72 - 3.56 80.72 - 2.04 78.83 - 2.04	77.02 - 0.80 76.30 - 3.68 80.25 - 2.10 78.22 - 1.85	76.77 - 0.86 76.02 - 3.79 80.03 - 2.09 77.81 - 1.82	76.57 - 0.91 75.90 - 3.90 79.88 - 2.18 77.50 - 1.81	76.43 - 0.87 75.74 - 3.79 79.82 - 2.06 77.32 - 1.82	76.29 - 0.86 75.72 - 3.80 79.72 - 2.22 77.12 - 1.88	76.21 - 0.85 75.59 - 3.79 79.68 - 2.31 76.96 - 1.96	76.13 - 1.04 75.53 - 3.60 79.59 - 2.22 76.78 - 1.99	76.65 - 0.79 75.95 - 3.45 80.02 - 2.27 77.54 - 2.41	Normal. ABERDEEN. 1917 Dep. " " [Normal.] ESKDALEMUIR. 1917 Dep. " " Normal. CAHIRCIVEEN. 1917 Dep. " " Normal. RICHMOND. 1917 Dep. " "
													MARCH.
79.09 - 1.58 78.34 - 1.79 81.90 - 1.13 81.32 - 3.00	79.13 - 1.61 78.54 - 1.93 81.95 - 1.06 81.51 - 2.66	79.11 - 1.56 78.46 - 1.89 82.00 - 1.10 81.68 - 2.80	78.90 - 1.61 78.12 - 1.73 81.84 - 1.10 81.44 - 2.76	78.56 - 1.52 77.66 - 2.18 81.57 - 1.23 81.01 - 2.67	78.01 - 1.46 77.03 - 2.46 81.10 - 1.13 80.17 - 2.42	77.53 - 1.51 76.43 - 2.60 80.60 - 1.15 79.45 - 2.07	77.22 - 1.47 76.09 - 2.76 80.26 - 1.06 78.87 - 1.84	77.02 - 1.33 75.76 - 2.78 80.10 - 1.14 78.47 - 1.84	76.80 - 1.37 75.56 - 2.73 79.91 - 1.04 78.04 - 1.87	76.65 - 1.26 75.34 - 2.66 79.81 - 1.15 77.72 - 1.85	76.49 - 1.25 75.26 - 2.63 79.63 - 1.11 77.42 - 1.89	77.34 - 1.34 76.28 - 2.31 80.36 - 1.00 78.74 - 2.14	Normal. ABERDEEN. 1917 Dep. " " [Normal.] ESKDALEMUIR. 1917 Dep. " " Normal. CAHIRCIVEEN. 1917 Dep. " " Normal. RICHMOND. 1917 Dep. " "
													APRIL.
81.09 - 1.69 82.05 - 3.84 83.89 - 1.92 84.53 - 2.88	81.07 - 1.90 82.30 - 3.62 83.95 - 1.97 84.80 - 2.87	81.02 - 2.00 82.25 - 3.81 84.00 - 1.87 84.92 - 2.95	80.75 - 1.71 82.00 - 3.93 83.85 - 2.28 84.71 - 2.89	80.49 - 1.74 81.52 - 3.77 83.63 - 2.18 84.32 - 2.69	80.11 - 1.75 80.73 - 3.60 83.14 - 2.19 83.59 - 2.56	79.58 - 1.82 79.46 - 3.32 82.51 - 1.98 82.47 - 2.33	79.06 - 1.82 78.52 - 3.03 81.93 - 1.97 81.56 - 2.31	78.77 - 1.69 77.83 - 2.87 81.61 - 1.80 80.93 - 2.07	78.46 - 1.72 77.40 - 2.55 81.34 - 1.83 80.32 - 1.94	78.19 - 1.64 76.96 - 2.33 81.17 - 1.86 79.92 - 1.99	77.97 - 1.59 76.66 - 2.40 80.99 - 1.84 79.48 - 1.92	79.16 - 1.80 78.91 - 3.20 82.03 - 1.99 81.39 - 2.47	Normal. ABERDEEN. 1917 Dep. " " [Normal.] ESKDALEMUIR. 1917 Dep. " " Normal. CAHIRCIVEEN. 1917 Dep. " " Normal. RICHMOND. 1917 Dep. " "
													MAY.
83.39 - 0.05 84.93 + 0.61 86.22 + 1.29 87.80 + 3.37	83.35 - 0.03 85.19 + 0.42 86.30 + 1.21 88.02 + 3.52	83.31 + 0.07 85.02 + 0.59 86.39 + 1.29 88.28 + 3.30	83.09 + 0.11 84.89 + 0.68 86.27 + 1.21 88.16 + 2.96	82.95 + 0.18 84.37 + 0.76 86.15 + 1.03 87.92 + 2.65	82.59 + 0.08 83.74 + 0.81 85.65 + 0.96 87.33 + 2.37	82.19 - 0.05 82.70 + 0.63 85.09 + 0.84 86.37 + 2.17	81.59 + 0.13 81.46 + 0.45 83.80 + 0.85 85.09 + 2.22	81.12 + 0.28 80.40 + 0.58 83.80 + 1.06 84.16 + 2.27	80.73 + 0.43 79.81 + 0.76 83.44 + 0.83 83.41 + 2.23	80.38 + 0.54 79.32 + 0.79 83.18 + 0.74 82.77 + 2.10	80.12 + 0.49 79.08 + 0.70 82.91 + 0.81 82.25 + 2.08	81.55 + 0.25 81.61 + 0.59 84.28 + 0.95 84.60 + 2.41	Normal. ABERDEEN. 1917 Dep. " " [Normal.] ESKDALEMUIR. 1917 Dep. " " Normal. CAHIRCIVEEN. 1917 Dep. " " Normal. RICHMOND. 1917 Dep. " "
													JUNE.
86.32 + 0.99 87.64 + 0.06 88.68 - 0.76 91.14 + 2.59	86.27 + 1.00 87.89 + 0.14 88.75 - 0.74 91.39 + 2.51	86.22 + 1.07 87.91 + 0.09 88.82 - 0.70 91.68 + 2.75	86.03 + 1.06 87.64 + 0.25 88.75 - 0.66 91.54 + 2.52	85.96 + 0.79 87.27 + 0.09 88.65 - 0.54 91.35 + 2.32	85.61 + 0.97 86.74 - 0.06 88.06 - 0.64 90.83 + 2.29	85.23 + 0.70 85.87 - 0.07 87.58 - 0.63 90.02 + 2.28	84.70 + 0.79 84.76 - 0.08 86.98 - 0.71 88.71 + 2.22	84.11 + 0.78 83.54 - 0.40 86.25 - 0.47 87.55 + 2.19	83.70 + 0.60 82.86 - 0.68 85.87 - 0.45 86.74 + 2.01	83.35 + 0.39 82.27 - 0.88 85.63 - 0.44 86.11 + 1.87	83.02 + 0.33 81.88 - 0.90 85.37 - 0.39 85.55 + 1.65	84.53 + 0.76 84.55 - 0.18 86.78 - 0.41 87.97 + 2.14	Normal. ABERDEEN. 1917 Dep. " " [Normal.] ESKDALEMUIR. 1917 Dep. " " Normal. CAHIRCIVEEN. 1917 Dep. " " Normal. RICHMOND. 1917 Dep. " "

The heights of the thermometer bulbs above the ground are :—

At Aberdeen	12.5 metres.
„ Eskdalemuir	0.9 „
„ Cahirciveen (Valencia Observatory)	1.3 „
„ Richmond (Kew Observatory)	3.0 „

The normals for temperature are for the 45 years, 1871-1915 (Eskdalemuir, 1911-1915 only).
The values for 1917 are given by the departure from the normal ; + indicates excess, - defect.
Temperature values are measured at each exact hour G.M.T.

Mean values are calculated by the formula $\frac{1}{24} \{ (1 + \dots + 23) + \frac{1}{2}(0 + 24) \}$

HOURLY VALUES OF THE METEOROLOGICAL ELEMENTS:

TEMPERATURE (in degrees absolute).

Hour, G.M.T.	0.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Noon.
JULY.													
ABERDEEN : Normal 200+	a. 84.88	a. 84.66	a. 84.45	a. 84.25	a. 84.12	a. 84.52	a. 85.18	a. 86.03	a. 86.58	a. 87.10	a. 87.46	a. 87.83	a. 87.99
1917 Departure.	0.00	+ 0.04	+ 0.03	- 0.03	+ 0.04	+ 0.11	+ 0.40	+ 0.47	+ 0.57	+ 0.22	+ 0.32	- 0.03	+ 0.28
ESKDALEMUIR : [Normal] 200+	83.60	83.27	83.05	82.90	82.83	83.07	84.00	85.09	86.12	86.84	87.62	88.09	88.62
1917 Departure.	- 0.50	- 0.73	- 0.72	- 0.71	- 0.57	- 0.44	- 0.23	0.00	+ 0.19	+ 0.41	+ 0.56	+ 0.56	+ 0.66
CAHIRCIVEEN : Normal 200+	86.66	86.52	86.37	86.29	86.18	86.18	86.40	87.04	87.59	88.29	88.73	89.17	89.42
1917 Departure.	+ 0.58	+ 0.36	+ 0.40	+ 0.41	+ 0.39	+ 0.41	+ 0.64	+ 0.76	+ 1.10	+ 1.05	+ 1.00	+ 0.84	+ 0.94
RICHMOND : Normal 200+	87.46	87.07	86.66	86.35	86.08	86.29	86.94	88.01	89.00	90.11	90.93	91.81	92.32
1917 Departure.	+ 0.11	+ 0.03	+ 0.09	+ 0.26	+ 0.20	+ 0.11	+ 0.07	+ 0.01	- 0.11	- 0.13	- 0.09	- 0.15	- 0.05
AUGUST.													
ABERDEEN : Normal 200+	84.85	84.64	84.42	84.24	84.07	84.06	84.52	85.41	86.14	86.86	87.28	87.72	87.96
1917 Departure.	+ 1.00	+ 1.12	+ 1.22	+ 1.22	+ 1.38	+ 1.37	+ 1.27	+ 0.73	+ 0.53	+ 0.09	+ 0.11	- 0.09	+ 0.09
ESKDALEMUIR : [Normal] 200+	83.46	83.17	83.03	82.78	82.63	82.57	83.09	84.00	85.31	86.43	87.19	87.70	88.21
1917 Departure.	+ 1.11	+ 1.32	+ 1.40	+ 1.63	+ 1.63	+ 1.67	+ 1.59	+ 1.24	+ 0.53	+ 0.23	+ 0.10	+ 0.14	- 0.05
CAHIRCIVEEN : Normal 200+	86.93	86.82	86.66	86.61	86.51	86.46	86.66	86.95	87.55	88.28	88.77	89.19	89.56
1917 Departure.	- 0.03	- 0.22	- 0.17	- 0.16	+ 0.01	- 0.02	+ 0.10	+ 0.22	+ 0.23	+ 0.22	+ 0.14	- 0.19	- 0.33
RICHMOND : Normal 200+	87.15	86.79	86.41	86.17	85.94	85.86	86.16	87.21	88.30	89.58	90.45	91.41	91.99
1917 Departure.	+ 0.42	+ 0.61	+ 0.81	+ 0.89	+ 0.99	+ 1.16	+ 1.18	+ 0.98	+ 0.54	+ 0.06	- 0.29	- 0.59	- 0.97
SEPTEMBER.													
ABERDEEN : Normal 200+	83.21	83.02	82.81	82.69	82.55	82.45	82.44	83.03	83.87	84.86	85.51	86.05	86.31
1917 Departure.	+ 0.92	+ 1.02	+ 1.14	+ 1.05	+ 1.01	+ 0.99	+ 1.08	+ 0.98	+ 1.09	+ 1.01	+ 1.14	+ 1.03	+ 1.28
ESKDALEMUIR : [Normal] 200+	81.23	80.90	80.67	80.53	80.48	80.27	80.30	80.93	82.42	83.75	84.90	85.40	86.03
1917 Departure.	+ 1.74	+ 1.93	+ 1.96	+ 1.77	+ 1.82	+ 1.97	+ 2.24	+ 1.98	+ 1.28	+ 0.81	+ 0.51	+ 0.26	+ 0.21
CAHIRCIVEEN : Normal 200+	85.72	85.63	85.51	85.45	85.32	85.29	85.21	85.35	85.89	86.63	87.24	87.86	88.18
1917 Departure.	+ 0.06	+ 0.13	+ 0.11	+ 0.27	+ 0.27	+ 0.22	+ 0.43	+ 0.38	+ 0.28	+ 0.23	+ 0.13	- 0.01	- 0.09
RICHMOND : Normal 200+	84.92	84.66	84.35	84.15	83.94	83.83	83.77	84.38	85.38	86.76	87.82	88.92	89.53
1917 Departure.	+ 1.36	+ 1.44	+ 1.39	+ 1.30	+ 1.24	+ 1.29	+ 1.27	+ 1.13	+ 1.02	+ 0.85	+ 0.85	+ 0.85	+ 0.94
OCTOBER.													
ABERDEEN : Normal 200+	80.65	80.53	80.41	80.33	80.25	80.20	80.14	80.18	80.54	81.27	81.99	82.60	82.98
1917 Departure.	- 1.99	- 2.05	- 1.98	- 1.98	- 2.08	- 2.20	- 2.08	- 1.98	- 1.96	- 1.91	- 1.76	- 1.73	- 1.77
ESKDALEMUIR : [Normal] 200+	79.16	79.02	79.03	78.95	78.90	78.72	78.73	78.75	79.43	80.44	81.49	82.08	82.60
1917 Departure.	- 1.77	- 1.83	- 2.11	- 2.49	- 2.61	- 2.67	- 2.68	- 2.56	- 2.40	- 2.57	- 2.73	- 2.89	- 2.81
CAHIRCIVEEN : Normal 200+	83.28	83.12	83.12	83.10	83.04	83.04	82.97	82.96	83.09	83.71	84.22	84.83	85.10
1917 Departure.	- 1.14	- 1.11	- 1.13	- 1.22	- 1.21	- 1.19	- 1.26	- 1.09	- 1.02	- 1.26	- 1.44	- 1.57	- 1.73
RICHMOND : Normal 200+	81.57	81.43	81.23	81.14	81.01	80.94	80.84	80.95	81.44	82.50	83.54	84.53	85.10
1917 Departure.	- 1.34	- 1.34	- 1.29	- 1.37	- 1.46	- 1.56	- 1.68	- 1.78	- 1.78	- 1.73	- 1.74	- 1.60	- 1.34
NOVEMBER.													
ABERDEEN : Normal 200+	78.29	78.22	78.17	78.11	78.05	78.03	78.00	78.05	78.11	78.41	78.83	79.35	79.75
1917 Departure.	+ 1.17	+ 1.09	+ 1.27	+ 1.07	+ 0.97	+ 0.91	+ 0.71	+ 0.85	+ 0.98	+ 1.10	+ 1.26	+ 1.79	+ 1.74
ESKDALEMUIR : [Normal] 200+	76.29	76.26	76.28	76.21	76.21	76.15	76.26	76.13	76.25	76.64	77.48	78.05	78.58
1917 Departure.	+ 2.90	+ 2.92	+ 2.79	+ 2.71	+ 2.60	+ 2.36	+ 2.31	+ 2.29	+ 2.11	+ 2.26	+ 1.87	+ 1.68	+ 1.59
CAHIRCIVEEN : Normal 200+	81.27	81.30	81.20	81.19	81.12	81.11	81.07	81.07	81.02	81.26	81.66	82.18	82.45
1917 Departure.	- 1.33	- 1.34	- 1.40	- 1.40	- 1.37	- 1.30	- 1.34	- 1.29	- 1.24	- 1.37	- 1.49	- 1.62	- 1.69
RICHMOND : Normal 200+	78.90	78.82	78.70	78.66	78.57	78.54	78.42	78.42	78.52	79.05	79.77	80.56	81.09
1917 Departure.	+ 2.00	+ 1.90	+ 1.88	+ 2.00	+ 2.00	+ 1.91	+ 1.85	+ 1.73	+ 1.68	+ 1.67	+ 1.60	+ 1.65	+ 1.47
DECEMBER.													
ABERDEEN : Normal 200+	76.52	76.47	76.45	76.42	76.38	76.40	76.37	76.38	76.36	76.46	76.68	77.05	77.32
1917 Departure.	- 0.35	- 0.25	- 0.25	- 0.45	- 0.54	- 0.69	- 0.73	- 0.63	- 0.51	- 0.59	- 0.60	- 0.44	- 0.62
ESKDALEMUIR : [Normal] 200+	75.88	75.81	75.82	75.76	75.74	75.65	75.72	75.63	75.73	75.75	76.15	76.52	76.92
1917 Departure.	- 2.06	- 2.18	- 2.35	- 2.39	- 2.51	- 2.43	- 2.44	- 2.36	- 2.28	- 2.25	- 2.28	- 2.33	- 2.20
CAHIRCIVEEN : Normal 200+	80.31	80.35	80.29	80.28	80.21	80.21	80.13	80.14	80.11	80.18	80.38	80.80	81.05
1917 Departure.	- 1.19	- 1.20	- 1.20	- 1.08	- 1.18	- 1.13	- 1.11	- 1.26	- 1.28	- 1.30	- 1.45	- 1.56	- 1.45
RICHMOND : Normal 200+	77.18	77.13	77.01	76.98	76.90	76.91	76.86	76.90	76.88	77.17	77.55	78.17	78.60
1917 Departure.	- 2.19	- 2.28	- 2.25	- 2.03	- 1.92	- 2.03	- 2.09	- 2.07	- 2.19	- 2.34	- 2.30	- 2.27	- 2.04
YEAR.													
ABERDEEN : Normal 200+	79.83	79.69	79.55	79.44	79.34	79.42	79.64	80.06	80.45	80.98	81.43	81.90	82.19
1917 Departure.	- 0.22	- 0.20	- 0.17	- 0.24	- 0.25	- 0.24	- 0.22	- 0.30	- 0.27	- 0.29	- 0.25	- 0.26	- 0.24
ESKDALEMUIR : [Normal] 200+	78.56	78.34	78.25	78.11	78.04	78.03	78.36	78.82	79.60	80.33	81.12	81.66	82.20
1917 Departure.	- 0.74	- 0.70	- 0.77	- 0.82	- 0.83	- 0.81	- 0.74	- 0.71	- 0.84	- 0.88	- 0.97	- 1.11	- 1.12
CAHIRCIVEEN : Normal 200+	82.69	82.62	82.49	82.44	82.34	82.33	82.35	82.63	82.87	83.49	83.92	84.44	84.75
1917 Departure.	- 0.84	- 0.90	- 0.90	- 0.90	- 0.89	- 0.90	- 0.86	- 0.83	- 0.65	- 0.79	- 0.81	- 0.87	- 0.91
RICHMOND : Normal 200+	81.23	81.00	80.74	80.58	80.40	80.43	80.57	81.08	81.69	82.61	83.39	84.27	84.82
1917 Departure.	- 0.24	- 0.27	- 0.26	- 0.25	- 0.26	- 0.29	- 0.34	- 0.37	- 0.44	- 0.53	- 0.56	- 0.59	- 0.56

NORMALS AND DEPARTURES THEREFROM IN 1917.

JULY TO DECEMBER AND YEAR.

13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	Midt.	Mean.	Hour, G.M.T.
													JULY.
a. 88.18 + 0.30 88.81 + 0.87 89.70 + 0.76 92.99 + 0.01	a. 88.16 + 0.13 89.17 + 1.00 89.74 + 0.88 93.30 + 0.05	a. 88.14 - 0.16 89.08 + 1.03 89.84 + 0.87 93.58 + 0.20	a. 87.90 + 0.34 88.95 + 0.95 89.74 + 1.09 93.47 + 0.38	a. 87.79 - 0.07 88.54 + 0.83 89.65 + 0.83 93.31 + 0.34	a. 87.44 + 0.14 88.06 + 0.70 89.10 + 0.83 92.76 + 0.28	a. 87.06 + 0.39 87.23 + 0.58 88.65 + 0.80 91.99 + 0.02	a. 86.48 + 0.23 86.20 + 0.25 88.01 + 0.84 90.57 + 0.05	a. 85.94 + 0.24 85.13 - 0.25 87.37 + 0.97 89.50 + 0.06	a. 85.50 + 0.14 84.44 - 0.18 87.05 + 0.85 88.72 + 0.05	a. 85.15 + 0.01 83.94 - 0.27 86.88 + 0.78 88.07 + 0.06	a. 84.89 + 0.16 83.63 - 0.38 86.68 + 0.74 87.47 + 0.15	a. 86.37 + 0.14 86.03 + 0.17 87.94 + 0.75 89.89 + 0.07	Normal. ABERDEEN. 1917 Dep. " " [Normal.] ESKDALEMUIR. 1917 Dep. " " Normal. CAHRCIVEEN. 1917 Dep. " " Normal. RICHMOND. 1917 Dep. " "
													AUGUST.
88.17 + 0.10 88.43 - 0.16 89.87 - 0.30 92.60 - 1.10	88.16 + 0.30 88.68 - 0.19 89.92 - 0.24 92.85 - 1.11	88.11 + 0.28 88.61 - 0.22 89.95 - 0.39 93.06 - 1.02	87.88 + 0.29 88.51 - 0.22 89.76 - 0.28 92.89 - 0.94	87.61 + 0.30 88.08 - 0.29 89.57 - 0.40 92.61 - 1.00	87.22 + 0.54 87.40 - 0.16 89.06 - 0.32 91.91 - 0.84	86.73 + 0.53 86.26 + 0.20 88.58 - 0.33 90.80 - 0.71	86.09 + 0.71 85.28 + 0.61 87.86 - 0.11 89.58 - 0.55	85.66 + 0.78 84.51 + 0.84 87.42 - 0.02 88.79 - 0.23	85.29 + 0.87 84.07 + 0.93 87.18 - 0.01 88.12 + 0.01	85.06 + 0.89 83.71 + 1.04 87.07 - 0.12 87.58 + 0.30	84.81 + 0.99 83.43 + 1.17 86.91 - 0.08 87.11 + 0.47	86.17 + 0.65 85.55 + 0.62 88.05 - 0.12 89.34 - 0.05	Normal. ABERDEEN. 1917 Dep. " " [Normal.] ESKDALEMUIR. 1917 Dep. " " Normal. CAHRCIVEEN. 1917 Dep. " " Normal. RICHMOND. 1917 Dep. " "
													SEPTEMBER.
86.53 + 1.23 86.31 + 0.08 88.50 - 0.16 90.13 + 1.00	86.54 + 1.34 86.60 + 0.12 88.50 - 0.18 90.35 + 1.11	86.43 + 1.54 86.48 + 0.05 88.51 - 0.15 90.46 + 1.18	86.15 + 1.69 86.19 - 0.01 88.24 - 0.19 90.18 + 1.16	85.79 + 1.51 85.50 + 0.25 87.94 - 0.28 89.68 + 1.22	85.20 + 1.46 84.38 + 0.64 87.36 - 0.15 88.59 + 1.20	84.65 + 1.17 83.21 + 0.83 86.76 0.00 87.42 + 1.22	84.18 + 0.99 82.64 + 0.90 86.33 + 0.10 86.66 + 1.15	83.89 + 0.98 82.05 + 1.26 86.16 + 0.09 86.11 + 1.24	83.62 + 0.87 81.73 + 1.59 85.96 + 0.88 85.62 + 1.29	83.40 + 0.80 81.36 + 1.69 85.86 + 0.10 85.19 + 1.35	83.18 + 0.93 81.09 + 1.84 85.68 + 0.14 84.84 + 1.31	84.38 + 1.14 83.09 + 1.08 86.64 + 0.07 86.78 + 1.17	Normal. ABERDEEN. 1917 Dep. " " [Normal.] ESKDALEMUIR. 1917 Dep. " " Normal. CAHRCIVEEN. 1917 Dep. " " Normal. RICHMOND. 1917 Dep. " "
													OCTOBER.
83.22 - 1.86 82.88 - 3.02 85.32 - 1.76 85.60 - 1.32	83.25 - 2.06 83.05 - 3.42 85.34 - 1.81 85.72 - 1.41	83.11 - 1.81 82.77 - 3.17 85.29 - 1.73 85.63 - 1.30	82.72 - 1.75 82.32 - 3.01 85.04 - 1.72 85.16 - 1.32	82.22 - 1.95 81.28 - 2.44 84.66 - 1.56 84.41 - 1.46	81.75 - 1.79 80.41 - 2.07 84.11 - 1.32 83.60 - 1.57	81.39 - 1.73 79.92 - 1.84 83.87 - 1.27 83.05 - 1.44	81.15 - 1.76 79.64 - 1.65 83.67 - 1.29 82.60 - 1.41	80.99 - 1.83 79.29 - 1.66 83.56 - 1.23 82.31 - 1.31	80.80 - 1.90 79.29 - 1.88 83.38 - 1.25 82.00 - 1.31	80.69 - 2.00 79.12 - 1.96 83.30 - 1.09 81.76 - 1.21	80.54 - 2.10 79.08 - 2.00 83.18 - 1.16 81.48 - 1.21	81.39 + 1.91 80.30 - 2.43 83.88 + 1.35 82.83 - 1.45	Normal. ABERDEEN. 1917 Dep. " " [Normal.] ESKDALEMUIR. 1917 Dep. " " Normal. CAHRCIVEEN. 1917 Dep. " " Normal. RICHMOND. 1917 Dep. " "
													NOVEMBER.
79.97 + 1.49 78.71 + 1.58 82.71 - 1.86 81.49 + 1.52	79.97 + 1.31 78.67 + 1.67 82.73 - 1.88 81.56 + 1.51	79.78 + 1.36 78.31 + 1.79 82.65 - 1.84 81.40 + 1.66	79.38 + 1.27 77.79 + 1.97 82.33 - 1.78 80.93 + 1.70	79.04 + 1.09 77.23 + 2.19 81.98 - 1.65 80.40 + 1.93	78.84 + 1.15 77.03 + 2.23 81.74 - 1.45 80.01 + 2.07	78.71 + 1.15 76.82 + 2.48 81.63 - 1.35 79.77 + 2.06	78.58 + 1.31 76.66 + 2.57 81.48 - 1.23 79.47 + 2.09	78.52 + 1.35 76.44 + 2.94 81.42 - 1.19 79.29 + 2.10	78.41 + 1.41 76.41 + 3.22 81.32 - 1.21 79.09 + 2.05	78.32 + 1.48 76.20 + 3.18 81.29 - 1.29 78.97 + 2.17	78.20 + 1.50 76.23 + 3.20 81.21 - 1.30 78.80 + 2.09	78.70 + 1.23 76.96 + 2.35 81.63 - 1.45 79.60 + 1.84	Normal. ABERDEEN. 1917 Dep. " " [Normal.] ESKDALEMUIR. 1917 Dep. " " Normal. CAHRCIVEEN. 1917 Dep. " " Normal. RICHMOND. 1917 Dep. " "
													DECEMBER.
77.54 - 0.68 77.08 - 2.24 81.27 - 1.41 78.95 - 1.84	77.52 - 0.81 77.11 - 2.09 81.30 - 1.37 79.01 - 1.81	77.34 - 0.76 76.83 - 2.01 81.22 - 1.35 78.89 - 1.89	77.10 - 0.93 76.55 - 2.21 81.01 - 1.42 78.45 - 1.89	76.96 - 0.82 76.37 - 2.22 80.77 - 1.41 78.14 - 1.99	76.84 - 0.84 76.33 - 2.23 80.59 - 1.41 77.88 - 2.06	76.78 - 1.04 76.19 - 2.10 80.55 - 1.45 77.72 - 2.14	76.69 - 0.98 76.13 - 1.90 80.44 - 1.33 77.56 - 2.18	76.68 - 0.93 76.12 - 2.09 80.44 - 1.28 77.46 - 2.32	76.61 - 0.79 76.03 - 2.27 80.36 - 1.41 77.35 - 2.55	76.58 - 0.64 75.92 - 2.35 80.37 - 1.37 77.27 - 2.46	76.50 - 0.51 76.16 - 2.29 80.31 - 1.36 77.16 - 2.46	76.75 - 0.67 76.16 - 2.25 80.53 - 1.32 77.62 - 2.13	Normal. ABERDEEN. 1917 Dep. " " [Normal.] ESKDALEMUIR. 1917 Dep. " " Normal. CAHRCIVEEN. 1917 Dep. " " Normal. RICHMOND. 1917 Dep. " "
													YEAR.
82.41 - 0.28 82.40 - 1.12 85.00 - 0.95 85.35 - 0.55	82.42 - 0.33 82.60 - 1.13 85.05 - 0.95 85.54 - 0.51	82.33 - 0.30 82.41 - 1.05 85.06 - 0.93 85.63 - 0.47	82.06 - 0.27 82.17 - 1.06 84.89 - 0.96 85.35 - 0.46	81.80 - 0.33 81.67 - 1.02 84.63 - 0.96 84.96 - 0.45	81.44 - 0.27 81.13 - 0.97 84.19 - 0.96 84.36 - 0.43	81.10 - 0.33 80.45 - 0.90 83.66 - 0.73 83.07 - 0.38	80.73 - 0.30 79.86 - 0.84 83.43 - 0.86 82.93 - 0.35	80.46 - 0.26 79.32 - 0.82 83.16 - 0.78 82.39 - 0.28	80.21 - 0.26 79.04 - 0.79 82.97 - 0.86 81.94 - 0.30	80.02 - 0.25 78.73 - 0.78 82.82 - 0.85 81.58 - 0.27	79.83 - 0.22 78.56 - 0.76 82.69 - 0.86 81.32 - 0.36	80.79 - 0.27 80.05 - 0.90 83.51 - 0.87 82.77 - 0.39	Normal. ABERDEEN. 1917 Dep. " " [Normal.] ESKDALEMUIR. 1917 Dep. " " Normal. CAHRCIVEEN. 1917 Dep. " " Normal. RICHMOND. 1917 Dep. " "

HOURLY VALUES OF THE METEOROLOGICAL ELEMENTS:

RELATIVE HUMIDITY

Hours, G.M.T.	0.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Noon.
JANUARY.													
ABERDEEN: Normal.	% 81.1	% 81.1	% 81.2	% 81.4	% 81.5	% 81.7	% 81.8	% 81.8	% 81.8	% 81.8	% 81.1	% 79.9	% 78.7
1917 Departure.	- 3.1	- 4.1	- 4.2	- 2.4	- 1.5	- 0.7	+ 0.2	- 0.8	- 0.8	- 0.8	- 2.1	- 1.9	- 2.7
ESKDALEMUIR: [Normal].	87.3	87.3	87.8	88.4	87.9	87.9	88.2	89.0	88.6	88.6	86.0	86.4	85.4
1917 Departure.	- 2.7	- 1.6	- 1.3	- 1.7	- 2.0	- 2.0	- 1.1	- 0.5	- 3.1	- 1.8	- 1.6	- 2.8	- 2.5
CAHIRCIVEEN: Normal.	86.8	86.6	87.1	86.9	87.2	87.0	87.1	87.1	87.1	86.8	86.8	86.0	85.3
1917 Departure.	- 6.3	- 6.4	- 7.0	- 5.6	- 4.2	- 4.8	- 4.4	- 5.4	- 7.2	- 6.9	- 7.3	- 6.6	- 5.9
RICHMOND: Normal.	86.4	86.2	86.6	86.4	86.5	86.2	86.8	86.7	86.7	86.1	85.4	82.8	81.5
1917 Departure.	- 6.2	- 5.6	- 6.2	- 6.3	- 6.5	- 6.2	- 6.2	- 6.5	- 6.2	- 6.7	- 6.4	- 4.6	- 4.1
FEBRUARY.													
ABERDEEN: Normal.	80.8	81.1	81.1	81.4	81.5	81.5	81.6	81.6	81.4	80.7	79.3	77.8	76.2
1917 Departure.	+ 1.2	+ 1.9	+ 1.9	+ 3.6	+ 2.5	+ 0.5	+ 1.4	+ 1.4	+ 1.6	+ 0.3	- 0.3	- 0.8	- 0.2
ESKDALEMUIR: [Normal].	86.8	87.3	86.9	87.6	87.1	87.7	86.4	86.7	87.1	88.1	84.7	84.4	83.4
1917 Departure.	- 6.7	- 6.2	- 6.2	- 8.8	- 8.7	- 8.7	- 7.2	- 7.0	- 6.4	- 8.1	- 7.0	- 6.4	- 6.7
CAHIRCIVEEN: Normal.	87.2	87.1	87.3	87.5	87.5	87.5	87.7	87.1	87.5	88.1	86.4	84.7	82.8
1917 Departure.	- 3.6	- 3.5	- 3.2	- 2.5	- 2.6	- 3.0	- 2.9	- 2.7	- 2.8	- 3.7	- 4.5	- 4.2	- 3.4
RICHMOND: Normal.	84.9	84.7	85.2	85.1	85.6	85.3	85.8	85.4	85.5	83.9	82.1	78.5	76.4
1917 Departure.	- 1.1	+ 0.9	+ 2.1	+ 2.2	+ 2.2	+ 2.1	+ 0.9	+ 0.5	+ 0.4	+ 2.6	+ 2.2	+ 3.8	+ 2.5
MARCH.													
ABERDEEN: Normal.	81.4	82.2	82.2	82.5	82.7	83.0	83.0	82.9	81.2	79.1	76.4	74.8	73.0
1917 Departure.	- 2.4	- 2.2	- 3.2	- 2.5	- 1.7	- 3.0	- 3.0	- 2.9	- 5.2	- 5.1	- 4.4	- 3.8	- 2.0
ESKDALEMUIR: [Normal].	86.1	87.0	87.0	88.2	87.3	87.8	87.5	87.9	87.0	85.6	81.6	80.5	79.0
1917 Departure.	- 2.8	- 3.7	- 3.1	- 2.9	- 0.9	- 1.2	- 1.1	- 3.7	- 4.1	- 4.6	- 5.7	- 4.9	- 5.0
CAHIRCIVEEN: Normal.*	86.5	86.6	86.8	87.0	87.2	87.1	87.2	87.3	86.8	85.1	83.1	80.8	79.3
1917 Departure.	- 0.9	- 0.7	- 0.2	- 0.2	- 0.4	- 0.4	- 0.1	- 0.5	+ 1.1	+ 1.5	+ 2.4	+ 4.5	+ 3.3
RICHMOND: Normal.	85.3	85.4	86.6	86.5	87.1	86.8	87.2	86.4	84.9	81.2	77.9	73.4	71.2
1917 Departure.	+ 0.1	- 0.3	- 0.7	- 0.6	- 1.6	- 1.7	- 1.8	- 1.2	- 0.5	+ 1.9	+ 1.7	+ 3.9	+ 3.1
APRIL.													
ABERDEEN: Normal.	82.6	83.3	83.7	84.0	84.3	84.4	83.7	82.0	79.1	76.0	73.4	72.0	70.9
1917 Departure.	- 2.6	- 3.3	- 2.7	- 3.0	- 3.3	- 3.4	- 3.7	- 5.0	- 5.1	- 5.0	- 5.4	- 4.0	- 2.9
ESKDALEMUIR: [Normal].	86.3	86.6	86.2	86.9	87.1	87.7	86.9	85.4	81.5	77.7	74.1	71.6	69.1
1917 Departure.	- 2.4	- 2.4	- 3.1	- 2.9	- 2.1	- 3.5	- 2.1	- 0.4	- 0.8	+ 0.8	+ 0.6	+ 3.3	+ 5.4
CAHIRCIVEEN: Normal.	85.8	86.2	86.7	86.6	86.9	86.9	87.0	86.5	84.1	81.9	79.6	77.2	76.3
1917 Departure.	- 3.4	- 1.0	- 2.5	- 1.4	- 1.7	- 1.1	- 2.0	- 1.8	- 1.6	- 3.3	- 2.0	- 2.7	- 3.3
RICHMOND: Normal.	83.4	84.2	85.5	86.0	86.9	86.7	86.7	83.6	79.9	74.9	70.2	66.3	63.5
1917 Departure.	- 3.2	- 3.2	- 3.6	- 3.3	- 2.6	- 1.1	- 1.2	- 3.2	- 1.8	- 0.1	+ 1.5	+ 2.4	+ 3.0
MAY.													
ABERDEEN: Normal.	84.3	84.9	85.3	85.8	86.1	85.5	83.5	80.2	77.6	75.4	74.0	72.8	71.9
1917 Departure.	- 0.3	- 0.9	- 0.3	+ 0.2	+ 0.1	+ 0.5	- 0.5	- 2.2	- 1.6	- 1.4	- 2.0	- 1.8	- 0.9
ESKDALEMUIR: [Normal].	87.5	88.0	88.0	88.7	88.9	88.7	87.2	84.7	79.8	76.4	73.1	70.7	68.8
1917 Departure.	- 4.0	- 2.3	- 2.0	- 1.7	- 1.3	- 1.1	- 1.8	- 1.3	+ 1.7	+ 0.5	+ 0.9	0.0	+ 0.3
CAHIRCIVEEN: Normal.	86.7	87.1	87.2	87.4	87.8	87.9	87.5	85.6	82.2	79.2	77.3	75.6	74.7
1917 Departure.	+ 0.3	+ 0.7	+ 0.5	+ 0.4	- 0.9	- 0.7	- 1.3	+ 0.1	+ 1.5	+ 0.1	- 0.8	- 1.6	- 1.1
RICHMOND: Normal.†	83.2	84.5	86.2	86.8	87.5	86.7	85.2	81.0	76.2	71.3	68.0	65.0	62.7
1917 Departure.	- 0.1	- 0.3	- 0.1	+ 0.2	+ 0.5	+ 0.5	+ 0.2	- 0.7	- 0.3	- 1.1	- 1.6	- 3.3	- 3.1
JUNE.													
ABERDEEN: Normal.	84.3	85.0	85.9	86.1	86.4	85.1	82.0	78.7	76.2	74.6	73.3	72.2	71.8
1917 Departure.	- 3.3	- 4.0	- 3.9	- 3.1	- 3.4	- 6.1	- 5.0	- 4.7	- 3.2	- 4.6	- 6.3	- 7.2	- 6.8
ESKDALEMUIR: [Normal].	88.7	89.1	89.5	89.9	90.0	89.6	87.6	84.3	80.0	76.9	74.6	72.1	71.0
1917 Departure.	+ 0.4	+ 1.0	+ 0.3	+ 0.5	0.0	- 0.1	- 1.7	- 3.4	- 3.7	- 4.7	- 3.2	- 1.8	- 2.5
CAHIRCIVEEN: Normal.	87.0	87.2	87.9	87.9	88.2	88.2	87.3	85.3	82.5	79.9	77.9	76.5	76.0
1917 Departure.	+ 1.1	+ 1.2	+ 0.1	+ 0.2	- 0.7	0.0	- 0.3	0.0	- 0.1	- 0.6	+ 2.1	+ 1.1	+ 0.9
RICHMOND: Normal.†	83.2	84.5	86.0	87.3	87.8	85.9	83.8	79.6	75.6	71.2	67.7	64.7	62.3
1917 Departure.	- 1.5	- 1.0	+ 0.1	- 1.1	- 0.2	- 1.3	- 1.2	- 2.1	- 3.4	- 4.5	- 5.0	- 4.8	- 5.3

The Relative Humidity of the air for each hour is deduced from the readings of the dry and wet bulb thermometers (see note on p. 12) by means of Glaisher's factors, complete saturation being taken as 100.

The normals for humidity are obtained from the observations for 30 years, 1886-1915 (Eskdalemuir 1911-1915 only).

* Cahirciveen Normals for March are for 29 years only, 1892 being omitted. † The Richmond Normals for May and June are for 29 years only, 1891 being omitted.

NORMALS AND DEPARTURES THEREFROM IN 1917.

JANUARY TO JUNE.

13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	Midt.	Mean.	Hour, G. M. T.
													JANUARY.
% 78.2	% 78.0	% 78.4	% 79.8	% 80.4	% 80.8	% 81.0	% 81.1	% 81.1	% 81.1	% 81.1	% 81.0	% 80.7	Normal. ABERDEEN.
- 2.2	- 2.0	- 0.4	- 2.8	- 2.4	- 2.8	- 3.0	- 3.1	- 3.1	- 3.1	- 4.1	- 4.0	- 2.4	1917 Dep. "
85.9	85.6	84.9	86.0	86.8	87.1	87.5	87.9	87.7	86.4	86.9	87.1	87.1	[Normal.] ESKDALEMUIR.
- 2.6	- 1.7	- 0.2	- 1.4	- 0.9	- 2.6	- 2.7	- 3.8	- 3.5	- 2.6	- 3.1	- 2.7	- 2.1	1917 Dep. "
84.3	84.0	84.3	84.8	85.6	86.1	86.3	86.5	86.6	86.5	86.4	86.7	86.2	Normal. CAHIRCIVEEN.
- 5.8	- 4.0	- 5.0	- 4.6	- 4.2	- 4.4	- 4.9	- 6.1	- 6.3	- 6.8	- 6.5	- 7.4	- 5.7	1917 Dep. "
79.7	79.4	79.6	81.4	82.5	83.9	84.3	85.1	85.1	85.9	85.8	86.4	84.5	Normal. RICHMOND.
- 3.2	- 2.9	- 3.1	- 3.8	- 4.9	- 5.4	- 6.5	- 6.5	- 5.8	- 7.1	- 6.4	- 6.6	- 5.6	1917 Dep. "
													FEBRUARY.
75.8	75.4	75.7	76.7	78.4	79.6	80.2	80.2	80.4	80.6	80.7	81.0	79.6	Normal. ABERDEEN.
- 0.8	- 1.4	- 0.7	- 0.7	- 0.4	+ 0.4	+ 2.8	+ 2.8	+ 2.6	+ 1.4	+ 1.3	+ 1.0	+ 0.9	1917 Dep. "
83.8	83.6	84.8	84.1	85.2	86.1	86.1	86.4	87.7	86.8	86.8	87.0	86.1	[Normal.] ESKDALEMUIR.
- 7.4	- 8.0	- 9.4	- 8.3	- 7.6	- 7.8	- 8.7	- 7.2	- 10.0	- 7.3	- 6.5	- 6.9	- 7.6	1917 Dep. "
81.7	81.3	81.5	82.1	83.4	84.9	85.4	86.1	86.1	86.3	86.8	87.1	85.5	Normal. CAHIRCIVEEN.
- 5.7	- 5.4	- 5.6	- 4.6	- 3.7	- 3.6	- 3.0	- 2.4	- 3.1	- 3.2	- 2.8	- 2.3	- 3.5	1917 Dep. "
74.6	73.7	73.7	74.7	77.1	79.8	81.2	82.7	83.2	84.0	84.4	84.8	81.6	Normal. RICHMOND.
+ 2.5	+ 2.9	+ 2.5	+ 2.1	+ 1.2	0.0	- 0.8	- 0.8	0.0	- 0.9	- 0.2	- 0.7	+ 1.2	1917 Dep. "
													MARCH.
72.4	72.1	72.4	73.4	75.1	77.3	79.0	80.1	80.7	81.2	81.4	81.6	78.7	Normal. ABERDEEN.
- 1.4	- 2.1	- 1.4	- 1.4	- 1.1	- 0.3	- 2.0	- 2.1	- 2.7	- 3.2	- 2.4	- 2.6	- 2.9	1917 Dep. "
78.7	78.7	78.3	79.8	80.6	83.7	84.8	85.4	85.9	86.1	86.6	86.1	84.2	[Normal.] ESKDALEMUIR.
- 7.2	- 8.8	- 6.3	- 8.9	- 4.8	- 4.6	- 6.2	- 3.5	- 3.1	- 5.2	- 3.7	- 2.6	- 4.4	1917 Dep. "
78.2	78.2	78.1	78.7	79.7	81.3	83.5	84.7	85.0	85.6	85.8	86.5	83.7	Normal.* CAHIRCIVEEN.
+ 3.7	+ 1.5	+ 2.4	+ 1.0	+ 1.3	+ 1.5	+ 0.5	+ 0.2	- 0.4	- 0.7	- 1.2	- 1.6	+ 0.8	1917 Dep. "
68.9	67.7	67.7	68.4	70.6	74.1	77.2	80.2	81.4	83.4	84.4	85.5	79.3	Normal. RICHMOND.
+ 5.9	+ 4.0	+ 4.5	+ 3.8	+ 3.7	+ 3.2	+ 2.0	+ 0.9	0.0	- 1.2	- 0.6	- 0.2	+ 1.2	1917 Dep. "
													APRIL.
70.5	70.6	70.9	71.6	73.0	74.6	77.0	79.2	80.3	81.3	82.3	82.8	78.0	Normal. ABERDEEN.
- 5.5	- 3.6	- 2.9	- 4.6	- 3.0	- 4.6	- 3.0	- 3.2	- 3.3	- 3.3	- 3.3	- 1.8	- 3.7	1917 Dep. "
68.8	68.5	67.8	68.9	70.6	73.5	78.6	81.1	83.7	85.1	86.2	86.3	79.2	[Normal.] ESKDALEMUIR.
+ 4.7	+ 4.5	+ 6.2	+ 4.8	+ 4.3	+ 3.0	+ 0.6	+ 0.4	- 2.1	- 1.6	- 3.0	- 2.5	+ 0.5	1917 Dep. "
75.8	75.5	75.7	75.9	77.1	78.8	81.0	83.4	84.5	85.2	85.7	85.9	82.1	Normal. CAHIRCIVEEN.
- 0.7	- 0.4	- 2.5	- 0.1	- 1.6	- 0.8	- 2.0	- 1.1	- 1.6	- 1.3	- 1.9	- 2.7	- 1.7	1917 Dep. "
62.0	60.8	60.7	61.0	62.6	65.6	69.7	74.0	76.9	79.5	81.5	83.0	74.7	Normal. RICHMOND.
+ 2.5	+ 2.5	+ 2.9	+ 3.3	+ 2.0	+ 0.5	- 0.1	- 0.8	- 1.2	- 2.2	- 2.5	- 2.6	- 0.5	1917 Dep. "
													MAY.
71.9	71.8	72.0	72.5	73.2	74.2	76.2	78.7	80.7	82.1	83.5	84.3	78.5	Normal. ABERDEEN.
- 0.9	- 0.8	- 2.0	- 0.5	- 1.2	+ 1.8	+ 0.8	+ 0.3	- 0.7	- 0.1	- 0.5	- 0.3	- 0.6	1917 Dep. "
68.6	68.1	68.1	69.1	69.8	72.1	76.6	80.7	83.8	85.9	87.0	87.4	79.2	[Normal.] ESKDALEMUIR.
+ 0.8	+ 2.1	+ 2.3	+ 1.5	+ 2.3	+ 1.2	+ 0.7	+ 0.4	- 1.0	- 2.3	- 3.0	- 3.5	- 0.3	1917 Dep. "
74.5	74.3	74.6	74.6	74.6	77.0	78.9	81.7	83.8	85.2	86.1	86.6	81.2	Normal. CAHIRCIVEEN.
- 0.2	- 0.5	+ 0.4	+ 0.5	+ 1.6	+ 1.2	+ 1.3	+ 0.6	+ 1.3	- 0.1	+ 0.2	+ 0.1	+ 0.1	1917 Dep. "
60.8	59.9	59.4	59.6	60.6	62.7	66.6	71.8	75.5	78.8	81.0	83.2	73.4	Normal.† RICHMOND.
- 3.2	- 4.0	- 4.2	- 2.7	- 1.3	- 0.8	- 1.0	- 2.8	- 2.5	- 2.0	- 0.7	- 0.4	- 1.4	1917 Dep. "
													JUNE.
71.3	71.2	72.0	72.5	72.6	73.9	75.5	77.6	80.1	82.0	83.6	84.3	78.1	Normal. ABERDEEN.
- 6.3	- 6.2	- 7.0	- 6.5	- 5.6	- 4.9	- 5.5	- 3.6	- 3.1	- 3.0	- 2.6	- 3.3	- 4.8	1917 Dep. "
69.6	69.4	68.8	70.8	71.7	73.8	77.1	81.1	84.5	86.3	87.6	88.9	80.2	[Normal.] ESKDALEMUIR.
- 1.9	- 3.0	- 2.4	- 3.1	- 3.0	- 2.9	- 2.6	- 0.9	0.0	+ 6.5	+ 1.5	- 0.2	- 1.6	1917 Dep. "
75.4	75.3	75.3	74.7	74.7	77.2	79.1	81.7	84.3	85.5	86.2	87.0	81.7	Normal. CAHIRCIVEEN.
+ 1.6	+ 1.0	+ 0.4	+ 1.6	+ 1.7	+ 1.4	+ 1.0	+ 2.0	+ 1.0	+ 1.0	+ 0.9	+ 1.3	+ 0.8	1917 Dep. "
60.3	59.2	58.5	58.8	59.8	61.9	65.4	70.5	74.9	78.4	80.8	83.2	72.8	Normal.† RICHMOND.
- 5.2	- 4.2	- 4.1	- 2.8	- 2.3	- 3.9	- 3.2	- 3.9	- 3.4	- 3.4	- 2.0	- 1.4	- 2.8	1917 Dep. "

The values for 1917 are given by the departure from the normal; + indicates excess, - defect.

The mean values are calculated by the formula, $\text{mean} = \frac{1}{24} \left\{ (1 + \dots + 23) + \frac{1}{2}(0 + 24) \right\}$

* Cahirciveen Normals for March are for 29 years only, 1892 being omitted. † The Richmond Normals for May and June are for 29 years only, 1891 being omitted.

HOURLY VALUES OF THE METEOROLOGICAL ELEMENTS:

RELATIVE HUMIDITY.

Hour, G.M.T.	0.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Noon.
JULY.													
ABERDEEN: Normal.	84.9	85.2	85.8	86.0	86.4	85.2	82.9	80.0	77.0	74.7	73.1	72.0	71.9
1917 Departure.	- 1.9	- 1.2	- 0.8	- 1.0	- 1.4	- 1.2	- 1.9	- 3.0	- 2.0	- 0.7	- 0.1	+ 1.0	- 0.9
ESKDALEMUIR: [Normal].	89.9	90.6	90.9	91.2	90.5	90.5	88.9	86.1	82.2	78.5	76.1	74.4	73.4
1917 Departure.	- 1.5	- 0.5	- 0.4	- 0.4	+ 0.3	- 0.3	- 1.1	- 1.6	- 2.0	- 1.8	- 3.1	- 3.5	- 5.4
CAHIRCIVEEN: Normal.	88.2	88.4	88.7	89.0	89.2	89.6	89.0	87.7	85.5	83.1	81.2	79.4	78.6
1917 Departure.	+ 3.1	+ 4.5	+ 4.1	+ 4.5	+ 3.8	+ 3.6	+ 3.0	+ 2.7	+ 2.3	+ 1.4	+ 1.6	+ 2.9	+ 2.2
RICHMOND: Normal.	83.8	85.3	86.5	87.3	88.2	87.2	85.5	81.0	76.1	70.9	67.3	63.6	61.7
1917 Departure.	- 0.7	- 0.7	- 0.8	- 1.2	- 0.8	- 1.0	- 0.3	- 0.4	+ 1.0	+ 1.0	+ 1.7	+ 2.9	+ 2.9
AUGUST.													
ABERDEEN: Normal.*	85.0	85.6	86.1	86.5	87.1	87.1	85.7	82.5	79.7	76.1	74.3	72.7	71.6
1917 Departure.	+ 4.0	+ 3.4	+ 2.9	+ 2.5	+ 2.9	+ 2.9	+ 3.3	+ 5.5	+ 7.3	+ 8.9	+ 9.7	+ 10.3	+ 9.4
ESKDALEMUIR: [Normal].	90.6	90.6	90.7	91.1	91.2	91.0	90.4	89.0	85.5	81.9	79.0	77.2	76.1
1917 Departure.	+ 0.6	+ 0.7	+ 0.8	0.0	+ 0.7	+ 1.2	+ 1.1	+ 1.3	+ 2.5	+ 2.7	+ 2.3	+ 1.5	+ 2.8
CAHIRCIVEEN: Normal.	88.7	88.9	89.5	89.3	89.6	89.6	89.5	88.9	87.1	84.5	82.4	80.5	79.3
1917 Departure.	- 0.1	+ 0.7	+ 0.7	+ 1.4	+ 1.3	+ 0.9	+ 0.9	- 0.3	- 0.3	- 0.4	0.0	+ 1.7	+ 2.7
RICHMOND: Normal.	86.0	87.0	87.9	88.8	89.3	89.4	88.6	85.3	80.7	74.8	70.3	65.8	63.8
1917 Departure.	+ 0.7	+ 0.4	- 0.6	- 0.2	+ 0.5	0.0	0.0	+ 0.1	+ 0.7	+ 2.0	+ 3.8	+ 5.0	+ 6.7
SEPTEMBER.													
ABERDEEN: Normal.*	85.0	85.4	85.7	85.9	86.2	86.2	86.3	84.9	82.2	78.6	75.7	73.5	72.4
1917 Departure.	- 5.0	- 4.4	- 4.7	- 3.9	- 4.2	- 4.2	- 3.3	- 1.9	- 3.2	- 2.6	- 2.7	- 3.5	- 3.4
ESKDALEMUIR: [Normal].	87.7	87.9	87.9	88.0	87.3	87.6	87.1	86.7	84.5	82.2	76.8	75.2	73.5
1917 Departure.	+ 3.0	+ 3.4	+ 3.1	+ 3.7	+ 3.9	+ 4.3	+ 4.9	+ 4.9	+ 5.7	+ 5.5	+ 9.0	+ 8.7	+ 6.9
CAHIRCIVEEN: Normal.	87.4	87.7	87.8	88.1	88.3	88.0	88.3	88.0	87.3	84.7	82.2	79.8	78.7
1917 Departure.	+ 5.3	+ 4.9	+ 5.7	+ 4.3	+ 4.4	+ 4.9	+ 3.5	+ 4.0	+ 3.9	+ 4.9	+ 5.1	+ 5.9	+ 5.9
RICHMOND: Normal.	87.8	88.5	89.5	89.6	90.1	90.1	90.5	88.5	85.0	79.8	74.7	70.0	66.9
1917 Departure.	+ 2.6	+ 2.2	+ 1.7	+ 2.1	+ 1.9	+ 2.2	+ 1.8	+ 2.8	+ 1.9	+ 2.0	+ 2.7	+ 2.5	+ 3.8
OCTOBER.													
ABERDEEN: Normal.	85.2	85.6	85.7	85.8	85.7	85.8	86.0	86.0	84.8	83.0	80.2	77.9	76.3
1917 Departure.	- 2.2	- 2.6	- 2.7	- 2.8	- 2.7	- 1.8	- 3.0	- 4.0	- 2.8	- 3.0	- 4.2	- 2.9	- 4.3
ESKDALEMUIR: [Normal].	89.3	90.2	89.7	89.9	89.5	89.6	89.0	89.6	88.6	87.7	83.9	82.0	79.9
1917 Departure.	- 3.5	- 2.6	- 2.9	- 3.0	- 2.8	- 2.4	- 1.8	- 1.6	- 2.6	- 2.8	- 1.3	- 0.6	+ 0.8
CAHIRCIVEEN: Normal.	86.6	86.8	87.0	87.0	87.0	87.0	86.9	87.2	86.9	85.8	84.1	81.6	80.2
1917 Departure.	- 4.1	- 4.6	- 4.2	- 3.7	- 3.0	- 2.7	- 1.5	- 2.3	- 2.2	- 1.7	- 0.4	+ 0.7	+ 2.1
RICHMOND: Normal.	90.0	90.0	90.7	90.6	91.3	91.1	91.3	90.7	89.4	86.1	82.6	78.2	75.2
1917 Departure.	- 1.9	- 1.0	- 1.6	- 1.5	- 2.2	- 1.8	- 1.2	- 0.9	- 1.0	- 1.4	- 1.7	- 2.7	- 3.0
NOVEMBER.													
ABERDEEN: Normal.	83.6	83.6	83.7	83.6	83.6	83.8	83.6	83.7	83.5	82.9	81.5	80.1	78.8
1917 Departure.	- 0.6	- 0.6	- 1.7	- 0.6	- 0.6	- 0.8	+ 0.4	- 0.7	- 1.5	- 1.9	- 2.5	- 8.1	- 7.8
ESKDALEMUIR: [Normal].	85.0	85.1	85.8	86.2	85.8	85.5	85.8	86.0	85.1	85.4	84.2	82.4	81.2
1917 Departure.	+ 3.2	+ 3.7	+ 2.5	+ 2.0	+ 1.2	+ 2.8	+ 0.7	+ 1.5	+ 2.7	+ 1.2	+ 3.1	+ 3.9	+ 4.1
CAHIRCIVEEN: Normal.	86.7	86.7	87.1	87.3	87.3	87.5	87.6	87.7	87.7	87.2	86.4	84.8	83.4
1917 Departure.	+ 3.4	+ 3.2	+ 3.7	+ 3.4	+ 2.7	+ 2.7	+ 2.5	+ 2.2	+ 3.2	+ 4.3	+ 4.6	+ 5.2	+ 6.2
RICHMOND: Normal.	88.9	88.7	89.3	89.2	89.3	89.0	89.6	89.2	89.2	87.5	85.9	83.0	80.7
1917 Departure.	- 0.4	- 0.6	- 0.3	- 1.6	- 1.5	- 0.9	- 2.0	- 1.8	- 1.2	- 0.7	- 2.2	- 2.0	0.0
DECEMBER.													
ABERDEEN: Normal.	82.6	83.0	83.2	83.3	83.4	83.4	83.0	83.2	83.2	82.8	82.5	81.6	80.7
1917 Departure.	- 2.6	- 3.0	- 3.2	- 2.3	- 0.4	- 0.4	0.0	- 2.2	- 1.2	- 2.8	- 2.5	- 3.6	- 3.0
ESKDALEMUIR: [Normal].	88.3	88.6	87.7	88.4	88.1	87.9	88.2	88.7	88.8	89.2	89.1	87.1	86.9
1917 Departure.	- 0.2	+ 0.2	+ 1.7	+ 0.3	- 0.1	+ 0.8	- 0.3	- 2.0	- 2.1	- 4.3	- 6.4	- 3.4	- 3.8
CAHIRCIVEEN: Normal.	87.9	88.0	87.6	87.7	88.0	87.6	87.9	88.0	87.9	87.7	87.5	86.4	86.1
1917 Departure.	- 1.0	- 1.6	- 1.9	- 3.0	- 2.3	- 3.0	- 3.1	- 3.3	- 3.8	- 3.7	- 3.6	- 3.5	- 4.2
RICHMOND: Normal.	87.6	87.2	87.8	87.4	87.8	87.6	88.0	87.5	87.8	87.0	86.3	84.1	82.7
1917 Departure.	- 5.4	- 3.6	- 3.1	- 3.4	- 3.5	- 3.2	- 3.1	- 2.4	- 2.9	- 3.2	- 3.5	- 3.8	- 3.3
YEAR.													
ABERDEEN: Normal.	83.4	83.8	84.1	84.4	84.6	84.4	83.6	82.3	80.6	78.8	77.1	75.6	74.5
1917 Departure.	- 1.6	- 1.7	- 1.8	- 1.3	- 1.2	- 1.4	- 1.3	- 1.7	- 1.4	- 1.5	- 1.9	- 2.2	- 2.2
ESKDALEMUIR: [Normal].	87.9	88.2	88.2	88.5	88.3	88.4	87.6	87.0	84.9	83.4	80.3	79.0	77.6
1917 Departure.	- 1.5	- 0.9	- 0.9	- 1.0	- 0.9	- 0.8	- 0.8	- 1.1	- 1.0	- 1.7	- 1.1	- 0.8	- 0.8
CAHIRCIVEEN: Normal.	86.8	87.3	87.6	87.7	87.8	87.8	87.8	87.2	86.0	84.4	82.9	81.1	80.1
1917 Departure.	- 0.2	- 0.2	- 0.4	- 0.2	- 0.2	- 0.3	- 0.5	- 0.6	- 0.4	- 0.6	- 0.2	+ 0.3	+ 0.4
RICHMOND: Normal.	85.9	86.3	87.3	87.6	88.1	87.7	87.4	86.1	83.1	79.6	76.5	73.0	70.7
1917 Departure.	- 1.4	- 1.0	- 1.1	- 1.3	- 1.2	- 1.2	- 1.3	- 2.0	- 1.1	- 0.7	- 0.5	- 0.1	+ 0.3

* The Aberdeen Normals for August and September are for 29 years only, 1893 being omitted.

NORMALS AND DEPARTURES THEREFROM IN 1917.

JULY TO DECEMBER AND YEAR.

13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	Midt.	Mean.	Hour, G.M.T.
													JULY.
% 71.3 - 2.3 73.0 - 5.4 77.9 + 2.1 59.6 + 2.6	% 71.5 - 1.5 72.7 - 6.5 77.6 + 2.2 58.6 + 2.3	% 71.8 - 1.8 72.4 - 6.7 77.0 + 1.4 58.0 + 2.2	% 72.7 - 1.7 74.0 - 6.8 77.1 + 1.3 58.3 + 1.4	% 73.5 - 1.5 75.6 - 6.9 76.9 + 2.7 59.3 + 1.7	% 74.7 - 1.7 77.4 - 7.1 79.1 + 3.5 61.5 + 1.7	% 76.4 - 4.4 80.8 - 7.5 81.1 + 2.6 65.2 + 0.7	% 79.1 - 2.1 84.6 - 5.5 83.7 + 2.8 71.0 + 0.6	% 81.5 - 1.5 86.9 - 3.0 85.9 + 1.9 75.8 - 1.0	% 83.0 - 2.0 88.2 - 1.8 87.1 + 3.0 79.2 - 0.9	% 83.9 - 0.9 89.7 - 1.0 87.6 + 3.0 81.8 - 1.1	% 84.8 - 1.8 90.0 - 1.8 88.2 + 2.7 84.0 - 1.0	% 78.5 - 1.6 82.4 - 3.3 83.7 + 2.7 73.0 + 0.6	Normal. ABERDEEN. 1917 Dep. " [Normal.] ESKDALEMUIR. 1917 Dep. " Normal. CAHIRCIVEEN. 1917 Dep. " Normal. RICHMOND. 1917 Dep. "
													AUGUST.
+ 9.7 75.2 + 3.6 78.5 + 1.7 61.3 + 7.1	+ 8.1 74.6 + 3.3 78.2 + 0.7 60.1 + 7.1	+ 7.1 74.9 + 2.4 78.2 + 3.0 60.1 + 5.6	+ 7.4 75.2 + 3.2 78.7 + 2.0 60.2 + 6.5	+ 6.8 77.0 + 2.8 79.1 + 2.3 62.0 + 7.5	+ 6.9 80.4 + 2.1 81.1 + 2.4 65.3 + 6.3	+ 6.3 84.9 + 1.6 83.2 + 2.0 70.6 + 5.1	+ 5.7 87.3 + 1.3 85.5 + 2.2 76.1 + 5.0	+ 4.5 89.5 + 0.6 86.9 + 1.4 79.6 + 4.2	+ 4.4 89.8 + 0.7 87.8 + 1.6 82.5 + 2.4	+ 3.7 89.9 + 0.8 88.1 + 0.9 84.3 + 1.4	+ 4.0 90.7 + 1.1 88.3 + 1.0 86.0 + 0.7	+ 6.0 84.3 + 1.7 84.7 + 1.2 75.8 + 3.3	Normal.* ABERDEEN. 1917 Dep. " [Normal.] ESKDALEMUIR. 1917 Dep. " Normal. CAHIRCIVEEN. 1917 Dep. " Normal. RICHMOND. 1917 Dep. "
													SEPTEMBER.
- 3.9 72.9 + 5.8 77.8 + 4.7 64.7 + 3.6	- 4.1 72.2 + 4.7 77.6 + 4.8 63.6 + 3.9	- 4.5 72.8 + 4.9 77.7 + 4.8 63.4 + 3.3	- 4.9 73.8 + 6.3 78.7 + 6.4 64.6 + 3.8	- 3.8 77.3 + 4.1 79.6 + 7.4 67.4 + 3.5	- 4.4 81.3 + 3.5 82.2 + 6.0 72.5 + 4.2	- 4.7 84.4 + 2.8 84.2 + 6.2 77.5 + 4.9	- 4.1 85.1 + 3.7 85.6 + 6.4 81.1 + 5.3	- 5.1 87.3 + 2.7 86.2 + 5.7 83.2 + 4.9	- 4.0 87.1 + 2.7 86.7 + 5.7 85.2 + 3.9	- 3.5 87.4 + 2.6 87.2 + 5.1 86.4 + 3.4	- 3.9 87.4 + 3.2 87.4 + 5.0 87.8 + 3.1	- 3.9 82.3 + 4.6 84.2 + 5.2 79.2 + 3.1	Normal.* ABERDEEN. 1917 Dep. " [Normal.] ESKDALEMUIR. 1917 Dep. " Normal. CAHIRCIVEEN. 1917 Dep. " Normal. RICHMOND. 1917 Dep. "
													OCTOBER.
- 2.9 78.5 + 1.6 79.4 + 2.9 73.1 - 3.8	- 3.2 78.0 + 3.1 79.0 + 4.0 72.0 - 3.7	- 2.4 79.6 + 0.8 79.1 + 4.3 72.6 - 3.2	- 2.9 81.1 + 1.6 80.3 + 2.8 74.8 - 2.1	- 2.3 84.8 - 0.5 81.8 + 1.7 78.9 - 1.0	- 4.1 86.7 - 0.9 83.9 + 0.6 82.9 + 0.4	- 5.5 87.7 - 1.2 84.5 - 0.6 85.1 - 0.6	- 2.8 88.0 - 2.5 85.1 - 0.8 87.2 - 1.5	- 2.3 89.6 - 3.6 85.6 - 2.5 87.6 - 1.0	- 1.7 89.0 - 2.8 86.1 - 2.1 88.7 - 2.9	- 1.8 89.5 - 2.4 86.3 - 4.0 89.1 - 2.5	- 2.2 89.2 - 3.6 86.8 - 4.3 90.0 - 2.2	- 3.0 86.3 - 1.4 - 0.9 84.6 - 1.9	Normal. ABERDEEN. 1917 Dep. " [Normal.] ESKDALEMUIR. 1917 Dep. " Normal. CAHIRCIVEEN. 1917 Dep. " Normal. RICHMOND. 1917 Dep. "
													NOVEMBER.
- 2.5 81.9 + 2.5 82.4 + 6.7 78.8 0.0	- 2.5 82.1 + 1.7 82.0 + 7.8 78.3 + 0.8	- 2.5 83.2 + 2.2 82.4 + 7.2 78.7 + 0.6	- 1.5 83.4 + 3.9 83.6 + 6.9 81.4 + 0.8	- 0.5 84.3 + 4.0 84.8 + 7.0 83.5 - 0.1	- 1.0 84.7 + 4.2 85.3 + 6.0 85.1 - 0.1	- 1.5 85.0 + 4.6 85.6 + 4.5 85.8 + 0.2	- 0.5 85.2 + 4.4 86.2 + 4.6 86.8 + 0.6	- 0.9 85.3 + 4.2 86.2 + 4.1 87.2 + 0.1	+ 0.2 85.9 + 2.6 86.4 + 3.8 88.1 - 0.5	- 0.2 86.2 + 2.8 86.5 + 3.9 88.3 - 0.3	- 0.3 85.4 + 3.0 86.8 + 3.7 88.7 - 0.6	- 1.8 84.6 + 2.9 85.8 + 4.6 85.9 - 0.6	Normal. ABERDEEN. 1917 Dep. " [Normal.] ESKDALEMUIR. 1917 Dep. " Normal. CAHIRCIVEEN. 1917 Dep. " Normal. RICHMOND. 1917 Dep. "
													DECEMBER.
- 3.1 87.0 - 3.0 85.5 - 4.6 81.6 - 5.5	- 2.0 87.1 - 4.8 85.3 - 4.0 81.0 - 5.0	- 2.0 88.1 - 4.4 85.5 - 3.9 81.8 - 3.9	- 1.5 88.3 - 5.0 86.4 - 4.3 83.8 - 3.9	- 1.9 89.0 - 3.0 86.7 - 2.9 84.8 - 4.5	- 2.3 88.7 - 3.5 87.0 - 3.2 85.9 - 4.0	- 1.6 88.8 - 3.4 87.0 - 2.5 86.0 - 5.2	- 1.5 88.5 - 3.8 87.5 - 3.4 86.6 - 4.8	- 1.6 89.2 - 2.1 87.8 - 2.5 86.6 - 5.1	- 1.7 88.7 - 3.2 87.7 - 2.1 87.2 - 4.4	- 2.7 89.3 - 1.3 87.9 - 2.4 87.0 - 5.1	- 1.6 88.4 - 1.4 87.8 - 1.3 87.6 - 5.6	- 2.0 88.3 - 2.4 87.2 - 3.1 85.9 - 4.0	Normal. ABERDEEN. 1917 Dep. " [Normal.] ESKDALEMUIR. 1917 Dep. " Normal. CAHIRCIVEEN. 1917 Dep. " Normal. RICHMOND. 1917 Dep. "
													YEAR.
- 1.8 77.3 - 1.0 79.3 + 0.5 68.8 + 0.3	- 1.8 76.9 - 1.3 79.0 + 0.7 67.9 + 0.3	- 1.8 77.1 - 1.0 79.1 + 0.6 67.9 + 0.2	- 1.8 78.2 - 1.3 79.6 + 0.8 68.9 + 0.5	- 1.5 79.7 - 1.1 80.3 + 1.1 70.8 + 0.4	- 1.4 81.6 - 1.6 82.0 + 0.9 73.4 + 0.2	- 1.7 83.8 - 2.1 83.3 + 0.5 76.2 - 0.4	- 1.2 85.4 - 1.7 84.8 + 0.4 79.4 - 0.6	- 1.4 86.9 - 1.9 85.7 - 0.3 81.4 - 0.9	- 1.3 87.3 - 1.9 86.3 - 0.1 83.4 - 1.5	- 1.4 87.9 - 1.5 86.7 - 0.4 84.5 - 1.3	- 1.4 87.9 - 1.5 87.1 - 0.5 85.8 - 1.4	- 1.6 83.8 - 1.2 84.2 + 0.1 79.2 - 0.6	Normal. ABERDEEN. 1917 Dep. " [Normal.] ESKDALEMUIR. 1917 Dep. " Normal. CAHIRCIVEEN. 1917 Dep. " Normal. RICHMOND. 1917 Dep. "

* The Aberdeen Normals for August and September are for 29 years only, 1893 being omitted.

HOURLY VALUES OF THE METEOROLOGICAL ELEMENTS

WIND SPEED (in Metres per second).

Hour, G.M.T.	0.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Noon.
JANUARY.													
ABERDEEN: Normal.	m/s. 4.49	m/s. 4.42	m/s. 4.41	m/s. 4.39	m/s. 4.37	m/s. 4.39	m/s. 4.49	m/s. 4.45	m/s. 4.55	m/s. 4.58	m/s. 4.57	m/s. 4.66	m/s. 4.81
1917 Departure.	- 0.10	+ 0.04	+ 0.24	+ 0.22	+ 0.39	+ 0.15	+ 0.16	+ 0.01	- 0.19	- 0.40	+ 0.01	- 0.34	- 0.10
ESKDALEMUIR: [Normal].	5.52	5.70	5.62	5.38	5.49	5.32	5.19	5.11	5.20	5.33	5.82	6.10	6.52
1917 Departure.	+ 0.80	+ 0.82	+ 0.97	+ 1.16	+ 1.56	+ 1.35	+ 1.01	+ 0.85	+ 1.05	+ 1.08	+ 0.41	+ 0.42	- 0.01
CAHIRCIVEEN: Normal.	6.52	6.45	6.42	6.34	6.33	6.33	6.29	6.31	6.32	6.41	6.30	6.26	6.85
1917 Departure.	+ 0.18	+ 0.07	+ 0.03	- 0.09	- 0.12	+ 0.13	+ 0.11	- 0.15	+ 0.38	+ 0.28	+ 0.12	+ 0.46	+ 0.48
RICHMOND: Normal.	3.39	3.27	3.31	3.31	3.27	3.33	3.33	3.33	3.40	3.50	3.74	4.14	4.32
1917 Departure.	+ 1.20	+ 1.30	+ 1.48	+ 1.38	+ 1.45	+ 1.24	+ 1.51	+ 1.42	+ 1.54	+ 1.70	+ 1.25	+ 1.34	+ 1.22
FEBRUARY.													
ABERDEEN: Normal.	4.32	4.28	4.23	4.27	4.26	4.21	4.28	4.30	4.35	4.41	4.55	4.80	5.08
1917 Departure.	- 1.34	- 1.54	- 1.49	- 1.39	- 1.35	- 1.25	- 1.49	- 1.48	- 1.29	- 1.15	- 1.00	- 1.18	- 1.29
ESKDALEMUIR: [Normal].	5.65	5.71	5.64	5.91	5.79	5.79	5.77	5.65	5.86	6.03	6.45	6.90	7.38
1917 Departure.	- 3.15	- 2.88	- 2.66	- 2.71	- 2.44	- 2.67	- 2.62	- 2.16	- 2.81	- 3.13	- 3.79	- 4.22	- 4.72
CAHIRCIVEEN: Normal.	6.21	6.10	6.07	6.11	6.01	6.03	5.97	5.96	5.92	6.00	5.94	5.97	6.66
1917 Departure.	- 2.46	- 2.70	- 2.77	- 2.56	- 2.59	- 2.67	- 2.93	- 2.78	- 2.79	- 2.90	- 2.58	- 2.26	- 2.66
RICHMOND: Normal.	3.40	3.38	3.40	3.34	3.34	3.34	3.36	3.35	3.46	3.76	4.13	4.69	4.91
1917 Departure.	- 0.96	- 1.16	- 0.96	- 1.02	- 0.95	- 1.11	- 1.16	- 1.15	- 1.23	- 1.26	- 1.38	- 1.50	- 1.27
MARCH.													
ABERDEEN: Normal.	4.15	4.09	4.06	4.12	4.08	4.16	4.14	4.29	4.47	4.76	5.00	5.26	5.57
1917 Departure.	+ 0.81	+ 0.59	+ 0.55	+ 0.53	+ 0.58	+ 0.79	+ 0.69	+ 0.79	+ 0.58	+ 0.89	+ 0.68	+ 0.55	+ 0.68
ESKDALEMUIR: [Normal].	5.37	5.45	5.50	5.40	5.40	5.31	5.46	5.64	5.93	6.50	6.90	7.48	7.68
1917 Departure.	+ 0.19	- 0.18	+ 0.03	- 0.11	- 0.12	- 0.08	- 0.07	- 0.08	+ 0.07	- 0.61	- 0.27	- 0.52	- 0.89
CAHIRCIVEEN: Normal.	5.51	5.50	5.44	5.36	5.24	5.20	5.29	5.22	5.36	5.62	5.82	5.94	6.58
1917 Departure.	- 0.38	- 0.08	- 0.06	- 0.32	- 0.20	- 0.14	- 0.54	- 0.46	- 0.72	- 0.22	- 0.52	- 0.59	- 0.77
RICHMOND: Normal.	3.20	3.20	3.23	3.14	3.14	3.15	3.23	3.35	3.72	4.30	4.76	5.14	5.23
1917 Departure.	+ 0.18	+ 0.24	+ 0.48	+ 0.30	+ 0.57	+ 0.45	+ 0.33	+ 0.09	+ 0.34	+ 0.13	- 0.36	- 0.27	- 0.01
APRIL.													
ABERDEEN: Normal.	3.30	3.26	3.33	3.30	3.27	3.31	3.33	3.64	4.14	4.56	4.90	5.14	5.33
1917 Departure.	+ 0.23	+ 0.26	+ 0.37	+ 0.46	+ 0.57	+ 0.67	+ 0.95	+ 0.90	+ 1.41	+ 1.02	+ 0.71	+ 0.41	+ 0.27
ESKDALEMUIR: [Normal].	4.71	4.65	4.60	4.38	4.37	4.48	4.44	4.83	5.62	6.41	7.07	7.46	7.69
1917 Departure.	- 1.33	- 0.63	- 0.34	+ 0.24	- 0.18	- 0.23	+ 0.56	+ 0.88	- 0.13	- 0.78	- 1.29	- 1.52	- 1.98
CAHIRCIVEEN: Normal.	4.75	4.67	4.66	4.61	4.62	4.60	4.64	4.74	5.03	5.41	5.72	5.83	6.40
1917 Departure.	+ 0.13	+ 0.12	+ 0.15	+ 0.04	- 0.01	- 0.31	- 0.65	- 0.70	- 0.71	- 0.49	- 0.66	- 0.40	- 0.30
RICHMOND: Normal.	2.75	2.71	2.71	2.63	2.63	2.61	2.83	3.31	3.83	4.30	4.71	5.03	5.22
1917 Departure.	- 0.05	+ 0.03	+ 0.28	+ 0.37	+ 0.28	+ 0.15	+ 0.28	+ 0.02	+ 0.05	- 0.13	- 0.39	- 0.35	- 0.03
MAY.													
ABERDEEN: Normal.	2.74	2.72	2.67	2.70	2.74	2.85	3.03	3.43	3.93	4.27	4.51	4.68	4.82
1917 Departure.	- 0.46	- 0.30	- 0.07	- 0.07	- 0.33	- 0.39	- 0.46	- 0.36	- 0.65	- 0.54	- 0.48	- 0.30	- 0.66
ESKDALEMUIR: [Normal].	3.59	3.50	3.48	3.47	3.49	3.61	3.86	4.29	4.88	5.46	5.77	5.84	5.97
1917 Departure.	- 0.28	+ 0.09	- 0.12	- 0.27	+ 0.28	+ 0.07	+ 0.01	+ 0.41	+ 0.27	+ 0.43	+ 0.29	+ 0.52	+ 0.43
CAHIRCIVEEN: Normal.	4.15	4.09	4.06	4.09	4.03	4.05	4.07	4.24	4.56	5.01	5.31	5.41	5.93
1917 Departure.	- 0.76	- 0.75	- 0.72	- 0.52	- 0.80	- 0.78	- 0.53	- 0.72	- 1.05	- 1.13	- 1.03	- 0.60	- 0.69
RICHMOND: Normal.	2.39	2.32	2.28	2.22	2.21	2.21	2.58	3.11	3.55	3.95	4.24	4.54	4.65
1917 Departure.	- 0.04	- 0.07	+ 0.04	- 0.14	- 0.05	- 0.08	- 0.08	- 0.18	- 0.15	- 0.33	- 0.62	- 0.09	+ 0.25
JUNE.													
ABERDEEN: Normal.	2.39	2.40	2.38	2.40	2.45	2.54	2.76	3.11	3.48	3.81	4.00	4.30	4.46
1917 Departure.	- 0.03	- 0.16	+ 0.05	- 0.06	- 0.08	+ 0.07	+ 0.08	+ 0.27	+ 0.18	+ 0.24	+ 0.48	+ 0.28	+ 0.21
ESKDALEMUIR: [Normal].	3.06	3.13	3.22	3.32	3.42	3.59	3.91	4.47	4.98	5.24	5.63	5.82	5.87
1917 Departure.	+ 0.38	+ 0.38	+ 0.34	- 0.07	- 0.35	- 0.43	- 0.35	- 0.43	+ 0.08	+ 0.33	+ 0.21	+ 0.65	+ 0.62
CAHIRCIVEEN: Normal.	3.80	3.70	3.65	3.62	3.62	3.63	3.73	3.97	4.30	4.72	4.97	5.17	5.57
1917 Departure.	- 0.21	+ 0.11	+ 0.22	+ 0.10	+ 0.30	+ 0.19	- 0.19	+ 0.06	+ 0.10	+ 0.27	+ 0.34	+ 0.41	+ 0.17
RICHMOND: Normal.	2.16	2.09	2.03	1.97	1.95	2.07	2.52	2.95	3.25	3.56	3.82	4.13	4.17
1917 Departure.	+ 0.24	+ 0.21	+ 0.12	+ 0.06	+ 0.05	- 0.06	- 0.30	- 0.45	- 0.19	- 0.05	- 0.48	- 0.55	- 0.30

At Aberdeen, Cahirciveen, and Richmond, the speed of the wind is obtained from the records of a Robinson cup-anemometer having cups 9 inches (0.23 metre) in diameter carried on arms measuring 2 feet (0.61 metre) from the centre of the cup to the spindle. The mean speed is found from the travel of the cups in the sixty minutes centering at the hour G.M.T., by multiplying by the factor 2.2, and is converted to metres per second.

At Eskdalemuir the speeds are obtained from the records of a Dines' pressure-tube anemometer. They represent mean values for sixty minutes centering at the hour G.M.T.

NORMALS AND DEPARTURES THEREFROM IN 1917.

JANUARY TO JUNE.

13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	Midt.	Mean.	Hour, G.M.T.
m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	JANUARY.
4.89	4.87	4.77	4.70	4.68	4.66	4.65	4.62	4.52	4.47	4.49	4.49	4.58	Normal. ABERDEEN.
- 0.42	- 0.56	- 0.43	- 0.37	- 0.45	- 0.16	- 0.34	- 0.27	- 0.46	- 0.18	- 0.25	- 0.09	- 0.16	1917 Dep. "
6.33	6.53	6.38	6.19	5.85	5.86	5.89	5.63	5.79	5.73	5.68	5.51	5.64	[Normal.] ESKDALEMUIR.
+ 0.68	+ 0.91	+ 0.54	+ 0.64	+ 1.00	+ 1.05	+ 1.41	+ 1.07	+ 0.42	+ 0.16	+ 0.49	+ 0.76	+ 0.82	1917 Dep. "
7.07	7.13	7.08	6.82	6.63	6.43	6.39	6.29	6.37	6.47	6.54	6.51	6.52	Normal. CAHIRCIVEEN.
+ 0.25	+ 0.27	+ 0.47	+ 0.69	+ 0.50	+ 0.67	+ 0.92	+ 1.03	+ 0.91	+ 0.80	+ 0.27	+ 0.16	+ 0.35	1917 Dep. "
4.33	4.35	4.10	3.84	3.73	3.68	3.70	3.67	3.57	3.56	3.39	3.39	3.65	Normal. RICHMOND.
+ 1.08	+ 1.12	+ 1.08	+ 1.45	+ 1.30	+ 1.27	+ 1.15	+ 1.43	+ 1.30	+ 1.19	+ 1.04	+ 1.16	+ 1.30	1917 Dep. "
5.10	5.16	4.97	4.68	4.41	4.34	4.31	4.27	4.33	4.30	4.22	4.31	4.48	Normal. ABERDEEN.
- 1.44	- 1.64	- 1.60	- 1.51	- 1.32	- 1.22	- 1.34	- 1.32	- 1.35	- 1.26	- 1.33	- 1.36	- 1.36	1917 Dep. "
7.73	7.85	7.42	6.96	6.46	6.20	6.06	6.01	5.97	5.94	5.74	5.73	6.29	[Normal.] ESKDALEMUIR.
- 5.13	- 5.64	- 5.21	- 4.84	- 4.51	- 4.29	- 3.88	- 3.85	- 3.69	- 3.65	- 3.25	- 3.35	- 3.67	1917 Dep. "
6.94	6.98	6.70	6.79	6.55	6.20	6.12	6.05	6.13	6.19	6.14	6.19	6.25	Normal. CAHIRCIVEEN.
- 2.39	- 2.16	- 1.91	- 2.21	- 2.51	- 2.26	- 2.77	- 2.32	- 2.47	- 2.39	- 2.47	- 2.59	- 2.53	1917 Dep. "
4.99	4.93	4.77	4.46	4.06	3.85	3.77	3.69	3.66	3.54	3.47	3.40	3.88	Normal. RICHMOND.
- 1.49	- 1.10	- 1.02	- 0.80	- 0.86	- 0.55	- 0.82	- 0.73	- 0.76	- 0.98	- 1.00	- 0.95	- 1.05	1917 Dep. "
5.52	5.46	5.37	5.14	4.72	4.44	4.21	4.09	4.10	4.07	4.12	4.13	4.56	Normal. ABERDEEN.
+ 0.59	+ 0.91	+ 0.68	+ 0.73	+ 0.44	+ 0.81	+ 0.78	+ 1.04	+ 0.88	+ 1.03	+ 0.85	+ 1.04	+ 0.73	1917 Dep. "
7.77	8.05	8.00	7.59	7.04	6.46	5.96	5.60	5.52	5.42	5.36	5.33	6.28	[Normal.] ESKDALEMUIR.
- 0.52	- 0.97	- 0.81	- 0.56	- 0.52	- 0.06	+ 0.30	- 0.20	- 0.52	- 0.11	+ 0.41	+ 0.40	- 0.25	1917 Dep. "
6.82	6.89	6.83	6.76	6.56	6.20	5.86	5.71	5.65	5.56	5.49	5.49	5.85	Normal. CAHIRCIVEEN.
- 0.65	- 0.24	- 0.34	- 0.55	- 0.68	- 0.38	- 0.04	- 0.14	+ 0.23	+ 0.42	+ 0.12	- 0.22	- 0.30	1917 Dep. "
5.26	5.29	5.10	4.97	4.54	4.01	3.69	3.58	3.55	3.33	3.22	3.19	3.97	Normal. RICHMOND.
- 0.35	+ 0.08	+ 0.13	+ 0.15	+ 0.08	+ 0.29	+ 0.09	+ 0.36	+ 0.23	+ 0.15	+ 0.12	+ 0.17	+ 0.16	1917 Dep. "
5.39	5.36	5.28	5.06	4.71	4.36	3.81	3.47	3.43	3.31	3.26	3.28	4.09	Normal. ABERDEEN.
+ 0.10	+ 0.04	- 0.01	- 0.13	- 0.07	- 0.28	- 0.18	- 0.11	+ 0.05	+ 0.09	+ 0.27	+ 0.13	+ 0.33	1917 Dep. "
7.71	7.77	7.74	7.54	7.05	6.29	5.63	5.24	5.01	4.83	4.80	4.72	5.85	[Normal.] ESKDALEMUIR.
- 1.99	- 2.22	- 2.69	- 2.41	- 2.27	- 1.76	- 1.14	- 0.66	- 0.75	- 0.61	- 1.12	- 1.43	- 1.02	1917 Dep. "
6.61	6.64	6.64	6.61	6.39	6.04	5.54	5.09	4.94	4.77	4.73	4.73	5.40	Normal. CAHIRCIVEEN.
0.00	- 0.04	+ 0.28	+ 0.74	+ 0.19	+ 0.36	+ 0.07	- 0.22	- 0.27	- 0.28	+ 0.03	- 0.01	- 0.13	1917 Dep. "
5.29	5.28	5.31	5.19	4.91	4.39	3.88	3.50	3.30	3.09	2.89	2.74	3.85	Normal. RICHMOND.
- 0.27	+ 0.06	- 0.42	- 0.39	- 0.58	- 0.63	- 0.93	- 0.61	- 0.66	- 0.39	- 0.34	- 0.06	- 0.20	1917 Dep. "
4.88	4.89	4.79	4.63	4.38	4.09	3.61	3.13	2.91	2.78	2.75	2.72	3.66	Normal. ABERDEEN.
- 0.54	- 0.49	- 0.42	- 0.66	- 0.42	- 0.44	- 0.36	- 0.29	- 0.30	- 0.29	- 0.51	- 0.34	- 0.40	1917 Dep. "
6.10	6.14	6.15	6.30	6.21	5.80	4.77	3.83	3.40	3.31	3.35	3.59	4.69	[Normal.] ESKDALEMUIR.
- 0.39	+ 0.01	+ 0.10	- 0.24	- 0.39	- 0.14	- 0.02	+ 0.10	+ 0.25	+ 0.40	- 0.07	+ 0.05	+ 0.09	1917 Dep. "
6.16	6.21	6.19	6.16	5.97	5.63	5.14	4.65	4.30	4.13	4.13	4.13	4.90	Normal. CAHIRCIVEEN.
- 0.87	- 0.85	- 0.54	- 0.49	- 0.67	- 0.82	- 0.78	- 0.54	- 0.28	- 0.15	- 0.48	- 0.50	- 0.68	1917 Dep. "
4.76	4.69	4.71	4.70	4.50	4.12	3.61	3.16	2.87	2.66	2.48	2.38	3.44	Normal. RICHMOND.
- 0.01	+ 0.32	+ 0.24	+ 0.37	+ 0.15	+ 0.53	+ 0.45	+ 0.63	+ 0.63	+ 0.40	- 0.06	+ 0.05	+ 0.09	1917 Dep. "
4.49	4.48	4.41	4.18	3.94	3.64	3.26	2.87	2.55	2.47	2.38	2.38	3.30	Normal. ABERDEEN.
+ 0.04	+ 0.01	+ 0.10	- 0.17	- 0.19	- 0.05	+ 0.20	- 0.30	- 0.46	- 0.41	- 0.24	- 0.13	0.00	1917 Dep. "
5.97	5.94	5.95	5.97	5.96	5.60	4.92	4.15	3.47	3.33	3.04	3.00	4.58	[Normal.] ESKDALEMUIR.
+ 0.77	+ 0.71	+ 0.78	+ 0.66	+ 0.31	+ 0.51	+ 0.42	- 0.06	- 0.15	+ 0.08	+ 0.04	+ 0.01	+ 0.22	1917 Dep. "
5.81	5.89	5.88	5.76	5.59	5.31	4.85	4.39	4.06	3.82	3.74	3.79	4.56	Normal. CAHIRCIVEEN.
- 0.02	+ 0.06	- 0.04	- 0.08	- 0.41	- 0.06	- 0.14	- 0.21	- 0.47	- 0.35	- 0.36	- 0.44	- 0.01	1917 Dep. "
4.21	4.33	4.35	4.27	4.20	3.95	3.45	2.92	2.69	2.46	2.29	2.16	3.16	Normal. RICHMOND.
- 0.32	- 0.17	+ 0.19	+ 0.21	+ 0.18	+ 0.51	+ 0.29	+ 0.42	+ 0.44	+ 0.60	+ 0.21	+ 0.24	+ 0.03	1917 Dep. "

The heights of the anemometers (centres of cups of Robinson anemometers) above the general surface of the ground are :—Aberdeen, 22.9 metres ; Eskdalemuir, 15.0 metres ; Cahirciveen, 13.9 metres ; Richmond, 19.8 metres. The heights above the roofs of the buildings on which the instruments are erected are :—Aberdeen, 3.7 metres ; Eskdalemuir, 6.7 metres ; Cahirciveen, 2.1 metres ; Richmond, 2.1 metres.

The normals for wind speed are for the 35 years, 1881-1915 (Eskdalemuir, 1911-15 only).

The values for 1917 are given by the departure from the normal ; + indicates excess, - defect.

The mean values are calculated by the formula, $\text{mean} = \frac{1}{24} \{ (1 + \dots + 23) + \frac{1}{2}(0+24) \}$

HOURLY VALUES OF THE METEOROLOGICAL ELEMENTS:

WIND SPEED (in Metres per Second).

Hour, G.M.T.	0.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Noon.
JULY.													
ABERDEEN : Normal.	m/s. 2.37	m/s. 2.35	m/s. 2.34	m/s. 2.38	m/s. 2.35	m/s. 2.38	m/s. 2.56	m/s. 2.95	m/s. 3.36	m/s. 3.69	m/s. 3.88	m/s. 4.13	m/s. 4.17
1917 Departure.	+ 0.65	- 0.41	- 0.32	- 0.43	- 0.30	- 0.48	- 0.52	- 0.63	- 0.64	- 0.55	- 0.28	- 0.53	- 0.45
ESKDALEMUIR : [Normal].	2.96	2.76	2.72	2.79	2.74	2.83	3.14	3.82	4.37	4.69	5.13	5.28	5.42
1917 Departure.	- 0.80	- 0.67	- 0.78	- 0.71	- 0.58	- 0.54	- 0.46	- 0.80	- 0.45	- 0.33	- 0.48	- 0.28	- 0.38
CAHIRCIVEEN : Normal.	3.72	3.65	3.68	3.64	3.67	3.60	3.67	3.86	4.22	4.64	4.87	5.01	5.51
1917 Departure.	- 1.28	- 1.18	- 1.21	- 1.17	- 1.09	- 0.93	- 0.99	- 0.97	- 1.06	- 0.97	- 0.63	- 0.47	- 0.80
RICHMOND : Normal.	1.98	1.89	1.86	1.81	1.79	1.82	2.18	2.63	3.03	3.39	3.64	3.90	3.99
1917 Departure.	+ 0.34	+ 0.22	+ 0.20	+ 0.02	+ 0.05	+ 0.01	+ 0.05	+ 0.03	0.00	+ 0.03	- 0.07	- 0.08	- 0.06
AUGUST.													
ABERDEEN : Normal.	2.47	2.47	2.41	2.42	2.44	2.39	2.50	2.76	3.25	3.62	3.88	4.12	4.28
1917 Departure.	+ 0.38	+ 0.37	+ 0.36	+ 0.40	+ 0.47	+ 0.52	+ 0.80	+ 0.80	+ 0.71	+ 0.57	+ 0.29	+ 0.03	- 0.34
ESKDALEMUIR : [Normal].	2.76	2.60	2.61	2.68	2.85	2.77	2.82	3.27	3.89	4.38	4.70	4.91	5.23
1917 Departure.	+ 1.31	+ 1.37	+ 1.33	+ 1.61	+ 1.31	+ 1.31	+ 1.54	+ 1.61	+ 1.39	+ 1.35	+ 1.33	+ 1.28	+ 1.19
CAHIRCIVEEN : Normal.	3.96	3.92	3.89	3.89	3.91	3.90	3.84	3.94	4.30	4.71	4.95	5.12	5.60
1917 Departure.	- 0.19	- 0.39	- 0.10	- 0.22	+ 0.03	+ 0.18	+ 0.01	+ 0.49	+ 0.41	+ 0.54	+ 0.82	+ 0.78	+ 0.43
RICHMOND : Normal.	2.09	2.02	1.92	1.88	1.88	1.89	2.07	2.48	3.06	3.48	3.76	4.04	4.14
1917 Departure.	+ 1.04	+ 1.27	+ 1.43	+ 1.22	+ 1.33	+ 1.28	+ 1.41	+ 1.66	+ 1.72	+ 1.60	+ 1.03	+ 1.42	+ 1.36
SEPTEMBER.													
ABERDEEN : Normal.	2.86	2.79	2.79	2.84	2.83	2.84	2.84	2.96	3.30	3.62	3.90	4.19	4.32
1917 Departure.	+ 0.25	+ 0.07	+ 0.23	+ 0.11	+ 0.39	+ 0.46	+ 0.36	+ 0.20	+ 0.24	+ 0.24	+ 0.37	+ 0.46	+ 0.54
ESKDALEMUIR : [Normal].	3.10	3.30	3.24	3.43	3.32	3.49	3.48	3.64	3.97	4.52	5.02	5.26	5.63
1917 Departure.	+ 1.60	+ 1.60	+ 1.62	+ 1.42	+ 1.75	+ 1.41	+ 1.37	+ 1.33	+ 1.51	+ 1.51	+ 1.41	+ 1.45	+ 1.41
CAHIRCIVEEN : Normal.	4.22	4.15	4.21	4.20	4.28	4.25	4.24	4.24	4.31	4.69	4.92	5.05	5.60
1917 Departure.	- 0.21	+ 0.18	+ 0.26	+ 0.18	0.00	+ 0.05	+ 0.07	- 0.35	- 0.44	- 0.38	+ 0.15	+ 0.80	+ 0.24
RICHMOND : Normal.	1.93	1.88	1.84	1.89	1.89	1.86	1.94	2.14	2.61	3.14	3.58	3.95	3.98
1917 Departure.	+ 0.25	+ 0.31	+ 0.32	+ 0.20	+ 0.24	+ 0.31	+ 0.49	+ 0.12	+ 0.17	- 0.13	- 0.30	+ 0.10	+ 0.11
OCTOBER.													
ABERDEEN : Normal.	3.82	3.82	3.83	3.81	3.80	3.75	3.77	3.85	4.00	4.18	4.43	4.62	4.81
1917 Departure.	+ 0.76	+ 0.51	+ 0.35	+ 0.37	+ 0.50	+ 0.49	+ 1.04	+ 0.83	+ 0.42	+ 0.24	+ 0.36	+ 0.61	+ 0.65
ESKDALEMUIR : [Normal].	3.44	3.51	3.61	3.71	3.84	3.87	3.82	3.68	3.89	4.40	5.02	5.34	5.58
1917 Departure.	+ 2.20	+ 2.07	+ 1.82	+ 1.61	+ 1.03	+ 1.04	+ 0.77	+ 1.10	+ 1.55	+ 1.82	+ 1.52	+ 1.74	+ 1.89
CAHIRCIVEEN : Normal.	5.01	4.97	5.00	4.96	5.03	5.06	5.06	5.03	5.09	5.21	5.39	5.55	6.07
1917 Departure.	+ 2.60	+ 2.15	+ 2.12	+ 2.10	+ 2.02	+ 1.99	+ 1.75	+ 2.16	+ 2.18	+ 2.37	+ 2.20	+ 2.69	+ 2.79
RICHMOND : Normal.	2.39	2.38	2.38	2.35	2.34	2.36	2.44	2.49	2.70	3.16	3.54	4.09	4.23
1917 Departure.	+ 1.21	+ 1.10	+ 1.08	+ 1.04	+ 0.80	+ 0.45	+ 0.25	+ 0.19	+ 0.15	+ 0.11	+ 0.15	+ 0.19	+ 0.39
NOVEMBER.													
ABERDEEN : Normal.	4.22	4.18	4.15	4.10	4.09	4.09	4.14	4.17	4.29	4.33	4.35	4.54	4.72
1917 Departure.	- 0.97	- 0.88	- 0.42	- 0.66	- 0.66	- 0.59	- 0.63	- 0.91	- 1.03	- 1.12	- 0.88	- 0.70	- 0.87
ESKDALEMUIR : [Normal].	5.38	5.62	5.45	5.56	5.79	5.63	5.64	5.60	5.64	5.73	6.24	6.53	6.83
1917 Departure.	+ 1.72	+ 1.94	+ 2.56	+ 2.34	+ 1.34	+ 1.55	+ 1.49	+ 1.29	+ 0.82	+ 0.92	+ 0.58	+ 1.27	+ 1.43
CAHIRCIVEEN : Normal.	5.86	5.83	5.68	5.73	5.67	5.75	5.65	5.72	5.62	5.76	5.71	5.68	6.28
1917 Departure.	- 0.15	- 0.19	- 0.06	- 0.14	- 0.12	+ 0.01	- 0.21	- 0.01	- 0.12	- 0.18	+ 0.02	+ 0.91	+ 0.44
RICHMOND : Normal.	3.01	2.98	2.99	2.99	3.05	3.00	2.96	2.99	3.04	3.30	3.53	4.06	4.28
1917 Departure.	+ 0.13	+ 0.04	+ 0.30	+ 0.40	+ 0.44	+ 0.43	+ 0.38	+ 0.36	+ 0.33	+ 0.32	- 0.04	- 0.06	- 0.05
DECEMBER.													
ABERDEEN : Normal.	4.40	4.39	4.42	4.40	4.39	4.42	4.38	4.38	4.45	4.44	4.46	4.53	4.70
1917 Departure.	- 0.18	- 0.15	- 0.14	- 0.42	- 0.42	- 0.65	- 0.78	- 0.54	- 0.18	- 0.55	- 0.42	- 0.16	- 0.27
ESKDALEMUIR : [Normal].	6.12	5.91	5.90	5.77	5.69	5.83	5.96	6.03	6.22	6.40	6.60	6.97	7.24
1917 Departure.	+ 0.06	+ 0.15	+ 0.22	+ 0.40	+ 0.29	+ 0.12	- 0.06	+ 0.28	+ 0.21	+ 0.14	- 0.84	- 0.87	- 1.11
CAHIRCIVEEN : Normal.	6.55	6.50	6.51	6.56	6.47	6.50	6.41	6.37	6.32	6.33	6.20	6.18	6.70
1917 Departure.	- 2.07	- 2.07	- 1.71	- 1.62	- 1.61	- 1.64	- 1.76	- 1.67	- 1.54	- 1.28	- 1.09	- 0.94	- 0.94
RICHMOND : Normal.	3.57	3.45	3.49	3.42	3.47	3.44	3.45	3.50	3.56	3.67	3.83	4.17	4.39
1917 Departure.	- 0.36	- 0.32	- 0.19	- 0.01	- 0.11	+ 0.05	+ 0.01	- 0.20	- 0.21	- 0.24	- 0.35	- 0.21	- 0.11
YEAR.													
ABERDEEN : Normal.	3.46	3.43	3.42	3.43	3.42	3.44	3.52	3.69	3.96	4.19	4.37	4.58	4.76
1917 Departure.	- 0.08	- 0.13	- 0.03	- 0.08	- 0.02	- 0.01	+ 0.02	- 0.01	- 0.03	- 0.09	- 0.01	- 0.07	- 0.14
ESKDALEMUIR : [Normal].	4.31	4.32	4.30	4.15	4.35	4.38	4.62	4.67	5.04	5.42	5.86	6.16	6.42
1917 Departure.	+ 0.22	+ 0.34	+ 0.42	+ 0.58	+ 0.32	+ 0.24	+ 0.10	+ 0.36	+ 0.29	+ 0.23	- 0.07	- 0.01	- 0.18
CAHIRCIVEEN : Normal.	5.02	4.96	4.94	4.93	4.91	4.91	4.91	4.97	5.11	5.38	5.51	5.60	6.15
1917 Departure.	- 0.40	- 0.39	- 0.32	- 0.36	- 0.35	- 0.33	- 0.49	- 0.43	- 0.45	- 0.34	- 0.24	+ 0.06	- 0.14
RICHMOND : Normal.	2.69	2.63	2.62	2.58	2.58	2.59	2.77	2.97	3.27	3.65	3.94	4.32	4.46
1917 Departure.	+ 0.26	+ 0.17	+ 0.27	+ 0.32	+ 0.34	+ 0.26	+ 0.24	+ 0.16	+ 0.21	+ 0.11	- 0.13	0.00	+ 0.12

NORMALS AND DEPARTURES THEREFROM IN 1917.

JULY TO DECEMBER AND YEAR.

13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	Midt.	Mean.	Hour, G.M.T.
													JULY.
m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	Normal. ABERDEEN.
4.23	4.22	4.19	4.00	3.76	3.48	3.06	2.70	2.43	2.32	2.33	2.37	3.15	1917 Dep. "
- 0.27	- 0.04	- 0.32	- 0.49	- 0.49	- 0.43	- 1.00	- 0.28	- 0.26	- 0.19	- 0.14	- 0.24	- 0.40	[Normal.] ESKDALEMUIR.
5.56	5.63	5.57	5.50	5.45	5.06	4.49	3.64	3.33	3.14	2.99	2.95	4.13	1917 Dep. "
- 0.39	- 0.23	- 0.17	- 0.26	- 0.56	- 0.44	- 0.53	- 0.57	- 0.86	- 0.67	- 0.70	- 0.60	- 0.53	Normal. CAHIRCIVEEN.
5.72	5.78	5.79	5.64	5.53	5.26	4.85	4.30	3.96	3.78	3.69	3.72	4.50	1917 Dep. "
- 0.86	- 1.01	- 0.69	- 0.73	- 0.82	- 1.03	- 1.19	- 1.21	- 1.27	- 1.26	- 1.13	- 1.20	- 0.99	Normal. RICHMOND.
4.07	4.18	4.14	4.07	3.94	3.61	3.17	2.69	2.44	2.26	2.07	1.98	2.94	1917 Dep. "
- 0.32	- 0.11	- 0.06	+ 0.10	+ 0.36	+ 0.60	+ 0.35	+ 0.29	+ 0.54	+ 0.54	+ 0.38	+ 0.34	+ 0.14	
													AUGUST.
4.28	4.24	4.12	3.97	3.65	3.29	2.90	2.69	2.62	2.60	2.51	2.48	3.16	Normal. ABERDEEN.
- 0.27	- 0.13	- 0.05	- 0.03	- 0.10	- 0.06	- 0.01	+ 0.25	+ 0.24	+ 0.18	+ 0.25	+ 0.27	+ 0.23	1917 Dep. "
5.44	5.57	5.46	5.43	5.03	4.60	3.93	3.36	3.20	3.02	2.91	2.85	3.89	[Normal.] ESKDALEMUIR.
+ 0.69	+ 0.72	+ 1.01	+ 0.85	+ 0.54	+ 0.23	+ 0.23	+ 0.56	+ 0.43	+ 0.91	+ 1.02	+ 1.17	+ 1.05	1917 Dep. "
5.82	5.87	5.90	5.73	5.52	5.17	4.62	4.23	4.06	3.94	3.95	3.97	4.61	Normal. CAHIRCIVEEN.
+ 0.28	+ 0.68	+ 0.50	+ 0.70	+ 0.84	+ 1.12	+ 0.83	+ 0.46	+ 0.37	+ 0.39	- 0.07	- 0.19	+ 0.38	1917 Dep. "
4.20	4.28	4.23	4.12	3.94	3.53	2.97	2.65	2.48	2.28	2.15	2.09	2.98	Normal. RICHMOND.
+ 1.32	+ 1.43	+ 1.67	+ 1.32	+ 1.04	+ 0.95	+ 0.82	+ 0.74	+ 0.67	+ 0.93	+ 1.13	+ 1.06	+ 1.24	1917 Dep. "
													SEPTEMBER.
4.34	4.37	4.25	3.99	3.58	3.18	2.95	2.93	2.85	2.90	2.84	2.88	3.35	Normal. ABERDEEN.
+ 0.11	- 0.17	- 0.35	- 0.27	- 0.45	- 0.29	+ 0.17	- 0.05	+ 0.06	- 0.32	- 0.06	+ 0.29	+ 0.09	1917 Dep. "
5.83	5.74	5.52	5.27	4.75	4.13	3.83	3.67	3.35	3.16	3.05	3.14	4.16	[Normal.] ESKDALEMUIR.
+ 1.44	+ 1.49	+ 1.72	+ 1.76	+ 1.60	+ 1.79	+ 1.67	+ 1.66	+ 1.98	+ 1.78	+ 1.79	+ 1.57	+ 1.58	1917 Dep. "
5.84	5.73	5.77	5.59	5.35	4.86	4.49	4.27	4.30	4.26	4.21	4.24	4.71	Normal. CAHIRCIVEEN.
+ 0.06	+ 0.19	- 0.19	- 0.35	- 0.31	- 0.59	- 0.55	- 0.31	- 0.28	- 0.23	- 0.20	- 0.11	- 0.09	1917 Dep. "
4.07	4.11	3.99	3.80	3.39	2.88	2.53	2.47	2.31	2.18	2.06	1.93	2.77	Normal. RICHMOND.
+ 0.05	- 0.01	- 0.07	- 0.02	+ 0.05	- 0.05	- 0.12	- 0.09	- 0.05	+ 0.11	+ 0.02	+ 0.16	+ 0.08	1917 Dep. "
													OCTOBER.
4.74	4.70	4.51	4.12	3.89	3.75	3.75	3.78	3.78	3.78	3.85	3.84	4.05	Normal. ABERDEEN.
+ 0.52	+ 0.41	+ 0.45	+ 0.94	+ 0.53	+ 0.71	+ 0.65	+ 0.48	+ 0.48	+ 0.38	+ 0.18	+ 0.62	+ 0.53	1917 Dep. "
5.67	5.59	5.31	4.79	4.27	3.85	3.71	3.63	3.38	3.64	3.57	3.55	4.22	[Normal.] ESKDALEMUIR.
+ 2.03	+ 1.92	+ 1.82	+ 2.27	+ 2.79	+ 2.94	+ 2.76	+ 2.76	+ 2.49	+ 1.76	+ 1.57	+ 1.93	+ 1.88	1917 Dep. "
6.22	6.27	6.22	5.97	5.66	5.39	5.22	5.16	5.10	5.07	5.06	5.04	5.37	Normal. CAHIRCIVEEN.
+ 2.97	+ 2.57	+ 2.51	+ 2.94	+ 3.16	+ 3.20	+ 2.79	+ 2.52	+ 2.33	+ 2.02	+ 2.24	+ 2.36	+ 2.42	1917 Dep. "
4.24	4.14	3.87	3.51	3.05	2.82	2.71	2.65	2.59	2.55	2.48	2.41	2.98	Normal. RICHMOND.
+ 0.13	+ 0.06	+ 0.24	+ 0.17	+ 0.25	+ 0.24	+ 0.37	+ 0.51	+ 0.82	+ 0.94	+ 1.06	+ 1.24	+ 0.49	1917 Dep. "
													NOVEMBER.
4.70	4.53	4.37	4.20	4.19	4.26	4.21	4.24	4.19	4.17	4.13	4.23	4.27	Normal. ABERDEEN.
- 0.63	- 0.44	- 0.30	- 0.32	- 0.40	- 0.60	- 0.64	- 0.59	- 0.62	- 0.63	- 0.45	- 0.82	- 0.66	1917 Dep. "
6.01	6.91	6.48	6.18	5.98	5.92	5.89	5.70	5.53	5.51	5.49	5.45	5.92	[Normal.] ESKDALEMUIR.
+ 1.94	+ 1.78	+ 1.89	+ 1.48	+ 0.95	+ 0.43	+ 0.49	+ 1.58	+ 2.10	+ 2.38	+ 2.36	+ 2.13	+ 1.54	1917 Dep. "
6.43	6.48	6.43	6.19	5.98	5.95	5.91	5.89	5.86	5.90	5.88	5.89	5.91	Normal. CAHIRCIVEEN.
+ 0.65	+ 0.13	+ 0.32	+ 0.25	+ 0.58	+ 0.52	+ 0.61	+ 0.64	+ 0.65	+ 0.31	+ 0.03	+ 0.02	+ 0.20	1917 Dep. "
4.34	4.28	3.99	3.60	3.41	3.33	3.29	3.25	3.19	3.15	3.07	3.03	3.38	Normal. RICHMOND.
- 0.02	- 0.15	- 0.02	- 0.15	- 0.03	+ 0.06	- 0.05	+ 0.13	+ 0.28	+ 0.21	+ 0.17	+ 0.20	+ 0.14	1917 Dep. "
													DECEMBER.
4.62	4.50	4.46	4.39	4.41	4.36	4.38	4.37	4.40	4.42	4.36	4.40	4.43	Normal. ABERDEEN.
- 0.38	- 0.17	- 0.12	- 0.33	- 0.07	- 0.36	- 0.46	- 0.52	- 0.67	- 0.79	- 0.60	- 0.24	- 0.39	1917 Dep. "
7.41	7.59	7.22	6.82	6.65	6.71	6.80	6.77	6.57	6.30	6.08	6.14	6.48	[Normal.] ESKDALEMUIR.
- 1.35	- 0.87	- 0.75	- 0.64	- 0.58	- 0.62	- 0.61	- 0.57	- 0.21	- 0.31	- 0.35	- 0.25	- 0.33	1917 Dep. "
6.86	6.88	6.76	6.65	6.53	6.45	6.46	6.38	6.45	6.49	6.50	6.56	6.50	Normal. CAHIRCIVEEN.
- 1.08	- 1.57	- 1.41	- 1.31	- 1.60	- 1.41	- 1.58	- 1.19	- 1.47	- 1.60	- 2.05	- 2.20	- 1.51	1917 Dep. "
4.46	4.33	4.03	3.78	3.74	3.72	3.66	3.66	3.69	3.60	3.57	3.57	3.74	Normal. RICHMOND.
+ 0.04	+ 0.31	+ 0.16	+ 0.11	- 0.03	- 0.11	+ 0.35	- 0.15	- 0.11	- 0.29	- 0.32	- 0.37	- 0.10	1917 Dep. "
													YEAR.
4.77	4.73	4.62	4.42	4.19	3.99	3.76	3.60	3.51	3.47	3.44	3.46	3.92	Normal. ABERDEEN.
- 0.22	- 0.19	- 0.19	- 0.22	- 0.25	- 0.20	- 0.21	- 0.17	- 0.20	- 0.20	- 0.17	- 0.07	- 0.12	1917 Dep. "
6.54	6.61	6.43	6.21	5.69	5.54	5.16	4.77	4.53	4.44	4.34	4.33	5.19	[Normal.] ESKDALEMUIR.
- 0.19	- 0.20	- 0.14	- 0.10	- 0.07	- 0.03	+ 0.09	- 0.05	+ 0.14	+ 0.18	+ 0.18	+ 0.20	+ 0.10	1917 Dep. "
6.36	6.40	6.35	6.22	6.02	5.74	5.45	5.20	5.10	5.03	5.01	5.02	5.42	Normal. CAHIRCIVEEN.
- 0.14	- 0.17	- 0.09	- 0.06	- 0.14	- 0.06	- 0.15	- 0.12	- 0.17	- 0.19	- 0.34	- 0.41	- 0.24	1917 Dep. "
4.52	4.52	4.38	4.19	3.95	3.67	3.38	3.16	3.03	2.89	2.76	2.69	3.40	Normal. RICHMOND.
- 0.01	+ 0.15	+ 0.18	+ 0.26	+ 0.16	+ 0.25	+ 0.15	+ 0.24	+ 0.28	+ 0.28	+ 0.20	+ 0.27	+ 0.19	1917 Dep. "

HOURLY VALUES OF THE METEOROLOGICAL ELEMENTS:

RAINFALL IN MILLIMETRES.

Hour, G.M.T.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Noon.
JANUARY.												
ABERDEEN: Normal.	0.06	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.08	0.06	0.07
1917 Departure.	- 0.02	- 0.04	- 0.03	- 0.03	+ 0.02	+ 0.06	+ 0.06	+ 0.10	+ 0.07	+ 0.11	+ 0.04	+ 0.12
ESKDALEMUIR: [Normal].	0.11	0.13	0.12	0.14	0.13	0.15	0.16	0.20	0.15	0.17	0.14	0.17
1917 Departure.	- 0.03	- 0.08	- 0.05	- 0.10	- 0.09	- 0.08	- 0.11	- 0.17	- 0.08	- 0.13	- 0.11	- 0.09
CAHIRCIVEEN: Normal.	0.22	0.21	0.22	0.21	0.21	0.18	0.20	0.21	0.22	0.19	0.16	0.18
1917 Departure.	- 0.19	- 0.17	- 0.17	- 0.10	- 0.12	+ 0.02	- 0.11	- 0.14	- 0.11	- 0.09	- 0.04	- 0.04
RICHMOND: Normal.	0.06	0.06	0.07	0.07	0.07	0.06	0.06	0.08	0.07	0.06	0.05	0.05
1917 Departure.	- 0.04	- 0.01	- 0.05	- 0.05	- 0.03	- 0.02	0.00	- 0.03	- 0.03	- 0.05	- 0.03	- 0.03
FALMOUTH: Normal.	0.16	0.17	0.16	0.18	0.16	0.16	0.18	0.16	0.16	0.15	0.13	0.15
1917 Departure.	+ 0.05	- 0.04	- 0.11	- 0.14	- 0.14	- 0.13	- 0.17	- 0.11	- 0.13	- 0.15	- 0.12	- 0.11
FEBRUARY.												
ABERDEEN: Normal.	0.09	0.09	0.08	0.09	0.09	0.08	0.09	0.08	0.10	0.11	0.07	0.08
1917 Departure.	- 0.02	- 0.04	- 0.02	- 0.03	- 0.03	- 0.01	- 0.06	- 0.05	- 0.08	- 0.08	- 0.04	- 0.05
ESKDALEMUIR: [Normal].	0.23	0.28	0.25	0.22	0.22	0.27	0.26	0.25	0.25	0.17	0.18	0.20
1917 Departure.	- 0.18	- 0.25	- 0.17	- 0.16	- 0.18	- 0.20	- 0.20	- 0.19	- 0.19	- 0.09	- 0.12	- 0.16
CAHIRCIVEEN: Normal.	0.20	0.20	0.21	0.21	0.21	0.18	0.19	0.19	0.17	0.17	0.19	0.19
1917 Departure.	- 0.06	- 0.06	- 0.07	+ 0.04	- 0.16	- 0.09	- 0.14	- 0.10	- 0.06	- 0.09	+ 0.05	- 0.10
RICHMOND: Normal.	0.07	0.07	0.06	0.06	0.07	0.06	0.05	0.06	0.06	0.07	0.05	0.05
1917 Departure.	- 0.03	- 0.05	- 0.03	- 0.02	- 0.02	- 0.04	0.00	- 0.01	- 0.04	- 0.03	- 0.02	0.00
FALMOUTH: Normal.	0.15	0.14	0.18	0.14	0.15	0.14	0.12	0.15	0.15	0.15	0.10	0.11
1917 Departure.	- 0.02	- 0.06	- 0.11	- 0.06	+ 0.01	- 0.08	- 0.08	- 0.14	- 0.14	- 0.14	- 0.09	- 0.10
MARCH.												
ABERDEEN: Normal.	0.07	0.08	0.08	0.08	0.09	0.09	0.09	0.10	0.12	0.11	0.07	0.06
1917 Departure.	+ 0.01	0.00	+ 0.07	+ 0.03	+ 0.03	+ 0.04	- 0.02	- 0.05	- 0.05	- 0.07	+ 0.01	+ 0.08
ESKDALEMUIR: [Normal].	0.19	0.17	0.20	0.18	0.19	0.21	0.19	0.23	0.18	0.14	0.13	0.18
1917 Departure.	- 0.10	- 0.09	- 0.08	- 0.06	- 0.10	- 0.08	- 0.12	- 0.22	- 0.16	- 0.10	- 0.11	- 0.15
CAHIRCIVEEN: Normal.	0.17	0.16	0.19	0.16	0.17	0.18	0.19	0.20	0.16	0.16	0.13	0.13
1917 Departure.	+ 0.02	- 0.01	- 0.03	+ 0.17	- 0.01	- 0.01	+ 0.02	+ 0.12	- 0.02	+ 0.01	+ 0.12	- 0.05
RICHMOND: Normal.	0.05	0.05	0.05	0.05	0.05	0.07	0.06	0.05	0.05	0.05	0.04	0.05
1917 Departure.	+ 0.02	- 0.01	+ 0.04	0.00	+ 0.01	- 0.05	+ 0.05	+ 0.10	+ 0.03	- 0.04	- 0.02	- 0.02
FALMOUTH: Normal.	0.13	0.15	0.14	0.12	0.11	0.11	0.12	0.12	0.13	0.13	0.10	0.10
1917 Departure.	- 0.04	+ 0.01	- 0.05	+ 0.09	+ 0.14	+ 0.04	- 0.04	+ 0.06	+ 0.11	0.00	- 0.01	+ 0.09
APRIL.												
ABERDEEN: Normal.	0.07	0.07	0.06	0.07	0.08	0.08	0.09	0.09	0.08	0.06	0.06	0.06
1917 Departure.	+ 0.06	+ 0.04	+ 0.03	- 0.02	- 0.03	- 0.06	- 0.06	- 0.08	- 0.08	- 0.05	- 0.04	- 0.03
ESKDALEMUIR: [Normal].	0.20	0.14	0.13	0.17	0.17	0.15	0.12	0.09	0.11	0.13	0.13	0.15
1917 Departure.	+ 0.04	+ 0.01	- 0.09	- 0.10	- 0.09	+ 0.06	+ 0.07	+ 0.17	+ 0.14	- 0.02	+ 0.03	- 0.02
CAHIRCIVEEN: Normal.	0.16	0.14	0.15	0.15	0.15	0.15	0.15	0.14	0.15	0.12	0.11	0.13
1917 Departure.	- 0.11	- 0.09	- 0.06	- 0.09	- 0.08	- 0.09	- 0.12	- 0.13	- 0.09	- 0.10	- 0.10	- 0.12
RICHMOND: Normal.	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05
1917 Departure.	+ 0.02	- 0.03	+ 0.02	0.00	0.00	- 0.03	+ 0.08	+ 0.07	+ 0.13	- 0.02	- 0.01	+ 0.05
FALMOUTH: Normal.	0.12	0.12	0.11	0.12	0.12	0.12	0.13	0.13	0.12	0.09	0.06	0.10
1917 Departure.	- 0.06	- 0.07	+ 0.02	- 0.03	- 0.05	- 0.05	- 0.07	- 0.06	+ 0.01	- 0.03	0.00	- 0.07
MAY.												
ABERDEEN: Normal.	0.08	0.06	0.07	0.07	0.08	0.09	0.07	0.06	0.06	0.05	0.05	0.07
1917 Departure.	- 0.02	- 0.31	+ 0.03	- 0.03	- 0.06	- 0.04	- 0.03	+ 0.01	+ 0.06	+ 0.07	+ 0.03	- 0.01
ESKDALEMUIR: [Normal].	0.09	0.10	0.09	0.09	0.09	0.11	0.09	0.07	0.07	0.08	0.08	0.09
1917 Departure.	- 0.03	+ 0.04	+ 0.12	+ 0.26	+ 0.12	+ 0.02	+ 0.09	+ 0.03	- 0.02	- 0.03	- 0.05	- 0.07
CAHIRCIVEEN: Normal.	0.11	0.12	0.14	0.14	0.13	0.13	0.13	0.12	0.12	0.10	0.07	0.10
1917 Departure.	- 0.06	+ 0.02	- 0.03	0.00	- 0.04	- 0.05	- 0.05	- 0.02	- 0.11	- 0.09	- 0.04	+ 0.08
RICHMOND: Normal.	0.06	0.05	0.06	0.05	0.08	0.07	0.06	0.06	0.06	0.06	0.04	0.06
1917 Departure.	+ 0.04	- 0.01	- 0.02	- 0.03	- 0.05	- 0.03	- 0.01	- 0.04	+ 0.03	+ 0.05	+ 0.11	- 0.02
FALMOUTH: Normal.	0.08	0.09	0.10	0.10	0.09	0.09	0.09	0.09	0.08	0.08	0.06	0.07
1917 Departure.	0.00	- 0.04	- 0.05	- 0.04	- 0.05	+ 0.01	- 0.03	- 0.05	- 0.03	- 0.03	- 0.03	- 0.07
JUNE.												
ABERDEEN: Normal.	0.06	0.06	0.06	0.06	0.06	0.07	0.06	0.06	0.05	0.08	0.07	0.07
1917 Departure.	- 0.02	+ 0.18	+ 0.11	+ 0.08	- 0.01	- 0.06	- 0.05	- 0.06	- 0.03	- 0.08	- 0.07	+ 0.04
ESKDALEMUIR: [Normal].	0.09	0.08	0.26	0.13	0.11	0.08	0.09	0.06	0.03	0.05	0.09	0.17
1917 Departure.	+ 0.04	+ 0.09	- 0.16	- 0.03	- 0.07	- 0.06	- 0.03	+ 0.05	- 0.02	+ 0.08	+ 0.06	- 0.10
CAHIRCIVEEN: Normal.	0.14	0.14	0.13	0.15	0.14	0.14	0.16	0.15	0.15	0.11	0.09	0.10
1917 Departure.	+ 0.11	+ 0.06	- 0.03	- 0.01	- 0.10	0.00	+ 0.06	+ 0.19	- 0.04	+ 0.02	+ 0.06	- 0.03
RICHMOND: Normal.	0.07	0.06	0.06	0.07	0.08	0.07	0.08	0.07	0.06	0.07	0.07	0.09
1917 Departure.	+ 0.05	+ 0.03	+ 0.25	+ 0.41	- 0.06	- 0.04	- 0.07	- 0.06	- 0.06	- 0.07	- 0.06	- 0.07
FALMOUTH: Normal.	0.08	0.10	0.12	0.11	0.10	0.11	0.09	0.08	0.08	0.07	0.07	0.08
1917 Departure.	+ 0.11	+ 0.07	+ 0.03	+ 0.02	+ 0.05	+ 0.28	+ 0.03	+ 0.10	- 0.01	+ 0.04	0.00	- 0.03

The amounts of rainfall are obtained at each observatory from the autographic records of a Beckley rain-gauge for each sixty minutes centering at the hour G.M.T.

The heights of the receiving surfaces of the gauges above the ground, and also above M.S.L., are as follows:—

	Height above Ground.	Height above M.S.L.
Aberdeen	0.6 metre	14.6 metres
Eskdalemuir	0.4 "	242.3 "
Cahirciveen (Valencia Observatory)	0.6 "	9.7 "
Richmond (Kew Observatory)	0.5 "	6.0 "
Falmouth	0.6 "	51.4 "

NORMALS AND DEPARTURES THEREFROM IN 1917.

JANUARY TO JUNE.

13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	Midt.	Day.	Hour, G.M.T.
													JANUARY.
mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	Normal.
0.07	0.06	0.06	0.07	0.06	0.07	0.07	0.07	0.07	0.06	0.07	0.07	1.75	Normal.
+ 0.09	+ 0.13	+ 0.16	+ 0.08	+ 0.02	+ 0.03	- 0.03	- 0.04	- 0.06	- 0.04	- 0.05	- 0.02	+ 0.72	1917 Dep.
0.18	0.20	0.16	0.18	0.14	0.14	0.14	0.18	0.15	0.11	0.12	0.10	3.57	[Normal.]
- 0.08	- 0.02	+ 0.11	+ 0.14	+ 0.10	+ 0.12	+ 0.01	- 0.02	- 0.04	+ 0.01	- 0.01	0.00	- 0.78	1917 Dep.
0.18	0.20	0.20	0.16	0.17	0.21	0.18	0.20	0.22	0.22	0.21	0.23	4.79	Normal.
+ 0.06	+ 0.17	+ 0.21	- 0.01	- 0.02	- 0.12	- 0.11	- 0.15	- 0.17	- 0.21	- 0.19	- 0.21	- 2.00	1917 Dep.
0.06	0.06	0.07	0.06	0.07	0.07	0.07	0.06	0.06	0.05	0.06	0.06	1.51	Normal.
- 0.03	- 0.04	- 0.03	- 0.02	- 0.04	- 0.03	+ 0.06	+ 0.03	+ 0.04	- 0.03	- 0.05	- 0.06	- 0.57	1917 Dep.
0.16	0.19	0.16	0.16	0.17	0.14	0.15	0.14	0.15	0.17	0.16	0.18	3.85	Normal.
- 0.09	- 0.03	+ 0.03	- 0.09	- 0.14	+ 0.02	- 0.05	+ 0.14	0.00	- 0.02	+ 0.04	- 0.04	- 1.53	1917 Dep.
													FEBRUARY.
0.08	0.07	0.08	0.08	0.08	0.07	0.08	0.07	0.07	0.07	0.08	0.09	1.97	Normal.
- 0.06	- 0.05	- 0.05	- 0.03	- 0.05	- 0.05	- 0.05	- 0.02	- 0.04	- 0.05	- 0.05	- 0.05	- 1.06	1917 Dep.
0.26	0.29	0.31	0.36	0.28	0.33	0.28	0.33	0.32	0.23	0.27	0.21	6.25	[Normal.]
- 0.20	- 0.25	- 0.31	- 0.34	- 0.25	- 0.29	- 0.23	- 0.30	- 0.29	- 0.21	- 0.25	- 0.19	- 5.20	1917 Dep.
0.16	0.16	0.18	0.20	0.21	0.18	0.19	0.21	0.20	0.20	0.21	0.22	4.63	Normal.
- 0.08	- 0.15	- 0.05	- 0.09	- 0.06	- 0.11	- 0.14	- 0.10	+ 0.02	- 0.08	+ 0.03	- 0.13	- 1.76	1917 Dep.
0.06	0.07	0.05	0.06	0.06	0.05	0.06	0.05	0.06	0.05	0.05	0.06	1.41	Normal.
- 0.05	- 0.07	- 0.04	- 0.05	- 0.04	+ 0.02	0.00	- 0.02	- 0.02	- 0.04	- 0.04	- 0.06	- 0.69	1917 Dep.
0.13	0.14	0.14	0.14	0.13	0.14	0.15	0.15	0.17	0.17	0.16	0.16	3.46	Normal.
- 0.07	- 0.09	0.00	- 0.08	- 0.10	- 0.13	- 0.14	- 0.14	- 0.17	- 0.16	- 0.14	- 0.16	- 2.39	1917 Dep.
													MARCH.
0.08	0.07	0.08	0.08	0.08	0.09	0.08	0.08	0.07	0.06	0.07	0.07	1.95	Normal.
- 0.01	- 0.01	- 0.07	- 0.06	- 0.06	- 0.04	- 0.07	- 0.04	- 0.02	- 0.01	- 0.05	- 0.05	- 0.41	1917 Dep.
0.16	0.18	0.17	0.15	0.15	0.18	0.20	0.24	0.22	0.20	0.20	0.15	4.39	[Normal.]
- 0.13	- 0.12	- 0.09	- 0.09	- 0.05	+ 0.09	0.00	- 0.09	- 0.06	- 0.11	- 0.11	- 0.03	- 2.16	1917 Dep.
0.15	0.14	0.12	0.12	0.12	0.13	0.13	0.14	0.13	0.13	0.14	0.10	3.61	Normal.
+ 0.07	- 0.05	- 0.02	- 0.04	+ 0.02	+ 0.01	+ 0.02	- 0.01	- 0.01	- 0.06	- 0.06	- 0.12	+ 0.07	1917 Dep.
0.06	0.05	0.06	0.06	0.06	0.07	0.05	0.06	0.06	0.06	0.06	0.05	1.32	Normal.
- 0.01	- 0.01	+ 0.03	0.00	+ 0.06	- 0.01	0.00	- 0.02	- 0.03	- 0.03	- 0.01	+ 0.02	+ 0.10	1917 Dep.
0.11	0.13	0.10	0.10	0.10	0.13	0.12	0.11	0.12	0.11	0.12	0.11	2.82	Normal.
+ 0.09	+ 0.02	+ 0.09	+ 0.15	+ 0.14	- 0.10	- 0.03	- 0.07	- 0.07	- 0.07	- 0.02	+ 0.06	+ 0.59	1917 Dep.
													APRIL.
0.07	0.07	0.07	0.08	0.07	0.08	0.06	0.06	0.06	0.06	0.07	0.07	1.69	Normal.
- 0.06	- 0.03	- 0.02	- 0.01	- 0.05	- 0.02	0.00	+ 0.04	+ 0.01	+ 0.05	+ 0.03	+ 0.05	+ 0.33	1917 Dep.
0.15	0.13	0.11	0.11	0.13	0.21	0.18	0.16	0.15	0.13	0.18	0.18	3.51	[Normal.]
+ 0.01	+ 0.04	+ 0.10	+ 0.04	- 0.03	- 0.09	0.00	+ 0.10	+ 0.06	+ 0.10	+ 0.05	+ 0.06	+ 0.64	1917 Dep.
0.13	0.13	0.12	0.12	0.13	0.14	0.12	0.14	0.13	0.13	0.13	0.12	3.24	Normal.
- 0.12	- 0.06	- 0.08	- 0.06	- 0.06	- 0.08	- 0.03	- 0.05	- 0.06	- 0.08	- 0.04	- 0.07	- 1.95	1917 Dep.
0.06	0.07	0.06	0.07	0.07	0.06	0.05	0.05	0.06	0.05	0.05	0.05	1.37	Normal.
- 0.01	- 0.04	- 0.03	+ 0.07	0.00	- 0.01	+ 0.03	+ 0.04	+ 0.02	+ 0.04	+ 0.08	- 0.04	+ 0.43	1917 Dep.
0.09	0.08	0.07	0.07	0.07	0.10	0.09	0.10	0.09	0.10	0.08	0.09	2.37	Normal.
0.00	- 0.05	- 0.04	- 0.01	- 0.06	- 0.09	- 0.08	- 0.07	+ 0.02	+ 0.01	- 0.03	+ 0.03	- 0.83	1917 Dep.
													MAY.
0.08	0.08	0.10	0.09	0.11	0.11	0.08	0.07	0.08	0.09	0.08	0.08	1.86	Normal.
- 0.06	- 0.07	- 0.07	- 0.03	- 0.10	- 0.11	- 0.07	- 0.06	- 0.06	- 0.06	- 0.01	- 0.02	- 0.72	1917 Dep.
0.11	0.12	0.08	0.05	0.13	0.09	0.10	0.09	0.09	0.11	0.10	0.08	2.20	[Normal.]
- 0.04	+ 0.08	- 0.01	+ 0.02	- 0.03	+ 0.01	- 0.02	+ 0.12	+ 0.02	+ 0.01	+ 0.13	+ 0.03	+ 0.80	1917 Dep.
0.10	0.09	0.10	0.09	0.10	0.09	0.10	0.10	0.09	0.10	0.09	0.11	2.57	Normal.
- 0.05	- 0.04	- 0.04	+ 0.04	- 0.01	+ 0.34	- 0.10	- 0.08	- 0.07	+ 0.04	+ 0.15	+ 0.06	- 0.15	1917 Dep.
0.05	0.07	0.07	0.09	0.08	0.06	0.06	0.04	0.04	0.04	0.04	0.05	1.40	Normal.
+ 0.05	- 0.02	+ 0.03	- 0.03	+ 0.03	- 0.06	- 0.06	- 0.04	- 0.02	+ 0.31	+ 0.11	- 0.05	+ 0.27	1917 Dep.
0.05	0.06	0.06	0.07	0.06	0.07	0.07	0.08	0.08	0.07	0.08	0.08	1.85	Normal.
- 0.04	- 0.04	- 0.01	+ 0.04	- 0.05	- 0.01	- 0.07	- 0.02	+ 0.07	+ 0.35	- 0.05	+ 0.07	- 0.17	1917 Dep.
													JUNE.
0.07	0.07	0.07	0.08	0.09	0.08	0.07	0.06	0.07	0.07	0.05	0.05	1.59	Normal.
- 0.04	- 0.05	- 0.01	- 0.03	- 0.04	- 0.06	- 0.05	- 0.06	- 0.05	0.00	- 0.02	- 0.02	- 0.40	1917 Dep.
0.12	0.11	0.09	0.26	0.17	0.09	0.06	0.12	0.11	0.11	0.10	0.08	2.66	[Normal.]
+ 0.10	- 0.05	+ 0.04	- 0.07	+ 0.15	+ 0.17	+ 0.10	+ 0.04	+ 0.10	- 0.02	- 0.05	- 0.01	+ 0.36	1917 Dep.
0.10	0.09	0.11	0.11	0.13	0.13	0.12	0.12	0.12	0.12	0.14	0.15	3.04	Normal.
+ 0.14	+ 0.02	0.00	- 0.07	- 0.08	- 0.12	0.00	+ 0.08	- 0.07	- 0.07	- 0.06	- 0.07	- 0.01	1917 Dep.
0.08	0.08	0.09	0.09	0.11	0.08	0.09	0.09	0.09	0.09	0.07	0.07	1.88	Normal.
+ 0.40	- 0.07	- 0.08	- 0.08	+ 0.56	+ 0.73	- 0.09	- 0.09	- 0.09	- 0.08	- 0.04	- 0.06	+ 1.26	1917 Dep.
0.10	0.08	0.08	0.08	0.08	0.07	0.06	0.08	0.08	0.08	0.09	0.10	2.07	Normal.
- 0.07	- 0.08	- 0.07	- 0.02	- 0.02	+ 0.04	- 0.02	- 0.05	- 0.04	- 0.02	- 0.02	+ 0.18	+ 0.48	1917 Dep.

The normals for rainfall are based upon the hourly tabulations of rainfall during the period of 45 years, 1871-1915 (Eskdalemuir 1911-1915).

The values for 1917 are given by the departure from the normal; + indicates excess, - defect.

Amounts of snow or rain which cannot be distributed among the actual hours of fall are omitted from the hourly means. In preparing the normals, however, an approximate allocation of such falls to their proper hours has been made.

HOURLY VALUES OF THE METEOROLOGICAL ELEMENTS :

RAINFALL IN MILLIMETRES.

Hour, G.M.T.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Noon.
JULY.												
ABERDEEN : Normal.	mm. 0.07	mm. 0.08	mm. 0.08	mm. 0.09	mm. 0.09	mm. 0.07	mm. 0.07	mm. 0.08	mm. 0.07	mm. 0.08	mm. 0.08	mm. 0.12
1917 Departure.	+ 0.02	+ 0.05	- 0.04	+ 0.01	+ 0.04	+ 0.03	+ 0.05	+ 0.05	+ 0.04	+ 0.04	+ 0.10	+ 0.03
ESKDALEMUIR : [Normal].	0.04	0.04	0.07	0.13	0.13	0.12	0.08	0.10	0.09	0.12	0.10	0.12
1917 Departure.	- 0.01	- 0.01	- 0.05	- 0.12	- 0.12	- 0.11	0.00	- 0.09	- 0.05	- 0.03	+ 0.03	+ 0.20
CAHIRCIVEEN : Normal.	0.15	0.15	0.16	0.16	0.16	0.17	0.17	0.18	0.16	0.13	0.10	0.11
1917 Departure.	+ 0.17	+ 0.33	+ 0.01	+ 0.08	+ 0.14	- 0.08	- 0.04	- 0.10	- 0.10	- 0.06	+ 0.01	+ 0.27
RICHMOND : Normal.	0.06	0.07	0.07	0.06	0.06	0.06	0.08	0.06	0.06	0.06	0.08	0.09
1917 Departure.	+ 0.19	+ 0.08	+ 0.16	+ 0.10	+ 0.11	+ 0.16	+ 0.13	+ 0.12	- 0.02	+ 0.08	+ 0.07	+ 0.04
FALMOUTH : Normal.	0.11	0.11	0.15	0.13	0.12	0.13	0.11	0.11	0.11	0.10	0.06	0.09
1917 Departure.	- 0.01	- 0.08	- 0.13	- 0.10	- 0.10	- 0.07	- 0.11	- 0.11	- 0.09	- 0.09	- 0.05	- 0.08
AUGUST.												
ABERDEEN : Normal.	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.10	0.09	0.11	0.07	0.08
1917 Departure.	- 0.07	- 0.02	+ 0.04	- 0.06	- 0.01	+ 0.04	+ 0.15	+ 0.12	+ 0.27	+ 0.27	+ 0.10	+ 0.15
ESKDALEMUIR : [Normal].	0.08	0.12	0.13	0.11	0.13	0.16	0.12	0.08	0.07	0.07	0.13	0.20
1917 Departure.	+ 0.24	+ 0.30	+ 0.36	+ 0.36	+ 0.29	+ 0.44	+ 0.25	+ 0.12	+ 0.01	+ 0.10	+ 0.03	+ 0.33
CAHIRCIVEEN : Normal.	0.18	0.16	0.15	0.20	0.22	0.22	0.21	0.19	0.19	0.16	0.14	0.14
1917 Departure.	- 0.01	+ 0.34	- 0.04	+ 0.05	+ 0.04	- 0.09	+ 0.01	+ 0.11	- 0.07	+ 0.15	+ 0.36	+ 0.03
RICHMOND : Normal.	0.06	0.07	0.07	0.05	0.06	0.05	0.07	0.06	0.07	0.07	0.07	0.09
1917 Departure.	+ 0.03	- 0.01	+ 0.11	+ 0.26	+ 0.01	0.00	+ 0.02	+ 0.06	+ 0.02	+ 0.05	+ 0.09	+ 0.03
FALMOUTH : Normal.	0.12	0.12	0.14	0.13	0.13	0.15	0.12	0.12	0.13	0.11	0.11	0.10
1917 Departure.	+ 0.20	+ 0.38	+ 0.02	+ 0.20	+ 0.05	+ 0.20	0.00	- 0.03	- 0.09	- 0.05	+ 0.02	+ 0.22
SEPTEMBER.												
ABERDEEN : Normal.	0.07	0.07	0.06	0.08	0.08	0.09	0.11	0.11	0.11	0.11	0.09	0.08
1917 Departure.	- 0.06	- 0.05	- 0.04	- 0.04	- 0.04	- 0.02	- 0.04	- 0.07	- 0.01	- 0.02	- 0.07	0.00
ESKDALEMUIR : [Normal].	0.10	0.06	0.07	0.06	0.09	0.07	0.07	0.11	0.11	0.06	0.13	0.13
1917 Departure.	- 0.03	- 0.03	- 0.04	+ 0.16	+ 0.10	+ 0.16	+ 0.12	+ 0.07	+ 0.18	+ 0.27	+ 0.38	+ 0.18
CAHIRCIVEEN : Normal.	0.17	0.17	0.19	0.17	0.17	0.15	0.16	0.16	0.17	0.13	0.14	0.14
1917 Departure.	+ 0.11	- 0.02	- 0.08	- 0.06	+ 0.22	+ 0.04	- 0.11	- 0.09	- 0.05	- 0.10	- 0.11	- 0.10
RICHMOND : Normal.	0.09	0.07	0.08	0.08	0.09	0.06	0.06	0.05	0.07	0.06	0.05	0.05
1917 Departure.	- 0.09	0.00	0.00	0.00	- 0.02	- 0.01	0.00	- 0.02	- 0.07	- 0.05	- 0.05	+ 0.01
FALMOUTH : Normal.	0.15	0.15	0.14	0.13	0.12	0.12	0.14	0.12	0.13	0.12	0.10	0.10
1917 Departure.	- 0.04	- 0.07	- 0.04	- 0.01	- 0.07	- 0.09	- 0.04	- 0.05	- 0.12	- 0.11	- 0.08	- 0.05
OCTOBER.												
ABERDEEN : Normal.	0.08	0.10	0.11	0.11	0.10	0.12	0.12	0.12	0.12	0.12	0.09	0.09
1917 Departure.	+ 0.04	+ 0.08	0.00	- 0.04	- 0.05	- 0.10	- 0.03	- 0.03	- 0.06	- 0.07	- 0.02	+ 0.01
ESKDALEMUIR : [Normal].	0.10	0.09	0.14	0.13	0.11	0.15	0.18	0.15	0.21	0.18	0.20	0.14
1917 Departure.	+ 0.08	+ 0.06	- 0.06	+ 0.02	+ 0.09	+ 0.11	- 0.02	0.00	- 0.03	+ 0.06	- 0.01	+ 0.04
CAHIRCIVEEN : Normal.	0.20	0.21	0.21	0.21	0.21	0.22	0.20	0.18	0.18	0.18	0.17	0.19
1917 Departure.	+ 0.05	- 0.06	+ 0.11	+ 0.08	+ 0.21	+ 0.11	+ 0.14	+ 0.07	+ 0.04	+ 0.03	+ 0.22	+ 0.21
RICHMOND : Normal.	0.10	0.10	0.10	0.08	0.09	0.10	0.09	0.09	0.09	0.09	0.08	0.11
1917 Departure.	- 0.01	- 0.03	- 0.04	- 0.07	- 0.06	+ 0.07	+ 0.25	- 0.03	- 0.01	+ 0.01	+ 0.01	+ 0.12
FALMOUTH : Normal.	0.22	0.19	0.20	0.21	0.22	0.21	0.20	0.21	0.17	0.17	0.13	0.17
1917 Departure.	- 0.04	+ 0.07	- 0.01	- 0.08	+ 0.17	0.00	+ 0.02	+ 0.18	+ 0.43	+ 0.05	+ 0.22	- 0.03
NOVEMBER.												
ABERDEEN : Normal.	0.12	0.13	0.11	0.14	0.13	0.12	0.12	0.11	0.11	0.11	0.11	0.10
1917 Departure.	0.00	+ 0.02	+ 0.13	+ 0.08	+ 0.12	+ 0.06	- 0.04	- 0.06	- 0.05	- 0.04	- 0.09	- 0.08
ESKDALEMUIR : [Normal].	0.26	0.25	0.22	0.22	0.21	0.18	0.19	0.21	0.23	0.22	0.24	0.23
1917 Departure.	0.00	- 0.02	- 0.14	- 0.05	- 0.07	+ 0.03	+ 0.02	- 0.02	- 0.11	- 0.06	- 0.14	- 0.09
CAHIRCIVEEN : Normal.	0.22	0.21	0.22	0.21	0.21	0.19	0.22	0.22	0.19	0.19	0.18	0.18
1917 Departure.	- 0.16	- 0.14	- 0.15	- 0.13	- 0.03	+ 0.05	0.00	- 0.09	- 0.11	- 0.13	- 0.15	- 0.13
RICHMOND : Normal.	0.08	0.09	0.08	0.08	0.09	0.08	0.08	0.07	0.06	0.06	0.06	0.07
1917 Departure.	- 0.06	- 0.06	- 0.05	- 0.06	- 0.08	- 0.07	- 0.04	+ 0.11	+ 0.02	- 0.03	- 0.06	- 0.06
FALMOUTH : Normal.	0.18	0.17	0.19	0.22	0.16	0.19	0.18	0.20	0.18	0.18	0.16	0.17
1917 Departure.	- 0.14	- 0.13	- 0.07	- 0.19	- 0.13	- 0.14	- 0.07	+ 0.07	- 0.03	- 0.12	- 0.11	- 0.11
DECEMBER.												
ABERDEEN : Normal.	0.11	0.11	0.12	0.13	0.13	0.12	0.12	0.11	0.11	0.12	0.10	0.10
1917 Departure.	- 0.05	- 0.06	- 0.04	- 0.04	- 0.04	- 0.03	- 0.04	- 0.04	- 0.06	- 0.10	- 0.06	- 0.08
ESKDALEMUIR : [Normal].	0.25	0.21	0.18	0.26	0.25	0.26	0.30	0.31	0.34	0.32	0.30	0.24
1917 Departure.	- 0.03	- 0.01	+ 0.03	- 0.17	- 0.19	- 0.15	- 0.14	- 0.13	- 0.15	- 0.27	- 0.20	- 0.11
CAHIRCIVEEN : Normal.	0.23	0.22	0.24	0.26	0.24	0.24	0.25	0.24	0.21	0.20	0.19	0.21
1917 Departure.	- 0.07	- 0.03	- 0.05	- 0.02	+ 0.01	- 0.09	- 0.13	- 0.19	- 0.17	- 0.15	- 0.14	- 0.14
RICHMOND : Normal.	0.07	0.08	0.08	0.09	0.08	0.07	0.07	0.07	0.08	0.07	0.07	0.07
1917 Departure.	+ 0.01	- 0.02	- 0.02	- 0.04	- 0.04	0.00	- 0.03	- 0.01	- 0.03	- 0.03	- 0.03	- 0.05
FALMOUTH : Normal.	0.21	0.24	0.23	0.24	0.23	0.21	0.21	0.21	0.20	0.23	0.19	0.19
1917 Departure.	- 0.17	- 0.24	- 0.22	- 0.22	- 0.18	+ 0.01	- 0.15	- 0.15	- 0.17	- 0.23	- 0.18	- 0.14
YEAR.												
ABERDEEN : Normal.	0.08	0.09	0.08	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.08	0.08
1917 Departure.	- 0.01	+ 0.01	+ 0.02	0.00	0.00	0.00	0.00	- 0.01	+ 0.01	- 0.01	- 0.01	+ 0.02
ESKDALEMUIR : [Normal].	0.14	0.14	0.15	0.15	0.15	0.16	0.15	0.15	0.15	0.14	0.15	0.17
1917 Departure.	+ 0.01	0.00	- 0.02	0.00	- 0.02	+ 0.01	- 0.01	- 0.03	- 0.04	- 0.02	- 0.01	0.00
CAHIRCIVEEN : Normal.	0.18	0.17	0.18	0.19	0.19	0.18	0.19	0.18	0.17	0.15	0.14	0.15
1917 Departure.	- 0.02	+ 0.02	- 0.05	0.00	0.00	- 0.02	- 0.04	- 0.03	- 0.07	- 0.05	+ 0.02	- 0.01
RICHMOND : Normal.	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
1917 Departure.	+ 0.01	0.00	+ 0.03	+ 0.04	- 0.02	- 0.01	+ 0.03	+ 0.02	- 0.01	- 0.02	0.00	0.00
FALMOUTH : Normal.	0.14	0.15	0.16	0.15	0.14	0.15	0.14	0.14	0.14	0.13	0.11	0.12
1917 Departure.	- 0.10	- 0.11	- 0.13	- 0.12	- 0.10	- 0.10	- 0.11	- 0.10	- 0.10	- 0.11	- 0.09	- 0.09

HOURLY VALUES OF THE METEOROLOGICAL ELEMENTS : NORMALS AND DEPARTURES THEREFROM IN 1917.

DURATION OF BRIGHT SUNSHINE (in hours arranged according to Local Apparent Time). JANUARY TO JUNE.

Hour, L.A.T.	4.	5.	6.	7.	8.	9.	10.	11.	Noon.	13.	14.	15.	16.	17.	18.	19.	20.	Day.
JANUARY.																		
ABERDEEN : Normal.	..	..	..	..	..	0.04	0.16	0.23	0.24	0.23	0.18	0.07	..	..	..	..	..	1.15
1917 Departure.	..	..	..	..	0.00	-0.02	-0.10	-0.08	-0.08	-0.06	-0.06	-0.07	0.00	..	..	..	..	-0.47
ESKDALEMUIR : [Normal].	..	..	..	..	0.01	0.08	0.12	0.16	0.16	0.17	0.17	0.09	0.01	..	..	..	..	0.97
1917 Departure.	..	..	..	..	-0.01	-0.04	+0.05	+0.09	+0.07	+0.06	+0.03	0.00	-0.01	..	..	..	..	+0.24
CAHIRCIVEEN : Normal.	..	..	..	..	0.01	0.11	0.23	0.27	0.28	0.27	0.23	0.15	0.03	..	..	..	..	1.58
1917 Departure.	..	..	..	..	-0.01	+0.01	+0.07	+0.05	0.00	0.00	-0.04	+0.03	-0.02	..	..	..	..	+0.09
RICHMOND : Normal.	..	..	..	..	..	0.08	0.18	0.23	0.26	0.25	0.23	0.11	0.01	..	..	..	..	1.35
1917 Departure.	..	..	..	..	0.00	-0.04	-0.08	-0.13	-0.07	-0.11	-0.10	-0.05	-0.01	..	..	..	..	-0.59
FALMOUTH : Normal.	..	..	..	..	..	0.02	0.18	0.28	0.33	0.29	0.28	0.17	0.02	..	..	..	..	1.82
1917 Departure.	..	..	..	..	-0.02	-0.07	-0.09	-0.07	-0.02	0.00	-0.02	+0.01	0.00	..	..	..	..	-0.28
FEBRUARY.																		
ABERDEEN : Normal.	..	..	..	..	0.06	0.24	0.34	0.38	0.38	0.38	0.35	0.27	0.10	0.01	..	..	..	2.51
1917 Departure.	..	..	..	..	-0.01	+0.12	+0.12	+0.14	+0.14	+0.12	+0.07	+0.09	+0.06	0.00	..	..	..	+0.85
ESKDALEMUIR : [Normal].	..	..	..	..	0.01	0.09	0.17	0.21	0.24	0.21	0.24	0.20	0.13	0.07	..	..	..	1.57
1917 Departure.	..	..	..	-0.01	+0.02	+0.04	+0.03	+0.05	+0.06	+0.03	+0.12	+0.17	+0.06	..	..	..	..	+0.57
CAHIRCIVEEN : Normal.	..	..	..	..	0.10	0.25	0.32	0.34	0.34	0.33	0.33	0.27	0.16	0.02	..	..	..	2.46
1917 Departure.	..	..	..	..	-0.02	+0.19	+0.12	+0.10	+0.17	+0.14	+0.05	+0.09	+0.15	-0.02	..	..	..	+0.97
RICHMOND : Normal.	..	..	..	0.00	0.06	0.19	0.27	0.30	0.31	0.33	0.30	0.24	0.10	0.00	..	..	..	2.10
1917 Departure.	..	..	..	..	-0.03	-0.13	-0.20	-0.19	-0.13	-0.14	-0.11	-0.13	-0.07	..	..	..	..	-1.13
FALMOUTH : Normal.	..	..	..	..	0.01	0.17	0.32	0.36	0.40	0.41	0.40	0.37	0.32	0.17	0.01	..	..	2.94
1917 Departure.	..	..	..	0.00	-0.02	-0.07	-0.04	-0.02	-0.08	-0.10	-0.02	-0.07	+0.02	0.00	..	..	..	-0.40
MARCH.																		
ABERDEEN : Normal.	..	..	..	0.09	0.23	0.29	0.33	0.33	0.33	0.31	0.30	0.27	0.23	0.11	0.01	..	..	2.83
1917 Departure.	..	..	..	+0.08	+0.07	+0.03	0.00	+0.06	+0.04	+0.04	-0.01	+0.03	-0.05	0.00	-0.01	..	..	+0.28
ESKDALEMUIR : [Normal].	..	..	..	0.12	0.23	0.31	0.34	0.37	0.36	0.37	0.35	0.30	0.22	0.10	0.01	..	..	3.08
1917 Departure.	..	..	..	+0.06	+0.12	+0.11	+0.12	+0.10	+0.17	+0.11	+0.10	+0.08	+0.10	+0.05	-0.01	..	..	+1.11
CAHIRCIVEEN : Normal.	..	..	..	0.13	0.32	0.39	0.42	0.45	0.45	0.43	0.42	0.39	0.34	0.19	0.02	..	..	3.95
1917 Departure.	..	..	..	-0.04	-0.14	-0.12	-0.13	-0.08	0.00	+0.03	+0.01	0.00	-0.01	-0.04	-0.02	..	..	-0.54
RICHMOND : Normal.	..	..	0.00	0.09	0.23	0.33	0.37	0.40	0.40	0.40	0.37	0.35	0.28	0.13	0.01	..	..	3.36
1917 Departure.	..	..	0.00	+0.05	0.00	-0.08	-0.13	-0.17	-0.12	-0.17	-0.07	-0.13	-0.15	-0.08	+0.01	..	..	-1.04
FALMOUTH : Normal.	..	..	0.01	0.16	0.37	0.43	0.46	0.49	0.48	0.48	0.47	0.44	0.39	0.21	0.01	..	..	4.40
1917 Departure.	..	..	0.00	+0.05	-0.06	-0.04	-0.01	+0.02	+0.06	+0.03	+0.08	+0.05	+0.02	+0.05	0.00	..	..	+0.25
APRIL.																		
ABERDEEN : Normal.	..	0.02	0.12	0.24	0.31	0.35	0.36	0.37	0.37	0.38	0.36	0.35	0.32	0.27	0.13	0.02	..	3.97
1917 Departure.	..	-0.01	+0.04	+0.12	+0.14	+0.17	+0.14	+0.07	+0.11	+0.04	+0.01	0.00	+0.03	0.00	+0.02	-0.01	..	+0.87
ESKDALEMUIR : [Normal].	..	0.02	0.15	0.31	0.37	0.40	0.43	0.42	0.41	0.42	0.43	0.44	0.38	0.34	0.19	0.03	..	4.74
1917 Departure.	..	-0.01	-0.06	-0.08	-0.01	-0.02	-0.11	-0.06	-0.04	-0.04	-0.09	-0.17	-0.13	-0.12	-0.12	-0.02	..	-1.08
CAHIRCIVEEN : Normal.	..	0.01	0.16	0.35	0.42	0.46	0.48	0.48	0.49	0.49	0.48	0.47	0.43	0.39	0.22	0.02	..	5.35
1917 Departure.	..	+0.01	-0.03	+0.01	+0.06	+0.09	+0.07	+0.08	+0.11	+0.12	+0.18	+0.14	+0.20	+0.04	+0.09	+0.03	..	+1.20
RICHMOND : Normal.	..	0.01	0.13	0.31	0.40	0.45	0.48	0.50	0.49	0.49	0.49	0.46	0.43	0.35	0.18	0.01	..	5.18
1917 Departure.	..	-0.01	+0.02	+0.02	+0.01	-0.05	-0.03	+0.01	+0.03	+0.03	0.00	-0.03	-0.06	+0.01	0.00	-0.01	..	-0.06
FALMOUTH : Normal.	..	0.01	0.18	0.39	0.47	0.51	0.54	0.55	0.55	0.56	0.55	0.54	0.52	0.41	0.22	0.07	..	6.07
1917 Departure.	..	0.00	+0.07	+0.09	+0.13	+0.16	+0.16	+0.20	+0.18	+0.10	+0.11	+0.16	+0.09	+0.18	+0.19	-0.02	..	+1.80
MAY.																		
ABERDEEN : Normal.	0.01	0.14	0.25	0.29	0.32	0.34	0.34	0.35	0.36	0.36	0.36	0.36	0.34	0.31	0.26	0.16	0.02	4.57
1917 Departure.	-0.01	+0.02	+0.07	+0.04	+0.12	+0.13	+0.13	+0.10	+0.08	+0.10	0.00	-0.02	+0.05	+0.03	-0.01	+0.02	-0.01	+0.84
ESKDALEMUIR : [Normal].	0.02	0.11	0.22	0.28	0.32	0.42	0.43	0.45	0.45	0.44	0.41	0.40	0.39	0.38	0.33	0.18	0.01	5.24
1917 Departure.	-0.01	-0.02	0.00	+0.07	+0.07	+0.02	+0.02	0.00	-0.02	-0.12	-0.08	-0.11	-0.16	-0.15	-0.03	-0.04	-0.01	-0.57
CAHIRCIVEEN : Normal.	..	0.15	0.36	0.42	0.45	0.48	0.50	0.51	0.52	0.53	0.52	0.52	0.50	0.47	0.39	0.22	0.01	6.55
1917 Departure.	0.00	-0.07	0.00	-0.02	-0.06	-0.03	-0.01	-0.04	-0.06	-0.01	+0.02	-0.01	-0.01	-0.03	-0.06	-0.11	-0.01	-0.51
RICHMOND : Normal.	..	0.10	0.34	0.44	0.49	0.51	0.52	0.54	0.52	0.52	0.50	0.49	0.47	0.44	0.38	0.19	0.01	6.46
1917 Departure.	..	-0.08	-0.05	-0.02	+0.02	+0.03	+0.13	+0.13	+0.05	0.00	+0.07	+0.11	+0.08	+0.07	-0.07	-0.08	-0.01	+0.38
FALMOUTH : Normal.	..	0.13	0.39	0.48	0.51	0.55	0.57	0.58	0.58	0.59	0.59	0.61	0.59	0.55	0.48	0.16	..	7.36
1917 Departure.	..	-0.08	-0.17	-0.11	-0.10	-0.08	-0.06	0.00	-0.03	+0.01	+0.02	-0.10	-0.09	-0.06	-0.06	-0.03	..	-0.94
JUNE.																		
ABERDEEN : Normal.	0.05	0.18	0.24	0.27	0.30	0.32	0.33	0.35	0.35	0.35	0.36	0.34	0.32	0.30	0.28	0.21	0.07	4.62
1917 Departure.	+0.07	+0.20	+0.22	+0.25	+0.35	+0.39	+0.31	+0.19	+0.14	+0.18	+0.16	+0.20	+0.17	+0.08	+0.14	+0.20	+0.09	+3.34
ESKDALEMUIR : [Normal].	0.03	0.16	0.24	0.31	0.36	0.37	0.43	0.45	0.44	0.44	0.44	0.41	0.36	0.40	0.34	0.23	0.04	5.45
1917 Departure.	+0.02	+0.18	+0.25	+0.27	+0.25	+0.25	+0.12	+0.13	+0.07	+0.08	+0.08	+0.18	+0.19	+0.14	+0.19	+0.12	+0.01	+2.53
CAHIRCIVEEN : Normal.	0.02	0.20	0.32	0.39	0.42	0.44	0.46	0.46	0.48	0.50	0.50	0.49	0.47	0.43	0.37	0.27	0.04	6.26
1917 Departure.	-0.01	-0.05	-0.03	+0.02	-0.03	-0.12	-0.13	-0.05	-0.09	-0.03	-0.03	-0.09	-0.03	+0.02	+0.08	+0.01	0.00	-0.56
RICHMOND : Normal.	..	0.16	0.34	0.41	0.44	0.48	0.50	0.50	0.52	0.51	0.51	0.50	0.48	0.45	0.42	0.28	0.03	6.53
1917 Departure.	..	+0.08	+0.06	+0.13	+0.16	+0.06	+0.04	+0.03	+0.02	+0.01	-0.04	0.00	-0.08	-0.06	0.00	-0.05	-0.01	+0.35
FALMOUTH : Normal.	0.01	0.23	0.38	0.44	0.47	0.49	0.53	0.53	0.54	0.57	0.58	0.58	0.58	0.55	0.49	0.30	0.01	7.28
1917 Departure.	+0.01	+0.03	+0.03	0.00	-0.06	-0.02	-0.01	-0.05	-0.03	+0.02	+0.02	-0.02	-0.01	+0.03	+0.04	+0.04	0.00	+0.02

The hourly duration of sunshine is obtained from the records of the Campbell-Stokes recorder, in which instrument 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 sunshine being shown by the length of the scorch on the card. The hourly amounts are measured from 30 minutes before to 30 minutes after each hour of Local Apparent Time. The height of the recorder above the ground at the several stations is as follows :—

Aberdeen	20.7 metres.
Eskdalemuir	1.5 "
Cahirciveen (Valencia Observatory)	12.8 "
Richmond (Kew Observatory)	13.3 "
Falmouth	10.4 "

The values for 1917 are given by the excess or defect from the normal : + indicates excess, - defect.

The normals for sunshine are based upon the hourly tabulations of sunshine in the period of 35 years, from 1881-1915 (Eskdalemuir 1911-15 only).

HOURLY VALUES OF THE METEOROLOGICAL ELEMENTS:
NORMALS AND DEPARTURES THEREFROM IN 1917.

DURATION OF BRIGHT SUNSHINE (in hours arranged according to Local Apparent Time).
JULY TO DECEMBER AND YEAR.

Hour, L.A.T.	4.	5.	6.	7.	8.	9.	10.	11.	Noon.	13.	14.	15.	16.	17.	18.	19.	20.	Day.
JULY.																		
ABERDEEN: Normal.	0·03	0·15	0·20	0·25	0·28	0·29	0·29	0·29	0·30	0·30	0·29	0·28	0·28	0·25	0·21	0·15	0·04	3·88
ABERDEEN: 1917 Departure.	+0·05	+0·14	+0·11	+0·09	+0·09	+0·11	+0·12	+0·22	+0·23	+0·23	+0·20	+0·21	+0·13	+0·09	+0·09	+0·10	0·00	+2·22
ESKDALEMUIR: [Normal].	0·02	0·12	0·25	0·32	0·32	0·36	0·38	0·39	0·39	0·41	0·43	0·41	0·35	0·28	0·15	0·02	4·99	
ESKDALEMUIR: 1917 Departure.	-0·01	+0·05	+0·07	+0·02	+0·05	+0·07	+0·07	+0·10	+0·08	+0·16	+0·17	+0·05	+0·03	-0·02	-0·03	+0·07	+0·03	+0·96
CAHRCIVEEN: Normal.	0·01	0·11	0·23	0·28	0·32	0·36	0·39	0·41	0·43	0·43	0·44	0·44	0·41	0·39	0·31	0·19	0·02	5·17
CAHRCIVEEN: 1917 Departure.	0·00	+0·11	+0·02	+0·03	-0·01	-0·07	-0·03	-0·01	-0·08	-0·06	-0·04	+0·02	+0·03	-0·05	-0·02	-0·02	-0·02	-0·20
RICHMOND: Normal.	..	0·13	0·34	0·42	0·46	0·50	0·52	0·52	0·51	0·52	0·51	0·49	0·47	0·44	0·40	0·25	0·02	6·50
RICHMOND: 1917 Departure.	0·00	-0·08	-0·09	-0·08	-0·08	0·00	0·00	+0·08	+0·07	+0·09	+0·10	+0·02	+0·11	+0·08	+0·02	+0·04	0·00	+0·28
FALMOUTH: Normal.	..	0·19	0·37	0·44	0·48	0·51	0·54	0·56	0·55	0·56	0·56	0·58	0·56	0·56	0·47	0·26	0·00	7·19
FALMOUTH: 1917 Departure.	..	-0·10	-0·07	-0·02	-0·04	0·00	0·00	-0·11	+0·02	-0·03	-0·01	-0·09	-0·12	-0·21	-0·10	-0·06	..	-0·94
AUGUST.																		
ABERDEEN: Normal.	..	0·05	0·17	0·23	0·28	0·30	0·31	0·32	0·33	0·33	0·32	0·31	0·28	0·22	0·15	0·04	..	3·64
ABERDEEN: 1917 Departure.	..	-0·04	-0·11	-0·11	-0·14	-0·14	-0·09	-0·10	-0·10	-0·03	-0·02	-0·02	-0·02	-0·07	0·00	+0·02	..	-0·97
ESKDALEMUIR: [Normal].	..	0·03	0·13	0·26	0·35	0·38	0·36	0·39	0·40	0·38	0·39	0·37	0·36	0·31	0·17	0·03	..	4·31
ESKDALEMUIR: 1917 Departure.	..	-0·01	-0·07	-0·15	-0·12	-0·06	-0·07	-0·05	-0·10	-0·09	-0·05	-0·04	-0·08	-0·07	-0·11	-0·02	..	-1·09
CAHRCIVEEN: Normal.	..	0·03	0·19	0·29	0·34	0·39	0·42	0·43	0·44	0·46	0·45	0·45	0·42	0·37	0·27	0·07	..	5·02
CAHRCIVEEN: 1917 Departure.	..	+0·02	0·00	0·00	+0·01	+0·02	-0·06	-0·03	-0·04	+0·06	+0·06	+0·08	+0·03	+0·02	+0·03	0·00	..	+0·21
RICHMOND: Normal.	..	0·02	0·22	0·37	0·47	0·51	0·54	0·54	0·53	0·52	0·52	0·50	0·47	0·43	0·32	0·07	..	6·03
RICHMOND: 1917 Departure.	..	0·00	+0·01	-0·05	+0·01	+0·04	-0·09	-0·12	-0·09	-0·03	-0·03	-0·01	-0·05	-0·10	-0·06	-0·04	..	-0·61
FALMOUTH: Normal.	..	0·04	0·29	0·44	0·50	0·55	0·56	0·58	0·59	0·58	0·60	0·57	0·55	0·51	0·47	0·05	..	6·80
FALMOUTH: 1917 Departure.	..	0·00	+0·12	+0·08	+0·04	-0·02	-0·02	-0·09	-0·07	-0·16	-0·10	-0·16	-0·16	-0·13	-0·23	-0·02	..	-0·92
SEPTEMBER.																		
ABERDEEN: Normal.	0·03	0·16	0·26	0·30	0·32	0·32	0·33	0·32	0·31	0·29	0·27	0·18	0·03	..	..	3·12
ABERDEEN: 1917 Departure.	+0·04	+0·18	+0·12	+0·10	+0·13	+0·15	+0·14	+0·14	+0·13	+0·14	+0·09	+0·07	+0·01	..	..	+1·44
ESKDALEMUIR: [Normal].	0·01	0·18	0·34	0·40	0·43	0·45	0·45	0·45	0·47	0·45	0·37	0·25	0·04	..	..	4·29
ESKDALEMUIR: 1917 Departure.	0·00	-0·14	-0·23	-0·16	-0·19	-0·21	-0·13	-0·16	-0·09	-0·10	-0·13	-0·06	-0·02	..	..	-1·62
CAHRCIVEEN: Normal.	0·02	0·18	0·33	0·40	0·45	0·46	0·47	0·47	0·47	0·45	0·40	0·27	0·06	..	..	4·43
CAHRCIVEEN: 1917 Departure.	-0·01	0·00	-0·11	-0·12	-0·20	-0·11	-0·06	-0·08	-0·12	-0·07	-0·13	-0·08	0·00	..	..	-1·09
RICHMOND: Normal.	0·02	0·18	0·33	0·43	0·50	0·52	0·52	0·52	0·51	0·51	0·44	0·31	0·05	..	..	4·84
RICHMOND: 1917 Departure.	+0·01	-0·02	+0·04	+0·04	+0·01	+0·06	+0·10	+0·03	+0·04	-0·02	+0·05	+0·06	+0·01	..	..	+0·41
FALMOUTH: Normal.	0·06	0·27	0·43	0·49	0·52	0·54	0·55	0·56	0·54	0·53	0·49	0·39	0·07	..	..	5·41
FALMOUTH: 1917 Departure.	-0·02	0·00	-0·14	-0·14	-0·13	-0·12	-0·16	-0·17	-0·14	-0·11	-0·13	-0·09	-0·01	..	..	-1·36
OCTOBER.																		
ABERDEEN: Normal.	0·02	0·12	0·25	0·29	0·30	0·31	0·31	0·30	0·25	0·15	0·02	..	..	..	2·32
ABERDEEN: 1917 Departure.	+0·02	+0·17	+0·16	+0·19	+0·23	+0·13	+0·11	+0·11	+0·12	+0·07	0·00	..	..	..	+1·31
ESKDALEMUIR: [Normal].	0·03	0·17	0·28	0·30	0·30	0·31	0·33	0·29	0·25	0·19	0·03	..	..	..	2·48
ESKDALEMUIR: 1917 Departure.	+0·05	+0·16	+0·09	+0·11	+0·04	+0·08	-0·02	-0·03	-0·03	-0·04	0·00	..	..	..	+0·41
CAHRCIVEEN: Normal.	0·01	0·20	0·34	0·38	0·41	0·42	0·43	0·40	0·36	0·25	0·06	..	..	..	3·26
CAHRCIVEEN: 1917 Departure.	-0·01	-0·08	-0·11	-0·13	-0·12	-0·08	-0·04	-0·06	-0·06	-0·07	-0·03	..	..	..	-0·79
RICHMOND: Normal.	0·03	0·17	0·28	0·35	0·39	0·38	0·39	0·38	0·32	0·21	0·04	..	..	..	2·94
RICHMOND: 1917 Departure.	+0·01	+0·11	+0·09	+0·16	+0·19	+0·24	+0·18	+0·19	+0·17	+0·19	+0·05	..	..	..	+0·58
FALMOUTH: Normal.	0·05	0·29	0·40	0·44	0·45	0·45	0·44	0·43	0·38	0·28	0·07	..	..	..	3·68
FALMOUTH: 1917 Departure.	0·00	-0·03	-0·06	-0·10	-0·10	-0·06	-0·02	+0·01	+0·01	-0·01	..	..	..	..	-0·25
NOVEMBER.																		
ABERDEEN: Normal.	0·09	0·20	0·23	0·25	0·25	0·21	0·11	0·01	..	..	..	..	1·35
ABERDEEN: 1917 Departure.	+0·01	+0·11	+0·04	+0·05	+0·14	+0·11	+0·05	+0·08	+0·02	..	..	..	..	+0·61
ESKDALEMUIR: [Normal].	0·05	0·19	0·28	0·30	0·28	0·28	0·28	0·18	0·02	..	..	..	..	1·86
ESKDALEMUIR: 1917 Departure.	-0·01	-0·05	-0·15	-0·14	-0·05	-0·07	-0·08	-0·06	0·00	..	..	..	..	-0·61
CAHRCIVEEN: Normal.	0·02	0·20	0·31	0·35	0·35	0·35	0·31	0·22	0·06	0·00	..	..	..	2·17
CAHRCIVEEN: 1917 Departure.	-0·02	-0·12	-0·14	-0·16	-0·16	-0·17	-0·16	-0·10	-0·02	..	..	..	..	-1·05
RICHMOND: Normal.	0·01	0·10	0·21	0·28	0·31	0·30	0·28	0·20	0·04	..	..	..	..	1·73
RICHMOND: 1917 Departure.	+0·02	+0·11	+0·10	-0·04	-0·12	-0·13	-0·13	-0·03	-0·02	..	..	..	..	-0·24
FALMOUTH: Normal.	0·07	0·28	0·35	0·38	0·38	0·37	0·33	0·25	0·07	..	..	..	..	2·48
FALMOUTH: 1917 Departure.	-0·04	-0·17	-0·20	-0·18	-0·18	-0·19	-0·12	-0·09	-0·02	..	..	..	..	-1·19
DECEMBER.																		
ABERDEEN: Normal.	0·01	0·11	0·19	0·21	0·19	0·13	0·02	..	..	..	..	..	0·86
ABERDEEN: 1917 Departure.	+0·01	+0·10	+0·02	+0·07	+0·11	+0·03	+0·01	..	..	..	..	..	+0·35
ESKDALEMUIR: [Normal].	0·03	0·10	0·11	0·16	0·13	0·10	0·03	..	..	..	..	..	0·66
ESKDALEMUIR: 1917 Departure.	+0·12	+0·21	+0·22	+0·10	+0·13	+0·12	+0·10	..	..	..	..	..	+1·00
CAHRCIVEEN: Normal.	0·06	0·20	0·26	0·26	0·24	0·19	0·10	0·00	..	..	..	..	1·31
CAHRCIVEEN: 1917 Departure.	0·00	+0·11	-0·04	-0·02	+0·06	+0·05	+0·01	..	..	..	..	..	+0·19
RICHMOND: Normal.	0·05	0·17	0·21	0·22	0·23	0·20	0·09	..	..	..	..	..	1·17
RICHMOND: 1917 Departure.	0·00	+0·01	+0·12	+0·15	+0·17	+0·14	+0·08	..	..	..	..	..	+0·67
FALMOUTH: Normal.	0·01	0·14	0·27	0·31	0·32	0·29	0·25	0·13	0·01	..	..	..	1·73
FALMOUTH: 1917 Departure.	-0·01	+0·09	+0·09	+0·15	+0·12	+0·02	+0·07	+0·06	..	..	..	..	+0·60
YEAR.																		
ABERDEEN: Normal.	0·01	0·05	0·08	0·13	0·18	0·24	0·28	0·31	0·31	0·31	0·29	0·24	0·19	0·14	0·09	0·05	0·01	2·91
ABERDEEN: 1917 Departure.	+0·01	+0·02	+0·04	+0·05	+0·08	+0·09	+0·09	+0·08	+0·09	+0·09	+0·05	+0·07	+0·05	+0·02	+0·02	+0·03	+0·01	+0·80
ESKDALEMUIR: [Normal].	0·01	0·04	0·08	0·15	0·22	0·28	0·32	0·34	0·34	0·33	0·29	0·23	0·18	0·11	0·05	0·01	0·01	3·32
ESKDALEM																		

I.—READINGS OF THE NORTH COMPONENT OF TERRESTRIAL MAGNETIC FORCE

Eskdalemuir. (X.)

FOR EACH HOUR OF GREENWICH MEAN TIME.

January, 1917.

Table with 25 columns (Hour G.M.T., 0-24, Midt., Mean) and 31 rows (Day 1-31). Values range from 831 to 1000. Includes a scale of 15,000 γ (-15 C.G.S. unit) +.

II.—READINGS OF THE WEST COMPONENT OF TERRESTRIAL MAGNETIC FORCE

Eskdalemuir. (-Y.)

FOR EACH HOUR OF GREENWICH MEAN TIME.

January, 1917.

Table with 25 columns (Hour G.M.T., 0-24, Midt., Mean) and 31 rows (Day 1-31). Values range from 879 to 1009. Includes a scale of 4000 γ (-04 C.G.S. unit) +.

c International quiet day. ** Day "proposed for reproduction" by the International Magnetic Commission (double star). † Mean of 30 days; 4th omitted.

III.—READINGS OF THE VERTICAL COMPONENT OF TERRESTRIAL MAGNETIC FORCE FOR EACH HOUR OF GREENWICH MEAN TIME.

Eskdalemuir. (Z.)

January, 1917.

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	1095	1098	1088	1080	1086	1088	1089	1094	1095	1097	1099	1102	1112	1113	1112	1112	1114	1112	1108	1108	1110	1111	1112	1108	1105	1102
2	1107	1105	1104	1103	1102	1099	1099	1098	1101	1103	1105	1106	1106	1105	1105	1105	1106	1108	1108	1111	1118	1112	1107	1104	1098	1105
3	1100	1098	1100	1101	1101	1101	1099	1099	1101	1103	1107	1107	1106	1104	1107	1106	1104	1105	1106	1104	1104	1103	1102	1101	1100	1103
3 c	1100	1098	1100	1101	1101	1101	1099	1099	1101	1103	1107	1107	1106	1104	1107	1106	1104	1105	1106	1104	1104	1103	1102	1101	1100	1103
4**	1102	1099	1098	1099	1099	1096	1093	1092	1094	1098	1105	1108	1125	1150	1171	1192	1274	1290	1270	1257	1253	1113	1043	1082	897	11388
4*	899	942	990	1007	1030	1046	1068	1075	1086	1091	1098	1107	1115	1120	1136	1158	1164	1164	1170	1167	1153	1139	1135	1131	1127	1096
5	1129	1129	1127	1124	1120	1119	1119	1120	1122	1122	1120	1122	1120	1123	1125	1126	1126	1126	1139	1139	1128	1126	1131	1125	1113	1125
6	1115	1100	1111	1119	1120	1119	1117	1116	1116	1115	1116	1115	1116	1121	1123	1127	1133	1134	1131	1133	1132	1129	1123	1111	1087	1120
7	1115	1100	1111	1119	1120	1119	1117	1116	1116	1115	1116	1115	1116	1121	1123	1127	1133	1134	1131	1133	1132	1129	1123	1111	1087	1120
8	1090	1104	1098	1091	1081	1092	1098	1104	1108	1112	1115	1114	1115	1118	1117	1118	1121	1121	1123	1131	1126	1136	1137	1128	1130	1113
9	1132	1133	1129	1127	1126	1123	1122	1120	1120	1118	1120	1120	1118	1115	1120	1122	1122	1120	1126	1135	1124	1126	1125	1125	1125	1124
10	1128	1112	1116	1117	1104	1100	1104	1113	1116	1116	1116	1117	1115	1113	1119	1127	1131	1127	1126	1131	1132	1129	1114	1108	1118	1118
11	1120	1121	1121	1119	1116	1117	1118	1119	1120	1118	1118	1118	1117	1116	1120	1125	1129	1140	1133	1133	1137	1134	1130	1127	1119	1124
12	1122	1121	1121	1121	1115	1105	1100	1109	1113	1114	1116	1113	1117	1121	1124	1129	1132	1159	1158	1146	1138	1132	1129	1114	1124	1124
13	1116	1108	1112	1094	1093	1104	1115	1119	1121	1121	1121	1122	1122	1121	1124	1128	1135	1138	1138	1139	1138	1139	1140	1135	1121	1123
14	1124	1114	1120	1121	1115	1112	1111	1112	1115	1114	1119	1119	1123	1126	1133	1135	1138	1137	1133	1134	1133	1129	1124	1127	1127	1124
15 c	1129	1128	1128	1128	1127	1126	1127	1125	1126	1126	1126	1126	1125	1125	1126	1127	1127	1126	1126	1125	1126	1125	1125	1124	1124	1124
16	1126	1125	1125	1125	1125	1125	1125	1125	1126	1125	1124	1122	1119	1120	1124	1127	1128	1130	1140	1133	1132	1133	1136	1133	1130	1127
17	1132	1123	1104	1104	1111	1118	1121	1122	1122	1123	1124	1123	1127	1127	1128	1130	1133	1133	1133	1134	1136	1139	1136	1133	1136	1126
18 c	1138	1137	1133	1125	1125	1126	1127	1126	1126	1127	1131	1130	1129	1128	1129	1131	1132	1132	1133	1132	1131	1131	1131	1131	1131	1130
19	1133	1133	1132	1130	1129	1128	1129	1129	1129	1129	1130	1131	1132	1129	1128	1134	1133	1129	1129	1129	1131	1144	1157	1151	1141	1133
20	1143	1137	1129	1114	1116	1120	1121	1124	1125	1126	1128	1128	1129	1129	1131	1132	1131	1133	1138	1146	1148	1148	1153	1147	1146	1132
21	1148	1141	1138	1137	1134	1134	1132	1132	1132	1132	1133	1133	1130	1133	1134	1134	1143	1161	1148	1150	1155	1161	1140	1121	1129	
22	1130	1134	1135	1128	1119	1119	1119	1121	1124	1128	1134	1138	1138	1141	1144	1148	1157	1158	1166	1147	1148	1141	1130	1130	1131	
23	1133	1116	1112	1120	1127	1129	1129	1127	1127	1130	1134	1135	1136	1146	1154	1155	1156	1159	1153	1150	1144	1141	1136	1127	1124	
24	1125	1129	1130	1118	1121	1124	1125	1130	1135	1139	1142	1141	1135	1138	1147	1152	1149	1145	1144	1150	1144	1142	1138	1136	1133	
25	1134	1132	1132	1118	1115	1118	1123	1124	1127	1134	1137	1143	1145	1142	1142	1145	1155	1154	1146	1151	1148	1140	1129	1131	1130	
26	1131	1132	1130	1114	1116	1123	1125	1128	1133	1136	1139	1140	1141	1144	1154	1167	1153	1147	1143	1140	1138	1138	1136	1132	1133	
27	1134	1134	1135	1135	1133	1132	1132	1131	1132	1131	1133	1132	1133	1134	1143	1151	1157	1163	1153	1145	1141	1138	1137	1134	1133	
28 c	1134	1134	1135	1136	1136	1136	1136	1136	1137	1135	1136	1138	1136	1135	1133	1135	1137	1139	1138	1137	1136	1136	1134	1132	1132	
29 c	1133	1132	1132	1131	1132	1132	1133	1133	1135	1134	1138	1136	1136	1134	1136	1139	1139	1138	1139	1139	1139	1139	1139	1139	1135	1129
30	1130	1127	1124	1127	1130	1132	1133	1133	1135	1135	1131	1130	1130	1134	1138	1141	1144	1146	1143	1142	1140	1140	1136	1132	1131	
31	1132	1133	1133	1134	1133	1132	1131	1129	1132	1132	1131	1133	1136	1138	1139	1139	1141	1142	1149	1148	1151	1150	1145	1137	1125	
Mean †	1118	1117	1117	1115	1115	1116	1118	1119	1121	1122	1124	1125	1125	1126	1130	1133	1136	1137	1137	1137	1136	1135	1132	1128	1124	1126

c International quiet day.

* Note that in the previous years this value was 45,000 γ. † Mean of 30 days; 4th omitted.

‡ Approximate value.

** Day "proposed for reproduction" by the International Magnetic Commission (double star).

IV.—AUXILIARY OBSERVATIONS IN ABSOLUTE MEASURE; DAILY VALUES OF TEMPERATURE IN THE EAST ROOM OF THE MAGNET HOUSE; MAGNETIC NOTES FOR THE MONTH. January, 1917.

Date.	Time, G.M.T.†		Horizontal Force.	Declination.	Dip.	Temperature in Magnet House.*	Mag-netic Character of day (0-2).	Date.
	From	To						
Jan.	h m	h m	γ	° ' "	° ' "	a		
3	11 2	11 37	16718	17 24 14	69 39.8	280+	1	1
						4.7	0	2
						4.7	0	3
						4.6	2	4
						4.6	2	5
						4.4	2	6
						4.4	1	7
						4.3	1	8
						4.3	1	9
						4.2	1	10
						4.2	1	11
						4.2	1	12
						4.2	1	13
						4.1	1	14
						4.1	0	15
16	11 49	12 29	16726	17 24 23	69 39.8	4.1	1	16
						4.0	1	17
						4.0	0	18
						4.0	0	19
						3.9	1	20
						3.9	1	21
						3.9	2	22
23	11 51	12 28	16726	17 26 59	69 40.0	3.9	1	23
						3.8	1	24
						3.8	1	25
						3.7	1	26
						3.7	0	27
						3.6	0	28
29	11 15	11 51	16722	17 25 45	69 41.2	3.6	0	29

V.—READINGS OF THE NORTH COMPONENT OF TERRESTRIAL MAGNETIC FORCE

Eskdalemuir. (X.)

FOR EACH HOUR OF GREENWICH MEAN TIME.

February, 1917.

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.	
15,000 γ (-15 C.G.S. unit) +																											
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 c	909	983	967	968	971	978	984	982	979	971	904	958	956	957	964	969	976	981	982	979	983	983	983	983	983	983	974
2	983	982	983	983	982	986	986	986	983	973	961	958	961	962	958	969	976	960	961	968	980	985	984	986	990	983	975
3	989	987	982	983	975	985	984	984	981	973	962	953	945	952	963	972	977	982	976	981	985	980	982	983	983	983	976
4	983	985	983	987	982	986	991	989	981	972	966	958	958	962	971	976	981	980	966	982	987	987	985	987	987	987	979
5	987	987	1004	981	982	983	991	987	983	978	961	955	955	958	959	967	972	966	973	967	957	962	976	981	973	974	
6	972	977	976	975	975	981	981	978	976	972	960	949	941	951	966	972	976	986	973	980	976	987	985	990	990	990	974
7	990	1000	984	975	977	977	989	986	983	977	961	954	950	953	957	958	976	981	987	983	987	1001	996	971	977	977	
8	970	986	965	961	960	976	973	976	971	965	958	948	945	949	954	965	970	975	991	981	981	986	974	975	979	999	
9 c	979	978	976	975	975	979	982	985	984	976	963	953	948	958	966	975	980	985	984	981	977	979	984	983	985	975	
10	985	988	983	992	1003	985	987	981	976	965	952	945	946	954	965	965	976	987	966	960	977	986	982	983	990	975	
11	989	992	985	981	972	979	982	977	979	974	965	958	965	959	968	971	971	971	974	975	979	977	979	989	980	975	
12 c	980	978	985	977	977	977	985	984	984	978	965	959	956	958	961	971	975	980	983	984	984	983	984	984	982	976	
13 c	981	980	983	981	983	987	988	985	995	987	977	968	962	963	963	967	971	981	973	980	977	977	982	983	983	978	
14	983	980	980	981	981	984	990	995	998	987	962	958	971	970	972	974	977	983	989	981	968	979	968	974	970	978	
15	970	970	973	981	982	987	992	996	994	976	965	954	951	959	964	950	958	968	1024	939	953	934	938	933	946	967	
16	945	926	883	933	967	964	965	964	962	962	954	947	937	941	939	952	964	966	970	973	977	970	980	980	981	956	
17	981	975	975	974	973	977	979	981	982	979	976	967	962	955	958	965	961	963	966	967	960	979	981	976	971	971	
18	970	959	959	980	975	977	986	976	991	970	951	949	950	945	952	937	955	966	966	967	974	981	981	977	982	967	
19	981	970	974	965	980	984	991	990	990	961	957	954	946	940	946	961	965	972	978	974	970	961	966	966	975	968	
20	975	980	980	992	989	984	990	985	984	979	936	948	954	949	915	936	968	965	967	971	988	976	972	984	973	969	
21	973	972	974	975	979	978	985	986	986	978	963	961	955	950	961	965	964	971	975	974	979	978	990	1000	980	974	
22	979	977	979	979	980	981	990	988	989	978	964	950	947	954	955	964	965	969	983	971	979	979	997	995	980	975	
23	980	976	980	974	979	985	983	987	985	979	960	964	962	964	964	974	964	964	976	983	998	994	988	984	978	977	
24	978	988	978	969	975	989	989	983	972	966	958	949	959	964	971	974	965	972	978	979	982	983	980	984	981	974	
25	980	979	982	978	979	983	982	988	973	966	955	941	944	955	964	967	958	962	976	980	994	989	980	976	979	972	
26	979	979	983	983	985	978	987	958	964	969	958	949	934	937	954	952	964	975	978	976	981	982	984	987	981	910	
27 c	980	978	978	980	982	982	983	978	974	962	952	946	945	945	956	971	965	962	973	982	983	980	977	982	982	971	
28	981	991	984	981	987	979	982	979	976	966	952	935	941	945	951	956	962	973	980	977	983	982	982	983	981	971	
Mean †	978	979	976	977	979	981	985	983	981	973	960	953	952	954	958	964	969	973	977	975	979	979	980	982	979	973	

VI.—READINGS OF THE WEST COMPONENT OF TERRESTRIAL MAGNETIC FORCE

Eskdalemuir. (-Y.)

FOR EACH HOUR OF GREENWICH MEAN TIME.

February, 1917.

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.	
4000 γ (-04 C.G.S. unit) +																											
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 c	994	984	993	989	992	992	988	984	984	981	984	991	999	1007	1007	1000	997	991	981	994	993	991	989	991	991	991	991
2	991	993	995	995	995	992	989	988	991	988	990	995	1004	1010	1008	1005	1003	994	989	995	994	991	984	969	981	993	
3	981	981	989	990	1005	991	988	987	984	980	980	993	1004	1011	1015	1009	1003	996	994	991	983	989	989	992	993	993	
4	993	994	996	992	991	989	990	989	981	978	981	989	1001	1009	1005	1002	1000	996	996	996	994	994	991	989	988	993	
5	988	997	989	986	981	988	977	979	979	977	979	991	1005	1016	1016	1016	1011	983	1001	1009	978	975	983	984	987	991	
6	987	982	988	988	989	986	983	985	979	973	975	990	1007	1009	1024	1018	1006	1003	989	975	991	993	989	984	980	991	
7	980	981	978	984	982	976	979	983	983	978	978	993	1005	1016	1023	1021	1018	1011	1000	1000	991	996	972	948	991	991	
8	947	948	942	976	976	978	982	982	977	972	975	986	996	1008	1000	1004	998	988	968	982	975	958	970	984	988	979	
9 c	988	992	992	990	990	989	986	983	978	974	979	990	996	1008	1008	1003	998	999	998	999	984	991	991	984	982	991	
10	982	982	977	979	962	962	976	980	974	970	971	983	994	1004	1005	1004	999	1001	1001	1003	997	979	983	985	991	986	
11	991	983	975	980	985	982	983	994	982	978	980	990	996	1002	1011	1012	1010	1006	1002	989	978	979	983	980	983	989	
12 c	983	983	995	985	982	982	984	983	978	972	976	985	993	1000	1005	1006	1002	998	996	995	974	993	988	986	988	989	
13 c	988	987	981	987	986	983	983	985	985	979	976	987	999	1009	1016	1015	1005	1002	988	998	993	991	987	980	984	991	
14	984	984	989	988	987	988	989	986	983	978	979	993	1003	1011													

VII.—READINGS OF THE VERTICAL COMPONENT OF TERRESTRIAL MAGNETIC FORCE FOR EACH HOUR OF GREENWICH MEAN TIME.

Eskdalemuir. (Z.)

February, 1917.

Table with 25 columns (0-23, Midt., Mean) and 28 rows (Day 1-28, Mean). Values are in gamma (γ) units. Includes a note '44,000 γ (-44 C.G.S. unit) +' above the main data columns.

c International quiet day.

§ Drier of vertical instrument changed on 16th.

VIII.—AUXILIARY OBSERVATIONS IN ABSOLUTE MEASURE; DAILY VALUES OF TEMPERATURE IN THE EAST ROOM OF THE MAGNET HOUSE; MAGNETIC NOTES FOR THE MONTH. February, 1917.

Table with columns: Date, Time (From, To), Horizontal Force, Declination, Dip, Temperature in Magnet House, Magnetic Character of day, Date. Data spans Feb 1 to Feb 28.

FEBRUARY, 1917.

Only one disturbance of considerable magnitude was recorded during the month. It began with a feebly marked sudden commencement at 13h 27m G.M.T. on the 15th. In some respects it resembled the disturbance of 4th-5th January 1917, being of short duration, but the range was considerably less: viz. 295 γ N, 324 γ W, 421 γ V. The vertical trace showed the characteristic drop in the value of V soon after midnight. Another slight disturbance was recorded on the 20th, but showed no feature of particular interest. Bays on the traces were recorded at the following times: N 7d 22h, accompanied by an inverted bay on W; inverted bays on W at 20h and 22h on 22nd, the second being accompanied by a bay on the N trace. The traces during the month were comparatively free from pulsationary activity, except during times of disturbance.

* Mean of the Corrected Readings of the Thermometers in the N, W, and V Magnetograph Boxes.

† The times are those of the Declination and Dip observations only. The Horizontal Force values given refer to the mean time of the Declination observations, being derived by a combined use of the actual observations and curve measurements.

IX.—READINGS OF THE NORTH COMPONENT OF TERRESTRIAL MAGNETIC FORCE FOR EACH HOUR OF GREENWICH MEAN TIME. Eskdalemuir. (X.) March, 1917.

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.	15,000 γ (-15 C.G.S. unit) +																									
1	γ 981	γ 979	γ 977	γ 980	γ 979	γ 981	γ 981	γ 980	γ 971	γ 946	γ 955	γ 949	γ 935	γ 942	γ 948	γ 953	γ 969	γ 984	γ 982	γ 981	γ 996	γ 981	γ 981	γ 983	γ 979	γ 971
2 c	978	978	979	980	981	983	981	981	980	975	961	949	944	948	961	964	966	971	975	978	980	981	980	981	980	972
3 c	980	980	981	980	980	983	983	984	984	979	972	961	964	960	959	970	975	979	981	978	989	991	988	991	986	979
4	985	1005	986	981	984	984	985	992	985	979	966	960	962	974	973	983	968	961	984	985	965	959	979	983	982	978
5	982	979	981	984	979	971	966	939	969	939	939	941	932	935	929	946	964	970	979	966	964	975	970	958	965	960
6	964	964	967	968	965	967	969	948	958	954	931	931	946	948	952	964	970	977	978	973	977	988	973	976	970	963
7	970	978	974	979	963	974	972	963	959	951	946	940	947	960	968	963	968	970	977	977	995	980	964	968	968	967
8	967	972	986	983	970	971	975	967	937	938	910	925	950	957	964	966	952	967	1002	972	971	969	954	966	995	963
9	995	966	967	968	968	968	964	962	953	952	951	945	946	952	956	961	962	969	976	975	977	976	976	982	978	965
10	978	982	979	978	983	982	986	991	970	957	946	945	951	955	958	965	967	977	983	970	976	976	977	980	985	971
11	984	981	981	977	989	987	976	971	964	952	944	941	947	953	958	969	971	971	972	978	983	982	982	981	981	971
12	981	980	980	979	977	978	977	981	973	968	956	952	945	947	956	972	971	977	985	976	970	972	968	975	973	971
13	973	976	975	977	978	985	984	984	971	961	946	928	936	930	936	937	945	961	956	968	975	974	988	962	971	962
14	970	971	975	976	984	971	970	974	970	966	957	949	945	945	949	949	952	966	973	975	982	975	974	978	975	967
15	975	976	978	978	980	982	983	980	970	956	936	933	933	945	947	972	980	965	975	974	975	972	976	986	981	968
16	980	975	975	976	975	974	979	982	975	968	952	946	950	945	949	963	964	969	963	980	981	974	975	975	974	968
17	974	969	971	972	972	978	973	975	974	969	955	945	939	942	947	953	960	964	970	980	980	979	979	988	986	967
18	986	989	969	972	973	969	981	981	966	960	951	944	944	949	958	959	962	969	973	982	979	979	976	974	974	968
19	974	972	979	982	985	986	988	985	980	974	956	954	955	956	964	974	980	980	978	975	983	982	995	989	979	976
20	978	978	981	979	979	985	985	989	977	963	961	948	948	968	967	974	976	976	978	983	993	994	1012	996	984	978
21	984	977	979	963	979	987	985	973	959	952	932	938	938	946	964	973	979	987	976	976	978	982	983	983	988	970
22	988	992	979	980	981	983	984	981	973	954	935	933	939	949	949	973	971	985	978	985	999	989	982	984	988	973
23	988	984	980	983	983	978	983	983	954	949	944	931	929	938	942	963	979	986	985	987	981	984	984	984	984	970
24	984	981	981	981	981	983	988	988	994	982	955	949	926	933	934	945	960	973	981	988	994	990	989	988	989	973
25	988	985	983	986	984	986	981	992	978	967	958	940	931	932	928	965	988	993	959	964	969	966	982	978	972	970
26	972	968	965	968	970	974	977	972	977	966	951	927	927	928	939	948	965	972	980	981	982	983	980	980	978	965
27	978	978	978	973	978	977	982	987	982	970	952	940	928	924	931	946	963	970	977	973	978	987	989	992	980	968
28 c	980	976	974	972	973	976	979	982	974	958	937	924	924	930	939	943	956	968	979	982	983	986	987	983	983	965
29 c	983	988	982	983	980	978	982	984	981	967	953	941	932	937	952	962	972	979	981	985	987	988	987	990	990	974
30 c	990	988	986	982	982	983	982	984	982	972	961	942	942	947	946	960	971	979	987	989	989	989	989	988	987	974
31	987	986	987	986	985	989	988	989	980	967	954	952	957	959	967	969	964	977	984	991	992	991	989	989	990	978
Mean	980	979	978	978	978	979	980	978	971	960	948	941	942	946	952	962	968	974	978	979	981	980	981	981	980	970

X.—READINGS OF THE WEST COMPONENT OF TERRESTRIAL MAGNETIC FORCE FOR EACH HOUR OF GREENWICH MEAN TIME. Eskdalemuir. (-Y.) March, 1917.

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.	4000 γ (-04 C.G.S. unit) +																									
1	γ 988	γ 986	γ 988	γ 986	γ 985	γ 986	γ 984	γ 981	γ 978	γ 970	γ 975	γ 985	γ 1000	γ 1007	γ 1011	γ 1005	γ 995	γ 990	γ 990	γ 985	γ 976	γ 985	γ 981	γ 976	γ 983	γ 987
2 c	983	986	988	988	988	986	985	981	977	975	977	985	998	1008	1009	1013	1007	1001	996	993	991	988	988	988	987	991
3 c	987	987	988	987	986	986	986	985	980	974	975	981	1009	1020	1013	1013	1007	1002	1001	997	992	992	991	985	988	993
4	987	980	978	984	985	985	984	979	974	970	969	984	1005	1032	1032	1058	1044	1015	1017	1013	985	965	963	979	981	994
5	981	974	976	967	957	973	995	994	970	966	974	975	987	1017	1018	1002	1000	1003	932	951	968	967	974	975	970	979
6	970	969	975	964	973	970	968	964	977	979	971	980	996	1022	1017	1017	998	985	973	981	979	980	973	973	980	983
7	980	987	984	971	982	967	966	965	966	969	984	990	1006	1014	1022	1006	995	987	990	980	969	959	974	974	978	983
8	978	993	988	952	958	968	968	969	986	984	984	999	1014	1023	1027	1011	995	974	981	965	958	937	963	973	963	981
9	963	950	945	937	960	936	955	956	954	963	978	991	1006	1012	1012	1006	998	991	987	988	987	987	986	989	985	977
10	985	974	968	965	958	952	965	971	966	968	980	993	1004	1005	1007	1003	997	994	991	991	991	989	985	985	981	983
11	980	975	966	968	974	966	971	969	963	962	970	980	1002	1017	1012	1004	994	989	990	989	987	984	984	984	984	983
12	984	984	984	981	980	978	973	964	952	963	972	991	1002	1004	1011	1018	1008	1002	1000	1002	979	984	970	967	969	985
13	969	968	959	959	950	946	941	954	959	967	984	1000	1007	1024	1033											

XI.—READINGS OF THE VERTICAL COMPONENT OF TERRESTRIAL MAGNETIC FORCE FOR EACH HOUR OF GREENWICH MEAN TIME.

Eskdalemuir. (Z.)

March, 1917.

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.	
44,000 γ (=44 C.G.S. unit) +																											
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	1094	1094	1093	1093	1093	1093	1094	1094	1095	1096	1093	1087	1086	1084	1086	1088	1093	1096	1096	1096	1095	1094	1094	1094	1093	1092	1091
2	1092	1090	1090	1090	1091	1091	1092	1092	1092	1092	1090	1087	1086	1084	1086	1088	1093	1096	1096	1096	1095	1094	1094	1094	1093	1092	1091
3 c	1091	1091	1091	1091	1091	1091	1091	1091	1091	1091	1089	1083	1074	1075	1079	1080	1084	1088	1088	1089	1090	1090	1091	1089	1090	1087	1087
4	1088	1076	1077	1080	1082	1084	1084	1084	1087	1088	1087	1080	1075	1070	1076	1081	1090	1092	1092	1096	1116	1132	1121	1105	1091	1089	1089
5	1090	1087	1086	1086	1084	1084	1078	1069	1069	1075	1079	1084	1084	1082	1091	1102	1103	1111	1143	1129	1110	1110	1095	1094	1070	1072	1091
6	1071	1079	1078	1066	1069	1080	1081	1085	1085	1083	1085	1088	1084	1085	1099	1110	1110	1105	1106	1100	1094	1086	1083	1082	1083	1088	1088
7	1082	1078	1074	1066	1061	1070	1076	1080	1080	1081	1079	1078	1075	1075	1077	1085	1093	1093	1093	1098	1096	1089	1087	1087	1087	1088	1082
8	1087	1080	1061	1057	1063	1071	1076	1079	1080	1079	1083	1082	1077	1078	1092	1117	1121	1128	1120	1112	1095	1089	1087	1087	1079	1087	1087
9	1078	1066	1067	1059	1047	1060	1073	1077	1079	1077	1077	1074	1075	1082	1083	1087	1091	1090	1089	1087	1086	1086	1086	1082	1078	1077	1077
10	1077	1078	1080	1081	1078	1077	1076	1072	1071	1069	1068	1065	1065	1069	1073	1078	1082	1085	1091	1090	1085	1083	1082	1082	1082	1080	1077
11	1079	1076	1073	1075	1071	1068	1073	1076	1080	1080	1082	1080	1079	1080	1083	1086	1087	1084	1080	1080	1080	1079	1079	1078	1078	1079	1079
12	1077	1078	1078	1079	1079	1078	1078	1078	1078	1075	1069	1065	1065	1069	1074	1083	1092	1094	1093	1096	1102	1098	1097	1095	1091	1082	1082
13	1091	1087	1084	1082	1080	1075	1072	1067	1061	1059	1059	1060	1066	1072	1075	1084	1103	1109	1108	1095	1088	1086	1083	1082	1081	1080	1080
14	1080	1081	1080	1071	1065	1070	1074	1075	1073	1070	1071	1068	1066	1066	1074	1080	1080	1080	1082	1084	1081	1084	1081	1076	1077	1075	1075
15	1076	1076	1076	1077	1077	1077	1077	1080	1082	1079	1074	1069	1065	1064	1073	1081	1100	1116	1119	1106	1096	1093	1086	1079	1074	1083	1083
16	1074	1074	1075	1076	1077	1078	1078	1080	1082	1078	1074	1067	1064	1070	1074	1082	1091	1099	1107	1109	1101	1088	1085	1081	1080	1082	1082
17	1079	1079	1078	1078	1078	1077	1077	1076	1073	1069	1064	1063	1064	1066	1072	1077	1080	1080	1081	1080	1083	1084	1079	1073	1064	1067	1075
18	1063	1052	1056	1064	1068	1070	1070	1074	1074	1068	1063	1058	1056	1059	1067	1079	1086	1086	1079	1080	1080	1078	1079	1079	1078	1078	1071
19	1077	1075	1074	1071	1069	1069	1069	1070	1071	1069	1065	1061	1056	1057	1062	1070	1075	1079	1079	1078	1076	1078	1075	1074	1071	1071	1071
20	1071	1069	1069	1070	1070	1070	1070	1073	1072	1070	1062	1055	1054	1056	1062	1067	1071	1073	1071	1074	1074	1070	1060	1053	1058	1067	1067
21	1057	1049	1036	1024	1040	1053	1058	1061	1062	1061	1061	1055	1053	1061	1066	1070	1073	1077	1091	1086	1077	1073	1070	1069	1068	1062	1062
22	1067	1064	1063	1064	1065	1065	1065	1069	1072	1070	1068	1061	1057	1059	1067	1074	1075	1076	1076	1073	1072	1067	1067	1064	1064	1067	1067
23	1064	1062	1063	1064	1065	1064	1065	1067	1066	1061	1057	1055	1058	1064	1071	1074	1076	1076	1073	1073	1072	1072	1069	1067	1065	1067	1067
24	1065	1066	1065	1066	1066	1067	1066	1067	1068	1069	1063	1060	1056	1056	1063	1068	1081	1072	1068	1068	1066	1065	1065	1065	1064	1065	1065
25	1063	1064	1064	1064	1064	1064	1063	1063	1063	1063	1052	1052	1052	1055	1068	1084	1112	1138	1112	1086	1077	1077	1075	1064	1063	1073	1073
26	1062	1062	1064	1064	1066	1067	1068	1070	1070	1070	1065	1065	1060	1058	1062	1064	1066	1067	1067	1069	1067	1070	1069	1066	1066	1066	1066
27	1066	1065	1065	1065	1063	1062	1063	1067	1068	1066	1063	1058	1052	1052	1056	1067	1082	1086	1087	1090	1082	1072	1063	1055	1056	1067	1067
28 c	1056	1059	1062	1063	1062	1063	1065	1066	1065	1063	1058	1050	1046	1041	1045	1054	1059	1061	1063	1063	1063	1062	1062	1061	1061	1059	1059
29 c	1061	1061	1061	1060	1060	1060	1060	1062	1062	1058	1051	1048	1047	1049	1051	1058	1062	1062	1062	1061	1060	1060	1060	1060	1059	1058	1058
30 c	1058	1057	1057	1057	1058	1059	1059	1059	1059	1053	1046	1043	1042	1044	1053	1056	1059	1062	1062	1061	1059	1059	1058	1058	1058	1058	1056
31	1058	1058	1058	1057	1057	1057	1058	1060	1059	1055	1048	1043	1045	1048	1051	1058	1058	1055	1055	1057	1057	1058	1059	1060	1059	1059	1055
Mean	1074	1072	1071	1070	1070	1071	1073	1074	1074	1072	1069	1066	1064	1066	1072	1079	1085	1088	1088	1086	1083	1081	1079	1075	1074	1075	1075

c International quiet day.

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

Eskdalemuir.

March, 1917.

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						
Mar.	h m	h m	γ	° ' "	° ' "	280+	0	1
						2·7	0	2
						2·6	0	3
						2·6	1	4
						2·6	2	5
						2·5	1	6
7	11 43	12 20	16704	17 25 10	69 39·3	2·5	1	7
						2·4	2	8
						2·4	1	9
						2·3	0	10
						2·3	0	11
12	15 2	15 41	16744	17 27 8	69 37·8	2·3	0	12
						2·3	1	13
						2·3	0	14
						2·3	1	15
						2·3	1	16
						2·3	0	17
						2·3	0	18
						2·3	0	19
						2·2	1	20
						2·2	1	21
						2·1	1	22
23	10 44	11 23	16701	17 24 14	69 40·2	2·1	0	23
						2·1	0	24
						2·1	1	25
						2·1	1	26
27	11 34	12 18	16690	17 22 34	69 40·8	2·1	1	27
						2·1	0	28
						2·0	0	29
						2·0	0	30
						2·0	0	31

* Mean of the Corrected Readings of the Thermometers in the N, W, and V Magnetograph Boxes.

XIII.—READINGS OF THE NORTH COMPONENT OF TERRESTRIAL MAGNETIC FORCE

Eskdalemuir. (X.)

FOR EACH HOUR OF GREENWICH MEAN TIME.

April, 1917.

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.
	15,000 γ (-15 C.G.S. unit) +																									
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	986	982	981	986	986	987	978	965	952	948	950	951	958	965	976	980	981	984	986	992	991	973	976	975
2	975	980	988	970	965	993	970	962	964	954	938	935	929	931	939	952	965	981	981	982	997	972	970	979	971	965
3	971	976	975	982	1000	991	976	966	966	950	936	924	937	939	950	954	972	980	981	985	975	969	971	976	970	967
4	970	980	973	977	985	979	982	972	946	943	935	935	931	940	947	952	961	969	977	980	984	983	986	989	1000	967
5	1000	992	979	986	985	1000	1001	998	983	960	951	930	913	925	947	962	965	979	981	976	975	968	960	967	970	970
6	970	964	980	950	971	940	961	979	962	941	910	926	931	925	940	962	979	980	997	976	972	974	966	964	967	959
7	967	967	967	969	967	975	977	970	956	940	918	906	922	939	923	955	955	974	991	986	992	977	971	965	966	960
8	966	985	962	980	979	976	971	974	960	953	943	929	924	929	935	956	980	976	987	988	989	1001	995	989	989	968
9	989	951	977	965	966	978	984	978	980	886	882	889	892	866	936	934	950	960	983	974	976	1000	985	972	973	953
10 c	973	974	970	971	969	975	974	975	966	951	932	923	918	926	944	965	966	971	979	985	985	984	983	983	980	964
11 c	980	980	980	981	983	985	985	981	972	957	940	928	930	942	955	965	974	980	984	988	991	988	983	985	983	972
12	983	983	983	983	984	984	985	984	975	960	942	930	918	935	950	963	975	985	988	998	1000	994	976	981	984	972
13	984	1006	978	977	980	980	983	975	966	965	952	941	931	936	948	969	978	974	980	985	983	983	985	985	985	972
14 c	985	985	985	985	983	982	981	981	976	968	957	949	946	947	954	965	974	980	988	991	993	990	989	989	990	976
15	990	990	990	988	991	997	996	990	988	972	935	941	949	946	946	943	955	960	971	985	990	994	999	994	990	977
16	990	999	990	992	990	1002	979	964	958	945	940	917	901	933	963	965	963	967	979	978	977	980	990	969	961	967
17	961	966	976	965	964	952	974	975	968	955	941	931	929	933	941	960	973	994	991	984	991	1010	990	982	986	967
18	986	994	980	981	988	980	988	989	981	965	946	933	926	918	935	954	968	975	980	991	993	987	979	986	978	971
19	978	972	972	975	972	973	977	978	976	966	952	946	945	946	955	962	968	976	981	983	980	977	976	976	977	969
20 c	978	980	980	977	978	977	977	977	974	963	944	933	930	935	946	958	966	978	984	986	985	984	990	999	1002	970
21	1002	986	988	989	988	995	985	984	979	961	946	931	929	937	955	972	976	996	989	992	995	992	993	997	997	977
22	997	997	995	995	992	986	988	990	986	969	953	942	936	946	959	977	976	989	994	998	990	991	997	1004	978	981
23	978	990	983	981	984	984	986	988	976	962	947	939	940	946	957	966	980	988	994	996	996	1000	991	1004	984	977
24	985	987	986	994	983	986	985	983	979	967	952	944	943	951	972	981	983	1018	997	993	996	994	991	989	988	981
25	988	990	987	982	982	986	985	983	980	969	956	943	942	948	959	986	982	1002	1012	1029	1012	1012	1006	1008	1007	985
26	1007	1006	1003	1003	1003	997	1000	977	956	968	962	957	944	924	932	953	963	983	995	1008	978	978	979	977	974	977
27 c	975	973	973	972	970	969	970	970	969	960	944	938	942	948	956	965	973	978	983	984	983	983	985	985	989	969
28	989	989	983	980	982	983	988	983	975	967	954	946	940	943	954	966	980	990	996	995	995	995	1001	993	996	978
29	997	992	989	987	979	979	991	989	972	953	949	952	947	951	955	965	990	980	995	999	992	990	994	995	990	978
30	990	989	991	994	994	989	989	978	965	972	960	950	940	955	960	955	944	985	993	999	991	985	990	1018	1005	979
Mean	983	984	982	980	981	982	982	979	971	957	942	935	932	937	949	962	971	981	988	989	988	988	985	985	984	971

XIV.—READINGS OF THE WEST COMPONENT OF TERRESTRIAL MAGNETIC FORCE

Eskdalemuir. (-Y.)

FOR EACH HOUR OF GREENWICH MEAN TIME.

April, 1917.

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.
	4000 γ (-04 C.G.S. unit) +																									
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	977	946	956	964	970	963	962	958	959	962	974	988	1000	1008	1007	1000	995	989	987	987	987	978	937	964	981	976
2	981	981	972	964	982	967	967	973	952	949	958	973	990	1003	1009	1008	1002	991	994	983	970	976	960	965	959	977
3	959	966	977	975	975	964	962	960	957	956	966	982	1004	1009	1011	1008	1009	990	982	973	962	969	954	959	971	976
4	971	967	959	957	950	951	960	957	963	967	971	992	1002	1013	1010	1000	992	986	985	981	981	981	982	980	979	978
5	979	949	962	965	992	977	973	973	963	971	969	979	992	1004	1010	1009	985	981	980	973	977	954	947	954	917	974
6	917	934	907	956	999	1007	1019	958	951	954	964	978	1003	1009	1009	1006	1012	1001	989	979	978	947	955	940	979	977
7	979	977	975	973	978	978	972	962	950	951	960	970	986	1001	1008	1004	994	986	988	977	975	979	956	930	954	975
8	954	934	945	961	953	959	974	954	949	945	955	971	997	1015	1019	1014	1007	996	992	986	959	959	958	955	933	971
9	933	959	957	959	977	953	959	969	970	959	975	980	1004	1005	1019	1011	1014	998	989	986	976	946	963	975	977	977
10 c	977	976	975	971	969	971	970	960	942	939	944	956	980	997	1007	1010	999	995	991	990	987	986	985	981	978	978
11 c	981	979	978	976	975	975	971	963	953	949	950	969	992	1008	1008	1001	992	987	987	987	989	986	976	982	983	980
12	983	982	981	980	979	975	970	959	951	944	949	967	987	1002	1008	1003	996	987	986	986	983	964	969	979	981	978
13	981	967	961	970	974	971	966	959	971	965	960	970	982	1000	1009	1012	1004	993	988	988	987	986	985	982	981	980
14 c	981	981	979	977	974	972	971	966	960	954	956	970	985	998	1009	1008	999	992	987	988	990	990	988	987	985	982
15	985	982	982	981	978	970	971	983	969	959	959	986	992	1008	1004	1002	992	987	986	981	975	980	966	973	978	981
16	978	965	951	951	955	972	970	977	977	959	966	987	993	1016	1032	1009	993	992	986	981	978	979	955	944	949	977
17	949	948	959	946	956	965	966	951	947	951	965	981	997	1006	1012	1013	1010	1012	1002	997	997	966	936	966	965	975
18	965	968	978	973	973	977																				

XV.—READINGS OF THE VERTICAL COMPONENT OF TERRESTRIAL MAGNETIC FORCE FOR EACH HOUR OF GREENWICH MEAN TIME.

Eskdalemuir. (Z.)

April, 1917.

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	1058	1057	1051	1050	1052	1054	1054	1054	1054	1052	1049	1049	1047	1047	1050	1054	1055	1057	1056	1057	1057	1060	1064	1058	1052	1054	
2	1053	1045	1034	1037	1031	1030	1033	1034	1042	1049	1053	1048	1043	1041	1046	1051	1060	1071	1076	1078	1072	1067	1065	1062	1060	1051	
3	1060	1059	1053	1045	1027	1029	1039	1049	1052	1053	1051	1045	1039	1042	1054	1058	1062	1081	1090	1088	1079	1068	1061	1061	1056	1056	
4	1056	1044	1045	1044	1037	1037	1039	1045	1047	1050	1046	1045	1045	1045	1051	1056	1057	1059	1059	1060	1059	1059	1059	1057	1048	1050	
5	1049	1049	1051	1051	1040	1031	1042	1048	1052	1052	1053	1052	1053	1047	1047	1059	1079	1095	1095	1093	1087	1081	1071	1052	1033	1059	
6	1033	1025	1016	1009	992	991	990	1022	1037	1042	1048	1047	1047	1046	1046	1050	1062	1082	1096	1105	1090	1084	1073	1066	1063	1046	
7	1063	1063	1063	1062	1060	1057	1058	1062	1061	1058	1058	1057	1054	1049	1055	1063	1066	1068	1068	1070	1066	1064	1066	1066	1066	1057	1061
8	1058	1051	1044	1032	1040	1045	1039	1046	1051	1051	1049	1044	1046	1050	1054	1060	1069	1067	1064	1064	1068	1061	1056	1054	1047	1052	
9	1048	1033	1014	1026	1011	1025	1035	1033	1036	1040	1043	1047	1052	1061	1066	1068	1073	1096	1093	1082	1077	1072	1060	1057	1060	1052	
10 c	1060	1062	1063	1064	1065	1063	1063	1063	1064	1061	1060	1052	1046	1043	1048	1054	1057	1059	1060	1060	1060	1060	1060	1059	1060	1050	
11 c	1061	1061	1061	1061	1060	1059	1060	1062	1062	1061	1058	1050	1043	1041	1044	1050	1055	1059	1059	1059	1058	1058	1060	1058	1057	1057	
12	1058	1059	1060	1060	1060	1062	1062	1064	1066	1063	1057	1049	1044	1043	1049	1054	1056	1059	1059	1059	1062	1066	1062	1060	1057	1058	
13	1058	1047	1050	1055	1057	1059	1061	1058	1055	1055	1051	1043	1041	1041	1046	1052	1060	1064	1062	1060	1060	1059	1059	1059	1058	1055	
14 c	1059	1060	1060	1060	1060	1060	1060	1060	1060	1055	1053	1048	1039	1035	1041	1049	1056	1060	1061	1060	1060	1059	1058	1058	1057	1055	
15	1058	1059	1059	1059	1058	1057	1056	1052	1051	1048	1046	1040	1038	1040	1047	1052	1057	1062	1068	1073	1072	1068	1063	1059	1052	1056	
16	1053	1043	1041	1042	1033	1020	1021	1029	1029	1038	1042	1041	1043	1042	1058	1096	1103	1087	1071	1067	1067	1067	1066	1062	1053	1053	
17	1054	1048	1038	1042	1046	1038	1040	1051	1055	1053	1052	1049	1046	1047	1052	1058	1061	1069	1081	1080	1079	1079	1070	1043	1026	1055	
18	1027	1044	1056	1061	1061	1056	1057	1062	1061	1059	1058	1055	1047	1048	1052	1056	1062	1068	1070	1070	1070	1073	1064	1048	1052	1058	
19	1053	1061	1064	1065	1063	1063	1066	1060	1073	1069	1062	1057	1051	1056	1061	1069	1070	1072	1072	1070	1067	1066	1066	1066	1066	1065	
20 c	1067	1067	1067	1067	1067	1067	1066	1066	1066	1064	1059	1054	1051	1047	1045	1052	1057	1059	1060	1061	1063	1062	1063	1062	1060	1060	
21	1061	1061	1062	1062	1063	1062	1062	1063	1063	1065	1064	1061	1055	1052	1055	1060	1064	1065	1069	1067	1065	1064	1064	1063	1064	1062	
22	1065	1065	1065	1065	1066	1068	1065	1064	1064	1061	1058	1051	1047	1048	1055	1060	1064	1068	1071	1076	1076	1070	1065	1056	1053	1063	
23	1055	1053	1057	1063	1065	1065	1065	1063	1063	1062	1060	1054	1048	1051	1058	1063	1070	1074	1074	1072	1071	1069	1070	1061	1061	1063	
24	1062	1064	1062	1047	1055	1065	1067	1066	1062	1057	1055	1052	1050	1052	1058	1067	1076	1085	1089	1081	1073	1071	1069	1068	1068	1065	
25	1069	1068	1068	1068	1070	1073	1074	1072	1068	1066	1060	1056	1051	1058	1063	1065	1067	1070	1072	1073	1079	1082	1077	1072	1069	1068	
26	1070	1069	1070	1070	1071	1063	1061	1060	1059	1052	1051	1050	1055	1070	1093	1100	1101	1095	1099	1110	1102	1089	1070	1072	1073	1075	
27 c	1074	1076	1078	1078	1078	1078	1076	1072	1070	1070	1066	1059	1059	1057	1060	1064	1067	1070	1072	1075	1076	1074	1074	1074	1072	1071	
28	1073	1069	1070	1073	1075	1077	1076	1076	1072	1066	1063	1061	1059	1057	1062	1064	1063	1067	1071	1074	1074	1073	1070	1069	1070	1069	
29	1071	1071	1071	1072	1070	1055	1057	1062	1060	1060	1063	1064	1058	1058	1064	1069	1076	1079	1079	1078	1081	1078	1074	1073	1076	1069	
30	1078	1078	1076	1073	1069	1064	1064	1066	1064	1061	1057	1056	1059	1067	1083	1098	1103	1096	1096	1094	1094	1089	1085	1071	1066	1076	
Mean	1059	1057	1056	1055	1053	1052	1054	1057	1057	1056	1055	1052	1048	1049	1056	1063	1068	1072	1074	1074	1072	1070	1066	1062	1058	1060	

c International quiet day.

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

Eskdalemuir.

April, 1917.

Date.	Time, G.M.T.†		Horizontal Force.	Declination.	Dip.	Temperature in Magnet House.*	Mag-netic Char-acter of day (0-2).	Date.
	From	To						
Apr.	h m	h m	γ	° ' "	° ' "	280+		
2	11 2	11 39	16692	17 22 16	69 40.0	2.0	0	1
						2.0	1	2
						2.0	0	3
						2.0	0	4
						2.0	1	5
						2.0	1	6
						2.0	0	7
						2.0	1	8
10	10 28	11 14	16673	17 17 47	69 41.3	2.0	1	9
						2.0	0	10
						2.0	0	11
						1.9	0	12
						1.9	0	13
						1.9	0	14
						1.9	0	15
17	12 3	12 36	16702	17 25 43	69 39.9	1.9	1	16
						1.9	1	17
						1.9	1	18
						1.9	0	19
						1.9	0	20
						1.9	0	21
						1.9	0	22
						1.9	0	23
24	10 17	10 46	16704	17 19 6	69 39.2	1.9	1	24
						1.9	1	25
						1.9	1	26
						1.9	0	27
						2.0	0	28
						2.0	0	29
						2.0	1	30

APRIL, 1917.

The month was characterised by the absence of any large disturbance and by the frequent occurrence of disturbances of low range, the only really quiet days being 10th, 11th, 14th, 20th, and 27th. Prominent bays on the N trace are shown at 19^h 56^m on the 2nd and at 0^h 51^m on the 13th; and on the W at 21^h 10^m on the 12th (inverted bay accompanied by clearly marked pulsations of 2^{min.} period). It is noticeable that the mean absolute daily range (R_n) on the N component during the month was 19 per cent. greater than that on the W component. Usually the excess of R_n over R_w is much less than this in equinoctial months.

* Mean of the Corrected Readings of the Thermometers in the N, W, and V Magnetograph Boxes.

† The times are those of the Declination and Dip observations only. The Horizontal Force values given refer to the mean time of the Declination observations, being derived by a combined use of the actual observations and curve measurements.

XVII.—READINGS OF THE NORTH COMPONENT OF TERRESTRIAL MAGNETIC FORCE FOR EACH HOUR OF GREENWICH MEAN TIME.

Eskdalemuir. (X.)

May, 1917.

Table with 25 columns (Hour G.M.T. to Mean) and 31 rows (Day 1 to 31). Includes sub-headers for '15,000 γ (-15 C.G.S. unit) +' and 'Day.' with values ranging from 966 to 1005.

XVIII.—READINGS OF THE WEST COMPONENT OF TERRESTRIAL MAGNETIC FORCE FOR EACH HOUR OF GREENWICH MEAN TIME.

Eskdalemuir. (-Y.)

May, 1917.

Table with 25 columns (Hour G.M.T. to Mean) and 31 rows (Day 1 to 31). Includes sub-headers for '4000 γ (-04 C.G.S. unit) +' and 'Day.' with values ranging from 942 to 1005.

c International quiet day.

† Mean of 29 days only; 24th and 25th omitted.

XIX.—READINGS OF THE VERTICAL COMPONENT OF TERRESTRIAL MAGNETIC FORCE FOR EACH HOUR OF GREENWICH MEAN TIME. May, 1917.

Eskdalemuir. (Z.)		FOR EACH HOUR OF GREENWICH MEAN TIME.																							Midt. Mean.	
Hour. G.M.T.	0.	1.	2.	3.	4.	5.	6.	7.	8.	9.	44,000 γ (.44 C.G.S. unit) +										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	1068	1070	1074	1073	1071	1073	1077	1078	1076	1071	1064	1060	1061	1067	1071	1071	1081	1088	1098	1110	1108	1095	1029	1064	1061	1075
2	1062	1051	1014	1032	1065	1063	1062	1065	1063	1070	1078	1081	1087	1116	1121	1131	1161	1158	1151	1137	1137	1119	1109	1105	1092	1094
3	1093	1064	1017	1027	1030	1028	1057	1074	1076	1078	1074	1073	1069	1068	1081	1092	1108	1120	1126	1126	1111	1096	1073	1071	1070	1076
4	1071	1047	1063	1066	1039	1057	1075	1084	1085	1080	1076	1074	1075	1076	1080	1084	1081	1097	1096	1093	1090	1089	1088	1073	1073	1077
5	1074	1074	1065	1043	1029	1044	1060	1069	1069	1073	1075	1074	1076	1074	1077	1082	1086	1088	1090	1090	1090	1090	1090	1090	1090	1074
6 c	1088	1089	1090	1091	1091	1090	1089	1087	1084	1079	1073	1073	1071	1071	1076	1081	1090	1095	1098	1098	1093	1093	1091	1087	1088	1086
7	1089	1087	1079	1071	1071	1077	1080	1077	1080	1072	1065	1060	1065	1078	1084	1090	1093	1095	1098	1097	1093	1091	1083	1080	1080	1080
8 c	1081	1085	1088	1088	1088	1088	1087	1084	1080	1074	1066	1063	1063	1069	1075	1083	1089	1092	1092	1092	1089	1087	1087	1087	1087	1083
9	1088	1089	1089	1091	1093	1093	1093	1091	1089	1086	1079	1075	1073	1075	1077	1087	1097	1105	1113	1113	1102	1098	1095	1091	1072	1091
10	1073	1078	1086	1090	1092	1092	1093	1092	1089	1085	1082	1074	1068	1068	1073	1080	1085	1092	1096	1098	1098	1094	1092	1090	1079	1086
11	1079	1081	1085	1078	1076	1081	1082	1081	1080	1079	1079	1072	1065	1068	1072	1081	1088	1091	1093	1094	1095	1094	1092	1091	1090	1083
12	1090	1090	1089	1090	1092	1093	1093	1090	1087	1085	1081	1073	1068	1066	1070	1078	1087	1090	1092	1095	1092	1090	1090	1081	1065	1085
13 c	1066	1075	1081	1083	1078	1082	1073	1070	1070	1068	1066	1065	1064	1066	1073	1079	1083	1088	1091	1093	1094	1097	1094	1089	1087	1079
14	1088	1084	1082	1082	1082	1080	1081	1082	1079	1080	1068	1063	1065	1072	1080	1089	1097	1105	1113	1124	1127	1126	1106	1100	1098	1090
15	1098	1096	1091	1090	1095	1095	1096	1093	1092	1086	1083	1079	1078	1083	1087	1092	1097	1102	1104	1108	1108	1101	1097	1090	1087	1093
16	1088	1089	1083	1083	1088	1093	1090	1080	1077	1073	1075	1077	1085	1097	1111	1126	1129	1130	1133	1126	1122	1118	1109	1103	1097	1100
17	1097	1094	1091	1089	1087	1085	1097	1097	1092	1087	1089	1085	1078	1080	1086	1090	1098	1102	1100	1099	1100	1100	1099	1098	1096	1092
18	1095	1087	1089	1094	1096	1096	1092	1090	1086	1082	1083	1082	1078	1082	1088	1091	1098	1105	1109	1107	1104	1099	1097	1096	1093	1094
19 c	1096	1096	1096	1098	1099	1101	1101	1099	1096	1095	1089	1084	1084	1087	1090	1091	1094	1097	1098	1096	1096	1095	1093	1094	1094	1094
20 c	1094	1095	1094	1096	1097	1097	1096	1095	1092	1084	1077	1073	1072	1075	1081	1087	1094	1100	1104	1104	1103	1104	1096	1094	1094	1092
21	1094	1094	1094	1096	1096	1096	1095	1094	1091	1086	1077	1070	1074	1078	1083	1088	1093	1098	1100	1096	1099	1098	1096	1094	1093	1091
22	1093	1092	1093	1096	1099	1102	1103	1101	1096	1093	1092	1086	1092	1086	1089	1091	1096	1113	1121	1111	1102	1097	1095	1094	1093	1096
23	1092	1093	1095	1096	1099	1101	1100	1098	1092	1086	1079	1075	1076	1080	1083	1088	1089	1091	1095	1097	1099	1098	1095	1094	1094	1091
24	1093	1094	1094	1094	1096	1098	1096	1092	1090	1086	†	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
25	†	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
26	1073	1070	1065	1068	1071	1075	1077	1078	1074	1066	1058	1053	1054	1059	1061	1068	1076	1086	1090	1088	1087	1086	1084	1084	1083	1073
27	1082	1084	1081	1079	1078	1077	1077	1080	1080	1078	1074	1075	1076	1078	1082	1089	1098	1097	1098	1097	1095	1094	1094	1089	1085	1085
28	1084	1075	1067	1067	1068	1073	1058	1061	1066	1071	1071	1071	1064	1070	1079	1084	1089	1093	1100	1105	1106	1105	1095	1088	1083	1080
29	1081	1077	1063	1066	1065	1053	1050	1064	1077	1081	1082	1078	1082	1087	1087	1087	1093	1105	1106	1103	1105	1102	1092	1076	1060	1082
30	1068	1062	1075	1080	1077	1077	1084	1086	1081	1077	1076	1074	1073	1076	1081	1091	1107	1109	1102	1094	1092	1093	1090	1089	1087	1084
31	1086	1082	1080	1083	1085	1087	1087	1086	1087	1086	1084	1076	1073	1076	1082	1089	1097	1100	1101	1102	1097	1094	1091	1090	1089	1088
Mean †	1084	1081	1078	1079	1079	1081	1083	1084	1082	1080	1077	1073	1072	1076	1082	1088	1095	1101	1103	1103	1101	1098	1091	1089	1085	1086

c International quiet day. † Mean of 29 days; 24th and 25th omitted. ‡ Instrument out of action, while search was being made for leak in gas-pipe.

XX.—AUXILIARY OBSERVATIONS IN ABSOLUTE MEASURE; DAILY VALUES OF TEMPERATURE IN THE EAST ROOM OF THE MAGNET HOUSE; MAGNETIC NOTES FOR THE MONTH. May, 1917.

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	o ' "	o ' "	a		
1	10 31	11 4	16726	17 22 8	69 38-0	280+		
						2-0	1	1
						2-0	1	2
						2-0	2	3
						2-1	1	4
						2-1	1	5
						2-1	0	6
						2-1	0	7
8	10 41	11 17	16712	17 19 52	69 39-0	2-1	0	8
						2-2	1	9
						2-2	0	10
						2-3	0	11
						2-3	0	12
						2-3	0	13
						2-3	1	14
15	10 43	11 16	16721	17 16 49	69 38-7	2-4	0	15
						2-4	1	16
						2-4	0	17
						2-4	1	18
						2-4	0	19
						2-4	0	20
						2-5	1	21
						2-5	1	22
23	10 23	10 57	16720	17 19 8	69 38-8	2-6	0	23
						2-6	0	24
						2-7	1	25
						2-7	1	26
						2-7	1	27
28	10 46	11 17	16710	17 23 26	69 39-6	2-8	1	28
						2-8	1	29
30	11 5	11 19			69 38-6	2-8	1	30
						2-9	0	31

MAY, 1917.

The principal disturbance of the month began on 30th April at 22^h 36^m, and was marked, at that time, by a sudden commencement which produced a change, in 3 minutes, of +61 γ N, +23 γ W, and -11 γ V. In the subsequent course of the disturbance, large movements took place at 22^h on the 1st and about 1^h 30^m on the 2nd, and these were most prominent on the N and W traces. The first consisted of a double oscillation whose range was 114 γ on N, and was accompanied by a sharp drop of 95 γ in V. The V trace showed no well-marked maximum during the *post-meridien* hours of the 1st, but showed two marked minima at 22^h 28^m on 1st and 2^h 41^m on 2nd. The V traces for 2nd, 3rd, 4th, and early hours of 5th show certain similarities involving "repetitions" of a fairly easily recognisable kind. A slight disturbance, involving no movements of large range, but accompanied by numerous rapid pulsations, began with a sudden commencement at 5^h 45^m on 16th. Another sudden commencement, followed by no considerable disturbance, was recorded on 21st at 15^h 39^m. A prominent bay on the W trace, centering at 23^h 44^m on 9th, accompanied by a slow fall in V, is worth notice.

* Mean of the Corrected Readings of the Thermometers in the N, W, and V Magnetograph Boxes.

† The times are those of the Declination and Dip observations only. The Horizontal Force values given refer to the mean time of the Declination observations, being derived by a combined use of the actual observations and curve measurements.

XXI.—READINGS OF THE NORTH COMPONENT OF TERRESTRIAL MAGNETIC FORCE
FOR EACH HOUR OF GREENWICH MEAN TIME.

Eskdalemuir. (X.)

June, 1917.

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.	
	15,000 γ (-15 C.G.S. unit) +																										
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 c	994	991	992	990	993	999	998	992	983	976	973	966	963	960	959	970	983	995	999	1002	1003	1002	1003	1007	999	999	987
2 c	999	996	993	992	1002	1003	1003	1002	999	987	977	969	958	962	965	976	986	1001	1010	1014	1014	1008	1003	1002	1003	1003	993
3	1004	998	996	999	1004	1005	1002	999	995	983	970	965	968	975	983	976	994	1018	1031	1029	1039	1019	1004	999	991	998	
4	991	960	969	964	988	991	986	963	959	950	942	929	934	949	954	964	981	994	1010	1017	1004	997	994	989	986	974	
5	987	988	990	990	992	994	991	985	977	964	955	945	939	948	951	966	985	1001	1005	1015	1021	1004	996	994	993	983	
6	993	998	1000	999	999	999	996	990	982	971	959	953	958	964	967	978	987	1005	1019	1027	1018	1020	1017	1022	1019	993	
7	1019	1025	1025	1024	1029	1025	1024	1018	1004	987	967	945	941	965	985	1022	1029	1033	1050	1064	1050	1015	967	980	981	1007	
8	982	997	1001	984	996	997	983	975	972	951	956	956	945	949	961	973	977	984	998	1006	1001	996	996	993	988	984	
9	998	1004	1014	1006	1012	1013	1003	985	981	971	964	957	955	961	968	996	1006	1016	1020	1014	1006	1005	997	997	996	994	
10	996	996	992	995	1002	995	993	979	973	962	955	951	948	950	959	982	1001	1013	1028	1014	1007	1007	1006	1002	997	988	
11	998	995	992	990	1008	1013	1012	1001	996	986	969	958	950	951	962	971	985	1007	1022	1027	1031	1003	1002	1002	1002	1005	993
12	1005	999	997	1003	1002	1003	1001	997	989	976	956	950	961	973	977	998	1011	1018	1026	1035	1016	1007	999	995	995	995	
13	995	993	997	1000	997	990	998	995	992	986	977	968	968	988	977	1030	1011	1018	1030	1022	1011	1005	998	996	994	995	
14	995	993	994	1000	998	1002	1008	978	987	991	975	969	959	970	984	978	994	1009	1010	1000	1001	1002	1000	999	997	992	
15	997	993	988	988	995	993	994	994	983	981	969	967	962	960	961	969	977	983	1003	1009	1013	1011	1004	1002	1003	987	
16	1003	1000	1000	997	997	1004	1000	985	973	962	963	973	973	973	993	995	1009	1004	1005	1013	1022	1018	1014	999	993	996	
17	993	994	989	996	994	996	994	986	974	958	950	957	955	971	978	975	987	990	1007	1018	1021	1017	1009	1006	1001	988	
18	1002	1000	996	994	1002	1007	1003	989	973	958	939	948	948	962	982	988	992	999	1005	1014	1010	1009	998	996	998	988	
19 c	998	998	1000	1002	1002	999	992	985	979	965	955	952	953	960	971	980	995	1014	1020	1020	1006	1004	1001	999	999	990	
20 c	999	997	999	999	1000	1000	999	998	994	990	971	956	954	967	971	979	991	1005	1007	1015	1016	1013	1006	1002	1002	993	
21	1002	1001	1003	1004	1005	1002	1001	997	988	979	956	950	949	958	976	989	994	997	1007	1014	1022	1022	1013	1009	1006	993	
22	1007	1009	1010	1011	1021	1018	1015	1011	1003	985	966	963	971	955	975	995	1002	1017	1019	1020	1038	1038	1028	1025	1015	1004	
23	1015	1025	1000	1004	1015	1022	1014	1006	990	991	975	955	941	939	967	977	979	988	1034	1048	1015	1003	976	955	988	993	
24**	988	985	980	969	994	972	979	977	961	940	929	932	936	937	1013	1085	991	1038	1020	1010	1009	1023	962	969	986	983	
25	987	1000	996	975	982	972	960	949	938	920	917	917	937	948	957	971	979	984	985	1001	995	1011	996	990	980	969	
26	980	987	983	983	986	986	976	965	976	970	977	967	948	932	930	941	954	968	996	1001	1005	1005	1006	1004	998	992	
27	985	985	986	987	991	986	983	978	971	961	948	942	942	967	990	999	999	1007	1005	1003	1006	992	995	999	999	984	
28	999	996	996	975	977	996	997	995	995	980	958	951	936	934	958	966	991	1011	1002	1007	996	1001	995	996	995	984	
29	996	992	987	1009	1003	1004	1005	990	985	970	954	954	953	964	974	983	1002	1004	1021	1008	998	996	993	1003	990	989	
30 c	990	986	983	991	1000	996	992	986	975	962	948	946	947	947	961	975	992	995	1007	1002	1002	1002	998	997	997	983	
Mean	997	996	995	994	1000	999	997	990	982	971	958	952	950	958	971	985	993	1004	1014	1016	1013	1008	999	997	996	989	

XXII.—READINGS OF THE WEST COMPONENT OF TERRESTRIAL MAGNETIC FORCE
FOR EACH HOUR OF GREENWICH MEAN TIME.

Eskdalemuir. (--Y.)

June, 1917.

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.
	4000 γ (-04 C.G.S. unit) +																									
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 c	980	974	974	964	960	952	942	942	944	954	965	980	995	1005	1006	1005	1001	998	986	979	979	979	979	977	967	976
2 c	967	964	965	974	968	954	947	936	930	933	948	964	981	1000	1006	1007	1002	999	994	978	984	979	981	977	984	973
3	975	974	972	968	967	958	949	942	940	943	959	979	1001	1024	1034	1023	1023	1020	1003	1001	1001	989	979	937	912	980
4	912	898	910	937	952	933	925	928	922	923	947	964	985	998	1004	1005	1005	997	991	985	978	978	979	974	979	961
5	979	979	974	971	968	959	948	937	929	931	941	958	975	994	1001	1007	1008	1000	985	978	973	970	972	974	973	971
6	973	974	975	977	974	965	953	942	934	931	952	970	995	1012	1019	1018	1011	1008	1001	995	985	985	977	980	979	980
7	979	981	979	977	973	960	952	948	951	956	960	982	1005	1019	1035	1033	1043	1002	1001	1017	997	971	944	967	977	986
8	977	980	967	970	986	974	949	957	945	950	959	970	980	986	990	986	985	985	979	978	978	979	982	983	989	974
9	989	988	965	959	958	951	957	963	958	956	960	965	986	1004	1009	1011	1012	1008	1004	995	988	988	979	981	979	980
10	980	979	976	965	964	950	946	942	945	948	958	969	987	997	1003	1010	1007	1003	995	990	991	990	984	975	968	977
11	968	974	977	978	971	952	947	935	932	938	947	954	973	987	995	1001	1001	999	997	985	986	993	992	988	987	974
12	987	972	969																							

XXIII.—READINGS OF THE VERTICAL COMPONENT OF TERRESTRIAL MAGNETIC FORCE
 Eskdalemuir. (Z.) FOR EACH HOUR OF GREENWICH MEAN TIME. June, 1917.

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.
	44,000 γ (.44 C.G.S. unit) +																									
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 c	1088	1095	1092	1093	1095	1097	1099	1100	1101	1099	1090	1081	1078	1081	1083	1088	1095	1101	1104	1101	1099	1098	1098	1096	1095	1094
2 c	1094	1095	1094	1093	1091	1093	1097	1096	1096	1094	1090	1085	1080	1082	1085	1090	1093	1097	1099	1100	1100	1101	1099	1099	1095	1094
3	1093	1092	1093	1094	1094	1095	1095	1093	1093	1087	1085	1081	1078	1079	1084	1088	1089	1095	1099	1103	1103	1106	1107	1097	1075	1092
4	1074	1050	1054	1051	1065	1079	1089	1093	1089	1091	1089	1087	1087	1089	1092	1097	1101	1105	1108	1109	1108	1104	1101	1101	1099	1089
5	1098	1097	1097	1098	1099	1101	1100	1096	1092	1084	1077	1076	1077	1079	1083	1087	1092	1098	1102	1105	1105	1105	1102	1100	1099	1094
6	1098	1098	1097	1098	1099	1102	1104	1103	1100	1099	1094	1085	1083	1082	1084	1087	1091	1094	1098	1100	1100	1097	1096	1094	1093	1095
7	1092	1092	1092	1093	1094	1094	1093	1092	1091	1088	1078	1073	1075	1082	1092	1105	1117	1132	1155	1153	1140	1119	1097	1080	1087	1101
8	1086	1089	1097	1102	1095	1090	1092	1093	1093	1091	1089	1090	1092	1099	1104	1111	1119	1118	1113	1109	1106	1103	1100	1099	1097	1099
9	1095	1088	1085	1086	1085	1087	1088	1090	1090	1088	1086	1082	1078	1081	1085	1088	1095	1099	1100	1100	1098	1095	1095	1090	1087	1090
10	1086	1086	1085	1088	1092	1096	1094	1091	1085	1079	1075	1075	1074	1078	1083	1089	1098	1107	1118	1118	1110	1103	1098	1095	1092	1092
11	1091	1083	1071	1070	1070	1077	1079	1084	1084	1081	1070	1068	1072	1076	1078	1083	1090	1094	1099	1107	1103	1096	1093	1092	1090	1084
12	1089	1088	1090	1090	1091	1092	1093	1093	1089	1086	1082	1078	1077	1080	1079	1080	1087	1097	1107	1107	1108	1107	1103	1098	1095	1091
13	1094	1094	1094	1094	1095	1094	1087	1086	1081	1075	1069	1061	1058	1063	1074	1082	1118	1146	1150	1161	1139	1119	1106	1096	1091	1097
14	1069	1076	1086	1090	1090	1087	1086	1088	1080	1084	1084	1081	1081	1081	1083	1086	1094	1095	1100	1102	1100	1097	1097	1096	1095	1093
15	1092	1090	1091	1088	1084	1089	1092	1094	1089	1084	1075	1071	1072	1076	1080	1086	1089	1097	1099	1100	1097	1096	1094	1092	1090	1088
16	1089	1089	1088	1076	1078	1081	1084	1086	1087	1084	1079	1077	1075	1082	1084	1085	1091	1099	1106	1099	1097	1098	1095	1092	1090	1088
17	1089	1086	1086	1086	1087	1087	1088	1086	1085	1082	1075	1070	1072	1074	1083	1087	1088	1095	1098	1097	1097	1095	1093	1091	1090	1087
18	1089	1089	1089	1085	1084	1086	1087	1086	1082	1073	1076	1073	1075	1075	1081	1084	1089	1093	1091	1091	1093	1090	1087	1082	1084	1084
19 c	1083	1084	1085	1084	1085	1086	1087	1087	1083	1080	1074	1068	1064	1069	1075	1079	1082	1087	1091	1094	1090	1087	1085	1085	1085	1082
20 c	1084	1084	1084	1084	1085	1085	1085	1084	1083	1078	1068	1059	1056	1059	1064	1071	1077	1080	1082	1083	1081	1081	1080	1080	1080	1078
21	1080	1080	1081	1081	1082	1084	1083	1083	1078	1071	1065	1062	1063	1063	1067	1069	1076	1082	1085	1085	1085	1085	1085	1082	1080	1078
22	1079	1077	1076	1076	1076	1077	1076	1077	1077	1071	1064	1056	1058	1065	1065	1067	1068	1070	1072	1073	1075	1077	1077	1074	1076	1072
23	1075	1071	1056	1061	1058	1059	1062	1066	1065	1065	1061	1063	1062	1061	1063	1072	1087	1094	1092	1099	1108	1101	1095	1055	1049	1072
24**	1048	1057	1046	1034	1033	1039	1039	1056	1071	1078	1081	1081	1080	1078	1078	1110	1190	1152	1146	1131	1113	1098	1061	1067	1064	1082
25	1063	1057	1029	1019	1050	1064	1073	1082	1082	1080	1080	1076	1068	1069	1073	1084	1089	1092	1095	1094	1095	1091	1086	1083	1083	1074
26	1083	1081	1081	1079	1082	1084	1084	1084	1082	1080	1074	1072	1072	1073	1076	1079	1085	1091	1090	1088	1087	1088	1087	1085	1084	1082
27	1083	1083	1082	1083	1083	1082	1083	1084	1083	1081	1077	1076	1072	1069	1076	1085	1090	1090	1088	1084	1086	1087	1084	1083	1076	1082
28	1075	1068	1058	1055	1052	1054	1059	1063	1068	1070	1063	1058	1059	1064	1068	1075	1081	1090	1099	1099	1099	1093	1088	1085	1071	1073
29	1071	1053	1059	1058	1057	1059	1060	1068	1075	1079	1075	1071	1066	1068	1079	1085	1096	1106	1112	1111	1105	1098	1093	1084	1080	1079
30	1079	1080	1080	1079	1080	1081	1083	1082	1079	1078	1070	1064	1062	1064	1067	1073	1079	1086	1085	1084	1084	1085	1085	1085	1084	1078
Mean	1084	1082	1080	1079	1080	1083	1084	1086	1084	1082	1077	1073	1072	1075	1079	1085	1095	1100	1103	1103	1100	1097	1092	1088	1084	1086

c International quiet day.

** Day "proposed for reproduction" by the International Magnetic Commission (double star).

XXIV.—AUXILIARY OBSERVATIONS IN ABSOLUTE MEASURE; DAILY VALUES OF TEMPERATURE IN THE EAST
 Eskdalemuir. ROOM OF THE MAGNET HOUSE; MAGNETIC NOTES FOR THE MONTH. June, 1917.

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	° ' "	° ' "	280+		
5	10 43	11 14	16702	17 17 28	69 40.2	2.9 3.0 3.0 3.0 3.1 3.2 3.2 3.2 3.3 3.4 3.4 3.5 3.5 3.5 3.6 3.7 3.7 3.8 3.8 3.8 3.8 3.9 3.9 4.0 4.0 4.1 4.1 4.1 4.2 4.2 4.3	0 0 1 1 0 1 1 1 0 0 0 1 1 1 1 1 0 0 0 0 0 0 1 1 2 2 1 0 0 0 0	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
11	10 31	11 1	16706	17 14 44	69 39.2			
18	10 44	11 21	16709	17 20 45	69 39.8			
26	10 52	11 35	16677	17 16 39	69 41.6			

The first of the three principal disturbances of the month began on the 6th with a sudden commencement at 17^h 10^m. The larger movements did not develop until the evening hours of the 7th. Quiet conditions were resumed by noon on the 8th, but at 0^h 6^m on the 9th another sudden commencement was recorded. The subsequent changes were of very moderate range. The 13th was a day of considerable disturbance, especially between 14^h and 18^h, in which interval six complete oscillations with an average range of 50 γ were recorded on N. The most disturbed portion of the month was from 23rd to 25th. On the 23rd a sudden commencement was recorded at 18^h 54^m, and was followed at about 23^h by the characteristic drop in V. On the following day (24th) another sudden commencement showed at 13^h 38^m well marked on all three components, and followed immediately by the gradual rise in V which characterises most storms, no matter when the sudden commencement takes place. The subsequent fall in V was more gradual than usual.

* Mean of the Corrected Readings of the Thermometers in the N, W, and V Magnetograph Boxes.

† The times are those of the Declination and Dip observations only. The Horizontal Force values given refer to the mean time of the Declination observations, being derived by a combined use of the actual observations and curve measurements.

XXV.—READINGS OF THE NORTH COMPONENT OF TERRESTRIAL MAGNETIC FORCE FOR EACH HOUR OF GREENWICH MEAN TIME.

Eskdalemuir. (X.)

July, 1917.

Table with 24 columns (Hour, 0-23, Midt., Mean) and 31 rows (Day 1-31). Values are magnetic force readings in 15,000 γ (-15 C.G.S. unit) +.

XXVI.—READINGS OF THE WEST COMPONENT OF TERRESTRIAL MAGNETIC FORCE FOR EACH HOUR OF GREENWICH MEAN TIME.

Eskdalemuir. (-Y.)

July, 1917.

Table with 24 columns (Hour, 0-23, Midt., Mean) and 31 rows (Day 1-31). Values are magnetic force readings in 4000 γ (-04 C.G.S. unit) +.

c International quiet day.

XXVII.—READINGS OF THE VERTICAL COMPONENT OF TERRESTRIAL MAGNETIC FORCE FOR EACH HOUR OF GREENWICH MEAN TIME.

Eskdalemuir. (Z.)

July, 1917.

Table with 25 columns (0-23, Midt., Mean) and 32 rows (Day 1-31, Mean). Values represent magnetic force readings in gamma units.

c International quiet day.

XXVIII.—AUXILIARY OBSERVATIONS IN ABSOLUTE MEASURE ; DAILY VALUES OF TEMPERATURE IN THE EAST ROOM OF THE MAGNET HOUSE ; MAGNETIC NOTES FOR THE MONTH. July, 1917.

Table with columns: Date, Time (From/To), Horizontal Force, Declination, Dip, Temperature in Magnet House, Magnetic Character of day, Date. Contains data for July 4, 11, 19, 24, 27, 30.

JULY, 1917.

The month was one of an average value as regards character figure. The disturbed portions of the month fell during the days 2nd-5th, 8th, 16th-20th, 25th-26th. Sudden commencements were recorded at the following times:— 2d 3h 42m, 13d 0h 25m, 27d 13h 56m, 31d 4h 40m.

* Mean of the Corrected Readings of the Thermometers in the N, W, and V Magnetograph Boxes. † The times are those of the Declination and Dip observations only. ‡ Doors of East Room of Magnet House left open.

XXIX.—READINGS OF THE NORTH COMPONENT OF TERRESTRIAL MAGNETIC FORCE FOR EACH HOUR OF GREENWICH MEAN TIME.

Eskdalemuir. (X.)

August, 1917.

Table with 24 columns (0-23) and 32 rows (Day 1-31). Includes sub-headers for 'Hour, G.M.T.', 'Day', and '15,000 γ (-15 C.G.S. unit) +'. Data values range from 866 to 1000.

XXX.—READINGS OF THE WEST COMPONENT OF TERRESTRIAL MAGNETIC FORCE FOR EACH HOUR OF GREENWICH MEAN TIME.

Eskdalemuir. (-Y.)

August, 1917.

Table with 24 columns (0-23) and 32 rows (Day 1-31). Includes sub-headers for 'Hour, G.M.T.', 'Day', and '4000 γ (-04 C.G.S. unit) +'. Data values range from 866 to 1000.

† Mean of 27 days—9th, 10th, 13th and 14th omitted. * * * Day "proposed for reproduction" by the International Magnetic Commission (double star). c International quiet day.

XXXI.—READINGS OF THE VERTICAL COMPONENT OF TERRESTRIAL MAGNETIC FORCE

Eskdalemuir. (Z.)

FOR EACH HOUR OF GREENWICH MEAN TIME.

August, 1917.

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.	
44,000 γ (-44 C.G.S. unit) +																											
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	1098	1065	1021	1026	1055	1067	1065	1075	1079	1080	1084	1081	1071	1070	1079	1082	1083	1087	1086	1092	1101	1096	1089	1087	1084	1076	1076
2	1084	1083	1084	1083	1082	1079	1079	1077	1075	1076	1074	1065	1052	1061	1068	1074	1078	1080	1079	1078	1078	1079	1069	1069	1066	1066	1075
3	1066	1060	1059	1070	1074	1078	1079	1078	1075	1074	1071	1063	1055	1052	1058	1066	1072	1076	1077	1077	1078	1075	1074	1074	1070	1070	
4	1071	1071	1072	1073	1074	1072	1072	1070	1066	1066	1065	1065	1056	1057	1068	1081	1086	1088	1087	1084	1087	1084	1080	1079	1078	1074	1074
5 c	1079	1078	1079	1078	1078	1079	1079	1080	1076	1076	1069	1069	1067	1064	1068	1076	1079	1082	1080	1079	1077	1076	1076	1076	1076	1076	1076
6 c	1077	1077	1078	1077	1081	1083	1083	1080	1077	1074	1073	1069	1056	1050	1060	1065	1069	1073	1076	1077	1078	1077	1076	1076	1073	1072	1073
7	1073	1074	1071	1074	1074	1077	1076	1076	1073	1068	1068	1061	1048	1045	1058	1079	1087	1096	1096	1095	1095	1093	1082	1080	1080	1076	1076
8	1081	1075	1066	1053	1040	1063	1068	1068	1072	1070	1067	1063	1055	1057	1070	1078	1086	1091	1096	1096	1095	1093	1089	1084	1083	1074	
9**	1084	1080	1072	1071	1065	906	916	964	1001	1024	1039	1098	1098	1099	1112	1117	1119	1116	1120	1123	1123	1113	955	791	783	1044	
10	784	913	1056	1017	1063	1077	1091	1090	1089	1089	1107	1102	1107	1109	1109	1108	1107	1107	1109	1118	1113	1109	1099	1099	1092	1082	
11	1093	1085	1081	1068	1069	1064	1066	1074	1078	1078	1082	1083	1087	1090	1095	1098	1099	1098	1097	1098	1098	1098	1096	1095	1095	1086	
12	1096	1096	1094	1094	1095	1096	1097	1097	1096	1092	1091	1088	1089	1093	1098	1109	1107	1102	1097	1096	1095	1096	1095	1093	1087	1096	
13**	1088	1087	1090	1093	1095	1098	1099	1098	1096	1089	1084	1083	1084	1084	1095	1111	1119	>1201	1226	1204	1210	1158	1147	1130	1126	>1120	
14**	1127	1124	1117	1110	1109	1110	1112	1110	1103	1096	1091	1089	1121	1259	1298	>1305	>1264	1236	1202	1140	1106	1067	1014	974	>1135		
15	975	957	925	916	885	900	939	976	1023	1063	1122	1126	1126	1141	1170	1154	1145	1148	1149	1135	1117	1113	1114	1116	1113	1063	
16	1114	1101	1107	1110	1108	1109	1109	1111	1109	1105	1097	1091	1083	1083	1106	1121	1127	1136	1136	1133	1135	1119	1112	1109	1109	1111	
17	1111	1108	1102	1094	1089	1090	1090	1095	1101	1103	1102	1100	1097	1101	1114	1119	1119	1126	1125	1116	1108	1105	1105	1105	1106	1105	
18	1107	1106	1099	1099	1099	1097	1093	1090	1090	1088	1087	1092	1091	1093	1100	1108	1116	1118	1114	1116	1118	1118	1114	1111	1108	1103	
19 c	1109	1100	1100	1103	1103	1102	1102	1101	1100	1097	1093	1087	1088	1091	1094	1100	1103	1107	1111	1111	1109	1107	1104	1104	1103	1101	
20	1104	1105	1105	1106	1106	1108	1107	1105	1105	1094	1088	1075	1072	1073	1092	1103	1111	1115	1108	1107	1105	1106	1109	1108	1110	1101	
21	1111	1092	1079	1062	1051	1033	1048	1040	1053	1063	1077	1093	1146	1164	1193	1247	1235	1258	1232	1193	1142	1107	973	978	881	1106	
22	881	972	973	971	1010	1009	998	1040	1063	1086	1107	1124	1138	1145	1144	1147	1153	1152	1158	1160	1153	1142	1109	1051	1045	1082	
23	1046	1054	1061	1078	1090	1096	1099	1105	1110	1108	1102	1099	1098	1106	1122	1152	1179	1219	1195	1176	1157	1130	1114	1113	1116	1119	
24	1116	1119	1118	1108	1110	1117	1117	1121	1125	1125	1117	1103	1103	1104	1110	1118	1125	1126	1125	1122	1119	1117	1116	1116	1116	1117	
25	1117	1116	1116	1117	1117	1119	1119	1118	1118	1117	1114	1110	1105	1100	1105	1118	1121	1125	1125	1127	1122	1111	1105	1101	1089	1115	
26	1089	1105	973	953	1049	1066	1114	1121	1118	1112	1109	1110	1112	1116	1118	1122	1125	1123	1122	1127	1126	1122	1117	1112	1111	1100	
27	1112	1115	1116	1116	1116	1117	1119	1118	1112	1106	1094	1093	1088	1091	1103	1116	1124	1131	1128	1127	1126	1122	1117	1109	1107	1113	
28 c	1107	1109	1111	1114	1114	1114	1118	1118	1116	1113	1113	1109	1104	1104	1113	1121	1126	1129	1126	1122	1120	1114	1113	1113	1110	1115	
29 c	1110	1110	1112	1112	1114	1118	1122	1125	1125	1122	1118	1109	1103	1102	1105	1113	1117	1118	1118	1115	1115	1116	1115	1114	1115	1115	
30	1116	1116	1116	1116	1117	1119	1121	1123	1121	1116	1110	1106	1101	1098	1102	1116	1123	1122	1116	1116	1123	1128	1122	1119	1119	1116	
31	1115	1112	1111	1110	1110	1111	1114	1115	1115	1110	1109	1105	1099	1097	1098	1105	1111	1111	1112	1114	1119	1117	1115	1114	1114	1110	
Mean †	1084	1084	1075	1073	1078	1082	1085	1089	1092	1092	1093	1090	1089	1091	1100	1111	1115	1120	1118	1114	1111	1106	1097	1093	1087	1095	

c International quiet day.

** Day "proposed for reproduction" by the International Magnetic Commission (double star).

† Mean of 27 days—9th, 10th, 13th and 14th omitted.

Value underlined is interpolated.

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

Eskdalemuir.

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

August, 1917.

Date.	Time, G.M.T. †		Horizontal Force.	Declina- tion.	Dip.	Temperature in Magnet House.*	Mag- netic Char- acter of day (0-2).	Date.
	From	To						
Aug.	h m	h m	γ	° ' "	° ' "	^a		
						280+		
						5.1	I	1
						5.1	I	2
						5.1	0	3
						5.1	0	4
						5.2	0	5
						5.2	0	6
						5.3	I	7
						5.3	I	8
						5.3	2	9
						5.4	2	10
						5.5	1	11
						5.5	0	12
						5.6	-2	13
						5.5	2	14
						5.5	2	15
						5.5	1	16
						5.5	1	17
						5.6	1	18
						5.7	0	19
						5.6	2	20
21	10 36	10 53			69 44°	5.6	2	21
22	10 23	10 32	16645	17 18 41		5.6	2	22
						5.6	2	23
24	10 36	11 12	16706	17 17 0	69 41.2	5.6	1	24
						5.7	1	25
						5.9	2	26
27	11 40	12 12	16713	17 24 5	69 39.6	5.7	1	27
						5.7	0	28
						5.8	0	29
30	10 53	11 24	16681	17 17 34				

XXXIII.—READINGS OF THE NORTH COMPONENT OF TERRESTRIAL MAGNETIC FORCE
FOR EACH HOUR OF GREENWICH MEAN TIME.

Eskdalemuir. (X.)

September, 1917.

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.	
	15,000 γ (-15 C.G.S. unit) +																										
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 c	991	992	993	991	990	989	985	979	966	951	940	942	955	967	976	1004	989	1005	1008	999	1000	996	995	999	1000	984	976
2	1000	1003	1004	1006	1006	1005	1003	991	975	944	928	920	943	954	985	990	971	987	995	1009	1004	999	985	990	991	983	983
3	991	989	988	1000	985	991	996	980	960	959	934	939	934	934	943	971	982	995	1004	998	997	997	991	984	971	976	
4	971	987	992	986	989	990	989	975	960	935	941	925	927	926	945	957	966	985	985	996	998	998	998	1014	990	973	
5	991	991	992	986	983	986	975	951	992	924	877	862	881	916	936	950	962	962	1011	996	995	969	945	936	933	956	
6	993	960	975	966	967	970	967	964	952	942	927	914	923	921	944	966	987	991	986	985	981	984	986	980	976	962	
7	976	976	976	977	978	974	981	970	962	950	927	919	925	933	947	949	968	973	990	992	996	1000	989	989	993	968	
8	993	991	985	987	984	984	971	976	963	955	951	948	943	939	947	961	971	982	989	993	993	994	1001	991	967	973	
9	967	981	991	982	987	1000	992	973	944	936	932	925	923	936	944	969	983	988	981	992	991	993	992	991	986	971	
10	986	988	986	982	986	991	987	974	955	941	935	941	949	956	959	967	979	978	986	991	992	992	994	997	993	975	
11 c	993	990	987	988	990	992	993	985	974	963	948	939	947	951	954	977	977	988	991	992	996	995	993	993	993	979	
12	993	990	990	991	992	992	991	986	981	972	961	953	948	951	961	969	980	987	1000	997	1001	1008	1008	990	1006	983	
13	1006	989	991	991	998	982	977	974	966	961	954	955	954	965	965	977	981	982	983	991	993	1000	995	993	988	980	
14	988	992	993	990	990	988	987	980	969	956	951	951	954	958	966	972	986	980	992	996	1000	999	1001	1001	1001	981	
15	1001	1000	1003	1016	1006	996	997	992	981	966	954	948	952	964	953	968	977	987	994	1004	993	996	996	1000	1001	985	
16	1001	995	994	996	995	987	993	989	981	961	955	947	950	958	968	977	991	998	997	995	1001	999	997	999	1008	984	
17	1008	995	994	990	993	991	994	992	980	976	951	939	939	948	957	968	969	982	1004	1011	1000	1000	985	995	991	981	
18	991	991	995	992	990	992	989	981	972	960	954	952	961	970	977	985	991	1002	1007	994	989	979	985	975	970	982	
19	970	975	997	1001	982	984	985	967	949	937	928	934	941	949	940	956	960	961	983	988	996	996	988	991	991	969	
20	991	993	994	992	995	983	979	991	986	987	950	926	931	930	943	946	966	953	972	989	992	1003	980	953	989	972	
21	989	982	990	990	987	993	991	993	981	966	953	932	918	923	931	951	969	981	981	983	989	995	989	990	991	973	
22	991	992	1001	994	978	986	988	984	975	965	956	956	937	942	952	960	964	977	987	1003	989	985	986	990	990	977	
23 c	990	987	987	988	986	988	988	988	979	965	949	939	938	948	958	968	980	986	991	993	994	992	993	994	996	978	
24	996	994	998	997	999	993	995	993	989	975	950	926	933	951	957	966	975	981	989	993	996	1002	998	996	992	981	
25 c	992	994	997	996	993	991	991	991	987	976	961	944	937	943	953	967	990	988	993	1000	1001	1001	999	998	999	983	
26 c	999	999	1001	1001	1001	1002	1001	999	992	978	961	951	950	954	957	966	983	987	993	1001	1002	1002	1004	1002	1006	987	
27	1006	999	1000	999	999	1001	998	1000	992	983	968	955	956	950	956	962	975	983	987	996	997	998	991	1001	1000	985	
28	1000	989	994	992	997	997	1000	1004	1004	991	960	957	960	956	961	966	981	988	995	998	998	1006	1005	1003	993	987	
29	994	995	994	994	997	999	998	1000	997	982	969	964	966	961	961	967	977	976	989	994	995	995	986	993	1000	986	
30	1000	1004	976	1002	1013	1016	988	980	974	970	954	938	937	944	943	958	963	987	969	996	981	986	994	994	980	976	
Mean	990	990	992	992	991	991	989	983	975	961	946	938	940	947	955	967	976	983	991	995	995	995	992	990	990	978	

XXXIV.—READINGS OF THE WEST COMPONENT OF TERRESTRIAL MAGNETIC FORCE
FOR EACH HOUR OF GREENWICH MEAN TIME.

Eskdalemuir. (-Y.)

September, 1917.

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.
	4000 γ (-04 C.G.S. unit) +																									
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 c	966	966	965	963	960	954	945	935	931	934	951	979	1005	1019	1016	1025	999	994	990	982	979	976	970	968	966	974
2	966	966	966	965	965	957	945	935	931	940	957	976	1003	1014	1033	1000	999	988	976	976	972	963	951	943	938	969
3	938	965	949	942	972	956	967	952	966	955	959	972	984	991	990	991	975	966	957	959	963	959	950	927	940	963
4	940	967	942	945	946	947	939	937	930	942	956	972	998	1004	1008	999	987	978	970	970	971	971	968	971	956	965
5	956	957	955	957	965	962	961	1012	949	916	914	974	988	1004	999	994	988	962	960	958	943	900	891	900	919	956
6	919	939	952	949	947	944	937	928	925	927	938	957	983	984	991	991	973	967	960	960	960	958	947	960	961	955
7	961	960	957	957	959	957	944	936	929	935	944	960	977	986	990	991	975	957	960	966	967	955	959	966	964	960
8	964	954	956	955	955	952	950	951	937	945	948	970	981	984	987	984	977	973	970	967	966	964	943	965	913	961
9	913	936	941	953	965	938	938	961	945	954	960	966	980	988	986	970	968	967	957	955	965	965	954	953	961	958
10	961	960	959	970	962	955	952	949	939	955	956	969	982	990	988	980	976	968	970	970	969	968	966	965	960	966
11 c	960	960	959	956	957	957	953	943	937	938	944	960	984	989	980	977	971	967	965	966	968	967	966	966	966	962
12	966	966	969	959	957	955	949	941	939	939	944	956	975	987	997	994	987	980	981	978	979	979				

XXXV.—READINGS OF THE VERTICAL COMPONENT OF TERRESTRIAL MAGNETIC FORCE
 Eskdalemuir. (Z.) FOR EACH HOUR OF GREENWICH MEAN TIME. September, 1917.

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.	
	44,000 γ (.44 C.G.S. unit) +																										
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 c	1114	1108	1108	1108	1108	1109	1110	1111	1108	1101	1094	1086	1083	1088	1093	1093	1101	1107	1110	1113	1113	1110	1110	1109	1108	1104	1104
2	1108	1107	1107	1106	1105	1105	1107	1108	1104	1103	1101	1097	1090	1091	1104	1120	1120	1127	1125	1125	1124	1118	1109	1108	1103	1109	
3	1104	1086	1063	1074	1067	1070	1084	1096	1096	1104	1104	1104	1106	1111	1118	1124	1135	1138	1140	1134	1125	1121	1116	1104	1096	1105	
4	1096	1079	1087	1100	1106	1110	1111	1110	1109	1101	1096	1096	1096	1099	1100	1106	1115	1121	1123	1121	1116	1112	1111	1101	1096	1106	
5	1096	1101	1104	1104	1100	1100	1104	1078	1079	1084	1092	1098	1109	1118	1118	1120	1133	1156	1171	1175	1155	1102	1055	1044	1073	1108	
6	1073	1088	1111	1121	1122	1123	1126	1127	1126	1123	1118	1111	1108	1114	1119	1129	1146	1152	1140	1133	1129	1126	1123	1118	1117	1122	
7	1117	1118	1118	1118	1118	1117	1119	1120	1119	1117	1119	1120	1112	1111	1115	1119	1123	1129	1126	1120	1118	1119	1118	1115	1111	1118	
8	1111	1111	1111	1112	1113	1114	1116	1114	1115	1111	1108	1103	1103	1106	1111	1115	1117	1118	1117	1116	1116	1116	1116	1116	1089	1053	1110
9	1053	1075	1091	1084	1074	1079	1096	1104	1105	1110	1110	1109	1108	1112	1120	1132	1131	1128	1130	1127	1121	1118	1116	1114	1112	1107	
10	1112	1112	1112	1110	1106	1107	1109	1111	1110	1108	1106	1104	1100	1099	1105	1111	1113	1113	1111	1111	1113	1113	1112	1111	1110	1109	
11 c	1110	1110	1110	1110	1110	1110	1113	1115	1114	1109	1104	1095	1090	1093	1103	1111	1112	1112	1112	1113	1114	1114	1113	1112	1111	1109	
12	1111	1111	1107	1108	1109	1111	1112	1112	1111	1109	1099	1093	1090	1091	1096	1102	1108	1108	1107	1108	1108	1108	1112	1113	1099	1106	
13	1099	1097	1100	1103	1103	1106	1108	1107	1101	1096	1095	1092	1094	1094	1100	1104	1104	1105	1105	1105	1106	1107	1109	1110	1112	1102	
14	1112	1109	1108	1107	1106	1105	1105	1106	1104	1098	1092	1087	1085	1087	1092	1100	1108	1109	1105	1104	1104	1105	1105	1104	1104	1102	
15	1104	1105	1104	1098	1093	1095	1098	1100	1101	1100	1099	1095	1089	1090	1096	1096	1099	1101	1102	1103	1108	1105	1104	1104	1101	1099	
16	1101	1102	1102	1102	1102	1101	1100	1100	1098	1096	1091	1087	1087	1090	1090	1095	1098	1105	1114	1108	1104	1103	1102	1102	1099	1099	
17	1099	1100	1098	1100	1098	1099	1100	1102	1102	1097	1092	1089	1087	1092	1094	1098	1103	1107	1105	1106	1109	1111	1109	1106	1102	1100	
18	1102	1101	1100	1100	1099	1099	1100	1101	1100	1096	1092	1088	1086	1087	1090	1093	1093	1096	1104	1114	1111	1118	1119	1112	1110	1100	
19	1110	1080	1080	1089	1087	1074	1071	1083	1087	1084	1083	1077	1074	1083	1101	1121	1131	1124	1110	1104	1102	1102	1099	1099	1100	1094	
20	1100	1100	1099	1099	1098	1096	1086	1083	1087	1088	1087	1089	1091	1096	1101	1113	1126	1135	1134	1125	1118	1111	1104	1087	1075	1102	
21	1075	1079	1079	1079	1083	1088	1092	1098	1101	1100	1094	1089	1088	1093	1101	1107	1128	1122	1120	1114	1110	1106	1106	1104	1103	1099	
22	1104	1102	1085	1071	1086	1094	1100	1103	1101	1095	1087	1079	1079	1079	1083	1090	1096	1097	1098	1100	1109	1109	1107	1104	1102	1094	
23 c	1102	1102	1102	1102	1101	1100	1100	1102	1102	1102	1098	1092	1085	1086	1089	1092	1094	1098	1099	1101	1101	1101	1101	1101	1100	1098	
24	1100	1099	1098	1094	1088	1093	1095	1098	1097	1094	1091	1088	1085	1086	1089	1095	1098	1098	1101	1102	1103	1102	1101	1101	1100	1096	
25 c	1100	1099	1096	1097	1098	1099	1101	1101	1099	1094	1088	1082	1081	1084	1086	1089	1093	1097	1098	1098	1098	1099	1099	1098	1098	1095	
26 c	1098	1099	1095	1090	1092	1093	1094	1095	1096	1096	1097	1093	1090	1088	1090	1092	1094	1096	1097	1100	1101	1101	1101	1100	1097	1095	
27	1097	1095	1095	1096	1096	1096	1098	1101	1102	1099	1094	1090	1087	1090	1091	1096	1102	1113	1110	1107	1107	1107	1105	1100	1088	1099	
28	1089	1089	1091	1094	1096	1098	1097	1097	1094	1089	1093	1093	1091	1088	1089	1091	1092	1094	1096	1098	1100	1098	1099	1102	1105	1094	
29	1105	1103	1102	1101	1100	1100	1099	1098	1100	1101	1101	1097	1091	1091	1093	1099	1112	1114	1111	1110	1109	1108	1105	1101	1098	1102	
30	1098	1091	1090	1074	1074	1069	1071	1073	1076	1080	1085	1091	1098	1116	1108	1112	1123	1130	1151	1147	1134	1121	1115	1090	1093	1101	
Mean	1100	1099	1098	1098	1098	1099	1101	1102	1102	1099	1097	1094	1092	1095	1100	1106	1112	1115	1116	1115	1113	1110	1107	1102	1099	1103	

c International quiet day.

XXXVI.—AUXILIARY OBSERVATIONS IN ABSOLUTE MEASURE; DAILY VALUES OF TEMPERATURE IN THE EAST ROOM OF THE MAGNET HOUSE; MAGNETIC NOTES FOR THE MONTH. September, 1917.

Date.	Time, G.M.T. †		Horizontal Force.	Declination.	Dip.	Temperature in Magnet House.*	Mag. netic Character of day. (0-2).	Date.
	From	To						
Sept.	h m	h m	γ	° ' "	° ' "	280+		
						5.8	o	1
						5.8	I	2
4	10 10	11 38			69 40.9	5.8	I	3
4	11 11	12 18			69 42.4	5.8	I	4
4	10 18	10 56	16688	17 20 2	69 41.1	5.8	2	5
4	11 21	11 34			69 42.4	5.8	I	6
						5.8	I	7
						5.9	I	8
						6.0	I	9
						6.0	o	10
11	10 45	11 17	16695	17 17 54	69 40.8	6.0	o	11
						6.1	I	12
						6.1	o	13
						6.1	o	14
						6.1	I	15
17	11 8	11 46	16700	17 21 42	69 40.4	6.2	I	16
						6.2	I	17
						6.1	I	18
						6.1	I	19
						6.1	I	20
						6.1	I	21
						6.1	I	22
						6.1	o	23
						6.1	o	24
25	11 9	11 40	16691	17 19 28	69 40.7	6.2	o	25
						6.2	o	26
						6.2	o	27
						6.2	I	28
						6.2	I	29
						6.3	I	30

SEPTEMBER, 1917.

The month was of average character as regards disturbance, there being only one day (5th) on which the absolute daily range was well above normal. The disturbance of that day began suddenly at 6^h 10^m after a tolerably quiet interval of 12 hours, but the phenomena were unlike those of the typical sudden commencement. In N there was only a sharp drop, in W a slight rise followed by a fall and then a rise, in V a sharp rise followed by a fall. The immediately following movements were of a highly pulsatory character. The principal movement associated with this disturbance took place between 20^h 16^m and 21^h 40^m, and included two complete oscillations on N and W, the extreme ranges being 209 γ N; 146 γ W.

Numerous cases of pulsations of short period occurred during the month, one notable case being between 20^h 20^m and 20^h 42^m on 20th, in which interval 25 pulsations were counted on the W trace.

A doubtful sudden commencement, not followed by any disturbance, is noted at 13^h 48^m on 28th.

* Mean of the Corrected Readings of the Thermometers in the N, W, and V Magnetograph Boxes.

† The times are those of the Declination and Dip observations only. The Horizontal Force values given refer to the mean time of the Declination observations, being derived by a combined use of the actual observations and curve measurements.

XXXVII.—READINGS OF THE NORTH COMPONENT OF TERRESTRIAL MAGNETIC FORCE
FOR EACH HOUR OF GREENWICH MEAN TIME.

Eskdalemuir. (X.)

October, 1917.

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.
	15,000 γ (-15 C.G.S. unit) +																									
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	980	973	983	975	973	987	996	986	976	971	947	944	951	961	962	960	974	983	968	989	986	987	985	997	1016	976
2	1016	987	982	992	986	992	990	992	976	951	937	929	928	937	942	951	976	978	986	985	982	1007	996	976	979	973
3	979	988	991	986	984	986	988	988	957	959	926	911	920	932	956	970	978	982	991	983	1014	981	967	986	993	971
4	993	986	987	988	942	958	987	982	958	928	929	928	928	943	956	962	957	981	982	988	987	992	985	986	993	967
5	993	982	976	978	989	1002	995	1001	1001	977	952	940	942	949	952	952	967	980	982	992	995	994	993	992	987	978
6	987	988	988	990	1007	1003	997	984	976	945	947	947	946	936	942	957	973	982	987	989	991	987	988	988	988	976
7	988	987	988	990	991	992	995	997	993	980	964	951	942	945	952	962	978	989	988	999	986	983	998	994	990	981
8	990	1001	992	991	996	1007	1008	1012	1003	985	966	956	947	944	952	980	981	963	966	987	983	985	983	990	990	982
9	990	990	993	992	990	992	994	992	971	970	948	922	930	941	954	971	976	987	993	994	994	994	993	1003	996	978
10	996	994	997	989	985	1002	1001	993	986	971	952	941	937	942	959	971	981	987	992	992	997	991	994	996	997	981
11	997	994	994	995	970	1001	986	982	981	959	941	950	941	945	952	962	971	978	1007	982	986	994	1011	987	990	978
12	990	988	989	987	993	991	991	987	981	972	958	950	955	954	962	977	987	988	985	992	989	990	992	992	991	981
13	991	992	994	994	996	1000	997	994	987	973	962	956	958	965	977	987	1001	993	1016	987	976	1001	1002	982	1002	987
14	1002	994	996	1002	996	986	974	977	987	954	908	871	932	941	943	957	961	992	1004	1007	991	990	985	993	992	972
15	992	987	987	982	986	989	982	990	983	971	961	953	951	956	959	967	976	983	982	982	982	978	979	992	988	977
16 c	988	985	985	985	987	989	992	990	996	967	957	957	955	958	963	971	978	984	990	995	997	998	997	997	994	982
17	994	992	993	997	998	1000	1001	995	984	971	961	952	942	946	954	957	963	970	982	989	990	992	1006	998	991	980
18	991	987	988	992	992	995	998	997	989	971	957	950	949	956	967	967	973	983	987	993	997	998	998	997	997	982
19 c	996	996	996	997	999	1001	1002	995	989	968	958	953	957	962	972	981	986	992	996	1000	999	997	996	999	999	987
20 c	999	996	997	997	1001	1001	1001	1000	992	978	964	955	952	960	972	981	987	987	991	995	999	1001	1002	997	1002	988
21 c	1002	1001	991	991	991	995	997	997	991	977	961	952	950	956	966	977	985	991	995	997	999	1000	1000	1001	1001	986
22 c	1001	998	1000	1000	1001	1004	1006	1005	996	985	968	956	953	951	951	959	969	977	990	1000	1001	1001	1001	1000	1003	986
23	1003	1002	1000	1000	1000	999	1002	999	991	976	962	946	950	951	967	966	985	991	1001	997	996	996	1001	1002	1002	987
24	1001	1000	1001	1001	1000	995	1002	1004	997	983	965	946	950	958	969	978	987	987	991	995	975	979	977	981	981	984
25	981	984	985	1007	1020	1006	971	932	938	948	937	939	945	953	950	949	988	953	968	977	975	980	980	977	974	968
26	973	971	973	974	979	979	979	977	974	966	953	949	947	947	956	967	975	982	987	990	987	979	984	985	986	972
27	986	985	986	986	985	983	982	986	987	976	967	964	955	949	954	974	979	979	972	982	993	994	993	999	994	979
28	993	993	993	994	999	999	996	985	985	964	937	939	906	902	940	953	963	967	982	971	959	966	929	942	968	964
29	968	972	968	953	970	978	959	948	912	933	940	918	892	914	928	939	935	987	959	938	963	970	961	973	977	949
30	977	967	983	978	969	969	972	970	958	929	907	923	930	926	949	958	961	978	980	974	983	988	983	983	979	962
31	978	977	987	972	966	974	981	982	980	961	941	933	927	940	948	947	977	977	965	977	1006	975	1016	977	970	
Mean	991	988	989	989	988	992	991	988	980	965	949	941	941	946	956	965	974	982	986	988	988	990	988	990	991	977

XXXVIII.—READINGS OF THE WEST COMPONENT OF TERRESTRIAL MAGNETIC FORCE
FOR EACH HOUR OF GREENWICH MEAN TIME.

Eskdalemuir. (-Y.)

October, 1917.

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.
	4000 γ (-04 C.G.S. unit) +																									
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	939	940	952	939	945	972	965	952	938	939	952	970	994	1002	994	991	978	970	956	959	963	923	951	965	950	961
2	950	943	949	944	955	961	945	945	935	936	942	967	980	1000	992	983	977	966	912	945	948	910	920	933	938	951
3	938	957	924	937	946	948	950	954	958	957	960	966	985	990	983	977	967	968	960	953	880	890	941	885	894	948
4	894	891	898	939	923	963	945	947	942	956	966	969	980	988	989	978	958	954	961	962	946	954	960	959	952	952
5	952	907	950	952	954	956	956	949	945	950	954	970	992	1003	990	985	978	985	978	975	973	961	959	901	936	947
6	947	951	942	974	977	977	964	964	953	964	969	968	978	980	982	980	974	967	965	965	964	960	958	958	958	966
7	958	956	957	957	957	957	956	951	939	929	931	942	951	966	974	976	973	972	972	974	957	940	943	956	958	956
8	958	967	951	953	955	954	957	956	946	941	943	960	979	992	987	995	999	983	973	960	970	966	963	963	961	966
9	961	958	956	953	952	952	950	939	937	935	942	950	972	978	985	985	977	966	966	960	962	963	963	968	964	960
10	964	963	947	949	974	957	948	944	934	928	934	951	967	977	985	985	976	968	968	967	967	966	965	963	970	960
11	970	954	957	957	973	970	961	949	938	934	937	953	967	986	992	981	974	967	909	946	961	945	949	953	957	957
12	957	959	958	957	954	954	952	945	940	939	946	960	981	985	982	978	976	974	975	973	970	961	958	961	961	962
13	962	959	961	961	962	957	955	951	939	936	945	959	973	979	980	979	987	981	1004	952	968	940	960	955	954	963
14	954	925	927	893	921	935	947	962	973	955	952	982	987	988	978	983	962	921	925	940	946	953	957	961	963	951
15	963	964	953	965	961	951	952	947	940	930	936	948	960	973	978	979	964	951	959	963	959	952	949	940	937	955
16 c	937	952	958	960	958	958	957	951	946	946	951	968	976	983	983	979	975	973	972	969	967	965	964	962	960	963
17	960	959	958	957	957																					

XXXIX.—READINGS OF THE VERTICAL COMPONENT OF TERRESTRIAL MAGNETIC FORCE FOR EACH HOUR OF GREENWICH MEAN TIME.
 Eskdalemuir. (Z.) October, 1917.

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.
44,000 γ (-44 C.G.S. unit) +																										
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	1094	1098	1086	1088	1091	1088	1088	1094	1101	1100	1099	1102	1102	1105	1116	1115	1115	1119	1125	1123	1122	1125	1114	1104	1088	1105
2	1088	1082	1092	1100	1097	1084	1095	1101	1104	1101	1097	1095	1093	1097	1102	1111	1118	1128	1147	1128	1122	1112	1091	1089	1093	1103
3	1094	1076	1071	1082	1092	1101	1104	1104	1105	1102	1106	1110	1109	1111	1113	1126	1130	1124	1126	1130	1124	1106	1095	1072	1104	1092
4	1072	1054	1030	1011	1001	1024	1067	1087	1101	1107	1112	1115	1118	1118	1123	1128	1128	1120	1116	1116	1113	1111	1110	1110	1094	1110
5	1104	1096	1102	1107	1107	1105	1104	1107	1107	1110	1111	1107	1103	1100	1113	1120	1119	1120	1118	1116	1118	1116	1119	1110	1109	1108
6	1094	1085	1094	1085	1070	1076	1085	1095	1102	1104	1102	1103	1101	1104	1106	1108	1112	1113	1111	1111	1110	1110	1110	1110	1109	1108
7	1109	1110	1110	1109	1109	1109	1109	1111	1114	1116	1114	1111	1106	1104	1103	1106	1107	1109	1108	1109	1119	1127	1118	1110	1106	1111
8	1106	1097	1098	1103	1104	1103	1103	1103	1104	1104	1100	1096	1094	1098	1103	1113	1129	1155	1149	1134	1120	1117	1117	1114	1110	1111
9	1110	1109	1107	1108	1108	1108	1108	1110	1112	1110	1107	1105	1103	1101	1103	1107	1114	1115	1112	1113	1112	1111	1110	1103	1092	1108
10	1093	1092	1097	1096	1086	1082	1092	1103	1109	1111	1111	1109	1106	1104	1103	1105	1109	1110	1109	1111	1111	1113	1112	1111	1104	1104
11	1104	1101	1104	1102	1091	1072	1080	1096	1104	1108	1109	1107	1105	1105	1110	1113	1114	1118	1127	1122	1116	1114	1104	1103	1105	1105
12	1105	1105	1104	1104	1104	1105	1107	1110	1112	1110	1106	1103	1101	1106	1111	1113	1115	1114	1114	1113	1113	1114	1113	1111	1109	1109
13	1110	1110	1108	1108	1106	1104	1105	1107	1111	1110	1109	1105	1102	1103	1104	1105	1108	1106	1106	1146	1134	1117	1088	1077	1071	1107
14	1071	1075	1075	1079	1088	1094	1097	1093	1086	1092	1095	1098	1096	1099	1119	1124	1136	1140	1123	1111	1105	1104	1106	1105	1101	1102
15	1102	1102	1102	1102	1101	1103	1106	1108	1111	1110	1107	1104	1104	1102	1105	1109	1117	1122	1120	1117	1117	1119	1116	1108	1103	1109
16 c	1103	1102	1105	1107	1107	1107	1106	1109	1109	1108	1105	1103	1104	1106	1107	1108	1109	1108	1106	1106	1106	1106	1107	1107	1107	1106
17	1108	1109	1109	1108	1107	1107	1107	1110	1111	1109	1101	1098	1098	1101	1108	1114	1118	1122	1121	1118	1116	1115	1107	1099	1102	1109
18	1102	1103	1106	1107	1107	1106	1107	1110	1112	1111	1109	1104	1101	1102	1107	1113	1121	1120	1115	1113	1111	1109	1109	1108	1107	1109
19	1108	1108	1108	1108	1107	1107	1108	1110	1113	1110	1105	1102	1101	1102	1104	1106	1108	1106	1106	1106	1109	1109	1109	1108	1107	1107
20 c	1107	1107	1107	1107	1107	1106	1106	1109	1113	1114	1108	1104	1102	1102	1104	1107	1110	1109	1108	1108	1108	1108	1107	1107	1107	1108
21 c	1108	1105	1105	1106	1106	1107	1107	1109	1113	1114	1111	1105	1102	1102	1104	1104	1106	1106	1105	1105	1105	1104	1104	1104	1104	1106
22 c	1105	1105	1105	1105	1104	1104	1104	1106	1110	1109	1107	1104	1101	1101	1105	1111	1113	1112	1112	1110	1108	1107	1106	1106	1104	1107
23	1104	1102	1103	1103	1103	1102	1101	1103	1105	1105	1100	1101	1099	1101	1103	1106	1108	1116	1113	1107	1110	1110	1108	1103	1102	1105
24	1103	1104	1104	1104	1104	1103	1098	1100	1103	1106	1103	1103	1101	1102	1105	1110	1111	1110	1109	1110	1122	1116	1110	1106	1099	1106
25	1099	1092	1088	1083	1064	1054	1060	1073	1075	1087	1096	1101	1103	1106	1116	1128	1133	1137	1137	1132	1128	1124	1119	1117	1116	1103
26	1117	1116	1115	1113	1112	1111	1111	1111	1112	1113	1112	1110	1108	1107	1107	1109	1108	1116	1119	1122	1122	1118	1115	1114	1113	1111
27	1111	1109	1109	1108	1108	1108	1107	1107	1107	1108	1105	1104	1104	1109	1108	1108	1116	1119	1122	1122	1118	1115	1114	1113	1112	1111
28	1112	1109	1108	1107	1105	1105	1104	1104	1103	1101	1098	1101	1108	1119	1115	1114	1114	1113	1112	1126	1148	1155	1134	1100	1098	1113
29	1098	1082	1100	1073	1060	1075	1086	1096	1100	1103	1106	1112	1129	1135	1139	1138	1145	1158	1148	1161	1144	1125	1109	1090	1070	1112
30	1070	1074	1034	1051	1072	1087	1098	1105	1112	1117	1122	1118	1112	1122	1127	1126	1145	1123	1120	1123	1120	1113	1110	1109	1107	1105
31	1107	1096	1077	1087	1093	1093	1091	1097	1105	1112	1113	1112	1114	1114	1118	1131	1128	1124	1125	1121	1122	1112	1111	1092	1081	1108
Mean	1101	1097	1096	1096	1094	1095	1098	1103	1106	1107	1106	1105	1104	1106	1110	1114	1118	1120	1119	1119	1117	1115	1110	1104	1100	1107

c International quiet day.

XL.—AUXILIARY OBSERVATIONS IN ABSOLUTE MEASURE; DAILY VALUES OF TEMPERATURE IN THE EAST ROOM OF THE MAGNET HOUSE; MAGNETIC NOTES FOR THE MONTH.
 Eskdalemuir. October, 1917.

Date.	Time, G.M.T.†		Horizontal Force.	Declination.	Dip.	Temperature in Magnet House.*	Magnetic Character of day (0-2).	Date.
Oct.	h m	h m	γ	° ' "	° ' "	$^{\circ}$		
						280+		
						6.3	2	1
3	12 26	12 54	16704	17 24 30	69 40.6	6.3	2	2
						6.3	1	3
						6.3	1	4
						6.3	1	5
						6.3	1	6
						6.2	1	7
						6.2	1	8
9	11 44	12 21	16691	17 20 50	69 41.9	6.1	1	9
						6.2	1	10
						6.2	1	11
						6.2	0	12
						6.2	2	13
						6.2	2	14
						6.2	0	15
16	10 28	10 56	16712	17 18 28	69 40.0	6.2	0	16
						6.1	0	17
						6.1	0	18
						6.1	0	19
						6.0	0	20
						6.0	0	21
						6.0	0	22
23	10 31	10 57			69 41.0	5.9	0	23
24	11 1	11 31	16705	17 17 30	69 41.0	5.9	1	24
						5.8	1	25
						5.8	0	26
						5.8	0	27
						5.8	2	28
						5.8	2	29
30	11 2	11 30	16680	17 16 46	69 42.6	5.7	1	30
						5.7	2	31

OCTOBER, 1917.

The month was free from large disturbance, but smaller disturbances were frequent, particularly during the first five and last four days of the month. The 21st was an exceedingly quiet day. The interval between 6^h and 16^h on 9th showed intense "internal" activity. A doubtful sudden commencement is noted at 6^h 26^m on 13th. Prominent bays are shown on N at 17^h 15^m and 23^h 28^m on 29th, and at 23^h 4^m on 30th.

XLI.—READINGS OF THE NORTH COMPONENT OF TERRESTRIAL MAGNETIC FORCE FOR EACH HOUR OF GREENWICH MEAN TIME. Eskdalemuir. (X.) November, 1917.

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.	15,000 γ (-15 C.G.S. unit) +																									
I	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	
	977	978	981	981	977	982	987	986	966	964	946	922	912	929	939	953	965	968	978	976	983	987	986	985	984	967
2	983	987	986	981	979	981	989	987	976	959	939	926	925	931	950	961	972	977	985	980	986	984	985	980	981	970
3	981	982	981	982	980	981	987	990	990	973	951	943	944	947	956	954	959	975	981	986	995	991	989	989	992	975
4	992	989	985	984	986	989	991	990	986	971	952	945	946	954	963	973	976	982	985	988	987	990	987	990	987	989
5	988	988	988	987	988	990	991	991	988	979	966	959	958	962	970	975	983	986	985	986	989	990	994	995	994	982
6	994	991	984	994	992	994	995	990	984	979	968	961	957	965	974	979	980	986	987	990	991	994	999	996	993	984
7	992	991	993	992	994	990	993	993	990	984	973	969	968	974	979	984	987	989	993	998	989	993	993	993	993	995
8	995	991	985	984	987	992	996	996	990	976	965	969	966	967	975	984	988	991	994	995	996	995	994	993	992	986
9 c	992	990	990	992	993	994	994	991	989	981	970	965	966	970	976	983	988	991	994	999	999	999	999	998	996	988
10 c	995	992	993	993	992	993	992	991	987	980	976	972	969	969	971	968	973	985	987	988	992	992	988	992	991	985
11	991	993	990	993	993	997	997	996	993	990	980	976	973	978	982	987	985	992	984	988	998	994	994	994	994	989
12	993	995	993	995	996	997	1003	996	986	928	962	966	961	960	972	947	950	959	971	967	948	947	961	949	950	970
13	950	969	961	967	970	964	971	976	976	962	951	947	947	951	961	969	977	983	976	971	980	988	987	984	976	969
14	975	973	969	970	984	981	979	992	1002	981	946	927	941	952	946	953	965	974	977	978	980	979	976	978	975	970
15 c	975	975	976	978	978	979	980	981	978	969	957	950	947	951	962	970	966	977	982	984	986	990	986	981	980	973
16 c	979	979	979	981	984	986	986	984	976	968	960	955	953	955	967	975	981	984	985	988	986	987	989	988	988	977
17	987	982	984	985	987	989	988	985	980	975	967	960	948	948	954	964	968	973	975	979	983	983	983	982	981	975
18	980	977	980	980	980	986	989	988	987	973	958	958	955	954	947	950	959	968	973	983	987	986	979	983	988	974
19	988	982	980	981	984	988	984	983	972	970	951	936	929	938	941	952	962	964	966	958	959	976	983	985	977	967
20	976	968	977	977	970	989	982	983	975	969	965	960	959	956	955	962	961	991	961	958	960	966	968	976	977	969
21	976	977	977	977	977	985	982	982	980	979	969	961	961	966	973	976	981	985	988	989	989	989	989	990	988	979
22	987	987	986	989	989	988	988	994	991	975	969	965	965	969	977	982	986	991	995	994	989	990	988	985	984	984
23 c	983	980	984	988	990	993	994	994	992	993	975	972	970	974	978	983	988	993	996	997	996	991	989	990	988	987
24	987	987	987	989	993	997	997	999	993	987	976	964	962	959	962	963	966	973	968	968	977	971	982	994	990	979
25	989	982	981	982	986	987	997	993	989	983	976	968	966	962	962	972	963	942	948	964	941	947	967	971	1005	972
26	1004	963	960	960	965	972	975	975	951	950	960	957	948	942	907	929	942	952	963	974	991	975	959	980	964	970
27	964	966	971	970	981	981	947	970	970	957	941	938	936	945	951	964	962	966	956	961	976	946	959	967	980	961
28	979	971	964	970	963	969	975	971	958	957	949	942	944	946	950	956	965	969	972	980	984	970	973	974	978	965
29	977	980	975	970	978	978	982	973	978	971	962	958	954	948	947	953	960	966	978	979	983	984	983	982	981	971
30	981	983	981	975	980	972	974	980	982	969	947	931	944	949	952	955	963	969	976	978	976	980	979	977	977	969
Mean	984	982	981	982	983	985	986	987	982	972	961	954	952	956	960	966	971	977	979	981	983	982	983	984	984	975

XLII.—READINGS OF THE WEST COMPONENT OF TERRESTRIAL MAGNETIC FORCE FOR EACH HOUR OF GREENWICH MEAN TIME. Eskdalemuir. (-Y.) November, 1917.

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.	4000 γ (-04 C.G.S. unit) +																									
I	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	
	938	942	952	956	961	968	957	955	954	941	940	949	966	977	979	978	976	965	962	956	938	950	949	950	956	957
2	956	968	960	956	962	965	956	948	939	931	938	953	968	973	979	979	972	965	963	952	956	945	942	936	954	957
3	954	957	957	956	957	957	955	949	945	935	938	949	963	979	982	978	967	970	967	963	954	952	957	955	958	958
4	957	957	955	957	954	955	955	951	946	937	939	951	962	970	972	969	965	964	960	960	957	956	955	954	955	957
5	955	958	957	956	955	955	953	951	947	941	942	955	968	973	974	972	971	967	965	960	965	961	956	954	947	959
6	947	948	963	949	955	952	947	946	946	943	949	968	970	976	982	974	974	973	969	971	972	947	955	958	957	960
7	957	955	955	951	944	944	949	951	948	946	951	962	970	975	978	980	976	974	972	977	966	965	962	958	960	961
8	960	951	946	947	941	955	956	954	949	946	944	957	967	973	977	973	969	969	967	965	963	962	958	956	957	958
9 c	957	958	957	957	956	956	955	952	949	944	949	956	970	971	975	975	971	969	968	968	965	963	961	959	960	961
10 c	960	956	956	957	957	958	955	951	949	946	946	957	969	971	977	978	976	964	965	964	961	958	960	959	957	960
11	956	950	951	948	955	954	953	953	951	948	950	962	968	970	969	969	967	964	948	955	957	957	954	955	956	957
12	956	956	958	958	960	956	953	958	954	972	982	975	979	968	989	999	972	952	943	931	921	917	896	911	941	955
13	941	940	960	959	954	954	948</																			

XLIII.—READINGS OF THE VERTICAL COMPONENT OF TERRESTRIAL MAGNETIC FORCE FOR EACH HOUR OF GREENWICH MEAN TIME. November, 1917.

Eskdalemuir. (Z.)

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.	
	44,000 γ (-44 C.G.S. unit) +																										
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	1081	1094	1099	1101	1102	1099	1101	1101	1106	1112	1115	1118	1122	1119	1116	1116	1118	1119	1116	1117	1119	1113	1111	1109	1107	1110	
2	1107	1103	1098	1101	1102	1102	1103	1106	1111	1112	1112	1113	1111	1110	1111	1112	1114	1112	1111	1112	1112	1112	1111	1109	1105	1109	
3	1105	1105	1105	1106	1106	1104	1104	1106	1108	1110	1108	1105	1104	1105	1109	1114	1118	1115	1112	1111	1109	1107	1105	1105	1104	1108	
4	1104	1102	1101	1102	1104	1104	1104	1105	1106	1108	1107	1106	1106	1103	1105	1107	1106	1107	1107	1106	1107	1106	1105	1105	1104	1105	
5	1104	1103	1102	1102	1102	1102	1102	1102	1103	1105	1102	1099	1098	1100	1100	1102	1103	1104	1104	1103	1103	1103	1103	1101	1099	1102	
6	1100	1100	1098	1096	1099	1099	1099	1101	1103	1103	1101	1103	1106	1102	1101	1103	1104	1104	1105	1104	1104	1109	1105	1102	1100	1102	
7	1100	1099	1099	1099	1098	1098	1097	1098	1099	1099	1098	1098	1098	1096	1095	1096	1099	1098	1097	1098	1103	1103	1102	1101	1099	1099	
8	1099	1099	1099	1099	1099	1099	1099	1099	1100	1102	1101	1099	1096	1095	1095	1097	1096	1097	1096	1096	1097	1097	1097	1096	1095	1098	
9 c	1095	1095	1095	1095	1093	1093	1093	1094	1095	1095	1093	1085	1087	1090	1090	1093	1095	1095	1094	1093	1093	1093	1094	1094	1094	1093	
10 c	1094	1093	1092	1092	1091	1091	1091	1093	1094	1095	1094	1093	1091	1094	1096	1101	1102	1104	1102	1100	1100	1100	1101	1100	1100	1096	
11	1101	1100	1097	1096	1096	1095	1095	1095	1095	1094	1095	1094	1089	1091	1092	1094	1096	1098	1100	1102	1100	1097	1097	1097	1096	1096	
12	1096	1095	1095	1094	1092	1092	1091	1091	1091	1095	1088	1087	1090	1096	1100	1118	1145	1163	1158	1119	1136	1140	1145	1128	1100	1110	
13	1100	1092	1096	1100	1103	1103	1103	1103	1104	1104	1103	1101	1101	1101	1101	1102	1103	1103	1106	1114	1114	1110	1109	1113	1118	1104	
14	1118	1113	1107	1074	1078	1090	1092	1091	1087	1089	1089	1089	1092	1100	1104	1110	1110	1107	1104	1103	1102	1102	1102	1101	1102	1098	
15 c	1102	1102	1102	1101	1101	1100	1100	1101	1102	1104	1103	1102	1102	1103	1103	1104	1107	1106	1103	1102	1102	1102	1101	1100	1100	1102	
16 c	1100	1100	1100	1099	1098	1098	1097	1098	1100	1100	1099	1096	1097	1096	1098	1100	1102	1101	1100	1100	1100	1098	1097	1096	1096	1099	
17	1096	1097	1097	1096	1096	1096	1095	1096	1096	1096	1094	1093	1096	1096	1100	1104	1105	1106	1106	1104	1103	1101	1100	1100	1099	1099	
18	1099	1096	1095	1095	1096	1095	1095	1094	1093	1092	1092	1092	1093	1096	1104	1106	1109	1108	1106	1103	1100	1100	1100	1100	1094	1098	
19	1094	1087	1078	1086	1089	1092	1090	1085	1089	1088	1087	1090	1092	1098	1102	1107	1108	1108	1109	1114	1116	1109	1102	1097	1096	1097	
20	1096	1088	1071	1079	1081	1072	1080	1084	1085	1086	1084	1083	1081	1081	1086	1092	1101	1108	1106	1110	1114	1111	1105	1098	1092	1091	
21	1092	1091	1089	1089	1091	1090	1091	1091	1089	1089	1089	1089	1087	1087	1089	1091	1092	1091	1091	1091	1091	1091	1090	1089	1088	1090	
22	1088	1088	1087	1087	1088	1088	1088	1087	1088	1091	1091	1089	1088	1087	1086	1086	1088	1088	1088	1088	1088	1091	1092	1091	1092	1089	
23 c	1092	1091	1089	1088	1087	1086	1086	1086	1086	1087	1084	1082	1082	1082	1082	1082	1084	1085	1084	1084	1085	1087	1087	1087	1086	1085	1085
24	1085	1085	1083	1083	1082	1080	1080	1079	1082	1082	1079	1078	1079	1082	1085	1090	1093	1096	1099	1102	1101	1101	1091	1084	1078	1087	
25	1078	1079	1081	1082	1082	1079	1077	1079	1081	1082	1080	1080	1082	1087	1089	1092	1097	1109	1130	1122	1136	1135	1117	1106	1085	1094	
26	1085	1082	1080	1067	1057	1071	1081	1084	1088	1087	1085	1083	1087	1097	1114	1122	1118	1117	1117	1113	1105	1096	1096	1096	1082	1093	
27	1082	1052	1069	1074	1073	1075	1083	1087	1091	1092	1090	1090	1090	1093	1095	1102	1114	1121	1118	1100	1102	1104	1096	1078	1089		
28	1078	1075	1080	1085	1087	1085	1086	1088	1091	1092	1093	1095	1096	1095	1093	1094	1094	1092	1091	1095	1096	1092	1089	1088	1087	1090	
29	1087	1082	1082	1083	1082	1082	1082	1081	1079	1082	1083	1083	1084	1090	1095	1092	1096	1100	1096	1091	1089	1087	1085	1085	1085	1087	
30	1085	1083	1082	1082	1082	1080	1080	1080	1083	1083	1083	1082	1084	1085	1085	1088	1090	1090	1089	1089	1089	1089	1089	1088	1085	1085	
Mean	1095	1092	1091	1091	1091	1091	1092	1093	1094	1095	1094	1093	1094	1095	1097	1100	1103	1105	1105	1104	1104	1103	1101	1099	1095	1097	

c International quiet day.

XLIV.—AUXILIARY OBSERVATIONS IN ABSOLUTE MEASURE; DAILY VALUES OF TEMPERATURE IN THE EAST ROOM OF THE MAGNET HOUSE; MAGNETIC NOTES FOR THE MONTH. November, 1917.

Eskdalemuir.

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	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o			
7	10	44	11	18	16724	17	15	47	69	39.7	5.7	0	1	1																	
14	11	2	11	24						69	41.1	5.4	0	1	14																
15	10	37	10	44	16701	17	13	39			5.3	0	15	15																	
20	11	24	11	54	16709	17	15	58		69	39.5	5.2	1	20	20																
27	10	46	11	22	16698	17	18	36		69	41.1	5.0	2	27	27																

NOVEMBER, 1917.

This was the quietest month of the year, and, indeed, rather suggested a November in a quiet year. It presented very few features of interest. The most disturbed day was the 12th. A doubtful sudden commencement is shown at 7^h 39^m on that day, but was followed by no considerable movements. The changes in V were practically all above the undisturbed value. On N a prominent peak is shown at 16^h 26^m. Very few cases of pulsatory movement occurred beyond those noted between 1^h and 2^h, and 20^h to 21^h on 6th, and 19^h to 20^h, 23^h to 24^h on 25th.

* Mean of the Corrected Readings of the Thermometers in the N, W, and V Magnetograph Boxes.
 † The times are those of the Declination and Dip observations only. The Horizontal Force values given refer to the mean time of the Declination observations, being derived by a combined use of the actual observations and curve measurements.
 ‡ Doors of East Room of Magnet House left open.

XLV.—READINGS OF THE NORTH COMPONENT OF TERRESTRIAL MAGNETIC FORCE FOR EACH HOUR OF GREENWICH MEAN TIME. Eskdalemuir. (X.) December, 1917.

Table with 25 columns (0-24 hours) and 31 rows (Day 1-31). Includes 'Midt.' and 'Mean.' columns. A central header indicates '15,000 γ (-15 C.G.S. unit) +'. Values range from approximately 944 to 1006.

XLVI.—READINGS OF THE WEST COMPONENT OF TERRESTRIAL MAGNETIC FORCE FOR EACH HOUR OF GREENWICH MEAN TIME. Eskdalemuir. (-Y.) December, 1917.

Table with 25 columns (0-24 hours) and 31 rows (Day 1-31). Includes 'Midt.' and 'Mean.' columns. A central header indicates '4000 γ (-04 C.G.S. unit) +'. Values range from approximately 911 to 958.

Value underlined is interpolated.

† Mean of 29 days—14th and 16th omitted.

c International quiet day.

** Day "proposed for reproduction" by the International Magnetic Commission (double star).

XLVII.—READINGS OF THE VERTICAL COMPONENT OF TERRESTRIAL MAGNETIC FORCE FOR EACH HOUR OF GREENWICH MEAN TIME.

Eskdalemuir. (Z.)

December, 1917.

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.	
	44,000 γ (·44 C.G.S. unit) +																										
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	1088	1078	1076	1075	1075	1075	1075	1074	1073	1071	1068	1069	1072	1073	1076	1079	1082	1084	1083	1086	1081	1077	1077	1077	1075	1077	
2	1075	1071	1069	1069	1070	1072	1072	1071	1072	1072	1068	1068	1067	1074	1078	1090	1105	1104	1109	1105	1098	1091	1088	1086	1084	1081	
3	1085	1084	1083	1083	1084	1084	1082	1082	1082	1080	1079	1078	1075	1082	1089	1088	1088	1087	1085	1082	1087	1094	1083	1079	1060	1083	
4	1060	1034	1038	1061	1067	1072	1073	1074	1075	1074	1071	1069	1069	1072	1072	1082	1087	1088	1099	1103	1094	1088	1088	1081	1082	1075	
5	1083	1080	1079	1080	1080	1080	1080	1079	1079	1077	1077	1077	1077	1077	1079	1084	1084	1085	1090	1088	1086	1086	1078	1084	1080	1081	
6	1081	1079	1081	1079	1080	1079	1078	1078	1078	1077	1075	1073	1073	1072	1072	1075	1080	1079	1079	1079	1083	1082	1080	1079	1078	1078	
7	1079	1079	1078	1077	1076	1075	1075	1073	1073	1073	1073	1070	1072	1075	1077	1078	1079	1079	1082	1087	1093	1086	1082	1080	1078	1078	
8	1079	1077	1077	1069	1043	1038	1049	1053	1061	1066	1068	1065	1065	1069	1078	1080	1079	1083	1102	1093	1091	1089	1086	1080	1075	1072	
9	1076	1060	1067	1073	1075	1075	1073	1074	1075	1074	1075	1075	1075	1075	1078	1079	1079	1079	1077	1076	1077	1077	1078	1074	1069	1075	
10 c	1071	1073	1075	1077	1077	1077	1076	1074	1075	1076	1077	1077	1077	1079	1080	1085	1086	1084	1085	1083	1084	1088	1088	1086	1085	1080	
11	1086	1084	1082	1082	1081	1080	1079	1076	1075	1075	1074	1070	1069	1073	1075	1077	1076	1077	1077	1077	1076	1078	1074	1074	1073	1077	
12	1074	1070	1069	1070	1070	1070	1070	1071	1071	1071	1073	1071	1070	1077	1084	1086	1083	1081	1078	1076	1076	1076	1076	1076	1076	1075	
13 c	1078	1077	1076	1076	1075	1074	1073	1073	1074	1076	1077	1077	1076	1076	1077	1081	1081	1080	1078	1078	1078	1080	1081	1079	1077	1077	
14	*	..	..	..	..	..	..	..	..	*	1075	1073	1071	1071	1082	1088	1081	1079	1077	1079	1086	1081	1077	1077	1073	..
15	1075	1071	1071	1071	1072	1071	1066	1062	1066	1070	1074	1075	1078	1078	1081	1081	1081	1081	1079	1081	1081	1081	1081	1079	1077	1075	
16**	1079	1077	1076	1075	1075	1075	1074	1074	1070	1070	1065	1064	1069	1073	1074	1097	1196	>1319	>1364	>1364	1297	1111	977	1021	1073	>1120	
17	1075	1081	1030	876	1005	1051	1069	1078	1083	1085	1088	1093	1101	1105	1102	1106	1106	1103	1100	1098	1098	1097	1096	1096	1096	1076	
18	1098	1098	1098	1098	1098	1093	1088	1086	1085	1086	1086	1096	1098	1099	1107	1130	1129	1114	1111	1120	1127	1123	1106	1102	1096	1103	
19	1098	1077	1087	1092	1087	1086	1085	1088	1092	1092	1096	1098	1095	1095	1096	1100	1104	1106	1112	1113	1117	1127	1122	1108	1104	1099	
20	1106	1102	1099	1097	1095	1094	1093	1095	1095	1091	1089	1090	1092	1092	1094	1099	1099	1100	1099	1099	1101	1104	1093	1093	1088	1096	
21	1090	1086	1080	1086	1088	1091	1093	1093	1093	1093	1091	1090	1092	1092	1092	1095	1097	1098	1100	1101	1104	1108	1102	1101	1098	1094	
22 c	1100	1092	1088	1093	1095	1096	1097	1098	1100	1103	1102	1100	1099	1097	1098	1101	1103	1102	1101	1098	1099	1099	1101	1099	1097	1098	
23 c	1098	1095	1091	1088	1090	1092	1093	1095	1098	1100	1099	1096	1096	1093	1096	1101	1102	1102	1100	1099	1099	1104	1107	1102	1097	1097	
24	1099	1097	1096	1091	1086	1086	1089	1092	1095	1096	1096	1091	1092	1094	1093	1094	1094	1093	1094	1094	1093	1092	1092	1092	1091	1093	
25	1092	1091	1090	1089	1089	1089	1088	1088	1089	1089	1087	1086	1084	1085	1089	1095	1098	1103	1114	1129	1136	1128	1115	1110	1081	1098	
26	1082	1088	1089	1090	1089	1089	1089	1089	1088	1091	1093	1092	1094	1094	1099	1103	1103	1109	1124	1140	1152	1134	1113	1107	1103	1102	
27	1104	1101	1099	1097	1093	1092	1091	1094	1097	1098	1096	1095	1097	1096	1100	1105	1105	1103	1102	1103	1104	1100	1098	1095	1094	1098	
28	1095	1095	1094	1093	1092	1092	1091	1092	1092	1094	1096	1095	1096	1096	1097	1100	1101	1100	1099	1099	1098	1098	1096	1095	1094	1093	
29	1094	1093	1092	1092	1091	1092	1091	1089	1088	1088	1085	1089	1092	1093	1094	1099	1101	1102	1097	1096	1096	1095	1095	1094	1094	1093	
30	1095	1096	1096	1095	1095	1094	1093	1091	1092	1094	1093	1091	1092	1091	1091	1095	1098	1098	1097	1097	1097	1098	1096	1096	1095	1095	
31 c	1095	1095	1095	1095	1095	1094	1093	1093	1093	1094	1093	1095	1095	1095	1094	1096	1097	1097	1097	1095	1094	1094	1094	1094	1093	1093	1095
Mean †	1087	1083	1081	1076	1080	1081	1082	1082	1083	1084	1083	1083	1084	1085	1087	1092	1093	1093	1095	1096	1097	1096	1092	1090	1086	1087	

c International quiet day. * Gas failed. † Mean of 29 days; 14th and 16th omitted.
 ** Day "proposed for reproduction" by the International Magnetic Commission (double star).

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

Eskdalemuir.

December, 1917.

Date.	Time, G.M.T.†		Horizontal Force.	Declination.	Dip.	Temperature in Magnet House.*	Magnetic Character of day (0-2).	Date.
	From	To						
Dec.						28.0 †		
						4.5 †	I	1
						4.1 †	I	2
						4.4	I	3
4	10 44	10 53	16718	17 14 21		4.2	I	4
4	11 47	12 4			69 38.9	4.2	I	5
						4.2	I	6
						4.1	I	7
						4.1	2	8
						4.1	I	9
						4.0	0	10
11	10 57	11 52	16727	17 16 3	69 38.1	4.2	0	11
						3.9 †	0	12
						3.8 †	0	13
						3.7 †	I	14
						3.6 †	I	15
						3.6 †	2	16
						3.3 †	2	17
						3.8	2	18
						3.8	I	19
						3.8	I	20
						3.6	0	21
22	10 26	10 57	16695	17 13 49	69 40.9	3.7	0	22
						3.8	0	23
						3.7	0	24
						3.3 †	I	25
						3.3 †	2	26
27	12 10	12 44	16694	17 17 6	69 41.4	3.5 †	0	27
						3.2 †	0	28
						3.3	0	29
						3.5	0	30
						3.5	0	31

DECEMBER, 1917.

The storm on 16th has been described elsewhere (*vide* Chree, *Proc. Roy. Soc.*, xciv. p. 525). One of its features was a rapid fall in V soon after 21^h, the rate being about 17 γ per minute. Another was the occurrence of two very well-marked minima in V, 3 hours before and 3 hours after midnight of 16th. Sudden commencements were noted at 0^h 40^m on 1st, 4^h 51^m on 18th, and 22^h 10^m on 28th. No disturbance occurred after the last of these. Pulsations, some of 30 seconds period, occurred on N between 1^h and

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.)

Eskdalemuir.

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

1917.

Table with 24 columns (1-23, Midt) and 13 rows (Month and Season, J.F.M., A.M., J.J.A.S.O.N.D., Y., W., Eq., S.). Content: ΔX (or ΔN). XLIX.—NORTH COMPONENT (all days except Jan. 4, May 24, 25, Aug. 9, 10, 13, 14, Dec. 14, 16).

—ΔY (or ΔW). L.—WEST COMPONENT (all days except Jan. 4, May 24, 25, Aug. 9, 10, 13, 14, Dec. 14, 16).

Table with 24 columns (1-23, Midt) and 13 rows (Month and Season, J.F.M., A.M., J.J.A.S.O.N.D., Y., W., Eq., S.). Content: —ΔY (or ΔW). L.—WEST COMPONENT (all days except Jan. 4, May 24, 25, Aug. 9, 10, 13, 14, Dec. 14, 16).

ΔZ (or ΔV). LI.—VERTICAL COMPONENT (all days except Jan. 4, May 24, 25, Aug. 9, 10, 13, 14, Dec. 14, 16).

Table with 24 columns (1-23, Midt) and 13 rows (Month and Season, J.F.M., A.M., J.J.A.S.O.N.D., Y., W., Eq., S.). Content: ΔZ (or ΔV). LI.—VERTICAL COMPONENT (all days except Jan. 4, May 24, 25, Aug. 9, 10, 13, 14, Dec. 14, 16).

x and n mark respectively the mean maximum and minimum hourly values in each month or season. The - over the n denotes that the value to which the letter is prefixed is to be taken with the minus sign.

LII.-LIV.—DIURNAL INEQUALITIES OF THE MAGNETIC COMPONENTS, DECLINATION (D.), INCLINATION (I.), AND HORIZONTAL FORCE (H).

Eskdalemuir.

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

1917.

Month and Season.	ΔD																							
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Noon.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	Midt.
LII.—DECLINATION (measured positive towards the West) (all days except Jan. 4, May 24, 25, Aug. 9, 10, 13, 14, Dec. 14, 16).																								
J.	-2.20	-1.41	-1.50	-1.90	-1.73	-0.45	-0.30	0.03	0.29	1.50	2.41	3.35	x 4.16	3.82	2.65	1.44	0.51	0.34	-0.81	-1.25	-1.82	-2.22	-2.14	\bar{n} 2.76
F.	-2.34	-1.44	-1.66	-1.80	-1.89	-1.72	-1.40	-1.56	-1.80	-0.68	1.37	3.51	5.02	x 5.59	5.00	3.02	1.78	1.13	0.77	-0.82	-1.49	-2.98	\bar{n} 3.34	-2.27
M.	-1.72	-1.91	-2.01	-2.31	-2.73	-2.65	-3.26	\bar{n} 3.84	-3.37	-1.05	1.81	5.09	x 7.27	7.20	5.93	3.60	1.58	0.02	0.03	-1.03	-1.64	-1.67	-1.65	-1.71
A.	-2.34	-2.35	-2.04	-1.71	-2.44	-2.88	-3.96	\bar{n} 4.29	-3.78	-1.57	1.59	4.88	7.35	x 7.57	6.14	4.20	2.37	1.04	0.19	-0.54	-1.54	-2.25	-1.77	-1.87
M.	-1.80	-2.12	-2.21	-2.09	-3.53	-4.50	-4.62	\bar{n} 4.87	-3.48	-0.80	2.21	4.96	6.48	x 6.63	5.75	4.21	2.88	1.56	0.33	-0.16	-1.05	-0.98	-1.55	-1.27
J.	-1.03	-2.51	-2.39	-3.20	-4.67	-5.68	-6.37	\bar{n} 6.43	-5.36	-2.64	0.69	4.64	6.78	x 7.56	7.03	5.75	4.23	2.52	1.55	0.74	0.18	0.00	-0.08	-0.71
J.	-2.04	-2.80	-3.11	-3.84	-4.26	-5.04	-5.70	\bar{n} 5.74	-4.79	-2.46	0.82	4.48	6.80	x 7.72	6.94	5.10	3.56	2.00	1.48	1.14	0.50	0.29	-0.15	-0.94
A.	-2.24	-2.56	-3.37	-3.62	-3.79	-5.04	\bar{n} 5.22	-4.96	-3.43	-0.88	2.85	6.74	x 9.07	8.74	6.43	3.94	1.69	0.49	-0.27	-0.82	-0.63	-0.75	-1.03	-1.36
S.	-1.85	-2.62	-3.34	-2.84	-2.97	-3.23	-3.46	\bar{n} 4.54	-3.50	-0.85	2.95	6.32	x 7.75	7.37	5.72	3.82	2.05	0.78	0.36	-0.13	-1.25	-1.99	-2.15	-2.40
O.	-2.69	\bar{n} 2.82	-2.53	-1.65	-1.28	-1.62	-2.03	\bar{n} 2.82	-2.71	-0.75	2.43	5.42	x 6.79	6.48	5.31	3.59	1.64	0.64	0.49	-1.22	-2.77	-2.74	-2.79	-2.51
N.	-1.48	-1.20	-0.75	-0.82	-0.94	-1.21	-1.44	-1.67	-1.76	-0.71	1.47	3.46	4.35	x 4.54	4.25	3.05	1.33	0.60	-0.12	-1.75	-2.03	-2.21	\bar{n} 2.62	-2.35
D.	-1.73	-1.21	-0.39	-0.46	-0.75	-0.76	-0.93	-1.01	-1.47	-0.93	0.58	2.24	3.53	x 3.83	3.44	2.41	2.06	1.61	0.45	-0.98	-2.56	-2.43	\bar{n} 2.57	-1.96
Y.	-2.00	-2.08	-2.11	-2.19	-2.58	-2.90	-3.22	\bar{n} 3.48	-2.93	-0.98	1.76	4.59	6.28	x 6.42	5.38	3.68	2.14	1.06	0.37	-0.57	-1.34	-1.65	-1.82	-1.84
W.	-1.94	-1.32	-1.07	-1.25	-1.33	-1.03	-1.02	-1.05	-1.19	-0.21	1.46	3.14	4.26	x 4.45	3.84	2.48	1.42	0.92	0.07	-1.20	-1.98	-2.46	\bar{n} 2.67	-2.33
Eq.	-2.15	-2.42	-2.48	-2.13	-2.35	-2.59	-3.18	\bar{n} 3.87	-3.34	-1.05	2.20	5.43	x 7.29	7.15	5.77	3.80	1.91	0.62	0.27	-0.73	-1.80	-2.14	-2.09	-2.12
S.	-1.93	-2.50	-2.77	-3.19	-4.06	-5.06	-5.48	\bar{n} 5.50	-4.27	-1.69	1.64	5.21	7.28	x 7.66	6.54	4.75	3.09	1.64	0.77	0.23	-0.25	-0.36	-0.70	-1.07

ΔI . LIII.—INCLINATION (all days except Jan. 4, May 24, 25, Aug. 9, 10, 13, 14, Dec. 14, 16).

J.	0.04	-0.11	-0.21	-0.52	-0.76	\bar{n} 0.84	-0.70	-0.35	-0.02	0.35	0.57	x 0.64	0.35	0.28	0.24	0.25	0.13	0.25	0.15	0.03	0.07	0.07	0.02	0.07
F.	-0.31	-0.30	-0.32	-0.45	-0.59	\bar{n} 0.87	-0.72	-0.56	0.09	0.88	x 1.14	1.04	0.74	0.42	0.20	0.15	0.03	-0.12	0.17	-0.01	-0.05	-0.08	-0.25	-0.24
M.	-0.57	-0.50	-0.50	-0.50	-0.48	-0.50	-0.31	0.28	0.95	1.48	x 1.60	1.18	0.67	0.46	0.04	-0.01	-0.14	-0.23	-0.35	-0.48	-0.41	-0.50	\bar{n} 0.59	-0.59
A.	-0.71	-0.60	-0.55	-0.69	-0.69	-0.65	-0.24	0.40	1.30	2.09	x 2.23	1.99	1.39	0.71	0.11	-0.16	-0.62	-0.88	\bar{n} 0.92	-0.80	-0.73	-0.7	-0.74	-0.68
M.	-0.43	-0.33	-0.14	-0.12	-0.10	0.13	0.45	0.85	1.50	x 1.73	1.65	1.29	0.83	0.34	-0.40	-0.91	-1.07	\bar{n} 1.31	-1.25	-0.86	-0.59	-0.34	-0.43	-0.50
J.	-0.41	-0.28	-0.26	-0.53	-0.31	0.00	0.62	1.10	1.71	x 2.23	2.21	1.90	1.24	0.35	-0.46	-0.66	-1.14	-1.6	\bar{n} 1.66	-1.42	-1.12	-0.54	-0.53	-0.49
J.	-0.13	-0.13	-0.37	-0.40	-0.28	0.12	0.61	1.26	1.92	x 2.43	2.27	1.41	0.69	-0.04	-0.78	-1.13	-1.25	\bar{n} 1.45	-1.35	-0.82	-0.64	-0.42	-0.26	
A.	-0.46	-0.59	-0.51	-0.61	-0.19	0.22	0.66	1.57	2.18	x 2.73	2.23	1.44	0.71	0.04	-0.30	-0.94	-1.50	\bar{n} 1.61	-1.39	-1.21	-0.77	-0.64	-0.62	-0.43
S.	-0.79	-0.84	-0.78	-0.78	-0.74	-0.51	-0.07	0.65	1.45	2.17	x 2.26	1.71	1.20	0.79	0.24	-0.08	-0.30	-0.70	-0.94	\bar{n} 0.96	-0.92	-0.69	-0.69	-0.68
O.	-0.77	-0.85	-0.87	-0.95	\bar{n} 1.23	-1.03	-0.65	0.06	1.11	1.98	x 2.21	1.92	1.49	0.92	0.50	0.09	-0.17	-0.39	-0.50	-0.41	-0.44	-0.43	-0.72	-0.88
N.	-0.41	-0.41	-0.52	-0.61	-0.76	\bar{n} 0.77	-0.75	-0.36	0.39	1.02	x 1.25	1.19	0.91	0.64	0.34	0.19	-0.01	-0.07	-0.19	-0.13	-0.07	-0.19	-0.27	-0.41
D.	-0.30	-0.14	-0.25	-0.53	-0.68	\bar{n} 0.87	-0.78	-0.43	-0.01	0.58	x 0.91	0.82	0.83	0.47	0.42	0.03	-0.09	-0.08	0.00	0.23	0.24	0.00	-0.07	-0.31
Y.	-0.44	-0.42	-0.44	-0.56	-0.57	-0.46	-0.16	0.37	1.05	1.64	x 1.71	1.38	0.92	0.45	0.01	-0.26	-0.51	-0.66	\bar{n} 0.69	-0.61	-0.47	-0.38	-0.44	-0.45
W.	-0.24	-0.24	-0.32	-0.53	-0.70	\bar{n} 0.83	-0.74	-0.42	0.11	0.71	x 0.97	0.92	0.71	0.45	0.30	0.16	0.02	-0.00	0.03	0.03	0.04	-0.05	-0.14	-0.22
Eq.	-0.71	-0.70	-0.67	-0.73	\bar{n} 0.79	-0.67	-0.32	0.35	1.20	1.93	x 2.07	1.70	1.19	0.72	0.22	-0.04	-0.31	-0.55	-0.67	-0.66	-0.62	-0.55	-0.69	-0.71
S.	-0.35	-0.33	-0.32	-0.42	-0.22	0.11	0.59	1.19	1.83	x 2.28	2.09	1.51	0.87	0.17	-0.49	-0.91	-1.24	-1.43	\bar{n} 1.44	-1.21	-0.82	-0.54	-0.50	-0.42

ΔH . LIV.—HORIZONTAL FORCE (all days except Jan. 4, May 24, 25, Aug. 9, 10, 13, 14, Dec. 14, 16).

J.	2.8	0.5	0.1	4.4	8.3	x 9.9	8.5	3.8	-0.9	-5.8	-8.8	\bar{n} 9.7	-5.1	-2.9	-1.1	-0.5	1.6	0.0	1.3	2.4	1.4	0.1	-0.7	-2.8
F.	3.1	1.2	1.8	3.9	6.2	x 10.3	8.4	6.7	-2.6	-14.4	\bar{n} 18.4	-16.8	-12.2	-6.6	-1.6	0.6	2.9	6.4	3.1	4.5	3.9	2.9	3.8	2.8
M.	7.3	5.9	5.4	5.4	5.8	6.5	4.0	4.7	-15.2	-24.1	\bar{n} 27.2	-21.7	-13.5	-8.1	0.8	3.8	7.0	8.4	9.3	x 10.3	8.4	8.8	9.0	8.3
A.	9.5	7.3	6.5	7.8	7.4	7.3	2.3	6.9	-20.7	-32.9	\bar{n} 36.3	-33.9	-24.6	-12.1	-0.7	5.3	13.8	18.3	x 19.0	16.6	14.6	10.9	11.7	9.6
M.	4.8	2.1	-0.4	-0.5	-0.1	-2.8	-7.5	-13.9	-24.7	-29.2	\bar{n} 29.3	-24.4	-16.0	-6.7	6.6	17.0	21.4	x 25.9	24.9	18.5	13.2	6.9	7.2	7.0
J.	4.6	2.1	1.4	5.9	3.6	-0.7	-9.3	-16.9	-26.9	-36.6	\bar{n} 37.7	-33.5	-22.7	-7.8	6.6	13.0	22.0	29.5	x 31.0	26.4	20.6	10.3	8.4	6.6
J.	0.4	-0.2	2.9	3.2	1.8	-3.5	-10.8	-20.6	-31.4	\bar{n} 39.6	-38.1	-26.3	-14.3	-0.7	13.5	22.2	25.1	25.7	x 27.7	25.1	16.0	11.5	7.2	3.1
A.	3.3	2.0	0.1	3.3	-1.6	-6.7	-12.0	-24.5	-33.5	\bar{n} 41.5	-34.9	-24.0	-12.3	1.4	10.2	21.2	31.3	x 32.0	27.5	23.5	15.0	9.5	7.8	2.9
S.	10.0	10.8	9.9	9.7	9.4	6.8	0.7	-10.2	-22.9	-34.6	\bar{n} 37.1	-29.5	-20.8	-12.9	-2.5	4.6	9.1	15.3	x 18.5	18.1	16.4	11.8	10.2	9.0
O.	7.9	8.6	8.7	9.6	x 14.0	12.3	8.2	-1.2	-16.4	-29.9	\bar{n} 33.6	-29.5	-22.3	-12.5	-4.7	2.8	7.4	10.4	12.0	10.2	9.8	7.8	9.8	10.8
N.	4.5	4.0	5.6	7.1	9.3	9.6	x 9.8	4.3	-6.4	-16.2	\bar{n} 20.1	-18.8	-14.1	-9.4	-3.7	-0.4	3.2	4.1	5.3	4.6	3.3	4.4	4.8	5.4
D.	2.9	-0.2	-0.3	5.2	8.0	x 10.9	9.7	4.9	-1.0	-9.9	\bar{n} 15.0	-13.3	-13.0	-6.7	-4.3	2.0	3.7	4.2	3.4	0.3	-0.2	2.0	2.3	4.5
Y.	4.6	3.6	3.4	5.4	6.0	5.0	1.0	-6.6	-16.9	-26.2	\bar{n} 28.0	-23.4	-15.9	-7.1	1.6	7.6	12.4	15.0	x 15.2	13.4	10.2	7.2	6.8	5.6
W.	1.9	1.1	1.7	5.2	7.9	x 10.2	9.1	4.9	-2.7	-11.6	\bar{n} 15.6	-14.7	-11.1	-6.4	-2.6	0.4	2.9	3.7	3.3	3.0	2.1	2.3	2.5	2.5
Eq.	8.7	8.1	7.6	8.1	9.2	8.2	3.8	-5.7	-18.8	-30.4	\bar{n} 33.5	-28.6	-20.3	-11.4	-1.7	4.1	9.3	13.1	x 14.7	13.8	12.3	9.8	10.2	9.4
S.	3.3	1.5	1.0	3.0	0.9	-3.4	-9.9	-19.0	-29.1	\bar{n} 36.7	-35.0	-27.0	-16.3	-3.5	9.2	18.3	24.9	x 28.3	27.8	23.4	16.2	9.6	7.6	4.9

x and \bar{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 as insignificant this year.

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

Eskdalemuir.

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

1917.

Table LV.—NORTH COMPONENT. Columns: Month and Season, 1-24, Midt. Rows: J.F.M.A.M.J.J.A.S.O.N.D., Y., W., Eq., S.

Table LVI.—WEST COMPONENT. Columns: 1-24. Rows: J.F.M.A.M.J.J.A.S.O.N.D., Y., W., Eq., S.

Table LVII.—VERTICAL COMPONENT. Columns: 1-24. Rows: J.F.M.A.M.J.J.A.S.O.N.D., Y., W., Eq., S.

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

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

Eskdalemuir.

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

1917.

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.
$\Delta D.$ LVIII.—DECLINATION (measured positive towards the West).																								
J.	-2.02	-1.50	-1.00	-1.35	-1.28	-0.47	-0.81	-0.79	-0.34	1.01	2.12	3.07	x 4.03	3.44	1.66	0.59	0.31	0.43	0.22	-0.40	-1.55	-1.46	\bar{n} 2.13	-1.78
F.	-1.38	-0.59	-0.85	-0.90	-1.25	-1.81	-2.07	-2.61	\bar{n} 2.89	-1.74	0.51	2.63	4.41	x 4.56	3.91	2.29	0.86	0.23	1.11	0.03	-0.31	-1.50	-1.54	-1.08
M.	-1.28	-1.22	-1.21	-1.41	-1.78	-1.84	-3.14	-4.49	\bar{n} 4.74	-1.99	0.11	4.11	x 6.06	5.98	4.78	3.17	1.76	1.00	0.26	-0.19	-0.60	-0.72	-1.27	-1.35
A.	-0.31	-0.50	-0.99	-1.62	-2.08	-2.65	-3.80	-5.31	\bar{n} 5.43	-3.41	-0.50	3.13	5.60	x 6.07	4.91	2.95	1.75	0.86	0.50	0.43	0.40	-0.12	0.28	-0.18
M.	-0.67	-0.47	-0.77	-1.46	-3.32	-4.56	\bar{n} 5.34	-4.95	-3.73	-1.44	1.89	4.81	x 6.60	6.00	4.51	2.98	1.75	0.82	0.30	-0.03	-0.93	-0.66	-0.46	-0.89
J.	-1.53	-1.46	-1.92	-2.81	-4.32	-5.87	\bar{n} 6.74	-6.71	-5.18	-2.68	0.55	4.23	6.42	x 7.55	7.03	5.64	3.95	2.04	0.95	0.72	0.53	0.30	0.13	-0.79
J.	-0.46	-0.46	-0.78	-2.10	-3.75	-5.41	-6.45	\bar{n} 6.92	-6.30	-3.38	0.17	4.26	6.79	x 8.02	6.73	4.52	2.48	0.79	0.08	0.24	0.54	0.64	0.58	0.17
A.	-1.98	-1.86	-2.01	-2.55	-3.91	-5.09	\bar{n} 6.08	-5.66	-4.22	-1.57	2.27	6.21	x 8.68	8.51	6.45	4.10	1.28	0.01	-0.07	-0.01	0.06	-0.65	-1.13	-0.79
S.	-1.16	-1.26	-2.19	-2.45	-2.74	-3.40	-4.81	\bar{n} 5.88	-5.43	-2.80	1.30	5.20	x 7.08	6.50	5.55	3.85	2.26	1.52	0.84	0.38	0.06	-0.51	-0.78	-1.15
O.	-1.83	-1.38	-1.18	-1.16	-1.40	-1.88	-2.91	\bar{n} 4.73	-4.46	-2.29	0.89	3.80	5.41	x 5.80	4.60	3.27	2.26	1.58	0.86	0.08	-0.49	-1.06	-1.57	-2.24
N.	-0.80	-0.69	-0.55	-0.74	-0.86	-1.24	-1.74	-2.11	\bar{n} 2.69	-1.55	0.61	2.71	3.11	x 3.25	2.93	2.24	0.99	0.73	0.38	-0.15	-0.99	-0.95	-0.90	-1.00
D.	-0.66	-0.86	-0.52	-0.62	-0.76	-0.97	-0.92	-1.18	-2.02	-1.42	0.18	1.67	3.32	x 3.72	3.39	2.31	0.83	0.51	0.27	-0.19	-1.23	\bar{n} 2.18	-1.65	-1.04
Y.	-1.17	-1.02	-1.16	-1.60	-2.29	-2.93	-3.73	\bar{n} 4.28	-3.95	-1.94	0.84	3.82	5.63	x 5.78	4.70	3.16	1.71	0.88	0.48	0.08	-0.38	-0.74	-0.87	-1.01
W.	-1.21	-0.91	-0.73	-0.90	-1.04	-1.12	-1.38	-1.67	\bar{n} 1.98	-0.93	0.86	2.52	3.72	x 3.74	2.97	1.86	0.75	0.47	0.49	-0.18	-1.02	-1.52	-1.56	-1.23
Eq.	-1.15	-1.09	-1.39	-1.66	-2.00	-2.44	-3.66	\bar{n} 5.10	-5.01	-2.62	0.45	4.06	6.04	x 6.09	4.96	3.31	2.01	1.24	0.62	0.17	-0.16	-0.60	-0.83	-1.23
S.	-1.16	-1.06	-1.37	-2.23	-3.83	-5.23	\bar{n} 6.15	-6.06	-4.86	-2.27	1.22	4.88	7.12	x 7.52	6.18	4.31	2.37	0.91	0.32	0.23	0.05	-0.09	-0.22	-0.57

$\Delta I.$ LIX.—INCLINATION.																								
J.	0.06	0.04	-0.16	-0.17	-0.43	\bar{n} 0.59	-0.46	-0.07	0.17	0.75	x 1.01	0.71	0.23	0.11	-0.02	-0.16	-0.13	0.07	-0.23	-0.27	-0.23	-0.11	-0.11	-0.02
F.	-0.42	-0.37	-0.18	-0.24	-0.40	\bar{n} 0.60	-0.45	-0.39	0.27	0.89	x 1.17	1.18	0.82	0.42	-0.04	-0.01	-0.09	-0.11	-0.39	-0.23	-0.16	-0.13	-0.23	-0.31
M.	-0.51	-0.46	-0.39	-0.34	-0.38	-0.41	-0.34	0.12	0.81	1.39	x 1.83	1.50	1.08	0.71	0.36	0.06	-0.17	-0.52	-0.70	-0.75	\bar{n} 0.81	-0.74	-0.72	-0.61
A.	-0.80	-0.67	-0.56	-0.41	-0.42	-0.31	-0.12	0.43	1.21	2.13	x 2.38	1.95	1.22	0.52	-0.07	-0.23	-0.48	-0.77	-0.90	\bar{n} 0.91	-0.77	-0.69	-0.87	-0.86
M.	-0.12	-0.13	-0.04	-0.09	0.20	0.34	0.56	0.86	1.28	x 1.57	1.52	1.16	0.59	0.28	-0.37	-0.88	-0.88	\bar{n} 1.20	-0.92	-1.08	-0.74	-0.79	-0.58	-0.53
J.	-0.21	-0.21	-0.26	-0.47	-0.27	0.12	0.51	0.94	1.43	x 1.79	1.79	1.53	1.10	0.66	0.11	-0.56	-1.14	-1.34	\bar{n} 1.36	-1.20	-1.01	-0.75	-0.70	-0.51
J.	-0.30	-0.23	-0.37	-0.29	-0.22	0.17	0.64	1.21	1.76	x 2.09	1.98	1.38	0.64	-0.11	-0.66	-0.76	-0.82	-1.08	-1.20	\bar{n} 1.26	-0.86	-0.72	-0.52	-0.49
A.	-0.66	-0.49	-0.58	-0.48	-0.38	-0.08	0.37	1.10	1.92	x 2.37	2.27	1.92	1.14	0.49	0.13	-0.48	-0.47	-1.02	-1.17	-1.40	\bar{n} 1.50	-1.28	-0.98	-0.77
S.	-0.74	-0.77	-0.66	-0.55	-0.52	-0.35	0.07	0.79	1.59	2.28	x 2.34	1.70	1.07	0.76	-0.22	-0.46	-0.69	-0.88	\bar{n} 0.94	-0.91	-0.78	-0.70	-0.67	-0.76
O.	-0.59	-0.51	-0.53	-0.66	-0.78	-0.84	-0.51	0.08	1.29	1.93	x 2.02	1.77	1.35	0.86	0.42	0.10	-0.18	-0.56	-0.84	\bar{n} 0.90	-0.83	-0.76	-0.67	-0.68
N.	-0.12	-0.21	-0.37	-0.43	-0.53	-0.50	-0.35	0.00	0.53	1.13	x 1.18	1.12	0.92	0.45	0.20	0.09	-0.24	-0.44	\bar{n} 0.56	-0.55	-0.46	-0.34	-0.32	-0.21
D.	-0.37	-0.40	-0.26	-0.32	-0.48	\bar{n} 0.62	-0.54	-0.34	0.08	0.82	x 1.17	1.13	0.80	0.56	0.43	0.22	-0.16	-0.45	-0.47	-0.38	0.02	0.22	-0.25	-0.40
Y.	-0.40	-0.37	-0.36	-0.37	-0.38	-0.30	-0.05	0.39	1.03	1.59	x 1.72	1.42	0.91	0.48	0.02	-0.25	-0.45	-0.69	-0.81	\bar{n} 0.82	-0.68	-0.56	-0.55	-0.51
W.	-0.21	-0.24	-0.24	-0.29	-0.46	\bar{n} 0.58	-0.45	-0.20	0.26	0.90	x 1.13	1.03	0.69	0.39	0.14	0.04	-0.16	-0.23	-0.41	-0.36	-0.21	-0.09	-0.23	-0.23
Eq.	-0.66	-0.61	-0.53	-0.49	-0.53	-0.47	-0.22	0.35	1.23	1.93	x 2.14	1.73	1.18	0.71	0.12	-0.13	-0.38	-0.68	-0.84	\bar{n} 0.87	-0.80	-0.72	-0.73	-0.72
S.	-0.32	-0.26	-0.31	-0.33	-0.17	0.14	0.52	1.03	1.60	x 1.95	1.89	1.50	0.87	0.33	-0.20	-0.67	-0.83	-1.16	-1.16	\bar{n} 1.23	-1.03	-0.89	-0.69	-0.58

$\Delta H.$ LX.—HORIZONTAL FORCE.																								
J.	1.5	1.3	1.2	1.5	5.5	x 7.8	5.9	0.5	- 3.0	-10.9	\bar{n} 14.6	-10.4	- 3.7	- 1.6	1.0	3.2	3.1	0.1	4.3	4.9	4.2	2.3	1.8	- 0.2
F.	5.1	4.4	2.1	3.2	5.6	x 8.6	6.2	5.6	- 3.8	-13.4	-18.0	\bar{n} 18.6	-13.2	- 7.1	0.7	1.4	3.2	3.3	6.7	4.4	3.2	2.7	3.6	4.1
M.	8.2	7.7	6.5	5.9	6.7	7.3	6.4	- 0.4	-11.6	-22.0	\bar{n} 30.2	-26.6	-20.4	-13.4	- 6.5	- 0.5	3.7	9.2	11.7	12.3	x 13.1	11.9	11.4	9.6
A.	13.1	11.5	9.9	7.8	7.7	6.2	3.4	- 5.1	-17.9	-32.5	\bar{n} 38.1	-34.1	-24.1	-11.9	- 1.0	3.0	7.8	12.5	14.8	x 14.9	12.7	11.6	14.1	13.6
M.	3.1	3.9	2.9	3.4	- 0.7	- 3.8	-7.8	-13.5	-21.4	-27.9	\bar{n} 28.3	-23.2	-13.7	- 7.2	4.4	14.1	15.6	x 21.2	16.9	18.5	13.4	13.1	9.0	8.2
J.	4.4	4.1	4.7	8.0	5.6	0.3	-5.6	-12.6	-21.0	-29.1	\bar{n} 31.7	-29.2	-21.7	-13.7	- 3.5	8.2	18.7	22.5	x 22.8	19.8	16.8	12.5	11.3	8.2
J.	5.5	4.3	6.4	5.7	5.0	- 0.4	-8.0	-17.8	-27.9	\bar{n} 34.3	-34.3	-26.7	-15.5	- 2.9	7.0	10.8	14.1	19.4	21.3	x 21.8	15.5	13.0	9.4	8.6
A.	9.2	7.1	8.8	7.7	6.7	2.9	-3.9	-15.4	-28.5	-36.4	\bar{n} 36.7	-33.2	-22.1	-10.2	- 2.2	8.3	9.3	17.6	19.4	x 23.4	19.6	14.9	11.4	11.4
S.	12.0	12.0	10.1	8.6	8.3	6.3	0.5	-10.6	-23.8	-35.5	\bar{n} 38.8	-30.6	-20.5	-14.3	1.6	6.5	11.2	14.4	x 16.1	15.8	13.8	12.4	11.8	12.6
O.	8.3	7.4	7.8	9.6	11.5	12.3	8.3	0.6	-17.7	-28.6	\bar{n} 31.2	-28.2	-21.7	-13.5	- 6.0	- 0.6	3.3	8.6	12.6	x 13.5	12.5	11.3	10.0	9.9
N.	1.9	3.2	5.3	5.9	7.2	6.7	4.7	0.0	- 7.5	-17.1	\bar{n} 19.0	-17.9	-14.5	- 7.1	- 2.5	- 0.2	4.9	7.3	x 8.9	8.7	7.3	5.5	5.0	3.4
D.	4.7	4.6	2.8	3.9	6.3	x 8.3	7.1	4.6	- 0.9	-12.2	\bar{n} 17.5	-17.2	-12.6	- 8.5	- 5.3	- 1.7	3.6	7.5	7.3	6.0	0.8	-1.7	4.3	5.8
Y.	6.2	5.7	5.7	5.9	6.3	5.2	1.4	- 5.3	-15.4	-25.0	\bar{n} 28.2	-24.7	-17.0	- 9.3	- 1.0	4.4	8.2	12.0	13.6	x 13.6	11.4	9.5	8.9	7.9
W.	2.5	2.7	2.8	3.6	6.2	x 7.8	6.0	2.7	- 3.8	-13.4	\bar{n} 17.3	-16.0	-11.0	- 6.1	- 1.5	0.7	3.7	4.5	6.8	6.0	3.9	2.2	3.7	3
Eq.	10.4	9.6	8.6	8.0	8.5	8.0	4.7	- 3.9	-17.7	-29.6	\bar{n} 34.6	-29.9	-21.7	-13.3	- 3.0	2.1	6.5	11.2	13.8	x 14.1	13.0	11.8	11.8	11.4
S.	5.5	4.9	5.7	6.2	4.1	- 0.3	-6.3	-14.8	-24.7	-31.9	\bar{n} 32.7	-28.1	-18.3	- 8.5	1.4	10.3	14.4	20.2	20.1	x 20.6	17.3	14.5	11.1	9.1

x and \bar{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 as insignificant this year.
 HOURLY VALUES, 1917.

LXA.-LXC.—SELECTED DISTURBED DAYS.—DIURNAL INEQUALITIES OF THE GEOGRAPHICAL COMPONENTS OF MAGNETIC FORCE.

Eskdalemuir.

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

1917.

Table with columns for Month and Season, and numbered hours 1-24. Section LXA.—NORTH COMPONENT. Rows include J.F.M.A.M.J.J.A.S.O.N.D. and Y.W.Eq.S.

-ΔY (or ΔW).

LXB.—WEST COMPONENT.

Table with columns for Month and Season, and numbered hours 1-24. Section LXB.—WEST COMPONENT. Rows include J.F.M.A.M.J.J.A.S.O.N.D. and Y.W.Eq.S.

ΔZ (or ΔV).

LXC.—VERTICAL COMPONENT.

Table with columns for Month and Season, and numbered hours 1-24. Section LXC.—VERTICAL COMPONENT. Rows include J.F.M.A.M.J.J.A.S.O.N.D. and Y.W.Eq.S.

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

LX.D.—LX.F.—SELECTED DISTURBED DAYS—DIURNAL INEQUALITIES.

Eskdalemuir.

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

1917.

Table LX.D.—DECLINATION (measured positive towards the West). Columns 1-23, Midt. Rows: Month and Season, J.F.M.A.M.J.J.A.S.O.N.D., Y., W., Eq., S.

Table LX.E.—INCLINATION. Columns 1-23, Midt. Rows: J.F.M.A.M.J.J.A.S.O.N.D., Y., W., Eq., S.

Table LX.F.—HORIZONTAL FORCE. Columns 1-23, Midt. Rows: J.F.M.A.M.J.J.A.S.O.N.D., Y., W., Eq., S.

x 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 as insignificant this year.

LXI.-LXII.—INTERNATIONAL QUIET DAYS—DIURNAL INEQUALITIES OF DECLINATION AND HORIZONTAL FORCE.

Kew Observatory, Richmond.

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

1917.

Table LXI.—DECLINATION (measured positive towards the West). Columns include Month and Season, and hours 1-24. Rows include J.F.M.A.M.J.J.A.S.O.N.D., Y., W., Eq., S.

Table LXII.—HORIZONTAL FORCE. Columns include Month and Season, and hours 1-24. Rows include J.F.M.A.M.J.J.A.S.O.N.D., Y., W., Eq., S.

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

LXIII.—RANGE OF THE MEAN DIURNAL INEQUALITIES FOR THE MONTHS, YEAR, AND SEASONS OF 1917, AT ESKDALEMUIR AND RICHMOND (KEW OBSERVATORY).

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

Table LXIII.—RANGE OF THE MEAN DIURNAL INEQUALITIES FOR THE MONTHS, YEAR, AND SEASONS OF 1917, AT ESKDALEMUIR AND RICHMOND (KEW OBSERVATORY). Columns include Months and Seasons, and categories: All Days, Quiet Days, Disturbed Days for both locations.

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.)

Table with columns for Month and Season, North Component, West Component, and Vertical Component, subdivided into All Days, Quiet Days, and Disturbed Days.

LXIV.A.—HARMONIC COMPONENTS OF THE DIURNAL INEQUALITY.

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

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

Table with columns for Month and Season, North Component, West Component, and Vertical Component, subdivided into All Days, Quiet Days, and Disturbed Days.

Note.—To obtain the phase angles for midnight, Local Apparent Time, the corrections $\epsilon, 2\epsilon, 3\epsilon, 4\epsilon$ must be added to a_1, a_2, a_3, a_4 respectively. The mean values of ϵ for the several months are: -2°·5, -3°·6, -2°·1, +0°·1, +1°·0, -0°·1, -1°·5, -1°·0, +1°·4, +3°·6, +3°·8, +1°·0.

LXVII.—MEAN MONTHLY AND ANNUAL VALUES OF TERRESTRIAL MAGNETIC ELEMENTS AT THE METEOROLOGICAL OFFICE OBSERVATORIES, 1917.

1917.	KEW (RICHMOND) (quiet days D and H. absolute observations I, see p. 65).				ESKDALEMUIR (all days except those noted in monthly tables).				VALENCIA (CAHIRCIVEEN) (in general 2 absolute observations per month).			
	North.	West.	Vertical.	Total.	North.	West.	Vertical.	Total.	North.	West.	Vertical.	Total.
January	γ 17805	γ 4789	γ 43388	γ 47143	γ 15967	γ 4990	γ 45126	γ 48127	γ 16802	γ 6054	γ 44522	γ 47970
February	17806	4786	43360	47117	15973	4988	45119	48122	16808	6043	44484	47936
March	17810	4783	43371	47128	15970	4984	45075	48080	16805	6052	44439	47894
April	17808	4779	43360	47117	15971	4978	45060	48065	16801	6023	44395	47848
May	17816	4777	43373	47132	15986	4976	45086	48094	16829	6029	44438	47898
June	17813	4771	43357	47115	15989	4977	45086	48095	16821	6015	44371	47832
July	17813	4768	43330	47090	15987	4974	45080	48089	16805	6017	44426	47877
August	17803	4761	43391	47143	15971	4963	45095	48096	16789	6015	44461	47904
September	17811	4764	43372	47128	15978	4962	45103	48106	16801	6009	44468	47915
October	17810	4758	43363	47119	15977	4958	45107	48109	16803	6005	44422	47872
November	17811	4753	43368	47123	15975	4955	45097	48099	16818	6011	44435	47891
December	17805	4746	43359	47112	15971	4951	45087	48087	16818	6009	44519	47968
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	48368	16732	6337	44771	48215
Year 1905	17743	5272	43742	47496	..	..	..	..	16640	6447	44893	48313

1917.	Declination (West).		Inclination (North).		Horizontal Force.	Declination (West).		Inclination (North).		Horizontal Force.	Declination (West).		Inclination (North).		Horizontal Force.	
January	0	3'2	66	58'6	γ 18438	0	17	21'4	69	39'6	γ 16729	19	48'9	68	8'5	γ 17860
February	15	2'6	66	57'8	18438	17	20'6	69	39'1	16734	19	46'6	68	7'4	17681	
March	15	1'9	66	57'9	18441	17	20'0	69	38'3	16730	19	48'4	68	6'2	17861	
April	15	1'3	66	57'8	18438	17	18'6	69	37'9	16729	19	43'3	68	5'9	17848	
May	15	0'6	66	57'7	18445	17	17'3	69	37'7	16743	19	42'7	68	5'2	17876	
June	14	59'7	66	57'5	18441	17	17'4	99	37'4	16746	19	40'6	68	4'2	17864	
July	14	59'1	66	56'8	18440	17	16'9	69	37'5	16742	19	42'0	68	6'6	17850	
August	14	58'3	66	59'3	18429	17	15'7	69	39'1	16724	19	42'7	68	8'6	17834	
September	14	58'4	66	58'2	18437	17	15'2	69	38'9	16731	19	40'9	68	8'2	17843	
October	14	57'5	66	58'1	18435	17	14'5	69	39'1	16729	19	39'9	68	6'9	17841	
November	14	56'6	66	58'3	18434	17	14'0	69	39'0	16726	19	40'0	68	6'2	17860	
December	14	55'5	66	58'5	18427	17	13'5	69	39'1	16721	19	39'7	68	8'5	17859	
Year 1917	14	59'6	66	58'0	18437	17	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	..	..	..	..	..	21	10'4	68	19'2	17848

* Mean of 11 months.

LXVIIA.—NON-CYCLIC CHANGE (24^b—0^b) FOR THE MONTHS OF 1917, AT TWO OBSERVATORIES.

Month.	Eskdalemuir.									Richmond.		Month.	Eskdalemuir.									Richmond.	
	"All Days."			Quiet Days.			Disturbed Days.			Quiet Days.			"All Days."			Quiet Days.			Disturbed Days.			Quiet Days.	
	X.	-Y.	Z.	X.	-Y.	Z.	X.	-Y.	Z.	D.	H.		X.	-Y.	Z.	X.	-Y.	Z.	X.	-Y.	Z.	D.	H.
J.	γ 5'2	γ 2'7	γ 6'0	γ 3'6	γ 3'0	γ -3'6	γ 0'4	γ -0'6	γ 1'4	γ 0'50	γ +5'6	J.	γ -1'3	γ -0'8	γ 1'2	γ 3'0	γ 2'6	γ -1'4	γ -3'0	γ -6'0	γ 6'0	γ +0'04	γ +2'8
F.	0'9	-0'1	-0'6	5'2	-2'2	1'6	3'2	4'4	-2'6	-0'34	+3'4	A.	7'7	3'9	3'7	4'6	0'6	-1'2	-60'8	-22'2	-67'6	+0'18	+4'1
M.	0'6	-0'2	-0'4	3'0	2'4	0'4	-0'8	-6'0	-2'4	-0'12	+3'0	S.	-0'4	-0'9	-0'8	5'8	1'4	-2'0	-9'4	-2'6	3'2	-0'06	+5'3
A.	0'4	-1'0	-0'6	10'6	3'6	-3'0	-22'2	-0'2	5'8	-0'24	+11'1	O.	0'1	0'0	-0'8	2'6	4'0	-0'2	-0'2	-12'0	-14'6	+0'42	+3'5
M.	-1'6	0'8	1'3	-1'2	1'6	5'0	-6'2	-1'0	1'6	+0'56	-1'2	N.	0'6	0'3	0'2	3'8	3'0	-1'6	-10'2	-1'0	-2'4	+0'36	+3'7
J.	-0'2	-0'4	0'8	4'0	-0'8	2'0	-15'0	-1'8	-3'6	-0'26	+4'5	D.	2'3	0'9	-0'8	0'6	3'6	1'4	-6'6	0'6	6'0	+0'50	+2'1

LXVIII.—MEAN VALUES, FOR THE YEARS SPECIFIED, OF THE MAGNETIC ELEMENTS AT OBSERVATORIES WHOSE PUBLICATIONS ARE RECEIVED AT KEW OBSERVATORY, RICHMOND.

Table with columns for Place, Latitude, Longitude, and magnetic elements (Declination, Inclination, Horizontal Force, Vertical Force) for the years 1917, 1916, and 1915. Includes locations like Sitka (Alaska), Rude Skov, Eskdalemuir, etc.

* 11 months; May missing.

ADDITIONAL VALUES FOR EARLIER YEARS.

Table with columns for Place, Latitude, Longitude, and magnetic elements for the years 1914, 1913, and 1912. Includes locations like Katharinenburg, Kasan (New Site), Potsdam, etc.

* Values for 1914 are from the first four and the last four months of the year only. † Kakioka is the new magnetic observatory to replace Tokio. It is stated that values for Tokio may be deduced from those for Kakioka by adding -5.5' to D, 265 gamma to H. -481 to V.

VALUES FOR BRITISH OBSERVATORIES FOR 1917-1919.

Table with columns for Place, Latitude, Longitude, and magnetic elements for the years 1917, 1918, and 1919. Includes locations like Eskdalemuir, Stonyhurst, Valencia Observatory, etc.

VALUES FOR RUSSIAN STATIONS, 1908-1911.

Table with columns for Place, Latitude, Longitude, and magnetic elements for the years 1908, 1909, 1910, and 1911. Includes locations like Pawlowsk, Katharinenburg, Irkutsk, etc.

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

Kew (Richmond).

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

1917.

Table with 26 columns (1-24, Midt., 24-0, No. of Days Used, Mean Values) and rows for months J, F, M, A, M, J, J, A, S, O, N, D and seasons Y, W, Eq, S.

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

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

Eskdalemuir.

1917.

Table with 26 columns (1-24, Midt., 24-0, No. of Days Used, Mean Values) and rows for months J, F, M, A, M, J, J, A, S, O, N, D and seasons Y, W, Eq, S.

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

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

Eskdalemuir.

1917.

Table with 26 columns (1-24, Midt., 24-0, No. of Days Used, Mean Values) and rows for months J, F, M, A, M, J, J, A, S, O, N, D and seasons Y, W, Eq, S.

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

NOTES ON THE METEOROLOGICAL SUMMARIES.

The outstanding feature of the year 1917 was the prolonged cold in the early months : it was also notable for unprecedented downpours of rain in June, for a very wet August, a stormy October, and a cold December. At Kew Observatory, Richmond, snow fell on no less than thirty-eight days in the first four months of the year and there were 70 ground frosts. Temperature remained well below normal until the middle of April. The thunderstorm of June 16th was noteworthy as giving the heaviest rainfall on record for London, 118 mm. having been recorded at Campden Hill, Kensington, in the remarkably short period of two hours. At Kew Observatory 43 mm. were recorded. More widespread rain was associated with the passage of a small depression which passed along the South coast of England on June 28th and 29th and was the occasion of the heaviest fall ever recorded in a day in the British Isles, viz. 250 mm. at Bruton, Somerset. At Kew Observatory the amount measured was 31 mm.

At Eskdalemuir severe weather lasted until well into April. The temperature in the screen on the night of April 1st was $258\frac{1}{2}a$, the lowest on record for Scotland for the month. The snow, which was as deep as 70 cm. in places, did not disappear until April 18th. In a gale, which occurred in the early morning of October 25th, a gust of 40 metres per second was recorded by the Dines tube-anemograph, the first time such a wind speed has been reached at this Observatory.

At Aberdeen the same dates are conspicuous ; the gust of 37 metres per second at this Observatory on October 25th is also the highest on record for the station.

At Valencia Observatory, Cahirciveen, the great snowstorm which visited Ireland at the beginning of April, though not so severe as at places in the counties to the North and East, is marked by the entry of hail with or without snow in the register on six consecutive days and may be regarded as the most important meteorological event of the year.

In these Meteorological Tables the normal diurnal variation for the month of each element is shown, together with the departure of the 1917 values from the normal. The 1917 values themselves can be read off by re-adding these differences. The values so found are averages for the months ; 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 1880 and 1887 to 1899 five-day means were printed.

For the observatories at Richmond, Cahirciveen, and Aberdeen the normals for Barometric Pressure, Air-Temperature, and Rainfall refer to the forty-five

years, 1871–1915; those for Wind Speed and Sunshine to the thirty-five years, 1881–1915; and those for Relative Humidity to the years 1886–1915. In the case of Eskdalemuir,* the “normals” are all for the five years, 1911–1915. For Falmouth only Rainfall and Sunshine are now tabulated. The normal diurnal variation of the other elements at Falmouth for periods ending in 1910 is given in previous volumes.

The tabulated values of pressure, temperature, and relative humidity refer to the exact hour by Greenwich time. The values of mean wind speed and of rainfall refer to the 60 minutes centered at an exact hour G.M.T. The duration of sunshine is given as a decimal fraction of the 60 minutes centered at an exact hour by Local Apparent Time. The difference between Local and Greenwich Time can be ascertained from the table on page 7.

In the tables for pressure, temperature, and relative humidity, values at 0 h and 24 h are both given. The small difference between these 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.

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; the following table shows the actual units employed for the different elements:—

Element.	Unit.	Corresponding Units used previously or in other Countries.
a. Barometric Pressure.	Millibars.	Inches or Millimetres of Mercury.
b. Temperature of the Air.	Degrees Absolute.	Degrees Fahrenheit or Centigrade.
c. Relative Humidity.	Percentages (100=Saturation).	Percentages (100=Saturation).
d. Velocity of the Wind.	Metres per Second.	Miles or Kilometres per hour.
e. Rainfall.	Millimetres.	Inches or Millimetres.
f. Sunshine.	Hours.	Hours.

Tables for the conversion from one set of units to the other were given with the notes for 1913. They will be found in the *Computer's Handbook*.

(a) 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. Tables for “reduction” of pressure to sea-level are printed in the Introduction to Part IV., Section 1, of the *Year Book* for 1913.

* Brackets are used in the Tables to call attention to the illegitimate use of the word “normal.”

The barographs* at Richmond and Aberdeen have remained unchanged throughout the whole period. The site of Valencia Observatory was changed from Valencia Island to Cahirciveen, County Kerry, on March 23rd, 1892, the change in the height of the cistern of the barometer being from 7.0 m. to 13.7 m. The site of the observatory at Falmouth was changed in May 1885, the change in the height of the cistern of the barometer being from 64.3 m. to 55.8 m. Account has been taken of these changes of position in calculating the pressure normals for the period 1871–1915, and the values given correspond with the present positions.

(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 $^{\circ}$ 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. At Kew Observatory, Richmond, the height of the thermometers above ground is 3.0 m., and the bottom of the screen is open. At Aberdeen the observatory is in the tower of King's College, and the screen is at a considerable height, 12.5 m. above ground. At Valencia Observatory, Cahirciveen, the height of the thermometers is 1.2 m.; in computing the normal values for the station no allowance has been made for the change in site in 1892.

It should be noted that the diurnal range of temperature, as determined by thermometers exposed in a north wall screen, is appreciably less than the range in a Stevenson screen in the open.

Before 1915 the tabulated values were taken directly from the curves, and were not corrected for the difference between the curve readings and the observations of the control-thermometers. The differences were always small, and it is not supposed that appreciable errors in the normal values have been introduced on this account. From 1915 methods have been adopted which eliminate this source of error.

The prolonged cold at the beginning of the year is a conspicuous feature of the temperature table. The largest deficit as compared with the normal is shown at Eskdalemuir, no less than $3.5a$ in February, but the average utilised as the “normal” is derived from only five years' observations in this case. At Richmond the deficit was $2.4a$ in February, $2.1a$ in March and $2.5a$ in April. In connection with the low temperature in February it is of interest to notice that in

* The ultimate standard barometers at Kew Observatory have not been moved since they were set up in 1855 and 1860 respectively. The barometer used at this observatory to control the barograph readings is standardised with reference to these instruments. The barometers formerly in use at the other observatories depended on the same standards. The control-barometers now in use at these stations are provided with millibar scales certified at the National Physical Laboratory, Teddington.

† The propriety of this definition has been discussed by F. J. W. Whipple, *London Phys. Soc. Proc.*, vol. xxxi., 1919, p. 240.

spite of persistent dull weather, and less than half the normal amount of sunshine, the range of the diurnal variation, from 273·3 at 7 h. to 277·3 at 15 h., was more than half a degree above the normal.

(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 4 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.

The normal daily variation of wind-speed at moderate heights shows † a maximum in the middle of the day and a minimum at night. The ratio of the daily range to the mean speed is greatest at inland stations. The following values of this ratio are derived from the normals for the whole year :—

Cahirciveen	·28	Aberdeen	·34
Eskdalemuir	·47	Richmond	·57

(e) *Rainfall*.—The tables give the mean values of the hourly measurements

* See *Computer's Handbook*, Section I.

† Cf. G. I. Taylor, "Phenomena connected with Turbulence in the Lower Atmosphere." *Proc. Roy. Soc., A.*, 1917, vol. xciv., p. 137.

for each month, *e.g.* the value entered to noon is the mean of the amounts which fall between the hours of 11 h 30 m, and 12 h 30 m during the month.

For the purpose of this table the rainfall day is to be regarded as beginning at 0 h 30 m.

There is reason to believe that the figures given for the rainfall at Cahirciveen in 1915 and 1916 were too high by nearly 5 per cent.*

The fluctuations in the hourly values for rainfall are remarkable. Such irregularities are to be expected, however, as a very heavy fall of say 30 mm. in a single hour of one day raises the annual mean for that hour by 0.1 mm., *i.e.* practically doubles it.

(*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 method of expressing the results is similar to that adopted for rainfall. The values are given in hours and are obtained by dividing the totals for each month by the number of days in the month.

Accuracy of Means.—The computation of mean hourly values for the tables has been carried to one decimal place beyond the last figure given by the individual readings. On account of unknown zero errors of the thermometers and barometers, and various defects of the anemometers, rain-gauges, and sunshine recorders, this refinement, regarded as determining the values for particular hours, is not justified, but the inclusion of the additional figures facilitates the study of diurnal variation.

Possible Systematic Errors.—The mean values as shown in the tables are known to be subject to certain small systematic errors incidental to the methods of recording and tabulating the various elements. The allowances which should be made to eliminate such errors as far as possible are under investigation, no such allowances have been made in the present volume.

One source of error was brought to light owing to the publication by Mr M. M'Callum Fairgrieve of a paper † entitled "A possible Two-hourly Period in the Diurnal Variation of the Barometer." The time-marks on the photographic barograms occur at intervals of two hours, alternate readings being taken at a time-mark and halfway between two time-marks. Owing to the difficulty in making the readings in the two categories quite consistent, a small systematic error equivalent to an apparent oscillation of pressure with a period of two hours affects the results. Similar small effects of the method of tabulation can be traced in the tables of temperature and humidity.

The errors are comparable with .005 mb. for pressure and .02 a for temperature.

It may be mentioned here that from January 1st, 1918, time-marks on the instruments in question have been made half-an-hour before each even hour instead of at the hour, so that the systematic error cannot recur.

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

* See *Hourly Values* 1916, p. 68.

† *Journal of the Scottish Meteorological Society*, 1913, p. 158.

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 1917 are set out below, the normals for the older observatories being for 1871–1915, those for Eskdalemuir for 1911–1915:—

Observatory and Period.	Amplitude in Millibars.				Phase, Greenwich Mean Time.								Phase, 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	
					°	h m	°	h m	°	h m	°	h m	°	°	°	°	°
Aberdeen, 1917	·103	·233	·022	·008	242·5	13 50	144·7	10 11	15·7	1 39	332·8	1 57	244·6	148·9	22·0	341·2	
„ 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, 1917	·025	·278	·012	·015	269·1	12 4	144·9	10 10	42·9	1 3	32·4	0 58	272·3	151·3	52·5	45·2	
„ [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.)																	
1917	·105	·369	·026	·006	352·3	6 31	152·1	9 56	346·2	2 18	251·3	3 19	352·6	152·7	347·2	252·6	
„ 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.)																	
1917	·106	·311	·026	·010	137·0	20 52	130·0	10 40	345·2	2 19	332·9	1 57	147·3	150·6	16·1	14·1	
„ 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 recently 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.

TERRESTRIAL MAGNETISM :—I. NOTES ON THE MANAGEMENT
OF THE INSTRUMENTS AT KEW OBSERVATORY, RICH-
MOND, AND ON THE CORRESPONDING TABLES, 1917.
By C. CHREE, Sc.D., LL.D., F.R.S., SUPERINTENDENT.

The magnetograph has continued in regular operation throughout the year, and absolute observations of declination, dip and horizontal force have been taken usually once a week. The results of the absolute observations have appeared month by month in the *Geophysical Journal*.

On January 8th a scale value determination of the horizontal force gave 1 mm.=6·2 γ . After this determination the position of the horizontal force magnet was slightly altered, by means of the torsion head, to allow for the change of declination that had occurred since 1914. Thereafter a second scale value determination was made which gave 1 mm.=5·9 γ . This was checked several times in the course of the year, and was found to remain unaltered.

On January 10th a scale value determination gave for 1 mm. on the vertical force trace 20½ γ . The sensitiveness was increased on January 16th to 1 mm.=15·4 γ . Subsequent scale value determinations on June 4th and December 3rd gave respectively 17·8 γ and 16·0 γ for the value of 1 mm.

The scale value of the declination instrument remained as in previous years,

$$1 \text{ mm.} = 0'87.$$

The base values of the curves were determined by means of the absolute observations. These were taken as in past years with the Jones unifilar magnetometer, using collimator magnet K.C.I. and declination magnet K.O. 90, and the Barrow dip circle No. 33 with 3½-inch needles. In the absolute observations of horizontal force use was made of the three deflection 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 combined. The values thus 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	1·99939
1911	+0·832	—1377	1·99934
1912	+0·749	—1286	1·99937
1913	+1·504	—1528	1·99959
1914	+1·226	—1343	1·99958
1915	+0·778	—1245	1·99942
1916	+2·962	—2044	1·99996
1917	+0·696	—1236	1·99938

The large apparent change in P and Q in 1916 as compared with previous years was pointed out in last year's Report. It will be seen that the values for 1917 have reverted approximately to what they were in 1915. The cause of these changes remains obscure. Originally the observations made in 1917 were reduced employing the values obtained for P and Q in the previous year. The substitution of the values appropriate to 1917 entailed a reduction of 12γ in the calculated values of H. The results were, however, obtained in time to secure the publication of the corrected values in the *Geophysical Journal*.

If the apparent changes in P and Q since 1915 represent true changes in the distribution of magnetism in the magnets, either the change must have been mainly in the mirror magnet (the deflected magnet), or else such change must occur without any correspondingly large change of magnetic moment in the collimator (the deflecting magnet). A calculation of the magnetic moment (at 0°C) of the collimator magnet, from the combined December and January absolute observations since December 1909, gave, as the value appropriate to January 1st of consecutive years from 1910 to 1918, the following results: 649.26, 648.62, 647.57, 646.59, 646.13, 645.40, 644.47, 643.87, and 643.46. This shows a very slow decline, at a nearly uniform rate, and certainly would not suggest any very exceptional occurrence during the last three years.

As mentioned in last year's Report, the electrification of the London and South-Western Railway's line in the spring of 1916 caused a large increase in the local artificial disturbance, and the subsequent electrification of the North London line from Richmond to Broad Street presumably added to this. The increase of artificial disturbance is especially large in the case of vertical force, but as no diurnal inequalities have been published for that element since 1902 this is of minor consequence. In the case of the horizontal components D and H, the uncertainty introduced is mainly in instantaneous values; the effect on mean hourly values even for individual days appears to be small. The publication of diurnal inequalities from the international quiet days has thus been continued.

Particulars of the magnetic "character" of individual days on the international scale "0" (quiet), "1" (moderately disturbed), "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, these monthly means should be regarded as giving only a general indication of the disturbance prevailing.

1917.	Number of Days having Magnetic "Character."			Mean of "Character" Numbers.
	"0."	"1."	"2."	
January	7	19	5	0.94
February	9	15	4	0.82
March	16	13	2	0.55
April	12	15	3	0.70
May	13	15	3	0.68
June	16	9	5	0.63
July	18	9	4	0.55
August	14	8	9	0.84
September	14	15	1	0.57
October	12	12	7	0.84
November	19	7	4	0.50
December	14	10	7	0.77
Year (totals and means)	164	147	54	0.70

The mean "character" figure for the year is somewhat below that for 1916, there being a decidedly smaller number of days of "character 1," and a greater number of days of "character 0." None of the magnetic storms of the year were exceptionally large, but there was very considerable disturbance on the following dates: January 4-5, February 15-16, June 24-25, August 9, 14, 15, 21 and 22, and December 16-17. On January 4-5 there was a range of 56' in D, and on December 16-17 a range of 408 γ in H. The disturbance of December 16-17 presented several features of interest which have been discussed in a special paper* by the Superintendent. The declination and horizontal force curves were tabulated on the five international quiet days a month, particulars of which are given in the accompanying table.

List of Magnetic Quiet Days for 1917, as issued by the International Commission of Terrestrial Magnetism.

January	3, 15, 18, 28, 29	July	6, 16, 17, 18, 20
February	1, 9, 12, 13, 27	August	5, 6, 19, 28, 29
March	2, 3, 28, 29, 30	September	1, 11, 23, 25, 26
April	10, 11, 14, 20, 27	October	16, 19, 20, 21, 22
May	6, 8, 13, 19, 20	November	9, 10, 15, 16, 23
June	1, 2, 19, 20, 30	December	10, 13, 22, 23, 31

The usual temperature correction, viz., 3.1 γ per 1a, has been applied to the horizontal force curves. In view of the continual small oscillations now usual in the traces, all the curves were smoothed. The non-cyclic changes shown in Table LXVIIA. have been allowed for in the usual way, i.e. by assuming them to come in at a uniform rate throughout the day.

Tables LXI. and LXII. give the diurnal inequalities of declination and horizontal force, after elimination of the non-cyclic change, for each month of the year, for the year as a whole, and for three seasons defined as in the Introduction. The letters x and n are attached to the maximum and minimum hourly values. The units employed throughout are 1' in declination and 1 γ (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.

* *Proc. Roy. Soc., A.*, vol. 94, p. 525 (1918).

Table LXIII. gives the algebraic difference of the extreme hourly values of Tables LXI. and LXII.

In the case of declination the monthly values of the ranges are all in excess of the corresponding ranges for 1916, except in the case of the two months April and May, and the mean excess for the twelve months is 1'4. The excess appears in the case of all the inequalities for the seasons and the year, being especially large, 1'91, in the case of winter.

In the case of horizontal force, on the average of the twelve monthly ranges, there is an excess of 2.1 γ for 1917 over 1916. There is also an excess in 1917 in the case of the ranges for the inequalities for the year, equinox and winter, the excess for winter being no less than 9.4 γ . But in the case of summer the range for 1916 is somewhat the larger, and the same is true of the five consecutive months March to July. The two months April and May show the largest deficiency of range in 1917 in horizontal force, and they are also the two months in which there was a reduced declination range. These two months are also exceptional in the matter of non-cyclic change in horizontal force. It has a negative sign in May, a very unusual feature, and is abnormally large in April, being almost twice as large as in any other month. The mean of the non-cyclic changes in horizontal force, +4.0 γ , is decidedly above average; the corresponding mean for 1916 was only +3.0 γ .

Table LXVII. contains mean monthly and annual values of declination, inclination, horizontal force, north and west components of force, vertical force, and total force. The results for declination and horizontal force are derived from the curve measurements of the international quiet days. The inclination results are derived from absolute observations of dip, taken at an hour in the afternoon when the departure from the mean value for the day is small, and by utilising the diurnal inequalities of previous years an allowance has been made for this departure. The values of the other elements are derived by calculation from those of declination, inclination, and horizontal force.

Westerly declination continues to fall rapidly, at approximately the same rate as in recent years. Every month except September shows a decline on the previous month. Inclination shows a small rise, as during the previous two years, and horizontal force a decided fall. There is a very regular decline in the west component, as there has been of late years; the north component, on the other hand, seems to be nearly stationary. Vertical force and total force show a decline since 1916, but these elements are affected by larger uncertainties than the others, and the irregularities apparent when successive years' values are compared are doubtless in part at least of instrumental origin.

Table LXVIII. gives a list of the values of the magnetic elements at the observatories whose publications are received at Kew Observatory, including the latest data available up to 1917. Owing to the war the sources of information have been more restricted than usual. The values for the British Observatories for the years 1918 and 1919 are also shown in this table.

TERRESTRIAL MAGNETISM :—II. NOTES ON THE MAGNETIC
OBSERVATIONS MADE AT THE VALENCIA OBSERVATORY,
CAHIRCIVEEN, 1917. BY L. H. G. DINES, M.A., A.M.I.C.E.,
SUPERINTENDENT.

Absolute observations of declination, horizontal force (H), and inclination were taken in general twice a month with the Dover Unifilar No. 139, and the Dover Dip Circle No. 118, at the same hours of the day on each occasion. The mean times of observation were 10^h 20^m for the declination, 11^h 37^m for the horizontal force, and 14^h 31^m for the inclination. In no case did the time of any individual observation differ from the mean by more than 6 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.

As in former years the deflections of the mirror magnet were taken at two distances of the collimator magnet, and a single distribution constant P calculated from them.

This constant was determined from the mean of all the observations utilised for publication in 1917.

In general, for each complete observation, twelve readings of deflection were taken, the order being as shown in the following scheme in which *e* indicates “ north end east,” and *w* “ north end west.” Double weight was given to the *w*'s in working up the results.

Collimator on East	Arm at 40 cm. ;	<i>e, w, e.</i>
,,	,,	30 cm. ; <i>e, w, e.</i>
,,	West Arm at 30 cm. ;	<i>e, w, e.</i>
,,	,,	40 cm. ; <i>e, w, e.</i>

Particulars of the individual observations will be found in the monthly numbers of the *Geophysical Journal*, the figures for which were also based on the value 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.

TERRESTRIAL MAGNETISM:—III. NOTES ON THE MANAGEMENT AND MANIPULATION OF THE INSTRUMENTS AT ESKDALEMUIR OBSERVATORY, 1917. BY A. CRICHTON MITCHELL, D.Sc., SUPERINTENDENT.

The magnetographs at Eskdalemuir are arranged so as to record the three geographical components of terrestrial magnetic force, viz. :—the north component N (or +X), the west component W (or—Y), and the vertically downward component V (or +Z). This arrangement is effected, in the case of the N and W instruments, by imposing a twist on the bifilar suspension so as to bring the magnets into an azimuth approximately perpendicular to the direction of the components which they respectively measure.

The north and west magnetographs employed were, as in previous years, the Adie bifilar instruments, while the vertical magnetograph was that lent by the late Professor Watson. During the year no change was made in the suspensions or mountings of the instruments or in the position of any control magnet.

The constants of these instruments were as follows :—

	North.	West.	Vertical.
Time scale : 1 hour=	15·6 mm.	15·6 mm.	15·6 mm.
Time marks	Every two hours ; end of mark at exact hour.		
Error of time mark	Not more than ± 1 min.		
Period of vibration	13·9 secs.	11 secs.	7·4 secs.
*Logarithmic decrement	·345	·572	..
Angular equivalent of 1 mm. on paper	·00032 radian.	·00033 radian.	·0003 radian.
Twist of bifilar suspension	35°	90° $\pm 5^\circ$	..
Ratio $\frac{\text{length of bifilar suspension}}{\text{mean breadth of suspension}}$	51	66	..
Temperature coefficient per <i>ia</i>	—9 γ	—2 γ	+26 γ
Direction in which marked pole points	West.	North.	..
Azimuth of magnet	269° 58'	0° 8·5'	346°

The scale values were determined fortnightly in the manner described in the 1913 *Notes*. From overlapping means, the following values were obtained and employed in reducing the hourly readings of the curves.

Month.	North Instrument. γ per mm.	West Instrument. γ per mm.	Vertical Instrument. γ per mm.
January	4·97	5·34	4·34
February	4·99	5·33	4·31
March	4·99	5·33	4·12
April	4·96	5·35	4·11
May	4·96	5·36	4·12
June	4·95	5·36	4·15
July	4·94	5·36	4·46
August	4·95	5·34	4·63
September	4·95	5·33	4·64
October	4·98	5·33	4·45
November	4·98	5·34	4·36
December	4·97	5·37	4·40
	4·97	5·38	4·38
	4·97	5·35	4·29

* The logarithmic decrement is the natural logarithm of the ratio of the amplitudes of two consecutive swings on the same side of the zero position.

The apparent force in the direction of either of the suspended magnets due to unit force at right angles to its nominal direction was found to be of negligible amount. In consequence, no correction has been made on this account in the 1917 tabulations.

Absolute observations were made weekly, as a rule, in the eastern magnetic hut. Declination and horizontal force were determined on Pier No. 5 by the Elliot magnetometer No. 60, whilst dip was observed on Pier No. 6 by means of the Schulze inductor No. 103.

In the reduction of absolute observations of H, the values of $\log \left(1 + \frac{P}{25^2} + \frac{Q}{25^4} \right)$ were obtained for a given month by taking the mean for seven months including the given month as fourth of the seven. The values employed during the year were as follows:—

January, ·00520; February, ·00520; March, ·00520; April, ·00511; May, ·00518; June, ·00530; July, ·00531; August, ·00543; September, ·00548; October, ·00558; November, ·00551; December, ·00547.

The base line values employed were obtained from smoothed curves drawn through points given by observation. The curves are shown in Plate I. In that for the vertical component there are a number of discontinuities. The largest of these was due to the renewal of the calcium chloride dryer; the others to disturbances in the position of the magnet system produced by too large deflections during scale tests.

Plate I. also shows the variation throughout the year of the temperature of the room in which the magnetographs are installed. The slight irregularities in this curve during the latter months of the year were produced by the main doors of the building being opened while some experiments on ventilation were being made.

The hourly readings are taken from the magnetograms by means of a ruled glass scale, the reading for a particular hour being that ordinate which is estimated to be the mean reading for an hour centering at the particular hour.

The non-cyclic correction has been eliminated in the usual manner from the diurnal inequalities.

The diurnal inequalities of declination, horizontal force, and dip have been computed from those of the geographical components by means of the formulæ—

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

where δD , δI are expressed in minutes of arc. The values of D , H , and I used in these formulæ for the particular month were the mean values given in Table LXVII.

The diurnal inequalities, for all classes of day, were computed to 0·01 γ and

afterwards rounded off to the nearest tenth of 1γ . The Fourier coefficients printed in Tables LXIV. and LXV. were computed from the unrounded values and afterwards rounded off.

The present volume does not include any reproduction of magnetograms obtained on highly-disturbed days, but, on application to the Superintendent, any person requiring these for the purpose of special investigation may be supplied with photographic copies.

TERRESTRIAL MAGNETISM :—IV. REVIEW OF RESULTS OF
MAGNETIC OBSERVATIONS AT ESKDALEMUIR DURING 1917.
BY A. CRICHTON MITCHELL, D.Sc., F.R.S.E., SUPERINTENDENT.

1. The following account summarises the principal results of the magnetic observations taken during 1917.

Reference may be made to the corresponding Review for 1915, and to *Notes on the Management of the Magnetic Instruments* in this and preceding volumes of the *Year Book*, for details regarding the instruments employed and the manner of reading the curves.

2. *Mean Annual Values of the Magnetic Elements.*—The following table gives the values for the year of the different elements. These are, in all cases, computed from the continuous records, standardised by means of absolute observations. The values of H, D, I, and T are deduced from those of N, W, and V. A comparison is made with the previous year.*

TABLE I.

Year.	H.	D.	I.	N.	W.	V.	T.
1917 .	γ 16732	$^{\circ}$ 17 16.3	$^{\circ}$ 69 38.5	γ 15976	γ 4971	γ 45093	γ 48097
1916 .	16756	17 26.1	69 37.6	15986	5020	45119	48130

The value of H, which has been falling since 1912, showed a further decrease, though not so great as in the previous year. Declination continued to diminish at nearly the same rate as in the previous years. Inclination rose by 1'·0, and, after its minimum in 1914, has now reached about the same value as it had in 1909. The geographical components and the total force all fell in value, N and W by amounts nearly the same as in the immediately preceding years, V by a smaller amount than usual.

The extreme values for N, W, and V are shown below, the signs > and < indicating that the trace was off the sheet.

TABLE II.

Component.	Maximum.			Minimum.			Absolute Annual Range.
	Value.	Date, 1917.			Value.	Date, 1917.	
North	γ 16483	Aug.	d h m 14 16 21	<15630	Jan.	d h m 4 23 32	> 853
West	5232	Aug.	14 16 15	4592	Dec.	16 21 14	640
Vertical	> 45382	Dec.	16 { 17 20 17 35 }	<44724	Aug.	9 { 23 35 23 55 }	> 658

* It may be of some interest to compare the results obtained at Eskdalemuir with those recently published by G. W. Walker in *The Magnetic Re-Survey of the British Isles for the Epoch January 1st, 1915* (*London Roy. Soc. Phil. Trans.*, vol. 219, 1919). The values of N, W, V, H, and D from Walker's isomagnetic charts are respectively 15,985 γ , 5060 γ , 45,665 γ , 16,738 γ , and 17° 37'·6; whereas the mean values for December 1914 and January 1915, as actually observed at Eskdalemuir, were respectively 16,005 γ , 5100 γ , 45,187 γ , 16,798 γ , and 17° 40'·7.

The annual range of the north and west components was thus much greater in 1917 than in 1916. That of the vertical component was nearly the same in the two years.

3. *Magnetic Character of 1917.*—The number of days in each month to which the character figures 0, 1, or 2 were assigned is given below.

TABLE III.—*Frequency of Magnetic Character Figures, 1917.*

Character.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
0	10	19	17	18	14	16	16	9	10	12	19	13	173
1	17	6	12	12	15	12	9	12	19	11	8	13	146
2	4	3	2	0	2	2	6	10	1	8	3	5	46

The mean character figure for the year was therefore 0.65 as compared with 0.74 in 1916.

As stated in last year's Review, the question of employing the sum (ΣR^2) of the squares of the daily absolute ranges on N, W, and V as an index of magnetic character has received considerable attention in recent years. It was pointed out that while the value of ΣR^2 could distinguish clearly between quiet days and disturbed days, it was uncertain whether it could be used to select the five quietest days in each month. The following table gives some information on this point. 5q days are the internationally selected quiet days; 5Q days are those on which ΣR^2 at Eskdalemuir has the five lowest values for the month. The table refers to 1917, and the unit for ΣR^2 is $1\gamma^2$.

TABLE IV.

Month.	Mean Value of ΣR^2 .		Mean Day of Month.		Number of Days common to 5q and 5Q.
	On 5q Days.	On 5Q Days.	For 5q Days.	For 5Q Days.	
1917.					
January	4303	3793	19th	13th	3
February	4737	3782	12th	8th	4
March	7979	6457	18th	13th	2
April	9176	7292	16th	20th	3
May	9624	7988	13th	13th	3
June	10952	9891	14th	15th	3
July	12555	10146	15th	13th	3
August	12655	10830	17th	13th	3
September	11319	8688	17th	20th	3
October	7179	5834	20th	19th	3
November	3240	2406	15th	17th	2
December	3370	2879	20th	19th	3

It thus appears that the quietest days at Eskdalemuir, judged by the ΣR^2 criterion, correspond in about three cases out of five with the internationally selected days. There need be no surprise that the proportion is not higher, for the 5q days are selected on the basis of estimates from a considerable number of stations in widely separated positions. But that a single station should give such a result indicates that if all stations submitted daily values of ΣR^2 , the selection could be made with tolerable certainty.

The next point for consideration is the division of the month into quiet, moderately-disturbed, and highly-disturbed days. The importance of any such division depends on the extent to which it is considered necessary that magnetic results should be tabulated for each such class of day, but this question cannot be discussed here. As an illustration of the value of ΣR^2 on days of different magnetic character, as assigned under the present international scheme, the subjoined table has been prepared.

TABLE V.

Month.	Mean Value of ΣR^2 .		
	On "0" Days.	On "1" Days.	On "2" Days.
1917.			
January	7495	16579	290128
February	8721	21304	117938
March	9643	20473	53599
April	12136	30865	..
May	10632	27574	80127
June	14071	26910	87717
July	13786	22016	94906
August	14392	21967	330219
September	11971	20208	124974
October	8083	24272	56629
November	4652	16540	45106
December	4083	15070	244578
Year 1917	9796	21751	168806
Year 1916	9262	23006	111444

Of course, the mean values for the year in the "2" day column will vary with the intensity of the larger magnetic disturbances of the year. But the figures for "0" and "1" days show that the standard of distinction between these days, measured by ΣR^2 , was fairly consistent for the two years considered. It may also be mentioned that if 14,000 and 40,000 be taken as the values for 1917, of ΣR^2 , which separate "0" from "1" days and "1" from "2" days respectively, we should have 178, 142, and 44 days of character "0," "1," and "2" respectively, as against 173, 146, and 46 days selected according to the international scheme. The dividing values thus taken are, of course, arbitrary, but it should be noted that 14,000 is about midway between the means of the "0" and "1" days, and 40,000 is about double the mean of the "1" days.

4. *Diurnal Inequalities.*—As in 1915 and 1916, diurnal inequalities for 1917 have been tabulated for (1) five international quiet days (2) for five disturbed days, and (3) for all days in each month. The details for each class of day are given in Tables XLIX. to LXF. Some of the results are exhibited graphically in Plates II. and III.

The quiet days selected under the international scheme were as follows :—

January	3, 15, 18, 28, 29	July	6, 16, 17, 18, 20
February	1, 9, 12, 13, 27	August	5, 6, 19, 28, 29
March	2, 3, 28, 29, 30	September	1, 11, 23, 25, 26
April	10, 11, 14, 20, 27	October	16, 19, 20, 21, 22
May	6, 8, 13, 19, 20	November	9, 10, 15, 16, 23
June	1, 2, 19, 20, 30	December	10, 13, 22, 23, 31

The photographic records were complete for all the days in the list, and the inequalities deduced from them are given in Tables LV. to LX. These inequalities show, in general, an increased range as compared with those of 1916. The range in the mean inequality rose from 36.6γ in 1916 to 42.0γ in 1917 on the north component, from 40.2γ to 47.1γ on the west, and from 11.9γ to 13.8γ on the vertical. The N inequality range was greatest (62.9γ) in August, and the W inequality range (74.1γ) in July. These are the largest monthly values recorded since January 1911. They are due in large part to the almost continuously disturbed conditions which prevailed during these months. For example the Eskdalemuir records showed only one day in August which was even approximately a really quiet day. The December inequality in N was of a somewhat unusual type: the range being 28.1γ , fully thrice its value in a quiet year.

The diurnal inequalities for disturbed days were deduced from the records obtained on the following dates.

January	4, 5, 12, 22, 23	July	2, 13, 22, 29, 31
February	15, 16, 18, 19, 20	August	9, 10, 13, 14, 21
March	4, 5, 8, 21, 25	September	2, 5, 9, 19, 30
April	5, 6, 9, 16, 26	October	3, 13, 14, 28, 29
May	1, 2, 3, 16, 28	November	12, 14, 25, 26, 27
June	7, 13, 23, 24, 25	December	8, 16, 17, 18, 26

Owing to the large absolute range of disturbance during the year, several cases occurred, among these days, on which the trace was off the sheet. These are noted by the symbols $>$ or $<$ in the tabulated hourly values, and further particulars are given in the *Magnetic Notes* under each month. Otherwise, the records are complete for all the selected days.

It will be noted that the days selected include five cases in which 3 successive days occur, nine cases of 2 successive days, and 27 days which stand apart. The distribution in this respect resembles that of the previous year, except that in 1916 one case occurred in which a group of 5 successive days was selected. It has again to be pointed out that although the selected days are those of large—and even those of largest—disturbance, and from that point of view are properly selected, there is reason to believe that the physical significance of events on two successive days may be very different. It may very well be that an analysis of first and second days of large disturbance would yield results of a character differing in more than mere amplitude. There is also need for investigation of such different types of disturbance as those of 27th August 1916 and 6th October 1916. Examples of both types occurred in 1917.

As a general rule, the inequalities for the selected disturbed days of 1917 resembled those of 1915 and 1916. There were, however, some exceptions worthy of mention. On the N component, the evening maximum, which is usually shown in winter months, occurred much earlier in 1917. The noon minimum at equinox was deeper than in the two previous years, but the afternoon maximum was not so pronounced. The afternoon maximum in summer was at least an hour in advance of the corresponding maxima in 1915, 1916. On the W component, there were no marked differences between 1917 and the two previous years. On the vertical component, the inequality range at equinox was much smaller in 1917, and there was also a postponement of both the morning minimum and the afternoon maximum. On the other hand, the 1917 summer range was much greater,

and the feebly-marked minimum about noon, quite noticeable in 1915 and 1916, was absent in 1917.

Compared with 1916, the inequality of all days in 1917 shows larger ranges in N and W but a smaller range in V. The monthly values of the inequality-ranges reached high figures in August (68.1 γ N, 71.4 γ W). The vertical inequality-range was lower than that of 1916 in March, April, and November.

5. *Harmonic Analysis of Diurnal Inequalities.*—The coefficients in the harmonic series which express the different inequalities are given in detail in Tables LXIV. and LXIVA.

Comparison of the two years 1916, 1917 cannot be expected to yield much information, but attention is drawn to the lower values in 1917, as compared with the previous year, of the phase angles of the 24-hour wave. On the north component, it is smaller for all classes of day and at all seasons except for summer on disturbed days and all days.

On the west and vertical components it is smaller for all classes of day and for all seasons. Taken over the whole year, this retardation amounts to about half an hour on the north component; to about the same amount (but larger on disturbed days) on the west and vertical components. The 12-hour wave in 1917, as compared with 1916, was accelerated on disturbed days on all three components, and retarded on quiet days for the north and west components.

Table LXIVA. also illustrates the effect of disturbance on the phase angles, and this is exemplified in the mean diurnal inequality for V. In 1917 the 24-hour wave on disturbed days was about 5 $\frac{3}{4}$ hours in advance as compared with that on quiet days. (For 1915 and 1916 the difference was about 5 hours.) This acceleration is not so marked on the horizontal components.

6. *Daily Range.*—The mean absolute daily range for each month of 1917 is given in the subjoined table, compared with the corresponding means for 1911–16. The figures are also expressed as percentage of the mean daily range for the year.

TABLE VI.—*Absolute Daily Range. Mean Monthly Values, 1917.*

Month.	Mean Absolute Daily Range.						Mean Daily Range expressed as Percentage of Yearly Mean.					
	1917.			Mean, 1911–16.			1917.			Mean, 1911–16.		
	N.	W.	V.	N.	W.	V.	N.	W.	V.	N.	W.	V.
	γ	γ	γ	γ	γ	γ	%	%	%	%	%	%
January .	95.5	96.1	61.9	47.3	48.7	21.7	99	104	115	69	73	54
February .	78.9	83.4	44.3	53.3	57.0	27.2	82	90	82	78	86	68
March .	77.7	83.6	39.1	71.1	75.0	44.8	80	90	73	104	113	112
April .	95.8	80.3	43.6	81.5	75.0	46.7	99	87	81	119	113	117
May .	97.9	87.0	52.0	76.6	66.5	37.8	102	94	97	111	100	95
June .	96.8	95.9	46.0	79.3	75.9	35.1	100	103	86	115	114	88
July .	103.6	101.4	54.8	76.0	70.6	40.4	107	110	102	111	106	101
August .	172.2	145.6	124.0	80.4	72.9	39.3	178	158	231	117	110	98
September .	89.5	89.9	44.1	77.3	70.5	34.8	93	97	82	113	106	87
October .	96.3	93.3	53.5	76.5	73.9	41.5	100	101	100	111	111	104
November .	65.9	61.8	28.1	62.5	61.8	32.5	68	67	52	91	93	81
December .	86.0	88.3	54.0	43.7	49.0	21.3	89	96	101	64	74	53
Winter .	81.8	82.5	47.3	51.6	54.1	28.8	85	89	88	75	81	72
Equinox .	89.8	86.8	45.1	76.0	73.7	49.0	93	94	84	111	111	123
Summer .	117.7	107.6	69.7	78.2	71.3	41.4	122	116	130	114	107	104
Year .	96.6	92.4	53.7	68.7	66.4	39.9	..	..	..	..	..	..

The mean range for 1917 was larger in all three components than in any year since 1911. This, however, was due to the large ranges recorded in August and, to a lesser extent, in December. The values for these months were quite exceptional.

In last year's *Review*, the frequency distribution of absolute daily range, according to different amounts, was given for each year since 1911. A comparison of the 1917 distribution with the mean for 1911-16 is given below.

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

Range. γ	Number of cases, 1917.			Percentage Distribution.					
	N.	W.	V.	N. 1917.	N. 1911-16.	W. 1917.	W. 1911-16.	V. 1917.	V. 1911-16.
0-9 . . .	..	..	12	0.0	0.1	0.0	0.1	3.3	7.8
10-19 . . .	..	..	50	0.0	4.7	0.0	3.4	13.7	22.9
20-29 . . .	4	2	100	1.1	7.7	0.5	7.4	27.4	24.9
30-39 . . .	11	18	58	3.0	9.9	5.0	9.3	15.9	14.1
40-49 . . .	27	23	36	7.4	13.3	6.3	15.1	9.9	8.5
50-59 . . .	38	26	21	10.4	15.6	7.1	17.1	5.8	5.1
60-69 . . .	52	57	29	14.3	12.8	15.6	13.9	7.9	3.4
70-79 . . .	48	51	10	13.2	8.4	14.0	9.6	2.7	2.2
80-89 . . .	41	48	11	11.2	6.5	13.2	6.3	3.0	2.4
90-99 . . .	40	37	8	10.9	3.9	10.2	4.3	2.2	1.9
100-109 . . .	25	30	3	6.9	4.5	8.2	3.3	0.8	1.0
110-119 . . .	19	16	2	5.2	2.4	4.4	2.2	0.5	0.7
120-129 . . .	14	9	1	3.8	2.2	2.5	1.3	0.3	0.5
130-139 . . .	7	12	1	1.9	2.1	3.3	1.1	0.3	0.8
140-149 . . .	1	11	..	0.0	1.0	3.0	1.5	0.0	0.3
150-159 . . .	5	4	3	1.4	0.8	1.1	0.6	0.8	0.3
160-169 . . .	5	2	..	1.4	0.7	0.5	0.5	0.0	0.3
170-179 . . .	4	4	1	1.1	0.4	1.1	0.6	0.3	0.5
180-189 . . .	2	3	3	0.5	0.8	0.8	0.5	0.8	0.3
190-199 . . .	2	..	1	0.5	0.4	0.0	0.4	0.3	0.4
200 and over . . .	20	12	15	5.5	1.7	3.3	1.3	4.1	1.4

If the above data are represented graphically it is seen that the frequency curve for 1917 is displaced in the direction of greater range as compared with the 1911-16 average. This is the usual effect of a more highly-disturbed year. The N component curve for 1917 shows a hump corresponding with ranges of 90γ-100γ, and a drop for 140γ-150γ. The W component curve for 1917 reproduces certain peculiarities in the 1911-16 curve. Both have a point of contrary flexure in the part rising from the origin. Both show a drop in value on the descending portion, the 1917 curve at 120γ-130γ, the 1911-16 curve at 130γ-140γ, the vertical component distribution for 1917 is very close to that of 1911-16.

Table VIII. gives details of the principal magnetic storms recorded at Eskdalemuir during 1917. Compared with the corresponding table of the previous year, it shows a larger proportion of disturbances beginning with "sudden commencements."

As mentioned above, it has not been thought desirable to reproduce by lithography curves for selected storms. Photographic reproductions can be obtained by application to the Superintendent.

TABLE VIII.—Principal Magnetic Disturbances recorded at Eskdalemuir, 1917.

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, 15,000γ; W, 4000γ; V, 44,000γ.

No.	From.			To.			North Component.					West Component.					Vertical Component.																		
	d	h	m	d	h	m	γ	d	h	m	γ	d	h	m	γ	Max.	Time.	Min.	Time.	Range.	Max.	Time.	Min.	Time.	Range.	Max.	Time.	Min.	Time.	Range.					
1*	Jan.	4	7	4	5	4	1214	4	20	27	<630	4	23	32	>584	1156	4	17	33	665	4	20	32	491	>1360	4	17	38	835	4	23	44	>525		
2*	Feb.	15	13	27	16	16	1117	15	18	19	822	16	1	40	295	1185	15	18	27	861	15	21	39	324	1381	15	18	49	960	16	2	10	421		
3*	Apr.	30	22	36	4	6	1099	2	15	56	878	1	22	14	221	1052	2	15	12	897	3	23	22	155	1166	2	15	49	980	2	2	19	180		
4*	May	16	5	45	16	20	1023	{	16	7	32	898	16	12	43	125	1002	16	7	11	940	16	5	46	62	1135	16	17	45	1071	16	9	54	64	
5*	June	6	17	10	8	10	1085	7	19	6	917	7	11	38	168	1069	7	16	34	920	7	21	46	149	1158	7	18	12	1068	7	23	11	90		
6*	June	9	0	6	10	19	1038	10	17	39	941	10	11	44	97	1016	{	9	16	11	937	10	7	8	79	1121	10	18	20	1074	{	10	11	35	47
7*	June	23	18	54	24	12	1084	23	18	52	914	23	23	0	170	1051	23	18	55	923	24	9	34	128	1112	23	20	12	1034	23	23	18	78		
8*	June	24	13	38	25	14	1123	25	14	49	934	24	10	2	186	1099	24	15	4	867	25	1	43	232	1206	24	16	0	1005	25	2	27	201		
9*	July	2	3	42	3	19	1076	2	16	41	937	2	17	24	139	1049	2	17	1	872	3	7	40	177	1113	2	17	38	1048	2	4	18	65		
10*	July	13	0	25	14	0	1163	13	16	20	905	13	11	11	258	1067	13	20	16	929	13	24	0	138	1242	13	16	16	1046	13	7	45	196		
11	July	21	16	0	22	5	1066	21	18	14	922	22	4	7	144	1019	21	19	56	884	{	21	22	55	135	1111	21	21	0	1023	22	4	32	88	
12*	July	27	13	56	28	1	1061	27	19	4	966	27	13	57	95	1041	27	14	2	946	28	0	26	95	1095	27	21	10	1040	28	0	4	46		
13	July	28	12	0	29	19	1064	29	3	24	905	29	10	46	159	1030	28	14	11	867	29	2	50	163	1132	29	13	3	976	29	5	33	156		
14*	July	31	4	40	1	21	1252	31	17	18	902	1	0	58	350	1202	31	17	19	900	1	3	15	302	1336	31	17	33	1009	1	2	26	327		
15*	Aug.	9	4	16	10	20	1152	9	21	32	<770	{	9	22	43	382	1168	9	4	45	704	9	23	16	464	1129	9	18	50	<724	9	23	35	>405	
16	Aug.	13	13	0	16	2	1483	14	16	21	<767	15	1	16	>716	1232	14	16	15	<718	15	2	43	>514	>1328	14	16	0	863	15	4	3	>465		
17*	Aug.	20	8	24	24	3	1265	21	16	46	773	21	22	31	492	1136	21	15	29	734	21	21	57	402	1349	21	15	34	784	22	0	14	505		
18*	Aug.	25	19	44	26	14	1084	25	20	19	774	16	2	5	310	1009	25	20	0	811	26	3	8	198	1122	25	19	46	838	26	2	2	284		
19	Sept.	5	6	10	6	2	1067	5	20	56	840	5	10	37	227	1036	5	6	36	813	5	20	45	223	1182	5	18	41	1028	5	23	12	154		
20	Oct.	28	8	0	31	24	1063	31	23	1	882	29	12	24	181	1015	29	15	36	865	31	20	22	150	1173	29	18	43	087	29	0	0	186		
21*	Nov.	12	7	39	13	2	1076	12	16	28	866	12	18	55	210	1024	12	16	32	878	12	22	2	146	1175	12	16	28	1087	13	0	24	88		
22	Dec.	16	8	0	17	16	1255	16	17	23	630	16	21	27	625	1178	16	17	16	592	16	21	14	586	>1382	16	17	20	833	17	2	55	>540		

ATMOSPHERIC ELECTRICITY :—POTENTIAL GRADIENT AT KEW
OBSERVATORY AND AT ESKDALEMUIR IN 1917. BY
C. CHREE, Sc.D., LL.D., F.R.S.

At Kew Observatory the instruments in use and the observational conditions have remained the same as in 1916. With regard to Eskdalemuir, Dr Mitchell reports that the multiplier which converts millimetres of deflection on the electrogram to volts per metre in the open was found to remain fairly constant during the first six months of the year, averaging about 70. Several changes were made in the second half of the year, making the value of this multiplier very variable. For five days (August 25th–30th) a copper-zinc electrometer was used while the Dolezalek instrument was dismantled and cleaned. On October 29th, 1917 the needle of the electrometer received a violent displacement during disturbance following a snowfall. The multiplier from that date until readjustment on November 9th was 147.

From October 1917 a quantitative record of the rate of leak from the electrograph has been kept at Eskdalemuir. A Wulf electrometer is connected to the wire leading from the jet to the recording electrometer and the whole system is given a charge from a dry pile. The fall of the potential, V , is measured and $-\frac{d}{dt}(\log_e V)$ is computed. Taking the minute as unit of time the value of this coefficient is found to vary between .016 and .013. A value of .025 is taken as indication of defective insulation. With such a value the charge would be reduced by half in about 30 minutes.

Tables A, B, and C, page 64,* give the diurnal inequalities of electrical potential gradient for the months and seasons of 1917. As usual, maxima and minima are distinguished by the letters x and n respectively. Table A, referring to Kew Observatory, is based on selected quiet days, *i.e.* days on which there is no occurrence of negative potential—numbering ten a month. In March, to obtain the full number of “days,” it was necessary to take periods of 24 consecutive hours commencing at different hours of the day. The commencing hour was 0^h in two of these periods, 14^h on six, and 18^h in the remaining two periods. Separate allowance was made for the non-cyclic change in each of the three groups of “days.” There is no entry for March in the column headed “24—0” as the figure would, under the circumstances, have been meaningless. Even on the representative selected day the non-cyclic change must be regarded as in the main an accidental feature, depending on the weather conditions near midnight of the selected days. It is desirable to choose days which will keep it as small as possible, because its elimination proceeds on the hypothesis that it represents a gradual change introduced at a uniform rate throughout the 24 hours, whereas the way it actually comes in is uncertain. When the non-cyclic correction is similar in size to the

* For convenience of comparison with previous years the roman numbers for the Tables are retained.

range of the diurnal inequality, the same confidence cannot be felt in the inequality as when the correction is small. In Table A, December is the only month possessing a notably large non-cyclic change. The diurnal inequality in that month presents, however, no specially abnormal feature.

The mean value for the year in Table A is almost the mean of those for the three previous years, but is a little lower than the mean for 1916. The reduction as compared with 1916 arises from winter and equinoctial months. In three of the summer months and in the summer season the 1917 mean value is the larger.

The diurnal inequality at Kew Observatory shows differences in details throughout the year, but at all seasons two maxima and two minima are clearly recognisable. The afternoon maximum and the early morning minimum are usually the principal ones. In Table A, however, two months, June and September, have the principal maximum in the forenoon, and the same is true of the summer season. The diurnal inequality in June is distinctly abnormal, the afternoon maximum being hardly recognisable. This is mainly accountable for the maximum in the summer season appearing in the forenoon.

Tables B and C refer to Eskdalemuir. The 0a days on which Table B is based correspond fairly with the Kew quiet days. They are days free from negative potential, and having no variation of potential as large as 1000 volts in any hour. All possible days having the necessary characteristics are, however, included, so that the number of 0a days fluctuates a good deal from month to month. The number available for the year was 103, as compared with 84 in 1916. In the winter months 36 days were available as compared with only 16 in 1916. In spite of the enhanced number of days the non-cyclic changes in Table B rule rather high.

The mean value for the year in Table B is 31 volts in excess of the corresponding value for 1916. In winter the excess in 1917 is no less than 118 volts. In summer the 1916 mean value is slightly the higher. The phenomena are thus the exact opposite of those described at Kew Observatory.

The diurnal inequality at Eskdalemuir throughout the whole year shows only one prominent maximum and minimum in the day. If we take, for example, the summer inequality in Table B—the general features of which are very similar to those of the mean of the three previous years, though its amplitude is less—we see that from 7^h to 18^h the value is persistently below the mean for the day, while during the remaining hours it is persistently above the mean. There is a distinct maximum near midnight, and a distinct minimum near noon. If there is a secondary maximum and minimum, they are insignificant and obscured by the irregularities existent in data depending on a single year. The equinoctial inequality is obviously similar to that for summer, only the hours of occurrence of the maximum and minimum and the times of change of sign present themselves earlier in the day. In winter the type at first sight looks quite different, negative signs presenting themselves at the early hours when positive signs are prominent in summer. But on closer inspection it will be seen that the type is fundamentally the same, only there is a great change in the hours of the maximum and minimum and in the times when the changes from + to — and from — to + occur. The minimum in winter presents itself at an early hour in the morning, just as it does at Kew Observatory the whole year round. But the type of the winter inequality

at Eskdalemuir is quite different from that at Kew Observatory, showing practically no trace of a secondary maximum in the forenoon or a secondary minimum in the early afternoon. It will be convenient to speak of the summer and winter *varieties* of inequality at Eskdalemuir when we want to emphasise the difference between an inequality having the negative sign most prominent near noon and an inequality having the negative sign most prominent in the early morning. It will be seen that the winter variety is dominant in Table B in all four winter months, and also in March, and to a less extent in October. May, June, July, and September, on the other hand, exhibit the summer variety. The same is true of August, but the transition from minus to plus in that month presents itself abnormally late in the day, and in consequence the maximum is deferred until the early morning hours. A somewhat similar phenomenon presents itself in April. The inequality in that month is, from the ordinary point of view, quite abnormal, the minimum appearing near the ordinary hour for the maximum, and conversely. The peculiarities of the August and April inequalities make themselves felt in the diurnal inequalities for their respective seasons by reducing the ranges.

In the inequality for the year in Table B we have a superposition of the winter and summer varieties. The winter months' inequalities having the larger ranges, the consequence is that the diurnal inequality for the year has an unbroken sequence of negative values from 0^h to 15^h. But the influence of the summer months leads to a very rounded form of curve. Between 1^h and 13^h the voltage ranges only from $-19v$ to $-40v$, and the average of the thirteen departures from the mean for this interval is only five volts.

The 1a and 2a days, included in Table C, agree with 0a days in the absence of large rapid excursions, but show negative potential. They numbered 49 in 1917, as compared with 44 in 1916. The number of days in individual months, especially October and March, is so small that conspicuous irregularities in the inequalities are inevitable.

In every month except May the mean value is lower in Table C than in Table B. This is a natural consequence of the presence of negative potential in 1a and 2a days. The difference between the mean values is exceptionally pronounced in March. The range in the monthly inequalities is larger in Table C than in Table B in seven months out of the twelve, and in the average of the twelve months. This might be due to negative potential being especially frequent near the natural hours of minimum. If such, however, were the case, the excess in the range should also appear in the seasonal inequalities in Table C, which is not true of the year as a whole, nor of two seasons out of the three. Thus the phenomenon is more likely due to the reduced number of days available for Table C.

If there is a persistent tendency to a regular type of diurnal variation, with maxima and minima at fixed hours, and irregular departures from it are small, the range of the inequality derived from a number of days is but little less than the arithmetic mean of the absolute ranges of the included days. If, however, there is no one dominant type of inequality, or if, while there is such a type, large departures from it are of daily occurrence, the inequality range will naturally fall far short of the arithmetic mean of the absolute ranges, and the larger the number of days the more is this likely to be the case. When irregular departures from a dominant

type are large, the inequality derived in a single month from a small number of days does not have its accidental features smoothed away to the same extent as when a larger number of days are included. And when one combines into seasons several months each containing but a few days, these irregular features will naturally tend to neutralise one another, and so lead to a relatively smaller range in the seasonal diurnal inequality.

It is thus of interest to compare the ranges of the seasonal diurnal inequalities in Tables A, B, and C with the corresponding arithmetic means of the ranges of the inequalities of the included months. The results obtained are as follows:—

(Range in seasonal inequality) ÷ (Mean of ranges in included months).

Table.	Year.	Winter.	Equinox.	Summer.
A	0·77	0·94	0·81	0·84
B	0·50	0·93	0·64	0·80
C	0·39	0·35	0·57	0·39

We see that in winter the ratio approached unity in Tables A and B. The natural inference is that even in the monthly inequalities at that season, in days free from negative potential, the accidental features are too small to have a serious effect on the hours of occurrence of the maximum and minimum. A second inference is that the dominant type of the diurnal inequality is much the same for the four winter months. For, obviously, a marked difference of type in the inequalities natural to the included months would affect the seasonal inequality in the same way as a difference in the characteristics of the diurnal variation in individual days of a month affects the monthly inequality.

The equinoctial season is that where we should naturally expect to find least homogeneity in the type of the diurnal inequality, as the climatological conditions in March and September are usually very different. But for quiet days at Kew Observatory the ratio for the equinoctial season is substantial, and only a trifle less than that for summer. In the case of the year, the reduction of the ratio from 0·77 in Table A to 0·50 in Table B is a natural consequence of the larger difference between the winter and summer varieties of variation at Eskdalemuir than at Kew Observatory. The smallness of the ratio at all seasons in Table C seems mainly due to the large accidental element that remains in the diurnal inequalities for individual months.

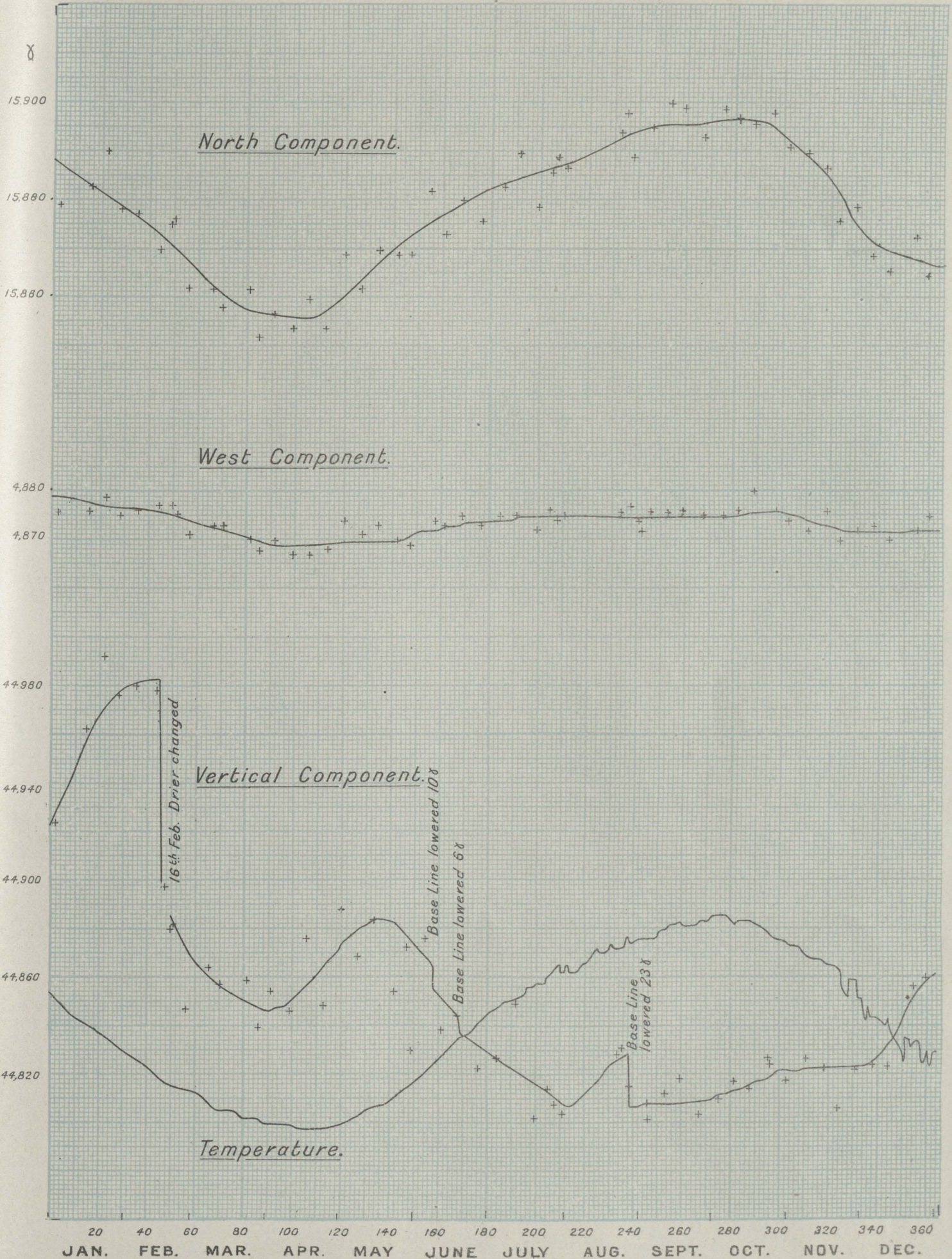
In the way the tables are formed the single day on which the October inequality in Table C depends has as much weight in the equinoctial and annual inequalities as have the six days on which the September inequality depends. If it were certain that the natural type of the diurnal inequality was closely alike for all the months of a season, there would be much to be said for allowing equal weight to the individual days, irrespective of the month to which they belong. If this were done in Table C, the single October day would have its weight reduced from 1/4 to 1/15 in the inequality for equinox, and the three February days would have their weight reduced from 1/4 to 1/6 in the inequality for winter. The consequent effect on the seasonal inequalities would be considerable.

The great differences that present themselves in the diurnal changes of electrical potential gradient on different days of the same month reduce the value that one naturally attaches to diurnal inequalities. It is obviously desirable to know whether in a specified month we have to do with a single dominant type of diurnal variation, from which there are on individual days accidental departures, or whether we have several fundamentally different types, each characteristic of a particular type of weather.

The large seasonal variation in the hour of minimum on 0a days at Eskdalemuir may throw some light on the causes operative in producing low potentials there.

ESKDALEMUIR MAGNETOGRAPHS, - BASE VALUES.

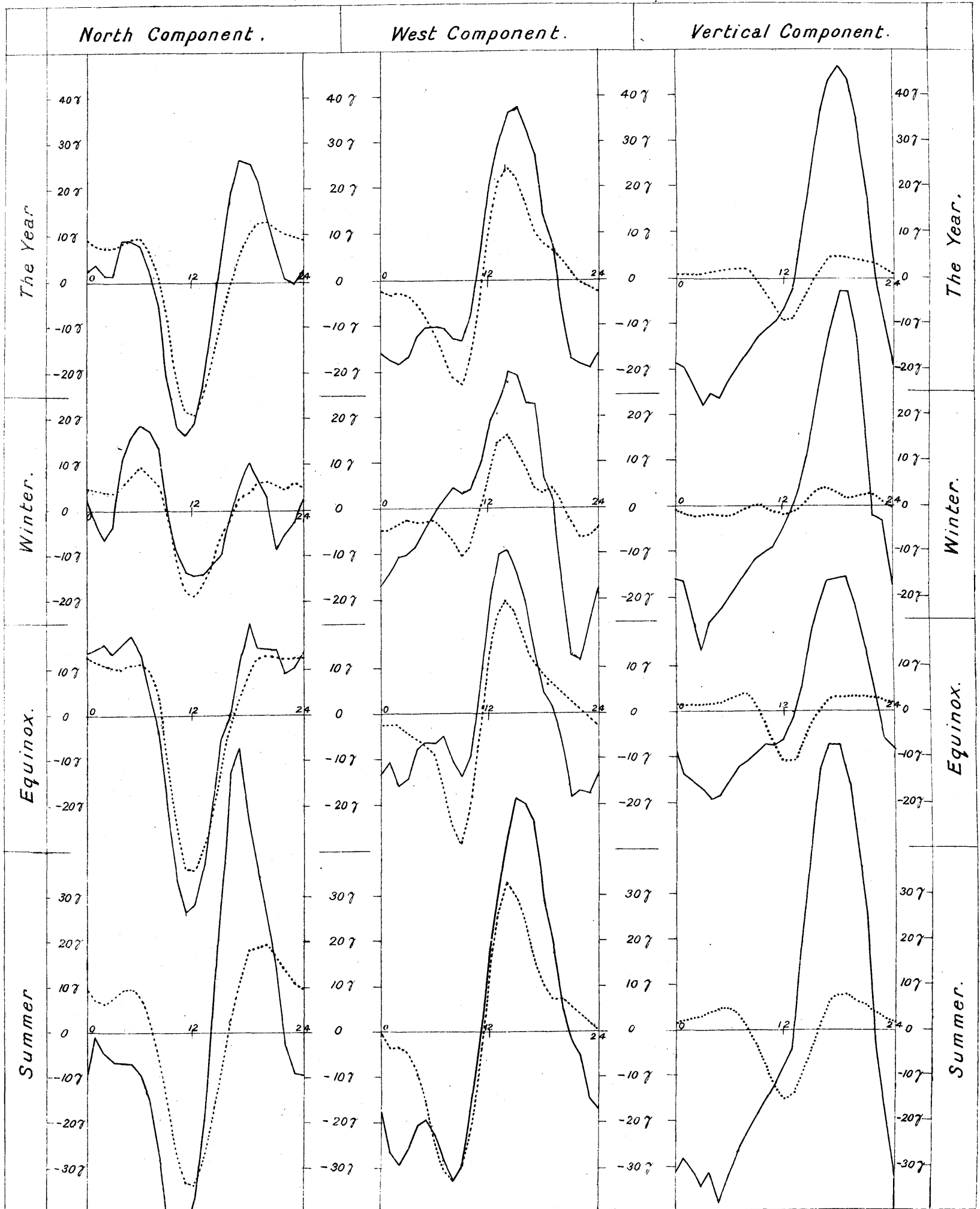
— 1917. —



DIURNAL VARIATION IN THE COMPONENTS OF MAGNETIC FORCE

ESKDALEMUIR, 1917.

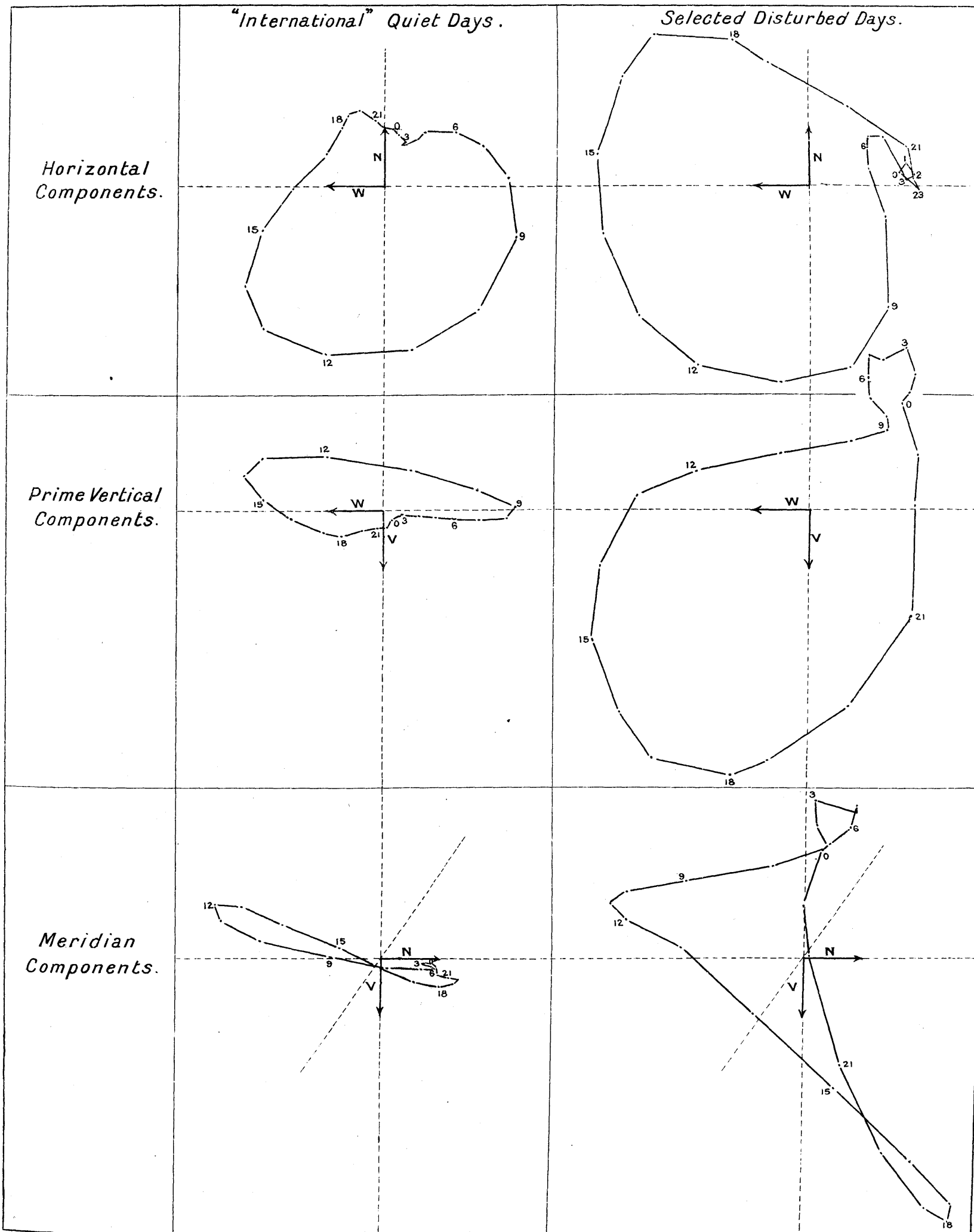
QUIET DAYS Dotted lines..... DISTURBED DAYS Continuous lines.



Scales:- Force: 1mm = 1γ

Time: 2mm = 1 hour.

VECTOR DIAGRAMS ILLUSTRATING DIURNAL VARIATION IN MAGNETIC FORCE ON QUIET DAYS AND DISTURBED DAYS. ESKDALEMUIR 1917.



Scale: 0.05 in. = 1 γ .