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THE  
OBSERVATORIES'  
YEAR BOOK  
1958

Comprising the meteorological and geophysical results  
obtained from autographic records and eye observations  
at the Lerwick, Eskdalemuir, and Kew Observatories

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## PREFACE

The *Observatories' Year Book* was published for the years 1922 to 1937 in continuation of Part III Section II and Part IV of the *British Meteorological and Magnetic Year Book* for the period 1908 to 1921. Further publication was resumed eventually after a long interruption because of the 1939-45 war but in an abridged form as outlined in the next paragraph.

The General Introduction to the Meteorological Tables and the parts of the Sectional Introductions which deal with site, instruments, procedure and tabulations included in the volume for 1938 have served as the standards of reference for subsequent Year Books; only important departures from these standards have since been mentioned explicitly. The space devoted to the discussion of observations has been reduced and the monthly tables of individual hourly values of meteorological elements have been discontinued, but summaries of the daily mean values (or total), monthly means (or totals) of the hourly values and some maximum and minimum values have been given. The diary of cloud, weather and visibility, and, after 1939, the aerological and seismological tables have also been discontinued but no major changes have been made in the tables of atmospheric electricity and terrestrial magnetism.

Another major review of the contents of the *Observatories' Year Book* has now been carried out and a number of important changes have been made, commencing with this volume. It has also been decided to publish the volumes for 1957 and 1958 out of turn in order that the observations for the period of the International Geophysical Year may become available as early as possible. Volumes of the *Observatories' Year Book* up to and including the year 1956 will however conform in style and content to the volumes for 1939 and subsequent years as outlined above, whenever they may be published.

The meteorological data for Kew and Eskdalemuir have been omitted from 1957 onwards; a punched card system of recording such data has been adopted. It has also been decided to omit all mention of the seismological work at Kew. Full details of the seismological measurements are given in the *Kew Seismological Bulletin*, distribution of which was resumed in 1947 after a break of seven years, and are also communicated to the *International Seismological Summary*. There are also some changes in the terrestrial magnetism and atmospheric electricity tables; full details of the changes are given in the Introduction to this volume.

There is now only one Introduction, replacing the General Introduction and separate Introductions to each Observatory. This is followed by the tables; firstly the geomagnetic, auroral and atmospheric electrical data for Lerwick; secondly the geomagnetic and atmospheric electrical data for Eskdalemuir; thirdly the atmospheric electrical and atmospheric pollution data for Kew. The form of the General Auroral table has been altered and the observations now cover the whole of the British Isles.

It may be of assistance to those who make use of the data in this volume to know the full range of the other work now (1960) carried out at the three Observatories and this is detailed below. Requests for information about this other work should be addressed to the Director-General, Meteorological Office, Air Ministry, Victory House, London, W.C.2.

### *Lerwick Observatory*

Full hourly synoptic observations of the weather. Hourly tabulations of pressure, wind, rainfall, sunshine, temperature, humidity, total and diffuse solar radiation on a horizontal surface, daylight illumination on a horizontal surface (the last named from May, 1958). Daily measurements of evaporation (from April, 1958) and atmospheric pollution.

## PREFACE (contd.)

Routine radio sonde and radar wind upper air measurements (twice and four times daily respectively). Regular measurements, normally several times a day, of the total amount of ozone. Chemical sampling of the air and rain water (from January, 1958).

*Eskdalemuir Observatory*

Full hourly synoptic observations 06-21h. G.M.T. (Three-hourly 06-21h. G.M.T. before May, 1958). Hourly tabulations of pressure, wind, rainfall, sunshine, temperature, humidity, total and diffuse solar radiation on a horizontal surface, daylight illumination on a horizontal surface (the last named from May, 1958). Daily measurements of evaporation (from October, 1957) and atmospheric pollution. Regular measurements, several times a day, of the total amount of ozone and occasional *umkehr* measurements of the vertical distribution. Chemical sampling of the air and rain water (from October, 1957).

*Kew Observatory*

Three-hourly synoptic observations 06-21h. G.M.T. Hourly tabulations of pressure, wind, rainfall, sunshine, temperature, humidity, total and diffuse radiation on a horizontal surface, solar radiation at normal incidence, daylight illumination on a horizontal surface, net flux of radiation. Daily measurements of evaporation and atmospheric pollution. Records from a set of Galitzin seismographs (3 components) and a short period vertical seismograph.

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NOTE ON THE TABLES: Maximum and minimum values are shown in italics.

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**LERWICK**





## INTRODUCTION

## DESCRIPTION OF OBSERVATORIES

*Lerwick Observatory, Shetland Isles (60°08' N, 0°11' W)*

The Observatory is set on a ridge of high ground about 85 m. above M.S.L. and about 2½ km. to the south-west of the small fishing town of Lerwick (population about 6000). The surrounding country is desolate moorland. Views of the station are given in Figs.2 and 4 together with a contoured map of the surroundings, Fig.1, and a site plan, Fig.3 in the *Observatories' Year Book* for 1938. An account of the history of the Observatory is given by W.G. Harper (*Met. Mag.*, London, 79, 1950, p.309).

*Eskdalemuir Observatory, Dumfriesshire (55°19' N, 3°12' W)*

The Observatory is situated on a rising shoulder of open moorland about 245 m. above M.S.L. in the upper part of the valley of the River Esk in the Southern Uplands of Scotland. It is surrounded by open grass covered hills rising within 8 km. to the north-west to nearly 700 m. above M.S.L.

In the *Observatories' Year Book* for 1938 a general view of the Observatory and its grounds is given in Fig.12; Fig.13 is a site plan and Fig.11 is a contoured map of the surrounding country. The history of the Observatory is described by M.J. Blackwell in a paper marking the fiftieth anniversary of the commencement of observations (*Met. Mag.*, London, 87, 1958, p.129), and by J. Crichton (*Met. Mag.*, London, 79, 1950, p.337).

*Kew Observatory, Richmond, Surrey (51°28' N, 0°19' W)*

Kew Observatory lies in the centre of an area of parkland about 16 km. west of the centre of London. The ground level is about 5 m. above M.S.L. Outside the parkland within 1 km., the area is extremely built-up, with a number of small factories within a few kilometres to the north and east.

Figs.18, 19, 20 and 21 in the 1938 *Observatories' Year Book* are respectively a plan of the surrounding country (shading indicates built-up areas), an aerial photograph of the Observatory, a site plan and a photograph of the Observatory and instrument lawn.

For the early history of the Observatory reference may be made to papers by G. Rigaud<sup>1</sup>, R.H. Scott<sup>2</sup>, C. Chree<sup>3</sup>, O.J.R. Howarth<sup>4</sup>, R.S. Whipple<sup>5</sup>, F.J.W. Whipple<sup>6</sup> and A.J. Drummond<sup>7</sup>.

Fuller descriptions of the sites of each observatory are given in the 1938 volume of the *Observatories' Year Book* (Lerwick, p.14, Eskdalemuir, p.84, Kew, p.168).

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1 RIGAUD, G.; Dr. DEMAINBRAY and the King's Observatory at Kew. *Observatory, London*, 5, 1882, p.279.

2 SCOTT, R.H.; The history of the Kew Observatory. *Proc. roy. Soc. London*, 39, 1885, p.37.

3 CHREE, C.; Description of the Kew Observatory, Old Deer Park, Richmond, Surrey. *Rec. roy. Soc.*, London, 1st. edn., 1897, p.137.

4 HOWARTH, O.J.R.; The British Association for the Advancement of Science: a retrospect 1831-1921. London, 1922.

5 WHIPPLE, R.S.; An old catalogue and what it tells us of the scientific instruments and curios collected by Queen Charlotte and King George III. *Proc. opt. Conv.*, London, Pt. II, 1926.

6 WHIPPLE, F.J.W.; Some aspects of the early history of Kew Observatory. *Quart. J.R. met. Soc.*, London, 63, 1937, p.127.

7 DRUMMOND, A.J.; Kew Observatory. *Weather London*, 1947, p.69.

## TERRESTRIAL MAGNETISM

Regular recording of the earth's magnetic field commenced at Kew in 1857. By the beginning of the twentieth century however, the extension of London's electric railway and tramway system had caused so much magnetic disturbance that it was decided to establish another magnetic observatory in an area considered unlikely to be similarly affected. This led to the building of Eskdalemuir Observatory which was opened in 1908, but magnetic observations were also continued at Kew up to 1924.

Comparisons of the magnetic results obtained at Kew and Eskdalemuir showed, however, that it would be very desirable to obtain magnetic records as far north as possible in the British Isles, and this resulted in the establishment of Lerwick Observatory in 1921. Recording of the magnetic field has been continuous at Lerwick since January 1923.

The principal magnetographs at Lerwick and Eskdalemuir are La Cour instruments, each set consisting of  $H$ ,  $D$  and  $Z$  variometers. The  $H$  and  $D$  magnets are about 1 cm. in length, and each is supported by a single quartz fibre. A description of the  $H$  variometer is given in *Publikationer fra det Danske Meteorologiske Institut, Communications Magnétiques, No.11 (le variomètre de Copenhague)*. The  $Z$  magnet is larger; it is supported by knife-edges resting on agates and is enclosed in a sealed vessel. A description of this instrument is given in *Publikationer fra det Danske Meteorologiske Institut, Communications Magnétiques, No.8 (la balance de Godhavn)*.

The recording apparatus is so designed that the three elements are recorded on one sheet of photographic paper with a single electric lamp as source of light. Time marks are made by a second lamp, the circuit of which is closed by a clock contact every five minutes. The width of paper is 10 cm. for each element, but the effective range of the variometer is increased by a number of small prisms which reflect light from the lamp into the variometers, producing a series of vertical light sources.

Scale values of  $H$  and  $Z$  are measured by passing a current through Helmholtz-Gaugain coils placed over the variometers, the resulting deflexions being recorded on the photographic paper. The current is measured by a milliammeter which is periodically calibrated. It is thought that the scale values adopted, about  $4\gamma/\text{mm}$ . for  $H$  and about  $6\gamma/\text{mm}$ . for  $Z$  at both Observatories, are accurate to about 1 per cent. The scale value of  $D$  depends only on the geometry of the system, with a small correction for torsion but it may also be checked by means of a Helmholtz-Gaugain coil. It is about  $0.9/\text{mm}$ . The  $H$  and  $Z$  variometers are capable of accurate compensation for temperature.

In addition to the La Cour standard magnetograph each Observatory also has a La Cour quick run magnetograph. This is similar to the standard set but has a time scale twelve times as great and a more complicated optical system.

Complete sets ( $H$ ,  $D$  and  $Z$ ) of supplementary magnetographs with lower sensitivity are also operated to provide information during any breaks in the standard magnetograph records and also to provide information when rapid magnetic disturbance renders the traces of the standard magnetograph indecipherable. Details of these instruments can be found in the 1938 volume of the *Observatories' Year Book*.

The La Cour magnetographs at Lerwick are housed in a non-magnetic concrete chamber above ground whose internal size is 4.9 m. by 3 m. with walls 76 cm. thick. In 1947 an electric heater was installed, controlled by a thermostat. This enables the temperature inside the chamber to be kept reasonably constant for periods of up to a few months at a time but the power is insufficient to keep the same temperature throughout the year. The thermostat is reset by several degrees at a time, so as to reduce the number of changes to a minimum. The time for a cycle of temperature changes (that is, the time between successive operations of the thermostat contacts) is of the order of one hour and a small oscillation of the temperature of the magnetograph is evident from the records, but the amplitude is only about one degree Celsius. The supplementary magnetographs are housed in a wooden hut.

At Eskdalemuir the magnetographs are placed in an underground chamber constructed throughout of non-magnetic material. Within the outer shell of stone and concrete and separated there from, and from each other, by corridors and vaultings are two similar rooms of approximate internal dimensions - length 7.6 m., width 6.1 m., height 3.0 m. The ceilings of the rooms are slightly below the undisturbed level of the surrounding ground. The roof portions of the outer containing shell is covered with a thick layer of earth which forms a mound. Electrical heating, thermostatically controlled, was introduced in November 1936 but, although the diurnal range in temperature is normally negligible, there is an annual range of temperature of about 4°C.

The temperature in the magnetograph chamber at both Lerwick and Eskdalemuir is read daily at 09h. and the readings are given in Table 4 (for Lerwick) and Table 25 (for Eskdalemuir).

Absolute measurements of each element of the magnetic field are made three times weekly and from these the base line values of the magnetographs are computed, using the mean ordinate of the variometer curve at the times of the absolute observation. The adopted values of the baseline are obtained by a graphical smoothing process. Normally one value is adopted for the whole of one day (0-24h. G.M.T.) except for known instrumental discontinuities, but at Lerwick the temperature compensation of the  $H$  variometer is not quite perfect and a baseline change of 2 or 3 $\gamma$  may occur when the chamber thermostat is altered. Since the magnetograph record shows that the temperature change is substantially complete in 24 hours, the adopted baseline is on these occasions changed in 1 $\gamma$  steps at eight or twelve hourly intervals.

#### TABULATIONS

Tables 1 and 22 give, for Lerwick and Eskdalemuir respectively, mean values of the horizontal component ( $H$ ) of magnetic force for periods of 60 minutes ending at the exact hour G.M.T. together with hourly, daily and monthly sums and means. Tables 2 and 23 give similar information for declination ( $D$ ) and Tables 3 and 24 for the vertical component ( $Z$ ). Tables 4 and 25 contain the values of the daily extremes of each component, the range during the day and the magnetic character figures  $K$  and  $C$  together with the 09h. temperature in the magnetograph chamber.

Tables 1-4 are subdivided into monthly sections and the same monthly parts of each table are grouped together on facing pages. Tables 22-25 are treated similarly. The days selected by the International Association of Geomagnetism and Aeronomy (I.A.G.A.) as being typical "quiet" and "disturbed" days are marked by the letters "q" and "d" respectively.

In general the declination ( $D$ ) is measured to the west and is considered to increase with increasing westerly declination in accordance with the convention adopted in previous volumes. There is, however, an important exception in the Tables 17 and 42 entitled "Noteworthy Magnetic Disturbances" (see below). In these two tables a movement of  $D$  to the east (that is, decreasing westerly declination) is regarded as positive, in order that the data in the tables may agree in every respect with data already supplied to I.A.G.A.

The magnetic character figures  $K$  and  $C$  are derived in the conventional way (see for example, *I.G.Y. Instruction Manual Part IV Geomagnetism - Part I*). The lower limit for  $K = 9$  is 1000 $\gamma$  for Lerwick and 750 $\gamma$  for Eskdalemuir.

Tables 5 (for Lerwick) and 26 (for Eskdalemuir) give the mean monthly and annual values of the magnetic elements  $H$ ,  $D$  and  $Z$  together with the values of the North Component ( $X$ ), West Component ( $-Y$ ), Inclination ( $I$ ) and Total Force ( $F$ ). The values for  $H$ ,  $D$  and  $Z$  are also given for the international quiet and disturbed days.

Tables 6 and 7 (for Lerwick) and 27 and 28 (for Eskdalemuir) give monthly, seasonal and annual means and frequency distributions of the daily range for each component ( $H$ ,  $D$  and  $Z$ ).

For this purpose "Winter" is defined as the four months November to February; "Equinox" as March, April, September and October; "Summer" as May to August.

Tables 8 and 29 contain values of the Q index (from July 1, 1957). This index gives a measure of the magnetic disturbance in the  $H$  and  $D$  traces during intervals of 15 minutes centred at 00h., 00h.15m., 00h.30m., etc., (that is, covering the periods 2352½ to 0007½ etc.) throughout the day. The entry for each day consists of 96 figures on a scale 0-9, T, E, (T standing for 10 and E standing for 11). Full details of the definition of the Q index and the methods used in scaling it are given in the *I.G.Y. Instruction Manual Part IV, Geomagnetism - Part I* and in a paper by J. Bartels and N. Fukushima "A Q index for the Geomagnetic activity in quarter-hourly intervals", *Abhandlungen Akad. Wiss. Gottingen Math-Phys. Klasse*. No.3 1956, but briefly it can be said that the figure allotted for each 15 minute interval is a measure of the maximum deviation of the  $H$  and  $D$  records from what it is estimated the records would have been on a perfectly quiet day. The figure is first allotted from the  $H$  magnetogram and then increased if necessary by inspection of the  $D$  record. The lower limits of the ranges corresponding to the figures 0-9, T, E are as follows (expressed in  $\gamma$ ):

Q	0	1	2	3	4	5	6	7	8	9	T	E
Lower Limit	0	10	20	40	80	140	240	400	660	1000	1500	2200

There is no upper limit for the highest index. At Lerwick and Eskdalemuir the estimated quiet day curves are normally drawn lightly in pencil on the magnetograms using templates, the position of the template being adjusted by reference to the preceding and following charts as necessary.

The next set of tables (9-16 for Lerwick and 30-38 for Eskdalemuir) give data on the diurnal inequalities of each magnetic element. As recommended by a resolution of the Commission for Terrestrial Magnetism and Atmospheric Electricity and approved by the Conference of Directors at Warsaw in 1935, the diurnal inequalities are all uncorrected for non-cyclic change, but the values of the non-cyclic change are also given separately in tables 14 and 37.

Some information is given for Eskdalemuir but not for Lerwick. This includes the diurnal inequalities of the North ( $X$ ) and West ( $-Y$ ) components and the Inclination ( $I$ ), and values of the first four harmonic components of the diurnal inequalities of the north, west and vertical components.

The inequalities of  $X$ ,  $-Y$  and  $I$  have been computed from those of  $H$ ,  $D$  and  $Z$  by means of the formulae:

$$\delta X = \cos D. \delta H - \frac{\pi}{180 \times 60} H \sin D. \delta D$$

$$-\delta Y = \sin D. \delta H + \frac{\pi}{180 \times 60} H \cos D. \delta D$$

$$\delta I = \frac{180 \times 60}{\pi} \cos I \left[ \frac{\delta Z \cos I - \delta H \sin I}{H} \right]$$

in which  $\delta D$  and  $\delta I$  are expressed in minutes of arc, and  $H$ ,  $D$  and  $I$  for any given month are the respective mean values for that month as published in Table 26.

The results of harmonic analysis of the mean diurnal inequalities of  $X$ ,  $-Y$  and  $Z$  for the months, seasons and year are to be found in Table 39, in which are given the values of  $a_n$ ,  $b_n$ ,  $c_n$  and  $\alpha_n$  in the two equivalent series  $\Sigma (a_n \cos 15nt^\circ + b_n \sin 15nt^\circ)$  and

$\sum c_n \sin(15nt^\circ + \alpha_n)$ . In the former series  $t$  is reckoned in hours from midnight G.M.T., whilst the published values of  $\alpha_n$  refer to local mean time. The harmonic coefficients have been computed from the inequalities as given in Tables 30-35 but for this purpose the non-cyclic change has been eliminated. A correction has been applied where necessary, because the hourly values are not instantaneous but are mean values; the factors by which the coefficients have to be multiplied (see *Report of the British Association, 1883, p.98*) are 1.00286 for  $a_1, b_1,$  and  $c_1$ ; 1.01152 for  $a_2, b_2,$  and  $c_2$ ; 1.02617 for  $a_3, b_3,$  and  $c_3$ ; and 1.04720 for  $a_4, b_4,$  and  $c_4$ . The values were obtained to two decimal places and finally were rounded off to 0.1 $\gamma$ .

Tables 17 and 42 are entitled "Noteworthy Magnetic Disturbances". These were revised in content in 1947 and now include all the disturbances which would have been included in the previous type of tables, with, however, additional disturbances of the form of sudden commencements and those which can be recognised as being solar flare effects. The tables are divided into three parts:

- (a) Disturbances noteworthy for some reason (usually, but not always, range) and without a sudden commencement.
- (b) Well marked sudden commencements whether followed by a large disturbance or not.
- (c) Disturbances accompanying a solar flare or other known solar flare effect.

The time given of commencement and ending of disturbances in (a) must depend on an arbitrary judgement. The list of sudden commencements under (b) will usually be a little shorter than that given in the I.A.G.A. bulletins because a somewhat stricter meaning has been given to the words "well marked", and also because the sharp beginnings of small polar disturbances have been omitted. The (c) table has been made as complete as possible by a careful scrutiny of the magnetograms at the time of any known solar flare or solar flare effect, but a small "crochet" can easily be masked by other disturbances. The signs given to the movements of  $H, D$  and  $Z$  are positive for increasing  $H, Z$  and an increase of force towards the east (that is, a decreasing westerly declination). Particulars of the same disturbances are given in both the Lerwick and the Eskdalemuir tables, even if the disturbances at one of the stations is relatively small.

Tables 40 and 41 are based on declination data (for Eskdalemuir) supplied to mine surveyors. Each hourly period between exact hours G.M.T. has been classified into one of four groups according to the range of declination within the period. The limits are: less than 5', 5'-15', 15'-30' and greater than 30'; the range is less than 5' in about 85% of the hours.

Table 40 gives the number of occurrences of hourly ranges in each of the last three of the four divisions mentioned above, in each month of the year. Table 41 gives the hourly distribution using data for the whole year.

#### NOTES ON THE RESULTS

Comparing mean values on all days of 1958 with those for 1957 at Lerwick  $H$  increased by 21 $\gamma$ ,  $D$  (west) decreased by 5' and  $Z$  increased by 23 $\gamma$ . The changes deduced in  $X, Y, I$  and  $F$  are +24 $\gamma, -17\gamma, -0.9$  and +29 $\gamma$ . The ranges between the extreme values recorded during 1958 were  $H$  3216 $\gamma, D$  6°42'6,  $Z$  1408 $\gamma$ . The range of 6°42'6 in declination corresponded to a range of about 1699 $\gamma$  in the component of force perpendicular to the magnetic meridian.

Similarly at Eskdalemuir  $H$  increased by 24 $\gamma, D$  (west) decreased by 6', and  $Z$  increased by 24 $\gamma$ . The changes deduced in  $X, Y, I$  and  $F$  are +29 $\gamma, -23\gamma, -1.0$  and +30 $\gamma$ . The ranges between the extreme values recorded during 1958 were  $H$  2762 $\gamma, D$  3°5'6,  $Z$  970 $\gamma$ . The range

of  $3^{\circ}5'6$  in declination corresponded to a range of about  $902\gamma$  in the component of force perpendicular to the magnetic meridian.

#### ABSOLUTE STANDARDS OF MAGNETIC FORCE AT LERWICK AND ESKDALEMUIR

##### *Horizontal Component*

Since January 1, 1934 the standard absolute instrument for the measurement of the horizontal component at Eskdalemuir has been a Schuster-Smith coil magnetometer. A complete description of this instrument and of the method of using it is given in the *Philosophical Transactions of the Royal Society*, A.223, 1922, p.175. Essentially the instrument consists of a Helmholtz-Gaugain system of two coils of wire accurately wound on a hollow marble cylinder, and a small magnet suspended at the centre of the coil system. Current from a 100 volt storage battery (kept solely for this purpose) can be passed through the coils and can be very accurately adjusted to a series of known values by means of a potentiometer and a standard cell. A horizontal magnetic field is set up at the centre of the coil, of a magnitude slightly greater than  $H$  and approximately opposed to it in direction. The coil is then rotated in azimuth until the resultant horizontal field, as indicated by the alignment of the small magnet at the centre, is found to be exactly at right angles to the earth's field. In this position, if  $\alpha$  is the angle between the direction of the earth's field and that set up by the coil system,  $A$  the constant of the coil (that is, the field due to unit current through the coil) and  $i$  the current, then

$$H = Ai \cos \alpha$$

Since 1939 at Lerwick the standard instrument has been a Smith portable coil magnetometer reconstructed to operate as a Schuster-Smith instrument.

In addition three Copenhagen Quartz Horizontal Magnetometer instruments (Q.H.M.'s) are available for intercomparison of the  $H$  standards at each Observatory and for use as standby absolute instruments.

The coil constant of the Eskdalemuir Schuster-Smith instrument was obtained by a direct comparison with the original instrument of this type at Abinger. Its potentiometer was calibrated at the National Physical Laboratory in 1933 and again in 1938 and 1953. The recalibrations showed negligible change in the resistances.

The constant of the Lerwick coil instrument was determined in 1932 by comparison with the Schuster-Smith Coil at Abinger and this constant has since been used unchanged. During the magnetometer's modification to act as a Schuster-Smith instrument, however, a small amount of magnetic material was removed from near the suspended magnet. A comparison with the Schuster-Smith magnetometer at Eskdalemuir then showed that the Lerwick instrument read  $13\gamma$  low. This was generally confirmed when it was installed at Lerwick in 1939 as it then gave results  $11\gamma$  below those obtained with the unifilar magnetometer currently in use as a standard. It was decided that the Lerwick standard of  $H$  should be (Coil values +  $11\gamma$ ) and there was no discontinuity in the published values of  $H$ , the term "Coil value" meaning the results obtained using the original value of the coil constant as determined in 1932.

However in 1946 comparisons between Lerwick and Abinger using Q.H.M. No.89 indicated that the Lerwick Coil magnetometer (uncorrected by any addition) gave results which were only  $5\gamma$  lower than the Abinger Schuster-Smith Coil; that is, values of  $H$  according to the Lerwick standard (Coil +  $11\gamma$ ) were  $6\gamma$  greater than the values given by the Abinger standard.

In 1947 it seemed desirable to assimilate the standard of  $H$  at Lerwick to that at Abinger so that the revised  $H$  standard at Lerwick became (Coil +  $5\gamma$ ). This assimilation was back-dated to January 1, 1934; where necessary corrections have been published (see, for example, 1938 *Observatories Year Book*, p.21).

The potentiometer in use with the Coil magnetometer had been calibrated at the National Physical Laboratory in 1938 and this was sent for recalibration in 1953. It was then found that the resistances had changed slightly and that the effect of this, when the new values were used, was to lower the values of  $H$  observed by  $7\gamma$ . The time of this change could not be identified with certainty and it was decided that no discontinuity should be introduced and that the Lerwick  $H$  standard should be altered from June 1, 1953 to (Coil +  $12\gamma$ ), using the new calibration of the potentiometer. Although this avoided a discontinuity, it established a new standard for  $H$  at Lerwick which was  $7\gamma$  higher than the Abinger standard.

Comparisons were made fairly frequently between 1948 and 1957 between Lerwick and Eskdalemuir using Q.H.M.'s, but it was found that reliable results (to an accuracy of 1 or  $2\gamma$ ) could not be obtained by using only one Q.H.M. or by using Q.H.M.'s sent through the post. It has been found necessary to use at least three instruments, carried personally by a responsible person, with comparisons at one station made both immediately before and immediately after the travelling.

The results of what appear to be the most reliable comparisons between Lerwick and Eskdalemuir Coil instruments are given below, (the figure for the Lerwick Coil is that obtained from the use of the original coil constant without the addition of any constant factor and using the 1938 potentiometer calibration up to 1953 and the 1953 potentiometer calibration after that).

Date	Instruments used for comparison	Difference Eskdalemuir $H$ - Lerwick $H^*$
Dec. 1938	Direct	$\gamma$
Sept. 1946	Q.H.M. 89	+13
Apr. 1948	Q.H.M. 89	+11
June-Sept. 1950	Q.H.M. 90, 91, 92	+13.5
May-June 1957	Q.H.M. 119A, 120, 121A	+12
Apr. 1959	Q.H.M. 119A, 120, 121A	+15
		+11

\*uncorrected coil values.

This evidence suggests that there has been no detectable change in the relationship between the two coils and suggests also that the change in the Lerwick potentiometer resistances occurred between 1950 and the recalibration in 1953, and that the standards currently in use at the two Observatories are in good agreement.

Comparisons between the  $H$  standards at Eskdalemuir and Abinger (1954 and earlier) and between Eskdalemuir and Hartland (1959) are given below. The table shows the difference Eskdalemuir minus Abinger (or Hartland). The comparison in 1933 has however a much higher probable error than the later observations.

Date	Instruments used for comparison	Difference Eskdalemuir $H$ - Abinger $H$ or Hartland
Dec. 1930	Direct at Abinger	$\gamma$
Jan. 1933	Travelling Kew instrument	0
Sept. 1946	Q.H.M. 89	-5
Apr. 1948	Q.H.M. 89	+6
May-Nov. 1950	Q.H.M. 91, 92	+6
July 1954	Q.H.M. 120	+10
May 1959	Q.H.M. 119A, 120, 477, 478, 479	+5
		+4

There is therefore no reliable evidence of a change in the relationship between the Eskdalemuir and Abinger/Hartland Schuster-Smith coil instruments over the last 13 years at least, although a change of some  $6\gamma$  is indicated following the installation of the coil instrument at Eskdalemuir. When compared with the results shown for the comparison between Lerwick and Eskdalemuir, these seem to indicate that all three coil instruments have remained in a very constant relationship to each other over the past 13 years and possibly therefore since they were installed at their respective Observatories. There remains, however, the difference of some  $6\gamma$  between Abinger (and later Hartland)  $H$  standard on the one hand, and Lerwick and Eskdalemuir  $H$  standards on the other. It is possible that the difference has existed at Eskdalemuir since the Coil was brought into use in 1932; at Lerwick the difference seems to have developed after 1950 and was finally accepted when the standard (Coil +  $12\gamma$ ) was introduced in June 1953.

#### *Declination*

The declination is measured at each Observatory by a Kew pattern unifilar magnetometer. The azimuths of both the fixed marks were remeasured by the Ordnance Survey in 1948 and since that date the values then obtained have been used.

The 1948 determination of the azimuth of the Lerwick fixed mark confirmed that the azimuth in use up to that time (based on a determination in October 1922) was in error. From a survey of the results obtained from five determinations made at intervals from 1923 to 1948 it was concluded that (i) the original determination was in error by about  $3\frac{1}{2}'$  and (ii) an apparently uniform small drift of about  $1'$  occurred between 1923 and 1948. Values of westerly declination published previous to 1948 are too large by amounts ranging from  $3\cdot5$  in 1923 to  $4\cdot4$  in 1948. The corrections for 1938 and previous years are given in the 1938 *Observatories' Year Book* (p.21) and for subsequent years in succeeding volumes. Since 1948 the correct fixed mark azimuth has been used and no corrections to the tabulated values are required.

The observation of the azimuth of the fixed mark at Eskdalemuir in 1948 gave results negligibly different from previous observations and no changes were required in the tabulations.

#### *Vertical Force*

The standard instrument in use at Lerwick from 1940 to 1952 was the Copenhagen Balance Magnetometer B.M. No.8 and a detailed account of its history up to 1947 is given in the 1938 *Observatories' Year Book* (p.20). Difficulties with its clamping mechanism were however often experienced and in 1952 the mechanism was unfortunately broken. Upon the advice of the Observatory at Rude-Skov it was replaced with a modern instrument, B.M.Z. No.83, in 1953. Since that date B.M.Z. No.83 has been used as the Lerwick standard using the original Rude-Skov calibration.

B.M.Z. No.83, on its arrival in 1953, was found to give close agreement with the existing  $Z$  standard which had been carried over from B.M. No.8, by the use of the Eskdalemuir B.M.Z. No.35 in the interim period.

On November 24, 1957, the instrument suffered an accidental knock and its readings immediately afterwards were found to be  $150\gamma$  lower than previously. On September 28, 1958, the instrument suffered a further slight jar and a further change in reading was found; the  $150\gamma$  correction now became  $126\gamma$ . These additive corrections have been applied to the observed readings since the appropriate dates.

The standard absolute instrument for determining vertical force at Eskdalemuir is a Schulze dip indicator. This instrument measures the inclination of the magnetic field and this has to be used in conjunction with measurements of  $H$  (from the magnetograph records) to calculate  $Z$  using the relation:-

$$Z = H \tan I$$



It consists essentially of a coil which can be rotated continuously and rapidly about an axis which coincides with a diameter of the coil. This axis is itself capable of rotation about other horizontal and vertical axes, so that it can be set in any required direction in space; the azimuth and inclination of the coil axis can be read from horizontal and vertical scales respectively. The windings of the coil are connected through a commutator to a Broca galvanometer.

To determine the magnetic inclination the coil is set with its axis in the magnetic meridian (as determined by other means) and the coil rotated steadily (about 360 rev./min.). The inclination of the axis of rotation is adjusted until the galvanometer deflection is the same whatever the sense of rotation. In this position the axis of rotation of the coil is parallel to the direction of the earth's total field and the inclination can be read from the vertical circle.

Two series of settings are normally made, one with the vertical circle facing east and one with the circle facing west.

Measurements are also made regularly with a Copenhagen balance magnetometer B.M.Z. No.35. The results with this type of instrument have less scatter than those of the dip inductor, but its constants are liable to change (either by slow drift or sudden jump). Consequently B.M.Z. No.35 is used to identify and measure changes in the Z baseline, while the absolute value is determined by the long term measurements with the dip inductor.

The Schulze inductor is nominally an absolute instrument requiring no checking except for the engraving of its scales. Inter-observatory comparisons are however a valuable means of checking this and the results of such comparisons are given below. The portable instrument most used as an intermediary has been B.M.Z. No.35. It has however been subject to sudden shifts in calibration, probably associated at least in part with the mounting and demounting of the instrument, and it has not always been possible to carry out the desirable number of observations before and after each movement. The estimated probable error of each comparison should be put at least at 5 $\gamma$ , and possibly as much as 10 $\gamma$ .

The difficulty of interpretation is shown by the results of particularly careful comparisons in 1954 and 1957, using two B.M.Z. instruments which revealed very different results from those before and after, as shown in the following tables.

Date	Instruments used for comparison	Difference Eskdalemuir Z - Lerwick Z
		$\gamma$
1948	B.M.Z. 35	+18
1950	B.M.Z. 35	+14
1952	B.M.Z. 35	+18
1952-1953	B.M.Z. 35	+15
1957	B.M.Z. 35, 53	-23
1959	B.M.Z. 35	+14

Comparisons between the Z standard instruments at Eskdalemuir and Abinger (up to 1954) and between Eskdalemuir and Hartland (1959) are in the next table.

Date	Instruments used for comparison	Difference Eskdalemuir Z - Abinger Z or Hartland
		$\gamma$
1949	B.M.Z. 35	+19
1950	B.M.Z. 35	+14
1951-1952	B.M.Z. 35	+19
1954	B.M.Z. 35	+1
1954	B.M.Z. 53	+6
1959	B.M.Z. 35	+14

It is worthwhile pointing out here that an error of  $6\gamma$  in  $H$  at Eskdalemuir makes a corresponding error of  $16\gamma$  in  $Z$  when the dip inductor is used. The comparisons with Abinger and Hartland are thus consistent with the supposition that the Eskdalemuir  $H$  coil reads high by about  $6\gamma$ . Alternative explanations seem less probable since the measurement of  $Z$  at Abinger and Hartland is by a coil method which is completely independent of the measurements of  $H$ .

There are no comparisons between Lerwick and Abinger or Hartland which did not also involve a measurement at Eskdalemuir so that, combining the information given in the two preceding tables, and disregarding the anomalous 1954 and 1957 results, it is seen that, within  $5\gamma$ , Lerwick and Abinger and Hartland  $Z$  measurements are in agreement and Eskdalemuir is high by some  $15\gamma$ .

In view of the difficulties of the measurement of vertical force it has been decided to obtain improved instruments for both Lerwick and Eskdalemuir, and it is hoped to introduce two nuclear precession magnetometers early in 1960. These instruments will measure the total field  $F$  and are believed to have an absolute accuracy of  $\pm 1\gamma$  when used with suitably precise frequency measuring apparatus. The vertical force can then be computed from simultaneous measurements of  $F$  and  $H$ . The error in  $Z$  caused by an error  $\Delta H$  in the  $H$  measurements can easily be shown to be  $-(H/Z)(\Delta H)$ . For Eskdalemuir the ratio  $H/Z$  averages about 0.36 and for Lerwick 0.31. The effect of systematic errors in  $H$  (which are believed to be  $6\gamma$  or less) is thus very small ( $2\gamma$  or less).

A description of this apparatus and details of the results obtained will be found in later volumes of this publication.

#### AURORA

A special watch for Aurora is kept at Lerwick Observatory. Up to 2200hr. each evening observations of the northern horizon and general meteorological conditions are made at intervals of 15 to 20 minutes; if any aurorae are seen continuous observations are made and details of the phenomena observed are noted. If necessary a second observer is called. Elevations of significant points are measured with a simple alidade.

Any aurorae which commence after 2200hr. are also noted by the staff making regular synoptic observations and upper air soundings, but these staff may not be able to devote long periods solely to recording the detailed aurorae changes. It should be noted that in former years the auroral watch was suspended during the months May to August. During 1957 and 1958 however, because of the I.G.Y., the watch was continued throughout this period although it was realised that twilight would prevent aurorae being seen for a number of weeks during mid-summer, and would in the other months severely restrict the time during which faint aurorae could be seen.

A brief account of the results obtained is given in Table 18. All dates, on which the sky remained completely overcast throughout the evening and on which, therefore, no opportunity arose of determining whether or not aurora occurred, have been omitted. Those nights on which aurora was actually observed are indicated by the symbol  $\Phi$ ; other nights on which no aurora was observed, despite at least an occasional interval of more or less clear sky, are indicated by the symbol  $\dots$ . In the latter case also, remarks on the weather are added to assist the reader in judging how far the fact of no observation of aurora may be taken as showing that, in fact, there was no aurora. Each night is described by a letter code which has the following significance:-

- a = Conditions favourable for seeing aurora
  - b = Unfavourable for faint aurora (because of moonlight, mist, thin cloud etc.), but not such as to mask bright aurora
  - c = Cloudy, but aurora not seen in clear intervals
  - ca, cb = Cloudy, but with conditions a or b respectively, in the intervals.
- Changing conditions are indicated by a hyphen; for example, a-c.

The detailed observations are available in manuscript and have also been sent to Mr. J. Paton of the Balfour Stewart Auroral Laboratory, University of Edinburgh [I.G.Y. World Data Centre C (Visual observations)].

Table 19 is a general auroral table giving a summary of the observations of aurorae in the British Isles. It is compiled from the detailed observations received at the Balfour Stewart Auroral Laboratory.

### ATMOSPHERIC ELECTRICITY

The programme at Lerwick and Eskdalemuir is to maintain a continuous record of the atmospheric electric potential gradient as it exists over open level country in the immediate neighbourhood at the height of one metre. This is also done at Kew Observatory but there, in addition, regular measurements are made on fine afternoons of the air-earth current. These latter are expressed as mean values covering the period of observation which is normally about 20 minutes centred on about 1430 G.M.T.

#### *Continuous Potential Gradient measurements*

The instruments used for the recording of the potential gradient are similar in principle at all three Observatories. An insulated boom projects through the wall of the building and is caused to take up the potential of the air because a small radioactive collector is fitted to its tip. The potential of the boom is recorded by an electrostatic voltmeter.

The collectors are of polonium deposited on a copper rod about 4 cm. long by 0.5 cm. diameter; these are recoated periodically by arrangement with the Government Chemist and a fresh collector is brought into use each quarter. Tests at Kew Observatory in 1959 showed that the strength of a new collector is usually between 80 and 200 micro-curies. A note about the supply of the collectors and of the techniques used in plating them is given in *Nature* 1955, 175, p.965.

The potential of the boom is of course affected by the presence of buildings, although it is assumed that this potential is always proportional to the potential gradient in the open. Standardising measurements have therefore to be made of the true potential gradient at a suitable open site. The ratio of the potential gradient in the open to the potential of the boom is called the exposure factor and is expressed in the units ( $\text{metre}^{-1}$ ).

The methods of making the standardisation measurements of potential gradient are different at each Observatory.

At Lerwick an insulated wire with a polonium collector fixed to its centre is stretched horizontally between two stout wooden posts 9 m. apart. The centre of the wire is exactly 1 m. above a levelled piece of ground. The potential of this wire is observed at 1 minute intervals for a period of 10-20 minutes using a Wulf electrometer, the times of observation being chosen to coincide with the minute dots on the electrograph. From the mean value of the observed potential and the mean reading of the electrograph an exposure factor is calculated. Observations are made in fine weather and as many as possible are made. Smoothed monthly means of the factors so obtained are used in the reduction of the records.

At Eskdalemuir absolute observations of potential gradient are made with a Wulf electrometer using a small pit about 50 yards from the main building. The electrometer is placed inside the pit and from the electrometer a thin metal rod (0.4 cm. in diameter) projects vertically upwards through a hole in the metal lid covering the pit. A polonium collector is fixed to the rod at exactly one metre above the ground level. It has been shown experimentally that the potential of the rod is the same (within experimental error) as that of a stretched wire at one metre exposed to the same potential gradient.

The observer shuts himself in the pit and takes readings of the electrometer every half minute until 15-30 readings have been obtained. As at Lerwick observations are made in

fine weather and at least six per month are aimed at. From the mean potential of the Wulf electrometer over the period and the corresponding mean value of the record, the exposure factor of the electrograph is obtained.

For any given month a mean exposure factor is used and this is a smoothed running mean using observations made during the preceding and following months.

The absolute measurements at Kew are made with the Wilson apparatus in the underground laboratory; these are described on p.15.

At Lerwick the boom potential is recorded by a Benndorf electrograph which, since 1926, has been installed in the west corner of the Office Block. Though there is distortion of the equipotential surfaces by adjacent houses etc. and though the site is a comparatively large distance (236 m.) away from the ground where absolute determinations are made, the values of the reduction factor suggest that these disadvantages are less serious than might be anticipated.

The collector is screwed into the end of a tube which projects about 120 cm. through a window in the north-west wall about 190 cm. from the corner of the building and 476 cm. above ground. The inner end of the tube is supported from a wooden framework by metal rods embedded in cast sulphur insulators; an electrical heater, which is situated below the tube, keeps the insulation dry even in wet weather. Draughts through the hole in the window are practically eliminated by a system of baffles.

A detailed description of the electrometer is to be found in the *Physikalische Zeitschrift, Leipzig* for 1906 (p.98) whilst the general principle is described in Mathias' "*Traité d'électricité atmosphérique et tellurique*" (p.54) and in Chauveau's "*Electricité atmosphérique*" (p.61).

The scale value of the record has varied from time to time following adjustments but has usually been kept between 25 and 30 volts per metre per millimetre, which permits a range from about +1500 to -1500 volts per metre in the open to be recorded. Tests of the scale value of the record are made daily with the aid of batteries after removing the collector from the boom; the insulation is also tested regularly. Considering the climatic difficulties, the behaviour of the instrument in the matter of insulation has been satisfactory, especially since electrical heating was installed in the room. The rate of leak has been small; an average value for 1957, for instance, was such that the instrument would lose half its potential in 20-30 minutes.

Tests of the rate of rise of potential of the Benndorf recorder and electrograph boom with a polonium collector fitted, after being earthed, were made at various times in the years 1954-1957. It was found that with a freshly plated collector the potential rose from zero to half the final value in about 4-6 seconds, but that this time increased after the collector had been in use. This loss of efficiency was found to depend almost as much on the weather as on the radio active decay of the polonium. The regular use of fresh collectors ensures that the time taken for the Benndorf to reach half its final potential is not allowed to exceed 20 seconds. The rate of leak is thus so very much less than the rate of charging that the difference between the potential of the boom and that of the air surrounding it is negligible.

The electrograph at Eskdalemuir consists essentially of quadrant electrometer with a small mirror on the vane which reflects a light spot on to a sheet of bromide paper wrapped around a drum rotated by clockwork. From 1936 until 1954 the electrograph boom projected through a pipe in the North wall a few feet to the West of its present position; it now projects through a small wooden door in the wall of a room.

The boom is supported on insulators, formerly of sulphur but, since October 1957, of polythene. Tests of the insulation of the boom and electrograph are made frequently (about 3 times per week). The insulation was in general very satisfactory throughout the year.

The scale value of the record was between 1.74 and 1.94 volts per millimetre during 1958 and this combined with an exposure factor of about 10 means that one millimetre on the record corresponded to about between 12 and 20 volts per metre in the potential gradient over open level country.

The Kew electrograph, which is also a quadrant electrometer recording photographically, was moved in April 1940 from a low building known as the Clinical House to a room in the main Observatory Building; the new position is 18 m. to the East of the former position. In March 1941 a metal fire escape was erected on this wall above the boom and this reduced the recorded potential by nearly 50%. This was compensated by increasing the sensitivity of the recorder by an approximately similar amount. The radioactive collector is now 90 cm. from the window of the building through which the boom projects and 360 cm. above ground level.

The scale value of the electrograph has been fixed at about 17 volts per metre per millimetre.

The electrograph became unreliable in May 1953 and from then until the end of 1955 the continuous records of potential gradient have not been published. Reliable recording started again on January 1, 1956.

#### *Air-earth current and conductivity measurements at Kew*

Measurements of the air-earth current and potential gradient are made in an underground laboratory using a modified Wilson apparatus. From these observations the conductivity can be calculated. The apparatus was devised by C.T.R. Wilson\* and is described in detail by F.J. Scrase†. Briefly, it consists of an insulated brass plate, mounted with its top surface flush with the ground level, and connected to a sensitive electrometer. The test plate can be covered when necessary with an earthed cylindrical cover, and can be maintained at any desired potential (usually zero) by a small charged variable capacitor (called the compensator). The method of using the instrument at Kew differs slightly from that adopted by Wilson, who used the readings of the position of the Compensator to obtain the charge on the test plate. At Kew the compensator is used merely to keep the plate at zero potential, and the charge is measured by reading the deflexion of the electrometer. The potential gradient is measured by the charge induced on the plate when it is exposed to the earth's field, and the air-earth current is measured by finding the charge collected by the plate during a known period (usually five minutes).

The potential gradient  $F$  is given in volts per centimetre by the formula

$$F = 4\pi (9 \times 10^{11}) Cv/A$$

where  $C$  is the capacity, in farads, of the system (when shielded),  $v$  is the potential acquired by the test plate after being exposed to the field, earthed and then shielded, and  $A$  is the area of the test plate‡. The potential gradient found in this way is, to a close approximation, equal to that found by measuring the potential at a height of 1 m. in the open part of the grounds with a stretched wire apparatus.

The air-earth current is given in amperes per square centimetre by the formula

$$i = C\delta v/At$$

where  $\delta v$  is the potential acquired by the plate in  $t$  seconds. The value of  $\delta v$  used is the

\*WILSON, C.T.R.: *Camb. Proc. Phil. Soc.* 13, 1906, pp.184 and 363

†SCRASE, F.J.: *London, Met. Off. Geophys. Mem.* VII, No.60, 1934

‡In practice, at present, half the potential gradient observations are made by a slightly different procedure, less desirable in principle, but giving negligibly different results; the plate is shielded, earthed and then exposed to the field and its potential measured.

mean result from four observations, each lasting five minutes. The observations of the current are sandwiched between measurements of the field strength, and from the mean values of  $i$  and  $F$  the conductivity  $\lambda$  is deduced. This conductivity is that due to positive ions only since measurements are made only with positive fields. No observations are made in precipitation and fog.

From July 1, 1949 to the end of 1955 trouble was experienced with the Wilson test plate apparatus and the observations of air-earth current and conductivity during the period have subsequently been found to be unreliable. These observations have not therefore been published. The observations of the potential gradient with this apparatus during this time were checked, however, on a number of occasions by simultaneous observations of the potential of a stretched wire at one metre above the ground level; the differences between the two methods of observations occasionally reached 15 per cent but the mean difference was only 4 per cent, the Wilson measurements being the greater. In view of the trouble with the apparatus it was decided that from July 1949 onwards until the end of 1955 the stretched wire observations should be the standard and that, before being used for electrograph standardisations, the Wilson observations should be corrected to allow for the differences between the two. Throughout this doubtful period the observations of potential gradient with the Wilson apparatus have been considered of sufficient value to publish, but the differences found between these observations and those made with the stretched wire apparatus must be borne in mind.

The instrument was overhauled late in 1955 and from January 1, 1956 the records and tabulations are considered reliable.

#### TABULATIONS

As was stated in the preface to this Year Book the layout of the atmospheric electricity tables has been altered. The information now given is substantially similar to that provided for the I.G.Y. returns.

Table 20 (for Lerwick), 43 (for Eskdalemuir) and 45 (for Kew) contains the mean value of the potential gradient for periods of 60 minutes ending at exact hours G.M.T. The entry for these hours, however, for which the mean is indeterminate because of large fluctuations, is made according to the following code:-  $Z+$  means an indeterminate but positive value,  $Z-$  an indeterminate but negative value and  $Z\pm$  an hour when the gradient was indeterminate in both magnitude and sign. In addition the entry for hours when precipitation is observed or recorded is marked with an asterisk.

Mean values and sums are given for each hour and for the months and year, using only hours without precipitation and for which the entry is not  $Z$ . The number of hours used for each mean is given. Estimated values are entered in brackets and are included in the sums and means. Besides this the monthly and annual mean potential gradient are given, using only the entries for 0a days (or for "selected quiet days" at Kew Observatory). The definition of 0a days is given in the next paragraph; the definition of "selected quiet days" at Kew is as follows:- normally 10 quiet days are selected in each month, these being calendar days characterised by no negative potential gradient, no large irregular movements, no indication of inferior insulation and no large non-cyclic change. When there are not 10 calendar days in a month the number can sometimes be made up by using other spells of 24 hr. The purpose of these entries is to enable comparison to be made with previous years for which corresponding information has been published.

In Tables 21, 44 and 46 (for Lerwick, Eskdalemuir and Kew respectively) the duration of negative potential is tabulated and an electrical character figure is assigned to each day.

At Kew the following scheme is used for the latter entries:-

0 denotes a day during which, midnight to midnight, no negative potential was recorded.

- 1 denotes the existence of negative potential at one or more times during the same period but with a total duration of less than three hours.
- 2 denotes negative potential extending in the aggregate to three hours or more during the same period.

Besides allocating each day a number as done at Kew, Lerwick and Eskdalemuir Observatories also allocate to each day a symbol, either "a", "b" or "c". The definition of these is as follows:-

- a denotes that within the 24 periods of 60 minutes for which an estimate of the mean potential gradient has to be made there was in no case a range of potential gradient in the open exceeding 1000 volts per metre.
- b denotes that a range of 1000 volts per metre or more was reached in one hour at least but in fewer than six individual hours.
- c denotes that a range of 1000 volts per metre or more was reached in at least six individual hours.

During periods of defective record the sign of the gradient is assumed positive when no precipitation was recorded. If precipitation was recorded for less than one hour during such defective periods, an approximate value for the duration of negative potential for that hour has been assigned and the total for the day is given in brackets. If this cannot be done the entry for any day with a defective record is -. When, because of oscillating gradients, there is uncertainty as to the times of change of sign, half the total duration of doubtful sign is accounted negative.

Table 47 contains the results of the measurements of the potential gradient, air-earth current and conductivity due to positive ions made with the Wilson apparatus at Kew. Each entry is the mean value for a period of twenty minutes centred about 1430 h. on the date in question. Monthly and annual means are also given.

It should be pointed out that the unit of potential gradient is volts per centimetre (not volts per metre as in the other tables); the unit of air-earth current is  $10^{-18}$  ampere per square centimetre and the unit of conductivity is  $10^{18}$  per ohm per centimetre.

#### NOTES ON THE RESULTS

While no detailed discussion of the results is attempted here, it is perhaps of interest to point out various marked changes which have occurred since around 1950. Most obvious is the large and continuing fall in the potential gradient at Eskdalemuir. At Kew the air-earth current and conductivity are now about twice the previous long term average but the potential gradient is almost unchanged. At Lerwick the potential gradient has fallen slightly. It seems almost certain that these changes are linked with the deposition on the ground of radioactive debris from nuclear weapon tests.

#### ATMOSPHERIC POLLUTION

The Owens atmospheric pollution recorder at Kew Observatory was originally installed in 1926 in the building known as the Clinical House. It was transferred in July 1953 to a site in the large Calibration hut some 25 m. to the South-west. The level of the intake is about two metres above that of the adjacent ground.

The instrument is described in the Report on observations in the year 1917-18, *London, Meteorological Office, Advisory Committee on Atmospheric Pollution*. Briefly, it consists of a device for passing a fixed volume of air through a filter paper clamped between two halves of a circular orifice; the density of the black stain is then taken as being

proportional to the weight of suspended solid matter in unit volume of air. In the Kew instrument each sample of air (6.4 litres) takes about twenty minutes to flow through the filter paper and a sample is taken approximately once an hour.

The density of the stain is measured by comparing it visually with a standard set of shades. The standard set now in use was originally supplied by the Department of Scientific and Industrial Research (D.S.I.R.) in 1942 and was recalibrated in 1948 and 1958.

In addition to the Owens recorder, from which of course the diurnal variation of pollution can be measured, D.S.I.R. have installed daily smoke filters at Kew, Lerwick and Eskdalemuir. These consist of an electrically operated pump which draws air through a filter paper continuously, an air meter being used to measure the volume of air. They are used to obtain the mean daily pollution concentration.

A summary of the results obtained at Kew with the Owens filter is given in Table 48. In this table are hourly means of the concentration of suspended matter, in milligrams per cubic metre, for each month, the seasons and the years. Winter is taken as the months January, February, November and December, Spring as March and April, Summer as May to August and Autumn as September and October.

The data from this instrument are also published in a different form in the various Reports of the Atmospheric Pollution Research Committee, (D.S.I.R., "*The Investigation of Atmospheric Pollution*", H.M.S.O. published yearly). The results of the observations made with the daily smoke filters are also published in these volumes.

During 1958 the highest estimate of pollution was  $1.5 \text{ mg.m}^{-3}$ , this value occurring on January 14, from 21h. to 22h. and on December 6 from 22h. to 23h. There were three days on which the pollution reached  $1.0 \text{ mg.m}^{-3}$ . The number of hours credited with  $1.0 \text{ mg.m}^{-3}$  was seven, of which four were recorded in January, two in November and one in December.









TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

Table 1: LERWICK (H) - Horizontal Component of Terrestrial Magnetic Force. Columns include Hour G.M.T. (0-1 to 23-24), Mean, and Sum 8000+. Rows 1-28 show hourly data for February 1958.

MAGNETIC DECLINATION (WEST)
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

Table 2: LERWICK (D) - Magnetic Declination (West). Columns include Hour G.M.T. (0-1 to 23-24), Mean, and Sum 1200.0+. Rows 1-28 show hourly data for February 1958.



TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

Table with columns for Hour G.M.T. (0-1 to 23-24), Mean, Sum 10,000+, and Grand Total 369,034. Includes sub-headers for 1 LERWICK (H) and 14,000γ (0-14 C.G.S. unit) +.

MAGNETIC DECLINATION (WEST)  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

Table with columns for Hour G.M.T. (0-1 to 23-24), Mean, Sum 1100-0+, and Grand Total 39936.6. Includes sub-headers for 2 LERWICK (D) and 9° +.

TERRESTRIAL MAGNETIC FORCE: VERTICAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

Table with columns for time intervals (0-1 to 23-24), Mean, and Sum 5000+. Includes sub-section 3 LERWICK (Z) and 47,000γ (0.47 C.G.S. unit) + MARCH 1958.

DAILY EXTREMES OF TERRESTRIAL MAGNETIC ELEMENTS, MAGNETIC CHARACTER FIGURES (K AND C) AND TEMPERATURE IN MAGNET HOUSE

4 LERWICK

MARCH 1958

Table with columns for Horizontal force, Declination, Vertical force, 3-hr. range indices, Sum of K indices, Magnetic character of day, and Temperature in magnet house. Includes sub-section 4 LERWICK.

q denotes an international quiet day and d an international disturbed day.

TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

Table for TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT. Includes columns for hour G.M.T., magnetic force values (gamma), and sum values. Sub-section 1 LERWICK (H) is detailed.

MAGNETIC DECLINATION (WEST)  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

Table for MAGNETIC DECLINATION (WEST). Includes columns for hour G.M.T., magnetic declination values (degrees), and sum values. Sub-section 2 LERWICK (D) is detailed.





TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

Table 1: LERWICK (H) 14,000γ (0 14 C.G.S. unit) + MAY 1958. Columns include Hour G.M.T. (0-1 to 23-24), Mean, and Sum 11,000+. Rows are numbered 1-31 with various letters (q, d) and a final Mean and Sum row.

MAGNETIC DECLINATION (WEST)  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

Table 2: LERWICK (D) 9° + MAY 1958. Columns include Hour G.M.T. (0-1 to 23-24), Mean, and Sum 1200.0+. Rows are numbered 1-31 with various letters (q, d) and a final Mean and Sum row.



TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

Table 1: LERWICK (H) 14,000γ (0.14 C.G.S. unit) + JUNE 1958. Columns include Hour G.M.T. (0-1 to 23-24), Mean, Sum 9000+, and Grand Total 363,154.

MAGNETIC DECLINATION (WEST)  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

Table 2: LERWICK (D) 9° + JUNE 1958. Columns include Hour G.M.T. (0-1 to 23-24), Mean, Sum 1000.0+, and Grand Total 37828.6.



TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

Table 1: LERWICK (H) 14,000γ (0.14 C.G.S. unit) + JULY 1958. Columns include Hour G.M.T. (0-1 to 23-24), Mean, and Sum 8000+. Rows list hours 1 through 31 and a final Mean/Sum row.

MAGNETIC DECLINATION (WEST)
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

Table 2: LERWICK (D) 9° + JULY 1958. Columns include Hour G.M.T. (0-1 to 23-24), Mean, and Sum 900.0+. Rows list hours 1 through 31 and a final Mean/Sum row.



TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

1 LERWICK (H) 14,000γ (0.14 C.G.S. unit) + AUGUST 1958  
Table with columns for Hour G.M.T. (0-1, 1-2, 2-3, 3-4, 4-5, 5-6, 6-7, 7-8, 8-9, 9-10, 10-11, 11-12, 12-13, 13-14, 14-15, 15-16, 16-17, 17-18, 18-19, 19-20, 20-21, 21-22, 22-23, 23-24), Mean, and Sum 10,000+.

MAGNETIC DECLINATION (WEST)  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

2 LERWICK (D) 9° + AUGUST 1958  
Table with columns for Hour G.M.T. (0-1, 1-2, 2-3, 3-4, 4-5, 5-6, 6-7, 7-8, 8-9, 9-10, 10-11, 11-12, 12-13, 13-14, 14-15, 15-16, 16-17, 17-18, 18-19, 19-20, 20-21, 21-22, 22-23, 23-24), Mean, and Sum 1100.0+.



TERRESTRIAL MAGNETIC FORCE: VERTICAL COMPONENT  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

Table with 26 columns (Hour G.M.T., 2-3, 3-4, 4-5, 5-6, 6-7, 7-8, 8-9, 9-10, 10-11, 11-12, 12-13, 13-14, 14-15, 15-16, 16-17, 17-18, 18-19, 19-20, 20-21, 21-22, 22-23, 23-24, Mean, Sum 4000+). Rows represent hourly data from 1 to 31, with a final 'Sum 6000+' row.

DAILY EXTREMES OF TERRESTRIAL MAGNETIC ELEMENTS, MAGNETIC CHARACTER FIGURES (K AND C) AND TEMPERATURE IN MAGNET HOUSE

4 LERWICK

AUGUST 1958

Table with multiple columns: TERRESTRIAL MAGNETIC ELEMENTS (Horizontal force, Declination, Vertical force), 3-hr. range indices, Sum of K indices, Magnetic character of day, Temperature in magnet house. Rows represent hourly data from 1 to 31, with a 'Mean' row at the bottom.

q denotes an international quiet day and d an international disturbed day.

Bracketed Values are interpolated.

TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

Table 1: LERWICK (B) 14,000γ (0.14 C.G.S. unit) + SEPTEMBER 1958. Columns include Hour G.M.T. (0-1 to 23-24), Mean, Sum 9000+, and Grand Total 361,371.

MAGNETIC DECLINATION (WEST)  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

Table 2: LERWICK (D) 9° + SEPTEMBER 1958. Columns include Hour G.M.T. (0-1 to 23-24), Mean, Sum 900.0+, and Grand Total 36790.2.

TERRESTRIAL MAGNETIC FORCE: VERTICAL COMPONENT  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

Table with 28 columns representing hours of the day (0-1 to 23-24) and 2 additional columns for Mean and Sum 5000+. The rows represent days from 1 to 30. The title includes '3 LERWICK (Z)' and '47,000γ (0.47 C.G.S. unit) +'. The table shows magnetic force values in Gauss for each hour.

DAILY EXTREMES OF TERRESTRIAL MAGNETIC ELEMENTS, MAGNETIC CHARACTER FIGURES (K AND C) AND TEMPERATURE IN MAGNET HOUSE

4 LERWICK

SEPTEMBER 1958

Table with 15 columns: Date, Horizontal force (Maximum, Minimum, Range), Declination (Maximum, Minimum, Range), Vertical force (Maximum, Minimum, Range), 3-hr. range indices K, Sum of K indices, Magnetic character of day (0-2), and Temperature in magnet house 200+. The table provides daily extremes for magnetic elements and temperature.

q denotes an international quiet day and d an international disturbed day.





TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

1 LERWICK (B) 14,000y (0.14 C.G.S. unit) + NOVEMBER 1958. Table with 25 columns of hourly values (0-1 to 23-24), Mean, and Sum 12,000+. Includes sub-rows 1-30 labeled with letters (d, q) and a Grand Total of 374,435.

MAGNETIC DECLINATION (WEST)  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

2 LERWICK (D) 9° + NOVEMBER 1958. Table with 25 columns of hourly values (0-1 to 23-24), Mean, and Sum 1100.0+. Includes sub-rows 1-30 labeled with letters (d, q) and a Grand Total of 36942.0.



TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

Table 1: LERWICK (E) 14,000γ (0.14 C.G.S. unit) +. Columns include Hour G.M.T. (0-1 to 23-24), Mean, and Sum 10,000+. Rows 1-31 show data for various days (q, d) and a final Mean/Sum row. Grand Total 383,382.

531 at 0-1h. January 1, 1959.

MAGNETIC DECLINATION (WEST)  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

Table 2: LERWICK (D) 9° +. Columns include Hour G.M.T. (0-1 to 23-24), Mean, and Sum 1000.0+. Rows 1-31 show data for various days (q, d) and a final Mean/Sum row. Grand Total 37328.1.

50.4 at 0-1h. January 1, 1959.



TERRESTRIAL MAGNETIC FORCE: VERTICAL COMPONENT  
 Mean values for periods of sixty minutes ending at exact hours, G.M.T.

3 LERWICK (Z)		47,000γ (0.47 C.G.S. unit) +														DECEMBER 1958				Sum 5000+							
Hour G.M.T.																Mean	Sum 5000+										
0-1		1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 5000+	
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 q	256	256	256	259	259	261	263	265	266	265	264	263	262	261	262	265	267	267	265	267	266	264	262	264	263	263	1305
2	264	265	263	264	265	264	262	262	260	256	255	265	268	289	312	316	334	334	406	374	355	314	287	286	293	2020	
3	284	278	261	266	265	265	268	266	265	266	265	266	265	264	264	263	261	261	261	261	259	257	257	265	265	1349	
4 d	251	247	245	245	243	241	242	241	244	250	257	259	272	332	342	384	266	146	187	302	327	292	85	259	257	1159	
5 d	147	-29	119	188	241	260	275	285	285	285	288	289	291	290	286	282	279	279	279	281	282	285	282	301	252	1050	
6	298	296	291	286	283	281	279	281	284	285	291	290	291	301	308	318	343	339	323	318	305	303	310	297	300	2201	
7 q	282	282	282	283	273	267	273	279	282	275	277	276	276	277	278	277	275	275	272	271	273	274	277	280	277	1636	
8	279	278	276	276	273	269	270	270	270	262	262	266	266	267	272	284	286	284	274	282	299	287	287	294	276	1633	
9	278	256	269	289	287	284	275	273	262	254	258	263	263	264	266	267	266	266	264	264	260	260	264	269	268	1421	
10 q	271	273	274	272	272	272	272	269	272	264	264	264	264	264	266	271	270	270	264	264	263	263	263	264	268	1425	
11	264	264	266	265	260	264	264	262	261	229	230	237	243	246	253	255	256	257	256	256	261	268	264	259	256	1140	
12 q	264	269	263	269	268	263	260	260	261	244	247	247	248	251	254	259	260	257	255	255	261	270	266	248	258	1199	
13 d	166	193	120	116	188	209	222	229	226	247	247	244	245	269	313	336	304	330	218	369	331	251	285	274	247	932	
14	253	251	239	254	254	255	255	254	248	266	267	275	270	275	289	316	338	343	347	364	329	335	254	223	281	1754	
15	275	282	278	277	276	273	274	273	273	268	268	269	268	268	270	275	283	290	279	277	278	282	284	272	275	1612	
16	266	267	262	266	261	250	261	262	265	266	260	257	264	266	268	277	278	275	273	275	273	275	273	273	267	1413	
17 d	270	270	268	268	267	266	269	270	275	260	264	260	256	256	260	263	263	311	293	344	347	325	270	306	279	1701	
18 d	183	13	38	77	200	255	268	281	279	260	263	271	267	261	266	266	265	264	267	275	286	288	313	312	238	718	
19	278	160	94	110	190	228	222	252	276	277	281	287	298	318	324	318	320	308	321	308	306	293	287	287	264	1343	
20	281	261	253	256	249	251	255	262	272	289	289	292	287	289	294	293	305	302	298	290	284	269	260	256	277	1637	
21	244	244	242	237	234	237	237	241	246	282	286	287	289	288	289	291	291	285	286	285	271	266	263	259	266	1380	
22	248	222	222	248	248	246	248	248	253	268	272	268	267	263	270	273	268	266	268	292	278	255	262	262	259	1215	
23	261	257	256	257	253	251	249	249	256	259	260	263	269	280	285	287	281	296	312	298	290	281	279	269	271	1498	
24	262	250	247	243	249	249	255	260	262	265	266	268	267	272	274	269	267	266	264	262	262	261	258	262	261	1260	
25 q	261	262	264	264	263	261	258	261	262	259	264	261	258	260	265	268	268	265	263	264	261	258	257	254	262	1281	
26	252	254	252	253	253	252	251	249	248	251	251	247	246	265	264	265	270	289	311	274	263	264	265	259	260	1248	
27	252	248	253	258	239	233	239	250	256	260	258	257	260	273	278	277	286	280	268	262	258	258	253	259	259	1214	
28	242	245	248	248	249	249	243	247	246	246	245	250	251	254	264	278	272	268	269	265	260	260	250	241	254	1090	
29	216	216	246	253	253	251	253	253	253	253	253	249	248	250	258	260	260	263	270	283	290	283	279	273	257	1166	
30	260	255	253	258	260	260	258	260	265	264	263	256	253	256	254	259	264	264	276	281	295	283	268	260	264	1325	
31	258	236	238	251	258	258	256	256	258	254	254	254	255	257	257	257	259	260	260	267	263	258	258	257	256	1139	
Mean	254	236	237	244	253	256	257	260	262	262	264	265	265	272	278	283	281	279	279	288	285	277	265	269	265	265	
Sum 7000+	866	321	338	556	833	925	976	1070	1131	1129	1169	1200	1227	1426	1605	1769	1705	1660	1649	1930	1838	1584	1227	1330		Grand Total 197,464	

261 at 0-1h. January 1, 1959.

DAILY EXTREMES OF TERRESTRIAL MAGNETIC ELEMENTS, MAGNETIC CHARACTER FIGURES (K AND C) AND TEMPERATURE IN MAGNET HOUSE

4 LERWICK

DECEMBER 1958

	TERRESTRIAL MAGNETIC ELEMENTS														3-hr. range indices K	Sum of K indices	Magnetic character of day (0-2)	Temperature in magnet house 200 +	
	Horizontal force				Declination				Vertical force										
	Maximum 14,000γ +		Minimum 14,000γ +		Range		Maximum 9° +		Minimum 9° +		Range		Maximum 47,000γ +						Minimum 47,000γ +
h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ
1 q	18 06	544	514	11 29	30	15 56	54.4	48.9	07 48	5.5	19 24	269	255	02 21	14	0,0,0,1,1,1,1,1	5	0	80.8
2	18 09	697	477	22 02	220	18 01	99.4	10.7	21 55	88.7	18 39	436	217	22 03	219	2,1,1,2,3,5,5,5	24	1	80.8
3	02 04	538	494	01 35	44	12 14	55.4	34.4	02 22	21.0	00 03	287	253	24 00	34	3,2,1,1,1,1,1,1	11	0	80.8
4 d	17 27	824	-32	22 55	856	17 32	87.9	16.8	18 54	71.1	15 36	415	-47	22 20	462	2,1,2,3,4,6,6,7	31	2	80.9
5 d	22 22	537	-433	00 24	970	00 10	101.1	-29.4	01 16	130.5	00 19	403	-215	01 01	618	8,4,3,2,2,2,1,3	25	1	80.6
6	14 36	518	467	10 55	51	16 30	64.2	31.4	23 00	32.8	16 53	357	279	07 18	78	1,1,1,2,3,3,2,3	16	0	80.6
7 q	05 36	534	488	10 16	46	13 03	55.5	47.6	07 21	7.9	00 26	286	266	05 52	20	1,2,2,1,1,1,0,1	9	0	80.6
8	23 28	554	500	23 17	54	16 07	64.1	27.9	20 42	36.2	20 42	312	259	09 40	53	0,0,0,1,2,3,4,3	13	0	80.1
9	22 19	536	487	01 24	49	11 43	57.5	38.0	01 13	19.5	00 02	296	247	01 39	49	3,3,3,2,1,1,1,1	15	0	80.0
10 q	22 32	533	495	10 37	38	13 00	54.4	45.4	04 27	9.0	06 12	279	260	22 34	19	1,1,1,1,0,0,0,1	5	0	79.9
11	22 35	554	489	22 13	65	13 22	58.3	24.1	22 30	34.2	22 20	283	223	09 46	60	1,1,1,2,2,1,1,4	13	0	79.6
12 q	20 45	543	500	13 02	43	13 10	55.4	41.0	22 36	14.4	21 32	272	242	23 43	30	2,2,0,1,1,1,1,3	11	0	78.5
13 d	18 05	1052	350	02 26	702	16 22	99.5	21.1	21 00	78.4	19 16	428	78	02 32	350	5,4,2,1,4,7,7,5	35	1	78.8
14	19 04	566	423	01 57	143	17 07	64.7	32.6	23 00	32.1	19 46	390	153	23 07	237	4,1,2,1,3,3,4,5	23	1	79.8
15	20 27	547	493	12 09	54	15 56	56.8	45.2	00 07	11.6	17 05	295	255	00 01	40	2,1,1,2,1,3,2,2	14	0	79.8
16	05 18	547	505	15 11	42	11 40	58.0	42.4	05 19	15.6	16 24	279	242	05 00	37	2,3,1,2,2,2,1,1	14	0	79.9
17 d	19 38	849	-269	23 50	1118	18 27	67.1	-5.6	23 42	72.7	23 55	441	164	18 35	277	1,1,1,1,1,4,6,7	22	2	79.7
18 d	22 11	526	-299	02 20	825	02 23	70.5	-36.0	02 25	106.5	00 05	406	-157	02 46	563	8,7,2,2,3,2,2,3	29	2	79.4
19	20 35	530	388	01 46	142	13 52	56.6	22.3	01 50	34.3	14 23	327	73	02 04	254	5,5,3,3,3,3,3,2	27	1	78.9
20	06 28	537	483	11 18															

MEAN MONTHLY AND ANNUAL VALUES OF TERRESTRIAL MAGNETIC ELEMENTS  
 For all, a, quiet, q, and disturbed, d, days for H, D and Z and for all days for H, W, I and F

5 LERWICK

	Horizontal (H) force			Declination (D) (west)			Vertical (Z) force			North component (X) all days	West component (-Y) all days	Inclination (I) (north) all days	Total force (F) all days
	a	q	d	a	q	d	a	q	d				
	14,000γ +			9° +			47,000γ +						
	γ	γ	γ				γ	γ	γ	γ	γ	γ	γ
Jan.	499	503	479	54.7	54.9	53.0	239	236	233	14283	2496	72 56.2	49414
Feb.	497	509	462	54.1	55.0	52.8	245	240	258	14281	2493	72 56.5	49419
Mar.	496	499	479	53.7	54.0	51.8	244	235	240	14280	2491	72 56.5	49418
Apr.	505	514	494	53.1	53.6	53.1	239	238	231	14289	2490	72 55.9	49415
May	517	523	520	53.1	53.2	54.1	235	233	245	14301	2492	72 55.0	49415
June	504	523	459	52.5	53.3	50.6	241	244	246	14289	2488	72 55.9	49418
July	511	517	491	52.7	52.3	54.2	250	253	250	14296	2489	72 55.6	49428
Aug.	509	517	487	52.2	53.2	51.1	240	244	222	14294	2487	72 55.6	49418
Sept.	502	511	484	51.1	51.5	50.5	263	253	278	14288	2481	72 56.5	49438
Oct.	506	515	483	50.7	51.3	49.4	260	257	263	14293	2480	72 56.2	49436
Nov.	520	521	520	51.3	51.1	51.4	257	257	266	14306	2485	72 55.2	49438
Dec.	515	521	501	50.2	50.6	48.5	265	265	255	14302	2480	72 55.7	49444
Year	507	514	488	52.5	52.8	51.7	248	246	249	14292	2487	72 55.9	49425

DAILY RANGE AND MEAN MONTHLY VALUES

6 LERWICK

	Mean absolute daily range						Mean daily range expressed as percentage of yearly mean					
	1958			Mean 1932-53			1958			Mean 1932-53		
	H	D	Z	H	D	Z	H	D	Z	H	D	Z
January	γ	γ	γ	γ	γ	γ	%	%	%	%	%	%
February	102	117	105	100	102	104	44	80	63	63	90	78
March	267	178	197	124	113	123	115	122	119	78	100	92
April	328	192	256	216	149	176	141	132	154	135	132	132
May	234	140	184	204	120	163	101	96	111	128	106	122
June	258	130	160	195	111	141	111	89	96	122	98	106
July	339	194	215	150	94	109	146	133	130	94	83	82
August	310	147	201	158	96	110	134	101	121	99	85	83
September	196	122	129	178	111	135	84	84	78	111	98	101
October	294	189	194	209	133	170	127	129	117	131	118	128
November	193	123	151	188	129	164	83	84	91	118	114	123
December	72	74	64	107	101	112	31	51	39	67	89	84
Winter	193	141	135	89	93	96	83	97	81	56	82	72
Equinox	159	127	125	105	103	109	69	87	75	66	91	82
Summer	262	161	196	204	134	168	113	110	118	128	119	126
Year	276	148	176	170	103	123	119	101	106	106	91	92
Year	232	146	166	160	113	133	..	..	..	..	..	..

"Winter" comprises the four months January, February, November, December; "Equinox" the months March, April, September, October; and "Summer" May to August.

FREQUENCY DISTRIBUTION OF DAILY RANGE

7 LERWICK

Range	Number of cases, 1958			Percentage distribution					
				H		D		Z	
	1958	1932-53	1958	1932-53	1958	1932-53	1958	1932-53	
γ				%	%	%	%	%	%
0 - 9	0	0	0	0.0	0.0	0.0	0.0	0.0	0.3
10 - 19	0	0	9	0.0	1.4	0.0	0.4	2.5	6.8
20 - 29	0	3	29	0.0	4.9	0.8	2.3	7.9	10.5
30 - 39	14	6	28	3.8	6.3	1.6	4.0	7.7	9.3
40 - 49	31	16	24	8.5	7.5	4.4	7.3	6.6	7.2
50 - 59	22	16	17	6.0	9.3	4.4	10.0	4.7	6.2
60 - 69	16	24	20	4.4	9.1	6.6	12.3	5.5	5.1
70 - 79	22	33	18	6.0	8.6	9.0	10.5	4.9	4.4
80 - 89	19	32	9	5.2	7.4	8.8	9.2	2.5	3.9
90 - 99	25	42	12	6.8	5.8	11.5	7.0	3.3	3.4
100 - 109	14	33	11	3.8	4.3	9.0	5.6	3.0	3.3
110 - 119	17	21	11	4.7	3.5	5.8	4.0	3.0	2.9
120 - 129	13	17	13	3.6	2.9	4.7	3.6	3.6	2.6
130 - 139	12	19	12	3.3	2.2	5.2	3.1	3.3	2.6
140 - 149	13	13	9	3.6	2.4	3.6	2.9	2.5	2.3
150 - 159	12	11	11	3.3	1.6	3.0	1.8	3.0	2.0
160 - 169	12	10	3	3.3	1.5	2.7	1.9	0.8	1.8
170 - 179	5	6	7	1.4	1.1	1.6	1.4	1.9	1.4
180 - 189	5	2	7	1.4	1.1	0.5	1.5	1.9	1.4
190 - 199	6	7	10	1.6	1.0	1.9	1.1	2.7	1.5
200 +	107	54	105	29.3	18.3	14.8	10.0	28.7	21.1
Days omitted	0	0	0	..	..	..	..	..	..



## Q-INDICES OF GEOMAGNETIC ACTIVITY

Q-indices for 4 consecutive intervals of 15 minutes centred at the full hour, 15 minutes later, etc.

8 LERWICK

JANUARY 1958

	Hour G.M.T.																								
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	7644	4455	6766	5444	4554	4444	4433	3212	1111	2111	2211	1121	1111	2111	0122	1111	1121	2233	3445	5666	5444	4455	5344	3332	
2	3533	3344	3333	3332	1112	2222	1112	2212	1001	1111	2222	2222	1011	2222	2222	2211	1101	1111	1221	1111	1111	1110	0111	2111	1111
3	2222	2222	2222	2222	2211	2111	1111	1111	2222	2111	1111	1110	0000	0000	0000	0000	0011	1111	0111	1111	1111	0000	0000	0000	0000
4	0001	0111	1000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0011	1111	1111	1110	0000	0000	0000	0000	0000	0000	0001	1111	
5	0011	2221	1222	1110	0000	0000	0000	0000	0000	0000	0000	0000	0000	1111	1011	1111	0011	1100	0000	0000	0000	0000	0000	0000	
6	0000	0000	0000	0000	1111	1000	0011	1000	0000	0000	0000	0000	0001	2201	1111	2212	2212	2111	0000	0000	0000	0000	0000	1100	
7	1221	1000	0000	0000	0100	0000	0000	0000	0000	0000	0000	0001	1111	2111	2222	1111	1111	1111	0011	0110	0000	0000	0000	0000	
8	1110	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	1111	1112	2222	2221	1122	2222	1111	0000	0000	0000	0000	0000	
9	0000	0000	0000	0000	0000	0000	0011	1100	0000	0011	0000	0001	1111	1122	2233	3333	3333	3333	3233	3322	2011	2222	2222	2122	
10	2222	2233	4433	2211	1000	0000	0000	0000	0000	0000	0000	0111	1111	0122	2222	2222	2222	2223	3322	2222	2222	2221	1221	1111	
11	1012	2011	2211	1000	0111	1000	0000	0000	0000	0000	0000	0111	1100	0000	0110	0011	1111	1112	2333	3332	2010	0112	2100	0000	
12	0000	0001	2222	3332	3332	2111	0110	0100	0000	0000	0000	1111	2222	2222	2112	1122	2222	2110	1111	2221	1111	1111	1001	2100	
13	1100	2211	1110	0011	1101	1110	0100	0000	0000	0000	0000	1111	1122	2211	1111	0011	0012	2111	1111	1222	2333	3322	2111	1001	
14	1111	0001	1010	0000	0000	0000	0000	0000	0011	2211	1210	0012	2221	0000	1001	1111	2222	2222	2211	1001	2212	2344	4322	1100	
15	1111	0000	0000	0000	0010	1100	0011	0011	1211	1000	0001	1102	2233	2222	3323	3322	2222	2221	0111	1111	1111	1111	0010	0000	
16	0111	0000	0000	0000	0111	0001	0000	0000	0000	0011	1100	1111	1222	1222	1222	2322	2222	2221	1112	3332	3322	1111	1121	2332	
17	1010	0111	1001	1000	0011	2110	1111	2111	1111	1122	2222	2222	2222	2221	3222	2212	2223	3233	2322	2222	1223	4433	3311	1333	
18	4432	3323	3224	4334	3332	2110	0010	1112	2233	3333	2222	2012	3322	2223	2332	2232	3434	4443	3333	3322	2211	1011	1111	0222	
19	3232	1211	1011	1111	1111	1211	1101	0000	0000	1000	0000	0011	1121	2122	2112	2222	2222	2222	3321	1100	0001	2111	1000	0222	
20	0011	1111	1000	0011	0000	0010	0000	0000	0010	0000	0111	2211	2122	2222	2233	3222	3322	3333	3343	3333	2223	3333	3333	2234	
21	4455	5445	5555	4666	6654	3333	3221	1011	1100	0112	2221	1111	1221	1111	0001	0010	0000	1122	2332	2333	3222	2221	1111	0010	
22	1001	0111	0001	0001	1111	0112	1111	0211	0111	1010	0000	1321	2223	3222	2222	2111	2111	1111	0122	2100	0000	0001	1100	0000	
23	0001	1222	1121	2221	2110	1110	1111	0110	0111	2101	1111	1222	2223	3222	2222	2222	2222	1111	1123	2221	2211	1001	2011	0000	
24	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0002	2111	2222	1112	2222	2221	1000	0111	0000	0100	0001	1000	0000	0010	
25	0000	0000	0112	2222	1100	1100	0000	0000	0000	1222	1001	1121	0222	2333	2233	3333	2333	4433	3111	0100	0000	0000	0001	1111	
26	1111	1111	1110	2223	3322	3312	3222	2222	1000	0000	0000	0000	0010	0011	1111	2211	1211	2222	2221	1000	1111	2222	1111	3332	
27	2111	0000	0000	0011	1100	0000	0000	0000	0000	0000	0000	0000	0000	0000	0111	1111	1112	1112	1111	0000	0000	0000	1344	3300	
28	0000	0000	0000	0000	0000	0000	0000	0000	0000	1111	1111	1011	2222	2222	2222	2222	1111	0001	0000	0000	0000	0000	0000	0000	
29	0000	0112	2222	3322	3333	2222	2111	1001	1111	1100	1110	0100	0000	0000	0000	1011	0000	0011	1111	2333	3333	2221	1000	0000	
30	0000	0000	0000	0000	0000	0010	0111	1011	1000	0001	1000	0000	0010	0010	0000	0000	0000	0000	0000	0001	1001	1100	0000	0000	
31	0110	1110	1100	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	1000	0000	0011	1000	0000	0111	0000	0000	0012	

## Q-INDICES OF GEOMAGNETIC ACTIVITY

Q-indices for 4 consecutive intervals of 15 minutes centred at the full hour, 15 minutes later, etc.

8 LERWICK

FEBRUARY 1958

	Hour G.M.T.																							
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	3322	2211	1110	0000	0000	0000	0000	0000	0000	1100	0000	0011	0101	0111	1111	1111	1111	1000	0000	0000	0122	2110	0000	
2	0000	1232	2111	0000	0000	0000	0111	1000	0000	0000	0111	1111	1112	2111	1222	2221	1111	1121	1211	1110	0000	0000	0000	0000
3	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	2222	2222	2222	2221	1111	1110	1100	0000	0000	0001	1111
4	1122	2100	0000	0000	0000	0000	0000	0000	0000	0000	0000	0122	2222	2332	2222	2122	2222	2332	4444	3222	1222	2122	2113	3233
5	3323	3233	3343	3233	3221	1223	2111	0011	1100	1011	1222	1113	3333	3212	3222	3333	3233	3333	3222	2233	3443	4333	2323	4333
6	2332	3333	2443	2112	2223	3222	2222	2211	2231	0122	2222	1223	2123	2233	2333	3333	2222	2223	3312	2011	1000	1112	3332	1333
7	2221	2233	3333	3221	1122	2222	2211	0111	1012	1100	0011	2221	1212	2111	1222	2222	2211	2100	0000	2223	3233	4332	2221	1122
8	2222	2222	2332	3344	3322	3333	2322	2111	1111	2222	1121	1122	2022	2223	3333	3332	2222	2222	1011	1122	2223	3322	1001	1111
9	1222	3321	1011	2222	3211	0000	0000	0000	0111	1112	2222	1222	1011	1211	2222	2221	2211	1112	2333	3233	3322	1111	1011	0000
10	2443	3233	3332	1122	2222	2111	0000	0000	0111	1111	1110	0001	1111	1111	1122	2233	3334	6444	3333	3554	4331	1112	3213	3332
11	2211	2158	ETT9	7766	6655	7777	7777	7878	8888	8888	7776	6665	4446	6444	3355	4322	3333	3333	3345	5466	7765	5444	4355	3445
12	5542	2232	3355	4443	3333	3333	3243	2111	3322	2222	2222	2333	3333	3333	3322	2222	2112	3333	5534	3234	3331	1122	1000	0111
13	1121	2221	0110	1000	0000	0000	0000	0121	1111	1111	2222	2212	3122	3122	1123	2222	2322	2112	2222	2223	3210	0111	1113	3221
14	0012	1022	2234	4434	4433	3222	1001	1111	0010	1122	2222	2221	1221	1122	2322	2333	3343	4332	1100	0000	0000	0000	0331	1100
15	0000	0000	0000	1111	0000	0000	0000	0000	0000	0000	0010	0000	0000	0011	1111	1111	1222	1000	0000	0000	0001	0000	0000	0222
16	2222	1000	0000	0000	0000	0000	0000	0000	0000	0000	0000	1101	1222	1112	2221	1223	3333	3222	2332	2222	2101	1100	0022	1222
17	2222	2111	2111	1221	2222	2222	2110	0112	1100	1011	0112	2222	2332	2333	3223	3221	2223	3221	2332	2223	4333	3322	1121	1102
18	1212	2222	2233	2333	3332	3323	2211	2222	1112	2221	2223	3222	3322	2111	1222	1110	0111	1212	2155	4643	3322	1132	3333	2222
19	3444	4221	2122	1221	2211	1100	2212	1122	1221	1112	0111	0110	0111	1210	1111	0112	2111	1100	2221	1110	1123	3332	2011	1333
20	3323	3221	1112	2222	1222	2221	0210	1212	0000	0100	1211													

Q-INDICES OF GEOMAGNETIC ACTIVITY

Q-indices for 4 consecutive intervals of 15 minutes centred at the full hour, 15 minutes later, etc.

8 LERWICK

MARCH 1958

	Hour G.M.T.												13	14	15	16	17	18	19	20	21	22	23	
	0	1	2	3	4	5	6	7	8	9	10	11												12
1	1123	3320	0000	0000	0000	0000	0000	0000	0000	0000	0011	1111	1110	0000	0000	0000	0000	0000	0001	1111	1212	2122		
2	2111	1100	0000	0000	0000	0000	0222	2100	0110	1111	1211	1101	1101	1111	1111	1222	1222	2211	1111	1111	1001	0000	0100	0012
3	2111	1110	0100	0000	0000	0000	0000	0000	0001	1111	1111	1221	1222	1111	1212	2222	2121	3222	3433	3223	4456	5443	4434	4454
4	5445	5555	4566	4443	3444	3333	3333	3221	2111	0010	0000	1111	1122	2322	2210	1111	1112	2111	2331	1123	3422	3223	3233	3223
5	2222	3322	3333	3333	3323	3322	2334	4444	4333	2332	2101	1122	2111	1201	1123	2211	2222	2312	2122	2102	2111	2233	3343	3433
6	3333	3456	6666	5444	4333	3333	2333	3333	3333	3100	0011	0111	1110	0012	3444	3323	3322	1101	1112	3332	1221	3344	4322	2122
7	2112	3221	2222	3334	4423	3322	2212	2222	1011	2110	0011	1222	2222	2222	2222	3222	2344	3222	2221	2222	2122	1211	1002	1210
8	0121	2212	3443	3333	3222	1222	0111	1112	1122	1221	0112	2111	1111	1222	2222	2100	1111	1100	0000	0011	1123	3321	1111	2222
9	3333	3344	4333	3221	2222	1111	1112	2001	1110	0111	2122	2222	2100	0002	2332	2111	1111	1111	0001	1133	2233	1121	0000	0000
10	0110	1112	3333	2222	2322	0011	1000	1110	0010	0000	0010	1122	2223	3221	2223	3332	1223	3333	3332	1011	1121	1111	1110	1112
11	3443	3332	2100	0000	0000	0000	0000	0000	0000	0000	0000	1222	2122	2222	2122	2233	3344	4444	5556	3566	3211	0122	3434	4344
12	5555	5577	6766	8866	5554	5443	3333	4444	3333	2222	1232	3333	2222	2222	3334	4433	2333	3333	3333	2222	2221	1013	3333	3322
13	2245	6543	2333	2343	4554	4433	3333	3233	3333	3333	3222	3334	3444	5555	5555	5566	5555	5556	6566	4543	3211	1211	1110	0000
14	2233	2211	2111	0000	0000	0001	0000	0000	0000	0000	0000	0111	1433	1123	2223	2234	4332	2222	2222	2222	1222	2122	1110	0011
15	1111	1111	1112	2221	2121	2212	2222	3111	1112	3332	3221	2112	2222	2333	3333	3333	3333	3333	3310	0100	1111	1110	1110	0001
16	1333	3345	5433	3333	3322	1221	0000	1111	1001	1111	1111	1111	1111	1111	0111	1000	0001	2222	2221	1110	0110	1122	2233	2111
17	1111	0111	1111	1111	1111	2222	2222	1000	2222	2332	2221	1111	1222	2222	2233	2122	2233	4444	4443	4465	4332	2111	1000	0001
18	0000	0001	2233	3443	3111	1222	2222	3322	0111	1001	0000	1110	1222	2222	2222	3345	6643	2444	4445	5433	2332	3444	3221	1331
19	2333	3323	3334	4554	4332	2222	2333	2222	2111	2201	1111	0101	1222	2222	3344	5555	5555	5433	4443	2113	3444	3334	5555	5566
20	5543	3333	3344	5554	3311	1322	2211	0112	2221	1121	2120	1111	1232	2223	3333	2223	3333	3343	2222	2232	1344	5444	4554	4336
21	6545	5334	4334	4444	3332	2112	2211	2221	2220	0111	1121	1111	1112	2224	4444	3234	5544	5545	4554	3221	1112	1332	2444	4544
22	5556	6776	6544	5544	3221	1110	0001	1121	0000	1011	1122	2211	2211	2221	2222	1111	1111	1111	1122	2211	1221	2111	1223	3555
23	3432	2233	3222	2222	2110	1221	0221	1110	0000	0000	2331	2221	2222	2223	3333	3333	3333	3333	3223	3333	4354	3111	1000	1000
24	1222	0111	1211	0000	1122	2221	1111	1110	1000	1222	2221	2222	2222	2333	3333	3333	3455	5555	4554	4443	3255	5554	3344	4556
25	6654	4566	6543	3212	1222	2221	1122	2211	0001	1111	1222	2222	2333	3223	3333	3335	5556	6544	4333	4333	3333	3333	3333	3222
26	2222	2333	3221	1110	0012	1110	0000	0000	0011	1221	1110	1222	2232	2222	3334	4334	5544	4322	2233	3333	3221	2213	3222	3333
27	4555	5332	2222	1111	1111	0000	0000	0000	2112	2111	2111	1222	2222	2222	2233	2233	2111	1111	1122	2211	1222	2222	3323	2111
28	0111	1111	2222	2222	2000	0010	0001	0001	0111	2222	2222	2222	2222	2222	2222	2222	2233	4432	1221	0111	1111	1122	2111	1111
29	1233	3332	2011	2100	0000	1200	0110	0000	0000	0000	0111	1222	2222	2222	2111	1111	1122	2222	1110	0001	1111	1112	2111	1011
30	1111	1111	0111	1111	1110	0001	1111	1112	2223	3333	3333	2222	2233	3444	4444	3443	4556	6544	4432	2122	2332	2312	3333	2111
31	1222	1221	1122	2111	1122	2233	1112	1210	0000	0111	2222	2222	3222	2222	2223	3333	3223	3333	3333	3344	4332	2222	2222	3233

1st: 0915 Q = 0, Q' = 0  
 9th: 1545 Q = 1, Q' = 0  
 23rd: 1015 Q = 3, Q' = 1  
 28th: 1030 Q = 2, Q' = 1  
 29th: 1345 Q = 2, Q' = 1    1630 Q = 2, Q' = 2

Q-INDICES OF GEOMAGNETIC ACTIVITY

Q-indices for 4 consecutive intervals of 15 minutes centred at the full hour, 15 minutes later, etc.

8 LERWICK

APRIL 1958

	Hour G.M.T.												13	14	15	16	17	18	19	20	21	22	23	
	0	1	2	3	4	5	6	7	8	9	10	11												12
1	2222	2111	2322	2222	3222	2111	2222	1101	0000	1000	0111	2222	2233	3332	2333	3333	3333	2222	3333	3334	4332	2011	1113	2211
2	2121	0222	1122	2222	2332	2001	1221	3322	3211	1111	0223	3333	3222	3222	2232	3332	1112	2233	3333	3322	3332	2333	3222	2233
3	3233	2223	3454	3212	2233	3333	2211	2001	1100	0111	0111	1122	2222	2211	1210	0123	3223	3332	2332	2322	2334	4333	2211	1122
4	1122	2322	2233	3333	2222	2111	1011	1120	0100	0112	2223	3333	3334	4444	5554	5544	4455	5555	6675	4544	4324	4333	5655	4434
5	4445	5555	5566	5444	3322	2322	2222	3222	2222	2333	3332	2333	3222	2332	3223	3322	3333	3333	3322	2221	2211	1121	2233	
6	4444	4543	3211	0000	0000	0101	1100	1011	0001	1000	0122	2222	2223	3223	3333	3444	3444	4443	4444	4343	4422	3223	3335	4454
7	4322	1212	1112	2232	2222	2211	1121	1110	0111	1111	1122	2222	2332	3333	3223	3333	3333	4443	3212	1111	1112	2222	2121	
8	1100	0000	1122	2222	1100	0111	1100	0000	0000	1112	2222	2222	2222	2223	3333	3333	3222	2222	2122	2222	2233	3222	1122	2221
9	1100	0000	1112	2111	2222	2210	0000	0000	0001	1111	1122	2222	2222	2222	2222	2222	2222	2222	2222	2333	3333	3323	2222	1111
10	0000	0000	0001	1000	0000	0000	0000	0000	1111	1122	2222	2222	2222	2222	2222	2222	2111	1111	1112	2222	2222	2222	1111	1111
11	2211	1112	2222	2221	0000	0000	0000	0000	0000	0111	1112	2222	2222	2223	3222	2222	2222	2211	1111	1111	1122	2122	1221	1111
12	1111	1111	1111	0000	0000	0000	0000	0000	0000	0000	0000	1222	2122	2111	1111	1110	0000	1221	1012	2111	1101	1111	1111	0110
13	0001	1111	1100	0000	0000	1111	1111	2100	0000	0000	0000	0001	1111	0000	0000	1100	0110	0111	1111	1111	1111	1111	1111	1111
14	0000	0001	1111	0000	1111	0000	0000	0000	0000	1111	1101	2221	2222	2233	3321	1223	3333	3222	2233	3333	3122	2122	1222	1123
15	4444	4433	3343	3333	3331	2222	2112	2222	2232	2222	2111	1111	1111	2122	1100	1111	2211	1123	3333	3333	3333	2122	2100	0244
16	4334	4433	3343	3333	2222	2322	2223	3332	2111	1112	2122	2222	2333	3332	2333	3333	3333	4444	4344	6644	5543	3223	3335	5554
17	4556	6666	6554	4445	5443	3333	3222	2233	3322	2112	2222	3223	3333	3333	3334	5666	6655	5555	5556	4443	3223	3322	2476	6544
18	3334	4344	4445	5555	3431	1222	2332	3333	3322	1112	2222	2222	3444	5554	4333	4454	5555	5554	5543	3333	3332	2334	4445	6554
19	2211	3333	3321	2122	1112	212																		

## Q-INDICES OF GEOMAGNETIC ACTIVITY

Q-indices for 4 consecutive intervals of 15 minutes centred at the full hour, 15 minutes later, etc.

8 LERWICK

MAY 1958

	Hour G.M.T.																							
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2224	5543	2222	2322	2332	2221	1111	1222	2122	1222	1111	2111	1111	1111	1112	2223	3444	3334	4444	4333	3221	2111	1245	4221
2	0111	2222	2222	1111	2221	1112	1110	1111	0112	1111	1000	0011	1122	1111	1111	1111	1111	1111	2223	3333	3322	1111	2222	1111
3	1111	2222	1111	1122	2122	2111	1010	0000	0000	0111	1111	1112	2122	2222	2222	2222	2222	2221	1112	2222	2111	2221	2221	1112
4	3222	2211	1111	1100	0000	0111	1110	0011	1111	1111	1111	2222	1111	1111	1122	2222	2222	2222	2221	1112	1112	2222	2122	2000
5	0000	1100	0002	2221	1100	0000	0000	0000	0010	0001	0011	1111	1111	1111	1111	1111	2222	2233	3333	3333	3322	3333	3331	1111
6	1221	1221	2222	2000	2000	0011	1111	1111	1100	0011	1111	1222	2222	2222	1222	1122	1111	1111	0000	1111	1111	1111	1222	1111
7	1000	0000	0000	0000	0000	0000	0011	1111	1111	1111	1111	1112	2222	2222	2222	2222	2222	2111	1111	1111	0001	1122	2100	0000
8	0011	1111	1122	1111	2222	2111	0000	0011	1111	1111	1111	1112	2222	2222	2222	2222	3332	3332	2222	1110	0110	1111	2122	2332
9	2111	1000	0000	0010	0111	0010	0001	2113	1011	0000	1111	2122	1211	2222	2111	1112	2222	2222	2201	2111	0000	0000	0000	0000
10	1122	2122	2110	0000	0000	1122	2222	2121	2211	1221	0011	1133	1333	3221	1111	2323	3322	2222	3323	3333	2221	1001	1112	2332
11	1000	0000	0000	0000	0000	0000	0122	2233	3333	3333	3332	2222	2221	1222	2212	2221	1222	2223	3333	2222	2211	1111	1222	1221
12	1111	1111	1100	0000	0000	0000	0000	0000	0012	1112	2222	2222	2222	1122	2111	1222	2233	4432	2333	3333	3323	3111	1244	4333
13	3333	3210	0000	0000	0011	0112	1111	1111	1211	1101	1221	2222	2222	2333	3334	4445	5566	6555	4344	4444	3333	3444	5567	7543
14	4666	6665	5555	4455	4433	3333	3333	3333	3333	2222	2222	2222	2223	3333	4455	5544	4444	4333	3333	4433	3222	1111	1111	1344
15	5444	4433	3444	4444	2245	5545	3222	2222	1101	1110	0211	0221	1222	2333	3333	3333	4444	4444	4444	3321	1111	1222	2212	2223
16	3233	3333	2222	2222	2111	2220	2000	0000	0012	2222	1111	1111	1221	1123	3333	3233	4455	4333	2210	0222	1111	1000	1111	1111
17	1112	2222	2333	3223	2332	1122	1112	2222	2222	2222	1100	0111	0022	2133	3333	3333	3333	3333	3334	3332	1110	0111	1211	1233
18	3332	3443	3333	3222	2001	0000	1111	1221	1111	1000	1121	2211	2222	2332	2233	3233	3445	5444	4433	3332	2222	2121	2112	2212
19	2211	1111	2221	1122	2233	3333	3322	1100	1100	0001	1111	1222	2222	2222	3322	2233	3333	3333	3333	3333	2222	2221	1000	0011
20	2222	2222	1001	1011	1111	1000	0000	0000	1111	1111	1112	2222	2222	2222	2222	2112	2222	2222	2222	2101	1111	1111	1222	2221
21	0000	2222	2211	1111	2112	1000	0000	0110	0011	1111	1222	2222	2222	2222	2222	2222	1111	1112	2111	1111	1111	1122	2222	1111
22	1122	2221	1111	1111	1111	1110	0000	0000	0011	1111	1111	1122	2222	2222	2222	2222	2221	1111	1111	1112	2222	2222	2222	2222
23	2211	1101	1001	1111	0011	1111	1110	0000	0100	0111	2222	2222	2222	2222	2222	2222	2222	2222	2221	1112	2222	1122	2222	2222
24	2222	2211	1111	1111	1000	0000	0000	0001	1111	2222	2222	2222	2222	2222	2222	2221	1111	1101	1111	1001	1111	1111	1111	1111
25	1111	1111	1111	1111	1111	1000	0000	0000	0000	0000	0011	2222	2111	1111	1112	2222	2222	2223	3333	3333	3333	3333	3322	2222
26	1012	2233	3333	3322	2222	1111	1221	1111	2222	3333	2233	3223	3333	3344	5566	7666	6666	6554	4333	3322	2223	3333	3332	3222
27	2233	3333	2111	1111	1112	2222	3222	3322	2222	3222	2111	2222	2233	3332	2223	3222	1112	2233	3344	4443	3333	2233	3444	4334
28	5555	5554	4333	3333	3222	2222	2222	2222	2221	1001	1011	0100	0000	0111	1022	3333	3322	2223	3333	3333	3332	2232	1002	2112
29	2213	3344	4444	4455	3123	3233	3444	4344	4343	3333	3445	6666	6666	6666	6655	4444	4444	4444	3333	3333	3232	3322	2221	1112
30	2111	1112	3333	3333	3333	3333	3333	3333	3333	3222	2211	1111	1111	2222	2221	1122	2223	3443	3322	2233	3332	3333	2233	2222
31	2222	2223	3333	4444	4333	2222	2322	2222	2222	2222	1111	0012	3333	4444	4310	0001	1102	5556	6765	6654	3333	5888	8666	7776

## Q-INDICES OF GEOMAGNETIC ACTIVITY

Q-indices for 4 consecutive intervals of 15 minutes centred at the full hour, 15 minutes later, etc.

8 LERWICK

JUNE 1958

	Hour G.M.T.																							
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	6888	8777	6677	7653	3333	3355	5444	3333	2232	3222	2222	3332	2122	2222	2222	1001	2233	3344	4455	5554	4332	2222	3333	4554
2	3212	2223	4444	3333	3333	2222	2222	3333	2222	2222	2122	2222	2322	3333	4444	4544	4455	5444	4323	2111	0000	0001	1112	2222
3	2222	2222	2222	2222	2222	2222	2222	2222	2222	2111	1000	1111	1111	1111	1000	0012	3233	3322	3333	3322	2222	2222	2111	1111
4	2222	2222	2222	2222	2222	2222	2222	2211	1111	2111	0110	0000	0000	0000	0000	0000	0001	2001	1221	1111	1100	0000	0000	0000
5	1111	1111	1111	1111	1111	1100	0000	0011	1001	1110	0111	2222	2222	2222	2222	3322	3444	3222	2211	1111	1111	1222	2222	2222
6	2222	2221	1111	1111	1111	2111	1000	0122	2111	2222	2222	2222	2221	1111	1111	1111	1222	2223	3333	3333	3443	3333	4554	5444
7	5667	7899	8888	8887	6433	3333	4444	4445	5555	5554	4443	3333	3333	3322	2223	4444	3333	3333	3222	2233	3323	3332	2221	2333
8	3222	2221	1111	0001	0000	0110	1111	1111	1211	1222	2222	2222	2211	1110	0100	1112	2222	2233	3344	4443	3333	2222	2222	2234
9	5554	3322	2223	3322	2222	2222	2222	2222	2222	2222	2222	2233	2222	2222	3333	3444	4443	4443	3223	3345	4333	3333	3223	4556
10	6666	6667	7677	6666	4444	4333	3333	2222	2211	1112	2233	2222	2223	3334	4444	4433	3322	3332	3333	3332	2233	3322	4432	2322
11	2221	1023	3344	3444	4322	2212	1111	2111	1111	0111	1111	2112	2222	2322	2222	2222	3333	2112	2333	3333	2223	2222	2222	1111
12	1111	1111	2222	2111	1233	3332	1111	1222	1111	1111	2211	1112	3221	2111	1112	2223	4323	3333	3333	3333	3333	3332	3332	2222
13	2222	2222	2221	1100	0001	1122	1111	1001	1000	0000	0111	1111	1122	2211	1112	2112	2222	2333	3332	2222	2222	2212	2212	2222
14	2222	2211	1000	0000	0000	0000	0111	0000	0111	1112	2222	2222	2222	2211	1111	1111	1111	1111	1243	3333	3333	3322	2233	2222
15	2101	1110	1110	2222	2221	2332	1223	2332	1122	2332	2223	2222	2222	2222	2222	1111	2221	1222	1110	0001	1111	1111	1111	1111
16	1112	3321	1110	0000	1111	1222	2233	2332	2222	1201	1111	2222	2223	3443	2222	2122	1111	1111	1222	2111	1122	2212	2111	1111
17	1111	1111	1110	0001	1222	2110	0000	0000	1111	1000	1112	2222	2222	2222	2111	1111	1111	1111	1111	1111	1111	1110	1111	1111
18	1110	0000	1111	1000	0000	0001	1111	1111	1001	2222	2222	2222	2222	2222	2222	2222	2222	2222	2233	3332	2222	2222	2112	2111
19	1111	0111	1111	1000	0111	0000	0000	1000	0000	0111	1222	2122	2222	2221	2222	2222	3333	3322	2222	2222	2111	1222	2112	2100
20	0000	0012	2011	0111	0111	0111	1101	1111	1111	1111	0011	1111	1111</											

Q-INDICES OF GEOMAGNETIC ACTIVITY

Q-indices for 4 consecutive intervals of 15 minutes centred at the full hour, 15 minutes later, etc.

8 LERWICK

JULY 1958

	Hour G.M.T.												13	14	15	16	17	18	19	20	21	22	23	
	0	1	2	3	4	5	6	7	8	9	10	11												12
1	2222	2344	5432	2221	1212	2222	2232	1111	1110	0001	0111	1111	1122	2122	2221	2333	3332	1112	3333	2222	2222	2222	2111	1111
2	0000	0000	0000	0000	0000	0000	1111	1111	1000	0001	1111	1011	2122	2222	1233	3233	3222	2222	3333	2223	3333	3333	2111	1110
3	0121	1122	2122	1222	2211	1001	1100	0000	1122	2222	2222	2221	2111	1112	1111	0123	3434	4444	3344	3333	3333	2222	1222	2222
4	2111	1100	0001	1111	0011	2221	1111	1222	2333	3321	1112	2222	2223	2233	4444	4432	2345	5554	4444	4333	3332	1123	3332	2222
5	1110	0000	0110	0111	2111	0000	0000	0000	0111	1000	1111	1111	1222	2233	2222	2110	1000	1000	1000	1112	1122	2222	2223	2122
6	1112	2222	2222	2111	1122	1122	2221	1111	1111	1111	1111	0000	0000	0010	0000	0000	1111	1111	1111	1110	1111	1111	1111	1111
7	0111	1111	1111	0000	1111	0000	0111	1111	1111	1001	2122	2222	2332	2222	3211	2233	2322	2233	3344	3333	3332	2222	2221	0121
8	2110	0122	3322	2221	1110	0111	1222	2235	7656	5554	4346	5555	4345	5456	7778	9799	8887	7776	6666	6666	6656	7779	9766	7777
9	7667	7676	7777	7777	7778	8777	7776	6666	6555	5444	5444	4333	4334	4444	4343	3233	2234	4333	2233	3322	2223	3222	2112	3356
10	6554	5567	7644	3333	3444	4332	2222	2222	2222	2221	2111	0002	2222	3333	3211	0000	0111	1222	2222	2222	1221	0011	1123	3222
11	3333	3333	4444	4332	2222	2211	2221	2212	2222	2332	2222	3333	2011	1112	2221	0011	1111	1212	2200	1122	3333	3322	1111	1001
12	1122	2122	2222	2111	2100	0000	1121	1212	2233	3322	2223	3332	2222	2212	2112	3323	3332	3444	4443	3333	3222	2221	1100	0000
13	0100	0001	1023	3333	3200	0112	2222	0012	2232	2222	2222	2222	1100	0012	2222	2222	3334	4432	2111	1101	1000	0000	0322	2222
14	2211	2222	2222	1022	1222	2222	2222	2222	1121	1111	1111	1111	2210	0011	0000	1223	3333	3210	1222	2222	1111	1110	0000	0000
15	1001	1111	2222	2212	2100	0111	1122	1111	1111	1222	1111	1111	1112	2223	3332	2222	2223	3222	2222	2222	2112	2111	1100	0000
16	1101	2222	2221	2222	2211	1111	2222	1111	1110	0110	0000	0001	1000	0010	0102	2233	3334	4333	3333	3322	2221	1110	0000	3322
17	2002	3333	2112	2222	2222	3332	2222	2112	2223	2332	1111	1111	0002	2221	1112	2222	1111	0010	0100	0001	1111	0100	0000	0000
18	0000	1101	2222	2332	2222	2212	3332	2333	2222	2222	2222	2333	2222	3343	3333	3332	3334	4333	3334	3333	3223	3221	1123	3333
19	2121	1111	1111	1111	1221	1121	1122	3444	3332	2211	1111	1111	2121	1111	1221	0000	2222	1111	0033	2333	3333	3222	3445	5443
20	2223	3332	3444	4433	2222	2344	3222	3322	2223	2222	2212	2322	2212	2212	2212	3334	4444	4332	0001	1111	1110	0000	0012	2111
21	0110	0001	1122	2111	2222	2111	1221	1222	2211	1111	1112	2222	2011	2121	2221	1111	2215	5555	5567	4443	4223	3333	5565	5332
22	2222	2233	2221	1222	2212	1222	2222	2232	2222	1110	1110	1112	3333	4334	3322	1101	1221	0000	0001	2222	1111	1110	0000	0000
23	0000	0000	0000	0100	0000	0001	1211	0000	1111	1100	0001	1112	1111	1011	1111	1111	1111	0111	1111	1100	0001	1110	0000	0002
24	2111	1101	1122	2222	2222	0000	0111	1111	1111	1122	1111	1111	2332	2221	1223	3443	2223	4444	4332	2333	3222	2122	1122	2000
25	0001	1211	2111	1111	1111	1111	1112	2223	3333	3332	3321	2232	3332	2344	4443	3344	4444	4444	4444	4333	2222	2222	2333	4433
26	3333	1133	3344	3321	1000	0100	0112	2222	2222	2223	2222	2222	2222	2222	2222	2222	2222	2222	2222	2222	2222	2212	2222	2222
27	2222	2223	3332	1112	2222	2211	2012	2222	2222	2211	2222	2232	3333	2233	4555	5555	5555	5555	5555	5544	3333	3233	2333	3345
28	3322	2344	3332	2222	1222	2221	2112	1222	2222	2222	1222	2222	2222	2222	2211	1111	1111	0111	1111	1221	1222	2222	2211	2222
29	1111	2112	1222	1111	1100	0000	0000	0000	0000	0000	0000	0000	0001	1111	0111	1111	1222	2121	1133	2222	3322	1222	2222	2222
30	2222	2222	2222	2222	2222	2222	2222	1212	2222	1110	0000	1111	1111	1122	2222	2222	3444	4444	4443	3333	3222	2233	1001	2221
31	1111	1222	2111	1111	1222	2211	1110	0000	0000	0001	1000	1122	2211	1111	1111	0244	5555	5555	5443	3332	2110	0122	2222	2221

Q-INDICES OF GEOMAGNETIC ACTIVITY

Q-indices for 4 consecutive intervals of 15 minutes centred at the full hour, 15 minutes later, etc.

8 LERWICK

AUGUST 1958

	Hour G.M.T.												13	14	15	16	17	18	19	20	21	22	23	
	0	1	2	3	4	5	6	7	8	9	10	11												12
1	1111	1111	1111	2221	1111	1111	1000	1000	0000	0000	0011	0112	3333	2121	2111	1112	0000	2011	0122	2333	3222	2222	3111	0112
2	2221	1121	1111	2111	1111	1122	1222	2221	1121	1111	0000	1221	1111	1133	2211	1013	3333	3333	3323	3333	3332	2111	1122	2222
3	2222	2333	3321	1001	2222	1000	0000	0112	2222	2222	2111	0011	1110	0022	2333	3222	2221	1222	2222	1101	0000	0000	0000	0000
4	0111	1111	1112	2222	2210	0000	0000	0000	1122	2222	2221	2211	2211	1111	1111	1111	1222	2222	2221	1111	1000	0000	0111	1111
5	1100	0110	0111	0100	0110	0000	0000	0000	0000	0000	0000	0001	1110	0001	2221	0000	0000	0010	2221	1111	1111	1111	1111	1222
6	1111	1111	1111	1111	1111	1111	1100	1111	1111	1110	0111	1122	2222	2223	3333	3333	3222	2222	2222	2222	2222	2222	2222	2222
7	2222	2222	2222	2111	1222	2222	2111	1000	0001	1122	2222	2223	3333	2222	2222	2222	2222	2223	3323	3333	2211	1112	2111	1111
8	1111	1111	1011	1111	1111	1111	1100	0000	0000	0001	1111	1111	2211	2222	2222	2222	2221	1111	1111	1111	1111	1111	1111	1222
9	2111	1110	0000	0001	2211	1000	0000	1010	0000	0000	0000	0011	1222	2222	2222	2332	2322	2222	2222	2222	2222	2000	1111	2222
10	1111	1111	1222	1111	1112	1111	1111	1012	2222	1011	1222	3222	2222	2333	2233	2233	3333	3322	1111	2233	3322	2222	2212	2210
11	1111	1121	1012	2222	2110	1111	1111	1211	2222	1111	1222	3332	2222	2221	1222	1112	2223	3322	2113	3222	2222	2222	2211	1111
12	1111	0111	1111	1221	0011	2222	2333	2111	1000	0000	0111	1011	1111	0111	1000	0000	0111	1111	1111	1111	1112	2222	2211	1122
13	2221	1001	1111	1011	1111	1222	3322	2111	1122	2233	2222	1111	1111	1111	1111	2111	1111	1122	1111	1111	1111	1211	1111	1111
14	1111	1111	1001	2221	1111	1111	1011	1122	2222	2222	2222	2222	2222	2222	2222	2111	1111	1233	3333	2211	2222	2222	2332	1111
15	2222	1111	0110	0001	0221	1211	1100	0011	1111	1222	2222	2222	2222	2222	2222	2222	2211	2211	1112	2222	2122	2222	2222	2222
16	1222	2212	2222	2111	1112	1101	1111	2222	2122	2222	2222	2222	2222	2233	2222	2233	3333	3210	1122	2211	1222	2211	1111	1111
17	0000	0001	0111	1110	0001	0101	0342	2223	3333	3322	1223	3333	3222	2333	2226	6566	6655	5564	4532	3344	6543	2345	6653	4357
18	7665	5433	3322	2233	3234	4444	3333	3333	3333	3333	3333	3223	3333	3322	2222	2211	1122	2111	1221	0121	1222	2211	1111	1111
19	1222	1222	2222	2222	2222	2222	2222	2223	2232	2222	3333	2222	2222	2222	2221	1111	1111	1233	2222	2211	1221			

## Q-INDICES OF GEOMAGNETIC ACTIVITY

Q-indices for 4 consecutive intervals of 15 minutes centred at the full hour, 15 minutes later, etc.

8 LERWICK

SEPTEMBER 1958

	Hour G.M.T.												13	14	15	16	17	18	19	20	21	22	23
	0	1	2	3	4	5	6	7	8	9	10	11											
1	0000	0111	1000	0000	0000	0000	0000	0011	2222	2222	2222	2222	2332	2333	3322	2122	2000	0000	1111	1112	2221	1111	1111
2	1111	1111	1101	1001	1111	2222	2222	2222	2222	2111	0000	0011	0000	0000	0122	1011	1221	1122	2222	2222	2222	2222	2222
3	2222	2222	3332	2222	2222	2222	3222	2222	2222	2223	3333	3223	3222	4444	4553	3444	4455	5666	6666	5555	5544	6654	4677
4	6656	6454	4444	4333	3223	3333	3332	2222	3222	2211	1132	3231	2111	2124	5556	7888	8777	7765	6676	6655	6665	7788	7699
5	9777	6888	7788	8887	7776	5433	3233	3223	3333	3322	2222	2321	2211	2333	3223	2223	3110	0022	2224	4455	5422	1100	0111
6	2111	1111	1111	1000	0000	0110	1122	2222	1111	1222	1122	2222	2222	2221	1110	0111	1000	0001	2211	1111	2110	0000	0000
7	0001	1000	0000	0000	1001	1222	2222	2211	1112	2212	2222	2212	2221	1000	2333	3444	4444	4444	4332	2233	4332	2344	5555
8	5432	2224	4443	4332	2332	2222	3222	2222	2221	1111	1122	2122	1110	1110	1100	2213	3211	1000	0000	0011	0000	1222	2344
9	2123	3444	4333	3222	2222	2222	2322	3222	2322	2221	1222	2112	2111	3345	4444	4432	2222	2110	2222	2221	1113	3331	1233
10	1111	2222	2221	1222	2222	2222	2222	2222	2222	2111	1000	0111	1222	2333	2211	2233	2233	3333	2221	0001	1000	1111	1000
11	1111	1111	1111	1112	1111	2222	2222	2222	2222	2111	0112	1111	2222	1001	1112	2221	1012	2111	1222	2222	2221	2221	1111
12	1222	2211	1222	2222	2211	1222	2122	2222	2111	1100	0001	1111	1111	1111	1221	1111	2221	1222	2222	2222	2222	2222	2222
13	2222	2222	2222	2222	2222	2222	2222	1101	0000	0000	0111	1111	1222	2222	2222	2222	2222	2212	2222	2222	2222	2222	2222
14	2222	2222	2222	2222	2222	2222	2221	1111	1111	2222	1111	1112	2222	2222	1111	2222	2212	2222	2111	2222	2221	1122	2222
15	2222	2222	2222	2222	2222	2222	2211	2222	2211	1111	2222	2222	2222	2222	2111	1122	2222	2222	3322	2222	2222	2222	2333
16	3333	3322	2333	2222	2233	3333	3333	3322	3323	2232	2211	2222	2212	2235	4322	2122	4555	5555	5444	3444	5554	4444	4344
17	3345	4212	2322	2222	3323	2222	2222	2222	2212	1101	0011	1121	1110	1110	0112	2112	2222	2222	1222	1111	1111	1111	1111
18	1122	2222	2211	1111	1111	1111	1122	2222	2211	1111	1111	1111	1110	0000	0000	0000	0000	1221	1122	2222	2211	0011	
19	1111	1111	1111	1111	1111	1011	0000	0000	0100	0000	0001	1111	2221	1110	0000	0000	0111	1111	1122	2222	1111	1111	1111
20	2112	2122	2211	1222	1221	1111	1111	1221	2111	1100	0000	0000	0000	0000	0000	0000	0000	1011	1112	2221	1111	0111	1000
21	0000	0111	0011	1000	0000	0000	0000	0111	1011	1111	0111	1000	0110	0000	0000	0000	0011	0011	0001	2210	0111	1000	0000
22	0011	1100	0000	0000	0000	0000	0000	0000	1111	1000	0011	0111	1111	1000	0001	1000	0011	0000	1001	1110	0000	0000	0000
23	0000	0000	0000	0001	1111	1111	0000	0000	0000	0000	0011	1111	1111	0001	1111	1000	0100	0000	0000	0000	0000	0000	0013
24	3210	0000	0011	1111	1000	0000	0001	1111	1111	1111	1112	2222	1001	1012	2111	1111	1001	0111	0110	0000	0001	0000	1233
25	3322	2222	2211	2333	3445	4333	4445	5444	4444	4443	3323	2333	3445	5556	6666	6677	6445	5566	5233	3223	3226	6555	5588
26	5555	4444	4446	6655	4333	3332	2222	3333	3332	2221	1011	0000	2211	2221	2221	2221	1023	3112	1110	0000	1122	3321	1100
27	1211	1000	0000	0000	0000	0000	0000	0000	0001	1001	0000	0111	1000	1000	0011	1123	2122	1222	1122	2211	1011	1233	
28	2222	2212	2100	0000	0001	1011	2221	1111	1001	1011	1011	1111	1111	0000	0111	0100	0000	0000	1100	0000	0000	0000	0000
29	0010	0000	0000	0000	0000	0000	0000	0011	1111	1211	1122	2111	1111	1011	0000	0000	0000	0000	0000	0000	0000	0000	0000
30	0000	0000	0000	0000	0000	0000	0001	0110	0001	2212	2222	2222	2222	2222	2222	2332	2232	3333	4555	4322	2210	0124	4433

1st: 1045 Q = 2, Q' = 1  
7th: 1445 Q = 3, Q' = 3

## Q-INDICES OF GEOMAGNETIC ACTIVITY

Q-indices for 4 consecutive intervals of 15 minutes centred at the full hour, 15 minutes later, etc.

8 LERWICK

OCTOBER 1958

	Hour G.M.T.												13	14	15	16	17	18	19	20	21	22	23
	0	1	2	3	4	5	6	7	8	9	10	11											
1	0000	0000	0001	1000	0000	1111	1111	2322	1001	1111	0112	2222	2222	2222	2111	1111	1000	0111	1100	2121	1113	3454	
2	4334	4443	3334	4333	3222	2222	2222	2111	1112	1111	1122	2222	2222	2222	2111	1000	0000	0000	0000	0000	0000	2222	
3	2221	1222	2222	1233	3333	2222	1112	2111	1111	2111	1121	2111	2222	3233	2222	2333	3332	3344	4432	2211	1011	1001	
4	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0011	1111	1122	1122	2222	1111	1110	0000	0000	0000	0011	
5	2333	3333	2110	0000	0000	0000	0001	2110	0000	0000	0011	2222	2222	2222	2222	2112	2111	1122	2222	2222	2112	2101	
6	0001	1000	0000	0000	0011	1100	0000	0000	0010	0011	0000	1101	1111	2221	2211	1110	0000	0001	1000	0000	0112	2211	
7	0000	0122	2222	2222	2222	2222	1111	0010	0000	0021	1111	1111	2222	2212	2112	2112	2222	1001	1000	0111	1111	0113	
8	4323	3333	3333	3333	2233	2111	1110	0112	2211	1111	0111	1111	1111	1111	1111	1111	1110	0000	0000	0000	0000	0001	
9	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0111	1111	1111	1111	1111	1111	1111	0000	0000	0000	0000	0000	
10	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0111	1111	1111	1111	1112	1111	1111	1111	1111	1000	0000	
11	1211	1000	0000	0000	0000	0000	0000	0111	1111	1111	1011	1122	1222	2222	1111	1111	0000	0111	1111	1000	0122	2211	
12	1000	0000	0000	0000	0000	0000	0000	0000	0000	0011	1111	1111	1111	1111	1111	1111	1110	0000	0000	0000	0011	1000	
13	0000	0000	0000	0000	0000	0000	0000	0000	0000	0122	2222	2322	2222	2222	2322	2222	2222	1100	1111	1101	0000	0000	
14	0000	0011	1101	0000	0011	0000	0000	0000	0111	1111	2222	2222	2221	1222	2222	2111	1121	1111	0000	0000	0000	0001	
15	0122	1000	0000	0000	0000	0000	0000	1101	0000	0000	1122	2111	1221	1001	1000	1111	1111	1111	1111	1211	1001	1012	
16	0000	0000	0000	0000	0001	1222	2100	0000	0101	1000	1111	2222	2222	1111	1111	1111	0110	0000	0000	1100	0000	0000	
17	0000	1110	0000	1111	2111	1111	2221	1111	1111	1111	1111	1221	1222	2111	1111	1111	1011	1111	2111	0100	0110	0000	
18	1000	0111	1001	2100	0000	1101	1000	1111	1111	1111	1111	1122	2222	2111	1111	1111	1111	0011	0000	0000	0002	1012	
19	0000	0000	0000	0001	1100	0000	0000	0011	1111	1110	0100	1121	1222	2211	1122	2222	2232	2111	1111	0111	0011	1000	
20	2112	2111	1001	1000	0000	0000	0000	0000	0000	0000	0001	1111	1111	1111	1000	0000	0000	0001	0000	1000	0000	0011	
21	1100	0000	0011	1122	2111	1011	0000	0001	1011	1011	0000	0000	0000	0111	1110	1111	0000	0000	0000	0000	0000	0000	
22	0000	0000	0000	0222	3322	2122	3333	3333	3333	3311	0222	2222	2222	2222	2222	2222	3223	3456	5333	3333	3557	5454	
23	5555	5444	3333	4544	4444	4444	4334	4444	4444	4433	3111	0134	4333	3332	3444	4333	3333	4555	5554				



Q-INDICES OF GEOMAGNETIC ACTIVITY

Q-indices for 4 consecutive intervals of 15 minutes centred at the full hour, 15 minutes later, etc.

8 LERWICK		NOVEMBER 1958																						
	Hour G.M.T.													13	14	15	16	17	18	19	20	21	22	23
	0	1	2	3	4	5	6	7	8	9	10	11	12											
1	0000	0000	0000	0000	0000	0000	0000	0000	0000	1111	1112	1121	1221	1111	1111	2222	1222	2222	2222	2111	1112	1210	2221	1110
2	1100	0000	0000	0000	0000	0000	0000	0000	0000	0111	2222	2222	2222	2222	2333	3333	3455	5677	5322	1110	0001	1001	1001	1112
3	2222	2210	1100	0122	2332	1221	1000	0000	0100	0011	1112	1111	0002	2122	1222	2222	2222	2222	1110	1000	1111	1122	1111	1222
4	2111	1111	1122	1111	1111	1000	0000	0000	0000	0000	0000	0000	3221	1011	1111	1000	0000	0000	0111	1121	1112	2221	1100	1111
5	1111	1111	1111	1111	1100	0000	0000	0000	0111	1111	1111	1111	1111	1111	1100	0100	0000	0000	0000	0000	0000	0001	1111	1110
6	0000	0000	0000	0000	0000	0000	0000	0000	0100	0111	0111	1111	1111	1000	0000	0000	0000	0101	1111	1111	1111	1111	1112	2000
7	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0011	1222	2222	2222	2222	2222	3332	2221	1110	0000	0000	0000	0222	1111
8	0000	0000	0000	0000	0000	0000	0000	0000	0000	0112	2222	2222	2222	2222	2221	1111	1111	0111	1000	0000	0000	0000	0000	0000
9	0000	1100	0000	0000	0011	1011	1111	1100	0000	0111	1222	2222	2222	2222	2222	2222	2111	1000	0000	0000	0000	0000	0111	1000
10	0010	0000	0000	0000	0000	0001	1111	1110	0000	1111	2233	3333	3333	3333	3222	2221	1111	1122	2222	2221	2222	2222	1001	1110
11	1333	3334	5544	3222	2233	2222	2111	1110	0000	0000	1001	1111	1111	1111	0000	0000	1000	0010	1101	1100	0110	0111	1000	0000
12	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	2111	1111	1211	1100	0000	0000	0001	1332	2211	1223	3201	1000
13	0000	1112	2222	2122	2221	1111	1111	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	1000	0000
14	0000	0001	1111	0000	0000	0000	0000	0000	0000	0000	0000	0001	1111	1000	0000	0000	0000	0000	0000	0000	0001	1111	2222	1110
15	2211	1000	0000	0110	1111	0100	0000	0000	1101	1000	0000	0111	1122	2211	1110	0000	1000	0000	0000	0000	0000	0111	1110	0011
16	1110	0000	0110	0000	0011	1011	1011	1000	0111	1110	0111	1111	2222	2222	2233	3222	2111	0000	0000	0000	0000	0000	0000	1100
17	0000	0000	0000	0000	0000	0001	0000	1111	0000	1111	1111	1122	2221	1111	1111	4111	1111	0000	0000	0000	0000	2221	0001	1001
18	1000	0000	0000	0000	0000	0000	0000	0000	0001	1111	1111	1111	1122	2222	2222	2222	2222	1110	0221	1111	2223	4432	2221	1100
19	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0011	1111	1111	1111	1111	1111	1100	0000	0000	0001	1000	0000	0000	0000
20	0000	0000	0001	1100	0000	0000	0000	0000	0000	0000	0000	0011	1111	1111	1111	1111	1100	0000	0000	0000	0000	0000	0000	0000
21	0001	1110	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0111	1100	0000	1111	1222	2211	1000	0000	0000	0000	0000	0000
22	0010	1111	1111	1111	0010	0000	0000	0000	0000	0000	0000	0001	1111	1111	1111	1000	0000	0000	0000	0000	0000	0000	0000	0000
23	0110	0000	0000	0000	0000	0000	0000	0000	0000	0001	1000	0001	1111	1122	3222	2222	1111	1111	1111	0000	0000	0000	1111	1000
24	0000	0000	0000	0000	0000	0000	0000	1111	1211	1111	1111	1122	2221	2222	2222	1111	1111	1111	1111	1111	1122	2111	1000	0000
25	0000	0000	0000	0000	1000	0000	0000	0000	0000	0000	0000	0000	0001	0111	2112	2223	2012	3212	2222	2111	1122	2222	2223	4333
26	3322	2211	1011	1000	0000	0000	0000	0000	0001	1100	0000	0011	1112	2221	1111	1111	2222	2122	2222	0111	2211	1000	0000	0011
27	2110	0000	0000	0000	0001	1111	0000	0000	0000	0001	2222	2222	2111	1111	1111	1111	2222	1112	2200	0002	2221	1122	1212	3333
28	2223	2122	2211	1123	3332	2122	2110	2222	2222	0101	1000	2111	2122	1222	2110	0110	0001	1100	0100	1111	1111	1112	2323	3222
29	1111	1111	1113	3222	2222	2000	0000	0000	1122	2222	1111	1111	2222	2222	2222	2222	2111	1111	1110	0000	0000	0000	0000	0000
30	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000

5th: 1015 Q = 1, Q' = 1

Q-INDICES OF GEOMAGNETIC ACTIVITY

Q-indices for 4 consecutive intervals of 15 minutes centred at the full hour, 15 minutes later, etc.

8 LERWICK		DECEMBER 1958																						
	Hour G.M.T.													13	14	15	16	17	18	19	20	21	22	23
	0	1	2	3	4	5	6	7	8	9	10	11	12											
1	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	1111	1111	1000	0000	0000	0000	0000	0000	0000	0000
2	0000	0000	0111	1011	0110	0000	0000	0000	0000	0001	1111	0001	1111	2222	2213	3333	3333	3334	5544	3122	3332	2245	5432	1000
3	0112	2223	3333	3221	1100	1100	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
4	0022	1111	1100	1100	0000	0000	0000	0000	0111	2223	3332	2222	2322	2233	3323	3455	5555	5555	6665	5553	4555	6767	7766	
5	7887	7666	5555	5444	4333	3333	3333	2222	2211	1000	0000	0001	2111	1111	2222	1111	1111	0110	0000	0000	0000	0000	1223	2011
6	0000	0000	0000	0000	0000	0000	0000	0100	0000	0000	0012	2111	0111	1001	1122	2222	2333	1110	0000	0000	0000	0000	0113	3321
7	1000	0000	0000	0010	1111	1122	1110	0000	0000	0000	0000	0000	0000	0001	0100	0000	0000	0001	0100	1000	1111	1111	1100	1000
8	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	1000	0000	0110	1111	1111	3322	2001	0001	1111	1234	3211	0001	1333
9	3123	2333	2332	2210	0111	1000	0001	1012	2221	0000	0000	2102	1000	1000	0000	0001	0111	1010	0000	0111	1111	1111	1221	1111
10	1111	1111	1111	1101	1110	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0010	1010	0111
11	1001	1111	0000	0000	1111	1000	0000	0000	0000	0001	1111	1000	0000	1110	0000	0000	0011	0000	0000	0000	0000	0101	2344	3100
12	0000	0000	1222	2221	1000	0000	0000	0000	0000	0000	0000	0000	0000	2000	0110	0000	0000	0000	0110	0001	0111	1011	2222	1112
13	3443	2333	3554	4444	4333	3332	2010	0001	1010	0111	1111	1221	2233	3333	3223	3334	5666	5556	7776	6554	4455	5544	4433	2333
14	3333	3333	4332	2221	1111	2222	1111	1101	0000	0000	0000	0000	1011	1321	1122	2222	1222	3312	1111	3234	3222	1113	3334	4333
15	2100	0000	0000	0000	0000	0000	0000	0000	0000	0012	1110	0000	0000	1100	0000	1111	1111	2221	0110	0000	0121	1111	2221	1111
16	0011	1000	1222	2111	2222	2211	1000	0000	0101	0000	0110	0111	1101	1111	1112	2221	1112	1111	1100	0000	0001	1111	1000	0000
17	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	1000	0111	1101	1022	3333	5555	6666	5442	2344	4443	3478
18	8887	7766	8887	5544	3311	2222	2211	1111	1111	1121	2112	0001	1112	2211	2211	1111	1110	0000	0000	0011	1100	1112	3222	2100
19	0123	3334	4444	3333	3223	2122	2222	1221	2211	0223	2201	1110	1111	1222	1000	0012	2221	0001	1111	0011	2333	2111	1100	0000
20	0000	1001	1111	1121	1010	1112	2222	2110	1100	1000	0110	1110	2111	1111	0101	0010	1222	1111	1000	1100	1233	3332	1000	0000
21																								

ALL DAYS

Departures from the mean of the 24 hourly values (uncorrected for non-cyclic change)

9 LERWICK

	Hour G.M.T.																							
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24
<b>HORIZONTAL FORCE</b>																								
	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$
Jan.	-6.2	-5.4	-12.9	-8.9	-2.9	+2.0	+3.8	+4.0	-1.9	-9.3	-13.2	-15.5	-17.8	-9.9	-3.6	+0.6	+6.8	+10.6	+15.0	+19.1	+16.0	+14.0	+9.8	+5.8
Feb.	-2.4	-13.1	-39.1	-12.8	-5.0	-8.0	-2.4	-8.2	-16.6	-25.3	-17.1	-14.8	-3.2	+0.8	+7.1	+10.5	+16.4	+20.4	+30.4	+34.6	+26.0	+8.0	+7.8	+6.0
Mar.	-35.1	-47.5	-42.0	-32.0	-8.1	+2.0	-0.3	-6.0	-14.6	-23.1	-27.9	-26.9	-19.4	-1.7	+25.8	+41.1	+64.7	+62.9	+54.4	+39.5	+19.0	+7.3	-10.7	-21.4
Apr.	-17.5	-25.9	-24.4	-19.4	-10.7	-5.0	-3.4	-10.3	-21.1	-33.4	-40.3	-44.0	-27.1	-8.5	+7.7	+33.7	+52.4	+58.5	+62.0	+53.3	+36.8	+17.3	-13.9	-16.8
May	-17.2	-20.5	-19.9	-19.4	-7.3	-5.4	-7.7	-20.3	-30.5	-41.9	-46.5	-37.7	-25.4	-4.4	+18.8	+33.9	+53.2	+65.4	+66.0	+55.8	+33.9	+3.2	-11.7	-14.4
June	-50.0	-53.9	-51.9	-57.2	-28.4	-22.6	-17.3	-21.0	-27.2	-31.7	-33.4	-26.3	-12.4	+7.0	+29.8	+48.2	+65.1	+74.4	+77.5	+69.7	+53.8	+28.1	-4.0	-16.3
July	-14.7	-30.6	-30.9	-19.4	-14.3	-17.4	-19.3	-29.2	-40.9	-42.5	-43.6	-43.2	-19.6	+3.6	+32.7	+63.7	+71.6	+68.4	+66.5	+53.3	+39.6	-9.6	-9.7	-14.5
Aug.	+6.2	+7.0	-7.5	-13.3	-14.7	-9.2	-10.1	-19.1	-33.3	-44.0	-45.4	-41.0	-29.1	-10.5	+6.8	+25.2	+36.2	+40.8	+40.8	+38.3	+28.8	+22.7	+13.8	+10.6
Sept.	-12.5	-14.5	-19.1	-13.9	-2.3	+9.2	+4.2	-5.0	-19.1	-31.9	-38.1	-33.6	-21.1	+2.7	+22.7	+46.2	+43.8	+46.6	+47.8	+42.5	+23.0	-9.2	-28.0	-40.4
Oct.	-5.3	+1.3	+1.1	+0.4	+9.5	+8.2	+8.0	+3.2	-7.3	-18.0	-28.4	-31.2	-24.1	-12.4	-3.0	+11.9	+27.0	+33.0	+32.3	+21.8	+4.7	-2.5	-9.4	-20.8
Nov.	+4.5	+2.7	+2.6	+4.7	+6.7	+9.5	+9.1	+5.2	-2.3	-13.1	-19.7	-24.0	-20.3	-15.8	-7.6	-1.9	+6.5	+14.5	+8.6	+8.8	+7.8	+5.4	+3.9	+4.2
Dec.	-30.3	-20.7	-22.9	-5.7	+2.8	+5.2	+5.8	+4.8	+0.4	-5.5	-8.8	-10.2	-8.9	-4.1	-0.4	+6.7	+19.1	+24.2	+29.0	+16.0	+13.5	+8.6	-3.3	-15.3
Year	-15.0	-18.4	-22.2	-16.4	-6.2	-2.6	-2.5	-8.5	-17.9	-26.6	-30.2	-29.0	-19.0	-4.4	+11.4	+26.7	+38.6	+43.3	+44.2	+37.7	+25.2	+7.8	-4.6	-11.1
Winter	-8.6	-9.1	-18.1	-5.7	+0.4	+2.2	+4.1	+1.5	-5.1	-13.3	-14.7	-16.1	-12.5	-7.3	-1.1	+4.0	+12.2	+17.4	+20.7	+19.6	+15.8	+9.0	+4.5	+0.2
Equinox	-17.6	-21.7	-21.1	-16.2	-2.9	+3.6	+2.1	-4.5	-15.5	-26.6	-33.7	-33.9	-22.9	-5.0	+13.3	+33.2	+47.0	+50.3	+49.1	+39.3	+20.9	+3.2	-15.5	-24.9
Summer	-18.9	-24.5	-27.5	-27.4	-16.2	-13.7	-13.6	-22.4	-33.0	-40.0	-42.2	-37.1	-21.6	-1.1	+22.0	+42.7	+56.5	+62.3	+62.7	+54.3	+39.0	+11.1	-2.9	-8.7
<b>DECLINATION</b>																								
Jan.	-4.07	-4.29	-3.91	-4.66	-3.57	-2.73	-1.90	-2.25	-2.44	-1.60	-0.42	+1.42	+3.96	+5.47	+5.15	+4.82	+5.66	+5.69	+4.58	+2.71	+0.03	-1.90	-2.54	-3.21
Feb.	-3.01	-1.93	+1.11	-4.73	-5.06	-4.66	-3.56	-2.88	-1.78	-0.49	+1.64	+3.57	+5.04	+6.08	+6.21	+5.28	+4.10	+3.43	+1.92	+0.96	-1.33	-2.62	-3.80	-3.49
Mar.	-3.96	-7.28	-7.71	-5.38	-5.83	-4.91	-3.03	-4.27	-4.28	-2.45	+0.40	+4.70	+7.88	+9.68	+10.16	+8.42	+7.09	+5.43	+3.42	+2.12	-0.26	-2.05	-3.63	-4.26
Apr.	-3.78	-4.76	-5.87	-7.12	-6.73	-7.19	-7.18	-7.18	-5.51	-2.27	+1.33	+5.62	+9.20	+10.72	+10.28	+8.47	+6.63	+4.57	+3.36	+1.91	+0.97	-0.24	-1.18	-4.05
May	-1.54	-3.34	-5.25	-5.68	-6.26	-7.60	-9.31	-9.00	-7.77	-4.25	-0.14	+4.11	+7.58	+9.40	+9.03	+7.70	+5.88	+5.07	+3.57	+2.15	+3.11	+2.70	+0.57	-0.73
June	-2.01	-5.03	-6.63	-8.33	-7.66	-8.65	-9.19	-9.24	-6.57	-3.52	+0.83	+4.61	+8.00	+8.72	+8.24	+6.99	+6.40	+5.19	+4.81	+4.41	+4.65	+3.63	+1.24	-0.89
July	-1.44	-2.73	-4.99	-6.35	-7.21	-7.87	-9.00	-9.32	-7.09	-4.62	-2.22	+0.90	+6.28	+7.54	+7.57	+8.22	+6.67	+6.57	+5.83	+5.10	+4.17	+4.00	+0.91	-0.92
Aug.	-0.55	-0.79	-1.63	-4.71	-5.37	-7.38	-8.24	-8.32	-6.60	-4.00	+0.63	+4.94	+8.45	+9.73	+8.12	+5.95	+3.50	+1.45	+0.52	+1.01	+1.20	+1.28	+0.82	-0.01
Sept.	-3.69	-4.00	-5.39	-5.18	-4.83	-5.13	-6.17	-6.32	-5.60	-3.93	+0.59	+4.98	+8.22	+9.22	+7.86	+5.62	+5.57	+4.27	+4.06	+2.28	+1.79	-0.02	-0.80	-3.40
Oct.	-3.74	-3.73	-2.92	-2.72	-2.63	-2.40	-2.21	-3.12	-4.44	-3.88	-1.06	+3.11	+6.03	+7.28	+7.23	+6.21	+4.99	+4.09	+3.46	+2.40	-1.02	-2.75	-4.63	-3.55
Nov.	-2.67	-2.67	-2.64	-2.40	-2.46	-2.02	-1.80	-1.82	-2.30	-1.95	-0.02	+2.14	+3.87	+4.75	+5.13	+4.68	+3.80	+3.07	+2.00	+0.89	-0.33	-1.71	-2.65	-2.89
Dec.	-3.35	-5.07	-5.13	-3.11	-1.79	-1.30	-0.84	-0.82	-0.83	-0.28	+0.79	+2.35	+3.77	+4.57	+4.31	+4.16	+4.58	+4.24	+2.73	+0.39	-0.44	-1.78	-3.33	-3.82
Year	-2.82	-3.80	-4.25	-5.03	-4.95	-5.15	-5.20	-5.38	-4.60	-2.77	+0.20	+3.54	+6.52	+7.76	+7.44	+6.38	+5.41	+4.42	+3.35	+2.19	+1.05	-0.12	-1.59	-2.60
Winter	-3.27	-3.49	-2.64	-3.73	-3.22	-2.68	-2.03	-1.94	-1.84	-1.08	+0.50	+2.37	+4.16	+5.22	+5.20	+4.73	+4.53	+4.11	+2.81	+1.24	-0.52	-2.00	-3.08	-3.35
Equinox	-3.79	-4.94	-5.47	-5.10	-5.01	-4.91	-4.65	-5.22	-4.96	-3.13	+0.31	+4.60	+7.83	+9.23	+8.88	+7.18	+6.07	+4.59	+3.57	+2.18	+0.37	-1.27	-2.56	-3.81
Summer	-1.39	-2.97	-4.63	-6.27	-6.63	-7.87	-8.93	-8.97	-7.01	-4.10	-0.23	+3.64	+7.58	+8.85	+8.24	+7.21	+5.61	+4.57	+3.68	+3.17	+3.28	+2.90	+0.89	-0.64
<b>VERTICAL FORCE</b>																								
	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$
Jan.	-7.5	-10.9	-14.3	-24.9	-30.3	-29.3	-21.0	-13.8	-7.7	-3.9	-1.6	+1.0	+2.9	+6.1	+10.7	+12.4	+15.0	+20.3	+24.2	+23.6	+21.2	+15.8	+9.3	+2.7
Feb.	-21.8	-28.5	-40.0	-28.8	-24.6	-23.6	-11.4	-7.2	+0.4	-0.6	-2.1	+2.8	+4.8	+13.8	+19.7	+25.1	+34.4	+33.8	+35.7	+29.8	+8.3	+2.3	-6.8	-15.5
Mar.	-53.7	-64.4	-57.3	-57.4	-52.2	-38.1	-28.4	-17.5	-8.6	-1.7	+4.7	+8.5	+14.6	+22.8	+36.8	+51.5	+62.8	+69.0	+71.4	+51.5	+30.2	+7.6	-17.4	-34.7
Apr.	-35.5	-35.2	-41.4	-41.2	-35.6	-28.8	-16.1	-9.1	-5.9	-2.4	+0.6	+4.4	+8.4	+20.7	+28.9	+36.6	+47.4	+54.7	+45.9	+35.6	+19.2	+5.0	-19.4	-36.8
May	-37.3	-44.3	-42.5	-35.6	-23.7	-14.4	-6.5	-2.2	-2.8	-1.1	-0.1	+2.6	+8.6	+14.5	+23.8	+29.1	+33.5	+31.7	+33.3	+30.0	+21.4	+12.8	-9.7	-21.1
June	-8.7	-25.1	-48.1	-52.7	-34.9	-17.4	-17.2	-5.6	+2.2	+5.7	+5.1	+3.6	+7.3	+15.1	+27.4	+36.9	+40.0	+38.8	+32.7	+25.1	+14.0	-1.1	-20.7	-22.4
July	-18.7	-25.6	-35.6	-31.2	-20.5	-13.9	-9.7	-3.5	+0.1	-3.4	-2.6	+1.8	+0.4	+10.0	+25.0	+26.4	+24.3	+26.6	+29.1	+21.8	+14.9	+15.1	-7.3	-23.5
Aug.	-12.4	-15.4	-27.0	-33.3	-27.8	-19.8	-11.6	-4.6	-3.3	-2.8	-1.2	-0.8	+1.7	+8.5	+18.6	+25.2	+28.4	+29.4	+22.5	+16.6	+10.8	+6.9	-2.1	-6.5
Sept.	-20.1	-23.7	-27.5	-18.9	-11.4	-14.0	-6.8	-3.0	-0.6	-1.4	-1.5	-2.2	+1.6	+7.9	+21.9	+26.2	+10.2	+23.2	+17.6	+21.8	+13.8	+6.9	+4.8	-24.8
Oct.	-29.7	-22.3	-16.4	-19.8	-18.5	-16.2	-11.7	-5.2	+1.2	+5.3	+8.0	+8.9	+10.1	+11.8	+11.9	+16.2	+24.6	+29.0	+26.5	+12.7	+13.3	+1.0	-18.4	-22.3
Nov.	-3.2	-7.3	-10.4	-9.5	-10.5	-10.4	-9.2	-5.9	-2.6	-1.4	-0.7	-0.2	+0.6	+1.4	+4.0	+8.0	+12.1	+11.8	+13.6	+10.8	+7.2	+3.3	+1.7	-3.2
Dec.	-11.7	-29.2	-28.7	-21.7	-12.7	-9.9	-8.1	-5.1	-3.1	-3.2	-1.9	-0.9	0.0	+6.4	+12.2	+17.5	+15.4	+13.9	+13.6	+22.7	+19.7	+11.5	0.0	+3.3
Year	-21.7	-27.7	-32.4	-31.3	-25.2	-19.7	-13.1	-6.9	-2.6	-0.9	+0.6	+2.5	+5.1	+11.6	+20.1	+25.9	+29.0	+31.9	+30.5	+25.2	+16.2	+7.3	-7.2	-17.1
Winter	-11.1	-19.0	-23.3	-21.2	-19.5	-18.3	-12.4	-8.0	-3.3	-2.3	-1.6	+0.7	+2.1	+6.9	+11.7	+15.7	+19.2	+19.9	+21.8	+21.7	+14.1	+8.2	+1.1	-3.2
Equinox	-34.7	-36.4	-35.7	-34.3	-29.4	-24.3	-15.7	-8.7	-3.5	-0.1	+2.9	+4.9	+8.7	+15.8	+24.9	+32.6	+36.3	+44.0	+40.3	+30.4	+19.1	+5.1	-12.6	-29.7
Summer	-19.3	-27.6	-38.3	-38.2	-26.7	-16.4	-11.3	-4.0	-0.9	-0.4	+0.3	+1.8	+4.5	+12.0	+23.7	+29.4	+31.5	+31.6	+29.4	+23.4	+15.3	+8.4	-9.9	-18.4

"Winter" comprises the four months, January, February, November, December; "Equinox" the months March, April, September, October; and "Summer" May to August.

INTERNATIONAL QUIET DAYS

Departures from the mean of the 24 hourly values (uncorrected for non-cyclic change)

10 LERWICK

	Hour G.M.T.																							
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24
HORIZONTAL FORCE																								
Jan.	+2.9	+0.8	+2.5	+2.5	+5.9	+8.4	+9.1	+8.5	+4.3	-2.0	-8.5	-14.3	-16.3	-12.8	-11.9	-7.5	-4.1	-2.0	+3.7	+6.9	+6.1	+5.6	+6.1	+6.1
Feb.	+5.5	+3.6	+2.7	+1.6	+3.6	+4.7	+3.4	+4.8	+0.1	-7.2	-14.7	-19.0	-12.9	-15.2	-14.1	-9.8	-6.2	+1.9	+10.4	+12.8	+12.9	+10.8	+9.7	+10.6
Mar.	+1.4	-1.7	-11.0	-6.1	+5.8	+13.9	+13.2	+8.7	-2.8	-18.9	-28.6	-34.5	-33.8	-25.9	-13.0	-3.3	+14.6	+28.3	+22.2	+19.7	+19.4	+21.1	+14.0	+13.1
Apr.	+10.8	+12.3	+10.3	+9.4	+5.9	+5.5	+4.2	+0.5	-11.5	-26.6	-36.3	-45.7	-42.6	-30.9	-15.1	-6.6	+4.7	+17.1	+22.2	+26.3	+25.1	+23.8	+18.9	+18.3
May	+8.1	+5.6	+4.9	+7.7	+10.7	+9.4	+3.7	-7.3	-23.1	-40.8	-50.5	-49.9	-41.3	-25.6	-13.7	+6.1	+20.9	+29.0	+31.7	+27.7	+27.9	+21.8	+19.9	+17.1
June	+4.9	+4.8	+4.2	+5.9	+3.6	+0.6	-7.7	-21.0	-36.4	-41.9	-41.6	-35.4	-31.1	-19.8	-9.4	+4.3	+18.0	+29.8	+42.7	+39.0	+32.2	+27.5	+17.4	+9.4
July	-2.6	-5.9	-6.0	-2.9	-4.2	-0.9	-6.8	-17.5	-30.4	-41.5	-43.6	-36.7	-26.8	-9.5	+3.4	+16.3	+28.8	+37.5	+41.4	+34.7	+31.2	+26.5	+12.4	+3.1
Aug.	+8.3	+7.8	+7.7	+8.8	+8.8	+7.5	-0.4	-14.4	-31.3	-41.2	-48.7	-50.4	-41.9	-17.4	-3.2	+4.3	+19.6	+27.5	+31.4	+30.2	+28.3	+23.8	+20.1	+14.8
Sept.	+14.3	+13.3	+12.6	+12.1	+11.3	+9.7	+4.1	-7.5	-23.0	-40.5	-47.5	-46.3	-34.5	-19.1	-8.4	+2.5	+8.3	+14.5	+18.7	+24.7	+23.0	+19.3	+19.9	+18.5
Oct.	+13.3	+9.3	+8.3	+10.1	+10.9	+10.2	+9.7	+4.3	-5.3	-20.9	-34.7	-40.1	-36.1	-29.5	-19.1	-9.7	+2.3	+12.4	+17.5	+19.7	+15.3	+18.3	+16.7	+17.1
Nov.	+4.3	+5.8	+4.4	+4.7	+5.8	+6.6	+6.5	+3.4	-4.2	-15.3	-22.8	-26.2	-22.7	-16.6	-8.4	-1.5	+3.4	+8.0	+10.1	+11.8	+12.4	+10.7	+10.6	+9.2
Dec.	+0.8	+1.2	+3.2	+1.4	+2.6	+4.3	+3.8	+0.8	-3.8	-10.0	-14.4	-15.0	-13.2	-9.0	-6.8	-4.0	+1.0	+5.3	+9.6	+10.6	+10.8	+9.4	+6.6	+4.8
Year	+6.0	+3.4	+3.7	+4.6	+5.9	+6.7	+3.6	-3.1	-13.9	-25.6	-32.7	-34.5	-29.4	-19.3	-10.0	-0.7	+9.3	+17.4	+21.8	+22.0	+20.4	+18.2	+14.4	+11.8
Winter	+3.4	+2.9	+3.2	+2.5	+4.5	+6.0	+5.7	+4.4	-0.9	-8.6	-15.1	-18.6	-16.3	-13.4	-10.3	-5.7	-1.5	+3.3	+8.5	+10.5	+10.5	+9.1	+8.3	+7.7
Equinox	+9.9	+4.3	+5.1	+6.4	+8.5	+9.8	+7.8	+1.5	-10.7	-26.7	-36.8	-41.7	-36.7	-26.3	-13.9	-4.3	+7.5	+18.1	+20.1	+22.6	+20.7	+20.6	+17.4	+16.7
Summer	+4.7	+3.1	+2.7	+4.9	+4.7	+4.1	-2.8	-15.1	-30.3	-41.3	-46.1	-43.1	-35.3	-18.1	-5.7	+7.7	+21.8	+30.9	+36.8	+32.9	+29.9	+24.9	+17.5	+11.1
DECLINATION																								
Jan.	-3.62	-3.31	-2.63	-1.56	-0.77	-1.03	-1.56	-2.15	-2.53	-2.52	-1.85	-0.19	+1.98	+4.21	+3.89	+2.90	+3.71	+3.43	+2.36	+1.57	+0.87	+0.40	-0.37	-1.23
Feb.	-1.46	-1.87	-2.39	-2.00	-1.57	-2.29	-1.72	-1.37	-1.83	-0.80	+1.27	+2.33	+3.82	+2.71	+2.79	+2.10	+1.31	+1.07	+0.50	+1.07	+1.03	-0.24	-1.07	-1.39
Mar.	-1.54	-4.30	-5.12	-4.14	-3.90	-3.89	-2.74	-4.46	-4.14	-1.88	+1.02	+3.88	+6.28	+7.16	+6.40	+4.40	+3.28	+1.59	+0.98	+2.24	+2.56	+0.84	-1.90	-2.62
Apr.	-1.43	-1.06	-0.70	-1.91	-3.78	-4.92	-6.57	-7.40	-5.96	-2.99	-0.56	+2.60	+5.17	+6.80	+6.46	+4.77	+2.84	+1.36	+1.09	+1.74	+2.40	+2.29	+0.08	-0.32
May	+0.38	-1.27	-2.80	-4.10	-5.80	-7.49	-9.66	-9.48	-9.08	-5.47	-0.60	+4.78	+8.96	+11.01	+9.48	+6.60	+4.28	+2.29	+1.38	+1.24	+1.78	+1.29	+1.14	+1.14
June	-0.28	-0.34	-2.60	-4.62	-6.76	-8.95	-9.64	-8.82	-6.48	-3.78	+0.48	+5.14	+8.00	+9.10	+7.80	+5.98	+4.16	+2.73	+2.24	+2.14	+2.42	+1.82	+0.84	-0.58
July	+0.94	-1.57	-2.82	-4.76	-5.10	-7.83	-9.54	-8.48	-7.10	-4.31	-1.00	+2.62	+6.02	+6.69	+5.82	+5.56	+4.60	+4.27	+4.08	+3.32	+2.94	+3.01	+2.20	+0.44
Aug.	+0.43	-0.54	-1.96	-2.59	-5.08	-7.08	-8.49	-8.78	-7.16	-5.43	-1.72	+2.84	+7.31	+9.32	+8.46	+5.99	+3.86	+2.10	+1.65	+1.64	+1.94	+1.29	+1.04	+0.96
Sept.	-0.62	-1.21	-1.35	-2.00	-2.57	-3.77	-5.56	-6.89	-6.77	-5.32	-1.29	+3.11	+7.00	+7.81	+6.57	+4.40	+2.37	+1.45	+1.54	+0.65	+1.11	+0.44	+0.61	+0.29
Oct.	-2.01	-2.02	-1.67	-1.93	-2.29	-2.60	-3.33	-4.51	-5.81	-5.46	-2.61	+0.75	+4.03	+6.04	+6.27	+5.35	+3.77	+2.96	+2.35	+2.47	+1.73	-0.36	-0.53	-0.59
Nov.	-1.08	-1.37	-1.62	-1.69	-1.91	-1.92	-2.17	-2.57	-3.04	-2.69	-0.92	+1.47	+2.92	+2.97	+3.54	+3.01	+2.39	+2.38	+2.11	+1.75	+0.82	+0.13	-1.56	-0.95
Dec.	-0.96	-0.97	-1.92	-2.03	-1.86	-1.33	-1.36	-1.59	-1.86	-1.11	-0.44	+0.95	+1.94	+3.37	+3.00	+2.17	+2.04	+1.69	+1.84	+1.09	+0.34	-0.31	-1.58	-1.31
Year	-0.94	-1.65	-2.30	-2.78	-3.45	-4.43	-5.19	-5.54	-5.15	-3.48	-0.69	+2.52	+5.29	+6.45	+5.87	+4.44	+3.22	+2.28	+1.84	+1.74	+1.66	+0.88	-0.09	-0.51
Winter	-1.78	-1.88	-2.14	-1.82	-1.53	-1.64	-1.70	-1.92	-2.37	-1.78	-0.49	+1.14	+2.67	+3.37	+3.31	+2.55	+2.36	+2.14	+1.70	+1.37	+0.77	-0.01	-1.15	-1.22
Equinox	-1.40	-2.15	-2.21	-2.49	-3.13	-3.79	-4.55	-5.81	-5.67	-3.91	-0.86	+2.59	+5.62	+6.95	+6.43	+4.73	+3.07	+1.84	+1.49	+1.77	+1.95	+0.80	-0.43	-0.81
Summer	+0.37	-0.93	-2.55	-4.02	-5.69	-7.84	-9.33	-8.89	-7.45	-4.75	-0.71	+3.85	+7.57	+9.03	+7.89	+6.03	+4.23	+2.85	+2.34	+2.09	+2.27	+1.85	+1.31	+0.49
VERTICAL FORCE																								
Jan.	-11.1	-9.5	-7.2	-6.3	-6.7	-6.9	-5.1	-4.3	-3.8	-2.9	-1.3	-0.1	+1.1	+4.9	+9.0	+7.7	+7.7	+9.5	+8.3	+6.9	+6.0	+4.1	+1.5	-1.5
Feb.	-2.8	-1.9	-0.7	-1.4	-2.5	-1.5	-2.0	-4.7	-3.9	-3.4	-0.3	+1.7	+4.2	+7.1	+5.3	+4.4	+5.1	+3.1	+1.2	-0.1	+0.1	+1.4	-0.1	-8.3
Mar.	-22.4	-42.1	-38.2	-27.8	-21.4	-14.1	-5.0	-0.4	+5.2	+8.9	+9.6	+9.6	+7.8	+7.1	+8.0	+8.8	+7.4	+20.7	+25.4	+19.8	+13.6	+10.7	+9.2	-0.4
Apr.	-2.5	+1.1	+1.5	+1.9	+3.5	+1.3	-2.5	-4.5	-5.5	-5.1	-4.7	-4.9	-6.1	-4.9	-3.3	-1.9	+1.7	+6.7	+7.9	+6.5	+6.7	+4.7	+2.9	-0.5
May	-4.4	-9.5	-4.2	+0.9	+4.6	+6.9	+8.2	+6.1	+2.2	-3.3	-10.4	-13.9	-15.2	-12.9	-6.4	-0.7	+5.6	+11.3	+12.8	+12.3	+8.2	+4.5	+0.6	-3.3
June	-1.8	-1.8	-0.4	+2.8	+3.2	+2.3	+1.8	+0.8	-1.0	-7.6	-11.6	-12.6	-11.0	-8.2	-2.2	+2.2	+9.2	+16.5	+14.4	+11.2	+5.2	+0.8	-6.6	-5.6
July	-8.0	-8.6	-10.0	-14.2	-11.2	-10.3	-4.6	-4.4	-5.0	-7.4	-8.0	-10.8	-10.0	-6.6	+1.8	+17.6	+29.0	+25.7	+20.0	+17.2	+13.4	+5.8	0.0	-11.4
Aug.	-6.8	-8.1	-4.6	-1.7	-1.4	+0.7	+2.8	+4.9	+2.4	-1.5	-6.8	-9.3	-12.2	-10.1	0.0	+4.9	+5.6	+9.5	+9.4	+8.9	+7.4	+5.3	+1.6	-0.9
Sept.	+1.9	+3.4	+3.8	+4.3	+4.8	+6.8	+7.7	+8.2	+7.0	+3.3	-3.4	-9.8	-13.9	-12.6	-7.8	-4.7	-3.0	-1.4	-0.3	+1.8	+2.8	+1.4	-0.4	-0.6
Oct.	-3.8	-0.7	+0.5	-2.2	-0.5	+1.3	+2.6	+5.1	+6.7	+3.0	+2.5	+0.3	-2.8	-3.3	-2.1	-1.2	-0.9	-0.3	-0.2	+0.7	+2.7	+1.4	-3.9	-4.9
Nov.	+0.9	+0.3	-0.3	-0.3	-0.9	-1.0	-0.9	+0.9	+1.7	+1.7	+0.5	+0.9	-1.1	-2.9	-2.9	-0.7	-0.1	-0.4	-0.3	+1.3	+0.3	+1.9	+1.7	+0.3
Dec.	+1.4	+3.0	+2.5	+4.0	+1.6	-0.6	-0.2	+1.4	+3.3	-4.0	-2.2	-3.2	-3.8	-2.8	-0.3	+2.6	+2.6	+1.4	-1.6	-1.2	-0.5	+0.4	-0.4	-3.4
Year	-4.9	-6.3	-4.8	-3.3	-2.2	-1.3	+0.2	+0.8	+0.8	-1.5	-3.0	-4.3	-5.3	-3.8	-0.1	+3.3	+5.8	+8.5	+8.1	+7.1	+5.5	+3.6	+0.5	-3.4
Winter	-2.9	-2.2	-1.4	-1.0	-2.1	-2.5	-2.1	-1.7	-0.7	-2.1	-0.8	-0.2	+0.1	+1.6	+2.8	+3.5	+3.8	+3.4	+1.9	+1.7	+1.5	+1.9	+0.7	-3.2
Equinox	-6.7	-9.6	-8.1	-5.9	-3.4	-1.2	+0.7	+2.1	+3.3	+2.5	+1.0	-1.2	-3.7	-3.4	-1.3	+0.3	+1.3	+6.4	+8.2	+7.2	+6.5	+4.7	+1.9	-1.6
Summer	-5.3	-7.0	-4.8	-3.1	-1.2	-0.1	+2.1	+1.9	-0.3	-4.9	-9.2	-11.7	-12.1	-9.5	-1.7	+6.0	+12.3	+15.7	+14.1	+12.4	+8.5	+4.1	-1.1	-5.3

"Winter" comprises the four months January, February, November, December; "Equinox" the months March, April, September, October; and "Summer" May to August.

DIURNAL INEQUALITIES OF THE TERRESTRIAL MAGNETIC ELEMENTS  
INTERNATIONAL DISTURBED DAYS

Departures from the mean of the 24 hourly values (uncorrected for non-cyclic change)

11 LERWICK

	Hour G.M.T.																							
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24
	HORIZONTAL FORCE																							
	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$
Jan.	-44.6	-39.2	-81.2	-57.4	-38.2	-10.5	+0.8	+4.8	0.0	-12.6	-18.8	-14.4	-17.0	-11.0	+14.4	+16.0	+26.0	+30.7	+47.8	+70.8	+48.2	+42.8	+28.2	+14.4
Feb.	+29.5	-34.0	-170.8	-32.1	-8.6	-50.0	-34.5	-64.6	-93.8	-104.9	-47.2	-21.6	+46.7	+38.4	+50.2	+39.1	+41.4	+52.2	+72.7	+95.4	+98.2	+55.9	+26.4	+16.0
Mar.	-60.0	-75.9	-91.9	-110.6	-48.1	-15.1	-12.4	-32.5	-26.3	-13.0	-5.9	-1.9	+11.6	+43.5	+65.1	+111.8	+108.3	+101.5	+77.8	+49.3	+17.3	+12.2	-51.9	-52.9
Apr.	-57.4	-68.9	-72.8	-56.3	-15.1	-3.0	-6.3	-19.3	-22.0	-31.3	-38.6	-45.1	-2.0	+23.7	+36.4	+98.7	+103.3	+124.2	+114.1	+75.1	+34.0	+1.7	-100.0	-73.1
May	-62.1	-63.1	-64.5	-79.5	-25.7	-17.2	-28.5	-42.1	-50.5	-59.9	-57.7	-6.1	+38.9	+78.1	+113.3	+130.3	+142.5	+151.4	+113.9	+87.3	+19.7	-107.7	-102.5	-108.3
June	-179.4	-266.7	-202.8	-239.1	-122.3	-103.0	-45.1	-24.9	-28.6	-7.9	+6.2	+6.5	+26.2	+63.9	+130.4	+182.1	+216.7	+216.8	+186.7	+157.5	+99.8	+27.7	-44.8	-55.9
July	-49.6	-84.7	-93.2	-75.7	-65.7	-82.8	-73.9	-73.5	-80.4	-35.9	-30.6	-36.3	+18.2	+62.1	+168.4	+270.7	+200.5	+138.8	+147.1	+95.9	+60.0	-185.5	-93.4	-100.5
Aug.	-6.9	+16.3	-58.7	-97.7	-104.9	-51.3	-23.9	-28.1	-48.9	-52.9	-23.3	-12.9	-1.5	+7.5	+51.9	+88.7	+98.1	+96.9	+79.1	+39.3	+19.5	+16.1	-1.5	-0.9
Sept.	-87.3	-79.9	-111.6	-92.1	-54.1	+18.5	+3.3	-5.7	-19.0	-25.1	-17.5	-2.7	+20.3	+85.7	+135.8	+219.1	+179.7	+171.7	+151.7	+124.1	+22.4	-136.5	-217.7	-283.1
Oct.	-36.0	-9.5	-21.6	-36.4	+0.2	-2.7	+2.2	-10.2	-24.6	-15.3	-4.0	+6.4	+26.4	+48.7	+48.0	+70.2	+121.0	+115.7	+106.6	+42.2	-52.8	-87.1	-127.2	-160.2
Nov.	+2.2	-7.8	-10.5	0.0	+1.6	+4.6	+7.8	+4.0	-2.5	-14.2	-21.8	-31.2	-22.8	-20.6	-3.1	+8.0	+34.6	+58.4	+8.2	+2.8	+3.5	-0.2	-1.6	+0.6
Dec.	-176.7	-103.4	-121.4	-24.5	+7.2	+10.4	+11.1	+13.8	+10.8	+2.9	+0.2	+4.6	+2.9	+12.0	+12.6	+45.3	+107.0	+113.4	+125.5	+54.6	+35.4	+11.1	-42.6	-112.2
Year	-60.7	-68.1	-91.7	-75.1	-39.5	-25.2	-16.6	-23.2	-32.1	-30.8	-21.6	-12.9	+12.3	+36.0	+68.6	+106.7	+114.9	+114.3	+102.6	+74.5	+33.8	-29.1	-60.7	-76.3
Winter	-47.4	-46.1	-96.0	-28.5	-9.5	-11.4	-3.7	-10.5	-21.4	-32.2	-21.9	-15.7	+2.5	+4.7	+18.5	+27.1	+52.3	+63.7	+63.5	+55.9	+46.3	+27.4	+2.6	-20.3
Equinox	-60.2	-58.5	-74.5	-73.9	-29.3	-0.6	-3.3	-16.9	-23.0	-21.2	-16.5	-10.8	+14.1	+50.4	+71.3	+124.9	+128.1	+128.3	+112.5	+72.7	+5.2	-52.4	-124.2	-142.3
Summer	-74.5	-99.5	-104.8	-123.0	-79.7	-63.6	-42.9	-42.1	-52.1	-39.1	-26.3	-12.2	+20.5	+52.9	+116.0	+167.9	+164.5	+151.0	+131.7	+95.0	+49.7	-62.3	-60.5	-66.4
	DECLINATION																							
Jan.	-10.96	-9.25	-7.30	-15.07	-9.52	-6.27	-1.96	-2.13	-0.92	-0.07	+0.48	+2.99	+7.06	+7.19	+6.86	+5.77	+9.22	+10.11	+9.62	+8.17	+3.14	-1.55	-1.88	-3.73
Feb.	-1.71	-1.12	+25.13	-8.13	-8.63	-10.20	-9.71	-7.19	-5.05	-3.78	+0.13	+2.23	+5.33	+8.90	+8.65	+5.01	+6.63	+6.04	+1.59	+1.41	-1.85	-1.60	-6.89	-5.19
Mar.	-5.59	-11.43	-16.03	-3.67	-9.01	-5.24	+0.99	-1.27	+0.69	-2.13	+1.47	+6.41	+8.97	+11.21	+12.05	+10.57	+10.65	+6.56	+4.97	+3.31	-5.67	-6.23	-6.29	-5.29
Apr.	-6.30	-7.42	-9.28	-8.82	-10.24	-8.38	-7.60	-7.44	-6.22	-3.78	+1.96	+7.22	+12.54	+14.28	+14.12	+11.96	+9.16	+11.04	+7.90	+2.04	+1.04	-2.70	-4.50	-10.58
May	-3.06	-9.69	-16.12	-11.20	-10.00	-11.59	-13.86	-10.10	-10.30	-4.67	-0.14	+4.32	+7.78	+11.69	+11.78	+11.94	+9.76	+11.39	+9.58	+4.24	+6.74	+8.37	+2.04	+1.10
June	-5.19	-17.11	-17.82	-17.27	-7.65	-11.13	-8.13	-8.33	-6.38	-1.85	+2.93	+6.39	+10.93	+10.06	+9.52	+8.43	+8.91	+10.31	+12.63	+7.97	+10.32	+4.75	-0.99	-1.29
July	-2.94	-5.30	-12.40	-15.52	-13.70	-13.77	-15.06	-17.90	-11.70	-7.98	-7.94	-7.08	+5.20	+8.02	+12.84	+21.16	+16.24	+20.09	+18.82	+15.04	+11.06	+10.30	-1.46	-6.02
Aug.	-0.90	+0.21	+0.64	-14.96	-11.24	-11.95	-11.74	-10.04	-5.26	-2.97	+4.70	+7.14	+10.18	+11.65	+9.98	+8.06	+5.88	+4.55	+2.20	+2.12	-0.36	+1.45	+0.50	+0.16
Sept.	-10.71	-12.78	-20.33	-14.32	-9.74	-8.39	-8.78	-6.24	-5.23	-5.68	+2.37	+6.50	+9.31	+11.02	+10.45	+10.64	+20.44	+17.71	+17.64	+9.56	+6.13	-0.68	-0.95	-17.94
Oct.	-5.21	-4.55	-4.32	-2.37	-1.13	+0.17	+2.09	-0.01	-2.54	-3.79	+0.09	+4.39	+7.03	+7.13	+8.10	+7.63	+8.87	+5.61	+6.03	+3.07	-8.64	-9.73	-9.83	-8.09
Nov.	-4.78	-6.12	-5.82	-4.16	-4.60	-2.07	-0.66	-0.76	-1.42	-1.74	+0.02	+2.24	+4.90	+5.26	+6.06	+6.06	+5.86	+7.23	+3.56	+1.76	-0.36	-1.86	-3.84	-4.76
Dec.	-8.32	-19.06	-16.03	-8.76	-2.38	-0.38	-0.16	+0.60	+0.77	+1.16	+2.72	+4.46	+6.06	+6.30	+5.71	+5.58	+9.30	+11.08	+6.22	+2.96	+3.45	-0.18	-3.08	-8.02
Year	-5.47	-8.63	-8.31	-10.35	-8.15	-7.43	-6.21	-5.90	-4.46	-3.11	+0.73	+3.93	+7.94	+9.39	+9.68	+9.40	+10.08	+10.14	+8.40	+5.14	+2.08	+0.03	-3.10	-5.80
Winter	-6.44	-8.89	-1.01	-9.03	-6.28	-4.73	-3.12	-2.37	-1.65	-1.11	+0.84	+2.98	+5.84	+6.91	+6.82	+5.61	+7.75	+8.61	+5.25	+3.57	+1.09	-1.30	-3.92	-5.43
Equinox	-6.95	-9.05	-12.49	-7.29	-7.53	-5.46	-3.33	-3.74	-3.33	-3.85	+1.47	+6.13	+9.46	+10.91	+11.18	+10.20	+12.28	+10.23	+9.13	+4.49	-1.79	-4.83	-5.39	-10.47
Summer	-3.02	-7.97	-11.43	-14.74	-10.65	-12.11	-12.20	-11.59	-8.41	-4.37	-0.11	+2.69	+8.52	+10.35	+11.03	+12.40	+10.20	+11.59	+10.81	+7.34	+6.94	+6.22	+0.02	-1.51
	VERTICAL FORCE																							
Jan.	-25.1	-33.0	-46.1	-81.9	-98.9	-78.6	-45.9	-27.3	-14.7	-2.6	+5.1	+12.1	+16.5	+25.4	+31.3	+34.9	+27.5	+35.8	+57.3	+54.9	+55.3	+46.0	+30.9	+21.1
Feb.	-15.7	-43.1	-122.3	-62.3	-43.1	-42.2	+10.7	+16.9	+35.9	+15.3	+1.1	+12.7	+0.7	+26.7	+40.3	+46.7	+40.7	+47.0	+53.7	+28.7	-9.3	+15.3	-16.1	-38.3
Mar.	-83.3	-79.2	-71.3	-103.1	-125.9	-96.2	-74.1	-38.9	-24.9	-5.8	+21.5	+33.1	+49.1	+64.2	+86.3	+105.7	+107.9	+117.8	+104.9	+76.1	+51.9	+7.4	-54.1	-69.1
Apr.	-77.6	-71.7	-92.0	-86.7	-65.5	-43.2	-30.3	-23.1	-13.8	-0.5	+11.4	+23.5	+32.2	+63.9	+74.4	+83.9	+89.1	+91.8	+82.5	+55.9	+19.8	+7.3	-37.0	-94.3
May	-93.2	-116.5	-117.2	-106.5	-74.7	-50.8	-39.1	-32.7	-27.0	-11.9	-0.6	+12.3	+45.6	+70.1	+90.6	+87.1	+95.7	+78.8	+76.1	+63.1	+33.4	+29.1	-4.8	-6.9
June	+49.1	-44.0	-134.8	-172.7	-90.8	-17.8	-63.3	-32.6	-4.0	+20.5	+29.8	+28.8	+36.3	+52.4	+69.2	+92.7	+95.0	+73.0	+52.7	+50.4	+16.0	-16.3	-51.8	-37.8
July	+11.4	-10.8	-60.3	-65.4	-51.8	-25.8	-25.4	-8.2	+10.3	-7.6	-5.2	+27.4	+14.8	+28.6	+67.5	+37.6	-11.0	-17.8	+23.8	+23.0	+19.7	+62.6	+14.0	-51.4
Aug.	-10.4	-18.3	-86.4	-147.7	-121.2	-74.7	-36.2	-5.3	-3.6	-6.9	+13.6	+21.7	+34.2	+40.9	+53.6	+76.1	+80.6	+68.7	+42.4	+32.9	+17.6	+19.3	0.0	+9.1
Sept.	-21.4	-51.4	-67.1	-55.8	-40.6	-82.4	-50.2	-37.0	-23.9	-15.0	-6.6	+3.6	+21.6	+37.6	+79.9	+59.6	-47.0	+42.0	+25.0	+72.6	+55.9	+57.2	+86.6	-43.2
Oct.	-51.1	-42.4	-46.2	-70.7	-66.4	-65.2	-54.5	-30.0	-15.4	+9.5	+27.0	+41.0	+54.1	+63.8	+57.8	+68.3	+92.2	+97.6	+67.9	+4.2	+30.6	-18.7	-94.4	-59.0
Nov.	+2.0	-17.5	-23.8	-20.5	-22.3	-16.6	-14.7	-11.1	-7.6	-7.9	-3.6	-2.9	-2.0	+2.3	+3.6	+7.7	+21.3	+15.6	+31.7	+18.9	+19.0	+15.3	+9.8	+3.3
Dec.	-51.2	-115.9	-96.7	-75.8	-26.9	-8.5	+0.6	+6.5	+7.1	+5.8	+9.1	+9.9	+11.6	+26.9	+38.7	+51.6	+20.7	+11.3	-5.8	+59.5	+59.9	+33.6	-7.7	+35.7
Year	-30.5	-53.7	-80.3	-87.4	-69.0	-50.2	-35.2	-18.6	-6.8	-0.6	+8.5	+18.6	+26.2	+41.9	+57.8	+62.7	+51.1	+55.1	+51.0	+45.0	+30.8	+21.5	-10.4	-27.6
Winter	-22.5	-52.4	-72.2	-60.1	-47.8	-36.5	-12.3	-3.7	+5.2	+2.7	+2.9	+7.9	+6.7	+20.3	+28.5	+35.2	+27.5	+27.4	+34.2	+40.5	+31.2	+27.5	+4.2	+5.5
Equinox	-58.3	-61.2	-69.1	-79.1	-74.6	-71.7	-52.3	-32.3	-19.5	-2.9	+13.3	+25.3	+39.3	+57.4	+74.6	+79.4	+60.5	+87.3	+70.1	+52.2	+39.5	+13.3	-24.7	-66.4
Summer	-10.8	-47.4	-99.7	-123.1	-84.6	-42.3	-41.0	-19.7	-6.1	-1.5	+9.4	+22.5	+32.7	+48.0	+70.2	+73.4	+65.1	+50.7	+48.7	+42.3	+21.7	+23.7	-10.7	-21.7

"Winter" comprises the four months January, February, November, December; "Equinox" the months March, April, September, October; and "Summer" May to August.

RANGE OF MEAN DIURNAL INEQUALITIES FOR THE MONTHS, YEAR AND SEASONS OF 1958

AVERAGE DEPARTURES

The ranges are derived from the diurnal inequalities printed in Tables 9 to 11

Arithmetical averages of diurnal inequalities in Tables 9 to 11 taken regardless of sign

12 LERWICK

	All days			Quiet days			Disturbed days		
	H	D	Z	H	D	Z	H	D	Z
	$\gamma$		$\gamma$	$\gamma$		$\gamma$	$\gamma$		$\gamma$
Jan.	36.9	10.35	54.5	25.4	7.83	20.6	152.0	25.18	156.2
Feb.	73.7	11.27	75.7	31.9	6.21	15.4	269.0	35.33	176.0
Mar.	112.2	17.87	135.8	62.8	12.28	67.5	222.4	28.08	243.7
Apr.	106.0	17.91	96.1	72.0	14.20	14.0	224.2	24.86	186.1
May	112.5	18.71	77.8	82.2	20.67	28.0	259.7	28.06	212.9
June	134.7	17.96	92.7	84.6	18.74	29.1	483.5	30.45	267.7
July	115.2	17.54	64.7	85.0	16.23	43.2	456.2	39.06	132.9
Aug.	86.2	18.05	62.7	81.8	18.10	21.7	203.0	26.61	228.3
Sept.	88.2	15.54	53.7	72.2	14.70	22.1	502.2	40.77	169.0
Oct.	64.2	11.91	58.7	59.8	12.08	11.6	281.2	18.70	192.0
Nov.	38.5	8.02	24.1	38.6	6.58	4.8	89.6	13.35	55.5
Dec.	59.3	9.71	51.9	25.8	5.60	8.0	302.2	30.14	175.8
Year	74.4	13.14	64.3	56.5	11.99	14.8	206.6	20.49	150.1
Winter	38.8	8.95	45.1	29.1	5.68	7.0	159.7	17.64	112.7
Equinox	84.2	14.70	80.4	64.3	12.76	17.8	270.6	24.77	166.4
Summer	104.9	17.82	69.9	82.9	18.36	27.8	290.9	27.14	196.5

13 LERWICK

	All days			Quiet days			Disturbed days		
	H	D	Z	H	D	Z	H	D	Z
	$\gamma$		$\gamma$	$\gamma$		$\gamma$	$\gamma$		$\gamma$
Jan.	9.0	3.29	13.8	6.6	2.11	5.6	28.7	5.88	37.8
Feb.	14.0	3.28	17.6	8.3	1.67	2.8	55.2	5.92	32.7
Mar.	26.4	4.94	35.9	16.3	3.39	14.3	49.9	6.49	68.8
Apr.	26.8	5.25	25.6	17.9	3.13	3.9	50.9	7.77	53.0
May	27.5	5.07	20.1	21.0	4.65	7.0	72.9	8.39	56.8
June	37.8	5.64	21.2	20.4	4.40	5.9	110.0	8.59	55.5
July	33.3	5.31	16.3	19.6	4.38	10.9	96.8	11.56	28.4
Aug.	23.1	3.97	14.1	20.7	4.07	5.3	42.8	5.79	42.6
Sept.	24.1	4.54	13.0	18.9	3.11	4.8	94.4	10.15	45.1
Oct.	13.5	3.73	15.0	16.3	2.98	2.2	49.0	5.02	51.2
Nov.	8.7	2.53	6.2	9.8	1.96	1.0	11.4	3.58	12.5
Dec.	11.3	2.66	11.3	6.3	1.55	2.0	48.4	5.53	32.4
Year	19.6	4.02	17.2	14.1	3.02	3.7	55.3	6.41	39.2
Winter	9.3	2.91	11.9	7.5	1.78	1.9	30.4	4.61	25.6
Equinox	21.8	4.57	22.1	16.4	3.10	3.8	59.0	7.12	51.0
Summer	29.2	4.97	17.6	19.8	4.35	6.4	79.1	8.18	42.4

NON-CYCLIC CHANGE

14 LERWICK

	All days			Quiet days			Disturbed days		
	H	D	Z	H	D	Z	H	D	Z
	$\gamma$		$\gamma$	$\gamma$		$\gamma$	$\gamma$		$\gamma$
Jan.	+5.9	+0.23	-0.4	+2.9	+1.38	+3.2	+39.7	+4.41	+21.7
Feb.	+0.1	+0.07	-0.1	+7.2	-0.47	-12.5	-22.3	-0.16	-26.3
Mar.	-0.4	+0.08	+0.6	+6.8	-0.09	+6.2	+0.2	+1.98	-10.0
Apr.	-2.2	-0.13	-2.3	+9.3	+0.91	+3.6	-35.6	-2.35	-25.9
May	-11.0	+0.20	+9.3	+6.4	-0.33	-5.1	-98.5	+4.54	+77.5
June	+14.5	-0.10	-6.6	+5.2	-0.56	-4.2	+67.0	+0.92	-39.3
July	-0.2	-0.03	-1.3	+2.6	-0.94	-10.4	-45.2	-2.77	-41.6
Aug.	-0.2	+0.03	+0.9	+3.8	-0.30	+1.7	-9.8	+0.22	+3.8
Sept.	-0.2	-0.11	+0.7	+2.6	+0.57	-2.2	-70.0	-4.46	-6.5
Oct.	+0.5	+0.07	+0.1	+0.1	-0.18	-8.2	-65.9	-3.30	-36.6
Nov.	0.0	-0.03	-0.5	+4.0	+0.41	-0.9	-4.1	-0.77	-2.7
Dec.	+0.1	+0.03	+0.2	+1.6	+0.50	-13.8	-16.6	-0.90	+25.1
Year	+0.6	+0.03	+0.1	+4.4	+0.07	-3.5	-21.8	-0.22	-5.1
Winter	+1.5	+0.07	-0.2	+3.9	+0.45	-6.0	-0.3	+0.65	+4.5
Equinox	-0.6	-0.02	-0.2	+4.7	+0.30	-0.1	-42.8	-2.03	-19.7
Summer	+0.8	+0.03	+0.6	+4.5	-0.53	-4.5	-21.6	+0.73	+0.1

AVERAGE RANGE OF DIURNAL INEQUALITY 1932-53 WITH 1958 AS PERCENTAGE OF THIS

15 LERWICK

		All days			International quiet days			International disturbed days		
		Z	H	D	Z	H	D	Z	H	D
Year	1932-53	53.3	49.4	9.36	10.3	37.4	8.68	131.1	131.6	14.22
	1958(%)	121	151	140	144	151	138	114	157	144
Winter	1932-53	41.1	24.4	7.87	7.7	15.1	4.65	116.6	85.0	13.84
	1958(%)	110	159	114	91	193	122	97	188	127
Equinox	1932-53	68.8	59.2	10.94	12.9	42.3	9.54	168.9	193.4	18.89
	1958(%)	117	142	134	138	152	134	98	140	131
Summer	1932-53	53.0	72.6	12.72	17.0	57.5	12.77	134.0	156.9	15.61
	1958(%)	132	144	140	164	144	144	147	185	174

RATIO OF RANGE OF INEQUALITY AT LERWICK TO THAT AT ESKDALEMUIR, 1958

16 LERWICK

Type of day	Element	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
q	D	1.14	1.08	1.06	1.04	1.12	1.11	1.09	1.03	.98	.99	.94	1.04
d	D	1.51	1.74	1.41	1.23	1.22	1.54	1.43	1.33	1.68	1.12	1.32	1.45
q	H	.95	.97	1.16	1.17	1.23	1.16	1.18	1.08	1.11	.97	.99	.99
d	H	3.60	2.32	4.07	2.14	1.99	2.60	1.47	1.89	1.69	4.49	2.06	4.47
q	Z	2.00	2.85	2.81	.57	.74	.92	1.41	.69	.78	.73	.56	1.08
d	Z	1.87	1.21	1.72	1.94	1.81	1.25	1.23	1.90	1.00	1.58	1.67	1.25

"Winter" comprises the four months January, February, November, December; "Equinox" the months March, April, September, October; and "Summer" May to August.

## 17 LERWICK

## (a) Disturbances without S.C.'s

Serial Number	From		To		Range ( $\gamma$ )			Notes
	Date	Hour	Date	Hour	H	D	Z	
1a	Mar. 11	10	Mar. 14	03	1125	642	540	
2a	Mar. 18	00	Mar. 22	08	828	439	571	
3a	Mar. 24	10	Mar. 25	05	578	208	430	
4a	Apr. 4	05	Apr. 6	04	724	304	346	
5a	Apr. 14	08	Apr. 21	02	801	339	486	
6a	May 12	11	May 20	03	879	264	411	
7a	May 25	15	May 30	12	619	297	418	
8a	June 6	17	June 8	01	1270	919	587	
9a	June 8	17	June 12	00	624	294	329	
10a	June 20	21	June 23	21	811	244	403	
11a	Aug. 27	02	Aug. 28	01	576	216	369	
12a	Dec. 12	18	Dec. 14	05	702	331	350	

## (b) Disturbances with a S.C.

Serial Number	Date	Time of S.C.	End of Disturbance		With initial reversed stroke			Magnitude main stroke of S.C.			Range of following disturbance ( $\gamma$ )		
			Date	Hour	H	D	Z	H	D	Z	H	D	Z
1b	Jan. 25	10.50			Yes	Yes	Yes	$\gamma$	$\gamma$	$\gamma$			
2b	Feb. 11	01.25	Feb. 13	03	Yes	No	No	+17	+22	-9	3216	1631	1408
3b	Feb. 16	16.42			Yes	No	Yes	+26	-8	-9		Small	
4b	Mar. 3	09.31			?	Yes	Yes	?	+20	-4		Small	
5b	Mar. 14	12.12			Yes	Yes	Yes	+74	-47	+28		Small	
6b	Mar. 17	07.50			Yes	No	No	-13	+18	-4		Small	
7b	Mar. 25	15.40			No	No	No	+80	-36	+23		Small	
8b	Apr. 26	12.47			Yes	No	Yes	+15	-3	+4		Small	
9b	May 31	16.53	June 2	23	Yes	Yes	Yes	+112	-32	-46	1312	714	819
10b	June 14	18.28			Yes	Yes	Yes	+77	-20	-23		Small	
11b	June 28	07.13	See 12b		Yes	Yes	Yes	-40	+76	-17		Small	
12b	June 28	17.42	June 30	06	Yes	Yes	Yes	+48	-12	-14	1590	782	818
13b	July 8	07.48	July 10	15	Yes	Yes	Yes	Illegible			3054	916	1359
14b	July 21	16.37	July 22	22	Yes	Yes	Yes	+223	-65	-88	566	326	317
15b	July 31	15.29			Yes	Yes	Yes	+77	-16	-25		Small	
16b	Aug. 17	06.22	Aug. 20	19	Yes	Yes	Yes	-91	-65	-30	884	295	373
17b	Aug. 22	02.27			No	Yes	Yes	+22	-49	-9		Small	
18b	Aug. 24	01.40	Aug. 25	21	No	No	No	+60	-49	-34	906	479	684
19b	Sept. 3	08.43	Sept. 6	02	Yes	Yes	Yes	+20	+49	-12	1974	1309	1408
20b	Sept. 16	09.30			Yes	Yes	Yes	-24	+30	-9		Small	
21b	Sept. 25	04.08	Sept. 27	01	Yes	Yes	Yes	-40	-36	-18	1287	697	512
22b	Sept. 30	10.05			Yes	Yes	No	+25	+12	-8		Small	
23b	Oct. 22	03.15	See 24b		Yes	Yes	Yes	+22	-40	+6	729	302	438
24b	Oct. 24	07.30	Oct. 25	15	Yes	Yes	Yes	-166	+48	-71	856	310	540
25b	Oct. 27	15.23	Oct. 31	02	Yes	Yes	Yes	+11	-4	+4	735	368	563
26b	Dec. 4	00.35	Dec. 5	14	No	Yes	Yes	+21	-20	+4	1257	551	630
27b	Dec. 13	00.01	Dec. 15	01	Yes	No	Yes	+17	-6	+4	702	331	350
28b	Dec. 17	15.47	Dec. 18	15	Yes	Yes	Yes	+13	-4	+4	1148	449	598

## (c) Disturbances due to Solar Flare

Serial Number	Date	Commencement	Max.	End	Movement ( $\gamma$ )			K	K'	Flare or S.F.E.
					H	D	Z			
1c	Mar. 1	09.13	09.20	09.22	-5	+2	0	1	1	S.E.A., S.W.F.
2c	Mar. 9	15.41	15.45	15.50	+13	-6	0	3	3	S.E.A.
3c	Mar. 23	09.53	10.15	11.10	-45	+18	+17	3	2	S.E.A.
4c	Mar. 28	10.34	10.37	10.41	-11	-8	+3	1	1	S.E.A.
5c	Mar. 29	13.41	13.46	13.57	-18	-8	+6	2	1	Very clear. S.E.A.
6c	Mar. 29	16.30	16.34	16.39	-7	-8	-4	3	3	S.E.A.
7c	June 3	15.11	15.13	15.25	-4	-4	+3	3	3	Class 2 flare, S.E.A.
8c	Aug. 7	15.01	15.09	15.23	+7	-10	0	3	3	Class 3 flare, S.E.A.
9c	Sept. 1	10.38	10.42	11.00	+10	-4	-6	3	3	
10c	Sept. 7	14.48	14.51	14.54	-2	-3	0	4	4	S.E.A.
11c	Oct. 13	11.05	11.10	11.50	-12	0	0	2	2	S.E.A., S.W.F.
12c	Nov. 5	10.15	10.22	10.25	-5	0	0	1	1	S.E.A., S.W.F.
13c	Dec. 9	13.01	13.06	13.15	-7	+12	0	1	1	S.E.A.
14c	Dec. 12	12.57	13.01	13.25	-11	-10	+6	1	1	S.E.A.

S.E.A. = Sudden enhancement atmospherics

S.W.F. = Short wave fade out





18 LERWICK (contd.)

Night commencing	SEPTEMBER (contd.)	Night commencing	NOVEMBER	Night commencing	DECEMBER (contd.)
18 ca ..	Variable cloud	1 c ..	Mainly cloudy	4 ca-c ☉	Variable cloud then cloudy. Faint draperies from 17h.50m. with corona at times, changing to numerous faint to moderate homogeneous arcs, rays and rayed arcs from 18h.23m., forming corona again from 18h.30m., pulsating at times. Faint to moderate pulsating bands observed around 20h. then becoming cloudy but rays sometimes visible till 22h. Indefinable aurora observed through cloud breaks till 24h. Glow visible through cloud breaks 03h.20m.
19 c-a-c ..	Overcast, fine, then cloudy	2 ca-c ☉	Variable cloud then cloudy. Faint rays 17h.45m. to 18h.	5 c ..	Variable cloud soon becoming
20 a ..	Fair to fine	3 a-ca ☉	Fine then variable cloud. Faint glow 05h.	6 ca ..	Variable cloud
21 ca-a ..	Fair to cloudy soon becoming fine	4 ca ..	Variable cloud	7 ca ..	Variable cloud then mainly cloudy
22 ca ..	Mainly cloudy	5 ca ..	Variable cloud	8 a-ca ..	Fine then variable cloud
23 c ..	Mainly overcast	6 a-c ..	Fine, then overcast	9 a-ca ..	Fine then variable cloud
24 b-a ☉	Fine. Bright moonlight. Faint rays 23h.	7 ca ..	Variable cloud then mainly fair to fine	10 ca ..	Mainly fair to fine
25 ca ☉	Cloudy. Faint rays visible through breaks in cloud 23h.	8 ca ..	Variable cloud	11 ca ☉	Cloudy then fair. Faint glow 23h.
26 ca ..	Cloudy soon becoming fair to fine	9 a ..	Fair to fine	14 ca ☉	Variable cloud. Rays observed through cloud breaks 22h.
27 cb ..	Mainly cloudy. Bright moonlight	10 a ☉	Mainly fine. Faint rays 17h.40m. fading to glow then becoming moderate homogeneous then rayed arc after 20h. Back to glow by 21h.30m., moderate rayed arc reappearing 22h. to 24h. then faint glow till 04h.30m.	15 a ..	Fair to fine
OCTOBER		11 c-a ..	Overcast then fair to fine	16 a-ca ..	Fine becoming variable
2 c ..	Mainly overcast	12 a-c-a ..	Fair to fine	17 b-a ☉	Fine. Moonlight. Faint triple rayed arc from 17h.50m. becoming moderate draperies. Corona 18h.37m. Faint rayed arc 18h.50m. becoming rayed band then fading to diffuse surface 19h.30m. to 21h. Faint glow 23h. to 04h. Faint homogeneous arc 05h. Faint corona 06h.
4 cb ..	Mainly cloudy. Bright moonlight	13 a ☉	Mainly fine. Faint glow 02h.	18 a-b-a ☉	Fine. Moonlight. Ray activity just visible in moonlight 22h. Presence of aurora uncertain 23h. and 24h. but faint rays observed 01h. deteriorating to glow 02h. to 04h.
5 ca ..	Mainly cloudy	14 c ..	Mainly overcast	22 c ..	Mainly cloudy
6 ca ..	Variable cloud	15 a-c ..	Fine then mainly cloudy	23 ca ☉	Mainly cloudy becoming variable. Faint glow 21h.
7 ca-b ☉	Mainly fair to fine. Moonlight. Faint rayed arc visible most of the time from 20h.50m. till 04h.	16 c-ca ..	Mainly overcast then variable	24 ca ..	Variable cloud
8 ca ..	Variable cloud	17 ca-c ..	Fine then overcast	25 c ..	Mainly cloudy then overcast
9 a-ca ☉	Fine then mainly cloudy. Very faint glow 23h. and 24h.	19 c ..	Mainly overcast	26 ca ..	Variable cloud
10 c-ca ☉	Variable cloud. Very faint glow, partly obscured by cloud 01h.	21 c ..	Mainly cloudy	27 ca-c ..	Mainly cloudy then overcast
11 a ☉	Mainly fine. Faint rayed arc 20h. for a few minutes, then faint glow till 24h.	22 c ..	Cloudy then overcast	28 ca ..	Mainly cloudy
12 c ..	Mainly overcast	23 c-a ..	Cloudy becoming fine	29 c-ca ..	Cloudy then variable cloud
13 c-a ..	Cloudy becoming fair to fine	25 c ..	Cloudy to overcast	30 ca ..	Fair to fine then variable cloud
14 ca ..	Variable cloud	26 a-c ..	Fine soon becoming overcast	31 a-c ..	Fine then cloudy
15 ca-a ..	Variable cloud	27 a-cb ☉	Fine then variable cloud. Bright moonlight. Faint homogeneous arc 24h. and 02h.		
16 c-a ..	Cloudy becoming fine	28 cb-c ..	Variable cloud then cloudy. Bright moonlight	DECEMBER	
17 ca ..	Cloudy with fine period	29 cb-a ..	Variable cloud becoming fair. Bright moonlight	1 c-a ..	Cloudy then fine
18 c-a ..	Overcast becoming fine	30 ca-c ..	Fine break then mainly cloudy	2 c-ca ..	Overcast then variable cloud
19 ca ☉	Fair to fine becoming cloudy. Faint glow 22h.			3 ca ..	Variable cloud
24 c ..	Cloudy soon becoming overcast				
26 c ..	Overcast then cloudy				
27 c-cb ..	Overcast then variable cloud. Bright moonlight				
29 c ..	Cloudy then overcast				
30 cb-c ..	Variable cloud then cloudy. Bright moonlight				
31 a-ca ..	Fine then variable cloud				

In the interests of brevity there have been omitted from Table 18 all dates on which the sky throughout the evening remained completely overcast and on which, therefore, no opportunity arose of determining whether or not aurora occurred. The nights on which aurora was actually seen are indicated by the symbol ☉. The nights on which aurora was not seen, despite at least an occasional interval of more or less clear sky, are indicated by the symbol ..; in the latter case also, remarks on the weather are added to assist the reader in judging how far the fact of no observation of aurora may be taken as indicating that there was not actual aurora.

The letters a, b, c, have the following significance:-

- a = Conditions favourable for seeing aurora
  - b = Unfavourable for faint aurora (because of moonlight, mist, thin cloud etc.), but not such as to mask bright aurora
  - c = Cloudy, but aurora not seen in clear intervals
  - ca,cb = Cloudy, but with conditions a or b respectively, in the intervals.
- Changing conditions are indicated by a hyphen; for example, a-c.

## 19 OTHER SCOTTISH STATIONS

Date	$\Phi_1$	Forms	Time	$\Phi_2$	Date	$\Phi_1$	Forms	Time	$\Phi_2$	Date	$\Phi_1$	Forms	Time	$\Phi_2$
JANUARY					APRIL (contd.)					SEPTEMBER (contd.)				
1-2	56	HA, RA, RB, R, S, P	1650-0600	63	8-9	60	G			5-6	58	G		
3-4	63	R	1750-1800	63	9-10	60	HA, R	2125-0100	65	7-8	58	HA, RA, R	2000-0250	65
9-10	57	HA, RA	1800-0100	63	10-11	60	HA, RA, S	2055-0120	67	8-9	58	S	2010-2325	
11-12	57	HA, RA, R	1755-0330	66	14-15	57	RA, R, S, F	2200-0300	64	9-10	61	HB, RB	2250-2350	64
12-13	58	HA, RA, RB, R, S	1900-0110	67	15-16	58	S	2050-0300		10-11	60	G		
13-14	57	G			16-17	54	R	2045-2315		11-12	62	G		
14-15	60	G			17-18	53	RA, R, F	2005-0145	62	15-16	62	G		
15-16	59	G			18-19	59	RA, R	2100-0300		16-17	56	HA, RA, RB, R, S, P	1940-0200	63
16-17	57	RA, R, S	1850-0600	64	19-20	59	G			17-18	63	G		
17-18	55	HA, RA, HB, R, S	1745-0345	65	20-21	59	G			20-21	59	G		
18-19	58	G			21-22	60	L			21-22	60	G		
20-21	56	HA, RA, RB, R, F	1835-0600	63	23-24	60	HA	2200-0200	66	22-23	61	G		
21-22	60	G			24-25	60	G			24-25	59	RA, R	1900-2400	
22-23	59	R	2100-0600	64	28-29	60	R	2145-2245		25-26	55	HA, RA, HB, RB, R, S	2000-0250	63
23-24	60	G			29-30	60	G			30-1	61	HA, RA, R	2040-2250	64
27-28	60	G			30-1	59	G							
29-30	61	G								OCTOBER				
FEBRUARY					MAY									
4-5	58	HA	1900-2225		1-2	60	HA, RA, R	2320-2350		2-3	60	G		
5-6	57	HA, R	1845-0530	67	2-3	62	G			3-4	60	G		
6-7	60	RA	2105-0215	65	6-7	60	G			5-6	57	RA, R	2000-0200	67
7-8	61	R	2045-2245		8-9	61	G			6-7	59	G		
8-9	60	HA, RA	2255-0155	66	9-10	60	G			7-8	59	HA, RA, R	2030-0400	67
9-10	62	G			10-11	59	R	2200-0100		9-10	60	R	2000-2400	
10-11	46	HA, RA, RB, R, S, P, F	2100-0625	51	12-13	56	HA, R, S	2155-2355	65	10-11	61	G		
11-12	54	R, F	1810-0500	61	13-14	54	RA	2210-0100	65	11-12	59	RA, R, S	1955-2400	
12-13	57	RA, RB, R	1800-0200		14-15	61	G			14-15	61	G		
13-14	60	HA, RA, F	1945-0600	62	17-18	60	G			17-18	60	G		
15-16	60	R	2055-0100	65	25-26	59	G			18-19	62	G		
16-17	57	HA, RA, R	1900-0600	65	26-27	60	G			20-21	60	G		
17-18	56	RA	1800-0400		28-29	60	G			22-23	56	HA, RA, RB, R, S, F	1920-0600	59
18-19	58	HA, R	1905-0050	65	31-1	53	HA, RA, RB, R, S, P	2230-0200	56	23-24	59	RA, R	1950-0500	65
19-20	59	G								24-25	58	HA, RA, RB, R, S, P	1920-0500	61
20-21	54	HA, RA, R, S	1755-0355		JUNE					27-28	59	HA, RA, R, S, P	1810-2110	59
21-22	58	HA, RA, R, S	1905-0355	62	6-7	54	G			28-29	56	RB, R, S	1850-0300	65
22-23	60	HA, RA, HB, R	1940-0555	67	9-10	59	G			30-31	59	HA	1745-2300	67
23-24	60	G			14-15	60	G			NOVEMBER				
MARCH					20-21	60	L			1-2	61	R	2050-2100	
1-2	60	G			21-22	60	L			2-3	56	R	1745-2400	63
2-3	60	G			24-25	60	L			3-4	57	HA	1930-0455	67
3-4	59	RA, RB	1845-0045	61	28-29	54	R	2130-0130	60	4-5	58	HA, R	2055-2250	67
4-5	63	HA	2340-0120		JULY					10-11	56	HA, RA, R, S	1740-0555	66
5-6	60	G			7-8	60	L			12-13	60	HA, RA, R	1855-0255	65
6-7	60	G			8-9	55	HA, RA, R, S, P	2230-0140	55	13-14	63	G		
7-8	61	G			9-10	54	R	2200-2400		14-15	60	G		
8-9	61	G			10-11	60	L			17-18	62	G		
9-10	63	R, S	2155-2355	67	11-12	60	L			25-26	58	HA	2040-2355	66
10-11	57	HA, RA, R, S	1940-0245	66	21-22	60	L			27-28	61	HA, RA	2235-0255	65
11-12	55	HA, RA, HB, RB, R, S, P, F	1905-0600	60	25-26	60	G			28-29	61	G		
12-13	54	HA, RA, RB, R	1920-0500	63	29-30	60	G			DECEMBER				
13-14	57	HA, RA, RB, R	1930-0445	65						1-2	61	G		
14-15	56	HA	1945-2400		AUGUST					2-3	56	HA, R	1755-2310	66
15-16	56	G			10-11	59	L			3-4	59	G		
16-17	57	HA, RA	1855-0400	67	14-15	61	HA	2300-0100	67	4-5	52	HA, RA, RB, R, S, P, F	1720-0555	58
17-18	57	G			16-17	61	G			5-6	60	R	1900-0045	
18-19	56	HA, RA, R, S	1925-0445	62	17-18	54	HA, RA, HB, R, S, P, F	2135-0215	59	6-7	60	G		
19-20	54	HA, RA, HB, RB, R, S, P	1925-0355	63	18-19	62	G			7-8	62	G		
20-21	58	HA, RB	1930-0400	64	21-22	60	G			8-9	56	HA, HB, R, S	1700-0455	65
21-22	56	HA, RA, RB, R	1930-0400	62	23-24	57	HA, RA, RB, R, F	2045-0320	57	11-12	62	G		
22-23	60	G			24-25	62	G			12-13	60	HA, RA	1930-0555	67
23-24	61	G			SEPTEMBER					13-14	55	HA, RA, HB, RB, R, S, P	1700-0455	60
24-25	59	HA, R	1950-2330	64	3-4	54	HA, RA, HB, RB, R, S, P, F	2020-0300	59	14-15	59	RA, R	1955-0555	
APRIL					4-5	45	HA, RA, HB, RB, R, S, P, F	1930-0430	52	15-16	61	G		
1-2	61	RA	2200-0300	67						17-18	46	HA, RA, RB, R, S	1740-0655	59
2-3	60	G								18-19	59	R	2155-0555	64
5-6	60	RA	2235-0055	64						20-21	60	G		
6-7	57	HA, RA, R	2030-2355	63						21-22	61	G		
7-8	59	R	2100-0300							23-24	63	G		

The above table was compiled in the Balfour Stewart Auroral Laboratory of the University of Edinburgh from all data available for the longitude of the British Isles, using mainly observations made at British Meteorological Office stations and by British voluntary observers, but including also some of the data from the Faroes, from Ireland and from France. Acknowledgements are made to the Directors of the Meteorological Services of Denmark (for the Faroes data), Ireland and France.

In the table,  $\Phi_1$  is the lowest geomagnetic latitude from which aurora was seen in the longitudes considered. On any night, if more than a horizon glow was seen from the British Isles, the other forms reported are listed and the period of time (G.M.T.) during which the display was observed from the British Isles is stated. The standard abbreviations are used for the forms and types of activity: G = horizon glow; HA = homogeneous arc; RA = rayed arc; HB = homogeneous band; RB = rayed band; R = rays; S = surface; P = pulsating; F = flaming. If the forms could not be determined because of cloud or twilight, but auroral light was positively identified, the abbreviation L is used. Under  $\Phi_2$  is given the lowest geomagnetic latitude of overhead occurrence in the longitudes considered. In the absence of direct visual observations,  $\Phi_2$  is deduced from elevation measurements made in other latitudes, assuming a height of 100 Km. for the lower edges of arcs and bands.

Because of varying observing conditions, these data are in some cases incomplete: aurora may have been overhead in latitudes lower than those listed, and other forms may have occurred. Fuller details may be obtained from the Laboratory on request.



POTENTIAL GRADIENT (reduced to open level surface)  
Mean values for periods of sixty minutes between exact hours

20 LERWICK		Factor 1.12 (metre <sup>-1</sup> )																				JANUARY 1958					
Hour G.M.T.		0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	
		volts per metre																									
1	195*	110*	250	Z*	250*	Z*	55	55	55	55	85	Z*	Z*	225	Z*	Z*	170*	335*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	115 (6)	
2	Z*	Z*	Z*	185*	55	55	55	55	55	55	85	85	85	85	85	140	250	225	250	Z*	Z*	Z*	Z*	310*	Z*	110 (15)	
3	Z*	Z*	55	55	60	55	55	55	55	30	30	55	55	55	55	85	55	110	250	110	110	225	110	195*	Z*	80 (21)	
4	110	60*	-340*	Z*	Z*	-680*	-715*	-465*	-370*	-60*	55*	85*	85*	110*	170*	140*	170*	195*	170*	250*	225*	225*	170*	140*	30*	155 (4)	
5	140*	110*	-95*	-185*	-215*	-495*	-560*	Z*	Z*	Z*	-60*	30*	30*	Z*	Z*	Z*	55*	155*	Z*	250*	Z*	110*	Z*	110*	110*	(0)	
6	195	195	170	Z*	110	85	85	110	110	110	85	110	110	110	125*	110*	225	170	Z*	Z*	Z*	Z*	95*	55*	55*	130 (15)	
7	85	85	85	85	55*	85*	85*	55*	85*	60*	280*	Z*	Z*	Z*	-95*	85*	Z*	Z*	Z*	370*	Z*	Z*	370*	110	110	90 (8)	
8	Z*	Z*	Z*	110*	Z*	170	Z*	55	55	Z*	55*	85*	85*	60*	55*	55*	55*	110	195	250	110	110	110	110	110	115 (14)	
9	85	95	85	85	Z*	95*	30*	Z*	Z*	Z*	125*	Z*	Z*	-310*	-215*	0	140*	170*	Z*	Z*	Z*	-95*	85*	Z*	Z*	105 (5)	
10	85	55	55	85	85*	Z*	110*	110*	-155*	-280*	-715*	-835*	-835*	-495*	-370*	-310*	-465*	-405*	-250*	-215*	Z*	-495*	-95*	30*	110	80 (5)	
11	60	-650*	-310*	0*	0*	55*	85	85	85	85	85	85	85	85	85	85	110	110	110	110*	110*	110	85	85	85	90 (17)	
12	85	85	85	55	Z*	55*	55	55	55	85*	85*	85*	85*	85	85	110	85	110	85	110	85	110	85	85	55	80 (19)	
13	30	30	30	30	30	30	30	30	30	55	85	85	85	85	85	110	(110)	110	110	140	110	125*	110*	110*	110*	70 (19)	
14	140*	125*	110*	170*	170*	60*	-560*	-155*	110*	30*	125*	125*	125*	140*	195	85	85	85	85	85	85	85	85	55*	55*	95 (10)	
15	85	55	55	55	55	55	85*	30*	55*	30*	0*	195*	195*	310*	280*	195*	170*	140*	170*	170*	170*	195*	195*	110*	110*	60 (6)	
16	110*	110*	110*	85*	85*	85*	85*	85*	55*	85*	85*	125*	125*	110*	170*	170*	Z*	280*	Z*	Z*	Z*	185*	140	Z*	Z*	140 (1)	
17	110*	Z*	Z*	Z*	Z*	Z*	140*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	(0)	
18	55*	30*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	110*	0	Z*	Z*	Z*	Z*	140*	140*	110*	110*	Z*	110 (1)	
19	Z*	110*	110*	Z*	Z*	170	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	110	85	85	85	85	85	85	95*	85*	85*	90 (5)	
20	110	195	110	Z*	170	185	Z*	140	140	110	140	110	110	110	110	140	110	110	170	Z*	Z*	Z*	Z*	Z*	Z*	135 (16)	
21	140*	195*	Z*	Z*	Z*	Z*	170	185	250*	-	280	420	420	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	225*	265 (4)
22	Z*	Z*	Z*	Z*	Z*	Z*	280*	250	225*	250	390	390	390	365	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	315 (4)
23	Z*	Z*	Z*	Z*	Z*	Z*	Z*	370*	530	505	Z*	Z*	Z*	-	170	250	140	Z*	Z*	Z*	225	195	225	195	195	260 (11)	
24	140	85	55	55	55	110	110	110	110	110	85	85	85	225	225	Z*	Z*	Z*	170	170	335	450	195	Z*	Z*	150 (19)	
25	Z*	Z*	Z*	195	195	195	170	195	225	195	170	170	170	170	170	195	-125*	-60*	0*	-60*	-250*	Z*	Z*	Z*	Z*	185 (12)	
26	Z*	140*	170	140	140	110	110	110	110	85	140	195	195	170	140	170	140*	170*	140*	110*	110*	85*	110*	110*	110*	140 (13)	
27	140*	140*	110	110	170	170*	225*	250	310	335	335	335	335	420	335	390	310*	390	420	420	390	420	450	365	195*	330 (18)	
28	250*	280*	280*	280*	335*	280*	250*	280*	280*	280*	250	225	225	225*	225*	170*	170*	225*	195*	140*	85*	225*	250*	280*	140*	250 (3)	
29	110*	55*	30*	30*	55*	110*	110*	85*	55*	-	-	-	-	-	-	-	-	110*	110*	170*	225	140*	140*	170	140	155 (5)	
30	110	85	110	85	110	110	110	110	85*	85	110*	110	110	110	110	110	110	110	110	110	110	110	85	110	110	105 (22)	
31	110	110	110	110	110	110	110	110	110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	110 (9)
Mean	100	100	100	90	105	105	90	105	145	150	155	165	165	160	155	135	105	150	160	190	170	190	170	145	105	140 (307)	
	(13)	(11)	(15)	(13)	(12)	(12)	(14)	(16)	(16)	(14)	(13)	(16)	(16)	(13)	(13)	(16)	(12)	(13)	(13)	(11)	(11)	(9)	(11)	(10)	(10)		
																											Mean for 0a days [170 (3)]

POTENTIAL GRADIENT (reduced to open level surface)  
Mean values for periods of sixty minutes between exact hours

20 LERWICK		Factor 1.17 (metre <sup>-1</sup> )																				FEBRUARY 1958				
Hour G.M.T.		0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean
		volts per metre																								
1	-	-	-	-	-	-	-	-	-	-	-	90	70	Z*	180	Z*	210*	Z*	150	120	120	180	150	120	120	130 (10)
2	90	120	Z*	Z*	90	Z*	Z*	150*	Z*	Z*	-	-	-	Z*	Z*	Z*	90*	Z*	Z*	150*	120	Z*	120	120	120	110 (7)
3	90	90	90	90	90	90	90	90	90	90	90	60	60	60	90*	90*	90*	90*	90*	90*	90*	120*	120	120*	-60*	90 (17)
4	-135*	-100*	-375*	-885*	Z*	Z*	Z*	-680*	-510*	Z*	-340*	90*	90*	120*	120*	150	180	150*	120*	120*	120	150	180	180	120*	150 (8)
5	120*	150*	-135*	Z*	Z*	120*	Z*	150*	Z*	180	Z*	Z*	Z*	Z*	Z*	180*	Z*	240	Z*	Z*	Z*	300*	Z*	Z*	Z*	210 (2)
6	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	135	205*	180*	70*	180*	170*	205*	210*	100*	120*	120*	135 (1)
7	120	120	120	120	120	120	150	180	150	150	180	210	210	240	210	210	210	210	240	240	270	210	150	120	120	180 (23)
8	120	120	120	120	150	150	150	120*	180*	135*	(135)	120*	120*	150*	Z*	Z*	Z*	180*	180*	180*	180*	180*	120	120	70*	145 (13)
9	Z*	120*	90*	120*	120	120	150	150	150	150	150	120	120	120	120	150	180	135*	Z*	Z*	Z*	180	270	Z*	Z*	150 (14)
10	Z*	120*	Z*	70*	Z*	Z*	210*	60*	90*	60	60	90*	90*	60*	30*	60*	150*	240*	210*	150*	90*	90*	90*	Z*	Z*	60 (1)
11	Z*	Z*	Z*	Z*	Z*	Z*	180*	240	480	600	600	480	480	330	300	300	300	270	270	170*	205*	240*	240*	270*	270	370 (12)
12	390	300	Z*	35*	120*	120*	90	35	-100*	60*	90	120	120	120	120	90	120	120	120	90	90	90	90	90	90	125 (17)
13	90	90	90	60*	60*	90	90	90	90	90	90	90	90	120	150	120	60	35*	90*	120	120	90	120	180	180	110 (20)
14	170	120	150	180	90	90	60	60	60	60	60	30	30	30	60	60	90	120	90	120	120	90	90	150	95 (24)	
15	150	150	90	150	150	120	120	90*	120	90	0	0	0	0	0	30	30	0	0	30	30	30	0	0	30*	65 (21)
16	-100*	0*	35*	-35*	0*	30*	60*	70*	70*	90*	90*	120*	120*	Z*	120*	Z*	Z*	120*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	-35 (1)
17	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	150*	Z*	Z*	180*	180*	270*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	(0)
18	610*	Z*	Z*	180	90	90	90	90	120	120	120*	120*	120*	120*	90*	120	90	120*	120	90	90	60	90*	120*	150*	105 (13)
19	120*	60	60	60	30	30	60	30	60	90	120	120	120	150	120	120	120	120	120	120	90	90*	90*	90*	60*	90 (16)
20	60*	270*	180*	60*	60*	60*	60*	90*	90*	(120)	90	120	120	120	150	120*	180	180	Z*	120*	120*	120*	150	(120)*	-	140 (7)
21	-	-	-	-	-	-	-	-	-	-	-	120*	Z*	Z*	150*	Z*	270*	180*	210*	300	120*	90	90	60*	60	135 (4)
22	60	60	60	30	30	30	120*	Z*	Z*	Z*	180*	120	120	120	120	120	90	120	120	120	240	120	Z*	Z*	210	105 (17)
23	180	150	150	150	170	35	135	70*	120	150	180*	90	90	120*	150	Z*	135*	120*	Z*	Z*	300*	300	270	270	240	170 (15)
24	210	240	390	Z*	Z*	Z*	Z*	Z*	90*	90	90	90	90	90	120	120	150	210	210	270	270	240	180	150	180	185 (1

POTENTIAL GRADIENT (reduced to open level surface)  
Mean values for periods of sixty minutes between exact hours

63

20 LERWICK		Factor 1.22 (metre <sup>-1</sup> )																				MARCH 1958				
	Hour G.M.T.		2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	
	0-1	1-2																								
	volts per metre																									
1	70*	95*	95*	95	95	130*	190*	95*	95*	95	95*	65*	95*	95*	95	65	95*	65	65	-70*	65	65	65	65	75 (10)	
2	-	-	-	-	-	-	-	-	-	-	95	95	130	160	95*	70*	130*	130	130	130	130	95	95*	95*	120 (9)	
3	95*	95*	95*	65*	65	65	65	30	30	65	95	95	0	-35*	-105*	0	225*	255*	190*	225*	225*	225*	190*	130*	65 (8)	
4	65*	95*	65*	95*	130*	95*	65*	65	65	65*	130*	95*	-175*	-350*	Z*	65*	-70*	130*	Z*	130*	95	95*	95*	95*	80 (4)	
5	95	Z*	Z*	95	Z*	Z*	Z*	Z*	Z*	(Z+)	130*	140*	Z*	160	130*	Z*	Z*	Z*	225*	255	290	130	130*	Z*	170 (6)	
6	Z*	Z*	Z*	Z*	95*	Z*	Z*	Z*	Z*	130*	Z*	Z*	160*	130*	130*	210*	Z*	255*	Z*	Z*	Z*	255	130*	Z*	255 (1)	
7	130*	210	Z-	210	210*	130*	160*	160*	160*	-	-	-	160*	95*	-	130*	130*	160*	160*	130*	130*	210*	160*	160*	210 (2)	
8	160*	130	130	130	130	160	210	225	190	160	130	105*	130*	190*	255*	255*	225*	190*	Z*	Z*	Z*	190*	280*	255*	155 (11)	
9	Z*	95*	95*	Z*	Z*	Z*	140*	65	95	130	Z*	Z*	Z*	Z*	255*	190*	290*	-	-	-	-	-	-	-	95 (3)	
10	Z*	Z*	Z*	Z*	Z*	Z*	-	190*	190	160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	175 (2)	
11	-	-	-	-	-	-	-	-	-	225	350	385	320	415	450	415	480	510	415	480	385	320	385	320	385	395 (14)
12	320	255	290	290	225	95	95	130	320	450	415	290	290	350	320	350	510	385	385	385	320	350	320	255	305 (24)	
13	255	225	225	225	190	160	225	255	225	255	225	190	225	Z*	Z*	190	255*	255	190	225	130	225	190	215	215 (20)	
14	160	160	160	130	130	95	95	95	130	95	95*	65	175	160*	190*	190	190	190	190	160	130	95	95	65	135 (21)	
15	95	95	95	95	95	95	95	95	160	225	65	65	65	95	95	95	95	95	95	95	95	95	95	95	100 (24)	
16	130	130	130	130	130	130	130	130	130	130	130	130	130	130	160	160	160	160	160	160	160	130	130	130	140 (24)	
17	95	95	95	65	65	95	95	95	95	95	95	95	95	130*	130	130	385*	130	-	-	160	255	190	160	120 (18)	
18	130	95	95	95	95	95*	65*	30	65	65*	130	130*	Z*	Z*	Z*	130	130	190	Z*	95	190	225	Z-	Z*	130 (12)	
19	35*	65	65	65	Z*	Z*	Z*	Z*	Z*	130	160	160	160	160	160*	160*	140	190	175	Z*	Z*	95	130	130	130 (14)	
20	130	130	130	130	130	130*	95*	65*	160*	160*	160	130	130	130	130	95	95	65	130*	95	95*	65*	65	65	115 (16)	
21	30	65	30	30	30	30	30	95	95	95	-	-	-	-	95	95	95	130	130	95	95	95	65	65	75 (19)	
22	65	65	65	65	65	65	95	95	95	130	160	190	190*	190	190	160*	160*	130*	130*	130	160	190	130*	130*	120 (17)	
23	130*	130	130	130	130	130*	130*	130	130	130	160	160	160*	190*	190*	190*	190*	190	190	190	130	130*	130*	160*	145 (11)	
24	160*	130	130*	130*	130*	130*	130*	130*	130*	130*	-	-	-	-	-	190	190	190	190	190	190*	160*	160	160	165 (7)	
25	95	95*	95*	95*	95	95*	130*	225*	190*	190*	160*	160*	160*	130*	160*	190	190*	225*	225*	160*	130*	160*	95	65*	120 (4)	
26	130*	95*	95*	95	130	130	130	130	160	160	130	190	160	160	130	130	160	190	95	130	130	130	160	160	140 (21)	
27	130	130	130	130	130	130	130	130	130	130	160	160	160	160	160	190	190	225	225	225	190	190	190	160	165 (24)	
28	130	130	130	130	130	130	130	130	130	130	130	130	130	160	160	160	160	160	160	160	160	160	160	130	145 (24)	
29	160	160	160	160	160	160	160	160	160	160	130	130	130	130	160	160	160	160	160	190	190	190	160	130	155 (24)	
30	130	130*	Z*	Z*	Z*	255*	Z*	95*	95*	95	-	-	-	-	-	-	-	-	-	130*	130*	95*	95*	65*	105 (3)	
31	65*	95*	105*	-70*	30*	65*	30*	65*	65*	65*	65	Z*	130*	130*	130	160	190	225	225	225	225	225	225	225	195 (11)	
Mean	135 (16)	130 (19)	130 (16)	125 (20)	120 (18)	110 (14)	115 (14)	120 (17)	140 (20)	155 (19)	155 (18)	160 (17)	165 (14)	175 (14)	175 (13)	175 (16)	175 (16)	200 (17)	195 (17)	180 (19)	190 (18)	175 (20)	155 (19)	155 (17)	155 (408)	
	Mean for 0a days																							[155 (11)]		

POTENTIAL GRADIENT (reduced to open level surface)  
Mean values for periods of sixty minutes between exact hours

20 LERWICK

Factor 1.34 (metre<sup>-1</sup>)

APRIL 1958

	Hour G.M.T.		2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	
	0-1	1-2																								
	volts per metre																									
1	200	200	165	130	200	230	265	230	230	230	230	165	130	130	165	200	200	200	200	165	165	130	100	100	100	180 (24)
2	65	100	100	100	100	100	130	130	130	130	100	100	130	165	165	165	165	130	100	100	165	165	130	130	130	125 (24)
3	130	100	65	35	130	130	100	130	165	100	130*	100*	100*	165*	Z*	165*	230*	110*	200*	265*	200*	200*	200	130	120 (12)	
4	65	65	65	65	65	65	65	65	65	65	65	65	100	130	165	165	165	165	165	165	165	130	100	100	105 (24)	
5	35	35	35	65	35	35	65	65	65	100	100	100	100	100	100	100	130	130	130	130	100	65	65	65	85 (24)	
6	65	65	65	35	-110*	Z*	Z*	65*	35*	35*	0*	65	65	65	65	65	65*	65	100	130	100	100	100	100	75 (16)	
7	65	65	35	65	35	Z*	Z*	35*	Z*	35	0*	35	35	35	35	35	65	65	75*	100	100	65	65	65	75 (7)	
8	65	100	65	65	65	65	65	65	65	65	35	35	35	35	35	35	65	65	Z*	130*	100	100	65*	65*	60 (13)	
9	65*	65	65*	65*	35	65	35*	65*	65*	65*	65*	65*	65*	65*	100	100	100	100	100	100	130	100	65	65	85 (13)	
10	35	35	35	35	35	65	65	65	65	100	100	100	100	100	100	100	100	100	65	-	-	-	-	-	75 (19)	
11	-	-	-	-	-	65	65	100	100	100	100	100	130	165	165	165	165	130	130	130	100	100	65	65	115 (18)	
12	65	65	65	100	130	200	230	165	130	130	65*	65*	65*	130*	200*	200	200	265*	330*	365*	230	200	130	130	155 (15)	
13	100	100	100	100	100	100	130	130	130	130	200	200	200	165*	165*	130*	200	230	230	265	295	295	265	230	175 (21)	
14	130	200	230*	200*	100*	100	100	100	-	65	65	65	65	65	0	35	100	100	75*	100*	Z*	Z*	-75*	-75*	90 (13)	
15	Z*	75*	100*	Z*	100	75	100*	230	Z*	Z*	65*	Z*	100*	110*	130*	200*	Z*	165*	200*	Z*	130*	200*	130*	65*	135 (3)	
16	65*	165*	130*	100*	65*	65*	35*	65*	35*	65*	65	100	100*	100*	100*	100*	100	65*	65	65	65*	65	65*	65*	80 (7)	
17	35	35	35	65	65	65	100	100	100	100	100	100	100	100	100	100	100	100	65*	35*	-110*	-295*	-			

POTENTIAL GRADIENT (reduced to open level surface)  
Mean values for periods of sixty minutes between exact hours

20 LERWICK		Factor 1.25 (metre <sup>-1</sup> )																				MAY 1958				
	Hour G.M.T.		2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	
	0-1	1-2																								
	volts per metre																									
1	175	280	245	350	315	315	245	210	175*	140*	140	175	105	105	105*	105	105	220	370	455	350	280	Z+	140*	240 (19)	
2	140	105*	105*	105*	105*	105*	Z+	105*	105*	105*	105*	70*	70	70	70	70	70*	70*	70*	140*	70*	70*	105*	105*	90 (6)	
3	105*	70	70	70	70	70	70	70	Z-	70	70	70*	70	70	70	110	105	75*	75*	105	105	105	105	105	85 (18)	
4	105	105	105	70	70	70	70	105	105	105	105	70	70	70	105	105	140	105	105	105	105*	105*	70*	70*	90 (20)	
5	105	105	70	70	35*	35*	-110*	35*	140*	-	-	-	-	-	35	70	105	70*	70*	70*	70*	-445*	-1035*	-520*	75 (6)	
6	-1000*	-1185*	-1295*	-1295*	-1075*	-740*	-890*	-1220*	-1330*	Z-	Z-	Z-	Z-	Z-	-665*	-150*	-260*	Z-	Z-	Z-	Z-	Z-	Z-	Z-	-	(0)
7	Z-	70	70	70	70	70	70	110	70	70	105	105	105	105	105	105	105	105	105	140	105	70	35	-110*	90 (19)	
8	-150*	-220*	-405*	-480*	-370*	-295*	140*	210*	140*	140*	175	140	75*	185*	175*	140	210	75*	75*	-185*	110*	105*	105*	70	145 (6)	
9	35	35*	75*	70	105	140	140*	140*	150*	(150)*	(140)*	70	105*	175*	105*	185*	Z+	140*	140	105	105	70	175	280*	100 (10)	
10	75*	35	35	Z*	35*	Z±	Z±	35	Z±	105	35	35	70	105	105	70	185	210	175	175	140	105	70	35	95 (18)	
11	70	70	70	70	70	140	175	175	210	210	-	-	140	140	-110*	-220*	150*	140	105	70	140	140	140	70	125 (19)	
12	70	105	140	70	35	35	35	35*	35*	35*	70	35*	35*	70*	70*	70	105	105	140	Z+	Z-	Z-	105*	75*	80 (13)	
13	70	75*	105*	70*	70	110*	105*	105*	70*	105*	105	70	70	70	105	105	140	140	140	140	175	175	210	210	140	125 (16)
14	105	Z±	110*	Z±	110*	Z±	(105)*	35	105	70	70	105	140*	175	175	140	140	140	140	140	140	70	70	35	105 (17)	
15	35	35	105	105	105	70	105	105	-	70*	Z±	Z±	-295*	-110*	Z±	-295*	110*	140*	140	140	105	105	70	70	95 (14)	
16	70	105	105	70	105	70	70	35	35	35	35*	70	Z±	Z±	Z±	Z±	Z±	Z±	175*	140	140	105	105	70	85 (16)	
17	70	35	0*	35	35*	35*	70	70	70	-	-	-	70	70	140*	Z-	Z+	Z+	295*	Z+	Z-	175*	140*	140	70 (9)	
18	-	-	-	-	-	-	70	70	70	70	70	70	70	35	35	0	Z-	Z-	75*	0*	35*	35	70	35	45 (13)	
19	35	0	35	35	35	70	105	140	-	-	105*	105*	140*	210*	175*	150*	295*	150*	150*	Z-	Z±	Z±	210	210	85 (10)	
20	280	350	210	35*	35*	35*	70	70	70*	70*	70*	35*	35*	35	35	35	35*	35*	35	0*	0*	0*	0*	-75*	130 (8)	
21	-75*	-75*	-110*	-75*	0*	0*	70*	75*	105*	105*	70*	70*	35*	75*	0*	75*	35*	35	75*	-	-	-	-	-	35 (1)	
22	-	-	-	-	-	-	-	-	-	35	35*	70*	70*	70	35	35	70	70	70	70	70	35	0	0	45 (12)	
23	-	-	-	-	-	-	35	70	70	70	105	105	105	105	105	140	175	140	140	245	245	175	140	140	150 (17)	
24	105	0*	Z+	Z+	Z±	185*	75*	245*	280*	105*	210	175	210	280	420	385	175	210	-	-	-	-	-	-	240 (9)	
25	75	35	0	Z±	Z±	150*	105	105	140*	175	175	280	315	455	490	490	630	735	-	560	455	350	420	420	330 (19)	
26	385	350	280	175	175	175	175	210	210	175	175	175	140	245	280	210	175	105	140	140	140	175	140	105	195 (24)	
27	105	140	105	105	140	105	175	175	105	Z±	Z±	175	0	35*	35*	35*	70	105	105	70	70	-520*	-630*	35*	105 (15)	
28	75*	70*	70*	-110*	70*	70*	75*	75*	105*	Z-	110*	35*	35*	70*	70	70*	35*	70	70	70	70	35	70	105	70 (8)	
29	105	70	35	35*	70*	70*	75*	-520*	-260*	Z+	Z±	Z-	110	105	105	140	105	70	105	175	105	105	105	105	100 (16)	
30	105	140	280	350	385	315	350	280	210	175	140	140	140	175	175*	Z±	Z±	Z-	455*	245*	140*	140	140	140	210 (17)	
31	70	35	35*	35*	75*	105	140	140	105	35	0	35	-35*	-75*	-110*	140*	105	70*	105*	105	245	770	Z+	455*	145 (13)	
Mean	110 (21)	110 (19)	115 (17)	115 (15)	125 (14)	125 (14)	130 (15)	115 (18)	115 (12)	100 (16)	105 (15)	105 (18)	115 (16)	130 (19)	135 (17)	135 (19)	160 (17)	155 (18)	135 (16)	170 (19)	150 (19)	165 (19)	125 (18)	115 (17)	130 (408)	
	Mean for 0a days																							[140 (2)]		

POTENTIAL GRADIENT (reduced to open level surface)  
Mean values for periods of sixty minutes between exact hours

20 LERWICK		Factor 1.22 (metre <sup>-1</sup> )																				JUNE 1958			
	Hour G.M.T.		2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean
	0-1	1-2																							
	volts per metre																								
1	240	70	205	205	170	475	305	410	610	645	610	580	440	340	375	375	410	340	375	340	340	170	240	240	355 (24)
2	135	135	100	170	135*	-70*	215*	135	170	-	-	-	-70*	70*	100*	205	270	270	240	240	205	135	135	100	175 (15)
3	100	100	100	100	100	100	170	170	170	135	135	135	135	135	135	205	240	205	170	135	100	440	Z+	155 (23)	
4	580	815	645	610	410	340	270	305	205	270	270	135	70	-	35	35	35	35	35	70	70	100	100	240 (23)	
5	100	70	70	70	70	100	135	135	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	95 (8)	
6	-	-	-	-	-	-	-	-	100	70	100	70	35	135	135	170	170	205	205	240	205	240	240	240	160 (16)
7	240	205	205	205	205	205	205*	205*	170*	205*	170	170	170	170	170	205	205	205	135	135	135	100	35	175 (21)	
8	70	100	70	70	70	35	100	70	35	70	70	100	35	70	100	70	70*	35	70*	70	100	100	100	70*	75 (21)
9	70	70	70	70	70	100	100	135	135	100	100	100	70*	70*	110*	Z±	Z-	70*	70	70	35	35	35	35	80 (18)
10	35	35	35	35	35	35	70	205	135	110*	100*	100*	70*	100*	100*	-145*	70*	-110*	70*	Z-	70	100	100	100	75 (14)
11	100	70	70	70	70	100	100	100	100	70	100	100	100	100	100	70	-	100	100	100	100	100	100	100	90 (23)
12	100	100	135	135	135	170	170	170	170	100	-	-	-	100	70	70	100	100	100	70	70	70	70	70	110 (21)
13	70	70	70	100	35	70	100	100	100	100	100	100	135	135	135	205	305	340	240	340	475	610	475	580	210 (24)
14	610	510	440	375	510	340	340	545	645	715	780	750	715	610	340	375	270	135	100	205	170	135*	375*	180	435 (23)
15	110	0	145	-70	110	135	170	135	135	135	70	170	205	170	-70*	100	135	100	70	100	135	-250*	0	135	115 (21)
16	135	100	100	70	100	170	170	135	70	-	580	440	340	100	70	70	70	70	70	35	35*	-180*	-70*	35*	150 (19)
17	35*	35	35	70	100	100	100	35*	70	70	35*	35*	35	35	35	35	35	35*	35	70	70	70	70	70	60 (19)
18	70	35	-145*	70	70	70	35*																		

POTENTIAL GRADIENT (reduced to open level surface)  
 Mean values for periods of sixty minutes between exact hours

20 LERWICK		Factor 1.19 (metre <sup>-1</sup> )																				JULY 1958					
Hour G.M.T.		0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	
		volts per metre																									
1	65*	65*	100	130	165	230	200*	430*	Z+	Z-	Z+	595	495	165	295	165	100	65	100	100*	100	100	100	100	100	100	190 (16)
2	100	65	65	65	65	100	130	130	130	130	130	130	130	130	130	130	100	100	100	100	65	65	65	65	65	65	100 (24)
3	65	65	65	100	130	130	100	100	100	130	130	100	130	130	130	165	165*	200	230	165	100	100*	100*	100*	100*	130	125 (24)
4	100	65	65	100	65	100	100	100	100	140	-	65	100	65	35	105	65*	65*	100	65	65	100*	100*	100*	100*	105*	85 (17)
5	130*	65*	100*	65	130	100	100	100	100	130	130	65	65	65	100	100	65	65	100	100	100	100	65	65	100	90 (21)	
6	65	65	65	130*	100*	100*	65	100	65	100	65	100*	100*	100	100	100	130	100	100*	65*	65*	35*	35*	35*	35*	85 (12)	
7	65*	65*	65*	65*	100*	130*	100*	100*	65*	35*	35*	35	35	35	35	65	100	100	100	100*	100*	100	130	100*	100*	75 (9)	
8	65*	130*	130*	165*	330*	230	130	130	265	230*	295*	330	230	130*	200	100*	65*	100*	165*	130*	130*	100*	200*	165*	215 (7)		
9	100*	100*	100*	130	100*	100*	130	130*	105*	35*	65	35	35	35	35	35	35	35	35	35	35	65	35*	130	130*	60 (14)	
10	130	165	165	165*	130*	130*	130	130	130	100	100	100	100	65	65	65	65	100	65	65*	100*	65	65	65	100	100 (19)	
11	100	100	100*	130	130	130	65*	130	100	130	200	200	200	200	230	200	130	130	165*	130*	130	130	100	65	65	135 (20)	
12	100	130	165	295	265	430	395	230	165	-	100	-	100	165*	100*	-245*	-630*	-525*	-430*	-210*	Z-	Z-	Z-	Z-	Z-	230 (11)	
13	130*	100	130	100	295	330	530	460	625*	230	265	265	230	230	265	200	130	100	130	130	130	100	100	130	130	205 (22)	
14	100	100	130*	130*	100*	100*	-70*	65*	65*	35*	65	65	65	65	65	65	65	65	65	65	65	100	100	100	65*	75 (14)	
15	65*	65	65	35	35	65	65	100	65*	65*	65*	130*	100*	35*	35	65	100	65	65	100	65	35	65	35	65	60 (17)	
16	35	35	35	35	35	65	100	130	130	165	130	130	100	100	100	130	130	100	130	130	100	100	100	35	65	95 (24)	
17	65	65	65	65	65	65	65	65	65	65	65	65	65	100	65	65	100	100	100	100	100	130	100	100	80 (24)		
18	100	100	130	165	230	230	200	165	165	165	165	165	165	165	130	130	130	130	130	130	100	100	65	65	65	140 (24)	
19	100	130	130	130	200	230	130	265	295	-	200	230	200*	130	130	265	295	395	430	460	530	430	Z+	Z+	255 (20)		
20	Z+	Z+	560	330	130	165	165	200	200	165	100	165	165	130	200	165	100	100	65	100	55	65	65	65	155 (22)		
21	65	65	100	130	130	100	65*	100	130	65*	35*	35*	35*	35*	35	35	35	65	65	65	65*	65	65	65*	65*	75 (17)	
22	65*	65*	65*	65	100	130	130	165	165	-	Z-	Z+	Z+	Z+	140*	165*	130	130	130*	100	65	65	35	35	35*	100 (13)	
23	65*	70*	35*	-105*	-70*	65*	100*	65*	35*	35*	65*	65*	100*	100*	100	65*	65*	65*	65*	65*	65*	65*	65*	65*	65*	65 (6)	
24	65	65	65	65	35	35	35	35	35	35	35	35	35	100*	65*	100	100	65	65	100	65	100	65	35*	65*	75 (13)	
25	100*	100*	100*	100	100	130	100	100*	100*	65	65*	65*	100*	100*	65*	65	35*	35*	65	65	65	100	100	65	65	85 (13)	
26	100	65	65	65	65	100	130	165	265	230	100*	130*	200*	165	165	130	130	165	-70*	-105*	130	100	165	100	130	130 (19)	
27	35	35	35	35	35	130	230	130	130	130	130	165	165	200	200	100	35	65	100	130	130	65	35	35	35	105 (24)	
28	65	200	330	200	200	100	200	130	230*	200	230	200	200	200	100	65	65	100*	65*	130	130	130*	165*	200*	-70*	160 (16)	
29	-245*	-245*	35*	-105*	35*	-70*	-210*	-245*	-	-	-	-	-	230	460	460*	365*	70*	330*	200*	-35*	280*	265*	105*	-105*	345 (2)	
30	-455*	Z-	-315*	-350*	-910*	-420*	-70*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	135 (2)	
31	100*	100	100*	130*	100*	100	165	200*	230*	165	65*	130	100*	100	100*	100	100	130	130	130	100	100	100	65	115 (15)		
Mean	80 (17)	90 (20)	125 (19)	115 (22)	135 (20)	145 (23)	155 (22)	160 (21)	160 (18)	135 (18)	130 (16)	160 (22)	150 (19)	130 (24)	120 (25)	105 (24)	105 (23)	110 (22)	110 (21)	110 (21)	110 (23)	100 (22)	80 (21)	85 (18)	120 (501)		
		Mean for 0a days [110 (17)]																									

POTENTIAL GRADIENT (reduced to open level surface)  
 Mean values for periods of sixty minutes between exact hours

20 LERWICK		Factor 1.12 (metre <sup>-1</sup> )																				AUGUST 1958				
Hour G.M.T.		0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean
		volts per metre																								
1	90	60	30	30	30	60	120	90	-	150	120	150	150	150	120	120	150	150	180	180	180	210	120	150	90	120 (23)
2	120	90*	60	60	90	90	120	120	60*	120*	90	60	60	120	120	150	120	90*	60*	90*	60*	90*	90	90*	90	100 (15)
3	90*	60*	30*	90*	90	90*	120*	30*	120*	60	60*	60*	60*	90	90	60	90	60	90	60	90	-	-	-	-	80 (10)
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Z+	90	Z+	240*	120*	150	(120)	390*	240*	210*	150*	150 (1)
5	210*	150*	150*	90	120	150	90	0*	-65	-65*	-160*	-255*	-160*	-130*	-130*	-130*	-95*	-130*	30*	30*	-30*	0*	60*	30*	75 (5)	
6	30*	0*	-30*	-65*	60*	60*	30*	60*	60*	30*	30*	30*	30*	30*	30	30*	0*	0*	0*	30*	150*	120*	90*	130*	120	75 (2)
7	90*	Z*	90	Z+	Z*	-65*	Z*	Z*	Z*	Z*	120*	150*	90*	95*	-255*	65*	210	180	180	180	180	120	150	150	155 (9)	
8	150	150	150	150	180	210	180	180	180	150	150	150	150	120	120	150	180	180	180	180	180	120	120	120	120	155 (24)
9	90	90	90	90	120	150	180	210	240	210	210	150	150	180	180	180	180	210	210	240	270	240	270	240	190	240 (24)
10	210	180	120	65*	150*	120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	240	270	420	600	510	275 (10)
11	240	180*	270*	330	-	390	240	240	60	90	-	-	-	-	300*	-	-	-	-	-	-	-	-	-	-	225 (7)
12	360	570	330	390	480	Z+	Z+	Z+	Z+	510	390	390	270	240	270	180	240	180	240	240	330	270	390	420	300	335 (19)
13	300	240	180	210	240*	240*	330	180	150	120	90	150	120	120	150	95*	210*	210*	240*	210*	150*	90*	120*	120*	195 (10)	
14	-95*	120*	150*	90*	90*	180*	240*	270*	270*	120*	60*	90*	90*	95*	90*	60*	60*	90*	90*	120	120	150	150	150	150	140 (6)
15	120	150	120	120	120	150	240	240	120	180	150	180	180	240	300	210	150	120*	120*	90	120	120	150	90	60*	160 (21)
16	60*	30*	30*	30*	-30*	30*	240*	180*	150*	150*	120	90	90	120	60	90	60*	-30*	30*	0*	0*	0*	30	60*	60	80 (7)
17	30	30	30	30	30	60	60	60	60	90	60	30	90	180	180	180	180	120	120	180	210	210	180	150	240	115 (24)
18	210	240	210	180	240	180	180	210	240	180	120	180	180	240	180	210	210	150	180	210	150	120	180	180	180	190 (24)
19	150	180	120	90	60	60	60	90	90	95*	-95*	65*	30	Z+	Z+	Z+	130*	570*	420*	210*	240*	300*	225*	160*	95 (10)	
20	-130*	Z*	95*	180*	240*	270*	360	510	690	570	630	Z+	Z+	390*	150	150*	270*	90*	0*	-65*	130*	-95*	-320*	0*	485 (6)	
21	120*	150*	180*	180*	180*	210*	300*	210*	360*	300	300	210	180	150	120	120	120	180*	300*	(180)	300*	270	210	150*	200 (10)	
22	240*	240*	150	180	240	210	240*	150*	90*	0	120*	65*	Z+	180*	180*	150	120	90	90	90	120	150	240	240	160 (13)	







ELECTRICAL CHARACTER OF EACH DAY AND APPROXIMATE DURATION OF NEGATIVE POTENTIAL GRADIENT

21 LERWICK

	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE	
	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient
1	1c	hr. 0.9	-	hr. -	1a	hr. 0.5	0a	hr. ...	1b	hr. 0.5	0a	hr. ...
2	1c	2.7	(1c)	-	(1a)	(0.2)	0a	...	1b	0.1	-	-
3	1b	0.2	1a	0.7	1b	1.7	1b	0.2	1b	0.7	0b	...
4	2b	7.7	2b	10.7	1b	2.7	0a	...	0a	...	1b	0.3
5	2c	12.7	1c	2.1	1c	0.9	0a	...	-	-	-	-
6	1c	0.7	1c	1.7	1c	0.6	1b	1.7	2c	17.3	(0a)	(...)
7	1c	2.3	0a	...	-	-	1b	1.0	1b	1.2	0a	...
8	1c	0.4	1b	0.7	1b	0.2	1b	0.2	2b	7.7	1a	0.4
9	2c	4.3	1c	1.5	(2c)	(3.1)	1a	0.1	1b	0.5	1b	1.9
10	2b	11.7	1b	1.4	-	-	0a	...	1c	1.8	1b	2.8
11	1b	2.5	2c	3.6	-	-	0a	...	1b	1.6	0a	...
12	1b	0.1	1b	2.3	0a	...	0a	...	1b	0.5	0a	...
13	(1a)	(0.3)	1a	0.2	1b	0.7	0a	...	1a	0.2	0a	...
14	1b	2.6	1a	0.1	1a	0.2	1b	1.2	1b	0.8	1a	0.2
15	1a	0.4	1a	0.2	0a	...	1c	0.7	-	-	2b	3.4
16	1c	0.4	1c	2.5	0a	...	0b	...	1c	2.3	1a	1.7
17	-	-	1c	1.7	(0b)	(...)	2a	3.8	1c	2.0	1a	0.7
18	-	-	1b	0.7	1c	1.6	2b	4.0	-	-	1a	0.9
19	1c	0.6	0a	...	1c	1.8	1a	2.7	(1b)	2.1	0a	...
20	1c	0.6	(1b)	-	0a	...	1b	0.6	1a	1.3	1a	1.0
21	1c	2.5	-	-	0a	...	1a	1.1	-	-	1a	0.2
22	2c	3.5	1c	1.0	0a	...	0a	...	-	-	0a	...
23	1c	2.1	1b	1.2	0a	...	(2c)	(5.5)	-	-	0a	...
24	1b	0.6	1c	1.0	0a	...	0a	...	-	-	0a	...
25	2c	7.3	1c	1.3	0a	...	1b	1.1	1b	1.7	0a	...
26	1b	0.7	2c	3.5	0a	...	1b	0.6	0a	...	2a	6.1
27	1a	0.1	-	-	0a	...	1a	0.2	2b	3.7	1a	2.6
28	0a	...	1a	0.7	0a	...	1b	1.0	1b	1.5	1a	1.6
29	-	-	-	-	0a	...	1b	0.5	2b	3.2	1a	2.3
30	0a	...	-	-	-	-	0a	...	1b	1.8	1a	0.1
31	(0a)	(...)	-	-	1b	0.4	-	-	2b	3.3	-	-
Total	-	67.9	-	38.8	-	14.6	-	26.2	-	55.8	-	26.2
No. of days used	-	28	-	23	-	27	-	30	-	24	-	28
Mean	-	2.4	-	1.7	-	0.5	-	0.9	-	2.3	-	0.9

	JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER	
	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient
1	0b	hr. ...	0a	hr. ...	1c	hr. 1.6	1a	hr. 0.4	2b	hr. 3.1	2c	hr. -
2	0a	...	1a	0.2	0a	...	1b	0.8	1b	0.9	1a	1.5
3	0a	...	-	-	0a	...	1b	0.5	1a	0.2	1a	0.6
4	1a	0.6	-	-	0b	...	2c	4.3	0a	...	1c	1.2
5	0a	...	2b	10.8	0a	...	-	-	2b	4.7	1c	0.3
6	0a	...	1a	1.3	0c	...	1b	0.4	1b	1.8	0a	...
7	0a	...	2c	4.3	1b	0.5	1c	2.3	1b	1.8	2c	3.5
8	0a	...	0a	...	1b	2.9	1c	1.3	1c	1.1	1b	0.3
9	1a	0.6	0a	...	1a	1.3	1c	0.6	1c	0.5	1c	0.8
10	0a	...	-	-	0a	...	2b	3.1	1a	0.2	1c	0.9
11	0a	...	-	-	0a	...	1c	1.3	2b	4.3	1b	0.9
12	2b	8.9	0b	...	0a	...	1b	1.1	1c	0.8	1b	0.8
13	0a	...	1a	0.3	0a	...	2c	4.9	1b	0.1	2b	4.5
14	1a	0.5	1b	0.9	1b	0.4	2b	3.4	1a	0.2	1b	0.8
15	0a	...	0a	...	1a	0.6	2c	3.0	1b	1.1	0a	...
16	0a	...	1a	2.2	1a	1.3	1c	1.6	0a	...	0a	...
17	0a	...	0a	...	1a	0.3	1a	0.7	0a	...	0a	...
18	0a	...	0a	...	0a	...	1a	0.3	0a	...	1b	0.4
19	0b	...	1b	2.3	2c	(8.9)	1a	2.2	0a	...	2b	3.8
20	0b	...	2b	5.9	1a	1.4	2b	3.4	0a	...	1c	2.8
21	0a	...	0a	...	0a	...	1a	0.4	1b	1.1	0a	...
22	1b	1.2	1b	0.9	1a	1.6	0a	...	0a	...	0a	...
23	1a	1.6	1b	1.7	(0a)	...	-	-	0a	...	0a	...
24	1a	0.2	1a	1.5	2c	3.5	-	-	1b	0.8	1b	2.0
25	0a	...	0a	...	1b	2.0	-	-	2a	4.2	(1a)	-
26	1a	1.1	0a	...	0a	...	-	-	0a	...	-	-
27	0a	...	0a	...	0a	...	-	-	0a	...	1b	1.4
28	1a	0.7	(1c)	0.3	0a	...	-	-	0a	...	2c	4.3
29	2b	7.5	-	-	1b	1.4	0a	...	1b	1.5	1c	1.4
30	-	-	0b	...	2c	4.5	1c	1.5	1a	0.3	1c	1.8
31	0a	...	0b	...	-	-	1b	1.4	-	-	1b	0.2
Total	-	22.9	-	32.6	-	32.2	-	38.9	-	28.7	-	34.2
No. of days used	-	30	-	26	-	30	-	24	-	30	-	28
Mean	-	0.8	-	1.3	-	1.1	-	1.6	-	1.0	-	1.2

Annual values: Character 0 1 2  
No. of days used 113 176 43

Duration: Total 419.0 hr.  
No. of days 328  
Mean 1.28 hr.

ESKDALEMUIR

TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

22 ESKDALEMUIR (H)		16,000γ (0.16 C.G.S. unit) +																				JANUARY 1958				
	Hour G.M.T.												12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 15,000+
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12														
1 d	606	575	629	624	653	621	674	695	658	641	640	652	652	652	662	668	684	695	683	709	662	676	661	666	656	738
2	658	652	673	677	679	680	692	690	674	671	683	674	658	669	675	669	682	691	698	697	690	693	694	700	680	1319
3 q	714	706	706	711	711	710	708	708	708	706	698	690	683	689	694	697	700	700	704	706	704	707	711	703	1875	
4 q	715	718	717	719	720	721	722	720	717	706	693	699	693	693	699	706	712	717	721	725	726	729	730	726	2154	
5 q	718	704	708	708	714	722	722	721	721	716	710	707	704	708	710	711	712	719	728	729	727	727	725	722	2193	
6	721	722	729	733	742	738	738	731	725	723	721	714	710	710	712	703	707	718	725	729	731	728	727	729	2366	
7 q	718	720	721	722	729	731	731	734	728	725	719	708	705	702	705	712	714	716	721	723	722	722	723	723	2274	
8 q	727	725	729	731	734	739	738	735	726	715	712	708	704	702	701	710	714	711	719	726	729	731	729	726	2321	
9	722	723	727	730	736	740	744	740	731	724	717	706	699	706	701	704	715	718	721	723	728	725	726	706	2312	
10	703	725	702	707	712	713	712	715	714	700	692	685	689	698	695	706	713	717	729	731	726	728	728	725	2065	
11	715	726	718	719	719	721	721	722	717	710	706	706	709	711	710	719	723	723	726	699	706	727	722	719	2209	
12	715	714	706	712	719	722	713	712	707	702	698	688	692	705	708	716	718	720	731	729	731	729	718	708	2113	
13	719	721	719	718	727	735	727	725	719	710	702	695	693	699	712	717	725	722	730	733	729	697	701	710	2185	
14	716	715	721	722	724	726	721	719	702	706	707	694	694	702	710	725	725	722	721	727	729	699	706	717	2150	
15	717	716	714	718	716	716	727	721	695	694	689	687	694	698	699	704	709	709	716	717	724	721	708	714	2023	
16	714	716	717	718	719	719	714	709	706	701	693	695	702	714	724	726	728	725	734	731	709	718	723	723	2178	
17 d	712	716	716	714	742	727	721	718	699	680	666	676	684	685	686	695	719	720	714	714	725	714	690	699	2052	
18 d	691	691	690	723	714	714	698	693	689	667	659	672	653	650	683	695	701	698	698	700	695	703	705	706	1588	
19	706	703	708	708	711	718	712	700	697	687	675	665	663	672	694	702	704	714	701	700	713	715	710	719	1797	
20	715	714	712	714	716	718	718	715	705	702	693	682	687	699	705	715	726	747	734	730	735	737	705	682	2106	
21 d	675	719	665	632	675	696	690	684	695	686	677	671	662	672	684	699	702	713	713	715	719	715	719	714	1592	
22	712	708	708	710	714	716	712	708	711	714	707	691	681	669	677	705	710	714	724	722	726	723	722	714	1998	
23 d	716	725	710	710	746	741	734	710	706	698	687	682	670	690	715	707	707	706	704	693	693	709	716	713	2085	
24	717	718	716	717	720	715	717	715	706	697	694	685	678	703	709	707	693	719	725	729	730	727	726	722	2085	
25	722	719	720	729	730	727	725	720	715	693	699	713	710	717	697	708	711	697	701	710	712	713	714	720	2122	
26	715	717	726	711	739	735	696	694	692	678	674	675	679	694	701	700	697	697	706	719	721	713	702	711	1892	
27	705	712	712	723	719	719	717	715	707	702	699	700	701	707	710	714	715	721	725	729	729	725	743	728	2177	
28	722	724	726	727	730	731	734	738	723	708	700	699	694	707	707	712	719	726	730	729	731	737	735	735	2324	
29	729	732	727	742	733	744	751	738	716	718	712	712	719	723	721	710	704	710	713	710	736	737	726	727	2290	
30	727	729	727	726	734	737	743	740	727	722	721	718	709	713	715	710	719	726	725	719	720	722	723	726	2378	
31	736	732	728	731	737	738	738	737	729	721	715	714	718	727	726	724	727	725	728	730	716	725	726	741	2469	
Mean	710	711	711	713	720	720	720	717	709	701	696	692	690	696	701	706	711	715	718	719	719	718	716	715	710	
Sum 21,000+	998	1037	1027	1086	1314	1330	1310	1221	970	730	572	463	387	586	747	896	1035	1156	1248	1283	1274	1269	1190	1182	Grand Total 528,313	

MAGNETIC DECLINATION (WEST)  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

23 ESKDALEMUIR (D)		10° +																				JANUARY 1958				
	Hour G.M.T.												12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 900.0+
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12														
1 d	31.1	33.6	41.6	26.0	25.9	29.9	40.9	39.3	37.3	37.7	37.5	39.2	43.2	43.3	42.0	42.5	44.8	48.6	51.0	51.9	40.8	39.8	34.7	33.2	39.0	35.8
2	30.6	27.6	32.2	35.2	39.0	42.5	41.2	40.9	40.4	41.5	43.1	43.7	43.9	48.0	48.0	45.9	43.2	42.6	42.2	41.3	40.8	40.2	38.8	38.6	40.5	71.4
3 q	37.7	39.0	39.4	39.8	40.9	40.5	39.7	38.9	38.1	37.7	37.0	37.6	41.1	44.7	43.7	43.5	43.6	44.0	43.4	42.9	41.4	41.2	40.1	39.5	40.6	75.4
4 q	40.2	39.2	40.2	40.7	40.1	39.3	39.1	38.6	37.8	37.4	39.0	39.6	40.6	43.5	43.7	42.6	42.5	42.6	42.3	41.8	41.0	40.7	40.6	40.5	40.6	73.6
5 q	38.7	36.6	36.1	38.2	38.7	39.2	38.7	38.3	37.9	39.1	40.3	40.5	42.9	45.6	44.8	43.4	43.5	43.6	43.3	42.3	41.5	41.3	40.5	39.7	40.6	74.7
6	38.9	39.5	41.2	41.3	40.7	40.6	40.4	40.3	40.0	39.3	40.3	41.5	43.6	46.3	45.1	45.1	45.0	43.4	42.8	41.8	40.8	40.0	39.1	37.8	41.5	94.8
7 q	37.6	39.3	40.4	40.1	41.8	40.7	40.0	39.0	38.9	39.4	40.4	42.3	44.7	46.0	45.8	45.1	44.3	44.3	43.2	42.4	41.2	40.4	40.1	38.6	41.5	96.0
8 q	38.2	39.0	39.3	40.5	40.0	40.4	40.7	40.4	39.2	38.4	38.7	42.1	44.2	46.6	47.3	43.6	46.1	45.0	43.1	41.8	41.0	40.8	40.6	40.4	41.6	97.4
9	40.1	39.6	41.1	40.1	40.1	39.6	39.6	39.5	38.6	39.1	40.0	41.0	44.6	47.9	48.9	52.6	53.1	52.3	46.9	41.4	43.5	42.2	37.2	35.0	42.7	124.0
10	33.9	29.8	31.1	37.5	39.6	39.3	40.3	40.1	39.0	38.5	39.2	41.1	44.9	46.4	44.0	44.1	45.1	45.0	42.7	43.4	41.7	39.9	39.4	40.7	40.3	66.7
11	39.1	37.3	36.1	38.6	40.5	39.3	40.5	39.3	38.8	40.1	39.9	38.8	41.3	43.5	42.5	43.8	44.2	45.3	49.0	47.7	41.4	40.8	40.4	39.4	41.1	87.6
12	40.2	38.2	35.7	32.8	33.3	36.7	39.4	38.8	38.8	39.3	40.5	42.7	46.5	48.6	46.6	46.4	46.7	44.2	44.7	44.3	41.4	41.7	40.6	38.9	41.1	87.0
13	38.8	36.8	37.5	38.7	39.6	38.8	39.2	38.6	37.6	39.2	40.4	40.7	43.9	46.0	45.5	43.6	44.9	43.0	43.7	45.3	34.8	36.0	39.0	40.2	40.5	71.8
14	40.8	40.3	41.5	40.3	40.1	39.8	38.9	38.0	37.9	42.3	41.8	44.4	45.7	46.0	45.9	44.3	45.8	46.4	44.5	41.2	41.5	28.2	34.8	40.5	41.3	90.9
15	41.3	40.3	39.6	38.4	37.7	37.8	35.7	34.7	37.9	40.0	41.4	41.4	47.5	49.0	49.1	46.5	46.5	44.8	42.9	42.4	39.2	38.0	37.7	39.1	41.1	86.2
16	39.8	39.6	39.5	39.9	39.9	38.5	37.5	37.3	36.4	37.9	39.5	41.9	44.8	46.3	46.8	44.8	46.2	44.6	44.5	43.8	42.6	41.2	38.6	33.0	41.0	84.9
17 d	38.5	40.9	39.7	37.9	37.2	37.7	37.9	37.9	36.3	36.5	42.2	43.6	46.5	46.3	48.4	43.6	46.4	44.0	44.6	44.0	40.1	27.7	32.8	34.8	40.2	65.5
18 d	26.1	30.5	33.0	28.7																						

TERRESTRIAL MAGNETIC FORCE: VERTICAL COMPONENT  
 Mean values for periods of sixty minutes ending at exact hours, G.M.T.

24 ESKDALEUIR (Z)		45,000γ (0.45 C.G.S. unit) +																				JANUARY 1958					
Hour G.M.T.		0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 7000+
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	γ
1 d	316	299	212	267	251	266	271	279	297	314	318	317	314	324	336	333	325	330	360	400	423	387	387	362	320	688	
2	351	351	330	309	304	295	303	308	312	312	313	321	321	328	335	338	337	332	328	327	329	329	323	316	323	752	
3 q	310	312	313	312	309	309	313	315	315	316	316	313	305	313	320	320	319	317	317	321	322	322	322	318	315	569	
4 q	313	311	310	310	310	310	311	312	313	308	307	310	309	308	314	314	310	309	309	310	310	310	310	311	310	449	
5 q	310	314	310	309	308	305	305	308	307	304	305	308	303	304	306	310	309	309	308	308	308	309	309	309	308	308	385
6	309	309	306	304	298	298	298	299	297	297	298	299	299	306	309	311	311	310	310	309	308	309	309	306	305	309	
7 q	305	304	304	302	299	300	302	302	301	298	298	297	298	307	310	308	309	310	310	310	310	310	310	308	306	305	308
8 q	302	300	299	297	298	298	298	298	298	299	299	298	297	302	310	312	312	314	316	314	310	308	307	306	304	292	
9	307	305	302	299	299	299	299	299	298	295	295	298	295	304	314	313	314	327	334	331	324	331	339	337	311	458	
10	332	309	302	302	302	303	305	306	306	307	304	305	299	309	311	305	309	314	314	312	311	310	308	309	308	308	394
11	313	310	308	305	305	306	306	306	304	304	309	309	302	304	313	309	309	309	313	338	347	329	322	319	312	499	
12	316	314	315	311	308	302	304	306	306	307	308	301	299	307	310	310	314	316	315	314	315	314	317	320	310	449	
13	313	309	309	309	306	299	299	301	302	309	310	304	297	302	311	312	308	313	312	312	317	317	317	316	309	404	
14	313	312	309	310	309	309	310	310	312	309	310	309	308	310	314	314	314	314	321	320	319	334	319	315	313	524	
15	312	312	311	308	306	304	294	295	305	309	312	311	306	319	322	325	322	322	322	322	323	327	324	326	321	314	538
16	317	316	314	312	311	310	310	313	316	314	309	308	305	309	312	311	306	306	309	319	332	330	327	322	314	538	
17 d	317	315	314	310	283	284	294	302	309	313	312	310	310	305	323	331	322	322	328	326	328	331	322	321	314	532	
18 d	310	304	305	284	285	280	292	301	298	296	300	305	303	315	328	328	323	330	338	344	344	335	329	326	313	503	
19	320	317	314	313	310	309	309	311	311	314	317	320	317	318	332	329	325	326	335	334	324	320	320	314	319	659	
20	313	312	311	310	310	309	309	310	311	314	304	306	305	309	313	316	309	308	316	315	317	322	322	324	331	313	501
21 d	299	252	249	227	229	254	289	303	305	305	309	314	316	317	322	322	316	314	318	320	322	324	320	318	299	164	
22	317	318	317	315	312	309	310	311	310	310	312	314	317	337	337	331	326	326	324	325	321	318	317	320	319	654	
23 d	316	309	312	311	287	280	280	290	299	308	312	311	312	316	322	329	332	330	338	341	337	330	322	322	314	546	
24	317	316	317	316	315	315	314	316	314	308	306	308	313	312	315	317	321	316	315	314	312	312	311	311	314	531	
25	312	313	310	302	303	302	304	306	305	306	306	304	304	312	322	326	347	362	352	337	329	321	317	312	317	614	
26	312	313	311	294	271	252	264	291	304	314	314	315	314	316	320	322	326	333	333	331	325	323	323	314	310	435	
27	314	316	317	312	309	308	309	313	314	316	318	317	311	311	312	315	314	314	315	316	316	316	320	309	314	532	
28	307	309	309	311	310	311	309	309	312	316	315	314	310	305	309	310	310	310	311	313	312	310	309	309	310	450	
29	308	305	303	286	279	274	274	281	287	287	294	302	304	305	309	312	316	317	321	326	316	304	305	306	301	221	
30	305	304	302	304	302	302	299	299	302	305	308	306	304	308	310	310	307	308	310	312	312	312	310	308	306	349	
31	298	294	297	298	298	298	298	300	300	299	300	300	298	299	304	305	308	308	308	309	314	314	311	304	303	262	
Mean	313	309	305	302	298	297	299	303	306	307	308	308	306	311	317	318	317	319	321	324	324	321	320	317	311		
Sum 9000+	704	584	442	359	226	200	282	400	473	507	538	554	495	641	825	848	830	876	960	1031	1041	965	910	818		Grand Total 231,509	

DAILY EXTREMES OF TERRESTRIAL MAGNETIC ELEMENTS, MAGNETIC CHARACTER FIGURES (K AND C) AND TEMPERATURE IN MAGNET HOUSE

25 ESKDALEUIR		TERRESTRIAL MAGNETIC ELEMENTS										JANUARY 1958			
		Horizontal force			Declination			Vertical force				3-hr. range indices K	Sum of K indices	Magnetic character of day (0-2)	Temperature in magnet house 200 + °A.
		Maximum 16,000γ +	Minimum 16,000γ +	Range	Maximum 10° +	Minimum 10° +	Range	Maximum 45,000γ +	Minimum 45,000γ +	Range					
1 d	h. m. γ	19 45 751	531 01 35	220	19 50 64.9	21.5 03 10	43.4	20 21 449	178 02 42	271	5, 5, 4, 3, 3, 3, 5, 3	31	1	85.3	
2	00 15 722	631 01 18	91	14 04 49.3	24.2 01 35	25.1	00 45 362	293 05 30	69	4, 3, 3, 3, 3, 2, 2, 1	21	1	85.2		
3 q	00 28 718	679 12 25	39	13 20 45.3	36.3 00 37	9.0	20 20 324	304 12 38	20	2, 1, 0, 1, 1, 1, 0, 0	6	0	85.2		
4 q	22 41 737	690 12 45	47	13 48 44.1	37.2 09 00	6.9	15 15 315	303 13 00	12	1, 0, 0, 0, 1, 1, 1, 2	6	0	85.0		
5 q	19 24 731	693 01 27	38	14 08 46.5	34.2 01 00	12.3	01 25 316	302 12 32	14	3, 1, 1, 1, 2, 1, 1, 0	10	0	84.8		
6	04 15 748	695 12 28	53	13 15 49.3	37.6 23 10	11.7	16 42 313	295 10 00	18	1, 2, 1, 2, 2, 2, 1, 1	12	0	84.9		
7 q	07 38 738	696 14 06	42	12 57 47.8	35.8 00 20	12.0	17 40 312	294 11 30	18	1, 1, 1, 1, 2, 1, 1, 0	9	0	84.6		
8 q	05 58 744	697 13 42	47	14 18 48.6	37.1 00 19	11.5	18 30 316	295 12 42	21	1, 1, 1, 1, 2, 2, 1, 0	9	0	84.5		
9	19 23 748	687 14 08	61	17 15 54.1	33.0 23 54	21.1	19 02 347	293 09 48	54	1, 1, 1, 2, 2, 2, 4, 3	16	1	84.5		
10	01 48 739	674 11 28	65	13 21 48.4	24.0 01 59	24.4	00 00 336	298 12 40	38	3, 1, 1, 2, 2, 1, 1, 1	12	0	84.5		
11	18 22 743	675 19 35	68	19 24 52.2	33.5 02 06	18.7	20 02 356	299 12 38	57	3, 2, 1, 2, 2, 2, 4, 2	18	1	84.5		
12	20 35 741	695 23 17	46	12 45 50.2	30.7 04 23	19.5	23 21 323	297 12 14	26	3, 3, 2, 2, 2, 2, 2, 2	18	1	84.5		
13	20 32 759	677 21 44	82	13 14 46.7	27.8 20 54	18.9	20 16 320	297 12 25	23	3, 3, 2, 1, 2, 2, 4, 3	20	1	-		
14	20 08 741	678 21 35	63	14 06 47.7	20.7 21 38	27.0	21 36 341	306 12 34	35	1, 1, 1, 2, 2, 2, 3, 4	16	1	84.5		
15	21 00 738	678 12 16	60	12 38 52.9	34.1 08 16	18.8	20 20 330	292 07 05	38	1, 2, 3, 2, 3, 2, 3, 3	19	1	84.5		
16	18 59 747	680 10 57	67	15 03 49.2	30.3 23 19	18.9	20 56 334	302 12 32	32	1, 1, 2, 2, 2, 3, 3, 3	17	0	84.8		
17 d	04 30 759	657 10 58	102	14 05 52.0	22.1 21 16	29.9	21 15 338	280 04 40	58	2, 3, 3, 2, 3, 3, 3, 4	23	1	84.8		
18 d	03 25 753	635 13 24	118	14 17 55.2	23.3 00 18	31.9	20 14 348	279 05 16	69	4, 3, 3, 3, 3, 3, 3, 3	25	1	84.6		
19	17 55 730	659 12 27	71	17 58 50.2	32.6 00 37	17.6	18 32 337	308 06 50	29	2, 2, 1, 1, 3, 2, 3, 2	16	0	84.6		
20	21 50 782	666 11 23	116	14 35 52.0	22.0 23 56	30.0	23 05 333	301 10 54	32	1, 0, 1, 2, 3, 3, 3, 5	18	1	84.3		
21 d	01 12 771	592 03 41	179	19 45 48.8	14.7 03 18	34.1	14 43 326	212 04 07	114	5, 5, 2, 3, 2, 2, 2, 2	23	1	84.3		
22	18 22 738	658 13 55	80	12 44 53.9	36.0 07 23	17.9	13 35 339	306 11 15	33	2, 2, 2, 3, 4, 2, 2, 9	19	1	84.1		
23 d	04 54 753	646 12 52	107	14 16 50.7	32.8 01 32	17.9	18 43 346	278 05 58	68	3, 3, 2, 2, 3, 3, 3, 3	22	1	84.4		
24	18 59 733	665 11 55	68	13 58 47.5	37.1 09 05										

TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

Table with columns for Hour G.M.T. (0-1 to 23-24), Mean, and Sum 13,000+. Rows 1-28 for station 22 ESKDALEMUIR (H) at 16,000γ (0.16 C.G.S. unit) +. Includes a Grand Total of 474,462.

MAGNETIC DECLINATION (WEST)  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

Table with columns for Hour G.M.T. (0-1 to 23-24), Mean, and Sum 800.0+. Rows 1-28 for station 23 ESKDALEMUIR (D) at 10° +. Includes a Grand Total of 26954.3.

TERRESTRIAL MAGNETIC FORCE: VERTICAL COMPONENT  
 Mean values for periods of sixty minutes ending at exact hours, G.M.T.

24 ESKDALEMUIR (Z)		45,000γ (0.45 C.G.S. unit) +												FEBRUARY 1958													
	Hour G.M.T.												12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 7000+	
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12															
1	297	302	303	302	302	302	302	304	306	304	300	296	299	303	306	308	311	314	313	311	310	313	313	308	305	329	
2	299	291	292	295	298	298	294	294	296	301	308	307	306	309	313	310	310	310	309	308	308	306	306	305	303	273	
3 q	304	303	300	300	299	299	300	300	300	300	300	301	304	303	299	300	302	300	300	300	300	302	301	300	299	301	216
4	288	290	294	295	295	295	294	294	291	287	283	287	286	285	296	309	308	305	312	357	349	347	345	345	306	337	
5	334	324	317	306	289	295	294	295	299	296	293	296	298	304	302	310	322	322	326	333	329	321	330	312	310	447	
6 d	313	317	314	315	305	289	294	294	292	296	300	306	308	311	332	341	344	338	336	326	318	322	315	287	313	513	
7	306	310	300	296	294	294	302	303	301	304	303	303	308	310	314	327	345	335	327	322	300	296	300	303	308	403	
8	302	287	298	294	282	284	285	290	292	299	303	303	302	309	331	346	350	347	328	323	331	333	323	320	311	462	
9	321	314	315	310	307	310	311	310	305	310	310	310	307	305	311	323	337	347	345	318	314	326	329	325	317	620	
10	298	292	291	305	311	308	306	307	308	314	317	317	314	317	326	337	357	362	366	368	344	349	354	330	325	798	
11 d	332	281	-189	75	194	177	205	261	243	227	341	386	425	422	430	417	401	383	397	460	487	424	410	379	315	568	
12 d	355	360	352	333	345	346	342	344	344	337	338	343	341	337	344	350	347	356	378	356	344	338	337	327	346	1294	
13	315	312	320	322	323	327	328	327	323	322	321	321	330	336	329	346	357	347	346	341	332	330	331	327	330	913	
14	321	314	303	288	283	274	281	296	303	306	306	314	321	323	322	325	363	366	343	332	329	329	321	318	316	581	
15 q	319	321	320	319	318	317	317	315	315	313	320	325	328	326	322	321	320	315	312	311	312	315	315	306	318	622	
16	302	300	305	305	305	304	304	304	306	315	315	311	315	317	320	322	320	323	324	322	322	323	322	321	314	527	
17 d	317	314	310	310	309	305	303	302	303	307	308	306	316	329	340	343	341	344	346	340	339	337	329	329	322	727	
18 d	323	311	302	294	286	299	303	300	298	302	303	303	313	329	334	342	344	343	347	332	325	321	307	302	315	563	
19	275	286	304	306	310	303	301	309	315	317	311	311	315	325	325	326	332	327	334	340	337	327	321	315	315	572	
20	316	318	318	318	311	307	307	309	310	305	302	298	298	308	326	324	325	332	340	360	365	317	321	323	319	658	
21	323	323	319	305	293	272	276	278	295	303	303	302	308	314	329	333	338	346	380	369	358	334	307	317	318	625	
22	318	293	277	300	311	313	309	310	311	311	314	315	317	324	323	326	324	327	327	332	340	326	318	296	315	562	
23	298	299	297	290	302	310	314	311	313	320	323	324	319	317	322	332	340	341	333	330	319	313	317	317	317	601	
24 q	315	315	315	314	312	314	314	313	313	312	314	313	315	318	311	311	312	317	320	316	315	317	315	315	314	546	
25 q	314	314	315	315	314	313	310	306	310	311	309	306	306	309	313	314	315	314	312	312	313	312	311	310	312	478	
26 q	309	309	308	306	305	306	307	306	305	307	309	310	310	311	312	312	312	310	311	312	311	313	314	312	309	427	
27	305	304	308	309	308	307	309	309	309	308	307	306	306	310	311	314	315	317	315	322	333	320	315	314	312	481	
28	315	313	310	304	307	310	311	313	312	313	307	309	311	310	318	328	332	323	325	322	317	315	312	312	315	549	
Mean	312	308	290	297	301	299	301	304	304	305	310	312	315	319	324	329	333	333	334	335	332	326	323	317	315		
Sum 8000+	734	617	118	331	418	378	423	504	518	547	668	729	826	921	1061	1197	1324	1311	1352	1375	1303	1125	1038	874		Grand Total 211,692	

DAILY EXTREMES OF TERRESTRIAL MAGNETIC ELEMENTS, MAGNETIC CHARACTER FIGURES (K AND C) AND TEMPERATURE IN MAGNET HOUSE

25 ESKDALEMUIR		TERRESTRIAL MAGNETIC ELEMENTS										FEBRUARY 1958							
	Horizontal force					Declination					Vertical force			3-hr. range indices K	Sum of K indices	Magnetic character of day (0-2)	Temperature in magnet house 200 +		
	Maximum 16,000γ +		Minimum 16,000γ +		Range	Maximum 10° +		Minimum 10° +		Range	Maximum 45,000γ +		Minimum 45,000γ +					Range	
	h. m.	γ	γ	h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ					h. m.	γ
1	00 00	742	699	12 10	43	12 38	46.9	33.1	00 10	13.8	21 48	317	294	00 10	23	2, 1, 1, 2, 2, 1, 1, 2	12	0	83.6
2	06 48	758	701	12 54	57	13 10	46.6	34.6	01 17	12.0	14 25	315	289	01 13	26	2, 1, 2, 2, 2, 0, 1, 0	10	0	83.6
3 q	20 16	749	702	12 54	47	12 38	44.8	37.0	23 05	7.8	00 00	305	298	24 00	7	1, 0, 1, 1, 2, 1, 2, 2	10	0	-
4	18 11	759	676	20 17	83	13 13	51.0	23.0	19 39	28.0	19 40	375	281	13 08	94	2, 0, 0, 2, 3, 3, 5, 4	19	1	83.6
5	20 38	760	652	21 34	108	15 00	53.7	22.5	21 09	31.2	20 03	344	287	04 34	57	3, 3, 3, 3, 4, 3, 4, 4	27	1	83.6
6 d	23 17	766	659	11 34	107	13 29	52.8	29.1	22 28	23.7	15 50	352	276	23 28	76	3, 3, 3, 3, 3, 4, 2, 4	25	1	83.6
7	20 04	774	668	16 13	106	14 47	48.2	26.9	20 53	21.3	16 30	349	290	05 06	59	3, 3, 3, 3, 2, 3, 4, 3	24	1	83.6
8	01 55	745	676	09 19	69	13 42	51.1	29.1	21 00	22.0	17 06	353	281	04 11	72	3, 3, 3, 2, 3, 3, 4, 3	24	1	83.0
9	19 30	768	668	20 38	100	14 07	48.6	32.6	20 13	16.0	18 22	356	304	04 00	52	3, 2, 2, 2, 2, 3, 4, 3	21	1	83.0
10	17 12	835	623	19 40	212	19 34	56.4	32.3	23 14	24.1	17 04	389	282	02 03	107	4, 3, 1, 2, 2, 5, 5, 4	16	1	83.6
11 d	02 06	1382	-1380	02 01	2762	02 32	178.0	-7.6	03 48	185.6	20 20	502	-468	02 05	970	9, 7, 8, 7, 8, 4, 5, 5	53	2	83.6
12 d	18 21	777	575	07 25	202	12 21	49.3	15.1	18 14	34.2	18 12	403	321	23 54	82	4, 5, 5, 3, 3, 4, 5, 3	32	1	83.6
13	19 56	729	649	13 03	80	14 42	51.0	30.2	19 51	20.8	16 20	359	310	01 28	49	3, 1, 2, 3, 3, 2, 3, 2	19	1	83.5
14	06 18	745	663	11 37	82	14 09	50.4	24.2	02 53	26.2	16 41	376	271	05 25	105	4, 4, 3, 2, 3, 4, 2, 3	25	1	-
15 q	23 21	787	687	11 17	100	13 34	45.7	37.1	23 48	8.6	13 00	329	298	23 35	31	1, 0, 1, 1, 2, 3, 2, 4	14	0	83.6
16	22 33	756	688	16 20	68	15 52	50.2	37.0	23 10	13.2	18 43	326	295	01 00	31	3, 1, 1, 3, 2, 3, 3, 3	19	1	-
17 d	13 29	769	669	14 22	100	13 25	57.7	30.7	20 38	27.0	19 56	349	299	07 31	50	3, 3, 3, 3, 4, 3, 4, 3	26	1	83.6
18 d	19 10	816	650	10 44	166	12 08	52.7	26.8	20 03	25.9	18 37	360	282	04 31	78	3, 3, 3, 3, 3, 3, 5, 3	26	1	83.6
19	21 12	744	675	13 06	69	13 01	47.1	29.9	24 00	17.2	20 44	344	263	00 48	81	3, 3, 3, 3, 3, 3, 3, 3	24	1	83.6
20	21 59	752	628	21 34	124	14 08	50.0	23.1	20 46	26.9	20 22	378	282	22 00	96	3, 3, 2, 3, 3, 3, 4, 5	26	1	83.6
21	21 58	776	644	22 15	132	13 33	52.2	17.0	21 51	35.2	18 54	391	268	05 35	123	3, 2, 3, 3, 3, 3, 4, 5	26	1	83.6
22	23 09	769	661	13 12	108	12 50	47.9	24.5	23 52	23.4	20 32	351	271	02 07	80	3, 3, 3, 3, 3, 3, 4, 4	26	1	83.6
23	20 26	766	672																

TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

22 ESKDALEMUIR (H)		16,000γ (0-16 C.G.S. unit) +																				MARCH 1958				
	Hour G.M.T.																						Mean	Sum 16,000+		
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22			22-23	23-24
1 q	741	716	721	720	722	721	722	720	711	698	698	698	696	701	704	713	716	723	724	726	724	719	718	728	716	1180
2 q	725	725	726	728	732	733	742	728	723	720	713	704	703	702	704	710	714	719	726	733	737	737	737	735	723	1356
3	730	733	733	733	734	735	736	743	736	724	718	707	693	714	718	733	737	744	709	728	720	708	692	716	724	1374
4	673	678	687	717	712	706	703	721	724	718	703	701	709	716	714	710	716	715	714	707	737	727	716	711	710	1035
5 d	707	702	715	716	726	717	732	681	695	694	686	686	683	693	698	705	700	709	713	726	715	716	737	720	707	972
6	703	675	687	703	696	704	698	699	696	693	695	673	678	687	714	707	712	711	713	735	710	726	704	708	701	827
7	719	720	720	708	742	718	714	694	678	673	671	673	672	679	700	706	735	714	716	722	712	700	719	720	705	925
8	739	728	708	716	720	717	701	701	673	673	661	653	670	687	698	702	713	716	720	727	720	720	715	713	704	891
9	714	710	709	706	707	715	710	706	701	676	663	663	683	695	712	704	708	715	722	735	742	727	723	724	707	970
10	730	747	711	711	720	721	718	712	703	684	669	668	679	691	709	713	724	738	726	724	723	707	718	717	711	1063
11	699	710	715	719	718	719	716	712	706	698	696	705	701	693	699	729	733	735	743	721	699	701	694	702	711	1063
12 d	676	643	617	658	694	690	664	637	654	662	647	639	634	631	659	684	694	689	703	705	694	697	698	690	669	59
13 d	696	707	709	715	696	713	711	675	662	639	636	648	658	696	713	733	712	724	716	708	682	695	696	700	693	640
14	706	699	700	701	701	701	694	687	681	673	665	660	678	687	712	709	707	723	732	733	743	741	733	735	704	901
15	735	730	734	736	730	736	745	725	697	689	687	677	686	701	712	710	712	722	710	712	713	713	712	716	714	1140
16 q	732	707	698	694	716	717	707	701	690	680	658	655	665	676	693	697	715	727	728	720	726	728	711	710	702	851
17	711	723	722	719	722	716	702	717	681	664	679	674	673	682	687	698	712	736	724	727	707	714	716	716	705	922
18	718	713	710	715	712	718	706	714	739	693	681	673	692	673	698	750	729	738	745	731	698	706	697	713	711	1062
19 d	714	706	688	686	707	709	697	711	707	690	680	662	643	660	714	748	749	686	690	703	699	692	664	676	695	681
20 d	724	698	685	698	712	714	707	702	677	677	662	663	686	700	709	688	716	737	724	720	708	683	671	701	698	762
21	724	710	705	719	714	709	716	711	678	673	660	670	684	701	724	749	766	765	719	712	711	718	715	676	710	1029
22	695	647	676	675	698	701	697	692	679	658	645	641	647	664	689	696	708	711	717	719	726	725	709	712	689	527
23	720	708	700	718	738	721	714	711	693	679	649	674	675	684	697	705	737	728	719	742	727	724	718	721	708	1002
24	711	714	718	717	731	718	734	718	698	682	671	684	680	706	722	730	765	797	739	722	718	701	698	696	715	1170
25	688	685	698	715	717	722	720	697	698	694	688	669	684	686	706	735	830	769	749	751	759	753	748	734	721	1295
26	732	715	729	729	731	737	739	739	733	718	708	697	683	710	754	746	767	699	730	733	723	725	718	719	726	1414
27	710	714	722	718	716	725	727	720	694	686	671	662	663	672	680	689	715	718	738	737	739	728	732	718	708	994
28 q	722	721	717	720	729	731	733	730	705	685	670	668	673	683	696	707	741	736	737	734	735	740	729	724	715	1166
29 q	726	723	724	725	731	735	740	735	720	694	679	674	676	686	705	719	742	739	725	743	741	745	741	751	722	1319
30	745	740	741	743	740	743	743	736	700	684	670	680	682	705	712	701	765	752	717	709	706	709	701	705	718	1229
31	710	701	700	707	705	718	718	709	699	680	668	662	667	689	705	730	718	739	739	747	735	727	726	718	709	1017
Mean	715	708	707	712	718	719	716	709	698	685	676	673	677	689	705	715	729	728	723	725	720	718	713	714	708	
Sum 20,000+	2175	1948	1925	2085	2269	2280	2206	1984	1631	1251	947	863	996	1350	1857	2156	2608	2574	2427	2492	2329	2252	2106	2125		Grand Total 526,836

MAGNETIC DECLINATION (WEST)  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

23 ESKDALEMUIR (D)		10° +																				MARCH 1958				
	Hour G.M.T.																						Mean	Sum 800-0+		
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22			22-23	23-24
1 q	34.9	35.5	37.7	38.2	37.4	37.2	36.7	36.5	36.7	37.8	41.7	44.7	47.0	47.2	45.4	43.7	42.7	42.6	41.7	41.0	40.6	39.1	38.9	36.5	40.1	161.4
2 q	37.1	38.7	39.2	38.9	38.3	38.4	41.0	38.6	38.7	41.4	44.3	44.9	45.1	44.2	43.5	41.9	40.7	40.7	40.9	40.9	40.7	40.8	38.1	40.7	40.7	177.7
3	38.3	38.6	38.8	38.6	39.1	39.0	38.2	38.9	37.4	38.1	42.2	46.5	45.1	45.3	43.7	42.1	42.3	45.9	38.7	41.9	36.3	31.9	34.8	33.3	39.8	155.0
4	28.6	31.1	34.0	29.5	27.3	30.3	36.7	37.5	38.6	38.3	40.7	45.1	45.2	46.4	44.9	43.8	45.0	40.3	37.1	39.2	34.1	36.3	37.0	36.2	37.6	103.2
5 d	35.8	35.5	34.8	36.5	36.3	34.5	39.8	39.1	37.6	36.9	38.1	42.6	42.5	45.0	45.2	45.1	42.8	42.6	42.1	39.8	38.4	33.5	32.1	32.4	38.7	129.0
6	35.3	38.3	42.5	28.9	33.3	32.4	36.7	36.3	36.3	36.9	41.0	43.4	44.8	47.5	47.6	45.0	40.5	41.7	39.7	33.8	38.3	26.5	35.2	38.0	38.3	119.9
7	39.6	42.3	37.5	38.2	38.6	35.1	34.0	33.6	34.6	35.3	38.3	46.4	50.1	49.9	51.8	48.1	44.6	42.4	43.5	41.8	38.0	37.8	38.3	38.8	40.8	178.6
8	36.6	34.1	27.6	32.6	33.9	35.2	35.6	35.2	34.9	37.1	40.1	42.6	43.0	48.1	45.8	44.5	42.9	41.7	41.6	41.1	37.6	36.8	37.8	35.5	38.4	122.3
9	32.6	31.7	30.0	36.8	36.9	38.7	42.4	38.3	37.2	38.5	42.1	46.4	45.5	48.0	51.6	47.5	43.3	42.1	40.9	37.2	36.4	38.7	40.3	40.2	40.1	163.3
10	38.5	38.5	33.7	33.4	39.0	36.4	36.6	35.7	35.0	36.5	39.7	45.6	49.0	48.6	49.6	47.8	46.1	43.3	41.2	41.2	40.1	36.7	36.9	35.4	40.2	164.5
11	27.7	30.7	37.4	38.4	37.7	38.3	37.6	36.8	37.6	39.3	40.4	47.2	48.7	50.6	48.9	51.0	47.3	45.1	45.4	42.1	40.1	37.3	28.2	29.8	40.1	163.6
12 d	21.4	15.7	17.0	20.7	19.9	24.6	30.2	38.0	42.6	38.2	41.4	48.9	50.4	50.4	49.1	46.7	44.2	38.7	35.0	38.7	37.7	36.7	33.9	36.0	35.7	56.1
13 d	39.9	33.4	34.2	39.9	38.4	45.4	49.8	41.5	43.6	37.3	44.0	45.3	46.0	47.6	46.5	46.4	46.9	46.2	40.3	43.9	41.9	39.7	40.9	39.3	42.4	218.3
14	38.3	36.9	36.2	38.4	37.3	37.0	36.5	36.5	36.2	37.3	39.5	41.9	48.1	45.3	49.9	47.6	44.4	46.7	46.1	45.4	44.8	43.3	41.4	39.8	41.5	194.8
15	38.0	37.7	37.7	37.1	39.9	41.6	41.0	36.9	37.4	42.1	41.1	45.9	50.6	51.6	51.0	50.2	46.3	45.4	41.8	41.5	40.0	39.3	39.3	39.2	42.2	212.6
16 q	40.8	38.2	29.0	32.7	35.3	33.9	35.3	33.7	34.3	38.1	40.3	43.6	46.1	47.5	47.1	44.5	42.7	42.4	42.4	42.3	42.0	37.5	34.6	36.7	39.2	141.0
17	37.2	40.0	39.6	37.6	37.2	34.6	39.3	37.2	33.7	39.4	39.5</															



TERRESTRIAL MAGNETIC FORCE: VERTICAL COMPONENT  
 Mean values for periods of sixty minutes ending at exact hours, G.M.T.

24 ESKDALEUIR (Z)

45,000γ (0.45 C.G.S. unit) +

MARCH 1958

	Hour G.M.T.																								Mean	Sum 7000+
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24		
1 q	300	302	306	309	311	312	315	316	315	314	307	302	300	303	309	310	311	311	315	315	316	320	321	313	311	453
2 q	310	310	311	311	310	310	300	295	294	294	295	299	300	306	311	313	312	310	309	310	310	310	309	309	306	348
3	309	306	305	304	305	305	305	304	306	305	304	305	311	310	315	317	320	319	360	352	362	315	321	294	315	559
4	296	288	283	291	292	293	290	291	295	300	306	310	318	329	332	325	329	345	349	345	324	305	305	319	311	460
5 d	325	325	310	310	294	294	289	276	271	283	302	306	312	319	326	327	329	334	331	332	334	332	296	292	310	449
6	292	283	225	253	280	296	299	302	311	315	311	313	319	324	346	357	367	346	341	337	337	329	307	310	313	500
7	308	299	297	286	268	276	290	299	304	308	308	302	310	318	320	327	344	347	337	338	344	337	326	314	313	507
8	298	283	273	262	269	279	292	303	306	307	307	305	306	313	325	326	326	322	318	315	321	323	319	320	305	318
9	311	302	287	301	309	305	297	302	310	312	311	310	319	318	329	340	336	325	323	323	317	308	308	309	313	512
10	309	318	285	295	290	323	305	313	314	306	303	298	302	310	315	334	334	352	365	344	340	340	336	329	319	660
11	333	317	317	319	319	319	321	320	313	303	300	295	303	311	317	330	365	388	393	369	344	348	335	305	329	884
12 d	261	234	235	118	175	223	248	272	280	298	321	330	340	352	375	383	371	385	388	364	360	350	327	314	304	304
13 d	298	264	274	250	232	241	251	280	286	301	323	346	370	414	447	464	462	452	428	376	371	356	346	345	341	1177
14	332	325	326	330	332	331	332	334	335	336	335	329	324	319	314	346	361	340	331	330	328	327	329	327	331	953
15	321	321	320	317	315	308	299	306	314	315	311	313	318	339	355	361	369	369	362	340	328	322	322	320	328	865
16 q	299	277	268	277	276	287	299	311	317	319	314	315	305	304	306	314	314	319	325	324	320	321	324	317	306	352
17	313	311	308	312	312	310	305	298	297	298	294	292	299	312	330	338	350	372	381	370	342	332	324	321	322	721
18	316	316	304	279	296	302	292	292	292	298	299	300	301	312	326	322	390	366	380	377	371	376	361	341	326	819
19 d	328	318	307	285	294	290	292	303	314	315	313	317	327	333	356	408	427	413	412	379	353	343	308	283	334	1018
20 d	264	284	276	263	285	301	306	314	316	316	314	305	298	304	325	335	343	352	342	350	355	332	317	303	313	500
21	256	271	278	267	280	299	305	313	321	323	327	317	307	308	325	340	374	381	392	368	348	345	318	305	319	668
22	258	226	259	264	292	312	319	323	326	328	324	317	310	316	325	325	323	326	330	331	323	322	317	280	307	376
23	281	284	288	289	277	286	294	306	311	312	312	308	311	317	328	340	356	359	362	358	336	329	328	322	316	594
24	321	320	320	319	296	296	297	305	309	305	296	292	300	298	314	337	362	388	392	382	363	312	320	292	322	736
25	262	244	248	284	306	309	308	309	309	309	302	301	302	321	338	349	376	388	354	340	334	334	322	317	315	566
26	317	302	296	310	316	316	320	321	321	317	313	314	310	307	321	353	384	383	363	370	367	343	336	317	330	917
27	273	285	304	315	319	320	322	324	323	313	313	310	308	309	308	313	322	324	325	334	329	330	319	314	315	556
28 q	316	316	309	301	306	310	315	321	323	318	311	303	296	296	300	309	316	342	339	332	324	319	323	322	315	568
29 q	304	290	300	302	306	305	313	319	319	312	304	297	297	299	304	310	317	327	326	320	317	316	316	312	310	432
30	311	311	311	309	309	310	313	316	312	304	302	293	293	315	351	361	388	414	395	366	364	350	333	326	332	957
31	321	314	315	311	309	296	285	297	305	310	311	311	305	302	309	327	333	336	341	340	340	336	333	328	317	615
Mean	301	295	292	289	293	299	301	306	309	309	309	308	310	317	329	340	352	356	355	346	339	331	323	313	318	
Sum 8000+	1343	1146	1045	943	1080	1264	1329	1485	1569	1594	1593	1555	1621	1838	2202	2541	2911	3035	3009	2731	2522	2262	2006	1720		Grand Total 236,344

DAILY EXTREMES OF TERRESTRIAL MAGNETIC ELEMENTS, MAGNETIC CHARACTER FIGURES (K AND C) AND TEMPERATURE IN MAGNET HOUSE

25 ESKDALEUIR

MARCH 1958

	TERRESTRIAL MAGNETIC ELEMENTS										3-hr. range indices K	Sum of K indices	Magnetic character of day (0-2)	Temperature in magnet house 200 +
	Horizontal force			Declination			Vertical force							
	Maximum 16,000γ +	Minimum 16,000γ +	Range	Maximum 10° +	Minimum 10° +	Range	Maximum 45,000γ +	Minimum 45,000γ +	Range					
1 q	h. m. γ	γ h. m.	γ	h. m.	h. m.	γ	h. m.	γ	h. m.	γ	4, 1, 1, 2, 2, 1, 1, 2	14	0	83.6
2 q	00 34 756	692 11 27 64	64	13 48 48.8	28.2 00 50	20.6	21 24 321	295 00 42	26	21	1, 1, 2, 2, 1, 1, 1, 2	11	0	83.6
3	06 41 753	696 13 11 57	57	11 56 46.4	36.3 23 43	10.1	16 02 314	293 09 52	21	21	1, 1, 1, 3, 3, 4, 4, 4	21	1	83.6
4	15 40 775	654 24 00 121	121	11 47 48.6	22.3 21 09	26.3	20 18 387	285 23 56	102	102	4, 3, 3, 2, 3, 3, 4, 3	25	1	83.6
5 d	20 18 755	644 00 07 111	111	11 44 48.5	24.2 00 20	24.3	18 26 351	242 02 38	109	109	3, 3, 5, 3, 3, 3, 3, 4	27	1	83.6
6	06 19 779	654 07 17 125	125	06 48 50.2	24.8 23 13	25.4	19 42 339	264 08 04	75	75	4, 4, 3, 3, 3, 3, 3, 4	27	1	83.6
7	19 23 748	649 01 55 99	99	14 04 50.7	18.8 21 35	31.9	16 14 377	212 02 24	165	165	3, 4, 3, 3, 3, 3, 3, 3	25	1	83.6
8	04 43 767	658 12 33 109	109	14 13 52.9	30.5 07 12	22.4	16 49 356	264 04 54	92	92	4, 3, 3, 2, 3, 2, 4, 3	31	1	83.6
9	00 33 748	642 10 54 106	106	13 28 49.5	24.1 02 20	25.4	16 20 327	257 03 38	70	70	4, 3, 3, 3, 3, 2, 3, 2	24	1	83.6
10	20 42 756	646 11 12 110	110	14 16 53.6	25.6 01 44	28.0	15 50 344	284 02 17	60	60	4, 2, 3, 3, 3, 2, 3, 2	22	1	83.6
11	01 18 764	662 10 27 102	102	14 57 52.9	30.5 24 00	22.4	18 28 368	281 02 02	87	87	4, 3, 2, 2, 3, 3, 3, 3	23	1	83.6
12 d	19 39 816	641 19 49 175	175	19 46 57.6	22.2 22 51	35.4	18 42 406	276 24 00	130	130	4, 1, 0, 2, 3, 3, 5, 4	22	1	83.6
13 d	04 37 734	514 02 59 220	220	13 11 52.2	6.0 02 12	46.2	17 52 401	56 03 08	345	345	6, 5, 4, 3, 3, 4, 3, 3	31	2	83.6
14	19 08 789	607 10 42 182	182	14 34 53.9	30.6 19 04	23.3	15 42 472	225 04 13	247	247	4, 4, 4, 3, 4, 4, 5, 2	30	1	83.6
15	15 52 777	616 12 14 161	161	12 26 57.8	34.5 02 01	23.3	16 12 367	310 14 00	57	57	3, 1, 1, 1, 5, 5, 2, 2	20	1	83.6
16 q	06 43 762	641 10 04 121	121	13 16 52.9	34.0 08 41	18.9	17 54 374	295 06 48	79	79	2, 3, 4, 4, 2, 3, 2, 2	22	1	83.5
17	00 23 758	647 11 20 111	111	12 58 48.9	26.6 02 27	22.3	18 45 326	259 02 04	67	67	4, 3, 2, 3, 2, 3, 2, 3	22	1	83.5
18	19 28 770	638 09 08 132	132	14 27 54.3	20.8 19 50	33.5	19 28 394	288 11 16	106	106	2, 2, 3, 4, 3, 4, 4, 1	23	1	83.6
19 d	16 01 831	639 13 23 192	192	15 37 55.3	30.9 18 56	24.4	16 11 407	274 03 27	133	133	2, 3, 3, 2, 4, 5, 4, 3	26	1	83.6
20 d	15 28 777	609 23 51 168	168	14 23 56.3	15.3 23 55	41.0	16 48 436	278 03 23	158	158	4, 3, 3, 3, 4, 5, 5, 5	32	1	83.6
21	00 08 769	649 10 07 120	120	13 52 53.9	14.0 21 01	39.9	20 32 361	251 00 21	110	110	4, 4, 4, 3, 3, 4, 5, 5	32	1	83.6
22	17 08 812	646 10 33 166	166	15 02 54.3										

TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

22 ESKDALEMUIR (H)		16,000γ (0.16 C.G.S. unit) +																				APRIL 1958				
	Hour G.M.T.												Mean	Sum 16,000+												
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12			12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24
1	728	707	716	710	710	708	699	675	686	677	662	664	672	686	718	731	733	730	750	754	748	725	721	725	710	1035
2 d	726	724	724	722	727	732	726	705	705	675	648	631	657	664	690	703	715	740	754	741	734	724	713	700	707	980
3	709	726	712	728	725	718	700	705	694	682	676	674	678	690	692	712	726	736	742	747	763	730	727	734	714	1126
4 d	722	726	717	728	740	724	723	715	706	684	671	672	703	721	737	740	749	769	769	719	714	721	708	713	720	1291
5	682	669	675	696	719	701	675	672	670	655	640	638	660	674	690	700	699	724	724	726	732	729	722	698	690	570
6	677	715	707	714	714	714	722	710	697	678	664	667	672	679	714	738	721	726	744	735	731	720	728	726	709	1013
7	711	718	716	703	707	716	710	704	686	668	650	652	669	692	697	714	719	733	758	731	729	730	728	716	707	957
8	709	712	713	725	719	725	725	716	700	675	657	650	660	675	698	715	735	726	723	742	748	728	726	724	709	1026
9	725	718	720	714	724	722	725	722	709	689	674	673	683	696	705	714	733	747	757	745	745	722	715	719	717	1207
10 q	718	723	723	722	724	726	728	724	709	686	669	664	674	687	707	721	728	737	737	745	754	753	744	743	719	1246
11 q	747	746	746	754	746	743	740	741	734	712	693	677	680	690	709	721	726	733	742	748	751	753	744	748	730	1524
12 q	748	747	746	746	742	741	742	742	741	730	721	704	703	713	726	737	742	755	756	759	752	755	752	752	740	1752
13 q	746	747	746	741	735	735	737	735	726	722	713	710	708	720	723	730	739	745	747	756	750	751	750	750	736	1662
14	745	741	742	741	745	740	743	746	746	738	711	701	714	750	726	740	750	733	756	749	745	740	738	730	738	1710
15	734	722	733	717	737	731	722	690	682	694	685	678	665	690	697	710	720	741	755	748	756	729	724	728	716	1188
16 d	714	721	720	733	720	724	706	707	716	689	675	669	687	693	701	712	734	766	746	771	748	721	717	746	718	1236
17 d	712	661	685	699	719	710	718	698	685	688	685	673	681	684	706	805	765	773	779	758	719	714	714	718	715	1149
18 d	697	715	699	686	694	693	686	677	662	659	642	641	691	681	694	737	780	762	763	738	726	690	680	708	700	801
19	722	715	714	712	710	709	700	702	684	643	647	659	687	707	742	745	737	748	732	763	739	718	728	731	712	1094
20	722	720	718	713	706	703	714	718	715	706	694	686	685	709	715	718	734	752	751	753	745	762	733	721	721	1293
21	732	726	728	727	726	725	724	724	713	700	692	697	693	711	739	762	757	769	740	738	741	758	757	711	729	1490
22 q	719	723	722	723	724	728	730	728	721	700	692	689	696	701	717	720	733	735	742	740	745	739	734	733	722	1334
23	733	733	733	730	730	730	726	722	715	709	707	711	711	715	726	758	765	733	739	752	752	740	733	734	731	1537
24	729	724	732	724	714	720	716	698	696	699	698	689	692	675	710	716	742	731	751	755	754	746	741	739	720	1291
25	742	739	767	733	728	730	728	721	713	708	696	692	701	701	712	726	747	744	751	756	753	751	751	750	731	1540
26	747	743	743	741	743	743	739	730	717	704	697	691	698	702	723	761	773	745	783	767	753	750	740	743	737	1676
27	739	736	735	733	732	733	731	724	722	714	695	682	681	688	704	722	748	777	781	769	755	743	733	727	729	1504
28	723	709	728	714	716	717	724	722	714	709	707	692	692	694	693	734	720	720	786	756	737	728	728	713	720	1276
29	705	709	726	715	698	712	713	698	684	660	658	655	660	689	690	688	753	745	760	775	767	746	733	724	711	1063
30	733	726	715	731	724	713	715	716	680	689	674	671	694	695	718	743	773	768	769	766	750	748	727	714	723	1352
Mean	723	721	723	723	723	722	720	713	704	691	680	675	685	696	711	729	740	745	753	750	745	735	730	727	719	
Sum 20,000+	1696	1641	1701	1675	1698	1666	1587	1387	1128	742	393	252	547	872	1319	1873	2196	2343	2587	2513	2336	2064	1889	1818		Grand Total 517,923

MAGNETIC DECLINATION (WEST)  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

23 ESKDALEMUIR (D)		10° +																				APRIL 1958				
	Hour G.M.T.												Mean	Sum 800.0+												
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12			12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24
1	34.9	33.8	31.5	30.4	30.9	32.7	31.3	33.1	33.4	34.9	39.0	45.5	50.0	52.0	52.3	47.9	43.6	40.5	41.1	36.1	34.0	38.1	38.3	37.0	38.4	122.3
2 d	37.5	35.1	33.1	31.4	29.7	33.9	29.9	27.5	31.2	32.9	39.1	42.9	46.4	48.5	48.0	47.5	43.2	40.7	41.8	41.1	39.6	37.7	35.4	32.0	37.8	106.1
3	38.5	38.5	38.6	34.0	31.2	30.7	34.9	34.2	33.1	34.8	39.2	43.2	47.5	48.1	47.1	44.3	40.4	39.2	39.3	40.8	39.1	35.7	36.8	37.0	38.6	126.2
4 d	39.7	42.0	41.2	40.3	33.8	34.8	34.2	32.7	30.8	35.1	40.9	46.3	55.0	58.1	57.1	55.2	50.8	49.8	43.9	41.8	35.0	38.4	38.1	29.5	47.9	204.5
5	29.7	29.7	27.3	22.4	28.9	29.7	33.1	36.6	38.5	42.2	42.8	48.8	47.8	49.9	49.5	47.4	44.2	42.1	38.2	36.6	36.8	38.4	38.5	35.4	38.1	114.5
6	35.8	32.4	33.4	35.0	33.8	35.9	35.1	31.1	30.4	32.9	38.5	42.5	47.1	50.1	51.5	49.8	47.7	44.6	42.6	41.2	39.1	42.1	40.5	34.3	39.5	147.4
7	33.6	34.9	33.2	30.2	32.1	32.5	33.7	32.3	34.0	35.9	40.6	44.0	47.8	51.9	50.0	50.3	46.9	43.9	39.6	38.6	39.3	40.4	39.0	33.9	39.1	138.6
8	35.7	36.7	36.8	37.6	35.5	36.6	35.1	31.8	29.5	31.2	35.1	40.4	45.4	49.7	50.1	48.0	45.4	42.2	40.4	40.9	41.1	34.3	38.3	37.8	39.0	135.6
9	34.6	33.9	30.9	32.3	34.5	32.6	32.8	31.8	31.4	33.1	31.6	40.4	43.8	47.2	47.6	45.2	43.8	42.1	39.9	41.4	42.1	39.7	39.2	37.5	37.9	109.4
10 q	36.3	36.3	36.6	36.6	35.7	35.4	33.3	31.5	31.5	33.5	33.9	37.1	44.5	46.7	46.2	44.3	42.1	40.4	40.6	41.1	41.8	41.0	37.0	37.2	38.7	127.9
11 q	38.5	38.8	40.1	38.0	35.8	34.5	33.7	32.7	31.7	34.6	35.7	39.3	43.4	46.0	46.6	45.8	44.1	42.0	41.3	41.8	42.0	41.3	40.3	40.0	39.5	148.0
12 q	39.7	39.3	39.3	38.5	37.6	36.2	35.4	34.8	34.8	36.0	38.2	42.1	45.7	47.4	45.8	44.0	41.8	40.8	40.3	40.7	40.3	41.4	38.6	39.1	39.9	157.8
13 q	39.6	39.7	39.2	37.8	35.9	34.6	32.9	32.8	32.8	34.5	36.7	39.6	42.9	44.9	44.1	42.9	41.1	39.5	39.3	39.8	40.4	40.3	40.0	38.8	38.8	130.1
14	37.6	38.1	38.8	37.9	38.0	37.2	36.3	33.4	32.3	33.9	37.0	41.4	45.9	49.4	48.0	48.5	50.8	45.3	42.5	37.5	38.2	38.4	35.5	33.9	39.8	155.8
15	30.9	28.4	25.3	28.7	35.7	33.1	32.6	31.5	37.3	39.1	38.6	42.6	44.9	48.1	46.4	45.4	42.2	41.4	39.3	37.5	31.1	36.6	36.7	38.2	37.1	91.6
16 d	31.2	30.6	31.4	30.6	32.1	30.2	30.6	34.5	32.5	32.0	39.6	44.8	50.5	50.7	51.3	49.3	46.9	46.4	41.4	34.8	34.9	33.0	31.3	28.3	37.5	98.9
17 d	33.2	23.4	20.0	30.4	30.1	28.4	30.8	29.1	33.7	35.8	37.9	42.7	46.7	50.5	52.5	43.2	43.6	47.6	42.7	31.6	39.0	36.0	35.1	38.0	36.7	82.0
18 d	29.6	34.8	39.5	31.7	30.2	33.4	34.3	34.6	33.7	35.9	40.1	46.5	50.9													



TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

Table with 22 columns for hours (0-1 to 23-24), 2 rows for 'Mean' and 'Sum 16,000+', and 22 rows of data (1-22). Includes station name '22 ESKDALEMUIR (H)' and unit '16,000γ (0.16 C.G.S. unit) +'. Grand Total: 542,292.

MAGNETIC DECLINATION (WEST)  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

Table with 22 columns for hours (0-1 to 23-24), 2 rows for 'Mean' and 'Sum 800.0+', and 22 rows of data (1-22). Includes station name '23 ESKDALEMUIR (D)' and unit '10° +'. Grand Total: 28632.6.

TERRESTRIAL MAGNETIC FORCE: VERTICAL COMPONENT  
 Mean values for periods of sixty minutes ending at exact hours, G.M.T.

24 ESKDALEUIR (Z)		45,000γ (0.45 C.G.S. unit) +																				MAY 1958				
	Hour G.M.T.												12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 7000+
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12														
1	295	267	279	295	296	301	310	313	308	301	296	300	302	312	322	330	345	351	355	344	333	328	301	301	312	484
2	311	301	283	281	280	292	301	302	307	306	305	304	299	302	306	310	315	319	323	331	325	320	313	312	306	348
3	313	314	315	314	310	313	317	316	309	300	292	293	292	292	295	299	302	308	316	316	316	319	317	315	308	393
4	297	302	310	313	311	304	305	305	301	297	293	293	297	296	298	306	309	313	315	316	316	317	321	311	306	346
5	312	308	297	297	310	317	320	315	310	308	302	292	290	291	296	304	311	315	327	335	336	324	314	314	310	446
6	313	308	298	304	315	315	314	311	305	297	289	286	292	302	314	319	316	317	319	319	320	317	315	315	309	420
7 q	315	315	315	314	315	314	312	308	305	293	280	272	273	280	289	298	305	311	313	309	308	309	309	308	303	270
8	306	305	307	309	310	312	312	308	302	296	289	281	274	281	300	312	319	319	320	321	320	313	309	305	305	330
9	305	309	313	314	314	313	312	307	306	299	291	282	281	285	289	295	302	308	313	314	312	311	309	307	304	291
10	301	297	298	304	308	308	304	304	298	294	290	287	289	297	311	323	327	326	344	341	335	327	318	310	310	441
11	313	314	315	316	316	315	311	305	293	287	281	280	282	289	300	313	315	323	336	336	331	322	316	314	309	423
12	313	314	314	315	315	316	314	312	307	296	289	284	287	293	298	301	314	327	331	337	341	329	313	293	311	453
13 d	285	300	310	315	316	316	313	308	298	289	288	287	299	302	312	331	386	401	378	376	357	331	262	258	317	618
14 d	238	227	244	254	259	266	273	284	288	292	291	293	301	322	363	379	370	361	353	352	335	324	321	304	304	294
15	265	264	261	252	263	262	285	296	301	302	301	297	302	318	332	335	347	346	347	344	334	323	314	300	304	291
16	293	268	277	279	299	312	319	321	320	318	312	307	302	301	315	326	343	347	339	326	318	320	317	314	312	493
17	313	307	297	285	284	294	302	308	309	300	296	292	295	308	327	331	335	339	347	342	330	321	309	285	311	456
18	279	270	267	285	295	304	304	303	300	286	288	287	287	297	309	324	338	351	353	345	332	322	313	298	306	337
19	302	311	313	312	300	284	280	287	288	286	288	292	293	302	313	316	321	324	326	330	321	315	317	316	306	337
20 q	311	298	300	305	310	314	316	316	313	309	297	292	289	296	301	308	316	321	324	326	323	316	313	309	309	423
21	304	290	289	295	296	307	312	314	311	304	295	290	288	293	299	306	315	318	320	317	315	312	311	311	305	312
22 q	312	312	314	315	316	318	316	315	311	301	286	273	275	289	295	305	316	320	318	315	315	312	309	308	307	366
23 q	303	302	305	310	311	311	310	307	301	291	285	284	289	296	304	310	315	321	321	319	314	315	311	311	306	346
24 q	311	311	312	312	312	313	312	307	298	294	289	285	286	286	292	303	307	314	319	316	312	309	307	308	305	315
25	309	309	310	312	313	315	311	304	296	291	281	270	281	286	290	298	300	302	306	314	318	313	307	295	301	231
26 d	290	283	281	290	296	305	307	302	292	286	284	289	300	314	351	428	439	428	382	353	338	333	320	313	325	804
27	311	309	302	312	317	317	319	317	310	298	293	296	300	298	306	320	319	328	343	356	347	333	299	286	314	536
28	257	262	270	265	277	293	300	300	298	300	294	291	294	305	312	323	336	338	336	336	331	324	317	302	303	261
29 d	273	228	228	217	252	275	283	267	262	270	285	307	375	427	440	408	411	393	379	373	335	317	313	319	318	637
30	323	327	323	300	297	312	316	315	305	307	301	299	302	313	327	334	340	347	340	338	335	328	312	306	319	648
31 d	312	309	301	267	267	282	294	301	301	300	295	292	309	331	339	328	324	346	401	407	370	198	215	169	302	258
Mean	299	295	295	295	299	304	307	306	302	297	292	290	294	303	314	323	331	335	337	336	328	316	308	301	309	
Sum 8000+	1285	1141	1148	1158	1280	1420	1504	1479	1353	1198	1046	977	1125	1404	1745	2023	2258	2382	2444	2404	2173	1802	1542	1317		Grand Total 229,608

DAILY EXTREMES OF TERRESTRIAL MAGNETIC ELEMENTS, MAGNETIC CHARACTER FIGURES (K AND C) AND TEMPERATURE IN MAGNET HOUSE

25 ESKDALEUIR		TERRESTRIAL MAGNETIC ELEMENTS												MAY 1958					
	Horizontal force						Declination			Vertical force			3-hr. range indices K	Sum of K indices	Magnetic character of day (0-2)	Temperature in magnet house 200 +			
	Maximum 16,000γ +		Minimum 16,000γ +		Range	Maximum 10° +		Minimum 10° +	Range	Maximum 45,000γ +		Minimum 45,000γ +					Range		
	h. m.	γ	γ	h. m.		γ	h. m.			γ	h. m.	γ						γ	h. m.
1	18 32	822	640	10 54	182	22 32	48.1	27.6	07 50	20.5	18 09	357	256	01 17	101	3, 2, 2, 3, 2, 4, 4, 4	24	1	84.4
2	20 12	785	653	12 03	132	14 06	44.2	27.8	06 27	16.4	19 42	332	280	04 15	52	2, 3, 2, 2, 2, 2, 3, 2	18	0	84.4
3	24 00	770	661	11 52	109	13 44	48.3	28.9	08 02	19.4	21 12	321	290	10 51	31	1, 2, 1, 2, 2, 2, 2, 3	15	0	84.4
4	00 03	771	669	11 44	102	15 04	48.1	28.0	06 17	20.1	22 29	322	290	11 05	32	3, 2, 2, 2, 3, 2, 1, 3	18	0	84.4
5	17 59	800	677	10 27	123	14 25	46.1	28.0	07 03	18.1	19 52	346	289	12 41	57	2, 2, 1, 1, 2, 4, 3, 4	19	1	84.4
6	20 42	760	669	11 33	91	14 22	47.4	27.5	07 23	19.9	15 28	320	286	11 15	34	3, 1, 2, 2, 2, 2, 2, 1	15	0	84.4
7 q	20 46	771	687	12 17	84	13 23	46.8	28.2	08 24	18.6	01 31	316	269	11 52	47	1, 1, 2, 2, 1, 1, 2, 3	13	0	84.4
8	19 27	784	701	15 13	83	14 12	49.5	29.6	22 27	19.9	19 51	321	273	12 36	48	1, 1, 1, 2, 3, 3, 3, 3	17	1	84.4
9	21 42	770	694	11 38	76	13 26	47.5	27.6	06 54	19.9	18 53	315	279	12 27	36	2, 1, 3, 3, 3, 2, 2, 2	18	0	84.4
10	19 22	810	673	12 33	137	12 43	47.3	31.8	18 44	15.5	18 44	351	284	11 58	67	3, 3, 2, 4, 3, 4, 4, 3	26	1	84.4
11	18 00	783	679	09 06	104	13 05	46.1	30.4	06 28	15.7	19 32	338	279	10 50	59	1, 1, 3, 3, 3, 3, 3, 1	18	0	84.4
12	17 11	827	696	12 17	131	12 32	47.3	27.2	22 44	20.1	20 48	344	281	11 50	63	1, 1, 2, 1, 2, 4, 4, 3	18	1	-
13 d	17 11	840	665	22 55	175	16 18	56.4	27.2	07 27	29.2	17 26	403	159	22 53	244	3, 2, 3, 2, 4, 4, 4, 4	26	1	84.4
14 d	19 17	818	658	10 31	160	13 22	51.3	22.0	06 48	29.3	15 15	381	209	01 17	172	4, 3, 4, 3, 4, 3, 4, 3	28	1	-
15	17 31	839	652	05 04	187	13 32	49.8	28.0	06 59	21.8	16 38	353	248	03 10	105	3, 4, 3, 3, 3, 4, 5, 3	28	1	84.4
16	16 39	821	660	09 27	161	13 42	48.4	28.1	08 19	20.3	16 44	349	263	01 25	86	3, 2, 2, 2, 3, 4, 2, 2	20	1	84.4
17	18 50	814	672	13 13	142	15 53	46.8	25.9	07 28	20.9	18 30	349	274	24 00	75	2, 3, 2, 3, 3, 3, 4, 3	23	1	84.4
18	16 45	834	661	10 44	173	14 32	49.8	27.8	06 54	22.0	18 04	355	264	02 29	91	3, 2, 2, 2, 3, 4, 3, 3	22	1	84.4
19	19 20	781	665	11 14	116	13 20	51.0	28.2	08 03	22.8	19 08	332	275	06 19	57	2, 3, 3, 2, 3, 2, 3, 2	20	0	-
20 q	17 17	770	663	10 49	107	14 05	50.6	30.0	08 17	20.6	19 43	327	288	12 20	39	2, 1, 1, 1, 2, 2, 2, 3	14	0	84.4
21	17 48	769	661	11 12	108	13 10	50.6	27.4	07 17	23.2	18 06</								

TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

22 ESKDALEMUIR (H)		16,000γ (0.16 C.G.S. unit) +																				JUNE 1958				
	Hour G.M.T.												12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 15,000+
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12														
1 d	338	619	605	675	698	666	669	676	676	665	667	674	671	675	679	693	735	769	780	788	759	730	712	717	681	1336
2	712	709	715	701	717	715	688	673	682	677	683	652	656	680	711	720	722	732	716	718	722	728	728	729	704	1886
3 q	727	728	722	726	725	720	708	693	674	661	661	666	667	691	702	718	743	733	760	751	752	749	743	740	715	2160
4 q	742	746	744	750	752	749	737	723	712	701	690	687	690	700	712	726	741	749	763	760	752	747	746	745	732	2564
5	747	746	746	748	750	750	738	724	717	701	690	681	682	702	726	756	788	757	760	755	753	752	749	749	736	2667
6	748	750	749	749	751	735	735	729	707	700	700	709	715	719	723	725	739	778	796	793	801	767	752	710	741	2780
7 d	695	579	582	614	699	677	669	628	554	562	591	657	692	672	684	748	752	739	733	753	756	745	745	739	678	1265
8	730	729	729	731	731	724	715	703	689	690	699	695	702	707	714	724	748	769	803	794	767	756	755	741	731	2545
9	708	739	738	737	739	728	705	706	705	702	697	699	720	711	745	775	770	743	797	793	780	765	718	683	733	2603
10	673	632	628	673	698	701	694	684	679	666	663	683	698	740	726	736	716	748	760	760	763	750	733	722	705	1926
11	728	719	709	689	721	728	712	698	685	672	671	681	697	708	708	721	753	734	769	763	770	762	737	736	720	2271
12	738	738	745	741	716	725	723	703	693	703	694	697	711	709	715	751	750	776	779	779	784	764	747	743	734	2624
13	740	740	737	730	724	730	724	711	702	694	693	709	722	729	739	738	753	785	766	763	768	756	745	745	735	2643
14	746	746	736	737	732	732	730	731	721	707	711	722	732	730	732	737	740	744	788	811	780	769	772	757	743	2843
15	738	743	738	728	749	743	746	732	711	701	695	702	713	722	724	720	734	749	743	752	757	751	743	743	732	2577
16	738	737	734	734	729	723	706	703	704	702	706	711	731	743	728	738	733	748	764	755	756	749	740	739	731	2551
17 q	740	732	732	731	722	734	733	716	699	699	704	714	717	731	750	748	751	749	753	762	764	760	753	748	735	2642
18 q	749	751	754	754	754	749	735	725	716	712	717	731	744	744	738	759	755	780	794	792	781	765	753	754	750	3006
19	753	753	754	752	757	755	748	736	727	715	701	702	697	719	747	755	794	775	760	782	765	763	757	753	747	2920
20 q	755	762	753	760	758	754	743	732	725	716	712	709	717	714	732	747	758	772	779	775	774	777	778	743	748	2945
21 d	754	752	746	752	714	711	724	722	712	723	733	672	678	725	789	776	778	863	823	807	753	715	695	702	742	2819
22	671	719	679	685	729	720	671	649	670	665	669	678	707	697	700	720	726	739	748	779	769	762	742	732	709	2026
23	712	714	722	717	709	717	711	704	699	690	687	688	690	697	718	718	738	762	769	765	767	753	750	747	723	2344
24	751	753	760	727	711	711	707	686	693	686	685	703	706	711	714	726	752	750	769	778	766	768	755	754	730	2522
25	737	734	732	737	742	729	707	700	682	664	667	702	714	707	722	715	745	794	795	799	765	743	751	737	730	2520
26	725	729	729	735	737	724	720	714	701	684	682	696	703	718	741	737	760	780	758	764	762	761	762	756	732	2578
27	751	736	738	748	748	746	738	722	713	703	691	687	696	714	727	754	749	759	770	780	785	771	749	735	738	2710
28 d	733	739	739	754	744	747	728	719	719	709	692	686	716	727	745	743	773	808	897	858	804	773	672	625	744	2850
29 d	537	556	647	603	569	462	605	590	572	584	600	582	605	655	750	781	769	772	754	729	740	732	735	729	652	658
30	735	731	732	733	730	724	710	692	682	670	666	675	684	696	717	738	746	752	757	750	760	756	751	749	722	2336
Mean	712	719	719	722	725	718	713	701	691	684	684	688	699	710	725	738	750	764	773	774	766	755	742	733	725	
Sum 20,000+	1351	1561	1574	1651	1755	1529	1379	1024	721	524	517	650	973	1293	1758	2143	2511	2908	3203	3208	2975	2639	2268	2002		Grand Total 522,117

MAGNETIC DECLINATION (WEST)  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

23 ESKDALEMUIR (D)		10° +																				JUNE 1958				
	Hour G.M.T.												12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 800.0+
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12														
1 d	47.7	19.1	28.6	32.0	31.6	32.0	31.5	31.9	33.8	35.7	38.3	41.8	46.1	48.0	48.2	46.2	45.4	45.1	40.5	34.8	41.4	40.4	39.3	40.5	38.3	119.9
2	38.6	38.0	33.9	33.1	29.0	30.2	28.5	27.2	28.8	32.4	38.4	41.9	47.4	48.5	50.2	47.9	46.9	42.6	39.1	40.6	40.2	40.2	40.1	40.1	38.5	123.8
3 q	40.3	40.5	39.2	36.2	34.1	31.0	28.7	28.6	30.7	34.6	38.6	43.5	47.3	48.3	47.4	44.9	42.6	38.0	37.6	38.1	39.2	39.3	39.7	39.5	38.7	127.9
4 q	39.4	40.2	39.4	39.7	37.1	34.2	30.9	31.4	32.3	34.4	38.1	42.1	45.2	46.0	45.4	44.4	42.2	40.2	38.7	38.2	38.5	38.5	38.1	38.2	38.9	132.8
5	38.6	38.4	37.8	37.3	36.4	34.4	31.2	29.5	29.5	30.5	37.8	41.6	46.4	49.2	49.4	48.0	46.0	40.5	39.5	39.5	39.8	40.0	40.0	39.9	39.2	141.2
6	39.2	38.6	37.6	37.1	34.0	31.4	31.3	30.6	32.0	33.8	37.7	39.9	42.7	43.4	43.6	43.2	42.8	42.6	41.0	39.5	40.2	41.6	31.6	34.4	37.9	109.8
7 d	33.6	29.4	8.6	22.3	30.4	28.2	32.6	30.7	32.0	37.2	46.1	45.6	46.4	46.0	42.3	38.9	39.8	40.2	39.5	37.0	40.5	40.7	38.3	40.8	36.1	67.1
8	38.9	38.2	36.6	35.0	33.0	32.3	31.7	31.6	33.2	36.7	39.5	41.9	43.6	43.2	43.0	43.0	42.6	42.1	41.1	40.4	37.8	40.5	40.8	37.9	38.5	124.6
9	35.5	30.6	29.9	27.8	26.0	25.9	28.0	31.1	33.8	36.6	40.3	44.0	47.4	48.4	49.2	48.9	48.6	46.0	43.6	41.4	37.7	33.3	36.6	33.4	37.7	104.0
10	29.8	30.9	33.0	28.9	29.0	31.6	30.4	26.9	28.5	32.7	38.3	42.1	46.1	48.7	46.4	46.5	45.0	44.3	41.7	41.0	41.5	37.5	35.1	36.6	37.2	92.5
11	37.4	36.4	31.1	28.4	30.8	33.2	30.0	29.4	29.6	29.9	34.3	40.1	45.6	47.4	47.6	46.5	46.2	41.0	40.2	38.4	39.8	38.6	38.2	38.0	37.4	98.1
12	37.2	37.5	36.7	36.1	39.4	33.9	29.2	27.5	30.6	34.4	36.6	40.5	43.8	45.5	45.6	46.4	43.0	41.2	41.5	39.3	39.2	41.3	41.6	38.4	38.6	126.4
13	38.8	39.0	36.7	34.8	31.7	33.6	31.4	30.2	31.0	34.6	37.1	40.5	44.7	45.1	45.2	44.0	43.2	42.5	38.5	41.7	41.8	40.8	38.9	39.3	38.5	125.1
14	39.3	36.4	34.3	33.6	32.4	30.2	29.2	30.0	32.2	34.7	39.1	44.6	46.6	45.7	43.8	42.8	41.8	40.4	42.0	42.8	37.8	38.6	41.6	35.0	38.1	114.3
15	34.3	35.9	35.6	33.9	33.5	24.9	28.2	25.1	32.2	35.9	42.0	43.7	46.5	47.7	46.7	44.1	42.8	39.8	38.1	38.7	39.7	39.8	39.4	38.6	37.8	107.1
16	39.9	39.2	36.4	35.8	33.4	33.0	33.2	36.5	36.4	36.5	39.6	43.5	45.5	45.9	43.4	43.5	41.5	40.9	39.3	38.4	39.2	39.1	39.0	37.3	39.0	136.4
17 q	37.1	36.5	36.4	34.3	33.8	31.8	31.4	31.7	33.1	35.2	39.6	44.4	46.1	46.2	45.6	43.5	42.2	40.3	39.2	39.7	39.5	38.1	38.9	38.8	38.5	123.4
18 q	37.9																									

TERRESTRIAL MAGNETIC FORCE: VERTICAL COMPONENT  
 Mean values for periods of sixty minutes ending at exact hours, G.M.T.

24 ESKDALEMUIR (Z)		45,000γ (0.45 C.G.S. unit) +																				JUNE 1958				
	Hour G.M.T.											12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 7000+	
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11															11-12
1 d	102	166	219	229	313	319	296	328	343	344	341	335	338	349	344	344	351	384	400	367	356	336	288	314	535	
2	316	326	285	298	298	289	298	305	315	317	310	309	319	339	365	389	407	404	380	350	336	327	325	325	331	932
3 q	325	326	328	330	331	331	324	321	313	305	301	301	303	310	315	323	338	348	347	339	330	325	323	322	323	759
4 q	321	321	322	323	324	328	331	328	321	319	315	315	316	320	326	331	332	340	340	331	326	324	322	321	325	797
5	320	320	323	323	323	322	323	324	321	302	295	286	285	289	300	315	330	347	343	334	325	320	317	316	317	603
6	316	316	317	319	320	326	320	315	310	301	293	285	289	298	305	313	315	317	330	334	336	323	296	287	312	481
7 d	249	48	63	73	243	297	301	301	300	312	328	329	330	336	351	380	380	387	380	374	356	348	335	330	297	131
8	331	328	329	330	330	330	328	328	325	314	311	309	306	315	326	327	330	334	340	347	348	339	327	308	327	840
9	276	293	294	302	307	312	316	308	301	294	285	286	293	309	323	342	353	355	350	341	336	326	290	275	311	467
10	271	250	207	239	278	295	320	336	340	329	321	316	317	329	361	370	359	354	359	354	341	327	313	310	317	596
11	312	302	281	276	292	315	327	330	334	327	318	312	304	313	319	323	334	346	343	342	333	330	323	322	319	658
12	320	320	320	320	312	288	295	310	313	308	305	302	301	305	312	321	342	347	343	339	337	321	305	310	317	596
13	313	312	311	311	311	310	314	319	312	302	296	292	292	296	308	315	319	324	336	331	326	324	323	316	313	513
14	313	311	312	313	315	315	315	316	314	307	285	273	278	288	299	312	315	318	316	316	330	332	316	302	309	411
15	302	307	310	307	292	291	276	281	275	271	273	284	294	307	317	326	328	336	336	329	323	320	319	318	305	322
16	316	301	304	308	311	314	314	309	304	296	296	298	304	320	331	332	334	327	330	331	323	321	320	317	315	561
17 q	315	314	315	319	313	303	305	311	308	301	296	289	287	292	304	312	316	319	317	313	315	315	314	309	309	408
18 q	314	313	313	315	316	316	316	311	309	300	296	293	296	302	308	315	321	324	327	331	330	327	319	316	314	528
19	315	314	313	315	315	315	316	316	308	307	297	293	292	296	304	312	312	324	321	319	326	320	317	313	312	480
20 q	313	311	309	311	315	316	312	302	297	292	288	284	287	289	294	302	302	305	309	312	309	306	302	307	303	274
21 d	302	300	269	248	250	254	267	285	286	282	277	274	293	312	339	362	391	412	372	362	361	326	312	305	310	441
22	232	270	236	222	194	219	263	284	302	308	318	328	337	341	337	335	341	346	344	334	327	319	306	296	297	139
23	286	275	276	277	288	285	300	319	324	318	308	298	295	298	307	319	324	327	333	332	328	323	319	320	307	379
24	307	289	289	289	295	294	293	301	304	307	296	295	310	323	340	344	343	342	333	331	321	304	303	312	484	
25	308	307	303	284	282	294	304	304	304	296	290	279	281	290	302	313	317	330	340	343	331	324	317	316	307	359
26	316	313	306	310	317	315	308	309	311	311	302	290	286	292	302	309	307	312	324	325	323	321	317	316	310	442
27	310	310	313	315	315	313	311	308	307	304	296	285	288	293	304	312	320	326	327	321	319	323	325	321	311	466
28 d	317	318	315	293	293	289	304	311	308	299	298	294	290	298	307	314	323	333	334	354	345	328	224	231	305	320
29 d	205	230	198	89	61	108	164	218	274	327	351	352	366	397	450	521	537	519	487	430	396	370	362	348	323	760
30	337	340	337	336	341	345	346	344	343	342	341	339	339	341	347	347	345	341	344	342	333	335	333	333	340	1171
Mean	296	292	287	284	293	298	304	309	311	308	304	301	304	313	325	336	342	347	346	341	335	327	315	310	314	
Sum 8000+	880	751	617	524	795	948	1107	1282	1326	1241	1130	1031	1113	1376	1752	2080	2259	2395	2369	2241	2047	1821	1462	1306		Grand Total 225,853

DAILY EXTREMES OF TERRESTRIAL MAGNETIC ELEMENTS, MAGNETIC CHARACTER FIGURES (K AND C) AND TEMPERATURE IN MAGNET HOUSE

25 ESKDALEMUIR

JUNE 1958

	TERRESTRIAL MAGNETIC ELEMENTS											3-hr. range indices K	Sum of K indices	Magnetic character of day (0-2)	Temperature in magnet house 200 +		
	Horizontal force			Declination			Vertical force										
	Maximum 16,000γ +	Minimum 16,000γ +	Range	Maximum 10° +	Minimum 10° +	Range	Maximum 45,000γ +	Minimum 45,000γ +	Range								
1 d	h. m. γ	γ h. m. γ	h. m. γ	h. m. γ	h. m. γ	h. m. γ	h. m. γ	h. m. γ	h. m. γ	h. m. γ	8, 6, 4, 3, 3, 4, 4, 3	35	2	84.0			
2	19 28 803	44 00 30	759	00 30 73.9	9.7 01 15	64.2	19 03 412	-29 00 33	441	17 11 411	275 02 28	136	25	1	84.0		
3 q	17 43 763	620 11 44	143	14 56 53.0	24.3 07 11	28.7	17 11 411	275 02 28	136	17 31 349	298 11 05	51	13	0	84.0		
4 q	16 54 765	655 09 44	110	13 11 49.2	27.4 07 00	21.8	17 31 349	298 11 05	51	18 32 342	313 10 13	29	12	0	84.0		
5	18 20 771	680 10 44	91	13 04 46.4	30.3 06 59	16.1	18 32 342	313 10 13	29	17 31 347	282 12 10	65	16	1	84.0		
6	16 27 820	677 12 47	143	14 54 50.1	27.6 09 01	22.5	17 31 347	282 12 10	65	20 24 350	278 24 00	72	18	1	84.0		
7 d	20 24 814	684 09 25	130	21 35 45.8	28.6 22 11	17.2	20 30 337	278 23 10	59	19 03 412	-29 00 33	441	22	1	84.0		
8	19 52 784	480 01 50	304	09 57 49.4	-7.8 02 53	57.2	17 14 389	-16 01 40	405	20 14 350	278 24 00	72	18	1	84.0		
9	19 07 821	682 09 02	139	12 47 43.9	30.9 07 41	13.0	20 14 350	278 24 00	72	16 57 362	266 23 57	96	28	1	84.0		
10	18 44 829	640 23 57	189	15 32 50.7	25.3 04 30	25.4	16 57 362	266 23 57	96	19 03 412	193 02 09	180	29	1	84.0		
11	22 00 802	585 01 47	217	13 52 50.6	23.6 07 27	27.0	15 04 373	193 02 09	180	17 28 347	274 03 32	73	23	1	84.0		
12	20 50 784	658 09 55	126	13 24 49.1	26.3 07 02	22.8	17 28 347	274 03 32	73	17 41 349	284 05 41	65	20	1	83.9		
13	19 14 792	679 10 52	113	15 56 47.6	27.1 07 29	20.5	17 41 349	284 05 41	65	28.8 06 07	17.0	18 31 336	290 12 52	46	18	0	83.9
14	17 39 792	691 09 31	101	14 50 45.8	28.8 06 07	17.0	18 31 336	290 12 52	46	21 10 336	271 11 28	65	19	1	83.9		
15	18 35 859	702 10 11	157	12 28 47.7	28.4 06 27	19.3	21 10 336	271 11 28	65	18 30 338	269 09 28	69	19	1	83.9		
16	06 15 782	674 09 14	108	14 08 48.7	19.8 07 20	28.9	18 30 338	269 09 28	69	15 58 335	295 10 28	40	21	0	83.9		
17 q	18 51 770	687 09 16	83	13 27 47.0	31.2 06 08	15.8	15 58 335	295 10 28	40	17 34 320	287 12 40	33	13	0	83.9		
18 q	20 26 770	695 08 36	75	13 42 46.4	30.7 05 55	15.7	17 34 320	287 12 40	33	20 06 333	291 11 30	42	15	0	84.0		
19	19 20 805	706 09 48	99	13 18 50.3	28.7 06 41	21.6	20 06 333	291 11 30	42	17 42 328	290 11 58	38	18	1	84.0		
20 q	17 14 812	692 11 47	120	14 48 47.8	30.2 07 00	17.6	17 42 328	290 11 58	38	18 27 346	275 11 55	71	25	1	83.9		
21 d	18 27 792	704 13 32	88	14 55 44.9	28.4 06 05	16.5	05 33 318	284 11 30	34	19 03 412	193 02 09	180	29				

TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

22 ESKDALEMUIR (H)		16,000γ (0.16 C.C S. unit) +																				JULY 1958					
	Hour G.M.T.	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 14,000+
	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	γ
1	745	717	700	732	726	717	717	730	710	687	684	685	693	701	704	742	736	745	765	767	765	750	738	734	725	7390	
2 q	728	728	730	729	731	731	726	716	721	686	677	687	699	717	746	751	753	768	779	768	770	765	747	745	733	3598	
3	746	737	732	732	730	730	725	725	723	719	710	696	699	706	707	743	790	787	781	768	767	757	747	745	738	3702	
4	738	734	740	742	744	747	746	715	677	685	678	685	719	739	764	740	795	803	794	778	767	748	727	725	739	3730	
5	729	735	732	732	738	740	736	726	719	716	715	708	719	744	721	737	746	753	758	765	764	779	749	750	737	3691	
6 q	745	747	747	738	736	736	728	718	709	702	702	703	706	720	726	736	758	766	766	761	760	757	755	748	736	3670	
7	748	749	747	745	743	748	747	738	728	711	704	709	733	740	732	757	748	769	817	781	773	772	759	749	748	3947	
8 d	736	723	719	733	737	738	719	669	539	694	682	559	745	798	1009	1592	1456	1009	973	772	715	16	249	494	753	4076	
9 d	458	494	504	508	504	515	529	519	563	566	563	607	649	652	645	675	710	739	696	692	698	709	732	703	610	630	
10	664	638	664	688	660	686	686	683	664	664	663	668	685	710	709	712	715	722	755	747	742	740	737	724	697	2726	
11	711	695	696	705	710	712	703	694	678	657	648	651	686	703	707	707	725	716	732	756	773	756	732	733	708	2986	
12	755	742	744	725	719	719	713	698	669	673	682	691	695	710	712	741	735	772	750	752	752	743	736	730	723	3358	
13	729	726	711	707	724	724	712	712	696	674	663	663	688	711	715	730	767	762	744	740	738	742	761	756	721	3295	
14	750	744	742	739	744	740	725	706	679	683	690	708	707	709	719	735	757	731	754	754	743	739	735	729	728	3462	
15 q	723	718	721	728	733	734	725	715	700	688	689	696	711	722	742	737	740	754	763	756	748	751	743	735	728	3472	
16 q	737	722	724	730	724	729	719	715	703	697	695	702	714	721	731	753	772	765	763	759	752	745	739	732	731	3543	
17	733	731	744	750	747	743	744	718	706	691	684	695	707	725	737	748	741	735	740	745	747	744	739	737	730	3531	
18 d	734	734	737	752	750	731	714	683	713	709	718	717	690	739	719	723	769	765	780	765	754	760	745	731	735	3632	
19	727	726	724	723	725	731	704	655	692	688	685	679	680	686	715	727	751	751	761	790	759	735	715	713	718	3242	
20	717	727	710	707	720	703	722	697	680	672	673	655	666	688	695	752	787	751	735	739	751	748	743	740	716	3178	
21 d	731	732	722	727	730	726	728	717	705	690	676	673	693	702	718	725	791	862	860	840	756	765	751	734	740	3754	
22	745	740	745	748	738	740	734	718	704	683	686	698	730	738	708	712	742	737	751	762	752	744	736	736	730	3527	
23 q	729	730	729	733	733	729	721	717	704	700	697	698	704	710	706	721	732	737	749	745	745	746	742	734	725	3391	
24	740	734	736	720	728	729	726	726	717	702	687	689	714	699	741	766	756	810	769	771	754	754	751	736	736	3655	
25	741	742	742	745	742	738	719	702	697	680	679	666	698	732	742	751	779	796	798	779	741	745	730	730	734	3614	
26	705	719	726	723	725	718	702	681	668	658	665	681	696	710	715	731	742	743	756	766	768	749	743	739	718	3229	
27 d	739	739	743	748	748	753	724	698	686	700	697	683	704	710	768	793	800	804	807	778	753	726	719	718	739	3738	
28	702	696	720	718	727	724	715	694	668	660	664	664	667	678	700	723	739	742	747	749	758	756	746	748	713	3105	
29	742	738	740	737	733	730	719	712	706	697	686	682	698	714	724	741	744	746	766	752	765	748	747	754	730	3521	
30	748	744	748	748	754	752	746	737	727	712	695	692	684	678	713	732	789	787	784	770	764	754	744	746	739	3748	
31	745	748	738	744	746	744	728	715	705	691	680	666	677	690	709	762	826	831	776	763	747	755	761	754	738	3701	
Mean	723	720	721	724	724	724	716	702	689	685	681	679	699	712	729	764	780	773	773	762	753	726	726	729	726	726	
Sum 21,000+	1420	1329	1357	1436	1449	1437	1202	749	356	235	117	56	656	1082	1599	2695	3191	2958	2969	2630	2341	1498	1498	1582		Grand Total 539,842	

MAGNETIC DECLINATION (WEST)  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

23 ESKDALEMUIR (D)		10° +																				JULY 1958					
	Hour G.M.T.	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 700.0+
	1	37.9	42.0	33.2	33.4	33.7	34.6	34.9	33.7	34.1	33.3	34.8	38.5	40.2	41.2	41.3	41.2	39.2	39.0	39.5	39.9	39.1	38.2	39.2	39.3	37.6	201.4
2 q	38.6	38.0	37.4	37.5	36.7	33.1	31.2	30.5	32.3	35.7	39.3	42.8	45.1	45.0	45.0	44.3	43.2	42.4	41.2	40.3	38.4	38.4	38.5	38.6	38.9	233.5	
3	37.3	35.7	33.2	32.3	31.3	30.4	30.5	30.7	35.7	31.5	33.2	38.4	40.2	41.6	41.6	42.2	42.3	40.8	42.1	39.0	38.4	40.1	40.9	40.8	37.1	190.2	
4	39.5	38.0	38.0	38.4	36.9	34.9	31.5	30.7	32.7	38.5	39.3	41.4	44.4	45.5	43.4	42.8	46.3	40.7	39.9	40.5	37.2	38.4	36.6	35.8	38.8	231.3	
5	37.6	38.9	39.1	34.8	34.4	34.3	34.5	34.9	35.7	36.2	36.5	38.4	40.8	42.7	41.3	42.7	42.7	41.6	40.4	39.9	41.6	41.7	35.8	38.4	38.5	224.9	
6 q	39.6	39.7	37.4	32.7	30.7	28.4	27.4	27.8	28.1	30.0	33.2	38.0	42.4	44.5	43.7	42.6	41.4	40.4	40.4	39.6	39.8	39.3	38.9	38.2	36.8	184.2	
7	38.1	38.4	37.4	36.7	35.8	33.1	30.2	30.4	30.8	33.8	36.9	42.9	44.6	46.7	46.2	46.4	45.6	46.3	45.7	43.0	42.7	42.1	35.7	37.8	39.5	247.3	
8 d	37.4	37.7	37.3	35.9	32.5	31.5	28.9	28.2	26.7	26.5	23.7	24.7	48.8	54.8	70.3	90.9	74.9	65.9	73.4	69.0	60.5	81.5	49.0	28.2	47.4	438.2	
9 d	34.0	30.3	17.3	13.6	29.6	31.8	30.4	25.1	32.6	32.8	33.6	34.9	36.6	35.6	39.2	41.4	38.8	35.5	35.1	35.3	36.6	38.1	39.4	32.3	32.9	89.9	
10	32.3	38.9	34.9	32.5	31.7	28.0	27.1	27.1	29.0	30.8	33.4	39.4	45.8	46.2	44.0	43.9	42.0	39.9	38.6	36.4	36.1	38.2	36.9	37.0	36.3	170.1	
11	33.4	30.2	37.1	31.9	30.5	29.6	28.2	27.9	30.8	32.3	35.2	38.3	44.0	47.5	46.5	45.1	43.4	40.5	39.7	40.9	37.2	36.2	36.4	37.2	36.7	180.0	
12	37.6	34.4	33.8	33.0	34.0	32.4	29.6	31.0	36.5	40.4	39.2	47.7	48.7	48.0	46.4	42.6	40.8	41.8	37.7	37.5	39.9	39.6	38.2	38.4	38.7	229.2	
13	37.8	38.1	39.8	39.7	35.1	36.4	33.8	30.8	28.0	30.2	33.0	38.8	43.8	43.8	41.7	39.8	36.9	38.4	37.9	38.6	39.6	40.2	39.4	38.6	37.5	200.2	
14	38.8	34.7	34.5	37.1	30.6	28.7	29.7	30.0	33.4	37.6	41.2	42.9	44.9	44.7	45.1	44.0	41.3	40.0	41.0	40.6	40.8	40.8	39.1	38.5	38.3	220.0	
15 q	37.2	35.7	34.8	34.6	35.6	32.0	30.0	29.9	30.5	32.4	36.1	38.9	41.5	41.2	40.2	40.3	40.5	39.7	39.9	40.3	40.4	39.2	39.1	39.3	37.1	189.3	
16 q	38.6	34.0	34.9	33.6	35.0	31.6	29.4	31.2	34.3	36.1	38.4	41.3	44.8	47.0	47.7	46.9	42.5	41.8	41.0	39.0	39.6	40.2	38.7	33.8	38.4	221.4	
17	38.6																										



TERRESTRIAL MAGNETIC FORCE: VERTICAL COMPONENT  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

24 ESKDALEMUIR (Z)		45,000γ (0.45 C.G.S. unit) +																				JULY 1958					
	Hour G.M.T.												12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 7000+	
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12															
1	333	313	312	314	321	311	309	307	313	320	323	324	328	335	344	351	359	351	350	344	340	340	335	330	329	907	
2 q	328	327	328	328	324	324	326	324	321	317	313	313	316	324	325	334	332	331	335	335	338	338	332	324	327	837	
3	319	324	328	326	326	327	324	321	319	315	311	311	317	321	325	330	339	357	362	365	359	347	336	330	331	939	
4	327	327	327	326	326	326	326	324	318	316	322	315	313	330	353	365	361	388	385	375	360	338	316	321	337	1085	
5	324	324	324	327	327	327	323	323	317	307	299	298	307	322	342	342	334	332	335	335	329	327	324	321	324	768	
6 q	319	317	313	313	321	326	331	330	321	315	315	309	304	308	315	323	326	327	323	323	324	324	322	321	320	670	
7	321	320	321	321	316	314	314	313	308	301	296	289	288	290	302	312	318	314	313	327	329	323	318	317	312	485	
8 d	316	309	297	294	305	311	316	321	331	292	286	308	279	317	393	527	426	383	395	438	432	182	255	321	335	1034	
9 d	293	284	246	234	232	225	239	291	319	328	333	369	405	432	441	412	394	394	373	363	357	347	342	322	332	975	
10	282	254	258	297	303	316	332	340	341	338	336	331	334	345	349	346	346	345	354	359	357	346	333	321	328	863	
11	310	308	288	302	323	335	344	344	344	335	325	315	309	323	337	340	346	349	341	336	349	343	330	327	329	903	
12	316	320	323	326	328	331	333	332	328	317	316	316	312	320	326	336	347	359	374	365	353	346	336	331	333	991	
13	330	330	326	311	317	316	319	325	327	318	307	304	301	304	317	331	351	352	339	335	333	328	324	325	324	770	
14	314	315	320	309	288	296	307	314	317	313	311	310	311	315	320	336	357	359	347	347	346	338	335	334	323	759	
15 q	331	330	329	327	323	324	326	326	323	319	310	312	315	319	330	337	346	350	351	347	344	338	332	329	330	918	
16 q	323	324	327	326	324	320	321	319	316	315	311	301	301	314	325	338	353	359	357	354	349	339	334	326	328	876	
17 q	321	309	311	316	319	296	296	312	320	313	308	305	305	310	315	320	327	328	328	327	327	326	325	324	316	588	
18 d	324	320	309	300	301	312	311	308	296	300	300	293	294	301	326	330	330	347	346	351	342	328	313	285	315	567	
19	302	316	320	323	321	321	318	314	296	301	300	296	301	305	314	321	324	327	330	331	346	328	304	280	314	539	
20	302	286	269	277	305	310	298	307	310	315	315	307	309	319	329	343	365	360	347	335	324	324	324	320	317	600	
21 d	317	315	309	312	312	316	315	318	320	316	309	307	299	299	311	321	323	328	348	346	354	341	298	307	318	641	
22	325	321	313	320	327	331	331	331	331	329	327	321	321	323	347	347	338	334	328	330	328	324	323	323	328	873	
23 q	323	323	323	324	327	329	328	324	325	318	313	309	305	312	317	321	324	327	327	327	327	327	324	323	322	322	722
24	323	314	302	307	314	317	320	318	319	315	299	289	290	298	302	318	326	339	356	347	343	333	320	320	318	629	
25	321	319	320	320	324	325	327	328	321	311	307	308	307	331	361	365	378	382	379	362	349	336	327	308	334	1016	
26	301	304	285	294	314	327	332	332	330	318	313	307	305	309	320	328	339	344	343	339	336	327	324	323	321	694	
27 d	324	317	307	304	308	306	300	304	309	309	307	298	301	317	357	394	402	404	397	395	378	366	349	340	337	1093	
28	344	338	312	321	327	330	326	330	333	330	320	311	307	310	314	316	324	327	330	326	324	323	324	324	324	771	
29	326	326	325	327	328	329	328	325	319	316	313	313	302	307	311	321	330	331	327	327	329	328	327	325	323	740	
30	324	324	323	322	327	331	330	328	327	321	309	304	305	312	323	337	349	372	377	367	351	336	327	324	331	950	
31	321	321	321	325	328	315	335	332	326	320	309	301	308	317	322	328	354	397	383	354	338	329	325	324	331	933	
Mean	319	315	310	312	316	317	319	321	321	316	312	309	310	319	333	344	347	351	351	349	345	330	324	321	325		
Sum 9000+	884	779	616	673	786	822	885	965	945	798	663	594	599	889	1313	1670	1768	1897	1880	1812	1695	1217	1037	949		Grand Total 242,136	

DAILY EXTREMES OF TERRESTRIAL MAGNETIC ELEMENTS, MAGNETIC CHARACTER FIGURES (K AND C) AND TEMPERATURE IN MAGNET HOUSE

25 ESKDALEMUIR		TERRESTRIAL MAGNETIC ELEMENTS										3-hr. range indices K		Sum of K indices	Magnetic character of day (0-2)	Temperature in magnet house 200 +				
		Horizontal force			Declination			Vertical force			K	K			°A.					
		Maximum 16,000γ +	Minimum 16,000γ +	Range	Maximum 10° +	Minimum 10° +	Range	Maximum 45,000γ +	Minimum 45,000γ +	Range										
1	h. m. γ	19 47	770	672	12 10	98	01 18	46.6	30.1	02 33	16.5	16 32	360	296	02 02	64	4.3, 3.2, 3.3, 2.2	22	1	83.9
2 q	h. m. γ	18 49	786	671	10 22	115	13 08	45.7	29.9	07 47	15.8	20 53	340	311	11 09	29	1, 1, 1, 1, 3, 2, 3, 2	14	0	83.9
3	h. m. γ	16 47	823	689	11 44	134	16 44	44.2	28.6	05 52	15.6	19 10	368	308	11 18	60	2, 1, 2, 2, 3, 4, 3, 2	19	1	83.9
4	h. m. γ	16 53	841	656	11 00	185	16 30	48.5	27.7	07 27	20.8	17 45	391	308	12 19	83	2, 2, 3, 3, 4, 5, 4, 3	26	1	83.9
5	h. m. γ	21 52	783	700	11 57	83	13 24	44.8	30.7	22 45	14.1	14 56	347	298	11 46	49	2, 2, 2, 2, 3, 2, 3, 4	20	0	83.9
6 q	h. m. γ	18 15	772	698	09 57	74	13 32	44.9	26.1	06 11	18.8	07 03	332	301	12 44	31	2, 1, 1, 1, 1, 2, 1, 0	9	0	83.9
7	h. m. γ	18 37	849	679	10 52	170	15 37	48.1	29.1	06 44	19.0	19 50	331	284	12 57	47	1, 2, 2, 3, 4, 4, 4, 3	23	1	-
8 d	h. m. γ	16 37	1935	-27.3	21 53	2208	21 06	180.1	-3.2	10 50	183.3	15 27	671	122	21 27	549	2, 2, 7, 7, 8, 9, 9, 9	53	2	83.9
9 d	h. m. γ	16 57	790	242	00 44	548	00 44	59.2	9.2	03 26	50.0	14 11	447	192	00 41	255	7, 5, 5, 5, 5, 5, 3, 5	40	2	83.9
10	h. m. γ	22 26	769	615	01 59	154	13 03	47.8	25.5	06 28	22.3	19 23	362	212	02 02	150	4, 4, 2, 2, 3, 2, 2, 3	22	1	-
11	h. m. γ	20 12	789	635	11 00	154	13 48	48.2	25.2	07 07	23.0	20 48	355	277	02 47	78	3, 2, 2, 3, 3, 3, 4, 3	23	1	83.9
12	h. m. γ	17 28	795	631	09 08	164	12 07	49.4	28.1	06 33	21.3	18 50	379	308	01 02	71	4, 3, 3, 4, 3, 4, 3, 2	26	1	84.1
13	h. m. γ	17 04	811	654	10 58	157	03 00	46.2	23.7	08 22	22.5	16 54	357	300	11 58	57	3, 3, 3, 2, 2, 4, 1, 3	21	1	84.6
14	h. m. γ	16 12	769	669	08 59	100	14 46	45.2	26.9	05 55	18.3	17 17	361	285	04 36	76	3, 3, 3, 3, 2, 3, 2, 1	20	1	84.6
15 q	h. m. γ	18 47	767	681	09 38	86	12 24	41.7	29.7	06 34	12.0	18 19	352	309	10 43	43	1, 2, 1, 2, 2, 1, 2, 2	13	0	84.7
16 q	h. m. γ	16 53	781	693	10 12	88	15 23	48.2	28.7	06 21	19.5	17 40	361	297	12 08	64	2, 2, 2, 1, 2, 2, 1, 3	15	0	-
17	h. m. γ	00 59	771	671	09 50	100	05 09	46.4	26.9	08 59	19.5	16 53	330	289	05 50	41	3, 4, 4, 3, 2, 3, 2, 0	21	1	84.3
18 d	h. m. γ	16 43	816	662	12 20	154	16 38	54.8	21.8	07 17	33.0	19 23	356	282	23 16	74	2, 3, 4, 3, 5, 5, 4, 3	29	1	84.3
19	h. m. γ	19 52	808	636	07 37	172	14 24	47.5	27.3	06 32	20.2	20 22	351	270	23 02	81	2, 3, 4, 3, 3, 2, 4, 4	25	1	84.3
20	h. m. γ	16 23	811	636	11 18	175	13 47	50.3	26.1	02 47	24.2	16 37	366	263	02 56	103	4, 4, 3, 3, 3, 4, 3, 2	26	1	84.3

TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

22 ESKDALENUIR (E)		16,000γ (0.16 C.G.S. unit) +																				AUGUST 1958					
	Hour G.M.T.	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 16,000+
	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	γ
1	741	739	742	740	744	741	727	710	704	702	693	664	666	700	716	729	731	743	760	782	753	754	747	746	746	728	1474
2	747	742	738	742	739	741	735	721	698	691	684	697	677	702	697	731	752	764	768	782	760	749	748	751	731	731	1556
3	752	749	737	737	740	721	722	717	698	691	684	685	693	703	735	734	739	753	750	743	742	741	742	736	727	1444	
4 q	738	741	741	742	738	741	734	713	697	683	672	674	683	694	715	732	759	763	764	759	754	752	752	747	729	1488	
5 q	744	741	742	742	745	745	732	720	709	701	696	687	693	715	725	725	740	744	764	763	759	758	757	753	733	1600	
6 q	746	745	742	747	752	748	741	730	717	701	694	690	697	713	733	749	751	753	758	764	768	760	751	745	737	1695	
7	746	750	749	755	757	757	746	731	707	687	682	693	709	698	715	728	742	769	768	773	754	749	743	744	735	1652	
8 q	744	746	741	750	749	745	733	717	706	696	687	692	702	727	725	721	741	755	761	761	762	759	759	756	735	1635	
9	754	742	729	730	743	741	735	721	707	701	696	696	703	713	726	754	756	753	758	762	772	755	742	746	735	1635	
10	749	743	754	748	753	751	738	746	733	717	699	687	696	708	731	758	770	753	756	782	773	774	762	760	743	1841	
11	749	744	735	733	735	740	748	734	712	703	675	685	708	714	730	736	758	755	751	769	770	766	765	752	736	1667	
12	745	742	739	741	732	724	728	721	705	688	689	699	707	715	725	732	736	742	754	760	777	775	762	763	733	1601	
13	764	748	734	733	732	729	716	724	704	688	670	685	693	705	718	729	731	739	756	753	750	748	742	758	727	1449	
14	739	739	740	741	739	736	721	708	683	675	674	679	691	701	718	738	756	780	773	764	767	762	756	753	731	1533	
15	726	730	732	739	735	744	736	718	698	682	681	683	694	710	716	718	746	753	757	768	755	755	753	754	728	1483	
16	765	760	729	732	737	733	722	704	685	673	676	687	697	725	721	758	783	740	768	766	755	746	743	743	731	1548	
17 d	745	744	744	742	746	743	743	707	675	690	685	705	734	732	773	820	845	905	830	768	709	694	699	672	744	1850	
18 d	692	720	722	706	705	676	690	686	673	660	651	654	656	678	690	711	726	728	736	733	734	728	730	729	701	814	
19	728	727	714	713	717	710	699	685	668	655	646	670	683	694	703	719	746	760	760	754	742	742	744	740	713	1119	
20 q	741	740	735	734	733	727	720	709	691	682	675	673	678	701	713	737	752	764	746	744	745	746	746	742	724	1374	
21	738	742	739	741	744	738	731	720	707	694	685	694	705	707	720	746	757	749	763	759	761	757	761	748	734	1606	
22 d	751	747	784	747	734	715	696	717	714	696	689	670	675	688	715	748	738	745	746	753	752	746	738	738	727	1442	
23	738	738	738	733	722	718	725	716	708	701	694	696	702	706	707	719	731	737	744	758	748	752	750	741	726	1422	
24 d	741	777	706	635	588	677	708	689	661	648	652	674	653	679	743	729	716	727	741	731	734	732	729	724	700	794	
25	730	739	746	721	733	738	723	713	708	700	673	673	698	707	713	732	730	726	726	740	735	738	736	735	721	1313	
26	739	734	733	728	718	722	704	677	676	654	637	642	664	689	696	715	719	724	725	750	742	738	733	733	708	992	
27 d	728	723	726	746	704	682	628	599	606	630	672	693	706	708	722	710	743	755	785	731	740	716	726	724	704	903	
28	715	716	718	719	721	715	710	688	666	651	650	668	686	705	723	732	747	770	760	759	735	735	730	726	714	1145	
29	718	723	732	735	725	719	708	707	680	665	672	687	711	720	732	733	731	734	733	747	752	740	743	752	721	1299	
30	735	735	743	742	742	731	727	717	699	685	681	687	714	739	716	737	737	734	740	743	753	756	746	739	728	1478	
31	742	737	738	738	742	739	726	717	710	695	683	684	702	713	728	754	750	723	737	744	742	742	741	740	728	1467	
Mean	740	740	737	733	731	729	721	709	694	683	677	682	693	707	721	736	747	753	756	757	751	747	744	742	726		
Sum 20,000+	2930	2943	2842	2732	2644	2587	2352	1982	1505	1185	997	1153	1476	1909	2340	2814	3159	3340	3438	3465	3295	3165	3076	2990		Grand Total 540,319	

MAGNETIC DECLINATION (WEST)  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

23 ESKDALENUIR (D)		10° +																				AUGUST 1958					
	Hour G.M.T.	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 800.0+
	1	36.9	35.1	34.7	33.0	32.7	30.9	28.5	28.3	30.5	31.2	35.2	40.4	43.8	46.3	46.5	45.5	42.5	40.4	39.4	37.7	37.7	36.2	36.2	37.7	37.0	87.3
2	37.7	37.0	36.4	36.3	36.7	36.5	33.0	33.0	33.4	35.6	37.2	42.4	44.8	45.3	44.9	44.5	41.4	37.1	36.1	35.8	37.2	38.6	38.8	39.2	38.3	118.9	
3	40.0	44.8	40.4	37.7	38.0	34.1	31.3	28.6	27.9	30.1	33.5	38.4	40.8	43.8	43.8	43.2	40.7	37.8	36.8	36.6	36.7	37.3	37.9	37.9	37.4	98.1	
4 q	38.4	38.2	38.9	39.6	35.8	33.9	31.8	30.9	30.5	31.4	35.6	41.3	45.0	46.2	46.6	45.3	43.2	40.8	39.5	38.7	39.5	39.4	39.3	38.9	38.7	128.7	
5 q	38.5	38.2	37.8	36.7	35.7	33.4	31.4	31.2	33.6	34.8	37.2	40.5	44.4	45.2	43.3	42.6	39.7	38.6	39.1	38.9	38.8	38.4	38.8	38.6	38.1	115.4	
6 q	37.5	37.7	36.1	35.2	33.8	31.2	30.4	29.4	29.5	31.2	33.3	38.1	43.5	46.4	46.2	44.8	42.0	40.2	39.2	38.9	38.7	38.5	37.1	38.0	37.4	96.9	
7	37.5	36.6	35.8	34.5	33.4	32.0	30.2	29.4	30.8	33.9	39.8	44.1	47.7	46.4	46.8	46.4	43.8	41.5	38.6	37.7	37.0	38.0	38.2	37.4	38.2	117.5	
8 q	36.6	35.1	34.4	35.2	33.4	31.8	30.2	29.4	31.2	32.4	36.8	42.2	47.7	51.7	50.0	45.2	42.6	40.0	39.7	40.2	39.9	39.1	38.8	39.2	38.5	122.8	
9	37.8	34.8	33.5	35.0	35.6	32.6	29.9	29.3	30.7	31.9	34.6	39.6	44.6	48.2	48.7	47.7	44.2	41.5	40.8	40.3	40.2	37.5	35.8	37.5	38.0	112.3	
10	37.4	36.1	34.2	32.9	32.8	29.2	27.0	28.6	29.4	31.9	38.4	40.9	44.1	47.0	47.3	45.4	42.3	39.9	37.5	38.5	37.9	39.4	36.5	32.8	37.0	87.4	
11	34.8	36.3	37.5	37.8	34.0	33.0	30.2	31.9	34.8	36.6	39.8	43.3	45.2	46.0	44.9	42.8	40.5	36.6	37.0	39.9	40.1	38.0	35.3	36.0	38.0	112.3	
12	35.8	36.5	36.6	36.2	34.8	35.6	34.5	31.3	30.6	32.9	37.1	40.4	44.6	44.6	43.3	41.5	39.4	38.3	38.6	39.5	39.7	38.7	38.2	37.8	37.8	106.5	
13	34.8	33.3	32.3	32.2	30.1	29.2	26.1	25.7	32.4	35.6	39.8	42.2	42.9	43.2	42.5	40.9	38.9	38.6	38.6	38.5	38.7	38.4	38.0	37.4	37.1	90.3	
14	36.7	36.4	35.2	36.3	34.0	31.9	29.5	28.9	30.3	33.0	37.0	42.0	45.9	47.1	45.8	43.0	40.4	37.9	34.1	36.1	38.2	37.8	38.0	32.7	37.0	88.2	
15	33.5	35.0	34.1	32.3	32.0	32.3	29.9	29.3	29.0	32.4	37.4	41.6	44.9	46.6	45.5	42.5	40.7	39.1	38.6	38.3	38.8	38.4	38.2	37.2	37.0	87.6	
16	34.8	29.9	28.1	34.4	31.4	27.1	27.1	27.4	30.0	33.2	38.2	43.2	46.6	48.5	47.1	46.2	45.1	39.2	38.4	37.4	38.5	38.0	37.2	36.5	36.8	83.5	
17 d	36.																										

TERRESTRIAL MAGNETIC FORCE: VERTICAL COMPONENT  
 Mean values for periods of sixty minutes ending at exact hours, G.M.T.

24 ESKDALEMUIR (Z)		45,000γ (0.45 C.G.S. unit) +																				AUGUST 1958				
	Hour G.M.T.											12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 7000+	
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11															11-12
1	323	320	319	324	328	331	325	317	311	312	307	302	294	302	314	321	327	332	332	331	335	330	327	324	320	688
2	319	316	321	322	325	324	326	326	324	315	302	297	297	302	317	327	343	349	347	342	339	327	323	319	323	749
3	317	305	285	304	309	316	321	323	316	310	309	304	303	311	328	334	337	340	342	338	334	328	326	324	319	664
4 q	321	321	321	319	320	324	326	325	319	312	309	297	301	305	310	323	329	333	337	334	329	325	322	321	320	683
5 q	321	321	320	323	323	325	327	328	319	312	306	301	296	309	321	326	327	329	328	327	325	323	320	319	320	676
6 q	315	314	316	319	324	327	324	320	314	308	298	289	282	287	297	307	314	317	317	317	319	318	320	317	312	480
7	315	313	312	312	316	319	320	320	316	311	308	304	307	308	311	316	321	330	338	336	335	328	323	320	318	639
8 q	319	318	319	318	319	322	326	325	321	317	311	301	296	301	316	325	326	331	328	325	324	321	320	319	319	648
9	315	308	313	313	307	312	319	321	315	305	301	297	293	296	302	310	320	330	323	315	317	324	324	320	313	501
10	318	317	313	316	319	321	322	313	307	297	291	294	290	292	313	333	343	345	339	331	331	319	317	313	316	594
11	315	315	315	305	306	305	304	305	304	301	302	297	297	307	319	327	332	342	342	304	327	326	319	315	314	531
12	315	317	317	318	321	320	309	313	316	309	301	291	294	307	314	319	320	317	315	313	314	316	319	317	313	512
13	309	306	312	316	320	318	311	311	319	310	302	304	312	316	322	325	324	321	321	321	322	321	321	321	316	585
14	320	319	319	316	321	324	325	324	321	312	302	298	296	296	305	312	317	326	340	337	330	326	315	302	317	603
15	298	309	318	319	317	315	321	323	316	312	305	296	293	297	307	313	314	315	313	317	317	316	315	315	312	481
16	312	298	300	307	313	319	318	316	315	312	309	308	300	298	316	331	343	354	342	334	327	324	321	320	318	637
17 d	319	319	319	320	319	319	315	313	308	292	286	285	286	301	321	366	405	401	351	362	334	354	348	347	329	890
18 d	271	297	311	329	331	313	321	326	323	318	318	315	318	323	330	335	339	340	335	334	333	328	327	326	323	741
19	317	316	320	321	326	332	334	335	329	322	319	312	313	316	327	331	334	341	341	337	330	328	325	320	326	826
20 q	321	321	323	326	327	328	328	327	321	311	304	305	304	304	305	311	319	322	326	324	322	321	321	322	318	643
21	321	321	321	321	323	326	327	327	321	313	305	296	292	298	305	310	316	322	323	326	326	324	315	309	316	588
22 d	312	310	283	231	204	236	251	265	289	298	303	304	308	313	311	313	333	339	344	335	330	327	326	323	299	188
23	322	323	322	322	323	323	315	314	316	315	312	302	301	302	313	315	317	322	324	327	332	325	321	319	318	627
24 d	313	299	181	75	98	196	294	328	329	317	317	324	340	338	356	363	356	349	362	352	339	331	330	329	301	216
25	327	319	293	289	284	286	302	315	320	324	324	321	312	321	326	330	332	334	335	338	335	332	330	328	319	657
26	326	324	321	322	324	302	302	310	311	312	313	316	321	332	341	344	344	342	342	343	335	331	328	326	325	812
27 d	324	320	308	288	274	256	270	277	255	247	280	297	316	330	351	379	376	396	409	374	357	347	324	321	320	676
28	331	334	335	335	336	334	332	335	331	319	309	307	312	330	351	370	371	381	380	367	346	340	338	332	340	1156
29	331	330	328	326	330	332	334	332	324	319	311	313	317	329	338	345	347	347	347	343	336	335	332	326	331	952
30	319	324	326	326	326	330	333	335	333	331	321	303	301	315	332	342	343	338	335	332	331	327	326	327	327	856
31	326	324	323	321	324	326	330	332	326	324	319	315	315	323	337	349	360	354	341	334	330	327	326	326	330	912
Mean	317	316	311	307	308	312	317	319	316	310	307	303	303	310	321	331	336	340	339	334	330	327	324	321	319	
Sum 9000+	832	798	634	503	537	661	812	881	789	617	504	395	407	609	956	1252	1429	1539	1499	1351	1241	1149	1049	967		Grand Total 237,411

DAILY EXTREMES OF TERRESTRIAL MAGNETIC ELEMENTS, MAGNETIC CHARACTER FIGURES (K AND C) AND TEMPERATURE IN MAGNET HOUSE

25 ESKDALEMUIR		TERRESTRIAL MAGNETIC ELEMENTS										3-hr. range indices K	Sum of K indices	Magnetic character of day (0-2)	Temperature in magnet house 200 + °A.		
		Horizontal force			Declination			Vertical force									
		Maximum 16,000γ +	Minimum 16,000γ +	Range	Maximum 10° +	Minimum 10° +	Range	Maximum 45,000γ +	Minimum 45,000γ +	Range							
1	h. m. γ	γ h. m.	γ	h. m.	h. m.	h. m.	γ	h. m.	γ	h. m.	γ	2, 1, 1, 4, 4, 3, 4, 3	22	1	84.3		
2	19 18 800	633 12 13	167	14 04	47.8	27.1	06 53	20.7	20 17	336	289	12 46	47	2, 2, 2, 3, 4, 3, 3, 2	21	1	84.3
3	19 41 788	667 12 04	121	13 26	46.7	31.3	07 06	15.4	17 28	350	293	11 13	57	3, 3, 2, 2, 3, 2, 2, 1	18	1	84.3
4 q	17 45 782	673 10 40	109	01 40	47.3	26.5	08 04	20.8	18 30	342	282	02 22	60	1, 2, 2, 2, 2, 2, 2, 1	14	0	-
5 q	18 02 772	667 11 12	105	14 22	47.1	30.0	07 47	17.1	18 30	338	297	11 48	41	1, 1, 1, 2, 3, 2, 2, 1	13	0	-
6 q	18 06 771	679 11 58	92	13 47	45.3	31.0	06 33	14.3	17 14	330	294	12 13	36	1, 1, 1, 2, 3, 2, 2, 1	13	0	-
7	20 04 775	686 11 22	89	13 48	47.0	28.8	08 08	18.2	05 30	327	281	12 32	46	1, 1, 1, 2, 1, 2, 2, 2	12	0	84.3
8 q	18 03 789	669 12 56	120	12 30	49.2	28.5	07 42	20.7	18 31	339	300	12 16	39	1, 1, 3, 2, 4, 3, 3, 1	18	1	84.3
9	20 02 766	683 11 29	83	13 40	52.3	29.0	07 26	23.3	17 25	331	293	12 39	38	1, 1, 1, 2, 2, 3, 1, 1	12	0	84.7
10	20 50 778	690 11 33	88	13 54	49.7	28.0	06 59	21.7	17 40	331	293	12 12	38	2, 2, 1, 1, 2, 3, 2, 2	15	0	84.7
11	15 38 804	671 11 28	133	13 23	49.8	26.0	06 07	23.8	17 30	347	286	13 22	61	2, 1, 3, 3, 3, 4, 4, 3	23	1	84.7
12	18 57 792	661 11 13	131	13 13	46.6	28.6	06 41	18.0	17 20	342	292	11 40	50	3, 2, 3, 3, 2, 3, 3, 3	22	1	84.7
13	20 40 793	675 10 26	118	13 12	45.8	29.6	08 02	16.2	04 43	323	290	11 43	33	2, 2, 2, 3, 2, 1, 3, 2	17	0	84.7
14	00 21 785	652 10 38	133	14 10	43.7	28.1	05 24	15.6	15 03	326	297	10 28	29	3, 2, 3, 3, 2, 3, 2, 1	19	0	84.7
15	17 40 791	675 09 01	116	13 27	47.5	28.3	06 58	19.2	18 49	343	294	12 58	49	2, 1, 2, 1, 1, 3, 2, 3	15	0	84.7
16	19 27 775	672 11 03	103	13 44	47.6	27.3	07 28	20.3	06 59	324	293	12 15	31	2, 3, 2, 2, 2, 3, 2, 2	18	0	84.7
17 d	18 59 793	666 09 54	127	13 38	49.7	25.6	07 27	24.1	17 20	357	294	01 49	63	4, 2, 2, 2, 3, 4, 3, 1	21	1	84.7
18 d	14 46 987	556 23 44	431	14 48	60.1	21.3	07 58	38.8	16 56	422	234	23 57	188	1, 1, 5, 4, 4, 6, 6, 5	34	1	84.7
19	18 09 744	599 00 00	145	12 37	47.0	21.2	06 57	25.8	17 03	343	262	00 00	81	5, 3, 3, 3, 3, 3, 2, 2	24	1	84.8
20 q	19 04 770	626 10 15	144	13 28	49.8	25.4	07 40	24.4	17 50	343	310	11 32	33	2, 3, 3, 3, 2, 3, 3, 2	21	0	84.7
21	17 43 767	667 11 12	100	13 03	48.0	26.7	07 37	21.3	05 20	329	301	10 45	28	1, 1, 2, 2, 3, 3, 2, 1	15	0	84.7
22 d	18 25 772	673 11 28	99	13 06	47.6	28.4	07 37	19.2	19 50	328	290	12 31	38	1, 1, 1, 3, 2, 3, 2, 3	16	0	84.7
23	02 30 840	647 11 47	193	15 11	47.9	10.7	05 34	3									

TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

22 ESKDALEMUIR (H)												16,000γ (0.16 C.G.S. unit) +												SEPTEMBER 1958				
	Hour G.M.T.											Mean	Sum 15,000+															
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11			11-12														
1	737	736	734	734	734	732	723	706	686	681	689	709	729	745	747	739	728	739	745	750	750	748	747	729	2505			
2	744	741	738	736	738	740	734	724	709	701	691	691	694	701	718	724	733	744	749	754	756	752	749	753	2514			
3 d	748	739	735	738	744	744	733	727	717	682	676	693	698	746	713	706	771	792	779	754	744	675	656	662	2372			
4 d	660	681	685	713	719	716	702	685	670	669	668	665	673	710	780	968	1414	944	982	697	511	165	219	323	1619			
5 d	330	468.	426	481	549	639	666	638	626	633	626	636	637	662	654	676	691	702	738	726	712	698	704	705	626			
6	692	689	689	688	690	698	692	686	677	667	648	639	651	667	685	689	705	721	722	722	723	721	721	692	1603			
7	721	720	720	719	719	711	705	704	690	675	657	665	670	691	722	736	743	728	737	755	710	706	708	711	2065			
8	712	715	737	698	709	714	712	703	688	672	660	668	684	700	708	730	710	723	727	736	735	748	785	722	2096			
9	727	715	722	722	723	725	719	704	695	684	675	681	688	742	737	700	707	724	732	729	730	723	742	735	2181			
10	725	728	726	727	729	722	717	706	693	676	668	673	682	705	701	724	744	740	734	733	733	740	732	753	2211			
11	728	732	736	733	729	726	720	708	700	685	664	673	685	700	719	721	725	728	740	746	742	741	737	739	2257			
12	742	732	738	739	732	730	721	708	695	682	677	686	696	705	715	724	732	739	742	743	742	742	742	743	2347			
13 q	740	740	741	744	744	740	733	721	702	681	675	677	697	719	728	737	740	738	742	745	755	749	750	747	2485			
14 q	745	746	745	747	745	745	738	725	706	673	674	691	715	722	729	743	746	752	744	753	745	748	748	747	2572			
15	748	749	746	747	748	746	738	725	707	683	673	678	696	717	728	741	749	760	756	756	756	760	762	770	2639			
16 d	761	754	750	754	761	765	743	724	707	699	696	705	718	761	719	730	803	759	747	733	719	713	706	702	2629			
17	723	735	721	726	717	710	707	692	672	657	656	658	664	673	700	702	714	722	731	738	736	736	734	735	2651			
18 q	734	734	732	728	725	721	711	699	704	677	674	678	687	703	714	719	726	732	741	746	741	737	739	739	2718			
19	737	737	736	736	737	737	735	726	711	691	680	687	687	698	709	723	734	741	746	755	754	745	746	748	2729			
20	747	746	743	749	748	745	742	736	723	707	695	692	699	711	723	733	742	745	753	760	754	754	752	745	2644			
21 q	746	745	744	743	744	742	739	732	722	712	700	702	700	710	720	733	742	747	752	752	753	751	751	751	2633			
22 q	748	743	743	744	744	744	742	738	726	713	702	694	705	713	723	733	736	745	753	755	753	752	752	750	2651			
23	750	747	750	751	745	746	753	748	738	726	708	707	714	719	724	732	737	740	748	753	756	759	755	753	2759			
24	761	750	750	750	749	748	743	735	723	720	707	703	713	713	726	734	735	745	753	753	754	754	758	752	2739			
25 d	748	740	746	748	741	760	675	696	668	663	667	659	663	717	773	798	730	715	698	710	707	687	638	672	2019			
26	695	686	686	699	703	696	701	676	673	678	664	662	667	668	665	681	702	706	712	718	718	718	724	734	1632			
27	719	720	721	720	719	721	717	706	695	681	664	664	672	683	695	711	717	726	730	732	731	726	716	729	2015			
28	722	717	730	735	724	720	730	730	707	691	671	671	684	693	706	705	718	731	737	737	740	738	738	739	2214			
29	740	740	741	740	740	737	731	731	721	700	679	674	678	693	712	723	730	736	742	743	744	740	742	740	2397			
30	738	744	743	743	745	745	746	740	729	710	698	698	693	698	704	720	746	743	733	738	736	721	716	729	2456			
Mean	719	722	722	724	727	729	722	713	699	686	676	679	688	706	717	731	755	744	748	740	733	715	716	720	718			
Sum 20,000+	1568	1669	1654	1732	1794	1865	1668	1379	980	569	282	379	639	1185	1497	1935	2659	2321	2429	2199	1984	1455	1468	1593	Grand Total 516,903			

MAGNETIC DECLINATION (WEST)  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

23 ESKDALEMUIR (D)												10° +												SEPTEMBER 1958				
	Hour G.M.T.											Mean	Sum 700.0+															
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11			11-12														
1	36.5	36.3	35.6	35.2	34.1	33.0	32.3	31.7	32.3	35.6	40.3	45.9	48.2	48.8	45.3	42.3	39.5	37.8	37.8	37.7	36.4	37.4	37.5	37.4	38.1	214.9		
2	37.6	37.5	37.8	35.9	34.2	32.0	29.9	28.6	29.7	33.5	39.2	43.6	46.9	47.5	45.6	43.0	40.5	37.9	36.9	37.7	38.1	38.1	37.9	38.4	37.8	208.0		
3 d	36.3	33.3	32.0	33.9	33.7	32.0	31.4	29.6	28.6	29.0	37.7	45.4	49.7	51.9	52.1	59.0	57.2	50.7	48.8	42.9	43.2	33.3	32.3	29.8	39.7	253.8		
4 d	25.7	26.9	25.7	27.1	31.8	29.7	29.3	28.9	30.3	33.0	38.2	40.9	44.1	48.3	52.5	53.3	72.2	48.9	57.4	49.5	42.9	31.0	25.6	0.1	37.2	193.3		
5 d	16.0	14.0	6.7	17.4	32.5	28.7	26.6	27.6	28.1	30.1	35.8	39.8	41.5	39.9	38.0	36.4	36.0	36.8	37.7	27.8	30.3	36.1	36.6	35.4	30.7	35.8		
6	34.9	34.9	35.1	35.7	34.5	33.4	29.0	27.5	29.7	31.7	34.8	38.4	41.3	42.7	42.2	39.5	37.7	36.3	35.3	34.5	35.3	36.8	37.0	36.7	35.6	154.9		
7	37.2	37.0	36.5	34.7	34.4	31.3	30.5	30.9	30.3	32.9	38.1	42.4	44.3	46.0	47.0	41.7	39.9	36.4	38.2	34.6	32.0	35.6	33.4	33.0	36.6	178.3		
8	33.3	35.3	30.6	29.6	30.3	30.7	29.1	29.1	29.7	32.9	37.6	41.6	43.8	44.6	43.1	42.4	39.5	39.0	38.0	38.6	38.1	37.2	30.7	29.7	35.6	154.5		
9	31.9	28.0	27.8	31.7	31.1	31.5	30.9	29.8	29.4	31.2	37.1	42.9	45.7	50.4	46.9	40.3	37.2	37.1	36.9	36.2	35.6	34.8	34.8	33.8	35.5	153.0		
10	34.7	39.0	36.2	33.2	33.0	31.8	30.8	30.2	31.2	33.9	38.4	43.8	47.0	48.7	43.2	41.4	38.6	35.7	36.6	38.4	38.6	38.4	37.0	37.4	37.4	197.2		
11	34.6	34.6	34.8	34.8	32.7	31.5	28.8	28.4	28.9	31.5	35.9	42.6	47.0	46.2	45.0	41.3	39.0	37.5	37.2	37.8	36.9	36.4	36.8	36.9	36.5	177.1		
12	35.4	34.5	34.9	32.6	33.0	31.6	31.0	29.1	29.9	33.0	37.8	42.4	44.9	45.4	44.1	41.2	38.8	37.6	37.9	37.4	38.4	37.3	36.7	35.4	36.6	180.3		
13 q	35.8	35.9	35.4	35.0	34.5	33.4	32.2	30.4	30.9	32.5	36.6	40.9	45.2	46.9	45.8	41.5	37.8	36.8	37.4	37.2	37.4	35.4	35.5	36.3	36.9	186.7		
14 q	36.8	36.7	36.4	35.6	34.8	33.6	31.5	29.9	29.4	30.3	35.8	41.5	46.3	47.4	45.2	42.0	39.1	38.0	38.1	38.1	37.3	37.9	38.1	37.2	37.4	197.0		
15	36.9	36.4	36.2	35.7	34.6	33.5	31.2	29.7	29.6	32.0	36.3	43.4	49.7	51.1	48.1	43.6	40.2	38.8	39.0	40.2	39.2	38.7	37.8	34.9	38.2	216.8		
16 d	30.2	31.4	30.4	31.3	28.9	25.8	26.6	28.1	28.2	29.9	35.2	41.4	46.1	54.1	48.3	45.6	45.9	40.1	33.8	39.2	34.3	27.4	27.3	30.0	35.0	139.5		
17	30.7	33.6	32.9	32.7	32.0	33.4	33.5	32.7	32.2	36.2	40.7	44.0	48.2	46.4	45.4	41.0	38.5	36.4	36.4	37.4	37.5	36.9	37.6	36.8	37.2	193.1		
18 q	36.3	35.8	35.4	34.6	33.8	32.8	30.9	29.2	29.7	33.5	42.0	42.2	44.6	44.3	42.5	40.8	39.7	37.8	38.1	34.8	36.1	36.7	36.7	36.4	36.9	184.7		
19	36.5	36.1	35.1	34.5	33.9	33.3	32.3	31.5	30.3	32.0	35.5	40.8	44.5	44.0	43.1	41.4	39.2	37.9	37.9	38.3	37.8	37.1	37.2	37.1	37.0	187.3		
20	36.6	35.8	35.3	34.9	34.1	33.2	32.7	30.9	30.6	32.2	35.3	39.7	4															



TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT  
Mean values for periods of sixty minutes ending at exact hours, G.M.T

22 ESKDALEMUIR (H)		16,000γ (0.16 C.G.S. unit) +																				OCTOBER 1958				
	Hour G.M.T.											12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 16,000+	
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11															11-12
1	731	730	730	734	741	756	756	744	730	709	682	674	676	691	711	722	731	737	738	752	739	728	742	738	726	1422
2	717	710	721	721	746	729	722	727	725	706	685	678	681	688	708	717	726	733	740	741	745	741	769	740	721	1316
3	738	738	741	752	748	742	741	724	715	701	686	684	688	715	720	740	739	732	713	718	735	739	742	743	726	1434
4 q	742	741	742	741	742	745	745	740	728	713	699	691	696	701	706	712	726	733	741	743	743	748	750	750	730	1518
5	741	723	736	740	742	740	737	736	725	712	695	687	686	708	725	733	734	757	747	748	738	742	732	738	729	1502
6	742	740	738	740	736	744	738	736	727	718	705	699	707	716	716	738	745	749	742	753	750	737	741	748	734	1605
7	745	743	752	750	752	737	740	748	738	711	705	696	691	701	712	731	733	735	735	732	744	747	725	715	730	1518
8	738	746	736	729	741	730	738	729	718	715	702	695	697	701	711	721	732	737	741	745	743	744	747	748	729	1484
9 q	745	741	741	748	743	743	745	740	729	713	693	693	699	707	715	727	741	747	749	749	748	746	748	749	733	1599
10 q	748	746	748	745	745	746	746	743	731	716	704	697	703	713	723	737	746	753	749	755	750	753	752	758	738	1707
11 q	755	747	746	747	749	745	745	741	731	715	705	692	694	704	717	732	738	747	760	758	748	767	760	751	737	1694
12 q	749	749	750	750	750	749	747	740	728	709	693	689	702	713	721	731	741	749	755	760	755	756	753	756	737	1695
13	753	755	755	757	758	754	759	754	740	712	698	688	704	707	721	725	733	744	738	748	753	756	757	752	738	1721
14	752	751	751	753	757	756	753	745	728	713	697	691	708	716	728	741	740	747	755	758	760	758	753	754	740	1765
15	752	746	751	752	756	755	756	751	733	713	696	701	718	728	738	742	744	748	756	759	752	753	755	753	742	1808
16	750	753	756	750	758	739	740	738	723	704	694	687	696	709	722	732	741	747	750	756	752	753	754	754	736	1658
17	751	745	747	747	759	753	743	733	722	703	687	683	689	705	720	732	740	761	755	751	747	753	757	765	735	1648
18	747	747	749	752	746	752	743	736	717	702	694	690	695	712	724	737	737	743	749	754	757	754	758	758	736	1653
19	751	750	747	748	750	751	751	746	732	716	702	701	693	706	728	745	747	730	738	743	742	750	743	745	736	1655
20	757	750	747	743	742	746	745	740	729	713	699	693	698	711	727	733	742	748	753	752	754	757	765	755	737	1699
21	752	748	748	759	754	749	749	740	729	716	710	704	703	708	722	725	733	742	740	749	750	749	749	751	737	1679
22 d	754	754	751	767	778	740	741	698	687	695	684	685	680	681	693	725	739	702	700	694	668	678	686	694	711	1074
23 d	685	703	713	720	706	704	718	686	660	663	666	658	663	663	702	697	709	709	689	667	676	674	693	670	687	494
24 d	684	704	668	705	729	721	692	667	634	617	605	600	636	680	674	697	701	701	672	668	655	660	643	624	668	37
25	676	682	677	679	683	686	690	694	687	668	647	641	644	658	667	679	692	705	707	708	712	715	717	716	685	430
26	719	718	718	721	723	728	721	720	704	697	682	675	672	682	691	707	703	714	705	722	704	701	708	715	706	950
27 d	717	717	720	721	720	729	727	727	717	705	699	690	694	709	708	722	734	736	756	753	651	680	674	694	713	1100
28 d	710	704	702	705	709	720	725	741	722	690	682	696	683	691	693	709	697	720	706	702	717	707	724	713	707	968
29	712	705	706	709	717	717	717	720	705	693	677	681	686	687	701	709	715	729	735	729	732	723	710	716	710	1031
30	723	726	721	724	730	732	728	732	711	703	687	672	686	694	713	720	722	720	714	727	736	720	731	728	717	1200
31	729	732	731	737	746	738	740	738	729	707	692	681	701	704	719	735	727	741	743	747	744	746	750	752	730	1509
Mean	734	734	733	737	741	738	737	731	717	702	689	684	689	700	712	724	730	735	735	737	732	733	735	734	724	
Sum 21,000+	1765	1744	1739	1846	1956	1876	1838	1654	1234	768	352	192	369	709	1076	1453	1628	1796	1771	1841	1700	1735	1788	1743		Grand Total 538,573

MAGNETIC DECLINATION (WEST)  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

23 ESKDALEMUIR (D)		10° +																				OCTOBER 1958				
	Hour G.M.T.											12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 700.0+	
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11															11-12
1	34.9	35.9	35.6	36.0	35.0	35.2	37.0	38.5	32.9	32.3	33.1	36.9	40.3	42.0	43.1	41.9	41.0	40.1	39.7	39.2	38.7	35.1	33.2	27.0	36.9	184.6
2	23.8	24.8	29.4	31.8	31.2	30.6	33.3	33.0	30.5	30.2	32.5	35.9	40.5	42.0	43.1	42.3	40.4	39.3	39.1	38.3	38.4	37.8	33.1	31.8	34.7	133.1
3	33.0	32.3	32.6	29.5	27.6	35.0	32.9	32.1	30.9	31.1	34.4	42.1	47.5	49.7	48.7	47.1	43.3	43.3	35.9	34.9	35.4	35.6	35.2	35.6	36.9	185.7
4 q	35.4	35.5	36.1	35.1	34.9	34.6	33.6	33.1	31.9	32.2	34.8	38.6	42.8	44.0	43.7	41.8	39.6	38.6	38.0	36.9	37.2	37.6	37.6	37.2	37.1	190.8
5	25.6	27.2	33.0	34.1	33.8	33.5	32.7	32.2	31.4	32.2	35.3	39.2	42.4	45.8	45.6	43.1	40.4	40.2	40.2	41.5	39.4	37.9	33.3	35.2	36.5	175.2
6	35.5	35.8	34.6	34.4	34.8	34.8	32.8	31.7	31.1	32.9	34.7	37.7	42.1	46.2	44.0	42.6	40.7	39.0	38.2	38.6	38.3	36.1	36.6	36.3	37.1	189.5
7	35.9	33.4	32.2	32.3	31.5	32.3	35.3	34.8	33.8	32.1	34.8	39.8	42.3	43.3	43.1	43.4	41.8	38.8	38.1	37.9	36.9	33.9	24.8	24.6	35.7	157.1
8	28.5	25.8	23.9	29.9	29.5	33.0	32.8	31.5	30.9	32.1	34.2	38.2	41.6	42.3	42.2	40.8	39.1	38.6	38.3	37.8	37.5	37.2	36.4	32.6	34.8	134.7
9 q	35.5	34.5	34.3	34.5	34.1	33.8	33.8	32.5	31.2	31.4	34.7	37.5	40.2	42.2	42.3	41.6	39.5	38.8	38.5	38.6	38.4	36.8	36.9	36.5	36.6	178.1
10 q	35.8	35.5	34.6	34.2	34.4	34.3	33.7	32.2	30.0	29.4	31.9	35.2	39.0	41.0	42.0	41.7	40.3	39.5	38.5	38.4	37.5	37.2	36.9	36.6	36.2	169.8
11 q	33.3	34.0	35.0	35.3	34.6	34.4	33.8	31.9	29.9	30.1	33.8	36.4	40.8	42.6	42.7	42.1	40.2	39.2	38.8	39.2	38.0	34.4	33.2	33.1	36.1	166.8
12 q	34.6	35.0	35.3	35.2	35.1	34.5	33.9	32.5	30.8	30.8	33.6	38.2	42.8	44.5	44.3	43.1	41.8	40.1	38.6	38.1	37.6	35.9	36.2	36.6	37.0	189.1
13	36.5	35.9	35.8	36.0	35.9	35.1	35.8	33.2	31.4	31.9	35.3	40.9	47.0	47.4	47.2	43.5	40.8	39.3	38.3	38.4	37.4	37.2	36.1	38.1	214.6	
14	36.0	34.9	35.0	36.4	35.6	36.5	35.0	33.0	30.9	31.3	33.5	38.4	43.2	45.6	45.1	44.3	41.4	40.1	39.7	39.0	37.8	37.4	35.0	34.8	37.5	199.9
15	33.1	34.5	36.1	35.1	34.5	35.5	34.0	32.7	31.8	32.3	35.1	39.2	42.8	42.9	43.6	42.8	42.0	40.5	40.0	39.3	37.2	34.7	35.9	35.4	37.1	191.0
16	36.4	35.5	35.0	34.0	33.0	31.0	34.6	32.9	31.5	31.6	34.0	38.4	42.7	45.0	43.9	42.6	40.8	40.0	39.5	39.1	38.7	37.4	36.9	35.8	37.1	190.3
17	35.6	34.5	35.4	33.5	3																					



TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

22 ESKDALEMUIR (H)		16,000γ (0.16 C.G.S. unit) +																				NOVEMBER 1958				
	Hour G.M.T.											12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 17,000+	
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11															11-12
1	744	742	741	741	743	746	748	744	723	701	701	701	708	723	738	755	756	754	753	751	753	745	746	746	738	703
2 d	745	743	743	743	748	750	751	749	740	727	712	719	730	734	746	749	763	761	684	730	725	729	729	727	737	677
3 d	727	720	727	727	720	709	716	716	719	705	695	698	703	698	722	727	728	726	731	736	736	741	736	742	721	305
4	738	734	729	724	735	738	731	733	727	714	711	716	713	718	729	734	737	738	741	748	741	746	740	739	731	554
5 q	740	742	741	742	743	741	740	737	729	713	708	706	709	716	727	730	737	739	743	746	747	750	749	745	734	620
6 q	744	744	744	746	748	747	746	741	731	720	713	712	719	728	738	740	746	749	751	753	754	751	751	747	740	763
7	748	746	746	745	746	747	748	744	739	727	716	715	718	724	724	719	731	739	743	748	751	746	743	747	737	700
8 q	748	746	745	747	749	753	753	750	736	716	700	697	704	713	725	732	738	745	749	748	750	750	747	749	737	690
9	748	749	748	751	758	762	765	757	743	724	711	705	710	720	731	741	752	757	758	765	766	769	767	765	747	922
10 d	764	763	763	766	768	777	783	781	761	739	708	694	707	704	712	729	748	749	736	739	734	730	734	738	743	827
11 d	738	735	714	720	729	753	745	733	723	716	700	693	698	711	723	735	738	741	743	744	745	745	741	740	729	503
12	740	740	741	738	737	747	744	743	738	731	723	717	712	724	711	733	738	742	745	739	741	727	731	740	734	622
13	740	729	733	742	748	750	744	735	727	721	712	715	725	728	733	733	736	739	748	747	749	750	747	749	737	680
14	747	747	749	743	748	751	746	743	735	726	716	711	715	728	735	735	742	748	753	753	755	755	734	741	740	756
15	745	744	749	750	750	753	753	750	739	734	727	715	714	723	734	741	747	751	752	756	758	760	758	756	744	859
16	754	746	752	756	758	761	760	752	742	734	719	715	711	717	725	724	738	728	751	752	750	749	752	752	742	798
17	750	748	750	750	752	758	748	753	732	730	724	716	719	730	734	736	739	743	748	750	757	756	757	754	743	834
18	750	751	750	752	755	757	759	750	733	726	718	717	712	723	727	728	733	739	738	730	729	725	735	739	737	676
19	745	745	746	747	748	747	747	749	743	729	718	710	714	718	719	723	735	741	744	745	746	747	745	743	737	694
20	745	746	749	754	751	752	753	746	743	736	729	717	723	730	729	731	734	745	750	754	753	752	750	751	743	823
21	752	757	752	755	757	759	757	749	746	741	730	722	729	737	738	733	734	745	754	756	754	752	750	746	746	913
22 q	752	753	747	750	753	756	754	753	748	739	729	726	724	731	741	746	753	756	759	760	759	758	758	756	748	961
23	756	752	752	756	760	763	764	761	754	756	747	738	729	725	726	731	736	740	748	748	749	746	741	747	747	925
24	750	751	752	752	753	753	751	744	731	723	723	726	720	704	710	721	732	736	735	736	738	748	746	746	736	671
25	743	742	741	749	752	754	752	747	744	734	732	727	729	735	735	729	723	717	706	701	705	706	717	717	731	537
26	721	726	736	726	730	732	734	732	730	722	714	710	708	711	714	716	722	724	733	748	744	742	740	733	727	448
27	738	742	745	744	739	754	739	741	742	728	704	704	714	722	719	724	725	727	742	742	726	730	724	728	731	543
28 d	732	740	747	763	761	738	748	749	747	739	724	722	717	709	733	736	738	745	744	739	737	734	731	736	738	709
29	739	745	756	750	754	762	754	752	732	721	724	718	705	712	715	704	717	732	740	743	745	743	744	744	735	651
30 q	742	743	743	741	739	739	742	739	734	732	728	726	727	733	734	736	739	745	748	751	751	751	750	749	740	762
Mean	744	744	744	746	748	750	749	746	737	727	717	714	715	721	728	732	738	741	742	745	745	744	743	744	738	
Sum 21,000+	1325	1311	1331	1370	1432	1509	1475	1373	1111	804	516	408	466	629	827	951	1135	1241	1270	1358	1346	1325	1297	1316		Grand Total 531,126

MAGNETIC DECLINATION (WEST)  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

23 ESKDALEMUIR (D)		10° +																				NOVEMBER 1958				
	Hour G.M.T.											12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 800.0+	
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11															11-12
1	35.6	35.9	35.5	35.8	35.9	35.7	35.3	34.1	31.8	31.0	33.6	37.6	40.2	41.9	41.7	41.6	41.2	41.4	41.5	39.6	38.6	35.6	33.8	36.0	37.1	90.9
2 d	35.7	35.0	34.5	35.0	35.2	34.9	34.8	34.2	33.1	33.3	35.1	40.1	43.1	44.7	46.9	47.0	47.7	51.0	39.5	36.1	35.8	34.0	32.0	38.1	114.5	
3 d	29.8	32.0	35.6	30.8	33.5	34.3	34.4	33.9	32.7	32.8	34.1	37.5	40.6	41.7	43.9	43.0	41.9	41.0	39.2	38.4	38.4	35.3	34.6	32.1	36.3	71.5
4	32.7	34.1	31.9	34.5	33.2	32.9	33.7	33.3	33.8	35.9	39.3	41.7	40.7	40.5	40.0	38.5	38.2	37.8	38.6	37.9	35.4	33.4	35.9	36.2	36.0	63.1
5 q	35.9	35.0	35.4	35.5	35.3	35.0	34.2	33.8	32.3	32.3	34.5	37.7	40.2	40.7	40.6	39.1	38.5	38.0	37.4	37.4	36.7	36.1	35.2	35.6	36.3	72.4
6 q	36.1	35.7	35.3	35.3	34.9	34.6	34.1	33.6	32.3	32.2	34.4	36.8	39.1	39.5	39.9	39.1	38.9	39.2	39.5	38.6	37.9	37.2	33.8	35.9	36.4	73.9
7	35.8	35.0	35.1	34.8	34.6	33.8	33.9	33.5	33.0	33.5	35.5	39.0	42.7	44.7	44.5	44.4	41.2	38.8	38.1	37.6	37.1	33.5	33.6	34.8	37.0	88.5
8 q	35.8	36.1	35.5	35.4	34.9	34.2	33.9	33.4	32.2	32.2	34.1	37.5	40.4	41.6	41.7	39.8	39.0	38.8	38.1	37.5	36.4	36.2	35.1	35.2	36.5	75.0
9	35.3	36.1	36.4	36.4	36.3	36.2	34.3	33.7	32.0	32.0	34.3	37.0	39.0	40.4	40.7	40.0	39.3	38.8	38.3	38.1	37.7	37.3	37.1	36.9	36.8	83.6
10 d	36.9	37.0	37.2	37.3	37.0	37.6	36.9	35.7	34.3	33.5	38.3	37.0	39.1	41.4	40.9	40.0	40.3	42.0	41.8	40.1	34.9	35.7	34.3	33.5	37.6	102.6
11 d	30.1	23.0	21.9	31.8	30.5	35.0	37.3	34.6	33.7	34.4	35.4	38.3	39.6	39.8	39.7	38.7	38.9	38.5	38.2	38.1	37.0	35.5	35.3	35.2	35.0	40.5
12	35.1	35.5	34.9	34.6	34.6	34.8	34.4	34.3	34.0	34.0	35.6	37.8	39.8	41.8	38.3	38.5	38.6	38.9	39.5	33.9	34.5	32.8	33.3	34.3	36.0	63.8
13	34.0	32.8	32.7	32.1	32.2	31.7	32.7	34.4	34.8	34.5	36.5	38.8	39.9	40.2	38.8	38.4	38.2	38.2	38.1	37.5	36.7	36.1	33.7	35.6	35.9	60.6
14	35.1	35.4	34.8	35.4	35.3	34.9	34.2	33.5	32.8	33.0	34.3	36.5	38.2	39.1	38.6	38.5	38.5	38.4	38.0	37.7	37.1	36.4	32.0	34.4	35.9	62.1
15	32.0	34.3	34.8	35.3	33.7	33.8	34.2	33.9	33.8	34.8	36.4	39.5	40.8	41.6	40.6	39.7	39.0	38.1	38.0	37.2	36.5	35.9	35.2	35.0	36.4	74.1
16	33.7	33.5	34.5	35.0	34.8	33.8	35.0	34.3	33.0	33.8	35.7	40.0	42.0	42.7	44.7	42.6	40.2	38.5	37.8	37.0	36.7	36.3	35.4	34.2	36.9	85.2
17	34.0	34.0	34.6	34.8	35.4	34.4	35.5	35.4	33.9	35.1	37.1	38.6	39.8	40.8	40.2	39.6	39.2	37.8	37.7	36.7	35.6	33.4	34.7	33.2	36.3	71.5
18	34.7	35.1	35.3	34.9	35.6	35.3																				





TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

22 ESKDALEMUIR (H)		16,000γ (0.16 C.G.S. unit) +																				DECEMBER 1958				
	Hour G.M.T.												12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 16,000+
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12														
1 q	747	748	748	747	749	751	752	748	743	738	735	735	736	737	738	741	748	754	760	756	756	755	751	747	1929	
2	752	750	748	747	747	745	746	750	750	751	740	723	726	714	716	719	720	755	714	719	723	724	728	733	1640	
3	726	721	727	725	732	731	728	726	725	723	722	721	721	725	730	735	742	746	751	749	748	750	748	746	1598	
4 d	755	759	749	751	753	761	756	756	746	713	701	721	708	701	699	697	707	720	654	609	626	641	670	588	706	
5 d	668	634	624	647	663	661	662	671	676	678	679	677	671	676	681	690	706	710	714	715	716	715	720	709	682	
6	710	711	715	723	725	726	723	722	719	710	690	695	709	699	708	704	694	708	716	720	727	721	708	718	713	
7 q	724	729	733	737	745	746	735	725	722	714	709	712	714	716	719	723	731	740	743	745	742	744	742	739	730	
8	739	740	740	740	741	741	739	736	735	728	723	732	732	736	730	730	734	741	747	741	740	736	738	736	737	
9	737	721	716	718	725	727	735	725	725	721	716	712	722	723	735	738	747	745	745	748	750	750	747	744	732	
10 q	743	739	740	736	735	730	735	731	724	720	718	721	730	737	740	739	742	743	746	747	747	749	749	750	1691	
11	750	751	747	748	754	750	751	746	745	746	746	742	740	739	740	742	745	748	753	755	751	744	745	742	747	
12 q	747	744	747	739	742	745	746	744	741	739	731	731	729	733	735	736	742	747	748	753	751	739	731	732	1772	
13 d	753	727	736	735	740	749	747	753	756	747	742	744	751	731	723	720	756	732	731	683	702	714	694	696	732	
14	694	699	708	715	723	711	717	720	719	717	711	705	709	700	692	686	703	702	705	721	692	710	740	718	709	
15	723	724	724	727	732	734	732	731	729	730	728	720	717	727	728	731	727	737	744	745	752	740	741	748	732	
16	752	747	750	729	742	755	748	752	748	739	744	747	735	735	733	727	732	739	750	749	750	748	748	745	743	
17 d	742	743	743	744	747	753	754	753	745	739	733	739	734	734	732	736	754	733	735	727	716	702	695	592	730	
18 d	610	642	612	701	714	713	709	712	712	711	704	695	699	703	702	711	719	727	732	735	729	723	718	722	702	
19	718	724	707	728	705	717	728	730	719	687	704	703	693	692	704	699	712	723	718	731	733	736	735	734	716	
20	733	735	726	733	748	757	752	738	724	715	714	705	714	720	724	727	716	726	733	735	737	741	737	739	730	
21	739	735	741	742	744	741	741	736	726	723	716	717	717	725	727	724	726	731	731	739	743	743	744	739	733	
22	731	746	738	738	747	753	749	747	737	724	716	721	723	729	722	728	736	743	741	718	738	752	741	742	736	
23	742	739	742	742	749	753	757	761	744	738	734	729	720	726	718	728	744	721	726	724	730	731	726	739	736	
24	740	744	738	739	741	744	742	739	735	730	726	720	720	718	728	739	743	745	747	751	752	750	754	746	739	
25 q	748	749	748	749	751	753	754	753	748	736	727	730	728	734	735	734	738	742	746	749	754	753	755	761	745	
26	754	752	750	745	751	752	753	752	748	738	736	741	739	726	742	741	739	723	730	749	750	744	730	729	742	
27	735	742	740	742	749	744	748	738	731	721	714	712	721	725	733	738	727	738	744	749	748	748	745	746	737	
28	746	739	739	737	746	752	761	748	742	736	727	726	731	735	730	719	736	745	741	754	741	735	752	748	740	
29	753	738	736	736	739	748	742	740	738	733	730	727	726	731	734	744	741	749	742	737	732	741	726	731	737	
30	734	738	743	740	742	746	751	744	736	731	729	730	731	744	754	744	745	747	736	735	733	742	752	743	740	
31	745	754	746	743	746	752	752	748	743	739	729	723	724	736	746	748	750	751	754	749	759	758	756	753	746	
Mean	732	731	729	733	738	740	740	738	733	727	722	721	722	723	725	726	732	736	735	733	735	735	735	728	731	
Sum 22,000+	690	664	601	723	866	941	947	878	732	522	379	347	370	407	478	518	702	811	777	737	768	780	770	559	Grand Total 543,967	

MAGNETIC DECLINATION (WEST)  
Mean values for periods of sixty minutes ending at exact hours, G.M.T.

23 ESKDALEMUIR (D)		10° +																				DECEMBER 1958				
	Hour G.M.T.												12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 700.0+
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12														
1 q	35.1	35.4	35.4	35.1	35.4	35.3	35.0	34.5	34.4	34.6	35.5	36.6	37.3	38.1	38.2	38.8	38.8	38.3	38.2	37.2	36.2	35.8	35.5	35.3	36.3	170.0
2	35.2	34.5	33.2	33.3	33.3	34.5	34.6	35.0	35.2	35.3	36.1	38.7	41.0	42.3	42.8	47.3	46.7	48.0	45.6	37.4	38.7	27.9	30.5	34.0	37.5	201.1
3	33.0	29.6	26.0	31.9	34.5	34.0	35.2	35.0	35.8	36.2	37.8	38.9	39.8	39.7	39.1	39.0	39.1	38.2	37.7	36.9	36.3	36.0	35.8	35.4	35.9	160.9
4 d	35.5	35.5	34.5	34.4	35.0	34.6	34.2	33.9	33.8	33.5	36.3	40.4	42.3	42.5	43.1	39.3	43.6	48.6	30.9	22.5	33.5	30.8	20.4	21.9	35.0	141.0
5 d	13.3	-1.9	18.5	20.4	29.8	33.2	34.0	35.9	36.6	35.8	36.6	37.0	37.4	37.7	37.4	37.1	37.6	37.3	36.9	36.7	35.2	33.6	34.2	34.8	31.9	65.1
6	34.1	33.7	34.1	34.1	33.8	33.8	33.7	34.0	33.7	34.9	35.3	38.9	41.1	39.8	41.9	41.8	43.2	37.6	37.0	36.4	35.3	34.6	31.0	31.1	36.0	164.9
7 q	35.2	35.2	35.2	35.5	34.5	34.6	34.8	33.7	33.5	33.3	35.1	36.6	38.3	39.0	38.7	37.9	37.8	37.2	36.8	36.0	35.6	35.6	35.9	34.7	35.9	160.7
8	35.2	35.1	34.6	34.5	34.6	34.5	34.3	34.2	34.4	34.6	35.9	38.3	39.1	40.6	40.8	41.5	42.4	38.0	37.4	38.9	30.3	34.9	34.8	30.1	36.2	169.0
9	30.3	28.6	31.0	34.4	35.4	35.0	33.2	36.2	36.3	34.9	36.4	38.6	38.6	38.6	39.1	38.6	38.2	37.3	36.6	35.9	35.5	35.4	35.8	35.4	35.6	155.3
10 q	35.0	35.2	34.6	32.9	31.9	32.6	33.0	34.1	33.7	34.2	36.3	38.4	39.0	39.0	38.7	37.9	37.1	36.7	36.4	36.2	35.5	35.4	35.4	35.5	35.6	154.7
11	35.6	34.9	34.7	33.8	32.5	33.7	33.8	33.5	33.7	35.4	36.9	38.2	38.5	39.6	38.2	38.3	38.3	37.8	37.6	37.3	36.9	36.2	27.6	34.4	35.7	157.4
12 q	34.9	33.6	30.5	31.9	34.0	34.2	34.3	34.2	34.1	34.6	35.1	36.8	37.5	39.5	39.0	38.5	37.5	36.9	37.9	37.6	36.3	33.8	29.9	32.7	35.2	145.3
13 d	30.3	27.3	25.1	19.3	27.8	29.9	32.7	33.4	34.0	35.2	37.1	39.0	42.8	44.6	42.7	43.5	47.6	52.1	53.6	42.2	38.1	30.4	25.5	31.5	36.1	165.7
14	32.2	34.5	35.6	36.0	36.5	35.1	34.5	34.3	34.6	36.1	36.8	36.9	37.2	37.1	38.3	38.8	40.4	40.6	39.0	32.3	31.8	32.9	31.1	29.1	35.5	151.7
15	33.5	34.3	34.5	34.5	34.7	34.8	34.4	34.3	34.4	34.2	36.3	37.4	37.2	38.6	39.0	40.4	39.6	35.6	38.6	37.2	35.2	34.8	32.8	33.2	35.8	159.5
16	34.2	33.7	32.9	33.9	35.6	32.4	34.1	34.5	34.8	34.3	35.7	39.7	38.7	39.5	39.2	37.4	36.9	36.9	37.4	36.2	35.5	34.9	34.9	34.9	35.8	158.2
17 d	35.0	35.5	35.9	36.1	36.2	36.0	35.6	35.1	34.9	35.1	36.3	37.4	37.1	37.9	38.4	38.1	39.3	42.4	25.2	33.8	34.1	32.5	33.6	21.7	35.1	143.2
18 d	23.2	16.3	17.5	31.8	34.3	36.8	33.8	33.8	33.9																	



MEAN MONTHLY AND ANNUAL VALUES OF TERRESTRIAL MAGNETIC ELEMENTS  
 For all, a, quiet, q, and disturbed, d, days for H, D and Z and for all days for N, W, I and F

26 ESKDALEMUIR

	Horizontal (H) force			Declination (D) (west)			Vertical (Z) force			North component (X) all days	West component (-Y) all days	Inclination (I) (north) all days	Total force (F) all days
	a	q	d	a	q	d	a	q	d				
	16,000γ +			10° +			45,000γ +						
	γ	γ	γ	'	'	'	γ	γ	γ	γ	γ	γ	
Jan.	710	715	690	40.7	41.0	39.7	311	308	312	16421	3096	69 45.4	48294
Feb.	706	721	670	40.1	40.5	40.0	315	311	322	16417	3093	69 45.8	48296
Mar.	708	716	693	39.6	39.7	38.7	318	310	320	16420	3091	69 45.7	48300
Apr.	719	729	712	38.7	39.1	38.5	312	307	312	16432	3088	69 44.8	48298
May	729	737	722	38.5	38.8	38.7	309	306	313	16441	3089	69 44.1	48298
June	725	736	699	38.2	38.5	37.6	314	315	310	16438	3087	69 44.5	48302
July	726	731	715	37.8	37.7	39.3	326	325	328	16438	3086	69 44.7	48313
Aug.	726	732	715	37.4	38.0	36.7	319	318	314	16440	3084	69 44.5	48307
Sept.	718	730	697	36.7	36.9	35.9	329	320	339	16422	3079	69 45.3	48313
Oct.	724	735	697	36.2	36.6	35.1	319	345	327	16438	3077	69 44.9	48314
Nov.	738	740	734	36.5	36.3	36.7	325	323	329	16452	3081	69 43.9	48316
Dec.	731	740	710	35.4	35.7	34.2	333	327	341	16446	3075	69 44.5	48322
Year	722	730	705	38.0	38.2	37.6	319	318	322	16435	3085	69 44.8	48306

DAILY RANGE AND MEAN MONTHLY VALUES

27 ESKDALEMUIR

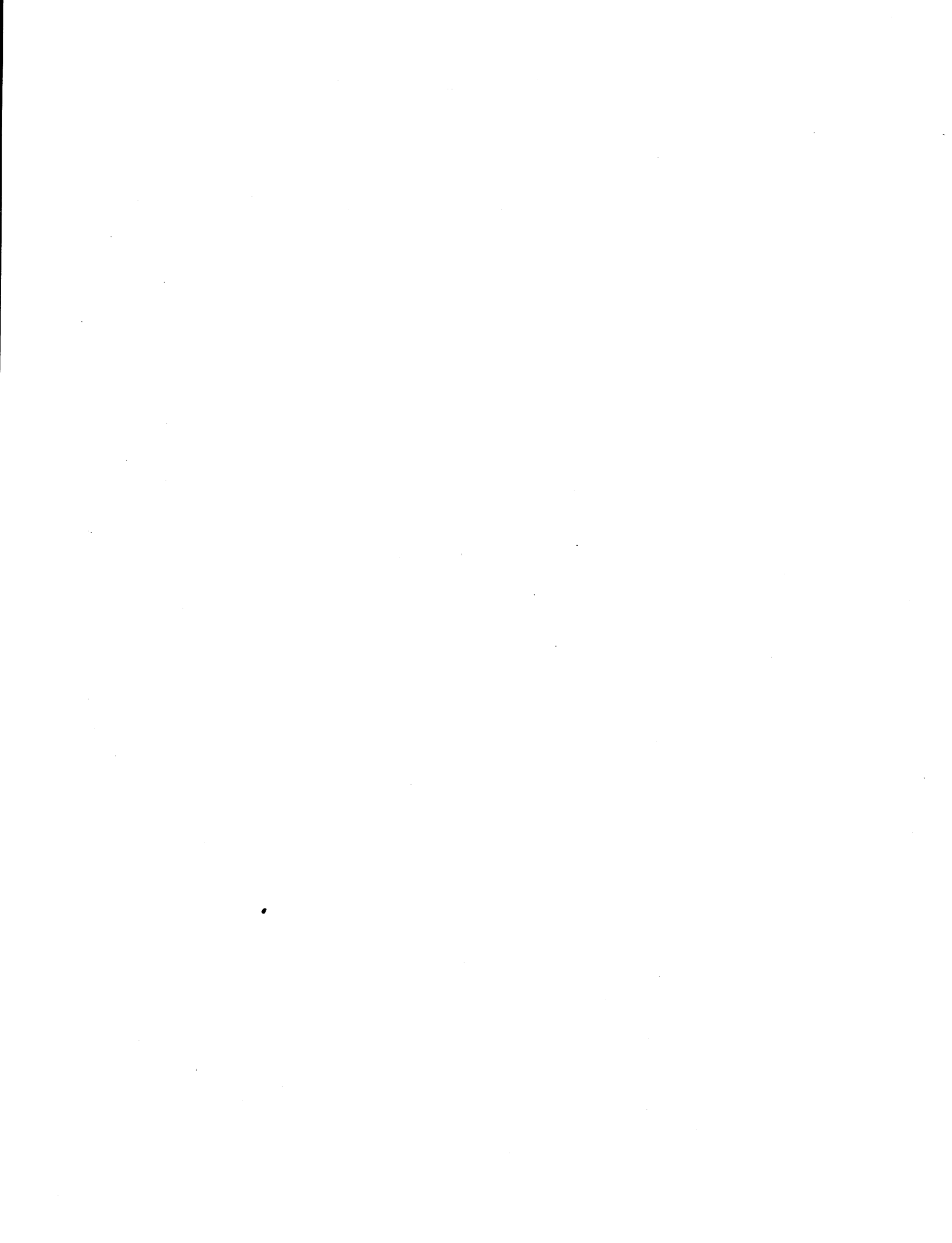
	Mean absolute daily range						Mean daily range expressed as percentage of yearly mean					
	1958			Mean 1932-53			1958			Mean 1932-53		
	H	D	Z	H	D	Z	H	D	Z	H	D	Z
January	77	92	47	78	83	47	56	81	58	76	90	75
February	190	126	90	84	89	53	138	111	111	82	97	84
March	138	134	111	126	113	85	100	118	137	124	123	135
April	128	116	83	125	103	77	93	102	102	123	112	122
May	145	121	91	116	91	71	105	106	112	114	99	113
June	179	123	113	105	84	55	130	108	140	103	91	87
July	221	130	90	110	85	56	160	114	111	108	92	89
August	143	111	69	113	93	68	104	97	85	111	101	108
September	189	139	108	117	106	81	136	122	133	115	116	129
October	103	107	69	107	102	76	75	94	85	105	111	121
November	61	65	28	73	79	47	44	57	35	72	86	75
December	87	108	69	66	74	42	63	95	85	65	80	67
Winter	104	98	75	75	81	47	75	86	73	74	88	75
Equinox	139	124	119	119	106	80	101	109	115	117	115	127
Summer	172	121	111	111	88	63	125	106	112	109	96	100
Year	138	114	102	102	92	63	..	..	..	..	..	..

"Winter" comprises the four months January, February, November, December; "Equinox" the months March, April, September, October; and "Summer" May to August.

FREQUENCY DISTRIBUTION OF DAILY RANGE

28 ESKDALEMUIR

Range	Number of cases, 1958			Percentage distribution					
	H	D	Z	H		D		Z	
				1958	1932-53	1958	1932-53	1958	1932-53
0 - 9	0	0	4	%	%	%	%	%	%
10 - 19	0	0	36	0.0	0.0	0.0	0.0	1.1	2.3
20 - 29	0	0	44	0.0	0.8	0.0	0.4	9.9	14.1
30 - 39	6	8	56	0.0	3.9	0.0	2.5	12.1	19.8
40 - 49	24	19	42	1.6	6.0	2.2	5.0	15.4	16.0
50 - 59	24	19	42	6.6	7.8	5.2	7.4	11.5	10.2
60 - 69	20	16	25	5.5	10.4	4.4	12.1	6.9	7.5
70 - 79	37	22	29	10.1	11.7	6.0	12.9	7.9	5.6
80 - 89	23	37	23	6.3	10.6	10.1	12.3	6.3	3.6
90 - 99	38	47	17	10.4	9.0	12.9	10.7	4.7	3.0
100 - 109	20	42	13	5.5	7.3	11.5	8.3	3.6	2.4
110 - 119	37	48	14	10.1	5.8	13.2	5.9	3.8	2.1
120 - 129	28	29	5	7.7	5.1	7.9	4.0	1.4	1.7
130 - 139	19	21	4	5.2	3.3	5.7	3.5	1.1	1.7
140 - 149	21	13	5	5.7	2.9	3.6	2.6	1.4	1.2
150 - 159	11	7	3	3.0	2.3	1.9	2.2	0.8	0.8
160 - 169	9	9	7	2.5	1.9	2.5	1.7	1.9	0.9
170 - 179	11	8	4	3.0	1.5	2.2	1.6	1.1	0.7
180 - 189	14	3	2	3.8	1.5	0.8	1.2	0.5	0.4
190 - 199	9	5	5	2.5	0.9	1.4	1.0	1.4	0.6
200 +	5	3	2	1.4	0.9	0.8	0.8	0.5	0.5
Days omitted	33	28	25	9.0	6.3	7.7	4.0	6.9	4.8



Q-INDICES OF GEOMAGNETIC ACTIVITY

Q-indices for 4 consecutive intervals of 15 minutes centred at the full hour, 15 minutes later, etc.

29 ESKDALEMUIR		JANUARY 1958																						
	Hour G.M.T.												13	14	15	16	17	18	19	20	21	22	23	
	0	1	2	3	4	5	6	7	8	9	10	11												12
1	4433	3344	4333	4433	3333	3333	3323	2222	1122	2111	1211	1111	1110	2111	0111	0011	2222	2223	3333	3334	4311	1022	1123	2222
2	2333	3333	2332	2221	1000	1222	2211	2221	1111	1111	2121	0201	2220	2212	2112	2211	1100	0000	0110	0000	0000	0000	0000	0000
3	1111	1100	0000	0001	1000	0000	0000	0000	0000	0000	0000	1111	1010	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
4	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	1111	1011
5	0012	2221	1221	1110	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	1100	1110	0011	1000	0000	0000	0000	0000	0000	0000
6	0000	0000	0000	0000	1111	0000	0000	0000	0000	0000	0000	0000	0101	2211	0011	1121	2211	1100	0000	0000	0010	0000	0000	0001
7	1110	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0011	1100	0000	0000	0000	0000	0000	0000	0000	0000	0000
8	0110	0000	0000	0010	0000	0000	0000	0000	0000	0000	0000	0000	0100	1111	2221	0110	0111	1110	0000	0000	0001	1110	0000	0000
9	0000	0000	0000	0000	0000	0000	0000	0000	0000	0011	1000	0000	0011	1122	1222	2333	3333	3333	2222	2222	1111	1111	0112	2122
10	2222	2233	3331	1111	0000	0000	0000	0000	0000	0000	0000	0000	1110	1110	0010	0000	0011	1110	0111	1110	0000	0000	0000	0000
11	0022	2112	2222	1110	0000	0010	0000	0000	0000	0000	0000	1111	1110	0001	1110	0001	1101	0112	2233	3232	2210	1102	2111	0110
12	0010	1101	2222	2332	3332	2121	1110	0100	0000	0000	0000	1221	2322	2222	2111	0001	0000	0001	1111	2211	1122	1111	1000	1211
13	1001	2210	0110	1001	1100	2210	0100	0000	0111	0000	0000	0000	0000	0101	0110	1111	0122	2122	1112	2221	2333	3322	2100	0001
14	1000	0011	1111	1111	1111	1111	1000	0000	0011	1100	1111	0011	0100	0000	0002	2212	2122	2111	1111	1111	2221	2344	4222	1011
15	1110	0000	0000	0111	0000	0000	1110	1110	1111	1000	0011	0002	2233	2222	2222	2211	1122	2210	0000	0111	0011	2211	0111	0000
16	0000	0000	0000	0000	0000	0000	0001	0000	0000	0000	0101	1000	0221	0111	1222	2211	1221	1101	1122	2222	1321	0110	2112	2332
17	1110	0000	0000	1100	1222	1011	1111	2110	1112	2211	2222	2112	2222	1111	2222	2111	2222	2123	2211	1222	3441	3332	2223	
18	4443	3333	3332	3334	4333	3322	2222	2222	2212	2232	2222	2221	2233	3332	2221	1011	2223	3332	3322	1111	0100	0000	0000	0022
19	2222	1220	1101	1100	0000	1111	1000	0011	1111	1101	1112	2222	2222	2222	2111	1111	0111	0222	2221	2211	0001	1100	0000	1110
20	0000	0000	0100	0000	0000	0010	0010	0000	0000	0000	0011	2221	1000	0112	2222	1022	2222	3333	3332	2322	2222	2333	3333	2223
21	4444	4433	3333	3444	4331	2222	2222	2222	2112	0012	2222	1112	2222	2122	1001	0110	0000	1011	1220	1122	1112	0101	0000	0000
22	0001	1110	0001	0001	0011	0111	1012	0121	0000	0000	0000	2222	2223	2232	3222	1100	0100	0101	1221	1111	2111	1011	1110	1000
23	0101	1222	1111	2221	2323	3222	2222	1000	0011	1000	0011	1212	2223	2200	2222	2212	1111	1110	1123	2221	2212	2001	1000	0000
24	0000	0000	0000	0000	0000	1000	0000	0000	0000	0002	2002	2221	1111	1011	1111	1000	1100	0000	0000	0000	0000	0000	0000	0000
25	0000	0000	0011	2222	1101	0110	0000	0000	0000	0110	0011	2221	1222	2222	2233	2232	3332	2200	0000	0111	1000	0000	0000	0111
26	1000	0111	1222	1122	2333	3222	1121	1111	0000	0001	1111	0000	0000	0001	0110	1100	0000	0111	1100	0111	1122	2222	1110	2332
27	2111	0000	0011	0112	2111	1100	0000	0000	0111	1000	0000	0000	0000	0000	0000	0000	0000	0111	0000	0110	0001	1000	1333	3200
28	0100	0000	0000	0000	0000	0000	0000	0111	1000	1100	0100	0111	0000	0000	0010	0000	0000	1001	0000	0000	1000	0000	0000	0001
29	0000	0002	2222	2222	3332	2222	1221	1101	1222	2200	2000	0100	0000	0000	0000	1111	2222	2211	2211	2333	3332	2211	0000	0000
30	0000	0000	0000	0000	0010	0010	0111	1111	0000	0001	1000	0000	0100	0000	0000	1100	0000	0000	0000	0000	0001	1000	0000	0000
31	0112	2200	1000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	1000	0000	0000	0000	0000	1111	0000	0000	0022

Q-INDICES OF GEOMAGNETIC ACTIVITY

Q-indices for 4 consecutive intervals of 15 minutes centred at the full hour, 15 minutes later, etc.

29 ESKDALEMUIR		FEBRUARY 1958																						
	Hour G.M.T.												13	14	15	16	17	18	19	20	21	22	23	
	0	1	2	3	4	5	6	7	8	9	10	11												12
1	2222	2100	0000	0000	0000	0000	0000	0000	0000	0000	0000	0011	0111	1000	0000	0000	0100	0000	0000	0000	0000	0011	1100	0000
2	0001	2221	0000	0000	0000	0000	0111	1000	0000	0011	0111	1000	0000	1000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
3	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	1112	0000	0001	1111	0011	1100	0000	0000	0100	0000	0000	1001
4	1222	2100	0000	0000	0000	0000	0000	0000	0000	0000	0100	0111	1000	0221	1112	1122	2211	2112	2222	2334	3333	2211	1101	2122
5	3323	3233	3333	3222	2122	2221	1111	1100	0001	2102	1222	2122	2122	2211	2111	2222	1122	2222	2211	2122	3333	4433	3321	2232
6	2322	2232	2222	2112	2221	1122	2212	2211	2231	0112	2222	1123	2222	1222	1222	2222	2222	2222	2222	2222	0122	1111	1122	3333
7	3222	1122	2011	2221	2222	2112	1101	0200	1012	1111	1100	2220	0001	1111	1211	1122	2211	2100	0000	2223	3333	3222	2221	2212
8	2221	2222	2222	2211	1112	3222	2111	1101	2222	1111	1122	0222	2222	2222	2223	2221	1112	2211	0011	1122	2122	2222	1001	1211
9	1211	2220	0011	1000	0111	1111	0000	0000	0100	0000	0000	0111	1122	2222	2222	2222	1010	0011	1233	3332	3332	1221	1111	0000
10	3332	2133	3201	2222	2222	2201	1111	1110	0000	0000	0000	0001	1121	1222	2222	2222	2222	4433	2220	1244	3112	2212	2222	2332
11	2111	1145	8766	5544	4544	5455	4556	5656	6667	6666	6655	5554	4456	5444	4433	2343	3333	3334	3333	3333	3333	3333	3445	4444
12	4344	3333	3243	2333	3333	3333	3333	3333	3333	3333	3333	3322	2233	3333	3222	2222	2112	2223	3444	3233	3222	0231	2100	0011
13	0122	2221	0000	0000	0000	0000	0000	0000	0021	1111	0021	2221	1122	2222	1122	1111	1111	0001	1221	1123	3200	0111	1112	2221
14	0012	1023	3233	3332	2223	3332	2222	2222	1122	1000	0010	0221	0221	2122	2210	1222	1233	3220	1000	0000	0000	0221	1100	
15	0000	1000	0000	0000	0000	0000	0000	0000	0000	0100	0010	0100	0000	0010	0001	0011	0121	0010	0111	1111	0000	1000	0332	
16	1211	1000	0000	0000	0000	0000	0000	0000	0000	0211	0001	2201	1110	0111	1110	0011	2223	2112	2211	1101	0001	1000	0122	1222
17	2222	2332	2222	1212	2222	2222	2111	1222	1111	1122	1222	2222	2332	1232	2222	3222	2112	2122	2222	2111	3333	3321	1221	1111
18	1221	2022	1122	1122	2221	2122	2221	1211	1111	1121	1222	2211	2221	2121	1001	1110	0110	1111	2134	3423	3311	1122	2222	2222
19	2322	2220	1111	1111	1112	1011	2212	0122	1231	1122	1211	0110	0111	1211	1000	0011	1100	1100	2221	0010	1123	3322	1011	0222
20	3222	2211	1012	2221	1222	2221																		



Q-INDICES OF GEOMAGNETIC ACTIVITY

Q-indices for 4 consecutive intervals of 15 minutes centred at the full hour, 15 minutes later, etc.

29 ESKDALEMUIR		MAY 1958																							
	Hour G.M.T.												13	14	15	16	17	18	19	20	21	22	23		
	0	1	2	3	4	5	6	7	8	9	10	11												12	
1	1212	3222	2222	2211	0110	1111	1100	1122	1111	1111	0011	2122	1111	1000	0001	0013	3333	2222	3443	3222	2211	1000	1233	2210	
2	0001	1001	1111	0122	2221	2222	2222	2221	1000	0000	0000	0000	0000	0000	0101	0010	0111	0000	0112	2222	2311	1000	0100	0011	
3	0000	1110	0000	0001	0011	1100	0000	0000	0000	0000	0000	1011	2100	0000	0000	0000	0011	1110	0001	2221	1100	0000	0002		
4	2222	2211	1000	0111	0000	0111	2211	1111	1100	0000	0000	0000	0000	0000	0011	2111	1000	0011	1000	0000	0011	1111	1222	2111	
5	1100	0111	2222	2222	1100	0000	0000	0000	0000	0000	0000	0000	0000	0001	1100	0011	2221	1223	3322	2321	1122	1113	3221	0000	
6	0000	1222	2222	2111	0010	0001	1000	1111	0000	0000	0000	0000	0000	0001	1110	0011	0000	0000	0110	0000	0111	0000	0000	0000	
7	0000	0011	1111	1110	0111	1000	0000	0011	0000	0000	0000	0000	0000	1110	0000	0000	0000	0000	0000	0000	0011	1022	2210	0100	
8	0001	0000	0011	0010	1112	2111	0000	0000	0110	0000	0000	0000	0000	0001	2111	2222	2221	2221	0000	0011	1221	1112	2222	3332	2211
9	1011	0000	0000	0000	0000	0110	1012	2113	1100	0000	0000	1212	2221	2010	0010	0001	1100	1111	1101	1110	0000	0001	1000	0000	
10	1001	1112	2212	1111	1111	1122	1111	1111	1100	0111	0001	0122	2222	2111	0000	2323	2211	1222	2223	3332	2220	1011	1111	2210	
11	0000	0000	0000	0000	0000	0000	0110	1222	1111	1111	1101	1122	1110	1001	0100	1221	0122	2222	3222	2221	1100	0000	0000	0000	
12	0000	0000	0000	0000	0000	0000	0000	0000	0001	0000	0000	0000	0100	0011	1000	1111	1222	3332	1232	3333	3223	3100	0023	3222	
13	2212	2200	0000	0000	0001	1111	2010	1110	1100	0001	0001	1111	1111	0122	1133	3233	2333	4433	1133	3233	2111	1232	2334	3322	
14	2333	3333	3333	3233	2211	2322	2333	3333	2222	2211	1221	0111	1122	2212	2223	3322	3332	2222	2233	3322	2100	1110	1011	1221	
15	2211	2222	2222	0011	0222	3332	2212	2221	2100	0120	0210	0121	1211	1211	1102	1122	3433	3444	4434	3320	2111	1112	2222	2222	
16	2222	2221	1101	1101	1111	1122	2000	0000	0021	2221	1110	0000	0000	1022	2222	2223	3344	3322	2111	1000	0011	1000	0011	1111	
17	0012	2222	2322	2222	2221	0011	0011	1000	0000	0001	0000	0000	0111	2222	2221	2212	3312	2222	3223	3221	1111	0111	0222	2222	
18	2222	2112	2111	0112	1000	0000	0101	1221	1110	0000	0121	0011	1121	2321	1232	1123	3344	4333	3232	2211	1000	0001	2112	2200	
19	1010	0000	0110	0011	2222	2222	3221	0100	1000	0000	0000	1000	0011	1211	2110	1222	2222	2222	2222	2222	1000	0111	0000	0000	
20	0001	1211	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0010	1111	2111	1112	2222	2222	2111	1100	0000	0000	0011	1221	
21	1111	2222	2222	2220	0001	1000	0000	1100	0011	0000	0000	0000	0000	0000	0000	0110	0000	1122	1100	0000	0000	0000	0000	0000	
22	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0011	0000	0000	1211	1112	2210	0000	0000	0000	0000	0001	1000	0111	
23	1100	0112	1100	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0111	2111	1111	1100	0000	0000	0000	0000	0000	
24	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	1121	1100	0000	0000	0000	1000	0000	0000	0000	0000	0000	
25	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0111	0010	0223	3332	2222	3321	2332	2212	2222	
26	1102	2222	2333	3221	2221	0100	0001	1000	0211	2220	0001	2222	2221	2342	3445	5444	4444	4322	1101	1000	0000	0011	2221	1122	
27	1122	0111	1110	1101	1002	0122	1111	2111	1100	0011	1222	1222	2233	1110	1113	2222	0012	2222	3333	3333	3332	2233	2442	2222	
28	3333	3332	0111	1111	2222	1222	1221	1112	2111	1001	0100	0100	0000	0100	0022	2222	2100	0022	3333	2333	2222	2122	1002	2122	
29	2333	3322	3333	3333	1223	3233	2333	3343	3333	3333	2232	3000	0000	3334	3222	1132	2322	2332	2222	2223	2111	1210	0000	0111	
30	0111	1111	2222	2212	2222	1122	2122	2222	1122	0000	0001	1000	0000	0011	0122	2111	0001	2222	2211	1122	2222	2322	1222	1001	
31	0000	0011	0022	2322	1111	0000	0000	0000	0000	0121	0000	0001	1001	2222	3222	1100	1101	5545	5554	4332	2323	4556	5444	5556	

Q-INDICES OF GEOMAGNETIC ACTIVITY

Q-indices for 4 consecutive intervals of 15 minutes centred at the full hour, 15 minutes later, etc.

29 ESKDALEMUIR		JUNE 1958																						
	Hour G.M.T.												13	14	15	16	17	18	19	20	21	22	23	
	0	1	2	3	4	5	6	7	8	9	10	11												12
1	5664	5544	4455	5432	2222	2334	4333	3332	1222	2211	2100	2221	1112	1221	1112	2111	2222	3333	3333	3333	3332	1111	2111	2111
2	1100	1102	2211	0111	1211	1011	1112	2221	1111	0000	1011	1233	3222	2222	3222	3222	1221	2122	1333	2222	2211	1000	0000	0000
3	0000	0000	0000	0000	0000	0000	0000	1000	0001	1000	0000	0000	0111	1101	0000	0101	1112	2221	1111	1000	0000	0000	0000	0000
4	0000	0000	0000	0001	1000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	1001	0110	0000	0000	0000	0000	0000	0000
5	0000	0000	0000	0000	0001	1100	0000	0001	0000	0001	0000	0000	0000	0011	1112	3322	3443	2112	2211	1111	0000	0000	0000	0000
6	0000	0000	0000	0000	0000	1111	1000	0012	2100	0120	0000	0100	1100	0000	0000	0012	1100	0233	3333	3333	3333	3332	3333	2222
7	2333	4455	5555	5554	3332	2333	3332	3344	5455	5554	5543	3332	1222	2322	2223	3332	2222	2111	2121	2222	2211	1100	0011	2211
8	1000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0111	0000	0000	0000	1001	1110	1001	2233	2333	3332	2222	1112	2222	1022
9	2333	2111	1100	0000	0000	0001	2222	1100	0000	0000	0011	0022	1111	0122	2222	2233	3332	1112	2334	3333	3333	3332	2122	2223
10	3323	2344	4443	3333	2222	1111	2222	1221	1101	1112	2222	1110	1013	2233	3112	2110	0222	1111	0111	2201	0122	2123	4432	1111
11	1102	2221	2222	2232	2110	0111	1111	2100	1100	0000	0110	2201	2212	3221	0102	1010	2221	1112	2222	2212	1223	2222	2101	0000
12	0000	0000	0000	0000	1222	2210	1111	1111	1111	1122	2201	1012	2210	0000	1211	0112	3222	2222	2122	2221	2222	2111	1100	0000
13	0000	0001	1001	0000	1112	1011	1001	0000	0000	0000	0110	0111	1100	0001	1111	0010	1222	2200	1110	0101	1100	1001	0110	0000
14	0000	0011	1111	0000	0000	0000	0000	0000	0000	0000	0000	1220	1121	0000	0011	1112	2222	2222	2243	2333	3121	0211	1122	2112
15	2210	0000	0010	1111	1221	2332	2332	1122	2332	1001	1100	0210		0000	0102	2222	1112	2100	0111	1100	0000	0000	0000	0000
16	0002	2200	0000	0000	1111	1001	1222	1111	1100	0001	0010	0001	1111	2222	1111	1111	2122	2210	0001	1000	0000	0000	0000	0000
17	0000	0000	0000	0000	0111	0000	0010	0000	0000	0000	0000	1110	0000	0000	0000	0200	0000	0111	1110	0000	0000	0000	0010	0010
18	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0009	1121	2212	2210	0112	1011	1221	2112	2222	2221	1111	2110	2210
19	0000	0000	0010	0000	0000	0000	0000	0000	0000	0000	0000	1000	0000	1101	2112	2100	3333	3321	1101	1122	0100	0011	0011	0011
20	0000	0011	0000	0000	0000																			



Q-INDICES OF GEOMAGNETIC ACTIVITY

Q-indices for 4 consecutive intervals of 15 minutes centred at the full hour, 15 minutes later, etc.

29 ESKDALEMUIR

JULY 1958

	Hour G.M.T.																							
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1111	2333	3332	1222	2122	2121	2222	2222	2101	1000	0000	0000	1111	0011	1112	2222	1101	1001	2221	1112	2221	1111	0000	0000
2	0000	0000	0000	0000	1111	1000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	1122	0022	2211	1211	0000	0000
3	0122	0000	0111	0000	0000	0000	0000	0000	0000	1111	1111	1000	0001	1120	1221	0112	3333	3332	2222	1001	1111	1010	0000	0000
4	0000	0001	1000	0000	0001	1111	1112	1221	2223	2110	0012	2211	1122	3313	3332	2222	3244	4333	3332	2222	2221	1122	0122	2211
5	1000	0000	0100	0111	1000	0000	0000	0100	0000	0000	1111	0000	1011	1221	2211	1000	0000	1000	0000	1001	1101	2222	2223	2211
6	0001	1111	1110	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0011	1010	0000	0000	0000	0000	0000	0000	0000
7	0000	0000	0000	0000	1010	0000	0000	0001	0010	0002	1112	2122	1222	2112	2221	2222	3312	2111	3333	2200	1220	0111	2222	2210
8	0122	1222	2221	1101	1110	0100	1111	2233	6656	5543	4335	6655	4445	4455	5545	6666	6667	6665	5555	5555	5455	6676	6554	4443
9	3435	5433	4444	4444	4322	2222	3332	2332	2242	2332	4223	2121	4122	3222	4433	3333	2224	4332	2122	2211	0000	1111	2333	2333
10	3312	3333	3320	0012	2333	2211	2222	1222	2222	2221	1121	1111	0000	1222	1111	1000	0000	0002	2222	1222	1222	1222	2231	2121
11	1121	2122	2221	1000	0000	0000	0110	1221	1122	2222	2222	2222	1000	1111	1110	1111	0110	1222	2111	1222	3333	2222	2121	1122
12	2233	3323	3222	2111	1000	0000	1121	1222	2223	3311	0112	1102	2110	0112	1112	2222	2122	3332	2211	2112	2111	1000	0000	0000
13	0000	0100	0023	3222	1111	2222	2222	1111	0200	1000	1211	0000	0000	0011	1000	1011	1223	3320	0011	0011	1111	0000	0322	1112
14	2111	1111	2110	1111	1222	2222	2111	1111	0221	2000	0001	1111	1100	0000	0000	0101	2221	0121	1000	0110	0000	1000	0000	0000
15	0000	1110	0000	0000	0111	0000	0000	0000	0000	0000	0000	0000	0000	0000	1111	1000	0000	0000	1111	1110	0001	1111	1100	0000
16	1111	0100	0000	0000	1111	0000	0100	0000	0000	0000	0000	0000	0000	0001	2210	0110	1122	2100	0000	0010	0000	0000	0001	3322
17	1002	3222	1121	1112	1123	3332	2223	2101	1112	2133	2121	1000	0011	0110	0000	0000	0001	1122	1221	0001	0000	0000	0000	0000
18	0000	0001	2222	2122	2122	2223	2222	2332	2222	2012	1122	2232	2322	2333	3323	2333	2133	3322	2222	2111	2113	2221	1012	2221
19	1020	1011	1011	0001	1111	0100	0122	3333	2222	1100	0010	0010	0011	0001	2220	0000	2222	1111	0033	2333	3333	3221	2223	3222
20	1122	2222	3323	2211	1000	0233	2211	0122	2211	1121	1011	1211	1111	2221	1211	2333	4443	2221	0000	1000	0111	1110	1011	1100
21	0100	0011	1111	2100	0011	0001	1122	1211	1000	0000	1001	1111	0011	2121	2211	1011	1235	5444	5544	4554	4233	3333	2333	4341
22	1122	1233	2122	2222	1122	2202	1122	1021	0110	0010	1110	0112	3333	3333	2222	2211	1220	0000	0101	2111	1101	1110	0000	0000
23	0000	0000	0000	1000	0000	0000	0100	0000	0000	0000	0001	0111	1110	0011	1111	1000	0000	0001	0000	0100	0000	0010	0000	0012
24	1011	1001	2222	2111	1110	0111	1110	0100	0000	0010	1111	1001	2221	2220	0013	3332	2023	3444	2122	0222	1110	0011	1111	1010
25	0000	0100	1100	1011	1010	0000	2021	2222	2222	1222	2211	2222	2221	1222	2221	0223	2333	3333	2333	3322	2101	1101	1122	1122
26	2332	0012	1222	1100	0000	0000	0111	1222	2222	2222	2211	1000	1000	0000	0000	0000	0000	0011	1001	1111	1222	1000	0000	0000
27	0000	1011	2110	0111	2222	2222	2122	2222	2221	1011	1101	3222	3111	2222	2223	3333	3333	3334	3322	2222	2211	1112	1122	1222
28	1222	2222	2111	1000	0000	1101	2000	0000	0000	0000	0000	0000	0000	0010	1100	1110	0111	0000	0000	0200	0112	1011	1100	1112
29	1000	1200	0010	0000	0100	0000	0000	0000	0000	0000	0000	1111	0000	0000	0000	0000	0010	2111	1033	2002	3212	1100	0000	0011
30	1110	0000	0000	0010	0000	0000	0111	1111	0000	1100	0000	0000	0112	2222	2100	0011	2333	3322	2222	2222	2111	1232	1110	0000
31	0000	0011	1000	0000	0000	0000	1000	0000	0000	0001	0111	1222	2222	1111	2200	1144	4444	4444	3321	1111	1011	0000	0122	1111

Q-INDICES OF GEOMAGNETIC ACTIVITY

Q-indices for 4 consecutive intervals of 15 minutes centred at the full hour, 15 minutes later, etc.

29 ESKDALEMUIR

AUGUST 1958

	Hour G.M.T.																							
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	0000	0000	1000	0000	0000	0010	0001	0000	0000	0001	1011	2222	3323	1222	1110	0122	1100	2222	1112	2332	2011	1102	2200	0000
2	0010	0000	0000	0000	0001	1111	0000	1000	0111	1100	0011	1221	2222	2222	3322	1111	2212	2211	1102	2222	2100	0000	0000	1111
3	1111	1222	2200	1000	1111	1110	0000	0000	0000	0000	0001	0000	0100	0120	1212	2101	1120	0122	1100	0000	0000	0000	0000	0000
4	0000	0000	0000	1111	1000	0000	1111	0000	0000	0000	0000	0000	0000	0011	1100	0000	1222	1111	1100	0000	0000	0000	0000	0000
5	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0011	0001	2100	0000	0000	0110	2110	0000	0000	0000	0000	0000
6	0000	0000	0000	0000	0000	0000	0000	0000	0000	0100	0000	0000	0000	0000	0000	1111	1000	0000	0000	0000	1111	0110	0010	0000
7	0000	0000	0000	0000	0000	0000	0000	1100	0000	0010	0000	1101	2222	2101	1100	0100	0001	1222	3212	2222	1111	1000	0000	0000
8	0000	1111	1111	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	1112	1000	0122	2100	0000	0000	0000	0000	0000	0000	0001
9	0000	0111	2110	1111	1110	0000	0000	0000	0000	0000	0000	0000	0000	0001	1000	0221	2210	1000	0000	0000	0111	1112	2111	1000
10	0000	0000	0000	1100	0000	0001	1111	1111	1210	0000	1111	2221	2101	1221	1221	1233	2222	2012	2112	2221	2210	1111	0001	2222
11	2211	1011	1112	2211	1111	1100	0121	1110	1110	0011	1222	2220	0000	0001	1111	1000	1112	1111	1112	2000	0001	1001	2221	1101
12	1100	0000	0000	0100	0000	1111	1222	1111	0000	0000	0012	1001	0100	1100	0000	0000	0000	0000	0022	2112	2233	2223	3221	2222
13	3332	1122	2221	1111	1222	2221	1222	3222	1101	0011	1222	2100	0000	0000	1000	2211	0000	2222	1111	0100	0000	0000	1000	0000
14	1100	0000	0110	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0111	1222	2233	2222	2201	1111	1111	2222	2111
15	1222	2111	1111	0001	0221	1111	0000	1011	0000	0000	0001	1000	0001	0011	0001	1111	1211	1100	0001	2121	0000	0000	0010	1111
16	1222	3223	3332	2100	0002	2211	1111	1010	0001	0010	0100	0001	0000	0222	1211	2232	2333	3221	1122	3211	1010	0000	0000	0000
17	0000	0000	0000	0000	0010	0000	0142	2223	3322	2111	1111	1223	3333	3433	2246	5554	5554	5555	5544	3333	3322	3332	2234	2234
18	4322	2212	2211	1122	2122	2222	2211	3212	1211	1222	2221	1112	2223	2101	1120	1001	2221	0110	1110	1111	1011	0000	0001	0110
19	1110	1111	0021	1112	1111	1110	0000	0012	1110	0101	1222	1111	1111	0110	2111	1000	2221	2222	2122	2201	0000	0000	0011	1000
20	0000	0010	0000	0000	0000																			

Q-INDICES OF GEOMAGNETIC ACTIVITY

Q-indices for 4 consecutive intervals of 15 minutes centred at the full hour, 15 minutes later, etc.

29 ESKDALEUIR

SEPTEMBER 1958

	Hour G.M.T.																						
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	0000	0000	0000	0000	0000	0000	0000	0000	0000	0012	1222	2222	3332	2222	2211	0011	0111	0000	0000	0011	0000	0000	0000
2	0000	0000	0011	0000	0000	0000	0011	1111	1000	0000	0000	0000	0000	0111	0000	0000	0000	0000	0000	0000	0000	0000	1111
3	0000	0001	1111	0000	0000	0000	0000	1000	0003	2223	3222	3221	1332	3333	3444	3333	3333	3333	3322	3333	4344	3355	4343
4	3334	4333	3323	3322	2112	2112	1100	1111	2122	1210	1132	3322	1111	2124	4345	6666	5777	6555	5576	6446	5556	7888	7777
5	6677	7766	6666	6666	6543	3222	2233	2213	3221	2222	2211	1320	1201	1221	1112	2122	1112	2222	3244	3334	4421	1010	1111
6	1000	0000	1000	0000	0000	0110	0111	2111	1000	0000	0000	0000	0000	0000	0001	1001	0011	2100	0000	0010	0000	0000	0000
7	0001	1000	1011	1001	0901	1111	1001	1000	0001	1110	0110	0110	0000	0111	2222	2333	3333	3333	2222	1233	3332	2102	3322
8	2111	1113	3332	2111	0110	0111	1110	0000	1001	0001	1010	1121	2112	2211	2211	2223	3110	0010	0000	0111	0000	2222	2443
9	1122	2223	3222	2211	2111	1011	1211	2011	1212	1111	1221	2002	2112	3334	3332	2222	2111	0110	2221	2111	1012	2221	1233
10	0010	1222	2200	0111	1111	1111	1110	0100	0100	1000	0110	1100	1111	2222	1012	1222	1223	2211	1110	0100	0000	1111	0000
11	1000	0000	0111	1111	1100	0000	0001	0000	0000	0001	0111	1010	1101	0011	1111	1111	0011	1000	1110	0011	1000	0010	0000
12	1210	0000	0011	1121	1001	1111	1000	0000	0000	0000	0010	0000	0000	0000	0000	0000	1111	1100	0000	0000	0000	0000	0000
13	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	1111	0000	0000	0010	0000	0000	0011	1110	0000	0000
14	0000	0000	0000	0000	0000	0000	0000	0000	0001	2000	0000	0012	2111	1100	0000	1101	1000	0111	0100	0000	0000	0000	0000
15	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	1110	0001	1100	1210	0000	0000	1001	0112	2100	0000	0000	0001	1110
16	2222	2222	2222	1122	1222	2233	3212	2222	2222	2132	3312	2232	2222	2244	3211	1123	3444	3323	3332	1100	2323	3343	3333
17	3332	3322	2222	2222	2222	1111	1111	0110	1111	1001	0101	1101	1101	2110	0101	1100	1000	0010	1000	0000	0000	0000	0000
18	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	1110	1011	1221	1001	0000	0000	0000
19	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	1001	2200	0100	0000	0000	0000	0000	0110	1100	0000	0000	0000
20	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0000	0011	1110	0000	0110	0001
21	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	1000	0100	0010	0000	0000	0001	0110	0000	0001	1100	0010	0000	0000
22	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0100	1011	1100	0000	0000	0000	0000
23	0000	0000	0000	0000	0000	0000	0000	0001	0000	0100	0100	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0022
24	2111	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	1100	1001	1000	0000	1000	0000	0000	0010	0011	1001	2222
25	2222	2222	2222	2333	3333	3333	3333	3332	2233	3333	3222	2233	2221	2334	4444	4554	4334	3222	3211	2121	1134	3222	3345
26	3333	3333	3333	3333	3322	1211	1211	1111	1121	1100	0110	0010	1100	0122	2221	1012	2021	1011	1010	0000	0012	2210	0000
27	1111	0000	0000	0000	0000	1111	0000	0000	0000	0010	0000	0000	0001	1001	0111	0011	1010	0100	0011	1100	0000	0122	
28	2222	1100	0011	1111	0001	1112	2111	1111	1000	0110	0000	0000	0000	0011	1111	1100	0000	0000	0000	0000	0000	0000	0000
29	0000	0000	0000	0000	0000	0001	1111	1000	0101	0111	1010	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
30	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	1210	1100	0011	0000	0011	0001	1111	1110	0123	3224	4332	1123	3233

1st: 1045 Q = 2, Q' = 1  
7th: 1445 Q = 2, Q' = 2

Q-INDICES OF GEOMAGNETIC ACTIVITY

Q-indices for 4 consecutive intervals of 15 minutes centred at the full hour, 15 minutes later, etc.

29 ESKDALEUIR

OCTOBER 1958

	Hour G.M.T.																						
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	0000	0000	0001	1001	1111	1122	2122	2221	0011	0110	0000	0000	0000	0000	0111	1211	2212	2211	1112	2222	2210	0000	0012
2	3333	3332	2321	1111	2121	2221	1111	1111	1000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	2332	3333
3	2101	1111	1122	2223	3332	2112	2111	1001	0110	1101	1111	1100	0012	2111	1101	1222	1120	1221	2222	2222	1111	1100	0100
4	0000	0000	0000	0000	0000	0000	0000	0000	1000	0000	0000	0000	1001	1001	1101	1100	0000	0000	0000	0000	0000	0011	1111
5	2333	3332	1000	0000	0000	0010	0001	1110	0000	0000	0001	1102	2211	0100	0111	1111	1011	1222	2001	2110	1000	1000	0222
6	0001	0000	0000	0000	1010	1100	0000	0000	0000	0011	0000	1101	1110	2211	1100	0011	1011	1022	1000	0001	1112	2211	1211
7	0000	0120	1122	2222	2222	2221	1111	0100	0100	0121	1111	0001	0111	1100	1110	0022	2211	0011	0000	1000	0112	2222	3333
8	2222	2333	3333	3322	2222	1000	0000	0001	1100	0001	0001	0000	1000	0000	0000	0000	0000	0000	0000	0000	0000	0000	2211
9	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	1000	0000	0000	0000	0000	1000	0000	0000	0000	0000
10	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0012	0012	2122	0000	0011	0000	0000	0011
11	1211	1100	0000	0000	0000	0000	0000	0000	0001	0000	0000	0001	0000	0000	0000	0000	0000	0000	0000	0000	1111	0022	1110
12	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0010	0000	0000	0000	0000	0000	0000	0000
13	0000	0000	0000	0000	0000	0000	0011	0000	0000	0010	1000	1100	0001	0000	0000	1000	0000	0000	0000	0110	0000	0000	0010
14	0000	0000	0000	0000	0110	0110	0000	0000	0000	0000	1110	0011	1100	0001	2111	0011	1000	1000	0000	0000	0000	0000	1000
15	1111	1000	1000	0000	0000	0000	0000	1111	1000	0000	0011	0011	1221	1111	1111	2111	1000	0000	0001	1101	1001	1011	1000
16	0000	0000	1110	0000	0111	1112	1100	0000	0100	0000	1000	0000	0001	0100	1000	0000	0000	1010	0000	0000	0000	0000	0110
17	0000	1000	0000	0000	1122	2101	1100	0000	0000	0000	0000	0000	0000	0010	0000	0001	1012	2222	2111	1011	1110	1100	1121
18	1000	0011	1001	2200	0000	0100	1000	0000	0000	0000	0000	0000	0000	0000	0000	0100	0000	1221	0000	0000	0000	1001	1022
19	0000	0000	0000	0001	1000	0000	0000	0000	0000	0000	0100	0010	1111	1100	0111	0122	2222	2111	0000	0100	0001	0011	1111
20	1221	1111	1011	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0110	0111	0001	1000	0000	0021	2221	1001
21	1100	0000	0000	1112	1110	0000	0000	0000	0100	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
22	0000	0000	0000	1322	3322	2113	2332	2333	3333	3311	0222	2222	2211	1121	1222	1233	3344	3322	1112	2334	3434	3333	3343</

Q-INDICES OF GEOMAGNETIC ACTIVITY

Q-indices for 4 consecutive intervals of 15 minutes centred at the full hour, 15 minutes later, etc.

29 ESKDALEMUIR

NOVEMBER 1958

	Hour G.M.T.																							
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	0000	0000	0000	0000	0000	0000	0000	0000	1111	1000	1100	1100	0000	0000	0001	2211	1111	1110	0010	1000	0000	0110	2110	0000
2	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	1101	1000	0000	0000	0011	1210	2232	2334	4443	2222	2100	0000	0000	0111
3	1112	2100	1110	0112	1101	0001	0000	0000	0000	0000	1111	1100	0111	0112	2200	0010	1100	1000	0000	1000	0010	0021	0001	1111
4	1111	0000	0011	0000	1001	1100	0000	0000	0000	0000	0000	0000	0002	3110	0110	0000	0000	0000	0000	0000	1010	0002	2220	0000
5	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
6	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0122
7	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	1100	0001	1000	0000	0111	1000	0000	0000	0000	0000	0222	1111
8	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
9	0000	0000	0000	0000	0011	1011	1110	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
10	0000	0000	0000	0000	0000	0011	1111	1101	0000	0100	1111	2100	1000	0111	1111	1111	1222	2221	1100	1010	1111	1001	1001	1100
11	1222	3333	4433	2211	1222	1123	2211	1100	0000	0110	0000	0000	0000	1020	0000	0001	1000	0000	0000	0000	0000	0000	0000	0000
12	0000	0000	0000	0000	0010	0000	0000	0000	0000	0010	0100	0002	1121	1122	2221	1100	0000	0000	0111	1222	1111	1111	2110	0000
13	0000	0011	1111	0122	2211	1221	1110	0000	1011	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
14	0000	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	1222	1211
15	2211	0000	0000	0000	0000	0000	0000	0000	0000	1100	0000	0000	0000	1111	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
16	0011	1000	0211	0000	0021	1111	0000	0001	0111	1011	1111	0000	0000	0100	0011	1100	0000	0000	0000	0000	0000	0000	0000	0110
17	0110	1100	0010	0000	0110	1110	0011	1110	0111	0000	0000	0010	0000	0000	0000	0110	0000	0000	0000	0000	0001	1111	0001	1000
18	0000	0000	0000	0000	0000	0000	0000	0001	1110	0000	0000	0000	0011	1000	0000	0100	1110	0100	0001	1122	2233	2332	2221	1100
19	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
20	0000	0000	0011	1110	0000	0000	0000	0000	0000	0000	0000	0011	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
21	0001	1110	0000	0000	0000	0000	0000	0000	0000	0000	0000	0100	0000	0000	0000	1111	1111	1000	0000	0000	0000	0000	0000	0000
22	0000	0011	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
23	0100	0000	0000	0000	0000	0000	0000	0220	0000	0000	0100	0000	0000	1102	2100	0000	0000	0000	0000	0000	0000	0000	0110	0000
24	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	1011	1111	1101	1222	2111	1110	0000	0000	0100	0000	0112	1010	0110	0000
25	0000	0000	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0011	0002	2122	2223	3212	2222	3232	3332	2222	2222	2112	2332
26	2200	0001	1210	0011	1000	0000	0000	0000	0000	0100	0000	0101	0010	0000	0000	1111	1111	2221	0111	2221	1000	0000	1111	1111
27	1000	0000	0000	0000	0001	1111	0111	1000	0000	0110	1110	0000	0001	1000	0000	0000	1111	1121	2111	1112	2211	1111	1111	2222
28	2122	1100	1112	2222	2222	1111	1111	2222	2222	0111	1110	2211	2122	1222	1100	1211	0001	2201	0110	0000	0000	0001	1212	2100
29	0000	1111	1112	2211	1111	1111	0000	0111	0001	1100	1110	0112	0111	1011	0111	1222	2111	0000	0000	0000	0000	0000	0000	0100
30	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000

5th: 1015 Q = 0, Q' = 0

Q-INDICES OF GEOMAGNETIC ACTIVITY

Q-indices for 4 consecutive intervals of 15 minutes centred at the full hour, 15 minutes later, etc.

29 ESKDALEMUIR

DECEMBER 1958

	Hour G.M.T.																							
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	1100	0000	0000	0000	0000	0000
2	0000	0000	1010	0000	0100	0000	0000	0000	0000	0001	1101	2111	1011	1112	3322	2222	2222	2233	4332	2100	1111	2234	4322	1211
3	1100	0012	2222	2110	0001	1000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
4	0022	0121	1101	1100	0000	1111	1000	1210	0002	2123	3010	1222	2312	2233	2223	3232	2223	3443	3345	5444	4443	5434	5444	5444
5	4555	5655	4444	4444	3322	2222	2222	1000	0011	0010	0110	0011	2110	1000	0000	0000	0111	1100	0000	0000	0000	0000	0221	1101
6	1000	0000	0000	0000	0000	0000	0000	1000	0000	0000	0122	2111	1111	0112	2122	2222	2233	2211	1111	1100	0000	0000	1123	3200
7	0010	0000	0000	0110	1111	1122	1100	0000	0000	0000	0000	0110	0100	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
8	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	1110	0000	0000	1011	1222	2211	1001	0001	1100	1233	2110	0001	1232
9	3122	3332	2222	2200	0011	1000	0122	1112	2110	0000	0000	2112	1000	0000	0110	0001	0011	0010	0000	0000	0000	0000	0000	0000
10	0000	0000	0001	1111	1122	1110	1011	1000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
11	0000	0000	0000	0011	1111	1000	0000	0000	0000	0011	0110	0000	0000	1111	0000	0000	0000	0000	0000	0001	0000	0011	2333	2100
12	0000	0001	1222	2211	1100	0000	0000	0000	0000	0000	0000	0000	0000	0000	0010	0000	0000	0000	0000	0011	0110	0111	2222	1112
13	3233	3332	2333	4444	3322	3321	2111	1101	1000	0010	0000	0111	2233	3222	3332	3222	3543	3344	4443	4443	3333	4433	3332	3332
14	2333	3222	3221	1121	0000	2211	1100	0000	0000	0000	0001	0000	1111	1320	1122	2222	2222	2212	2222	3334	3222	2112	2333	2222
15	1000	0000	0000	0000	0010	0000	0000	0000	0000	0022	1100	0000	1110	0000	0000	0000	1011	1111	1110	0001	0221	2121	0011	1101
16	1122	1100	2221	2111	2111	2210	0000	0000	1110	0000	0111	2222	2110	0001	0012	2110	0100	0000	0210	0000	0000	0000	0000	0000
17	0100	0000	0000	0000	0000	0000	0000	0000	0000	0000	1000	0111	1000	0000	0000	0001	1123	3332	3545	4333	2212	2223	3133	3355
18	5554	4434	5655	4333	2211	1221	1110	0110	1110	1021	2111	0000	0012	2010	2000	0000	0000	0000	0000	0000	1000	0012	2112	2100
19	0001	1333	3433	3223	3222	1121	1111	1100	1010	0222	2111	1010	1212	2331	1101	1122	2221	0000	1221	0011	2332	2110	1000	0100
20	0001	1000	0100	1221	1122	2222	2221	1110	1100	1000	0111	1101	2200	0211	1101	1100	2122	1111	0001	0101	1233	3321	1100	0001

DIURNAL INEQUALITIES OF THE GEOGRAPHICAL COMPONENTS OF MAGNETIC FORCE

ALL DAYS

Departures from the mean of the 24 hourly values (uncorrected for non-cyclic change)

30 ESKDALEMUR

	Hour G.M.T.																							
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24
<b>NORTH COMPONENT</b>																								
Jan.	+2.4	+3.9	+3.0	+5.2	+11.9	+12.1	+10.9	+8.5	+1.0	-7.2	-13.2	-18.1	-22.9	-18.3	-13.0	-7.4	-3.4	+0.5	+4.3	+6.7	+8.4	+9.6	+7.6	+7.6
Feb.	+7.9	+7.2	+6.0	+3.3	+9.4	+10.0	+5.6	-2.3	-10.2	-18.5	-19.4	-21.0	-14.5	-12.4	-8.7	-5.4	-1.7	+4.6	+11.2	+12.9	+10.9	+6.5	+8.2	+10.2
Mar.	+10.2	+4.3	+3.5	+7.7	+13.9	+13.9	+10.4	+4.5	-6.4	-19.5	-31.6	-38.1	-36.7	-27.0	-11.2	-0.1	+15.9	+16.6	+13.4	+16.4	+12.6	+11.3	+7.6	+8.5
Apr.	+6.3	+4.9	+7.5	+7.5	+8.2	+7.6	+5.5	-0.7	-9.6	-24.7	-38.8	-47.3	-41.2	-32.3	-17.3	+2.3	+15.1	+21.8	+31.5	+30.2	+25.3	+16.5	+11.3	+10.2
May	+7.7	+6.9	+2.7	+2.5	+7.1	+5.9	+1.1	-10.0	-20.2	-33.3	-42.3	-44.9	-40.7	-26.3	-9.2	+5.0	+23.4	+37.5	+39.4	+35.2	+23.7	+13.0	+10.8	+4.7
June	-11.9	-3.9	-2.5	+0.8	+4.8	-1.1	-5.2	-16.6	-28.0	-37.1	-40.8	-39.9	-32.1	-22.7	-7.3	+6.4	+19.6	+34.2	+45.0	+46.1	+38.5	+27.8	+16.7	+9.1
July	-1.4	-3.8	-1.7	+1.8	+2.9	+3.6	-2.5	-16.4	-30.5	-35.8	-41.8	-47.1	-31.9	-19.8	-3.6	+31.4	+48.8	+42.9	+43.9	+34.0	+25.5	-1.9	-0.3	+3.6
Aug.	+13.9	+14.4	+11.8	+9.3	+7.3	+7.4	+1.1	-10.0	-26.3	-38.5	-48.2	-47.2	-40.0	-27.7	-12.8	+4.0	+17.4	+25.4	+29.7	+30.4	+24.8	+20.5	+17.7	+15.7
Sept.	+3.6	+6.9	+7.1	+9.8	+11.5	+14.3	+9.0	0.0	-13.0	-28.0	-41.3	-42.3	-36.7	-20.1	-8.7	+7.6	+32.7	+23.6	+27.7	+21.0	+14.4	-2.0	-1.1	+4.1
Oct.	+13.0	+12.1	+11.3	+14.7	+18.2	+15.5	+14.3	+9.5	-2.4	-17.3	-32.9	-41.8	-39.3	-29.7	-18.0	-5.0	+2.1	+8.8	+8.4	+11.7	+9.2	+11.2	+14.3	+12.1
Nov.	+8.3	+7.7	+8.5	+9.5	+11.5	+13.9	+12.9	+9.7	+1.8	-8.4	-19.6	-25.3	-25.1	-20.5	-14.0	-9.5	-2.9	+1.4	+3.1	+6.9	+7.5	+7.6	+7.2	+8.1
Dec.	+3.1	+3.2	+0.9	+3.8	+7.6	+9.7	+9.6	+7.7	+3.2	-3.9	-9.4	-11.8	-12.4	-11.9	-9.5	-7.9	-2.1	+1.5	+1.9	+2.3	+3.9	+5.2	+6.1	-0.8
Year	+5.3	+5.3	+4.8	+6.3	+9.5	+9.5	+6.0	-1.4	-11.8	-22.7	-31.6	-35.4	-31.2	-22.4	-11.1	+1.7	+13.7	+18.3	+21.6	+21.2	+17.0	+10.4	+8.8	+7.7
Winter	+5.5	+5.5	+4.7	+5.4	+10.1	+11.4	+9.7	+5.9	-1.1	-9.5	-15.4	-19.1	-18.7	-15.8	-11.3	-7.6	-2.5	+1.9	+5.1	+7.2	+7.7	+7.2	+7.3	+6.3
Equinox	+8.3	+7.1	+7.3	+9.9	+13.0	+12.8	+9.8	+3.4	-7.9	-22.4	-36.1	-42.3	-38.4	-27.3	-13.8	+1.2	+16.5	+17.7	+20.3	+19.8	+15.4	+9.2	+8.1	+8.7
Summer	+2.1	+3.4	+2.6	+3.6	+5.5	+3.9	-1.3	-13.2	-26.3	-36.2	-43.2	-44.8	-36.2	-24.1	-8.2	+11.7	+27.3	+35.1	+39.5	+36.4	+28.1	+14.8	+11.2	+8.3
<b>WEST COMPONENT</b>																								
Jan.	-15.5	-16.2	-13.7	-14.7	-10.9	-8.9	-6.1	-8.9	-12.7	-10.9	-6.7	+0.4	+13.0	+22.7	+22.4	+18.6	+21.9	+22.5	+18.5	+11.4	+0.6	-5.9	-9.5	-11.2
Feb.	-11.8	-9.4	+1.1	-16.4	-14.7	-12.4	-12.1	-9.4	-8.5	-5.7	+3.2	+10.5	+22.2	+25.2	+24.3	+19.6	+14.8	+12.2	+6.9	+3.7	-5.3	-10.0	-14.2	-13.8
Mar.	-15.3	-23.2	-23.3	-17.6	-18.4	-16.7	-10.9	-18.2	-22.1	-18.5	-7.4	+12.5	+28.4	+38.8	+42.8	+36.3	+30.2	+20.7	+11.9	+7.1	-1.3	-7.3	-13.5	-15.1
Apr.	-12.1	-15.3	-17.5	-22.8	-22.5	-25.3	-27.6	-31.7	-30.0	-20.2	-7.6	+11.9	+32.7	+43.7	+44.7	+40.1	+30.9	+21.4	+14.1	+7.1	+1.8	-0.5	-4.1	-11.1
May	-3.7	-10.4	-17.2	-17.1	-20.4	-28.4	-38.3	-41.3	-39.4	-27.3	-9.1	+10.9	+28.8	+41.0	+42.7	+37.0	+29.6	+24.9	+15.4	+7.9	+9.3	+7.7	+0.5	-2.8
June	-9.1	-14.6	-19.2	-23.2	-25.6	-34.6	-40.5	-43.9	-37.2	-25.3	-6.1	+12.2	+30.0	+37.1	+39.0	+35.8	+32.2	+26.4	+21.7	+16.9	+9.3	+11.5	+4.4	-3.9
July	-5.7	-8.4	-14.8	-19.7	-23.2	-28.8	-37.7	-42.4	-36.6	-29.1	-17.9	-0.1	+23.6	+33.0	+37.6	+42.7	+37.2	+27.0	+23.8	+17.7	+12.1	+10.9	+2.1	-3.6
Aug.	-1.5	-1.5	-5.4	-11.6	-15.5	-26.1	-34.7	-39.5	-35.9	-27.3	-8.4	+13.4	+32.1	+41.3	+37.9	+31.0	+20.1	+9.4	+3.8	+4.1	+5.1	+5.3	+3.9	+0.1
Sept.	-13.8	-13.6	-16.4	-16.7	-14.4	-17.8	-23.8	-28.7	-31.3	-26.7	-6.6	+16.1	+33.5	+43.2	+39.1	+31.4	+28.3	+15.1	+13.4	+8.1	+4.1	+4.6	-6.7	-11.2
Oct.	-12.5	-11.5	-8.1	-6.5	-6.9	-6.5	-6.6	-13.3	-23.5	-25.3	-15.1	+4.5	+21.5	+30.4	+31.8	+28.7	+21.3	+15.3	+12.7	+7.3	-2.9	-8.0	-15.1	-11.7
Nov.	-8.9	-8.7	-8.2	-7.1	-6.8	-5.9	-6.1	-7.6	-12.7	-14.1	-6.9	+4.2	+13.6	+18.8	+20.5	+18.4	+15.8	+12.7	+8.5	+4.5	-0.2	-5.2	-8.7	-9.8
Dec.	-12.8	-17.0	-15.9	-10.4	-5.3	-3.2	-2.4	-3.6	-5.3	-5.0	+0.4	+7.7	+14.0	+18.8	+18.2	+16.1	+17.8	+17.4	+9.0	+0.5	-2.5	-8.2	-14.0	-14.2
Year	-10.2	-12.5	-13.2	-15.3	-15.4	-17.9	-20.6	-24.1	-24.6	-19.7	-7.4	+8.7	+24.4	+32.9	+33.4	+29.6	+25.0	+18.7	+13.3	+8.1	+3.1	-1.2	-6.2	-9.0
Winter	-12.2	-12.8	-9.2	-12.1	-9.4	-7.6	-6.7	-7.4	-9.8	-9.0	-2.5	+5.7	+15.7	+21.3	+21.3	+18.2	+17.5	+16.2	+10.7	+5.0	-1.9	-7.3	-11.6	-12.2
Equinox	-13.4	-15.9	-16.3	-15.9	-15.5	-16.6	-17.2	-22.9	-26.7	-22.7	-9.2	+11.2	+28.9	+38.9	+39.6	+34.1	+27.7	+18.1	+13.0	+7.5	+0.4	-5.1	-9.8	-12.3
Summer	-5.0	-8.7	-14.2	-17.9	-21.2	-29.5	-37.8	-41.8	-37.3	-27.3	-10.4	+9.1	+28.6	+38.2	+39.3	+36.7	+29.8	+21.9	+16.2	+11.7	+10.6	+8.8	+2.7	-2.5
<b>VERTICAL COMPONENT</b>																								
Jan.	+1.8	-1.9	-6.6	-9.3	-13.6	-14.3	-11.8	-8.0	-5.6	-4.4	-3.5	-3.0	-4.9	-0.1	+5.7	+6.5	+5.9	+7.5	+10.1	+12.4	+12.7	+10.4	+8.5	+5.5
Feb.	-3.1	-7.3	-25.1	-17.5	-14.4	-15.9	-14.2	-11.3	-10.8	-9.7	-5.4	-3.3	+0.2	+3.6	+8.6	+13.5	+18.0	+17.4	+19.0	+19.8	+17.3	+10.9	+7.8	+1.9
Mar.	-16.3	-22.7	-25.8	-29.2	-24.8	-18.8	-16.8	-11.7	-8.9	-8.2	-8.2	-9.4	-7.3	-0.3	+11.5	+22.3	+34.3	+38.4	+37.4	+28.5	+21.8	+13.3	+5.1	-4.2
Apr.	-6.0	-8.8	-13.4	-14.1	-14.8	-14.3	-9.5	-7.2	-9.2	-12.1	-14.1	-16.6	-15.9	-6.7	+4.2	+14.2	+24.7	+30.6	+31.2	+27.2	+20.0	+12.8	+2.9	-5.1
May	-9.1	-13.8	-13.5	-13.2	-9.2	-4.7	-2.1	-2.8	-6.9	-11.9	-16.8	-19.1	-14.2	-5.2	+5.8	+14.7	+22.2	+26.3	+28.3	+27.0	+19.6	+7.5	-0.8	-8.1
June	-17.7	-22.0	-26.5	-29.5	-20.5	-15.4	-10.1	-4.3	-2.8	-5.7	-9.4	-12.6	-9.9	-1.2	+11.4	+22.3	+28.3	+32.8	+31.9	+27.8	+21.2	+13.7	+1.7	-3.5
July	-6.6	-10.0	-15.2	-13.5	-9.8	-8.6	-6.6	-4.0	-4.6	-9.4	-13.7	-16.0	-15.8	-6.5	+7.3	+18.7	+21.9	+26.1	+25.5	+23.3	+19.6	+4.1	-1.6	-4.6
Aug.	-1.9	-3.0	-8.3	-12.6	-11.5	-7.6	-2.6	-0.4	-3.3	-8.9	-12.5	-16.0	-15.6	-9.1	+2.1	+11.6	+17.3	+20.8	+19.6	+14.8	+11.3	+8.3	+5.1	+2.4
Sept.	-13.8	-10.2	-14.6	-16.7	-12.0	-5.2	-0.3	+1.5	-1.1	-4.8	-9.2	-14.0	-12.1	-3.4	+8.4	+20.9	+24.5	+23.3	+21.6	+20.9	+15.2	+4.8	-7.1	-16.6
Oct.	-9.4	-7.5	-7.3	-10.9	-10.6	-10.4	-8.3	-4.0	-1.1	-0.4	-3.6	-7.5	-5.3	-2.1	+1.7	+7.3	+14.1	+17.0	+18.4	+18.3	+11.3	+7.1	+0.7	-7.5
Nov.	+0.7	-1.1	-3.1	-3.4	-4.7	-5.4	-5.3	-3.9	-1.9	-3.0	-5.1	-5.8	-5.3	-3.4	+0.6	+4.1	+6.3	+8.1	+7.1	+5.8	+6.8	+5.3	+4.4	+2.2
Dec.	-9.1	-11.1	-14.5	-10.7	-8.1	-7.0	-6.6	-5.1	-4.3	-4.6	-5.2	-5.8	-6.1	-1.4	+3.2	+6.5	+9.6	+12.0	+18.7	+16.8	+13.1	+11.4	+7.8	+0.5
Year	-7.5	-9.9	-14.5	-15.1	-12.8	-10.6	-7.9	-5.1	-5.0	-6.9	-8.9	-10.8	-9.3	-3.0	+5.9	+13.5	+18.9	+21.7	+22.4	+20.2	+15.8	+9.1	+2.9	-3.1
Winter	-2.4	-5.3	-12.4	-10.2	-10.2	-10.7	-9.5	-7.1	-5.7	-5.4	-4.8	-4.5	-4.0	-0.3	+4.5	+7.7	+9.9	+11.3	+13.7	+13.7	+12.5	+9.5	+7.1	+2.5
Equinox	-11.4	-12.3	-15.3	-17.7	-15.5	-12.2	-8.7	-5.3	-5.1	-6.4	-8.8	-11.9	-10.1	-3.1	+6.5	+16.2	+24.4	+27.4	+27.1	+23.7	+17.1	+9.5	+0.4	-8.3
Summer	-8.8	-12.2	-15.9	-17.2	-12.7	-9.1	-5.3	-2.9	-4.4	-9.0	-13.1	-15.9	-13.9	-5.5	+6.7	+16.8	+22.4	+26.5	+26.3	+23.2	+17.9	+8.4	+1.1	-3.5

"Winter" comprises the four months January, February, November, December; "Equinox" the months March, April, September, October; and "Summer" May to August.

ALL DAYS

Departures from the mean of the 24 hourly values (uncorrected for non-cyclic change)

31 ESKDALEMUIR

	Hour G.M.T.																							
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24
DECLINATION (measured positive towards the west)																								
Jan.	-3.23	-3.42	-2.89	-3.17	-2.67	-2.26	-1.66	-2.11	-2.61	-1.93	-0.84	+0.76	+3.49	+5.28	+5.02	+4.05	+4.55	+4.52	+3.58	+2.05	-0.19	-1.56	-2.20	-2.56
Feb.	-2.68	-2.17	0.00	-3.44	-3.32	-2.88	-2.67	-1.82	-1.32	-0.46	+1.38	+2.93	+5.03	+5.56	+5.24	+4.16	+3.05	+2.28	+0.97	+0.26	-1.49	-2.26	-3.18	-3.17
Mar.	-3.48	-4.84	-4.85	-3.84	-4.25	-3.91	-2.59	-3.84	-4.23	-3.00	-0.29	+3.97	+7.13	+8.86	+9.07	+7.35	+5.49	+3.55	+1.90	+0.82	-0.74	-1.90	-3.01	-3.37
Apr.	-2.69	-3.28	-3.82	-4.89	-4.87	-5.40	-5.78	-6.38	-5.69	-3.15	-0.07	+4.21	+8.17	+10.05	+9.69	+8.02	+5.67	+3.49	+1.64	+0.29	-0.59	-0.73	-1.26	-2.63
May	-1.05	-2.36	-3.58	-3.55	-4.40	-5.96	-7.82	-7.96	-7.19	-4.26	-0.24	+3.91	+7.37	+9.28	+8.97	+7.28	+5.09	+3.61	+1.62	+0.25	+0.98	+1.05	-0.30	-0.74
June	-1.38	-2.80	-3.79	-4.72	-5.35	-6.94	-7.95	-8.25	-6.45	-3.71	+0.31	+3.99	+7.28	+8.36	+8.16	+6.99	+5.77	+4.03	+2.68	+1.66	+1.73	+1.26	+0.25	-1.13
July	-1.11	-1.56	-2.93	-4.05	-4.80	-5.95	-7.53	-7.94	-6.24	-4.53	-2.04	+1.76	+5.97	+7.48	+7.73	+7.45	+5.67	+3.84	+3.15	+2.30	+1.48	+2.28	+0.44	-0.87
Aug.	-0.83	-0.85	-1.53	-2.70	-3.41	-5.55	-7.05	-7.61	-6.27	-4.06	+0.12	+4.49	+8.01	+9.40	+8.15	+6.11	+3.40	+0.93	-0.36	-0.32	+0.10	+0.29	+0.12	-0.58
Sept.	-2.91	-3.00	-3.58	-3.74	-3.33	-4.14	-5.14	-5.78	-5.82	-4.32	+0.22	+4.85	+8.14	+9.47	+8.22	+6.05	+4.47	+2.15	+1.65	+0.83	+0.28	-0.85	-1.30	-2.42
Oct.	-3.01	-2.78	-2.07	-1.87	-2.08	-1.91	-1.88	-3.05	-4.65	-4.46	-1.80	+2.50	+5.82	+7.26	+7.10	+6.00	+4.22	+2.76	+2.26	+1.04	-0.94	-2.04	-3.60	-2.82
Nov.	-2.11	-2.05	-1.97	-1.79	-1.80	-1.72	-1.72	-1.90	-2.63	-2.53	-0.65	+1.80	+3.70	+4.57	+4.66	+4.07	+3.29	+2.50	+1.60	+0.64	-0.32	-1.33	-2.03	-2.28
Dec.	-2.70	-3.56	-3.25	-2.25	-1.35	-1.02	-0.85	-1.02	-1.19	-0.87	+0.44	+2.00	+3.29	+4.25	+4.04	+3.56	+3.68	+3.46	+1.74	+0.01	-0.66	-1.85	-3.06	-2.84
Year	-2.26	-2.72	-2.85	-3.33	-3.47	-3.97	-4.39	-4.81	-4.52	-3.11	-0.29	+3.10	+6.12	+7.49	+7.17	+5.92	+4.53	+3.09	+1.87	+0.82	-0.03	-0.64	-1.59	-2.12
Winter	-2.68	-2.80	-2.03	-2.66	-2.29	-1.97	-1.73	-1.71	-1.94	-1.45	+0.08	+1.87	+3.88	+4.91	+4.74	+3.96	+3.64	+3.19	+1.97	+0.74	-0.67	-1.75	-2.62	-2.71
Equinox	-3.02	-3.47	-3.58	-3.59	-3.63	-3.84	-3.85	-4.76	-5.10	-3.73	-0.49	+3.88	+7.31	+8.91	+8.52	+6.85	+4.96	+2.99	+1.86	+0.75	-0.50	-1.38	-2.29	-2.81
Summer	-1.09	-1.89	-2.96	-3.75	-4.49	-6.10	-7.59	-7.94	-6.54	-4.14	-0.46	+3.54	+7.16	+8.63	+8.25	+6.96	+4.98	+3.10	+1.77	+0.97	+1.07	+1.22	+0.13	-0.83
INCLINATION																								
Jan.	+0.08	-0.10	-0.19	-0.39	-1.00	-1.03	-0.93	-0.65	-0.04	+0.50	+0.86	+1.11	+1.22	+0.92	+0.71	+0.41	+0.10	-0.12	-0.26	-0.28	-0.25	-0.30	-0.17	-0.23
Feb.	-0.45	-0.53	-1.02	-0.45	-0.79	-0.89	-0.57	-0.01	+0.51	+1.04	+1.10	+1.17	+0.68	+0.59	+0.48	+0.45	+0.37	-0.03	-0.35	-0.41	-0.22	-0.03	-0.19	-0.45
Mar.	-0.88	-0.55	-0.57	-1.01	-1.30	-1.17	-0.96	-0.36	+0.48	+1.31	+1.96	+2.11	+1.88	+1.29	+0.50	+0.11	-0.57	-0.40	-0.11	-0.46	-0.27	-0.32	-0.21	-0.48
Apr.	-0.41	-0.35	-0.60	-0.55	-0.63	-0.54	-0.25	+0.26	+0.78	+1.57	+2.29	+2.55	+1.91	+1.42	+0.68	-0.30	-0.77	-0.94	-1.48	-1.40	-1.19	-0.76	-0.62	-0.66
May	-0.69	-0.67	-0.30	-0.28	-0.44	+0.15	+0.35	+1.10	+1.64	+2.23	+2.47	+2.34	+1.96	+1.09	+0.22	-0.43	-1.36	-2.12	-2.08	-1.74	-1.19	-0.76	-0.73	-0.47
June	+0.46	-0.11	-0.25	-0.49	-0.50	+0.12	+0.59	+1.52	+2.23	+2.61	+2.52	+2.15	+1.49	+1.00	+0.27	-0.31	-0.99	-1.77	-2.43	-2.55	-2.20	-1.63	-1.11	-0.63
July	0.00	+0.09	-0.08	-0.21	-0.15	-0.09	+0.47	+1.51	+2.33	+2.48	+2.63	+2.70	+1.41	+0.73	-0.05	-2.13	-3.12	-2.51	-2.53	-1.88	-1.34	+0.09	-0.05	-0.31
Aug.	-0.94	-1.00	-0.91	-0.78	-0.57	-0.35	+0.29	+1.13	+2.09	+2.65	+2.96	+2.54	+1.85	+1.09	+0.43	-0.36	-0.96	-1.27	-1.51	-1.68	-1.41	-1.21	-1.08	-0.97
Sept.	-0.41	-0.54	-0.62	-0.85	-0.87	-0.85	-0.30	+0.39	+1.21	+2.05	+2.57	+2.23	+1.70	+0.70	+0.29	-0.37	-1.89	-1.16	-1.45	-0.96	-0.62	+0.31	-0.02	-0.53
Oct.	-0.93	-0.84	-0.82	-1.15	-1.37	-1.19	-1.06	-0.56	+0.42	+1.44	+2.26	+2.50	+2.18	+1.52	+0.83	+0.15	-0.05	-0.35	-0.25	-0.41	-0.29	-0.46	-0.73	-0.83
Nov.	-0.42	-0.43	-0.53	-0.62	-0.78	-0.97	-0.90	-0.64	-0.01	+0.65	+1.24	+1.46	+1.35	+1.03	+0.68	+0.50	+0.15	-0.05	-0.13	-0.36	-0.32	-0.30	-0.26	-0.36
Dec.	-0.27	-0.27	-0.22	-0.38	-0.63	-0.77	-0.76	-0.59	-0.25	+0.20	+0.49	+0.54	+0.49	+0.52	+0.48	+0.48	+0.16	-0.02	+0.23	+0.25	+0.09	+0.04	-0.04	+0.24
Year	-0.41	-0.44	-0.51	-0.60	-0.75	-0.65	-0.33	+0.26	+0.95	+1.56	+1.95	+1.95	+1.51	+0.99	+0.46	-0.15	-0.74	-0.90	-1.03	-0.99	-0.77	-0.44	-0.43	-0.47
Winter	-0.27	-0.33	-0.50	-0.46	-0.80	-0.92	-0.47	+0.05	+0.60	+0.92	+1.07	+0.94	+0.94	+0.77	+0.59	+0.46	+0.19	-0.05	-0.13	-0.20	-0.17	-0.15	-0.16	-0.20
Equinox	-0.66	-0.57	-0.66	-0.89	-1.04	-0.93	-0.64	-0.07	+0.72	+1.59	+2.27	+2.35	+1.92	+1.23	+0.57	-0.10	-0.82	-0.71	-0.83	-0.81	-0.59	-0.31	-0.40	-0.63
Summer	-0.29	-0.41	-0.38	-0.44	-0.41	-0.12	+0.42	+1.31	+2.08	+2.49	+2.43	+1.68	+0.97	+0.22	-0.81	-1.61	-1.92	-2.15	-1.96	-1.54	-0.87	-0.74	-0.60	
HORIZONTAL FORCE																								
Jan.	-0.5	+0.8	+0.4	+2.4	+9.7	+10.2	+9.6	+6.7	-1.4	-9.1	-14.2	-17.7	-20.1	-13.8	-8.6	-3.8	+0.7	+4.6	+7.6	+8.7	+8.4	+8.3	+5.7	+5.4
Feb.	+5.6	+5.3	+6.1	+0.3	+6.5	+7.5	+3.3	-4.0	-11.6	-19.2	-18.5	-18.7	-10.1	-7.5	-4.0	-1.7	+1.1	+6.8	+12.3	+13.4	+9.7	+4.5	+5.4	+7.5
Mar.	+7.2	-0.1	-0.9	+4.3	+10.3	+10.6	+8.2	+1.1	-10.4	-22.6	-32.4	-35.1	-30.8	-19.4	-3.1	+6.6	+21.2	+20.1	+15.4	+17.4	+12.1	+9.7	+5.0	+5.6
Apr.	+3.9	+2.0	+4.1	+3.1	+4.0	+2.8	+0.3	-6.5	-15.0	-28.0	-39.5	-44.3	-34.4	-23.7	-8.7	+9.7	+20.6	+25.4	+33.6	+31.0	+25.2	+16.1	+10.3	+8.0
May	+6.9	+4.9	-0.5	-0.7	+3.2	+0.5	-6.0	-17.5	-27.1	-37.8	-43.2	-42.1	-34.6	-18.2	-1.1	+11.8	+28.5	+41.4	+41.6	+36.0	+25.0	+14.2	+10.7	+4.1
June	-13.4	-6.5	-6.0	-3.5	0.0	-7.5	-12.6	-24.4	-34.4	-41.1	-41.2	-36.9	-26.0	-15.4	+0.2	+12.9	+25.2	+38.5	+48.2	+48.4	+40.7	+29.4	+17.2	+8.2
July	-2.4	-5.3	-4.4	-1.9	-1.4	-1.8	-9.4	-24.0	-36.7	-40.6	-44.4	-46.3	-27.0	-13.3	+3.4	+38.8	+54.8	+47.2	+47.6	+36.7	+27.3	+0.1	+0.1	+2.9
Aug.	+13.4	+13.9	+10.6	+7.0	+4.3	+2.4	-5.3	-17.1	-32.5	-42.9	-48.9	-43.9	-33.4	-19.6	-5.6	+9.7	+20.8	+26.7	+29.9	+30.6	+25.3	+21.1	+18.1	+15.4
Sept.	+1.0	+4.3	+3.9	+6.5	+8.6	+10.8	+4.4	-5.3	-18.6	-32.4	-41.8	-38.6	-29.9	-11.8	-1.3	+13.3	+37.4	+26.0	+29.7	+22.1	+14.9	-2.8	-2.3	+1.9
Oct.	+10.5	+9.8	+9.6	+13.2	+16.6	+14.0	+12.8	+6.9	-6.7	-21.7	-35.1	-40.2	-34.6	-23.6	-11.8	+0.4	+6.0	+11.5	+10.6	+12.9	+8.5	+9.5	+11.2	+9.7
Nov.	+6.5	+6.0	+6.8	+8.0	+10.0	+12.6	+11.5	+8.1	-0.6	-10.9	-20.5	-24.1	-22.2	-16.7	-10.0	-6.0	+0.1	+3.7	+4.6	+7.6	+7.3	+6.5	+5.5	+6.2
Dec.	+0.7	0.0	-2.0	+1.8	+6.5	+8.9	+9.0	+6.9	+2.2	-4.7	-9.2	-10.2	-9.6	-8.3	-6.0	-4.8	+1.2	+4.7	+3.5	+2.4	+3.4	+3.6	+3.4	-3.4
Year	+3.3	+2.9	+2.3	+3.4	+6.5	+5.9	+2.1	-5.8	-16.1	-25.9	-32.4	-33.2	-26.1	-15.9	-4.7	+7.2	+18.1	+21.4	+23.7	+22.3	+17.3	+10.0	+7.5	+5.9
Winter	+3.1	+3.0	+2.9	+3.1	+8.2	+9.8	+8.3	+4.4	-2.9	-11.0	-15.6	-17.7	-15.5	-11.6	-7.1	-4.1	+0.8	+4.9	+7.0	+8.0	+7.2	+5.7	+5.0	+3.9
Equinox	+5.7	+4.0	+4.2	+6.8	+9.9	+9.5	+6.4	-0.9	-12.7	-26.2	-37.2	-39.5	-32.4	-19.6	-6.2	+7.5	+21.3	+20.7	+22.4	+20.9	+15.2	+8.1	+6.1	+6.3
Summer	+1.1	+1.7	-0.1	+0.2	+1.5	-1.6	-8.3	-20.7	-32.7	-40.6	-44.4	-42.3	-30.3	-16.6	-0.8	+18.3	+32.3	+38.5	+41.8	+37.9	+29.6	+16.2	+11.5	+7.7

"Winter" comprises the four months January, February, November, December; "Equinox" the months March, April, September, October; and "Summer" May to August.

DIURNAL INEQUALITIES OF THE GEOGRAPHICAL COMPONENTS OF MAGNETIC FORCE  
INTERNATIONAL QUIET DAYS

Departures from the mean of the 24 hourly values (uncorrected for non-cyclic change)

32 ESKDALEMUIR

	Hour G.M.T.		2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24
	0-1	1-2																						
NORTH COMPONENT																								
	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	
Jan.	+5.4	+1.6	+2.7	+4.1	+7.0	+10.1	+10.2	+10.1	+7.1	+0.9	-5.0	-12.0	-18.7	-19.9	-16.9	-10.2	-7.3	-5.2	+1.6	+5.5	+6.1	+7.5	+8.0	+7.5
Feb.	+6.4	+3.8	+5.4	+4.0	+6.0	+6.2	+6.7	+8.5	+2.3	-7.5	-16.8	-20.4	-19.1	-18.9	-16.4	-10.4	-7.2	+0.5	+9.1	+12.0	+11.9	+10.4	+10.5	+12.9
Mar.	+14.7	+5.4	+5.1	+4.2	+12.9	+14.6	+15.4	+10.9	-1.4	-17.3	-31.6	-38.0	-37.5	-31.7	-20.7	-10.3	+7.2	+11.9	+11.3	+13.8	+15.1	+17.5	+12.8	+15.6
Apr.	+7.1	+8.3	+7.5	+9.1	+7.3	+8.4	+10.7	+10.7	+2.6	-15.3	-29.6	-41.0	-40.7	-32.8	-18.6	-7.9	+1.4	+10.2	+14.4	+18.7	+19.1	+19.1	+15.3	+15.9
May	+10.2	+8.6	+6.2	+9.3	+12.9	+13.7	+8.7	+0.2	-14.2	-29.5	-41.2	-46.7	-43.8	-30.0	-19.1	0.0	+14.2	+21.1	+22.2	+20.7	+21.9	+18.7	+18.7	+17.7
June	+6.8	+8.0	+6.4	+10.8	+10.3	+11.6	+3.1	-10.5	-24.1	-33.9	-38.6	-38.1	-35.1	-26.9	-15.9	-2.0	+9.5	+18.1	+32.1	+30.6	+27.1	+22.7	+18.1	+10.2
July	+1.4	-0.6	+1.1	+3.7	+3.8	+7.1	+0.7	-7.2	-16.9	-31.5	-37.0	-35.1	-28.5	-18.4	-6.3	+3.5	+16.0	+23.9	+30.3	+25.1	+22.5	+20.6	+13.6	+8.2
Aug.	+11.0	+11.5	+9.8	+12.9	+14.8	+14.4	+7.0	-6.1	-20.8	-33.4	-44.2	-50.1	-46.9	-29.7	-16.6	-4.3	+13.5	+22.2	+25.5	+25.2	+24.6	+22.4	+20.7	+16.5
Sept.	+13.3	+12.5	+12.3	+12.8	+12.5	+11.3	+7.0	-0.9	-11.3	-33.2	-43.5	-43.5	-34.7	-23.6	-13.3	-1.0	+6.1	+11.7	+15.2	+19.7	+18.9	+17.1	+17.7	+16.7
Oct.	+14.0	+11.1	+11.5	+12.5	+12.3	+12.3	+12.9	+9.4	-0.3	-16.3	-33.1	-42.5	-39.7	-32.7	-24.1	-12.1	-0.1	+8.1	+13.8	+16.1	+12.5	+18.8	+17.6	+18.0
Nov.	+6.1	+6.7	+5.2	+6.4	+7.6	+8.5	+8.9	+6.1	-1.4	-12.9	-22.9	-27.4	-25.9	-18.7	-10.3	-5.6	+0.6	+5.0	+8.5	+10.4	+11.6	+12.0	+11.9	+9.9
Dec.	+2.6	+2.5	+4.5	+3.0	+5.6	+6.1	+5.6	+1.7	-2.5	-8.8	-15.2	-14.8	-14.1	-11.5	-9.2	-7.3	-1.7	+3.8	+7.2	+9.1	+9.8	+8.7	+7.6	+7.5
Year	+8.3	+6.6	+6.5	+7.8	+9.5	+10.3	+8.1	+2.7	-6.8	-19.9	-29.9	-34.1	-32.0	-24.5	-15.6	-5.7	+4.4	+10.9	+15.9	+17.3	+16.8	+16.3	+14.4	+13.1
Winter	+5.1	+3.6	+4.4	+4.4	+6.6	+7.7	+7.8	+6.6	+1.4	-7.1	-15.0	-18.7	-19.4	-17.2	-13.2	-8.3	-3.9	+1.0	+6.6	+9.3	+9.8	+9.6	+9.4	+9.4
Equinox	+12.2	+9.3	+9.1	+9.6	+11.2	+11.6	+11.5	+7.5	-2.6	-20.5	-34.5	-41.2	-38.2	-30.2	-19.2	-7.8	+3.7	+10.4	+13.7	+17.1	+16.4	+18.2	+15.9	+16.5
Summer	+7.3	+6.8	+5.9	+9.2	+10.5	+12.0	+4.9	-6.0	-19.0	-32.1	-40.3	-42.5	-38.6	-26.2	-14.5	-0.7	+13.3	+21.3	+27.5	+25.5	+24.0	+21.1	+17.8	+13.1
WEST COMPONENT																								
	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	
Jan.	-11.3	-11.4	-8.8	-4.8	-2.1	-2.8	-4.7	-7.7	-11.5	-12.6	-10.3	-5.0	+5.1	+17.5	+17.1	+11.3	+13.6	+13.5	+10.6	+7.3	+2.4	+0.9	-1.4	-4.7
Feb.	-5.3	-7.0	-8.2	-5.7	-4.9	-7.9	-6.0	-5.3	-10.1	-7.0	+1.7	+2.4	+14.4	+10.4	+11.3	+4.0	+1.7	+6.9	+6.3	+7.4	+5.8	+1.4	-1.6	-4.6
Mar.	-4.5	-13.8	-18.4	-12.7	-12.3	-13.5	-10.6	-19.1	-23.9	-17.4	-5.0	+8.1	+21.0	+27.7	+27.5	+20.2	+15.9	+8.4	+7.0	+11.0	+11.7	+5.5	-5.5	-7.2
Apr.	-3.7	-1.5	-1.0	-5.4	-12.4	-16.1	-23.8	-31.3	-31.1	-23.2	-14.3	-1.2	+15.3	+27.8	+28.6	+23.3	+15.6	+9.3	+7.4	+10.2	+12.0	+11.2	+2.6	+1.8
May	+1.5	-4.6	-9.2	-12.1	-17.6	-26.1	-38.0	-41.3	-43.7	-32.2	-13.4	+11.1	+33.1	+44.5	+40.9	+32.8	+21.9	+12.4	+7.0	+6.7	+8.9	+6.3	+5.6	+5.5
June	-0.2	+0.4	-6.9	-12.9	-21.1	-33.1	-42.3	-42.5	-38.3	-25.7	-6.7	+15.3	+29.8	+35.5	+34.7	+29.9	+23.3	+15.6	+12.4	+10.4	+10.5	+7.4	+4.6	0.0
July	+2.5	-5.4	-8.6	-14.1	-15.8	-31.0	-40.3	-39.8	-36.0	-27.4	-12.3	+5.7	+22.5	+29.7	+30.6	+30.1	+25.1	+21.0	+19.6	+13.8	+11.8	+10.8	+6.9	+0.5
Aug.	+1.2	-1.6	-5.8	-6.6	-14.7	-24.4	-34.9	-42.0	-39.0	-33.5	-18.3	+4.2	+27.3	+40.7	+37.5	+29.4	+20.3	+12.9	+10.3	+10.0	+9.9	+7.3	+5.5	+4.3
Sept.	-1.2	-3.3	-4.9	-6.9	-9.1	-14.0	-22.2	-32.7	-36.0	-32.8	-11.3	+6.6	+27.8	+36.0	+32.7	+21.9	+11.9	+7.7	+9.1	+4.8	+5.4	+3.7	+4.1	+2.7
Oct.	-5.8	-6.4	-5.6	-6.4	-7.6	-9.1	-11.7	-18.9	-29.1	-31.9	-20.3	-5.2	+14.8	+24.8	+27.0	+24.7	+18.1	+14.5	+11.8	+11.0	+7.8	+2.3	+1.0	+0.3
Nov.	-3.7	-5.1	-5.8	-5.4	-6.0	-6.6	-8.1	-10.5	-16.3	-17.3	-10.2	+1.7	+11.4	+13.7	+16.8	+13.2	+11.0	+10.3	+9.2	+7.7	+4.5	+2.0	-3.9	-2.8
Dec.	-3.3	-3.6	-6.5	-6.8	-6.0	-5.3	-5.5	-7.9	-10.5	-10.1	-10.4	+1.8	+7.6	+14.5	+13.2	+10.3	+9.9	+8.1	+8.9	+6.0	+2.1	-1.3	-0.8	-4.1
Year	-2.8	-5.2	-7.5	-8.3	-10.8	-15.8	-20.7	-24.9	-27.1	-22.6	-10.5	+3.8	+19.2	+26.9	+26.5	+20.9	+15.7	+11.7	+10.0	+8.8	+7.8	+4.8	+1.0	-0.7
Winter	-5.9	-6.7	-7.3	-5.7	-4.7	-5.6	-6.1	-7.9	-12.1	-11.8	-6.1	+0.2	+9.6	+14.0	+14.6	+9.7	+9.0	+9.7	+8.8	+7.1	+3.7	+0.8	-3.1	-4.1
Equinox	-3.8	-6.2	-7.5	-7.8	-10.3	-13.1	-17.1	-25.5	-30.0	-26.3	-12.8	+2.1	+19.7	+29.0	+28.9	+22.5	+15.4	+10.0	+8.9	+9.3	+9.2	+5.7	+0.6	-0.6
Summer	+1.2	-2.8	-7.7	-11.4	-17.3	-28.6	-38.9	-41.4	-39.3	-29.7	-12.7	+9.1	+28.2	+37.6	+35.9	+30.6	+22.7	+15.5	+12.3	+10.2	+10.3	+8.0	+5.7	+2.6
VERTICAL COMPONENT																								
	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	
Jan.	-0.3	-0.2	-1.1	-2.4	-3.6	-3.9	-2.6	-1.4	-1.5	-3.4	-3.3	-3.2	-5.9	-1.6	+3.7	+4.4	+3.4	+3.5	+3.6	+4.2	+3.7	+3.4	+2.9	+1.6
Feb.	+1.4	+1.7	+0.8	+0.1	-1.1	-1.0	-1.1	-2.7	-2.2	-2.1	-0.4	+0.3	+1.8	+2.7	+0.6	+0.9	+1.5	+0.4	+0.3	-0.5	-0.2	+0.9	+0.2	-2.3
Mar.	-3.8	-10.6	-10.8	-9.6	-7.8	-4.9	-1.0	+2.8	+4.0	+1.8	-3.4	-6.4	-10.0	-8.0	-3.6	+1.6	+4.4	+12.1	+13.2	+10.6	+7.8	+7.6	+9.0	+5.0
Apr.	+5.0	+5.8	+6.2	+5.4	+5.6	+4.3	+2.4	+0.8	-6.2	-8.6	-11.0	-14.2	-16.6	-13.0	-6.2	-2.8	+1.4	+6.7	+7.8	+6.8	+6.0	+5.4	+5.4	+3.6
May	+4.4	+1.6	+3.2	+5.2	+6.8	+8.0	+7.2	+4.6	-0.4	-8.4	-18.6	-24.8	-23.6	-16.6	-9.8	-1.2	+5.8	+11.4	+13.0	+11.0	+8.4	+6.2	+3.8	+2.8
June	+2.9	+2.3	+2.6	+4.9	+5.1	+4.1	+2.9	-0.1	-5.2	-11.3	-15.5	-18.3	-16.9	-12.1	-5.4	+1.9	+7.1	+12.5	+13.3	+10.5	+7.2	+4.7	+1.5	+1.3
July	-0.4	-1.0	-1.2	-1.6	-1.4	-0.5	+1.2	-0.6	-4.0	-8.4	-12.8	-16.4	-17.0	-9.8	-2.8	+5.4	+11.0	+13.7	+13.4	+12.0	+11.2	+7.4	+3.4	-0.8
Aug.	+1.6	+1.3	+2.0	+3.3	+4.8	+7.5	+8.4	+7.3	+1.0	-5.7	-12.2	-19.1	-22.0	-16.5	-8.0	+0.7	+5.2	+8.7	+9.4	+7.7	+6.0	+3.9	+2.8	+1.9
Sept.	+5.0	+5.4	+5.8	+5.8	+5.8	+7.2	+8.6	+8.0	+3.6	-1.8	-9.2	-18.6	-19.6	-14.6	-8.6	-3.0	-0.2	+0.8	+0.8	+4.2	+4.2	+4.2	+3.0	+3.2
Oct.	+2.2	+2.3	+1.2	+0.5	+0.6	+0.9	+2.6	+4.7	+5.8	+3.9	-3.2	-7.7	-10.0	-9.3	-6.2	-3.5	-0.6	+0.3	+1.8	+2.7	+4.0	+3.5	+2.2	+1.3
Nov.	+0.7	+0.1	0.0	-0.1	-0.5	-0.7	-0.3	+0.7	+2.8	+2.1	-0.7	-3.3	-5.7	-4.7	-2.8	+1.1	+1.7	+1.7	+1.5	+1.1	+1.6	+1.7	+1.5	+0.5
Dec.	+2.6	+2.4	+1.3	+1.2	-0.2	-1.2	-1.4	-0.6	+0.3	-0.8	-1.8	-3.8	-4.8	-4.6	-1.9	+0.6	+2.0	+1.4	+1.0	+0.8	+1.5	+2.4	+2.6	+1.0
Year	+1.8	+0.9	+0.8	+1.1	+1.2	+1.7	+2.2	+2.0	-0.2	-3.6	-7.7	-11.3	-12.5	-9.0	-4.3	+0.5	+3.6	+6.1	+6.6	+5.9	+5.1	+4.3	+3.2	+1.6
Winter	+1.1	+1.0	+0.3	-0.4	-1.3	-1.7	-1.3	-1.0	-0.1	-1.														

INTERNATIONAL DISTURBED DAYS

Departures from the mean of the 24 hourly values (uncorrected for non-cyclic change)

33 ESKDALEHUIR

	Hour G.M.T.																							
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24
DECLINATION (measured positive towards the west)																								
Jan.	-2.49	-2.36	-1.89	-1.12	-0.68	-0.95	-1.34	-1.94	-2.59	-2.58	-1.89	-0.56	+1.73	+4.30	+4.09	+2.66	+3.02	+2.93	+2.08	+1.26	+0.25	-0.10	-0.59	-1.24
Feb.	-1.32	-1.55	-1.86	-1.30	-1.22	-1.83	-1.46	-1.40	-2.14	-1.13	+0.98	+1.26	+3.64	+2.81	+2.90	+1.20	+0.62	+1.37	+0.92	+1.04	+0.72	-0.11	-0.72	-1.42
Mar.	-1.47	-2.99	-3.92	-2.73	-2.97	-3.29	-2.73	-4.27	-4.78	-2.85	+0.19	+3.09	+5.67	+6.79	+6.34	+4.47	+2.93	+1.25	+0.99	+1.69	+1.78	+0.45	-1.59	-2.05
Apr.	-1.02	-0.62	-0.48	-1.44	-2.78	-3.57	-5.22	-6.74	-6.38	-4.10	-1.76	+1.32	+4.64	+6.86	+6.48	+5.00	+3.10	+1.49	+0.94	+1.34	+1.70	+1.54	-0.06	-0.24
May	-0.08	-1.25	-2.10	-2.79	-4.05	-5.80	-8.01	-8.33	-8.28	-5.39	-1.14	+4.01	+8.36	+10.13	+8.98	+6.63	+3.89	+1.70	+0.57	+0.57	+0.96	+0.57	+0.42	+0.43
June	-0.30	-0.23	-1.64	-3.01	-4.65	-7.12	-8.67	-8.19	-6.82	-3.91	+0.12	+4.53	+7.36	+8.19	+7.62	+6.11	+4.35	+2.46	+1.29	+0.93	+1.10	+0.63	+0.24	-0.39
July	+0.46	-1.06	-1.78	-2.98	-3.34	-6.54	-8.18	-7.78	-6.64	-4.34	-1.08	+2.48	+5.62	+6.70	+6.42	+5.96	+4.46	+3.34	+2.82	+1.84	+1.54	+1.40	+0.88	-0.20
Aug.	-0.18	-0.77	-1.54	-1.82	-3.52	-5.47	-7.32	-8.26	-7.08	-5.49	-2.02	+2.76	+7.30	+9.35	+8.20	+6.10	+3.58	+1.77	+1.10	+1.06	+1.06	+0.63	+0.32	+0.24
Sept.	-0.75	-1.13	-1.46	-1.87	-2.31	-3.25	-4.75	-6.57	-6.84	-5.37	-0.65	+2.97	+6.93	+8.17	+7.10	+4.47	+2.17	+1.11	+1.27	+0.23	+0.38	+0.09	+0.15	-0.09
Oct.	-1.70	-1.72	-1.57	-1.76	-2.00	-2.30	-2.86	-4.18	-5.87	-5.84	-2.86	+0.56	+4.50	+6.24	+6.37	+5.44	+3.66	+2.62	+1.86	+1.62	+1.11	-0.24	-0.46	-0.62
Nov.	-0.97	-1.28	-1.37	-1.34	-1.50	-1.65	-1.98	-2.36	-3.23	-3.00	-1.19	+1.38	+3.29	+3.48	+3.79	+2.88	+2.20	+1.89	+1.54	+1.16	+0.47	-0.04	-1.23	-0.94
Dec.	-0.77	-0.82	-1.49	-1.49	-1.43	-1.30	-1.33	-1.65	-2.03	-1.72	-0.57	+0.93	+2.07	+3.36	+3.01	+2.35	+2.05	+1.50	+1.53	+0.87	+0.05	-0.60	-1.41	-1.11
Year	-0.88	-1.31	-1.76	-1.97	-2.54	-3.59	-4.49	-5.14	-5.22	-3.81	-0.99	+2.06	+5.09	+6.37	+5.94	+4.44	+3.00	+1.95	+1.41	+1.13	+0.93	+0.35	-0.34	-0.64
Winter	-1.39	-1.50	-1.65	-1.31	-1.21	-1.43	-1.53	-1.84	-2.50	-2.11	-0.67	+0.75	+2.68	+3.49	+3.45	+2.27	+1.97	+1.92	+1.52	+1.08	+0.37	-0.21	-0.99	-1.18
Equinox	-1.23	-1.61	-1.86	-1.95	-2.51	-3.10	-3.89	-5.44	-5.97	-4.54	-1.27	+1.99	+5.43	+7.01	+6.57	+4.85	+2.97	+1.62	+1.27	+1.22	+1.24	+0.46	-0.49	-0.75
Summer	-0.03	-0.83	-1.77	-2.65	-3.89	-6.23	-8.05	-8.14	-7.21	-4.78	-1.03	+3.45	+7.16	+8.59	+7.81	+6.20	+4.07	+2.32	+1.45	+1.10	+1.17	+0.81	+0.47	+0.02
INCLINATION																								
Jan.	-0.22	+0.03	-0.09	-0.27	-0.52	-0.72	-0.67	-0.60	-0.36	+0.02	+0.37	+0.77	+1.02	+1.05	+0.99	+0.64	+0.40	+0.26	-0.15	-0.35	-0.34	-0.42	-0.44	-0.39
Feb.	-0.32	-0.12	-0.23	-0.19	-0.36	-0.33	-0.39	-0.56	-0.08	+0.53	+1.07	+1.32	+1.12	+1.18	+0.95	+0.66	+0.49	-0.11	-0.67	-0.89	-0.89	-0.68	-0.66	-0.85
Mar.	-1.00	-0.45	-0.37	-0.36	-0.89	-0.91	-0.90	-0.41	+0.49	+1.39	+2.05	+2.23	+1.96	+1.54	+0.93	+0.47	-0.56	-0.58	-0.50	-0.78	-0.94	-1.03	-0.55	-0.81
Apr.	-0.30	-0.39	-0.33	-0.39	-0.19	-0.25	-0.35	-0.29	+0.06	+1.08	+1.85	+2.35	+2.07	+1.49	+0.71	+0.17	-0.25	-0.62	-0.84	-1.19	-1.25	-1.26	-0.90	-0.97
May	-0.58	-0.47	-0.21	-0.33	-0.46	-0.38	+0.08	+0.65	+1.46	+2.12	+2.42	+2.31	+1.88	+1.01	+0.51	-0.44	-1.06	-1.25	-1.22	-1.17	-1.34	-1.15	-1.20	-1.16
June	-0.37	-0.47	-0.27	-0.43	-0.29	-0.25	+0.39	+1.21	+1.93	+2.27	+2.24	+1.86	+1.52	+1.03	+0.48	-0.19	-0.73	-1.07	-1.93	-1.88	-1.73	-1.47	-1.21	-0.64
July	-0.13	+0.08	0.00	-0.11	-0.09	-0.09	+0.48	+0.95	+1.46	+2.19	+2.26	+1.83	+1.17	+0.60	-0.04	-0.47	-1.09	-1.49	-1.89	-1.52	-1.35	-1.30	-0.89	-0.57
Aug.	-0.70	-0.70	-0.53	-0.68	-0.67	-0.46	+0.18	+1.10	+1.87	+2.47	+2.83	+2.76	+2.20	+1.04	+0.43	-0.06	-1.01	-1.40	-1.57	-1.59	-1.59	-1.47	-1.36	-1.09
Sept.	-0.73	-0.65	-0.61	-0.61	-0.57	-0.39	+0.03	+0.66	+1.28	+2.54	+2.77	+2.31	+1.45	+0.74	+0.26	-0.28	-0.55	-0.84	-1.09	-1.25	-1.21	-1.07	-1.14	-1.05
Oct.	-0.79	-0.59	-0.66	-0.73	-0.70	-0.67	-0.64	-0.26	+0.52	+1.56	+2.34	+2.66	+2.17	+1.61	+1.09	+0.40	-0.23	-0.70	-1.00	-1.13	-0.82	-1.17	-1.11	-1.15
Nov.	-0.34	-0.37	-0.27	-0.36	-0.44	-0.50	-0.48	-0.25	+0.36	+1.11	+1.61	+1.69	+1.41	+0.94	+0.40	+0.23	-0.13	-0.41	-0.64	-0.75	-0.77	-0.77	-0.70	-0.60
Dec.	-0.06	-0.06	-0.18	-0.08	-0.30	-0.36	-0.33	-0.03	+0.30	+0.68	+1.02	+0.85	+0.72	+0.46	+0.39	+0.37	+0.04	-0.31	-0.55	-0.65	-0.63	-0.49	-0.36	-0.41
Year	-0.46	-0.35	-0.31	-0.38	-0.46	-0.44	-0.22	+0.18	+0.78	+1.49	+1.90	+1.91	-1.56	+1.05	+0.59	+0.13	-0.39	-0.71	-1.01	-1.10	-1.07	-1.02	-0.88	-0.81
Winter	-0.23	-0.13	-0.19	-0.23	-0.41	-0.48	-0.47	-0.36	+0.06	+0.58	+1.02	+1.16	+1.06	+0.90	+0.68	+0.47	+0.20	-0.15	-0.50	-0.66	-0.65	-0.59	-0.54	-0.56
Equinox	-0.70	-0.52	-0.49	-0.52	-0.58	-0.55	-0.47	-0.08	+0.59	+1.64	+2.25	+2.39	+1.92	+1.35	+0.75	+0.19	-0.40	-0.69	-0.86	-1.09	-1.05	-1.14	-0.93	-0.99
Summer	-0.44	-0.39	-0.25	-0.39	-0.38	-0.29	+0.28	+0.98	+1.68	+2.26	+2.43	+2.19	+1.69	+0.92	+0.35	-0.29	-0.98	-1.30	-1.65	-1.54	-1.50	-1.35	-1.16	-0.86
HORIZONTAL FORCE																								
Jan.	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
Feb.	+3.2	-0.5	+1.0	+3.1	+6.5	+9.4	+9.1	+8.5	+4.8	-1.5	-6.8	-12.7	-17.4	-16.3	-13.4	-7.9	-4.7	-2.6	+3.5	+6.7	+6.4	+7.5	+7.6	+6.5
Mar.	+5.3	+2.4	+3.8	+2.9	+5.0	+4.6	+5.5	+7.4	+0.4	-8.7	-16.2	-19.6	-16.1	-16.6	-14.0	-9.5	-6.8	+1.8	+10.1	+13.2	+12.8	+10.5	+10.0	+11.8
Apr.	+13.6	+2.8	+1.6	+1.8	+10.4	+11.8	+13.2	+7.2	-5.8	-20.2	-32.0	-35.8	-33.0	-26.0	-15.2	-6.4	+10.0	+13.2	+12.4	+15.6	+17.0	+18.2	+11.6	+14.0
May	+6.3	+7.9	+7.2	+7.9	+4.9	+5.3	+6.1	+4.7	-3.2	-19.3	-31.7	-40.5	-37.1	-27.1	-13.0	-3.5	+4.3	+11.7	+15.5	+20.3	+21.0	+20.9	+15.5	+15.9
June	+10.3	+7.6	+4.4	+6.9	+9.4	+8.6	+1.5	-8.0	-22.0	-34.9	-43.0	-43.8	-36.9	-21.2	-11.2	+6.1	+18.0	+23.0	+23.1	+21.6	+23.2	+19.5	+19.4	+18.4
July	+6.6	+7.9	+5.0	+8.2	+6.2	+5.3	-4.8	-18.2	-30.8	-38.1	-39.2	-34.6	-29.0	-19.9	-9.2	+3.6	+13.6	+20.7	+33.8	+32.0	+28.6	+23.7	+18.6	+10.0
Aug.	+1.8	-1.6	-0.5	+1.0	+0.8	+1.2	-6.8	-14.4	-23.3	-36.0	-38.6	-33.4	-23.8	-12.6	-0.5	+9.0	+20.4	+27.4	+33.4	+27.2	+24.3	+22.2	+14.6	+8.2
Sept.	+11.0	+11.0	+8.6	+11.4	+11.8	+9.6	+0.4	-13.8	-27.6	-39.0	-46.8	-48.4	-41.0	-21.6	-9.4	+1.2	+17.0	+24.2	+27.0	+26.6	+26.0	+23.4	+21.4	+17.0
Oct.	+12.7	+9.7	+10.3	+11.1	+10.7	+10.4	+10.5	+5.7	-5.7	-21.9	-36.3	-42.7	-36.3	-27.5	-18.7	-7.3	+3.3	+10.6	+15.7	+17.9	+13.7	+18.9	+17.5	+17.7
Nov.	+5.3	+5.6	+4.0	+5.3	+6.4	+7.2	+7.1	+4.0	-4.4	-15.9	-24.4	-26.6	-23.3	-15.8	-7.0	-3.1	+2.6	+6.8	+10.1	+11.6	+12.2	+12.1	+11.0	+9.2
Dec.	+1.9	+1.8	+3.2	+1.7	+4.4	+5.0	+4.5	+0.2	-4.4	-10.5	-16.0	-14.2	-12.5	-8.6	-6.6	-5.3	+0.2	+5.2	+8.7	+10.0	+10.0	+8.3	+6.4	+6.6
Year	+7.6	+5.5	+5.0	+6.1	+7.3	+7.2	+4.1	-2.0	-11.7	-23.7	-31.3	-32.8	-27.9	-19.1	-10.4	-1.7	+7.2	+12.9	+17.5	+18.6	+17.9	+16.9	+14.3	+12.7
Winter	+3.9	+2.3	+3.0	+3.3	+5.6	+6.5	+6.5	+5.0	-0.9	-9.1	-15.9	-18.3	-17.3	-14.3	-10.3	-6.4	-2.2	+2.8	+8.1	+10.4	+10.3	+9.6	+8.7	+8.5
Equinox	+11.3	+8.0	+7.6	+8.0	+9.1	+9.0	+8.1	+2.7	-8.1	-25.0	-36.2	-40.1	-33.9	-24.3	-13.5	-3.5	+6.5	+12.1	+15.1	+18.5	+17.8	+18.9	+15.7	+16.1
Summer	+7.4	+6.2	+4.4	+6.9	+7.1	+6.2	-2.4	-13.6	-25.9	-37.0	-41.9	-40.1	-32.7	-18.8	-7.6	+5.0	+17.3	+23.8	+29.3	+26.9	+25.5	+22.2	+18.5	+13.4

"Winter" comprises the four months January, February, November, December; "Equinox" the months March, April, September, October; and "Summer" May to August.

DIURNAL INEQUALITIES OF THE GEOGRAPHICAL COMPONENTS OF MAGNETIC FORCE  
INTERNATIONAL DISTURBED DAYS

Departures from the mean of the 24 hourly values (uncorrected for non-cyclic change)

34 ESKDALEMUIR

	Hour G.M.T.																							
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24
NORTH COMPONENT																								
Jan.	-2.5	+1.2	-4.0	-1.4	+21.3	+13.7	+14.4	+11.4	+0.5	-14.7	-23.8	-20.9	-30.6	-26.3	-10.3	-2.0	+5.8	+9.0	+5.8	+10.5	+6.9	+14.6	+9.7	+11.7
Feb.	+30.1	+21.2	+18.0	-0.3	+15.7	+7.2	-17.8	-50.1	-71.3	-75.3	-59.1	-44.1	+9.3	-6.5	-1.3	+3.0	+15.5	+21.4	+32.3	+37.8	+35.6	+25.4	+27.2	+25.9
Mar.	+15.9	+6.3	-1.4	+5.8	+19.9	+19.3	+9.0	-10.6	-13.3	-17.8	-31.0	-37.3	-38.7	-25.7	-3.9	+10.7	+14.3	+12.2	+14.4	+18.1	+10.6	+8.7	+5.6	+9.2
Apr.	+4.8	+2.1	+1.7	+6.5	+14.3	+10.0	+5.6	-5.4	-11.6	-28.8	-48.1	-59.5	-38.2	-34.7	-18.1	+17.5	+29.4	+42.8	+46.4	+34.4	+17.0	+4.8	-2.6	+9.8
May	+15.5	+9.8	-3.6	-8.1	+11.3	+10.5	-3.4	-17.7	-29.8	-44.8	-55.4	-40.0	-25.8	-9.5	+14.7	+28.4	+42.4	+66.8	+50.2	+46.7	+17.7	-25.3	-13.4	-37.5
June	-83.7	-41.6	-26.1	-12.5	-9.9	-39.5	-13.8	-25.1	-46.2	-47.6	-43.4	-48.9	-34.9	-17.4	+20.7	+40.5	+54.6	+83.6	+91.2	+84.9	+59.1	+38.1	+13.4	+4.3
July	-32.5	-27.4	-22.8	-12.5	-12.6	-14.3	-22.5	-46.1	-66.0	-37.1	-42.9	-64.6	-23.7	-2.3	+45.1	+169.5	+176.2	+110.5	+97.5	+47.6	+16.6	-125.3	-75.8	-34.6
Aug.	+17.3	+26.3	+21.6	+6.6	-14.7	-9.1	-13.2	-27.2	-43.9	-47.3	-47.4	-40.7	-37.7	-27.3	+4.8	+21.4	+33.9	+54.2	+52.7	+29.1	+19.9	+8.1	+9.2	+3.6
Sept.	-40.2	-12.7	-19.0	-2.8	+9.6	+33.0	+12.6	+1.3	-14.9	-23.3	-32.0	-31.2	-27.5	+10.7	+20.1	+66.8	+169.3	+77.4	+84.3	+23.5	-18.7	-104.7	-108.1	-73.5
Oct.	+15.9	+21.3	+14.7	+26.4	+30.9	+24.9	+21.6	+6.6	-11.4	-20.4	-29.8	-35.3	-31.8	-19.1	-10.1	+6.3	+12.9	+14.4	+5.5	+1.4	-16.8	-10.4	-5.1	-12.5
Nov.	+10.9	+10.5	+8.6	+13.0	+14.5	+13.1	+15.7	+12.8	+6.3	-5.7	-24.9	-29.5	-26.1	-26.4	-11.3	-2.8	+5.1	+5.8	-8.1	+2.9	+2.2	+3.5	+3.3	+6.3
Dec.	+1.3	+1.2	-10.1	+10.3	+14.2	+16.8	+15.1	+18.1	+16.1	+6.6	-0.4	+1.4	-2.3	-6.4	-7.7	-3.9	+11.7	+5.7	+0.8	-16.3	-13.2	-9.2	-6.4	-43.3
Year	-3.8	+1.5	-1.9	+2.6	+9.5	+7.1	+2.0	-11.0	-23.8	-29.6	-36.5	-37.6	-25.7	-15.9	+3.5	+29.6	+47.5	+42.0	+39.4	+26.6	+11.4	-14.3	-11.9	-10.8
Winter	+10.0	+8.6	+3.1	+5.4	+16.4	+12.7	+6.9	-2.0	-12.1	-22.3	-27.1	-23.3	-12.5	-16.4	-7.6	-1.5	+9.6	+10.5	+7.7	+8.7	+7.9	+8.5	+8.5	+0.2
Equinox	-0.7	+4.2	-1.0	+9.0	+18.6	+21.8	+12.2	-2.0	-12.8	-22.6	-35.3	-40.9	-34.0	-17.1	-2.9	+25.3	+56.5	+36.7	+37.6	+19.2	-2.0	-25.5	-27.6	-16.8
Summer	-20.9	-8.2	-7.7	-6.6	-6.4	-13.0	-13.3	-29.0	-46.4	-44.2	-47.2	-48.5	-30.5	-14.1	+21.4	+65.0	+76.7	+78.7	+72.9	+52.1	+28.3	-26.1	-16.6	-16.0
WEST COMPONENT																								
Jan.	-42.3	-34.0	-24.3	-45.1	-28.0	-21.4	-5.6	-8.1	-7.9	-7.9	-5.9	+4.3	+21.5	+28.6	+31.1	+24.3	+35.5	+39.3	+34.4	+30.1	+8.5	-6.6	-8.5	-12.1
Feb.	-6.2	-14.7	+70.7	-32.3	-20.7	-21.6	-31.8	-16.8	-19.1	-21.3	-4.0	+10.8	+37.2	+35.9	+33.9	+17.9	+23.6	+16.4	+0.2	+4.4	-4.3	-6.6	-27.9	-23.6
Mar.	-26.1	-40.7	-45.9	-19.8	-27.5	-16.0	+4.0	-5.2	-3.6	-14.4	+0.3	+19.7	+33.6	+46.9	+52.4	+46.0	+40.7	+24.0	+13.5	+10.6	-18.8	-24.3	-26.4	-22.9
Apr.	-19.9	-25.8	-26.5	-26.4	-33.4	-29.5	-31.2	-34.6	-32.3	-25.9	-3.9	+19.4	+49.4	+57.2	+60.6	+54.9	+41.0	+41.9	+24.5	+2.5	-3.6	-15.0	-17.7	-25.7
May	-8.5	-30.3	-51.1	-31.0	-35.4	-44.1	-54.7	-45.2	-48.1	-26.6	-6.2	+19.9	+36.8	+58.2	+60.3	+54.9	+45.0	+49.5	+33.5	+9.0	+10.8	+11.5	-2.6	-5.5
June	-31.2	-51.5	-53.6	-40.8	-26.0	-42.9	-37.0	-41.5	-40.0	-21.9	-0.7	+15.4	+39.1	+45.6	+51.9	+48.5	+44.9	+46.6	+45.2	+22.7	+26.3	+11.9	-4.3	-6.7
July	-19.7	-21.5	-42.3	-50.9	-48.6	-47.0	-55.9	-69.2	-49.3	-38.2	-31.7	-22.0	+23.3	+38.8	+66.6	+106.7	+91.5	+64.5	+65.9	+39.8	+19.9	+16.1	-8.3	-28.5
Aug.	-3.3	+6.8	+1.1	-34.1	-28.1	-40.6	-48.7	-47.0	-32.5	-20.7	+7.5	+22.5	+37.2	+47.4	+48.1	+40.7	+28.6	+19.8	+4.7	-1.8	-4.0	+0.6	+1.8	-6.0
Sept.	-45.1	-45.4	-54.7	-41.7	-20.9	-26.4	-31.5	-24.3	-26.6	-27.9	+4.5	+27.5	+41.6	+62.4	+59.6	+69.6	+99.1	+49.7	+47.9	+20.2	-0.4	-36.5	-34.5	-66.2
Oct.	-15.8	-9.5	-5.3	+2.0	+4.2	+6.3	+11.2	+0.2	-11.3	-17.0	-4.2	+17.6	+27.9	+34.6	+36.1	+35.5	+32.9	+12.3	+10.3	-10.1	-40.5	-39.0	-45.3	-33.1
Nov.	-16.5	-19.7	-17.0	-13.4	-13.5	-5.9	-1.9	-2.7	-9.4	-14.5	-6.7	+3.7	+17.1	+19.7	+26.2	+23.8	+24.2	+27.6	+11.1	+6.7	-1.5	-6.3	-14.0	-16.9
Dec.	-33.2	-57.6	-41.1	-26.9	-5.3	+2.5	+2.0	+4.4	+5.1	+3.9	+9.7	+18.8	+24.6	+26.5	+25.4	+22.8	+35.4	+46.0	+11.0	-3.1	+2.7	-13.1	-25.6	-35.1
Year	-22.3	-28.7	-24.2	-30.0	-23.5	-23.9	-23.4	-24.1	-22.9	-19.4	-3.5	+13.1	+32.4	+41.8	+46.0	+45.4	+45.2	+36.5	+25.2	+10.9	-0.4	-9.0	-17.8	-23.5
Winter	-24.5	-31.4	-2.9	-29.4	-16.8	-11.6	-9.3	-5.8	-7.9	-9.9	-1.7	+9.4	+25.1	+27.6	+29.1	+22.2	+29.7	+32.3	+14.1	+9.5	+1.3	-8.1	-19.0	-21.9
Equinox	-26.7	-30.4	-33.1	-21.5	-19.4	-16.3	-11.8	-15.9	-18.5	-21.3	-0.9	+21.0	+38.1	+50.3	+52.1	+51.5	+53.4	+32.0	+24.1	+5.8	-15.8	-28.7	-31.0	-37.0
Summer	-15.7	-24.1	-36.5	-39.2	-34.5	-43.7	-49.1	-50.7	-42.5	-26.9	-7.8	+8.9	+34.1	+47.5	+56.8	+62.8	+52.5	+45.1	+37.4	+17.5	+13.3	+10.0	-3.3	-11.7
VERTICAL COMPONENT																								
Jan.	-0.4	-16.1	-33.6	-32.1	-44.9	-39.2	-26.7	-16.9	-10.4	-4.7	-1.8	-0.5	-1.0	+3.5	+14.2	+16.7	+11.7	+13.2	+24.5	+34.3	+38.8	+29.5	+24.0	+17.9
Feb.	+5.8	-5.6	-104.4	-56.8	-34.4	-39.1	-32.8	-22.0	-26.2	-28.4	-4.2	+6.6	+18.4	+23.4	+33.8	+36.4	+33.2	+30.5	+38.6	+40.4	+40.4	+26.2	+17.4	+2.6
Mar.	-25.2	-35.4	-40.0	-75.2	-64.4	-50.6	-43.2	-31.4	-27.0	-17.8	-5.8	+0.4	+9.0	+24.0	+45.4	+63.0	+66.0	+66.8	+59.8	+39.8	+34.2	+22.2	-1.6	-13.0
Apr.	-22.9	-30.0	-38.7	-35.9	-33.9	-27.0	-22.5	-18.5	-16.1	-16.6	-17.5	-14.9	-9.1	+8.8	+20.9	+40.1	+51.7	+57.4	+56.7	+46.9	+28.7	+23.0	-4.7	-25.9
May	-33.8	-44.1	-40.6	-44.8	-35.4	-24.7	-19.4	-21.0	-25.2	-26.1	-24.8	-19.8	+3.4	+25.7	+47.6	+61.4	+72.6	+72.3	+65.2	+58.8	+33.6	-12.9	-27.2	-40.8
June	-74.9	-97.5	-97.1	-123.5	-77.9	-56.4	-43.5	-21.3	-7.7	+2.7	+9.7	+8.1	+12.9	+26.3	+49.3	+74.3	+85.1	+90.6	+81.5	+74.1	+55.1	+35.7	+3.9	-9.5
July	-12.8	-18.6	-33.9	-38.8	-36.0	-33.6	-31.4	-19.2	-12.5	-18.6	-20.6	-12.6	-12.0	+5.6	+38.1	+69.2	+47.4	+43.6	+44.2	+51.0	+45.1	-14.8	-16.2	-12.6
Aug.	+6.4	-5.3	-33.8	-65.7	-69.1	-50.2	-24.1	-12.5	-13.4	-19.9	-13.4	-9.3	-0.6	+6.7	+19.6	+36.9	+47.5	+50.8	+45.9	+37.1	+24.4	+23.1	+16.8	+14.9
Sept.	-65.2	-41.6	-61.8	-77.2	-66.0	-38.6	-22.4	-17.2	-17.8	-18.2	-16.2	-11.8	-1.0	+22.6	+53.2	+84.4	+90.8	+86.2	+81.8	+84.4	+62.4	+10.6	-43.2	-78.2
Oct.	-28.9	-26.7	-32.3	-49.3	-46.1	-45.2	-40.1	-30.7	-24.7	-19.3	-9.7	-4.9	+13.5	+25.5	+30.7	+35.9	+52.1	+66.0	+67.9	+72.1	+32.9	+13.7	-14.9	-37.5
Nov.	+4.0	-2.9	-7.4	-9.1	-10.7	-12.0	-13.1	-11.3	-10.0	-9.7	-10.4	-9.5	-7.0	-3.7	+2.4	+5.9	+11.3	+20.2	+15.3	+8.7	+16.2	+13.5	+11.4	+7.9
Dec.	-62.1	-55.0	-66.5	-43.3	-24.5	-16.4	-12.3	-10.5	-9.3	-9.4	-8.7	-9.3	-8.5	+1.0	+8.9	+17.3	+27.5	+41.0	+74.3	+58.7	+40.5	+40.2	+29.3	-2.9
Year	-26.9	-31.6	-48.3	-54.3	-45.3	-36.9	-27.6	-19.4	-16.7	-15.5	-10.3	-6.5	+1.5	+14.1	+30.3	+45.1	+49.7	+53.2	+54.6	+50.5	+37.7	+17.5	-0.4	-14.8
Winter	-13.2	-19.9	-53.0	-35.3	-28.6	-26.7	-21.2	-15.2	-14.0	-13.1	-6.3	-3.2	+0.5	+6.1	+14.8	+19.1	+20.9	+26.2	+38.2	+35.6	+34.0	+27.3	+20.5	+6.4
Equinox	-35.5	-33.4	-40.7	-59.4	-52.6	-42.9	-32.1	-24.5	-21.4	-18.0	-12.3	-7.8	+3.1	+20.2	+37.5	+55.9	+65.1	+69.1	+66.5	+60.8	+39.5	+17.4	-16.1	-38.7
Summer	-32.0	-41.4	-51.3	-68.2	-54.6	-41.2	-29.6	-18.5	-14.7	-15.5	-12.3	-8.4	+0.9	+16.1	+38.7	+60.5	+63.1	+64.3	+59.2	+55.3	+39.5	+7.8	-5.7	-12.0

"Winter" comprises the four months January, February, November, December; "Equinox" the months March, April, September, October; and "Summer" May to August.



INTERNATIONAL DISTURBED DAYS

Departures from the mean of the 24 hourly values (uncorrected for non-cyclic change)

35 ESKDALEMUIR

	Hour G.M.T.																							
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24
DECLINATION (measured positive towards the west)																								
Jan.	-8.47	-6.93	-4.78	-9.07	-6.47	-4.85	-1.69	-2.07	-1.62	-1.03	-0.29	+1.67	+5.53	+6.79	+6.68	+4.99	+6.97	+7.61	+6.75	+5.69	+1.46	-1.89	-2.09	-2.89
Feb.	-2.40	-3.79	+13.62	-6.53	-4.79	-4.64	-5.75	-1.49	-1.16	-1.45	+1.44	+3.87	+7.18	+7.51	+6.92	+3.51	+4.19	+2.50	-1.19	-0.55	-2.24	-2.31	-6.68	-5.77
Mar.	-5.89	-8.48	-9.23	-4.22	-6.32	-3.97	+0.46	-0.64	-0.23	-2.24	+1.23	+5.40	+8.27	+10.48	+10.75	+8.90	+7.70	+4.39	+2.18	+1.46	-4.21	-5.26	-5.55	-4.98
Apr.	-4.23	-5.29	-5.43	-5.59	-7.29	-6.34	-6.51	-6.79	-6.09	-4.13	+1.05	+6.17	+11.43	+12.87	+12.93	+10.43	+7.17	+6.84	+3.19	-0.77	-1.37	-3.21	-3.47	-5.57
May	-2.31	-6.50	-10.19	-5.96	-7.58	-9.31	-10.92	-8.46	-8.59	-3.68	+0.85	+5.54	+8.41	+12.12	+11.63	+10.02	+7.48	+7.45	+4.86	+0.04	+1.51	+3.28	-0.01	+0.32
June	-3.15	-8.86	-9.87	-7.79	-4.89	-7.20	-6.97	-7.45	-6.35	-2.62	+1.51	+4.97	+9.23	+9.90	+9.73	+8.29	+7.03	+6.26	+5.69	+1.37	+3.09	+0.96	-1.37	-1.51
July	-2.74	-3.29	-7.68	-9.81	-9.33	-8.96	-10.43	-12.23	-7.46	-6.31	-4.78	-1.99	+5.62	+7.93	+11.74	+15.11	+11.79	+8.82	+9.61	+6.23	+3.40	+8.01	+1.20	-4.45
Aug.	-1.33	+0.38	-0.59	-7.14	-5.12	-7.85	-9.34	-8.48	-4.91	-2.40	+3.31	+6.08	+8.95	+10.62	+9.53	+7.42	+4.50	+1.95	-1.04	-1.46	-1.57	-0.18	+0.01	-1.34
Sept.	-7.61	-8.72	-10.37	-8.35	-4.59	-6.60	-6.85	-4.97	-4.83	-4.76	+2.13	+6.75	+9.47	+12.24	+11.31	+11.57	+13.65	+7.14	+6.51	+3.21	+0.61	-3.42	-2.89	-10.63
Oct.	-3.80	-2.73	-1.64	-0.59	-0.31	+0.34	+1.45	-0.21	-1.86	-2.67	+0.28	+4.91	+6.86	+7.73	+7.70	+6.95	+6.17	+1.94	+1.87	-2.11	-7.56	-7.51	-8.98	-6.23
Nov.	-3.76	-4.37	-3.76	-3.20	-3.28	-1.69	-0.98	-1.02	-2.14	-2.71	-0.42	+1.86	+4.44	+4.97	+5.72	+4.92	+4.70	+5.35	+2.54	+1.24	-0.38	-1.41	-2.96	-3.66
Dec.	-6.76	-11.69	-7.92	-5.82	-1.60	-0.13	-0.16	+0.20	+0.42	+0.55	+1.98	+3.74	+5.06	+5.59	+5.42	+4.76	+6.72	+9.09	+2.20	0.00	+1.04	-2.29	-4.94	-5.46
Year	-4.37	-5.86	-4.82	-6.17	-5.13	-5.10	-4.81	-4.47	-3.73	-2.79	+0.69	+4.08	+7.54	+9.06	+9.17	+8.07	+7.34	+5.78	+3.60	+1.20	-0.52	-1.27	-3.14	-4.35
Winter	-5.35	-6.69	-0.71	-6.15	-4.03	-2.83	-2.15	-1.09	-1.13	-1.16	+0.68	+2.79	+5.55	+6.21	+6.19	+4.55	+5.65	+6.14	+2.57	+1.59	-0.03	-1.97	-4.17	-4.45
Equinox	-5.38	-6.31	-6.67	-4.69	-4.63	-4.14	-2.86	-3.15	-3.25	-3.45	+1.17	+5.81	+9.01	+10.83	+10.67	+9.46	+8.67	+5.08	+3.44	+0.45	-3.13	-4.85	-5.22	-6.85
Summer	-2.38	-4.57	-7.08	-7.67	-6.73	-8.33	-9.41	-9.15	-6.83	-3.75	+0.22	+3.65	+8.05	+10.14	+10.66	+10.21	+7.70	+6.12	+4.78	+1.55	+1.61	+3.02	-0.04	-1.75
INCLINATION																								
Jan.	+0.68	-0.05	-0.27	-0.14	-2.15	-1.60	-1.53	-1.06	-0.19	+0.95	+1.59	+1.30	+1.72	+1.45	+0.64	+0.24	-0.53	-0.75	-0.21	-0.22	+0.39	-0.15	+0.06	-0.18
Feb.	-1.75	-1.35	-4.63	-0.98	-1.62	-1.17	+0.76	+2.95	+4.27	+4.51	+3.83	+2.92	-0.62	+0.56	+0.50	+0.47	-0.49	-0.86	-1.17	-1.53	-1.29	-0.94	-1.01	-1.35
Mar.	-1.34	-0.78	-0.32	-1.98	-2.55	-2.31	-1.70	-0.01	+0.25	+0.91	+1.89	+2.21	+2.35	+1.70	+0.72	+0.28	+0.18	+0.55	+0.36	-0.34	+0.38	+0.28	-0.08	-0.64
Apr.	-0.70	-0.56	-0.74	-0.98	-1.36	-0.96	-0.53	+0.33	+0.77	+1.80	+2.77	+3.30	+1.67	+1.79	+0.95	-0.84	-1.17	-1.91	-1.95	-1.07	-0.36	+0.44	+0.27	-0.96
May	-1.75	-1.35	-0.13	-0.19	-1.18	-0.75	+0.43	+1.21	+1.93	+2.63	+3.10	+1.89	+1.32	+0.54	-0.54	-1.03	-1.55	-3.22	-2.10	-1.73	-0.47	+1.20	+0.24	+1.52
June	+4.03	+0.97	-0.01	-1.71	-0.94	+1.74	+0.29	+1.64	+3.34	+3.46	+3.10	+3.22	+2.12	+1.22	-0.79	-1.43	-2.05	-3.84	-4.54	-4.03	-2.85	-1.77	-0.73	-0.43
July	+2.06	+1.61	+1.18	+0.49	+0.54	+0.69	+1.39	+3.41	+4.63	+2.45	+2.70	+4.20	+0.97	-0.19	-2.84	-10.74	-11.53	-6.98	-6.13	-2.36	-0.23	+7.66	+4.68	+2.31
Aug.	-1.25	-1.94	-2.26	-1.63	-0.39	-0.13	+0.88	+2.06	+2.96	+2.87	+2.69	+2.16	+2.00	+1.37	-0.43	-1.00	-1.41	-2.55	-2.39	-0.97	-0.66	+0.03	-0.21	+0.21
Sept.	+1.59	+0.37	+0.40	-1.20	-2.00	-2.79	-0.99	-0.21	+0.87	+1.43	+1.65	+1.42	+1.27	-0.91	-0.74	-3.16	-10.10	-3.57	-4.11	+0.29	+2.77	+7.58	+6.46	+3.71
Oct.	-1.56	-1.94	-1.70	-2.97	-3.21	-2.82	-2.54	-1.19	+0.28	+1.07	+1.77	+1.98	+2.07	+1.45	+0.97	+0.03	+0.03	+0.53	+1.18	+1.81	+2.41	+1.50	+0.52	+0.30
Nov.	-0.42	-0.52	-0.54	-0.91	-1.04	-1.08	-1.33	-1.09	-0.55	+0.31	+1.46	+1.65	+1.33	+1.40	+0.48	+0.03	-0.36	-0.22	+0.77	-0.06	+0.27	+0.18	+0.23	-0.01
Dec.	-1.21	-0.72	-0.47	-1.41	-1.47	-1.54	-1.32	-1.50	-1.35	-0.71	-0.31	-0.55	-0.36	+0.12	+0.41	+0.40	-0.53	+0.07	+1.64	+2.55	+1.83	+1.75	+1.46	+3.21
Year	-0.13	-0.52	-0.77	-1.14	-1.45	-1.08	-0.52	+0.55	+1.43	+1.80	+2.19	+2.15	+1.32	+0.87	-0.06	-1.40	-2.46	-1.90	-1.56	-0.64	+0.19	+1.48	+0.99	+0.64
Winter	-0.68	-0.66	-1.47	-0.86	-1.57	-1.35	-0.86	-0.17	+0.54	+1.26	+1.64	+1.33	+0.52	+0.89	+0.50	+0.29	-0.48	-0.45	+0.26	+0.19	+0.30	+0.21	+0.18	+0.42
Equinox	-0.50	-0.73	-0.53	-1.79	-2.27	-2.28	-1.45	-0.28	+0.54	+1.30	+2.02	+2.23	+1.84	+1.01	+0.48	-0.92	-2.76	-1.10	-1.13	+0.17	+1.30	+2.45	+1.79	+0.60
Summer	+0.78	-0.18	-0.31	-0.76	-0.49	+0.38	+0.75	+2.08	+3.21	+2.85	+2.90	+2.87	+1.61	+0.74	-1.15	-3.55	-4.12	-4.14	-3.79	-2.27	-1.05	+1.78	+0.99	+0.90
HORIZONTAL FORCE																								
Jan.	-10.3	-5.1	-8.4	-9.7	+15.7	+9.5	+13.1	+9.7	-1.0	-15.9	-24.5	-19.7	-26.1	-20.5	-4.4	+2.5	+12.3	+16.1	+12.1	+15.9	+8.4	+13.1	+7.9	+9.3
Feb.	+28.4	+18.1	+30.8	-6.3	+11.6	+3.1	-23.4	-52.3	-73.6	-77.9	-58.8	-41.3	+16.0	+0.3	+5.0	+6.3	+19.6	+24.1	+31.8	+37.9	+34.2	+23.7	+21.6	+21.1
Mar.	+10.8	-1.4	-9.9	+2.0	+14.4	+16.0	+9.6	-11.4	-13.7	-20.2	-30.4	-33.0	-31.8	-16.6	+5.9	+19.0	+21.6	+16.4	+16.6	+19.8	+6.9	+4.0	+0.6	+4.8
Apr.	+2.0	-2.7	-3.2	+1.5	+7.9	+4.4	-0.3	-11.7	-17.4	-33.1	-48.0	-54.9	-28.4	-23.5	-6.6	+27.3	+36.5	+49.8	+50.1	+33.3	+16.0	+1.9	-5.8	+4.9
May	+13.7	+4.0	-13.0	-13.7	+4.6	+2.2	-13.5	-25.8	-38.2	-48.9	-55.6	-35.6	-18.5	+1.4	+25.6	+38.1	+50.0	+74.8	+55.5	+47.6	+19.4	-22.7	-13.6	-37.8
June	-88.0	-50.4	-35.6	-19.8	-14.6	-46.8	-20.4	-32.4	-52.8	-50.8	-42.8	-45.2	-27.0	-8.6	+30.0	+48.8	+62.0	+90.8	+98.0	+87.6	+63.0	+39.6	+12.4	+3.0
July	-35.6	-30.9	-30.2	-21.7	-21.4	-22.7	-32.4	-58.1	-74.0	-43.5	-48.0	-67.5	-19.0	+4.9	+56.6	+186.3	+190.0	+120.5	+108.0	+54.1	+20.0	-120.1	-76.0	-39.3
Aug.	+16.4	+27.1	+21.4	+0.2	-19.6	-16.5	-22.0	-35.4	-49.2	-50.3	-45.2	-35.8	-30.2	-18.1	+13.6	+28.6	+38.6	+56.9	+52.6	+28.2	+18.8	+8.1	+9.4	+2.4
Sept.	-47.8	-20.8	-28.7	-10.4	+5.6	+27.6	+6.6	-3.2	-19.5	-28.0	-30.6	-25.6	-19.4	+22.0	+30.7	+78.4	+184.6	+85.2	+91.6	+26.8	-18.5	-109.6	-112.6	-84.4
Oct.	+12.7	+19.2	+13.5	+26.3	+31.1	+25.6	+23.3	+6.5	-13.3	-23.2	-30.1	-31.5	-26.1	-12.4	-3.3	+12.7	+18.7	+16.4	+7.3	-0.5	-23.9	-17.4	-13.3	-18.3
Nov.	+7.7	+6.7	+5.3	+10.3	+11.7	+11.8	+15.1	+12.1	+4.5	-8.3	-25.7	-28.3	-22.5	-22.3	-6.3	+1.7	+9.5	+10.8	-5.9	+4.1	+1.9	+2.3	+0.7	+3.1
Dec.	-4.8	-9.4	-17.5	+5.2	+13.0	+17.0	+15.2	+18.6	+16.7	+7.2	+1.4	+4.8	+2.2	-1.4	-2.9	+0.4	+18.0	+14.0	+2.8	-16.6	-12.5	-11.4	-11.0	-49.0
Year	-7.9	-3.8	-6.3	-3.0	+5.0	+2.6	-2.4	-15.3	-27.6	-32.7	-36.5	-34.5	-19.2	-7.9	+12.0	+37.5	+55.1	+48.0	+43.4	+28.2	+11.1	-15.7	-15.0	-15.0
Winter	+5.3	+2.6	+2.5	-0.1	+13.0	+10.3	+5.0	-3.0	-13.3	-23.7	-26.9	-21.1	-7.6	-11.0	-2.1	+2.7	+14.9	+16.3	+10.2	+10.3	+8.0	+6.9	+4.8	-3.9
Equinox	-5.6	-1.4	-7.1	+4.9	+14.7	+18.4	+9.8	-4.9	-16.0	-26.1	-34.8	-36.3	-26.4	-7.6	+6.7	+34.3	+65.3	+41.9	+41.4	+19.9	-4.9	-30.3	-32.8	-23.3
Summer	-23.4	-12.5	-14.3	-13.7	-12.7	-20.9	-22.1	-37.9	-53.5	-48.4	-47.9	-46.0	-23.7	-5.1	+31.5	+75.5	+85.1	+85.7	+78.5	+54.4	+30.3	-23.8	-16.9	-17.9

"Winter" comprises the four months January, February, November, December; "Equinox" the months March, April, September, October; and "Summer" May to August.

RANGE OF MEAN DIURNAL INEQUALITIES FOR THE MONTHS, YEAR AND SEASONS OF 1958

The ranges are derived from the diurnal inequalities printed in Tables 30 to 35

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	All days			Quiet days			Disturbed days			All days			Quiet days			Disturbed days		
	N	W	Z	N	W	Z	N	W	Z	D	I	H	D	I	H	D	I	H
Jan.	35.0	38.9	27.0	30.1	30.1	10.3	51.9	84.4	83.7	8.70	2.25	30.3	6.89	1.77	26.8	16.68	3.87	42.2
Feb.	33.9	41.6	44.9	33.3	24.5	5.4	113.1	103.0	145.0	9.00	2.19	32.6	5.78	2.21	32.8	20.30	9.14	115.8
Mar.	54.7	66.1	67.6	55.5	51.6	24.0	58.6	98.3	142.0	13.92	3.41	56.3	11.57	3.26	54.0	19.98	4.90	54.6
Apr.	78.8	76.4	47.8	60.1	59.9	24.4	105.9	95.2	96.1	16.43	4.03	77.9	13.60	3.61	61.5	20.22	5.25	105.0
May	84.3	84.0	47.4	68.9	88.2	37.8	122.2	115.0	117.4	17.24	4.59	84.8	18.46	3.76	67.0	23.04	6.32	130.4
June	86.9	82.9	62.3	70.7	78.0	31.6	174.9	105.5	214.1	16.61	5.16	89.6	16.86	4.20	73.0	19.77	8.57	186.0
July	95.9	85.1	42.1	67.3	70.9	30.7	301.5	175.9	108.1	15.67	5.82	101.1	14.88	4.15	72.0	27.34	19.19	310.1
Aug.	78.6	80.8	36.8	75.6	82.7	31.4	101.6	96.8	119.9	17.01	4.64	79.5	17.61	4.42	75.4	19.96	5.51	107.2
Sept.	75.0	74.5	41.2	63.2	72.0	28.2	277.4	165.3	169.0	15.29	4.46	79.2	15.01	4.02	65.1	24.28	17.68	297.2
Oct.	60.0	57.1	29.3	61.3	58.9	15.8	66.2	81.4	121.4	11.91	3.87	56.8	12.24	3.83	61.6	16.71	5.62	62.6
Nov.	39.2	34.6	13.9	39.4	34.0	8.5	45.2	47.3	33.3	7.29	2.43	36.7	7.02	2.46	38.8	10.09	2.98	43.4
Dec.	22.1	35.8	33.2	25.0	25.0	7.4	61.4	103.6	140.8	7.81	1.31	19.2	5.39	1.67	26.0	20.78	4.75	67.6
Year	57.0	58.0	37.5	51.4	54.0	19.1	85.1	76.0	108.9	12.30	2.98	56.9	11.59	3.01	51.4	15.34	4.65	91.6
Winter	30.5	34.1	26.1	29.2	26.7	5.8	43.5	63.7	91.2	7.71	1.99	27.5	5.99	1.82	28.7	12.90	3.21	43.2
Equinox	62.6	66.3	45.1	59.4	59.0	20.2	97.4	90.4	128.5	14.01	3.39	61.9	12.98	3.53	59.0	17.68	5.21	101.6
Summer	84.3	81.1	43.7	70.0	79.0	32.2	127.2	113.5	132.5	16.57	4.79	86.2	16.73	4.08	71.2	20.07	7.35	139.2

NON-CYCLIC CHANGE

37 ESKDALEUIR

	All days			Quiet days			Disturbed days		
	H	D	Z	H	D	Z	H	D	Z
Jan.	+3.8	+0.17	-1.1	+3.0	+0.74	-0.6	+13.7	+3.06	+6.1
Feb.	0.0	+0.05	+0.2	+7.2	-0.52	-6.6	-7.0	-0.71	-11.3
Mar.	-0.4	+0.05	+0.5	+2.6	-0.05	+1.0	+3.1	+1.64	-5.9
Apr.	-0.3	-0.05	-1.2	+9.4	+0.77	-1.4	-11.5	-1.73	-7.0
May	-9.1	+0.14	-4.8	+7.5	-0.44	-3.6	-74.7	+4.02	-25.0
June	+10.5	-0.11	+6.6	+5.3	-0.21	-2.7	+50.3	+0.94	+43.3
July	0.0	-0.04	-0.3	+5.2	-0.72	-3.2	-18.1	-1.53	-5.8
Aug.	-0.3	+0.01	-0.1	+3.8	-0.12	-1.6	-10.4	-0.09	+5.4
Sept.	-0.3	-0.08	+0.3	+2.8	+0.43	-2.2	-34.3	-2.62	-2.7
Oct.	+0.6	+0.05	-0.3	+2.2	-0.32	-2.8	-21.2	-2.46	-12.7
Nov.	0.0	-0.02	-0.2	+3.8	+0.17	-1.1	-4.5	-0.62	+0.8
Dec.	+0.1	0.00	+0.2	+7.3	+0.03	-5.9	-22.4	-0.38	+17.8
Year	+0.4	+0.01	0.0	+5.0	-0.02	-2.6	-11.4	-0.04	+0.3
Winter	+1.0	+0.05	-0.2	+5.3	+0.11	-3.5	-5.1	+0.34	+3.3
Equinox	-0.1	-0.01	-0.2	+4.3	+0.21	-1.3	-16.0	-1.29	-7.1
Summer	+0.3	0.00	+0.3	+5.5	-0.37	-2.8	-13.2	+0.83	+4.5

"Winter" comprises the four months January, February, November, December; "Equinox" the months March, April, September, October; and "Summer" May to August.

AVERAGE RANGE OF DIURNAL INEQUALITY 1932-53 WITH 1958 AS PERCENTAGE OF THIS

38 ESKDALEUIR

		All days			International quiet days			International disturbed days		
		Z	H	D	Z	H	D	Z	H	D
Year	1932-53	28.7	37.8	8.66	13.7	34.4	8.43	82.1	53.9	11.93
	1958(%)	131	151	142	139	149	137	133	170	129
Winter	1932-53	21.2	19.3	6.95	5.9	16.2	4.44	66.5	34.4	11.45
	1958(%)	123	142	111	98	177	135	137	126	113
Equinox	1932-53	37.1	43.1	10.18	14.8	39.7	9.69	108.9	75.4	15.11
	1958(%)	122	144	138	136	149	134	118	135	117
Summer	1932-53	33.9	59.7	11.84	21.9	50.4	11.76	82.4	83.7	13.11
	1958(%)	129	144	140	147	141	142	161	166	153

"Winter" comprises the four months January, February, November, December; "Equinox" the months March, April, September, October; and "Summer" May to August.

HARMONIC COMPONENTS OF THE DIURNAL INEQUALITY OF MAGNETIC FORCE  
 Values of  $a_n, b_n$  in the series  $\Sigma(a_n \cos 15nt + b_n \sin 15nt)$ ,  $t$  being reckoned in hours from midnight G.M.T.  
 Longitude of Eskdalemuir Observatory,  $3^{\circ}12' W$ .

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	North component								West component								Vertical component							
	$a_1$	$b_1$	$a_2$	$b_2$	$a_3$	$b_3$	$a_4$	$b_4$	$a_1$	$b_1$	$a_2$	$b_2$	$a_3$	$b_3$	$a_4$	$b_4$	$a_1$	$b_1$	$a_2$	$b_2$	$a_3$	$b_3$	$a_4$	$b_4$
	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$	$\gamma$
ALL DAYS																								
Jan.	+11.2	+4.3	-7.7	-2.6	+1.6	-1.4	-0.2	-0.2	-10.1	-14.8	-4.6	+5.7	-0.7	-1.8	+2.2	+2.1	+2.4	-11.2	+1.0	-2.9	+1.2	+0.2	-1.4	+0.5
Feb.	+13.2	-2.0	-6.3	+0.8	-0.3	-2.0	+2.3	+1.6	-12.9	-11.1	+2.1	+7.1	-1.3	+0.4	+0.2	+3.3	-0.7	-17.9	-2.1	-3.0	+1.0	-1.1	+1.1	-0.3
Mar.	+17.9	-3.5	-15.5	+0.9	+5.3	-1.4	0.0	-0.9	-17.4	-21.5	+0.1	+11.1	-1.1	-6.3	+2.0	+1.9	-3.8	-26.5	-9.7	-5.0	+3.1	+1.5	+0.5	-1.4
Apr.	+22.7	-9.6	-18.6	-1.1	+3.5	+0.8	-1.0	+1.2	-14.8	-27.2	+5.5	+12.5	-2.0	-5.2	+0.6	+1.1	+3.2	-19.8	-10.4	-2.9	+2.4	+2.3	-0.6	+0.7
May	+21.7	-18.9	-20.0	+1.2	+2.9	+0.7	+2.0	+0.4	-8.7	-31.4	+7.4	+12.7	-4.5	-4.4	+0.8	+0.2	+1.8	-17.8	-13.0	-2.7	+1.8	-0.7	-0.4	+1.1
June	+21.0	-19.1	-19.1	+0.5	-3.4	-0.7	0.0	+1.0	-9.4	-33.4	+7.3	+9.7	-4.8	-3.1	+0.4	-0.6	-3.9	-20.7	-10.9	-5.1	+4.1	+0.4	+0.2	-0.1
July	+15.1	-22.9	-23.0	+9.2	+4.5	+1.9	+2.0	-1.4	-5.8	-33.4	+3.7	+12.6	-2.0	-3.5	-0.3	+0.3	+1.2	-16.3	-11.0	-1.6	+3.3	+1.2	-1.0	+0.8
Aug.	+27.5	-13.5	-15.9	+4.0	+2.8	-1.1	+1.0	+1.3	-6.7	-23.6	+11.9	+14.2	-5.0	-5.3	-0.2	+0.7	+3.9	-12.0	-7.7	-2.1	+5.1	+0.9	-0.1	+0.5
Sept.	+16.7	-8.3	-20.2	+6.8	+5.1	+0.7	+1.2	+1.2	-13.6	-23.6	+4.5	+12.9	-5.3	-5.9	+2.5	+1.5	-3.3	-13.9	-12.2	-1.7	+3.2	+0.8	-2.2	+1.6
Oct.	+21.7	+2.7	-13.7	+0.4	+5.5	-1.5	-1.0	+0.1	-9.9	-15.2	-2.4	+13.2	-2.8	-5.4	+2.3	+3.5	-0.9	-11.4	-5.7	-3.3	+0.4	+2.6	-1.6	+0.5
Nov.	+14.0	+4.4	-8.7	-1.7	+2.9	-1.3	-0.4	+0.9	-7.6	-10.8	-1.6	+7.1	-1.2	-2.8	+1.3	+1.8	+2.4	-5.7	-1.7	-1.0	+1.4	+0.6	-0.7	-0.4
Dec.	+6.6	+3.3	-5.5	-2.3	+1.1	-1.2	+0.4	+0.1	-12.3	-9.0	-3.6	+4.5	-0.6	-1.8	+2.2	+0.1	+0.6	-11.5	-4.6	-4.3	-0.1	-1.1	-0.3	-0.8
Year	+17.5	-6.9	-14.4	+1.4	+2.6	-0.5	+0.6	+0.5	-10.8	-21.2	+2.6	+10.3	-2.6	-3.8	+1.1	+1.3	+0.2	-15.4	-7.3	-3.0	+2.2	+0.7	-0.6	+0.3
Winter	+11.3	+2.5	-7.0	-1.4	+1.3	-1.4	+0.5	+0.6	-10.7	-11.4	-1.9	+6.1	+1.0	-1.5	+1.5	+1.8	+1.2	-11.6	-1.8	-2.9	+0.9	-0.3	-0.3	-0.2
Equinox	+19.7	-4.7	-17.0	+1.8	+4.8	-0.3	-0.1	+0.4	-13.9	-21.9	+1.9	+12.4	-2.8	-5.7	+1.8	+2.0	-1.2	-17.9	-9.5	-3.2	+2.3	+1.7	-1.0	+0.4
Summer	+21.3	-18.6	-19.5	+3.7	+1.7	+0.2	+1.3	+0.3	-7.7	-30.3	+7.7	+12.5	-3.9	-4.1	+0.2	-0.1	+0.8	-16.7	-10.6	-2.9	+3.6	+0.5	-0.5	+0.7
QUIET DAYS																								
Year	+19.5	-1.8	-11.9	-0.9	+2.7	-1.2	+0.1	+0.9	-3.7	-18.1	+4.3	+9.3	-3.7	-4.3	+0.8	+1.5	+5.1	-2.5	-4.7	-1.5	+1.8	+0.2	-0.6	-0.3
Winter	+11.7	+3.1	-6.4	-2.8	+1.6	-0.5	-0.1	+1.1	-3.6	-9.3	-0.9	+4.1	-2.0	-2.6	+1.1	+1.6	+1.3	-2.5	-0.6	-0.7	+0.8	0.0	-0.7	-0.5
Equinox	+22.8	0.0	-13.3	-1.8	+5.0	-1.4	-0.5	+1.3	-3.4	-18.7	+3.8	+10.0	-4.2	-6.3	+0.9	+1.9	+5.6	-1.1	-4.6	-2.8	+2.2	+0.4	-0.7	-0.3
Summer	+24.1	-8.2	-16.1	+1.8	+1.7	-1.7	+0.8	+0.2	-4.0	-26.4	+10.1	+13.8	-4.9	-3.9	+0.4	+0.9	+8.3	-3.9	-9.0	-0.9	+2.5	+0.2	-0.4	-0.1
DISTURBED DAYS																								
Year	+8.4	-20.9	-23.1	+10.6	+4.2	+2.5	+2.7	-1.1	-22.0	-30.2	-2.2	+11.7	-0.8	-2.8	+2.2	+0.7	-12.0	-44.8	-11.7	-6.3	+3.2	+0.1	+0.1	+2.5
Winter	+13.2	-4.1	-9.1	+3.0	+0.7	-3.5	+2.3	-0.6	-18.0	-18.5	-5.0	+5.3	-1.4	-1.5	+1.5	+2.3	-2.3	-30.2	-3.5	-10.7	+0.8	-4.3	+2.1	-0.3
Equinox	+6.2	-13.6	-27.9	+12.3	+6.9	+4.3	+3.7	-1.5	-30.2	-23.9	+5.4	+17.8	-0.3	-2.7	+4.4	+2.2	-17.0	-54.5	-17.2	-3.5	+1.3	+3.6	-2.2	+4.6
Summer	+5.6	-44.9	-32.4	+16.5	+5.0	+6.7	+1.9	-1.1	-17.7	-48.4	+3.9	+12.1	-0.7	-4.2	+0.6	-2.3	-16.8	-49.7	-14.6	-4.8	+7.5	+1.2	+0.3	+3.3

HARMONIC COMPONENTS OF THE DIURNAL INEQUALITY OF MAGNETIC FORCE  
 Values of  $c_n, a_n$  in the series  $\Sigma c_n \sin(15nt + a_n)$ ,  $t$  being mean local time, reckoned in hours from midnight

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	North component								West component								Vertical component							
	$c_1$	$a_1$	$c_2$	$a_2$	$c_3$	$a_3$	$c_4$	$a_4$	$c_1$	$a_1$	$c_2$	$a_2$	$c_3$	$a_3$	$c_4$	$a_4$	$c_1$	$a_1$	$c_2$	$a_2$	$c_3$	$a_3$	$c_4$	$a_4$
	$\gamma$	$^{\circ}$	$\gamma$	$^{\circ}$	$\gamma$	$^{\circ}$	$\gamma$	$^{\circ}$	$\gamma$	$^{\circ}$	$\gamma$	$^{\circ}$	$\gamma$	$^{\circ}$	$\gamma$	$^{\circ}$	$\gamma$	$^{\circ}$	$\gamma$	$^{\circ}$	$\gamma$	$^{\circ}$	$\gamma$	$^{\circ}$
ALL DAYS																								
Jan.	12.0	72	8.1	258	2.1	141	0.3	235	17.9	217	7.3	327	2.0	211	3.0	59	11.4	171	3.1	167	1.2	88	1.5	301
Feb.	13.3	102	6.4	283	2.0	198	2.8	68	17.0	233	7.4	23	1.4	297	3.3	16	17.9	185	3.6	221	1.5	147	1.2	120
Mar.	18.2	104	15.5	280	5.5	114	0.9	191	27.7	222	11.1	7	6.4	200	2.7	60	26.7	191	10.9	249	3.5	74	1.5	175
Apr.	24.7	116	18.7	273	3.6	87	1.5	333	31.0	212	13.7	30	5.6	211	1.3	42	20.1	174	10.8	261	3.3	57	0.9	331
May	28.8	134	20.0	280	3.0	86	2.0	91	32.6	199	14.7	37	6.3	236	0.8	90	17.9	177	13.3	265	1.9	120	1.2	355
June	28.4	135	20.1	278	3.5	269	1.0	11	34.7	199	12.1	43	5.7	247	0.7	160	21.1	194	12.0	251	4.1	94	0.2	128
July	27.4	150	24.8	298	4.9	76	2.4	138	33.9	193	13.1	23	4.0	219	0.5	321	16.3	179	11.1	268	3.5	79	1.3	320
Aug.	30.7	119	16.3	291	3.0	120	1.7	49	24.6	199	18.5	46	7.3	233	0.7	357	12.6	165	7.9	261	5.2	89	0.5	3
Sept.	18.7	120	21.3	295	5.1	92	1.7	57	27.2	213	13.6	26	7.9	232	2.9	71	14.3	197	12.3	269	3.3	86	2.7	319
Oct.	21.8	86	13.7	278	5.7	115	1.0	290	18.1	216	13.4	356	6.1	217	4.2	46	11.5	188	6.6	246	2.6	17	1.7	303
Nov.	14.7	76	8.8	266	3.1	123	1.0	348	13.2	219	7.3	353	3.0	213	2.2	49	6.2	161	2.0	245	1.5	77	0.8	251
Dec.	7.4	67	5.9	254	1.6	146	0.4	83	15.2	237	5.8	328	1.9	207	2.2	101	11.5	180	6.3	233	1.1	196	0.8	212
Year	18.8	115	14.5	282	2.7	111	0.8	63	23.8	210	10.6	21	4.6	223	1.7	55	15.4	182	7.9	254	2.3	83	0.7	308
Winter	11.6	81	7.2	265	1.9	147	0.8	52	15.6	226	6.4	349	1.8	222	2.3	52	11.6	177	3.4	219	0.9	120	0.4	246
Equinox	20.3	107	17.1	282	4.9	104	0.4	353	25.9	216	12.5	15	6.3	216	2.7	55	17.9	187	10.1	258	2.9	62	1.0	303
Summer	28.3	134	19.8	287	1.7	93	1.3	87	31.3	197	14.7	38	5.7	233	0.2	129	16.7	181	11.0	261	3.6	92	0.9	337
QUIET DAYS																								
Year	19.6	98	11.9	272	3.0	123	0.9	19	18.5	195	10.3	31	5.6	230	1.7	40	5.7	120	4.9	259	1.8	93	0.6	255
Winter	12.1	78	6.9	253	1.7	118	1.1	7	9.9	204	4.1	354	3.3	227	1.9	48	2.8	156	0.9	225	0.8	100	0.8	246
Equinox	22.8	93	13.4	269	5.1	115	1.4	351	19.0	193	10.7	27	7.6	223	2.0	38	5.7	104	5.4	245	2.2	88	0.7	260
Summer	25.4	112	16.2	283	2.4	144	0.9	88	26.7	192	17.1	43	6.3	241	1.0	34	9.1	119	9.0	271	2.5	95	0.4	276
DISTURBED DAYS																								
Year	22.5	161	25.4	301	4.9	68	2.9	125	37.4	219	11.9	356	2.9	205	2.3	85	46.4	198	13.3	248	3.2	98	2.5	14
Winter	13.8	111	9.6	295	3.5	179	2.4	118	25.8	227	7.3	323	2.1	233	2.7	45	30.3	188	11.3	204	4.4	179	2.1	112
Equinox	14.9	159	30.5	300	8.2	67	4.0	126	38.5	235	18.6	350	2.8	196	4.9	76	57.1	201	17.5	265	3.8	30	5.1	347
Summer	45.3	176	36.4	303	8.3	46	2.2	131	51.5	203	12.8	24	4.3	199	2.4	179	52.5	202	15.4	258	7.6	91	3.3	19

"Winter" comprises the four months January, February, November, December; "Equinox" the months March, April, September, October; and "Summer" May to August.

40 ESKDALEMUIR

Number of cases per month

Range interval	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
5' to 15'	116	212	275	197	150	145	139	101	114	121	46	88	1704
15' to 30'	12	21	24	11	6	18	12	25	9	16	1	17	172
>30'	0	12	2	0	1	8	13	1	15	2	0	10	64

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Hourly distribution

Range interval	Hour (G.M.T.) ending at																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
5' to 15'	78	74	72	69	68	63	55	67	58	62	124	122	73	50	46	55	72	64	58	60	63	83	86	82
15' to 30'	7	9	6	9	5	4	9	8	1	4	0	3	5	2	3	1	3	8	13	19	17	13	14	9
>30'	4	4	6	4	3	2	1	1	1	2	2	1	1	0	0	1	3	2	4	4	4	6	7	1

NOTEWORTHY MAGNETIC DISTURBANCES AT ESKDALEMUIR

42 ESKDALEMUIR

(a) Disturbances without S.C's

Serial Number	From		To		Range ( $\gamma$ )			Notes
	Date	Hour	Date	Hour	H	D	Z	
1a	Mar. 11	10	Mar. 14	03	302	225	416	
2a	Mar. 18	00	Mar. 22	08	250	229	235	
3a	Mar. 24	10	Mar. 25	05	200	154	178	
4a	Apr. 4	05	Apr. 6	04	230	180	155	
5a	Apr. 14	08	Apr. 21	02	264	199	223	
6a	May 12	11	May 20	03	188	150	244	
7a	May 25	15	May 30	12	296	193	240	
8a	June 6	17	June 8	01	334	275	405	
9a	June 8	17	June 12	00	244	115	180	
10a	June 20	21	June 23	21	317	210	248	
11a	Aug. 27	02	Aug. 28	01	344	186	215	
12a	Dec. 12	18	Dec. 14	05	172	275	232	

(b) Disturbances with a S.C.

Serial Number	Date	Time of S.C.	End of Disturbance		With initial reversed stroke			Magnitude main stroke of S.C.			Range of following disturbance ( $\gamma$ )		
			Date	Hour	H	D	Z	H	D	Z	H	D	Z
1b	Jan. 25	10.50			No	Yes	No	$\gamma$	$\gamma$	$\gamma$			
2b	Feb. 11	01.25	Feb. 13	03	No	No	No	+16	+17	-3	2762	Small	970
3b	Feb. 16	16.42			Yes	No	-	+572	-790	-23		811	
4b	Mar. 3	09.31			Yes	Yes	-	+36	-11	0		Small	
5b	Mar. 14	12.12			Yes	Yes	Yes	-14	+22	0		Small	
6b	Mar. 17	07.50			Yes	No	-	+93	-50	-4		Small	
7b	Mar. 25	15.41			No	No	No	-24	+17	0		Small	

## (b) Disturbances with a S.C. (contd.)

Serial Number	Date	Time of S.C.	End of Disturbance		With initial reversed stroke			Magnitude main stroke of S.C.			Range of following disturbance ( $\gamma$ )		
			Date	Hour	H	D	Z	H	D	Z	H	D	Z
8b	Apr. 26	12.47			Yes	No	-	$\gamma$	$\gamma$	$\gamma$			
9b	May 31	16.53	June 2	23	Yes	Yes	No	+174	-62	-7	925	607	464
10b	June 14	18.28			Yes	Yes	No	+105	-19	-7		Small	
11b	June 28	07.13	See 12b		Yes	Yes	Yes	-43	+62	+3		Small	
12b	June 28	17.42	June 30	06	Yes	Yes	No	+69	-19	-2	567	233	532
13b	July 8	07.49	July 10	15	Yes	Yes	Yes	Illegible			2208	891	549
14b	July 21	16.37	July 22	22	Yes	Yes	Yes	+296	-79	-10	315	154	110
15b	July 31	15.29			Yes	Yes	Yes	+112	-24	-6		Small	
16b	Aug. 17	06.22	Aug. 20	19	Yes	Yes	Yes	-21	-61	-9	431	189	188
17b	Aug. 22	02.27			Yes	Yes	No	+96	-59	-12		Small	
18b	Aug. 24	01.40	Aug. 25	21	No	No	No	+117	-50	-14	402	242	326
19b	Sept. 3	08.43	Sept. 6	02	Yes	Yes	Yes	+17	+47	-6	1805	810	712
20b	Sept. 16	09.30			Yes	Yes	Yes	-33	+37	-6		Small	
21b	Sept. 25	04.09	Sept. 27	01	No	Yes	No	+39	-39	-6	323	308	449
22b	Sept. 30	10.05			Yes	Yes	No	+30	+14	-6		Small	
23b	Oct. 22	03.14	See 24b		Yes	Yes	No	+19	-42	-3	192	212	232
24b	Oct. 24	07.28	Oct. 25	15	Yes	Yes	Yes	-104	+61	+9	267	258	274
25b	Oct. 27	15.22	Oct. 31	02	Yes	Yes	-	+11	-4	0	261	219	268
26b	Dec. 4	00.36	Dec. 5	14	No	Yes	No	+31	-21	-6	240	399	366
27b	Dec. 13	00.01	Dec. 15	01	No	No	No	+26	-10	-12	182	271	232
28b	Dec. 17	15.48	Dec. 18	15	Yes	Yes	-	+12	-5	0	362	275	420

## (c) Disturbances due to Solar Flare

Serial Number	Date	Commencement	Max.	End	Movement ( $\gamma$ )			K	K'	Flare or S.F.E.
					H	D	Z			
1c	Mar. 1	09.13	09.20	09.22	-6	+2	0	2	2	S.E.A., S.W.F.
2c	Mar. 9	15.41	15.45	15.50	+16	-7	0	2	2	S.E.A.
3c	Mar. 23	09.53	10.15	11.10	-65	+33	+6	4	2	S.E.A.
4c	Mar. 28	10.34	10.37	10.41	-12	-7	0	2	2	S.E.A.
5c	Mar. 29	13.41	13.46	13.55	-24	-8	+3	3	2	Very clear. S.E.A.
6c	Mar. 29	16.29	16.34	16.39	-11	-4	0	3	3	S.E.A.
7c	June 3	15.11	15.13	15.25	-5	-2	0	3	3	Class 2 flare, S.E.A.
8c	Aug. 7	15.01	15.09	15.23	+4	-12	0	3	3	Class 3 flare, S.E.A.
9c	Sept. 1	10.37	10.40	10.55	+11	-3	-3	3	3	
10c	Sept. 7	14.48	14.50	14.52	-4	-2	0	3	3	S.E.A.
11c	Oct. 13	11.05	11.10	11.50	-14	0	0	3	2	S.E.A., S.W.F.
12c	Nov. 5	10.15	10.20	10.25	-8	0	0	1	1	S.E.A., S.W.F.
13c	Dec. 9	13.01	13.06	13.15	-11	+13	0	2	2	S.E.A.
14c	Dec. 12	12.57	13.01	13.20	-23	-13	+3	2	3	S.E.A.

S.E.A. = Sudden enhancement atmospheric  
S.W.F. = Short wave fade out

POTENTIAL GRADIENT (reduced to open level surface)  
Mean values for periods of sixty minutes between exact hours

43 ESKDALEMUIR		Factor 9.72 (metre <sup>-1</sup> )																			JANUARY 1958					
	Hour G.M.T.		2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	
	0-1	1-2																								
volts per metre																										
1	100	140	180	165	135	155	160	140	120	115	125	120	120	125	135	130	150	165	140	130	60	45	35	45	122	(24)
2	55	45	45	45	50	50	45	50	50	55	65	120	140	135	155	120	160	195	195	135	100	120	95	120	98	(24)
3	105	85	75	65	65	60	65	80	70	75	95	100	100	120	115	110	110	130	100	110	130	125	125	115	97	(24)
4	95	70	60	50	60	55	60	40	40	40	40	50	40	60	45	20	-10	20	-115*	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	-35*	Z <sup>±</sup>	42	(18)
5	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	(-)
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(-)
7	85	70	75	70	80	130	95	75	95	135	120	145	160	150	145	110	100	150	130	150	155	155	75	75	117	(4)
8	75	60	75	60	50	-90*	Z <sup>±</sup>	5*	65*	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	114	(24)
9	(50)*	Z <sup>±</sup>	90*	45*	40	Z <sup>±</sup>	-20*	-45*	45*	Z <sup>±</sup>	60	55*	90	95	115	115	130	135	135	145	165	150	100	80	111	(14)
10	95	70	40	-190*	-90*	-95*	-85*	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	119	(7)
11	40*	Z <sup>±</sup>	Z <sup>±</sup>	110	130	135	115	115	105	130	135	165	150	150	155	130	150	145	155	165	165	170	150	100	139	(21)
12	110	105	100	115	110	85	95	(100)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	103	(8)
13	-	-	-	-	-	-	-	-	75	95	125	135	(120)	135	125	160	95	70	100	50	55	90	80	80	99	(16)
14	75	65	40	45	30	65	40	0*	0*	70	60	100*	80*	140*	200*	175*	415*	315*	45*	0	40	110	175	260	77	(14)
15	265	210	75	30	100	95	100	110	55	135	160	235	185	55	135	100	175	145	75	115	150	110	85	85	124	(24)
16	75	40	20	65	135	95*	55	50*	125	130*	100	95	85	80*	130	60	135*	95*	45*	175*	110*	95*	125*	115	85	(13)
17	95	110	100	95	110	110	95	95	100	95	125	180	165	165	150	95*	120	140	155	145	130	90	60	65	117	(23)
18	85	95	25*	85*	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	45*	-45*	40*	Z <sup>±</sup>	80	90*	0	95	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	200	115*	Z <sup>±</sup>	93	(6)
19	Z <sup>±</sup>	-	60	65	80	145	245	185	175	240	215	210	245	225	195	195	190	195	215	240	185	350	380	202	(21)	
20	305	170	110	130	130	175	200	180	185	225	310	100	135	95	65	-	-	-	-	-	-	-	-	-	171	(16)
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	370	210	185	195	290	280	240	380	325	305*	295	310	260	370	295	370	395	505	360	315	280	270	255	205	303	(23)
23	150	175	280	375	185	260	250	260	275	330	250	275	320	660*	Z <sup>±</sup>	225*	320	150	330	410	455	510	345	270	294	(21)
24	280	160	175	145	120	160	110	100	120	140	175	185	215	190	260	485	355	240	325	325	260	250	425	230	226	(24)
25	245	200	275	Z <sup>±</sup>	Z <sup>±</sup>	535*	280*	Z <sup>±</sup>	265*	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	-50	240	270	295	340	325	Z <sup>±</sup>	Z <sup>±</sup>	238	(9)
26	-325*	45	-55	60	45	55*	45	85	75	140	130	130	85	70	40	45	60	125	85	100*	35*	50*	100*	165*	67	(17)
27	165*	240*	225*	155*	140*	130	150	185	70*	55*	100	140	135	130	95	100	130	185	240	160	185	175	170	130	149	(17)
28	95	35*	110	125	150*	145	30*	-180*	-345*	15*	-110*	-165*	-110*	-20*	20*	85*	110*	50*	165*	130*	135*	130	130	130	124	(7)
29	135	110	75	95	145	145	115	170	205	240	180*	230*	250	210*	230	195	190	185	150	100	145	165	165	195	162	(21)
30	165	150	145	200	375	210	120	50	60	185	165	130	160	185	145	210	245	115	255	260	315	195	180	150	182	(24)
31	105	120	140*	140*	205	165	85	75*	140*	235	160	135	185	160	220	350	260	260	185	130	120	110	105	90	169	(20)
Mean	144	114	104	110	121	130	117	134	126	138	145	159	156	153	148	166	173	199	202	182	189	178	171	156	151	(502)
	(22)	(22)	(21)	(21)	(22)	(21)	(20)	(18)	(18)	(19)	(22)	(21)	(21)	(20)	(21)	(20)	(21)	(21)	(21)	(22)	(22)	(23)	(21)	(22)		
	Mean for 0a days																							160	(7)	

POTENTIAL GRADIENT (reduced to open level surface)  
Mean values for periods of sixty minutes between exact hours

43 ESKDALEMUIR		Factor 9.63 (metre <sup>-1</sup> )																			FEBRUARY 1958						
	Hour G.M.T.		2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean		
	0-1	1-2																									
volts per metre																											
1	80	80	55	50	55	50	35	45	55	-30	20	-75*	0*	-40*	25*	15*	20*	40*	35	60	75	65	70	70	51	(17)	
2	55	40	45	55	50	50	65	(75)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(115)	80	63	(10)	
3	95	105	95	65	70	55	55	55	85	120	140	170	150	120	110	125	85	100	95	40	60	95	150*	115*	95	(22)	
4	Z <sup>±</sup>	130	55	100	85	60	85*	45*	5*	Z <sup>±</sup>	70*	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	10*	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	85*	35*	55*	85*	35*	Z <sup>±</sup>	86	(5)
5	Z <sup>±</sup>	Z <sup>±</sup>	20	40	70	90	110	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	68	(6)
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7	130	105	95	70	55	55	100	75	130	105	165	155	160	170	165	170	165*	145*	190	245	195*	120	185	230*	132	(20)	
8	745*	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	160*	130*	-20*	60	0	155	55	140	-85	-270	-80	305	355	63	(10)	
9	220	175	205	200	215	145	130	125	100	105	110	135*	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	-600*	-335*	-260	5*	5*	82	(14)	
10	-40	-50	75	95	130	190	145	150	130	Z <sup>±</sup>	Z <sup>±</sup>	15	-10	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	90*	Z <sup>±</sup>	Z <sup>±</sup>	145	(12)	
11	105	75*	35*	165	165	150	130	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	144	(6)
12	-	80	90	35	40	20*	-	-	-	Z <sup>±</sup>	100	105	110	Z <sup>±</sup>	130	130	100	115	150	175	145	155	105	105	110	(17)	
13	55	50	65	60	60	100	135	165	175	180	165	250	260	260	230	180	110	95	70	20	-20	35	-95*	-90*	123	(22)	
14	-50*	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	-560*	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	135	170	Z <sup>±</sup>	Z <sup>±</sup>	Z <sup>±</sup>	110	20*	45	115	(4)	

POTENTIAL GRADIENT (reduced to open level surface)  
 Mean values for periods of sixty minutes between exact hours

43 ESKDALEMUIR

Factor 9.73 (metre<sup>-1</sup>)

MARCH 1958

	Hour G.M.T.																								Mean
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	
	volts per metre																								
1	55*	20*	80*	80*	5	45	-15	100	85	150	135	-355	70	95	80	15	25	75	15	70	120	95	70	0	65 (19)
2	60	55	55	45	40	45	40	50	75	95	100	100	100	95	130	120	110	45	90	90	-	-	-	-	77 (20)
3	-	-	-	-	-	-	-	-	90	340	250	160	135	190	150	115	90	145	145	120	105	50*	220	95	157 (15)
4	65*	25*	10	-20	65	75	120	25	50	65	80	75	150	65	65	70	85	80*	75*	65*	10*	45*	10*	-	65 (16)
5	75*	50*	55*	80	55	60	70	55	55	60	55	-40*	75	45	Z <sup>+</sup>	125	130	120	125	135	145	Z <sup>+</sup>	Z <sup>+</sup>	Z <sup>-</sup>	87 (16)
6	115	115	90	85	95	90	95	95	105	115	140	160	140	115	140	115	135	150	160	135	145	145	130	130	123 (24)
7	100	110	130	120	100	115	130	80	Z <sup>+</sup>	Z <sup>+</sup>	130	235	205	160	165	115	120	175	Z <sup>-</sup>	Z <sup>+</sup>	175	220	190	160	149 (21)
8	140	80*	120	75*	100	90	80	Z <sup>+</sup>	Z <sup>+</sup>	Z <sup>+</sup>	-110	105	Z <sup>-</sup>	70*	60*	Z <sup>+</sup>	Z <sup>+</sup>	150*	185	90	90	220	350	-	122 (12)
9	270	130	140	305	320	295	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	230 (7)
10	-	75	95	80	65	60	-	-	85	-	-	145	200	130	170*	180	135	105*	110	75	115	135	60	95	108 (17)
11	115	80	75	80	100	175	135	110	120	105	80	100	-	-	-	-	-	-	-	-	-	-	-	-	106 (12)
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(-)
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(-)
14	180	320	205	195	180	180	235	160	180	160	160	140	120	120	150	105	85	30	0	10	65	85	85	85	95 (10)
15	85	85	65	85	85	65	60	80	85	125	140	175	140	120	105	85	70	65	30	10	15	15	15	10	76 (24)
16	20	10	10	10	20	20	20	35	30	40	60	105	115	115	105	120	140	115	160	65	45	140	105	105	71 (24)
17	85	55	60	40	40	55	60	65	65	60	60	60	95	95	-	-	-	-	-	-	-	-	-	-	64 (14)
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65	-	70	45	70	35	45	35	30	60	91 (9)
19	50	45	40	40	30	30	45	45	45	55	45	65	90	95	115*	85	85	85	80	85	85	-20	10	75	56 (23)
20	65	85	65	105	115	65	65	95	120	85	120	130	100	95	85	75	65	60	65	55	55	45	45	55	80 (24)
21	95	65	30	30	45	85	25*	60*	90*	115	120	100	95	55	90	45	55	65	45	55	50	75	55	30	67 (21)
22	55	55	50	85	85	95	95	95	130	140	110	95	115	105	105	115	120	110	115	110	115	105	105	105	101 (24)
23	100	85	65	95	100	85	85	95	85	95	105	105	110	120	105	130	115	90	95	85	95	140	170	102	102 (24)
24	145	120	100	115	85	95	75	85	90	115	125	165	175	165	180	180	235	195	195	120	150	65	70	45	129 (24)
25	105	65	10*	-20	20	30	25	-40	-40	-10	-10	-20	40	65	65	85	70	75	65	55	115	120	120	85	46 (23)
26	60	105	55	55	40	45	-20*	-65*	-10*	60*	-105*	30*	-75	-145	-10*	55	-20	-60	-20	-45*	40*	140	-135*	-90*	15 (14)
27	-170*	-325*	-45	-110	-70*	-135*	-425	-120	-20*	-25	20	35	90	135	150	135	150	70	185*	270*	150	255	250	Z <sup>+</sup>	45 (16)
28	165*	205*	135*	215*	60*	Z <sup>+</sup>	Z <sup>+</sup>	Z <sup>+</sup>	Z <sup>+</sup>	Z <sup>+</sup>	255*	180	220	145	105*	165	120	145*	155	125	235	185	120*	370	190 (10)
29	215	90	140	135*	90*	0	35	-10	20	35	5	-290	-370*	-55*	-280*	Z <sup>-</sup>	Z <sup>-</sup>	115*	-65*	Z <sup>+</sup>	185*	295*	220*	35*	24 (10)
30	-10*	10	40	-30	Z <sup>-</sup>	Z <sup>+</sup>	Z <sup>+</sup>	Z <sup>+</sup>	Z <sup>+</sup>	Z <sup>+</sup>	Z <sup>-</sup>	40*	55*	30*	30*	40	40*	95	50	-5	130	105	160	120	66 (11)
31	45	55	65	120	140	10	-20	30	55	140	30	30	-30	-45	-20	0	25	65	160	120	50	30	20	10	45 (24)
Mean	105	86	72	69	84	80	50	57	77	77	98	92	105	93	102	96	98	82	91	87	106	104	108	110	89 (532)
	(20)	(21)	(23)	(23)	(23)	(24)	(23)	(20)	(20)	(23)	(24)	(24)	(24)	(24)	(19)	(24)	(23)	(21)	(21)	(22)	(22)	(22)	(21)	(21)	[94 (8)]

POTENTIAL GRADIENT (reduced to open level surface)  
 Mean values for periods of sixty minutes between exact hours

43 ESKDALEMUIR

Factor 10.03 (metre<sup>-1</sup>)

APRIL 1958

	Hour G.M.T.																								Mean
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	
	volts per metre																								
1	10	10	30	30	25	50	50	25	50	50	105	95	70	85	75	60	70	45	-30	-60	-5	30	45	30	39 (24)
2	20	130	85	80	180	155	125	140	110	110	120	115	150	160	165	205	Z <sup>+</sup>	Z <sup>+</sup>	Z <sup>+</sup>	125	140	105	70	75	122 (21)
3	75	55	45	75	40	-180	Z <sup>+</sup>	Z <sup>+</sup>	Z <sup>+</sup>	Z <sup>+</sup>	Z <sup>+</sup>	Z <sup>+</sup>	Z <sup>-</sup>	Z <sup>-</sup>	Z <sup>-</sup>	Z <sup>-</sup>	Z <sup>-</sup>	Z <sup>-</sup>	Z <sup>-</sup>	80*	70	Z <sup>-</sup>	Z <sup>+</sup>	Z <sup>+</sup>	26 (7)
4	20	40	85	-10	Z <sup>+</sup>	Z <sup>+</sup>	Z <sup>+</sup>	Z <sup>+</sup>	Z <sup>+</sup>	Z <sup>+</sup>	Z <sup>+</sup>	Z <sup>+</sup>	Z <sup>-</sup>	Z <sup>-</sup>	Z <sup>-</sup>	Z <sup>-</sup>	Z <sup>-</sup>	Z <sup>-</sup>	Z <sup>-</sup>	-80	150	195*	180	205	82 (9)
5	145	115	115	95*	115*	75*	95	145	105	85	95	105	90	125	95*	95	115	105	105	105	95	105	85	70	105 (20)
6	75	70	65	70	75	80	85*	90	70	70	70	65	50	60	80	75	70	60	65	65	60	70	50	45	67 (23)
7	20	20	20	20	20	25	30	50	150	130	80	40	50	50	30	10	20	20	10	15	30	60	75	105	45 (24)
8	125	105	10	30	50	50	50	70	80	105	110	85	60	70	70	65	75	70	20	20	15	10	10	95	60 (24)
9	95	100	50	50	20	30	50	70	85	70	10	40	50	75	45	45	55	75	20	30	30	10	30	15	48 (24)
10	20	20	25	70	30	40	55	60	45	15	50	60	70	75	95	95	95	95	95	60	60	20	50	60	57 (24)
11	50	50	45	40	30	25	30	50	75	75	75	60	80	95	85	95	95	80	10	10	-10	-10	10	10	48 (24)
12	20	15	20	15	20	20	40	60	60	60	75	85	70	70	60	65	50	30	20	10	30	5	5	39 (24)	
13	10	20	20	20	20	15	20	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19 (8)
14	-	-	-	-	-	-	-	-	70	65	55	60	75	85	80	80	40	60	45	50	40	30	25	5	54 (16)
15	25	30	50	60	55	40	45	60	70	35	90	Z <sup>+</sup>	60	100	70	85	60	65	25	40	70	60	45	60	57 (23)
16	60	50	45	75	60	30	55	85	70	65	45	60	40	70	50	25	20	40	30	30	50	50	30	10	48 (24)
17	-220*	145*	400*	-60*	-20*	-140*	Z <sup>-</sup>	10*	85*	10	80*	155*	75	100	50*	-60*	85	65	25	80	95	110	125	125	81 (11)
18	70	55	40	35	5	45*	50*	40*	30*	65*	15*	Z <sup>-</sup>	55	60*	30*	30*	-185*	45*	40*	55	55	25	15*	35	47 (9)
19	40	45	75	65	55	85	65	80	75	75	80	60	100	75	20	Z <sup>-</sup>	135	95	70	75	40	Z <sup>+</sup>	55	75	70 (22)
20	80	10*	-60*	-35*	40	70	65	75	60	40	50	60	50	Z <sup>-</sup>	95	75	75	-10*	80	75	50	60	65	65	65 (19)
21	45	45	50	45	40	60	55	50	95	60	60	40	70	75	70	50	60	60	95	95	60	50	50	70	60 (24)
22	60	40	40	30	25	15	40	60	70	85	110	90	135	100	80	85	65	-	-	-	-	-	-	-	66 (17)
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(-)
24	-	-	-	-	-	-	-	-	75	75	Z <sup>-</sup>	120	125	110	85	120	Z <sup>+</sup>	Z <sup>-</sup>	-	-	-	-	-	-	1

POTENTIAL GRADIENT (reduced to open level surface)  
Mean values for periods of sixty minutes between exact hours

43 ESKDALEMUIR		Factor 10.20 (metre <sup>-1</sup> )																				MAY 1958			
Hour	G.M.T.											volts per metre										Mean			
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21		21-22	22-23	23-24
1	20	30	65	35	60	55	90	125	165	90	90	90	95	95	115	105	80	50	20	20	20	20	25	69 (24)	
2	30	30	30	25	30	30	35	20	20	60	70	70	80	25	20	20	-10	-15	40	30	20	30	45	45	33 (24)
3	50	40	30	35	40	40	45	55	60	60	50	60	65	70	65	65	70	70	40	20	30	15	20	20	46 (24)
4	20	20	10	15	20	20	20	-5	30	135	70	60	40	30	40	70	90	60	45	25	30	30	10	41 (24)	
5	90	140	50	35	25	25	45	60	60	55	70	Z*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	60 (11)	
6	-	-	-*	-*	-*	-*	-*	-*	335*	55*	100	80*	95	105	115	125	135	100	115	80	95	75	60	90	99 (13)
7	80	65	50	30	30	40	60	70	85	95	90	-125*	-380*	30*	70*	70*	50*	40*	Z*	Z*	85*	Z*	Z*	295*	63 (11)
8	390*	375	285	230	185	170	200	210	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	236 (7)
9	-	-	-	-	-	-	-	-	70	70	80	70	55	40	30	25	20	25	20	10	25	15	20	20	37 (16)
10	10	10	15	25	10	25	30	50	50	50	20	20	30	15	25	30	30	25	30	30	30	30	20	20	26 (24)
11	10*	20*	20	30	25	45	45	65	70	60	60	55	55	40	Z-	180*	Z*	-65	60	70	50	-5	-80	Z*	33 (18)
12	Z*	-315*	Z-	-135*	-55*	-170*	-205*	-235	-245	-625*	-160	35	25	-130	-205*	Z-	-50	55	65	45	30	25	30	20	-35 (14)
13	20	20	25	25	20	50	50	70	70	70	75	75	55	55	40	50	30	30	30	10	75	40	20	30	43 (24)
14	20	10	30	30	30	0	Z*	-190*	-160*	-5*	85*	60*	30*	-120*	-70*	40	25	5	40	40	50	35	25	50	29 (15)
15	30	25	10	20	20	25	30	40	45	25	30	30	40	45	55	60	70	50	45	25	70	-10	0	30	34 (24)
16	10	20	40	50	50	40	50	45	60	50	45	40	20	25	40	20	40	40	45	45	70	125	105	95	49 (24)
17	30	45	25	35	35	40	60	80	-	-	-	-	-	-	-	65	Z-	80	80	70	80	80	70*	57 (14)	
18	50	50	40	35	25*	-30*	-50*	50	50	50	45	45	65	70	70	80	70	65	75	60	45	45	35*	5*	56 (19)
19	10*	35*	30*	80*	105	95	105	105	80	85*	70*	35	5	35	20	-40*	Z*	Z*	75	80	45	Z*	60	45*	65 (13)
20	35	20*	-50*	Z*	60	Z*	-65*	45	25	55	40	40	Z*	Z*	50*	Z*	Z*	Z*	Z*	Z*	25*	Z*	Z*	-30*	43 (7)
21	35	40	Z*	55	60	55	-25	95	Z*	65	60	60	55	60	Z*	55	Z+	70	Z*	Z*	60	70	85	70	57 (18)
22	65	40	40	30	30	40	70	80	90	70	55	Z*	Z*	80	90	70	60	40	Z*	-295*	Z*	Z*	Z*	-240*	59 (16)
23	-60	95*	95	115	105	70	75	40	-30	-135	Z*	Z*	Z*	Z*	Z*	Z*	220	70	Z*	Z*	20	40	45	48 (14)	
24	45	25	30	35	120	Z*	Z*	Z*	60*	Z*	Z*	Z*	Z*	Z*	-5	60*	Z*	0	Z*	45	75*	90	140	120	59 (11)
25	80	100	70*	Z*	Z*	55*	Z*	Z*	Z*	Z*	Z*	0*	80	80	70	60	60	65	65	70	50	45	60	25	65 (14)
26	60	45	50	30	35	45	45	65	85	85	70	85	55	60	70	Z*	Z*	Z*	55	75	60	50	70	45	59 (21)
27	40	45	105	100	90	75	75	80	Z-	Z*	Z*	Z*	Z*	55	225	Z*	Z*	Z*	Z*	40	30	45	40	75 (14)	
28	40	40	30	60	65	45	45	65	70	70	230	Z*	Z*	60	50	35	25	40	35	60	35	35	25	50	55 (22)
29	30	25	25	25	35	55	75	80	80	90	90	90	85	70	50	30	10	-20	25	20	20	10	-20	20	42 (24)
30	25	5	10	25	20	15	5	-5*	Z*	-200*	-60*	55*	80*	125*	105	165	25	25	25	35*	0	Z*	10	65*	33 (14)
31	80	115	60	170	260	130	115	105	155	190	120	70	60	Z-	Z*	-75*	80*	65	80	90	45	45	45	40	102 (20)
Mean	37 (25)	57 (24)	49 (24)	52 (25)	60 (26)	51 (24)	58 (23)	58 (25)	52 (22)	66 (21)	63 (22)	57 (18)	56 (19)	47 (21)	63 (20)	62 (18)	46 (19)	46 (23)	53 (23)	48 (22)	44 (24)	39 (24)	38 (25)	43 (21)	52 (538)
																							Mean for 0a days	[ - (0) ]	

POTENTIAL GRADIENT (reduced to open level surface)  
Mean values for periods of sixty minutes between exact hours

43 ESKDALEMUIR		Factor 10.11 (metre <sup>-1</sup> )																				JUNE 1958			
Hour	G.M.T.											volts per metre										Mean			
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21		21-22	22-23	23-24
1	30	25	30	30	5	5	10	95	140	75	55	45	40	25	55	65	45	35	40	75	95	45	-35	-15*	45 (23)
2	25	25	15	15	75	120	130	110	85	90	100	95	70	75	80	55	80	55	55	Z*	-185*	-130*	Z*	Z*	71 (19)
3	Z*	Z-	-120*	Z*	Z*	90*	110*	130*	280*	250	100	70	40	0*	0*	75	110	115	65	75	50	40	35	40	82 (13)
4	40	45	50	50	40	90	65	55	50	40	55	45	40	(40)	-	40	30	30	25	15	15	15	20	40	40 (23)
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	25 (1)
6	15	20	40	70	70	75	25	25	0	40	30	50	40	30	30	55	55	80	115	20	0	-20	20	135	43 (24)
7	55	30	75	25	55	40	35	40	45	15	-25	-5*	Z*	Z*	-30*	90	110	15	25	95	0	35	10	0	39 (20)
8	0	40	50	5	25	35	75	205	115	95	75	55	65	75	55	45	35	55	40	20	60	65	50	20	57 (24)
9	0	10	20	0	40	40	10	35	-60	-40	-5	130*	65	65	0	-10	-15	-55*	0*	-120*	55*	40	-10	0	10 (19)
10	0	-15*	25*	10*	55*	100*	90*	85*	105*	40*	40*	-10*	25*	100*	210*	-	Z*	Z*	225*	195	210	45*	40*	30*	135 (3)
11	60*	-50	50*	65	100	100	60	85	30	-	50	40	45	25	35	75	30	25	5	5*	25*	-185*	-240*	-130*	45 (16)
12	-90*	100*	0*	-285*	-110*	Z*	365*	190*	95	140	100	80	95	50	55	15	20	40	50	15	25	30	35	30	55 (16)
13	30	20	55	70	100	30	60	75	75	75	70	70	90	65	85	95	105	90	90	60	55	40	55	67 (24)	
14	30	35	55	75	95	40	75	60	90	75	120	95	95	95	95	90	95	65	50	35	45	50	40	50	69 (24)
15	50	30	20	15	25	30	25	30	45	50	65	75	80	75	75	85	95	55	95	55	60	20	35	40	51 (24)
16	5	40	15	15	40	135*	220*	190*	205*	150*	130*	60*	-295*	-40*	260	125	45	35*	75*	55*	-30*	-380*	30*	30*	71 (7)
17	30*	55	50	60	90	130	135	95	95	70	55	50	40	35	35	25	35	35	45	50	40	55	45	50	60 (23)
18	50	40	40	40	35	55	95	80	75	70	75	65	55	75	65	50	75	135	95	75	45	40	55	30	63 (24)
19	Z*	Z*	-480*	Z*	Z*	65*	40*	60*	115*	205*	180*	335	175*	180*	185	165*	155*	80*	75	140*	245*	80*	60*	-85*	198 (3)
20	30*	240	135	75	210	275	210	75	165	115*	80*	40	45	20	40	40	15*	15	35	20	-25*	-5	20	40	89 (19)
21	30	40	30	25	45	50	55	45	35	55	55	35	40	45	50	40	30*	45	55	50	35	35	30	30	42 (23)
22	30	40	35	30	55*	65	45*	120	140	95	75	90	90	105	105	100	90	80	55	55	40	35	-65	-40*	67 (21)
23	35	30	25	25	30	50	80	65	65	Z-	65	80	Z*	Z*	160	70	Z*	Z*	55	40	35	25	20	15	51 (19)
24	25	15	10	Z+	Z*	Z*	145	150	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	75	65	45	40	70	65	70	65 (12)
25	65	60	50	50	55	145	135	120	140	155	130	105	80	Z-	-480*	-40	35	-25*	90*	Z-	-30*	Z*	Z*	Z*	86 (15)
26	Z*	Z*	Z*	-5*	110*	140*	35*	65	100	-45	Z*	Z*	-5	60*	75	25	5	15	20	20	25	35	35	15	27 (14)
27	35	-10	30	5	40	95	75	Z*	Z*	-130*	135*	120	-	-	-	-	-	-	-	-	-	-	-	-	49 (8)
28	-	-	-	-	-	-	-	-	-	-	-	-	40	75	100	70	35	25	40	35	40	15	15	20	45 (13)
29	20	10	40	40	40	70	80	90	100	45	100	100	135	-	-	-	15	30	40	15	30	15	20	20	50 (21)
30	10	15	20	-5	25	20	10	15	40	35	50	50	70	50	15*	20*	40								



POTENTIAL GRADIENT (reduced to open level surface)  
 Mean values for periods of sixty minutes between exact hours

115

43 ESKDALEUIR		Factor 9.76 (metre <sup>-1</sup> )																						JULY 1958			
Hour	G.M.T.																								Mean		
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24			
	volts per metre																										
1	25	30	45	80	100	30	35	45	25	35	65	20	20	0	30	10*	20	20	20	40	100	120	140	250	56	(23)	
2	175	225	240	Z±	Z±	Z±	390	125	120	55	35	85	70	70	90	70	75	40	25	65	40	60	80	105	(21)		
3	70	30	30	20	45	40	40	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	(8)		
4	-	-	-	-	-	-	-	-	80	85	60	70	60	70	60	65	65	60	40	55	35	20	15	35	55	(16)	
5	30	20	10	-10	20	40	65	60	65	65	75	75	65	75	65	60	30	35	-65	-115	-55	-20	-35	65	26	(24)	
6	30	35	55	45	35	40	35	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	(8)		
7	-	-	-	-	-	-	-	-	-	-	-	35	40	55	55	75	50	55	40	35	35	120	20	40	75	52	(14)
8	85	90	100	90	150	320	245	175	210	130	90	90	165	110	65	85	20	-20	-35	10	45	30	20	20	95	(24)	
9	90*	65	10	75*	110	195	165	230	155	70*	95	95	55*	75	-105*	55	-60*	35	65	65	85	85	65	55	95	(17)	
10	45	55	65	55	70	55	65	75	65	65	30	30	25	25	50	35	55	65	65	85	80	45	35	35	53	(24)	
11	55	45	25	35	45	55	70	85	85	85	90	65	90	115	90	90	55	85	100	80	65	35	30	35	67	(24)	
12	35	25*	30*	70	75	Z±*	-90*	Z±*	Z±*	-50*	-5*	125	130*	135*	155	115	95	100	105	90	55	55	35	-35	77	(14)	
13	-45*	-30*	90	90*	Z±*	Z±*	280*	Z±*	185*	40*	135	220	-60	Z±*	Z-	25	5*	Z±*	Z±*	Z±*	20*	40*	-10*	20*	82	(5)	
14	75	115	110	70	80	85	90	100	90	60	55	65	-70*	50	30	Z-	60	100	90	125	155	125	65	80	85	(22)	
15	55	25	75	70	70*	95	100	95	100	80	85	135	Z±*	95	Z±	Z±*	Z±*	Z±*	Z±*	Z±*	-30*	35*	90	105	86	(15)	
16	90	110	65	60	60	150	160	150	140	50	115	65	20	55	55	15	185	25	Z-	Z±	Z±*	Z±*	Z±*	55*	87	(18)	
17	55	45	45	100	105	105	185	140	140	115	90	100	110	90	0	90	85	90	105	90	70	85	65	55	90	(24)	
18	35	30	35	20	25	35	55	70	90	30	35	75*	95*	185*	185*	90*	55*	70*	175	90	45*	-20*	-105*	-95*	56	(13)	
19	65	65	65	50	80	105	140	130	150	80	135	120	80	90	65	50	20	20	35	40	400	25	15	Z±	88	(23)	
20	Z±*	-35*	35	-40*	5*	Z±*	Z±*	Z±*	195*	145	70	75	35*	55	35	75	70	75	80	90	130	170	80	90	85	(15)	
21	75	90	65	85	110	120	90	100	90	90	70	70	85	85	95	90	75	80	85	80	85	90	65	55	85	(24)	
22	35	25*	30*	20*	-5*	30*	-170*	45*	-160*	115	80	115	35	Z±*	75	75	40	65	Z±*	Z-	165	40	35	80	73	(13)	
23	125	110	100	85	65	100	130	110	100	130	145	155	100	45	50	30	55	85	75	60	55	65	75	85	89	(24)	
24	75	65	45	65	85	85	120	140	115	120	90	70	70	75	65	55	55	70	75	35	45	40	35	35	72	(24)	
25	40	35	70	85	75	120	175	140	130	120	125	90	85	75	85	90	85	75	55	45	35	20	20	20	79	(24)	
26	-50*	35*	Z±*	-145*	-135*	155*	Z±*	Z±*	185	155	70	70*	75*	Z±*	230*	250*	60*	25*	55	55	110	-325*	-10*	105*	105	(6)	
27	130*	75*	150	155	70	65	45	120	220	65	140	75	80	75	60	75	90	75	45	45	30	45	30	50	82	(22)	
28	130*	115	145*	140*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	-95*	Z±*	100*	Z±*	55*	55*	80	20	90*	80*	65	10	75	85	64	(7)	
29	135*	150	135	110	125	85	75	85	120	125	100	75	75	75	75	65	90	90	110	110	120	110	90	45	97	(23)	
30	Z±*	Z±*	Z±*	70*	120	170*	Z±*	Z±*	130	35	Z±*	55*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	130	95	70	75	94	(7)	
31	100	115	85	75	65	100	160	100	140	100	65	55	85	75	85	85	90	90	60	60	50	30	35	30*	83	(23)	
Mean	65	76	73	67	78	96	120	108	115	91	84	87	66	70	67	66	67	61	62	56	90	59	50	64	77	(549)	
	(21)	(22)	(24)	(21)	(22)	(21)	(22)	(23)	(23)	(23)	(25)	(25)	(20)	(22)	(22)	(22)	(22)	(23)	(24)	(23)	(23)	(25)	(25)	(23)			
	Mean for 0a days																						[65	(7)]			

POTENTIAL GRADIENT (reduced to open level surface)  
 Mean values for periods of sixty minutes between exact hours

AUGUST 1958

43 ESKDALEUIR		Factor 9.62 (metre <sup>-1</sup> )																						AUGUST 1958		
Hour	G.M.T.																								Mean	
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24		
	volts per metre																									
1	40	35	65	75	Z±*	Z±*	Z±*	Z±*	125*	160	Z±*	85	Z±*	Z±*	-165*	100*	195*	Z±*	190	340*	Z±*	Z-	50*	70	90	(8)
2	95	185	155	120	130	150	40*	5*	Z±*	Z±*	20	Z±*	Z±*	Z±*	Z±*	95	Z±*	Z±*	Z±*	130	210	185	125	133	(12)	
3	85	65	60	80	90	115	120	145	135	145	115	65	35*	65*	80	70	45*	90*	115*	115*	120*	50*	65*	120*	98	(14)
4	55*	105*	160	60	80	75*	105*	115*	Z±*	100*	195*	Z±*	70*	105*	85*	30*	25*	35*	50*	40	35	35*	55*	65*	75	(5)
5	65*	55*	-75*	100	65	85	85	25	90	120	115	120	105	120	110	115	100	80	95	95	85	45	35	35	87	(21)
6	-	-	-	-	-	-	60	90	90	50	60*	25*	-40*	80	90	75	65	85	85	90	110	125	70	75	83	(15)
7	90	65	45	55	60	145	130	110	115	75	75	55	Z±*	75	100	55*	110	85	70	85	75	45	40	35	79	(22)
8	35	35	40	45	40	55	65	55	35	35	10	15	35	35	35	55	35	20	10	20	70	35	55	65	39	(24)
9	20	20	20	20	20	35	55	55	65	65	30*	70*	180*	210*	90*	90*	100*	100*	100*	120*	190*	230*	125*	10*	37	(10)
10	70*	35*	35*	70*	70*	40*	65	275	125	125	90	85	70	80	90	80	90	Z±*	Z±*	Z±*	-20*	20*	210	255	126	(13)
11	165	180*	215*	145	155*	100*	180*	110*	210	135	90	100	100	95	110	110	145	165	125	110	50	70	120	70*	120	(17)
12	110	110	90	35*	40*	35	85	105	85	90	65	55	70	90	65	90	100	90	95	125	135	130	90	85	91	(22)
13	45	55	85	70	90	85	105	125	100	65*	-25*	-245*	-110*	-90*	50*	-20*	165*	85	70	105	125	135	125	125	96	(16)
14	70	65*	50*	35*	80*	110	100	135	90	85	45	85	85	85	85	85	90	80	90	90	85	80	65	45	84	(20)
15	55	40	45	20	95	70	-	-	80	65*	105*	80*	60*	80*	160	160	90	125*	120	65*	110	90*	185	100	95	(14)
16	100	90	45	25	40	65	55	65	115	90	65	90	90	95	90	100	100	95	90	100	60	45	35	25	74	(24)
17	20	25	25	20	20	20	15	35	45	85	90	55	90	110	100	60	0	35	35	30	45	20	15	42	(24)	
18	25	55	55	50	65	90	95	140	115	105	80	80	80	75	80	20	10	10*	20*	-20*	20	65	-35	-85*	63	(20)
19	80*	10*	-115*	25	45	85*	80*	50	45	25	25	20	35	15	20	50	40	35	30	45	35	20	-20	20	29	(19)
20	Z±*	Z±*	0*	-	-	-	-	Z±*	Z±*	-	-	-	60	105	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	-	-	-	83	(2)
21	-	-	-	-	-	155	230	100	25	25	45	65	50	55	65	80	80	70	230	Z±*	Z±*	50	35	60	84	(17)
22	110	55	65	45	60	90	100	60	65	45	60	45	45	35	60	40	-105	Z±	Z-	10	65	185*	-245*	-65*	50	(19)
23	-40*	45	55	45*	0	-135*	65*	-25*	90*	55	65	65	80	65	70	80	80	80	65	65	65	45	55	55	61	(18)
24	35	40	40	50	80	85	55	80	90	110	90	70	55	65	75	60	65	80	50							

POTENTIAL GRADIENT (reduced to open level surface)
Mean values for periods of sixty minutes between exact hours

Table with 24 columns for hours (0-1 to 23-24) and 24 columns for months (12-13 to 23-24). Includes 'Factor 9.47 (metre^-1)' and 'SEPTEMBER 1958'. Data includes numerical values, 'Z' indicators, and asterisks. Summary row shows 'Mean (433)' and 'Mean for 0a days [58 (6)]'.

POTENTIAL GRADIENT (reduced to open level surface)
Mean values for periods of sixty minutes between exact hours

Table with 24 columns for hours (0-1 to 23-24) and 24 columns for months (12-13 to 23-24). Includes 'Factor 9.46 (metre^-1)' and 'OCTOBER 1958'. Data includes numerical values, 'Z' indicators, and asterisks. Summary row shows 'Mean (455)' and 'Mean for 0a days [101 (2)]'.

The potential gradient is reckoned as positive when the potential increases upwards. The symbol Z indicates either that the trace fluctuates rapidly so that estimation of a mean value is impracticable, or that the trace is limited by the range of the instrument (see Introduction); and the suffix +, - or z indicates that the mean value is plainly positive, plainly negative, or indeterminate in sign. The occurrence of precipitation of any sort is indicated by an asterisk. Round brackets round any hourly mean indicates that the record during that hour is somehow imperfect.

POTENTIAL GRADIENT (reduced to open level surface)  
Mean values for periods of sixty minutes between exact hours

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43 ESKDALEMIIR		Factor 9.55 (metre <sup>-1</sup> )																				NOVEMBER 1958				
Hour G.M.T.		0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean
		volts per metre																								
1		20	15	15	10	10	10	10	10	20	-	-	-	-	75	-145*	-95*	2*	2*	2*	-390*	75*	50*	20*	10*	19 (10)
2		10*	60*	125	125	75	75	65	40	85	95	90	80	55	80	75	85	70	70	60	50	-155*	50	25	10	70 (21)
3		15	20	10	20	25	35	35	50	60	85	75	75	70	60	50	60	60	55	40	35	40	40	40	25	45 (24)
4		35	25	25	25	35	35	35	45	60	90	85	60	55	75	70	60	70	70	45	15	15	15*	-85*	35*	50 (21)
5		-85*	-170*	-60*	-180*	-285*	-85*	245*	70*	50*	85*	50	40	75	75	55	70	70	55	50	70	50	25	35	40	63 (12)
6		15*	15*	35	20*	10*	10*	45*	20*	-*	-*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35 (1)
7		-	-	-	-	-	-	-	-	40	50	50	50	45	70*	40*	35*	50*	85	90	115	160	100	90	135	87 (11)
8		5	0	15	20	35	45	35	35	35	115	100	70	30*	-155*	2*	35	90	-55*	85*	75	95	120	120	75	59 (19)
9		45	50	40	40	35	35	45	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42 (8)
10		-	-	-	-	-	-	-	-	85	85	80	80	85	75	35	35	30	35	70	65	50	30	20	15	53 (15)
11		15	25	45	40	50	60	40	40	50	15	30	35	35*	30	40	2*	2*	2*	2*	2*	2*	165*	55*	75	39 (15)
12		80	90	70	65	45*	55	70	65	110	90	55	115	110	165*	125	135	2*	90*	85	90	60	-50	2*	80	79 (19)
13		50	115	160	120	70	65	55	55	85	-	-	-	-	-	-	95	90	130	55	50	90	130	70	110	89 (18)
14		70	60	60	110	25	40	60*	60*	55*	110*	160*	40*	85*	110*	165	145	70	25	110	190	35*	110*	40*	55*	89 (12)
15		145	230	145	140	160	80	85	140	190	165	135	185	160	110	50	80	75	95	60	40	40	15	35	45	109 (24)
16		-10	50*	15	100*	70*	35	50*	120*	170	135*	130*	80*	130*	145*	175	160	100	60	90	110	125	60	85	85	90 (14)
17		35	70	50	65	35	30	40	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46 (8)
18		-	-	-	-	0	25	5	35	5	55	85	80	80	50	50	30	45	85	0	35	20	70	15	50	39 (19)
19		45	30	35	30	25	-	-	-	-	55	50	45	45	50	60	50	55	70	50	30	30	30	35	35	45 (19)
20		35	25	30	30	35	20	35	35	60	40	45	50	20	45	10	35	40	50*	35*	35	40*	120*	20*	45	35 (18)
21		15*	25*	55	120	140	120	135	135	145	185	205	145	145	135	125	140	120	105	60	40	70	35	25	25	110 (22)
22		20	25	15	50	45	50	35	50	150	160	245	125	80	115	70	35	75	85	55	55	70	75	50	50	74 (24)
23		50	25	40	50	60	50	45	40	50	35	15	15	15	30	20	30	25	35	40	45	40	10	55	36 (24)	
24		50	35	30	35	35	55	50	55	85	120	120	185	135	190	200	150	40	95	240	230	120	135	195	105	112 (24)
25		85	85	100	75	85	75	75	60	110	110	210	140	110	75	145	105	50	70	105	85	85	70	95	75	95 (24)
26		45	60	40	125	40	100	75	80	35	70	50	35	40	35	65	35	40	80	60	60	50	110	85	75	62 (24)
27		70	55	60	35	35	245	120	80	100	160	160	210	295	315	425	285	80	170	75	70	0	120	110	60	139 (24)
28		40	-15	50	40	50	-25	55	25	50	45	50	70	35	50	40	50	35	25	-40	-35	-10	35	95	-25	29 (24)
29		-25	-85	50	100	60	95	60	65	85	75	85	95	95	75	60	60	50	50	35	50	55	40	75	45	56 (24)
30		35	60	40	-35*	-260*	-205*	70	75	85	85	90	110	130	95	105	90	125	125	135	110	85	70	50	50	87 (21)
Mean		42	45	52	64	53	58	57	55	84	89	93	92	90	88	96	86	65	76	69	69	61	61	65	56	69 (545)
		Mean for 0a days																								
		[45 (2)]																								

POTENTIAL GRADIENT (reduced to open level surface)  
Mean values for periods of sixty minutes between exact hours

43 ESKDALEMIIR		Factor 9.57 (metre <sup>-1</sup> )																				DECEMBER 1958					
Hour G.M.T.		0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	
		volts per metre																									
1		60	40	45	50	45	40	25	30	25	50	90	105	90	75	50	45	50	35	20	15	-	-	-	-	49 (20)	
2		-	-	-	-	-	-*	-*	-*	-*	50	40	70	100	90	85	65	55	95	90	80	90	65	65	75	74 (15)	
3		60	50	40	45	40	35	40	35	45	65	60	90	105	85	80	40	60	160	140	85	40	110	205	135	77 (24)	
4		150	175	160	110	160	175	140	90	75	75	90	95	90	105	125	85	60	85	75	50	60	60	50	50	100 (24)	
5		35	25	35	55	60	-	-	-	-	70	90	145	85	75	75	70	55	70	50	60	50	75	70	60	65 (20)	
6		65	70	60	60	45	50	50	40	50	60	120	125	115	75	70	50	40	50	40	50	65	60	40	40	62 (24)	
7		25	25	25	25	15	15	40	15	25	35	15*	-10*	0	-50	10	-40	85	20	50	85	175	160	160	125	47 (22)	
8		115	80	85	90	2*	2*	180	175	150	85	2*	2*	40*	2*	110*	2*	170	2*	145*	255	160	135	165	160	143 (14)	
9		180	190	125	85	105	95	75	75	75	65	110	140	125	125	90	110	110	125	135	165	95	100	85	75	111 (24)	
10		40	45	100	135	135	90	70	85	110	130	190	200	230	115	110	135	135*	90*	125	180*	260*	275*	-*	-*	120 (17)	
11		-*	-*	210*	-*	50*	70*	105*	110	140*	105	135	30	180*	70	100	115	65	40	65	85	75	105	85	-100	85 (14)	
12		2*	2*	2*	-180*	110	200	215	260	195	2*	2*	2*	2*	2*	2*	2*	2*	115	45	2*	180*	2*	2*	2*	163 (7)	
13		30*	120	90	245	205	140	2*	120	90	95	115	125	115	115	105	120	250	210	310	285	310	220	235	220	175 (22)	
14		250	325	350	350	355	295	245	200*	165	150*	90*	60	60	110	110	160	100	75	75	75	125	60	15	35	162 (21)	
15		2*	2*	2*	-5	-5	-45*	15*	2*	95	70	-25*	2*	85	120	110*	105	290*	20	2*	180*	-65*	75	65	25*	63 (10)	
16		-85	2*	-75*	2*	50*	95	120	95	100	105*	110	110	2*	2*	-75*	115	105	60	-10	2*	80*	55	60	65*	72 (13)	
17		35	-15	55	30	35	75*	60*	115*	75	90	105	90	90	85	75	85	90	105	100	95	85	160	65	50	75 (21)	
18		35	20	25	35	2*	2*	2*	2*	2*	285	2*	135	215	230*	90	90*	35	120	120	20	35	45	-45	-105*	78 (15)	
19		-25*	2*	2*	-155*	-70	-125*	2*	2*	2*	2*	30*	30*	-10	2*	2*	55*	85*	105	165	135	125	135	-	-	84 (7)	
20		-	-	-	-	-	55	5	2*	2*	2*	95*	120	2*	25*	2*	2*	-35*	90	105	105	55*	-70*	2*	2*	80 (6)	
21		2*	85	2*	70	70	75	65	2*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73 (5)	
22		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24		125	195*	195	165*	225	80	125	35	165	105*	165	260	375	410	125	240	245	195	85	90	65	35	25	25	157 (21)	
25		35	35	25	35	35	0	-15*	20*	-200*	-370*	2*	2*	2*	2*	2*	2*	2*	-35*	20*	25*	25*	5*	2*	2*	27 (6)	
26		90	60*	2*	2*	2*	45*	2*	75	90	130	150	105	90	90	100*	35*	40	55	65	55	45	15	5	60	73 (16)	
27		25	40*	15*	-195*	-160*	-15*	25*	30*	10*	60*	50	40	40*	50	85	75	70	35	45	25	50	60	35	35	48 (13)	
28		25*	50*	40*	35*	100*	110*	55*	135*	110*	75*	70	85	115	2*	85	110	2*	2*	105	105	2*	2*	105	120	100 (9)	
29																											

44 ESKDALEMUIR

	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE	
	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient
1	0a	hr.	2a	hr.	2b	hr.	2a	hr.	1a	hr.	1a	hr.
2	0a	...	(0a)	(...)	(0a)	(...)	0b	...	1a	1.5	2b	3.5
3	0a	...	1a	0.1	(1a)	(0.4)	2c	5.0	1a	0.1	1c	2.2
4	2b	6.4	2c	10.0	1a	1.7	2c	-	1a	0.9	(0a)	(...)
5	(2c)	-	(1b)	-	1b	1.9	1a	0.1	(2b)	-	(1a)	-
6	(2c)	-	(0a)	(...)	0a	...	1a	0.1	(1a)	-	1a	2.3
7	1a	0.1	1a	0.2	1b	1.8	1a	0.3	2b	5.1	2b	3.6
8	2c	-	2c	7.0	1b	1.7	1a	0.9	(2b)	-	1a	0.5
9	2b	3.5	2c	6.4	(1a)	(0.1)	1a	0.5	(1a)	-	2a	9.2
10	2c	12.1	2c	11.3	1b	0.4	1a	0.7	1a	1.3	1b	2.2
11	1b	2.0	(2b)	-	(1b)	-	1a	1.9	1b	3.0	2b	3.9
12	(0a)	(...)	(2b)	-	(1b)	-	1a	0.5	2b	11.4	2b	4.1
13	(1a)	(0.2)	2a	3.1	(1b)	1.9	(0a)	(...)	1a	0.4	1a	0.3
14	1a	2.3	2c	14.9	1a	1.3	(0a)	(...)	2b	5.2	1a	0.6
15	1a	0.2	1a	1.5	0a	...	1b	0.5	1a	0.9	1a	0.5
16	1a	0.1	1b	2.6	1a	0.1	1a	0.6	1a	0.3	2a	4.4
17	1a	0.1	1a	0.7	(0a)	(...)	2b	5.9	(1a)	-	1a	0.1
18	2b	6.3	1a	0.1	(1a)	-	1b	2.1	1a	0.8	0a	...
19	1b	0.6	1a	0.1	1a	0.6	1b	1.1	2b	3.9	2b	5.6
20	(1a)	-	(1b)	-	0a	...	1b	2.5	2b	7.9	1a	2.1
21	(2b)	-	(2a)	-	1a	0.5	1a	0.1	1b	1.9	0a	...
22	0a	...	0a	...	0a	...	(0a)	(...)	2b	5.1	1a	1.3
23	1b	0.1	1b	(2.2)	0a	...	(2b)	-	2c	4.9	2b	(3.5)
24	0a	...	2b	(9.8)	0a	...	(2b)	-	2c	6.7	2c	(5.1)
25	2b	9.0	(1a)	(1.1)	2a	5.7	2c	7.9	2c	3.8	(2c)	(5.0)
26	1a	2.6	0a	...	2a	11.2	1c	2.6	1b	1.3	(2b)	(4.7)
27	1a	0.1	2b	10.3	2b	8.1	1a	0.1	2c	4.6	(2b)	-
28	2a	6.7	2b	6.9	2c	(4.4)	(1a)	-	1b	1.9	(1a)	-
29	1a	0.2			2b	9.8	1a	0.2	1a	1.2	(1a)	(0.1)
30	1a	0.1			2c	7.3	1a	1.5	2b	4.4	1a	1.3
31	0a	...			2a	6.7			1b	1.4		
Total	-	52.7	-	92.2	-	70.0	-	38.2	-	80.0	-	68.6
No. of days used	-	26	-	23	-	28	-	26	-	26	-	27
Mean	-	2.0	-	4.0	-	2.5	-	1.5	-	3.1	-	2.5

	JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER	
	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient
1	1a	hr.	2c	hr.	1a	hr.	1b	hr.	2b	hr.	(1a)	hr.
2	1b	1.5	2c	4.7	0a	0.1	1a	1.1	1a	6.0	(1a)	(0.1)
3	(0a)	(...)	2c	5.7	0a	...	1a	2.5	1a	0.9	(1a)	-
4	(1a)	(0.1)	1a	0.3	(1a)	(0.8)	1c	4.9	0a	...	1a	0.7
5	2a	6.1	1b	1.8	(0a)	(...)	(2c)	(13.8)	1a	1.7	0a	...
6	(0a)	(...)	1a	0.5	(2b)	(3.1)	1a	1.2	2a	5.2	(0a)	(...)
7	(1a)	(0.9)	1a	1.0	2c	5.3	2c	4.3	1a	-	0a	...
8	2a	3.3	1b	0.8	1b	1.3	1a	0.1	(1a)	(0.1)	2a	3.3
9	1a	1.2	1a	0.4	2b	3.4	1a	0.3	1b	2.5	2c	4.2
10	0a	...	1a	1.3	1a	0.4	1b	1.2	(1a)	-	0a	...
11	0a	...	1b	2.1	0a	...	(2c)	-	(1a)	-	(1a)	-
12	2b	3.9	0a	...	0a	...	(0a)	(...)	2b	4.7	(1a)	(2.7)
13	2c	7.1	0a	...	1a	2.2	1b	2.5	1b	1.5	2c	7.2
14	1b	1.4	2a	3.7	(1a)	(1.9)	(2b)	-	(1a)	(0.3)	1b	0.8
15	2b	3.2	0a	...	(1a)	(0.7)	(1a)	(0.4)	1a	1.7	1a	0.4
16	2b	3.1	(1a)	(0.9)	(1a)	-	1b	2.7	1a	0.4	2b	5.7
17	1a	0.5	1a	0.1	(1b)	-	(1b)	(0.4)	1a	1.0	2b	5.9
18	1a	1.5	1a	0.6	(0a)	(...)	(0a)	(...)	1a	-	1a	1.0
19	1a	0.6	2a	3.5	2b	-	(1a)	(0.8)	(1a)	(2.8)	2c	4.9
20	2b	3.2	2a	3.1	2a	5.9	1a	0.8	(0a)	(...)	2c	8.7
21	0a	...	2c	4.5	2c	4.9	2c	-	1a	1.3	2c	-
22	2b	...	(1b)	(0.8)	1c	2.0	(1a)	(0.9)	1a	0.5	1b	-
23	1a	4.3	2b	4.0	1b	2.0	1a	0.3	1a	0.1	(1a)	(0.1)
24	0a	...	1a	2.4	2c	-	1a	0.4	1a	0.5	(2a)	-
25	1a	0.3	1a	0.1	2c	-	1a	0.6	1a	0.3	1a	0.1
26	2b	6.0	(1a)	(0.9)	1a	1.8	(0a)	(...)	1a	0.1	2c	10.2
27	1a	0.5	0a	...	(0a)	(...)	(1a)	(1.7)	1a	0.7	1b	2.4
28	2b	7.7	1b	1.9	(1a)	-	1b	1.7	1a	0.9	1a	1.8
29	0a	...	2b	3.1	(1a)	-	1a	1.2	2a	6.1	1b	1.4
30	2c	8.2	1a	0.1	2b	-	1a	2.3	1a	2.3	1a	3.9
31	1a	0.2	0a	...	2b	2.4	(2a)	(4.5)	1a	1.4	1b	0.9
Total	-	67.8	-	48.3	-	38.2	-	50.6	-	43.0	-	70.4
No. of days used	-	31	-	31	-	22	-	27	-	26	-	26
Mean	-	2.2	-	1.6	-	1.7	-	1.9	-	1.7	-	2.7

Annual values: Character 0 1 2  
No. of days used 54 197 114

Duration: Total 720.0 hr.  
No. of days 319  
Mean 2.26 hr.

KEW

POTENTIAL GRADIENT (reduced to open level surface)  
Mean values for periods of sixty minutes between exact hours

45 KEW OBSERVATORY		Factor 4.45 (metre <sup>-1</sup> )																				JANUARY 1958											
	Hour G.M.T.																																Mean
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24									
volts per metre																																	
1	295	265	230	200	160	170	210	245	330*	330																234 (9)							
2	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	875	895	800	705	710	515*											797 (5)						
3																		695	635	455	420	505				542 (5)							
4							150	190	235	190	95	95*				Z*		160*	235*	255	235	210	65	75		170 (10)							
5								285*	Z*	520*	295*	350*	350*	340*	360											360 (1)							
6																																	
7																																	
8																																	
9	-30*	-20*	85	135	140	190	150	245	340	380	325*	200	435	435	425	400	435	455	340	325*	125*	20*	-40*	-200*	432 (8)								
10	360	370	340	285	295	285	265	295	340	295*			255	265*	295	330	340	380	380	360	420	425	360	330	287 (20)								
													-305*	-85*	-180*	-55*	-10*	-75*	-250*	110*	170	315*	-95*	-95*	301 (10)								
11	215	305	290	235	-95	55*	180	305	370	270*	200	295	370	335	470	Z*	Z*	250	250	380	505	560	550	540	325 (20)								
12	430	360	325	305	325	350	340	370	495	595	595	560	415	440	380	305	290	280	415	395	405	305	270	405	390 (24)								
13	395	305	270	235	225	250	395	425	450	450	550	505	440	475	440*	380	495	360	395	385	425	250	135	190	365 (23)								
14	115	125	225	125	180	270	260	360	520				620	665	575	575	475	560	495	295	340	460	450	620	396 (21)								
15	700*	575	575	505	415	340*	315*	270*	235*	405*	630	565	290	335	405*	335*	110*	360*	160	-125	225	-125	295	380	336 (14)								
16	260	315	350	205	145	225	90	190	515*	430*	440*	295*	305*	370*	295*	485*	550*	395	460	655	440	350	360	415	324 (15)								
17	385	250	235	215	70	200	145	200	460	460	495	585*	395*	215*	215*	215*	340	340	560	430	505	415	440	485	336 (21)								
18	250	305	380	450	430	440	505	595	675	650	505	560	540	430	260	245*	80*	90	100	125	115*	260	295	325	389 (21)								
19	155*	180	155	225	235	250	290	350	470	515	520	550	450	360	370	505	530	560	610	720	685	650	540	505	444 (23)								
20	530	470	360	360	370	360	380	475	675	845	820	790	610	610	475	575	550	630	665	560	700	495	485	295	546 (24)								
21	280	360	460	605	565	595	485	Z*	Z*	Z*	515	740	880	970	980	1150	1125	1145	1035	1010	1010	865	575	295	745 (21)								
22	430	200	-50	-75	-30	145	200	235	325*	405*	360	560	585	595	1035	665	845	900	785	720	730	700	650	700	493 (22)								
23	755	710	585	530	550	650	820	920	880	1115	775	720	Z*	Z*	Z*	Z*	145	470	675	Z*	Z*	Z*	-735	-295	545 (17)								
24	20	-95	45	35	90	215	190	190	610	395*	550*	560	755	745	655	575	720	595	610	875	945	755	560	325	453 (22)								
25	305	405	325	235	250	235	280	360	405	385	290	190	55	170	360	380	360	325	405	370	295	280	170*	115*	303 (22)								
26	135*	100*	0*	-30*	-40*	45	35*	20*	-155*	-325*	-440*	-335*	-325*	-30*	110*	215*	180*	290*	380	395	475	560	520*	485*	371 (5)								
27	350*	270	225	295	290	115	215	145	215	235	225	235	290	350	485	520	360	385	415	385	370	315	260	260	298 (23)								
28	260	245	225	235	290	315	335	380	335*	155*	90*		200*	110*	135*	65*	190*	-105*	-135*	-145*	-210*	-295*	-170*	-30*	293 (9)								
29	65*	65*	45*	0*	25*	Z*	65*	45*	155*	205*	100*	370*	290*	315*	430	560	710	695	700	550	610	560	485	485	586 (10)								
30	575	505*	450*	415*	585*	605*	1150*	1135*	890*	910*	990*														575 (1)								
31	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	520	520	755	685	650	505	640	655	380	415	395	235	315	513 (13)								
Mean	345 (17)	311 (19)	282 (20)	267 (20)	245 (20)	279 (19)	294 (20)	339 (19)	470 (16)	513 (12)	470 (14)	527 (17)	494 (17)	519 (17)	518 (17)	531 (16)	514 (16)	507 (20)	445 (22)	456 (21)	492 (21)	438 (21)	334 (19)	350 (19)	411 (439)								
Mean for selected quiet days																							400 (9)										

POTENTIAL GRADIENT (reduced to open level surface)  
Mean values for periods of sixty minutes between exact hours

45 KEW OBSERVATORY		Factor 4.40 (metre <sup>-1</sup> )																				FEBRUARY 1958											
	Hour G.M.T.																																Mean
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24									
volts per metre																																	
1	250	160	160	215	215*	340*	275*	260*	455*	465	445	445	410	375	410	390	435	480	500	570	605	365	285	320	383 (19)								
2	35	115	410	320	375	570*	470	580	820*	615	630	170	230	340	455	465	465	465	470	500	480	420	330*	404 (21)									
3	275	180	90	115	100	125	390	750	925	935	890	720	890	710	585	525	375	265	265	230	400	140	0	285	424 (24)								
4	365	140	275	320	260	230	310	260*	355	125*	55*	225	240	215	305	385	400	385	320	240	115*	180	180	125	273 (20)								
5	60	70	55	45	45	100	80	105	125*	90*	140	215	Z*	Z*	205	390	390	375	320	240	505	185	185	320	201 (20)								
6	425	340	410	355	385	230	545	705	925	980	995	900	755	705	640	580	580	750	625	455	720	515	545	340	600 (24)								
7	260	260	365	445	490	420	435	365	490	665	730	Z*	Z*	Z*	535*	390*	435*	375*	205*	260*	115*	70*	-55*	-40	407 (12)								
8	60	215	285	550*	215	225	195	195*	10*	265	265	285	320	310	240*	Z*	250	465	465	480	385	500	630	580	337 (19)								
9	570	570	535	545	515	515	500	675	355*	305*	-40*	-225	115	195	150*	160*	150	160	240	160	180	215	-375*	-535*	330 (17)								
10	-265*	0*	55	80	125	140	170	240	400	310	330	250	215	375*	215	140*	35*	195	345*	385*	295*	265*	275*	265	214 (14)								
11	230	180	140*	135*	150	185	195	250	320	375	365	330*	Z*	385	410	355	Z*	Z*	340	285	285	455	310	195	293 (18)								
12	160	135	115	135	140	170	215	295	375	410	375	355	345	345	365	365	355	355	490	535	695	720	675	660	366 (24)								
13	560	695	630	500	390	240	425	410	470	330	340	390	345*	265*	170*	100*	225*	45	Z*	Z*	-30*	180*	125	105	377 (15)								
14	100	70	115	90	125	125	105	125	135*	160*	180	215	215	215	225	225	215	250	205	185	160	70	60	90	153 (22)								
15	100	100	125	125	125	135	170	230	295	275	225	215	180	230	305	320	330	320	320	250	230	275	180	80	45	203 (24)							
16	35*	60*	55*	70*	Z*	Z*	140*	0*	125	185	230	310	320	345	320	240	320	410	425	550	455	390	375	340	334 (16)								
17	345	285	240	185	215	180	225	295*	265*	285	275	500	425	215	390	365	355	365	515	365	385	385	515	505	342 (22)								
18	330	340	375	390	385	345	305	465	550	570	470	435	345	320	320	365	355	285	215	170	180	185	265	275	343 (24)								
19	330	295	-20	100	230	260	340	425	455	515	465	355*	340*	195*	-40*	Z*	55*	105*	125*	100	135*	140	125	140	260 (15)								
20	90	55	105	135	105	140	180	265	275*	285	355	345	125	105	265	295*	185*	170	305	285	285	250	250	150	202 (21)								
21	125	150	150	125	140	180	185*	265*	410*	355	230*	-340*	-115*	-385*	-140*	Z*	Z*	Z*	-415*	-490*	-480*	-385*	-190	-115	102 (9)								
22	140	205	150	125	70*	60	180	125	400	375	265*	285*	265	35	215*	70*	55*	60*	-105*	-835*	-810*	-20*	170*	135*	180 (7)								
23	195*	150*	0*	-95*	-190*	-55*	-30*	45*	10	25	55	90	90	180	170	230	230	205	195	240	275	265	225	180	167 (16)								
24	310	170	35	55	60*	-55*	-170*	-130*	-180*	-215*	180*																						

POTENTIAL GRADIENT (reduced to open level surface)  
Mean values for periods of sixty minutes between exact hours

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45 KEW OBSERVATORY

Factor 4.35 (metre<sup>-1</sup>)

MARCH 1958

	Hour G.M.T.																								Mean
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	
	<i>volts per metre</i>																								
1	115*	80*	-25*	20*	35*	70*	70*	195*	130*	140*	165*	175*	230	230	265	350	370	325	275	280	420	315*	80*	80*	292 (10)
2	175*	230*	240	160	20	25	25	10	-10	115	245	335	360	335	325	310	350	370	460	485	605	580	590	555	295 (22)
3	545	430	405	510	310	255*	245	325	500	635	750	640	535	475	475	360	325	385	370	395	530*	500	150	80	425 (22)
4	105	70	220	230	240	240	255	335	495	450	510	570	495	530	460	345	315	380	325	370	350	345	325	300	344 (24)
5	280	350	280	255	240	210	280	345	395*	350*	280	185	160	165	185	160	230	230	300	175	130	95*	115*	-130*	234 (19)
6	70*	90	210	195	240	245	315	335	395	370	290*	300*	385	300	280	240	Z±	415	350	395	380	420	395	360	316 (20)
7	350	360	315	335	300	300	315	450	535	430	370	350	315	315	300*	Z±	Z±	-80*	Z±	200	140	Z±	130*	336	(16)
8	300	275	315	300	300	265	230	Z±	465*	545*	530*	385*	Z±	350	450	510	350	Z±	Z±	Z±	Z±	105	140	299	(13)
9	210	20	130	55	70	70	160	175	290	335	385	405	420	360	335	310	245	315	345	370	245	280*	195*	90	243 (22)
10	185	240	185	275	280	230	345	495	670	545	475	685	870	810	670	495*	495*	580	625	565	Z±	Z±	Z±	150	467 (19)
11	280	240	245	245	210	280	265	460	415	-	-	-	385	300	275	315	300	300	370	280	405	45	60	195	280 (21)
12	230	230	195	220	245	500	695	680	650*	535	350	115*	210*	265	265	245*	230*	Z±	-10*	-80	-25*	-320*	185	460	332 (15)
13	195	140	210	265	300	310	360*	420	465	380	275	310	280	280	310*	345	335	370	385	275	345	350	230	275	306 (22)
14	280	175	45	35	105	300	495	660	785	765	600	570	580	475	475	565	580	570	440	335	300	520	810	730	466 (24)
15	705	530	405	450	350	300	380	475	640	600	440	370	310	240	230	275	315	280	325	370	405	370	350	345	394 (24)
16	310	275	195	210	255	290	275	300	280	245	290	300	265	275	280	245	-100	10	-135	-120	0	130	125	230	185 (24)
17	185	115	195	175	185	130	70	175	395	415	485	570	465	405	385	450	460	535	570	465	420	370	310	275	342 (24)
18	245	265	230	175	175	220	315	535	555	565	520	565	535	475	555	475	570	670	625	625	415	405	465	590	449 (24)
19	460	420	420	325	350	415	500	640	810	860	510	535	650	460	430	500	520	485	475	790	715	825	940	845	578 (24)
20	535	415	310	275	255	325	615	880	995	810	660	580	670*	475	535	Z±	Z±	680	775	755	705	670	685	705	602 (21)
21	635	615	580	440	315	265	385	565	905	935	740	635	650	590	535	755	545	300*	405*	175*	405	300	35	210	526 (21)
22	450	385	350	175	230	240	275	315	300	310	325	315	325	275	280	310	345	360	345	450	510	450	415	345	337 (24)
23	280	210	195	210	220	275	230	240	230	210	255	265	280	230	240	210	160	70	245	315	420	405	385	335	255 (24)
24	345	290	240	310	315	315	350	450	590	615	580	565	570	545	580	485	325*	-80*	-145*	-20*	-75*	-10*	60*	-35	418 (17)
25	60	140	90	165	220	210	300	420*	660*	660*	280*	430*	440*	460	230*	590	Z±	565*	405*	360	460*	230*	350	420	241 (10)
26	310*	-90*	220*	245*	150*	-35*	-455*	-55*	605	600*	640	810	600	650	485	300*	275	335	370	560	380	300	405	350	469 (14)
27	115*	430	125*	370	430	265	275	405	360	275	300	310	245	300	255	185*	-165*	90*	80*	140	150*	175	245	275	297 (17)
28	230*	-45*	200*	210*	210	220	255	300	350	350	265	-20*	Z±	Z±	-75*	-25*	140*	-55*	Z±	-130*	-120*	Z±	Z±	-75*	281 (6)
29	35*	70	45	95	90	Z±	60*	90*	160*	160	175	245	230	210	210	245	275	335	385	460	465	495	485	460	270 (19)
30	530	405	385	290	265	440*	280	385	380*	335	405	Z±	Z±	Z±	Z±	245	35	-285*	70*	-20*	90*	0	300	Z±	329 (11)
31	140*	245	115	245	150	160	95	165	325	Z±	580	590	510	555	415	465	420	450	-75*	-100*	-65*	Z±	Z±	-65*	343 (16)
Mean	335	275	250	250	237	254	305	405	495	469	446	453	426	391	380	374	328	384	392	368	391	390	363	347	359 (589)
	(23)	(27)	(27)	(28)	(29)	(26)	(27)	(26)	(24)	(24)	(25)	(24)	(25)	(29)	(26)	(22)	(22)	(22)	(21)	(23)	(21)	(20)	(23)	(25)	
	Mean for selected quiet days																						[384 (10)]		

POTENTIAL GRADIENT (reduced to open level surface)  
Mean values for periods of sixty minutes between exact hours

45 KEW OBSERVATORY

Factor 4.37 (metre<sup>-1</sup>)

APRIL 1958

	Hour G.M.T.																								Mean
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	
	<i>volts per metre</i>																								
1	105*	Z±	Z±	Z±	90*	105	140	335	565	600	565	675	675	620	520	600	630	680	480	480	575	565	635	710	534 (19)
2	565	480	445	415	480	515	595	745	715	565	-	-	-	-	-	-	-	-	-	-	-	-	-	-	552 (10)
3	-	-	-	-	-	-	-	-	-	-	610	645	790	770	700	675	665	725	655	610	485	275	55	0*	589 (13)
4	0*	0	95	170	125	125	170	170	195	175	175	175	175	170	195	175	160	125	125	90	Z±	Z±	20*	460*	144 (19)
5	185*	290*	Z±	Z±	Z±	Z±	Z±	Z±	Z±	Z±	Z±	Z±	Z±	Z±	Z±	-35*	70	0	210	370*	250*	-100*	-120*	-180*	93 (3)
6	-10*	0*	-25*	0*	55*	20*	20*	-20*	-10*	135	220	135	35	170	185	290	265	195	250	300	310	310	335	210	223 (15)
7	160	115	45*	35	80	90	105	220	230	250	300	250	250	355	300*	285	355	355	175	255	240	495	435	345	245 (22)
8	205	150	95	80	135	170	210	255	285	275	230	255	230	265*	300*	195*	300*	230	370	345	505	495	370	390	264 (20)
9	355	210	115	125	125	90	95	175	220	265	290	275	285*	345*	Z±	Z±	125*	275*	415*	290	365*	300	275	170	211 (16)
10	160	125*	95	160	160	185	240	335	390	320	300	230	185	210	275	300	285	405	700	675	630	655	450	495	341 (23)
11	345	265	170	170	125	135	150	220	370	515*	485*	300*	495*	480*	505	655	495*	530	630	675	620	690	620	515	411 (18)
12	495	300	220	230	160	230	345	445	435	480	435	370	400	380	370	335	335	355	515	540	610	620	550	655	409 (24)
13	690	515	320	285	265	230	230	230	285	310	300	300	275	285	275	265	240	285	320	460	520	460	370	405	335 (24)
14	300	150	-10	-20	-70	-80	-200*	-120*	445*	460	-	-	-	-	-	-	-	415	195	25	70	435	250	160	163 (14)
15	195	160	160	150	70	140	230	355	495	520	400	230	195	170	105	135	95	390	Z±	Z±	150*	-45*	20	140	218 (20)
16	265	450	450	255	310	285	335	320	425	285	285	290	255	250	210	240	265	310	390	495	495	435	255	95	319 (24)
17	150	80	95	125	90	115	175	285	275*	300	250	140*	140*	230*	45*	10*	140	195*	255	230*	70*	230*	115*	105	167 (13)
18	185	195	185	175	185	175	230	310	275	265	210	210	175	160	170	150*	205*	290*	250	240	220	185	185	220	210 (21)
19	210	175	150	140	140	140	160	210	240	255	205	170	135	150	175	185	210	210	240	255	285	320	355	380	212 (24)
20	400	300	140	240	185	275*	290	285	310	275	205	125	115	1											

POTENTIAL GRADIENT (reduced to open level surface)
Mean values for periods of sixty minutes between exact hours

Table for KEW OBSERVATORY, MAY 1958. Factor 4.22 (metre^-1). Columns: Hour G.M.T. (0-1 to 23-24), Mean. Rows: 1 to 31, Mean. Values in volts per metre. Includes a sub-row for 'Mean for selected quiet days' with value [185 (10)].

POTENTIAL GRADIENT (reduced to open level surface)
Mean values for periods of sixty minutes between exact hours

Table for KEW OBSERVATORY, JUNE 1958. Factor 4.04 (metre^-1). Columns: Hour G.M.T. (0-1 to 23-24), Mean. Rows: 1 to 30, Mean. Values in volts per metre. Includes a sub-row for 'Mean for selected quiet days' with value [152 (10)].

The potential gradient is reckoned as positive when the potential increases upwards. The symbol Z indicates either that the trace fluctuates rapidly so that estimation of a mean value is impracticable, or that the trace is limited by the range of the instrument (see Introduction); and the suffix +, - or ± indicates that the mean value is plainly positive, plainly negative, or indeterminate in sign. The occurrence of precipitation of any sort is indicated by an asterisk. Round brackets round any hourly mean indicates that the record during that hour is somehow imperfect.



POTENTIAL GRADIENT (reduced to open level surface)  
Mean values for periods of sixty minutes between exact hours

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45 KEW OBSERVATORY													Factor 7.91 (metre <sup>-1</sup> )†													JULY 1958			
Hour G.M.T.		0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean			
volts per metre																													
1	140	140	130*	120	130	130	150	155	165	155	140*	140*	120*	120*	120*	120	120	120*	115*	115*	130	115*	115*	120	137	(13)			
2	130	130	120	140*	120*	120*	120*	120*	105*	Z±	115*	120*	140	140	165	155	175	190	190	200	200	200	210	225	235	174	(15)		
3	245	270	295	270	280	285	365	320	295	225	215	225	245	Z±	Z±	Z±	105	Z±	190	250	235	175	210	235	247	(20)			
4	245	225	235	250	280	285	390	330	305	330	365	220	220	215	215	180	170	230	200	200	190	140	155	135	238	(24)			
5	180	165	140	165	180	190	190	205	200	235*	180*	180*	190*	170	125	180	180	180*	200*	190	200*	205*	235*	235	180	(15)			
6	205	150*	185*	165	180	180	165*	165*	150*	180*	185	190	180	180	165	165	170	180	180	190	180	180	190	190	190	181	(18)		
7	190	190	170	140	120	135	150	155	180	140	135	135	140	140	170	165	190	200	205	205	185	190	190	190	190	167	(24)		
8	180	180	180	180	165	170	185	185	200	215	170	180	185	185	185	165	140	135	140	170	190	190	180	180	176	(24)			
9	150	135	150	165	165	135	170	190	205	230	205	190	185	205	190	200	165	135	120	110	165	110	135	135	164	(24)			
10	135	110	120	120	135	135	265	265	265	205	185	165	155	165	125	120	105	90	90	120	150	165	105	80	149	(24)			
11	80	65	50	125	90	75	125	170	235	190	180	165	150	140	120	135	150	125	135	135	205	105	125	105	133	(24)			
12	80	65	90	105	60	120	150*	135*	180	165*	Z±	120*	155	140*	150	90	135	135*	120*	Z±	Z±	230	180	150	128	(14)			
13	65	60*	60*	80	80*	65*	105*	105*	95*	110*	120*	65*	95	135*	120	120	120	135	170	165	180	155	180	170	135	(13)			
14	140	125	120	120	120	140	190	205	205	205	180	140	140	135*	150	150	135	120	105	90	120	140	120	105	142	(23)			
15	105	105	150	180	250	155	265	310	340	245	245	215	180	220	280	265	250	190	235	215	165	110	80	90	202	(24)			
16	190	110	120	75	80	140	190	220*	205*	295*	Z±	Z±	150*	215*	Z±	Z±	Z±	Z±	0*	75*	120	105	150	135	129	(11)			
17	165	180	150	155	150	215	245	275	295	280	220	215	155	135	165	140	140	140	165	165	210	190	190	165	188	(24)			
18	165	190	190	210	235	285	380	400	380	330	260	190	210	210	190	140	120	95	95	140	285	210	260	235	225	(24)			
19	285	235	235	285	285	330	305	400	380	285	210	190	190	190	190	165	190	190	235	235	305	380	380	425	271	(24)			
20	470	450	425	Z±	Z±	305*	95*	235	285	210	235	Z±	235*	140	95	95	95	95	95	95	95	120	140	140	195	(18)			
21	120	120	95	95	120	140	210	260	190*	210*	235*	260	190	140*	120	120*	120	120	120	45*	95*	140*	165	165	151	(16)			
22	190	190	190*	190	190	235*	190*	380*	285	285	-	165	140	Z±	Z±	Z±	235	210	140	120	120	120	120	140	177	(16)			
23	140	120	140	140	165	190	210	235	235	190	140	140	45*	Z±	95	120	140	95	95	120	140	140	140	120	148	(22)			
24	140	140	95	140	165	210	260	260	210	210	190	140	140	120	95	95	70	70	70	95	45	25	45	95	130	(24)			
25	165	140	140	210	140	190	210	235	235	210	190	140	165	140*	120*	165*	190*	210*	235*	190*	140*	235*	190	140	180	(15)			
26	190	140*	95*	Z±	190*	210*	260	260	235	235	235	235	235	235	285	260	235	190	210	210	190	235*	260	260	234	(18)			
27	210	235	190	260	235	330	260	260	285	235	260	260	210	210	285*	330*	380*	330*	425*	330*	305*	305*	305*	305*	250	(15)			
28	260	235	235*	260*	235	235*	260	260	285	285*	305	305	285	260	285	285	260	235*	260*	260*	260*	260*	260	260	270	(14)			
29	235*	235	285	285	285	285	305	330	330	305	285	210	210	210*	285*	235	210	210	210	235	355	330	305	285	273	(21)			
30	285	260	285	260*	260	260	260	305	285	285	235	210	190	190	190	165	140	140	70	70*	190	190	210	235	220	(22)			
31	285	235	235	260	235	235	285	285	285	260	210	190	140	165	95	95	95	95	120	165	190	210	235	235	202	(24)			
Mean	184	178	176	173	183	198	243	260	261	237	219	195	178	181	165	160	156	147	149	166	182	172	183	184	188	(607)			
																									Mean for selected quiet days			176	(10)

POTENTIAL GRADIENT (reduced to open level surface)  
Mean values for periods of sixty minutes between exact hours

45 KEW OBSERVATORY

Factor 7.73 (metre<sup>-1</sup>)†

AUGUST 1958

Hour G.M.T.		0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	
volts per metre																											
1	180	215	160	100*	Z±	Z±	275*	315*	235	275	215	160	120	215	235	235	195	120	80	Z±	Z±	Z±	215	180	160	192	(16)
2	120	120	160	120	140	160	180	195	235	195	160	120	120	120	Z±	Z±	120	120	100	100	120	180	195	195	180	152	(22)
3	160	160	160	180	160	180	180	215	235	195	180	140	140	120	100	80	120	120	120*	140*	140*	160*	160*	195	160	160	(19)
4	160	180	235	195	195	180*	180*	180	195	195	195	195	195	195	195	195	180	195	195	195	235	215	235	235	200	(22)	
5	235	195	195	180*	180*	195*	195*	195*	195*	195*	195*	195*	195*	195*	195*	235*	215*	235*	195*	215*	215*	235*	235*	235*	235*	208	(11)
6	215*	275*	315	295	275	275	295	355	315	295	235	180	120	120	140	120	80	120	120	120	195	235	255	275	215	(22)	
7	195*	140*	120*	60*	315*	315*	275*	315	315	275	315	235	255*	315	315	-	235	275	255	315	315	335	295	315	294	(14)	
8	315	375	395	395	355	355	315*	295*	235	235*	-	255*	235*	195*	195*	195*	180	195	215	215	235	215	215*	215*	283	(13)	
9	215*	215*	235*	215	235*	235*	215*	215	235	195	180	180	180	180	180	180	180	180	215	215	235	215	215	215	201	(18)	
10	215	215	235	235	235	235*	235	235	235	235	215*	215	235*	215	235	215	215	195	235	255	235	255	275	275	233	(20)	
11	255	275	315	315	335	355	355*	355*	315*	275*	275	315	315	235*	180	160	160	120	120	160	195	235	255	275	275	241	(20)
12	295	295	295	275	255	275*	160*	315	275*	Z±	Z±	Z±	Z±	235*	Z±	Z±	315	275	255	235*	255*	315*	275	275	275	281	(13)
13	275	275	315	275	275	315	315	295	315	295	275	215	215	195	195*	275*	275*	255*	235*	215	215	235	215	195	195	258	(19)
14	195	195	235	215	235	235*	255	275	235	255	255	275*	255*	255*	235	235	235	235	255								

POTENTIAL GRADIENT (reduced to open level surface)
Mean values for periods of sixty minutes between exact hours

Table for SEPTEMBER 1958, KEW OBSERVATORY. Factor 4.83 (metre^-1). Columns: Hour G.M.T. (0-1 to 23-24), Mean. Rows: 1-30 and Mean. Includes a sub-row for 'Mean for selected quiet days'.

POTENTIAL GRADIENT (reduced to open level surface)
Mean values for periods of sixty minutes between exact hours

Table for OCTOBER 1958, KEW OBSERVATORY. Factor 4.77 (metre^-1). Columns: Hour G.M.T. (0-1 to 23-24), Mean. Rows: 1-31 and Mean. Includes a sub-row for 'Mean for selected quiet days'.

The potential gradient is reckoned as positive when the potential increases upwards. The symbol Z indicates either that the trace fluctuates rapidly so that estimation of a mean value is impracticable, or that the trace is limited by the range of the instrument (see Introduction); and the suffix +, - or ± indicates that the mean value is plainly positive, plainly negative, or indeterminate in sign. The occurrence of precipitation of any sort is indicated by an asterisk. Round brackets round any hourly mean indicates that the record during that hour is somehow imperfect.

POTENTIAL GRADIENT (reduced to open level surface)  
Mean values for periods of sixty minutes between exact hours

45 KEW OBSERVATORY

Factor 4.82 (metre<sup>-1</sup>)

NOVEMBER 1958

Hour	G.M.T.												volts per metre										Mean		
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22		22-23	23-24
1	365	310	255	300	300*	375	420	750	770	730	585	420	300	295	365	420	410	510	540	455*	340	165*	55*	438 (20)	
2	-170*	-95*	-40*	55*	-20*	110*	90*	-40*	75*	100*	10*	-65*	340*	330*	275*	185*	110*	245	265	135	100	55	35*	160 (5)	
3	80*	165*	130*	Z±	Z±	190	155	285	300	295	245	285	300	275*	350	355	365	385	340	220	185	240	295	240	279 (18)
4	185	130	145	165	240	245	245	330	295	365	355	330	365	365	310	295	355	365	475	430	430	385	385	240	310 (24)
5	255	200	130*	-440*	10*	145	65*	-170*	-230*	-160*	285*	310	365	405	620	640	605	585	510	350	350	405	240	220	388 (16)
6	100	-155	-40	295	275	295*	255*	155*	-105*	45*	165*	230*	135*	275	350*	220*	230	240*	240	310	350	245	285	330	211 (13)
7	420	405	310	330	200*	230*	190*	340*	330	255	275	275	295	330	245*	240*	300	240*	255	275	330	265	245	295	305 (17)
8	210	165	110	35*	0	-115	145	275	365	550	550	550	385	405	365	310	285	330	330	330	330	255	190	165	282 (23)
9	175	185	185	145	175	165*	165	255	405	410	285	265	275	275	330	385	385	185	310	110*	Z±	Z±	440	-40	260 (20)
10	Z±	130	200	145	155	220	310	495	585	640	565	540	495	475	420	455	495	465	450	440	455	420	310	310	399 (23)
11	185	145	220	240	310	440	350	565	705	785	705	695	565	385	365	420	585	860	675	715	860	785	465	530	523 (24)
12	330	405	275	240	240	155*	130*	-190*	-155*	Z±	Z±	Z±	Z±	-170*	275*	495	585	620	630	1155	1190*	1465	1320	1245	693 (13)
13	935	20*	35*	715	605	0	240	585	990*	695	330	510	455	385	455	495	475	510	540	620	465	450	385	275	506 (20)
14	200	255	200	55	25	130	185	420	595	540	640	815	935	785	675	640	585	440	585	565	320	75	275	310	427 (24)
15	110	240	650	805	495	935	630	420	615	675	715	785	675	495	405	405	385	300	310*	385*	455*	295*	295	330	518 (20)
16	200	185	185	220	145	285	295	365	530*	990	925	950	395	255	220	295	350	475	285	465	475*	110	540	1045	417 (22)
17	1465	1375	510	880	Z±	Z±	90	-40	365*	785	980	970	1060	1025	905	1080	1025	1080	1050	940	740	475	285	285	808 (21)
18	375	295	240	245	275	375	295	245	475	510	565	585	640	550	695	615	510	620	740	730	685	705	715	660	514 (24)
19	550	550	510	385	495	465*	355	465	695*	860	730	440*	530*	385	430	420	385	385	420	475	510	265	465	210	463 (20)
20	320	365	330	465	825	695*	330	90	585	585	495	440	410	420	365	320	405	420	175	0	365	365	300	145	372 (23)
21	240	55	75	120	130	200	200	200	295	230	405	510	475	455	455	440	730	805	805	760	585	440	230	175	376 (24)
22	90	90	100	120	165	165	80	130	240	295	200	295	210*	135	200	255	55	165	405	300	405	330	295	255	207 (23)
23	240	190	120	110	110	75	0	35*	35*	75*	75*	265	410	265*	75*	35*	20	145	45	-20	55	55	90	80	115 (18)
24	110	110	55	75	75	110	35	25	135*	220	135	75	200	110	455	420	550	565	355	550	420	495	430	255	253 (23)
25	130	80	130	75	80	80	55	55	55*	55	55	120	130	75	55	45	45	55	75	25	35	-135	0	200	66 (23)
26	275	120	165	245	350	365	185	165	255	130	350	715	365	300	385*	385*	275*	405*	510*	330*	615	715	395	405	340 (18)
27	230	145	45	130	35	350	440*	530*	495*	585*	585	310	565*	540*	550*	475*	455*	495	510	560	420*	310*	210*	310*	309 (11)
28	350*	365*	175*	245*	185*	165	330	365	440	530	520	520	585	240	75	185	110	100	120	220	90	130	0	130	256 (19)
29	90	130	65	-20*	-85	75	55	0	-20	220	80	55	495	255	285	450	510	300	565	605	575	365	575	405	253 (24)
30	405	365	200	130	65	130	190	240	245	255	385	255	695	455	220	75	220	130	55	165	90	230	200	120	230 (24)
Mean	315 (26)	249 (26)	210 (25)	265 (25)	229 (24)	228 (20)	221 (24)	276 (23)	414 (18)	485 (24)	457 (26)	462 (26)	475 (24)	382 (25)	389 (23)	413 (24)	406 (27)	432 (26)	418 (28)	444 (27)	391 (24)	369 (27)	347 (28)	327 (27)	360 (597)
Mean for selected quiet days																							[388 (9)]		

POTENTIAL GRADIENT (reduced to open level surface)  
Mean values for periods of sixty minutes between exact hours

45 KEW OBSERVATORY

Factor 4.71 (metre<sup>-1</sup>)

DECEMBER 1958

Hour	G.M.T.												volts per metre										Mean		
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22		22-23	23-24
1	-20	70	80	270	280	210	260	355	420	485	420	375	420	375	425	350	365	365	225	150	50	-10	175	190	262 (24)
2	210	350	245	295	260	505	385	330	330	400	385	530	445	385	350	375	385	450	750	785	765	645	820	750	464 (24)
3	315	315	-170	70	130	185	225	385	590	625	680	590	350	295	460	445	420	435	350	215	155	375	225	190	327 (24)
4	210	645	515	820	625	765	820	1045	1165*	1115	1025	825	985	940	930	940	895	855	730	880	705*	575	600	505	784 (22)
5	730	515	285	270	190	185	225	385	495*	680	435	435	35	130	185	155	70	295	320	155	130	175	140	215	276 (23)
6	215	105	250	225	140	210	210	295	330	435	625	765	685	470	610	285	270	50	520	610	385	400	670	765	397 (24)
7	95	-55	85	225	385	520	445	190	245	350	330	280	330	375	340*	445*	470	505	315*	250	350	540	765	750	354 (21)
8	610	590	445	520	485	435	340	400	555	600	695	585	520	555	610	750	625	505	420	280	320	245	280	245	484 (24)
9	Z±	Z±	225	215	225	225	315	495	750	740	680	600	730	750	720	740	730*	330*	-170*	-180*	-255*	Z±	Z±	Z±	529 (14)
10	-110	-165*	-180*	0*	70	210	250	295*	505	515	540	450	540	575	480	505	470*	245*	175*	Z±	-200*	-35*	Z±	-110*	377 (12)
11	190	150	140	150	210	260	350	625	765	800	670	810	435	280	190	340	250	295	350	505	520	295	280	470	389 (24)
12	355	Z±	Z±	Z±	Z±	470	485	480	625	905	835	610*	-45*	Z±	-190*	-135*	315*	435	330	470	680	715	600	470	561 (14)
13	495	470	505	620	635	625*	800	485*	Z±	Z±	210	365	250*	-20*	575	645	645	625	825	920	Z±	Z±	Z±	Z±	596 (14)
14	Z±	Z±	Z±	Z±	-20	-80	-170	50	155	225	280	295	260	330	410	610	715	765	755	905	835	835	610	765	427 (20)
15	685	670	410	410	480	785*	705*	680	590*	765	800	730*	-400*	-335*	Z±	460*	505	210	385*	140*	480*	660*	660*	660*	570 (11)
16	485	0	385	715	645	790	575	425	400*	505	400	320	425	400	295	185	450	505	280	190	515	350	460	400	422 (23)
17	105	250	155	315	270	225*	385	470	420	625	520	505	365	425	340	385	385	445	470	Z±	Z±	Z±	520*	Z±	380 (18)
18	Z±	485*	Z±	215*	Z±	Z±	105*	Z±	315*	540	505	505	450	385	340	420	-70*	280	400	305	165	85	-35*	-165*	365 (12)
19	-270*	-120*	-45*	-125*	Z±	15	105	105	155*	165*	245	225	245	190	225*	Z±	210	70	85	35	-10	10	130	210	125 (15)
20	150	150	130	150	150	120	140	120	80*	130	175	190	215	210	200	185	210	250	320	350	315	250	270	295	203 (23)
21	260	260	245	210	225	245*	260	320	470*	385	400	315	250	285	260	315	350	245	315	330	210	235	340	365	290 (22)
22	280	420	420	295	260	270*	260	210*	295	305	245	210	295	270	295	385	445	365*	385	400	470	400	390	420	340 (21)
23	365	375	295	315	295	330	385	505	590	565	245	400*	-65	-270	-70	85	410	420							

## 46 KEW OBSERVATORY

	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE	
	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient
1	-	hr.	0	hr.	1	hr.	1	hr.	0	hr.	2	hr.
2	-	-	1	0.0	1	1.5	0	0.7	1	0.0	2	3.2
3	0	0.0	1	0.8	1	1.0	0	0.0	1	0.3	2	4.1
4	-	-	1	1.1	1	0.6	1	0.5	0	0.0	1	0.1
5	-	-	1	0.4	1	0.1	1	2.4	0	0.0	0	0.0
6	-	-	1	1.3	1	0.8	2	8.8	1	0.9	0	0.0
7	-	-	0	0.0	1	0.6	2	4.1	1	1.6	1	1.3
8	1	2.2	1	2.7	1	2.9	1	0.1	0	0.0	1	0.9
9	1	1.4	1	0.7	1	2.0	0	0.0	1	0.2	0	0.0
10	2	6.6	1	2.8	1	0.4	1	0.6	0	0.0	1	0.6
11	1	1.1	1	2.0	1	1.1	0	0.0	0	0.0	2	3.3
12	0	0.0	0	0.6	1	0.3	0	0.0	1	0.8	0	0.0
13	1	0.1	0	0.0	2	3.2	0	0.0	1	0.2	1	0.3
14	1	0.2	1	2.1	1	0.1	0	0.0	1	0.1	1	0.2
15	1	2.0	0	0.0	1	0.7	2	6.0	1	2.3	0	0.0
16	1	0.2	0	0.0	0	0.0	1	2.7	1	2.5	0	0.0
17	1	0.4	1	1.3	2	4.1	0	0.0	2	3.6	0	0.0
18	0	0.0	0	0.0	1	0.2	1	1.5	1	0.1	1	1.4
19	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20	0	0.0	1	1.4	0	0.0	0	0.0	0	0.0	1	1.8
21	1	1.2	1	0.3	0	0.0	0	0.0	0	0.0	0	0.0
22	1	1.9	2	11.7	1	0.2	0	0.0	0	0.0	1	1.7
23	2	5.0	2	4.3	1	0.1	0	0.0	1	0.2	2	5.4
24	1	1.8	2	3.9	1	0.1	0	0.0	2	3.0	1	1.2
25	1	0.5	2	5.7	2	4.2	1	0.2	0	0.0	1	2.8
26	2	8.3	2	12.3	1	0.6	1	1.8	1	0.2	1	2.2
27	0	0.0	1	5.9	1	2.7	1	0.8	2	6.7	1	2.5
28	2	6.6	1	1.1	1	1.9	0	0.0	1	2.1	2	8.7
29	1	2.2	1	0.1	2	6.8	1	0.1	0	0.0	0	0.0
30	-	-	1	0.8	1	0.8	0	0.0	2	13.9	0	0.0
31	-	-	2	7.0	2	7.0	0	0.0	1	0.4	0	0.0
Total	-	41.7	-	62.5	-	48.1	-	30.3	-	39.3	-	41.7
No. of days used	-	23	-	28	-	31	-	30	-	31	-	30
Mean	-	1.8	-	2.2	-	1.6	-	1.0	-	1.3	-	1.4

	JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER	
	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient	Character	Duration of negative potential gradient
1	0	hr.	1	hr.	0	hr.	1	hr.	1	hr.	1	hr.
2	1	0.0	1	2.0	0	0.0	1	1.6	1	0.2	1	1.8
3	1	0.5	1	0.7	0	0.0	1	0.1	2	5.6	0	0.0
4	0	2.0	0	0.0	1	0.7	1	0.2	1	1.0	1	1.5
5	0	0.0	0	0.0	1	0.7	1	1.8	0	0.0	1	0.3
6	0	0.0	1	0.2	0	0.0	1	0.7	2	3.8	1	0.8
7	0	0.0	0	0.0	0	0.0	0	0.0	2	3.2	1	0.6
8	0	0.0	1	0.3	0	0.0	1	0.3	1	0.1	1	1.1
9	0	0.0	0	0.0	1	0.2	0	0.0	1	1.5	0	0.0
10	0	0.0	0	0.0	0	0.0	0	0.0	1	1.7	2	5.0
11	0	0.0	0	0.0	0	0.0	0	0.0	1	0.7	2	6.3
12	1	0.6	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1
13	0	0.0	1	1.2	0	0.0	1	1.4	2	4.7	2	5.9
14	0	0.0	0	0.0	0	0.0	1	2.4	1	1.3	2	3.2
15	0	0.0	0	0.0	0	0.0	0	0.0	1	0.8	2	4.8
16	0	0.0	1	0.5	1	0.5	0	0.0	1	0.4	1	2.7
17	2	3.2	0	0.0	0	0.0	0	0.0	1	0.5	1	1.0
18	0	0.0	0	0.0	0	0.0	1	0.3	1	1.9	1	2.7
19	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	5.0
20	0	0.0	0	0.0	0	0.0	0	0.0	1	0.2	2	5.6
21	1	1.2	1	0.2	1	0.8	0	0.0	1	1.2	1	0.1
22	1	0.3	0	0.0	1	1.3	0	0.0	1	0.3	0	0.0
23	1	1.0	1	0.6	1	1.9	0	0.0	1	0.4	0	0.0
24	1	0.7	0	0.0	1	1.0	0	0.0	1	1.4	2	3.6
25	0	0.3	1	0.1	0	0.0	0	0.0	1	0.3	1	1.9
26	0	0.0	1	0.2	0	0.0	0	0.0	1	2.0	0	0.0
27	1	0.5	0	0.0	0	0.0	0	0.0	1	0.2	1	0.7
28	0	0.0	0	0.0	1	0.4	0	0.0	1	0.6	1	0.2
29	0	0.0	1	0.3	1	1.0	0	0.0	1	2.0	1	0.6
30	0	0.0	0	0.0	1	0.2	0	0.0	2	3.2	1	2.9
31	1	0.3	0	0.0	1	0.2	1	1.2	1	1.1	1	1.1
Total	-	10.6	-	5.8	-	8.9	-	12.1	-	40.3	-	61.3
No. of days used	-	31	-	31	-	30	-	31	-	30	-	31
Mean	-	0.3	-	0.2	-	0.3	-	0.4	-	1.3	-	2.0

Annual values: Character 0 1 2  
No. of days 144 171 42

Duration: Total 402.6  
No. of days 357  
Mean 1.13 hr.

ELECTRICAL OBSERVATIONS, UNDERGROUND LABORATORY, WILSON METHOD

Mean value for periods of twenty minutes about 14h. 30m.

F = Potential gradient, unit 1 v.cm.<sup>-1</sup> λ+ = Conductivity due to positive ions, unit 10<sup>-18</sup> ohm.<sup>-1</sup> cm.<sup>-1</sup>  
 i = Air-earth current, unit 10<sup>-18</sup> amp. cm.<sup>-2</sup>

47 KEW OBSERVATORY

	JANUARY			FEBRUARY			MARCH			APRIL			MAY			JUNE		
	F	i	λ+	F	i	λ+	F	i	λ+	F	i	λ+	F	i	λ+	F	i	λ+
1	...	...	...	...	...	...	...	...	...	5.40	306	57	3.77	208	55	...	...	...
2	...	...	...	...	...	...	...	...	...	4.31	238	55	2.56	241	94	...	...	...
3	7.47	118	16	6.17	160	26	4.31	179	42	...	...	...	...	...	...	2.20	240	109
4	...	...	...	...	...	...	4.69	205	44	...	...	...	...	...	...	1.04	91	87
5	...	...	...	...	...	...	1.91	191	60	...	...	...	1.63	186	114	1.32	137	104
6	...	...	...	6.37	183	29	3.23	117	36	...	...	...	...	...	...	...	...	...
7	...	...	...	...	...	...	3.26	129	40	...	...	...	1.79	158	88	...	...	...
8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9	3.50	147	42	...	...	...	...	...	...	...	...	...	1.50	165	110	1.15	146	127
10	...	...	...	...	...	...	5.26	176	33	3.16	240	76	...	...	...	2.08	147	71
11	...	...	...	...	...	...	2.98	121	41	...	...	...	...	...	...	...	...	...
12	...	...	...	3.49	146	42	2.57	127	49	...	...	...	...	...	...	...	...	...
13	4.82	135	28	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14	5.61	175	31	...	...	...	5.40	184	34	4.45	293	66	1.93	108	56	...	...	...
15	...	...	...	...	...	...	...	...	...	0.54	56	104	...	...	...	...	...	...
16	...	...	...	...	...	...	...	...	...	2.16	160	74	...	...	...	0.94	121	129
17	2.55	99	39	3.63	163	45	3.82	312	82	...	...	...	...	...	...	...	...	...
18	...	...	...	3.09	111	36	5.67	217	38	2.21	163	74	...	...	...	1.18	122	103
19	...	...	...	...	...	...	4.58	232	51	...	...	...	1.83	178	97	1.09	147	135
20	5.00	142	29	3.18	114	36	...	...	...	...	...	...	1.55	116	75	1.72	206	120
21	9.39	202	22	...	...	...	6.64	235	35	1.60	126	79	0.91	104	114	...	...	...
22	6.86	159	23	...	...	...	...	...	...	2.66	191	72	...	...	...	...	...	...
23	...	...	...	...	...	...	...	...	...	1.45	146	101	1.78	165	93	2.64	234	89
24	6.81	163	24	...	...	...	6.08	285	47	...	...	...	...	...	...	...	...	...
25	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
26	...	...	...	2.95	97	33	...	...	...	...	...	...	...	...	...	1.15	144	125
27	4.90	197	40	3.43	111	32	2.69	204	76	...	...	...	1.07	128	120	...	...	...
28	...	...	...	2.37	122	51	...	...	...	2.42	270	112	1.02	113	111	...	...	...
29	...	...	...	...	...	...	...	...	...	1.49	138	93	...	...	...	...	...	...
30	...	...	...	...	...	...	...	...	...	1.24	85	69	1.55	163	105	1.54	163	106
31	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mean	5.69	154	29	3.85	134	37	4.21	194	47	2.55	186	79	1.76	156	95	1.50	158	109
No. of days used	10	10	10	9	9	9	15	15	15	13	13	13	13	13	13	12	12	12

	JULY			AUGUST			SEPTEMBER			OCTOBER			NOVEMBER			DECEMBER		
	F	i	λ+	F	i	λ+	F	i	λ+	F	i	λ+	F	i	λ+	F	i	λ+
1	...	...	...	2.53	253	100	1.56	185	119	...	...	...	...	...	...	4.42	217	49
2	1.78	207	116	...	...	...	2.77	166	60	2.40	198	83	...	...	...	...	...	...
3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4	2.05	231	113	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	...	...	...	1.88	225	120	...	...	...	...	...	...	7.88	328	42	1.53	77	50
6	...	...	...	...	...	...	...	...	...	2.76	188	68	...	...	...	...	...	...
7	1.46	165	113	...	...	...	...	...	...	...	...	...	3.68	229	62	...	...	...
8	1.49	220	148	...	...	...	...	...	...	...	...	...	...	...	...	6.30	263	42
9	2.28	251	110	...	...	...	...	...	...	2.97	204	69	...	...	...	7.04	218	31
10	1.31	169	129	...	...	...	2.74	328	120	...	...	...	3.98	283	71	4.52	218	48
11	1.45	197	136	2.13	272	128	3.51	258	74	...	...	...	3.29	259	79	2.76	123	45
12	...	...	...	...	...	...	4.17	306	73	...	...	...	...	...	...	...	...	...
13	...	...	...	...	...	...	...	...	...	...	...	...	4.29	239	56	...	...	...
14	1.56	203	130	...	...	...	...	...	...	2.86	202	71	5.48	254	46	...	...	...
15	3.18	206	65	2.31	329	142	...	...	...	3.31	226	68	...	...	...	...	...	...
16	...	...	...	...	...	...	3.52	309	88	...	...	...	...	...	...	...	...	...
17	...	...	...	...	...	...	2.49	209	84	...	...	...	...	...	...	...	...	...
18	1.42	205	144	...	...	...	1.47	199	135	...	...	...	6.70	259	39	3.77	227	60
19	...	...	...	1.72	236	137	2.31	322	139	...	...	...	4.24	260	61	2.63	204	78
20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
21	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
22	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3.40	262	77
23	1.69	187	111	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
24	1.54	172	112	...	...	...	2.19	225	103	...	...	...	...	...	...	...	...	...
25	...	...	...	1.92	207	108	...	...	...	...	...	...	...	...	...	...	...	...
26	...	...	...	2.38	223	94	2.55	248	97	...	...	...	...	...	...	...	...	...
27	...	...	...	1.87	228	122	...	...	...	...	...	...	...	...	...	2.85	161	56
28	...	...	...	1.51	312	207	...	...	...	...	...	...	...	...	...	...	...	...
29	...	...	...	2.17	268	123	...	...	...	4.68	199	43	...	...	...	...	...	...
30	1.64	181	110	...	...	...	...	...	...	3.97	193	49	...	...	...	5.94	265	45
31	1.48	234	158	...	...	...	...	...	...	3.14	201	64	...	...	...	4.27	190	44
Mean	1.74	202	121	2.04	255	128	2.66	250	99	3.26	201	64	4.94	264	57	4.12	202	52
No. of days used	14	14	14	10	10	10	11	11	11	8	8	8	8	8	8	12	12	12

Year: Mean 3.09 195 78  
 No. of days used 135 135 135

