

METEOROLOGICAL OFFICE

THE
OBSERVATORIES'
YEAR BOOK
1960

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

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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 dealt with site, instruments, procedure and tabulations included in the volume for 1938 served as the standards of reference up to 1956; only important departures from these standards were mentioned explicitly in subsequent Year Books. The space devoted to the discussion of observations was reduced and the monthly tables of individual hourly values of meteorological elements were discontinued, but summaries of the daily mean values (or totals), monthly means (or totals) of the hourly values and some maximum and minimum values were given. The diary of cloud, weather and visibility, and, after 1939, the aerological and seismological tables were also discontinued but no major changes were made in the tables of atmospheric electricity and terrestrial magnetism.

Another major review of the contents of the *Observatories' Year Book* was then carried out and a number of important changes made, commencing with the volume for 1957. The meteorological data for Kew and Eskdalemuir were omitted; a punched card system of recording such data centrally, at the Meteorological Office, Bracknell, has been adopted. It was also 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 were also some changes in the terrestrial magnetism and atmospheric electricity tables; full details of the new tables are given in the Introduction to this volume.

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 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, London Road, Bracknell, Berkshire.

Lerwick Observatory

Full hourly synoptic observations of the weather. Continuous recording and hourly tabulations of pressure, wind, rainfall, sunshine, temperature, humidity, total and diffuse solar radiation on a horizontal surface, daylight illumination on a horizontal surface. Daily measurements of evaporation and atmospheric pollution.

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.

Eskdalemuir Observatory

Full hourly synoptic observations 06-21h. G.M.T. Continuous recording and hourly tabulations of pressure, wind, rainfall, sunshine, temperature, humidity, total and diffuse solar radiation on a horizontal surface, daylight illumination on a horizontal surface. Daily measurements of evaporation, atmospheric pollution and soil temperatures (at depths of 30 and 122 cm.). 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. Sampling for radioactivity of particulate matter in the air near the surface.

Kew Observatory

Three-hourly synoptic observations 06-21h. G.M.T. Continuous recording and 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, atmospheric pollution and soil temperatures (at depths of 10, 20, 30 and 122 cm.). Records from a set of Galitzin seismographs (3 components) and a short period vertical seismograph.

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ERRATA IN PREVIOUS VOLUMES

Observatories' Year Books 1947 and 1948

Page 39. Table 63. For entries under North component substitute the following:-

	1947	1948
	γ	γ
Jan.	14086	14098
Feb.	14085	14096
Mar.	14071	14094
Apr.	14090	14099
May	14097	14098
June	14098	14112
July	14102	14112
Aug.	14089	14094
Sept.	14072	14099
Oct.	14078	14087
Nov.	14091	14106
Dec.	14099	14119
Year	14088	14101

Observatories' Year Book, 1953

Page 39. Table 63. Heading of Declination. For "11° +" read "10° +".

Observatories' Year Book, 1955

Page 6. Table 5(c). Heading of last column. For "Flare of S.F.E." read "Flare or S.F.E."

Observatories' Year Book, 1957

Page 7. Introduction, line 16. For " α_n " at beginning of line and in following mathematical expression read " a_n ".

Page 7. Introduction, line 16. For " δ_n " read " α_n "

Page 7. Introduction, line 17. For " δ_n " read " α_n "

Page 7. Introduction, line 18. For " δ_n " read " α_n "

Page 10. First complete para. line 3. For "1938" read "1933"

Page 12. Second table. Heading. Below "Eskdalemuir Z-Abinger Z" add "or Hartland"

Page 18. First complete para. Line 3. After "1430" add "h."

Page 20. Table 2. Heading. After "LERWICK" add "(D)"

Page 29. Footnote. After "quiet" insert "day"

Page 44. Table 5. Heading. For "N, W," read "X, -Y,"

Page 49. Table 10. Above second table insert "DECLINATION"

Page 72. Table 22. Heading. After "ESKDALEMUIR" add "(H)"

Page 90. Table 26. Heading. For "N" read "X"

Page 97. Heading. For "Diurnal Inequalities of the Geographical Components of Magnetic Force" read "Diurnal Inequalities of the magnetic elements, Declination, Inclination and Horizontal Force"

Pages 98 and 99. These two pages should be transposed

Page 100. Table 37. Footnote. For "may" read "May"

Page 113. Table 45. Footnote, last line. Before "of days" insert "is the number".

ERRATA IN PREVIOUS VOLUMES - *continued**Observatories' Year Book 1958*

Page vi, Contents, Kew Observatory, Table 47. Last word. For "changes" read "charges"

Page 15. First line. After "volts" insert "per metre"

Page 17. Line 28. For " 10^{10} " read " 10^{-10} "

Page 44. Table 5. Heading. For "N, W," read "X, -Y,"

Page 44. Table 6. Heading to table. Delete "absolute"

Page 92. Below Table 22 insert "751 at 0-1h. January 1, 1959"

Page 92. Below Table 23 insert "35.0 at 0-1h. January 1, 1959"

Page 94. Table 26. Heading. For "N, W," read "X, -Y,"

Page 94. Table 27. Heading to table. Delete "absolute"

Page 105. Table 33. Heading. For "DISTURBED" read "QUIET"

Observatories' Year Book 1959

Page 18. Line 16 For " 10^{10} " read " 10^{-10} "

Page 88. Table 25. Heading. For "N, W," read "X, -Y,".

INTRODUCTION

DESCRIPTION OF OBSERVATORIES

Lerwick Observatory, Shetland (60°08'N, 1°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 port 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.

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 White 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.

General views of the observatory and its neighbourhood and of the observatory grounds are given in Figs. 6 and 8 respectively; Fig. 7 is a site plan and Fig. 5 is a contour 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. 9, 10, 11 and 12 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. Rigaud¹, R.H. Scott², C. Chree³, O.J.R. Howarth⁴, R.S. Whipple⁵, F.J.W. Whipple⁶ and A.J. Drummond⁷.

-
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. long and each is supported by a single quartz fibre. The Z magnet is larger: it is supported by knife-edges resting on agates and is enclosed in a sealed vessel. Detailed descriptions of these variometers are given in publications of the Danish Meteorological Institute *Communications Magnétiques*, No.11 (for H) and No.8 (for Z) and in *Observations Faites à Thule: Première Partie: Magnétisme Terrestre* (for D).

The recording apparatus is so designed that 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 virtual light sources.

Scale values of H and Z are measured by passing a current through Helmholtz-Gaugain coils placed over the variometers, the resulting deflections 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 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 $1'/\text{mm.}$ 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 magnetograph house at Lerwick, which contains the La Cour magnetographs, is above ground and is made of non-magnetic concrete: its internal dimensions are 4.9 m. by 3 m. and the walls are 76 cm. thick. An electric heater, controlled by a thermostat, enables the temperature to be kept reasonably constant for periods of up to a few months at a time but the power is insufficient to maintain the same temperature throughout the year. The thermostat is re-set 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 therefrom, 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 portion of the outer containing shell is covered with a thick layer of earth which forms a mound. Electrical heating, thermostatically controlled, was introduced in 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 house at both Lerwick and Eskdalemuir is read daily at 09h. and the readings are given in Table 4 (for Lerwick) and Table 24 (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 magnetograms 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 *Z* variometer is not quite perfect and a baseline change of 2 or 3γ may occur when the room 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 1γ steps at eight or twelve hourly intervals.

TABULATIONS

Table 1 and 21 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 22, give similar information for declination (*D*) and Tables 3 and 23 for the vertical component (*Z*). Tables 4 and 24 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 house.

Tables 1-4 are subdivided into monthly sections and the same monthly parts of each table are grouped together on facing pages. Tables 21-24 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 Tables 16 and 38 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 1000γ for Lerwick and 750γ for Eskdalemuir.

Tables 5 (for Lerwick) and 25 (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 26 and 27 (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.

The next set of tables (8-15 for Lerwick and 28-36 for Eskdalemuir) gives 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 13 and 35.

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:

$$\begin{aligned}\delta X &= \cos D \cdot \delta H - \frac{\pi}{180 \times 60} H \sin D \cdot \delta D \\ -\delta Y &= \sin D \cdot \delta H + \frac{\pi}{180 \times 60} H \cos D \cdot \delta D \\ \delta I &= \frac{180 \times 60}{\pi} \cos I \left[\frac{\delta Z \cos I - \delta H \sin I}{H} \right]\end{aligned}$$

in which δD and δI 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 25.

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 37, in which are given the values of a_n , b_n , c_n and α_n in the two equivalent series $\sum (a_n \cos 15nt^\circ + b_n \sin 15nt^\circ)$ 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 α_n refer to local mean time. The harmonic coefficients have been computed from the inequalities as given in Tables 28-33 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 0.1y.

Tables 16 and 38 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 with sudden commencement (ssc) and those which can be recognised as being solar flare effects (sfe). 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". 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. Doubtful cases are not included. 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 Eskdalemuir tables, even if the disturbances at one of the stations is relatively small.

The details of irregular changes in declination at Eskdalemuir which previously were given (for example, see Tables 40 and 41 of 1958 *Observatories' Year Book*) were prepared for the benefit of mine surveyors but were no longer required by them after 1958 and have therefore been omitted.

NOTES ON THE RESULTS

Comparing mean values on all days of 1960 with those of 1959 at Lerwick H increased by 15γ , D (west) decreased by $5'$ and Z increased by 28γ . The changes deduced in X , Y , I and F are $+18\gamma$, -18γ , $-0.5'$ and $+31\gamma$. The ranges between the extreme values recorded during 1960 were H 3835γ , D $8^{\circ}17.8'$ and Z 2114γ . The range of $8^{\circ}17.8'$ in declination corresponded to a range of 2106γ in the component of force perpendicular to the magnetic meridian.

Similarly at Eskdalemuir H increased by 19γ , D (west) decreased by $6'$ and Z increased by 26γ . The changes deduced in X , Y , I and F are $+24\gamma$, -25γ , $-0.7'$ and $+29\gamma$. The ranges between the extreme values recorded during 1960 were H 3283γ ; D $4^{\circ}30.4'$ and Z 1151γ . The range of $4^{\circ}30.4'$ in declination corresponded to a range of 1320γ in the component of force perpendicular to the magnetic meridian.

ABSOLUTE STANDARDS OF MAGNETIC FORCE AT LERWICK AND ESKDALEMUIR

Vertical Component

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 150γ lower than previously. On September 28, 1958, the instrument suffered a further slight jar and a further change in reading was found; the 150γ correction now became 126γ . These additive corrections have been applied to the observed readings since the appropriate dates.

Measurements of vertical component at Eskdalemuir are also made regularly with a Copenhagen Balance Magnetometer (B.M.Z. No.35). Details of various inter-Observatory comparisons using a B.M.Z. as an intermediary instrument were given in the Introduction to the 1958 *Observatories' Year Book*. These, however, were not very satisfactory because of the

liability of the B.M.Z. instruments to changes in calibration.

Until June, 1960, the standard instrument for determining vertical component at Eskdalemuir was a Schulze Dip Inductor (No.102), the use of which is described in the 1959 *Observatories' Year Book*, (pp.7,8).

During 1960 proton (sometimes called nuclear) precession magnetometers were installed at Lerwick and at Eskdalemuir. The proton magnetometer replaced the Schulze dip inductor for deduction of the absolute standard of vertical component at Eskdalemuir. The principle of these instruments has been described by Packard and Varian¹ and Waters and Francis².

They enable the free precession frequency (f) of the proton to be measured; this is related to the total magnetic field F at the proton sample by the relation

$$f = \frac{\gamma_p F}{2\pi}$$

where f is in cycles per seconds and γ_p is the gyromagnetic ratio of the proton. The value adopted for γ_p is 2.67513×10^4 radians gauss⁻¹ sec⁻¹⁽⁵⁾; this is the value as measured by Driscoll and Bender^(3,4) and recommended provisionally at the meeting of the International Association of Geomagnetism and Aeronomy in Helsinki in 1960⁽⁵⁾.

The proton sample used at Lerwick and Eskdalemuir is distilled water contained in a polythene bottle placed on the axis of a solenoid. This solenoid serves firstly to provide a strong polarising field and then as a pick-up coil to detect the small precession signal. After amplification the signal is passed to a counter unit to enable its periodicity to be determined. This is done by measuring the time, in units of 10 microseconds, for a given number of cycles of precession. Usually 2048 cycles are counted; this gives an accuracy of 1 part in 10^5 (or 0.5γ) when measuring the total field or the vertical component in the British Isles, because the value of f for these fields is close to 2000 cycles per second and the counting time is therefore about 1 second.

The amplifier unit used must be placed within about 8 m. of the pick-up coil to avoid excessive attenuation in the precession signal but a careful investigation of the field due to this amplifier was made, and at the distances finally used (about 5.5 m. at Lerwick and 6.1 m. at Eskdalemuir) the effect of the disturbing field at the coil was completely negligible ($<0.1\gamma$). The power supplies and counter unit were placed at a great distance (at Eskdalemuir in the main office building, 230 m. away; at Lerwick in the East hut, 100 m. away). It was also proved by experiment that there was no magnetic effect associated with the pick-up coil.

The instruments have been used initially to measure the total field F , and from that to deduce the vertical component assuming the Observatory H record is correct. The equation used is

$$Z = \sqrt{F^2 - H^2}$$

1. PACKARD, M. and VARIAN, R.; Free nuclear induction in the Earth's magnetic field. *Phys. Rev.*, 93, p.941, 1954.
2. WATERS, G.S. and FRANCIS, P.D.; A nuclear magnetometer. *J. Sci. Instr.*, 35, pp.88-93, 1958.
3. DRISCOLL, R.L. and BENDER, P.L.; Proton gyromagnetic ratio, *Phys. Rev. Letters*, 1, pp.413-414, 1958.
4. BENDER, P.L. and DRISCOLL, R.L.; A free precession determination of the proton gyromagnetic ratio. *I.R.E. Trans. on Instrumentation*, 1-7, pp.176-180, 1958.
5. NELSON, J.H.; The gyromagnetic ratio of the proton. *J. Atmosph. Terr. Phys.*, 19, p.292, 1960.

and it is easily shown that the error ΔZ in Z caused by an error ΔH in the H measurements is given by

$$\Delta Z = - \left(\frac{H}{Z} \right) \Delta H$$

The ratio (H/Z) at Eskdalemuir and Lerwick is about $\frac{1}{2}$. Since we believe that the systematic errors in H do not exceed 6γ (and may well be much less) the corresponding error in Z is small (2γ or less). The 1960 comparison over a period of two months (May-June, Eskdalemuir; June-July Lerwick) of the proton magnetometer Z values (denoted here by Z_{pm}) with the Z values obtained by using the Schulze dip inductor (Eskdalemuir, denoted here Z_{DIP}) and B.M.Z.83 (Lerwick) yield the following mean results.

$$\text{Eskdalemuir} \quad Z_{\text{pm}} - Z_{\text{DIP}} = 0\gamma$$

$$\text{Lerwick} \quad Z_{\text{pm}} - Z_{\text{EMZ83}} = -8.5\gamma$$

As a test before installation at Eskdalemuir and Lerwick the proton magnetometer was taken to Hartland in April 1960. The total field as measured with this instrument was compared with the total field as computed from measurements with the Hartland H and Z standard instruments (Schuster-Smith and Dye coils respectively). The mean result obtained (after testing of the instrument, one day only was available for measurement but it was magnetically quiet) was as follows:-

$$F_{\text{pm}} - F_{\text{Hartland}} = 5\gamma$$

An upper limit to the magnitude of the random errors of the proton magnetometer can be estimated from the constancy of the Z baseline measurements. Over a period of 2 months at Lerwick comprising observations on 33 days the standard deviation of a single observed Z baseline about a mean value was 1.7γ . This of course includes the variability of both the Z and H baselines of the variometers and the errors in reading two sets of ordinates from the charts; the effect of these cannot be estimated accurately but must certainly account for the greater part of the observed variability of the baseline measurements. It is seen that the random error of the proton magnetometer appears to be limited solely by the short term random error of the frequency measuring apparatus (1 part in 10^8 , as mentioned earlier).

The instrument is now being developed further into a proton vector magnetometer, by the construction of a Helmholtz-Gaugain coil system at the centre of which the water bottle is placed. The final form of this will enable the coils to be rotated about a horizontal axis through the centre of the coil system and perpendicular to the main axis. In this way an artificial magnetic field of adjustable magnitude and direction can be created at the bottle, and in particular it can be arranged that either the horizontal or the vertical component can be exactly cancelled. In these cases the proton magnetometer will then measure the remaining field, that is, either the vertical or horizontal component respectively.

A full description of this instrument and the results obtained will be given in a later volume of the *Observatories' Year Book* but results have been obtained at Eskdalemuir with an experimental instrument which had only a fixed Helmholtz-Gaugain coil with a horizontal axis. This could be used for measuring Z directly; over a period 3 months the difference between Z as measured directly by the proton magnetometer (Z_{pvm}) and Z as measured using the total field measurement in conjunction with the Eskdalemuir H standard (Z_{pm}) was zero within a probable error of 1γ ; that is,

$$Z_{\text{pvm}} = Z_{\text{pm}} \pm 1\gamma$$

The first proton magnetometer (and proton vector magnetometer) measurements at Eskdalemuir thus do not confirm the tentative suggestion (at the top of p.12 in the 1958 *Observatories' Year Book*) that there was an error of some 14-16 γ in the Eskdalemuir Z measurements, possibly caused by an error of 6 γ in the H measurements. The interpretation of the previous comparisons with Hartland and Abinger must be that the B.M.Z. is not a suitable instrument to use when the accuracy desired is of the order 1-2 γ .

It is seen that the difference (Eskdalemuir Z - Lerwick Z) in 1960 was in fact -8.5 γ . When this is compared with the first table on p.11 of the 1958 *Observatories' Year Book* the unreliability of B.M.Z. comparison is again suggested.

It seems probable that the proton vector magnetometer will be designated the standard absolute instrument at Lerwick and Eskdalemuir; the decision as to what, if any, discontinuities in the magnetic field measurements this will involve and the exact relation between the Eskdalemuir and Lerwick Z standard on the one hand and the Hartland Z standard on the other will be made later after full trials of the instruments.

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 α 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 γ low. This was generally confirmed when it was installed at Lerwick in 1939 as it then gave results 11 γ 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 γ) 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 5γ lower than the Abinger Schuster-Smith Coil; that is, values of H according to the Lerwick standard (Coil value + 11γ) were 6γ 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 value + 5γ). 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 7γ . 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 value + 12γ), using the new calibration of the potentiometer. Although this avoided a discontinuity, it established a new standard for H at Lerwick which was 7γ higher than the Abinger standard.

Comparisons were made fairly frequently between 1948 and 1957 between Lerwick and Eskdalemuir using Q.H.Ms, but it was found that reliable results (to an accuracy of 1 or 2γ) could not be obtained by using only one Q.H.M. or by using Q.H.Ms 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^*
		γ
Dec. 1938	Direct	+13
Sept. 1946	Q.H.M. 89	+11
Apr. 1948	Q.H.M. 89	+13.5
June-Sept. 1950	Q.H.M. 90, 91, 92	+12
May-June 1957	Q.H.M. 119A, 120, 121A	+15
Apr. 1959	Q.H.M. 119A, 120, 121A	+11
June 1960	Q.H.M. 119A, 120	+14

*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	γ 0
Jan. 1933	Travelling Kew instrument	-5
Sept. 1946	Q.H.M. 89	+6
Apr. 1948	Q.H.M. 89	+6
May-Nov. 1950	Q.H.M. 91,92	+10
July 1954	Q.H.M. 120	+5
May 1959	Q.H.M. 119A,120,477,478,479	+4
Apr. 1960	Q.H.M. 119A,120	+6

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 6γ 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 in their respective Observatories. There remains, however, the difference of some 6γ between Abinger (and later Hartland) H standard on the one hand, and Lerwick and Eskdalemuir H standards on the other.

Further evidence about the accuracy of the Eskdalemuir H standard can be obtained from the preliminary measurements made by the proton magnetometer mentioned above. From the measurements of Z_{pvm} and the total field F it is possible to calculate H by means of the equation

$$H = \sqrt{F^2 - Z^2}$$

The results show that the two ways of measuring H agree within a probable error of $\pm 3\gamma$; that is,

$$H_{\text{Esk}} = H_{\text{pm}} \pm 3\gamma$$

The improved Helmholtz-Gaugain system to enable H to be measured directly should enable more precision to be obtained.

These preliminary proton magnetometer and proton vector magnetometer measurements do not confirm the tentative suggestion on p.12 of the 1958 *Observatories' Year Book* that the Eskdalemuir Schuster-Smith coil reads 6γ high.

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 $3.5'$ in 1923 to $4.4'$ 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.

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.

A brief account of the results obtained is given in Table 17. All dates, on which the sky remained completely overcast throughout the night 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 Φ ; 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 $\cdot\cdot$. 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 18 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. A detailed examination of the tables for 1957 and 1958 has been made by B. McInnes and K.A. Robertson in a paper published in the *Journal of Atmospheric and Terrestrial Physics*, 19, 1960, p.115.

ATMOSPHERIC ELECTRICITY

The programme at Lerwick and Eskdalemuir is to maintain a continuous record of 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 (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 below.

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 millimetre, which, combined with an exposure factor of between 1.0 and 1.3, 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 and normally 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, have been made frequently. 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 7 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 approximately 1.6 volts per millimetre during 1960 and this, combined with an exposure factor of about 9, means that one millimetre on the record corresponded to approximately 14 volts per metre in the potential gradient over an open level surface.

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.

Valve voltmeters were constructed on the pattern described by A.W. Brewer (*Journal of Scientific Instruments*, 30, 1953, p.91) and have been recording continuously at Kew since May, 1958, at Eskdalemuir since April 1959 and at Lerwick since June 1959. These give pen records and will eventually replace existing electrographs.

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 deflection 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 δv is the potential acquired by the plate in t seconds. The value of δv used is the 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 λ 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.

*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.

TABULATIONS

Table 19 (for Lerwick), 39 (for Eskdalemuir) and 41 (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± 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 20, 40 and 42 (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 43 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. These changes appear to be linked with the deposition on the ground of radioactive debris from nuclear weapon tests; they are discussed by K.H. Stewart in the *Quarterly Journal of the Royal Meteorological Society*, 86, 1960, p.399.

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 44. 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 1960 the highest estimate of pollution was 1.7 mg.m^{-3} , this value occurring on January 7, from 07h. to 08h. There were four days on which the mean hourly concentration of pollution reached 1.0 mg.m^{-3} ; the number of hours credited with 1.0 mg.m^{-3} or more was eleven, of which ten were in January and one in December.

NOTE ON THE TABLES: Where figures are in italics they are maximum and/or minimum values.

LERWICK OBSERVATORY

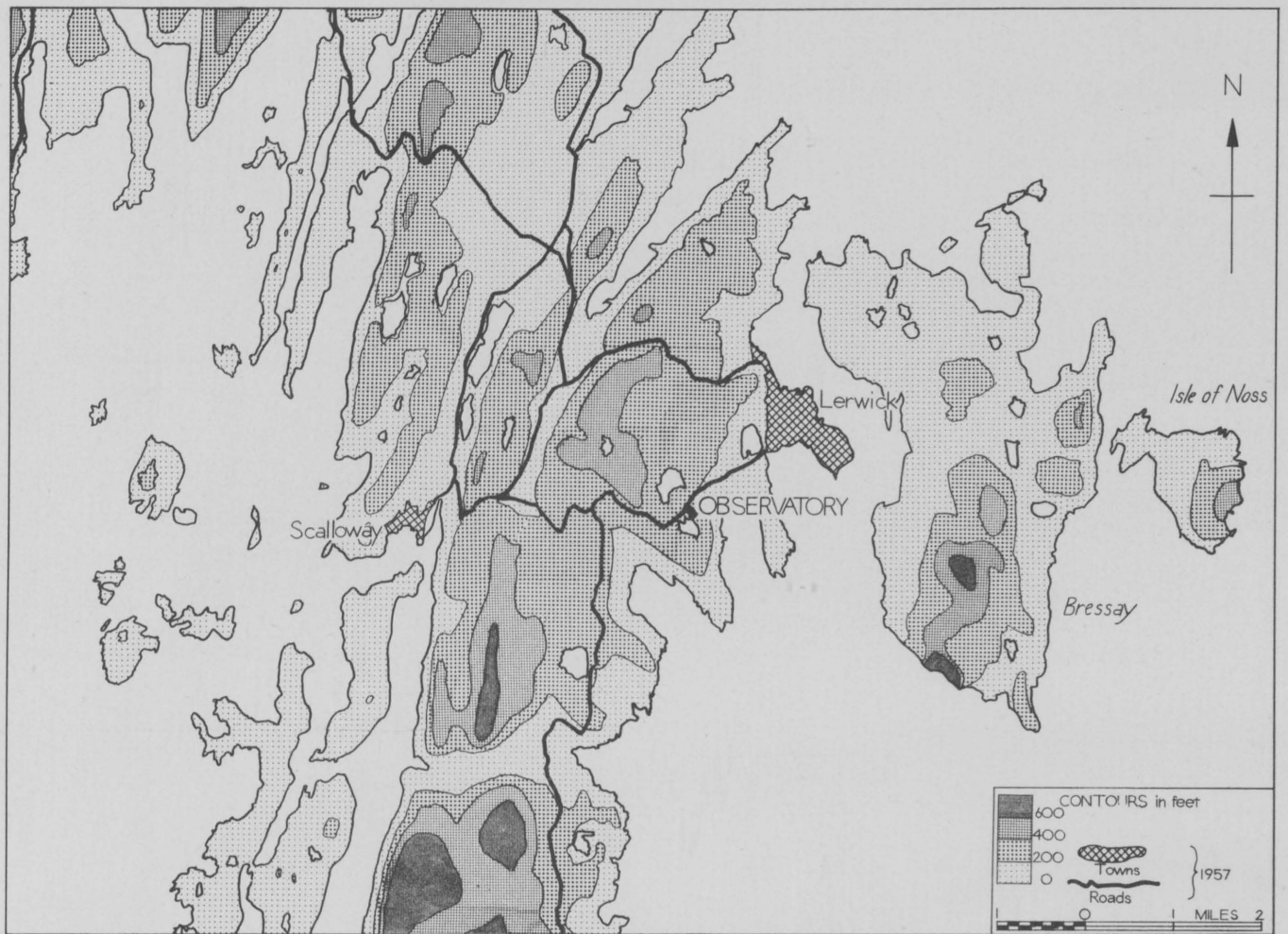


FIG.1 - Contour map of surroundings

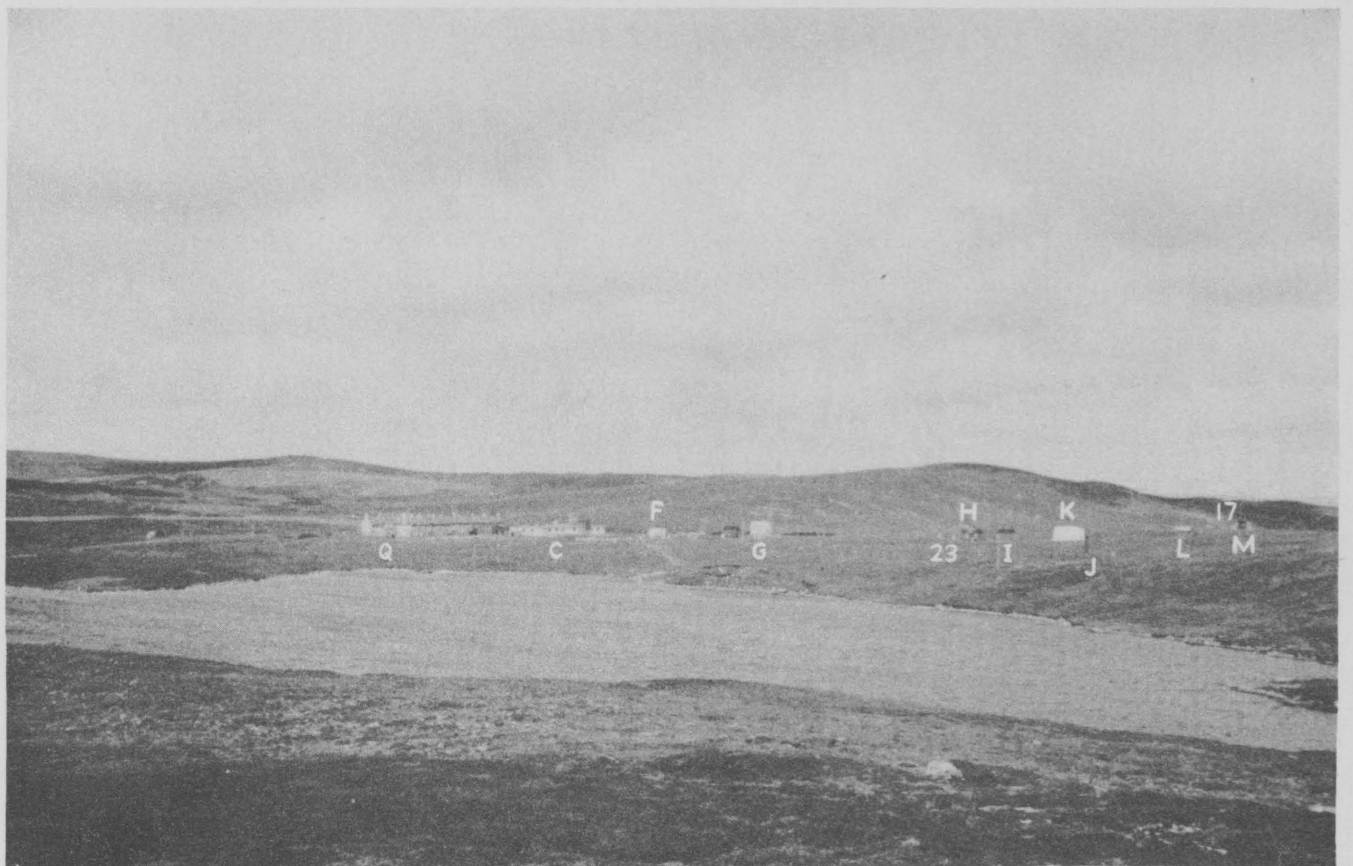


FIG.2 - General view from the south - Loch Trebister in the foreground, July 1961

LERWICK OBSERVATORY

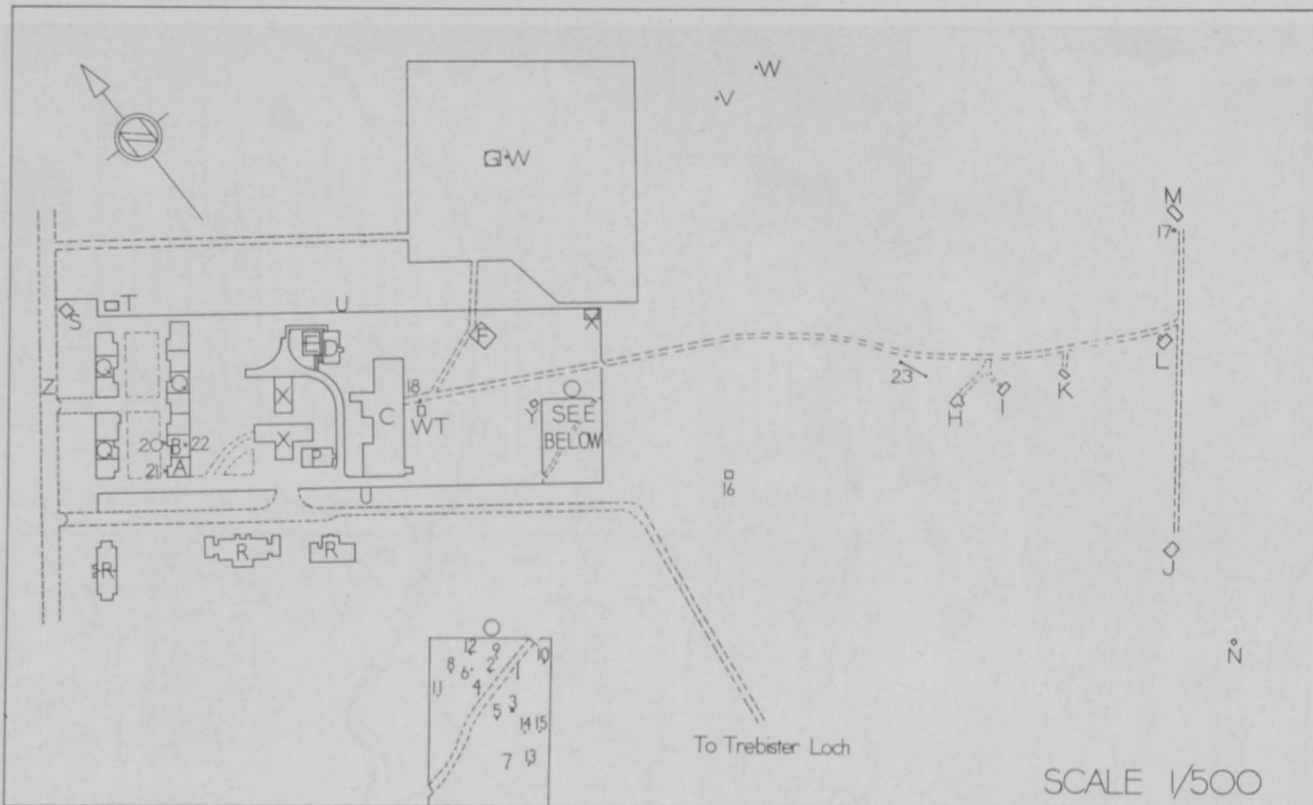


FIG.3 - Site plan, 1961



FIG.4 - View from the north-west, showing instruments and huts, July 1961

INSTRUMENTS

1. Small thermometer screen
2. Rain-gauge
3. Sunshine recorder (Campbell-Stokes type)
4. Recording rain-gauge
5. Large thermometer screen
6. Grass minimum thermometer
7. Total radiation solarimeter
8. Diffuse radiation solarimeter
9. Meteorological Office tilting-siphon rain recorder
10. Apparatus for the chemical sampling of air and precipitation
11. Daylight illuminometer
12. Evaporation pan (American class 'A' type) with water-surface maximum and minimum thermometers
13. Bi-metallic radiation recorder
14. Rain-gauge (turf walled)
15. Gravity Station
16. Electrical (cup generator) anemograph (from 4 May, 1961)
17. Cloud searchlight

18. Alidade for cloud searchlight
19. Boom for electrograph†
20. Boom for electrograph†
21. Boom for Benndorf electrograph†
22. Direct-reading pressure-tube anemograph
23. Site for absolute measurements of electrical potential gradient

BUILDINGS

- A. Observatory offices†
- B. Radio-sonde offices†
- C. New Observatory building (constructed 1960-61)*
- D. Boiler house (constructed 1961)
- E. Fuel tanks (constructed 1961)
- F. Radar house
- G. Balloon filling shed
- H. Old absolute hut - containing declinometer and proton magnetometer
- I. New absolute hut - containing Schuster-Smith coil
- J. West hut - containing B.M.Z.

- K. Magnetograph house - containing standard and quick-run La Cour variometers
- L. Old magnetograph hut - containing supplementary variometers
- M. East hut - containing spectrophotometer for ozone measurements, and atmospheric pollution meter
- N. Azimuth pillar
- O. Instrument enclosure
- P. Power house - containing emergency generators
- Q. Residential quarters
- R. Site of residential quarters to be constructed 1961-62
- S. Aurora hut
- T. Transformer house
- U. Fence
- V. Floodlight
- WT. Water tower
- W. Radio-sonde launching masts
- X. Various sheds for stores, etc.
- Y. Underground petrol store
- Z. Main road - NE to Lerwick, SW to Sumburgh

*From 13 July, 1961 †Up to 13 July, 1961

ESKDALEMUIR OBSERVATORY

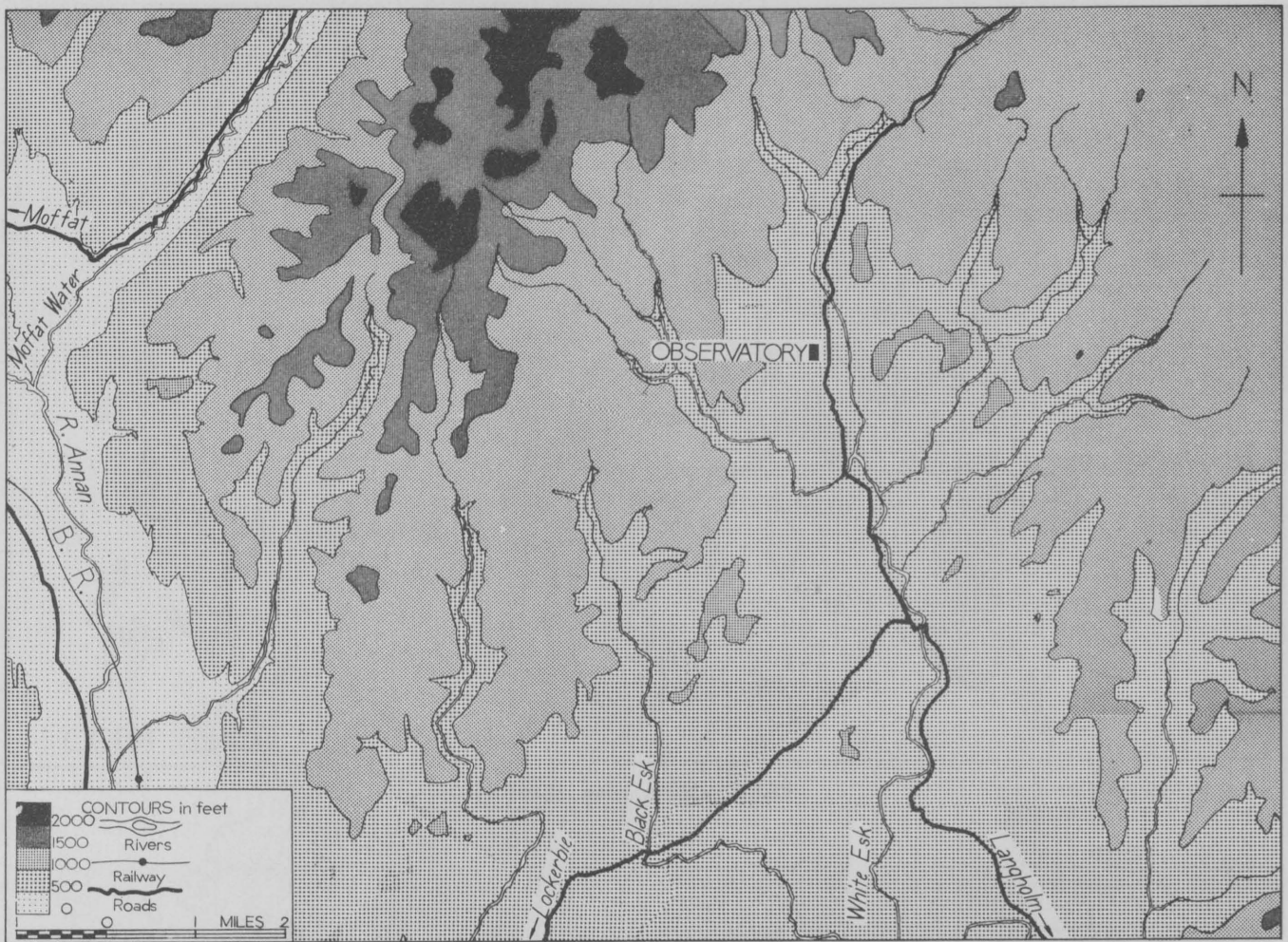


FIG.5 - Contour map of surroundings



FIG.6 - The Observatory and Davington village looking westwards from Dumfedling Hill, July 1961

- INSTRUMENTS**
1. West hut } for absolute magnetic observations including those East hut } with proton magnetometer
 2. Underground magnetograph chambers
 3. Meteorological Office tilting-siphon rain recorders (turf walled)
 4. Standard 8-inch rain gauge (turf walled)
 5. Fuess snow recorder (turf walled)
 6. Jardi rain recorder (turf walled)
 7. Experimental snow-gauges
 8. Canadian snow-gauge
 9. Evaporation pan (American class [A] type) with water-surface maximum and minimum thermometers
 10. Apparatus for the chemical sampling of air and precipitation
 11. Cup counter anemometer Mk. II
 12. 4-foot earth thermometer
 13. 1-foot earth thermometer
 14. Standard 8-inch rain-gauge
 15. Bi-metallic radiation recorders
 16. Total radiation solarimeter
 17. Diffuse radiation solarimeter
 18. Daylight illuminometer
 19. Sunshine recorder (Campbell-Stokes)
 20. Direct-reading pressure-tube anemograph
 21. Atmospheric electricity absolute observation pit
 22. Boom for electrograph
 23. Air pollution sampling unit
 24. Atmospheric radioactivity sampling unit
 25. Cloud searchlight
 26. Ozone spectrophotometer hut
 27. Large thermometer screen
 28. Lowered hut - containing standard thermometers and photothermograph
- BUILDINGS**
- A. Main observatory building
 - B. Schuster house
 - C. Rayleigh house
 - D. Glazebrook house
 - E. Shaw house
 - F. Cottage
 - a. Reservoir
 - b. Tennis court
 - c. Old ozone spectrophotometer hut
 - d. Garage and battery room
 - e. Recreation room
 - f. Reserve petrol store

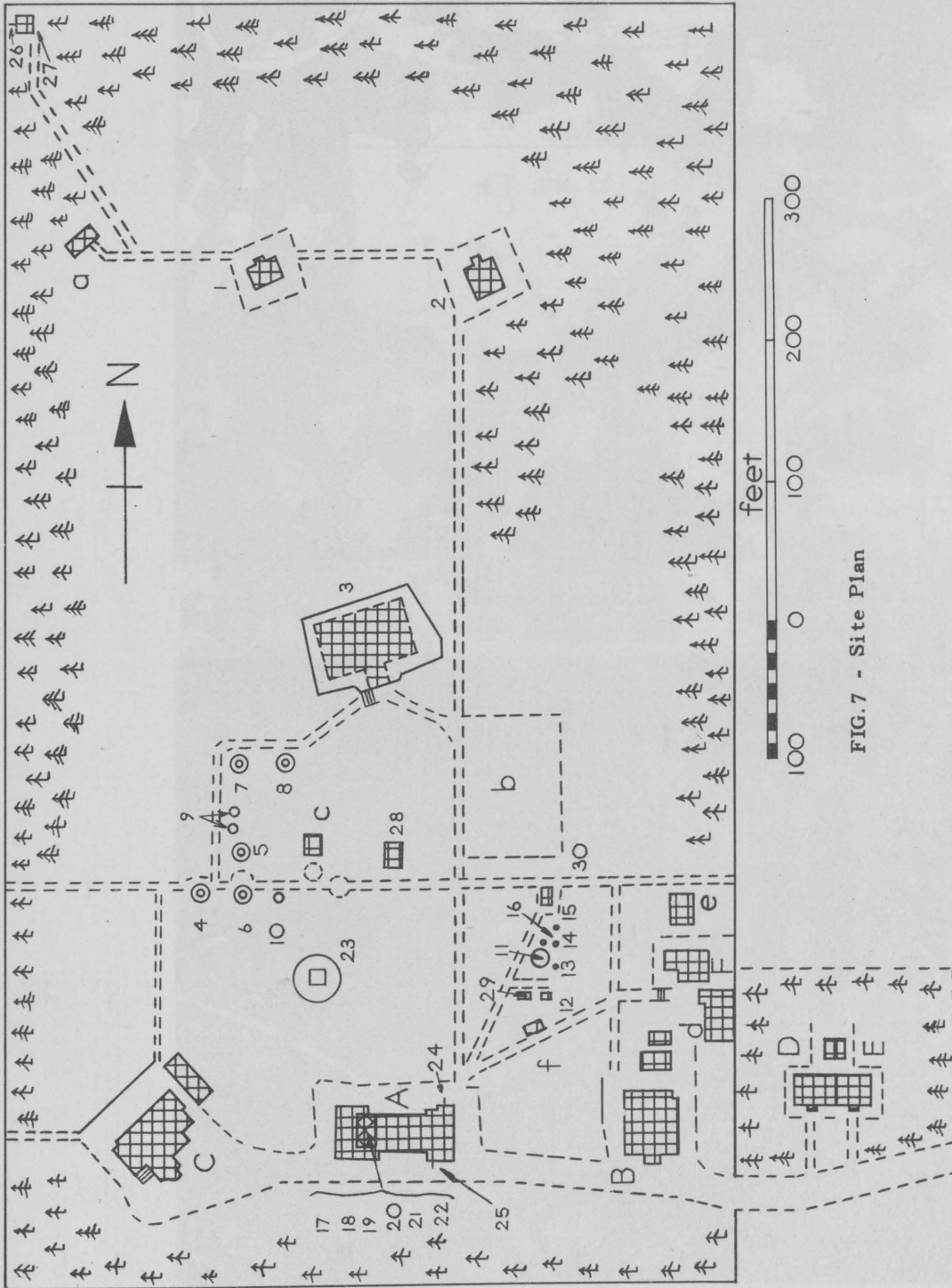


FIG. 7 - Site Plan

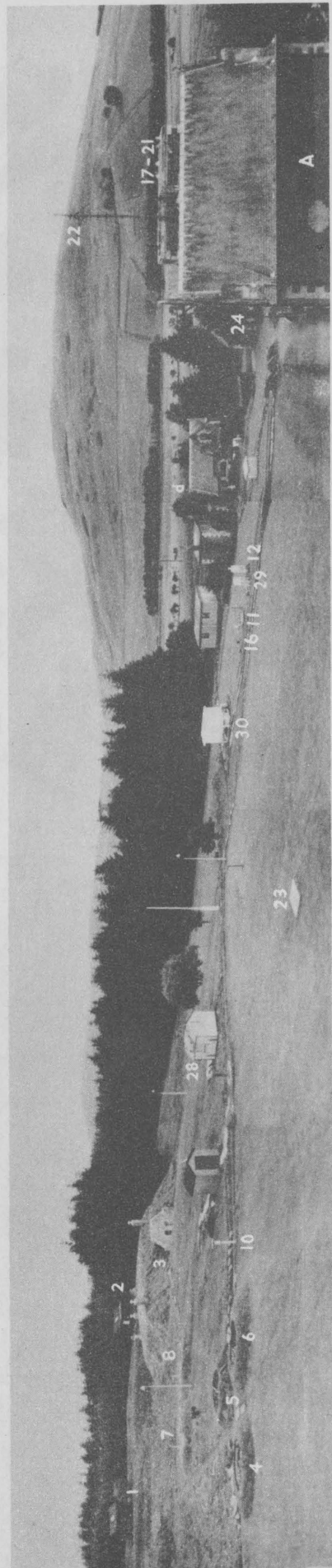


FIG. 8 - General view of the Observatory looking northwards (on the left) to south-eastwards (on the right), July 1961

KEW OBSERVATORY

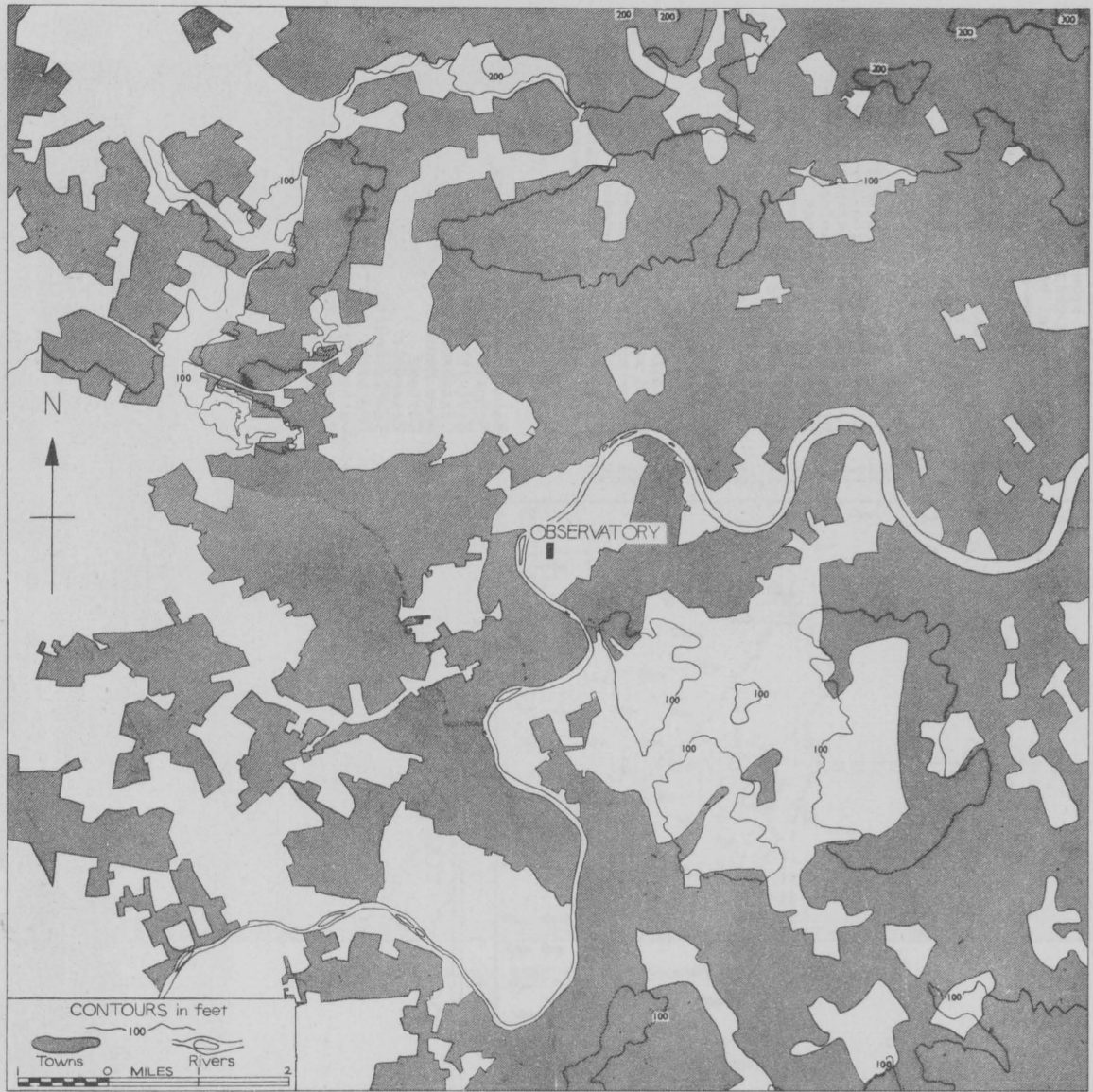


FIG.9 - Contour and built-up area map



FIG.10 - Aerial view, February 1961

KEW OBSERVATORY

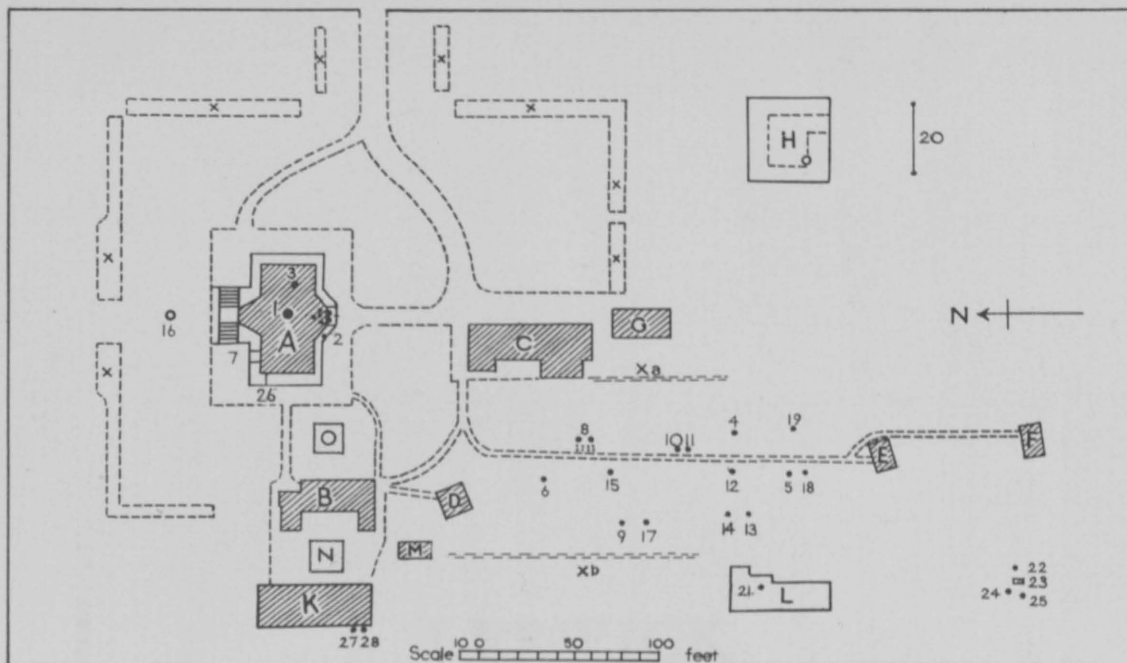


FIG.11 - Site plan, 1961



FIG.12 - General view from south-south-west, August 1961

INSTRUMENTS

1. Direct-reading pressure-tube anemograph
2. Sunshine recorder (Campbell-Stokes type)
3. Solarimeters and Daylight illuminometers (Installed in this position 1954)
4. Radiation balance meter (Installed 1953)
5. Bi-metallic radiation recorders (Installed 1948)
6. Large thermometer screen
7. North-wall screen
8. Earth thermometers
9. Grass minimum thermometer
10. 8-inch rain-gauge
11. 5-inch rain-gauge
12. Meteorological Office tilting-siphon rain recorder
13. Storm gauge
14. Rainfall chronograph
15. Pillar
16. Modified Jardi rate of rainfall recorder (Modified 1951)
17. Experimental recording resistance psychrometer
18. Theodolite pillar
19. Pollution gauge
20. Posts for stretched wire apparatus
21. Photobarograph
22. Meteorological Office evaporation tank recorder
23. Meteorological Office standard evaporation tank
24. Evaporation Pan (American Class 'A' Type) with water-surface maximum and minimum thermometers
25. Cup counter anemometer
26. Electrograph collector (Moved from Clinical house 1939)
27. Owen's air filter and pollution gauge (Moved from Clinical house 1953)
28. Smoke filter (Installed 1948 - removed from Clinical house 1953)

BUILDINGS

- A. Main observatory building
- B. Clinical house
- C. Workshops
- D. Experimental hut
- E. Store
- F. Atmospheric electricity laboratory
- G. Carpenter's shop
- H. Underground laboratory
- K. Calibration hut (Erected 1941)
- L. Underground seismological house
- M. Greenhouse
- N. Hot water storage cylinders (Erected 1953)
- O. Static water tank (Erected 1942)
- X. Shrubberies, or hedges - thickness, length and height reduced considerably in 1949-50

•
LERWICK

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) +

JANUARY 1960

	Hour G.M.T.																						Mean	Sum 12,000+			
	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	544	543	543	546	551	549	555	549	547	538	528	525	526	524	526	532	539	543	542	541	543	543	541	540	540	540	958
2 q	542	543	541	544	548	549	557	558	555	543	532	522	513	522	529	535	532	539	538	534	539	539	537	539	539	539	930
3	538	536	535	535	547	559	561	559	557	544	532	528	529	527	535	541	536	538	545	548	550	548	545	547	543	1020	
4	542	535	540	543	552	550	547	551	554	554	545	543	549	539	547	549	547	551	552	551	551	547	546	548	547	1133	
5	544	539	529	526	523	560	560	550	540	520	521	515	509	517	531	528	529	538	539	546	551	557	564	533	536	869	
6	527	528	518	520	525	532	533	534	533	533	533	535	533	532	532	527	532	538	538	543	542	544	540	536	533	788	
7	538	537	535	535	541	543	550	548	540	535	536	527	532	533	536	541	546	553	549	545	545	545	545	544	541	979	
8	543	543	539	540	540	541	543	545	544	543	542	536	531	532	535	539	546	549	552	555	551	548	539	543	542	1019	
9 q	543	542	543	543	543	547	547	547	544	549	547	544	544	547	547	547	550	550	550	550	551	548	541	542	546	1111	
10 d	541	542	546	546	550	553	561	556	551	540	521	508	516	529	548	555	776	550	522	544	574	510	502	510	548	1151	
11 d	519	490	504	493	522	525	529	527	502	499	512	517	520	526	560	537	548	545	535	532	533	534	532	538	524	579	
12	514	506	531	533	535	535	536	530	532	532	529	525	518	516	523	529	525	527	532	535	514	524	518	525	526	624	
13	528	529	533	529	538	545	545	543	535	531	529	532	532	530	527	528	529	532	532	543	532	540	533	537	534	812	
14 d	532	410	430	506	516	540	550	556	536	532	540	533	524	533	536	535	535	544	562	670	613	412	333	538	521	516	
15 d	543	361	335	404	513	521	532	533	529	516	510	510	510	515	519	519	513	521	526	523	524	529	529	526	503	61	
16	530	532	531	530	529	535	535	532	529	526	527	528	531	526	524	525	528	529	537	542	540	539	525	510	530	720	
17	524	531	536	543	546	541	547	546	542	541	539	533	541	558	549	552	545	552	554	558	562	560	558	554	546	1112	
18	549	545	550	553	556	562	562	576	538	514	532	525	511	532	536	528	532	533	536	533	539	526	526	520	538	914	
19	518	528	538	543	545	550	543	541	540	531	525	523	525	528	530	538	538	544	545	546	548	548	554	548	538	917	
20	544	547	549	552	560	560	551	543	550	544	539	515	525	533	541	556	531	534	539	548	542	535	537	540	542	1015	
21 d	529	445	452	499	526	539	547	533	532	529	525	515	536	518	531	529	549	635	592	610	504	500	498	518	529	691	
22	497	509	494	510	510	528	540	531	528	514	513	493	513	520	530	535	524	530	534	539	542	544	535	537	523	550	
23	534	536	537	535	533	542	543	538	533	528	517	520	518	516	536	531	541	542	534	535	528	520	529	530	531	756	
24	528	526	528	535	545	540	535	535	525	522	511	515	529	534	539	536	534	540	544	536	535	533	540	542	533	787	
25	539	544	544	541	543	546	543	544	537	531	526	524	527	530	522	533	540	541	543	542	545	547	544	547	538	923	
26	550	545	543	543	542	547	548	545	546	532	523	528	526	524	529	531	540	538	542	543	547	547	543	544	539	946	
27	543	541	544	548	544	545	555	552	548	539	528	525	524	524	528	528	533	539	544	548	550	550	547	543	540	970	
28	541	546	546	550	550	550	549	547	540	529	524	524	524	519	527	533	536	542	549	554	555	554	554	543	543	1023	
29	558	558	562	548	550	547	550	555	566	552	543	526	520	535	532	535	539	542	545	552	558	557	551	552	547	1133	
30 q	551	550	551	551	554	557	558	557	553	541	524	515	517	524	531	538	543	547	551	554	557	556	554	552	545	1086	
31 q	550	550	552	554	558	563	563	563	560	547	535	525	526	532	541	547	549	550	554	556	557	558	558	558	550	1206	
Mean	536	523	525	531	540	545	548	546	541	533	529	524	525	528	534	536	545	544	544	550	546	537	532	539	537		
Sum 16,000+	623	217	259	478	735	901	976	926	778	540	393	234	279	375	557	617	885	856	857	1056	922	642	498	695		Grand Total 399,299	

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

2 LERWICK (D)

9° +

JANUARY 1960

	Hour G.M.T.																						Mean	Sum 1000.0+		
	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	45.7	48.4	47.2	45.2	45.1	46.4	46.5	45.1	45.0	44.7	44.6	47.2	48.8	49.6	49.4	48.6	47.9	47.4	46.9	46.1	45.9	45.0	44.2	45.0	46.5	115.9
2 q	44.6	45.5	46.1	46.1	46.5	46.5	46.3	45.5	45.2	45.2	45.3	46.1	48.4	51.3	50.0	49.0	49.4	49.3	47.9	46.2	45.2	44.8	43.1	42.9	46.5	116.4
3	42.0	47.1	47.7	46.5	45.1	44.3	45.1	45.1	44.9	44.8	45.2	47.8	51.0	52.8	52.7	54.5	55.4	51.7	48.4	46.5	46.0	45.5	45.3	44.2	47.5	139.6
4	41.7	42.2	39.4	41.7	40.3	42.7	43.7	44.3	43.8	44.3	44.6	47.7	50.9	51.3	52.8	53.2	48.9	49.5	49.4	47.7	46.2	45.7	42.5	40.3	45.6	94.8
5	40.9	42.9	42.7	31.9	37.7	41.7	43.3	44.3	43.6	44.6	47.7	50.3	52.3	55.5	52.9	52.9	50.8	50.7	50.7	50.0	49.6	47.0	44.3	30.9	45.8	99.2
6	39.4	43.9	40.1	41.0	43.4	44.4	45.5	45.5	46.5	47.3	47.7	48.4	49.8	49.7	49.6	49.2	48.8	50.7	49.4	47.5	46.5	45.5	44.1	43.4	46.1	107.3
7	44.6	43.8	43.9	42.5	43.6	42.7	43.6	45.9	46.5	46.5	46.8	46.2	48.1	50.0	49.4	49.9	49.4	52.1	52.5	50.8	49.4	47.0	46.3	45.5	47.0	127.0
8	43.6	39.6	39.7	43.1	44.6	46.0	45.5	45.7	45.5	45.9	46.0	46.8	47.5	47.9	47.9	48.6	48.9	49.0	49.4	49.8	49.4	45.9	44.3	44.1	46.0	104.7
9 q	43.9	43.6	43.8	44.8	46.2	45.0	45.5	45.8	45.9	46.3	46.9	47.8	49.2	50.0	49.2	49.0	50.0	49.4	48.7	48.0	47.8	47.2	46.9	46.0	47.0	126.9
10 d	45.1	44.6	46.0	46.0	47.0	46.0	46.5	44.6	46.7	47.7	49.5	53.7	52.7	55.7	54.5	56.9	52.8	47.9	48.9	43.1	18.2	23.5	31.9	38.5	45.3	88.0
11 d	39.5	40.0	42.0	43.1	44.6	45.5	46.3	47.7	46.7	49.8	49.4	50.9	49.4	53.2	46.5	49.4	47.9	48.1	47.3	47.7	46.7	46.1	45.3	45.5	46.6	118.6
12	47.7	47.9	43.9	43.3	44.8	45.0	44.9	44.6	45.2	46.2	47.5	46.0	47.7	48.9	47.0	39.8	46.0	48.3	46.0	44.0	42.7	29.7	40.7	42.7	44.6	70.5
13	44.3	45.9	47.2	48.2	46.0	45.9	46.0	45.8	46.7	48.1	47.7	49.2	49.4	49.4	48.6	49.1	48.4	47.3	44.6	37.7	35.7	38.5	39.1	42.7	45.5	91.5
14 d	45.9	50.5	34.7	34.6	38.4	42.4	42.7	43.6	46.7	46.8	49.3	50.9	50.8	49.8	49.4	47.7	47.7	48.8	51.7	58.0	46.5	28.3	35.0	37.4	44.9	77.6
15 d	37.9	39.1	18.9	24.1	35.9	42.9	42.7	44.6	47.0	44.9	45.3	46.0	47.0	46.7	47.5	48.4	47.7	48.7	47.9	44.6	44.3	43.1	44.2	44.2	42.7	23.6
16	43.1	44.1	43.6	45.2	46.5	45.5	45.1	44.4	44.8	45.1	45.5	45.9	47.7													

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) +

JANUARY 1960

Hour	G.M.T.																						Mean	Sum 6000+		
	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	289	289	289	296	296	296	296	298	297	297	300	299	300	300	305	307	309	309	311	309	305	301	297	294	300	1189
2 q	292	291	294	296	296	296	292	292	291	291	295	301	300	295	298	304	309	311	318	323	313	305	299	286	299	1188
3	275	267	274	281	281	281	283	286	287	289	293	296	291	296	300	304	316	326	320	311	306	302	302	298	294	1065
4	298	295	282	282	282	285	290	291	289	289	291	292	289	292	298	308	313	311	311	311	311	313	309	298	297	1130
5	279	275	261	249	268	235	253	267	287	303	302	301	314	330	335	324	315	311	331	325	325	331	342	305	299	1168
6	313	316	312	294	301	308	308	309	305	300	300	299	298	301	305	309	307	306	306	305	306	305	308	310	305	1331
7	307	304	302	301	296	294	292	294	294	297	298	302	300	301	300	298	296	297	305	314	321	316	309	307	302	1245
8	304	303	299	294	295	296	296	296	298	296	298	299	300	301	300	298	296	296	296	298	298	308	311	311	300	1200
9 q	307	305	300	301	298	296	294	294	292	292	293	294	292	293	295	294	294	295	295	296	298	302	309	310	297	1139
10 d	311	305	300	294	291	287	281	280	282	287	295	311	322	348	385	399	426	428	366	374	282	230	289	286	319	1659
11 d	306	305	292	294	294	300	302	300	311	331	320	315	325	335	400	361	371	361	340	324	328	326	320	300	323	1761
12	252	231	275	292	298	302	298	299	302	304	302	305	307	309	317	337	330	327	322	320	323	276	281	293	300	1202
13	299	293	279	280	281	292	294	296	294	292	294	298	302	309	315	324	324	323	322	318	324	313	267	268	300	1201
14 d	296	198	175	236	263	281	285	292	295	289	294	315	327	318	315	308	305	300	298	305	294	307	227	313	285	836
15 d	307	309	243	177	256	300	316	309	309	316	316	315	320	320	320	337	342	341	336	337	320	302	289	291	305	1328
16	298	302	301	299	298	300	304	302	304	302	301	302	305	308	307	304	309	314	310	302	301	301	283	287	302	1244
17	288	280	267	273	277	279	276	283	287	287	289	296	294	291	294	294	302	300	303	304	302	300	300	301	290	967
18	300	297	294	292	292	291	289	283	294	294	292	304	323	322	316	311	309	309	316	316	309	309	300	292	302	1254
19	225	224	252	270	279	283	289	294	295	298	301	300	298	299	300	302	302	309	314	307	305	302	298	303	290	949
20	307	307	303	299	296	294	299	302	297	298	300	309	302	301	302	310	337	335	327	316	313	316	318	307	308	1395
21 d	279	114	181	231	249	274	287	294	293	300	313	324	376	353	337	330	389	505	460	409	270	276	281	237	307	1362
22	256	272	266	267	278	282	286	300	312	312	319	335	328	329	320	325	327	333	324	323	320	314	302	315	306	1345
23	313	309	305	302	294	274	274	292	302	308	314	316	318	327	344	342	339	345	337	334	310	297	285	289	311	1470
24	285	278	255	259	261	273	289	301	311	313	319	319	319	326	337	331	327	335	326	320	318	313	311	305	305	1331
25	301	290	280	285	289	287	292	296	304	300	302	305	307	312	318	316	310	312	314	316	307	302	299	294	301	1226
26	289	292	296	296	292	290	287	291	293	302	302	300	304	304	305	310	311	309	306	304	301	300	304	300	299	1188
27	289	266	274	268	276	280	283	289	298	293	296	296	299	300	304	307	308	300	296	296	294	293	294	296	291	995
28	296	289	285	285	292	292	292	292	293	297	298	298	299	300	300	303	305	302	299	294	296	294	292	291	295	1084
29	285	285	282	277	272	280	285	285	282	287	287	292	296	294	293	302	304	302	300	296	292	290	298	291	290	957
30 q	289	292	294	296	294	293	292	292	292	290	289	287	287	283	285	289	293	294	292	292	291	289	286	287	290	968
31 q	287	289	289	289	289	290	290	289	290	292	293	291	286	283	283	289	293	293	292	292	292	289	289	287	289	946
Mean	291	280	277	279	285	287	290	293	296	298	300	304	307	309	314	315	320	324	319	315	306	301	297	295	300	
Sum 8000+	1022	672	601	655	824	911	994	1088	1180	1246	1306	1416	1528	1580	1733	1777	1918	2041	1895	1782	1480	1323	1199	1152		Grand Total 223,323

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

4 LERWICK

JANUARY 1960

Hour	TERRESTRIAL MAGNETIC ELEMENTS											3-hr. range indices K	Sum of K indices	Magnetic character of day, C (0-2)	Temperature in magnet house 200 + °A.				
	Horizontal force			Declination			Vertical force												
	Maximum 14,000γ +	Minimum 14,000γ +	Range	Maximum 9° +	Minimum 9° +	Range	Maximum 47,000γ +	Minimum 47,000γ +	Range										
1 q	h. m.	γ	γ	h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ	2,1,1,1,1,1,1,1	9	0	79.1				
2 q	06 44	557	522	11 51	35	14 07	50.3	43.4	22 25	6.9	18 55	314	283	01 50	31	1,0,1,2,2,1,1,2	10	0	78.8
3	06 51	560	511	12 14	49	13 44	51.9	41.7	23 12	10.2	19 05	326	279	24 00	47	2,2,0,2,1,2,1,1	11	0	78.3
4	06 30	564	523	13 50	41	16 31	56.6	40.0	00 24	16.6	17 27	328	261	01 44	67	2,1,2,2,2,1,2,1	14	0	78.9
5	08 41	564	528	01 03	36	15 33	56.5	37.8	02 25	18.7	16 43	316	279	02 22	37	3,3,3,2,3,3,2,4	23	1	79.1
6	22 47	591	492	12 58	99	13 36	57.3	23.6	23 39	33.7	22 42	359	225	05 30	134	3,2,1,1,2,1,2,1	13	0	78.8
7	21 03	547	510	00 00	37	17 57	51.8	32.5	00 09	19.3	00 02	327	287	03 43	40	1,1,2,1,1,2,1,2	11	0	78.8
8	17 35	559	524	11 49	35	17 50	54.5	41.5	03 40	13.0	20 37	322	291	07 02	31	2,2,1,1,1,1,2,2	12	0	78.9
9 q	19 46	559	529	12 32	30	20 14	50.8	38.5	01 50	12.3	21 07	318	291	03 48	27	1,1,1,0,1,0,0,1	5	0	78.8
10 d	20 23	555	536	24 00	19	13 24	50.4	42.9	02 23	7.5	24 00	313	290	09 05	23	1,1,1,3,4,8,5,5	30	2	78.3
11 d	16 40	1367	483	21 11	884	16 52	70.9	2.8	21 17	68.1	16 32	490	165	21 18	325	3,3,3,3,4,4,2,3	25	1	78.4
12	16 51	623	474	01 30	149	14 14	63.8	34.4	00 11	29.4	16 52	446	267	23 58	179	2,2,1,2,2,3,3,4	20	1	78.2
13	06 37	543	488	21 00	55	13 16	54.4	22.1	21 08	32.3	15 28	442	216	01 21	126	4,4,3,3,2,7,7,3	34	2	78.1
14 d	22 06	562	516	22 41	46	03 20	51.6	31.6	20 36	20.0	20 45	330	242	22 37	88	7.5,2,2,2,2,2,2	24	1	78.0
15 d	20 10	844	166	22 48	678	19 30	61.1	9.3	21 50	51.8	23 45	389	46	02 01	343	1,1,0,0,1,1,1,3	8	0	78.0
16	00 35	571	128	01 22	443	01 42	69.0	6.2	02 25	62.8	01 14	372	147	03 01	225	3,3,2,1,3,2,1,1	16	1	77.9
17	21 23	547	494	23 08	53	22 29	50.3	32.5	23 20	17.8	17 50	319	265	22 52	54	1,1,4,3,2,1,2,3	17	1	77.5
18	13 05	579	515	00 05	64	13 07	60.4	37.3	02 41	23.1	19 31	308	253	02 38	55	4,2,1,1,1,1,2,1	13	0	76.5
19	07 35	587	494	09 11	93	09 58	55.4	35.9	21 50	19.5	12 35	328	275	07 45	53	2,2,2,3,2,3,2,2	18	1	77.6
20	22 15	560	494	00 08	66	12 45	51.5	36.3	01 07	15.2	18 30	318	187	01 02	131	6,3,3,3,3,5,6,4	33	2	77.6
21 d	04 44	573	500	11 29	73	16 12	62.0	39.2	22 39	22.8	16 44	347	289	05 12	58	3,3,3,			

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) +																				FEBRUARY 1960				
	Hour G.M.T.																					Mean	Sum 12,000+			
	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	558	558	557	558	560	572	571	565	556	540	528	525	536	524	517	531	531	540	544	551	554	558	554	552	547	1140
2	550	547	547	546	543	547	549	551	548	539	533	526	529	546	563	558	590	574	675	782	576	544	539	522	563	1524
3	537	532	529	527	540	538	534	534	529	521	516	515	512	518	536	554	553	558	529	540	535	526	518	465	529	696
4	524	538	538	535	536	539	537	540	525	512	513	511	512	516	522	528	537	551	551	554	549	554	544	539	534	805
5	535	540	536	537	537	538	543	550	539	539	540	516	512	547	551	561	547	525	548	555	543	545	534	515	539	933
6	509	508	425	454	529	535	530	524	535	529	527	519	519	531	540	547	565	543	539	541	545	544	548	551	527	637
7 q	543	539	532	536	538	542	550	553	546	534	528	523	520	524	531	536	540	544	547	548	550	551	552	550	540	957
8	548	548	550	550	551	552	550	551	557	547	533	532	516	521	532	538	541	551	547	545	549	551	549	548	544	1057
9 q	543	547	539	545	548	550	550	551	549	543	532	529	531	536	539	545	551	556	558	555	554	558	560	559	547	1128
10 q	557	557	560	561	564	558	560	563	554	548	545	542	538	541	541	539	544	548	550	554	555	556	554	555	552	1244
11	554	554	555	555	557	559	561	563	558	549	540	535	531	532	540	545	555	555	543	539	533	529	543	542	547	1129
12	536	544	541	544	549	552	549	554	547	533	527	523	524	521	532	536	544	550	555	557	556	555	552	552	543	1033
13	555	556	557	559	561	563	568	566	562	554	541	537	543	538	542	543	548	552	555	552	549	527	419	370	538	917
14 d	413	498	489	529	545	532	543	547	554	538	538	519	529	537	538	540	531	541	564	612	538	513	527	537	531	752
15	539	538	538	539	541	543	539	538	535	529	523	522	525	533	534	528	532	528	541	532	541	547	545	545	536	855
16 d	543	547	539	533	534	538	535	533	535	544	558	544	538	557	555	527	534	539	539	546	546	541	540	532	541	977
17 d	520	541	527	541	544	547	549	518	521	537	542	541	536	541	535	530	549	575	566	551	564	572	563	529	543	1039
18 d	564	545	423	500	532	522	523	531	534	526	509	513	514	523	530	548	525	537	526	526	538	538	538	543	525	608
19	543	540	539	536	536	541	547	542	547	537	537	535	523	524	538	544	542	554	560	560	529	509	512	488	536	873
20	435	466	495	508	497	536	544	547	546	536	529	531	526	522	528	534	526	541	544	550	551	549	558	557	527	656
21 d	545	544	538	527	551	551	539	551	550	540	509	517	525	533	530	539	535	552	546	547	564	552	545	547	541	977
22	548	545	547	547	548	549	547	547	548	547	539	533	530	531	535	541	536	545	548	554	554	551	546	549	544	1065
23	548	547	548	552	550	543	547	552	550	540	532	529	526	524	531	532	540	539	539	544	549	547	550	552	542	1011
24 q	550	551	549	551	548	552	556	555	550	545	540	535	536	539	542	540	542	545	551	553	557	553	551	551	548	1142
25 q	551	548	551	550	552	552	555	554	547	538	531	528	531	535	539	545	548	549	554	560	555	550	563	558	548	1144
26	559	558	557	555	556	557	557	554	549	541	533	532	534	539	548	560	558	551	558	559	560	556	554	550	551	1235
27	545	539	509	503	509	529	561	567	550	541	535	529	529	541	540	560	546	554	544	554	560	557	568	563	543	1033
28	555	555	555	560	562	557	554	552	540	529	525	523	531	535	543	545	548	553	554	557	559	560	561	563	549	1176
29	561	552	529	554	561	560	562	558	539	530	520	520	530	530	560	550	544	552	554	559	561	558	551	547	548	1142
Mean	537	541	531	538	544	547	549	549	545	537	531	527	527	533	538	542	544	548	553	560	551	547	543	536	541	
Sum 15,000+	568	682	399	592	779	854	910	911	800	586	403	284	286	449	612	724	782	904	1029	1237	974	851	738	531		Grand Total 376,885

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

2 LERWICK (D)		9° +																				FEBRUARY 1960				
	Hour G.M.T.																					Mean	Sum 1000.0+			
	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	46.1	46.0	46.2	46.5	47.8	46.0	44.8	44.8	44.9	45.5	48.8	52.0	53.0	52.9	52.0	52.3	50.3	48.9	47.7	47.0	45.5	45.1	45.3	45.5	47.7	144.9
2	45.3	44.2	43.9	43.9	45.0	43.9	43.1	43.2	43.4	44.2	47.0	47.8	51.5	54.0	54.9	56.3	61.7	62.1	58.6	59.4	45.1	44.9	41.2	33.7	48.3	158.3
3	39.8	42.6	42.2	40.7	41.2	39.5	41.7	42.6	42.5	43.3	45.5	50.5	51.8	51.8	55.8	56.9	51.3	54.7	52.3	44.6	44.3	43.1	43.4	36.9	45.8	99.0
4	35.4	40.9	40.9	42.3	40.8	46.7	40.9	42.0	43.0	47.1	44.9	47.9	50.1	50.7	49.4	48.8	48.4	51.7	52.7	47.7	47.3	39.1	42.9	45.1	45.3	86.7
5	45.3	45.3	44.6	44.8	43.9	43.6	43.1	43.9	44.7	43.1	48.4	49.9	56.6	59.7	59.7	58.2	53.8	51.9	51.8	51.3	48.4	43.4	32.3	31.5	47.5	139.2
6	35.2	34.6	39.0	40.5	33.7	34.0	39.5	46.3	48.1	43.8	46.5	48.1	50.8	52.5	54.4	54.8	56.4	53.7	50.7	47.2	45.3	45.3	45.2	45.0	45.4	90.6
7 q	43.3	44.1	46.5	47.5	45.7	45.7	46.0	44.6	43.5	44.9	47.0	48.1	48.1	49.0	49.6	49.0	47.8	47.1	46.5	46.5	45.9	45.7	45.7	45.7	46.3	111.1
8	45.6	45.5	45.7	45.7	45.3	45.1	44.1	44.9	45.5	44.2	44.8	49.2	51.0	50.5	51.6	50.8	50.0	50.6	49.4	46.8	46.9	45.5	45.3	45.2	47.1	129.2
9 q	41.4	40.2	45.2	43.9	44.3	44.0	43.8	43.6	43.3	43.2	44.6	47.0	49.4	50.3	50.1	50.3	50.3	49.8	48.4	46.9	46.5	46.5	45.9	46.5	46.1	105.4
10 q	46.5	46.3	46.9	47.7	47.1	47.0	46.1	45.8	44.8	44.6	45.8	50.1	50.9	51.0	50.6	48.7	47.5	46.7	46.7	46.2	46.0	45.5	45.3	45.3	47.0	129.1
11	46.0	46.5	46.2	45.8	45.7	45.5	45.1	44.6	44.1	44.1	45.2	46.9	48.7	49.6	49.8	49.4	49.7	50.5	51.3	45.7	43.3	39.4	42.4	44.6	46.3	110.1
12	42.2	35.3	38.3	45.5	46.5	46.2	45.5	44.1	43.4	44.0	46.5	47.5	48.9	49.4	49.6	48.7	47.7	46.8	46.2	46.1	45.7	45.5	45.5	45.3	45.4	90.4
13	45.5	45.5	45.5	45.7	45.7	45.5	45.3	45.1	44.3	43.8	44.8	47.0	48.9	49.4	49.7	49.1	47.7	46.5	47.0	48.0	47.1	41.7	25.9	25.8	44.6	70.5
14 d	32.9	43.1	44.3	40.5	36.4	43.1	47.1	45.5	45.3	46.0	48.0	52.0	53.9	55.5	56.1	57.5	52.7	50.1	50.8	49.0	27.5	37.9	34.5	37.4	45.3	87.1
15	42.2	43.3	44.0	44.2	43.4	43.7	43.6	43.6	43.8	44.3	45.8	48.4	48.4	51.3	53.7	49.7	48.9	39.5	47.9	47.7	47.0	46.5	46.0	44.3	45.7	96.4
16 d	41.4	45.7	37.9	38.6	40.4	43.0	41.3	41.9	42.1	43.3	47.7	50.6	48.7	52.9	54.6	55.5	49.2	50.1	47.5	47.5	46.5	44.6	49.4	46.0	46.1	106.4
17 d	42.3	42.5	40.4	41.7	42.2	42.9	45.0	46.1	43.9	46.9	51.8	52.3	53.1	52.8	52.5	49.9	50.0	54.9	53.0	54.2	52.1	46.0	37.1	37.6	47.1	131.2
18 d	36.4	40.0	40.2	39.2	37.6	48.2	52.7	47.1	45.1	48.6	49.6	52.5	52.7	51.8	49.7	48.6	46.2	46.1	37.4	35.9	44.6	45.3	44.6	41.7	45.1	81.8
19	40.1	43.6	43.3	42.7	43.3	43.1	4																			

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) +												FEBRUARY 1950												
	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 6000+
	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	286	287	287	287	285	276	279	283	288	291	295	292	290	298	304	311	321	319	318	312	302	295	292	292	295	1090
2	291	294	294	293	296	296	296	296	298	297	295	294	287	287	289	294	298	364	412	381	392	353	318	287	313	1502
3	302	305	304	292	270	282	297	302	308	308	308	306	312	317	317	332	348	347	376	348	336	322	283	196	309	1418
4	244	267	263	285	292	260	272	285	294	287	292	301	302	301	304	308	307	312	328	340	346	381	349	321	302	1241
5	309	296	301	301	303	302	302	299	303	301	296	309	311	309	316	359	368	338	350	359	351	344	334	304	319	1665
6	294	293	263	196	236	258	274	276	268	280	290	295	303	305	305	311	316	336	333	322	315	313	308	302	291	992
7 q	298	294	288	283	277	283	287	290	297	303	304	305	301	301	301	297	299	299	297	300	301	301	300	301	296	1107
8	299	298	299	297	297	294	292	291	287	290	297	295	306	308	309	313	323	337	345	333	315	308	304	302	306	1339
9 q	287	274	274	276	288	293	292	292	293	296	299	299	293	293	294	294	292	290	292	292	293	293	292	296	291	977
10 q	295	297	293	288	286	284	282	282	285	287	287	289	290	293	299	302	300	298	294	293	290	289	291	290	291	984
11	291	291	291	291	290	287	285	282	282	282	283	287	291	291	291	294	299	308	351	349	353	349	333	309	303	1260
12	289	262	259	275	283	287	290	288	290	295	294	293	293	298	295	298	297	294	293	291	291	291	292	292	289	930
13	292	291	293	292	291	290	284	284	282	282	284	283	280	282	285	289	294	293	291	297	335	315	272	266	289	947
14 d	226	239	222	197	232	251	257	280	284	287	287	294	296	307	331	358	364	360	381	416	360	261	283	294	294	1067
15	298	295	301	304	304	301	301	299	298	298	298	298	294	301	325	341	338	360	349	347	320	305	299	297	311	1471
16 d	298	283	240	263	280	284	284	287	287	280	271	275	280	283	306	356	338	321	313	306	304	311	251	173	286	874
17 d	209	264	286	294	295	292	292	289	277	271	276	282	289	303	315	318	311	317	392	389	373	369	356	290	306	1349
18 d	290	309	214	150	187	188	220	257	282	297	299	301	308	319	314	324	332	330	362	362	312	304	300	281	285	842
19	280	290	293	292	292	292	289	289	288	290	293	296	296	296	302	316	325	340	340	354	335	237	256	247	297	1128
20	163	171	181	243	240	266	288	295	294	297	296	299	290	305	305	312	327	321	310	306	303	304	275	263	278	664
21 d	276	282	255	228	239	261	270	266	277	281	298	312	311	309	326	332	349	335	310	305	294	288	292	292	291	988
22	290	289	290	291	291	291	292	288	290	291	290	292	295	290	292	294	297	297	295	298	314	288	296	296	293	1037
23	290	290	288	286	286	284	277	279	284	288	288	289	290	295	300	299	316	332	312	299	296	298	297	297	294	1060
24 q	297	297	294	290	289	282	280	282	284	285	284	288	284	283	289	292	292	291	289	289	290	291	295	294	289	931
25 q	292	292	290	291	290	288	286	286	290	290	286	286	284	286	287	290	292	289	288	288	289	295	279	278	288	912
26	284	290	290	290	290	289	288	288	290	286	281	280	284	286	292	298	304	298	296	293	290	292	294	287	290	960
27	259	247	230	203	235	237	225	241	265	277	281	288	288	294	309	309	309	305	328	315	302	300	271	257	274	575
28	270	287	291	291	289	288	288	286	291	292	291	287	288	295	295	298	295	295	294	293	291	289	288	286	290	958
29	279	262	280	276	284	282	265	261	277	284	287	284	282	287	292	316	315	309	315	313	346	357	342	341	297	1136
Mean	279	281	274	271	276	278	281	284	287	289	291	293	294	297	303	312	316	318	326	324	319	308	298	284	295	
Sum 7000+	1078	1136	954	845	1017	1068	1134	1223	1333	1393	1430	1499	1528	1622	1789	2055	2166	2235	2454	2390	2239	1943	1642	1231		Grand Total 205,404

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

4 LERWICK		TERRESTRIAL MAGNETIC ELEMENTS												FEBRUARY 1960								
	Horizontal force						Declination						Vertical force						3-hr. range indices K	Sum of K indices	Magnetic character of day, C (0-2)	Temperature in magnet house 200 +
	Maximum 14,000γ +		Minimum 14,000γ +		Range	Maximum g° +		Minimum g° +		Range	Maximum 47,000γ +		Minimum 47,000γ +		Range							
	h. m.	γ	γ	h. m.		γ	h. m.	γ	h. m.		γ	h. m.	γ	h. m.		γ						
1	05 27	575	507	14 00	68	13 08	57.6	43.0	08 28	14.6	16 31	324	275	05 20	49	0,1,1,2,3,2,2,1	12	0	77.5			
2	19 42	890	478	22 51	412	19 12	66.9	31.0	23 05	35.9	18 36	439	263	22 47	176	1,1,0,2,3,4,6,4	21	1	77.9			
3	17 51	568	419	23 19	149	18 06	64.2	25.6	23 47	38.6	18 18	393	156	23 12	237	2,2,2,3,3,3,4,5	24	1	78.4			
4	19 10	607	503	13 02	104	12 40	55.1	30.0	00 00	25.1	21 21	399	213	00 07	186	3,3,3,2,2,2,4,4	23	1	78.8			
5	16 02	591	497	11 39	94	15 17	65.5	27.0	22 54	38.5	16 14	387	292	10 40	95	1,0,1,3,3,3,2,4	17	1	78.9			
6	16 27	587	336	02 57	251	16 49	58.6	31.3	05 14	27.3	17 33	340	159	03 30	181	5,5,3,2,2,2,3,2,1	23	1	78.8			
7 q	07 22	558	519	12 39	39	14 50	50.1	42.6	00 15	7.5	11 48	307	275	04 31	32	2,2,1,1,1,0,0,0	7	0	78.8			
8	08 06	561	503	12 33	58	14 27	54.6	42.2	10 08	12.4	18 14	349	283	08 08	66	0,0,1,2,2,2,2,1	10	0	78.7			
9 q	18 25	566	527	10 51	39	13 27	50.8	38.3	01 05	12.5	11 10	303	257	01 42	46	3,2,0,1,0,1,1,1	9	0	79.0			
10 q	04 31	569	534	12 28	35	11 57	54.2	43.7	09 30	10.5	15 24	304	280	06 25	24	0,1,1,2,1,1,1,0	7	0	79.1			
11	17 03	568	521	21 02	47	18 29	54.2	37.5	21 51	16.7	18 35	367	281	10 43	86	0,0,0,2,1,2,3,3	11	0	78.4			
12	19 43	560	516	13 13	44	13 35	50.2	29.7	01 26	20.5	00 02	304	248	02 00	56	3,2,1,1,1,1,0,0	9	0	78.0			
13	21 08	634	269	23 45	365	21 10	54.6	19.4	23 52	35.2	20 55	354	215	22 56	139	0,0,2,1,1,1,3,6	14	1	77.8			
14 d	20 04	734	351	00 01	383	15 45	60.1	7.5	20 30	52.6	20 04	462	188	03 33	274	5,3,3,2,3,3,6,3	28	1	77.4			
15	23 12	549	516	16 00	33	14 40	55.5	37.0	17 27	18.6	17 23	369	293	01 51	76	1,0,1,1,3,3,3,1	13	0	77.6			
16 d	22 17	600	480	22 53	120	15 14	67.2	33.8	02 28	33.4	15 45	375	155	23 38	220	4,2,2,3,4,4,2,5	26	1	77.7			
17 d	22 11	596	494	24 00	102	18 03	64.2	32.6	22 27	31.6	18 39	430	173	00 00	257	4,2,3,2,3,3,4,4	25	1	77.5			
18 d	00 36	670	368	02 11	302	06 19	57.5	29.0	19 05	28.5	18 59	392	128	03 24	264	6,4,4,2,2,3,4,2	27	1	77.3			
19	19 15	603	404	24 00	199	11 20	52.2	18.8	20 51	33.4	17 44	376	175	24 00	201	2,1,2,2,2,4,4,5	22	1	77.2			
20	22 57	580	368	00 05	212	01 37	55.1	17.7	00 45	37.4	16 46	335	137	00 28	198	5,3,2,1,2,3,1,3	20	1	77.0			
21 d	20 54	573	493	10 43	80	07 14	52.2	27.6	16 56	24.6	16 52	370	212	03 09	158	3,3,3,3,2,4,3,3	24	1	77.7			
22																						

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

1 LERWICK (H)		14,000y (0.14 C.G.S. unit) +																				MARCH 1960				
	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 11,000+	
	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	549	538	534	533	552	546	545	553	546	534	530	535	529	517	527	547	560	561	589	611	563	544	548	550	548	2141
2 d	543	523	513	540	536	531	535	539	511	515	517	520	510	516	515	547	563	558	571	551	551	548	547	538	535	1838
3 d	531	544	542	538	531	541	549	525	535	519	509	528	522	554	555	545	543	568	566	551	548	546	547	555	541	1992
4	543	534	543	545	545	547	544	543	537	533	527	516	516	520	563	596	577	585	546	543	552	543	540	530	545	2068
5	544	543	541	537	532	540	550	532	529	534	528	527	527	534	525	552	560	564	569	567	559	527	534	563	542	2018
6	547	544	544	548	542	548	562	556	548	536	521	532	531	535	539	550	560	547	555	548	544	542	550	548	545	2077
7 q	548	549	551	551	556	558	558	555	547	532	523	519	523	533	540	544	544	549	557	559	562	559	560	559	547	2136
8	560	559	560	562	565	569	546	553	555	536	522	515	518	515	529	522	523	533	541	547	556	554	551	549	543	2040
9	552	553	555	554	554	560	555	554	549	539	519	516	518	527	545	530	543	557	534	537	559	558	555	555	545	2078
10	556	554	559	556	558	556	556	556	523	466	483	503	510	507	522	536	548	539	555	543	543	547	552	553	537	1881
11 d	545	540	546	545	549	534	559	559	542	527	524	481	501	518	534	541	587	596	544	535	547	541	538	535	540	1968
12	533	535	540	542	545	547	548	537	528	513	513	515	513	520	531	537	541	543	548	554	553	553	556	549	537	1894
13 q	545	545	544	549	552	549	555	542	533	518	504	504	510	520	530	542	545	556	553	557	556	550	559	556	541	1974
14	550	554	552	551	552	558	556	551	543	520	514	520	523	531	539	557	551	561	564	567	568	567	566	571	549	2186
15	562	562	559	558	555	557	559	556	547	534	526	524	539	547	566	588	597	616	699	617	579	595	579	482	567	2603
16 d	318	189	216	293	284	336	525	542	513	514	509	509	506	498	513	521	568	564	610	672	566	538	399	480	466	183
17	530	501	512	495	517	543	546	532	507	520	511	505	502	514	524	533	550	548	547	546	551	543	544	547	528	1668
18	545	541	529	540	540	539	531	553	543	531	527	521	521	516	531	542	546	551	551	553	555	558	563	558	541	1985
19	545	553	546	545	549	553	556	556	546	522	512	503	513	522	530	543	521	543	551	554	553	556	556	556	541	1984
20 q	554	547	548	548	547	543	554	553	546	536	524	524	529	536	542	546	548	553	557	558	561	561	559	559	547	2133
21	559	557	556	552	555	557	559	556	547	539	528	521	530	530	531	537	548	553	554	557	558	552	552	554	548	2142
22 q	550	545	546	550	554	558	556	545	541	529	518	521	526	524	539	546	551	556	559	561	560	561	561	560	547	2117
23 q	564	558	559	556	555	553	559	554	543	531	515	514	522	532	541	552	554	556	559	561	564	565	570	559	550	2196
24	555	541	553	568	568	568	566	558	545	535	522	520	523	533	541	578	561	562	574	575	559	569	568	558	554	2300
25	553	555	555	558	560	565	567	564	556	539	525	528	531	532	539	543	546	554	571	565	562	561	563	565	552	2257
26	531	547	549	554	554	555	560	555	556	524	522	526	531	530	539	546	551	556	567	566	567	565	565	564	549	2180
27	562	558	563	561	548	553	559	559	538	523	512	505	509	518	526	533	542	550	559	566	568	567	566	563	546	2108
28	560	560	559	559	557	566	566	560	546	522	509	500	504	528	539	559	574	541	568	597	564	556	556	523	549	2173
29	434	426	482	501	530	543	551	525	511	525	514	506	507	516	524	333	541	555	561	561	560	564	562	566	525	1598
30	521	561	547	551	551	545	546	548	541	527	510	515	533	523	560	603	642	613	642	622	597	545	473	511	555	2327
31 d	504	513	491	500	523	523	522	504	489	492	480	430	526	539	564	633	1080	1010	816	838	734	403	-2	-306	534	1806
Mean	535	530	532	537	539	543	552	548	537	525	516	513	519	525	537	551	570	574	575	572	565	550	530	526	542	
Sum 15,000+	1593	1429	1494	1640	1716	1841	2100	1975	1641	1265	998	903	1103	1285	1643	2082	2665	2798	2837	2739	2519	2038	1437	1310		Grand Total 403,051

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

2 LERWICK (D)		9° +																				MARCH 1960				
	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	44.2	43.2	41.8	40.5	39.1	38.5	43.7	42.1	44.1	43.9	46.1	50.1	51.6	51.2	51.9	53.5	53.8	51.8	57.4	49.9	37.1	38.7	39.4	44.0	45.7	297.6
2 d	43.6	39.5	25.7	39.4	40.1	41.4	43.2	43.6	45.3	47.8	47.1	52.1	53.5	54.7	51.7	52.5	52.6	46.9	46.7	45.0	45.0	43.7	33.8	40.5	44.8	275.4
3 d	40.6	41.5	37.4	36.8	42.1	40.0	40.2	43.1	48.3	48.7	47.7	52.5	53.5	55.1	56.5	55.6	49.4	50.1	42.7	46.0	43.9	44.1	44.0	36.4	45.7	296.2
4	39.2	40.3	42.4	41.2	43.5	43.4	42.2	42.0	42.3	43.3	46.1	49.6	51.8	54.7	59.7	52.5	57.5	58.7	50.0	45.8	44.2	45.9	40.0	39.3	46.5	315.6
5	40.1	40.5	41.4	41.1	42.2	41.2	39.4	41.3	46.3	45.5	47.7	50.8	52.7	56.2	53.5	53.0	52.7	51.2	51.5	50.2	44.0	47.0	41.9	39.0	46.3	310.4
6	41.0	42.8	42.2	42.0	44.0	45.9	44.3	43.3	42.9	44.2	45.3	47.7	51.7	52.6	51.7	49.8	48.9	47.4	46.0	41.4	33.7	43.1	45.1	43.9	45.0	280.9
7 q	43.9	45.1	45.0	45.1	44.2	43.9	43.8	42.6	41.4	42.0	44.7	48.9	51.8	53.2	53.1	50.7	48.6	48.0	48.1	47.4	47.0	46.0	45.0	45.3	46.5	314.8
8	46.0	45.7	46.2	45.4	45.0	43.1	44.9	49.8	46.8	43.3	45.3	50.7	56.5	56.7	56.5	53.0	49.8	47.6	46.3	45.9	46.0	45.6	43.4	39.3	47.5	338.8
9	42.2	45.0	44.2	45.9	45.9	43.9	44.8	43.9	42.4	43.0	45.9	48.9	52.1	53.1	53.7	49.8	48.8	47.7	47.0	46.7	46.3	45.4	44.9	45.8	46.6	317.3
10	46.3	45.9	45.6	44.8	43.6	43.1	42.7	43.1	42.1	46.3	51.3	51.0	53.9	54.2	52.9	52.8	49.7	45.9	45.1	32.4	39.8	43.3	45.3	46.4	46.1	307.5
11 d	45.2	47.8	41.2	42.7	43.3	49.1	46.7	46.0	44.9	44.2	47.5	47.7	50.8	53.0	53.8	50.8	49.4	44.6	39.1	44.9	42.9	44.1	45.0	47.0	46.3	311.7
12	47.1	48.9	46.3	45.0	42.7	42.3	42.3	42.9	44.1	45.0	45.9	49.2	51.7	51.9	50.8	49.9	45.7	43.8	46.9	46.0	46.0	44.8	41.1	42.5	45.9	302.8
13 q	43.8	44.2	46.6	45.0	44.5	44.2	43.3	41.7	40.1	40.2	42.2	46.8	51.1	53.0	51.8	49.6	46.2	45.0	42.3	44.4	43.5	44.4	43.2	45.1	45.1	282.2
14	45.9	45.2	44.5	44.2	44.1	44.1	43.3	42.1	40.8	42.7	46.2	48.7	51.8	52.8	51.7	51.6	48.7	48.3	47.9	47.9	47.6	46.5	45.9	45.5	46.6	318.0
15	45.0	44.5	44.2	44.1	43.9	43.6	42.7	41.1	40.0	40.2	42.8	47.1	52.7	55.5	58.1	60.2	64.9	59.7	60.5	41.5	49.0	45.8	43.8	35.3	47.8	346.2
16 d	19.1	16.7	-9.2	-17.1	11.7	17.5	41.4	40.7	41.1	46.6	47.7	48.9	52.1	51.7	51.9	49.8	48.9	46.1	45.5	41.1	33.3	37.9	36.4	48.9	35.4	48.7
17	42.2	46.1	45.2	45.0																						

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) +																				MARCH 1960						
	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		
1	γ	299	294	264	246	268	281	287	286	283	283	279	281	289	292	301	319	339	355	389	358	306	301	307	300	2204		
2 d	γ	304	272	198	259	280	272	275	281	291	293	288	287	305	306	303	302	321	336	355	377	352	332	312	290	2191		
3 d	γ	278	259	272	279	266	232	250	276	273	286	288	288	305	324	332	344	336	339	371	348	343	322	312	284	2207		
4	γ	284	284	284	288	294	289	294	296	302	304	299	299	301	315	331	386	363	395	426	379	344	330	287	268	2642		
5	γ	272	283	286	290	286	260	264	279	279	286	289	291	291	295	298	295	300	304	317	341	356	275	236	240	288	1913	
6	γ	255	283	273	283	272	270	281	289	292	297	298	291	292	298	306	308	315	320	310	321	322	306	298	297	295	2077	
7 q	γ	293	295	296	297	293	293	293	297	300	301	298	295	291	290	296	301	301	295	294	294	294	296	295	295	296	2093	
8	γ	291	292	291	287	285	283	289	276	275	282	285	287	292	309	316	325	328	322	315	302	294	296	296	285	296	2103	
9	γ	290	290	290	286	286	284	286	285	289	290	293	289	289	290	293	310	300	300	297	206	293	292	293	290	292	2001	
10	γ	291	291	287	291	289	289	289	295	307	287	292	292	298	294	300	320	356	356	360	380	330	305	294	291	308	2381	
11 d	γ	285	244	258	284	291	282	272	284	291	296	291	319	349	329	325	327	339	429	408	351	306	298	301	264	309	2423	
12	γ	262	257	277	295	300	300	298	298	298	298	301	301	303	311	310	318	330	329	313	306	304	301	293	292	300	2195	
13 q	γ	287	289	297	294	298	300	294	297	298	295	294	291	291	292	300	307	311	313	312	306	304	285	276	282	296	2113	
14	γ	291	293	298	299	298	294	295	295	294	296	294	290	293	294	298	301	302	296	295	293	291	291	291	290	295	2072	
15	γ	295	295	298	300	300	299	299	296	295	297	295	287	284	289	298	316	354	408	476	396	382	373	373	308	326	2813	
16 d	γ	291	306	251	100	29	52	166	277	304	316	322	324	332	333	330	331	344	402	423	396	373	330	210	158	279	1700	
17	γ	239	267	244	267	267	261	303	311	313	313	314	313	316	317	324	328	351	347	348	332	318	309	299	284	304	2285	
18	γ	282	278	286	293	293	298	295	294	301	301	301	302	299	302	307	315	320	311	306	306	303	301	291	267	294	2152	
19	γ	275	267	282	290	294	294	296	297	298	302	300	300	295	300	316	333	338	322	312	310	310	302	299	296	301	2228	
20 q	γ	293	294	294	296	300	299	298	301	303	304	304	299	298	298	298	302	301	300	300	299	300	301	299	297	299	2178	
21	γ	292	292	293	294	294	294	293	295	298	298	299	296	298	313	315	307	298	294	293	294	297	291	295	295	297	2128	
22 q	γ	291	291	291	295	291	291	295	298	305	301	299	292	290	297	299	294	292	290	291	294	296	298	294	286	294	2061	
23 q	γ	270	283	286	289	290	287	287	287	289	291	295	287	284	284	286	289	291	292	291	293	292	293	284	269	287	1889	
24	γ	269	262	215	225	244	262	269	277	280	280	284	279	277	278	291	298	327	322	319	325	316	297	289	294	282	1779	
25	γ	296	295	295	292	289	289	286	286	286	291	290	286	286	287	287	290	293	290	289	293	291	290	287	270	289	1934	
26	γ	262	271	284	284	290	290	290	286	287	283	279	276	280	285	297	294	300	292	289	287	285	284	284	286	285	1845	
27	γ	287	290	283	287	288	280	277	280	287	286	286	282	281	278	284	285	289	289	285	285	284	284	284	286	284	1827	
28	γ	290	291	293	291	291	287	286	285	285	284	287	284	279	285	294	303	340	352	320	330	288	245	249	225	290	1964	
29	γ	203	162	180	215	251	283	284	281	270	273	283	284	283	291	296	300	298	298	300	300	294	294	283	205	267	1411	
30	γ	163	191	252	279	285	286	284	285	285	285	284	278	280	286	286	315	353	362	403	439	412	347	299	264	300	2203	
31 d	γ	229	205	184	200	241	240	231	240	256	272	292	319	339	345	313	329	206	8	325	99	232	304	434	-72	240	771	
Mean		275	273	270	273	275	275	281	287	290	293	293	293	297	300	304	312	317	318	332	322	315	303	295	264	294		Grand Total 218,783
Sum 8000+		509	466	382	475	513	521	726	904	1002	1091	1098	1089	1190	1307	1426	1674	1816	1852	2298	1971	1764	1378	1138	193			

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

4 LERWICK		TERRESTRIAL MAGNETIC ELEMENTS											3-hr. range indices K		Sum of K indices	Magnetic character of day, C (0-2)	Temperature in magnet house 200 +		
		Horizontal force			Declination			Vertical force			K	Sum of K indices	C	Temp. °A.					
		Maximum 14,000γ +	Minimum 14,000γ +	Range	Maximum g° +	Minimum g° +	Range	Maximum 47,000γ +	Minimum 47,000γ +	Range									
1	h. m.	γ	γ	h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ								
2	20 02	714	504	03 04	210	18 53	64.3	29.2	20 18	35.1	20 03	443	232	03 19	211	3, 3, 2, 2, 3, 3, 5, 3	24	1	79.0
1 d	18 50	593	487	02 01	106	13 28	57.4	21.5	02 10	35.9	19 20	391	179	02 17	212	4, 3, 3, 3, 2, 3, 3, 4	25	1	79.0
3 d	23 18	577	494	10 09	83	15 08	61.4	27.6	23 15	33.8	18 33	384	223	05 05	161	3, 3, 3, 3, 3, 3, 3, 3	24	1	79.0
4	14 51	615	506	23 11	109	17 48	66.8	31.3	22 38	35.5	18 07	453	223	05 06	230	2, 2, 2, 2, 4, 4, 4, 4	24	1	79.0
5	20 59	593	510	21 47	83	13 46	58.4	34.5	22 57	23.9	20 52	366	217	22 08	149	2, 2, 3, 1, 3, 2, 3, 4	20	1	78.8
6	16 55	566	515	10 08	51	13 47	53.3	30.8	20 25	22.5	20 00	338	247	00 15	91	3, 2, 2, 2, 2, 2, 3, 2	18	1	78.8
7 q	20 43	564	515	11 50	49	13 44	54.2	40.7	08 20	13.5	15 55	304	288	13 31	76	1, 1, 1, 2, 1, 1, 1, 0	8	0	78.7
8	05 44	572	508	11 47	64	12 37	58.5	35.9	23 42	22.6	15 48	332	271	08 00	61	0, 1, 2, 2, 2, 2, 2, 2	13	0	78.3
9	20 51	572	508	11 18	64	14 34	55.6	38.2	00 01	17.4	15 10	311	281	05 42	30	2, 1, 2, 2, 2, 3, 2, 2	16	0	78.0
10	16 08	574	446	09 41	128	09 57	56.4	30.6	19 52	25.8	19 24	389	282	10 12	107	1, 2, 3, 4, 2, 3, 4, 2	21	1	78.0
11 d	17 39	641	438	11 40	203	12 04	56.1	31.4	18 01	24.7	17 42	467	222	01 31	245	3, 3, 3, 4, 3, 5, 5, 3	29	1	78.2
12	22 19	566	509	13 22	57	13 12	53.5	40.0	22 43	13.5	16 32	334	251	01 41	83	3, 1, 2, 2, 2, 2, 2, 2	16	0	78.2
13 q	21 02	574	500	11 03	74	13 35	53.7	39.2	08 42	14.5	18 05	317	272	22 50	45	2, 1, 1, 1, 1, 2, 2, 2	12	0	78.3
14	23 15	574	510	10 00	64	15 28	53.7	38.3	08 09	15.4	16 03	309	284	00 00	25	1, 1, 2, 1, 1, 3, 0, 1	10	0	78.3
15	19 06	745	321	24 00	424	18 48	70.5	23.0	23 57	47.5	19 00	516	264	23 39	252	1, 0, 1, 1, 2, 4, 5, 6	20	1	78.7
16 d	20 02	713	45	01 50	668	23 16	63.0	-48.6	03 49	111.6	18 52	450	-64	04 16	514	6, 6, 5, 2, 3, 4, 5, 6	37	2	78.4
17	15 58	590	472	03 36	118	14 21	54.6	20.3	20 12	34.3	20 05	362	215	00 08	147	3, 3, 3, 3, 2, 3, 4, 3	24	1	78.8
18	23 02	587	510	13 38	77	13 34	52.0	34.2	23 28	17.8	16 05	323	258	23 09	65	2, 2, 3, 2, 2, 1, 0, 3	15	0	78.5
19	14 43	566	487	11 49	79	13 51	57.1	39.2	08 39	17.9	16 03	344	264	01 33	80	3, 1, 1, 2, 3, 3, 1, 1	15	0	78.5
20 q	21 06	563	522	10 42	41	13 18	51.5	38.7	08 49	12.8	10 13	307	287	00 07					

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 9000+, and Grand Total 371,495. Rows include data for 1 LERWICK (H) and 14,000γ (0.14 C.G.S. unit) + APRIL 1960.

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 800.0+, and Grand Total 30931.6. Rows include data for 2 LERWICK (D) and 9° + APRIL 1960.

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) +																							MAY 1960	
	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 11,000+
	0-1	1-2																								
1 d	382	357	424	484	499	507	530	518	502	467	474	471	467	505	530	530	518	520	533	538	534	512	510	516	493	828
2	515	501	490	490	467	515	516	516	509	504	501	482	513	526	514	542	550	546	546	560	550	538	531	534	519	1456
3	535	534	534	536	532	538	534	518	508	512	496	503	502	517	537	544	571	562	563	568	555	552	548	547	535	1846
4 q	547	547	546	544	543	544	540	533	525	516	508	508	510	515	528	546	554	566	577	585	573	553	542	548	542	1998
5	550	550	546	551	557	559	551	540	526	519	510	511	519	516	528	538	559	572	581	565	578	564	553	556	546	2099
6 d	557	561	551	561	566	561	548	534	516	496	483	515	563	564	625	677	682	742	688	544	571	338	227	292	540	1962
7 d	276	256	311	368	492	517	570	568	551	531	521	526	569	568	565	582	697	719	684	601	555	525	446	464	519	1462
8 d	514	548	536	525	449	493	526	539	510	434	522	548	542	559	975	1366	936	635	626	571	537	533	519	537	603	3480
9	524	521	526	529	533	525	522	515	507	493	501	495	507	536	536	538	568	577	555	551	549	548	544	544	531	1744
10	544	544	540	544	539	533	533	524	510	509	514	514	514	528	548	558	569	562	577	589	573	568	545	542	543	2021
11	537	537	509	553	558	487	540	519	437	522	544	535	520	501	501	524	544	566	587	593	572	568	530	548	535	1832
12	540	535	526	516	458	451	497	507	504	510	493	501	533	540	556	543	580	562	570	576	568	564	559	557	531	1746
13	557	550	545	546	546	533	530	522	514	507	499	504	517	538	560	562	584	588	582	589	581	544	507	511	542	2016
14	539	539	548	551	542	526	529	533	510	488	488	488	507	505	530	564	574	570	574	573	569	563	561	557	539	1928
15	556	555	555	553	547	544	541	531	510	497	505	493	485	514	529	532	559	550	567	566	565	558	552	551	538	1915
16	550	548	548	551	551	543	537	532	519	495	478	490	502	531	600	648	647	616	608	614	612	617	622	578	564	2537
17	564	575	567	567	567	560	555	555	545	533	519	521	511	518	505	553	562	566	581	567	564	562	559	560	551	2236
18 q	558	553	543	542	549	546	542	536	528	520	511	513	521	533	545	562	577	588	587	575	571	568	564	567	550	2199
19 q	558	551	550	550	554	551	540	534	522	511	512	513	520	539	555	564	577	575	584	585	574	568	567	562	551	2216
20 q	563	561	559	563	564	563	554	537	525	521	522	528	537	552	558	565	566	572	571	575	575	569	571	571	556	2342
21	574	571	566	566	566	565	555	544	532	524	528	536	548	578	552	559	570	578	585	585	574	570	562	564	561	2452
22 q	563	562	563	564	565	562	554	544	533	520	510	509	526	542	559	569	578	584	592	593	589	581	577	579	559	2418
23	581	580	577	577	577	574	562	548	542	536	540	540	553	569	617	637	601	598	596	601	595	568	574	563	577	2843
24	565	554	546	526	538	538	432	510	519	513	525	533	532	564	587	603	585	591	606	604	582	559	515	521	548	2148
25	448	455	507	523	525	529	540	533	520	509	508	514	532	557	549	584	587	627	623	587	573	563	542	505	539	1940
26	435	509	494	505	521	526	529	511	520	503	497	491	510	529	539	552	603	617	606	595	574	562	536	460	530	1724
27	472	477	408	486	535	548	536	521	498	485	484	497	510	529	529	561	561	577	602	592	579	568	559	560	528	1674
28	555	547	544	556	556	545	533	521	513	507	508	509	513	526	532	545	557	566	569	574	605	585	593	559	547	2118
29 d	155	174	434	540	547	547	536	532	518	518	520	524	540	558	553	599	571	587	625	618	624	559	558	565	521	1502
30	577	581	574	574	566	556	547	540	519	524	531	536	531	580	619	667	653	615	578	561	561	556	553	552	569	2651
31	548	550	551	554	558	558	555	549	541	532	526	517	536	543	557	555	575	578	594	598	591	599	574	553	558	2392
Mean	514	516	523	535	538	537	536	531	517	509	509	512	522	538	565	596	594	589	591	580	573	554	539	536	544	
Sum 15,000+	939	983	1218	1595	1667	1647	1626	1478	1039	762	744	865	1190	1680	2518	3469	3415	3272	3317	2993	2773	2182	1700	1623		Grand Total 404,725

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

2 LERWICK (D)		9° +																							MAY 1960	
	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 800.0+
	0-1	1-2																								
1 d	35.7	28.3	34.4	29.4	28.9	24.9	25.1	25.6	25.1	35.2	37.1	41.3	44.1	43.8	45.3	45.6	43.4	41.9	40.6	38.0	38.9	39.1	42.9	41.8	36.5	76.4
2	42.4	44.7	46.3	42.8	39.9	37.1	36.2	33.2	34.4	35.1	39.0	42.2	45.3	47.2	46.8	46.3	44.3	43.4	42.9	41.5	37.3	41.9	43.6	43.9	41.6	197.7
3	42.9	42.6	42.6	42.6	42.0	40.9	39.2	38.6	41.5	42.9	41.9	44.8	48.5	50.1	49.6	48.6	47.2	44.7	44.3	44.1	43.8	44.3	44.5	43.4	44.0	255.6
4 q	43.4	44.3	42.8	41.0	39.3	38.2	37.1	37.1	37.0	38.1	39.8	42.8	45.8	48.7	49.5	49.1	47.8	46.3	44.9	45.6	44.5	38.1	38.9	41.1	42.5	221.2
5	42.8	43.2	42.4	40.5	39.0	38.6	36.7	37.2	37.0	38.1	41.8	45.8	48.4	49.7	49.1	49.5	48.2	46.7	45.6	44.8	39.3	38.5	42.6	41.1	42.8	226.6
6 d	41.8	42.9	40.9	43.2	38.0	37.1	34.9	37.1	37.1	41.0	44.8	54.5	59.2	59.5	60.2	60.3	59.9	60.7	49.5	49.0	45.7	55.1	32.1	26.7	46.3	311.2
7 d	25.3	41.3	30.4	29.4	29.5	32.8	34.7	33.8	32.6	37.0	42.9	46.3	48.8	51.1	49.0	50.7	56.8	50.9	44.8	42.8	43.9	45.8	43.7	47.5	41.3	191.8
8 d	44.7	43.8	41.7	41.7	49.5	40.5	40.5	39.2	40.0	31.8	50.6	51.5	54.4	43.9	31.4	23.2	64.9	58.5	50.2	53.7	51.8	46.8	42.4	54.9	45.5	291.6
9	44.1	40.0	38.0	37.3	38.4	37.0	36.6	39.5	41.0	45.7	49.4	53.7	52.6	49.1	47.6	46.5	43.9	44.1	44.8	45.7	44.3	44.1	44.2	44.3	43.8	251.9
10	44.3	44.1	45.4	42.4	39.9	38.2	38.1	39.8	41.7	41.7	44.8	48.2	48.7	48.7	50.5	47.5	45.2	45.8	44.7	43.6	45.3	46.6	43.1	42.4	44.2	260.7
11	42.1	41.8	43.4	38.8	42.0	51.3	45.3	50.5	51.1	50.1	46.3	47.4	47.2	48.5	47.7	44.9	44.8	45.0	45.8	46.0	44.3	45.8	44.7	39.9	45.6	294.7
12	40.2	41.0	39.9	39.3	40.8	43.4	41.3	38.4	37.1	38.2	37.1	44.7	46.0	46.5	48.2	48.9	49.6	48.5	47.0	47.4	47.2	45.6	46.3	44.3	43.6	246.9
13	41.3	41.2	39.5	40.0	40.0	38.1	39.1	40.1	40.0	42.0	47.5	49.6	51.5	52.4	51.7	50.2	47.6	48.6	47.7	45.8	43.2	43.4	36.1	36.1	43.9	252.7
14	40.5	41.8	44.8	44.6	43.8	46.5	44.3	44.3	43.6	43.9	47.0	50.5	53.4	53.3	52.5	51.4	48.6	47.2	46.7	46.3	45.8	42.1	44.8	45.5	46.4	313.2
15	45.0	44.7	44.1	44.1	40.5	37.4	35.4	34.7	36.5	38.8	42.0	46.3	52.3	53.3	51.7	49.6	45.9	42.8	43.4	44.1	44.8	45.5	45.5	45.3	43.9	253.7
16	45.3	43.4	42.0	40.5	39.3	38.6	37.8	37.1	37.0	39.0	42.7	46.6	51.5	53.0	58.4	59.7	71.7	54.9	49.4	49.5	48.0	47.4	48.7	44.7	4	

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) +

MAY 1960

	Hour G.M.T.																								Mean	Sum 6000+
	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 d	341	317	248	296	344	352	347	342	335	322	308	315	328	332	327	332	342	341	343	356	358	281	299	319	326	1825
2	321	319	301	299	303	325	332	339	339	335	333	331	325	332	333	327	340	340	334	333	340	328	320	316	327	1845
3	315	314	319	320	317	315	320	320	313	312	320	317	313	314	322	327	327	338	332	327	328	327	323	320	321	1700
4 q	320	317	316	320	321	320	320	315	315	311	308	307	307	307	312	315	315	317	321	326	332	322	309	307	316	1580
5	313	319	319	317	315	316	314	313	312	310	307	303	305	308	305	309	307	319	317	323	315	307	304	286	311	1453
6 d	239	243	283	290	287	300	308	309	310	307	301	287	301	347	393	401	406	395	313	282	349	415	280	234	316	1580
7 d	212	280	222	228	263	293	321	329	327	329	327	327	328	368	421	413	407	492	468	402	347	313	231	175	326	1823
8 d	208	265	286	304	246	161	223	259	272	326	341	327	361	410	547	384	476	487	442	388	359	333	330	288	334	2023
9	309	320	327	328	327	330	327	327	320	313	313	317	332	347	368	361	366	355	350	333	327	321	321	321	332	1960
10	321	323	320	323	327	327	323	323	321	314	319	326	329	340	343	359	373	366	355	346	337	323	301	292	330	1931
11	265	266	241	280	288	240	208	240	269	254	282	297	310	331	338	349	353	341	327	326	335	320	245	283	291	988
12	305	313	317	320	301	251	248	281	299	313	330	327	343	367	367	358	349	345	331	320	315	312	305	284	317	1601
13	286	303	311	318	319	315	313	311	307	301	298	293	290	301	319	333	339	335	334	333	327	291	266	260	308	1403
14	282	287	294	296	304	284	261	271	287	300	296	306	310	321	326	336	355	350	334	330	326	319	311	312	308	1398
15	312	312	314	316	316	316	314	314	313	312	310	315	320	329	344	342	347	347	332	326	324	319	315	311	322	1720
16	306	308	312	314	316	317	321	322	313	302	304	296	292	294	297	319	373	429	377	375	348	296	319	298	323	1748
17	293	276	305	318	319	321	319	311	311	313	309	307	309	313	319	321	348	345	330	322	317	315	316	312	315	1569
18 q	309	310	309	304	309	305	304	305	308	304	303	304	304	306	311	313	318	324	325	323	318	316	311	308	310	1451
19 q	290	291	304	312	315	314	310	309	303	299	297	297	295	296	302	307	311	317	317	321	323	319	311	307	307	1367
20 q	309	310	310	309	306	301	308	307	301	294	289	291	295	297	302	303	308	306	304	304	303	304	304	303	303	1268
21	297	295	302	307	303	301	301	296	290	284	282	278	276	279	299	301	306	309	309	308	308	306	305	304	298	1146
22 q	306	306	306	304	303	303	302	303	299	296	290	280	274	280	288	289	291	295	295	297	297	299	299	300	296	1102
23	298	301	303	303	300	297	299	300	300	290	285	277	277	286	280	297	324	338	352	333	285	258	289	291	298	1163
24	254	215	238	247	210	223	238	182	234	266	283	297	322	335	345	359	387	392	365	368	275	282	236	177	280	730
25	123	167	196	258	289	282	283	295	299	299	293	295	307	329	356	355	360	362	395	355	325	325	307	271	297	1126
26	159	196	208	188	264	283	298	301	288	289	290	292	298	317	323	322	337	364	348	330	323	309	272	199	283	798
27	121	152	110	149	261	303	324	331	329	322	313	303	297	301	307	315	326	323	329	342	322	307	291	297	282	775
28	297	299	303	303	311	315	312	314	313	309	301	291	292	297	305	307	315	315	315	309	289	280	276	276	302	1244
29 d	230	-13	40	170	262	304	314	317	320	314	303	298	296	297	309	349	359	347	333	332	323	332	317	309	281	752
30	297	294	299	305	311	311	309	303	307	296	295	309	330	351	385	416	432	411	378	356	339	329	323	315	333	2001
31	304	293	289	290	290	292	301	307	305	298	289	282	276	282	284	294	298	302	301	303	300	296	296	290	294	1062
Mean	275	274	276	288	298	297	301	303	305	304	304	303	308	320	335	336	348	353	342	333	323	313	298	286	309	
Sum 8000+	542	498	552	936	1247	1217	1322	1396	1459	1434	1419	1392	1542	1914	2377	2413	2795	2937	2606	2329	2014	1694	1232	865		Grand Total 230,132

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

4 LERWICK

MAY 1960

	TERRESTRIAL MAGNETIC ELEMENTS												3-hr. range indices K	Sum of K indices	Magnetic character of day, C (0-2)	Temperature in magnet house 200 +	
	Horizontal force			Declination			Vertical force										
	Maximum 14,000γ +	Minimum 14,000γ +	Range	Maximum g° +	Minimum g° +	Range	Maximum 47,000γ +	Minimum 47,000γ +	Range								
1 d	h. m.	γ	γ	h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ	6,6,3,4,4,3,2,4	32	2	81.0
2	16 13	582	233 01 10	415	21 55	54.3	2.7 05 15	51.6	01 05	397	190 01 58	207	61	3,4,2,2,3,3,2	22	1	81.4
3	16 31	579	486 10 39	93	13 40	50.9	37.3 07 25	13.6	17 38	340	308 09 04	32	13	1,1,2,2,2,2,2,1	13	0	80.5
4 q	19 22	594	503 10 30	91	13 52	49.8	31.4 21 54	18.4	20 28	335	303 23 24	32	11	1,0,1,1,2,1,2,3	11	0	80.8
5	18 26	587	501 10 42	86	13 20	51.1	33.3 21 09	17.8	19 31	328	243 24 00	85	17	1,2,2,2,2,2,3,3	17	0	81.0
6 d	17 40	815	16 21 50	799	17 40	77.8	15.5 23 42	62.3	21 46	547	176 23 33	371	34	3,3,2,4,4,5,6,7	34	2	81.4
7 d	17 57	764	157 01 56	607	16 32	62.6	16.0 00 30	46.6	17 52	528	123 23 29	404	39	6,6,3,4,5,5,5,5	39	2	81.7
8 d	15 20	1639	250 09 14	1389	16 27	86.8	-10.5 15 08	97.3	14 36	622	140 05 17	482	48	4,6,5,6,8,9,5,5	48	2	82.0
9	16 53	595	476 09 36	119	00 00	58.5	30.4 05 14	28.1	14 44	379	295 00 03	84	23	4,3,3,3,3,3,2,2	23	1	82.0
10	19 42	609	494 12 19	115	14 34	51.4	35.6 06 36	15.8	16 36	374	272 24 00	102	19	2,2,2,2,3,2,3,3	19	1	82.0
11	19 35	618	377 08 23	241	05 29	60.7	34.3 04 36	26.4	16 03	360	195 06 28	165	29	3,5,5,3,3,3,3,4	29	1	82.3
12	16 22	602	437 04 56	165	16 08	51.6	31.9 08 48	19.7	14 34	372	239 06 17	133	24	2,4,4,3,4,3,2,2	24	1	82.5
13	19 17	598	469 22 54	129	13 35	53.9	33.3 23 30	20.6	16 07	343	244 23 23	99	20	3,2,1,2,3,3,2,4	20	1	82.8
14	16 04	599	477 09 42	122	12 41	54.5	38.8 00 00	15.7	16 37	364	259 06 12	105	19	3,3,3,2,2,3,1,2	19	1	82.8
15	18 24	578	465 12 03	113	12 43	54.3	32.5 06 50	21.8	17 01	354	305 10 17	49	14	0,2,2,3,3,2,2,0	14	0	82.8
16	15 42	751	469 10 40	282	16 58	76.0	34.6 08 22	41.4	17 16	466	266 21 07	200	23	1,1,2,2,4,5,4,4	23	1	82.8
17	01 02	588	484 14 00	104	13 17	53.4	28.2 06 33	25.2	16 43	360	264 01 08	96	21	3,2,3,3,4,3,2,1	21	1	84.2
18 q	16 56	594	508 11 13	86	14 08	47.9	34.3 07 54	13.6	18 05	329	302 10 52	27	13	2,2,2,1,1,2,2,1	13	0	84.4
19 q	19 28	594	507 10 05	87	22 57	49.0	33.9 07 33	15.1	20 23	325	278 00 50	47	12	2,1,2,1,2,1,1,2	12	0	84.2
20 q	19 10	578	518 09 58	60	12 33	49.7	34.3 06 03	15.4	02 06	313	288 10 43	25	9	1,2,1,1,1,1,1,1	9	0	84.0
21	19 01	595	519 09 30	76	12 59	54.3	36.5 05 35	17.8	17 24	312	276 12 23	36	14	2,1,1,2,3,2,2,1</			

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) +																				JUNE 1960					
	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 11,000+
1	γ	562	549	520	528	542	469	498	497	472	439	468	484	536	551	558	555	563	572	578	592	581	578	567	562	534	1821
2 q	γ	561	556	555	557	559	559	550	537	529	521	511	516	521	526	544	553	563	579	585	579	573	570	567	562	551	2233
3	γ	562	559	555	555	555	551	545	538	533	521	518	523	536	540	546	552	563	610	613	621	606	588	551	536	557	2377
4 d	γ	520	533	515	540	432	397	401	435	501	530	535	527	540	549	573	562	592	581	604	569	574	584	548	574	530	1716
5	γ	468	424	343	364	391	468	455	484	490	466	478	480	531	520	533	568	603	579	587	606	595	565	565	556	505	1119
6	γ	507	489	399	456	489	521	511	517	511	514	501	484	539	551	535	574	555	561	559	570	575	575	572	568	526	1633
7	γ	548	541	503	520	558	561	554	551	542	521	525	542	526	542	538	549	564	587	614	613	603	591	577	564	556	2334
8	γ	559	545	527	495	436	530	527	525	514	529	520	511	534	556	570	562	568	601	633	630	593	547	495	529	543	2036
9	γ	493	451	540	545	471	480	519	524	508	512	503	503	537	576	563	571	566	588	637	605	578	563	559	555	539	1947
10 q	γ	553	548	542	549	552	549	540	530	514	506	506	512	519	534	551	566	571	580	592	600	596	577	558	558	550	2203
11 q	γ	560	557	537	559	565	557	541	523	518	516	515	524	537	548	548	561	576	578	588	578	578	570	567	565	553	2266
12 q	γ	564	560	563	563	563	556	552	538	524	511	504	511	534	539	549	560	570	590	607	591	579	576	575	576	556	2355
13	γ	572	567	565	565	567	568	563	559	548	535	531	522	519	534	553	550	572	606	603	599	591	578	572	576	563	2515
14	γ	578	581	574	578	576	567	557	549	546	535	527	552	528	560	542	558	563	578	582	617	601	586	578	578	566	2591
15	γ	570	572	561	570	572	570	557	551	520	525	533	536	536	527	542	563	600	602	605	611	594	581	581	587	565	2566
16 q	γ	571	565	569	562	565	571	554	562	547	534	523	518	517	523	537	559	570	589	575	577	575	573	572	574	558	2382
17	γ	574	553	549	562	563	560	559	552	547	536	525	523	528	532	549	577	608	582	572	577	576	581	578	573	560	2436
18	γ	566	553	553	570	568	562	555	548	537	518	521	505	529	555	545	558	578	612	602	598	603	589	592	582	562	2499
19	γ	574	580	580	566	567	548	538	534	514	507	527	528	540	586	569	570	586	615	637	633	601	578	562	548	566	2588
20	γ	543	538	539	540	556	556	551	541	523	509	508	517	545	562	558	571	564	581	592	597	592	586	576	570	555	2315
21	γ	563	560	568	543	502	530	533	529	505	496	499	512	526	552	563	589	601	620	650	622	602	585	554	555	557	2359
22	γ	560	554	551	539	553	543	543	536	522	515	515	530	541	535	547	562	559	569	575	594	600	595	569	552	552	2259
23	γ	473	474	521	553	548	549	555	549	535	522	515	533	551	574	555	589	601	610	602	595	586	574	572	566	554	2302
24	γ	559	553	559	554	562	558	548	530	526	536	540	524	536	539	534	568	582	615	610	624	607	583	578	566	562	2491
25	γ	572	553	563	560	562	553	543	530	519	511	516	532	550	563	584	635	665	714	695	660	639	544	493	519	574	2775
26	γ	504	457	459	503	542	513	491	507	515	521	520	518	534	539	553	569	576	607	611	600	604	586	575	559	540	1963
27 d	γ	533	544	505	525	304	300	478	525	523	484	506	506	513	521	541	558	641	698	672	673	608	503	381	537	513	1306
28 d	γ	580	577	567	564	566	565	567	540	524	511	522	516	496	513	525	540	593	666	654	646	579	533	504	491	556	2339
29 d	γ	517	512	482	476	543	535	538	497	523	524	512	506	507	515	536	554	572	599	594	614	631	617	443	129	520	1476
30 d	γ	93	265	18	137	461	555	578	553	522	510	496	515	530	525	541	585	632	703	646	633	618	580	559	571	493	826
Mean		532	529	513	514	526	530	533	530	522	514	514	517	531	543	549	566	584	606	609	607	595	575	551	545	547	
Sum 15,000+		959	870	382	425	790	901	1001	891	652	415	420	510	916	1287	1482	1988	2517	3172	3274	3224	2838	2236	1540	1338		Grand Total 394,028

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

2 LERWICK (D)		9° +																				JUNE 1960					
	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 900.0+
1	41.8	41.1	32.5	39.8	29.7	33.8	45.3	42.0	39.2	38.2	44.0	45.8	47.7	48.1	47.8	52.5	52.3	51.1	49.5	48.2	46.3	44.9	45.9	44.8	43.8	152.3	
2 q	43.4	41.7	41.9	40.5	39.0	37.1	36.2	35.3	34.9	37.5	41.2	45.5	48.7	49.5	49.3	48.7	48.6	47.7	47.7	46.7	45.9	45.0	44.8	44.6	43.4	141.4	
3	43.8	42.7	41.5	40.5	39.1	37.1	35.7	34.3	34.5	37.8	41.9	44.9	47.7	50.4	50.6	50.7	50.5	52.0	50.6	51.1	50.1	41.7	46.6	44.7	44.2	160.5	
4 d	40.5	36.1	31.7	20.8	14.9	12.7	20.7	18.7	46.3	39.8	47.4	47.5	50.8	52.4	53.6	55.8	54.9	51.1	51.3	49.6	47.7	49.4	44.8	46.8	41.1	85.3	
5	35.7	31.3	32.3	43.9	38.8	42.8	40.0	42.0	43.9	41.9	40.5	41.8	45.5	50.5	51.1	51.1	48.5	47.6	47.7	43.1	46.1	48.6	48.2	48.2	43.8	151.1	
6	40.2	45.3	38.2	43.4	37.6	34.7	35.2	33.4	37.1	39.0	42.4	46.8	51.5	51.5	50.6	49.7	45.9	44.8	44.7	45.7	44.1	45.3	46.3	47.5	43.4	140.9	
7	41.5	44.8	41.0	37.6	34.7	35.1	34.7	35.0	34.4	38.3	46.3	48.1	49.6	52.0	49.4	49.6	48.7	46.7	45.7	45.7	41.8	46.7	47.2	45.9	45.3	140.1	
8	44.8	43.4	44.5	44.3	43.8	39.1	33.8	32.3	37.1	40.9	42.8	48.2	49.3	50.5	51.4	51.5	49.6	48.0	46.6	44.8	45.8	42.9	37.2	38.6	43.8	151.2	
9	41.9	36.7	39.1	42.9	44.7	44.3	39.3	36.0	35.7	40.9	42.3	47.7	49.6	52.0	50.4	50.1	47.2	46.3	43.8	41.5	45.7	45.7	45.3	44.7	43.9	153.8	
10 q	44.0	43.6	42.9	39.5	38.1	37.0	35.3	35.2	35.4	38.4	42.8	47.8	49.7	48.8	48.4	47.2	48.2	46.6	46.7	46.7	46.3	43.9	45.7	45.8	43.5	144.0	
11 q	45.5	46.3	45.3	38.6	37.6	35.2	34.9	35.6	36.7	40.5	45.5	49.1	51.1	50.6	50.4	49.8	49.4	47.7	47.7	45.9	45.9	45.9	46.1	45.7	44.5	167.0	
12 q	44.3	42.8	41.8	40.5	38.3	36.2	36.1	36.5	37.4	39.2	42.8	46.3	48.7	50.1	50.6	50.6	50.6	50.6	50.6	48.2	45.8	45.8	45.5	45.3	44.3	164.1	
13	44.7	45.8	42.9	39.1	35.3	35.2	35.4	35.7	38.2	37.5	39.7	42.9	45.7	47.7	48.5	48.6	49.4	51.4	49.1	48.6	47.7	47.5	46.6	46.5	43.7	149.7	
14	45.4	47.5	46.0	40.5	37.2	37.6	40.1	42.9	40.5	40.0	41.0	42.7	45.6	47.9	52.0	52.0	51.1	49.4	47.6	45.8	47.2	45.2	46.6	45.8	44.9	177.6	
15	45.1	47.3	45.7	40.8	38.1	36.4	36.0	38.6	39.1	42.9	44.8	46.9	48.8	51.5	51.1	50.4	48.7	47.2	47.8	46.6	45.8	45.8	45.9	47.2	44.9	178.5	
16 q	46.6	44.8	44.6	44.8	40.8	38.6	40.1	38.6	37.6	38.2	40.9	44.3	46.0	45.7	46.3	47.7	46.5	44.3	44.9	46.2	45.9	45.7	45.8	46.5	43.8	151.4	
17	46.6	45.3	40.1	39.1	38.9	38.0	37.1	37.2	37.0	38.0	41.1	45.7	48.6	49.5	49.3	47.6	46.5	43.1	45.9	46.8	47.7						

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) +																				JUNE 1960				
	Hour G.M.T.				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+							
	0-1	1-2	2-3	3-4																						
1	268	214	196	133	155	180	202	242	272	270	293	321	347	371	373	323	309	304	309	315	321	325	317	308	278	1668
2 q	304	308	309	309	310	311	312	312	309	310	310	303	301	297	300	303	303	305	307	311	310	309	308	305	307	2366
3	305	305	308	308	307	309	310	313	309	303	302	297	296	295	297	296	296	290	306	320	325	312	277	283	303	2269
4 d	262	249	240	171	82	78	154	186	199	249	277	315	348	344	370	364	374	392	382	363	343	316	291	314	278	1663
5	249	193	118	138	88	135	192	233	249	279	323	360	388	386	355	340	380	394	370	380	348	330	322	313	286	1863
6	263	283	197	158	168	236	273	296	310	313	326	346	346	368	346	332	352	341	337	326	320	320	320	310	299	2187
7	271	273	223	203	258	288	302	298	302	314	303	303	314	314	332	337	335	336	344	356	334	327	322	318	304	2307
8	311	310	290	213	198	223	277	296	308	306	306	308	296	303	308	314	316	315	334	348	313	293	214	223	288	1923
9	216	124	212	247	243	221	263	293	305	299	302	303	303	324	356	346	338	326	310	306	310	315	314	312	287	1888
10 q	310	308	307	303	311	310	308	307	310	301	294	293	294	300	309	321	322	318	314	314	315	316	310	300	308	2395
11 q	300	299	275	279	300	312	315	314	308	305	297	288	283	288	295	302	312	312	306	308	309	307	304	303	301	2221
12 q	305	309	308	308	308	309	310	317	314	303	290	277	271	276	283	294	303	307	310	318	319	310	303	300	302	2252
13	300	298	292	290	299	303	306	309	307	296	294	293	290	286	289	308	316	321	328	322	316	310	303	299	303	2275
14	298	295	296	296	303	303	298	296	296	298	298	297	318	340	357	336	324	316	316	319	326	326	318	308	312	2478
15	307	309	301	302	307	312	310	304	306	293	296	295	298	301	300	307	320	335	347	350	337	323	316	306	312	2482
16 q	305	301	294	291	277	287	296	298	303	303	305	300	295	292	294	298	302	308	316	312	314	312	308	304	301	2215
17	288	277	281	293	300	306	342	307	306	306	304	301	299	296	292	305	319	356	342	320	310	307	308	305	307	2370
18	301	288	257	269	296	305	303	311	309	304	300	301	290	302	325	318	308	302	322	312	306	303	298	298	301	2228
19	300	292	277	249	237	252	249	243	252	263	273	292	300	311	338	351	350	350	341	338	337	336	310	285	297	2126
20	281	263	261	227	235	258	270	284	295	296	295	289	296	313	318	324	330	322	317	342	327	320	302	294	293	2039
21	277	262	263	260	193	189	215	239	255	262	267	261	270	283	292	308	329	368	364	365	337	320	294	277	281	1750
22	285	296	292	247	258	282	283	296	298	292	290	290	296	305	298	296	302	302	304	298	312	322	308	280	293	2032
23	229	202	246	285	292	282	272	279	288	290	287	287	293	302	308	300	329	348	345	335	320	307	302	291	292	2019
24	288	279	279	285	292	298	301	298	289	288	292	294	294	308	298	298	310	316	340	334	300	297	288	283	298	2149
25	270	285	288	290	301	304	306	308	306	297	283	280	292	310	322	331	362	327	342	356	338	272	180	237	299	2187
26	215	164	110	150	197	237	251	269	295	307	309	296	298	316	322	317	314	302	303	310	315	310	270	270	269	1447
27 d	272	243	136	-39	32	72	165	248	276	306	309	312	306	304	301	304	297	326	348	366	341	279	131	201	243	836
28 d	271	296	305	310	314	313	300	300	300	288	282	303	323	315	310	322	335	368	366	331	297	263	263	257	305	2332
29 d	255	257	242	201	250	249	275	296	289	298	302	302	303	306	308	312	315	323	330	322	316	239	136	260	279	1686
30 d	110	64	-33	-14	92	215	300	324	324	322	331	346	326	325	316	319	338	340	333	327	305	306	277	289	258	1182
Mean	274	261	246	232	240	256	275	287	293	295	298	302	306	313	317	317	325	329	331	330	321	308	284	288	293	
Sum 6000+	2216	1846	1370	962	1203	1679	2260	2616	2789	2861	2940	3053	3174	3381	3512	3526	3740	3870	3933	3904	3621	3232	2514	2633		Grand Total 210,835

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

4 LERWICK		TERRESTRIAL MAGNETIC ELEMENTS												3-hr. range indices K	Sum of K indices	Magnetic character of day, C (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 +	Range								
1	h. m. γ	γ	h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ	4,4,4,4,3,3,2,1	25	1	84.2
2 q	19 44 599	417	09 25	182	03 16	53.2	25.5	04 32	27.7	14 07	385	105	03 37	280	1,0,1,1,2,2,2,0	9	0	84.1
3	18 31 588	510	10 51	78	13 33	50.4	34.2	08 10	16.2	19 50	314	294	13 59	20	0,0,1,2,2,3,2,4	14	0	84.5
4 d	17 49 632	512	11 10	120	17 49	52.9	33.3	07 46	19.6	21 33	328	261	22 02	67	3,6,5,4,4,4,3,3	32	1	85.1
5	14 33 637	302	00 50	335	16 04	59.1	-3.4	04 53	62.5	14 54	400	-5	04 55	405	6,5,4,4,3,4,3,3	32	1	85.3
6	20 04 632	220	02 13	412	03 47	53.5	18.8	01 05	34.7	12 47	409	56	04 15	353	6,5,4,4,3,4,3,3	32	1	85.3
7	15 52 606	337	02 45	269	13 03	54.3	30.4	07 37	23.9	13 38	380	150	03 35	230	5,5,3,3,4,3,2,2	27	1	85.6
8	18 38 630	466	02 54	164	13 16	53.0	32.2	08 55	20.8	19 12	368	171	02 50	197	4,4,2,3,3,2,3,2	23	1	86.7
9	18 28 651	399	04 37	252	14 03	53.5	28.6	07 54	24.9	19 24	365	172	22 28	193	3,5,3,3,3,3,3,5	28	1	86.4
10 q	18 40 658	384	01 10	274	13 10	53.4	29.3	01 33	24.1	14 50	366	86	01 19	280	5,4,4,2,4,3,4,1	27	1	86.3
11 q	20 03 611	501	09 54	110	12 24	50.6	33.3	08 06	17.3	16 11	328	290	12 10	38	1,0,1,2,2,2,2,2	12	0	86.2
12 q	18 33 592	509	10 42	83	12 34	51.5	33.8	06 42	17.7	06 22	318	261	02 53	57	3,3,2,2,1,2,1,1	15	0	86.4
13	18 26 614	501	10 43	113	17 35	51.5	35.0	06 12	16.5	20 06	322	269	12 26	53	1,1,2,2,1,3,2,1	13	0	86.3
14	17 28 626	513	12 47	113	17 29	53.5	34.7	04 32	18.8	18 11	334	285	13 30	49	2,2,1,1,2,3,2,1	14	0	86.3
15	19 59 629	504	14 01	125	14 41	53.5	36.4	05 20	17.1	14 01	372	289	11 33	83	1,2,2,3,4,3,3,2	20	1	86.2
16 q	19 06 644	503	08 35	141	13 40	51.5	35.1	08 04	16.4	18 36	357	290	09 17	67	2,1,3,2,3,3,2,2	18	0	86.1
17	17 32 596	513	12 13	83	02 11	48.1	36.2	08 22	11.9	18 47	318	272	04 15	46	2,2,2,1,1,2,1,1	12	0	86.0
18	16																	

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

Table with columns: 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 10,000+. Rows include data for LERWICK (H) and a Grand Total of 407,861.

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

Table with columns: 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+. Rows include data for LERWICK (D) and a Grand Total of 32236.5.

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 1960	
	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 10,000+	
	0-1	1-2																									
1	522	541	552	552	525	535	545	531	529	533	528	518	544	551	580	549	561	574	591	584	578	571	568	549	550	550	3211
2	544	526	541	524	524	557	560	546	525	528	520	528	526	540	552	545	572	614	609	579	571	571	557	534	550	3193	
3	542	546	556	561	559	553	540	530	524	522	521	526	542	543	561	551	579	590	582	581	572	563	559	555	552	3258	
4 q	550	544	558	560	557	549	555	552	534	505	507	518	531	536	556	560	566	577	578	581	573	565	558	555	551	3225	
5 q	560	559	557	556	558	555	550	548	541	532	529	533	546	556	561	555	563	566	579	573	567	566	566	556	556	3349	
6	564	565	562	566	566	565	562	557	541	521	523	526	541	553	562	581	590	574	573	581	583	582	575	571	562	3484	
7	573	559	544	566	563	563	562	558	543	529	528	528	528	536	552	563	575	573	581	581	582	576	573	571	559	3407	
8	571	570	569	569	567	566	561	525	508	517	521	520	544	553	566	609	636	628	608	601	573	534	492	474	558	3382	
9	423	544	561	560	560	508	497	513	525	526	524	506	509	520	528	545	583	571	580	566	567	562	559	566	538	2903	
10	569	568	569	575	575	565	561	539	505	525	545	532	539	536	538	547	558	622	629	607	588	571	561	561	562	3485	
11	558	557	552	477	480	553	563	547	526	512	512	493	521	530	584	566	552	558	597	590	582	573	570	575	547	3128	
12	572	557	555	566	567	516	524	497	505	509	513	513	497	489	525	544	550	567	568	580	585	578	572	565	542	3014	
13	562	557	553	558	558	557	555	544	523	499	489	491	504	520	546	562	564	569	571	576	569	569	562	545	546	3103	
14	547	550	547	537	552	561	556	545	530	513	504	501	507	513	535	558	566	611	635	620	611	585	579	576	556	3339	
15	536	565	561	556	569	569	567	557	540	517	516	513	527	533	538	548	555	572	581	577	582	579	577	574	555	3309	
16 d	579	569	564	562	564	559	553	550	542	527	516	509	516	540	675	829	985	935	841	646	549	525	532	485	611	4652	
17 d	169	91	117	95	309	154	492	452	361	439	484	498	512	561	520	618	828	938	759	628	524	485	288	480	530	802	
18	553	530	539	544	548	530	512	501	491	469	471	492	503	519	531	543	555	553	569	571	564	556	555	552	531	2751	
19	550	543	542	547	550	544	535	524	506	489	480	493	516	540	534	525	569	598	627	630	568	525	427	535	537	2897	
20	544	551	554	551	532	477	412	433	471	500	493	495	525	526	530	539	562	596	596	600	574	559	547	537	529	2704	
21 d	510	531	530	532	532	541	532	518	482	470	510	526	539	558	566	561	572	627	647	607	562	561	558	558	547	3130	
22	521	422	527	543	542	539	536	522	503	493	507	522	530	530	533	539	569	561	570	588	562	558	554	542	534	2813	
23	529	547	551	540	548	552	545	539	530	513	502	502	510	527	539	549	572	562	572	561	561	561	559	543	543	3032	
24 q	558	549	553	558	563	558	545	521	511	502	507	524	526	541	550	564	578	584	574	569	566	563	559	559	549	3182	
25 q	559	561	559	558	556	550	542	527	513	501	498	502	511	530	551	571	566	572	570	577	575	573	573	571	549	3166	
26 q	571	569	569	566	564	561	553	541	528	513	505	507	526	537	553	561	561	557	572	585	581	568	571	564	553	3283	
27	562	557	554	566	568	568	566	548	534	525	520	523	535	551	568	575	597	631	610	587	577	583	571	571	564	3547	
28	567	564	558	522	511	526	536	532	529	511	502	502	525	521	526	534	560	578	567	567	565	563	562	561	541	2989	
29 d	567	563	581	595	578	447	505	525	523	514	503	496	506	511	546	568	581	582	590	598	562	498	401	441	533	2781	
30 d	262	410	370	204	374	326	351	409	444	493	508	521	602	613	621	625	583	596	596	565	557	559	550	542	487	1681	
31	530	535	537	481	520	554	540	541	511	487	497	504	504	522	523	539	542	555	572	561	559	562	550	550	532	2776	
Mean	527	529	534	524	537	525	533	525	512	507	509	512	525	537	553	569	592	606	603	588	571	559	541	547	544		
Sum 15,000+	1324	1400	1542	1247	1639	1258	1513	1272	878	734	783	862	1292	1636	2150	2623	3350	3791	3694	3217	2695	2345	1787	1944		Grand Total 404,976	

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

2 LERWICK (D)													9° +													AUGUST 1960	
	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 900.0+	
	0-1	1-2																									
1	45.3	42.4	40.1	39.9	43.4	39.3	37.9	38.6	38.1	39.4	39.8	44.7	49.1	48.0	46.3	48.2	48.6	47.8	46.6	44.9	45.3	45.0	40.5	42.1	43.4	141.3	
2	40.5	40.1	41.0	45.3	46.7	40.8	37.6	37.6	41.4	40.6	41.9	44.1	48.7	51.3	51.7	49.8	47.7	46.8	44.7	44.9	44.1	37.9	41.1	43.8	43.8	151.0	
3	36.3	37.9	39.9	38.7	39.3	39.3	37.8	38.9	40.0	40.5	43.4	45.9	47.7	48.7	48.9	47.7	44.3	46.2	45.4	45.7	45.3	43.8	43.8	45.4	42.9	130.8	
4 q	45.7	46.0	41.7	39.3	40.0	43.0	37.7	38.0	39.2	40.5	43.4	44.4	46.3	49.0	48.9	47.0	45.9	45.3	44.8	45.5	44.6	44.6	43.1	42.9	43.6	146.8	
5 q	42.3	42.9	40.9	40.1	39.5	39.2	38.9	38.4	39.1	41.5	43.9	46.7	49.4	50.0	47.5	46.7	45.8	44.6	44.6	44.7	44.8	45.0	45.2	45.6	43.6	147.3	
6	44.9	43.1	41.7	40.8	39.2	38.2	39.2	39.3	39.1	40.5	44.2	46.8	50.1	52.2	49.8	48.2	47.1	44.5	44.8	46.5	45.3	43.9	41.0	41.8	43.8	152.2	
7	43.8	45.3	47.2	39.7	36.4	36.5	37.3	37.2	37.8	40.1	41.4	43.3	47.4	50.9	51.7	50.4	48.9	46.7	46.4	46.5	46.0	45.1	44.2	43.5	43.9	153.7	
8	43.5	43.2	43.6	41.8	39.2	36.3	36.3	35.9	40.5	39.1	43.3	49.0	50.7	53.9	52.0	52.6	51.3	48.0	46.0	43.2	40.8	40.5	45.3	41.8	44.1	157.8	
9	41.8	37.2	39.5	37.8	42.1	54.3	53.7	46.8	37.3	37.3	41.1	43.2	46.0	49.0	48.9	46.6	44.9	44.1	44.7	43.8	44.8	45.2	43.9	44.8	44.1	158.8	
10	44.6	38.3	40.1	39.0	36.3	36.2	36.7	37.4	40.8	44.7	45.0	48.7	50.8	52.3	52.0	50.4	46.9	47.1	47.9	46.6	43.6	46.7	44.8	44.3	44.2	161.2	
11	42.2	41.6	43.0	49.7	35.1	32.7	32.6	33.8	37.5	39.9	44.7	47.8	49.0	52.6	54.1	51.8	50.3	49.1	48.8	44.9							

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) +

AUGUST 1960

Table with columns for Hour G.M.T. (0-1, 1-2) and magnetic force values (γ) for hours 2-3 through 23-24, plus Mean and Sum 6000+.

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

4 LERWICK

AUGUST 1960

Table with columns for Terrestrial Magnetic Elements (Horizontal force, Declination, Vertical force), 3-hr. range indices K, Sum of K indices, Magnetic character of day, C (0-2), and Temperature in magnet house 200 +.

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 1: LERWICK (H) 14,000γ (0.14 C.G.S. unit) + SEPTEMBER 1960. Columns include Hour G.M.T. (0-1 to 23-24), Mean, Sum 9000+, and Grand Total 381,031.

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

Table 2: LERWICK (D) 9° + SEPTEMBER 1960. Columns include Hour G.M.T. (0-1 to 23-24), Mean, Sum 600.0+, and Grand Total 29793.8.

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) +																				SEPTEMBER 1960				
	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 6000+
	0-1	1-2																								
1 q	304	310	309	309	310	311	312	311	310	309	305	302	298	302	309	310	308	304	304	304	305	308	304	304	307	1362
2	305	305	308	306	307	306	305	303	303	296	292	294	296	313	338	372	361	332	347	373	334	309	238	241	312	1484
3 d	155	94	201	223	227	207	237	226	258	276	282	288	309	330	349	335	323	325	343	338	325	324	316	305	275	596
4 d	278	284	286	289	273	234	246	279	289	309	342	355	375	429	423	456	390	411	424	286	364	261	23	92	308	1398
5 d	294	-28	-115	83	50	185	256	311	380	398	410	410	403	408	444	508	459	421	421	351	354	316	204	138	294	1061
6	173	241	267	284	289	313	282	252	286	313	318	320	328	336	343	354	358	355	352	341	319	313	252	118	296	1107
7 d	208	270	303	316	323	326	330	330	326	318	323	322	345	362	356	363	342	361	390	352	324	305	299	297	325	1791
8	219	242	281	264	277	279	297	310	329	328	320	322	328	345	358	356	384	394	366	337	332	322	315	311	317	1616
9	282	257	242	244	233	270	297	309	315	320	321	323	323	337	344	344	345	343	355	363	339	324	306	305	310	1441
10	284	298	312	318	314	318	318	317	322	318	320	323	318	323	330	354	396	408	414	413	374	343	313	297	335	2045
11	296	240	198	257	297	311	313	323	330	333	321	315	316	324	324	333	339	354	369	366	335	305	286	223	309	1408
12	258	270	269	279	299	309	311	315	316	316	317	323	325	324	332	355	358	349	338	336	337	329	319	315	317	1599
13	309	256	240	212	194	193	248	279	295	311	323	323	321	330	333	337	326	318	317	316	330	319	287	238	290	955
14	140	233	298	303	271	260	284	297	306	311	316	317	312	315	318	325	316	312	311	316	320	323	318	316	297	1138
15 q	316	316	312	311	308	310	304	310	316	316	311	307	303	303	304	310	315	320	322	316	313	316	314	304	312	1477
16 q	305	303	305	309	310	310	311	313	316	315	309	304	304	303	303	305	311	310	305	308	309	311	315	315	309	1409
17	313	312	311	305	301	306	310	310	310	310	309	307	299	298	304	304	299	305	309	309	305	276	252	239	300	1198
18	195	210	241	246	246	279	290	298	305	310	315	312	313	317	318	328	324	328	324	318	317	316	316	309	295	1075
19 q	298	306	313	312	312	313	312	315	317	316	315	313	308	305	305	309	307	312	310	310	309	309	309	309	310	1444
20	309	311	312	312	312	311	312	312	312	310	308	305	299	303	306	309	312	316	311	309	303	302	302	260	307	1358
21	240	278	294	303	305	306	305	307	303	299	298	298	301	308	317	335	354	358	355	347	324	312	295	244	308	1386
22	246	280	297	298	298	300	304	303	305	305	305	305	305	310	310	316	326	331	329	320	325	324	319	285	306	1346
23	222	213	233	252	283	302	303	304	298	292	303	298	300	303	310	311	311	313	310	309	309	311	292	225	288	907
24	178	218	193	174	263	280	288	271	266	284	291	303	300	305	305	312	334	396	358	337	315	297	303	304	286	875
25 q	309	310	312	315	316	317	318	318	320	318	316	312	310	309	309	310	310	310	310	316	325	316	311	307	313	1524
26	305	303	286	296	303	306	309	311	313	309	305	303	301	302	303	305	306	306	309	312	324	322	274	116	297	1129
27	32	66	191	241	257	263	280	303	315	311	315	318	312	311	309	312	315	314	323	351	342	324	311	298	280	714
28	305	309	304	303	305	303	309	307	309	318	318	315	312	309	318	330	325	330	332	336	330	319	311	310	315	1569
29	308	305	305	305	305	309	309	309	311	303	303	299	303	310	324	324	330	346	357	367	341	304	211	169	307	1357
30 d	119	144	180	184	199	241	265	290	299	306	306	316	325	345	370	403	383	404	390	389	309	229	265	284	289	945
Mean	250	249	260	272	276	286	295	301	309	313	315	315	316	324	331	341	339	343	343	335	326	310	283	259	304	
Sum 7000+	505	456	788	1153	1287	1580	1865	2043	2280	2377	2435	2450	2492	2719	2916	3225	3167	3286	3305	3046	2792	2289	1480	778		Grand Total 218,714

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

4 LERWICK		TERRESTRIAL MAGNETIC ELEMENTS										SEPTEMBER 1960			
	Horizontal force			Declination			Vertical force			3-hr. range indices K	Sum of K indices	Magnetic character of day, C (0-2)	Temperature in magnet house 200 +		
	Maximum 14,000γ +	Minimum 14,000γ +	Range	Maximum g° +	Minimum g° +	Range	Maximum 47,000γ +	Minimum 47,000γ +	Range						
1 q	h. m.	γ	γ h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ	1, 1, 1, 2, 1, 1, 0, 2	9	0	86.1	
2	18 16	637	296 22 51	341	14 02	57.9	-4.2 23 01	62.1	19 07	381	194 22 49	187	21	1	86.0
3 d	18 50	590	65 01 05	525	07 12	58.2	19.9 01 35	38.3	14 22	357	14 01 32	343	30	1	85.7
4 d	17 49	867	-249 21 46	1116	22 10	156.2	-55.2 23 44	211.4	21 36	556	245 22 10	801	44	2	85.5
5 d	15 30	732	-710 00 14	1442	00 34	81.2	-77.4 01 43	158.6	00 02	719	278 01 29	997	48	2	85.5
6	20 04	579	198 00 03	381	23 05	62.3	1.6 00 04	60.7	16 16	361	79 23 33	282	30	1	85.3
7 d	14 33	640	437 00 00	203	12 05	56.7	22.7 18 31	34.0	18 27	416	180 00 11	230	25	1	85.4
8	16 25	624	475 09 46	149	13 08	53.6	26.5 00 33	27.1	16 55	396	197 00 17	199	24	0	85.6
9	17 39	590	460 03 37	130	13 51	54.4	25.7 02 06	28.7	19 35	368	214 04 22	154	22	0	85.3
10	17 59	609	473 11 37	136	14 56	52.2	34.0 23 36	18.2	18 43	426	277 00 17	149	20	0	86.1
11	18 26	602	435 02 19	167	14 08	50.2	27.5 21 30	22.7	18 52	375	173 02 18	202	23	0	86.0
12	19 37	568	491 10 21	77	14 34	50.6	35.5 00 01	15.1	15 35	364	246 00 01	118	17	0	86.0
13	19 54	580	356 23 58	224	13 15	52.1	27.4 03 45	24.7	21 00	343	169 05 23	174	26	1	86.0
14	19 16	570	285 00 11	285	00 14	51.7	16.8 00 59	34.9	15 23	328	102 00 10	226	19	0	85.9
15 q	20 13	574	500 11 23	74	13 20	49.4	35.5 09 13	13.9	18 18	322	298 23 32	24	10	0	86.2
16 q	20 04	573	496 11 15	77	14 19	50.4	35.1 07 51	15.3	09 01	318	299 01 28	19	9	0	86.1
17	20 39	621	488 23 56	133	14 22	52.3	24.5 20 54	27.8	00 06	315	220 23 59	95	16	0	86.0
18	19 29	572	395 02 16	177	14 19	51.4	15.0 01 09	36.4	15 07	330	172 01 06	158	17	0	86.2
19 q	19 08	568	500 10 57	68	13 18	48.5	36.3 08 49	12.2	08 42	318	296 00 12	22	7	0	86.2
20	21 17	583	504 10 58	79	13 49	49.3	36.0 07 48								

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) +

OCTOBER 1960

Table with columns for Hour G.M.T. (0-1 to 23-24), Mean, and Sum 9000+. Rows include hourly data for days 1-31 and a final Sum row.

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

2 LERWICK (D)

9° +

OCTOBER 1960

Table with columns for Hour G.M.T. (0-1 to 23-24), Mean, and Sum 600.0+. Rows include hourly data for days 1-31 and a final Sum row.

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) + OCTOBER 1960

	Hour G.M.T.											Mean											Sum 6000+				
	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 d	243	212	181	115	159	172	209	237	281	330	320	337	349	375	429	397	420	388	375	324	284	149	264	269	284	819	
2	246	201	115	110	159	194	212	227	262	346	373	371	423	403	424	417	427	353	345	330	315	310	296	246	296	1105	
3	252	290	307	312	309	310	306	311	318	324	349	350	351	343	334	331	339	337	322	315	316	322	313	298	319	1659	
4	287	304	312	315	315	314	312	315	312	318	324	324	325	323	335	403	480	514	366	384	315	366	183	140	329	1886	
5	229	216	248	276	277	265	285	302	311	318	318	315	318	337	361	364	355	377	354	334	329	291	85	151	292	1016	
6 d	250	261	139	-52	-82	88	187	252	301	304	328	426	413	410	477	268	162	101	84	296	358	464	496	120	252	51	
7 d	480	326	101	50	210	91	89	237	295	358	351	353	375	396	422	463	487	442	375	377	222	209	163	132	292	1004	
8	75	68	130	205	252	291	318	332	341	335	350	351	350	368	386	376	376	388	378	377	299	252	197	194	291	989	
9	220	162	104	119	159	212	242	260	314	329	345	354	350	365	389	408	387	398	404	344	317	282	162	171	283	797	
10	233	222	188	229	289	316	332	339	341	342	340	334	327	327	329	338	341	342	355	365	360	315	271	250	309	1425	
11	240	214	272	298	303	302	310	319	317	330	333	335	335	339	368	363	350	343	339	339	342	330	322	317	319	1660	
12 q	308	317	325	326	327	327	328	334	337	336	333	328	324	320	318	322	326	324	326	334	339	327	299	295	324	1780	
13 q	311	317	319	320	320	325	322	321	325	325	322	320	315	309	307	311	313	317	318	320	321	323	322	322	319	1645	
14 q	324	322	321	320	320	320	319	320	321	327	321	315	312	311	315	317	317	317	318	320	320	321	323	326	319	1665	
15	325	324	322	322	320	317	315	313	313	315	313	315	324	328	334	332	355	457	445	442	368	320	281	258	336	2058	
16	299	320	324	324	322	324	322	322	324	326	327	328	333	340	339	332	328	324	322	322	322	324	326	322	325	1796	
17	306	317	320	324	324	322	317	318	322	326	328	328	330	328	337	340	335	331	337	341	339	330	322	309	326	1831	
18	298	239	219	208	258	269	279	296	305	320	331	340	341	342	364	378	380	432	460	389	258	237	299	307	315	1549	
19	311	317	326	330	326	308	299	312	321	322	322	324	330	332	332	339	351	346	347	355	341	327	306	315	327	1839	
20	320	320	319	318	316	316	316	315	317	323	326	331	337	345	352	374	396	363	338	330	325	328	329	311	332	1965	
21	290	299	321	330	330	326	324	325	324	322	324	324	324	327	330	330	330	330	335	339	335	302	309	315	323	1745	
22 q	316	319	324	325	325	324	322	322	324	323	324	320	317	316	320	322	324	322	320	320	319	318	317	317	317	321	1700
23 q	318	316	316	317	318	318	318	317	318	318	316	311	311	312	315	320	322	318	319	320	315	317	318	317	317	1605	
24	317	318	318	321	322	321	319	319	318	316	313	312	312	312	321	343	443	389	455	480	373	342	317	298	342	2199	
25 d	312	318	322	322	322	324	330	277	252	279	315	349	361	377	408	430	201	142	264	422	348	253	253	85	303	1266	
26 d	1	73	98	193	193	230	275	322	335	363	376	398	420	422	442	448	424	413	370	273	290	311	204	234	296	1108	
27	228	168	184	220	275	305	320	328	337	343	370	389	388	374	396	406	449	455	384	349	365	250	194	263	323	1740	
28	277	217	150	173	237	260	239	288	320	343	398	425	466	423	435	496	497	432	376	375	317	284	278	301	334	2007	
29	261	146	255	294	305	309	311	314	328	338	365	390	377	416	404	372	365	422	376	319	333	294	222	260	328	1876	
30	273	278	244	265	296	311	316	326	339	352	375	412	387	371	400	415	415	376	377	381	350	322	310	235	339	2126	
31	140	218	266	279	295	298	311	331	331	336	344	348	349	368	383	386	375	381	383	332	294	300	316	279	318	1643	
Mean	267	256	248	252	271	281	291	305	316	329	338	347	351	353	368	369	370	361	351	350	323	304	277	257	314		
Sum 7000+	1290	939	690	808	1401	1709	2004	2451	2804	3187	3474	3757	3874	3959	4406	4441	4470	4174	3866	3846	3029	2420	1600	955		Grand Total 233,554	

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

4 LERWICK OCTOBER 1960

	TERRESTRIAL MAGNETIC ELEMENTS											3-hr. range indices K	Sum of K indices	Magnetic character of day, C (0-2)	Temperature in magnet house 200 + °A.				
	Horizontal force			Declination			Vertical force												
	Maximum 14,000γ +	Minimum 14,000γ +	Range	Maximum 9° +	Minimum 9° +	Range	Maximum 47,000γ +	Minimum 47,000γ +	Range										
1 d	h. m.	γ	γ	h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ	4, 5, 4, 3, 4, 4, 5, 5	34	1	85.2				
2	16 16	638	362	03 45	276	06 54	58.6	6.9	21 24	51.7	14 32	451	68	21 20	383	5, 4, 4, 4, 5, 5, 4, 3	34	1	85.3
3	16 48	795	389	02 49	406	06 55	62.5	22.8	17 43	39.7	16 47	503	71	02 51	432	4, 2, 2, 3, 2, 1, 3	19	0	85.6
4	20 01	561	478	10 12	83	14 21	49.0	3.7	1 24 00	12.9	10 54	358	239	00 02	119	3, 0, 1, 2, 3, 6, 7, 7	29	2	85.7
5	18 07	989	65	22 42	924	23 20	79.6	2.6	17 18 21	76.9	17 11	561	-44	22 57	605	4, 4, 3, 2, 3, 3, 3, 7	29	1	85.9
6	17 06	590	144	22 22	446	05 30	54.9	-7.8	23 07	62.7	17 31	392	-6	22 20	398	7, 6, 6, 5, 7, 9, 9, 9	58	2	85.9
7 d	16 25	1396	-1431	22 40	2827	22 53	211.6	-129.5	23 37	341.1	22 41	1080	-403	18 01	1483	9, 8, 6, 6, 7, 7, 6, 7	56	2	85.9
8	14 52	1115	-840	00 32	1955	01 15	263.9	-136.6	01 37	400.5	01 18	990	1196	03 06	1196	7, 4, 3, 3, 3, 3, 5, 4	32	1	85.8
9	18 41	560	10	01 11	550	01 30	63.4	18.3	19 30	45.1	19 20	398	-49	02 09	447	5, 5, 4, 2, 4, 4, 4, 6	34	1	85.5
10	15 13	621	270	22 32	351	06 40	51.2	12.1	23 11	39.1	15 12	428	81	02 29	347	4, 4, 1, 1, 0, 1, 2, 4	17	0	85.7
11	17 42	552	403	02 56	149	13 30	47.2	22.4	01 41	24.8	19 59	371	173	02 35	198	3, 1, 1, 1, 2, 2, 0, 2	12	0	84.8
12 q	14 15	572	492	00 43	80	14 00	54.9	25.3	21 15	29.6	14 40	382	197	01 13	185	2, 0, 2, 0, 2, 2, 2, 3	13	0	84.9
13 q	22 12	584	497	11 18	87	13 23	49.2	28.5	22 00	20.7	19 57	347	288	23 30	59	2, 1, 1, 1, 1, 1, 0, 1	8	0	84.9
14 q	21 55	573	513	11 25	60	14 34	49.0	36.8	08 40	12.2	08 52	327	303	00 00	24	1, 0, 1, 1, 0, 1, 0, 1	5	0	84.8
15	21 35	569	516	11 02	53	14 26	49.1	37.2	09 33	11.9	09 28	328	311	13 40	17	1, 1, 1, 2, 3, 5, 6, 4	23	1	84.8
16	19 10	765	487	22 26	278	18 42	69.2	21.3	22 42	47.9	17 26	493	242	22 58	251	3, 1, 1, 1, 2, 2, 0, 2	12	0	84.8
17	22 41	564	504	10 57	60	13 24	55.2	32.3	00 15	22.9	13 52	344	279	00 00	65	4, 4, 3, 2, 3, 5, 7, 5	33	1	84.7
18	06 22	561	510	13 07	51	13 26	50.2	34.0	01 02	16.2	14 51	345	302	00 27	43	2, 3, 3, 2, 1, 1, 3, 4	19	0	84.7
19	18 49	732	233	20 30	499	18 09	56.9	5.8	20 51	51.1	17 57	495	99	21 00	396	1, 2, 1, 2, 2, 3, 2, 3	16	0	84.7
20	07 39	553	503	12 04	50	12 47	49.1	21.1	21 25	28.0	19 32	360	285	06 00	75	3, 1, 2, 1, 2, 1, 2, 3	15	0	84.7
21	15 11	559	507	12 08	52	15 33	54.0	22.9	22 10	31.1	16 28	402	296	24 00	106	3, 1, 2, 1, 2, 1, 2, 3	15	0	84.7

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) + NOVEMBER 1960

Hour	Hour G.M.T.												Mean												Sum 8000+	
	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	533	532	538	538	534	547	559	546	540	533	525	520	525	537	549	538	543	550	553	553	546	517	536	547	539	4939
2	547	546	542	551	555	561	562	547	521	514	511	517	529	525	533	542	541	543	549	548	552	563	533	526	540	4958
3	516	501	536	540	556	558	564	558	540	519	513	524	539	521	530	535	549	548	554	551	557	501	361	375	523	4546
4 d	264	391	234	381	521	478	512	524	537	494	489	514	526	556	642	627	568	566	573	532	531	527	506	430	497	3923
5	502	547	546	517	527	552	551	547	532	534	524	526	532	542	557	558	556	553	549	547	547	547	546	548	541	4987
6	549	549	551	552	553	557	558	550	548	537	536	535	534	529	545	551	552	555	556	551	561	547	551	550	548	5157
7 q	553	540	538	550	557	563	564	562	553	541	534	527	523	526	534	542	546	551	555	558	558	559	559	559	548	5152
8 q	558	558	558	561	565	568	566	562	554	540	530	527	530	540	544	551	555	558	558	559	558	550	540	546	551	5236
9 q	556	547	554	552	551	565	565	559	558	547	541	530	532	539	543	551	556	557	560	561	560	558	554	555	552	5251
10	557	557	558	560	564	565	566	570	571	559	537	531	533	540	551	559	566	569	577	576	579	576	576	570	561	5467
11	570	566	572	572	582	587	587	565	560	557	537	512	520	537	540	546	549	552	555	561	564	562	555	551	557	5359
12	545	551	555	560	565	568	566	561	555	548	544	540	544	551	593	579	587	758	1009	896	758	111	96	328	561	5468
13 d	172	164	63	22	105	-136	-684	-765	344	760	1093	632	586	593	720	364	698	663	733	595	562	354	148	311	379	1097
14 d	-121	-39	452	511	514	522	514	519	520	511	511	505	498	517	514	531	528	547	541	507	521	490	491	463	461	3067
15 d	469	501	505	522	522	512	508	504	520	516	520	524	520	644	716	776	947	844	733	500	491	426	217	31	540	4968
16 d	-489	-454	-739	-331	214	503	476	476	444	461	527	549	568	634	598	601	537	534	530	538	535	538	534	518	346	302
17	496	478	502	518	527	534	537	542	536	531	531	536	535	542	545	534	560	548	520	536	537	533	529	521	529	4708
18 q	517	518	544	530	528	533	535	535	529	524	523	527	530	531	537	543	545	548	551	551	550	549	547	545	536	4870
19 q	545	545	547	549	551	559	559	559	559	549	549	553	548	548	543	547	549	553	556	558	559	562	559	559	553	5265
20	559	552	559	561	568	568	554	554	546	534	540	538	547	548	548	531	549	546	555	555	556	556	555	552	552	5239
21	556	557	559	560	559	551	563	523	537	521	534	538	547	550	579	656	795	785	797	605	533	521	431	483	577	5840
22	469	424	387	493	528	514	541	541	518	527	522	511	521	530	540	550	543	549	540	543	545	546	546	540	519	4468
23	545	543	545	544	554	558	546	552	545	543	534	529	534	541	538	546	552	547	548	549	540	544	540	519	543	5036
24	511	517	537	550	560	564	568	555	554	551	548	543	547	551	551	557	562	561	563	565	561	543	472	508	546	5099
25	522	528	522	449	504	551	560	554	510	534	526	522	539	550	551	565	567	537	524	531	487	544	479	522	525	4588
26	540	537	540	540	515	542	549	541	515	524	531	539	526	541	546	541	549	551	554	552	528	544	543	550	539	4938
27	560	554	549	551	557	561	562	560	549	551	543	541	541	545	529	545	555	586	554	534	546	546	522	530	549	5171
28	496	526	543	557	545	544	560	551	540	524	534	536	539	541	555	550	555	555	560	557	555	552	551	550	545	5076
29	554	538	552	554	557	559	563	564	555	551	544	530	537	545	553	550	553	560	562	555	550	551	547	545	551	5229
30	550	544	549	550	566	567	563	562	559	550	546	544	544	544	548	549	557	560	550	568	570	514	467	532	548	5153
Mean	457	464	467	489	520	526	510	503	532	539	549	533	536	548	562	591	579	581	587	563	553	515	486	496	529	
Sum 13,000+	701	918	998	1664	2604	2775	2294	2077	2949	3185	3477	3000	3074	3438	3855	4733	4366	4443	4619	3893	3597	2441	1589	1867		Grand Total 380,557

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

2 LERWICK (D) 9° + NOVEMBER 1960

Hour	Hour G.M.T.												Mean												Sum 400.0+	
	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	39.6	38.9	41.5	41.6	41.4	42.4	42.2	40.5	39.6	40.4	43.4	46.3	47.9	47.3	47.8	45.8	44.5	44.4	43.1	43.1	40.0	40.5	35.4	36.6	42.3	614.2
2	41.0	41.5	43.6	42.3	38.3	40.5	39.9	41.6	43.2	42.8	43.7	47.4	50.4	48.4	46.4	45.8	43.6	43.1	42.3	40.6	36.2	30.9	34.5	35.6	41.8	603.6
3	38.3	45.8	37.7	37.6	38.1	40.5	39.8	38.8	39.1	40.7	42.4	45.7	47.0	47.5	47.6	45.2	43.4	44.2	43.2	42.4	29.5	29.7	29.0	12.7	39.4	545.9
4 d	29.5	24.5	18.2	29.3	40.2	36.4	45.3	39.7	38.9	40.0	49.4	48.1	47.0	50.1	52.8	31.8	50.9	47.2	33.9	34.7	35.7	35.4	31.9	31.9	38.5	522.8
5	40.5	40.5	40.5	45.1	44.4	40.5	41.5	42.4	42.9	43.5	43.3	45.3	46.0	44.5	44.4	41.3	41.5	41.6	41.4	41.0	40.4	41.0	40.4	40.4	42.3	614.3
6	41.0	41.2	41.5	41.5	42.3	40.9	41.6	42.9	41.5	40.0	42.4	46.4	46.2	44.7	44.1	43.1	42.0	41.0	41.0	42.7	37.8	36.7	39.7	40.3	41.8	602.5
7 q	40.5	40.3	42.9	40.1	40.5	41.5	45.3	42.4	40.5	40.0	42.4	43.7	44.8	45.1	44.2	42.5	41.5	42.0	41.6	41.5	41.3	41.0	41.0	41.3	42.0	607.9
8 q	41.5	41.7	42.0	42.2	41.5	41.2	41.0	39.5	38.8	39.0	41.0	43.1	44.8	45.3	44.8	44.4	43.5	43.7	42.9	42.9	42.4	40.5	37.6	35.7	41.7	601.0
9 q	37.6	39.1	40.5	41.5	42.3	40.7	39.6	41.2	41.5	41.0	43.6	44.4	46.1	47.1	46.5	44.8	43.9	43.4	43.2	42.5	42.0	38.1	38.6	39.8	42.0	609.0
10	41.4	41.5	41.6	41.7	41.5	41.0	40.3	39.6	38.9	39.6	42.4	47.2	49.6	52.0	51.8	52.6	48.1	46.6	46.7	45.0	43.4	42.3	41.5	40.5	44.0	656.8
11	41.4	41.0	43.1	42.4	42.0	42.3	41.6	42.0	39.6	40.6	44.5	48.9	46.0	46.8	45.8	44.8	43.5	43.3	42.4	42.9	43.2	42.3	41.3	33.6	42.7	625.3
12	32.7	38.5	40.6	40.5	41.4	41.3	41.6	41.4	40.4	40.5	41.5	42.0	43.4	47.4	53.1	50.9	52.1	58.5	-18.5	78.3	61.0	85.7	46.0	32.4	44.7	672.7
13 d	40.0	11.0	1.6	31.4	27.3	13.1	1.1	-55.9	-1.4	-7.1	-35.6	6.8	18.6	45.4	37.4	30.4	34.8	46.2	25.4	26.4	43.1	33.8	41.8	34.1	18.7	49.8
14 d	20.4	35.1	35.2	40.5	39.5	38.6	37.2	37.6	37.4	36.6	37.5	39.3	39.5	42.9	42.0	38.1	41.5	34.5	25.3	44.3	38.1	40.7	38.6	38.1	37.4	498.5
15 d	40.3	36.2	35.6	39.9	40.7	40.3	43.1	40.4	37.4	37.2	37.4	41.4	43.2	46.8	51.0	51.6	55.6	42.5	54.6	47.1	41.5	31.9	28.1	41.4	41.9	606.0
16 d	-0.1	-7.1	12.3	24.8	32.8	31.9	33.0	28.8	31.4	38.7	38.5	38.1	41.0	41.5	41.5	37.6	41.5	40.4	39.4	31.9	33.5	38.1	38.6	42.0	32.1	370.1
17	46.8	47.1	44.8	40.5	40.4	41.0	40.0	40.3	39.1	40.4	42.2	43.4	42.0	41.0	41.5	39.7	32.4	29.5	30.9	40.4	42.4	37.8	35.3	38.1	39.9	557.0
18 q	37.0	41.6	42.2	37.6																						

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

Table with columns for LERWICK (Z), Hour G.M.T., magnetic force values (gamma), Mean, and Sum 7000+. Includes a Grand Total of 233,878.

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

4 LERWICK NOVEMBER 1960

Table with columns for TERRESTRIAL MAGNETIC ELEMENTS (Horizontal force, Declination, Vertical force), 3-hr. range indices K, Sum of K indices, Magnetic character of day, C (0-2), and Temperature in magnet house 200+.

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 with columns for time (Hour G.M.T. 0-1 to 23-24), magnetic force values (gamma), Mean, and Sum (11,000+). Includes sub-headers for LERWICK (H) and 14,000y (0-14 C.G.S. unit) +. Includes a Grand Total of 407,390.

538 at 0-1h. January 1, 1961.

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

Table with columns for time (Hour G.M.T. 0-1 to 23-24), magnetic declination values (degrees), Mean, and Sum (800.0+). Includes sub-headers for LERWICK (D) and 9 degrees +. Includes a Grand Total of 30747.8.

41.5 at 0-1h. January 1, 1961.

3 LERWICK (Z)		47,000γ (0.47 C.G.S. unit) +																		DECEMBER 1960								
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 6000+	
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	γ
1 d	355	340	299	3	61	121	204	230	289	305	336	357	397	424	454	451	456	513	510	405	352	242	208	204	313	1516		
2 d	258	292	286	325	318	312	337	340	344	347	354	349	375	409	377	382	395	397	375	359	317	280	280	307	338	2115		
3	314	320	323	318	300	300	315	320	359	332	337	340	339	337	343	346	348	350	343	343	339	335	330	330	332	1961		
4 q	330	329	332	333	333	329	329	329	325	322	325	329	335	341	343	359	367	370	369	369	355	347	337	327	340	2164		
5	324	327	330	330	330	310	310	317	318	318	320	325	330	333	351	356	360	377	372	364	347	336	330	330	335	2045		
6	331	331	331	329	329	323	313	315	317	319	319	324	351	366	375	399	494	533	484	477	354	246	304	333	358	2597		
7	339	337	320	317	319	303	313	322	327	331	329	331	331	357	355	357	367	368	357	391	386	348	211	278	333	1994		
8	299	268	266	244	252	243	270	294	312	326	336	337	332	337	339	336	337	338	336	335	334	334	333	333	311	1471		
9	329	328	321	302	286	302	318	319	320	327	331	333	339	355	384	382	367	368	364	344	327	333	307	297	333	1983		
10	301	312	307	299	312	319	324	329	331	335	337	337	336	336	338	338	344	344	341	341	345	327	327	332	329	1892		
11 q	327	331	326	327	327	324	327	323	325	331	332	336	336	343	345	357	347	337	335	336	342	364	331	309	334	2018		
12	312	324	317	311	316	317	318	325	331	331	331	337	339	345	355	357	377	398	405	381	384	345	258	299	335	2043		
13	233	247	276	258	276	286	290	301	322	335	342	348	359	351	350	341	339	339	339	335	337	335	334	334	317	1607		
14 q	332	331	331	326	324	324	324	324	327	327	329	322	319	324	324	327	329	326	327	327	331	327	320	313	326	1815		
15 d	301	292	285	281	285	296	304	312	322	329	337	356	390	432	493	501	463	380	386	424	467	309	138	32	338	2115		
16 d	42	-12	41	55	75	89	180	215	264	302	310	319	351	341	337	343	350	346	346	345	345	356	366	359	253	65		
17 q	350	347	347	343	338	335	333	325	317	319	323	327	333	339	345	343	341	339	338	344	358	357	350	346	339	2137		
18	339	338	333	293	292	299	293	300	303	321	341	375	380	377	385	433	490	459	437	390	350	339	336	286	354	2489		
19	272	290	318	328	333	326	325	326	321	328	339	346	343	349	347	345	354	352	337	336	339	327	314	319	330	1914		
20	333	329	319	315	299	307	319	325	326	334	337	338	351	358	355	359	364	361	359	289	276	233	282	326	1827			
21	265	185	238	304	324	327	333	333	331	331	331	332	333	331	339	404	404	381	373	357	361	323	313	327	328	1880		
22	287	266	308	316	318	306	317	319	325	333	338	342	340	340	346	347	367	362	351	345	347	334	326	303	328	1883		
23	266	286	307	314	323	323	321	325	362	333	333	341	353	371	368	364	353	347	347	346	337	327	331	335	334	2013		
24	333	326	319	325	325	327	328	332	333	334	333	332	333	349	355	347	347	378	369	345	341	345	327	303	337	2086		
25 q	323	311	302	313	320	323	327	329	331	333	333	333	333	333	333	334	334	333	333	334	335	333	331	317	328	1861		
26	293	288	313	317	311	293	280	295	309	319	323	329	334	332	326	326	327	325	325	325	329	333	333	334	317	1619		
27 d	333	331	326	298	290	303	299	284	262	287	305	326	366	393	422	466	516	493	401	278	343	192	182	254	331	1950		
28	246	278	301	329	338	333	333	341	344	356	365	388	371	363	384	420	428	404	375	348	345	340	335	330	350	2395		
29	310	292	255	292	316	324	324	332	336	343	348	348	350	352	355	391	479	428	380	369	357	349	343	330	346	2303		
30	324	328	335	332	330	328	326	328	335	338	338	343	348	351	358	357	353	358	396	389	364	355	344	339	346	2297		
31	338	332	328	333	322	312	313	322	334	336	339	336	349	366	362	392	385	392	362	362	362	359	359	353	348	2348		
Mean	301	297	301	294	297	299	308	314	323	328	333	339	348	356	363	373	383	381	370	358	349	324	305	303	331			
Sum 9000+	339	224	340	110	222	264	547	731	1002	1162	1331	1516	1776	2035	2244	2560	2881	2796	2473	2104	1817	1053	471	405		Grand Total 246,403		

345 at 0-1h. January 1, 1961.

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

4 LERWICK		TERRESTRIAL MAGNETIC ELEMENTS												3-hr. range indices K		Sum of K indices	Magnetic character of day, C (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 +		Range							
		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					
1 d	16 15	1196	-214	03 19	1470	16 08	90.5	-45.1	03 21	135.6	18 08	548	-185	03 18	733	7, 8, 5, 4, 5, 7, 6, 6	48	2					81.4		
2 d	20 16	587	458	02 08	129	14 26	50.8	20.2	21 03	30.6	13 10	434	243	00 00	191	3, 3, 3, 3, 4, 3, 4, 4	27	0						81.8	
3	06 18	567	511	04 07	56	04 12	51.0	37.7	17 24	13.3	16 55	355	284	04 43	71	2, 3, 2, 1, 1, 2, 1, 1	13	0						81.3	
4 q	05 30	563	527	13 20	36	14 34	46.5	36.8	16 00	9.7	17 49	375	321	09 11	54	1, 0, 1, 1, 2, 2, 2, 2	11	0						81.2	
5	19 46	569	525	12 19	44	14 18	50.4	38.8	00 45	11.6	17 53	386	305	05 41	81	1, 2, 1, 2, 2, 2, 3, 1	14	0						81.0	
6	18 01	796	253	21 20	543	18 08	68.9	22.5	20 36	46.4	17 30	544	153	21 15	391	0, 2, 1, 2, 3, 5, 7, 6	26	1						81.1	
7	20 43	638	387	21 51	251	22 10	59.9	-3.9	20 58	63.8	20 49	427	118	22 05	309	2, 3, 2, 2, 3, 2, 5, 6	25	1						81.0	
8	07 48	580	457	04 24	123	06 45	51.3	31.4	00 01	19.9	15 39	345	228	05 09	117	4, 4, 3, 3, 2, 2, 0, 1	19	0						80.9	
9	19 34	577	514	09 34	63	10 29	49.1	23.8	18 58	25.3	14 48	419	281	04 40	138	2, 3, 2, 3, 4, 3, 4, 3	24	0						81.0	
10	20 59	587	527	12 09	60	03 25	46.6	20.5	20 55	26.1	20 38	349	286	00 00	63	3, 2, 1, 1, 1, 2, 4, 3	17	0						81.1	
11 q	05 29	567	532	13 30	35	13 10	47.8	24.6	21 26	23.2	21 39	371	298	23 38	73	0, 0, 1, 1, 2, 2, 3, 3	12	0						80.9	
12	00 30	596	443	23 59	153	16 42	55.5	11.5	22 14	44.0	18 21	444	216	23 42	228	3, 2, 1, 2, 2, 3, 4, 5	22	1						80.5	
13	23 26	561	446	00 00	115	12 34	49.4	25.9	00 00	23.5	12 32	364	221	00 00	143	4, 3, 3, 2, 2, 1, 1, 1	17	0						81.1	
14 q	12 57	584	553	20 24	31	12 54	49.4	38.9	20 03	10.5	20 26	333	308	23 50	25	0, 0, 1, 2, 2, 1, 1, 2	9	0						80.9	
15 d	15 40	988	-130	23 54	1118	17 19	90.8	-21.9	22 06	112.7	20 07	612	-103	23 38	715	3, 2, 2, 3, 6, 6, 7, 7	36	2						80.8	
16 d	12 23	576	0	00 54	576	07 00	54.9	-21.8	01 43	76.7	22 00	371	-98	01 44	469	6, 6, 5, 3, 3, 2, 1, 3	29	2						80.8	
17 q	18 17	561	533	06 19	28	08 20	45.1	36.5	20 50	8.6	21 04	365	315	08 30	50	1, 1, 2, 3, 2, 1, 2, 2	14	0</							

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 *X*, *-Y*, *I* and *F*

5 LERWICK

	Horizontal (<i>H</i>) force			Declination (<i>D</i>) (west)			Vertical (<i>Z</i>) force			North component (<i>X</i>) all days	West component (<i>-Y</i>) all days	Inclination (<i>I</i>) (north) all days	Total force (<i>F</i>) all days
	<i>a</i>	<i>q</i>	<i>d</i>	<i>a</i>	<i>q</i>	<i>d</i>	<i>a</i>	<i>q</i>	<i>d</i>				
	14,000γ +			9° +			47,000γ +						
January	537	544	525	45.9	46.6	44.7	300	295	308	14326	2466	72 55.0	49484
February	541	547	536	45.9	46.3	45.7	295	291	293	14331	2467	72 54.6	49480
March	542	546	523	45.4	45.8	43.7	294	294	286	14331	2464	72 54.5	49479
April	516	541	479	43.0	44.3	40.0	297	299	281	14308	2450	72 56.3	49475
May	544	551	535	43.7	43.3	42.0	309	306	317	14335	2457	72 54.7	49494
June	547	554	522	43.5	43.9	41.1	293	304	273	14338	2457	72 54.1	49480
July	548	556	527	43.3	43.3	42.5	304	300	314	14339	2457	72 54.3	49490
August	544	552	525	43.3	43.7	42.4	303	304	286	14335	2456	72 54.5	49488
September	529	543	490	41.4	42.3	38.8	304	310	298	14322	2445	72 55.6	49485
October	528	549	485	41.4	42.8	39.7	314	320	285	14320	2445	72 55.9	49494
November	529	548	445	40.4	41.5	33.7	325	324	331	14322	2441	72 56.0	49505
December	548	554	534	41.3	41.7	39.7	331	333	315	14340	2448	72 54.9	49516
Year	538	549	511	43.2	43.8	41.2	306	307	299	14329	2454	72 55.0	49489

DAILY RANGE AND MEAN MONTHLY VALUES

6 LERWICK

	Mean daily range						Mean daily range expressed as percentage of yearly mean					
	1960			Mean 1932-53			1960			Mean 1932-53		
	<i>H</i>	<i>D</i>	<i>Z</i>	<i>H</i>	<i>D</i>	<i>Z</i>	<i>H</i>	<i>D</i>	<i>Z</i>	<i>H</i>	<i>D</i>	<i>Z</i>
January	130	100	101	100	102	104	45	62	48	63	90	78
February	123	101	122	124	113	123	42	62	58	78	100	92
March	197	134	159	216	149	176	68	83	75	135	132	132
April	607	307	364	204	120	163	209	190	173	128	106	122
May	253	124	160	195	111	141	87	77	76	122	98	106
June	239	128	182	150	94	109	82	79	86	94	83	82
July	283	138	179	158	96	110	97	85	85	99	85	83
August	253	127	201	178	111	135	87	78	95	111	98	101
September	255	164	216	209	133	170	88	101	102	131	118	128
October	451	258	329	188	129	164	155	159	156	118	114	123
November	476	211	316	107	101	112	164	130	150	67	89	84
December	222	151	203	89	93	96	76	93	96	56	82	72
Winter	238	141	185	105	103	109	82	87	88	66	91	82
Equinox	377	216	267	204	134	168	130	133	127	128	119	126
Summer	257	129	181	170	103	123	88	80	86	106	91	92
Year	291	162	211	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, 1960			Percentage distribution					
	<i>H</i>	<i>D</i>	<i>Z</i>	1960		<i>D</i> 1932-53		<i>Z</i> 1932-53	
				%	%	%	%	%	%
0 - 9	0	0	0	0.0	0.0	0.0	0.0	0.0	0.3
10 - 19	1	0	9	0.3	1.4	0.0	0.4	2.5	6.8
20 - 29	2	2	24	0.6	4.9	0.6	2.3	6.6	10.5
30 - 39	14	9	24	3.8	6.3	2.5	4.0	6.6	9.3
40 - 49	22	13	21	6.0	7.5	3.6	7.3	5.7	7.2
50 - 59	23	27	16	6.3	9.3	7.4	10.0	4.4	6.2
60 - 69	27	26	17	7.4	9.1	7.1	12.3	4.6	5.1
70 - 79	19	37	9	5.2	8.6	10.1	10.5	2.5	4.4
80 - 89	24	35	16	6.6	7.4	9.6	9.2	4.4	3.9
90 - 99	20	27	12	5.5	5.8	7.4	7.0	3.3	3.4
100 - 109	13	27	8	3.6	4.3	7.4	5.6	2.2	3.3
110 - 119	14	17	6	3.8	3.5	4.7	4.0	1.7	2.9
120 - 129	14	11	16	3.8	2.9	3.0	3.6	4.4	2.6
130 - 139	9	13	6	2.5	2.2	3.6	3.1	1.7	2.6
140 - 149	11	18	12	3.0	2.4	4.9	2.9	3.3	2.3
150 - 159	5	14	9	1.4	1.6	3.8	1.8	2.5	2.0
160 - 169	9	10	9	2.5	1.5	2.7	1.9	2.5	1.8
170 - 179	4	6	5	1.1	1.1	1.7	1.4	1.4	1.4
180 - 189	2	9	6	0.6	1.1	2.5	1.5	1.7	1.4
190 - 199	7	4	7	1.9	1.0	1.1	1.1	1.9	1.5
200 +	126	61	134	34.4	18.3	16.7	10.1	36.6	21.1
Days omitted	0	0	0	-	-	-	-	-	-

ALL DAYS

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

8 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																								
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
Jan.	-0.5	-13.5	-12.2	-5.2	+3.1	+8.5	+11.0	+9.3	+4.5	-3.2	-7.9	-12.9	-11.6	-8.5	-2.6	-0.7	+8.1	+7.0	+7.1	+13.5	+9.2	+0.2	-4.5	+1.8
Feb.	-4.7	-0.7	-10.5	-3.8	+2.6	+5.3	+7.1	+7.2	+3.3	-4.1	-10.4	14.5	-14.4	-8.8	-3.2	+0.7	+2.7	+6.9	+11.2	+18.4	+9.3	+5.1	+1.2	-5.9
Mar.	-6.4	-11.8	-9.6	-5.0	-2.5	+1.6	+9.8	+5.9	-4.9	-17.1	-25.6	-28.8	-22.2	-16.5	-4.8	+9.3	+28.0	+32.4	+33.7	+30.4	+23.4	+7.9	-11.6	-15.6
Apr.	-98.1	-105.7	-68.1	-66.2	-39.9	-11.0	-5.0	-10.7	-8.7	-10.7	-13.9	-8.8	+20.0	+50.7	+87.1	+89.5	+91.0	+80.9	+78.4	+48.6	+13.9	-20.0	-31.0	62.3
May	-29.8	-28.2	-20.7	-8.7	-6.4	-7.0	-7.7	-12.5	-26.5	-35.5	-35.1	-32.2	-21.8	-5.9	+21.2	+51.8	+50.0	+45.0	+46.9	+36.4	+29.4	+10.3	-5.3	-7.7
June	-15.3	-18.2	-34.6	-33.0	-21.0	-17.2	-13.9	-17.5	-25.6	-33.4	-33.3	-30.2	-16.8	-4.3	+2.1	+19.1	+36.6	+58.5	+61.8	+60.3	+47.3	+27.3	+4.0	-2.7
July	-38.7	-39.5	-25.3	-17.4	-3.4	-2.4	-7.5	-15.4	-21.9	-32.3	-34.5	-30.4	-16.4	-5.5	+10.1	+32.9	+54.2	+60.3	+59.2	+51.7	+28.9	+17.6	-5.4	-18.9
Aug.	-17.7	-15.3	-10.7	-20.3	-7.6	-19.8	-11.6	-19.4	-32.1	-36.8	-35.2	-32.7	-18.8	-7.7	+8.9	+24.2	+47.6	+61.9	+58.7	+43.2	+26.5	+15.2	-2.8	+2.3
Sept.	-44.2	-24.0	-17.0	-0.6	+0.9	+8.8	+3.1	-8.4	-19.9	-25.8	-27.5	-21.3	-10.1	-1.8	+17.7	+21.2	+31.7	+41.0	+45.5	+33.0	+28.1	+5.6	-9.2	-26.8
Oct.	-45.4	-52.1	-36.3	-30.0	-11.8	-5.7	-0.2	-0.1	-2.2	-14.0	-20.9	-7.9	+7.0	+27.1	+53.3	+65.3	+83.0	+75.9	+42.4	+23.3	-21.1	-17.9	-53.9	-57.8
Nov.	-71.9	-64.6	-62.0	-39.7	-8.4	-2.8	-18.7	-25.9	+3.0	+11.0	+20.6	+4.8	+7.2	+19.4	+33.2	+62.6	+50.4	+52.8	+58.8	+34.6	+24.6	-13.8	-42.3	-32.9
Dec.	-18.6	-20.5	-19.1	-20.0	-1.3	+2.6	+5.6	+3.1	+2.3	-4.9	-7.5	-6.1	+0.1	+1.9	+13.4	+31.9	+35.9	+34.6	+30.1	+6.5	+0.7	-24.2	-25.6	-20.9
Year	-32.6	-32.8	-27.2	-20.8	-8.0	-3.3	-2.3	-7.0	-10.7	-17.2	-19.3	-18.4	-8.1	+3.3	+19.7	+34.0	+43.3	+46.4	+44.5	+33.3	+18.3	+1.1	-15.5	-20.6
Winter	-23.9	-24.8	-25.9	-17.2	-1.0	+3.4	+1.3	-1.6	+3.3	-0.3	-1.3	-7.2	-4.7	+1.0	+10.2	+23.6	+24.3	+25.3	+26.8	+18.3	+10.9	-8.2	-17.8	-14.5
Equinox	-48.5	-48.4	-32.7	-25.5	-14.4	-1.6	+1.9	-3.3	-8.9	-16.9	-22.0	-16.7	-1.3	+14.9	+38.3	+46.3	+58.4	+57.5	+50.0	+33.8	+11.1	-6.1	-26.4	-40.6
Summer	-25.4	-25.3	-22.8	-19.9	-9.6	-11.6	-10.2	-16.2	-26.5	-34.5	-34.5	-31.4	-18.5	-5.9	+10.6	+32.0	+47.1	+56.4	+56.7	+47.9	+33.0	+17.6	-2.4	-6.7
DECLINATION																								
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
Jan.	-2.30	-2.08	-2.86	-3.12	-1.75	-0.78	-0.38	-0.25	-0.21	+0.18	+0.98	+2.31	+3.74	+4.59	+3.72	+3.32	+2.91	+1.58	+1.60	+0.34	-1.66	-3.32	-3.33	-3.23
Feb.	-4.01	-2.81	-2.49	-2.30	-2.73	-2.10	-1.53	-1.54	-1.74	-1.37	+0.36	+3.05	+4.77	+5.68	+6.12	+5.39	+3.49	+2.36	+1.73	+0.74	-1.36	-2.66	-3.72	-3.33
Mar.	-2.90	-3.06	-4.82	-5.18	-3.85	-3.81	-2.99	-3.54	-3.46	-2.54	-0.48	+2.65	+6.75	+8.07	+8.07	+6.95	+5.97	+3.01	+2.60	+0.87	-1.35	-1.26	-2.77	-2.93
Apr.	-7.57	-7.70	-9.21	-9.18	-6.38	-4.29	-4.29	-5.13	-5.45	-2.92	+0.70	+3.71	+5.43	+7.55	+7.07	+7.91	+9.26	+10.69	+6.95	+4.84	+4.22	-0.42	-2.57	-3.22
May	-1.35	-2.77	-4.23	-4.55	-4.40	-5.37	-6.28	-5.89	-5.30	-3.30	-0.07	+3.62	+6.35	+7.01	+6.43	+5.24	+5.73	+3.73	+2.33	+1.92	+1.27	+0.92	-0.10	-0.94
June	-2.38	-4.07	-3.33	-5.63	-6.85	-8.22	-7.33	-7.69	-6.17	-4.02	-1.02	+2.31	+5.41	+6.93	+7.11	+7.10	+5.87	+5.18	+4.88	+3.87	+3.60	+2.49	+1.86	+0.10
July	-3.05	-3.97	-4.32	-4.80	-5.32	-5.41	-5.88	-5.83	-5.16	-3.33	-0.85	+2.37	+4.85	+6.61	+7.10	+6.08	+5.85	+4.84	+3.84	+3.24	+3.12	+1.68	+0.18	-1.84
Aug.	-0.66	-3.91	-3.93	-4.48	-4.37	-4.47	-5.67	-6.54	-5.25	-2.50	+0.68	+4.19	+6.86	+7.95	+7.12	+5.40	+3.62	+2.62	+2.01	+1.89	+1.12	+0.16	-1.31	-0.53
Sept.	-5.65	-6.86	-6.63	-5.55	-4.41	-2.81	-3.08	-2.62	-2.53	-1.13	+2.06	+5.17	+7.91	+8.56	+8.39	+5.64	+4.02	+3.24	+1.62	+1.32	+0.68	-0.50	-2.06	-4.78
Oct.	-7.24	-3.94	-4.76	-5.72	-3.19	-0.85	+1.19	+1.56	-0.36	+0.15	+2.19	+4.39	+6.70	+7.50	+5.85	+5.13	+4.80	+4.21	+0.41	+0.44	-2.11	-5.31	-4.21	-6.83
Nov.	-3.60	-3.52	-2.09	-0.91	-0.01	-0.34	+0.05	-2.27	-1.46	-1.23	-0.36	+3.00	+4.18	+5.42	+5.47	+3.40	+3.22	+1.71	-2.22	+1.24	-0.78	-1.24	-3.49	-4.17
Dec.	-3.27	-3.38	-2.69	-3.62	-1.30	+1.35	+1.62	+1.68	+2.03	+1.80	+2.35	+3.23	+4.32	+3.29	+3.77	+2.85	+3.49	+2.98	+1.08	-2.23	-4.29	-5.17	-5.26	-4.63
Year	-3.67	-4.01	-4.28	-4.59	-3.71	-3.09	-2.88	-3.17	-2.92	-1.68	+0.55	+3.33	+5.61	+6.60	+6.35	+5.37	+4.85	+3.85	+2.24	+1.54	+0.21	-1.22	-2.23	-3.03
Winter	-3.29	-2.95	-2.53	-2.49	-1.45	-0.47	-0.06	-0.59	-0.35	-0.15	+0.83	+2.90	+4.25	+4.75	+4.77	+3.74	+3.28	+2.16	+0.55	+0.02	-2.02	-3.10	-3.95	-3.84
Equinox	-5.84	-5.39	-6.35	-6.41	-4.46	-2.94	-2.29	-2.43	-2.95	-1.61	+1.12	+3.98	+6.70	+7.92	+7.35	+6.41	+6.01	+5.29	+2.89	+1.87	+0.36	-1.87	-2.90	-4.44
Summer	-1.86	-3.68	-3.95	-4.87	-5.23	-5.87	-6.29	-6.49	-5.47	-3.29	-0.31	+3.12	+5.87	+7.13	+6.94	+5.95	+5.27	+4.09	+3.27	+2.73	+2.28	+1.31	+0.16	-0.80
VERTICAL FORCE																								
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
Jan.	-9.1	-20.5	-22.6	-21.0	-15.6	-12.6	-10.1	-7.0	-4.0	-1.9	+0.1	+3.5	+7.3	+8.8	+13.9	+15.2	+19.7	+23.8	+19.0	+15.3	+5.7	+0.5	-3.4	-5.0
Feb.	-16.5	-14.6	-20.8	-24.6	-18.7	-17.0	-14.6	-11.5	-7.8	-5.8	-4.4	-2.0	-1.0	+2.1	+8.0	+17.1	+21.0	+23.2	+30.9	+28.7	+23.5	+13.2	+2.9	-11.3
Mar.	-19.6	-21.0	-23.6	-20.7	-19.5	-19.1	-12.6	-6.9	-3.6	-0.8	-0.6	-0.8	+2.4	+6.1	+10.1	+18.0	+22.5	+23.8	+38.1	+27.5	+21.0	+8.4	+0.7	-29.8
Apr.	-53.4	-51.0	-58.2	-45.4	-35.0	-34.8	-18.9	-8.6	+1.4	+9.1	+14.9	+18.4	+15.7	+22.4	+34.6	+28.2	+31.6	+27.9	+43.8	+42.7	+40.1	+16.8	-5.5	-36.8
May	-33.8	-35.2	-33.4	-21.0	-11.0	-12.1	-8.6	-6.2	-4.2	-5.0	-5.5	-6.3	-1.5	+10.5	+25.4	+26.6	+38.9	+43.4	+32.8	+23.9	+13.7	+3.4	-11.5	-23.3
June	-19.0	-31.3	-47.1	-60.8	-52.7	-36.8	-17.6	-5.6	+0.2	+2.5	+5.2	+9.0	+12.9	+19.9	+24.3	+24.6	+31.9	+36.2	+38.2	+37.3	+27.9	+14.8	-9.0	-5.0
July	-27.3	-37.8	-46.6	-42.8	-25.1	-18.3	-12.6	-6.0	-1.5	+0.6	+1.9	+4.8	+10.5	+15.8	+22.5	+29.7	+35.0	+37.1	+32.3	+26.0	+16.7	+6.6	-7.3	-14.2
Aug.	-38.2	-34.5	-44.7	-25.9	-33.5	-32.1	-23.6	-8.7	-0.7	+0.9	+1.6	+3.6	+5.4	+11.1	+20.0	+29.3	+34.9	+39.0	+42.6	+37.7	+28.1	+12.0	-8.8	-15.5
Sept.	-53.6	-55.3	-44.1	-32.0	-27.6	-17.7	-8.3	-2.4	+5.6	+8.8	+10.7	+11.3	+12.6	+20.2	+26.8	+37.0	+35.1	+39.2	+39.7	+31.1	+22.7	+5.8	-21.1	-44.5
Oct.	-46.5	-57.9	-65.8	-62.0	-42.9	-33.1	-23.4	-9.0	+2.4	+14.6	+24.0	+33.1	+36.9	+39.5	+54.0	+55.2	+56.1	+46.5	+36.6	+36.0	+9.6	-10.1	-36.5	-57.3
Nov.	-26.2	-43.3	-24.1	-30.4	-51.3	-40.2	-15.8	-0.3	+2.0	+11.0	+18.3	+22.4	+21.9	+28.7	+36.7	+40.9	+46.4	+41.0	+14.3	+3.3	+13.7	+0.2	-28.6	-40.6
Dec.	-33.1	-33.5	-29.8	-37.1	-33.6	-32.2	-23.1	-17.1	-8.5	-3.2	+2.2	+8.2	+16.5	+25.0	+31.6	+41.9	+52.2	+49.5	+39.0	+27.2	+17.8	-6.7	-25.6	-27.6
Year	-31.4	-36.3	-38.4	-35.3	-30.5	-25.5	-15.8	-7.4	-1.6	+2.6	+5.7	+8.8	+11.6	+17.5	+25.7	+30.3	+35.4	+35.9	+33.9	+28.1	+20.0	+5.4	-12.8	-25.9
Winter	-21.2	-28.0	-24.3	-28.3	-29.8	-25.5	-15.9	-9.0	-4.6	0.0	+4.1	+8.0	+11.2	+16.1	+22.5	+28.8	+34.8	+34.4	+25.8	+18.6	+15.2	+1.8	-13.7	-21.1
Equinox	-43.3	-46.3	-47.9	-40.0	-31.3	-26.2	-15.8	-6.7	+1.5	+7.9	+12.3	+15.5	+16.9	+22.1	+31.4	+34.6	+36.3	+34.3	+39.5	+34.3	+23.3	+5.2	-15.6	-42.1
Summer	-29.6	-34.7	-42.9	-37.6	-30.6	-24.8	-15.6	-6.6	-1.5	-0.3	+0.8	+2.8	+6.8	+14.3	+23.1	+27.5	+35.2	+38.9	+36.5	+31.2	+21.6	+9.2	-9.1	-14.5

"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 QUIET 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
HORIZONTAL FORCE																								
Jan.	+1.9	+1.5	+1.9	+3.5	+6.7	+9.0	+11.9	+10.7	+8.7	-0.5	-10.9	-17.9	-18.9	-14.3	-9.3	-4.3	-1.5	+1.8	+2.9	+2.9	+5.3	+4.7	+2.1	+2.1
Feb.	+2.0	+1.6	-0.6	+1.8	+3.2	+4.0	+7.5	+8.4	+2.4	-5.2	-11.6	-15.4	-15.6	-11.8	-8.4	-5.8	-1.8	+1.7	+5.2	+7.2	+7.4	+6.8	+9.2	+7.8
Mar.	+5.9	+2.5	+3.3	+4.5	+6.5	+5.9	+10.1	+3.5	-4.3	-17.1	-29.5	-29.9	-24.3	-17.3	-7.9	-0.3	+2.1	+7.7	+10.7	+12.9	+14.3	+12.9	+15.5	+12.3
Apr.	+14.5	+6.7	+2.2	-2.5	+2.9	+7.8	+3.7	-4.1	-16.6	-27.3	-30.1	-33.4	-29.9	-21.5	-13.2	-4.1	+4.9	+15.6	+21.3	+23.5	+21.0	+19.1	+19.5	+20.0
May	+6.3	+3.4	+0.7	+1.2	+3.6	+1.7	-5.4	-14.6	-24.9	-33.8	-38.9	-37.2	-28.7	-15.2	-2.5	+9.8	+19.0	+25.5	+30.8	+31.2	+24.9	+16.4	+12.7	+14.0
June	+8.2	+3.5	-0.4	+4.3	+7.1	+4.8	-6.3	-15.7	-27.2	-36.1	-41.8	-37.5	-28.0	-19.7	-7.8	+6.1	+16.3	+29.6	+35.7	+31.3	+26.6	+19.5	+14.2	+13.3
July	+0.7	+4.7	+4.7	+5.3	+6.9	+5.0	-1.3	-12.5	-23.8	-35.5	-40.7	-37.6	-29.5	-21.3	-11.0	+0.3	+11.1	+23.8	+30.5	+30.9	+30.4	+23.9	+19.5	+15.5
Aug.	+7.9	+4.7	+7.5	+7.9	+7.9	+2.8	-2.7	-13.9	-26.3	-41.1	-42.5	-34.9	-23.7	-11.7	+2.5	+10.5	+15.1	+19.4	+22.9	+25.3	+21.9	+15.5	+13.7	+11.3
Sept.	+10.4	+9.0	+8.6	+7.4	+6.8	+4.4	+2.0	-6.2	-19.0	-29.4	-35.4	-35.4	-28.4	-20.8	-9.0	-0.4	+7.0	+11.2	+18.8	+21.6	+21.6	+20.0	+17.8	+17.4
Oct.	+6.2	+5.7	+6.1	+6.4	+8.1	+5.6	+6.5	+4.3	-4.8	-19.1	-28.6	-32.1	-27.4	-19.9	-10.4	-5.1	+1.9	+8.0	+13.9	+13.5	+15.6	+15.5	+17.0	+13.1
Nov.	-2.3	-6.5	0.0	+0.3	+2.3	+9.5	+9.7	+7.3	+2.4	-7.9	-12.7	-15.3	-15.5	-11.3	-8.0	-1.3	+2.1	+5.3	+7.9	+9.3	+8.8	+7.5	+3.7	+4.7
Dec.	-1.8	-4.9	-1.2	+1.8	+3.8	+6.5	+4.0	+6.8	+3.8	+0.7	-2.8	-2.6	-1.6	-5.5	-2.6	-5.2	-0.2	+2.5	+2.6	+0.8	-1.2	-2.1	-2.2	+0.6
Year	+5.0	+2.7	+2.7	+3.5	+5.5	+5.6	+3.3	-2.2	-10.8	-21.0	-27.1	-27.4	-22.6	-15.9	-7.3	0.0	+6.3	+12.7	+16.9	+17.5	+16.4	+13.3	+11.9	+11.0
Winter	-0.1	-2.1	0.0	+1.9	+4.0	+7.3	+8.3	+8.3	+4.3	-3.2	-9.5	-12.8	-12.9	-10.7	-7.1	-4.1	-0.3	+2.8	+4.7	+5.1	+5.1	+4.2	+3.2	+3.8
Equinox	+9.3	+6.0	+5.1	+3.9	+6.1	+5.9	+5.6	-0.6	-11.2	-23.2	-30.9	-32.7	-27.5	-19.9	-10.1	-2.5	+4.0	+10.6	+16.2	+17.9	+18.1	+16.9	+17.5	+15.7
Summer	+5.8	+4.1	+3.1	+4.7	+6.4	+3.6	-3.9	-14.2	-25.5	-36.6	-41.0	-36.8	-27.5	-17.0	-4.7	+6.7	+15.4	+24.6	+30.0	+29.7	+25.9	+18.8	+15.0	+13.5
DECLINATION																								
Jan.	-1.74	-0.99	-0.88	-0.98	-0.62	-0.63	-0.70	-1.26	-1.66	-1.81	-1.42	+0.02	+2.10	+3.37	+3.14	+2.44	+2.20	+1.99	+1.28	+0.40	-0.24	-0.85	-1.54	-1.62
Feb.	-2.41	-2.51	-0.78	-0.57	-0.79	-0.93	-1.45	-1.63	-2.30	-2.67	-1.25	+1.45	+3.11	+4.05	+4.04	+2.87	+1.83	+1.37	+0.79	+0.19	-0.04	-0.51	-1.13	-0.73
Mar.	-0.48	-0.56	-0.76	-1.56	-1.62	-2.07	-2.60	-4.16	-5.10	-4.50	-2.30	+1.70	+5.34	+6.92	+6.08	+4.26	+2.36	+1.21	+0.44	+0.60	-0.02	-0.28	-2.12	-0.78
Apr.	-1.50	-1.53	-1.24	-1.81	-2.61	-4.16	-5.17	-6.71	-6.12	-3.87	-1.34	+2.25	+5.46	+6.65	+5.50	+4.03	+3.01	+1.98	+1.67	+1.57	+1.52	+1.15	+0.80	+0.47
May	+0.84	+0.52	+0.21	-2.20	-3.62	-5.58	-6.74	-7.16	-6.05	-3.98	-1.64	+1.84	+4.48	+5.68	+5.49	+4.92	+3.20	+1.90	+1.50	+1.76	+1.69	+0.66	+1.26	+1.44
June	+0.86	-0.06	-0.60	-3.12	-5.14	-7.07	-7.38	-7.66	-7.50	-5.14	-1.26	+2.70	+4.94	+5.04	+5.10	+4.90	+4.76	+3.49	+3.62	+2.84	+2.06	+1.30	+1.64	+1.68
July	-1.20	-0.72	-1.85	-4.12	-5.80	-7.16	-8.60	-7.64	-5.69	-3.52	-0.76	+2.66	+5.56	+6.90	+7.05	+5.76	+4.32	+3.00	+2.70	+2.48	+2.31	+2.10	+1.72	+0.50
Aug.	-0.02	-0.13	-1.82	-3.70	-4.66	-5.03	-6.98	-7.28	-6.80	-4.09	+0.42	+4.68	+6.96	+7.83	+6.24	+4.32	+2.46	+1.45	+1.42	+1.94	+1.24	+1.17	+0.58	-0.20
Sept.	-0.83	-1.29	-2.23	-2.45	-2.77	-3.35	-4.03	-5.05	-5.59	-4.33	-1.25	+2.47	+5.25	+5.79	+5.21	+3.85	+3.01	+2.45	+2.51	+2.37	+0.81	+0.25	-0.61	-0.19
Oct.	-1.35	-1.12	-1.51	-1.57	-1.91	-2.04	-2.49	-3.53	-4.55	-4.18	-1.69	+1.71	+4.13	+5.40	+5.09	+3.71	+2.41	+2.16	+2.19	+1.67	+0.73	-0.50	-2.13	-0.63
Nov.	-2.14	-0.92	+0.07	-1.18	-0.60	-1.04	+0.50	-1.12	-1.71	-1.76	+0.22	+1.78	+3.22	+3.46	+2.91	+1.72	+1.08	+0.96	+0.46	+0.22	-0.09	-1.34	-1.84	-1.86
Dec.	-1.80	-0.89	-0.42	-1.02	-0.66	-0.37	-0.02	+0.52	+0.58	+0.39	+0.82	+1.66	+2.92	+2.85	+2.70	+1.26	+0.84	+1.15	+0.62	-0.26	-2.20	-3.41	-2.50	-2.76
Year	-0.98	-0.85	-1.02	-2.02	-2.57	-3.29	-3.89	-4.39	-4.37	-3.29	-0.95	+2.08	+4.46	+5.33	+4.88	+3.67	+2.62	+1.93	+1.60	+1.31	+0.65	-0.02	-0.49	-0.39
Winter	-2.02	-1.33	-0.50	-0.94	-0.67	-0.74	-0.67	-0.87	-1.27	-1.46	-0.41	+1.23	+2.84	+3.43	+3.20	+2.07	+1.49	+1.37	+0.79	+0.14	-0.64	-1.53	-1.75	-1.74
Equinox	-1.04	-1.13	-1.43	-1.85	-2.23	-2.91	-3.57	-4.86	-5.34	-4.22	-1.65	+2.03	+5.05	+6.19	+5.47	+3.96	+2.70	+1.95	+1.70	+1.55	+0.76	+0.15	-1.01	-0.28
Summer	+0.12	-0.10	-1.12	-3.29	-4.81	-6.21	-7.43	-7.43	-6.51	-4.18	-0.81	+2.97	+5.49	+6.36	+5.97	+4.97	+3.69	+2.46	+2.31	+2.25	+1.83	+1.31	+1.30	+0.85
VERTICAL FORCE																								
Jan.	-2.5	-2.0	-2.1	+0.4	-0.7	-0.8	-2.7	-2.2	-2.9	-2.8	-1.3	-0.8	-2.3	-4.4	-2.1	+1.4	+4.3	+5.2	+6.3	+7.2	+4.5	+2.0	+0.7	-2.4
Feb.	+2.9	-0.2	-3.1	-5.3	-4.9	-5.0	-5.5	-4.5	-1.1	+1.2	+1.1	+2.5	-0.5	+0.2	+3.1	+4.1	+4.1	+2.4	+1.1	+1.5	+1.7	+2.8	+0.5	+0.9
Mar.	-7.7	-4.0	-1.7	-0.2	-0.1	-0.4	-1.1	+1.6	+4.5	+4.0	+3.5	-1.6	-3.7	-2.2	+1.3	+4.2	+4.7	+3.6	+3.1	+2.8	+2.7	+0.2	-4.9	-8.6
Apr.	-1.7	-3.6	-6.5	-5.6	-10.2	-5.3	-2.2	-0.6	+1.7	+3.8	+0.9	-2.0	-3.7	-2.4	-1.5	+0.8	+2.4	+4.3	+4.0	+5.2	+6.7	+6.6	+4.9	+4.0
May	+0.4	+0.4	+2.6	+3.4	+4.4	+2.2	+2.4	+1.4	-1.2	-5.6	-9.0	-10.6	-11.4	-9.2	-3.4	-1.0	+2.2	+5.4	+6.0	+7.8	+8.2	+5.6	+0.4	-1.4
June	+1.0	+1.3	-5.2	-5.7	-2.5	+2.0	+4.5	+5.9	+5.0	+0.7	-4.6	-11.5	-15.0	-13.1	-7.6	-0.1	+4.7	+6.2	+6.9	+8.9	+9.6	+7.1	+2.8	-1.3
July	-2.6	+5.0	+7.6	+8.8	+8.2	+6.1	+5.6	+5.4	+3.8	-8.8	-13.6	-17.0	-18.2	-13.4	-8.2	-2.0	+3.2	+6.1	+7.2	+6.6	+4.8	+3.6	+0.8	+1.0
Aug.	-2.5	-8.4	-11.4	-4.3	-0.6	+0.8	+0.7	+2.8	+0.6	-1.7	-8.0	-13.2	-13.9	-10.8	-2.0	+5.9	+11.4	+12.4	+12.3	+9.0	+10.0	+8.3	+4.2	0.0
Sept.	-3.8	-1.1	+0.1	+1.0	+1.1	+2.1	+1.2	+3.3	+5.7	+4.6	+1.1	-2.5	-5.6	-5.7	-4.1	-1.4	+0.1	+1.1	0.0	+0.7	+2.1	+1.8	+0.5	-2.3
Oct.	-4.5	-1.8	+1.1	+1.6	+2.0	+2.9	+1.8	+2.8	+5.1	+5.8	+3.3	-1.2	-4.1	-6.4	-4.9	-1.6	+0.4	-0.3	0.0	+2.4	+2.9	+1.2	-3.5	-5.0
Nov.	-7.3	-8.6	-11.4	-12.5	-5.6	-5.0	-4.1	-2.8	-0.2	+1.9	+1.2	+1.2	+2.1	+3.6	+6.8	+8.7	+8.2	+6.6	+5.7	+4.2	+3.6	+3.5	+2.4	-2.2
Dec.	-0.9	-3.5	-5.7	-4.9	-4.9	-6.2	-5.3	-7.3	-8.3	-6.9	-4.9	-3.9	-2.1	+2.7	+4.9	+10.7	+10.1	+7.8	+7.3	+8.9	+10.5	+12.3	+0.5	-10.9
Year	-2.4	-2.2	-3.0	-1.9	-1.1	-0.7	-0.4	+0.5	+1.1	-0.3	-2.5	-5.1	-6.5	-5.1	-1.5	+2.5	+4.7	+5.1	+5.0	+5.4	+5.6	+4.6	+0.8	-2.3
Winter	-1.9	-3.6	-5.6	-5.6	-4.0	-4.3	-4.4	-4.2	-3.1	-1.7	-1.0	-0.3	-0.7	+0.5	+3.2	+6.2	+6.7	+5.5	+5.1	+5.5	+5.1	+5.1	+1.0	-3.7
Equinox	-4.4	-2.6	-1.7	-0.8	-1.8	-0.2	-0.1	+1.8	+4.3	+4.5	+2.2	-1.8	-4.3	-4.2	-2.3	+0.5	+1.9	+2.2	+1.8	+2.8	+3.6	+2.5	-0.7	-3.0
Summer	-0.9	-0.4	-1.6	+0.5	+2.4	+2.4	+3.3	+3.9	+2.1	-3.9	-8.8	-13.1	-14.6	-11.6	-5.3	+0.7	+5.4	+7.5	+8.1	+8.1	+8.1	+6.1	+2.1	-0.4

"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 TERRESTRIAL MAGNETIC ELEMENTS

INTERNATIONAL DISTURBED 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																								
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
Jan.	+7.8	-75.4	-71.5	-35.4	+0.4	+10.6	+18.8	+16.0	+5.1	-1.8	-3.4	-8.4	-3.8	-0.8	+13.9	+10.0	+59.2	+34.0	+22.4	+50.8	+24.7	-28.0	-46.2	+1.0
Feb.	-19.3	-1.2	-33.1	-10.3	+4.0	+1.8	+1.5	-0.3	+2.5	+0.8	-5.1	-9.5	-7.9	+2.0	+1.3	+0.5	-1.5	+12.6	+11.9	+20.1	+13.7	+7.0	+6.3	+1.3
Mar.	-35.0	-61.5	-61.6	-40.0	-38.6	-30.3	+14.8	+10.6	-5.2	-9.9	-15.4	-29.6	-10.2	+1.7	+13.0	+34.2	+145.0	+135.9	+98.2	+106.2	+66.0	-8.1	-117.4	-162.8
Apr.	-321.6	-273.1	-281.0	-409.8	-245.8	-31.9	-41.8	-50.0	+4.4	+29.1	+32.0	+67.6	+200.4	+312.7	+432.4	+349.6	+303.4	+182.1	+154.6	+36.2	-79.2	-126.5	-110.4	-133.4
May	-158.5	-156.1	-84.0	-39.7	-24.7	-10.3	+6.7	+2.9	-15.8	-46.1	-31.3	-18.5	+0.9	+15.5	+114.4	+215.5	+145.5	+105.3	+95.9	+39.1	+29.0	-41.9	-83.3	-60.5
June	-73.6	-36.0	-104.8	-128.4	-61.0	-51.7	-9.8	-12.2	-3.6	-10.4	-8.0	-8.2	-5.0	+2.4	+21.0	+37.6	+83.8	+127.3	+111.8	+104.8	+79.8	+41.2	-35.2	-61.8
July	-132.2	-124.9	-84.8	-65.0	+5.6	+6.3	-15.4	-28.2	-37.2	-43.1	-24.6	-9.0	+40.8	+43.9	+76.8	+145.0	+189.9	+170.0	+117.2	+67.8	-15.5	-17.6	-113.8	-152.0
Aug.	-108.0	-92.6	-92.9	-127.8	-54.0	-120.0	-38.8	-34.6	-54.9	-36.8	-21.2	-15.4	+9.6	+31.2	+60.3	+114.8	+184.4	+210.2	+161.2	+83.4	+25.5	+0.2	-59.6	-24.2
Sept.	-192.0	-118.6	-69.4	-24.4	-25.0	-9.3	-4.4	-25.0	-41.4	-22.8	+5.2	+39.6	+52.4	+57.2	+110.2	+90.6	+86.4	+123.9	+127.0	+51.6	+31.6	-66.8	-73.2	-103.4
Oct.	-194.9	-181.3	-136.0	-163.7	-109.9	-70.9	-18.1	+0.9	+6.0	-19.3	-6.7	+53.9	+83.1	+156.9	+259.8	+293.9	+357.7	+233.9	+94.5	+59.1	-146.4	-76.3	-189.1	-287.1
Nov.	-385.7	-332.0	-341.7	-223.6	-69.4	-68.9	-179.4	-193.0	+28.3	+103.8	+183.3	+100.2	+94.9	+144.2	+193.3	+335.2	+211.0	+186.1	+177.4	+89.8	+83.3	+22.4	-65.5	-94.0
Dec.	-68.1	-59.8	-84.4	-113.3	-14.0	-20.8	-11.1	-14.4	+2.8	-9.9	-12.8	-6.2	+20.1	+32.6	+79.6	+191.7	+183.2	+158.6	+128.9	+7.0	-15.8	-116.3	-148.2	-109.4
Year	-140.1	-126.0	-120.4	-115.1	-52.6	-32.9	-23.1	-27.3	-9.1	-5.5	+7.7	+13.0	+39.6	+66.6	+114.7	+151.5	+162.3	+140.0	+108.4	+59.7	+8.1	-34.2	-86.3	-98.9
Winter	-116.3	-117.1	-132.7	-95.7	-19.5	-19.3	-42.5	-47.9	+9.7	+23.2	+40.5	+19.0	+25.8	+44.5	+72.0	+134.3	+113.0	+97.8	+85.1	+41.9	+26.5	-28.7	-63.4	-50.3
Equinox	-185.9	-158.6	-137.0	-159.5	-104.8	-35.6	-12.4	-15.9	-9.1	-5.7	+3.8	+32.9	+81.4	+132.1	+203.9	+192.1	+223.1	+169.0	+118.6	+63.3	-32.0	-69.4	-122.5	-171.7
Summer	-118.1	-102.4	-91.6	-90.2	-33.5	-43.9	-14.3	-18.0	-27.9	-34.1	-21.3	-12.8	+11.6	+23.3	+68.1	+128.2	+150.9	+153.2	+121.5	+73.8	+29.7	-4.6	-73.0	-74.6
DECLINATION																								
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
Jan.	-2.15	-4.86	-8.65	-6.94	-3.10	-0.49	+0.56	+1.96	+2.69	+2.90	+3.91	+6.30	+5.97	+6.38	+5.23	+5.76	+4.52	+1.67	+3.28	+0.62	-5.97	-8.68	-6.79	-4.12
Feb.	-6.52	-2.81	-3.82	-5.06	-5.72	-2.11	+0.68	+0.14	-1.16	+0.81	+3.26	+5.52	+5.84	+6.87	+6.72	+6.10	+2.10	+2.21	+1.32	+0.48	-4.26	-2.59	-3.78	-4.22
Mar.	-7.94	-9.92	-19.96	-17.84	-9.34	-7.15	-1.60	-0.84	+0.16	+1.58	+1.70	+1.74	+9.46	+11.44	+12.80	+12.70	+14.70	+5.03	+4.38	+6.78	+1.50	+0.72	-5.36	-4.74
Apr.	-29.97	-31.33	-26.03	-33.31	-21.15	-10.40	-7.05	-6.77	-7.77	-2.23	+4.81	+5.11	-0.53	+3.25	+4.07	+16.07	+30.87	+47.64	+28.23	+19.65	+19.81	+3.61	-4.23	-2.35
May	-5.09	-5.24	-13.86	-8.39	-6.32	-8.64	-8.45	-7.84	-7.62	-4.01	+1.80	+6.10	+9.39	+8.38	+5.60	+4.01	+2.76	+8.78	+4.83	+4.56	+3.84	+4.39	-0.42	+1.44
June	-4.26	-13.43	-3.06	-14.02	-8.48	-12.07	-9.92	-12.18	-5.70	-3.77	-0.12	+2.02	+6.64	+8.79	+9.60	+10.24	+10.14	+9.95	+9.48	+8.16	+7.46	+4.97	+1.78	-2.22
July	-12.81	-10.55	-8.44	-5.85	-4.05	-1.75	-3.25	-1.35	-1.90	-0.09	+1.07	+3.25	+2.63	+4.91	+5.56	+6.43	+11.41	+10.55	+8.13	+5.51	+6.58	+2.01	-4.57	-13.43
Aug.	+1.18	-13.30	-11.98	-13.10	-3.66	+0.63	-5.26	-7.12	-3.74	+1.28	+3.58	+6.26	+7.76	+7.74	+7.84	+6.02	+5.72	+8.09	+5.64	+4.34	+1.10	-0.90	-5.96	-1.96
Sept.	-11.39	-19.68	-14.49	-12.70	-8.38	+0.89	-0.02	+0.34	-0.95	+0.26	+5.67	+9.98	+12.53	+12.10	+13.01	+7.26	+5.90	+6.25	-2.40	+0.48	+0.03	+2.60	-0.19	-7.10
Oct.	-21.93	-10.80	-17.95	-18.28	-8.35	-2.84	+4.53	+8.30	+3.71	+6.12	+8.97	+9.28	+9.97	+10.14	+5.87	+6.44	+13.05	+21.84	+3.81	+3.92	+1.39	-10.26	-4.39	-22.54
Nov.	-7.70	-13.79	-13.15	-0.54	+2.37	-1.67	-1.78	-15.61	-4.99	-4.64	-8.29	+1.01	+4.14	+11.63	+11.37	+4.18	+11.13	+8.43	+2.00	+3.15	+4.65	+2.26	+2.07	+3.77
Dec.	-6.36	-7.84	-8.01	-14.64	-4.44	+4.74	+3.16	+4.96	+3.83	+2.60	+3.20	+5.64	+7.54	+5.38	+7.51	+8.68	+12.14	+10.66	+6.38	-0.62	-5.99	-7.20	-17.22	-14.10
Year	-9.58	-11.98	-12.45	-12.56	-6.72	-3.41	-2.37	-3.00	-1.95	+0.07	+2.46	+5.18	+6.78	+8.08	+7.93	+7.82	+11.20	+11.76	+6.26	+4.75	+2.51	-0.76	-4.09	-5.96
Winter	-5.68	-7.33	-8.41	-6.79	-2.72	+0.12	+0.65	-2.14	+0.09	+0.42	+0.52	+4.62	+5.87	+7.57	+7.71	+6.18	+7.47	+5.74	+3.25	+0.91	-2.89	-4.05	-6.43	-4.67
Equinox	-17.81	-17.93	-19.61	-20.53	-11.81	-4.87	-1.03	+0.26	-1.21	+1.43	+5.29	+6.53	+7.86	+9.23	+8.94	+10.62	+16.13	+20.19	+8.51	+7.71	+5.68	-0.83	-3.54	-9.18
Summer	-5.25	-10.68	-9.33	-10.34	-5.63	-5.46	-6.72	-7.12	-4.74	-1.65	+1.58	+4.41	+6.61	+7.45	+7.15	+6.67	+10.01	+9.34	+7.02	+5.64	+4.75	+2.62	-2.29	-4.04
VERTICAL FORCE																								
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
Jan.	-8.1	-61.7	-69.6	-61.5	-37.3	-19.5	-13.7	-12.9	-9.8	-3.3	-0.3	+8.1	+26.1	+26.9	+43.6	+39.1	+58.7	+79.1	+52.1	+41.9	-9.0	-19.7	-26.7	-22.5
Feb.	-32.8	-17.3	-49.3	-66.2	-46.1	-37.5	-28.0	-16.9	-11.3	-9.4	-6.5	+0.1	+4.2	+11.5	+25.7	+45.0	+46.1	+39.9	+59.0	+62.9	+35.9	+14.0	+3.7	-26.7
Mar.	-8.3	-28.6	-53.2	-61.3	-64.4	-70.2	-46.9	-14.2	-2.8	+6.9	+10.4	+21.6	+40.3	+41.6	+34.8	+40.9	+23.4	+17.0	+90.7	+28.4	+35.4	+31.5	+28.0	-101.0
Apr.	-54.7	-14.5	-39.5	-76.5	-92.1	-94.3	-38.5	-29.3	-8.5	+6.5	+26.9	+46.7	+29.9	+50.3	+87.1	-3.3	-29.7	-63.9	+25.3	+63.7	+110.3	+92.1	+10.1	-33.1
May	-70.7	-98.3	-100.9	-59.1	-36.3	-34.6	-14.1	-5.5	-3.9	+2.9	-0.7	-5.9	+6.1	+34.1	+82.7	+59.1	+81.3	+95.8	+63.1	+35.3	+30.5	+16.1	-25.3	-51.7
June	-38.5	-50.7	-94.5	-146.7	-118.5	-87.0	-33.7	-1.7	+5.1	+20.1	+27.7	+43.1	+48.7	+46.3	+48.5	+51.7	+59.3	+77.4	+79.3	+69.3	+47.9	+8.1	-52.9	-8.3
July	-6.3	-20.2	-104.9	-111.9	-65.5	-46.8	-33.7	-21.3	-10.1	-0.2	+11.3	+25.3	+53.9	+70.8	+81.7	+83.5	+75.5	+73.0	+63.9	+34.3	-3.9	-36.8	-67.9	-43.7
Aug.	-84.4	-69.4	-177.2	-77.6	-98.8	-119.0	-76.6	-11.2	+14.8	+16.6	+26.8	+34.2	+38.0	+49.2	+59.4	+88.6	+95.0	+86.6	+97.0	+88.6	+67.6	+20.8	-27.6	-41.4
Sept.	-87.4	-145.5	-127.2	-79.3	-83.9	-59.6	-31.5	-11.1	+12.2	+23.1	+34.4	+39.9	+53.2	+76.5	+90.2	+114.7	+81.1	+86.2	+95.3	+44.9	+37.0	-11.3	-76.8	-75.1
Oct.	-28.2	-47.4	-117.2	-159.8	-125.0	-104.4	-67.4	-20.4	+7.4	+41.4	+52.6	+87.2	+98.2	+110.6	+150.2	+115.8	+53.4	+11.8	+8.2	+53.0	+15.0	-8.2	-9.4	-117.4
Nov.	+7.2	-119.3	-22.0	-65.5	-202.1	-149.2	-22.3	+38.7	+16.4	+49.7	+79.0	+80.3	+59.2	+77.5	+105.0	+103.3	+116.1	+91.2	+51.5	-38.9	-12.0	-35.5	-91.0	-117.3
Dec.	-56.9	-66.0	-67.3	-122.3	-108.9	-90.4	-49.9	-38.5	-18.5	-0.6	+13.7	+26.7	+61.1	+85.2	+101.9	+113.9	+121.3	+111.2	+88.9	+47.5	+50.1	-38.8	-79.9	-83.5
Year	-39.1	-59.2	-85.2	-90.6	-89.9	-76.0	-38.0	-12.0	-0.7	+12.8	+22.9	+33.9	+43.2	+56.7	+75.9	+71.0	+65.1	+58.8	+64.5	+44.2	+33.7	+2.7	-34.6	-60.1
Winter	-22.7	-66.1	-52.1	-78.9	-98.6	-74.1	-28.5	-7.4	-5.8	+9.1	+21.5	+28.8	+37.7	+50.3	+69.1	+75.3	+85.5	+80.3	+62.9	+28.3	+16.3	-20.0	-48.5	-62.5
Equinox	-44.7	-51.7	-84.3	-94.2	-91.3	-82.1	-46.1	-18.7	+2.1	+19.5	+31.1	+48.9	+55.4	+69.7	+90.6	+67.0	+32.1	+12.8	+54.9	+47.5	+49.4	+26.0	-12.0	-81.7
Summer	-50.0	-59.7	-119.4	-98.8	-79.8	-71.9	-39.5	-9.9	+1.5	+9.9	+16.3	+24.2	+36.7	+50.1	+68.1	+70.7	+77.8	+83.2	+75.8	+56.9	+35.5	+2.1	-43.4	-36.3

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

RANGE OF MEAN DIURNAL INEQUALITIES FOR THE MONTHS SEASONS AND YEAR OF 1960

AVERAGE DEPARTURE

The ranges are derived from the diurnal inequalities printed in Tables 8-10

Arithmetical average of diurnal inequalities in Tables 8-10 taken regardless of sign

11 LERWICK

	All days			Quiet days			Disturbed days		
	H	D	Z	H	D	Z	H	D	Z
	γ	'	γ	γ	'	γ	γ	'	γ
Jan.	27.0	7.92	46.4	30.8	5.18	11.6	134.6	15.06	148.7
Feb.	32.9	10.13	55.5	24.8	6.72	9.6	53.2	13.39	129.1
Mar.	62.5	13.25	67.9	45.4	12.02	13.3	307.8	34.66	191.7
Apr.	196.7	19.90	102.0	56.9	13.36	16.9	842.2	80.95	204.6
May	87.3	13.29	78.6	70.1	12.84	19.6	374.0	26.62	196.7
June	96.4	15.33	99.0	77.5	12.76	24.6	255.7	24.26	226.0
July	99.8	12.98	83.7	71.6	15.65	27.0	341.9	24.84	195.4
Aug.	98.7	14.49	87.3	67.8	15.11	26.3	338.0	21.59	274.2
Sept.	89.7	15.42	95.0	57.0	11.38	11.4	319.0	32.69	260.2
Oct.	140.8	14.74	121.9	49.1	9.95	12.2	644.8	44.38	310.0
Nov.	134.5	9.64	97.7	25.2	5.60	21.2	720.9	27.24	318.2
Dec.	61.5	9.58	89.3	12.3	6.33	23.2	339.9	29.36	243.6
Year	79.2	11.19	74.3	44.9	9.72	12.1	302.4	24.32	166.5
Winter	52.7	8.72	64.6	21.2	5.45	12.3	267.0	16.12	184.1
Equinox	106.9	14.33	87.4	50.8	11.53	8.9	409.0	40.72	184.8
Summer	91.2	13.62	81.8	71.0	13.79	22.7	271.3	20.69	202.6

12 LERWICK

	All days			Quiet days			Disturbed days		
	H	D	Z	H	D	Z	H	D	Z
	γ	'	γ	γ	'	γ	γ	'	γ
Jan.	6.9	2.11	11.1	6.5	1.41	2.7	22.9	4.31	31.3
Feb.	6.7	2.81	14.2	6.3	1.64	2.5	7.3	3.50	29.0
Mar.	15.2	3.75	14.9	10.9	2.41	3.0	52.1	7.06	37.6
Apr.	46.7	5.69	29.0	15.2	3.01	3.8	175.4	15.26	46.9
May	24.3	3.71	18.2	16.8	3.10	4.4	64.2	6.32	42.3
June	26.4	4.73	23.7	18.4	3.74	5.5	50.8	7.44	52.7
July	26.2	4.15	20.0	17.8	3.92	7.0	71.9	5.67	47.8
Aug.	24.0	3.63	22.2	16.4	3.39	6.5	73.4	5.60	65.3
Sept.	19.7	4.05	25.5	15.3	2.83	2.2	64.6	6.44	65.7
Oct.	31.4	3.71	37.0	12.3	2.43	2.8	133.3	9.78	67.1
Nov.	31.9	2.31	25.1	6.7	1.34	5.0	162.8	6.01	72.9
Dec.	14.1	2.99	25.9	2.8	1.36	6.3	67.0	7.20	68.5
Year	20.3	3.37	21.7	11.2	2.38	2.9	72.6	6.23	48.8
Winter	12.4	2.27	18.4	5.2	1.38	3.7	61.1	4.26	47.1
Equinox	26.0	4.16	26.3	13.2	2.63	2.3	101.7	9.03	50.6
Summer	25.1	4.01	20.7	17.3	3.49	5.1	63.4	6.10	50.7

NON-CYCLIC CHANGE

13 LERWICK

	All days			Quiet days			Disturbed days		
	H	D	Z	H	D	Z	H	D	Z
	γ	'	γ	γ	'	γ	γ	'	γ
Jan.	+0.5	+0.01	-0.1	-0.3	+0.12	-2.1	-11.8	-1.30	-13.7
Feb.	-0.3	-0.10	+1.2	+3.7	+0.83	-4.0	+28.4	+1.87	+10.9
Mar.	+24.5	-1.58	-5.8	+5.3	+0.05	-5.8	-125.0	+1.62	-50.6
Apr.	+20.6	+1.46	+7.0	+3.2	+0.89	+4.0	+131.8	+13.22	+44.8
May	+4.8	+0.14	-2.3	+6.4	+0.41	-5.3	+59.2	+3.47	+11.0
June	+0.3	+0.04	+0.2	+3.1	+0.08	-4.3	+3.0	-0.53	+4.6
July	-1.3	+0.05	-0.2	+12.7	+1.27	+5.7	-53.3	-1.12	-42.7
Aug.	+0.6	-0.10	+0.7	+3.4	-0.80	-6.9	-14.4	-1.07	-27.0
Sept.	-0.4	-0.09	-1.2	+4.7	+0.26	+1.6	-39.3	+0.41	+34.4
Oct.	-0.4	+0.02	+0.4	+5.5	-0.07	+2.7	-46.7	-1.96	-35.4
Nov.	+1.1	+0.11	+2.7	+8.9	+0.87	-1.7	+75.7	+4.66	-38.6
Dec.	-0.3	-0.10	-0.2	+4.3	-0.06	-13.9	-19.3	-2.30	-16.0
Year	+4.1	-0.01	+0.2	+5.1	+1.07	-2.5	+5.6	+1.41	-9.9
Winter	+0.3	-0.02	+0.9	+4.1	+0.44	-5.4	+18.3	+0.73	-14.3
Equinox	+11.1	-0.05	+0.1	+4.7	+2.53	+0.6	-0.1	+3.32	-1.7
Summer	+1.1	+0.03	-0.4	+6.4	+0.24	-2.7	-1.4	+0.19	-13.5

AVERAGE RANGE OF DIURNAL INEQUALITY 1932-53 WITH 1960 AS PERCENTAGE OF THIS

14 LERWICK

		All days			International quiet days			International disturbed days		
		H	D	Z	H	D	Z	H	D	Z
		γ	'	γ	γ	'	γ	γ	'	γ
Year	1932-53	49.4	9.36	53.3	37.4	8.68	10.3	131.6	14.22	131.1
	1960(%)	160	120	139	120	112	117	230	171	127
Winter	1932-53	24.4	7.87	41.1	15.1	4.65	7.7	85.0	13.84	116.6
	1960(%)	216	111	157	140	117	160	314	116	158
Equinox	1932-53	59.2	10.94	68.8	42.3	9.54	12.9	193.4	18.89	168.9
	1960(%)	181	131	127	120	121	69	211	216	109
Summer	1932-53	72.6	12.72	53.0	57.5	12.77	17.0	156.9	15.61	134.0
	1960(%)	126	107	154	123	108	134	173	133	151

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

RATIO OF RANGE OF INEQUALITY AT LERWICK TO THAT AT ESKDALEMUIR 1960

15 LERWICK

Type of day	Element	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
q	H	0.97	1.03	1.09	1.16	1.34	1.12	1.17	1.16	1.04	1.02	0.91	0.69
	d	2.90	1.99	2.47	1.88	4.01	2.22	2.83	2.34	3.32	2.45	2.09	5.21
q	D	0.93	1.00	1.04	1.04	1.05	1.02	1.09	1.08	1.02	0.98	0.92	1.24
	d	1.23	1.27	1.46	1.59	1.61	1.31	1.83	1.30	1.77	1.78	1.73	1.58
q	Z	0.93	0.81	0.86	0.70	0.73	0.81	0.87	0.87	0.55	0.87	2.26	1.73
	d	2.30	2.60	1.15	0.70	1.34	1.84	1.30	1.36	1.65	1.10	1.14	1.33

16 LERWICK

(a) Disturbances without sudden commencement

Serial Number	From		To		Range (γ)			Notes		
	Date	Hour	Date	Hour	H	D	Z			
1a	Jan.	20	01	Jan.	23	01	492	310	511	
2a	Mar.	15	12	Mar.	18	18	700	504	580	
3a	Mar.	29	08	Apr.	2	19	3176	1789	1709	
4a	Apr.	23	03	Apr.	27	02	1067	805	643	
5a	May	5	16	May	8	01	799	264	423	
6a	July	28	22	Aug.	3	03	619	272	507	
7a	Sept.	2	09	Sept.	6	13	1577	988	997	
8a	Sept.	29	08	Oct.	3	24	478	235	449	
9a	Oct.	4	11	Oct.	10	09	2827	1694	1483	
10a	Nov.	3	20	Nov.	5	16	651	264	411	
11a	Nov.	21	04	Nov.	22	24	625	216	513	
12a	Dec.	14	24	Dec.	16	24	1118	477	715	
13a	Dec.	27	02	Dec.	30	24	943	346	477	

(b) Disturbances with a sudden commencement (ssc)

Serial Number	Date	Time of sudden commencement	End of disturbance		With initial reversed stroke			Magnitude of main stroke			Range of following disturbance (γ)				
			Date	Hour	H	D	Z	H	D	Z	H	D	Z		
1b	Jan.	10	07.19	Jan.	12	04	Yes	Yes	Yes	γ	γ	γ	893	288	325
2b	Jan.	13	19.00	Jan.	15	24	Yes	No	Yes	+45	+37	+20	716	266	343
3b	Apr.	2	23.13	See 4b	-	-	No	Yes	Yes	+12	+14	+6	804	596	474
4b	Apr.	5	12.59	Apr.	5	24	Yes	Yes	Yes	+24	-16	-7			
5b	Apr.	7	15.11	-	-	-	Yes	Yes	Yes	+47	-12	+19		Small	
6b	Apr.	10	01.28	Apr.	18	20	No	Yes	-	+56	-14	+10	1327	369	627
7b	Apr.	27	20.00	See 8b	-	-	Yes	No	Yes	+9	-10	0	2220	1018	1042
8b	Apr.	30	01.32	May	2	24	No	No	No	+60	-16	-20			
9b	May	8	04.22	May	9	19	Yes	Yes	Yes	+26	-24	-27	1389	412	482
10b	May	11	04.35	May	12	24	No	Yes	Yes	-86	-142	-56		Small	
11b	May	16	13.51	May	17	20	Yes	Yes	Yes	+35	-65	-14		Small	
12b	May	28	20.19	May	30	22	No	No	Yes	+69	-41	+23	830	324	575
13b	June	27	01.45	See 14b	-	-	No	No	-	+78	-32	-33	1129	506	1631
14b	June	29	19.39	July	2	22	No	No	Yes	+22	-36	0			
15b	July	14	04.48	-	-	-	No	Yes	-	+36	-24	-10	1984	759	754
16b	July	14	17.01	July	18	23	Yes	Yes	Yes	+8	-17	0			
17b	Aug.	16	14.09	Aug.	19	01	Yes	Yes	Yes	+158	-37	-20	2001	721	1134
18b	Aug.	19	16.16	-	-	-	Yes	Yes	Yes	+173	-59	+39		Small	
19b	Aug.	29	00.22	Aug.	31	23	Yes	Yes	Yes	+73	-22	-23	706	311	670
20b	Oct.	24	14.51	Nov.	1	03	Yes	Yes	Yes	+59	-30	-26	1773	715	733
21b	Nov.	12	13.49	See 22b	-	-	Yes	Yes	-	+40	-32	+8	3835	1184	2059
22b	Nov.	15	13.04	Nov.	17	04	Yes	Yes	No	+81	-85	0			
23b	Nov.	30	19.10	Dec.	3	06	No	No	Yes	+110	+53	+31	1410	574	733
24b	Dec.	7	18.04	Dec.	8	18	Yes	No	Yes	+37	-8	-17	251	270	309

(c) Disturbances due to solar flare (sfe)

Serial Number	Date	Commencement	Max.	End	Movement (γ)			K	K'	Notes	
					H	D	Z				
1c	Apr.	6	11.32	11.38	11.45	-9	0	+3	2	2	S.E.A.
2c	Aug.	5	14.29	14.32	14.55	+11	-3	-3	2	2	From I.A.G.A. list
3c	Aug.	14	13.10	13.11	13.20	-11	-10	+7	2	2	S.E.A.

S.E.A. = Sudden enhancement of atmospherics

18 BRITISH ISLES

Date	Φ_1	Forms	Time	Φ_2	Date	Φ_1	Forms	Time	Φ_2	Date	Φ_1	Forms	Time	Φ_2
JANUARY					APRIL (contd.)					SEPTEMBER (contd.)				
4-5	57	G,S,R	0055-0700	65	29-30	54	HA,RA	2150-0300	57	29-30	59	HA,RA,RB	2045-0350	66
5-6	57	HA,R	1800-0455	66	30-1	51	RA	2100-0300	54	30-1	59	HA,RA,RB	2050-0450	65
10-11	60	G	2345											
13-14	60	G	2345											
14-15	56	HA,RA	1730-0255	62	MAY					OCTOBER				
16-17	61	G	2200-2325		1-2	61	G	2240-0040		1-2	61	HA,F	1940-0350	66
18-19	62	G	2240		6-7	55	HA,RA	2130-0140	59	4-5	58	HA,RB	1925-2230	64
19-20	62	G,RA	2350		7-8	58	R	2130-2310		6-7	51	HA,RA,PA,F	1905-0430	56
20-21	61	G	2300-0055		10-11	60	G	2215		7-8	58	RA	1950-0050	
21-22	59	G	2245-0545		16-17	58	HA	2130-2330		8-9	63	R	0100-0400	
22-23	62	G	2300-0045		23-24	59	G	2300-0200		9-10	59	R	1925-2245	
23-24	60	G	2155-0255		24-25	60	G	2335		10-11	60	G	2050-2340	
24-25	60	G	2040-2315		26-27	60	G	2335		11-12	63	G	1940	
FEBRUARY					28-29	52	HA,RA	2340-0240	62	12-13	59	R	2050-0001	
2-3	56	HA,RA,RB	1755-2350	63	29-30	59	G	2345		13-14	56	HA,RA	2050-2315	
3-4	60	G,RB	2140-0550		JUNE					15-16	57	HA,RA	1825-2220	65
4-5	61	HA,RA	1910-2240	68	4-5	60	R	2300		17-18	63	R	2140-0340	
5-6	58	HB,RA,RB,F	2120-0600	64	26-27	59	G	0150		18-19	60	RA,RB,F	1842-2340	63
13-14	57	G	1800-2030		27-28	59	G	0001-0200		19-20	62	G	2000-0350	
14-15	58	HA,HB,RB	1820-0150	63	29-30	55	G,R	0050		20-21	61	G	2240-0140	
15-16	61	RA	2250-2259							24-25	58	HA,RA	1800-0050	
16-17	60	R,F	2015-0200	64	JULY					25-26	56	HA,RA	1950-0450	62
17-18	58	HA,RA	1900-0540	64	15-16	51	RA,RB,F	2250-0200	57	26-27	59	RA	2250	66
18-19	61	G	2200-0100		17-18	60	RB	0030-0130		27-28	56	R	2145-2310 and 0450	
19-20	57	HA,RA,RB	2000-0500	64	26-27	60	G	2320-2330		28-29	62	R	0050-0150	
20-21	60	G,R	2140-0400		28-29	58	G	0115		29-30	59	R	1825-2152	63
26-27	59	G	0300		29-30	56	RA	2210-2350		30-31	62	R	0005	
27-28	60	HA,RA	2050-0300	66	30-31	58	G	2315		31-1	61	R	2010-2017	
28-29	61	G	2300-0200		AUGUST					NOVEMBER				
29-1	58	G	0001-0400		11-12	63	R	0025-0115		3-4	59	R	2000-0050	65
MARCH					14-15	58	G	2050-2345		6-7	61	G	1940	
1-2	59	HA	1905-0600	67	16-17	53	RA,RB	2100-0305	61	8-9	62	RA	2350	
2-3	59	R	1900-0500		17-18	54	RA	2115-0150		11-12	58	G	1800-2400	
3-4	60	RA	2300-0200	67	19-20	57	R	2115-0250		12-13	50	HA,RA,F	1733-0500	53
4-5	62	G	0500		20-21	59	HA	2110-0150	65	13-14	52	HA,RA,F	1730-0550	60
15-16	Auroral activity completely obscured by overcast skies over whole region. Active aurora seen in geomagnetic latitude 52° in Western Atlantic.				21-22	63	R	0230		14-15	54	HA,R	1940-0540	
16-17	61	R	2240-2400		24-25	63	G	2150		15-16	51	HA,RA,F	1750-0600	57
25-26	63	G	2200 and 0100		26-27	63	G	0050		16-17	60	HA,R	1750-0350	
28-29	59	HA,RA,F	1930-0400	64	27-28	61	G	2150-2250		17-18	60	HA	1840-0440	
29-30	60	R	2130-0253	65	28-29	59	G	2143-0150		21-22	60	G	1815-2350	
30-31	58	HA,RA,S,F	2040-0400	62	29-30	54	R	2100-2330		22-23	61	G	2040-2240	
31-1	52	HA,RA,S,F	2015-0400	57	SEPTEMBER					23-24	60	G	1925-0340	
APRIL					2-3	60	HB,RB	2200-0300	64	24-25	60	G,R	2140-0540	
1-2	52	HA,RA,P	2025-0300	56	4-5	56	RA,RB	2015-0250	60	25-26	60	HA,R,F	1950-2250	63
2-3	55	G,R	0050-0500		6-7	59	RA,RB,F	2100-0040	63	27-28	59	G	1715-1905 and 2010-2400 2150	55
6-7	60	HA,HB,R,F	2055-0200	62	7-8	60	R	2130	64	30-1	61	R	2150	
7-8	59	G	2045-2100		10-11	63	RB	2225-2230		DECEMBER				
10-11	57	RA,RB,S	2000-0300	62	11-12	59	HA,RA	2050-0040		1-2	58	G	1720-1724	
11-12	58	R	2035-2210		12-13	61	RA	0250-0330	67	6-7	56	G	1750-2400	
13-14	60	HB	2300-0100	64	13-14	60	HA,RA	0010-0125		7-8	57	HA,RA	1940-0140	62
14-15	57	G	2100-2300		17-18	61	HA	2350-0050		9-10	61	G	1740-0340	
15-16	60	G	2040-0249		20-21	60	HB,RB	2245-0030		10-11	61	G	1750-1950	
16-17	58	HA,RA	2140-0159	64	21-22	60	G	2150-0250		11-12	60	G	1950-0050	
17-18	58	G	2005-2350		22-23	59	HA	2000-0400		12-13	60	G	1700-0550	
23-24	53	HA,RA,RB	2120-0345	56	23-24	56	G	1915-0350		14-15	62	G	0150	
24-25	54	RA,RB	2130-0300	61	24-25	60	R	2000-2150		15-16	57	R	1648-0340	
25-26	56	HA,R,PS	2145-0200	65	25-26	60	HB	2000 and 0220-0330		18-19	58	HA,R,S	1650-0350	
26-27	59	HA,RA,RB	2050-0300		26-27	59	HA,RA	2040-0340		19-20	60	G	2050-0300	
27-28	52	HA,PA,HB,RA,RB,F	2030-0300	59						20-21	58	C,HA	1750-0500	
28-29	55	HA,RA,RB,F	2150-0300	60						21-22	58	G,HA,RA	1715-0518	

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, Φ_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 Φ_2 is given the lowest geomagnetic latitude of overhead occurrence in the longitudes considered. In the absence of direct visual observations, Φ_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

19 LERWICK

Factor 1.06 (metre⁻¹)

MARCH 1960

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	-180*	30*	180*	0*	240*	-90*	150	120*	120*	150	120*	150*	120*	180	150	150	180*	180	120*	90*	120*	30*	150*	60*	160 (6)
2	90*	-90*	30*	30	30	30*	30*	30	60	60	30	0	30	30	60	60	90	60	90	120	150	150	150	60*	68 (19)
3	150	120*	Z--	Z±*	-120*	90	90	120	150	90	90	0	90	60*	90*	90	90	90	90	90	90	90	60	60	95 (18)
4	110	85	85	85	55	55	55	55	85	85	110	85	110	110	110	140	140	140	140	140	140	110	110*	85*	101 (22)
5	110*	140*	170	195	250	280	310	280	335	335	310	390	475	505	505	420	310	280	335	390	250	195	225	170	314 (22)
6	170	170	140	140	140	140	170	170	140	140	110	140	140	140	140	170	170	170	170	170	195	140	140	170	152 (24)
7	170	170	140	140	140	140	140	140	140	140	140	170	170	170	170	195	140	140	140	170	170	140	140	140	153 (23)
8	140	140	140	110	140	140	140	140	110	110	110*	140*	140	170*	170*	170*	170	170	170*	170*	170	140	140	140	140 (17)
9	150	150	120*	90*	90*	90*	150*	150*	150	Z++	Z++	Z++	Z++	Z++	Z++	180*	180*	240*	240*	150*	150*	180	180*	210*	157 (4)
10	170	140*	195	140*	195*	195*	195*	195*	170*	140*	170*	170	170	170	110	140	140	140	110*	140*	140	140	110	110	147 (13)
11	90*	60*	120*	90*	90*	180*	330*	390*	300*	210*	180*	210*	150*	150*	150	150	120	180	210	300	300	210*	180	240	203 (9)
12	150	120	150	150	150	120	150	150	180	120	120*	90*	150*	150*	180*	180	150*	150*	150	120	150	90*	120*	90	142 (15)
13	60*	90*	90	60	60	60	30	60	120	150	210	210	240	240	240	180	120	150*	210	120	150*	180	210*	210*	143 (18)
14	120*	150	150*	150*	150*	210*	120*	120*	30*	90	150	120	120*	120*	150	150*	180	240	180	180*	270*	270	210*	390*	170 (9)
15	Z++	210*	180*	150	180*	180*	210	180	240	150	180	210	240	240	270	210	180	270	240	210	240	180*	180*	150	210 (17)
16	140*	140*	140*	170*	140*	170*	140*	140*	140*	140*	170*	140*	170	170*	170*	195*	195*	195*	170*	170*	170*	140*	140*	110	140 (2)
17	140*	110	110	140*	140*	110*	140*	140	110	140*	170*	140*	140*	170*	170*	170*	195*	195*	195*	195*	225	225	195	195	167 (9)
18	195	140	195	170	170	170	140	140	140	140	170	140	140	170	195	195	170	170	195	195	195	195	170	170	172 (24)
19	140	140	140	170	140	140	170	170	140	140	140	140	170	140	140	170	195	195	225	225	195	195	195	170	166 (24)
20	150	150	150	150	180	150	150*	150*	150*	120*	90*	120*	120*	150*	150*	90*	150*	60*	150*	180*	90*	30*	150*	90*	155 (6)
21	120*	90*	90*	120*	150*	120*	90*	-120*	60*	-60*	0*	-60*	30*	90*	120*	150*	180*	150*	150	150*	120*	210*	210*	270	210 (2)
22	270	270	270	240	240	270	270	210	150	150	150	180*	180*	60*	-90*	120*	240	300	300	300	150*	90*	120*	270	244 (16)
23	270	270	270	150	Z++	300*	270*	270*	Z++	330	330	300	360	360	360	360	390	390	450	450	480	420	360	360	351 (19)
24	365	365	365	335	310	280	250	280	280	280	280	280	280	225	280	280	250	365	335	390	450	335	310	250	309 (24)
25	195	195	195	195	195	195	195	225	225	225	225	195	195	195	225	225	225	250	250	250	225	250	250	225	218 (24)
26	140	140	140	110	110	110	110	85	110	110	110	110	140	140	140	170	195	110	110	110	85	85	85	85	118 (24)
27	60	60	0	0*	30*	30*	30*	60	90	60	120	120	120	120*	120	60	120	120	120	120*	90*	90	60*	60*	84 (16)
28	30*	30*	30*	60*	60*	60	90	90	90	90	90	30*	120*	150	120	120	120	120	60*	-150*	120*	120*	120*	90	97 (12)
29	90	90*	90	90	60	60	90*	120	90	120	120	90	30*	90	90	120	120	150	180	150	150	150	150	120	114 (21)
30	90	90	120	120*	120*	120	150	150*	150*	120	120	120	120	120	90*	90*	60	120	120	90	90*	120*	120	90*	112 (15)
31	90*	60	60*	60*	90*	90*	90	90	120	120	120	90	120	150	120	120	90	90	60	60	90	120	90	60	98 (19)
Mean	167 (19)	150 (20)	158 (20)	148 (18)	148 (16)	143 (18)	147 (20)	140 (21)	148 (22)	150 (23)	157 (20)	159 (20)	183 (20)	187 (19)	183 (21)	176 (22)	166 (24)	186 (24)	192 (24)	201 (20)	203 (20)	181 (21)	171 (18)	165 (23)	168 (493)
																							Mean for 0a days		177 (13)

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

19 LERWICK

Factor 1.07 (metre⁻¹)

APRIL 1960

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	30	30	30	55*	85	110	110	140	110	110	110	85	85	85	85	55	55	85	85	110	85	55	55	79 (23)
2	90	120	120	120	90	90	90	90	120	120	150	150	150	150	120	60	90	90	120	60*	-60*	-360*	-150*	113 (20)	
3	-180*	210*	270	300	270	270	270	330	390	330	240	210	210	180	150	120	150	180	210	210	210	210	180	180	229 (22)
4	150	150	150	150	150	150	150	120	150	120	120	90	120*	-30*	60*	-30*	360*	150*	90*	120*	150*	180*	150*	120*	137 (12)
5	150*	150*	150	-90*	120*	30*	60*	120*	-240*	150*	180*	210	300	360	360	390	360	390	360	420	420	300	210*	30*	335 (12)
6	-60*	Z--	Z--	Z--	Z--	330	300	180	270	270	300	330	390	420	330	180	-90*	30*	180	120	120	90	90	90	235 (17)
7	85	85	85	85	85	85	110	195	110	110	110	110	140	140	110	110	140	110	310	390	280	250*	110*	142 (22)	
8	-60*	-120*	180*	180	180	270	300	300	300	360	420	480	300*	210*	90*	150*	240	300	300	210*	240*	120	180*	180*	288 (13)
9	150*	150*	120*	180*	240*	90*	-30*	-270*	-120*	-240*	(-360*)	(-480*)	Z--	Z--	-300*	120*	120	150	150	150	120	150	120	139 (8)	
10	90	120	120	120	90	120	120	120	150	150	150	240	270	240	120	120	90	120	120	Z++	-540*	Z--	Z--	-360*	145 (19)
11	-960*	-780*	-840*	-600*	-870*	-360*	-180*	0*	-30*	0*	30	30*	30*	-90*	-150*	-180*	-330*	-270*	-750*	-90*	90	90	90	90	78 (5)
12	90	90	90	60	60	90	120	150	120	150	150	-60*	-450*	-90*	120*	150	150	150	180	180	120*	Z--	Z--	125 (17)	
13	Z--	60*	-360*	Z--	-30*	90*	120	150	150	120	90	120*	Z±	120*	60 (60)	90	90	90	60*	120*	120*	60*	60*	102 (10)	
14	Z±	60*	90*	90*	60*	180*	120	120	120	120*	120	120	120	150	270*	210*	90*	330*	180*	150*	300*	60*	90*	60*	124 (7)
15	150*	Z++	Z++	180*	150*	Z++	120*	Z++	240*	120	120*	120*	120	120	120	150*	120*	120*	120	120	120	150	150	120	126 (10)
16	120*	120	120	120	120*	120	120	120*	120*	120	(120*)	(180)	(150)	(150)	(150)	(150)	(150)	150	120	120	120	150	180	180	141 (19)
17	140	140	140	140	140	140	140	140	170	170	140	110	110	140	140	170	195	225	225	225	195	195	195	195	163 (24)
18	250	195	170	140	140	110*	140	110	110	110	110	110	85	85	110	170	195	170	170	195	225	195	170	170	153 (23)
19	140	140	110	110	85	85	85	85	110	110	110	140	140	110	85	110	170	170	225	250	140	170	195	133 (24)	
20	180	180	180	60*	60*	-510*	120*	120*	Z±	360*	Z++	-180*	180*	270*	150*	150	150	150	150	150	120*	120*	150*	120*	161 (8)
21	120	90*	120*	90*	90	90*	-30*	30*	90*	60*	60*	60*	60*	90*	90*	90*	90*	150*	150*	120*	120*	120	120	120	113 (4)
22	85	85	85*	110*	110	110	110	110	110	110	110	110	110	110*	110	110	140	140	140	110	85*	110*	110	110	112 (19

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

MAY 1960

19 LERWICK		Factor 1.05 (metre ⁻¹)																				Mean					
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	60*	95	125	125*	95*	95*	95*	125*	340*	125	95	60	95	60*	60*	95*	95*	125*	95*	95*	125	125	95*	95	104 (9)		
2	250*	95*	60	95	60	95	95	125	95	-60*	-215*	-370*	-30*	95	60	60*	60*	60*	95	30	-215*	-250*	-620*	-1055*	82 (11)		
3	-495*	-435*	-185*	30*	30*	280*	Z+*	60*	0*	215*	155	155	185	340	310	310	215	155*	95*	125*	95*	125*	125	155	217 (9)		
4	125	125	95	155	250	185	185	525	620	370	340	310	185	560	465	185	310	495*	525*	435*	340*	405*	310*	340*	294 (17)		
5	310*	215*	30*	-185*	-60*	250*	280*	125	185	185	250	215	155	185	155	215	215	185*	155*	155*	155*	280	310	155	202 (13)		
6	175	115	145	145	115	115	260	205	290	375	495	520	520	665	665	665	755	640	580	495	640	465	465	580	420 (24)		
7	580	405	230	230	350	435	290	260	290	405	405	520	405	495	665	810	870	610	665	520	520	435	260	350	459 (24)		
8	465	525	435	495	280	370	650	Z+	775	650	Z+	Z+	775	590	495	525	680	405	405	340	95	125	185	185	450 (21)		
9	230	230	260	320	290	290	320	405	465	(405)	375	320	320	260	260	290	230	230	260	405	725	840	610	495	368 (24)		
10	465	405	350	350	290	260	260	175	175	205	260	205	230	320	320	320	290	175	145	145	115	85	85	60	237 (24)		
11	30	60	60	60	60	60	85	115	175	175	175	230	205	205	205	260	320	145	145	145	145	115	115	85	141 (24)		
12	60	30	85	85	85	85	115	145	175	175	205	230	260	290	290	230	205	175	115	115	115	115	85	85	149 (24)		
13	60	60	60	60	60	465	620	435	340	(280)	(215)	(215)	(250)	(250)	(250)	(250)	(280)	280	310	310	340	310	310	280	262 (24)		
14	280	280	280	250	215	280	250	250	310	250	280*	60*	-95*	185*	250	340	250	215	435	620	650	Z+	Z+	Z+	318 (17)		
15	Z+	Z+	960	590	370	435	Z+*	525	Z+*	370	370	310	310	370	340	310	340	185	185	215	185	95	95	125	334 (20)		
16	155	-95	125	185	125	250	215	185	155	155	125	155	185	215	185	250	185	125	95	125	280	405	650	650	212 (24)		
17	520	495	290	375	495	465	320	115	85	85	85	85	175	85	85	145	85	60	60	30	30	30	30	30	179 (24)		
18	30	30	60	60	30	30	60	60	95	95	60	60	60	60	95	95	125	95	95	60	95	60	30	30	65 (24)		
19	30	30	60	60	60	60	60	60	60	60	30	0	0	-30	0	0	0	0*	30*	30*	30*	60*	60	60	37 (18)		
20	30	60	60*	60*	60	30	60	95	95	60	60*	60*	60*	30*	60*	60*	95*	60*	95*	60	60	60	60	60	63 (14)		
21	30*	30*	0*	30	60	60	95	60*	30*	60	95*	95*	95	95	125	125	155	155	125	95*	95*	95*	95	60	95 (14)		
22	60	30	30	60	60	60	30	60	60	60	95	60	95	155	215	250	310	250	340	215	125	125	125	95*	125 (23)		
23	60*	125*	435	-280*	-125*	0*	155*	125	125	125	125	185*	60*	-250*	155*	155*	185*	-60*	-405*	-435*	-280*	Z-*	Z-*	-560*	187 (5)		
24	-185*	-95*	-95*	-60*	-310*	-155*	-125*	125*	95*	(95*)	125*	215*	155	155	155*	125*	125	125	125	125	155	125	125	95	131 (10)		
25	95*	30*	95	155	155	125	60	95	125	125	125	125	125	185	215	215	215	215	185	185	215	155	155	125	153 (22)		
26	125	125	125	155	125	125	155	185	280	310	310	310	370	340	155*	185	155*	95*	250	465	435	370	250*	250*	250 (19)		
27	Z+*	680*	280*	620	930	745	310*	30*	185*	(95)	(30)	30*	60	95	95	95	95	60	-95*	-30*	95*	60	95	60	224 (14)		
28	60*	60*	60	60	60	60	60	60	-30*	60*	60*	60	60	95	95	95	95	95	95	30	0	30	30	30	62 (19)		
29	60	60	60	60	60	60	115	115	115	115	85	85	85	85	85	85	85	85	85	60	30	60	85	60	77 (24)		
30	60	60	60	60	60	60	95	60	95	95	95	60	60	60	60	90	60	60	30	30	30*	0*	30	30	62 (22)		
31	30	30	30	30	30	60	60	60	60	60	60	60	60	30	60	60	60	85	85	85	85	60	60	85	56 (24)		
Mean	179	150	183	190	182	201	186	183	219	203	191	189	203	231	233	246	256	203	213	210	235	197	172	161	201 (585)		
	(20)	(21)	(25)	(25)	(26)	(26)	(24)	(25)	(24)	(27)	(24)	(23)	(27)	(27)	(26)	(26)	(26)	(22)	(23)	(23)	(22)	(23)	(22)	(25)			
																										Mean for 0a days [232 (9)]	

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

JUNE 1960

19 LERWICK		Factor 1.02 (metre ⁻¹)																				Mean				
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	115	115	115	85	60*	115*	175	175	205	230	145	115	85	175	465	640	320	115	115	115	115	115	115	115	180 (22)	
2	85	115	60	30	60	175	145	175	175	175	230	350	495	290	375	350	290	30	30	85	60*	60*	60*	85*	186 (20)	
3	105	80	80	80	80	80	80	130	180	180	180	180	180	235	210	310	260	285	285	675	805	600	570	440	258 (24)	
4	340	310	310	(260)	(260)	(260)	(210)	(130)	(80)	105	105	105	130	105	105	105	130	130	130	180	210	210	210	176 (24)		
5	155	80	80	105	130	130	130	130	180	180	235	235	180	260	285	260	235	260	210	235	210	285	235	155	191 (24)	
6	260	350	230	(175)	(175)	(175)	(205)	(260)	230	(230)	205	205	205	115	85	85	30	0*	30	145	205	85	30*	60*	175 (21)	
7	175*	Z+*	-30*	-60*	-320*	-205*	Z-*	Z+*	260	230	145*	115*	115*	115	30	60	30	60*	85*	115	60	115	-115*	-30*	113 (9)	
8	60	60	60	60	60	85	85	85	145	145	145*	85*	175*	85*	30*	-405*	-260*	-290*	-350*	115*	145*	205	205	290	119 (13)	
9	375	405	405	320	350	350	Z+*	Z+*	-115*	-60*	Z+*	60*	Z+*	Z+*	350	175	465	85	175	115	60*	145*	60	115	267 (14)	
10	115	-30*	-30*	290*	260*	375*	350	-30*	230	405	320	Z+	Z+	145	85	0*	30*	0	30	-30	-30*	60*	30*	60*	165 (10)	
11	30*	0*	30	30	30	60	85	85	85	85	85	60	115	115	85	115	Z-*	Z-*	85*	Z-*	60*	60*	175*	60*	76 (14)	
12	115	60*	60	85	145	290*	145*	145	115	115	145	205	230	175	175	145	145*	Z+*	Z-*	Z-*	0*	115*	115*	143 (13)		
13	85*	60*	85*	85	115	145	115	145	115	85	85*	115	115*	Z+*	85*	Z+*	Z+*	Z-*	175*	145	85*	85*	85*	85*	116 (9)	
14	60*	60*	30*	60*	60*	85	115	85	85	(85)	(85)	(85)	85	115	145	115	145	115	85	85	85	85	60	60	95 (20)	
15	-30	30*	30*	30*	60	85	115	115	115	115	115	85	85	60	85	115	115	145	175	205	260	290	375	495	147 (21)	
16	465*	350*	Z-*	320*	290*	175*	85*	290*	Z+	85	115	145	115	175	115*	145*	85*	405*	85*	85*	115	115*	115*	85*	125 (6)	
17	115*	115	115	85*	85*	145*	205	175	145	85	145	145*	115	375*	85*	60*	-60*	-30	30	30	30	30	0	30	81 (15)	
18	30	30	30*	30*	60*	60*	30*	0*	60*	60*	85*	60	85*	85*	0*	30*	-85*	0*	0*	-30*	0*	30*	60	115	59 (6)	
19	115*	115*	85	115	85	85	115*	30*	0*	-145*	-30*	30*	-60*	115*	85*	60*	60*	60*	60*	60*	30*	30*	30*	30*	93 (4)	
20	30*	30*	30*	30*	30*	30*	30*	0*	(30*)	(30*)	(60*)	85*	60*	0*	30*	30	30*	0*	30*	30*	30*	85*	60*	30*	30 (1)	
21	30*	30*	60*	60*	30*	30*	30	0	115	(85)	(85)	85	115	85	145	145	145	145	145	115	115	85	85	85	101 (18)	
22	50	50	80	105	155	235	180	180	155	(130)	(130)	155	13													

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

57

Factor 1.01 (metre⁻¹)

19 LERWICK

JULY 1960

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	30*	-85*	55*	85	85	85	85	85	55	55	55	55	55	55	55	55*	55	55	85	85	85	85	85	85	70 (20)	
2	70	70	70	50*	50*	70*	70*	70*	50	50	95	95	70	95	120	120	120	120	120	70	70	70	70	70	88 (19)	
3	70	50	50	50	50	50	50	50	70	70	70	70	70	70	95	95	70	95	95	120	120	120	95	77 (24)		
4	95	95	95	95	70	95	95	95	95	70	70	70	70	70	70	70	70	70	95	70	95	95	70	70	81 (24)	
5	85	55	55	55	85	85	85	110	140	110	110	110	110	110	140	140	140	170	170	30	0*	-110*	55*	0*	106 (20)	
6	140	110	110	85	110	110	55*	55*	110*	85	55	85	170	140	110	170	170	170	170	170	170	110	85	55	123 (21)	
7	55	30	30	55	30	55	55	110	140	140	170	140	110	170	55	55	55*	55*	110*	-30*	110*	110*	110*	86 (17)		
8	85	85*	55*	110*	110	170	170*	365*	195	85	55	55	30	55*	30*	85	85	110	110	110	110	85	85	85	97 (17)	
9	85	85	85	85	85	55	85	85	85*	85*	110	110	55*	30	85	85	140	170	140	85	55	55	85	110	91 (21)	
10	70	95	95	70*	50	50	70	95	95	95	70	95	70	95	95	95	70	120	120	95	70	95	95	170	90 (23)	
11	70	95	95	190	145	120	70	145	145	145	120	70	70	70	70	95	70	70	120	70	70	50	70	70	96 (24)	
12	55	55	55	55	55	55	55	55	55*	55*	85*	85*	85	85*	85*	110	85	85	110	170	195	195	170	170	101 (18)	
13	120	95	95	95	120*	170*	215	265	410	265	310	865	530	890	790	670	505	Z+	240	145*	265*	290*	335	310*	394 (17)	
14	335*	475	670	755	225*	505*	700	390	250	195	280	225	310	225	280	250	170	55*	55	55	85	195	110	110	289 (20)	
15	140	140	110	30	0	140	450	225	225	225	195	250	450	225	310	390	365	280	390	310	250	195	225	420	247 (24)	
16	385	530	505	385	310	410	430	550	670	290	310	310	410	215	120	145	145	335	335	240	170	120	145	265	322 (24)	
17	195	225	195	140	170	110	85	85	85	55*	30*	55*	-30*	0*	195	-30*	170*	390*	420*	310*	-110*	-140*	170*	280*	149 (10)	
18	335*	365	365	225*	195*	110	170	140	85*	85	85	225	310	280	170*	-110*	0*	30*	30	30*	55*	30*	30*	30*	197 (11)	
19	30*	0*	30*	30*	0*	30*	195	365	140	85	55*	55	55*	55*	30*	55*	85	85*	85*	110	85*	110*	85	55	131 (9)	
20	85	85	55	55	55*	85*	140	110*	30*	170	170	110	110	170	140	170	170	140	110	110	110	85	85	85	118 (20)	
21	85	85	85	110	195	280	280	250	195	140	140	140	85	170	170	250	225	140	140	85	110	85	55*	30*	157 (22)	
22	Z+	85	85	85	85	85	110	110	85	85	110	110	110	110	85	110	85	110	140	110	85	85	85	110	98 (23)	
23	110	55	0	55	85	140	140	140	170	140	110	85	85	85	55	85	85	85	85	85	85	110	140	140	98 (24)	
24	110	110	110	140	140	140	250	280	225	195	195*	420*	85*	55*	85*	250*	195*	-55*	85*	55*	85	85	85	85	146 (14)	
25	85	85	110	110	110	110	280*	450*	250	(195)	170	195	140	110	110	110	140	85	140	140	140	85	30	55	123 (22)	
26	30	30	30	55	55	55*	85*	225*	170*	225	170	140	170	140	140	170	140	140	170	170	170	140	110	85	124 (20)	
27	70	70	50	70	95	120	95	95	95	190	170	95*	120*	120	145	145	145	170	170	190	240	190	145	120	132 (22)	
28	110	170	195	225	250	335	250	280	335	(280)	280	280	250	250	110	55	110	140	85	110	110*	-*	-*	205 (20)		
29	-*	-*	-*	-*	-*	-*	-*	335	310	335	280	365	365	785	810	615	505	475	Z*	505	505	505	310	170*	467 (15)	
30	170	120	70	70	265*	240	310	290	265	310	335	310	290	310	430	Z+	Z+	Z+	Z+	Z+	Z+	265	170	120	240 (17)	
31	145	145	170	145	120*	120*	50	95*	95*	(120)	120	215	120	170	310	310	215	240	265	240	265	290	240	120	192 (19)	
Mean	109	134	135	131	108	137	181	191	194	158	155	180	180	197	200	178	161	155	144	140	145	142	129	120	155 (601)	
	(25)	(27)	(27)	(25)	(22)	(23)	(25)	(25)	(24)	(24)	(28)	(27)	(27)	(26)	(26)	(26)	(26)	(26)	(26)	(23)	(25)	(24)	(23)	(23)	(23)	
	Mean for 0a days																							[146 (9)]		

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

Factor 1.01 (metre⁻¹)

19 LERWICK

AUGUST 1960

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	80	50	80	50	50	50	235	285	365	Z+	Z+	Z+	285	210	105	105*	-50*	-105*	0*	-25*	-80*	130*	235*	155	154 (13)
2	155*	180*	105*	50*	25*	50	50	80	130	(105)	105	80	80	105	80	105	155	180	155	235	105	50	80	50	104 (19)
3	80	80	80	105	80	210	235	365	210	130	130	180	130	105	80	25	50	-50	25	50	155	50	25	25	106 (24)
4	25*	105*	25	0	50	50	50	235*	50*	-*	50*	-210*	-310*	Z+	310*	-130	Z+	130	80*	260*	155*	155*	130	50	39 (9)
5	-25	-25	0	50	50*	80*	210*	180	80	50	50	50	25	25	25	50*	50*	25*	25*	0	25	25*	0*	34 (15)	
6	25*	25*	0*	25*	50*	50	50	50	155	130	80	25	50	25	50	80	105	105	105	25	25	0	0*	0*	65 (17)
7	25*	50*	50	50	50	80	155	105	105	105	105	130	105	105	80	80*	80*	130	105	105	25	25*	25*	90 (18)	
8	0*	-25*	-25*	-25	0	25	105	80	80	130	130	130	105	155	105	105	80	50	50	105*	80*	130	50	50	81 (19)
9	50	80	80	50	80	180	180	180	25*	80	80	50	80	105	130	155	155	155	80	-	-	-*	-*	108 (18)	
10	-	-	-	-	-	-*	-*	-*	-*	50*	25*	0	25	-25	50	-50*	0	25	25	0	0	25	25	25	15 (12)
11	50*	25*	50*	50	50*	50*	80	80	105*	(105)	(105)*	(105)*	(105)*	105*	105	80*	130*	130	25*	105*	80	105*	105	105	93 (9)
12	105	80	80	80	50	50	80	105	105*	105	105*	105	105	105	-105*	-25*	50*	0*	50	50	50	50	25	25	72 (18)
13	50	50	25	50	50	50	50	80	80	105	80	80	80	80	105	130	80	80	50*	50*	105	105	80*	50	75 (21)
14	80	80	50	50	50	50	105	105	105	130	130	105	130	155	130	Z+	Z+	Z+	130	130	155	105	Z-	Z-	104 (19)
15	155	180	105	80	80	105	180	180	105	80	80	80	80	80	50*	-25*	50*	80*	155*	155*	105	105	80	50	106 (18)
16	80	80	80	80	80	130	105	105	105	105	105	105	105	105	105	80	105	80	80	80	80	80	80	50	91 (24)
17	50	50	50	80	-25*	80*	105*	130	80	50	50	80	50*	80*	80	50*	50*	50*	50*	25	50	50	50	50	62 (15)
18	50	50	50	50	50	80	80	80	80	80	80	50	25	50	80	80	50	80	50	50*	25*	0*	25*	50*	60 (19)
19	50	50	50*	25*	25*	50	50	80	50	80	50*	105	80*	80*	50*	25*	25*	80	50	25	50	50	50	50	57 (13)
20	50	50	50	50*	25*	50*	80	105	105*	80*	470*	80	50	50	50	80	80	50	80	50*	50	50	50	50	62 (17)
21	50	50	50	50	50	50	80	50	50	50	50	50	50	50	80	80	80	130	130	130	130	105	155	105	77 (24)
22	285	260*	260*	130*	180	155*	0*	-25*	50*	80*	50	180	310	105*	-155*	-285*	105	Z+	675	390	235	155	80	80	227 (12)
23	50	80	105	180	130	105*	80*	25*	105*	105	155	130	130	130	130	155	155	180	180	210	180	130	105	130	137 (20)
24	110	110	110	90	65	45	65	90	110																

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

19 LERWICK		Factor 0.99 (metre ⁻¹)											SEPTEMBER 1960													
	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	110*	80*	80	55*	80	80	80	110	80*	80	80*	80*	80	110	110	110	135	80*	110*	25*	80	80	80*	95 (14)		
2	65	65*	65*	65	65*	65*	90	65*	65	65	65	65	45	45	45	90	90	65	90	130	45	45	45	66 (19)		
3	45	45	45	45	45	45	90	130	110	110	110	110	110	130	130	110	130	90	90	65	65	65	65	85 (24)		
4	80	80	80	80	80	55*	Z*	0*	160	55*	110*	80	110*	80*	80*	Z*	55*	80*	80	80	80*	110	80	80*	90 (11)	
5	80	80	80	80*	80*	80*	55*	25*	80*	(55)*	80*	80	80	110*	110*	135*	135*	110	135	135	110	135	110	101 (12)		
6	90	65	65	65	65	65	130	200	200	110	80*	80*	90	110	130	110	110	90	90	90	90	110	155	110	103 (24)	
7	80	25*	25	25	55	55	80	110	135	135	80	110	80	80	110	135	110	55	80	110	135	190	190	135	100 (23)	
8	190	160	80	135	160	190	135*	160*	160*	110*	135	215	380	350	405	Z*	Z*	Z*	Z*	Z*	Z*	245	245	55*	222 (13)	
9	-215*	-215*	160*	80	55	55	110	80	80*	80*	80	80	110	135	135	135	135	135	160	190	160	135	135	135	116 (20)	
10	65	90	65	65	65	45	45	45	90*	110*	175	155	240	200	220	265	440	Z*	Z*	Z*	Z*	Z*	Z*	130	144 (16)	
11	110	80*	80*	25*	80*	160	215*	215*	160*	160	80*	110*	110*	25*	55*	80	80*	55*	25*	0*	-80*	-55*	-55*	80*	127 (4)	
12	110	160	160	160	160	160	215	160	135	110	110	110	110	135	135	135	160	190	215	160	80*	55*	80*	153 (21)		
13	110*	80	80	80	80	80	135*	80*	160*	135	135	160	135	135	135	135	135	135	135	160	215	160	160	130 (20)		
14	325	245	430	405	350	190*	-25*	325*	215*	-*	110*	190*	295*	215*	245*	190*	190*	190*	160*	245*	Z*	190*	190*	215*	351 (5)	
15	215*	245	245	160	160	215	135*	-55*	110*	80*	160	110*	Z**	25*	-25*	190*	110*	110*	190	190	350	Z*	270	245	221 (11)	
16	215	135	80	80	110*	110*	160	135	160*	55*	110*	135	110*	135*	80	135	135	80	80	135	190	215	215	138 (17)		
17	215	215	215	215	160	135	190	135	190	160	160	135	160	190	190	160	160	190	80	80*	80*	110*	80*	171 (20)		
18	90*	155*	130*	130*	130*	130	175	175	285	285	350	440	550	460	395	485	550	530	375	330	265	310	220	200	343 (19)	
19	205	90	45	205	275	160	205	185	160	255	160	115	90	160	25	25	25	25	25	25	25	25	25	25	107 (24)	
20	25	25	25	25	25	25	25	25	25	-45	-90	-45	-25	0	0	25	45	45	45	70	70	45	45	45	18 (24)	
21	25	25	25	25	25	25	45	45*	70*	70*	45*	45*	45*	45	0	0*	25	25	25	25	45	45	45*	70*	29 (15)	
22	25*	70*	25*	25*	90*	70*	160	115	115	140*	185	230	160*	25*	160*	205*	185	70	70	70	70	45	45	25	107 (13)	
23	20	20	45	45	20	20	65	110	130	90	90	90	110	90	90	90	110	155	130	155*	155*	155*	90*	81 (20)		
24	70*	90*	70*	70*	0*	-90*	25*	0*	-45*	-45*	0*	-25*	-45*	-45*	-25*	-45*	-25*	-25*	0*	25*	70	45*	90	140*	80 (2)	
25	80*	105	80*	80*	80	80	Z*	105	105*	105	130*	130*	130	130	130	130	130	130	130	155	130	105	105	105	117 (17)	
26	65	45	45	45	45	45	45	65*	90*	130*	110	110	110	110	110	130	110*	155	155	200	220	130	110	130	106 (20)	
27	110	110	110	90	90	90	110	130	130	130	130	130	130	130	130	130	130	130	130	155	155	155	130	110	124 (24)	
28	110	110	110	90	65	110	130	110	110	130	130	130	110	110	110	130	155	130	130	130	130	110	65	45	112 (24)	
29	50	50	50	50	50	50	50	105	235	130	130	130	130	130	130	155	130	105	105	180	130	210	210	-	116 (23)	
30	-	-	-	-	-	-	130	130	110	130	130	130	130	130	110	110	130*	155	175	200	200	155	175	110	143 (16)	
Mean	109 (21)	104 (21)	99 (22)	102 (22)	100 (22)	92 (22)	110 (20)	121 (19)	145 (16)	123 (19)	124 (21)	129 (23)	140 (22)	139 (23)	134 (23)	136 (22)	150 (21)	129 (22)	125 (24)	132 (24)	134 (22)	129 (22)	130 (23)	112 (19)	123 (515)	
																							Mean for 0a days		129 (9)	9)

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

19 LERWICK		Factor 0.90 (metre ⁻¹)											OCTOBER 1960													
	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	155	65	90	65	45	65	65	200	175	110	130	130	130	110*	110*	-200*	-200*	200	155	155	155	130	130	110	123 (20)	
2	110	110	110	110	110	130	130	130	110	130	130	130	130	130	130	110	110	130	130*	-45*	90*	130	130	155*	122 (20)	
3	65*	90*	90*	130*	110*	110*	130	130*	90*	90*	110*	110*	45*	-110*	Z*	45*	90*	-45*	Z*	Z*	Z*	155*	200	130*	165 (2)	
4	200*	175	130	130	130	155	175	310	220	175	220	200	155	90	65	45*	45*	45	60	-110*	0*	20*	45	65	141 (18)	
5	90*	65	0*	-45*	-65*	-20*	-20*	0*	0*	20*	0*	45*	45*	65*	65*	65*	65*	65*	65*	90	45	65	65	20	20	53 (7)
6	20	20	20	20	45	45	45*	45	65	110	110	90	65	65	45	45	45	45	45	65	110	65	90*	65	57 (22)	
7	45	20	20	20	20	45	45	65	90	65	65	65	45	65	65	65	90	90	65	65	65*	90	65	65	58 (23)	
8	45	20	20	20	20	45	65	65	-20*	20*	90*	90*	110	110	110	130	155	130	65	Z*	Z*	-175*	110*	65*	71 (16)	
9	45*	-45*	45*	65	90*	90*	90*	110	90	90	90	90	90	90*	90*	90*	90*	100*	100*	100*	100*	100*	90	90	25*	94 (14)
10	-25*	75*	75*	50*	75*	75*	75*	50*	75*	50*	50*	50*	75*	75*	75	100	100*	100*	100*	100*	100*	75	75	75*	80 (5)	
11	75	50	25*	25*	75*	75*	75*	50*	100	100	50*	50*	100*	100	150	150	125	125	150*	125*	125*	125	100*	100*	107 (11)	
12	25*	100	125*	75*	100*	75*	75	125	125	100	75*	25*	100*	100*	100	100	75	100	100	100*	125	125	100	-25*	104 (13)	
13	-100*	-100*	-25*	-25*	-200*	-25*	50*	75*	125	125	100	75	75*	50	100*	75*	75*	50*	100	100	75	100	75*	-25*	94 (9)	
14	50*	50*	50*	75	50	50*	75*	75*	75*	100	100*	50*	75*	75*	125	125	150	150*	125*	125	100	100	100	75	100 (12)	
15	65	65	65	65	65	65	65	90	90	65*	90	65	90	90	90	90	90	65	65	90	110	90	65	110	80 (23)	
16	100	75	50	75	50*	25	25*	50*	100	125	75	75	100	100	100	100	100	75	100	100	100	125	100	75*	90 (20)	
17	90*	90	90	90	90	90	65	90	90	90	90	90	110	110	155	130	130	130	155	155	155	155	130	110	113 (23)	
18	110	130	130	110	130	130	130	155	155	155	155	130	130	155	175	200	200	200	175	175	155	155	155	155	155	152 (24)
19	130	130	130	110	90	110	130	110	110	110	110	110	110	130	155	175	155	130*	155*	155	90	90*	45*	65	121 (20)	
20	75	75	75*	75	75	100	125*	50*	25*	100*	100	125	150	150	175	175	150	125	200	100	125*	150	100	125	124 (18)	
21	125	100	50*	-75*	75*	100*	125	-450*	-200*	100*	125*	175	175	175	200	200	225	225	225	225	225	175	175	150	183 (16)	
22	125	125	125	125	150	0*	25*	100*	-25*	75*	175	150	175	150	175	200	200	175	175	175	50*	100*	250*	175	161 (16)	
23	130	130	130	130	130	130	130	130	130	130	130	155	155	175	155	155	155	155	155	155	155	155	155	130	144 (22)	
24	100*	125*	125	150	125*	100	-75*	-25*	25*	100*	100*	100*	75*	150	175	175	150	175	150	150	175	200	150	75*	160 (13)	
25	75*	50*	-150*	-125*	-275*	-350*	-625*	-125*	-25*	50*	50	50*	75*	75*	75*	75*	100*	50*	-150*	(-125)*	-100*	-150*	-225*	-125*	5	

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

19 LERWICK												Factor 0.83 (metre ⁻¹)												NOVEMBER 1960		
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	140	115	115*	115*	140	140	115	70*	45*	25*	-45*	-25*	-45*	45*	70*	90*	115*	90	70*	-25*	-25*	-90*	126 (7)	
2	-70*	Z+	-185*	-45*	-25*	-25*	25*	25*	25*	90*	(90)*	(90)*	(140)*	(160)*	(115)*	115	140	205	205	160	160	-230*	Z-	Z-	164 (7)	
3	-160*	-45*	-185*	-115*	-255*	-90*	25*	25*	45*	45*	-45*	70*	115*	160	185	185	230	255	275	255	205	255	160*	223 (9)		
4	140	140	140	140*	115*	-320*	90*	Z+	-45*	90	115	90	115	90*	-45*	90*	115*	25*	90*	90	115	115	90	70	109 (12)	
5	70	70	45*	115*	90	90	115*	90*	70*	70*	45*	0*	70*	70*	-115*	160*	160*	115	255	140	140*	90	70	108 (10)		
6	115*	90*	25*	25*	115*	115	275*	90*	90*	90	70	70*	70	90	90*	115	70	140	115	140	115*	115	115	90	103 (13)	
7	80	60	60	80	80	60	80	80	100	100	80	80	100	80	100	100	100	120	180	120	80	80	60	90	90 (24)	
8	40	40	40	40	40	40	20	40	40	(60)	(60)	80	80	100	120	100	100	160	120	120	100	80	40	74 (24)		
9	25	25	25	45	70*	25*	-90*	-25*	-255*	70*	0*	90	140	140*	Z+	Z+	370	370	Z+	Z+	Z+	90	90*	127 (10)		
10	140	90*	90*	70*	90	90*	70*	70*	115	(90)*	115*	140	160	185	205	205	160*	230	255	230	185	185*	90*	90*	178 (12)	
11	45*	-70*	115*	185	160	185	185	230*	160	185	185*	185*	185	185	70*	90*	140*	0*	25*	230	205	230	230	Z+	194 (12)	
12	Z+	Z+	205	230	230	230	255	230*	Z+	Z+	Z+	Z+	230	230	255	185*	230	230	205	230	230*	230*	160*	160*	232 (14)	
13	185*	185*	185	90*	115*	Z+	140	Z+	Z+	185	155*	Z+	140*	160*	160	160	205	230	255	275	300	230*	160*	-*	209 (10)	
14	-*	-*	-*	-*	-*	-*	-*	-*	90*	-*	185*	205	160	185	185	255	230	205	230	230	230	185	160	140	200 (13)	
15	205	205	205	185	205	-45*	Z+	0*	230	230	185	160	160	160	160	160	160	185	185	185	185	185	115	115	183 (20)	
16	Z+	185	230	-45	205	(205)	(230)	(185)	-*	160	185	115*	230*	320*	Z+	205*	370	Z+	-320*	-230*	25*	70*	255	160*	197 (11)	
17	90	90	70	115*	115	140	205	255	Z+	Z+	Z+	-90*	Z+	-415*	70*	140	-300*	25*	160	185	205	185	185	140	155 (14)	
18	140	160	160	140	255	255	320	255	230*	-	-	-	140*	-90	255*	Z+	370	Z+	185	140	140	140	140	140	178 (16)	
19	115	140	115	115	300*	115*	115	115	115	90	140	160	185	185	160*	90*	185	185	185	140	140	140	90	115	139 (20)	
20	115	70	70	70	70	70	70	255	Z+	Z+	-45*	185	230	230	140	140	140	185	160	140	90*	Z+	Z+	134 (18)		
21	115*	90*	115	115	90	70	90*	45*	70	(-45)*	-160*	-140*	-230*	-230*	45*	45*	25*	70	70	45	45	45*	0*	-115	57 (10)	
22	45*	45*	-90*	-45*	-90*	-160*	-300*	-70*	25*	(0)*	25*	45*	70*	0*	70	45	45*	25*	-25*	70*	160*	300*	140*	-115*	57 (2)	
23	-300*	0*	115*	140	140	160	160	90*	185	205	205*	185*	140*	160	205	230	255	320*	230*	255*	140*	45*	70*	70*	184 (10)	
24	45*	70	70	90	115	115	140	140	(140)	140	140	140	160	205	300	230	230	230	230	255*	230*	300*	275	275	171 (20)	
25	255	140	160	-140*	70	-25*	-90*	-115*	-140*	70*	90*	-205*	-25*	115*	90*	115	-115*	70*	-115*	140	140	70	90	45	123 (10)	
26	70	45	45	25	70	45	45	25	90	90	45*	115	70	90*	90	90	115	275	115	115	Z+	Z+	140*	70*	85 (18)	
27	90	45*	45*	230*	185*	Z+	205*	Z+	115*	Z+	185	205	370	115	255*	255*	205*	90	90	90*	115	345*	45*	25*	157 (8)	
28	140*	90*	Z+	115	Z+	Z+	Z+	Z+	115*	Z+	Z+	Z+	-25*	115	-70*	25*	115	115	45	115	115	90	90	90	101 (10)	
29	90	70	45	70	70	45	45	25	45	70	115	115	160	185	140	115	115	115	90*	-70*	-185*	-160*	-160*	115*	91 (18)	
30	160*	160	140	90	90	-140*	-275*	90*	115	90	70	-45*	25*	255	230	185	300	390	390	300	205	230	185*	205*	203 (16)	
Mean	111	106	117	99	121	123	137	132	125	127	124	132	154	152	173	149	192	195	186	175	163	154	145	91	144 (398)	
	(15)	(17)	(19)	(18)	(18)	(15)	(16)	(12)	(14)	(14)	(11)	(12)	(16)	(18)	(15)	(18)	(19)	(20)	(22)	(23)	(20)	(16)	(16)	(14)		Mean for 0a days [82 (2)]

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

19 LERWICK												Factor 0.85 (metre ⁻¹)												DECEMBER 1960	
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	145	95	95	95	70	95	95	95	95	120	50*	50	70	145*	95*	120*	Z+	-145*	-240*	-25*	-50*	70*	-50*	93 (13)	
2	95	95	70*	70	70*	70*	50	70	50	50	50	70	95	95	70	70	95	95	120	120*	70*	95	95	95	79 (19)
3	50	-50*	-215*	-310*	-265*	25*	145	50*	50*	170	Z+	Z+	385	Z+	Z+	Z+	Z+	290	Z+	505	170	95	190*	Z+	226 (8)
4	Z+	Z+	Z+	Z+	Z+	Z+	120	190	Z+	120*	-*	-*	120*	120*	170*	Z+	190*	120*	120*	145	170	120	95	120	137 (7)
5	70	70	70	95	95	70*	95	120	95	95	-95*	70	95	120	145	145	120	120	120	120	95	95	70	70	100 (22)
6	70	70	70	50	50	50	50	50	70	70	120	120	190	215	170	145	385	530	625	430	240	70*	95*	170*	180 (21)
7	145	120	95	70	95	95	95	95	70*	70*	120	120	190*	Z+	95*	Z+	70*	455	Z+	Z+	215	145	Z+	Z+	143 (13)
8	Z+	120	120	95	50*	25*	95	95	70	95	95	120	120	145	Z+	215*	145	170	145	145	145	120	120	120	121 (19)
9	105	85	85	105	105	105	105	85	85	105	85	105	105	125	125	125	125	125	125	125	125	105	105	108 (24)	
10	120	120	120	95	95	50	50	50	50	70	95	70	120*	190	190	190	215	190	145	190	145	145	145	145	127 (23)
11	65	105	85	65	85*	65*	85*	85	85	85	85	85	105	125	105	105	105	105	65	65	85	105	85	105*	90 (20)
12	Z+	-385*	50*	50*	70*	265	95	265*	95	95	70	95	215*	120	120	120	120*	120*	170	-	-*	-*	-	-	125 (10)
13	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	215	240	385	430	360	410	480	335	170*	265*	170	120	286 (12)
14	-*	-*	-*	95	120	120	120	120	120	120	120	120	95*	145*	145	170*	-*	Z+	95	Z+	Z+	335*	170	120*	122 (12)
15	95	25*	120	145*	95*	120	120	120	120	120	120	145	145	145	145	120*	145*	95	120	-	-*	-*	-*	-*	124 (14)
16	-*	-*	-*	-*	-*	-*	-*	-*	-*	145	145	145	145	145	145	170	170	145	95	95	70*	70*	50	95*	133 (12)
17	120*	120*	95*	120*	95*	25*	25	50	50	0	-*	-*	-*	-*	-*	-*	-*	-*	95	120	120*	95	95	95	66 (8)
18	120*	120*	95*	95	145	170	Z+	Z+	70*	120	145	215	170	290*	190*	170*	Z+	145*	Z+	Z+	Z+	Z+	Z+	-25*	151 (7)
19	70	70	Z+	Z+	70	95	95	120	95	170	215	240	215	120	120	120	145	120	120	120	70	95	120	120	124 (22)
20	95	95	95	95	70	95	-50*	95*	95	120	120	120	120	145	145	145	145	120	120	120	145*	120*	120	115 (20)	
21	95	70	95	70	70	0*	0*	120	145	120	95	95	95	95	95	70*	70*	170	Z+	25*	Z+	385*	170*	95	102 (15)
22	95	95	240	25*	70	190	-25*	95	120	Z+	Z+	95*	120	70	190*	335	95	95	120	95	170	265	240	120*	148 (17)
23	-50*	-215*	-360*	-480*	-550*	-480*	Z-	-70*	120*	190	240	170	170	170	170	120	95*	95*	70*	-120*	-25*	-25*	70*	95*	176 (7)
24	95*	95	70	70	95	95	70	50*	50*	95*	170*	170*	360	190*	215*	145	190	145*	95	120	95	120*	-70*	-25*	123 (13)
25	-335*	25*	-120*	-120*	95*	120	120	95*	145	145	215*	Z+	170*	145	170	Z+	120*	95*	120*	-120*	0*	70*	190*	95	134 (7)
26	215	170																							

20 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	1a	hr. (0.1)	1c	2.0	2b	3.1	0a	0.0	1b	0.5	1a	0.1
2	1a	1.1	2c	5.2	1a	1.3	1b	2.4	2b	7.1	1a	0.4
3	1a	-	(2c)	-	1b	2.1	1a	0.7	2c	4.9	0a	0.0
4	1b	-	(1a)	-	0a	0.0	1b	1.1	1a	0.1	0a	0.0
5	1c	2.0	1b	0.2	0a	0.0	1b	2.3	1b	1.7	0a	0.0
6	1a	0.8	0a	0.0	0a	0.0	2c	4.4	0a	0.0	1a	0.5
7	1a	0.6	0a	0.0	0a	0.0	0a	0.0	0a	0.0	2c	4.8
8	1a	(1.2)	0a	0.0	0a	0.0	1b	1.4	1b	0.1	2b	4.5
9	0a	0.0	1a	0.5	1c	1.7	2b	7.9	0a	0.0	2c	4.0
10	1a	2.3	1c	1.2	0a	0.0	2b	4.0	0a	0.0	2b	4.5
11	1b	1.0	2c	3.5	1a	0.3	2a	15.4	0a	0.0	1b	3.0
12	1b	2.9	1c	0.6	1a	0.1	2b	4.1	0a	0.0	2b	3.4
13	1b	(0.4)	1c	0.9	1a	0.1	2b	(5.8)	1a	0.2	1b	2.8
14	1a	0.1	1c	-	1b	0.5	1c	(2.2)	1b	0.9	1a	0.3
15	1a	0.5	1c	1.4	1b	0.4	1c	(1.6)	1b	1.0	1a	0.5
16	1b	1.1	1c	(2.3)	0a	0.0	1a	0.1	1a	1.2	1b	1.1
17	1b	0.6	1c	1.6	0a	0.0	0a	0.0	0a	0.0	1a	2.3
18	0a	0.0	1b	1.9	0a	0.0	0a	0.0	1a	0.5	2a	4.1
19	0a	0.0	2c	5.2	0a	0.0	0a	0.0	1a	2.5	2a	4.7
20	0a	0.0	1c	2.5	1a	0.3	1b	2.1	1a	0.1	1a	0.5
21	1a	2.7	1c	1.9	2a	3.6	1a	0.8	1a	0.5	1a	0.7
22	1b	0.6	0a	0.0	1a	1.6	0a	0.0	1a	0.1	0a	0.0
23	2c	4.3	1b	0.3	1b	0.1	1b	0.3	2c	8.9	0a	0.0
24	1a	0.2	0a	0.0	0a	0.0	0a	0.0	2b	5.1	0b	0.0
25	1a	0.2	2c	4.8	0a	0.0	1a	0.7	1a	0.3	1a	0.5
26	1a	0.1	2b	4.0	0a	0.0	1a	(1.2)	1b	0.3	0a	0.0
27	1a	0.1	2c	9.3	1a	0.8	1a	0.2	1b	2.5	1b	0.5
28	1b	1.2	1b	1.1	1a	1.4	1a	0.3	1b	0.8	1b	1.8
29	1c	0.7	1b	1.6	1a	0.4	0a	0.0	0a	0.0	1a	0.3
30	1c	1.2			1a	0.3	1b	2.5	1a	0.4	1a	2.1
31	1b	0.3			1a	0.1			0a	0.0		
Total	-	26.3	-	52.0	-	18.2	-	61.5	-	39.7	-	47.4
No. of days used	-	29	-	26	-	31	-	30	-	31	-	30
Mean	-	0.9	-	2.0	-	0.6	-	2.1	-	1.3	-	1.6

	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	1b	hr. 0.6	2b	3.1	1a	0.4	1b	1.5	2a	4.5	2b	3.7
2	0a	0.0	1a	0.2	0a	0.0	1a	0.6	2b	7.1	1b	0.5
3	0a	0.0	1a	1.1	0a	0.0	2b	4.2	2b	6.7	2c	4.7
4	0a	0.0	2c	5.1	1b	1.6	1a	1.5	1b	2.7	1c	1.3
5	1a	2.4	1a	2.4	1a	0.7	2a	4.9	1b	1.7	1a	0.5
6	1a	0.1	1a	1.6	0a	0.0	0a	0.0	1b	1.1	1a	0.4
7	1a	0.5	1a	0.6	1a	0.1	0a	0.0	0a	0.0	1c	1.3
8	1b	0.1	1a	2.0	1b	0.2	1b	2.8	0a	0.0	1b	0.9
9	1a	0.1	1a	-	1b	2.1	1a	0.8	2c	3.4	0a	0.0
10	0a	0.0	2a	-	0b	0.0	1a	1.0	1b	1.1	1a	0.1
11	0a	0.0	1a	0.5	1a	2.9	1a	1.6	1b	2.5	0a	0.0
12	1a	0.1	1a	1.4	1a	0.5	1a	1.5	1b	1.2	(1b)	-
13	0b	0.0	1a	0.1	1a	0.1	2a	4.5	1b	1.3	(1a)	-
14	1b	0.1	1b	1.9	1b	2.0	1a	0.2	(1b)	-	(1b)	-
15	1b	0.6	1a	0.5	2b	3.8	0a	0.0	1b	1.2	(1b)	-
16	0a	0.0	1a	0.1	1a	0.1	1a	0.1	2c	4.0	(1b)	-
17	2a	3.7	1a	0.5	1a	0.1	0a	0.0	2b	4.1	(1a)	(0.8)
18	1b	1.7	1a	0.4	0a	0.0	0a	0.0	1c	1.9	1c	2.8
19	1a	1.9	1a	0.1	1b	1.0	0a	0.0	1b	0.3	1b	0.1
20	1a	0.3	1b	0.2	2a	4.9	1a	0.8	1b	1.5	1a	0.3
21	1a	0.3	1a	0.1	1a	1.3	1a	2.1	2a	6.4	1c	1.9
22	1b	0.1	1b	3.0	1a	0.6	1b	2.0	2b	7.7	1b	1.4
23	1a	0.4	1b	0.5	0a	0.0	0a	0.0	1a	1.8	2b	9.2
24	1b	1.5	0a	0.0	2a	9.9	1a	1.1	1a	0.1	1a	1.4
25	1b	0.3	0a	0.0	1b	0.5	2a	11.6	2b	6.1	2c	4.2
26	1b	0.2	1a	1.2	0a	0.0	2b	3.7	1b	1.0	1b	1.9
27	0a	0.0	1a	0.3	0a	0.0	1a	1.2	1c	2.3	1c	0.9
28	1b	-	0a	0.0	0a	0.0	1a	0.4	1c	2.9	1b	0.7
29	(1b)	-	1a	0.1	1a	0.1	0a	0.0	2b	3.2	2c	4.6
30	0a	0.0	1a	0.2	0a	0.0	1a	0.3	1a	2.1	2c	8.1
31	0a	0.0	0a	0.0			1b	1.1			1b	0.5
Total	-	15.0	-	27.2	-	32.9	-	49.5	-	79.9	-	52.2
No. of days used	-	29	-	29	-	30	-	31	-	29	-	26
Mean	-	0.5	-	0.9	-	1.1	-	1.6	-	2.8	-	2.0

Annual values: Character 0 1 2
No. of days used 82 229 55

Duration: Total 501.8 hr.
No. of days 351
Mean 1.43 hr.

ESKDALEMUIR

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

21 ESKDALEMUIR (H)		16,000γ (0.16 C.G.S. unit) +																				JANUARY 1960					
	Hour G.M.T.																					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	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	766	769	768	770	773	773	780	773	769	757	747	747	747	748	747	752	758	762	764	762	764	764	764	762	762	1286	
2 q	764	764	764	766	771	774	783	783	779	766	753	740	733	743	750	755	754	760	756	755	763	762	759	761	761	1258	
3	761	764	760	758	770	781	784	784	781	762	754	750	753	749	754	757	757	767	766	772	774	774	768	767	765	1357	
4	764	760	765	768	775	774	771	776	780	779	772	771	776	767	771	764	767	774	775	774	773	769	768	774	771	1507	
5	771	768	769	757	754	794	784	776	760	738	741	736	724	717	723	735	744	756	757	768	771	770	763	752	755	1128	
6	741	748	739	747	745	750	755	754	755	755	755	756	754	751	747	744	753	757	758	766	764	765	761	758	753	1078	
7	759	760	757	755	763	766	777	771	761	757	759	745	754	755	761	765	768	774	770	765	765	768	771	767	763	1313	
8	765	764	761	763	763	765	768	769	769	770	765	762	756	757	757	760	769	772	776	777	772	775	761	766	766	1382	
9 q	768	766	767	767	769	773	772	773	776	775	773	772	772	774	772	770	773	773	775	774	775	774	772	763	765	771	1509
10 d	766	766	770	772	778	780	793	779	778	766	739	733	731	725	720	722	745	708	728	726	778	772	712	730	749	969	
11 d	730	724	736	735	747	748	751	751	724	715	733	733	735	731	732	735	732	755	753	749	748	750	751	763	740	761	
12	763	754	751	755	756	757	759	751	752	754	751	746	740	739	740	741	741	743	750	752	733	759	738	746	749	971	
13	750	755	761	758	742	766	766	765	760	756	751	752	752	749	743	742	745	750	751	762	740	750	759	759	753	1084	
14 d	751	739	712	741	743	759	771	774	761	756	756	743	736	744	748	754	757	767	781	750	723	697	691	680	743	834	
15 d	699	684	665	714	724	734	744	749	742	729	723	720	722	729	732	719	723	734	739	735	743	752	754	748	727	457	
16	751	752	752	753	755	757	756	754	751	749	747	744	746	743	745	748	746	747	761	764	762	761	750	735	751	1029	
17	747	757	763	765	769	771	774	770	766	767	759	753	764	781	774	778	766	775	777	781	784	781	780	775	770	1477	
18	772	769	775	779	783	789	789	806	765	749	750	738	725	743	753	748	751	756	753	754	763	748	746	749	761	1253	
19	765	762	762	765	765	772	761	762	760	744	740	739	747	746	750	755	757	765	767	770	770	770	777	769	760	1240	
20	765	767	772	775	785	782	774	764	775	766	760	736	757	765	768	767	743	755	762	774	765	759	760	765	765	1361	
21 d	764	763	718	741	761	763	774	765	757	746	738	718	720	721	730	739	723	727	730	738	740	733	726	750	741	785	
22	728	738	743	751	750	756	766	752	729	735	726	701	724	728	745	747	739	748	756	760	765	762	761	760	745	870	
23	758	759	760	760	744	778	768	762	755	745	735	734	737	729	748	746	752	756	754	753	752	751	757	755	752	1048	
24	754	760	763	766	775	763	761	760	750	741	729	735	745	744	753	751	752	753	762	758	758	757	765	767	755	1122	
25	765	772	775	765	768	769	768	769	761	759	752	752	753	751	744	755	758	756	765	768	771	773	770	770	763	1309	
26	774	768	768	770	771	775	775	772	771	755	749	753	748	748	753	750	758	757	765	766	770	767	766	768	763	1317	
27	772	768	770	774	768	773	781	777	772	763	748	748	747	747	748	748	753	762	767	771	774	774	770	766	764	1341	
28	766	772	776	774	775	774	775	774	770	763	756	749	745	744	750	755	757	765	771	779	779	776	779	776	767	1400	
29	785	784	790	779	775	770	774	784	789	775	761	745	742	758	753	753	762	765	768	775	780	779	773	776	771	1495	
30 q	775	774	775	777	780	782	784	784	780	767	755	745	745	752	761	765	767	770	774	778	779	779	778	775	771	1501	
31 q	774	774	776	779	784	788	788	788	782	768	756	745	751	760	768	771	770	774	779	780	780	780	782	782	774	1579	
Mean	759	759	757	761	764	769	772	770	764	756	749	743	745	746	750	751	753	757	762	763	764	761	759	759	758		
Sum 23,000+	533	524	483	599	681	856	926	871	680	427	233	41	81	138	240	291	340	473	610	656	678	601	523	536		Grand Total 564,021	

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

22 ESKDALEMUIR (D)		10° +																				JANUARY 1960				
	Hour G.M.T.																					Mean	Sum 600.0+			
	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	28.4	30.7	30.1	28.9	28.7	29.5	29.5	28.4	27.8	27.5	28.2	30.6	32.2	32.8	32.8	32.2	31.3	30.4	29.7	29.4	28.7	28.2	27.7	28.3	29.7	112.0
2 q	28.2	28.7	29.5	29.7	30.3	29.9	29.3	28.6	27.8	27.1	27.9	29.3	31.9	34.0	33.0	32.5	32.3	32.0	30.8	29.4	28.4	28.1	26.9	26.5	29.7	112.1
3	26.1	29.4	30.3	30.2	28.9	27.7	27.9	28.1	27.4	26.6	28.0	31.2	33.4	34.9	35.5	35.7	36.4	34.2	31.5	29.8	29.1	28.3	28.1	27.5	30.3	126.2
4	25.2	26.4	24.4	25.9	25.0	26.7	27.4	27.6	26.9	26.9	27.4	30.0	33.3	33.1	34.3	34.3	31.5	31.7	31.4	30.1	29.0	28.3	26.4	24.3	28.6	87.5
5	24.6	25.8	25.8	19.3	23.9	24.7	26.4	26.9	26.9	28.2	30.6	32.7	34.1	37.5	35.2	34.8	32.9	32.6	32.7	31.4	30.5	29.1	26.2	15.9	28.7	88.7
6	23.9	26.8	24.1	24.3	26.7	27.7	28.4	28.7	29.2	30.3	30.5	31.7	32.8	32.8	32.8	32.4	31.8	32.9	32.0	30.4	29.6	28.6	27.4	27.1	29.3	102.9
7	27.8	27.4	27.2	26.3	26.9	26.3	26.5	28.3	28.8	29.2	29.5	29.1	31.5	32.8	32.2	32.3	31.9	33.9	34.0	32.6	31.9	30.0	29.3	28.7	29.8	114.4
8	27.4	24.6	24.2	26.9	27.8	29.1	28.8	28.8	28.5	28.4	28.7	29.6	30.1	30.6	30.9	31.4	31.5	31.3	31.5	31.1	28.9	27.7	27.6	29.0	96.9	
9 q	27.3	27.0	27.2	27.9	29.1	28.1	28.3	28.5	28.7	28.9	29.2	30.2	31.0	31.9	31.6	31.4	32.1	31.9	31.4	30.5	30.3	29.8	29.5	29.1	29.6	110.9
10 d	28.4	28.1	29.4	29.1	30.1	28.9	29.5	27.3	29.7	29.8	32.1	35.4	34.6	37.1	36.1	37.3	31.6	29.9	31.0	27.5	8.0	13.4	19.3	23.5	28.6	87.1
11 d	24.7	26.0	26.5	28.2	28.4	29.2	29.1	30.2	29.2	32.0	32.4	33.0	32.6	35.2	30.8	31.5	30.8	30.5	30.2	30.2	29.4	29.1	28.4	27.6	29.8	115.2
12	29.3	29.4	27.3	27.1	28.1	28.2	28.2	27.6	27.6	28.3	29.6	29.3	30.6	31.3	30.2	25.9	28.9	31.0	29.0	27.4	25.7	17.8	24.5	26.4	27.9	68.7
13	27.5	28.7	29.7	30.9	28.9	28.9	28.8	28.4	29.0	30.3	30.2	31.6	32.2	32.3	31.3	31.9	31.3	30.2	27.7	22.5	20.4	22.0	22.6	26.1	28.5	83.4
14 d	28.6	31.7	20.3	22.2	24.2	27.2	27.0	27.3	29.9	29.9	32.2	33.0	33.9	33.5	32.2	30.7	30.5	31.2	33.4	35.7	27.4	15.5	17.5	21.0	28.2	76.0
15 d	21.1	24.6	13.6	14.8	22.7	26.6	26.8	28.0	28.9	27.7	28.3	29.2	30.6	29.9	30.2	30.8	30.8	31.9	30.4	27.6	27.7	26.6	27.4	27.6	26.8	43.8
16	27.0	27.6	27.3	28.4	29.1	28.8	28.2	27.5	27.8	28.0	28.5	29.2	30.9	30.3	29.6	29.5	30.3	28.9	29.5	29.4	29.3	28.4	27.1	21.9	28.4	82.5
17	25.5	27.4	26.6	27.0	27.8	30.4	30.0	29.2	28.6	29.1	29.7	30.3	32.7	35.5												

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

23 ESKDALEUIR (Z)

45,000γ (0.45 C.G.S. unit) +

JANUARY 1960

	Hour G.M.T.																						Mean	Sum 8000+		
	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	359	356	355	358	358	355	354	355	355	354	354	352	352	354	359	363	365	365	365	364	363	361	360	358	358	594
2 q	358	357	358	358	357	355	353	352	353	351	355	358	355	353	358	363	365	366	369	370	367	364	363	360	359	618
3	355	349	349	352	353	353	352	352	352	352	353	352	352	353	361	364	366	370	370	367	364	362	361	361	357	577
4	362	361	356	354	353	353	354	353	352	353	355	355	353	352	356	361	364	366	364	366	365	366	365	363	358	602
5	354	352	344	345	348	333	335	340	349	359	358	355	356	362	375	375	375	378	378	376	375	377	382	382	361	661
6	376	372	372	365	366	368	368	369	366	364	363	361	360	363	366	368	366	366	366	365	366	365	366	366	366	793
7	364	364	363	363	360	359	358	358	356	355	356	360	359	359	359	358	359	358	362	365	366	366	364	363	361	654
8	363	364	361	358	357	356	357	356	355	358	360	360	355	355	359	359	360	359	359	360	363	364	366	366	360	630
9 q	364	363	360	360	359	358	357	356	355	354	353	352	349	352	355	356	358	359	359	360	360	362	365	365	358	591
10 d	365	363	359	355	352	349	346	345	347	349	352	355	362	372	395	405	454	427	400	404	386	359	375	372	373	948
11 d	375	372	364	360	359	363	364	365	369	370	369	364	368	376	406	395	395	393	383	378	378	378	375	369	375	988
12	351	339	351	358	360	360	360	363	363	363	364	364	366	365	370	383	378	377	375	377	379	367	363	366	365	762
13	366	363	355	353	353	358	359	359	358	354	354	357	359	365	369	372	375	372	374	373	379	375	362	355	363	719
14 d	363	335	324	343	348	352	356	359	353	351	356	363	371	375	377	373	367	364	363	413	439	397	375	399	367	816
15 d	421	359	329	320	349	366	372	371	372	375	374	374	375	375	379	388	389	388	386	387	382	375	370	369	373	945
16	370	371	371	368	366	366	368	368	367	365	369	371	370	370	370	368	367	373	370	367	366	366	366	369	368	842
17	366	361	353	354	354	352	350	352	352	359	363	366	362	358	360	359	363	365	368	370	368	367	368	370	361	660
18	370	369	364	363	360	359	358	353	358	356	363	367	371	374	377	375	372	371	375	373	375	373	374	370	368	822
19	348	343	350	356	359	360	363	365	366	363	364	363	357	363	364	365	364	366	369	365	364	362	359	360	361	658
20	363	365	363	359	355	355	355	358	358	359	356	359	354	356	359	367	374	373	372	368	367	368	370	363	362	696
21 d	355	314	319	332	338	348	352	353	355	355	363	366	383	351	378	378	399	446	439	435	379	371	375	356	368	840
22	354	358	349	349	352	353	356	363	366	366	367	372	369	375	374	375	375	378	375	376	372	371	368	369	366	782
23	368	366	365	363	359	349	348	355	360	363	366	369	366	375	386	386	386	389	383	382	376	369	363	360	369	852
24	358	352	344	343	342	349	355	362	367	366	369	368	367	375	381	378	378	374	371	370	368	365	361	364	369	738
25	360	354	349	352	352	353	354	356	358	358	355	358	360	362	366	366	365	369	370	364	363	360	360	359	359	623
26	355	355	356	355	353	353	353	355	358	363	359	359	359	356	360	366	369	366	366	364	365	365	365	363	360	642
27	359	349	349	347	349	349	352	355	359	356	352	353	353	353	357	361	363	359	356	359	359	359	359	360	355	527
28	359	354	349	352	353	353	353	354	356	358	355	353	353	352	353	358	360	359	358	357	358	358	356	358	355	529
29	352	351	348	346	343	345	347	347	348	351	347	350	350	351	352	355	359	357	355	356	354	355	359	357	351	435
30 q	356	355	354	354	353	353	352	352	353	352	344	340	338	338	343	347	340	352	353	353	353	353	353	353	350	394
31 q	353	354	353	353	352	352	352	351	354	357	355	351	344	342	344	350	355	354	353	353	354	353	353	353	352	445
Mean	363	356	353	353	354	354	355	357	358	358	359	360	360	361	367	369	372	373	371	372	370	366	365	364	362	
Sum 10,000+	1242	1040	936	948	972	987	1013	1052	1090	1109	1123	1147	1149	1187	1368	1437	1519	1563	1509	1542	1472	1358	1325	1295		Grand Total 269,383

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

24 ESKDALEUIR

JANUARY 1960

	TERRESTRIAL MAGNETIC ELEMENTS										3-hr. range indices K	Sum of K indices	Magnetic character of day, C (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 q	h. m. γ	γ h. m.	γ	h. m.	h. m.	γ	h. m.	γ	h. m.	γ	1,1,1,2,1,1,1,1	9	0	82.5		
2 q	06 43 781	737 12 15	44	14 09	32.9	27.0	09 22	5.9	18 51	366	350 12 00	16	1,1,1,3,2,1,2,1	12	0	82.4
3	06 33 785	731 12 12	54	13 16	34.3	26.1	23 10	8.2	19 03	371	349 09 38	22	2,2,1,2,2,2,1	14	0	82.4
4	06 30 787	743 13 45	44	16 31	36.9	25.0	00 18	11.9	17 46	371	347 01 42	24	2,1,3,3,3,1,2	18	1	82.6
5	08 41 793	749 15 42	44	12 27	37.2	22.8	00 36	14.4	17 20	367	352 13 23	15	3,4,3,2,3,3,4	25	1	82.4
6	05 26 802	699 12 58	103	13 22	39.6	12.8	23 38	26.8	22 47	389	330 05 30	59	3,2,1,1,2,2,2,2	15	0	82.5
7	19 10 773	726 00 10	47	14 19	34.2	19.3	00 10	14.9	00 00	378	359 12 20	19	1,1,2,2,1,2,1,1	11	0	82.5
8	17 20 779	742 11 09	37	18 04	35.2	25.4	03 39	9.8	20 40	368	353 08 49	15	2,2,1,1,1,2,2,2	13	0	82.6
9	19 45 781	750 13 50	31	20 13	32.1	23.5	02 16	8.6	21 07	367	353 12 45	14	1,1,2,1,1,1,1,1	9	0	82.5
10 d	09 05 780	759 23 59	21	17 00	32.4	26.2	02 21	6.2	22 51	366	349 12 52	17	2,1,4,4,4,6,5,5	31	2	82.6
11 d	16 45 883	668 21 55	215	13 10	42.3	-0.6	20 26	42.9	16 46	508	341 07 19	167	3,2,4,4,4,4,3,3	27	1	82.6
12	23 45 791	690 09 11	101	14 07	41.8	20.9	01 09	20.9	14 35	412	354 03 53	58	3,2,2,2,3,3,3,4	22	1	82.6
13	00 24 793	713 20 59	80	13 15	36.6	11.3	21 08	25.3	15 32	387	336 00 22	51	2,2,1,1,2,1,3,3	15	1	82.6
14 d	22 19 782	721 20 21	61	02 19	33.4	17.5	20 37	15.9	20 38	382	351 23 27	31	4,4,3,3,3,3,5,4	29	2	82.6
15 d	18 39 809	652 23 39	157	18 53	38.3	5.3	21 49	33.0	20 17	467	291 02 00	176	5,4,3,3,3,3,2,2	25	1	82.6
16	22 04 766	622 02 01	144	14 42	33.7	9.7	02 10	24.0	00 02	433	285 02 55	148	1,1,0,1,1,2,2,3	11	0	82.6
17	22 24 769	718 23 07	51	13 01	31.6	19.9	23 15	11.7	17 42	375	364 22 50	11	3,3,2,2,4,3,2,2	21	1	82.5
18	13 04 806	738 00 01	68	13 03	40.2	23.3	02 40	16.9	18 29	371	347 06 13	24	2,1,4,3,3,2,3,3	21	1	82.5
19	07 46 821	710 12 34	111	09 09	37.4	21.5	21 48	15.9	22 48	379	351 07 44	28	3,2,1,2,2,2,1,2	15	0	82.5
20	22 14 788	736 12 13	52	12 43	34.8	20.7	01 09	14.1	18 30	370	335 00 59	35	1,3,2,4,3,3,2,2	20	1	82.4
21 d	04 44 799	717 11 22	82	16 11	40.7	24.5	22 38	16.2	16 19	376	352 12 57	24	6,3,3,4,4,4,6,5	35	2	82.4
22	19 56 843	685 11 57	158	12 12	44.0	-8.0	19 49	52.0	20 47	466	295 01 33	171	3,2,3,4,3,3,2,3	23	1	82.3
23	22 19 783	671 11 03	112	09 55	38.7	20.9	00 16	17.8	17 09	381	345 02 42	36	2,3,3,2,3,3,4,3	23	1	82.3
24	05 55 795	709 13 50	86	13 07	39.2											

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

Table with 24 columns for hours (0-1 to 23-24) and 2 columns for Mean and Sum. Title: 21 ESKDALEMUIR (H) 16,000γ (0.16 C.G.S. unit) + FEBRUARY 1960. Data rows 1-29 and summary rows.

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

Table with 24 columns for hours (0-1 to 23-24) and 2 columns for Mean and Sum. Title: 22 ESKDALEMUIR (D) 10° + FEBRUARY 1960. Data rows 1-29 and summary rows.

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

23 ESKDALEUIR (Z)

45,000γ (0.45 C.G.S. unit) +

FEBRUARY 1960

	Hour G.M.T.																						Mean	Sum 8000+		
	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	352	352	352	351	349	344	344	346	348	349	349	348	352	352	352	360	369	370	368	365	362	358	355	354	354	501
2	354	357	356	356	357	356	356	356	358	353	349	347	343	344	349	349	355	375	399	433	411	387	378	369	364	747
3	366	365	363	360	349	352	355	358	360	358	358	355	358	360	363	375	386	382	389	385	381	374	364	335	365	751
4	348	352	349	354	358	343	347	351	354	351	348	352	351	351	355	360	363	366	371	379	381	393	383	370	360	630
5	364	359	359	359	359	359	358	355	353	353	346	353	352	358	361	380	389	378	382	386	382	382	383	375	366	785
6	369	367	348	316	335	343	347	343	340	346	347	347	349	353	356	360	368	375	375	372	371	369	365	362	355	523
7 q	363	360	355	352	348	352	353	353	358	360	358	352	349	350	352	353	356	358	358	359	359	358	357	357	355	530
8	356	355	354	353	353	353	353	349	348	351	352	349	348	348	354	360	369	375	377	374	368	364	363	360	358	586
9 q	359	352	348	347	352	353	353	353	352	353	351	346	342	343	347	348	348	349	350	353	353	353	353	350	411	
10 q	352	351	349	347	345	345	344	344	346	349	352	349	349	349	353	354	355	355	353	353	353	353	353	350	406	
11	352	351	349	350	349	348	348	346	346	347	345	347	348	348	349	353	359	364	378	381	386	389	380	367	357	580
12	363	352	346	347	349	351	352	352	353	353	349	345	344	348	352	354	355	354	353	353	353	353	353	352	437	
13	353	353	352	350	349	348	346	343	343	343	344	338	338	341	343	347	351	353	352	354	376	387	385	360	352	449
14 d	332	339	332	323	333	335	336	346	348	351	351	349	348	358	370	382	386	386	392	406	413	366	369	369	359	620
15	366	364	364	364	364	361	360	358	355	355	355	353	351	355	370	349	378	393	383	380	370	364	361	361	364	734
16 d	364	356	342	346	352	352	352	351	351	347	340	340	342	344	360	378	372	367	366	363	362	366	348	324	354	485
17 d	330	345	355	359	358	355	352	350	345	340	338	344	347	353	361	362	363	371	393	393	390	390	390	370	361	654
18 d	368	370	334	309	314	309	317	335	348	351	349	348	355	362	363	374	378	377	390	389	369	364	362	357	354	492
19	357	359	360	360	359	359	357	358	355	358	358	356	358	360	364	372	375	387	388	395	391	359	359	348	365	752
20	322	317	315	336	335	342	351	354	357	357	351	351	351	352	357	365	376	374	367	365	363	363	355	346	351	422
21 d	350	352	340	330	332	340	341	338	342	342	348	357	359	362	371	375	386	382	368	365	363	356	357	357	355	513
22	355	354	353	354	354	354	354	352	351	352	348	345	346	347	348	351	354	359	359	361	371	361	359	352	354	494
23	357	355	352	352	352	351	347	348	350	351	346	343	347	347	352	354	370	380	368	362	359	360	359	358	355	520
24 q	358	357	355	353	352	348	347	348	351	352	348	347	347	346	348	354	358	358	357	358	358	358	359	358	353	475
25 q	357	356	352	352	351	351	351	352	356	353	347	344	344	342	346	347	353	351	351	352	354	357	351	350	351	420
26	351	351	351	351	351	351	351	351	356	353	344	338	339	339	347	356	356	350	352	351	351	354	357	356	350	407
27	346	339	334	319	324	327	322	327	339	346	346	344	342	345	353	358	362	360	371	366	360	361	350	343	345	284
28	345	351	353	352	351	351	350	347	350	351	348	346	349	350	349	352	354	352	351	351	351	351	351	351	350	407
29	351	347	347	345	348	347	336	338	346	350	347	345	343	344	350	361	359	359	362	361	374	387	385	369	354	501
Mean	354	353	349	346	348	348	348	350	351	349	347	348	348	350	355	360	366	368	370	371	370	367	364	356	356	
Sum 10,000+	260	238	119	47	82	80	80	102	159	175	112	78	91	151	295	443	603	660	723	765	735	637	544	337		Grand Total 247,516

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

24 ESKDALEUIR

FEBRUARY 1960

	TERRESTRIAL MAGNETIC ELEMENTS												3-hr. range indices K	Sum of K indices	Magnetic character of day, C (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								
	h. m.	γ	γ	h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ						
1	05 10	801	731	14 02	70	13 07	38.6	26.0	09 00	12.6	16 50	371	343	07 12	28	0,2,2,2,3,2,2,1	14	0	81.6
2	16 05	801	717	20 00	84	19 13	43.4	17.7	23 21	25.7	19 48	462	341	12 33	121	1,1,1,2,3,4,4,4	20	1	81.5
3	22 55	802	689	12 38	113	18 05	40.0	15.1	23 51	24.9	18 31	390	326	23 18	64	2,2,2,3,3,3,3,4	22	1	81.4
4	19 17	795	701	12 54	94	12 39	36.7	16.8	00 00	19.9	21 31	398	336	05 40	62	3,3,2,2,2,2,4,3	21	1	81.5
5	07 30	785	707	11 30	78	14 33	43.1	16.8	23 17	26.3	16 17	393	345	10 32	48	2,1,2,4,4,3,2,3	21	1	81.4
6	16 35	789	710	02 53	79	16 52	37.5	18.3	04 45	19.2	18 03	376	309	03 16	67	3,4,3,1,2,3,2,2	20	1	81.4
7 q	07 22	784	744	12 40	40	14 50	33.3	25.9	09 14	7.4	00 31	364	348	04 30	16	2,2,2,1,1,0,0,1	9	0	81.5
8	08 05	789	721	12 28	68	14 27	36.6	24.6	10 07	12.0	18 08	377	347	13 10	30	1,1,2,3,3,2,2,1	15	0	81.5
9 q	18 24	796	750	11 22	46	14 13	33.5	22.5	01 45	11.0	01 05	360	341	12 29	19	3,1,1,1,1,2,2,1	12	0	81.6
10 q	04 32	797	760	11 43	37	11 58	35.4	26.0	09 27	9.4	17 12	356	343	06 18	13	1,2,2,2,2,1,1,0	11	0	81.4
11	08 00	791	728	18 38	63	18 30	34.0	23.4	21 33	10.6	20 50	390	343	10 43	47	0,0,1,2,1,3,3,3	13	0	81.6
12	01 39	785	741	13 13	44	13 34	33.0	18.5	01 23	14.5	00 00	366	343	12 23	23	3,1,2,1,2,1,1,0	11	0	81.7
13	07 50	799	669	22 28	130	14 38	33.3	12.1	22 54	21.2	21 59	397	332	23 47	65	0,0,1,2,2,1,3,5	14	1	81.7
14 d	20 49	809	705	20 27	104	14 51	38.7	2.6	20 28	36.1	20 06	448	318	03 32	130	4,3,2,3,3,3,5,3	26	1	81.6
15	21 28	777	727	17 10	50	14 32	36.8	23.3	17 35	13.5	17 35	396	349	12 40	47	1,0,1,1,3,3,2,1	12	0	81.6
16 d	22 24	832	696	14 54	136	15 14	46.6	19.1	02 25	27.5	15 41	381	318	23 47	63	4,2,2,3,5,4,3,4	27	1	81.7
17 d	17 35	790	731	18 10	59	18 03	39.4	19.2	22 15	20.2	22 08	404	320	00 00	84	3,2,3,3,3,3,3,4	24	1	81.5
18 d	00 40	829	704	18 56	125	12 42	38.1	17.9	04 03	20.2	18 59	405	302	03 27	103	5,4,3,3,3,3,4,2	27	1	81.6
19	17 57	782	719	20 18	63	11 45	34.0	10.9	20 48	23.1	17 48	399	330	24 00	69	2,1,3,3,2,4,4,4	23	1	81.7
20	22 16	803	719	16 24	84	13 09	35.4	13.6	00 41	21.8	16 43	378	306	01 52	72	4,3,2,2,3,3,2,3	22	1	81.8
21 d	04 30	802	707	16 37	95	12 03	34.6	17.9	16 55	16.7	16 55	393	326	03 09	67	2,3,3,4,3,4,3,3	25	1	81.7
22	21 05	799	747	12 16	52	11 53	34.5	18.6	20 16	15.9	20 30	374	342	11 53	32	1,1,2,2,2,2,3,3	16	0	81.7
23	08 40	784	730	17 00	54	14 02	34.7	21.7	17 10	13.0	17 23	382	342	11 12	40	2,2,2,2,2,3,2,2	17	1	81.7
24 q	06 56	787	763	11 33	24	14 19	32.7	26.0	08 53	6.7									

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

21 ESKDALEMUIR (H)		16,000γ (0.16 C.G.S. unit) +																				MARCH 1960				
	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
	0-1	1-2																								17,000+
1	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	1410
2 d	773	770	778	773	775	770	776	783	778	764	756	758	751	746	752	768	771	767	783	778	755	757	762	766	767	1410
3 d	765	766	767	759	763	760	766	770	743	748	747	742	720	732	742	768	770	772	768	753	758	765	771	762	757	1177
4	759	769	763	763	774	780	776	751	766	744	736	750	734	753	753	746	758	770	761	762	758	766	768	774	760	1234
5	767	759	766	765	771	772	767	766	758	755	751	738	731	728	757	769	770	764	743	759	768	766	773	756	759	1219
6	766	764	763	762	765	775	777	755	763	761	753	751	751	752	748	774	781	784	780	774	763	779	771	787	767	1399
7 q	773	769	774	775	777	778	785	782	776	763	747	759	759	758	757	770	772	763	776	765	768	768	775	773	769	1462
8	772	773	773	775	779	783	783	779	770	757	750	747	750	759	762	767	772	777	782	784	787	785	786	784	772	1536
9	786	784	787	788	792	797	775	794	788	766	750	740	742	739	747	736	748	759	766	776	783	782	777	776	770	1478
10	779	781	784	785	783	789	783	786	777	768	744	748	750	757	766	755	772	779	778	783	785	785	780	782	774	1579
11 d	782	780	785	782	782	784	786	747	706	724	734	734	734	735	747	745	743	753	755	747	768	773	778	780	780	1232
12	775	783	775	770	777	776	787	785	764	753	751	687	704	739	749	755	780	737	739	755	777	766	765	778	759	1227
13 q	770	773	768	769	769	773	778	765	754	740	737	735	735	738	752	753	753	762	773	778	778	778	774	774	762	1283
14	773	768	772	775	776	776	782	768	761	747	734	731	736	748	756	764	766	775	778	780	778	781	786	781	766	1392
15	775	779	777	777	780	785	784	779	772	747	744	753	750	759	766	766	783	779	788	791	795	795	793	793	799	1643
16 d	790	787	785	784	782	784	787	785	773	761	751	746	759	767	776	792	786	790	778	774	759	763	759	724	773	1542
17	674	666	644	703	720	713	755	737	735	719	710	705	698	705	723	735	755	736	751	731	740	751	751	766	722	323
18	752	746	753	751	757	763	769	758	731	740	726	720	714	728	736	746	755	766	763	766	774	764	769	774	751	1021
19	769	770	762	766	766	766	766	785	771	759	751	741	741	739	751	762	767	775	778	781	782	790	786	767	1402	
20 q	775	783	772	771	776	782	785	787	778	756	743	728	739	742	751	753	747	770	778	780	778	782	783	782	768	1421
21	780	776	775	775	773	773	783	782	776	763	750	749	754	758	765	769	773	778	782	784	785	785	784	785	773	1557
22 q	783	783	780	778	781	782	785	783	775	769	758	752	748	744	754	765	776	780	782	783	784	785	785	783	774	1578
23 q	784	780	777	781	785	784	785	778	771	758	749	754	756	751	766	775	780	783	784	786	784	786	787	793	776	1617
24	793	785	785	781	781	782	787	785	778	764	747	748	754	763	773	781	784	782	786	786	789	792	795	791	779	1692
25	783	787	795	801	795	792	792	786	776	766	750	756	761	766	772	793	769	783	788	795	781	797	793	780	782	1757
26	779	780	782	785	787	792	794	795	785	765	754	759	761	764	771	774	775	781	797	785	789	787	790	792	780	1723
27	769	773	777	781	780	782	786	783	765	754	752	757	758	772	761	774	776	784	792	791	792	791	791	790	776	1631
28	787	785	790	787	777	785	787	786	766	759	742	739	738	751	757	762	770	777	786	791	793	791	791	787	774	1584
29	785	785	784	784	785	794	796	791	778	754	735	734	746	761	764	776	769	753	791	793	791	786	778	774	774	1587
30	749	756	756	755	764	769	779	765	757	750	734	734	732	741	748	759	769	779	785	785	785	789	796	820	765	1356
31 d	792	777	766	773	776	772	778	770	754	741	746	746	756	753	785	800	817	786	804	774	759	749	731	761	771	1498
Mean	771	771	770	772	775	777	780	776	765	753	742	738	741	748	757	767	780	779	777	784	777	775	770	772	767	767
Sum 22,000+	1920	1902	1859	1924	2008	2076	2182	2059	1729	1326	1009	871	986	1180	1480	1786	2178	2156	2100	2312	2096	2042	1874	1922		Grand Total 570,977

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

22 ESKDALEMUIR (D)		10° +																				MARCH 1960				
	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
	0-1	1-2																								500.0+
1	27.2	26.8	25.7	25.2	23.2	23.4	27.0	25.1	26.3	26.4	28.4	31.9	33.5	33.4	34.5	36.4	35.8	33.8	37.1	30.4	21.6	23.2	23.9	27.2	28.6	187.4
2 d	27.0	24.5	14.9	23.7	24.1	25.1	26.5	25.8	26.8	29.3	28.7	33.3	35.3	36.8	34.4	35.0	33.9	29.7	29.2	28.3	27.8	26.7	20.4	24.6	28.0	171.8
3 d	25.0	24.8	23.1	22.4	25.9	23.7	23.3	26.5	29.0	30.2	29.7	34.4	35.9	37.8	38.6	36.7	31.8	31.7	27.0	29.0	27.7	27.4	27.3	21.9	28.8	190.8
4	24.1	25.1	25.9	25.1	27.2	26.6	26.0	25.6	25.7	26.4	28.4	31.3	34.2	36.9	41.4	35.7	37.6	37.1	32.6	29.4	27.8	28.7	23.0	23.9	29.4	205.7
5	24.3	24.6	25.2	24.7	26.1	24.5	23.3	25.0	28.4	26.8	28.9	32.2	34.5	37.6	35.3	35.2	34.1	32.6	32.6	31.8	27.4	28.7	25.2	23.4	28.9	192.4
6	24.6	26.3	25.8	26.1	28.2	28.6	27.0	26.3	25.0	26.2	27.3	29.7	33.1	35.0	34.5	32.7	31.5	30.3	28.8	25.1	20.7	27.1	27.9	27.1	28.1	174.9
7 q	27.4	27.9	27.9	27.9	27.5	27.3	27.1	25.7	24.3	24.4	26.5	30.7	33.8	35.7	35.6	33.6	31.9	30.8	30.7	29.7	29.6	29.0	28.1	28.3	29.2	201.4
8	28.5	28.4	28.9	28.6	27.9	26.6	28.2	30.9	27.3	24.7	26.8	32.0	37.9	37.9	37.9	35.3	32.7	30.1	29.5	28.8	28.7	28.7	26.9	24.1	29.9	217.3
9	26.2	27.7	27.5	28.6	28.4	26.7	27.6	26.2	24.9	25.0	27.4	30.8	34.4	35.4	35.9	32.8	32.0	30.2	29.8	29.1	28.8	28.4	28.0	28.5	29.2	200.3
10	28.8	28.6	28.1	27.6	26.8	26.3	26.2	26.0	24.5	29.2	30.9	31.9	35.6	36.3	36.0	35.6	32.6	30.1	27.8	19.2	24.6	27.1	28.5	28.9	29.1	197.2
11 d	28.2	28.5	25.1	26.6	27.5	31.9	29.0	28.6	27.2	26.7	29.0	31.1	35.1	36.2	36.5	33.6	31.4	26.5	23.8	27.8	26.4	27.5	27.7	28.3	29.2	200.2

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

23 ESKDALEMUIR (Z)

45,000γ (0.45 C.G.S. unit) +

MARCH 1960

	Hour G.M.T.																								Mean	Sum 8000+
	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	361	357	347	337	343	345	345	344	344	341	341	337	339	340	344	352	364	372	375	391	392	374	367	364	355	516
2 d	361	352	330	340	346	344	342	342	346	346	344	337	346	350	350	356	369	375	383	391	386	378	370	359	356	543
3 d	355	346	349	350	343	328	329	337	337	340	345	343	349	358	364	371	372	378	392	383	380	372	367	359	356	547
4	355	355	352	355	355	352	353	357	360	360	355	349	350	357	368	401	392	402	410	396	384	376	363	353	367	810
5	353	355	355	356	352	341	340	345	343	346	349	346	345	346	350	357	361	362	366	374	381	361	342	340	353	466
6	341	351	348	350	343	340	345	352	355	356	355	346	340	344	355	358	366	366	362	367	372	361	357	356	354	486
7 q	355	353	353	353	352	351	352	356	357	357	353	346	345	345	350	356	357	352	351	351	352	354	352	352	352	455
8	350	350	348	347	345	345	348	341	343	346	348	343	342	348	353	363	367	367	364	360	356	356	359	356	352	445
9	355	352	352	350	349	348	349	349	351	350	348	338	338	339	346	355	352	356	355	355	355	354	356	352	350	404
10	350	349	348	348	348	349	349	350	355	352	343	339	340	343	347	362	382	380	384	393	373	362	356	352	356	554
11 d	351	335	338	346	348	340	339	345	354	350	345	350	360	357	359	366	382	421	411	386	368	360	360	345	359	616
12	342	337	341	347	351	352	351	352	350	354	348	344	345	354	356	361	371	371	362	360	358	356	356	354	353	473
13 q	351	350	351	350	351	350	349	354	355	355	348	342	340	343	353	359	364	364	361	360	359	353	348	347	352	457
14	349	351	353	354	351	347	350	354	351	349	346	344	345	348	352	355	355	351	350	349	349	350	351	349	350	403
15	352	351	351	351	350	349	349	349	351	348	344	339	338	342	349	362	377	398	429	420	400	403	400	395	367	797
16 d	377	309	266	252	225	239	287	343	360	364	370	377	381	380	378	379	393	410	424	452	429	396	361	325	353	477
17	345	348	352	345	344	356	360	365	366	365	362	360	362	366	368	371	385	382	382	375	373	367	361	355	363	715
18	351	350	351	354	354	355	352	355	356	357	356	352	352	355	362	370	373	368	364	362	361	360	357	349	357	576
19	348	345	351	354	355	354	352	353	351	349	348	345	344	345	356	368	368	368	366	363	362	354	356	354	355	509
20 q	355	355	354	356	356	356	356	359	362	360	356	354	354	356	359	363	362	361	359	356	356	356	355	355	357	572
21	352	351	351	353	352	353	354	355	356	356	354	348	345	354	360	360	360	359	356	355	356	355	355	354	354	504
22 q	353	351	352	351	349	349	351	355	355	351	348	339	334	339	343	346	348	349	349	350	353	353	352	346	349	366
23	339	343	344	345	345	345	345	348	348	348	345	337	330	331	339	345	349	350	350	351	351	353	350	344	345	275
24	342	334	318	320	325	331	336	342	343	338	337	328	325	331	339	349	366	365	364	369	366	358	351	355	343	232
25	355	354	353	351	349	349	351	354	354	355	352	343	340	340	345	349	351	354	355	356	355	355	354	350	351	424
26	344	347	348	349	350	350	351	354	354	345	339	332	335	344	351	351	355	351	351	351	349	349	349	350	348	349
27	350	350	348	348	348	343	343	348	349	347	341	331	327	329	336	344	349	349	349	350	350	350	351	351	345	281
28	352	354	354	354	351	349	348	349	348	344	337	333	332	336	344	357	378	378	368	377	368	352	345	340	352	448
29	326	305	312	325	334	344	347	344	338	336	339	335	333	338	350	356	359	360	360	356	355	355	353	325	341	185
30	305	314	333	343	348	348	344	345	345	343	337	330	332	339	347	368	395	408	411	423	417	416	385	354	360	630
31 d	352	341	329	329	336	334	325	325	330	335	333	340	344	355	357	371	488	690	508	586	511	416	331	55	376	1029
Mean	349	345	343	344	343	343	345	349	351	350	347	343	343	347	353	361	371	381	377	380	373	365	357	342	354	
Sum 10,000+	827	695	632	663	648	636	692	821	867	843	766	635	632	752	930	1181	1510	1817	1671	1768	1577	1315	1071	595		Grand Total 263,544

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

24 ESKDALEMUIR

MARCH 1960

	TERRESTRIAL MAGNETIC ELEMENTS												3-hr. range indices K	Sum of K indices	Magnetic character of day, C (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	h. m.	γ	h. m.					γ		
1	h. m.	γ	γ	h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ	2, 3, 3, 2, 3, 3, 5, 3	24	1	81.5		
2 d	19 57	804	730	20 41	74	18 51	40.5	16.1	20 18	24.4	20 15	408	334	03 19	74	4, 3, 3, 3, 3, 3, 3, 4	26	1	81.5
3 d	22 24	790	705	12 51	85	13 32	39.1	12.4	02 30	26.7	19 22	392	328	02 20	64	3, 3, 3, 3, 3, 3, 3, 3	24	1	81.5
4	23 20	798	720	12 20	78	15 08	41.7	16.5	23 15	25.2	18 39	396	328	05 07	68	2, 2, 2, 2, 4, 4, 3, 4	23	1	81.5
5	22 13	815	718	13 05	97	14 58	46.7	19.5	22 36	27.2	18 14	413	349	12 22	64	2, 2, 3, 1, 3, 3, 3, 4	21	1	81.6
6	21 04	813	736	14 20	77	13 47	40.0	20.8	22 59	19.2	20 38	383	338	23 28	45	2, 2, 2, 3, 2, 2, 3, 2	18	1	81.8
7 q	06 40	793	737	10 07	56	13 46	35.4	18.4	20 24	17.0	20 19	375	338	00 12	37	1, 1, 1, 2, 1, 1, 1, 0	8	0	81.4
8	20 23	792	743	11 45	49	13 44	36.4	23.6	08 19	12.8	09 17	358	344	13 07	14	0, 2, 3, 2, 2, 2, 3	17	0	81.5
9	05 10	799	730	15 45	69	12 37	39.1	21.6	23 41	17.5	16 57	369	340	07 40	29	1, 1, 2, 3, 2, 3, 2, 2	16	0	81.3
10	20 52	801	736	11 06	65	14 34	37.3	22.8	08 23	14.5	17 29	357	334	11 57	23	2, 2, 3, 4, 3, 4, 4, 2	24	1	81.4
11 d	07 38	797	677	09 23	120	15 02	39.3	15.7	19 50	23.6	19 28	395	337	11 45	58	3, 3, 3, 4, 3, 4, 4, 2	26	1	81.4
12	20 24	797	646	11 40	151	12 08	38.7	17.2	17 59	21.5	17 53	434	331	01 30	103	2, 1, 2, 2, 3, 3, 1, 2	16	0	81.4
13 q	22 20	788	727	13 23	61	15 05	36.1	24.3	22 32	11.8	17 10	373	334	01 43	39	2, 1, 2, 1, 1, 3, 2, 2	14	0	81.5
14	21 04	800	729	11 05	71	13 34	36.2	22.2	09 17	14.0	17 09	366	339	12 18	27	1, 1, 1, 2, 2, 3, 1, 2	13	0	81.5
15	16 25	810	736	09 55	74	15 27	36.1	22.3	08 09	13.8	16 02	356	344	11 57	12	2, 0, 1, 1, 3, 4, 4, 5	20	1	81.6
16 d	17 54	827	665	24 00	162	16 10	44.9	8.2	24 00	36.7	19 11	454	336	12 32	118	5, 5, 3, 3, 3, 3, 5, 4	31	1	81.5
17	23 07	812	592	02 33	220	14 43	36.8	-14.4	02 44	51.2	20 04	473	213	04 18	260	3, 3, 3, 3, 3, 3, 4, 3	25	1	81.6
18	20 26	804	700	12 10	104	13 59	37.6	13.5	20 09	24.1	16 12	388	339	04 03	49	2, 2, 3, 2, 3, 1, 1, 3	17	0	81.4
19	23 05	816	732	12 42	84	13 59	34.2	19.9	23 28	14.3	16 05	373	348	23 09	25	2, 1, 2, 3, 3, 3, 1, 1	16	0	81.5
20 q	07 14	793	716	11 50	77	13 50	38.7	21.9	08 37	16.8	15 52	372	343	11					

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

21 ESKDALEUIR (H)

16,000γ (0.16 C.G.S. unit) +

APRIL 1960

Table with 25 columns for hourly intervals (0-1 to 23-24) and 2 columns for Mean and Sum. Rows include hourly data from 1 d to 30 d, and a final Sum row.

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

22 ESKDALEUIR (D)

10° +

APRIL 1960

Table with 25 columns for hourly intervals (0-1 to 23-24) and 2 columns for Mean and Sum. Rows include hourly data from 1 d to 30 d, and a final Sum row.

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

23 ESKDALEUIR (Z) 45,000γ (0.45 C.G.S. unit) + APRIL 1960

	Hour G.M.T.																								Mean	Sum 8000+
	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 d	33	256	364	99	90	288	366	367	352	351	355	393	506	513	574	623	536	565	496	394	167	280	294	310	357	572
2	281	211	309	351	337	325	345	368	381	412	431	434	423	401	394	393	394	391	393	390	390	389	385	372	371	900
3 d	355	321	324	284	246	278	279	287	336	363	371	378	379	381	380	383	385	389	389	389	385	384	383	384	351	433
4	383	383	381	382	383	383	385	384	382	379	375	368	367	368	372	378	390	401	408	391	384	352	365	371	380	1115
5	372	358	355	347	341	349	365	371	368	373	374	367	367	365	380	441	444	427	417	400	385	382	377	374	379	1099
6	374	377	378	378	378	378	377	375	372	362	366	361	371	374	382	381	377	378	377	377	392	395	382	376	377	1038
7	363	356	349	350	350	356	365	371	371	365	356	354	353	354	359	376	391	427	476	494	433	389	377	374	380	1109
8	375	366	334	329	349	368	372	371	367	365	360	362	364	362	370	379	393	404	389	378	379	377	374	371	369	858
9 q	366	359	351	345	335	344	345	352	358	362	361	356	355	357	361	366	367	368	370	371	372	371	374	368	359	628
10	366	364	362	364	366	362	361	360	361	355	349	348	348	362	367	374	385	394	420	408	395	367	305	211	361	654
11	305	332	345	360	364	366	371	377	376	374	376	370	367	368	373	383	388	387	404	401	389	383	365	342	369	866
12	297	287	285	303	316	339	350	351	354	358	359	357	360	378	379	379	385	400	393	381	373	356	331	352	450	
13	343	348	331	333	343	322	311	310	331	345	350	351	359	362	366	369	372	375	377	377	378	374	373	359	352	459
14	343	339	358	364	366	368	367	372	373	368	363	360	360	362	366	369	374	379	386	385	375	371	359	353	366	780
15	354	355	355	351	355	297	322	345	354	355	356	354	348	354	360	367	374	374	372	368	367	367	367	363	356	534
16	357	340	344	349	357	361	364	365	362	360	353	348	349	364	405	420	449	477	433	402	406	380	369	338	377	1052
17	321	346	312	305	338	348	355	367	368	368	366	359	354	354	358	366	373	385	404	410	406	396	375	369	363	703
18	359	286	290	326	343	356	360	361	362	365	363	366	363	366	371	381	387	399	391	382	377	374	371	363	361	662
19 q	362	365	364	367	368	372	375	377	368	363	359	356	355	355	356	359	362	366	366	367	367	366	366	366	365	748
20 q	366	366	366	366	366	366	367	365	359	354	345	343	339	342	350	355	360	362	365	367	367	367	367	366	360	636
21 q	366	366	365	364	365	366	366	364	359	352	343	337	328	331	340	345	348	355	359	359	360	361	361	360	355	520
22 q	357	356	356	357	359	360	359	356	353	348	339	331	331	336	348	358	362	366	364	364	361	360	360	359	354	500
23	359	359	360	359	359	355	355	355	351	345	334	325	327	334	344	349	355	360	361	355	363	369	370	325	351	428
24 d	274	187	201	257	236	297	326	342	356	359	364	371	370	402	420	418	411	420	450	442	398	279	281	293	340	154
25	234	218	277	327	347	345	352	369	370	366	362	372	372	383	424	432	458	448	437	435	409	352	344	337	365	770
26	318	320	324	336	348	358	364	373	375	373	368	365	362	369	381	398	412	422	423	416	403	390	379	336	371	913
27	337	359	367	371	371	370	371	371	366	362	351	341	344	356	369	381	389	391	390	391	375	369	343	233	361	668
28 d	152	144	166	195	302	354	344	308	315	333	360	377	397	443	451	469	505	528	544	494	443	408	385	351	365	768
29	314	201	307	350	327	274	291	310	333	348	357	366	353	384	393	393	402	407	415	402	389	386	374	333	350	409
30 d	315	328	227	153	241	267	299	316	327	340	344	347	364	446	608	558	541	299	518	511	535	492	520	454	390	1350
Mean	323	318	327	324	331	342	351	355	359	361	360	361	365	374	390	398	402	401	410	400	384	373	367	348	364	
Sum 9000+	701	553	807	722	946	1272	1529	1660	1760	1823	1810	1817	1935	2226	2701	2943	3063	3029	3294	3013	2531	2204	1995	1442		Grand Total 261,776

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

24 ESKDALEUIR APRIL 1960

	TERRESTRIAL MAGNETIC ELEMENTS												3-hr. range indices K	Sum of K indices	Magnetic character of day, C (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	9, 9, 6, 6, 7, 8, 9, 8	62	2	81.2	
2	16 57	2030	-562	03 47	2592	16 50	86.5	-69.7	00 15	156.2	15 50	778	-231	03 46	1009	34	2	80.9
3 d	23 20	783	455	01 28	328	04 33	36.9	-4.5	02 27	41.4	11 43	439	182	01 26	257	34	2	81.0
4	00 15	800	568	04 20	232	06 13	51.4	-3.7	01 40	55.1	18 49	394	228	04 48	166	26	1	80.9
5	17 53	781	641	21 32	140	21 32	35.3	13.6	21 50	21.7	18 13	412	316	21 33	96	27	1	81.0
6	15 52	847	692	11 20	155	14 09	39.2	17.1	07 57	22.1	15 45	470	337	04 31	133	27	1	81.0
7	16 32	858	711	13 00	147	13 42	35.0	12.7	21 37	22.3	20 58	401	360	11 25	41	22	1	80.8
8	17 50	842	721	10 33	121	15 16	37.8	14.6	22 30	23.2	19 06	517	347	03 50	170	23	1	80.8
9 q	17 42	793	699	12 32	94	13 41	35.3	19.4	08 24	15.9	17 27	406	325	03 29	81	20	1	80.7
10	03 34	791	719	12 12	72	14 29	35.1	20.0	05 03	15.1	20 28	373	332	04 37	41	19	1	80.7
11	19 17	805	584	23 12	221	14 10	43.6	4.9	23 42	38.7	18 42	433	147	23 10	286	26	1	80.9
12	17 48	815	692	10 07	123	13 50	37.9	9.0	00 00	28.9	18 49	412	285	00 00	127	26	1	81.0
13	22 49	849	683	08 16	166	00 01	37.9	11.8	02 19	26.1	18 25	401	269	02 07	132	28	1	80.8
14	06 52	815	714	11 16	101	06 16	35.6	23.2	04 19	12.4	19 52	379	304	06 48	75	23	1	80.7
15	22 07	806	696	11 50	110	13 28	34.7	19.0	08 58	15.7	18 48	388	332	01 02	56	20	1	80.8
16	05 37	815	700	05 07	115	05 11	48.5	18.8	07 46	29.7	16 44	376	286	05 29	90	25	1	81.4
17	16 53	818	708	13 08	110	15 33	46.1	16.5	20 40	29.6	17 11	494	310	03 59	184	25	1	80.7
18	18 32	819	697	09 45	122	13 34	38.7	8.7	00 17	30.0	19 42	414	278	02 58	136	28	1	80.7
19 q	17 38	805	676	10 52	129	01 06	38.4	22.2	08 12	16.2	17 33	400	264	01 43	136	23	1	80.8
20 q	00 32	785	727	11 22	58	13 53	33.1	18.9	07 50	14.2	07 11	378	354	12 44	24	10	0	80.8
21 q	19 20	785	727	11 45	58	13 28	34.1	18.3	09 12	15.8	06 56	367	337	12 32	30	7	0	80.8
22 q	23 50	811	734	11 40	77	13 21	35.0	19.0	07 55	16.0	00 41	367	327	12 50	40	8	0	80.7
23	18 32	801	755	11 03	46	13 15	35.3	21.9	07 24	13.4	17 23	366	331	11 57	35	12	0	80.6
24 d	20 09	824	689	23 15	135	13 18	36.0	11.6	24 00	24.4	22 11	378	305	23 39	73	19	1	80.8
25	22 15	835	643	01 53	492	12 47	43.5	-29.5	01 44	73.0	19 01	458	133	01 43	325	35	2	80.7
26	17 10	853	600	00 45	253	14 03	45.0	10.										

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

21 ESKDALEUIR (H)

16,000γ (0.16 C.G.S. unit) +

MAY 1960

Table with 25 columns for hourly intervals (0-1 to 23-24), a Mean column, and a Sum 17,000+ column. Rows are labeled 1 d through 31, plus a Mean row and a Sum 22,000+ row.

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

22 ESKDALEUIR (D)

10° +

MAY 1960

Table with 25 columns for hourly intervals (0-1 to 23-24), a Mean column, and a Sum 500.0+ column. Rows are labeled 1 d through 31, plus a Mean row and a Sum 600.0+ row.

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

23 ESKDALEMUIR (Z)		45,000y (0.45 C.G.S. unit) +																				MAY 1960					
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 8000+
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	421	385	377	401	410	420	428	420	412	392	385	384	389	397	410	413	414	409	407	414	414	384	380	385	402	1651	
2	385	383	374	372	370	382	389	395	394	394	391	386	384	388	386	388	390	394	391	394	396	387	382	379	378	386	1274
3	379	379	379	379	378	378	378	378	377	372	371	366	362	366	373	379	384	389	388	385	383	382	379	378	378	378	1062
4 q	378	377	377	378	379	379	378	374	373	370	365	365	366	363	366	371	377	379	383	383	385	385	378	373	373	375	1002
5	373	374	375	374	377	377	374	373	372	371	364	360	360	362	360	364	371	377	379	378	378	374	371	367	371	905	
6 d	347	343	357	360	360	363	367	366	363	358	348	342	349	370	390	413	427	443	459	429	437	366	331	343	376	1031	
7 d	329	298	295	321	343	351	371	382	380	375	371	371	369	386	406	408	425	465	477	442	416	395	367	335	378	1078	
8 d	343	360	367	371	343	305	327	339	337	349	366	363	373	398	485	702	580	492	457	428	408	399	396	377	403	1665	
9	383	385	385	385	384	382	382	382	377	367	359	363	368	384	397	397	404	403	398	390	386	383	381	381	384	1208	
10	381	381	379	380	383	383	381	379	378	371	367	366	370	379	385	396	401	398	399	397	390	385	379	373	383	1181	
11	363	360	348	362	364	336	321	333	339	341	356	365	366	373	381	387	388	389	387	387	390	383	362	368	365	749	
12	373	375	375	376	363	339	340	352	360	359	360	358	368	379	391	393	393	389	384	379	377	375	373	367	371	898	
13	366	371	373	373	374	371	367	362	358	349	344	341	344	351	366	375	383	385	383	384	382	370	365	361	367	798	
14	364	366	365	364	367	358	346	348	349	354	349	350	351	358	368	379	391	391	386	382	378	375	372	372	366	783	
15	373	373	373	373	375	374	373	368	366	363	356	355	352	361	373	378	387	389	385	379	378	375	373	373	372	925	
16	371	371	373	373	374	377	378	373	364	355	344	340	340	348	358	373	387	418	406	401	389	372	373	368	372	926	
17	368	360	368	373	377	379	378	371	368	364	358	348	348	356	362	373	388	385	383	377	373	372	372	369	370	870	
18 q	367	368	368	367	372	368	366	366	362	356	355	353	355	357	367	374	379	383	383	379	377	373	372	368	368	835	
19 q	365	363	367	373	378	378	374	371	361	355	354	350	349	354	363	371	378	379	379	379	378	374	371	367	368	831	
20 q	367	367	368	370	371	369	368	366	360	349	345	343	346	356	360	363	367	371	371	370	369	367	366	366	363	715	
21	362	361	362	367	367	368	367	363	354	345	343	341	339	345	356	361	368	372	373	372	369	367	367	367	361	686	
22 q	366	366	366	366	367	367	367	367	367	364	358	344	332	328	336	348	350	354	360	361	362	362	362	362	362	357	577
23	361	361	362	362	362	362	366	367	365	359	345	336	336	345	352	364	374	383	391	386	371	360	367	367	363	704	
24	350	339	345	344	327	329	331	310	328	339	343	347	360	373	387	395	402	409	404	410	383	375	366	340	360	636	
25	318	322	331	347	355	354	357	362	362	355	344	342	349	368	385	390	396	402	419	404	388	383	379	369	366	781	
26	329	336	337	326	348	359	367	367	362	351	345	340	347	365	368	371	389	402	401	391	385	381	368	347	362	682	
27	314	321	302	309	344	368	376	379	376	368	355	345	346	356	363	371	378	378	383	393	383	375	369	371	359	623	
28	368	367	366	366	370	373	372	373	371	365	355	343	340	349	356	361	369	373	373	371	362	360	360	359	363	722	
29 q	269	195	247	309	343	364	366	365	359	354	347	343	345	346	356	381	388	390	390	390	390	396	385	375	371	349	374
30	367	366	367	368	370	371	368	366	366	355	349	347	354	362	381	406	424	439	433	416	399	387	381	377	373	380	1126
31	371	366	363	362	364	366	367	367	362	358	345	339	339	343	348	356	362	366	367	367	366	366	363	362	360	635	
Mean	360	356	358	363	366	366	367	367	365	360	355	353	355	364	377	391	395	397	396	390	385	377	371	366	371		
Sum 10,000+	1171	1039	1091	1251	1359	1350	1390	1384	1308	1165	1021	931	1000	1293	1672	2121	2233	2296	2263	2102	1936	1671	1498	1358		Grand Total 275,903	

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

24 ESKDALEMUIR		TERRESTRIAL MAGNETIC ELEMENTS										3-hr. range indices K		Sum of K indices	Magnetic character of day, C (0-2)	Temperature in magnet house 200 +			
		Horizontal force			Declination			Vertical force											
		Maximum 16,000y +	Minimum 16,000y +	Range	Maximum 10 ⁰ +	Minimum 10 ⁰ +	Range	Maximum 45,000y +	Minimum 45,000y +	Range									
		h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ								
1 d	02 33	789	532	01 14	257	01 08	38.2	-0.7	05 11	38.9	06 19	433	355	02 48	78	6,6,5,3,4,4,3,4	35	2	80.8
2	15 57	793	672	04 18	121	13 27	31.6	16.7	09 19	14.9	20 02	401	368	04 27	33	2,4,3,3,3,3,3,2	23	1	80.8
3	19 01	795	712	10 22	83	13 42	33.8	22.0	07 23	11.8	17 20	390	362	12 39	28	1,2,2,2,2,3,2,1	15	0	81.0
4 q	19 19	813	734	12 18	79	15 03	32.5	18.1	21 52	14.4	19 56	387	373	23 27	14	1,1,1,2,2,1,2,3	13	0	80.9
5	20 40	806	735	10 40	71	13 19	33.6	18.9	06 40	14.7	18 48	379	355	24 00	24	2,2,2,2,2,2,3,3	18	0	81.1
6 d	18 00	962	654	22 19	308	17 38	45.3	4.6	21 57	40.7	17 57	475	284	22 00	191	3,3,2,4,3,5,6,5	31	1	80.8
7 d	16 29	875	676	00 59	199	16 31	39.5	12.2	09 31	27.3	18 22	488	263	01 58	225	4,4,3,4,6,5,4,5	35	2	80.9
8 d	15 06	1055	469	09 16	586	16 28	52.2	0.1	09 18	52.1	15 20	778	301	05 17	477	2,5,6,7,7,7,5,6	45	2	81.2
9	16 56	793	694	10 48	99	12 01	36.1	16.6	05 12	19.5	17 02	406	355	10 33	51	3,3,3,4,3,3,2,2	23	1	80.9
10	19 43	819	716	12 20	103	14 34	34.0	19.8	06 33	14.2	16 32	402	365	11 09	37	2,2,2,2,2,2,3,3	18	1	80.9
11	04 37	837	650	08 17	187	05 29	40.3	19.6	04 35	20.7	20 09	391	315	06 21	76	4,5,5,3,4,4,4,3	32	1	81.2
12	16 25	807	691	10 49	116	16 08	33.7	16.1	08 48	17.6	15 11	397	337	05 43	60	2,3,3,3,4,4,2,2	23	1	81.2
13	20 35	820	732	11 03	88	13 33	35.9	20.0	23 29	15.9	20 15	388	339	11 08	49	2,2,2,2,3,3,3,3	20	1	81.2
14	16 00	802	706	11 49	96	13 09	37.2	23.3	06 39	13.9	16 53	394	344	06 50	50	2,2,3,3,3,3,2,2	20	1	81.2
15	18 20	801	689	12 00	112	13 07	36.8	17.1	06 50	19.7	16 58	390	351	12 23	39	0,2,2,4,3,3,2,1	17	0	81.3
16	15 43	955	689	14 53	266	16 32	52.9	17.5	08 22	35.4	17 38	429	339	11 55	90	2,1,2,2,5,6,6,5	29	1	81.2
17	01 01	827	709	13 49	118	13 09	36.9	13.0	06 33	23.9	16 45	390	344	11 58	46	3,2,3,4,4,3,2,2	23	1	81.4
18 q	16 56	809	734	11 12	75	13 45	30.8	18.9	07 52	11.9	17 40	384	352	11 37	32	2,2,2,2,2,2,2,2	16	0	81.3
19 q	19 30	808	742	10 06	66	13 31	32.1	18.1	07 31	14.0	17 45	381	349	12 09	32	2,1,2,2,1,2,2,2	14	0	81.6
20 q	23 42	802	754	11 26	48	13 29	33.5	18.2	07 15	15.3	17 55	372	341	11 40	31	1,2,1,1,1,2,1,2	11	0	81.5
21	18 58	816																	

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

21 ESKDALEMUIR (H)		16,000γ (0.16 C.G.S. unit) +																				JUNE 1960				
	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 18,000+	
	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	798	796	781	805	788	737	769	744	724	712	706	704	728	735	750	774	789	796	801	808	797	796	791	786	767	415
2 q	786	780	779	780	782	780	774	767	761	751	739	745	749	752	768	781	789	800	807	797	794	792	791	788	776	632
3	784	782	779	779	777	773	768	763	757	753	754	754	757	769	774	782	791	829	828	831	820	806	785	773	783	793
4 d	766	773	767	816	766	743	704	712	757	747	730	718	718	727	747	751	769	773	796	789	791	803	780	786	760	229
5	769	744	750	739	770	770	735	745	735	711	694	687	707	714	743	782	778	770	794	795	805	789	788	788	754	102
6	761	754	754	772	756	759	752	747	742	741	714	699	747	741	749	782	763	776	777	792	798	796	794	797	761	263
7	789	777	778	774	782	780	777	778	768	746	754	761	746	756	751	770	780	795	808	820	816	807	801	789	779	703
8	785	777	778	784	755	773	755	743	745	761	757	747	766	776	786	781	784	813	826	828	808	784	773	775	778	670
9	767	769	780	782	736	750	745	747	732	734	727	730	757	775	761	782	780	806	845	814	790	782	781	779	769	451
10 q	778	775	777	777	778	779	771	756	742	737	736	742	748	758	772	782	797	800	810	815	810	793	782	785	775	600
11 q	785	787	783	784	787	774	760	745	740	739	743	751	763	770	777	786	796	804	813	800	798	792	790	788	777	655
12 q	786	783	788	791	792	787	777	759	749	745	742	751	771	770	781	788	792	811	824	806	797	800	801	802	783	793
13	798	798	793	792	793	795	790	782	775	765	756	751	753	766	774	775	796	820	818	818	810	802	799	803	788	922
14	802	807	801	802	802	799	790	781	773	762	759	767	745	751	754	778	793	803	808	825	810	795	795	792	787	894
15	785	790	783	785	783	778	775	771	749	755	759	758	761	758	777	792	805	806	806	811	807	797	798	803	783	792
16 q	788	790	792	787	788	790	778	778	772	754	740	741	743	753	768	783	790	803	794	797	795	793	794	797	779	708
17	801	783	775	782	783	783	780	774	768	760	752	748	750	758	775	792	810	779	786	798	797	801	798	796	780	729
18	792	787	793	793	790	789	778	768	760	750	745	730	759	773	764	781	797	827	806	819	817	809	814	805	785	846
19	797	805	811	800	799	778	780	783	753	745	757	749	758	774	766	769	789	808	829	826	803	784	782	778	784	823
20	772	774	776	791	788	777	771	761	747	739	738	746	765	770	775	782	784	797	807	807	805	802	797	796	778	667
21	797	791	793	777	784	786	778	766	736	735	737	749	755	771	782	795	799	799	826	808	807	797	785	786	781	739
22	784	780	786	795	782	772	766	753	747	746	747	759	765	759	777	788	790	791	798	817	813	806	791	790	779	702
23	767	772	764	777	777	780	782	769	757	744	742	758	769	785	780	807	803	808	804	802	801	790	797	792	780	727
24	783	786	784	783	787	782	772	762	760	763	766	753	758	757	769	788	794	819	807	828	818	799	799	795	784	812
25	794	777	792	785	786	778	766	749	742	741	749	763	760	763	791	831	832	895	868	840	836	784	787	756	790	965
26	763	768	746	775	775	740	736	734	733	736	731	740	748	746	758	776	791	820	821	815	812	801	803	783	769	451
27 d	774	786	828	677	712	698	747	753	736	698	707	710	738	732	753	771	846	858	871	845	810	782	771	784	766	387
28 d	787	790	820	775	775	786	791	768	751	747	738	709	703	727	744	749	785	821	816	839	805	775	751	749	769	461
29 d	766	755	755	754	787	782	759	736	755	754	743	734	727	732	753	768	786	805	809	836	847	871	794	727	772	535
30 d	727	736	712	720	774	772	764	751	728	714	693	699	728	728	746	783	808	871	837	838	795	781	785	764	328	
Mean	781	779	779	778	778	773	767	759	750	743	739	738	748	755	765	782	793	810	815	815	809	797	790	785	776	
Sum 22,000+	1431	1372	1358	1333	1336	1174	995	760	500	289	154	153	442	646	965	1449	1806	2303	2440	2464	2255	1923	1693	1553		Grand Total 558,794

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

22 ESKDALEMUIR (D)		10° +																				JUNE 1960				
	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 500.0+	
	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	24.0	21.8	18.5	20.7	15.3	21.1	27.2	25.2	23.7	23.5	28.6	31.2	32.6	32.7	31.9	34.1	33.6	33.1	31.5	29.6	28.2	27.7	28.2	27.4	27.1	151.4
2 q	26.6	25.7	25.7	24.8	23.5	21.8	20.1	19.0	18.7	20.8	23.6	27.3	30.4	31.5	31.9	31.8	31.4	30.5	30.0	28.9	28.5	27.8	27.8	27.2	26.5	135.3
3	26.7	26.1	25.4	24.7	23.3	21.5	19.7	18.5	18.4	21.4	24.6	28.1	30.6	32.8	33.4	33.2	32.6	33.2	31.6	31.7	30.6	23.9	27.3	27.1	26.9	146.4
4 d	24.3	20.2	19.1	12.1	9.2	9.1	10.5	10.0	26.5	22.4	28.2	30.0	33.2	34.6	36.9	37.2	35.9	33.9	33.1	31.4	29.1	29.4	26.5	28.7	25.5	111.5
5	21.3	19.4	21.6	30.5	22.7	25.2	24.4	26.4	27.1	25.5	24.7	26.6	30.3	33.7	33.2	32.5	30.6	29.4	29.1	25.2	27.1	29.5	29.1	29.6	27.3	154.7
6	23.4	29.0	24.9	24.5	20.6	19.5	19.8	18.4	21.5	22.7	27.1	31.6	35.4	34.9	33.5	33.1	29.6	27.7	27.5	27.9	26.8	27.5	28.3	29.3	26.9	144.5
7	24.6	27.1	24.6	22.1	19.5	19.9	19.6	18.6	21.3	27.4	30.2	32.7	34.6	32.8	32.4	31.6	29.4	27.8	24.5	27.4	27.6	27.4	27.4	26.2	129.1	
8	27.0	26.8	27.7	28.0	29.3	21.4	18.6	17.5	20.8	24.0	26.8	30.5	31.4	33.2	33.6	33.8	32.0	30.1	27.6	25.5	25.2	24.2	21.5	23.6	26.7	140.1
9	27.2	23.5	24.2	26.5	28.9	27.8	24.0	19.3	20.1	23.1	27.0	30.2	33.1	35.6	34.7	33.5	30.7	28.8	25.3	23.4	27.0	27.8	27.9	27.5	27.4	157.1
10 q	27.4	26.9	26.9	24.0	23.0	20.8	19.3	19.1	19.6	22.1	26.2	29.9	31.7	32.4	32.4	31.2	30.6	28.9	28.7	27.9	27.2	25.6	27.6	27.9	26.6	137.3
11 q	27.9	28.7	28.0	23.5	22.6	20.0	19.1	19.0	19.7	23.0	27.3	31.4	33.4	33.9	33.5	32.7	31.4	29.6	28.9	27.9	28.1	28.0	28.3	28.1	27.3	154.0
12 q	27.2	26.4	25.9	25.2	23.4	21.0	20.1	20.1	20.3	21.8	24.5	27.2	30.7	32.1	33.8	33.4	33.1	32.5	32.2	29.9	28.2	28.0	27.9	27.9	27.2	152.8
13	27.4	28.1	25.8	23.7	20.9	20.4	19.8	19.6	20.7	20.4	23.0	26.4	28.1	30.0	30.7	31.0	31.8	32.9	31.1	29.6	29.1	29.0	28.3	28.8	26.5	136.6
14	28.0	29.1	28.6	24.5	22.3	21.7	23.2	24.6	21.9	22.5	23.9	26.4	29.3	32.2	34.5	33.7	33.0	31.4	29.4	27.3	28.1	26.9	28.2	27.6	27.4	158.3
15	27.6	29.1	28.4	25.0	22.7	20.8	20.1	21.7	22.8	25.3	26.4	28.9	31.7	33.2	33.1	32.4	31.2	30.1	29.7	28.4	27.4	27.7	28.3	28.9	27.5	160.9
16 q	28.5	27.2	27.2	28.4	24.5	22.4	23.3	21.2	20.5	20.9	23.6	26.9	28.7	28.7	29.6	30.4	29.4	27.5	27.5	28.3	28.2	28.0	28.6	28.7	26.6	138.2
17	27.8	27.6	24.5	24.1	23.5	22.5	21.6	21.3	20.8	21.9	25.2	28.7	31.8	32.5	32.5	30.9	29.5	27.3	29.1	28.9	29.3	29.3	29.4	28.0	27.0	147.9
18	28.6	29.0	29.0	25.1	22.8	23.5																				

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

23 ESKDALEMUIR (Z)		45,000γ (0.45 C.G.S. unit) +																				JUNE 1960					
	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 8000+	
	0-1	1-2																									
1	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
2	q	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
3		γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
4	d	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
5		γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
6		γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
7		γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
8		γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
9		γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
10	q	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
11	q	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
12	q	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
13		γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
14		γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
15		γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
16	q	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
17		γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
18		γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
19		γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
20		γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
21		γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
22		γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
23		γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
24		γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
25		γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
26		γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
27	d	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
28	d	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
29	d	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
30	d	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	348	346
Mean		357	353	344	336	338	343	349	354	355	354	351	349	353	361	367	371	378	384	387	386	383	376	365	362	361	
Sum 10,000+		721	604	321	71	148	296	479	631	664	607	523	485	601	835	1003	1143	1329	1513	1609	1590	1492	1293	958	858		Grand Total 259,774

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

24 ESKDALEMUIR		TERRESTRIAL MAGNETIC ELEMENTS												JUNE 1960						
		Horizontal force						Declination			Vertical force			3-hr. range indices K	Sum of K indices	Magnetic character of day, C (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
		h. m.	γ	γ	h. m.		γ	h. m.	γ	h. m.		γ	h. m.					γ	h. m.		γ
1		03 29	829	690	09 25	139	13 49	35.4	12.2	04 20	23.2	14 21	386	294	03 59	92	3,5,3,3,3,2,2,1	22	1	81.6
2	q	18 12	811	736	10 50	75	14 59	32.5	17.9	08 09	14.6	06 00	375	350	12 30	25	2,1,2,1,3,2,2,1	14	0	81.6
3		17 50	859	746	11 07	113	17 48	34.1	17.7	07 45	16.4	21 29	384	340	11 53	44	0,0,2,2,2,4,3,4	17	1	81.8
4	d	21 25	855	664	06 55	191	14 32	39.8	2.5	04 51	37.3	17 01	413	241	05 38	172	4,5,5,3,5,4,4,5	35	1	81.8
5		20 07	836	657	11 15	179	03 47	37.9	12.2	00 49	25.7	17 12	424	259	04 06	165	4,5,3,4,3,4,4,2	29	1	82.2
6		19 53	803	660	11 15	143	12 24	37.0	16.1	07 27	20.9	16 11	396	299	04 12	97	4,3,3,4,3,3,3,2	25	1	81.9
7		19 25	827	732	14 22	95	13 07	35.4	16.4	07 50	19.9	19 16	403	326	02 50	77	3,3,3,3,3,3,3,2	23	1	81.9
8		19 45	855	723	11 16	132	14 02	35.6	13.9	07 52	21.7	19 28	401	315	04 42	86	2,4,3,4,3,3,4,3	26	1	81.8
9		18 41	866	715	10 59	151	13 09	36.1	17.1	08 03	19.0	19 13	390	303	01 24	87	3,4,3,2,4,3,4,1	24	1	82.1
10	q	20 05	824	734	09 54	90	14 00	33.0	17.8	08 04	15.2	21 10	383	342	12 08	41	1,1,1,2,2,3,2,2	14	0	82.2
11	q	18 04	818	735	09 28	83	13 49	34.4	18.1	06 40	16.3	05 51	375	345	11 27	30	2,1,2,2,2,2,2,1	14	0	82.1
12	q	18 25	832	738	10 37	94	14 57	34.1	19.1	06 10	15.0	20 06	375	322	11 50	53	1,1,2,2,2,3,3,1	15	0	82.2
13		17 29	845	747	12 27	98	17 18	34.3	19.1	07 06	15.2	18 19	380	339	12 41	41	1,2,1,2,2,4,2,1	15	0	82.2
14		19 59	833	709	13 47	124	14 39	35.4	20.9	05 03	14.5	19 54	387	346	11 12	41	2,2,2,3,4,3,3,1	20	1	82.3
15		18 56	827	733	08 32	94	14 02	33.7	19.0	08 14	14.7	18 33	397	349	11 36	48	2,1,3,3,3,3,3,2	20	0	82.4
16	q	17 26	810	736	11 20	74	15 12	30.6	19.8	08 20	10.8	17 59	375	344	13 12	31	2,2,3,2,2,2,1,2	16	0	82.5
17		16 31	823	746	11 36	77	14 23	32.7	20.4	08 43	12.3	17 30	392	348	13 53	44	3,1,2,1,3,4,3,2	19	0	82.5
18		17 33	841	718	11 13	123	13 55	35.8	19.8	08 10	16.0	18 37	379	341	12 27	38	3,2,2,3,3,3,3,3	22	1	82.6
19		18 32	839	738	09 37	101	13 39	35.8	18.3	04 51	17.5	19 41	403	331	07 36	72	3,3,3,3,3,3,4,3	25	1	82.5
20		19 21	811	733	09 57	78	14 01	35.0	17.6	08 19	17.4	20 28	380	334	03 35	46	3,3,1,1,3,3,1,1	16	0	82.7
21		18 50	834	727	08 40	107	14 47	37.0	19.8	04 47	17.2	19 03	414	310	05 00	104	3,4,3,3,3,3,3,3	25	1	82.6
22		19 32	827	739	10 13	88	13 34	37.5	16.2	04 53	21.3	21 33	381	335	03 39	46	3,3,1,3,3,3,3,3	22	1	82.5
23		15 37	829	735	10 36	94	13 40	36.8	13.6	02 05	23.2	18 06	385	340	01 10	45	4,3,3,2,3,4,2,2	23	1	82.5
24		20 01	847	735	13 49	112	13 30	36.0	16.1	06 55	19.9	19 52	389	347	11 49	42	2,2,2,3,3,3,4,3	22	1	82.7
25		17 22	918	715	23 00	203	14 20	38.8	16.1	01 10	22.7	19 11	408	319	22 47	89	3,2,2,3,3,5,4,5	27	1	82.6
26		17 52	842	719	07 59	123	15 31	33.4	15.3	05 06	18.1	20 46	381	282	02 47	99	4,4,3,2,3,4,3,3	26	1	82.5
27	d	18 43	917	626	04 59	291	16 39	37.1	10.3	03 50	26.8	20 03	426	209	03 32	217	5,5,4,3,2,5,5,4	33	2	82.6
28	d	19 23	870	672	11 57	198	15 51	37.7	8.4	08 23	29.3	18 43	421	335	10 36	86	3,3,4,4,4,4,4,3	29	1	82.7
29	d	21 49	917	696	23 56	221	21 09	37.1	11.9	07 02	25.2	18 10</								

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

21 ESKDALEMUIR (H)

16,000γ (0.16 C.G.S. unit) +

JULY 1960

	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
	0-1	1-2																								16,000+
1	796	785	770	763	775	783	744	751	773	744	724	718	729	741	748	736	766	780	860	844	799	780	774	778	769	2461
2	783	765	777	774	776	785	784	766	779	765	744	726	732	765	759	783	777	788	803	799	796	791	784	778	774	2579
3	778	781	783	788	786	781	778	768	766	751	741	731	758	768	772	779	792	803	815	827	818	789	788	784	780	2723
4	791	786	774	780	764	775	779	762	745	730	731	733	736	743	755	766	816	800	825	810	808	787	786	787	774	2569
5	791	793	786	786	791	794	788	771	751	728	728	739	733	741	744	778	778	795	810	828	813	795	794	784	777	2639
6	775	771	766	775	779	784	774	755	735	717	689	706	738	764	763	765	785	791	801	803	798	785	781	782	766	2382
7 q	779	781	781	783	786	785	772	759	744	735	731	741	753	759	775	782	795	813	812	809	805	796	796	791	778	2663
8 q	789	787	783	782	785	786	776	767	757	751	746	751	763	767	773	789	801	808	814	812	805	799	797	794	783	2782
9 q	791	793	796	798	799	799	793	780	768	763	763	757	768	771	780	791	797	804	810	813	813	810	810	805	791	2972
10	800	794	788	791	795	801	796	788	780	778	760	745	753	766	776	785	785	809	818	830	823	811	801	791	790	2957
11	797	791	785	791	800	804	804	794	783	780	763	751	758	770	775	786	806	795	816	817	825	798	795	797	791	2981
12	797	796	795	797	799	794	775	781	778	763	756	749	766	761	775	773	781	791	805	808	807	809	801	796	786	2853
13	803	791	786	791	793	795	796	795	780	760	757	758	766	771	778	785	802	789	803	807	830	799	800	799	789	2934
14 d	795	791	790	791	796	789	801	788	766	752	736	743	751	761	769	805	815	875	824	823	826	843	828	832	795	3090
15 d	821	814	811	821	809	803	791	792	782	759	766	759	740	747	783	852	917	907	854	788	763	730	603	581	783	2793
16 d	524	496	655	656	731	725	647	636	638	664	686	679	712	705	732	788	856	814	814	804	768	750	724	710	705	914
17	691	696	760	757	737	729	730	707	679	712	705	710	713	722	731	759	781	816	808	790	775	783	762	770	743	1823
18	760	753	754	770	773	764	755	752	740	728	731	736	726	745	765	762	762	777	792	794	794	789	783	780	762	2285
19 d	778	777	779	782	785	784	752	723	710	678	696	690	738	752	750	740	738	781	800	850	797	765	779	771	758	2195
20	764	763	755	758	762	759	750	736	718	710	713	704	725	753	782	762	782	804	825	822	779	758	799	763	760	2246
21	763	765	765	765	752	750	758	743	724	717	720	723	738	733	760	781	789	796	787	789	791	786	787	795	762	2277
22	790	779	771	765	756	754	761	750	742	742	733	732	747	761	769	776	777	796	802	812	808	794	786	787	770	2490
23	777	783	772	774	774	772	760	761	762	747	736	737	748	758	764	771	780	782	787	796	799	790	793	791	771	2504
24	805	789	782	784	774	776	777	775	779	786	775	773	766	756	758	766	784	788	807	808	806	790	792	794	783	2790
25 q	782	782	782	781	782	783	779	767	757	755	749	755	762	768	781	789	786	794	801	799	802	799	794	792	780	2721
26	788	786	786	786	789	788	783	778	766	761	757	764	769	771	772	790	800	800	813	817	809	808	790	760	784	2811
27 q	769	782	785	790	792	785	769	766	754	746	746	747	753	757	760	772	781	792	805	807	804	800	800	796	777	2658
28	790	789	790	790	792	786	777	769	767	768	766	769	758	765	780	790	802	806	809	822	817	812	812	817	789	2943
29	810	817	792	786	778	787	802	794	777	768	749	748	748	766	777	830	847	851	830	830	785	796	800	794	794	3062
30	775	738	777	782	780	784	785	781	774	771	765	750	734	759	786	795	785	792	790	797	799	797	802	800	779	2698
31 d	794	785	752	794	785	765	741	742	713	720	715	724	734	737	751	775	822	802	808	793	790	785	787	772	766	2386
Mean	776	771	775	778	780	779	770	761	751	743	738	737	746	755	766	761	796	805	811	811	801	791	784	780	774	
Sum 22,000+	2046	1899	2028	2131	2175	2149	1877	1597	1285	1049	877	848	1115	1403	1743	2201	2678	2939	3148	3148	2842	2524	2308	2171		Grand Total 576,181

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

22 ESKDALEMUIR (D)

10° +

JULY 1960

	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
	0-1	1-2																								500.0+
1	26.3	25.0	29.5	24.5	20.4	22.0	22.8	22.5	22.6	20.8	21.8	23.8	29.3	30.6	29.8	26.5	25.8	26.3	27.8	24.9	25.0	27.2	26.7	26.8	25.4	108.7
2	29.1	27.8	27.6	28.1	26.8	27.4	23.2	22.9	22.0	20.7	21.9	24.7	28.1	30.1	31.9	31.2	30.1	28.3	27.5	27.2	27.4	26.8	27.5	26.6	26.9	144.9
3	26.9	27.1	27.5	27.5	25.1	23.4	23.1	19.8	19.1	19.8	22.1	25.5	26.7	28.8	30.3	30.4	28.8	27.8	29.2	28.4	27.2	23.0	26.2	26.7	25.9	120.4
4	27.6	23.0	21.6	23.6	26.2	25.0	22.8	19.0	21.8	20.0	19.4	25.6	30.7	32.8	33.1	33.3	33.0	29.4	28.8	28.0	27.7	27.1	28.3	27.5	26.5	135.3
5	29.0	28.7	24.5	19.9	21.1	20.3	22.1	25.1	23.2	23.8	27.1	28.5	32.1	32.8	33.1	31.9	29.2	27.3	27.4	26.5	25.5	26.4	26.5	26.1	26.6	138.1
6	26.3	20.3	19.7	21.9	21.0	19.4	19.0	19.3	21.6	24.3	28.0	34.7	36.5	35.3	32.9	30.2	29.3	28.3	28.3	28.4	28.6	28.0	27.4	27.3	26.5	136.0
7 q	26.5	26.3	25.7	25.2	24.7	23.5	20.0	20.4	20.9	22.1	25.7	28.3	31.1	32.2	32.0	29.4	28.2	28.3	28.3	28.3	28.3	28.3	28.2	26.5	26.6	138.4
8 q	26.9	26.9	25.7	23.5	21.1	19.4	18.5	20.3	22.2	24.4	28.3	32.4	32.4	34.0	33.7	33.0	32.5	30.0	28.3	27.2	26.8	27.3	28.2	28.0	26.5	137.1
9 q	27.5	27.9	28.0	25.7	23.4	20.3	19.1	19.3	20.7	23.0	26.1	30.5	32.9	35.5	36.5	34.3	32.1	30.3	29.0	28.1	27.8	28.2	28.4	27.0	27.6	161.6
10	25.2	26.4	29.1	23.1	22.1	21.1	20.3	20.8	20.5	20.3	22.6	28.0	32.4	35.5	37.3	37.0	35.1	32.0	29.5	28.5	27.3	27.5	28.1	27.5	27.4	157.2
11	25.4	24.7	23.2	21.3	18.8	16.7	18.5	18.1	18.5	20.1	23.0	27.5	31.3	33.3	33.9	32.5	31.6	31.1	28.3	27.5	27.5	22.6	27.0	26.7	25.4	109.1
12	26.2	27.5	26.5	26.3	23.9	25.3	26.2	24.1	21.6	22.5	23.5	27.5	31.0	32.7	33.5	31.9	30.9	30.3	28.6	27.9	27.5	28.3	28.3	28.1	27.5	160.1
13	27.8	27.9	23.9	22.9	21.4	25.3	25.3	23.8	21.7	22.9	26.1	28.3	30.9	32.4	33.3	32.9	33.4	30.6	29.3	28.7	28.0	25.2	27.7	28.2	27.4	157.9
14 d	28.2	27.3	26.1	24.3	25.2	29.3	25.5	21.8	21.1	24.7	25.4	28.1	30.1	33.0	30.6	30.3	31.0	35.0	30.1	30.8	30.7	32.9	29.0	27.2	28.2	177.7
15 d	24.4	22.7	23.5	26.1	29.0	27.1	26.8	28.9	27.6	28.1	30.8	29.6	25.2	28.6	32.5	33.1	36.9	32.9	32.3	28.3	26.0	22.9	12.6	-4.5	26.3	131.4
16 d	-8.5	16.7	25.3	26.1	17.8	20.5	22.6	23.8																		

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

23 ESKDALEMUIR (Z) 45,000γ (0.45 C.G.S. unit) + JULY 1960

γ	Hour G.M.T.																								Mean	Sum 8000+	
	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	366	362	342	325	354	363	362	358	358	365	371	369	368	368	374	385	391	397	398	416	415	398	379	369	373	953	
2	361	341	348	358	357	364	359	364	370	374	374	369	370	369	371	372	378	382	386	386	382	382	376	374	369	867	
3	371	370	369	360	354	365	369	371	369	365	357	352	368	370	374	368	376	385	386	389	392	388	376	373	372	917	
4	366	330	339	339	346	348	353	363	363	355	348	347	351	359	371	378	394	406	399	397	394	393	382	377	367	798	
5	370	356	346	340	347	359	365	365	369	369	363	356	358	364	369	375	383	387	387	392	396	389	377	370	369	852	
6	358	335	335	349	362	369	371	376	369	366	364	346	345	350	359	371	381	382	380	375	371	373	371	370	364	728	
7 q	370	370	371	371	370	370	369	368	365	362	354	346	345	348	354	365	370	370	370	371	370	370	370	370	370	365	759
8 q	369	369	370	370	371	370	373	374	367	351	347	343	340	348	358	363	366	373	375	371	371	370	369	368	364	746	
9 q	366	365	364	365	369	368	365	364	359	348	340	331	323	328	336	346	359	370	375	373	370	369	365	365	358	583	
10	365	365	363	357	362	364	365	365	359	356	353	346	341	346	357	363	370	370	377	376	377	376	368	363	363	704	
11	357	348	352	358	359	358	358	362	364	363	360	357	354	349	356	365	372	380	380	381	377	381	370	364	364	725	
12	363	363	358	358	360	366	369	370	373	373	369	370	371	374	380	392	394	389	382	381	377	371	370	368	373	941	
13	359	358	359	359	361	363	365	365	364	359	353	351	358	368	370	374	382	393	392	384	377	376	371	369	368	830	
14 d	365	364	365	369	370	363	357	358	353	353	354	357	370	382	389	389	399	411	427	411	408	392	377	374	377	1057	
15 d	374	370	370	368	369	366	365	364	363	359	357	370	389	422	452	509	542	515	460	439	370	317	242	198	385	1250	
16 d	95	70	138	167	228	308	324	336	354	375	387	398	423	427	437	446	492	501	481	455	433	424	397	369	353	465	
17	336	305	309	317	325	347	355	362	374	367	370	367	370	377	389	398	417	433	420	409	397	388	388	358	370	878	
18	365	366	369	359	371	366	370	368	366	366	364	365	366	369	382	399	391	385	385	382	385	388	384	381	375	992	
19 d	380	378	377	376	374	372	374	373	365	366	369	368	381	378	383	402	409	411	415	405	377	381	371	357	381	1142	
20	327	347	354	367	378	383	385	383	381	371	364	362	361	365	377	392	392	391	402	408	400	383	367	358	375	998	
21	361	365	369	375	365	335	351	366	372	369	365	357	361	366	366	373	378	383	389	385	375	374	372	368	368	840	
22	360	362	363	368	365	361	358	362	357	352	358	358	358	363	365	371	373	378	381	385	384	380	373	363	367	798	
23	334	334	350	363	370	374	376	375	371	367	363	358	358	359	364	365	370	376	377	380	376	373	370	370	366	773	
24	361	357	363	366	369	366	369	368	365	362	352	345	347	347	354	365	369	376	380	382	379	380	374	369	365	765	
25 q	369	370	371	371	373	370	373	374	370	362	351	346	347	351	358	359	363	366	370	373	374	370	369	369	365	769	
26	369	369	369	371	373	373	371	370	366	358	358	360	361	361	363	359	357	368	380	382	381	374	374	365	368	832	
27 q	363	370	371	374	376	376	377	376	373	367	363	358	353	353	361	367	371	376	374	371	370	369	369	370	369	848	
28	370	370	371	371	374	373	371	367	360	357	350	346	342	345	350	353	359	364	367	370	371	374	370	363	363	708	
29	360	342	323	299	311	310	309	324	341	340	345	350	352	359	370	386	427	467	473	447	430	400	388	382	368	835	
30	335	324	325	341	351	360	363	364	364	359	359	364	367	370	377	386	390	391	391	390	384	377	372	369	366	773	
31 d	362	331	273	299	324	329	333	339	351	358	359	368	380	394	399	403	408	428	413	398	391	384	369	363	365	756	
Mean	353	346	347	349	356	360	362	364	364	362	359	357	361	365	373	382	391	397	396	392	386	379	370	363	368		
Sum 10,000+	927	726	746	830	1038	1159	1224	1294	1295	1214	1141	1080	1178	1329	1565	1839	2123	2304	2272	2164	1954	1764	1470	1246		Grand Total 273,882	

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

24 ESKDALEMUIR JULY 1960

	TERRESTRIAL MAGNETIC ELEMENTS										3 hr. range indices K	Sum of K indices	Magnetic character of day, C (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	h. m. γ	γ h. m.	γ	h. m. γ	γ h. m.	γ	h. m. γ	γ h. m.	γ	105	4,3,4,3,3,3,4,3	27	1	82.7
2	18 39 879	710 11 33	169	12 46 32.7	17.1 04 01	15.3	20 06 422	317 03 04	105	47	3,3,3,4,3,2,3,1	22	1	82.6
3	18 31 817	708 11 18	109	14 05 32.6	18.0 08 10	14.6	18 59 387	340 01 09	47	43	2,2,3,3,3,3,3,3	22	1	82.7
4	19 33 844	721 11 12	123	14 27 31.1	17.9 08 05	13.2	20 42 394	351 11 02	43	90	3,3,3,3,3,4,3,2	24	1	82.9
5	18 39 837	715 11 01	122	15 27 34.7	15.1 07 25	19.6	17 22 409	319 01 37	90	59	3,2,3,3,3,2,3,3	22	0	82.9
6	19 40 848	709 09 58	139	13 11 34.1	18.9 05 34	15.2	20 33 397	338 03 43	59	53	3,3,3,3,3,3,1,1	22	1	82.7
7 q	19 09 810	675 10 50	135	12 38 37.5	17.2 02 01	20.3	17 10 383	330 02 00	53	30	1,1,2,2,2,3,2,1	14	0	82.7
8 q	17 33 823	729 10 37	94	14 10 32.4	19.4 06 44	13.0	17 54 373	343 11 59	30	36	2,1,1,1,2,2,1,1	11	0	82.8
9 q	18 22 816	741 10 34	75	13 43 34.3	17.4 06 47	16.9	18 15 376	340 12 15	36	55	1,1,1,2,2,1,2,1	11	0	83.1
10	20 40 817	753 11 31	64	14 19 37.1	18.7 06 05	18.4	18 30 375	320 12 24	55	40	3,2,1,3,2,3,3,2	19	0	83.0
11	19 56 842	741 11 17	101	15 06 37.8	18.5 07 03	19.3	18 45 380	340 12 19	40	36	3,3,1,3,2,3,3,3	21	1	83.1
12	20 10 839	748 11 22	91	14 18 34.7	15.8 05 18	18.9	21 30 382	346 01 29	36	39	2,3,3,2,3,3,2,2	20	1	83.2
13	19 09 817	738 13 10	79	14 03 35.4	19.4 08 43	16.0	16 13 396	357 03 28	39	43	3,3,3,2,3,4,3,2	23	1	83.5
14 d	20 37 847	752 10 30	95	16 23 35.2	20.5 04 27	21.7	17 29 394	351 11 14	43	84	1,3,3,3,4,6,4,5	29	1	83.3
15 d	17 21 1011	720 10 05	291	17 21 41.4	20.1 08 59	21.3	17 58 432	348 09 10	84	470	3,3,3,3,4,6,6,7	35	2	83.3
16 d	16 36 1059	497 23 53	562	16 34 46.9	-17.3 23 58	64.2	17 08 574	104 23 57	470	593	7,5,4,4,3,5,4,3	35	2	83.5
17	16 40 890	341 01 47	549	01 38 37.8	-16.8 00 05	54.6	17 50 507	-86 01 45	593	148	5,3,3,2,2,4,3,3	25	1	83.7
18	17 23 828	664 08 27	164	02 00 35.1	18.4 08 06	16.7	17 08 438	290 01 29	148	51	2,2,2,3,3,3,2,1	18	1	83.5
19 d	20 50 801	708 12 13	93	14 50 36.9	17.3 05 52	19.6	15 31 404	353 03 26	51	99	1,2,3,4,4,4,5,4	27	1	83.4
20	19 41 912	643 11 31	269	14 06 38.5	16.5 19 35	22.0	19 09 422	323 24 00	99	96	3,1,2,3,4,4,4,5	26	1	83.5
21	22 34 859	690 11 54	169	14 50 36.5	9.4 22 26	27.1	18 55 414	318 00 11	96	62	2,3,2,2,3,3,2,2	19	1	83.4
22	17 17 811	716 13 08	95	13 38 33.4	18.2 07 11	15.2	18 31 392	330 05 21	62	47	3,3,2,2,3,2,2,2	20	0	83.5
23	19 37 817	717 10 58	100	13 23 37.1	20.7 07 50	16.4	19 48 397	350 09 17	47	58	4,1,2,1,2,2,2,2	16	0	83.5
24	01 03 820	733 10 41	87	14 01 33.8	12.0 00 55	21.8	19 22 382	324 00 45	58	41	3,2,3,2,4,3,3,2	22	1	83.6
25 q	19 03 825	740 13 28	85	14 37 35.3	17.4 08 10	17.9	19 13 383	342 11 42	41	29	1,2			

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

21 ESKDALEMUIR (H)		16,000γ (0.16 C.G.S. unit) +																				AUGUST 1960				
	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	768	772	777	781	769	779	781	766	759	757	747	740	764	760	776	773	787	797	807	798	795	793	795	780	776	1621
2	774	771	778	769	786	790	786	770	755	755	747	747	748	755	768	762	788	817	801	789	798	793	771	775	1607	
3	774	773	781	783	781	779	770	763	753	748	747	753	769	764	778	773	793	801	795	799	793	789	788	787	1634	
4 q	786	787	793	788	785	786	778	777	761	735	746	748	758	763	776	778	786	796	797	802	793	789	783	778	1674	
5 q	788	786	784	781	784	783	780	774	764	761	766	769	775	784	788	780	784	789	797	793	795	793	792	783	1783	
6	793	793	788	793	794	793	789	784	769	753	756	760	776	786	789	803	809	792	798	808	807	803	799	798	1933	
7	802	794	796	799	791	791	788	783	769	763	760	758	756	761	772	786	800	791	803	806	806	801	799	797	1872	
8	799	798	799	800	798	793	787	752	744	753	757	752	776	778	780	822	814	802	789	793	788	778	772	774	1798	
9	766	778	781	780	791	773	764	758	749	756	745	714	735	751	753	766	788	781	791	784	793	789	787	794	1467	
10	801	801	795	800	798	799	789	766	739	765	776	764	768	759	754	763	769	815	804	800	799	794	786	788	1792	
11	784	784	787	761	773	789	789	771	749	739	740	726	736	750	792	764	766	786	817	803	804	797	796	803	1775	
12	813	793	791	796	802	770	772	741	750	746	742	719	704	709	732	754	759	786	796	804	805	798	798	791	1475	
13	789	786	789	788	788	788	783	769	753	731	721	714	719	731	764	776	785	793	802	800	794	796	789	776	1524	
14	778	781	780	776	787	793	788	774	761	746	735	728	731	739	757	781	794	825	839	827	825	799	803	808	1755	
15	796	789	789	791	791	793	788	775	761	741	738	746	762	765	765	770	774	794	802	800	808	803	802	798	1741	
16 d	804	795	790	786	788	784	780	777	770	759	753	745	748	763	856	901	896	886	858	804	754	739	749	751	2036	
17 d	742	672	682	676	684	704	747	679	619	692	705	698	705	746	730	784	865	969	867	816	744	736	749	751	740	762
18	769	767	757	768	766	764	748	735	722	690	696	716	720	733	731	746	756	753	776	787	784	782	783	781	751	1030
19	779	772	772	773	773	766	759	746	728	707	703	724	744	759	743	748	787	789	822	815	788	777	776	765	763	1315
20	773	774	778	776	769	733	731	716	729	729	728	728	747	732	752	762	784	794	829	789	779	781	779	776	772	1211
21 d	772	767	769	768	765	763	756	742	707	696	739	757	766	778	773	760	784	811	814	806	784	786	792	807	769	1462
22	781	767	772	768	766	763	754	740	723	718	733	750	760	766	763	765	783	776	784	800	783	784	782	783	765	1364
23	770	778	778	770	776	775	768	763	754	746	738	739	744	761	769	765	791	776	786	783	786	785	786	785	770	1482
24 q	789	781	784	788	788	783	769	749	740	733	742	753	762	773	778	791	799	798	789	790	790	788	784	783	776	1624
25 q	783	785	783	783	781	777	769	753	738	731	725	730	742	761	777	791	788	796	795	803	801	798	797	796	774	1583
26 q	796	794	794	791	788	785	775	764	754	744	740	746	760	769	780	783	784	784	800	808	804	790	797	793	780	1723
27	811	795	794	793	789	791	789	775	763	754	749	751	766	781	791	799	811	818	785	797	790	811	796	798	1897	
28	794	793	789	776	774	766	765	756	757	736	728	726	742	732	738	749	776	792	787	786	788	789	789	788	767	1416
29 d	824	806	807	823	808	789	774	753	746	742	724	719	727	731	761	781	791	791	788	776	767	748	728	741	769	1445
30 d	727	762	771	681	765	714	669	657	666	691	687	699	743	737	752	747	766	773	767	770	773	781	769	766	735	633
31	776	764	772	757	784	787	767	766	729	708	716	727	732	741	741	754	761	771	789	786	781	787	781	777	761	1254
Mean	784	779	781	776	780	776	769	755	741	736	736	737	748	755	767	777	791	801	801	797	790	787	784	783	772	
Sum 22,000+	2301	2158	2200	2063	2182	2043	1852	1394	981	825	829	846	1185	1418	1783	2087	2518	2842	2834	2712	2492	2380	2317	2277		Grand Total 574,519

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

22 ESKDALEMUIR (D)		10° +																				AUGUST 1960				
	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 500.0+	
	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	27.9	25.2	24.0	23.8	26.3	22.1	21.0	21.9	21.6	22.0	22.9	27.5	31.1	31.4	30.1	31.0	30.6	29.2	27.6	26.8	27.1	26.5	23.2	24.3	26.0	125.1
2	23.9	24.0	24.6	28.1	28.5	22.9	21.4	21.0	23.5	22.9	24.5	26.8	31.0	33.2	33.7	32.4	30.4	28.9	26.2	26.1	26.4	26.0	21.4	23.5	26.3	131.3
3	20.7	21.7	23.5	22.8	23.3	22.7	21.2	21.5	22.0	22.9	26.4	28.2	30.5	31.8	31.8	30.1	26.8	28.0	27.1	27.1	26.9	26.4	26.4	27.0	25.7	116.8
4 q	27.4	27.7	23.8	22.8	23.4	25.4	20.6	21.3	22.3	23.7	25.9	27.0	29.7	31.8	32.0	30.2	28.5	27.4	26.4	26.4	26.1	26.2	25.9	26.0	26.1	127.5
5 q	25.0	25.1	24.0	23.6	22.8	22.3	21.7	21.1	21.8	23.8	25.2	28.2	30.9	31.3	29.8	29.2	27.6	26.6	26.2	26.4	26.6	26.8	27.1	27.2	25.8	120.3
6	26.6	25.5	24.5	23.8	22.8	21.7	22.0	21.6	21.4	22.9	26.4	29.7	32.8	33.7	31.8	30.2	28.9	26.4	26.7	27.9	27.2	25.9	24.1	24.4	26.2	128.9
7	25.9	27.2	28.9	22.5	20.5	20.1	20.2	19.4	19.8	21.8	22.9	25.3	29.7	33.3	33.6	32.3	31.0	28.2	28.0	27.5	26.9	26.5	26.0	25.6	26.0	123.1
8	25.8	25.6	25.6	24.6	23.6	20.2	19.2	18.9	21.2	20.5	26.0	30.8	32.6	35.1	34.1	34.2	32.4	29.7	27.3	23.6	22.4	22.7	25.6	23.6	26.1	125.3
9	24.5	21.5	22.9	21.9	24.8	35.1	30.7	26.5	18.7	18.8	23.3	27.7	28.3	30.6	30.9	29.4	27.9	26.9	26.9	26.4	26.5	26.6	26.0	26.6	26.2	129.4
10	26.2	21.5	23.2	22.7	20.6	20.1	19.7	19.2	21.4	24.5	26.0	28.6	31.5	33.2	33.6	33.1	30.3	29.7	29.1	26.9	25.2	27.5	27.0	26.5	26.1	127.3
11	24.8	24.2	25.4	33.6	22.3	18.0	17.4	17.8	20.4	23.2	27.9	31.2	33.0	34.2	35.6	33.7	32.7	31.6	30.3	27.3	28.2	27.5	27.1	27.8	27.3	155.2
12	22.5	20.8	20.5	22.0	23.4	27.1	24.7	25.8	29.2	26.0	24.9	28.4	31.8	34.2	33.8	31.8	28.8	27.6	27.8	27.1	27.1	25.7	23.4	24.1	26.6	138.5
13	24.7	24.4	26.3	24.1	24.5	21.7	19.4	17.2	17.9	21.6	25.7	30.2	35.9	36.0	34.1	31.0	28.3	25.9	26.0	26.4	26.9	27.2	25.3	24.7	26.1	125.4
14	25.6	25.7	27.2	27.6	24.4	21.5	20.1	17.6	18.6	21.6	24.2	27.6	31.7	35.4	35.1	34.6	32.4	29.7	28.5	29.3	24.3	25.0	27.6	27.8	26.8	143.1
15	28.2	23.8	24.7	27.9	23.4	22.8	20.1	18.0	18.7	24.2	27.0	29.4	31.6	32.5	30.5	28.4	26.9	26.6	26.3	26.9	27.9	26.9	26.7	26.5	26.1	125.9
16 d	25.9	24.9	24.1	23.3	22.0	20.2	19.1	19.3	20.8	23.8	26.9	31.6	35.7	37.3	38.0	36.2	34.7	30.2	28.8	27.4	20.2	25.1	27.4	30.4	27.2	153.3
17 d	31.2	10.4	7.9	9.3	26.9	28.2	16.6	17.8	27.7	30.2	28.7	31.6	33.2	33.4	32.4	31.8	28.3	25.								

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

21 ESKDALEMUIR (H)		16,000 _y (0.16 C.G.S. unit) +																				SEPTEMBER 1960					
	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	775	775	774	774	774	765	762	757	754	747	746	755	760	760	759	757	762	769	778	780	782	780	782	778	767	2405	
2	778	778	775	777	774	770	767	762	746	744	754	756	780	780	777	769	788	798	800	782	801	805	774	742	774	2577	
3 d	751	765	783	790	760	767	713	767	764	749	744	742	742	747	739	757	774	778	770	774	774	772	772	775	761	2269	
4 d	779	773	783	789	781	797	766	670	684	684	715	735	740	737	806	730	766	801	816	747	711	730	666	614	743	1820	
5 d	577	621	651	598	667	662	664	602	495	551	613	694	723	731	738	736	751	767	779	764	751	759	744	759	683	397	
6	707	749	761	757	756	751	702	721	713	713	708	710	713	721	733	751	748	759	767	777	782	776	779	749	742	1803	
7 d	770	755	760	765	768	763	750	744	742	739	727	740	737	760	801	767	795	793	785	773	775	772	773	778	764	2342	
8	778	760	758	777	773	773	767	745	713	711	714	714	739	754	758	775	798	775	777	790	781	781	783	781	761	2275	
9	787	784	764	745	768	773	761	751	741	718	712	710	731	739	757	771	777	790	781	770	780	776	779	774	760	2239	
10	780	776	776	779	779	773	770	766	752	736	719	700	718	731	750	771	778	777	782	771	775	779	779	767	762	2284	
11	769	778	773	772	773	782	782	766	752	735	730	721	732	730	746	752	782	776	779	776	792	787	764	776	764	2325	
12	766	767	780	783	772	778	780	755	741	729	719	719	721	730	753	745	758	772	786	783	781	781	784	788	761	2271	
13	789	802	779	787	758	808	767	750	731	712	701	709	732	730	744	759	765	775	781	794	784	773	760	745	760	2235	
14	771	752	764	772	773	784	784	784	767	752	734	724	718	736	744	757	754	772	782	787	790	786	781	782	782	765	2348
15 q	780	779	780	781	784	778	761	767	753	739	734	734	752	755	769	774	781	782	784	792	796	790	790	794	772	2529	
16 q	789	794	790	785	785	783	778	768	751	740	733	733	736	749	766	778	781	786	797	796	795	794	789	790	774	2586	
17	790	789	792	789	785	778	772	767	761	752	741	741	750	757	765	769	787	795	798	807	816	812	788	770	778	2671	
18	754	749	756	788	780	777	772	765	747	734	726	743	747	754	768	765	777	777	786	789	787	784	782	790	767	2397	
19 q	783	776	776	778	777	774	771	761	751	740	733	735	748	760	768	771	780	782	790	790	791	790	789	788	771	2502	
20	787	786	785	784	784	782	777	770	758	747	742	746	752	761	769	774	773	779	792	797	803	808	803	814	778	2673	
21	798	791	787	784	786	784	782	776	768	756	743	738	741	742	759	767	766	767	778	786	782	787	789	801	773	2558	
22	773	774	777	777	775	774	772	762	748	739	737	737	749	757	781	790	787	787	790	801	792	784	784	777	773	2562	
23	765	764	773	791	779	777	789	770	769	760	735	742	743	746	748	766	776	783	795	798	797	791	804	810	774	2571	
24	779	759	754	778	774	783	759	746	747	722	722	729	738	735	752	763	782	755	766	773	787	778	774	775	760	2230	
25 q	771	771	770	770	771	771	770	764	752	736	724	725	733	743	754	767	775	780	788	785	779	781	779	781	764	2340	
26	779	775	779	783	785	786	787	779	758	748	738	738	742	753	764	775	783	788	791	794	783	771	755	748	770	2482	
27	737	748	756	772	765	786	775	745	744	743	730	720	726	730	744	757	765	779	782	767	769	772	778	782	757	2172	
28	778	777	778	779	781	783	785	787	778	748	737	736	746	757	759	753	767	772	775	774	780	782	782	777	770	2471	
29	779	781	780	780	782	782	783	778	769	765	758	759	760	768	743	743	768	767	773	769	776	755	736	731	766	2385	
30 d	764	769	772	788	789	794	788	765	754	746	747	740	751	737	756	751	761	767	770	759	755	737	770	775	763	2305	
Mean	766	767	769	772	772	775	765	753	740	731	727	731	741	747	759	762	774	779	784	782	781	779	774	770	763		
Sum 21,000+	1983	2017	2086	2172	2158	2239	1958	1603	1202	926	808	919	1218	1398	1783	1857	2223	2358	2523	2458	2443	2368	2213	2111		Grand Total 549,024	

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

22 ESKDALEMUIR (D)		10° +																				SEPTEMBER 1960				
	Hour G.M.T.																				Mean	Sum 400.0+				
	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	24.3	23.9	23.3	23.5	22.5	21.5	20.5	20.2	20.9	22.3	25.5	28.6	30.8	30.5	29.9	28.3	26.8	26.2	26.5	26.4	26.2	25.3	23.7	24.6	25.1	202.2
2	25.4	24.8	24.3	23.2	22.5	21.8	20.5	19.9	21.2	24.4	28.5	32.0	36.1	37.4	37.1	32.3	29.7	30.2	27.9	25.8	27.9	28.4	18.7	9.4	26.2	229.4
3 d	18.7	27.5	17.4	16.6	23.6	31.1	27.0	26.9	20.3	20.8	26.3	30.1	31.5	32.0	29.6	27.6	25.0	24.2	21.3	21.0	24.3	23.6	24.8	24.9	24.8	196.1
4 d	22.8	22.6	22.9	20.1	23.9	26.5	24.3	22.2	28.5	28.1	33.5	35.8	35.6	36.5	38.6	31.0	26.6	22.9	9.7	18.1	19.2	26.5	21.8	9.4	25.3	207.1
5 d	-0.8	-7.8	-4.0	1.9	12.2	21.5	23.4	22.3	24.4	25.1	32.0	33.8	36.5	35.0	35.3	29.2	26.1	27.6	13.8	18.1	25.4	26.0	16.1	9.6	20.1	82.7
6	17.5	23.5	23.0	18.4	19.4	23.4	28.5	27.3	22.5	23.0	25.3	29.3	30.5	30.9	30.4	28.0	26.4	25.1	24.2	21.3	24.5	26.6	29.6	27.4	25.3	206.0
7 d	21.7	21.8	24.4	22.7	22.1	20.8	20.6	20.3	20.5	22.9	25.9	30.6	34.8	32.3	33.1	27.8	27.8	26.0	17.8	24.6	23.7	20.3	24.5	25.1	24.7	192.1
8	16.9	17.6	23.9	24.6	22.3	20.0	20.5	21.3	22.5	24.3	27.3	30.6	34.5	35.3	32.2	30.6	24.7	24.0	26.1	26.4	26.4	25.9	25.5	24.7	25.3	208.1
9	21.4	16.2	19.4	23.8	23.2	20.8	19.6	19.7	20.8	23.3	27.7	30.9	34.7	36.2	34.7	29.4	25.9	24.3	23.5	25.1	26.0	22.4	24.7	24.1	24.9	197.8
10	22.2	23.8	23.2	22.4	20.3	21.2	21.1	20.3	20.3	22.5	26.0	29.2	32.4	33.2	33.1	31.0	27.2	26.5	25.2	23.9	25.4	26.0	23.4	20.3	25.0	200.1
11	24.5	25.2	17.8	19.8	21.4	21.0	20.9	18.6	17.7	19.9	22.9	26.9	31.1	31.8	31.7	29.0	27.2	25.7	26.5	26.5	26.2	18.9	20.7	20.6	23.9	172.5
12	25.2	28.0	25.9	23.4	21.8	21.0	22.1	23.0	24.2	24.7	25.5	28.9	31.9	32.9	32.8	28.8	28.0	26.2	25.6	23.9	23.7	26.1	26.6	26.5	26.1	226.7
13	26.3	26.0	18.6	19.1	23.4	19.6	19.3	22.9	21.2	22.9	27.2	28.7	32.7	33.8	30.7	27.6	25.6	24.6	24.5	24.6	23.9	19.9	19.3	17.8	24.2	180.2
14	20.0	19.9	22.2	22.7	26.5	22.2	20.6	19.9	19.7	23.0	27.1	30.7	33.0	33.2	31.7	28.3	26.6	25.6	25.0	24.7	25.2	25.2	25.4	25.5	25.2	203.9
15 q	25.4	24.5	24.0	23.8	23.5	23.5	22.5	21.1	18.9	19.8	23.4	27.0	29.8	30.6	30.2	29.0	28.3	27.8	27.5	28.0	27.5	26.5	25.8	26.2	25.6	214.6
16 q	25.1	24.9	23.4	23.1	23.2	22.7	21.2	19.3	18.7	19.9	23.9	27.5	30.1	31.8	32.9	30.6	29.2	28.3	28.3	27.7	26.9	26.5	25.7	26.6	25.7	216.5
17	24.7	24.1	23.7	23.9	22.1	21.8	20.9	19.9	18.7	19.8	22.5	26.5	30.4	31.9	32.9	31.3	30.0	28.3	27.8	27.6	22.9	15.3	17.1	17.0	24.2	181.1
18	16.1	12.2	19.3	19.7	20.3	23.9	21.1	20.3	19.5	22.1																

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

23 ESKDALEMUIR (Z)		45,000γ (0.45 C.G.S. unit) +												SEPTEMBER 1960													
	Hour G.M.T.											Mean	Sum 8000+														
	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	371	374	373	371	372	370	368	368	366	364	361	357	358	362	374	376	373	369	370	371	372	375	373	369	369	857	
2	368	367	367	367	367	367	367	366	358	352	349	349	350	358	371	386	389	380	386	395	381	375	359	361	368	835	
3 d	330	266	320	332	332	317	327	320	329	335	339	338	350	367	381	381	382	383	389	389	381	381	378	375	351	422	
4 d	367	363	361	361	356	338	340	351	350	363	371	390	407	426	440	450	434	453	501	475	454	282	218	209	377	1060	
5 d	108	132	114	162	169	237	290	338	363	397	417	443	436	436	456	508	491	466	490	445	425	412	379	338	352	452	
6	343	362	366	367	368	400	356	348	362	369	370	369	375	384	396	404	405	408	408	406	396	390	370	318	377	1040	
7 d	349	366	377	384	387	388	389	393	393	385	381	378	391	398	413	409	404	414	429	409	401	394	387	384	392	1403	
8	362	364	372	366	370	373	381	389	396	394	387	383	391	408	420	423	440	441	423	413	409	406	403	402	397	1516	
9	392	386	374	368	359	372	381	383	384	378	371	372	376	386	392	398	399	401	403	402	392	388	381	380	384	1218	
10	372	375	380	382	381	382	385	385	383	379	374	372	371	377	385	405	425	428	432	432	410	397	388	382	391	1382	
11	377	357	342	359	371	378	382	391	395	388	379	374	374	375	380	387	394	405	408	399	390	383	379	357	380	1124	
12	360	360	359	364	371	375	376	379	375	372	371	370	372	377	387	401	400	397	393	392	391	385	380	379	379	1086	
13	376	357	353	338	326	323	345	357	363	365	367	369	370	376	380	387	383	382	380	382	388	388	380	368	367	803	
14	319	348	370	374	359	353	364	368	368	366	364	364	364	367	375	380	376	375	377	381	382	381	379	379	368	835	
15 q	378	378	376	376	375	375	375	378	376	372	364	355	351	353	360	367	374	376	376	376	376	377	376	371	371	911	
16 q	371	370	370	372	374	374	376	378	377	368	360	354	351	353	359	364	369	369	368	371	373	374	375	375	369	845	
17	374	372	371	369	368	370	373	374	370	365	360	354	349	351	357	360	363	368	370	371	374	369	357	355	365	764	
18	342	345	336	345	343	352	359	363	365	365	367	365	369	370	371	377	378	379	378	376	376	376	376	374	364	747	
19 q	370	371	372	372	372	372	371	374	374	370	363	355	352	353	357	363	366	370	370	371	371	371	371	372	368	823	
20	371	371	371	371	371	371	374	374	371	365	356	351	353	357	364	368	370	371	370	370	368	367	369	353	367	797	
21	344	356	362	365	367	368	369	368	364	355	351	348	349	358	365	379	387	391	391	391	382	379	374	357	367	820	
22	354	360	364	364	363	365	365	367	368	361	356	353	356	360	365	374	379	379	378	376	382	382	383	376	368	830	
23	356	347	348	351	358	364	365	364	360	360	360	354	355	359	364	369	371	370	370	370	371	373	370	357	362	686	
24	340	348	324	313	348	356	357	346	341	348	351	353	357	358	363	371	387	411	394	386	382	374	374	374	361	656	
25 q	375	375	376	376	376	376	376	379	380	377	368	364	361	363	365	369	371	370	371	370	371	376	380	376	371	373	945
26	371	369	363	365	367	368	368	369	371	368	362	354	356	357	360	367	368	367	368	371	378	382	371	326	365	766	
27	287	281	329	342	347	348	355	364	366	363	363	363	359	360	362	368	372	375	379	391	387	382	374	369	358	586	
28	370	371	370	369	369	369	370	370	369	371	368	365	365	365	372	379	379	385	386	386	383	379	375	374	373	959	
29	371	370	370	370	370	371	371	372	374	365	357	353	355	357	374	371	382	391	394	401	395	387	364	341	372	926	
30 d	312	312	318	321	325	338	348	358	363	362	359	360	367	378	391	410	407	420	418	419	403	374	370	371	367	804	
Mean	349	349	352	355	356	360	364	368	369	368	365	364	366	372	380	388	391	393	396	393	388	379	370	361	371		
Sum 10,000+	480	473	548	636	681	810	923	1034	1074	1042	966	929	990	1149	1399	1651	1718	1794	1870	1793	1653	1359	1109	817		Grand Total 266,898	

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

24 ESKDALEMUIR		TERRESTRIAL MAGNETIC ELEMENTS										SEPTEMBER 1960							
	Horizontal force					Declination					Vertical force					3-hr. range indices K	Sum of K indices	Magnetic character of day, C (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
1 q	22 28	788	742	10 06	46	12 31	31.3	19.9	07 37	11.4	15 07	377	356	11 51	21	1, 1, 2, 2, 1, 2, 1, 1	11	0	0A.
2	18 11	852	711	22 52	141	14 00	38.6	-2.4	23 03	41.0	19 30	396	347	12 07	49	1, 2, 2, 2, 3, 3, 4, 5	22	1	-
3 d	03 27	798	656	06 40	143	07 00	35.5	13.5	00 00	22.0	19 02	394	245	01 26	149	4, 5, 5, 4, 3, 3, 3, 2	29	1	85.2
4 d	21 29	939	450	24 00	489	22 10	49.5	-2.6	23 59	52.1	18 14	540	65	21 57	475	4, 4, 5, 5, 6, 6, 5, 8	43	2	84.9
5 d	19 01	846	439	09 09	407	12 54	38.0	-20.2	01 58	58.2	15 43	525	74	00 23	451	7, 6, 6, 6, 4, 5, 5, 5	44	2	84.9
6	20 05	798	646	00 07	152	23 00	37.9	7.3	00 07	30.6	18 07	412	312	23 20	100	5, 3, 4, 4, 1, 2, 4, 4	27	1	84.9
7 d	14 19	831	704	12 37	127	12 03	38.2	11.5	18 28	26.7	18 28	434	334	00 00	100	3, 4, 4, 4, 5, 3, 4, 4	31	1	85.5
8	16 25	809	699	08 20	110	13 04	37.6	13.6	00 32	24.0	16 54	448	359	00 29	89	4, 3, 4, 4, 4, 4, 3, 2	28	1	85.3
9	17 39	802	699	11 01	103	13 50	37.3	13.2	01 55	24.1	18 44	404	353	04 18	51	4, 3, 3, 2, 2, 2, 3, 3	22	0	85.1
10	17 52	800	695	11 23	105	13 54	34.7	18.6	23 34	16.1	18 55	437	370	12 00	67	2, 2, 1, 3, 3, 3, 3, 3	20	0	84.8
11	02 03	822	718	11 14	104	14 08	33.2	15.3	02 38	17.9	18 41	410	336	02 17	74	4, 3, 2, 2, 3, 3, 3, 3	23	0	85.2
12	24 00	792	712	11 04	80	14 29	33.5	20.3	00 01	13.2	16 05	403	356	01 50	47	3, 2, 3, 2, 2, 3, 2, 2	19	0	84.7
13	05 23	822	689	10 51	133	13 14	35.0	14.4	23 23	20.6	21 11	392	317	05 14	75	4, 4, 3, 3, 3, 2, 3, 4	26	1	85.0
14	00 08	792	710	11 12	82	13 30	33.7	11.4	00 47	22.3	21 37	383	303	00 22	80	4, 3, 2, 2, 2, 2, 1, 1	17	0	84.6
15 q	23 18	801	729	10 53	72	14 12	31.5	18.7	08 29	12.8	07 50	379	348	12 14	31	1, 2, 2, 2, 2, 2, 2, 2	15	0	84.3
16 q	20 02	802	725	11 12	77	14 17	32.7	18.3	07 50	14.4	07 55	380	349	12 58	31	2, 1, 1, 1, 2, 2, 1, 1	11	0	84.3
17	20 41	831	735	10 50	96	14 18	34.8	12.5	21 54	22.3	20 56	380	348	12 32	32	1, 2, 1, 1, 2, 3, 4, 4	18	0	84.5
18	03 42	796	715	10 17	81	14 18	33.8	9.2	01 14	24.6	16 57	380	330	02 48	50	4, 3, 2, 3, 3, 2, 1, 2	20	0	84.4
19 q	22 42	796	729	09 47	67	13 18	31.0	19.1	08 47	11.9	07 41	375	351	12 57	24	2, 1, 2, 2, 2, 2, 1, 0	12	0	84.5
20	23 43	825	737	10 39	88	13 47	32.1	19.5	07 46	12.6	07 10	375	341	24 00	34	0, 1, 1, 1, 1, 2, 2, 3	11	0	84.8
21	00 00	812	732	13 21	80	14 03	36.3	13.6	23 43	22.7	19 23	394	341	00 00	53	2, 0, 1, 2, 2, 2, 3, 3	15		

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

Table with 25 columns (Hour G.M.T. 0-1 to 23-24, Mean, Sum) and 31 rows (1 d to 31). Includes sub-headers for '21 ESKDALEMUIR (H)' and '16,000γ (0.16 C.G.S. unit) +'. Grand Total: 559,091.

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

Table with 25 columns (Hour G.M.T. 0-1 to 23-24, Mean, Sum) and 31 rows (1 d to 31). Includes sub-headers for '22 ESKDALEMUIR (D)' and '10° +'. Grand Total: 17916.1.

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

23 ESKDALEMUIR (Z)		45,000γ (0.45 C.G.S. unit) +																				OCTOBER 1960					
	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 8000+
	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	363	343	338	307	297	303	308	323	346	364	364	373	381	400	425	427	439	422	421	404	389	346	365	366	367	812	
2	358	338	296	288	304	315	318	325	340	368	384	393	431	435	469	462	459	438	417	394	384	381	376	362	376	1035	
3	357	369	376	376	376	376	376	381	383	380	389	389	389	387	387	388	392	389	382	380	381	383	382	377	381	1145	
4	371	373	376	376	376	376	376	376	376	380	379	377	375	371	371	382	419	458	503	513	448	458	431	353	320	397	1538
5	351	338	349	365	364	352	361	369	372	375	374	372	376	385	398	404	400	414	399	388	387	381	322	328	372	924	
6 d	360	363	284	209	186	247	286	323	354	364	372	408	433	451	553	614	687	655	487	467	231	230	132	50	364	746	
7 d	-48	202	220	104	138	176	263	323	365	381	386	415	437	465	519	564	559	499	444	432	370	359	342	292	342	207	
8	292	250	301	332	353	367	382	388	391	386	391	391	394	440	420	417	418	426	419	421	396	379	358	345	377	1057	
9	354	331	301	298	305	326	335	349	375	383	387	390	391	406	422	437	427	430	423	406	394	383	327	331	371	911	
10	357	350	337	341	366	380	388	392	393	392	389	384	380	379	384	392	396	399	403	406	406	394	378	366	381	1152	
11	354	342	364	373	376	373	379	381	383	387	383	380	381	385	400	403	399	395	395	394	395	392	387	384	383	1185	
12 q	381	383	385	387	387	387	387	389	391	388	381	375	375	372	376	380	383	383	384	388	389	387	378	371	383	1187	
13 q	376	378	380	381	382	383	381	382	382	380	376	371	370	368	368	372	377	379	380	381	381	380	380	381	378	1069	
14 q	381	380	380	379	379	379	377	378	380	383	375	370	366	366	371	376	379	379	380	381	381	381	381	382	382	378	1065
15	382	381	381	380	377	377	376	375	375	374	370	370	371	376	377	379	396	438	446	464	424	399	388	375	390	1351	
16	381	383	386	384	383	384	382	382	382	377	373	371	376	380	383	383	383	383	382	383	382	383	388	387	382	1161	
17	381	381	381	381	381	381	377	381	384	384	381	377	376	376	382	387	388	388	393	391	388	387	382	382	383	1195	
18	377	354	337	332	353	354	357	364	370	376	376	379	381	389	403	409	411	427	464	437	389	381	393	389	383	1202	
19	387	386	387	388	384	376	375	380	383	385	383	381	378	383	388	395	400	395	396	401	399	396	387	383	387	1296	
20	383	383	381	380	377	381	380	382	384	385	383	381	382	390	398	406	412	403	394	389	388	392	395	389	388	1318	
21	378	377	382	386	385	383	382	382	383	383	382	380	377	380	383	384	387	387	388	389	389	383	381	381	383	1192	
22 q	380	381	382	382	381	380	377	381	383	380	375	366	366	369	372	377	379	377	377	377	377	377	377	377	377	377	1050
23 q	378	377	376	376	376	376	375	376	376	376	369	364	365	367	372	376	376	376	376	376	377	376	377	378	374	987	
24	380	380	377	377	376	376	376	376	376	375	372	369	369	371	377	393	436	523	461	456	416	400	389	380	395	1471	
25 d	382	383	383	382	381	382	384	357	346	353	354	372	394	428	449	499	564	677	659	510	434	403	384	296	423	2156	
26 d	274	246	260	289	312	333	355	378	387	393	406	427	446	468	485	480	456	437	417	387	378	389	350	357	380	1110	
27	352	325	329	341	362	375	383	388	395	395	400	410	412	412	427	435	457	460	434	421	422	381	343	372	393	1431	
28	373	348	321	337	346	354	340	363	376	383	400	418	447	447	452	471	476	460	432	416	398	383	376	377	396	1494	
29	366	322	357	372	376	379	381	381	386	388	394	406	408	430	425	417	457	441	426	398	402	386	352	364	392	1414	
30	370	368	350	360	372	378	381	387	395	395	403	423	415	410	427	430	435	417	415	417	410	395	389	364	396	1506	
31	320	343	361	365	372	375	380	390	392	388	390	394	398	408	418	419	414	418	422	403	387	383	388	375	388	1303	
Mean	350	350	349	346	351	357	364	371	378	381	382	386	391	400	413	422	432	436	423	410	391	381	365	354	383		
Sum 10,000+	851	858	818	728	883	1083	1278	1503	1707	1796	1834	1971	2136	2394	2792	3095	3400	3517	3124	2708	2104	1803	1306	981		Grand Total 284,670	

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

24 ESKDALEMUIR		TERRESTRIAL MAGNETIC ELEMENTS										3-hr. range indices K		Sum of K indices	Magnetic character of day, C (0-2)	Temperature in magnet house 200 +			
	Hour	Horizontal force			Declination			Vertical force			K	Sum of K indices	C	°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	γ	h. m.	γ	h. m.	h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ			
2	06 30	808	678	09 52	130	14 04	36.2	-4.4	21 15	40.6	16 26	444	280	04 02	164	4,5,4,4,4,3,4,5	33	1	84.5
3	17 01	846	681	12 08	165	07 38	38.9	8.2	17 43	30.7	14 20	480	277	02 52	203	3,4,4,3,5,5,4,3	31	1	84.7
4	23 49	786	685	10 24	101	13 10	31.0	19.2	23 59	11.8	16 53	395	354	00 29	41	2,2,2,3,3,3,2,2	19	0	84.7
5	18 12	872	696	19 13	176	16 46	41.9	-20.6	18 27	62.5	18 20	613	273	23 01	340	2,1,2,2,3,5,6,5	26	2	84.6
6 d	22 10	800	669	22 54	131	05 16	34.0	-0.5	23 11	34.5	17 38	421	303	22 46	118	4,4,3,2,3,4,3,5	28	1	84.7
7 d	17 56	1786	-190	22 54	1976	22 55	85.7	-62.2	18 06	147.9	16 43	801	-313	22 55	1114	4,6,5,6,7,8,8,9	53	2	84.5
8	14 57	987	-1253	01 05	2240	01 17	164.7	-105.7	00 31	270.4	15 56	617	-240	00 32	857	9,8,6,6,6,6,5,6	52	2	84.5
9	23 28	774	626	10 29	138	01 29	35.1	8.5	19 30	26.6	19 18	428	234	01 22	194	5,2,3,4,3,3,4,4	28	1	84.5
10	19 37	823	685	10 49	138	06 39	32.2	7.2	23 13	25.0	15 12	445	295	03 07	150	3,4,3,3,4,3,4,5	29	1	84.5
11	22 29	777	723	11 20	54	13 29	30.2	12.5	01 40	17.7	19 58	407	331	03 07	76	3,3,2,0,1,1,2,3	15	0	84.4
12 q	21 19	787	712	11 12	75	14 17	35.9	14.3	21 13	21.6	14 57	405	335	01 09	70	3,3,3,2,2,2,2,3	20	0	84.4
13 q	22 14	811	723	11 42	88	13 22	31.6	15.6	22 03	16.0	20 57	392	369	23 30	23	1,1,1,2,1,2,2,3	13	0	84.6
14 q	22 37	797	739	11 27	58	14 31	31.1	18.9	09 50	12.2	05 49	383	367	13 02	16	1,2,1,2,2,0,1,1	7	0	84.5
15	21 36	797	741	11 01	56	14 26	31.4	19.1	09 31	12.3	09 29	384	365	13 08	19	1,1,1,2,1,0,0,1	10	0	84.3
16	18 27	818	720	14 20	98	18 41	39.1	11.4	22 41	27.7	19 13	493	368	10 07	125	1,2,2,2,3,3,4,4	21	1	84.5
17	23 52	788	727	12 58	61	13 23	35.6	17.2	00 01	18.4	22 30	388	370	11 29	18	2,1,2,2,2,2,0,2	13	0	84.5
18	06 23	789	731	12 19	58	13 25	32.3	18.7	01 00	13.6	19 52	393	374	13 13	19	2,1,1,2,2,1,2,2	13	0	84.5
19	05 11	803	670	21 10	133	13 50	34.6	7.0	20 54	27.6	18 54	491	327	03 08	164	3,3,3,2,3,3,5,5	27	1	84.4
20	07 38	778	727	12 02	51	12 43	30.5	10.0	21 25	20.5	19 32	403	371	06 00	32	2,3,2,3,2,2,2,4	20	0	84.1
21	20 02	787	727	12 06	60	15 27	33.7	12.5	22 10	21.2	16 19	415	377	04 32	38	1,2,2,2,2,3,2,3	17	0	84.3
22 q	21 22	800	735	10 37	65	13 19	31.9												

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

Table 21: ESKDALEMUIR (B). 16,000γ (0-16 C.G.S. unit) +. NOVEMBER 1960. Columns: Hour G.M.T. (0-1 to 23-24), Mean, Sum 14,000+. Rows: 1-30 and Mean/Sum.

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

Table 22: ESKDALEMUIR (D). 10° +. NOVEMBER 1960. Columns: Hour G.M.T. (0-1 to 23-24), Mean, Sum 400-0+. Rows: 1-30 and Mean/Sum.

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

23 ESKDALEMUIR (Z) 45,000γ (0.45 C.G.S. unit) + NOVEMBER 1960

	Hour G.M.T.																						Mean	Sum 8000+			
	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	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
2	371	375	377	375	376	377	377	384	388	387	382	384	388	393	399	400	398	395	392	393	398	391	380	383	386	386	1263
3	385	385	381	371	372	372	372	376	381	385	387	384	391	398	395	396	398	392	389	391	393	378	373	372	384	384	1217
4	354	325	331	358	368	372	375	377	381	382	383	388	393	389	388	388	389	392	392	396	400	399	373	348	377	1041	
4 d	308	312	288	280	295	309	326	356	369	380	373	384	400	410	440	464	441	441	442	413	404	399	386	361	374	981	
5	345	377	383	377	366	372	375	376	382	385	386	389	396	410	418	415	407	399	395	392	389	388	389	388	387	1299	
6	387	388	387	387	386	383	383	381	381	381	377	380	387	387	389	392	391	389	391	391	391	391	387	384	386	1271	
7 q	381	380	371	366	372	372	371	372	376	381	377	381	383	384	387	388	389	387	385	384	383	382	382	382	380	1116	
8 q	382	382	383	382	383	383	383	385	388	383	377	376	376	378	383	387	386	385	383	383	383	387	388	383	383	1189	
9 q	377	377	376	383	377	377	378	381	383	380	377	374	371	371	377	380	384	383	383	382	383	383	385	380	379	1102	
10	378	377	377	378	378	378	379	378	377	374	367	364	361	360	365	373	376	377	377	374	381	381	378	377	374	985	
11	376	376	374	372	370	368	367	371	373	371	369	370	370	372	378	383	383	383	382	381	380	380	382	381	375	1012	
12	381	377	377	377	376	376	376	376	377	376	377	379	379	378	376	375	372	419	613	646	544	241	279	334	395	1481	
13 d	338	311	269	228	160	110	-29	62	364	541	663	545	490	485	493	717	559	496	514	425	458	410	322	348	387	1279	
14 d	251	191	338	391	410	415	417	416	416	417	415	415	411	407	413	421	417	423	423	389	397	394	398	389	391	1374	
15 d	382	393	389	392	399	398	390	396	396	396	392	393	396	432	482	508	565	561	523	427	427	400	318	219	416	1974	
16 d	-90	38	-19	105	210	335	370	387	388	377	393	413	423	458	458	468	439	426	421	420	412	404	406	402	335	44	
17	379	365	375	388	394	400	399	400	401	399	394	394	403	411	412	418	425	422	425	416	406	412	412	407	402	1657	
18 q	404	398	395	394	396	399	399	400	399	398	398	399	402	404	406	406	406	403	401	400	400	400	400	400	400	1607	
19 q	399	399	398	398	396	394	393	391	390	389	386	383	383	387	393	394	395	395	395	394	394	393	393	392	393	1424	
20	389	388	386	384	383	383	383	384	387	389	386	392	393	400	405	405	403	400	399	399	396	396	395	394	392	1419	
21	394	393	392	391	389	377	359	369	381	390	393	399	418	423	431	469	519	534	546	483	433	410	371	352	417	2016	
22	361	358	323	342	365	374	379	384	392	397	394	396	399	405	414	421	430	434	427	417	410	408	381	381	391	1392	
23	388	390	387	383	386	387	385	379	382	388	389	388	394	400	406	407	410	406	405	403	404	400	399	393	394	1459	
24	381	376	369	383	383	389	388	388	388	388	388	386	387	389	392	394	395	395	395	398	399	399	389	355	387	1294	
25	353	361	362	327	302	314	341	358	372	380	387	398	401	408	429	444	447	439	428	427	418	399	377	367	385	1239	
26	377	383	380	374	369	372	382	387	389	391	390	392	397	404	404	403	400	399	398	400	411	406	399	391	392	1398	
27	378	377	383	386	385	381	381	383	387	387	384	387	389	395	404	411	422	446	439	420	411	394	388	382	396	1500	
28	354	357	378	382	378	361	366	373	381	387	391	389	391	403	408	402	399	395	394	395	397	398	396	394	386	1269	
29	388	388	383	385	387	386	385	384	384	383	382	383	387	389	394	395	394	392	392	396	401	399	394	385	389	1336	
30	387	386	387	386	376	379	381	382	383	382	381	380	380	383	388	392	394	394	402	403	410	403	388	402	389	1329	
Mean	355	356	356	361	363	366	364	371	385	391	395	393	395	400	408	421	418	417	422	411	407	391	380	374	387		
Sum 10,000+	638	683	680	825	887	993	931	1136	1536	1744	1838	1785	1839	2013	2227	2616	2533	2502	2651	2338	2213	1725	1408	1226		Grand Total 278,967	

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

24 ESKDALEMUIR NOVEMBER 1960

	TERRESTRIAL MAGNETIC ELEMENTS												3-hr. range indices K	Sum of K indices	Magnetic character of day, C (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	h. m.	γ	γ	h. m.	γ	h. m.	31°	h. m.	16°	h. m.	γ	h. m.	γ	h. m.	γ	h. m.	γ	2,2,2,2,2,2,2,4	18	0	84.3	
2	06 40	790	732	11 59	95	12 13	31.1	16 6	22 42	14 5	15 08	404	369	00 00	35	15 08	404	2,2,3,2,3,1,4,3	20	1	84.5	
3	20 55	817	722	12 15	58	12 50	34.0	10 5	21 14	23 5	16 09	400	364	24 00	36	16 09	400	3,3,2,2,3,2,3,4	22	1	84.5	
4	01 47	802	684	23 51	118	12 25	30.4	1 9	23 14	28 5	21 12	401	315	01 55	86	21 12	401	5,5,3,3,4,5,4,4	33	2	84.5	
4 d	04 14	823	651	02 38	172	14 51	35.2	6 5	01 58	28 7	15 09	484	253	02 57	231	15 09	484	3,3,2,2,2,1,0,1	14	0	84.4	
5	06 01	787	729	13 38	58	03 51	28.8	20 2	00 36	8 6	14 40	421	330	00 09	91	14 40	421	1,1,2,2,1,1,3,2	13	0	84.4	
6	20 40	793	748	11 55	45	12 44	27.8	15 8	20 33	12 0	20 10	395	377	10 35	18	20 10	395	2,2,2,2,1,1,0,1	11	0	84.4	
7 q	06 51	799	745	12 41	54	13 40	27.0	19 1	09 30	7 9	16 30	389	364	03 15	25	16 30	389	0,1,1,2,1,1,1,2	9	0	84.5	
8 q	05 50	796	744	11 15	52	13 55	28.0	17 9	23 10	10 1	08 21	391	375	11 02	16	08 21	391	2,2,2,2,2,1,0,2	13	0	84.5	
9 q	06 49	794	753	11 55	41	13 27	30.0	18 4	00 30	11 6	16 11	387	370	13 03	17	16 11	387	0,0,2,3,3,2,1,1	12	0	84.5	
10	20 08	803	741	12 03	62	15 14	37.3	20 9	08 55	16 4	21 13	382	357	13 49	25	21 13	382	2,3,3,3,3,2,3,3	22	1	84.6	
11	06 13	824	729	12 00	95	11 50	33.0	16 3	23 40	16 7	23 07	384	365	09 43	19	23 07	384	2,1,1,1,4,5,7,8	29	2	84.7	
12	19 02	1329	222	22 33	1107	21 11	57.4	-0 6	21 48	58 0	19 21	753	77	21 33	676	19 21	753	9,8,9,7,8,7,7,5	60	2	84.8	
13 d	15 43	1290	-817	07 18	2107	00 50	96.8	-105 5	10 50	202 3	15 44	838	-209	06 48	1047	15 44	838	7,3,4,3,3,4,5,3	32	2	84.7	
14 d	19 27	826	422	00 45	404	19 37	35.0	5 4	18 19	29 6	17 38	431	90	01 11	341	17 38	431	4,3,3,3,5,5,5,7	35	2	84.8	
15 d	22 08	874	526	23 58	348	14 44	44.0	7 7	22 55	36 3	16 54	619	172	23 42	447	16 54	619	9,7,4,4,6,4,4,3,3	40	2	84.8	
16 d	13 26	848	-185	00 45	1033	02 54	71.0	-24 4	00 45	95 4	15 08	484	-272	02 48	756	15 08	484	3,2,2,3,3,4,4,2	23	1	84.6	
17	19 50	803	705	18 14	98	01 40	30.2	10 7	17 11	19 5	16 09	429	359	01 49	70	16 09	429	4,1,1,2,1,1,1,0	11	0	84.5	
18 q	02 17	786	728	00 34	58	12 20	26.7	18 8	00 11	7 9	15 31	406	389	02 33	17	15 31	406	0,2,2,2,3,1,1,2	13	0	84.5	
19 q	21 50	790	755	14 04	35	12 12	27.9	21 3	09 26	6 6	00 12	400	380	11 42	20	00 12	400	2,2,2,2,3,2,1,2	16	0	84.5	
20	05 05	795	740	14 06	55	13 15	28.4	21 7														

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

21 ESKDALEMUIR (H)

16,000γ (0.16 C.G.S. unit) +

DECEMBER 1960

Table with 25 columns for hours (0-1 to 23-24), Mean, and Sum 17,000+. Rows 1-31 with data points and a final Sum 23,000+ row.

765 at 0-1h. January 1, 1961.

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

22 ESKDALEMUIR (D)

10° +

DECEMBER 1960

Table with 25 columns for hours (0-1 to 23-24), Mean, and Sum 500.0+. Rows 1-31 with data points and a final Sum 600.0+ row.

24.1 at 0-1h. January 1, 1961.

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

23 ESKDALEUIR (Z)

45,000γ (0.45 C.G.S. unit) +

DECEMBER 1960

	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 8000+	
	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	405	400	378	200	264	292	327	336	359	376	386	394	418	445	469	549	567	530	523	508	436	389	378	367	404	1696
2 d	374	383	382	390	390	388	396	399	400	401	401	401	420	432	422	423	425	423	418	412	400	384	381	389	401	1634
3	389	390	389	384	378	379	384	388	389	393	393	394	395	394	397	401	403	403	400	399	398	397	395	395	393	1427
4 q	393	393	394	393	393	390	390	389	388	385	385	386	391	395	399	408	411	412	412	412	407	404	399	394	397	1523
5	394	393	392	391	388	382	381	382	384	383	383	386	389	393	399	401	405	412	411	407	399	395	393	392	393	1435
6	390	392	391	388	388	384	378	378	379	385	385	391	396	400	412	422	450	487	522	495	446	382	394	401	410	1836
7	403	400	390	389	385	380	382	386	389	388	385	384	384	394	400	402	407	403	405	420	432	409	371	389	395	1477
8	394	384	372	365	359	349	358	370	377	381	388	389	390	392	396	396	397	397	395	394	394	393	391	392	384	1213
9	390	390	389	382	376	380	384	384	385	388	389	390	391	400	417	419	412	411	411	412	407	397	389	384	395	1477
10	381	384	384	378	382	385	387	388	388	388	387	388	389	386	392	395	399	397	396	397	399	388	384	385	389	1327
11 q	386	388	388	388	387	386	386	385	386	386	388	389	391	394	397	403	400	396	394	394	401	409	398	391	392	1411
12	388	389	388	387	387	386	387	386	387	388	386	388	384	390	400	405	412	419	428	428	424	412	385	370	396	1504
13	366	363	370	365	371	372	373	377	388	390	395	397	397	397	397	399	399	397	397	396	395	394	393	390	387	1278
14 q	389	389	387	385	384	384	384	384	385	385	387	381	376	382	385	388	387	388	387	388	389	388	384	380	385	1246
15 d	376	370	366	363	364	369	375	381	384	389	396	405	421	439	503	527	533	593	632	536	460	429	321	282	426	2214
16 d	279	271	262	264	282	282	306	332	358	367	368	376	390	393	391	396	396	396	399	400	400	404	412	408	355	532
17 q	403	399	398	394	392	390	389	385	380	382	384	384	385	390	393	394	394	394	396	401	401	399	397	392	392	1418
18	394	393	388	374	371	371	367	370	372	381	385	394	405	416	426	442	459	447	442	430	412	402	400	387	401	1623
19	374	378	382	387	386	385	384	383	384	385	392	390	390	396	394	395	400	397	389	390	393	394	384	385	388	1317
20	389	389	385	379	373	374	380	382	383	387	388	390	394	402	403	403	405	404	403	408	382	375	362	371	388	1311
21	367	339	350	375	383	384	386	388	388	389	390	389	389	390	396	421	423	410	407	402	409	394	388	389	389	1346
22	377	367	381	384	382	377	377	381	382	388	391	394	395	397	400	400	407	405	399	396	399	395	390	387	390	1351
23	368	374	381	384	387	386	383	384	387	384	384	387	392	391	407	405	402	405	400	396	392	388	387	388	389	1342
24	389	388	384	384	384	384	385	385	386	388	388	385	390	399	403	397	398	412	407	396	394	396	390	379	391	1391
25 q	386	382	377	381	384	385	387	388	388	385	386	384	388	389	389	388	388	388	389	389	388	388	388	382	386	1267
26	372	370	378	378	377	366	362	367	372	377	379	381	387	388	385	383	384	385	385	386	385	386	387	388	379	1108
27 d	387	385	384	375	372	373	371	362	382	364	371	374	388	414	424	493	462	500	537	459	439	370	368	373	405	1727
28	368	372	378	388	392	390	390	395	398	405	412	417	411	411	420	434	433	423	417	407	401	398	394	393	402	1647
29	386	378	365	373	381	385	385	386	390	395	399	398	399	401	404	408	447	431	417	412	377	403	397	393	396	1510
30	390	389	389	389	388	385	375	388	392	393	392	391	393	397	389	397	396	391	418	412	406	404	399	395	394	1458
31	393	390	388	388	383	376	380	384	388	391	396	393	396	404	404	420	417	419	409	407	406	407	406	404	398	1549
Mean	382	380	378	372	375	374	377	380	384	386	388	390	394	400	407	417	420	422	424	416	405	396	387	384	393	
Sum 11,000+	840	772	730	545	613	599	679	773	898	967	1039	1090	1224	1411	1613	1914	2018	2075	2143	1884	1571	1275	1007	915		Grand Total 292,595

399 at 0-1h. January 1, 1961.

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

24 ESKDALEUIR

DECEMBER 1960

	TERRESTRIAL MAGNETIC ELEMENTS												3-hr. range indices K	Sum of K indices	Magnetic character of day, C (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. 15 38	γ 853	612	h. m. 22 49	γ 241	h. m. 16 09	γ 43.9	h. m. -17.0	γ 22 34	h. m. 60.9	γ 16 16	h. m. 611	γ 157	h. m. 03 18	γ 454	5,6,5,4,4,6,5,6	41	1	0A.
2 d	10 18	801	708	12 51	93	14 25	31.2	9.7	21 00	21.5	13 05	445	372	00 48	73	3,3,3,3,4,3,4,4	27	1	84.4
3	06 18	786	734	09 44	52	04 10	31.9	20.9	23 40	11.0	16 58	406	374	04 25	32	2,3,2,2,1,2,1,1	14	0	84.5
4 q	05 30	787	747	13 19	40	13 48	28.0	21.3	15 57	6.7	18 30	413	382	10 58	31	1,0,1,2,2,2,2,1	11	0	84.4
5	05 39	796	750	12 19	46	14 18	30.3	21.6	00 44	8.7	17 52	416	377	05 35	39	1,2,1,3,2,2,3,2	16	0	84.5
6	06 35	813	708	21 29	105	17 01	41.5	9.8	20 39	31.7	18 28	539	367	21 24	172	1,2,2,2,3,3,5,4	22	0	84.4
7	22 08	812	710	21 15	102	21 51	32.8	-8.2	20 58	41.0	20 52	457	360	22 12	97	2,3,2,2,3,1,5,6	24	1	84.4
8	06 01	816	735	03 37	81	06 45	30.6	15.8	00 01	14.8	20 50	456	343	05 12	113	3,4,3,3,2,2,1,2	20	0	84.4
9	23 36	808	723	14 29	85	12 56	30.0	12.7	18 55	17.3	14 54	434	372	04 28	62	2,3,3,3,3,2,4,3	23	1	84.4
10	21 00	811	750	20 33	61	13 51	28.3	11.6	20 45	16.7	20 33	401	377	03 31	24	2,2,2,1,1,2,4,3	17	0	84.4
11 q	07 36	793	750	15 11	43	13 55	29.6	13.8	21 26	15.8	21 34	412	382	09 08	30	1,1,1,2,2,3,3,3	16	0	84.4
12	00 31	813	687	19 04	126	06 40	34.6	7.8	22 17	26.8	18 26	436	367	23 59	69	3,2,2,2,2,2,4,3	20	1	84.3
13	06 53	795	733	12 46	62	12 33	31.6	12.3	00 01	19.3	12 33	400	358	00 52	42	4,3,3,2,3,1,1,1	18	0	84.4
14 q	11 02	814	772	12 04	42	12 53	31.1	22.8	23 50	8.3	18 19	390	374	12 12	16	0,0,1,3,2,2,1,2	11	0	84.4
15 d	17 53	872	606	20 59	266	15 38	48.7	-11.4	22 05	60.1	18 18	708	243	23 54	465	3,2,2,2,5,5,6,6	31	1	84.5
16 d	05 08	786	638	00 06	148	06 55	33.5	-4.8	00 23	38.3	22 52	412	249	00 01	163	4,4,3,3,3,2,1,3	23	1	84.4
17 q	08 28	781	756	15 06	25	14 00	26.3	19.8	20 39	6.5	20 58	405	378	08 30	27	1,1,3,2,2,2,2,2	15	0	84.4
18	03 50	811	698	19 44	113	10 55	34.4												

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 X, -Y, I and F

25 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
January	758	768	740	28.9	29.4	28.3	362	355	371	16478	3049	69 43.5	48359
February	765	773	760	29.0	29.1	29.0	356	352	356	16485	3050	69 42.9	48355
March	767	773	753	28.4	28.6	27.2	354	351	360	16488	3048	69 42.6	48354
April	753	769	742	27.0	27.5	25.8	364	359	361	16475	3039	69 43.9	48358
May	768	777	757	26.8	26.4	25.9	371	366	382	16490	3040	69 43.0	48370
June	776	778	766	26.7	26.8	25.3	361	365	352	16498	3041	69 42.2	48364
July	774	782	761	26.3	26.2	26.2	368	364	372	16497	3039	69 42.5	48370
August	772	778	761	25.9	26.1	25.4	370	368	368	16495	3037	69 42.7	48371
September	763	770	743	24.8	25.3	23.7	371	370	368	16486	3030	69 43.4	48368
October	751	775	712	24.1	25.0	22.4	383	378	375	16476	3024	69 44.4	48376
November	754	770	692	23.6	23.6	21.3	387	387	380	16479	3022	69 44.4	48381
December	768	777	748	24.0	24.3	22.8	393	390	398	16493	3027	69 43.6	48391
Year	764	774	745	26.3	26.5	25.3	370	367	370	16487	3037	69 43.2	48368

DAILY RANGE AND MEAN MONTHLY VALUES

26 ESKDALEMUIR

	Mean daily range						Mean daily range expressed as percentage of yearly mean					
	1960			Mean 1932-53			1960			Mean 1932-53		
	H	D	Z	H	D	Z	H	D	Z	H	D	Z
	γ	γ	γ	γ	γ	γ	%	%	%	%	%	%
January	76	82	45	78	83	47	50	69	43	76	90	75
February	73	85	52	84	89	53	48	71	50	82	97	84
March	116	114	78	126	113	85	76	96	74	124	123	135
April	305	183	190	125	103	77	199	154	181	123	112	122
May	144	108	85	116	91	71	94	91	81	114	99	113
June	132	99	83	105	84	55	86	83	79	103	91	87
July	148	102	96	110	85	56	97	86	91	108	92	89
August	130	106	98	113	93	68	85	89	93	111	101	108
September	118	114	91	117	106	81	77	96	87	115	116	129
October	266	188	179	107	102	76	174	158	170	105	111	121
November	235	142	166	73	79	47	154	119	158	72	86	75
December	93	107	92	66	74	42	61	90	88	65	80	67
Winter	119	104	89	75	81	47	78	87	85	74	88	75
Equinox	201	150	135	119	106	80	131	126	129	117	115	127
Summer	139	104	91	111	88	63	91	87	87	109	96	100
Year	153	119	105	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

27 ESKDALEMUIR

Range	Number of cases, 1960			Percentage distribution					
	H	D	Z	H		D		Z	
				1960	1932-53	1960	1932-53	1960	1932-53
γ				%	%	%	%	%	%
0 - 9	0	0	0	0.0	0.0	0.0	0.0	0.0	2.3
10 - 19	0	0	37	0.0	0.8	0.0	0.4	10.1	14.1
20 - 29	3	1	39	0.8	3.9	0.3	2.5	10.7	19.8
30 - 39	5	13	50	1.4	6.0	3.8	5.0	13.7	16.0
40 - 49	23	11	45	6.3	7.8	3.0	7.4	12.3	10.2
50 - 59	34	25	26	9.3	10.4	6.8	12.1	7.1	7.5
60 - 69	27	32	20	7.4	11.7	8.7	12.9	5.5	5.6
70 - 79	37	52	19	10.1	10.6	14.2	12.3	5.2	3.6
80 - 89	37	42	13	10.1	9.0	11.5	10.7	3.6	3.0
90 - 99	30	26	19	8.2	7.3	7.1	8.3	5.2	2.4
100 - 109	29	31	11	7.9	5.8	8.5	5.9	3.0	2.1
110 - 119	24	25	7	6.6	5.1	6.8	4.0	1.9	1.7
120 - 129	19	22	8	5.2	3.3	6.0	3.5	2.2	1.7
130 - 139	17	18	5	4.6	2.9	4.9	2.6	1.4	1.2
140 - 149	12	13	6	3.3	2.3	3.6	2.2	1.6	0.8
150 - 159	7	5	1	1.9	1.9	1.4	1.7	0.3	0.9
160 - 169	10	4	9	2.7	1.5	1.1	1.6	2.5	0.7
170 - 179	3	6	6	0.8	1.5	1.6	1.2	1.6	0.4
180 - 189	2	5	2	0.5	0.9	1.4	1.0	0.5	0.6
190 - 199	3	7	4	0.8	0.9	1.9	0.8	1.1	0.5
200 +	44	28	39	12.0	6.3	7.7	4.0	10.7	4.8
Days omitted	0	0	0	-	-	-	-	-	-

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)

28 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																								
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
Jan.	+2.7	+2.3	+1.2	+5.1	+6.8	+11.8	+13.9	+12.1	+6.3	-2.0	-8.9	-16.2	-16.5	-15.3	-11.4	-9.3	-7.2	-2.1	+2.3	+5.0	+6.8	+5.5	+3.3	+3.5
Feb.	+4.5	+5.5	+2.6	+5.9	+9.0	+9.6	+11.4	+11.1	+7.3	-0.7	-8.6	-15.7	-16.7	-13.3	-11.5	-9.7	-8.0	-2.2	-1.3	+2.3	+3.9	+3.2	+6.3	+5.2
Mar.	+6.1	+5.7	+5.1	+7.1	+9.5	+11.5	+14.5	+11.5	+1.5	-11.8	-23.6	-31.0	-30.8	-26.1	-16.6	-5.9	+7.5	+9.3	+8.3	+16.5	+10.9	+9.2	+4.9	+6.8
Apr.	-18.7	-25.3	-9.5	-20.3	-6.5	+0.5	+0.3	-6.7	-11.9	-20.7	-32.3	-37.0	-21.5	-5.3	+13.6	+31.4	+49.9	+57.9	+31.5	+28.9	+5.2	-5.7	+1.9	+0.4
May	+2.2	+0.6	+2.1	+1.6	+2.8	+3.6	+4.2	-4.5	-15.8	-24.9	-29.7	-32.1	-30.3	-22.8	-10.5	+11.3	+15.6	+19.2	+27.7	+24.2	+21.9	+15.7	+10.5	+10.4
June	+6.2	+5.0	+4.3	+4.7	+6.1	+1.8	-3.9	-11.1	-20.5	-29.0	-36.0	-39.0	-32.0	-26.7	-16.3	-0.3	+12.6	+29.8	+35.1	+36.9	+30.5	+20.1	+12.8	+8.8
July	+2.9	-1.4	+2.7	+6.5	+8.5	+8.0	+0.2	-8.5	-18.7	-27.2	-34.6	-38.6	-32.4	-24.8	-14.5	+1.1	+17.2	+26.6	+34.4	+35.2	+25.7	+15.9	+9.8	+6.0
Aug.	+12.0	+9.5	+10.7	+6.1	+10.4	+6.4	+1.8	-12.0	-26.0	-32.9	-35.7	-38.3	-29.8	-23.3	-11.2	-0.1	+15.4	+27.5	+28.2	+24.5	+17.8	+14.6	+13.2	+11.3
Sept.	+6.9	+8.0	+10.4	+13.1	+11.9	+14.2	+5.3	-6.1	-19.3	-29.5	-36.2	-35.3	-27.9	-22.7	-9.8	-5.0	+8.6	+13.9	+20.9	+18.9	+18.9	+17.0	+12.8	+10.8
Oct.	-10.2	-3.9	+6.7	+5.9	+8.5	+12.3	+9.7	+5.0	-1.7	-16.1	-30.1	-29.5	-23.3	-8.8	+0.7	+11.5	+17.0	+27.4	+13.0	+8.6	-1.5	+2.4	-4.5	+1.1
Nov.	-34.7	-8.6	-13.9	-0.9	+9.8	+8.9	-3.1	-12.4	-3.0	-3.8	-4.4	-13.7	-12.2	-5.8	+0.3	+11.9	+18.4	+12.3	+23.5	+20.3	+11.6	+6.7	+0.5	+2.2
Dec.	+3.6	+0.9	+2.6	+6.0	+11.8	+13.5	+11.7	+7.8	+4.9	-3.8	-7.7	-8.8	-10.1	-9.5	-7.9	-5.0	-7.0	-6.0	-0.7	-3.0	+1.9	+0.7	+2.4	+1.6
Year	-1.3	-0.1	+2.1	+3.4	+7.4	+8.5	+5.3	-1.1	-8.1	-16.8	-24.0	-27.9	-23.7	-17.0	-7.9	+2.6	+10.8	+18.1	+18.6	+18.2	+12.8	+8.7	+6.1	+5.7
Winter	-5.9	0.0	-1.9	+4.1	+9.4	+11.0	+8.4	+4.6	+3.9	-2.6	-7.4	-13.6	-13.9	-11.0	-7.7	-3.0	-3.5	+0.5	+6.0	+6.2	+6.0	+4.0	+3.1	+3.2
Equinox	+28.3	+21.9	+33.6	+32.3	+26.0	+27.1	+23.8	+21.3	+18.7	-0.8	-33.2	-60.6	-76.4	-76.3	-60.0	-38.3	-16.1	+3.3	+13.7	+17.5	+15.8	+21.2	+25.7	+31.6
Summer	+5.9	+3.4	+5.0	+4.7	+7.0	+5.0	-0.2	-9.1	-20.2	-28.4	-33.9	-37.0	-31.2	-24.4	-13.1	+3.1	+15.2	+25.8	+31.3	+30.2	+24.0	+16.6	+11.6	+9.1
WEST COMPONENT																								
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
Jan.	-9.5	-8.6	-10.0	-9.7	-4.7	-1.3	-0.1	-0.3	-2.0	-2.3	+0.8	+6.6	+14.1	+18.3	+15.4	+12.7	+10.5	+6.6	+6.8	+1.1	-5.5	-12.2	-13.8	-13.1
Feb.	-14.3	-10.5	-7.4	-7.7	-8.4	-6.4	-5.3	-5.9	-8.4	-9.7	-2.3	+8.0	+16.8	+22.2	+24.5	+21.5	+14.4	+9.7	+6.7	+2.9	-4.5	-10.0	-13.5	-12.5
Mar.	-10.4	-11.0	-15.3	-15.3	-12.1	-11.4	-9.4	-14.1	-18.5	18.4	-10.8	+4.5	+23.9	+32.0	+34.6	+31.2	+27.4	+14.4	+9.8	+3.2	-4.6	-5.0	-11.9	-12.9
Apr.	-29.4	-27.7	-28.0	-29.4	-15.7	-13.6	-17.4	-23.4	-29.0	-22.6	-8.1	+7.8	+25.4	+39.5	+40.6	+42.8	+46.4	+42.5	+16.3	+9.4	+7.4	-8.6	-13.3	-11.9
May	-2.4	-8.6	-11.7	-12.8	-13.1	-19.7	-26.4	-28.7	-29.7	-23.4	-8.9	+7.3	+23.7	+30.3	+31.4	+29.0	+26.7	+17.2	+9.9	+6.5	+4.1	+1.2	-0.1	-1.8
June	-6.7	-10.5	-9.3	-16.6	-23.2	-29.8	-31.8	-36.0	-33.0	-25.3	-12.2	+3.1	+19.2	+28.1	+30.4	+32.0	+27.9	+25.8	+22.3	+16.4	+13.0	+8.3	+6.1	+1.7
July	-8.9	-11.7	-11.5	-13.5	-16.3	-18.9	-24.3	-26.9	-27.9	-23.0	-12.8	+2.7	+17.2	+27.3	+31.6	+29.2	+26.5	+21.0	+16.5	+11.9	+9.1	+5.8	+0.5	-3.4
Aug.	-0.8	-12.4	-12.0	-10.9	-12.9	-16.1	-25.2	-32.2	-29.5	-19.5	-3.7	+13.0	+27.9	+34.0	+33.5	+27.3	+19.9	+12.0	+6.5	+5.0	+2.2	-0.4	-4.4	-1.1
Sept.	-17.8	-18.3	-18.1	-16.7	-13.0	-10.7	-13.6	17.4	-19.1	-15.1	0.0	+15.9	+30.6	+35.0	+36.3	+24.1	+17.5	+12.9	+5.6	+4.6	+1.7	-2.2	-7.3	-15.0
Oct.	-26.3	-10.5	-12.3	-14.7	-5.2	-1.1	+4.7	+4.7	-5.5	-5.3	+3.0	+16.0	+27.5	+33.6	+29.0	+23.7	+16.5	+9.8	-6.4	-2.0	-17.0	-18.8	-19.6	-23.9
Nov.	-19.4	-10.9	-5.4	+0.2	+2.6	+2.2	+5.2	-1.6	-5.9	-9.3	-5.3	+8.5	+14.3	+20.4	+21.0	+17.0	+11.2	+6.1	-0.7	-0.7	-6.0	-11.5	-15.2	-16.6
Dec.	-12.5	-11.8	-7.0	-6.6	-1.0	+6.2	+6.6	+8.7	+7.1	+5.8	+8.0	+11.9	+16.7	+13.8	+14.2	+9.1	+10.1	+7.7	+0.2	-11.8	-17.7	-19.7	-20.4	-17.7
Year	-13.2	-12.7	-12.3	-12.8	-10.3	-10.1	-11.4	-14.4	-16.8	-14.0	-4.4	+8.7	+21.4	+27.9	+28.6	+25.0	+21.2	+15.5	+7.8	+3.9	-1.5	-6.1	-9.4	-10.7
Winter	-14.0	-10.5	-7.4	-5.9	-2.9	+0.1	+1.6	+0.2	-2.3	-3.9	+0.3	+8.7	+15.5	+18.7	+18.8	+15.1	+11.5	+7.5	+3.3	-2.1	-8.4	-13.3	-15.7	-15.0
Equinox	-20.9	-16.9	-18.4	-19.0	-11.5	-9.2	-8.9	-12.5	-18.0	-15.3	-4.0	+11.0	+26.8	+35.0	+35.1	+30.5	+26.9	+19.9	+6.4	+3.8	-3.1	-8.6	-13.0	-15.9
Summer	-4.7	-10.8	-11.1	-13.5	-16.4	-21.2	-26.9	-31.0	-30.0	-22.8	-9.4	+6.5	+22.2	+29.9	+31.7	+29.4	+25.2	+19.0	+13.8	+9.9	+7.1	+3.7	+0.5	-1.1
VERTICAL COMPONENT																								
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
Jan.	+0.5	-5.9	-9.3	-8.9	-8.2	-7.6	-6.8	-5.6	-4.4	-3.6	-3.3	-2.5	-2.5	-1.1	+4.6	+6.8	+9.5	+11.0	+9.2	+10.2	+8.0	+4.4	+3.2	+2.3
Feb.	-1.8	-2.7	-6.7	-9.2	-7.9	-8.1	-8.0	-7.3	-5.3	-4.8	-6.9	-8.1	-7.6	-5.7	-0.6	+4.5	+10.0	+11.9	+14.2	+15.6	+14.6	+11.1	+8.0	+0.8
Mar.	-5.0	-9.2	-11.2	-10.3	-10.7	-11.1	-9.4	-5.1	-3.7	-4.5	-6.9	-11.2	-11.2	-7.5	-1.6	+6.5	+17.0	+27.0	+22.3	+25.3	+19.3	+10.8	+2.8	-12.4
Apr.	-40.2	-45.2	-36.6	-39.5	-32.1	-21.2	-12.6	-8.3	-4.8	-2.8	-3.3	-3.0	+0.9	+10.6	+26.5	+34.5	+38.5	+37.4	+46.2	+36.8	+20.9	+9.9	+2.9	-15.5
May	-10.5	-14.7	-13.0	-8.0	-4.4	-4.7	-3.5	-3.6	-6.0	-10.7	-15.3	-18.2	-16.1	-6.5	+5.7	+20.1	+23.8	+25.8	+24.7	+19.6	+14.2	+5.6	+0.1	-4.4
June	-3.4	-7.3	-16.8	-25.1	-22.5	-17.7	-11.5	-6.4	-5.3	-7.2	-10.0	-11.3	-7.4	+0.4	+6.0	+10.6	+16.8	+22.9	+26.2	+25.5	+22.3	+15.6	+4.5	+1.1
July	-15.7	-22.1	-21.5	-18.8	-12.0	-8.1	-6.1	-3.8	-3.7	-6.5	-8.7	-10.7	-7.6	-2.6	+5.0	+13.7	+23.0	+28.8	+27.7	+24.3	+17.5	+11.3	+1.9	-5.3
Aug.	-12.0	-16.0	-18.6	-21.0	-16.9	-17.2	-11.7	-5.6	-5.2	-7.7	-11.1	-13.5	-11.4	-4.6	+4.8	+13.7	+23.3	+32.2	+33.2	+27.7	+20.6	+13.1	+4.0	-0.1
Sept.	-21.4	-21.6	-19.0	-16.2	-14.7	-10.4	-6.6	-2.9	-1.5	-2.6	-5.2	-6.4	-4.4	+0.9	+9.4	+17.7	+19.9	+22.4	+25.0	+22.4	+17.8	+7.9	-0.4	-10.1
Oct.	-32.6	-32.4	-33.6	-36.5	-31.5	-25.1	-18.9	-11.5	-5.0	-2.1	-0.9	+3.5	+8.9	+17.2	+30.0	+39.8	+49.6	+53.4	+40.8	+27.3	+7.9	-2.0	-17.9	-28.4
Nov.	-32.8	-31.4	-31.4	-26.7	-24.5	-21.1	-23.0	-16.3	-2.9	+4.0	+7.2	+5.3	+7.2	+12.9	+20.2	+33.0	+30.4	+29.2	+34.3	+23.8	+19.7	+3.3	-7.1	-13.3
Dec.	-11.4	-13.5	-14.9	-20.9	-18.7	-19.0	-16.6	-13.5	-9.5	-7.2	-4.9	-3.3	+1.0	+7.2	+13.6	+23.3	+26.6	+28.6	+30.7	+22.3	+12.2	+2.8	-6.0	-8.9
Year	-15.5	-18.5	-19.4	-20.1	-17.0	-14.3	-11.2	-7.5	-4.8	-4.6	-5.8	-6.6	-4.2	+1.8	+10.3	+18.7	+24.0	+27.5	+27.9	+23.4	+16.3	+7.8	-0.3	-7.9
Winter	-11.4	-13.4	-15.6	-16.4	-14.8	-13.9	-13.6	-10.7	-5.5	-2.9	-2.0	-2.1	-0.5	+3.3	+9.5	+16.9	+19.1	+20.2	+22.1	+18.0	+13.6	+5.4	-0.5	-4.8
Equinox	-24.8	-27.1	-25.1	-25.6	-22.3	-16.9	-11.9	-6.9	-3.7	-3.0	-4.1	-4.3	-1.5	+5.3	+16.1	+24.6	+31.3	+35.1	+33.6	+27.9	+16.5	+6.7	-3.1	-16.6
Summer	-10.4	-15.0	-17.5	-18.2	-13.9	-11.9	-8.2	-4.9	-5.1	-8.0	-11.3	-13.4	-10.6	-3.3	+5.4	+14.5	+21.7	+27.4	+27.9	+24.3	+18.7	+11.4	+2.6	-2.2

"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)

29 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.	-2.03	-1.82	-2.06	-2.15	-1.20	-0.70	-0.54	-0.51	-0.63	-0.39	+0.49	+1.93	+3.46	+4.26	+3.53	+2.92	+2.39	+1.42	+1.29	+0.04	-1.37	-2.66	-2.90	-2.77
Feb.	-3.06	-2.32	-1.59	-1.78	-2.04	-1.66	-1.50	-1.60	-1.97	-1.92	-0.14	+2.20	+4.02	+4.98	+5.38	+4.71	+3.20	+2.04	+1.41	+0.50	-1.05	-2.13	-2.96	-2.72
Mar.	-2.32	-2.42	-3.26	-3.34	-2.78	-2.73	-2.43	-3.26	-3.79	-3.27	-1.30	+2.06	+5.95	+7.42	+7.58	+6.51	+5.23	+2.55	+1.67	+0.03	-1.33	-1.35	-2.58	-2.84
Apr.	-5.24	-4.66	-5.31	-5.18	-2.94	-2.76	-3.52	-4.47	-5.41	-3.79	-0.44	+2.95	+5.93	+8.17	+7.70	+7.47	+7.52	+6.43	+2.13	+0.82	+1.30	-1.52	-2.76	-2.42
May	-0.57	-1.75	-2.43	-2.64	-2.74	-4.11	-5.37	-5.62	-5.40	-3.79	-0.69	+2.66	+5.90	+6.95	+6.72	+5.43	+4.79	+2.76	+0.97	+0.40	+0.02	-0.34	-0.40	-0.75
June	-1.58	-2.30	-2.03	-3.51	-4.90	-6.08	-6.27	-6.84	-5.89	-4.03	-1.13	+2.06	+5.06	+6.66	+6.74	+6.45	+5.16	+4.10	+3.20	+1.94	+1.48	+0.93	+0.76	+0.02
July	-1.90	-2.31	-2.42	-2.97	-3.61	-4.11	-4.91	-5.11	-4.94	-3.62	-1.30	+1.98	+4.66	+6.43	+6.90	+5.84	+4.71	+3.24	+2.06	+1.09	+0.87	+0.58	-0.26	-0.90
Aug.	-0.60	-2.86	-2.81	-2.42	-2.99	-3.48	-5.14	-6.05	-4.97	-2.71	+0.57	+4.04	+6.73	+7.72	+7.16	+5.50	+3.43	+1.40	+0.26	+0.10	-0.22	-0.63	-1.38	-0.65
Sept.	-3.84	-3.98	-4.03	-3.85	-3.06	-2.68	-2.94	-3.29	-3.14	-1.94	+1.34	+4.52	+7.20	+7.90	+7.67	+5.04	+3.21	+2.08	+0.36	+0.23	-0.35	-1.07	-1.95	-3.43
Oct.	-4.93	-1.98	-2.73	-3.19	-1.37	-0.68	+0.60	+0.77	-1.04	-0.48	+1.72	+4.32	+6.43	+7.12	+5.84	+4.37	+2.69	+0.96	-1.77	-0.73	-3.38	-3.88	-3.79	-4.87
Nov.	-2.64	-1.89	-0.57	+0.07	+0.17	+0.11	+1.17	+0.14	-1.09	-1.75	-0.91	+2.21	+3.33	+4.33	+4.23	+3.00	+1.96	+0.77	-1.01	-0.90	-1.64	-2.56	-3.09	-3.44
Dec.	-2.66	-2.42	-1.50	-1.55	-0.63	+0.74	+0.90	+1.47	+1.24	+1.31	+1.90	+2.72	+3.74	+3.14	+3.16	+2.02	+2.30	+1.77	+0.07	-2.26	-3.63	-4.00	-4.20	-3.63
Year	-2.61	-2.56	-2.56	-2.71	-2.34	-2.35	-2.50	-2.86	-3.09	-2.20	+0.01	+2.80	+5.20	+6.26	+6.05	+4.94	+3.88	+2.46	+0.89	+0.11	-0.77	-1.55	-2.13	-2.37
Winter	-2.60	-2.11	-1.43	-1.35	-0.93	-0.38	+0.01	-0.13	-0.61	-0.69	+0.33	+2.27	+3.64	+4.18	+4.07	+3.16	+2.46	+1.50	+0.44	-0.65	-1.92	-2.84	-3.29	-3.14
Equinox	-4.08	-3.26	-3.84	-3.89	-2.54	2.21	-2.07	-2.56	-3.35	-2.37	+0.33	+3.46	+6.38	+7.65	+7.20	+5.85	+4.66	+3.01	+0.60	+0.09	-0.94	-1.95	-2.77	-3.39
Summer	-1.16	-2.31	-2.42	-2.89	-3.56	-4.45	-5.42	-5.91	-5.30	-3.54	-0.64	+2.69	+5.59	+6.94	+6.88	+5.81	+4.52	+2.87	+1.62	+0.88	+0.54	+0.13	-0.32	-0.57
INCLINATION																								
Jan.	-0.05	-0.19	-0.19	-0.44	-0.59	-0.95	-1.08	-0.93	-0.49	+0.07	+0.49	+0.92	+0.85	+0.75	+0.67	+0.62	+0.58	+0.33	-0.01	-0.09	-0.18	-0.11	+0.03	-0.02
Feb.	-0.16	-0.30	-0.25	-0.52	-0.68	-0.75	-0.88	-0.84	-0.50	+0.05	+0.42	+0.73	+0.71	+0.46	+0.44	+0.49	+0.59	+0.32	+0.35	+0.20	+0.16	+0.19	-0.05	-0.17
Mar.	-0.40	-0.47	-0.42	-0.53	-0.74	-0.89	-1.07	-0.71	+0.04	+0.89	+1.51	+1.70	+1.45	+1.14	+0.63	+0.17	-0.41	-0.12	-0.12	-0.50	-0.18	-0.27	-0.10	-0.59
Apr.	+0.59	+0.88	+0.06	+0.71	-0.18	-0.39	-0.12	-0.51	+1.01	+1.57	+2.13	+2.26	+1.13	+0.13	-0.73	-1.72	-2.88	-3.39	-1.12	-1.10	+0.08	+0.73	+0.11	-0.26
May	-0.37	-0.29	-0.32	-0.15	-0.13	-0.12	+0.15	+0.55	+1.25	+1.65	+1.68	+1.57	+1.31	+0.97	+0.45	-0.60	-0.76	-0.83	-1.33	-1.19	-1.14	-0.91	-0.69	-0.77
June	-0.41	-0.38	-0.58	-0.73	-0.68	-0.20	+0.36	+1.00	+1.61	+2.03	+2.26	+2.24	+1.69	+1.42	+0.85	-0.11	-0.75	-1.70	-1.93	-2.99	-1.61	-1.04	-0.80	-0.57
July	-0.47	-0.31	-0.57	-0.73	-0.65	-0.50	+0.13	+0.79	+1.47	+1.90	+2.21	+2.24	+1.73	+1.24	+0.70	-0.08	-0.88	-1.29	-1.77	-1.86	-1.36	-0.84	-0.60	-0.48
Aug.	-1.07	-0.87	-1.02	-0.78	-0.94	-0.65	-0.10	+1.04	+1.93	+2.21	+2.11	+2.02	+1.34	+1.01	+0.45	+0.02	-0.67	-1.16	-1.11	-0.99	-0.69	-0.63	-0.72	-0.73
Sept.	-0.77	-0.84	-0.93	-1.06	-0.99	-1.06	-0.35	+0.54	+1.46	+2.05	+2.25	+1.97	+1.35	+1.09	+0.44	+0.47	-0.28	-0.52	-0.83	-0.74	-0.82	-0.89	-0.76	-0.77
Oct.	+0.19	-0.42	-1.12	-1.11	-1.27	-1.41	-1.16	-0.67	+0.06	+1.07	+1.92	+1.83	+1.42	+0.60	+0.34	-0.06	-0.09	-0.60	+0.23	+0.13	+0.50	+0.02	+0.09	-0.49
Nov.	+1.70	-0.08	+0.20	-0.60	-1.28	-1.13	-0.43	+0.43	+0.20	+0.46	+0.53	+0.92	+0.80	+0.45	+0.22	-0.17	+0.06	-0.16	-0.69	-0.74	-0.20	-0.22	-0.02	-0.27
Dec.	-0.37	-0.25	-0.45	-0.83	-1.22	-1.43	-1.25	-0.95	-0.64	0.00	+0.29	+0.35	+0.49	+0.63	+0.68	+0.79	+0.99	+1.00	+0.79	+0.89	+0.39	+0.26	-0.06	-0.11
Year	-0.13	-0.29	-0.46	-0.56	-0.78	-0.79	-0.48	+0.06	+0.62	+1.16	+1.48	+1.57	+1.19	+0.82	+0.43	-0.01	-0.38	-0.70	-0.60	-0.67	-0.42	-0.31	-0.29	-0.44
Winter	+0.28	-0.20	-0.17	-0.60	-0.94	-1.06	-0.91	-0.57	-0.36	+0.15	+0.43	+0.73	+0.71	+0.57	+0.51	+0.43	+0.56	+0.37	+0.11	+0.06	+0.04	+0.03	-0.03	-0.15
Equinox	-0.10	-0.21	-0.61	-0.50	-0.80	-0.94	-0.67	-0.08	+0.64	+1.39	+1.95	+1.94	+1.34	+0.74	+0.17	-0.29	-0.91	-1.15	-0.46	-0.55	-0.11	-0.11	-0.16	-0.53
Summer	-0.58	-0.46	-0.62	-0.59	-0.60	-0.37	+0.14	+0.85	+1.56	+1.94	+2.06	+2.02	+1.52	+1.16	+0.61	-0.20	-0.77	-1.25	-1.53	-1.50	-1.20	-0.85	-0.70	-0.64
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.	+1.0	+0.7	-0.6	+3.3	+5.8	+11.4	+13.7	+11.9	+5.8	-2.4	-8.6	-14.7	-13.6	-11.7	-8.4	-6.8	-5.6	-5.2	-0.4	0.0	+2.8	+3.0	+3.2	+0.7
Mar.	+1.8	+3.5	+1.2	+4.4	+7.3	+8.3	+10.2	+9.9	+5.6	-2.5	-8.9	-14.0	-13.4	-9.0	-6.8	-5.6	-5.2	-0.4	0.0	+2.8	+3.0	+3.2	+0.7	
Apr.	+4.1	+3.6	+2.2	+4.2	+7.1	+9.2	+12.6	+8.7	-1.9	-15.0	-25.2	-29.7	-25.9	-19.8	-10.0	-0.1	+12.4	+11.8	+10.0	+16.8	+9.9	+8.1	+2.6	+4.3
May	-23.7	-29.9	-14.4	-25.3	-9.2	-2.0	-2.8	-10.8	-17.0	-24.5	-33.2	-35.0	-16.6	+1.9	+20.7	+38.6	+57.5	+64.7	+33.9	+30.1	+6.5	-7.2	-0.5	-1.8
June	+1.7	-1.0	0.0	-0.7	+0.4	0.0	-3.6	-9.6	-20.9	-28.7	-30.8	-30.3	-25.6	-17.0	-4.7	+16.4	+20.2	+22.0	+29.0	+25.0	+22.3	+15.7	+10.3	+9.9
July	+4.9	+3.0	+2.5	+1.6	+1.8	-3.6	-9.6	-17.4	-26.1	-33.1	-37.6	-37.8	-28.0	-21.2	-10.6	+5.5	+17.4	+34.0	+38.6	+39.3	+32.4	+21.3	+13.7	+9.0
Aug.	+1.3	-3.5	+0.6	+4.0	+5.4	+4.5	-4.2	-13.2	-23.4	-30.9	-36.4	-37.5	-28.8	-19.5	-8.6	+6.3	+21.7	+30.0	+36.8	+36.8	+26.9	+16.7	+9.7	+5.3
Sept.	+11.7	+7.1	+8.4	+4.0	+7.9	+3.4	-2.8	-17.6	-30.9	-35.9	-35.8	-35.3	-24.3	-16.8	-5.0	+4.8	+18.7	+29.2	+28.9	+25.0	+17.9	+14.3	+12.2	+10.9
Oct.	+3.6	+4.6	+7.0	+9.9	+9.4	+12.0	+2.8	-9.1	-22.4	-31.7	-35.6	-31.9	-21.9	-16.0	-3.1	-0.6	+11.6	+16.0	+21.6	+19.4	+18.9	+16.3	+11.3	+7.9
Nov.	-14.8	-5.7	+4.4	+3.1	+7.4	+11.9	+10.4	+5.8	-2.7	-16.8	-29.1	-26.1	-18.0	-2.6	+5.9	+15.6	+19.7	+28.7	+11.6	+8.1	-4.6	-1.0	-8.0	-3.2
Dec.	-37.6	-10.4	-14.6	-0.9	+10.1	+9.1	-2.1	-12.5	-4.0	-5.4	-5.3	-11.9	-9.4	-2.0	+4.1	+14.8	+10.3	+13.2	+23.0	+19.8	+10.3	+4.5	-2.3	-0.8
Year	+1.3	-1.2	+1.3	+4.7	+11.4	+14.4	+12.7	+9.2	+6.1	-2.7	-6.1	-6.5	-6.9	-6.8	-5.2	-3.3	-5.1	-4.5	-0.6	-5.1	-1.3	-2.9	-1.3	-1.6
Year	-3.7	-2.4	-0.2	+1.0	+5.4	+6.5	+3.1	-3.7	-11.0	-19.1	-24.4	-25.9	-19.4	-11.7	-2.6	+7.1	+14.5	+20.6	+19.7	+18.6	+12.3	+7.5	+4.3	+3.7
Winter	-8.4	-1.9	-3.2	+2.9	+8.7	+10.8	+8.6	+4.6	+3.4	-3.3	-7.2	-11.8	-10.8	-7.4	-4.1	-0.2	-1.3	+1.9	+6.5	+5.7	+4.4	+1.5	+0.2	+0.4
Equinox	-7.7	-6.9	-0.2	-2.0	+3.7	+7.8	+5.7	-1.3	-11.0	-22.0	-30.8	-30.7	-20.6	-9.1	+3.4	+13.4	+25.3	+30.3	+19.3	+18.6	+7.7	+4.1	+1.3	+1.8
Summer	+4.9	+1.4	+2.9	+2.2	+3.9	+1.1	-5.1	-14.5	-25.3	-32.1	-35.1	-35.2	-26.7	-18.6	-7.2	+8.3	+19.5	+28.8	+33.3	+31.5	+24.9	+17.0	+11.5	+8.8

"Winter" comprises for 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)

30 ESKDALEMUIR

	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
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12												
NORTH COMPONENT																								
Jan.	+2.9	+2.5	+2.7	+4.5	+7.7	+10.5	+13.9	+13.2	+10.8	+1.0	-9.3	-17.7	-19.7	-14.9	-10.8	-7.3	-5.2	-1.5	+0.9	+1.6	+4.6	+4.4	+2.6	+2.5
Feb.	+2.7	+2.3	+0.6	+3.2	+4.2	+4.9	+9.3	+10.4	+5.0	-3.0	-9.4	-15.6	-14.7	-11.7	-10.5	-8.7	-5.1	-1.2	+3.1	+5.1	+6.8	+5.8	+9.1	+7.3
Mar.	+7.7	+3.7	+3.9	+5.2	+6.5	+7.6	+8.3	+27.9	+2.5	-11.0	-24.4	-28.0	-27.2	-23.0	-14.0	-6.0	-0.6	+4.6	+8.5	+10.2	+11.3	+12.6	+15.4	+14.0
Apr.	+13.3	+8.0	+6.3	+3.2	+8.6	+10.9	+9.0	+5.2	-6.3	-18.6	-26.2	-32.3	-28.6	-27.2	-17.6	-9.0	+0.8	+9.3	+15.5	+16.6	+14.5	+14.0	+14.7	+15.8
May	+5.5	+2.4	-0.6	+1.0	+5.3	+5.9	+0.7	-6.9	-13.1	-19.7	-27.1	-30.1	-26.2	-18.7	-7.2	+3.7	+11.7	+16.9	+21.4	+21.4	+17.8	+13.0	+11.3	+11.5
June	+5.6	+4.6	+5.6	+6.9	+10.1	+8.7	-0.5	-10.6	-18.8	-28.1	-36.0	-33.2	-26.8	-21.6	-9.7	+1.1	+10.5	+22.3	+28.5	+22.8	+19.2	+14.9	+12.1	+12.6
July	+1.0	+3.7	+4.6	+7.3	+10.6	+10.8	+2.6	-7.6	-20.2	-27.5	-32.6	-32.5	-25.8	-22.8	-13.9	-2.2	+6.5	+17.8	+24.6	+24.9	+22.9	+17.9	+16.5	+13.5
Aug.	+10.2	+8.5	+10.7	+10.3	+9.9	+8.1	+1.4	-8.6	-20.7	-33.5	-34.3	-32.5	-24.3	-14.5	-4.0	+2.3	+7.9	+13.1	+16.3	+19.9	+17.7	+12.6	+12.2	+11.4
Sept.	+10.4	+10.1	+10.0	+9.6	+10.5	+6.9	+1.9	-1.8	-12.2	-24.8	-34.2	-35.1	-28.0	-21.0	-10.9	+3.4	+3.8	+8.0	+15.5	+17.1	+18.2	+16.8	+16.0	+16.3
Oct.	+5.8	+5.1	+5.5	+6.6	+8.0	+6.8	+9.2	+7.4	-1.0	-15.4	-26.7	-33.1	-29.6	-21.2	-11.3	-5.7	-0.2	+7.0	+11.7	+11.6	+14.9	+14.5	+16.9	+13.2
Nov.	+1.3	-2.5	+3.0	+3.9	+4.1	+10.9	+11.8	+9.3	+4.5	-7.5	-11.3	-17.1	-18.4	-13.8	-12.2	-5.9	-1.7	+2.8	+5.5	+7.5	+7.2	+7.5	+4.7	+6.5
Dec.	-0.7	-1.9	+0.1	+2.9	+4.6	+7.5	+5.5	+8.5	+5.6	+2.4	-2.1	-3.7	-4.5	-8.1	-6.1	-10.0	-0.3	-0.6	-0.3	-1.4	-1.2	-0.8	+1.0	+3.4
Year	+5.4	+3.9	+4.3	+5.4	+7.5	+8.3	+6.4	+2.3	-5.3	-15.5	-22.8	-25.9	-22.8	-18.2	-10.7	-4.3	+2.4	+8.2	+12.6	+13.2	+12.8	+11.1	+11.1	+10.7
Winter	+1.5	+0.1	+1.7	+3.7	+5.2	+8.5	+10.1	+10.4	+6.5	-1.8	-8.0	-13.5	-14.3	-12.2	-9.9	-7.9	-3.1	-0.1	+2.3	+3.2	+4.3	+4.3	+4.3	+5.0
Equinox	+9.3	+6.7	+6.4	+6.1	+8.4	+8.1	+8.2	+4.8	-4.2	-17.4	-27.9	-32.1	-28.4	-23.2	-13.5	-6.0	+0.9	+7.2	+12.8	+13.8	+14.7	+14.4	+15.8	+14.8
Summer	+5.5	+4.9	+5.1	+6.4	+8.9	+8.4	+1.0	-8.5	-18.2	-26.9	-32.5	-32.1	-25.8	-19.5	-8.7	+1.2	+9.2	+17.5	+22.7	+22.2	+19.4	+14.6	+13.0	+12.2
WEST COMPONENT																								
Jan.	-7.1	-4.1	-2.7	-2.2	0.0	-0.1	-0.5	-3.1	-6.9	-11.6	-10.3	-3.3	+6.3	+13.1	+13.3	+10.7	+9.6	+8.6	+5.6	+2.3	-0.8	-3.6	-6.4	-6.9
Feb.	-9.0	-9.9	-3.0	-1.3	-2.3	-3.3	-4.9	-6.4	-10.7	-14.9	-9.6	+2.4	+11.2	+16.3	+17.0	+12.4	+8.2	+6.5	+4.5	+1.7	+0.8	-0.9	-2.8	-1.8
Mar.	-2.7	-2.9	-3.4	-5.6	-4.8	-6.2	-7.8	-16.5	-24.6	-25.9	-18.3	+0.2	+18.8	+28.1	+27.1	+20.7	+12.7	+6.5	+4.3	+3.9	+1.8	+0.7	-4.8	-1.3
Apr.	-4.9	-5.5	-3.8	-4.0	-7.5	-14.2	-21.4	-29.9	-32.4	-25.8	-15.0	+2.7	+20.3	+27.7	+25.3	+20.2	+16.8	+10.9	+8.4	+7.7	+7.7	+6.8	+5.6	+4.3
May	+3.7	+3.0	+4.0	+5.1	+9.6	-21.1	-28.9	-33.6	-31.3	-25.9	-14.7	+0.8	+15.9	+24.7	+25.4	+23.9	+16.4	+10.9	+9.1	+9.0	+8.7	+4.0	+6.5	+7.8
June	+4.5	+1.7	+0.7	-6.9	-15.1	-26.2	-32.1	-37.3	-38.4	-30.5	-15.4	+2.5	+15.7	+20.4	+25.1	+25.4	+23.6	+18.9	+18.3	+13.0	+9.6	+6.0	+8.3	+8.0
July	-3.8	-1.5	-4.1	-11.7	-17.7	-25.8	-35.6	-35.1	-31.9	-25.6	-13.7	+3.4	+19.4	+29.1	+32.8	+28.0	+22.4	+17.3	+13.8	+10.6	+9.1	+8.1	+8.7	+3.8
Aug.	+1.0	-0.5	-6.2	-11.7	-15.3	-19.1	-29.7	-35.1	-35.5	-24.9	-3.8	+16.3	+28.5	+33.2	+30.9	+22.8	+12.4	+7.6	+7.4	+8.0	+5.6	+4.8	+3.2	-0.2
Sept.	-1.9	-3.5	-7.7	-8.7	-10.4	-12.9	-17.9	-24.9	-30.1	-27.1	-11.6	+6.4	+20.3	+23.9	+23.7	+16.8	+13.3	+12.2	+13.6	+11.5	+6.1	+4.4	+2.0	+2.6
Oct.	-4.9	-4.0	-4.5	-4.3	-5.9	-6.8	-8.9	-14.5	-23.3	-25.4	-16.3	+0.2	+15.2	+23.1	+23.8	+16.9	+11.2	+11.1	+10.4	+7.4	+5.3	+1.4	-5.5	-1.5
Nov.	-10.6	-6.4	-1.8	-4.6	-1.4	-2.1	-1.4	-5.2	-9.9	-14.7	-4.9	+2.5	+10.5	+14.3	+13.3	+10.0	+7.3	+6.5	+4.6	+3.2	+1.7	-2.3	-4.3	-4.2
Dec.	-6.5	-4.0	+0.4	-3.2	-0.8	+0.1	+0.4	+1.6	+1.5	+0.6	+1.5	+5.5	+11.5	+10.9	+10.2	+4.0	+3.9	+4.2	+2.4	-1.4	-8.9	-13.0	-10.1	-10.8
Year	-3.5	-3.1	-3.0	-5.7	-7.5	-11.5	-15.7	-20.0	-22.8	-21.0	-11.0	+3.3	+16.1	+22.1	+22.3	+17.7	+13.2	+10.1	+8.5	+6.4	+3.9	+1.4	+0.1	0.0
Winter	-8.3	-6.1	-1.8	-2.9	-1.1	-1.4	-1.6	-3.3	-6.5	-10.1	-5.8	+1.8	+9.9	+13.6	+13.5	+9.3	+7.3	+6.4	+4.2	+1.4	-1.8	-5.0	-5.8	-5.9
Equinox	-3.6	-4.0	-4.9	-5.7	-7.1	-10.1	-14.0	-21.5	-27.6	-26.0	-15.3	+2.4	+18.7	+25.7	+25.0	+18.7	+13.5	+10.1	+9.2	+7.6	+5.2	+3.3	-0.7	+1.0
Summer	+1.4	+0.7	-2.3	-8.9	-14.4	-23.1	-31.6	-35.3	-34.3	-26.7	-11.9	+5.8	+19.9	+26.8	+28.6	+25.0	+18.7	+13.7	+12.2	+10.1	+8.3	+5.7	+6.7	+4.8
VERTICAL COMPONENT																								
Jan.	+2.6	+1.7	+0.6	+1.3	+0.4	-0.7	-1.8	-2.1	-1.4	-1.7	-3.2	-4.7	-7.8	-7.5	-3.6	+0.5	+1.2	+3.9	+4.4	+4.7	+4.0	+3.3	+3.4	+2.5
Feb.	+5.8	+3.2	-0.3	-1.8	-2.4	-2.2	-2.4	-2.0	+0.5	+1.4	-0.8	-4.4	-5.8	-6.0	-2.9	-0.8	+2.0	+2.2	+1.8	+3.0	+3.3	+3.8	+2.6	+2.2
Mar.	-0.5	-0.6	-0.3	0.0	-0.4	-0.9	-0.4	+3.4	+4.3	+3.2	-1.1	-7.4	-10.5	-8.2	-2.3	+2.8	+5.0	+4.1	+3.0	+2.6	+3.1	+2.8	+0.5	-2.2
Apr.	+4.8	+3.8	+1.8	+1.2	0.0	+3.0	+3.8	+4.2	+0.8	-2.8	-9.2	-14.0	-17.0	-14.4	-7.6	-2.0	+1.2	+4.8	+6.2	+7.0	+6.8	+6.6	+5.8	+5.2
May	+2.2	+1.9	+2.9	+4.4	+7.1	+5.9	+4.2	+2.5	-2.3	-8.8	-13.7	-17.7	-17.6	-13.1	-5.5	-0.6	+4.7	+8.1	+9.0	+8.3	+7.9	+5.8	+3.5	+0.9
June	+4.8	+3.9	+1.2	+1.9	+3.5	+5.8	+5.7	+4.7	+2.8	-3.1	-12.6	-20.1	-21.4	-15.5	-8.4	-0.5	+3.3	+7.0	+7.3	+7.7	+8.8	+6.7	+4.6	+1.9
July	+3.2	+4.6	+5.2	+6.0	+7.6	+6.5	+7.2	+7.0	+2.6	-6.2	-13.2	-19.4	-22.6	-18.6	-10.8	-4.2	+1.6	+6.7	+8.6	+7.6	+6.8	+5.4	+4.2	+4.2
Aug.	+1.4	-1.0	-2.6	-0.6	+2.0	+2.9	+3.6	+3.6	+0.6	-4.4	-14.6	-20.0	-18.6	-13.8	-3.4	+5.2	+9.8	+10.3	+9.0	+6.8	+7.2	+7.0	+5.6	+4.0
Sept.	+3.1	+3.8	+3.5	+3.6	+4.0	+3.5	+3.4	+5.6	+4.7	+0.4	-6.7	-12.8	-15.3	-13.0	-6.9	-2.0	+0.8	+0.9	+1.2	+3.2	+4.5	+4.8	+3.9	+1.8
Oct.	+1.2	+1.8	+2.7	+3.0	+3.0	+3.0	+1.4	+3.2	+4.5	+3.2	-2.8	-8.8	-9.6	-9.6	-6.1	-1.8	+0.8	+0.8	+1.4	+2.8	+2.9	+2.4	+0.8	-0.2
Nov.	+1.6	+0.2	-2.3	-2.4	-2.2	-2.0	-2.2	-1.2	+0.3	-0.8	-4.0	-4.4	-4.0	-2.2	+2.3	+4.0	+5.0	+3.6	+2.4	+1.6	+1.7	+2.0	+2.6	+0.4
Dec.	+0.8	-0.3	-1.8	-2.3	-2.5	-3.6	-3.3	-4.3	-5.2	-5.9	-4.6	-5.7	-4.4	-0.5	+2.0	+5.7	+5.5	+5.0	+4.7	+5.3	+6.6	+7.5	+3.0	-1.7
Year	+2.6	+1.9	+0.9	+1.2	+1.7	+1.8	+1.6	+2.1	+1.0	-2.1	-7.2	-11.6	-12.9	-10.2	-4.4	+0.5	+3.4	+4.8	+4.9	+5.1	+5.3	+4.8	+3.4	+1.6
Winter	+2.7	+1.2	-0.9	-1.3	-1.7	-2.1	-2.4	-2.4	-1.5	-1.7	-3.1	-4.8	-5.5	-4.1	-0.5	+2.3	+3.4	+3.7	+3.3	+3.7	+3.9	+4.1	+2.9	+0.9
Equinox	+2.1	+2.2	+1.9	+1.9	+1.7	+2.1	+2.1	+4.1	+3.6	+1.0	-4.9	-10.7	-13.1	-11.3	-5.7	-0.7	+1.9	+2.7	+2.9	+3.9	+4.3	+4.1	+2.7	+1.1
Summer	+2.9	+2.3	+1.7	+2.9	+5.1	+5.3	+5.2	+4.5	+0.9	-5.6	-13.5	-19.3	-20.1	-15.3	-7.0	0.0	+4.9	+8.0	+8.5	+7.6	+7.7	+6.2	+4.5	+2.7

"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)

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.	-1.53	-0.92	-0.64	-0.61	-0.28	-0.42	-0.61	-1.12	-1.80	-2.37	-1.72	0.00	+2.01	+3.20	+3.08	+2.43	+2.12	+1.78	+1.09	+0.40	-0.34	-0.89	-1.38	-1.48
Feb.	-1.92	-2.09	-0.63	-0.38	-0.61	-0.85	-1.34	-1.67	-2.35	-2.88	-1.59	+1.07	+2.80	+3.71	+3.81	+2.82	+1.85	+1.35	+0.78	+0.15	-0.09	-0.40	-0.91	-0.63
Mar.	-0.84	-0.72	-0.83	-1.32	-1.20	-1.54	-2.04	-3.64	-5.05	-4.80	-2.78	+1.08	+4.80	+6.52	+5.99	+4.40	+2.58	+1.14	+0.54	+0.40	-0.05	-0.32	-1.54	-0.78
Apr.	-1.48	-1.41	-1.00	-0.93	-1.84	-3.27	-4.64	-6.21	-6.30	-4.51	-2.04	+1.75	+5.16	+6.59	+5.76	+4.41	+3.36	+1.85	+1.12	+0.93	+1.00	+0.85	+0.58	+0.27
May	+0.55	+0.52	+0.10	-1.07	-2.14	-4.48	-5.85	-6.52	-5.82	-4.49	-1.96	+1.28	+4.17	+5.68	+5.38	+4.67	+2.88	+1.58	+1.03	+1.02	+1.10	+0.33	+0.90	+1.14
June	+0.70	+0.17	-0.07	-1.64	-3.41	-5.61	-6.44	-7.13	-7.05	-5.10	-1.77	+1.73	+4.16	+4.91	+5.43	+5.08	+4.37	+2.99	+2.64	+1.77	+1.23	+0.66	+1.23	+1.15
July	-0.81	-0.44	-1.00	-2.63	-3.96	-5.60	-7.27	-6.80	-5.68	-4.13	-1.56	+1.90	+4.87	+6.72	+7.12	+5.73	+4.28	+2.82	+1.87	+1.22	+0.98	+0.97	+1.14	+0.26
Aug.	-0.15	-0.42	-1.64	-2.73	-3.46	-4.14	-6.03	-6.76	-6.38	-3.77	+0.50	+4.50	+6.65	+7.22	+6.38	+4.51	+2.20	+1.04	+0.89	+0.88	+0.48	+0.49	+0.20	-0.46
Sept.	-0.77	-1.09	-1.93	-2.11	-2.49	-2.86	-3.67	-4.95	-5.61	-4.55	-1.07	+2.59	+5.13	+5.59	+5.17	+3.51	+2.55	+2.16	+2.17	+1.69	+0.55	+0.27	-0.19	-0.09
Oct.	-1.20	-0.99	-1.12	-1.12	-1.48	-1.63	-2.14	-3.20	-4.66	-4.55	-2.30	+1.26	+4.16	+5.45	+5.22	+3.62	+2.26	+1.97	+1.66	+1.06	+0.52	-0.25	-1.74	-0.80
Nov.	-2.18	-1.19	-0.48	-1.07	-0.44	-0.83	-0.72	-1.39	-2.16	-2.69	-0.58	+1.13	+2.80	+3.39	+3.14	+2.23	+1.54	+1.21	+0.72	+0.37	+0.08	-0.75	-1.04	-1.09
Dec.	-1.29	-0.74	+0.07	-0.76	-0.34	-0.25	-0.12	0.00	+0.09	+0.04	+0.39	+1.24	+2.49	+2.50	+2.29	+1.18	+0.80	+0.87	+0.50	-0.24	-1.75	-2.60	-2.07	-2.30
Year	-0.91	-0.78	-0.76	-1.36	-1.80	-2.62	-3.41	-4.12	-4.40	-3.65	-1.37	+1.63	+4.10	+5.12	+4.90	+3.72	+2.57	+1.73	+1.25	+0.80	+0.31	-0.14	-0.40	-0.40
Winter	-1.73	-1.23	-0.42	-0.71	-0.42	-0.59	-0.70	-1.05	-1.55	-1.97	-0.87	+0.86	+2.53	+3.20	+3.08	+2.17	+1.58	+1.30	+0.77	+0.17	-0.53	-1.16	-1.33	-1.37
Equinox	-1.07	-1.05	-1.22	-1.37	-1.75	-2.33	-3.12	-4.50	-5.41	-4.60	-2.05	+1.67	+4.81	+6.04	+5.53	+3.99	+2.69	+1.78	+1.37	+1.02	+0.51	+0.14	-0.72	-0.35
Summer	+0.07	-0.04	-0.65	-2.02	-3.24	-4.96	-6.40	-6.80	-6.23	-4.37	-1.20	+2.35	+4.96	+6.13	+6.08	+5.00	+3.43	+2.11	+1.61	+1.22	+0.95	+0.61	+0.87	+0.52
INCLINATION																								
Jan.	-0.04	-0.07	-0.13	-0.23	-0.50	-0.70	-0.95	-0.88	-0.66	+0.03	+0.65	+1.09	+1.02	+0.63	+0.46	+0.36	+0.26	+0.09	-0.01	-0.02	-0.19	-0.17	-0.01	-0.02
Feb.	+0.08	+0.05	-0.01	-0.24	-0.31	-0.33	-0.61	-0.66	-0.19	+0.41	+0.71	+0.89	+0.68	+0.42	+0.41	+0.40	+0.28	+0.05	-0.22	-0.28	-0.37	-0.27	-0.50	-0.41
Mar.	-0.49	-0.22	-0.22	-0.27	-0.38	-0.44	-0.72	-0.26	+0.24	+1.11	+1.79	+1.65	+1.29	+0.96	+0.53	+0.21	+0.01	-0.28	-0.53	-0.64	-0.68	-0.77	-0.94	-0.95
Apr.	-0.69	-0.37	-0.32	-0.13	-0.47	-0.47	-0.24	+0.12	+0.83	+1.47	+1.67	+1.74	+1.21	+1.09	+0.66	+0.30	-0.23	-0.62	-0.97	-1.01	-0.88	-0.84	-0.89	-0.96
May	-0.35	-0.15	+0.11	+0.10	-0.06	+0.01	+0.40	+0.92	+1.18	+1.39	+1.62	+1.53	+1.09	+0.60	+0.03	-0.54	-0.85	-1.04	-1.29	-1.31	-1.08	-0.76	-0.73	-0.83
June	-0.30	-0.22	-0.34	-0.32	-0.39	-0.11	+0.56	+1.26	+1.76	+2.13	+2.24	+1.65	+1.04	+0.79	+0.13	-0.39	-0.89	-1.52	-1.91	-1.46	-1.16	-0.88	-0.78	-0.87
July	+0.06	-0.11	-0.13	-0.19	-0.29	-0.24	+0.44	+1.09	+1.77	+1.96	+1.98	+1.61	+0.90	+0.69	+0.25	-0.30	-0.65	-1.21	-1.57	-1.57	-1.45	-1.14	-1.08	-0.83
Aug.	-0.65	-0.58	-0.69	-0.55	-0.42	-0.23	+0.36	+1.08	+1.80	+2.39	+1.93	+1.44	+0.79	+0.21	-0.19	-0.30	-0.43	-0.70	-0.94	-1.23	-1.05	-0.71	-0.70	-0.65
Sept.	-0.58	-0.53	-0.47	-0.44	-0.47	-0.21	+0.17	+0.56	+1.28	+1.96	+2.22	+1.91	+1.22	+0.77	+0.26	-0.03	-0.39	-0.65	-1.15	-1.18	-1.16	-1.04	-0.98	-1.06
Oct.	-0.29	-0.24	-0.24	-0.31	-0.38	-0.29	-0.46	-0.23	+0.46	+1.39	+1.88	+1.95	+1.53	+0.88	+0.30	+0.12	-0.10	-0.57	-0.86	-0.78	-0.97	-0.91	-1.02	-0.85
Nov.	+0.08	+0.25	-0.23	-0.26	-0.31	-0.74	-0.81	-0.58	-0.17	+0.65	+0.70	+0.99	+0.98	+0.68	+0.70	+0.37	+0.15	-0.17	-0.35	-0.49	-0.45	-0.42	-0.19	-0.36
Dec.	+0.15	+0.17	-0.06	-0.21	-0.35	-0.58	-0.45	-0.68	-0.51	-0.31	+0.01	+0.03	+0.05	+0.39	-0.33	+0.75	+0.11	+0.11	+0.11	+0.24	+0.35	+0.39	+0.13	-0.13
Year	-0.25	-0.17	-0.23	-0.26	-0.36	-0.36	-0.19	+0.15	+0.65	+1.21	+1.45	+1.37	+0.98	+0.67	+0.33	+0.08	-0.23	-0.54	-0.81	-0.81	-0.76	-0.63	-0.64	-0.66
Winter	+0.07	+0.10	-0.11	-0.24	-0.37	-0.59	-0.71	-0.70	-0.38	+0.20	+0.52	+0.75	+0.68	+0.53	+0.47	+0.46	+0.20	+0.02	-0.12	-0.14	-0.16	-0.12	-0.14	-0.23
Equinox	-0.51	-0.34	-0.31	-0.29	-0.43	-0.35	-0.31	+0.05	+0.70	+1.49	+1.89	+1.81	+1.31	+0.93	+0.44	+0.15	-0.18	-0.53	-0.87	-0.91	-0.92	-0.89	-0.96	-0.95
Summer	-0.30	-0.27	-0.27	-0.24	-0.29	-0.14	+0.44	+1.09	+1.63	+1.95	+1.94	+1.56	+0.96	+0.58	+0.05	-0.38	-0.71	-1.12	-1.42	-1.39	-1.18	-0.87	-0.82	-0.79
HORIZONTAL FORCE																								
Jan.	+1.6	+1.7	+2.2	+4.0	+7.6	+10.3	+13.6	+12.4	+9.4	-1.1	-11.0	-18.0	-18.2	-12.3	-8.2	-5.2	-3.4	+0.1	+1.8	+2.0	+4.4	+3.7	+1.4	+1.2
Feb.	+1.0	+0.5	0.0	+2.9	+3.7	+4.2	+8.3	+9.1	+3.0	-5.7	-11.0	-14.9	-12.4	-8.5	-7.2	-6.3	-3.5	0.0	+3.9	+5.3	+6.8	+5.5	+8.4	+6.9
Mar.	+7.1	+3.1	+3.2	+4.1	+5.5	+6.3	+10.7	+5.1	-2.0	-15.5	-27.3	-27.5	-23.3	-17.5	-8.8	-2.1	+1.7	+5.7	+9.1	+10.7	+11.4	+12.5	+14.3	+13.5
Apr.	+12.2	+6.9	+5.5	+2.4	+7.1	+8.1	+5.0	-0.3	-12.1	-23.0	-28.5	-31.3	-24.4	-21.7	-12.7	-5.2	+3.9	+11.1	+16.8	+17.7	+15.7	+15.0	+15.5	+16.3
May	+6.1	+2.9	-0.5	+0.1	+3.5	+2.0	-4.5	-12.9	-18.5	-24.1	-29.3	-29.5	-22.9	-13.9	-2.5	+7.9	+14.5	+18.6	+22.7	+19.7	+19.1	+13.5	+12.3	+12.7
June	+6.3	+4.8	+5.6	+5.5	+7.2	+3.8	-6.3	-17.2	-25.4	-34.1	-38.2	-32.2	-23.5	-17.6	-5.0	+5.7	+14.6	+25.4	+31.3	+24.8	+20.6	+15.7	+13.4	+13.8
July	+0.3	+3.4	+3.8	+5.1	+7.2	+6.0	-3.9	-13.8	-25.6	-31.7	-34.6	-31.4	-21.9	-17.2	-7.8	+2.9	+10.4	+20.6	+26.7	+26.4	+24.2	+19.1	+17.8	+14.0
Aug.	+10.2	+8.3	+9.4	+8.0	+7.0	+4.5	-4.0	-14.6	-26.8	-37.5	-34.4	-29.0	-18.8	-8.3	+1.6	+6.4	+10.0	+14.3	+17.4	+21.0	+18.4	+13.3	+12.6	+11.2
Sept.	+9.9	+9.3	+8.4	+7.9	+8.5	+4.5	-1.3	-6.3	-17.4	-29.3	-35.7	-33.3	-23.9	-16.3	-6.4	+0.3	+6.1	+10.1	+17.7	+18.9	+19.0	+17.3	+16.1	+16.5
Oct.	+4.8	+4.3	+4.6	+5.7	+6.8	+5.5	+7.4	+4.7	-5.2	-19.7	-29.2	-32.5	-26.4	-16.7	-6.8	-2.5	+1.8	+8.9	+13.4	+12.7	+15.6	+14.5	+15.6	+12.7
Nov.	-0.6	-3.6	+2.6	+3.0	+3.8	+10.3	+11.4	+8.2	+2.6	-10.0	-12.0	-16.4	-16.2	-11.0	-9.6	-4.0	-0.4	+3.9	+6.2	+8.0	+7.4	+7.0	+3.8	+5.6
Dec.	-1.9	-2.6	+0.2	+2.3	+4.4	+7.4	+5.5	+8.6	+5.8	+2.5	-1.8	-2.6	-2.3	-6.0	-4.2	-9.1	+0.4	+0.2	+0.1	-1.6	-2.8	-3.1	-0.8	+1.4
Year	+4.7	+3.3	+3.7	+4.3	+6.0	+6.1	+3.5	-1.4	-9.3	-19.0	-24.4	-24.9	-19.5	-13.9	-6.5	-1.0	+4.7	+9.9	+13.9	+14.1	+13.3	+11.2	+10.9	+10.5
Winter	0.0	-1.0	+1.3	+3.1	+4.9	+8.1	+9.7	+9.6	+5.2	-3.6	-8.9	-13.0	-12.3	-9.5	-7.3	-6.1	-1.7	+1.1	+3.0	+3.4	+3.9	+3.3	+3.2	+3.8
Equinox	+8.5	+5.9	+5.4	+5.0	+7.0	+6.1	+5.5	+0.8	-9.2	-21.9	-30.2	-31.1	-24.5	-18.1	-8.7	-2.5	+3.4	+8.9	+14.3	+15.0	+15.4	+14.8	+15.4	+14.7
Summer	+5.7	+4.9	+4.6	+4.7	+6.2	+4.1	-4.7	-14.7	-24.1	-31.3	-34.1	-30.5	-21.8	-14.3	-3.4	+5.7	+12.4	+19.7	+24.5	+23.7	+20.6	+15.4	+14.0	+12.9

"Winter" comprises the four months January, February, November, December; "Equinox" the months March, 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)

32 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																								
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
Jan.	+4.0	-1.3	-14.7	+4.2	+11.9	+16.7	+25.9	+22.1	+10.8	+0.4	-5.0	-15.0	-15.9	-14.9	-11.5	-10.0	-6.6	-3.1	+4.2	+0.1	+10.8	-2.9	-7.7	-2.3
Feb.	+3.6	+8.0	+3.1	+11.3	+14.7	+9.1	+6.4	+2.9	+5.7	+3.7	-4.6	-14.0	-12.5	-8.2	-15.7	-20.1	-14.7	+0.5	-7.8	-2.7	+7.8	+3.9	+9.2	+10.3
Mar.	-1.1	+3.0	-3.6	+5.1	+11.1	+9.5	+18.3	+5.9	-4.9	-16.8	-25.9	-51.5	-44.0	-29.1	-14.6	+1.7	+63.0	+45.9	+8.1	+52.0	+15.5	+0.6	-29.0	-19.4
Apr.	-107.7	-130.7	-80.9	-169.4	-76.0	-21.9	-31.8	-41.8	-20.3	-12.3	-28.8	-27.9	+41.8	+97.1	+137.8	+174.2	+237.9	+224.3	+52.8	+48.6	-71.0	-108.5	-46.8	-38.7
May	-26.3	-24.7	-2.0	-12.0	-3.2	+4.9	+7.8	+4.3	-6.5	-32.0	-29.5	-20.6	-22.3	-21.9	+3.2	+50.4	+40.9	+30.1	+47.3	+21.9	+9.2	-2.0	-13.4	-3.5
June	0.0	+7.6	+3.8	-10.9	+1.5	-3.5	-5.6	-13.2	-15.0	-29.8	-42.1	-52.6	-47.1	-42.9	-24.8	-9.3	+24.9	+52.0	+53.6	+58.4	+48.4	+36.8	+8.7	+1.1
July	-12.5	-24.5	-1.2	+9.9	+22.5	+13.5	-12.5	-23.6	-37.2	-45.7	-41.6	-44.5	-29.1	-26.0	-10.1	+24.6	+62.2	+69.6	+54.9	+48.8	+26.4	+12.9	-13.7	-23.1
Aug.	+10.9	+6.9	+8.9	-9.3	+2.0	-11.2	-11.6	-33.5	-56.6	-45.1	-41.7	-42.1	-29.9	-17.0	+6.0	+27.5	+54.4	+82.2	+58.0	+33.9	+5.0	-0.9	+0.5	+2.9
Sept.	-8.5	+0.9	+13.7	+9.9	+13.8	+13.5	-6.0	-31.6	-53.3	-48.4	-37.6	-19.9	-13.4	-9.5	+15.5	+0.2	+23.2	+36.1	+45.9	+25.0	+12.7	+12.3	+3.7	+1.5
Oct.	-110.2	-62.3	-0.6	-20.7	-20.3	+9.2	+12.9	+5.9	-4.0	-31.4	-27.1	-15.2	-3.2	+40.5	+53.5	+88.9	+106.9	+132.8	+42.9	+24.1	-61.5	-32.2	-77.5	-51.7
Nov.	-229.5	-50.6	-102.9	-34.9	+12.2	-14.4	-96.7	-120.3	-20.0	+13.2	+41.3	+18.5	+24.1	+40.0	+56.4	+104.1	+47.7	+52.0	+75.6	+61.9	+48.2	+35.0	+32.7	+6.3
Dec.	+11.7	+12.3	+5.1	+11.5	+37.5	+18.5	+13.0	+5.8	+12.6	-4.0	-8.6	9.8	-16.6	-11.7	-6.3	+17.0	-4.4	-7.3	+1.4	-19.9	-13.3	13.9	-18.1	-12.6
Year	-38.8	-21.3	-14.3	-17.1	+2.3	+3.6	-6.6	-18.0	-15.7	-20.6	-20.9	-24.5	-14.0	-0.3	+15.7	+37.5	+53.0	+59.6	+36.4	+29.3	+3.2	-4.9	-12.6	-10.7
Winter	-52.5	-7.9	-27.4	-1.9	+19.1	+7.5	-12.9	-22.4	+2.3	+3.3	+5.8	-5.0	-5.1	+1.3	+5.7	+22.8	+5.5	+10.5	+18.4	+9.8	+13.4	+5.5	+4.0	+0.4
Equinox	-56.8	-47.3	-17.9	-43.8	-17.8	+2.6	-1.6	-15.3	-20.6	-27.2	-29.9	-28.6	-4.7	+24.7	+47.9	+66.2	+107.8	+109.8	+37.4	+37.5	-26.1	-32.0	-37.5	-27.0
Summer	-7.0	-8.6	+2.3	-5.5	+5.7	+0.9	-5.5	-16.5	-28.8	-38.2	-38.7	-40.0	-32.1	-26.9	-6.4	+23.3	+45.6	+58.2	+53.5	+40.7	+22.3	+11.6	-4.5	-5.6
WEST COMPONENT																								
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
Jan.	-10.4	-19.7	-29.0	-20.0	-6.5	+1.7	+6.3	+9.9	+10.0	+10.3	+15.1	+22.3	+24.5	+24.9	+20.4	+19.5	+13.8	+6.0	+11.4	-3.4	-23.3	-33.4	-30.6	-19.9
Feb.	-23.5	-10.1	-9.3	-18.4	-18.8	-6.5	+0.5	-0.5	-5.0	+0.6	+8.8	+18.6	+22.8	+26.8	+23.8	+21.6	+8.2	+10.3	+2.8	+1.0	-13.5	-9.1	-14.9	-16.2
Mar.	-29.4	-34.6	-61.2	-50.4	-29.7	-20.3	-7.9	-6.1	-7.6	-3.4	-2.7	+2.1	+33.6	+42.9	+50.9	+51.9	+68.6	+29.3	+16.5	+22.7	+2.1	-2.6	-33.4	-31.1
Apr.	-134.7	-121.7	-84.7	-109.5	-47.1	-38.9	-28.6	-29.8	-38.3	-18.5	+8.1	+16.1	+31.9	+61.3	+65.7	+102.7	+158.3	+178.8	+49.3	+27.9	+28.6	-24.6	-29.1	-23.3
May	-5.4	-16.0	-39.4	-25.7	-21.8	-32.0	-31.9	-32.6	-36.1	-28.1	-2.7	+14.2	+35.4	+37.1	+40.7	+39.3	+30.3	+36.5	+13.3	+5.2	+1.3	-1.2	-5.1	+5.0
June	-11.5	-31.5	-8.4	-39.0	-27.0	-36.6	-42.3	-51.2	-33.7	-26.7	-14.4	-2.6	+16.5	+28.9	+37.6	+41.4	+45.3	+46.2	+38.8	+32.0	+24.5	+16.4	+3.3	-6.1
July	-37.5	-26.3	-15.7	-13.5	-13.3	-8.9	-15.3	-11.5	-16.6	-10.8	-4.4	+7.1	+11.7	+24.8	+30.4	+34.5	+38.3	+32.4	+24.6	+11.5	+8.0	+2.4	-21.1	-30.6
Aug.	+10.3	-41.4	-33.9	-28.7	-6.3	+3.9	-25.3	-36.4	-21.5	-4.0	+8.1	+21.7	+33.4	+36.8	+40.5	+36.0	+31.6	+22.4	+3.0	-0.1	-9.7	-12.0	-23.9	-4.4
Sept.	-34.9	-38.8	-36.1	-36.1	-18.7	+3.2	-4.0	-11.9	-14.3	-7.1	+18.9	+38.3	+49.8	+49.9	+55.2	+28.9	+20.8	+16.7	-22.0	-11.1	-11.5	-4.5	-8.0	-22.8
Oct.	-89.6	-24.1	-44.5	-45.2	-5.8	-9.2	+16.6	+34.1	+16.1	+26.6	+38.1	+44.0	+47.6	+59.7	+47.7	+41.4	+36.6	+45.5	-19.2	+3.8	-50.6	-46.8	-42.1	-80.7
Nov.	-61.6	-39.1	-39.7	+6.1	+10.0	+1.7	+18.4	-16.1	-11.6	-22.3	-34.1	+3.1	+10.9	+39.7	+39.2	+34.7	+28.2	+21.1	-3.0	-5.0	+3.1	-1.4	+10.0	+7.8
Dec.	-19.6	-25.7	-14.1	-18.5	-5.1	+17.7	+14.7	+21.8	+17.2	+9.6	+13.5	+21.0	+29.3	+24.7	+28.3	+27.9	+29.6	+23.9	+6.8	-23.2	-29.8	-36.2	-62.9	-51.2
Year	-37.3	-35.8	-34.7	-33.2	-15.8	-10.4	-8.2	-10.9	-11.8	-6.1	+4.3	+17.2	+29.0	+38.1	+40.0	+40.0	+44.2	+39.1	+10.2	+5.1	-5.9	-12.7	-21.5	-22.8
Winter	-28.8	-23.7	-23.1	-12.7	-5.1	+3.7	+9.9	+3.7	+2.7	-0.4	+0.8	+16.3	+21.9	+29.1	+27.9	+26.0	+20.0	+15.3	+4.5	-7.7	-15.9	-20.0	-24.6	-19.9
Equinox	-72.1	-54.8	-56.6	-60.3	-25.3	-16.3	-6.0	-3.4	-11.0	-0.6	+15.6	+25.1	+40.7	+53.5	+54.9	+56.3	+71.1	+67.6	+6.1	+10.8	-7.9	-19.7	-28.1	-39.5
Summer	-11.0	-28.8	-24.4	-26.8	-17.1	-18.4	-28.7	-33.0	-27.0	-17.4	-3.3	+10.1	+24.3	+31.9	+37.3	+37.8	+41.4	+34.3	+19.9	+12.2	+6.0	+1.4	-11.7	-9.0
VERTICAL COMPONENT																								
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
Jan.	+4.6	-22.5	-32.2	-29.1	-21.9	-15.6	-13.1	-12.5	-12.0	-11.1	-8.4	-6.7	+0.6	-1.3	+15.8	+16.7	+29.7	+32.4	+23.1	+32.3	+21.6	+4.9	+2.8	+1.9
Feb.	-7.5	-4.0	-15.8	-22.9	-18.6	-18.2	-16.7	-12.4	-9.6	-10.1	-11.2	-8.8	-6.1	-0.6	+8.6	+17.9	+20.6	+20.2	+25.5	+26.8	+23.0	+12.1	+8.8	-1.0
Mar.	-0.9	-23.5	-37.7	-36.7	-40.5	-43.1	-35.7	-21.7	-14.7	-13.1	-12.7	-9.1	-4.1	-0.1	+1.5	+8.5	+40.7	+94.7	+63.5	+79.5	+54.7	+24.3	-2.3	-71.5
Apr.	-134.9	-113.4	-104.3	-163.0	-137.6	-63.9	-37.8	-36.6	-23.5	-11.4	-1.9	+12.6	+42.5	+76.4	+125.9	+129.6	+115.0	+79.5	+118.8	+85.4	+24.9	+8.0	+11.9	-2.2
May	-39.8	-65.5	-53.0	-29.3	-21.9	-21.0	-9.9	-7.3	-11.4	-16.1	-18.2	-21.1	-16.6	-2.3	+27.8	+81.7	+65.2	+58.1	+56.3	+39.0	+32.5	+4.1	-11.8	-19.5
June	-21.3	-16.4	-39.3	-70.8	-56.6	50.1	-28.2	-12.2	-8.9	-5.0	-0.5	+3.4	+8.1	+13.6	+21.3	+25.6	+35.0	+49.1	+52.2	+47.1	+40.2	+24.2	-2.7	-7.8
July	-57.0	-69.7	-67.6	-56.5	-39.2	-24.7	-21.6	-18.3	-15.0	-10.1	-7.0	-0.1	+16.4	+28.3	+39.8	+57.5	+77.8	+80.9	+67.0	+49.3	+23.6	+7.3	-21.0	-40.1
Aug.	-39.8	-57.3	-80.4	-98.6	-66.4	-81.1	-52.2	-22.2	-12.6	-11.7	-6.8	-4.6	+2.8	+14.7	+23.2	+44.6	+73.8	+103.3	+100.8	+80.4	+55.4	+30.5	+6.4	-2.2
Sept.	-74.7	-80.0	-69.9	-55.8	-54.0	-44.3	-29.0	-15.8	-8.3	+0.6	+5.5	+14.0	+22.3	+33.2	+48.3	+63.8	+55.8	+59.3	+77.6	+59.6	+44.9	+0.8	-21.5	-32.4
Oct.	-109.0	-67.9	-78.2	-117.1	-112.5	-87.0	-56.1	-34.5	-15.6	-4.3	+0.8	+23.7	+43.0	+67.1	+111.0	+141.5	+165.7	+162.8	+110.3	+64.7	-14.8	-29.9	-60.6	-103.1
Nov.	-142.7	-131.4	-127.4	-101.3	-85.6	-67.0	-85.7	-57.0	+6.2	+41.7	+66.8	+49.6	+43.5	+58.0	+76.8	+135.1	+103.8	+89.0	+84.1	+34.4	+39.2	+20.9	-14.4	-36.6
Dec.	-34.1	-36.6	-43.9	-80.0	-64.0	-57.5	-43.4	-36.4	-21.7	-19.0	-13.9	-8.4	+9.1	+26.2	+43.5	+79.2	+78.2	+90.1	+103.4	+64.6	+28.7	-3.2	-26.3	-34.6
Year	-54.8	-57.3	-62.5	-71.8	-59.9	-47.8	-35.8	-23.9	-12.3	-5.8	-0.6	+3.7	+13.4	+26.1	+45.3	+66.8	+71.8	+76.6	+73.5	+55.3	+31.2	+8.7	-10.9	-29.1
Winter	-44.9	-48.6	-54.8	-58.3	-47.5	-39.6	-39.7	-29.6	-9.3	+0.4	+8.3	+6.4	+11.8	+20.6	+36.2	+62.2	+58.1	+57.9	+59.0	+39.5	+28.1	+8.7	-7.3	-17.6
Equinox	-79.9	-71.2	-72.3	-93.1	-86.1	-59.6	-39.7	-27.1	-15.5	-7.1	-2.1	+10.3	+25.9	+44.1	+71.7	+85.9	+94.3	+99.1	+92.3	+72.3	+27.4	+0.8	-18.1	-52.3
Summer	-39.5	-52.2	-60.1	-63.8	-46.0	-44.2	-28.0	-15.0	-12.0	-10.7	-8.1	-5.6	+2.7	+13.6	+28.0	+52.3	+62.9	+72.9	+69.1	+53.9	+37.9	+16.5	-7.3	-17.4

"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)

33 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.	-2.25	-3.93	-5.31	-4.19	-1.75	-0.27	+0.31	+1.17	+1.61	+2.07	+3.23	+5.07	+5.53	+5.59	+4.55	+4.31	+3.03	+1.33	+2.15	-0.69	-5.11	-6.63	-5.89	-3.93
Feb.	-4.87	-2.35	-1.99	-4.13	-4.35	-1.66	-0.13	-0.21	-1.23	-0.01	+1.95	+4.27	+5.07	+5.71	+5.39	+5.11	+2.21	+2.06	+0.85	+0.31	-3.01	-1.99	-3.35	-3.65
Mar.	-5.90	-7.10	-12.23	-10.36	-6.42	-4.46	-2.28	-1.46	-1.35	-0.06	+0.42	+2.34	+8.42	+9.74	+10.83	+10.42	+11.50	+4.20	+3.02	+2.64	-0.15	-0.54	-5.66	-5.56
Apr.	-23.19	-19.70	-14.09	-15.82	-6.68	-7.05	-4.60	-4.46	-6.97	-3.28	+2.71	+4.28	+4.89	+8.78	+8.13	+14.26	+23.12	+27.77	+8.00	+3.82	+8.41	-0.94	-4.13	-3.26
May	-0.11	-2.32	-7.89	-4.75	-4.29	-6.64	-6.73	-6.75	-7.05	-4.48	+0.55	+3.63	+7.97	+8.30	+8.09	+6.07	+8.63	+6.26	+0.93	+0.23	-0.09	-0.16	-0.53	+1.13
June	-2.31	-6.64	-1.83	-7.45	-5.49	-7.24	-8.33	-9.83	-6.23	-4.28	-1.35	+1.43	+5.07	+7.42	+8.49	+8.69	+8.21	+7.38	+5.83	+4.29	+3.15	+1.94	+0.35	-1.27
July	-7.10	-4.39	-3.12	-3.09	-3.51	-2.30	-2.63	-1.45	-1.96	-0.49	+0.66	+3.09	+3.44	+5.97	+6.50	+6.03	+5.40	+3.95	+2.91	+0.50	+0.63	+0.01	-3.74	-5.31
Aug.	+1.67	-8.59	-7.15	-5.45	-1.35	+1.20	-4.67	-6.09	-2.23	+0.87	+3.17	+5.93	+7.85	+8.05	+7.93	+6.23	+4.35	+1.46	-1.55	-1.27	-2.15	-2.39	-4.83	-0.99
Sept.	-6.73	-7.87	-7.80	-7.65	-4.29	+0.15	-0.59	-1.23	-0.92	+0.35	+5.21	+8.47	+10.55	+10.43	+10.58	+5.83	+3.35	+2.05	-6.15	-3.17	-2.78	-1.37	-1.75	-4.67
Oct.	-14.02	-2.56	-8.97	-8.36	-0.42	-2.20	+2.88	+6.66	+3.39	+6.54	+8.70	+9.44	+9.74	+10.56	+7.65	+5.08	+3.44	+4.28	-5.46	-0.12	-7.95	-8.26	-5.64	-14.40
Nov.	-3.97	-6.05	-4.22	+2.53	+1.57	+0.87	+7.31	+1.19	-1.60	-5.01	-8.43	0.05	+1.31	+6.55	+5.84	+3.17	+3.95	+2.35	-3.41	-3.31	-1.16	-1.59	+0.81	+1.35
Dec.	-4.40	-5.65	-3.04	-4.17	-2.41	+2.90	+2.49	+4.19	+3.00	+2.09	+3.04	+4.61	+6.54	+5.43	+5.96	+5.01	+6.15	+5.10	+1.33	-3.95	-5.52	-6.79	-12.04	-9.87
Year	-6.10	-6.43	-6.47	-6.07	-3.28	-2.23	-1.41	-1.52	-1.79	-0.47	+1.65	+4.38	+6.37	+7.71	+7.49	+6.68	+6.95	+5.68	+0.70	-0.06	-1.31	-2.39	-3.87	-4.20
Winter	-3.87	-4.49	-3.64	-2.49	-1.73	+0.46	+2.49	+1.59	+0.45	-0.21	-0.05	+3.47	+4.61	+5.82	+5.43	+4.40	+3.83	+2.71	+0.23	-1.91	-3.70	-4.25	-5.12	-4.03
Equinox	-12.46	-9.31	-10.77	-10.55	-4.45	-3.39	-1.15	-0.12	-1.46	+0.89	+4.26	+6.13	+8.40	+9.88	+9.30	+8.90	+10.35	+9.57	-0.15	+0.79	-0.62	-2.78	-4.29	-6.97
Summer	-1.96	-5.49	-5.00	-5.19	-3.66	-3.75	-5.59	-6.03	-4.37	-2.09	+0.76	+3.52	+6.08	+7.43	+7.75	+6.75	+6.65	+4.76	+2.03	+0.94	+0.39	-0.15	-2.19	-1.61
INCLINATION																								
Jan.	-0.02	-0.23	+0.53	-0.75	-1.25	-1.50	-2.10	-1.87	-1.12	-0.43	-0.06	+0.55	+0.76	+0.64	+0.90	+0.83	+1.00	+0.92	+0.15	+0.83	+0.10	+0.71	+0.95	+0.44
Feb.	-0.14	-0.52	-0.48	-1.08	-1.19	-0.96	-0.84	-0.49	-0.55	-0.50	-0.08	+0.48	+0.39	+0.20	+0.95	+1.49	+1.37	+0.34	+1.11	+0.83	+0.22	+0.15	-0.20	-0.51
Mar.	+0.41	-0.36	+0.05	-0.63	-1.37	-1.44	-1.99	-0.85	+0.05	+0.82	+1.42	+3.13	+2.38	+1.39	+0.38	0.53	-3.96	-1.04	+0.83	-1.73	+0.31	+0.59	+2.25	-0.11
Apr.	+5.35	+7.25	+3.76	+8.43	+2.17	+0.34	+1.51	+2.20	+0.75	+1.75	+1.94	+2.08	-2.08	-5.23	-6.74	-9.48	-14.69	-14.92	-1.14	-1.43	+4.93	+7.61	+3.71	+2.77
May	+0.81	+0.20	-0.70	+0.38	-0.07	-0.45	+0.37	-0.07	+0.58	+2.05	+1.52	+0.66	+0.62	+0.93	0.02	-1.77	-1.68	-0.99	-1.88	-0.54	+0.18	+0.25	+0.65	-0.31
June	-0.39	-0.52	-1.12	-0.57	-1.17	-0.57	+0.18	+1.18	+1.17	+2.15	+2.92	+3.57	+3.09	+2.80	+1.70	+0.75	-1.31	-2.75	-2.69	-3.05	-2.47	-2.01	-0.68	-0.19
July	-0.13	+0.21	-1.40	-1.88	-2.28	-1.39	+0.48	+1.24	+2.27	+2.88	+2.61	+2.83	+2.17	+2.10	+1.27	-0.62	2.63	-2.97	-2.25	-2.13	-1.25	-0.69	+0.64	+0.90
Aug.	-1.82	-1.36	-2.15	-1.47	-1.69	-1.31	-0.22	+2.09	+3.67	+2.72	+2.47	+2.39	+1.63	+1.04	0.31	-1.14	-2.13	-3.12	-1.36	-0.24	+1.15	+0.95	+0.41	-0.19
Sept.	-0.86	-1.56	-2.19	-1.59	-2.01	-2.02	+0.27	+1.83	+3.47	+3.28	+2.38	+1.18	+0.83	+0.64	0.49	+1.21	-0.40	-1.11	-0.84	-0.04	+0.41	-0.73	-0.68	-0.62
Oct.	+5.62	+2.71	-1.35	-0.98	-1.37	-2.63	-2.43	-1.65	-0.32	+1.63	+1.34	+1.05	+0.69	-1.72	-1.35	-2.85	-3.38	-5.25	+0.13	+0.03	+4.28	+1.94	+4.10	+1.83
Nov.	+12.26	+0.54	+4.08	-0.29	-3.03	-0.73	+4.01	+6.68	+1.60	+0.43	-0.65	-0.03	-0.64	-1.66	-2.27	-3.91	-0.90	-1.46	-2.85	-3.15	-2.23	-1.77	-2.62	-1.41
Dec.	-1.37	-1.39	-1.25	-2.50	-3.97	-2.84	-2.09	-1.53	-1.57	-0.32	+0.06	+0.18	+0.96	+1.11	+1.14	+0.49	+1.86	+2.40	+2.37	+3.18	+1.94	+1.27	+1.30	+0.59
Year	+1.65	+0.42	-0.18	-0.25	-1.43	-1.29	-0.35	+0.73	+0.87	+1.28	+1.31	+1.49	+0.90	+0.20	-0.40	-1.30	-2.24	-2.50	-0.71	-0.63	+0.63	+0.69	+0.82	+0.26
Winter	+2.69	-0.39	+0.73	-1.15	-2.36	-1.51	-0.25	+0.70	-0.41	-0.20	-0.19	+0.29	+0.36	+0.07	+0.18	-0.28	+0.83	+0.55	+0.19	+0.42	0.00	+0.09	-0.15	-0.22
Equinox	+2.63	+2.01	+0.07	+1.31	-0.64	-1.44	-0.80	+0.38	+1.11	+1.62	+1.72	+1.83	+0.46	-1.18	-2.05	-2.91	-5.61	-5.58	-0.26	-0.81	+2.48	+2.35	+2.35	+0.94
Summer	-0.38	-0.37	-1.34	-0.88	-1.30	-0.93	+0.02	+1.11	+1.92	+2.45	+2.38	+2.36	+1.88	+1.72	+0.66	-0.69	-1.94	-2.44	-2.05	1.49	-0.60	-0.39	+0.25	+0.05
HORIZONTAL FORCE																								
Jan.	+2.0	-4.9	-19.8	+0.5	+10.6	+16.7	+26.6	+23.5	+12.4	+2.3	-2.2	-10.7	-11.2	-10.1	-7.6	-6.3	-4.0	-1.9	+6.2	-0.5	+6.4	-8.9	-13.2	-5.9
Feb.	-0.7	+6.0	+1.3	+7.8	+11.0	+7.7	+6.4	+2.8	+4.7	+3.8	-2.9	-10.4	-8.1	-3.2	-11.1	-15.8	-12.9	+2.4	-7.2	-2.5	+5.2	+2.2	+6.3	+7.2
Mar.	-6.4	-3.3	-14.6	-4.1	+5.6	+5.7	+16.6	+4.7	-6.2	-17.1	-26.0	-50.3	-37.2	-20.9	-5.2	+11.1	+74.4	+50.5	+11.0	+55.3	+15.6	+0.1	-34.6	-24.7
Apr.	-130.3	-150.6	-94.9	-186.5	-83.3	-28.6	-36.5	-46.5	-26.9	-15.4	-26.9	-24.5	+46.9	+106.6	+147.5	+189.9	+262.7	+253.0	+60.9	+52.9	-64.7	-111.2	-51.3	-42.3
May	-26.9	-27.2	-9.1	-16.5	-7.1	-1.0	+1.9	-1.7	-12.9	-36.6	-29.5	-17.7	-15.5	-14.8	+10.5	+56.7	+49.3	+36.2	+48.9	+22.5	+9.3	-2.2	-14.1	-2.5
June	-2.1	+1.8	+2.2	-17.7	-3.4	-10.0	-13.1	-22.2	-20.8	-34.1	-44.0	-52.2	-43.3	-37.0	-17.6	-1.7	+32.6	+59.4	+59.7	+63.2	+52.0	+39.1	+9.2	0.0
July	-19.1	-28.9	-4.0	+7.3	+19.7	+11.7	-15.1	-25.3	-39.6	-46.9	-41.7	-42.5	-26.5	-21.1	-4.4	+30.5	+68.1	+74.3	+58.5	+50.1	+27.4	+13.1	-17.3	-28.3
Aug.	+12.6	-0.7	+2.6	-14.3	+0.8	-10.3	-16.0	-39.5	-59.6	-45.1	-39.6	-37.5	-23.4	-10.1	+13.2	+33.5	+59.2	+84.9	+57.6	+33.3	+3.2	-3.1	-3.8	+2.1
Sept.	-14.6	-6.1	+7.0	+3.2	+10.2	+13.9	-6.6	-33.2	-55.0	-48.9	-33.6	-12.6	-4.2	-0.3	+25.2	+5.4	+26.6	+38.5	+41.2	+22.6	+10.4	+11.3	+2.2	-2.6
Oct.	-124.5	-65.6	-8.6	-28.5	-21.0	+7.4	+15.7	+12.0	-1.0	-26.1	-19.8	-7.0	+5.5	+50.6	+61.2	+94.9	+111.8	+138.8	+38.7	+24.4	+69.6	+40.1	-83.8	-65.4
Nov.	-236.7	-56.8	-108.3	-33.2	+13.8	-13.9	-91.8	-121.2	-21.7	+9.0	+34.5	+18.8	+25.7	+46.4	+62.5	+108.6	+52.0	+54.9	+73.8	+60.0	+47.9	+34.2	+33.9	+7.6
Dec.	+8.0	+7.4	+2.5	+8.0	+36.0	+21.4	+15.4	+9.6	+15.5	-2.2	-6.0	-5.8	11.0	-7.0	-1.1	+21.8	+1.0	-2.8	+2.6	-23.8	-18.5	-20.2	-29.2	-21.6
Year	-44.9	-27.4	-20.3	-22.8	-0.6	+1.7	-8.0	-19.7	-17.6	-21.4	-19.8	-21.0	-8.5	+6.6	+22.7	+44.1	+60.1	+65.7	+37.7	+29.8	+2.1	-7.1	-16.3	-14.7
Winter	-56.9	-12.1	-31.1	-4.2	+17.9	+8.0	-10.9	-21.4	+2.7	+3.2	+5.9	-2.0	-1.1	+6.5	+10.7	+27.1	+9.0	+13.1	+18.9	+8.3	+10.3	+1.8	-0.5	-3.2
Equinox	-68.9	-56.4	-27.8	-54.0	-22.1	-0.4	-2.7	-15.7	-22.3	-26.9	-26.6	-23.6	+2.7	+34.0	+57.1	+75.3	+118.9	+120.2	+37.9	+38.8	-27.1	-35.0	-41.9	-33.7
Summer	-8.9	-13.7	-2.1	-10.3	+2.5	-2.4	-10.6	-22.2	-33.2	-40.7	-38.7	-37.5	-27.2	-20.7	+0.4	+29.7	+52.3	+63.5	+56.2	+42.3	+23.0	+11.7	-6.5	-7.2

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

RANGE OF MEAN DIRUNAL INEQUALITIES FOR THE MONTHS, YEAR AND SEASONS OF 1960
The ranges are derived from the diurnal inequalities printed in tables 28 to 33

34 ESKDALEMUIR

	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
	γ	γ	γ	γ	γ	γ	γ	γ	γ			γ			γ			γ
January	30.4	32.1	20.3	33.6	24.9	12.5	41.8	58.3	64.6	7.16	2.00	28.4	5.57	2.04	31.8	12.22	3.10	46.4
February	28.1	38.8	24.8	26.0	31.9	11.8	34.8	50.3	49.7	8.44	1.61	24.2	6.69	1.55	24.0	10.58	2.68	26.8
March	47.5	53.1	39.4	55.9	54.0	15.5	114.5	129.8	166.2	11.37	2.77	46.5	11.57	3.38	41.8	23.73	7.09	124.7
April	94.9	75.8	91.4	48.9	60.1	24.0	407.3	313.5	292.6	13.58	5.65	99.7	12.89	2.75	49.0	50.96	23.35	449.2
May	59.8	61.1	44.0	51.5	59.0	26.7	82.4	89.7	147.2	12.57	3.01	59.8	12.20	2.93	52.2	16.52	3.93	93.3
June	75.9	68.0	51.3	64.5	63.8	30.2	111.0	97.4	123.0	13.58	4.25	77.1	12.56	4.15	69.5	18.52	6.62	115.4
July	73.8	59.5	50.9	57.5	68.4	31.2	115.3	75.8	150.6	12.01	4.10	74.3	14.39	3.55	61.3	13.60	5.85	121.2
August	66.5	66.2	54.2	54.2	68.7	30.3	138.8	81.9	201.9	13.77	3.37	65.1	13.98	3.62	58.5	16.64	6.79	144.5
September	57.1	55.4	46.6	53.3	54.0	20.9	99.2	94.0	157.6	11.93	3.31	57.2	11.20	3.40	54.7	18.45	5.66	96.2
October	57.5	59.9	89.9	50.0	49.2	14.1	243.0	149.3	282.8	12.05	3.33	57.8	10.11	2.97	48.1	24.96	10.87	263.3
November	58.2	40.4	67.1	30.2	29.0	9.4	333.6	101.3	277.8	7.77	2.98	60.6	6.08	1.80	27.8	15.74	16.17	345.3
December	23.6	37.1	51.6	18.5	24.5	13.4	57.4	92.5	183.4	7.94	2.43	21.3	5.10	1.43	17.7	18.58	7.15	65.2
Year	46.5	45.4	48.0	39.1	45.1	18.2	98.4	81.5	148.4	9.35	2.36	46.5	9.52	2.26	39.0	14.18	4.15	110.6
Winter	24.9	34.5	38.5	24.7	23.7	9.6	75.3	57.9	120.5	7.47	1.79	22.6	5.17	1.46	22.7	10.94	5.05	84.0
Equinox	110.0	56.0	62.2	47.9	53.3	17.4	166.6	143.2	192.2	11.73	3.10	61.1	11.45	2.85	46.5	22.81	8.24	189.1
Summer	68.3	62.7	46.1	55.2	63.9	28.6	98.2	74.4	136.7	12.85	3.59	68.5	12.93	3.37	58.6	13.78	4.89	104.2

NON-CYCLIC CHANGE

35 ESKDALEMUIR

	All days			Quiet days			Disturbed days		
	H	D	Z	H	D	Z	H	D	Z
	γ		γ	γ		γ	γ		γ
January	+0.5	-0.01	-0.2	-0.1	+0.06	-1.2	-6.7	-1.03	+0.3
February	-0.4	-0.06	+0.4	+3.1	+0.66	-4.1	+7.2	+1.01	+4.8
March	-1.1	-1.40	-10.4	+4.7	+0.09	-4.1	-57.1	-5.50	+74.7
April	+8.0	+1.44	+13.1	+3.4	+0.84	-1.0	+29.9	+12.66	+97.8
May	+4.5	-0.05	-2.5	+6.6	+0.39	-2.8	+15.4	+0.82	+5.1
June	-0.1	+0.05	+0.3	+5.0	-0.06	-3.3	+4.0	-0.46	+5.1
July	-0.7	+0.05	-0.3	+10.5	+0.84	+0.2	-27.0	-0.18	-11.7
August	+0.2	-0.10	+0.3	+4.2	-0.69	-2.5	-10.8	-1.19	-2.0
September	+0.2	-0.03	-0.1	+3.8	+0.34	-1.9	+7.7	+0.12	+15.0
October	-0.4	-0.03	+0.2	+5.1	-0.06	-0.4	-13.5	-0.79	-16.7
November	0.0	+0.03	+1.0	+7.5	+1.30	-3.7	+82.9	+1.41	+15.9
December	0.0	-0.01	-0.1	+7.6	-0.19	-4.6	-17.4	-2.98	-0.8
Year	+0.9	-0.01	+0.2	+5.1	+0.29	-2.5	+1.2	+0.32	+15.6
Winter	0.0	-0.01	+0.3	+4.5	+0.46	-3.4	+16.5	-0.40	+5.1
Equinox	+1.7	-0.01	+0.7	+4.3	+0.30	-1.9	-8.3	+1.62	+42.7
Summer	+1.0	-0.01	-0.5	+6.6	+0.12	-2.1	-4.6	-0.25	-0.9

"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 1960 AS PERCENTAGE OF THIS

36 ESKDALEMUIR

		All days			International quiet days			International disturbed days		
		H	D	Z	H	D	Z	H	D	Z
		γ		γ	γ		γ	γ		γ
Year	1932-53	37.8	8.66	28.7	34.4	8.43	13.7	53.9	11.93	82.1
	1960(%)	123	108	167	113	113	133	205	120	181
Winter	1932-53	19.3	6.95	21.2	16.2	4.44	5.9	34.4	11.45	66.5
	1960(%)	117	107	182	140	116	163	244	96	181
Equinox	1932-53	43.1	10.18	37.1	39.7	9.69	14.8	75.4	15.11	108.9
	1960(%)	142	115	168	117	118	118	251	151	177
Summer	1932-53	59.7	11.84	33.9	50.4	11.76	21.9	83.7	13.11	82.4
	1960(%)	115	109	136	116	110	131	124	105	166

"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 $\sum(a_n \cos 15nt + b_n \sin 15nt)$, t being reckoned in hours from midnight G.M.T.
 Longitude of Eskdalemuir Observatory, 3°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
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
ALL DAYS																								
Jan.	+7.9	+5.3	-6.7	-4.1	+1.6	-1.4	-0.2	+1.3	-10.9	-5.0	-1.8	+4.3	-0.5	-1.2	+1.8	+2.5	+0.1	-8.9	-1.5	-1.6	+1.4	+0.2	+0.5	-0.4
Feb.	+8.2	+5.9	-5.0	-3.4	+2.3	-1.0	-0.5	+0.8	-11.6	-9.5	-1.0	+7.5	-1.2	-2.4	+0.3	+2.2	+3.7	-10.3	-3.4	-3.2	+0.5	+0.8	-0.8	-0.2
Mar.	+15.0	+0.9	-13.2	-2.4	+4.3	-0.1	-0.4	+1.0	-12.5	-19.1	-0.2	+10.2	+0.2	-6.2	-1.5	+1.9	+1.7	-17.8	-8.8	-6.2	0.0	+2.3	-1.2	-0.6
Apr.	+1.2	-20.9	-21.7	+6.8	+9.1	+0.1	+2.4	-2.1	-18.4	-25.9	-4.7	+13.1	-0.6	-5.0	+3.5	-1.2	-14.9	-27.2	-13.2	-5.2	+1.6	-0.5	-1.2	+0.1
May	+16.7	-10.5	-13.8	+0.8	+2.4	-0.2	0.0	0.0	-7.0	-22.2	+5.1	+11.3	-2.1	-4.0	+1.5	-0.4	+1.4	-15.5	-12.5	-0.5	+2.9	-0.4	-1.1	-1.5
June	+22.3	-14.9	-15.8	-0.9	-0.9	+1.7	+1.0	+1.0	-4.3	-29.1	+4.3	+9.2	-2.5	-2.1	+0.3	+0.2	+1.2	-19.2	-5.0	-5.9	+2.8	+0.8	-0.1	+3.0
July	+19.7	-13.3	-17.7	-0.2	-0.7	+0.5	+1.2	0.0	-6.0	-23.8	+1.7	+9.4	-2.2	-4.0	+0.2	+0.3	-2.3	-17.7	-10.8	-5.1	+1.3	-0.4	+0.5	-1.1
Aug.	+22.1	-11.5	-13.7	+4.3	+1.0	+0.3	+3.0	0.0	-9.1	-20.0	+7.3	+11.3	-4.0	-4.5	+1.9	-0.5	+0.5	-20.7	-9.7	-5.5	+2.6	+1.8	0.0	+0.2
Sept.	+21.2	-6.3	-12.8	+2.9	-0.4	-2.6	+1.0	+0.4	-15.3	-16.8	+2.9	+7.9	-4.5	-6.4	+1.3	+1.1	-5.3	-16.5	-9.4	-4.5	+0.3	-0.4	-1.9	-0.2
Oct.	+7.0	-4.5	-15.7	+5.6	+4.9	-1.6	-0.5	-0.1	-20.2	-5.2	-1.4	+9.1	-0.9	-4.8	+1.6	+3.1	-20.2	-30.9	-12.4	+0.7	+3.1	+4.0	+0.2	-0.1
Nov.	+0.8	-8.6	-11.5	-1.9	-3.9	-1.3	-1.9	-4.2	-11.2	-3.7	-3.7	+8.2	+2.8	-4.3	0.0	+1.5	-15.1	-25.2	-6.8	-3.9	-1.0	+1.9	-2.5	-2.4
Dec.	+5.3	+6.2	-4.4	-0.9	+0.6	-2.4	+0.4	+0.1	-15.3	+2.1	-2.8	+4.7	+1.1	+0.2	+2.6	+0.7	-5.9	-21.1	-6.0	+0.4	+1.0	+3.2	+0.1	+0.9
Year	+12.3	-6.0	-12.7	+0.5	+1.7	-0.6	+0.5	-0.1	-11.8	-14.9	+0.5	+8.9	-1.7	3.7	+1.3	+1.0	-4.6	-19.2	-8.3	-3.3	+1.4	+1.1	-0.7	-0.2
Winter	+5.6	+2.1	-6.9	-2.6	+0.1	-1.5	-0.5	-0.5	-12.2	-4.0	-2.3	+6.2	-0.9	-1.9	+1.1	+1.7	-4.3	-16.4	-4.5	-2.1	+0.5	+1.5	-0.7	-0.5
Equinox	+40.9	+16.8	-19.1	-11.9	+8.1	+7.6	-2.4	-2.2	-16.6	-16.7	-0.9	+10.1	-1.4	-5.6	+2.0	+1.2	-9.7	-23.1	11.0	-3.8	+1.3	+1.3	-1.1	-0.2
Summer	+20.2	-12.5	-15.2	+1.0	+0.5	+0.6	+1.3	+0.2	-6.6	-23.8	+4.6	+10.3	-2.7	-3.7	+1.0	-0.1	+0.2	-18.3	-9.5	-4.2	+2.4	+0.4	-0.2	+0.2
QUIET DAYS																								
Year	+14.4	-1.0	-9.0	-0.5	+1.9	-1.2	+0.4	+0.9	-2.8	-13.8	+3.1	+9.3	3.0	3.4	+1.1	+1.6	+5.2	2.0	-4.4	1.7	+2.1	+0.3	-1.1	0.5
Winter	+6.4	+5.0	-5.6	-2.8	+2.1	-0.5	-0.1	+0.8	-4.9	-4.1	-1.4	+5.7	-1.4	-2.2	+0.8	+1.9	+2.5	-3.8	-1.2	-1.1	+1.1	+0.1	-0.7	-0.6
Equinox	+18.3	-0.7	-9.7	-1.5	+3.5	-1.7	0.0	+1.2	-2.4	-15.2	+2.8	+10.6	-3.8	5.4	+1.9	+2.3	+4.7	-0.1	-4.0	-2.3	+2.2	+0.9	-1.6	-0.5
Summer	+18.6	-7.3	-11.8	+2.9	+0.3	-1.2	+1.3	+0.6	-1.2	-22.1	+7.8	+11.7	-3.7	-2.5	+0.6	+0.7	+8.5	-1.8	-7.9	-1.7	+3.0	0.0	-1.0	-0.4
DISTURBED DAYS																								
Year	-4.9	-24.0	-22.7	+8.7	+2.7	+1.5	+1.6	-5.2	-27.1	-21.5	-5.9	+8.0	+0.8	-4.6	+3.1	-2.4	-28.5	51.7	-16.6	-3.9	+4.2	+4.5	0.0	+1.2
Winter	-5.3	-3.9	-8.6	+1.0	-6.1	-1.1	-4.7	-7.6	-22.2	-5.2	-5.7	+7.3	+0.9	-4.7	+2.9	+0.6	-24.1	-45.7	-10.2	-4.8	+3.0	+3.4	-1.5	-3.6
Equinox	-24.0	-41.6	-33.8	+19.6	+12.8	+1.2	+6.4	-5.6	-44.3	-29.7	-11.9	+7.5	+3.1	-6.0	+3.8	-4.6	-42.9	-58.1	-21.6	+2.7	+4.9	+8.4	-0.1	+7.5
Summer	+14.1	-27.2	-25.7	+5.6	+2.1	+4.1	+3.2	-2.4	-14.7	-29.5	0.2	+9.2	-1.5	3.1	+2.6	-3.3	-18.4	-51.1	-18.0	9.5	+4.7	+1.8	+1.7	-0.3

HARMONIC COMPONENTS OF THE DIURNAL INEQUALITY OF MAGNETIC FORCE
 Values of c_n, a_n in the series $\sum(c_n \sin(15nt + a_n))$, 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
	γ	$^\circ$	γ	$^\circ$	γ	$^\circ$	γ	$^\circ$	γ	$^\circ$	γ	$^\circ$	γ	$^\circ$	γ	$^\circ$	γ	$^\circ$	γ	$^\circ$	γ	$^\circ$	γ	$^\circ$
ALL DAYS																								
Jan.	9.5	59	7.9	245	2.1	141	1.3	4	12.0	249	4.7	344	1.3	210	3.1	48	8.9	182	2.2	230	1.4	91	0.6	146
Feb.	10.0	58	6.1	243	2.5	124	0.9	343	15.0	234	7.5	358	2.7	216	2.2	21	10.9	163	4.7	233	0.9	39	0.8	269
Mar.	15.0	90	13.4	266	4.3	101	1.0	352	22.8	217	10.2	5	6.2	188	2.4	51	17.9	178	10.7	241	2.3	9	1.4	257
Apr.	21.0	180	22.7	294	9.1	99	3.1	144	31.7	219	13.9	347	5.0	196	3.7	121	31.0	212	14.2	255	1.7	119	1.2	289
May	19.7	125	13.8	280	2.4	104	0.0	148	23.3	201	12.4	31	4.5	218	1.5	119	15.5	178	12.5	274	3.0	108	1.8	230
June	26.8	127	15.8	273	1.9	341	1.5	57	29.4	192	10.1	31	3.3	239	0.4	76	19.2	180	7.7	227	3.0	84	3.0	11
July	23.7	127	17.7	276	0.8	319	1.2	104	24.6	197	9.6	17	4.6	218	0.4	39	17.9	191	12.0	251	1.4	118	1.2	171
Aug.	24.9	121	14.3	294	1.1	81	3.0	103	22.0	208	13.5	39	6.0	231	2.0	119	20.7	182	11.1	247	3.2	65	0.2	8
Sept.	22.1	110	13.1	289	2.6	198	1.1	83	22.7	226	8.4	27	7.8	225	1.7	61	17.3	201	10.5	251	0.5	150	1.9	277
Oct.	8.3	126	16.7	296	5.1	118	0.6	269	20.9	259	9.3	357	4.9	200	3.5	41	37.0	216	12.4	279	5.1	47	0.3	127
Nov.	8.7	178	11.6	267	4.1	261	4.7	218	11.7	255	9.0	342	5.1	223	1.5	11	29.4	214	7.8	247	2.2	343	3.5	239
Dec.	8.2	44	4.5	265	2.5	176	0.4	95	15.4	281	5.5	336	1.1	91	2.7	88	21.9	199	6.0	280	3.3	27	0.9	21
Year	13.7	119	12.7	279	1.8	120	0.5	119	19.0	222	8.9	9	4.1	213	1.7	67	19.8	197	8.9	255	1.7	61	0.7	266
Winter	6.0	72	7.4	256	1.5	185	0.7	238	12.9	255	6.6	346	2.1	214	2.1	46	16.9	198	4.9	251	1.6	27	0.9	244
Equinox	44.3	71	22.6	245	11.1	57	3.3	240	23.6	228	10.1	1	5.8	204	2.3	71	25.1	206	11.6	257	1.9	53	1.1	272
Summer	23.8	125	15.3	280	0.8	49	1.3	94	24.7	199	11.3	31	4.5	226	1.0	107	18.3	183	10.4	252	2.4	89	0.3	322
QUIET DAYS																								
Year	14.5	97	9.0	273	2.3	131	1.0	36	14.1	195	9.8	25	4.5	231	2.0	47	5.6	114	4.7	255	2.1	91	1.2	258
Winter	8.2	55	6.3	250	2.1	114	0.8	5	6.4	233	5.8	353	2.6	222	2.1	35	4.6	150	1.6	234	1.1	92	0.9	238
Equinox	18.3	95	9.9	268	3.9	126	1.2	11	15.4	192	10.9	21	6.6	224	3.1	53	4.7	95	4.6	247	2.4	78	1.7	264
Summer	20.0	115	12.1	290	1.2	177	1.4	77	22.1	186	14.1	40	4.5	246	0.9	53	8.6	105	8.0	265	3.0	100	1.1	263
DISTURBED DAYS																								
Year	24.5	195	24.3	297	3.1	70	5.5	176	34.6	235	9.9	330	4.7	180	3.9	141	59.0	212	17.1	263	6.2	52	1.2	13
Winter	6.6	237	8.6	283	6.2	269	9.0	225	22.8	260	9.2	329	4.8	179	3.0	91	51.7	211	11.3	251	4.5	50	3.9	215
Equinox	48.0	213	39.0	307	12.9	94	8.5	144	53.3	239	14.0	309	6.7	162	6.0	153	72.3	220	21.7	284	9.7	40	7.5	12
Summer	30.6	156	26.3	289	4.7	37	3.9	139	32.9	210	9.2	5	3.4	215	4.2	154	54.3	203	20.3	248	5.0	78	1.7	112

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

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(a) Disturbances without sudden commencement

Serial Number	From		To		Range (γ)			Notes		
	Date	Hour	Date	Hour	H	D	Z			
1a	Jan.	20	01	Jan.	23	01	172	254	171	
2a	Mar.	15	12	Mar.	18	18	235	289	260	
3a	Mar.	29	08	Apr.	2	19	2592	762	1009	
4a	Apr.	23	03	Apr.	27	02	510	364	336	
5a	May	5	16	May	8	01	308	199	225	
6a	July	28	22	Aug.	3	03	191	158	223	
7a	Sept.	2	09	Sept.	6	13	500	340	475	
8a	Sept.	29	08	Oct.	3	24	168	211	203	
9a	Oct.	4	11	Oct.	10	09	3039	1320	1114	
10a	Nov.	3	20	Nov.	5	16	172	163	231	
11a	Nov.	21	04	Nov.	22	24	141	164	329	
12a	Dec.	14	24	Dec.	16	24	266	293	465	
13a	Dec.	27	02	Dec.	30	24	165	203	216	

(b) Disturbances with a sudden commencement (ssc)

Serial Number	Date	Time of sudden commencement	End of disturbance		With initial reversed stroke			Magnitude of main stroke			Range of following disturbance (γ)				
			Date	Hour	H	D	Z	H	D	Z	H	D	Z		
1b	Jan.	10	07.19	Jan.	12	04	Yes	Yes	No	+44	+46	+6	215	209	172
2b	Jan.	13	19.00	Jan.	15	24	Yes	No	-	+13	+16	0	187	161	182
3b	Apr.	2	23.13	See 4b			No	Yes	No	+12	-22	-7	279	269	242
4b	Apr.	5	12.59	Apr.	5	24	Yes	Yes	No	+58	-15	-3			
5b	Apr.	7	15.11	-	-	-	Yes	Yes	No	+43	-13	-3		Small	
6b	Apr.	10	01.28	Apr.	18	20	No	Yes	-	+11	-9	0	265	213	347
7b	Apr.	27	20.00	See 8b			Yes	No	No	+100	-18	-9	1726	823	672
8b	Apr.	30	01.32	May	2	24	No	No	No	+92	-39	-12			
9b	May	8	04.22	May	9	19	No	Yes	No	+92	-140	-11	586	254	477
10b	May	11	04.35	May	12	24	No	Yes	No	+50	-66	-4		Small	
11b	May	16	13.51	May	17	20	Yes	Yes	No	+79	-31	-6		Small	
12b	May	28	20.19	May	30	22	No	No	No	+115	-41	-13	242	278	276
13b	June	27	01.45	See 14b			No	No	-	+49	-35	0	297	208	285
14b	June	29	19.39	July	2	22	No	No	No	+92	-31	-10			
15b	July	14	04.48	-	-	-	No	Yes	-	+10	-18	0	718	313	660
16b	July	14	17.01	July	18	23	Yes	Yes	No	+132	-37	-3	580	236	651
17b	Aug.	16	14.09	Aug.	19	01	Yes	Yes	Yes	+193	-64	-9			
18b	Aug.	19	16.16	-	-	-	Yes	Yes	No	+98	-26	-6		Small	
19b	Aug.	29	00.22	Aug.	31	23	Yes	Yes	No	+102	-35	-11	298	192	291
20b	Oct.	24	14.51	Nov.	1	03	No	Yes	Yes	+46	-50	-3	1076	382	522
21b	Nov.	12	13.49	See 22b			Yes	Yes	Yes	+98	-74	-6	2146	987	1110
22b	Nov.	15	13.04	Nov.	17	04	Yes	Yes	-	+73	+42	0			
23b	Nov.	30	19.10	Dec.	3	06	No	No	No	+60	-10	-6	241	297	454
24b	Dec.	7	18.04	Dec.	8	18	Yes	No	No	+42	-8	-3	106	200	114

(c) Disturbances due to solar flare (sfe)

Serial Number	Date	Commencement	Max.	End	Movement (γ)			K	K'	Notes	
					H	D	Z				
1c	Apr.	6	11.32	11.38	11.45	-13	0	0	2	2	S.E.A.
2c	Aug.	5	14.29	14.32	14.55	+8	-4	0	2	2	From I.A.G.A. list
3c	Aug.	14	13.10	13.11	13.20	-13	-9	+2	3	2	S.E.A.

S.E.A. = Sudden enhancement of atmospherics

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

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Factor 10⁻⁵⁸ (metre⁻¹)

JANUARY 1960

Hour G.M.T.	Factor 10 ⁻⁵⁸ (metre ⁻¹)											Factor 10 ⁻⁵⁸ (metre ⁻¹)											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	30*	50*	-120*	Z-*	Z±*	-260*	-115*	15	25	15	60	50	35	25	70	65	50	40	35	35	70	35	20	20	39	
2	-	-	-	-	-	-	-	-	-	-	-	-	-	35	50	60	50	60	50	45	50	40	30	25	25	43
3	15	15	15	15	15	25	25	55	25	30	40	50	55	60	35	-75*	60*	85*	85*	135*	100*	5*	195	185	50	
4	120	120	75	75	75	80	85	100	115	155	150	170	165	160	190*	95*	-85*	-230*	Z-*	Z-*	-185*	-80*	20*	25*	118	
5	35	55	40	50	35	75	90	85	90	105	120	125	145	170	140*	140	150	170	160	150	180	165	95	115	111	
6	115	65	110	80	80	70	50	60	105	135	110	115	135	125	90	90	80	45	75	65	50	95	35	35	84	
7	30	55	35	30	25	25	35	40	30	50	65	85	95	80	100	60	35	30	35	40	45	40	30	30	89	
8	25	20	15	25	20	15	20	30	35	25	50*	40*	60*	135	65*	40*	40*	50*	0*	115*	100	-20	-245*	35	35	
9	40	20	15	15*	25	35*	40*	40*	100	120	85	150	140	105	105	165	55	55	80	70	65	60	60	50	78	
10	55	50	50	40	80	85	75*	80*	105	150	145	115	125	145	110	150	105	120	210	245	330	375	390	300	151	
11	325	130	75	135	110	160	-75*	-95*	-50*	10*	-135*	-40*	95*	125	130	115	135	155	200	200	185	135	120	90	149	
12	60	-35	20	25	20	60*	10*	-30*	45*	10*	80*	-125*	-140*	20*	-25*	-55*	-15*	-20*	55*	40*	-245*	-200*	-65*	-100*	18	
13	-60*	25*	50*	85*	70*	75*	95*	85	90	140*	170*	20*	160	230	190*	195*	195*	245*	100*	230*	310*	130*	125*	100*	160	
14	350*	85*	90*	5*	30*	225*	0*	70*	80*	0*	85*	225*	340*	185*	265*	150*	110*	130*	160*	170*	160*	155*	75*	50*	-	
15	70*	165*	45*	5*	20*	25*	15*	20*	-*	-*	-*	-*	-*	-*	305*	305	475	415	350	405	350	320	300	375	366	
16	285	160	170	185	220	205	160	70	185	260	230	245	300	245	280	240	210	160	175	140	120	125	120	160	194	
17	200	200	180	135	150	125	110	35	45	70	90	95	110	105	110	85	100	225	225	185	225*	Z+*	150*	105*	129	
18	100	135	45	-90*	100*	25*	Z-*	Z-*	Z-*	-115*	-125*	-290*	-215*	-330*	Z-*	Z-*	100*	125	160	165	135	115	50	50*	114	
19	Z+*	Z+*	Z+*	Z+*	Z-*	Z-*	-330*	Z-*	Z-*	Z-*	Z±*	115*	185	165	300	340	170*	165*	Z+*	215*	270	480	Z+	Z+*	290	
20	Z+*	155	135	135	165	175	170	185	155	125	165	125	125	115	120	110	70	80	100	100	125	135	135	105	131	
21	120*	-35*	5*	250*	Z+*	220*	180*	100*	130*	-275*	-890*	-705*	-35*	-20*	20*	-35*	-80*	-250*	-90*	-65*	-30	-85*	35*	185*	-30	
22	-70*	-45*	80*	-90	-85	180*	300*	-450*	-340*	-105*	-125*	20*	-15*	-30*	-25*	5*	-25*	-15*	0*	-10*	-*	-*	-5*	-87		
23	15*	35*	-170*	-195*	-10*	35	45	40	75	95	80	40	20*	10*	25*	35*	45*	75*	35*	80*	-145*	Z-*	-390*	15*	62	
24	Z-*	Z-*	-60*	20	40	40	15	15	10	5	10	15	30	50	40	55	80	30	40	100	35	15	15	15	32	
25	25	20	20	15	15	15	15	15	25	50	60	105	70	95	135	85	105	135	75*	65*	75	40	-*	-	56	
26	-	-	-	-	-	-	-	-	-	-	50	70	85	95	80	75	20	-	-	-	-	-	-	-	68	
27	-	-	-	-	-	-	-	-	-	-	-	-	85	95	100	100	75	50	35	-10	0	80	85	75	64	
28	85	85	100	10	75	45	50*	80	65*	60*	95*	35*	-45*	35*	Z-*	-40*	90*	90*	100*	170*	160*	175*	105	205*	73	
29	330*	215*	185*	180	75	70	75	55	75	115	130	245	250	270	150	85	95*	170*	115*	0*	0*	60	30	20	118	
30	20	0	25	65	85*	195*	150*	170*	415*	410*	690*	525*	415*	790*	505*	580*	365*	690*	Z+*	Z+*	Z+*	Z+*	Z-*	Z-*	27	
31	Z-*	Z-*	Z-*	Z-*	Z±*	Z±*	Z+*	Z±*	Z-*	-580*	-95*	150*	195*	25*	110*	-5*	10*	15*	125*	170	130	195	170	160	165	
Mean	96	74	66	63	63	78	69	61	76	94	99	123	123	126	119	129	113	118	128	132	120	131	110	106	101	
	(16)	(17)	(17)	(18)	(18)	(16)	(14)	(17)	(17)	(16)	(16)	(16)	(19)	(21)	(17)	(18)	(18)	(16)	(15)	(16)	(19)	(19)	(18)	(17)	(3)	
	Mean for 0a days																							[131	(3)]	

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

39 ESKDALEMUIR

Factor 10⁻¹⁷ (metre⁻¹)

FEBRUARY 1960

Hour G.M.T.	Factor 10 ⁻¹⁷ (metre ⁻¹)											Factor 10 ⁻¹⁷ (metre ⁻¹)											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	95	-180*	-5*	90*	90*	-160*	40*	115	95	170	145	80*	-*	50*	-250*	-155*	90*	110*	260*	190	180	260	100	185	153
2	220	175	145	-80*	-120*	-20*	Z-*	Z-*	Z-*	Z-*	-15*	-	250*	165	180	190	240	315*	180*	355*	130*	Z-*	Z-*	Z-*	188
3	-480*	-480*	-615*	-855*	-150*	-45*	-130*	-220*	-310*	-50*	60*	95*	25*	135*	80*	100*	-390*	70*	-40*	60*	110	80*	-60*	75*	110
4	10*	50*	60*	10*	30*	-155*	-425*	-120*	Z-*	Z±*	Z-*	5*	120	145	160	135	115	90	75	95	115	140	145	60	116
5	130	185	140	120	110	100	100	105	150	410	470	275	260	150	160	100	80	35	65	55	60	105	55	75	146
6	90	95	60	60	45	50	55	60	90	130	140	140	135	80	105	140	50	70	100	95	100	105	95	85	91
7	90	90	80	70	50	60	60	60	80	75	70	85	110	100	90	105	70	65	60	40	50	60	110	65	75
8	70	65	60	60	55	35	65	205	245	225	120	145	140	130	140	145	80	90	80	60	65	135	135	105	111
9	90	60	60	60	45	50	45	55	80	95	100	105	125	135	110	120	65	50	60	70	55	55	75	70	76
10	80	90	75	60	65	70	40	-30*	50*	130	-25*	5*	-175*	-275*	-245*	-40*	50*	-5*	10*	40	65	115*	110	145	81
11	235	205	130	120	125	110	120	150	150	160	175	165	180	155	135	120	155	145	145	150*	35*	155*	165*	30*	152
12	105*	75*	510*	-120*	185*	Z+*	95*	-*	-65*	135*	200*	280	240	215	210	185*	130	180	Z+*	195	280	385	610	460*	273
13	340*	325*	100*	120*	105*	25*	20*	65*	45*	210*	225*	65*	140*	135*	185	160	130	165	160	150	120	95	100	85	135
14	85	85	70	115	95	115	195	165*	320*	170*	Z*	355*	575	605	450	420	330	505	655	680	460	645	510	285	362
15	225	160	270	320	175	165	175	275	185	210	200	265	275	220	215	260	370	465	345	305	Z+	Z+	Z+	Z+	254
16	555	495	225	160	135	215	240	215	230	210	220	240	330*	135*	Z±*	210	190	205	200	305	315	335	260	240	257
17	250	280*	245*	240	180	150	160	245	165	260	245	240	300	280	240	255	260	210	280	295	205	180	165	140	225
18	140*	180*	Z+*	Z±*	Z±*	Z±*	Z-*	55*	-75*	-235*	155*	Z+	Z±*	Z±*	Z+*	325*	Z±*	-85*	115*	225	465	530*	470*	Z±*	345
19	110*	150*	215	155	245	385	280	310	400	430	530	805	700	855	935	590*	Z+*	Z+*	315*	290	275	Z±*	Z±*	Z±*	445
20	Z±*	Z±*	Z±*	295*	250	250	150	140	245	Z-*	245*	305*	Z±*	Z±*	145*	260*	140*	405*	295*	345	305	285	240	245	246
21	185	160	260	Z+	275	420*	-	-	95	140	240	430*	230*	205	270	280*	280	340	320	290	230	275	285	-	241
22	-	-	200	-	135	145	130	155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	153
23	-	-	-	-	-	-	-	175	225	220	-	-	-	-	-	-	250	150	160	355	350	405	220*	50*	253
24	Z+*	Z+*	Z+*</																						

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

39 ESKDALEMUIR

Factor 9.81 (metre⁻¹)

MARCH 1960

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	-250*	-575*	-420*	-300*	-85*	25*	10*	5*	-100*	-105*	15*	65*	55*	35*	30*	50*	60*	35*	-160*	-305*	-270*	Z--	Z--	75*	-	(0)		
2	-15*	30	95	85	140	90	135	65	45	Z--	Z--	95*	100	120	0*	75*	70	85*	160*	Z--	100	105*	435*	-25*	90	(12)		
3	165	110	-40*	-20*	95*	110	80	10*	Z--	Z--	Z--	Z--	45*	Z--	Z--	Z±	30*	65*	-170*	-450*	Z--	Z--	20	70	93	(6)		
4	85	70	50	45	45	50	45	55	75	80	90	55	80	100	145	120	105*	35*	70*	65	85	80	40	40	71	(21)		
5	75	75	110	85	45	85	145	130	95	170	180	200	200	205	190	145	85	45	60	10	45	70	60	70	107	(24)		
6	85	90	100	70	80	80	55	50	65	55	65	110	110	85	105	90	70	85	135	125	125	75	45	50	84	(24)		
7	90	85	50	60	55	100	65	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	(8)		
8	-	-	-	-	-	-	-	-	70	55*	70*	75*	130*	125*	95*	115*	95*	90*	25*	80*	15*	20*	20*	20	45	(2)		
9	45	60	75	80	80*	30*	40*	25*	85*	85*	135*	110*	130*	115	50	85	45*	-75*	-220*	-85*	120*	115*	135*	135	81	(8)		
10	145	215	195	160	170	200	160	180	5*	Z--	Z±	325	255	365	420	480	255	155	90*	150*	175*	215*	75	170	231	(17)		
11	20	30	20	Z--	Z±	110*	50	55	65*	20*	90*	85*	95	195	230	215	265	150	300	300	165	310	130	95	154	(17)		
12	20	75	155	120	185	110	70	20	60	5*	20*	10	85	35	70	45	60	70*	65*	75*	105	215*	5	35	70	(18)		
13	110	80	25	-15	-10	145	110	115	-25	-130*	-30*	80*	205*	215	195	190	145*	Z±	Z±	115*	60*	Z±	45	60	89	(14)		
14	30*	-100*	-60*	60	Z±	120	160*	225*	275	205	190	265	235	215	215	185	175	260	300	230	Z±	Z±	270	95	206	(16)		
15	100	110	-120*	Z±	Z--	-80*	110*	105*	140*	270*	195	100*	70*	-90*	40*	-15*	5*	-130*	155*	170*	105	10	110	210	120	(7)		
16	150	320	0	-5	125	0	30	105	25	-10	40	15	35	85	190	75	185	65	5	25	70	165	95	115	79	(24)		
17	80	45	-15	-15	85	5	70	35	25	25	75	35	60	45	80	155	-15	35	45	80	125	100	105	105	57	(24)		
18	105	80	95	85	75	80	80	85	95	100	95	110	160	155	125	95	85	70	85	70	65	65	30	Z--	91	(23)		
19	Z--	55	105	50	25	20	5	15	-20	45	65	80	120	100	115	125	125	140	145	145	100	45*	5*	-15*	78	(20)		
20	-15*	45*	65*	55*	50*	75	85*	40*	50*	90*	130	155	200	235	225	215	225	115	90	60	80	95	65	60	135	(15)		
21	50	60	60	50	55	90	95	105	140	140	180	175	180	190	200	190	150	80	60	55	30	30	40	30	101	(24)		
22	35	35	30	30	45	50	45	50	100	140	165	205	205	230	185	185	125	90	20	50	65	100	35	80	96	(24)		
23	115	125	80	95	100	140	100	50	130	125	215	260	295	250	180	155	115	110	35	30	105	80	65	75	126	(24)		
24	45	50	35	30	55	155	200	235	305	230	150	110	190	95	85	125	140	165	230	310	270	220	210	30	153	(24)		
25	95	155	125	80	100	115	175	185	105	145	100	115	135	130	170	150	135	150	160	140	110	100	110	80	128	(24)		
26	70	75	85	60	70	55	75	50	50	65	65	45	40	90	35	65	85	100	80	75	70	115	130	105	73	(24)		
27	90	110	80	65	65	75	75	95	105	100	105	105	85	110	85	115	130	120	120	100	60	40	25	30	87	(24)		
28	30	10*	15*	20	30	20*	25*	25*	30*	30	75*	95*	65	105*	100*	100*	125	125	45*	35*	30*	35	35	45	54	(10)		
29	35	25*	30	30	35	40	50	50	90	110	85	75	90	90	95	105	120	165	140	125	110	125	105	100	87	(23)		
30	100	95	80	65	95	100	75	85	95	100	95	90	90	100	65	40*	15*	55*	60	75	70	-15	-45	-5	70	(21)		
31	-45	25	40*	-145*	-175*	-185*	30*	45	-10*	30*	25	15	30	45	25	25*	5*	25*	30*	-20	35	25	30	10	19	(13)		
Mean	76	90	73	58	76	87	87	83	91	103	115	122	131	144	145	150	139	117	115	103	95	91	73	73	100	(535)		
	(25)	(25)	(23)	(24)	(22)	(24)	(23)	(23)	(21)	(18)	(20)	(21)	(24)	(25)	(24)	(22)	(21)	(19)	(18)	(20)	(22)	(20)	(25)	(26)				
				</																								

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

39 ESKDALEMUIR

Factor 9.88 (metre⁻¹)

MAY 1960

	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	60*	70	60	45	70	100	65	85	65	60	80	80	95	85	60	65	60	80	50	35	25	25	30	30	62 (23)
2	20	20	10	15	30	40	35	30	55	140	165	140	75	70	110	115	150	110	105	35	5	10	15	20	63 (24)
3	-30	30	40	-5	5	25	10	55	80	30*	50*	95	120	120	110	110	105	95	100	65	50	15	0	0	54 (22)
4	-	-	-	-	-	-	-	-	15*	25*	30*	30*	140*	140*	195*	70*	95*	55*	55	75	35	30	20	30*	43 (5)
5	25*	10*	-60*	-65*	75*	130*	110*	135*	110*	150*	75*	110*	105*	110	150	180	150	155	120	115	50	195	210	15	132 (11)
6	40	35	40	10	20	55	95	125	155	115	155	115	120	130	140	105	80	55*	45*	50	30	20	15	25	76 (22)
7	20	50	65	60	30	75	45*	110*	45*	85	100	95	125	150	165	170	160	165	150	-	-	-	-	-	104 (16)
8	-	-	-	-	-	-	-	-	-	40*	75*	140	185	120	70	60	90	110	135	85	200	80	-30	2*	104 (12)
9	-20*	-10*	20	20	50	65*	15*	55*	50	15	35	45	80	75	90	125	120	70	30	5	50	0	-5	0	46 (19)
10	-15	-15	30	-15	50	120	70	35	15*	35*	55	70	130	130	145	150	140	140	160	120	100	60	-25	55	77 (22)
11	80	100	75	100	100	135	90	110	120	110	110	105	115	115	115	110	85	50	45	40	-25	15	40	5	81 (24)
12	-15	10	-5	-15	-5	5	40	55	80	75	80	70	155	140	150	130	40	60	7*-	Z*-	65*	65*	30	30	55 (20)
13	70	35	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	68 (8)
14	35	30	50	110	45	125	105	150	120	165	120	70*	95*	Z±*	Z±*	70	195	150	155	140	120	85	75	75	106 (20)
15	90	65	45	50	45	65	70	70	95	80	75	95	95	95	105	120	120	100	65	65	65	60	45	50	79 (24)
16	55	50	45	45	50	60	45	70	80	120	110	110	135	140	125	110	115	115	95	105	45	45	75	95	85 (24)
17	45	35	15	60	225	510	265	75	100	95	120	120	105	110	Z	Z	95	100	110	95	95	50	135	75	120 (22)
18	55	70	110	200	275	130	80	125	140	120	105	95	110	110	110	110	125	120	100	100	65	40	75	110	110 (24)
19	60	60	75	105	115	110	105	115	110	60	55	105	85	105	115	65	-	-	105	125	120	130	105	100	97 (22)
20	120	75	120	125	125	120	130	125*	115*	120	100	95	120	110	95	100	125	125	120	95	35	-15	80	65	99 (22)
21	65	60	30	25	25	45	65	105	55	60	95	85	75	60	80	85	70	50	35	30	35	40	30	20	55 (24)
22	30	40	70*	165*	165*	140*	50	5	60	120	130	95	110	100	100	125	125	125	135	75	50	100	50	95	86 (20)
23	60	40	55	-40*	75*	115*	115*	130*	65*	110	110	90	100*	40*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	65*	165	Z-
24	140	125	115	120	15	185	145	145	130	120	125	130	120*	130	150	150	155	140	130	35	-5	30	20	35	107 (23)
25	50	45	65	45	85	60	115	125	65	45	120	155	145	180	200	165	180	70*	5*	25*	5*	10*	20*	40*	109 (17)
26	15*	45*	75*	320*	280*	310*	170*	365*	215*	265*	205*	270*	225*	210	260	120	120	155	135*	120*	140	75*	45*	110*	167 (6)
27	105*	160*	70*	130	310	270	215	140	130*	95*	140	110	110	90	110*	-15*	95	65	100	130	95	125	110	95	137 (17)
28	110	115	70	60	50	70	80	80	65	75	-	-	-	-	65	60	60	45	35	35	30	25	30	35	60 (20)
29	30	30	30	25	20	35	50	60	75	85	75	75	75	45	45	60	40	30	-15	-30	15	15	10	10	37 (24)
30	10	15	10	5	10	15	20	15	-	-	-	-	-	-	-	-	65	35	45	30	0	5	15	10	19 (16)
31	15	10	20	15	30	45	70	35	70	55	55	45	45	35	55	60	55	-	65	45	50	40	25	10	41 (23)
Mean	47	48	50	56	74	104	88	80	88	93	101	99	109	111	117	109	108	101	90	71	59	51	48	43	80 (583)
	(24)	(25)	(24)	(24)	(24)	(23)	(23)	(22)	(20)	(22)	(23)	(24)	(22)	(25)	(24)	(25)	(27)	(24)	(26)	(26)	(27)	(26)	(28)	(25)	
	Mean for 0a days																							[61 (6)]	

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

39 ESKDALEMUIR

Factor 9.40 (metre⁻¹)

JUNE 1960

	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	15	50	50	15	20	25*	20*	75	115	110	115	130	100	115	110	145	150	140	135	130	120	120	50	70	95 (22)
2	145	60	70	5	-10*	-5*	15	105*	120*	190*	245*	100*	90	100*	75*	35	190*	30*	105*	70	100	90	160	155	83 (12)
3	140	220	150	80	70	120	115	120	105	120	175	135	120	170	145	115	70	50	30	5	20	15	15	20	97 (24)
4	20	20	20	25	30	35	50	60	65	70	85	95	70	75	75	55	55	50	70	80	95	50	35	20	54 (24)
5	20	20	15	5	-5	-20	5	25	20	40	60	60	65	80	75	75	80	70	Z±*	Z±*	Z±*	Z±*	Z±*	36 (18)	
6	30	25	90	75	95	155	295	330	300	155	75	95	80	65	75	120	90	120	140	120	120	105	70	123 (24)	
7	100	75	50	Z±*	65	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	105*	190	175	150	150	145*	-40*	20*	155*	60*	119 (8)
8	240*	-95*	-115*	-230*	-225*	120*	145*	110*	180	130*	110	Z±*	105*	110*	120*	5*	Z±*	Z±*	190*	116*	Z±*	140*	190	205	171 (4)
9	185	100	135	-5*	80*	55*	50*	20*	70*	90*	115*	80*	110*	35*	135	170	135	150	160	150	160	160	135	120	146 (13)
10	115	105	90	55	45	0*	20*	50	55	70	55	70	70	80	95	70	105	110	100	100	100	70	75	75	80 (22)
11	35	Z±*	35*	-35*	75*	160*	35*	120*	130	35*	Z±*	40*	-10*	0*	60	45*	85*	75*	35	65	-	-	-	-	65 (5)
12	-	-	-	-	-	-	-	-	-	-	-	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	- (0)
13	Z±*	-	-	-	-	-	-	-	-	-	-	145	Z±*	Z±*	Z±*	Z±*	Z±*	110	105	85	120	160	125	135	130 (6)
14	120	105	90	90	90	95	75	85	120	130	95	100	75	95	105	Z±*	125*	95	75*	65	65	65	85	95	92 (21)
15	85	90	90	165*	205*	200*	225	185	160	155	180	220	225	210	180	140	140	140	120*	-5*	Z±*	65*	45*	Z±*	162 (15)
16	Z±*	195*	190*	190*	225*	95*	125*	160*	220*	175*	340*	180	90*	110	125	80	100	120	130	115	90	105	165	150	123 (12)
17	135	95	90	110	105	125*	150*	175*	245	180	190	145	130	130	105	90*	95*	55*	85*	185	-	-	355		

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

39 ESKDALEMUIR

Factor 8.84 (metre⁻¹)

JULY 1960

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	55	65	65	55	45	60	80	80	105	90	100	125	170	185	110	95	100	105	105	65*	-50*	55	25	35	87 (22)	
2	30	45	40	10	-15	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	22 (5)	
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	47 (9)	
4	15	5	15	25	20	25*	-5*	55*	80*	35*	100*	55*	205*	320*	240*	125	90	115	90	90	130	90	65	65	67 (14)	
5	20	5*	30*	45	40*	40*	50*	110*	40*	20*	60*	-10*	100*	205*	Z*	210*	110*	Z-	70*	55*	15*	Z+*	30	5	25 (4)	
6	45*	15	5	20	25*	45*	125	45	45*	25*	15	40*	75*	40	45	40	-20*	-15*	-20*	-10*	80*	-*	-*	-	39 (9)	
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	76 (9)	
8	30	45	30	40	90	125	170	165	125	145	115	75*	110*	100	110	115	100	115	140	130	130	120	120	109 (22)		
9	100	70	65	65	40	30	40	45	70	80	Z+*	35*	90	85	110	70	-30*	30*	-125*	-10*	65	35	20	25	61 (18)	
10	30	40	60	40	70	180	135	140	250	260	205	90*	-5*	-120*	-255*	-170*	-70*	-5*	70*	90*	-40*	-5*	30*	90	125 (12)	
11	60*	90*	15*	25*	105	180	110*	20*	60	40	30*	25*	20*	40*	40*	55*	35*	45*	45*	10*	90*	120	75	40	89 (7)	
12	65	105	125	110	100	95	110	100	115	115	115	65	80	100	115*	105	115*	105	140	180	160	85	40	85	105 (22)	
13	80*	Z+*	Z-*	90*	-90*	-5*	100*	250*	300*	Z*	155*	130*	230*	135*	125	125	110	115	110*	Z-	75*	135*	55*	30*	119 (4)	
14	155*	Z+*	Z-*	Z+*	70*	100*	110	170	110	110*	100*	30*	110	Z-	Z+*	Z+*	Z+*	Z+*	Z-	Z-	115	145	190	210	145 (8)	
15	255*	70	110	105	140	105	105	120	145	175*	20*	70*	15*	65*	150*	Z+*	Z-	55*	85*	85	55	-	-	-	103 (10)	
16	-	-	-	-	-	-	100	115	135	155	150	130	155	155	110	150	185	160	170	155	40*	-5*	5*	165*	145 (14)	
17	155*	65*	50*	55*	Z-*	Z+*	Z+*	Z-*	110*	300*	135*	160*	215*	175*	115	100*	85*	95	80*	90*	105*	105*	-	-	105 (2)	
18	-	-	-	-	-	-	-	-	-	-	-	-	Z+*	Z+*	Z+*	Z+*	Z-*	Z+*	80*	115*	115	105	-	-	110 (2)	
19	-	-	-	-	-	-	Z-*	Z+*	Z-*	275	180	185	125*	-15*	Z-*	Z-*	115	Z-*	Z-*	70*	150	175	130	90	162 (8)	
20	45	30	20	15	25	40	80	160	90	110	90	90	110	-	-	-	50*	-40*	70*	110	95	115	110	100	80 (18)	
21	100	120	130	95	80	180	180	130	175*	Z-*	Z-*	Z-*	30*	Z-*	135*	120	115	120	150	120*	Z-*	180	195	155	137 (15)	
22	115	125*	140	105	100	145	125	130	155	160	180	Z-*	Z+*	Z-*	Z-*	70	Z-*	65	75	95	80	85	90	95	112 (18)	
23	60	80	100	85	90	145	160	95	80	80	70	75	70	95	115	125	140	170	165	120	145	95*	65*	75*	108 (21)	
24	75*	65*	140*	80*	115*	100*	190*	290*	225*	95*	330	120*	115*	55*	55*	125*	145	130	105*	130*	160	100	170	135	167 (7)	
25	85*	95*	105	125	135*	175*	185	150	135	115	110	110	115	120	125	110*	Z-*	120*	150	160	200	200	200	150	144 (17)	
26	135	135	100	85	70	120	145	140	100*	Z-*	Z-*	Z-*	Z-*	110*	125	125	115	120	135	125*	145*	175	165	130	126 (16)	
27	135	110	90	75	70	95	140	120	150	180	210	180	195	185	165	170	140	185	210	95	75	70	95	115	136 (24)	
28	90	60*	105*	60*	115*	205*	250*	220*	295*	315*	235*	190*	115*	255	140*	205	175	195	170*	145*	140*	195*	210*	290	202 (6)	
29	180*	105	55	65*	90*	115	130	110*	120*	165	105*	150	80*	120	125*	105*	115*	135*	170	140*	160*	100	45*	Z-*	123 (9)	
30	Z+*	Z-*	Z-*	Z-*	35*	100*	Z-*	Z-*	Z+*	Z+*	Z-*	Z-	105	125	145	170	140	140	145	155	220	115	130	80	139 (12)	
31	85	125	125	85	65	130	185	155	-	-*	-*	-	-	-	-*	-*	-*	-*	-*	-	-	-	-	-	119 (8)	
Mean	69	73	77	66	68	116	128	121	123	141	144	119	116	125	114	117	130	127	138	117	117	107	102	99	109 (372)	
	(16)	(16)	(18)	(18)	(16)	(15)	(18)	(17)	(14)	(14)	(13)	(10)	(11)	(13)	(13)	(16)	(14)	(16)	(14)	(13)	(17)	(20)	(19)	(21)		
																										Mean for 0a days [123 (2)]

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

39 ESKDALEMUIR

Factor 8.71 (metre⁻¹)

AUGUST 1960

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	-	-	-	-	-	-	-	-	-	60	125	200*	Z+*	Z+*	Z+*	Z-*	Z+*	Z-*	Z+*	Z-	-	-	-	-	93 (2)
2	-	-	-	-	75	120	205	210	160	105	85	85	85	100	85	70	55	60	45	-15*	-*	-*	-*	-*	103 (15)
3	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	(0)
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(0)
5	-*	-*	-*	-*	-*	-*	-*	-*	95	60	30*	60*	80*	35	35*	20	45	100	110	115	-	110	155	155	91 (11)
6	155	135	180	185	115	100	110	120	125	125	115	110	105	105	110	105	115	135	120	100	110	25	45	40	112 (24)
7	130	45	50	35	35	60	50	80	90	110	75	70	105	125	140	120	125	125	115	105	110	85	60	45	87 (24)
8	40	45	45	45	30	30	60	135	105	95	100	75	130	75*	Z-*	Z-*	130	215	205	130	60	60	-40*	90 (20)	
9	Z+*	Z-*	Z+*	Z+*	55	85*	65*	165	180*	Z-*	Z+*	170*	175	170	Z+*	Z+*	Z+*	-30*	75*	115	85*	35*	30	35*	118 (6)
10	25*	30	55	75	120	150	265	405	260	170	110	95	105	110	80	90	95	100	105*	180	125	70*	100	85*	134 (21)
11	135	135	105	80	70	80	155	135	90	75	85	135	120	110	145	140	85	170	145	130	85	Z-*	Z-*	Z-*	115 (21)
12	90	85	60	175	135	100	110	165	135	140	130	145	145	165	140	110	100	80	30	75	90	115	105	65	112 (24)
13	55	40	30	Z*	45	50	85	70	170	180	170	Z-*	Z-*	Z-*	Z+*	Z+*	Z+*	Z-*	Z-*	Z-*	Z-*	Z-*	75	120	91 (12)
14	95	65	45	-15*	120	105	255	210	135	135	125	145	170	130	-55*	15*	Z-*	90*	110*	110*	135	100	120	135	131 (17)
15	95	85	80	95	110	80	125	130	100*	115	125	110	130	125	90*	110*	120	130	130	145*	130*	110	100	105	111 (19)
16	50	120	185	185	150	130	115	60*	Z+*	Z-*	Z-*	95*	110*	125	105	105	105	120	115	125	110	110	135	115	123 (18)
17	90	105	110	90	80	75	70	140	100*	100	Z-*	Z-*	135	80	-30	Z-*	50*	Z-*	Z+*	-	-	-	-	-	87 (12)
18	-	-	-	-*	-*	-*	-*	-*	135*	160	95*	150*	75*	Z-*	Z+*	Z-*	75*	95	70	90	125	70	160	170*	110 (7)
19	165	115	145	145	125	120	180	130	125*	130*	135	110	120	Z-*	60*	Z+*	Z+*	Z-*	65*	115*	175*	-85*	-20*	30*	135 (11)
20	15	110	100	105	85	85	155	180	135	95	90	90	100	90	100	125	130	150	150	145	160	115	130	130	115 (24)
21	110*	50*	70*	25*	Z-*	Z+*	60*	Z*	60*	105*	70*	Z+*	185*	160*	185*	195*	100*	200*	340	210*	130*	80*	60*	55*	340 (1)
22	45*	85*	210*	120*	280*	95*	175*	160*	195*	220*	Z-*	Z+*	Z-*	Z+*	Z-*	275*	190*	250*	Z-*	Z+*	Z+*	125*	240*	225*	(0)
23	210	Z-*	Z-*	180	185	185	190	Z+*	160*	180	180	305	220	Z-	180	195	155	115	85*	130*	180	105	145*	190	185 (16)
24	185	170	115	120	Z+*	190*	175*	145*	145	145	135	110	65*	70*	25*	-30*	150*	40*	115*	185	Z-*	Z+*	Z+*	146 (9)	
25	Z+*	Z+	Z+*	Z+*	Z+*	Z+*	Z-*	Z+*	Z-*	Z+*	Z+*	240	170*	105*	70*	150*	130*	110*	155*	Z-*	155*	145*	160	110*	200 (2)
26	Z+*	Z-*	130	120	95	115	200	205	175	185	145	115	110	120*	150	Z*	190*	140*	100*	35					

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

SEPTEMBER 1960

39 ESKDALEMUIR		Factor 8.38 (metre ⁻¹)																		Mean						
	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	25	25	45	65	50	55	85	115	115	150	135	95	35*	5*	30*	70*	105	85	70	70	90	85	100	125	85 (20)	
2	170	200	205	105	160	130	195	290	245	110*	90*	5*	-5*	125*	70*	120*	Z±*	Z±*	Z±*	Z±*	130*	120*	70*	95	115 (11)	
3	145	185	180	195	145	155	180	180	170	125	95	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	170	160	125	115	260 (16)	
4	170	195	130	115	130	150	150	245	200	140	85	200	120*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	70	75	50	70	125 (19)	
5	45	75	80	155	125	115	195	190	165	180	125	120	120	125	165	115	120	120	150	175	225	135	120	105	135 (24)	
6	85	85	65	75	90	90*	130*	130*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	80 (5)	
7	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	155	120	110	120	100	135	150	160	170	135	-*	-*	136 (16)	
8	90	80	70	75	90	105	185	260	105	135	115	70*	130*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	119 (11)	
9	-*	-*	-*	-*	-*	-*	-*	235	275	155	185	185	205	185	175	145	160	165	155	175	135	135	125	160	174 (17)	
10	235	150	95	105	105	105*	85*	135	150	165	155	125	115	135	150	140	145*	90*	125*	110*	180*	185*	190*	210*	140 (14)	
11	215*	215*	250*	305*	240*	155*	270	235	210*	250*	220	175	145	115	125	140	125	135	130	115	105	105	55	0	137 (16)	
12	5	45	20	15	30	15	40	65	55	80	100	100	130	125	140	140	105	125	150	135	165	170	95	70	88 (24)	
13	40	30	70	40	80	110	120	130	145	155	140	95	115	120	170	170	160	135	125	55	25	10*	15*	109 (22)		
14	-20*	-15*	0*	-5*	5*	-120*	-315*	-215*	-215*	-295*	-370*	-390*	Z±*	Z±*	195*	180*	140*	190*	230	170	Z±*	Z±*	80*	-70*	200 (2)	
15	80*	85*	Z±*	Z±*	Z±*	Z±*	-10*	15	85	-15*	Z±*	115	165	140	115	Z±*	95*	95	50	Z±*	55	80	65	55	86 (12)	
16	40	30	45	50	30	30	30*	0*	45	80	90	80	-180*	-85*	Z±*	Z±*	Z±*	120*	90*	150*	75*	80	165*	15*	55 (11)	
17	165*	75*	110*	205*	125*	100*	150*	115*	110*	130*	165*	130*	120*	235*	190*	175*	170	90*	120*	55*	10	-*	-*	-*	90 (2)	
18	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	160	140	110	75	85	130	75	55	90	35	25	50	107 (15)	
19	70	40	40	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	-5*	140	110	145	125	90	165	205	250	260	245	250	235	158 (15)	
20	175	155	115	120	100	55	30	105	100	135	185	105	170	105	150	155	175	95	70	60	55	55	50	45	107 (24)	
21	65	65	60	55	45	50	75	90	135	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	78 (13)	
22	15*	45*	65*	50*	45*	55*	135*	220*	125*	140*	165*	170*	110	110	130	145	135	165	145	135	135	130	70	131 (12)		
23	65	85	80	80	80	85	85	110	105	110	130	135	125	130	140	135	135	175	215	205	195	140	105	120	124 (24)	
24	90	80	65	60	120	115	205	220	210	175	170	175	185	165	155	160	155	160	175	230	215*	240	160	105	155 (23)	
25	50	30	30*	105	135	65	80	110	160	135	155	175	160	165	175	165	170	120	90	95	145	100	90	75	120 (23)	
26	80	85	105	85	60	50	45	50	55	70	90	90	100	125	110	110	90	110	95	90	0	-15	5	5	70 (24)	
27	5	55	195	50	40	50	60	55	55	65	75	95	110	60	70	85	130	100	65	70	70	70	65	74	74 (24)	
28	65	30	-40	-35	-35	-10	30	65	80	95	130	145	165	110	105	175	65	-30	-5	-10	-35	-25	-5	-20	45 (23)	
29	-10	-10	-15	-20*	-25*	-5*	-85*	Z±*	Z±*	Z±*	Z±*	Z±*	85*	25*	-15*	50	105	140	135	95	90	35	10	70	58 (12)	
30	55	55	55	65	45	50	80	Z±*	Z±*	Z±*	Z±*	120*	115	90*	115	70*	-50*	-15	-20*	95	65	15	30	-10	54 (15)	
Mean	80	80	79	79	81	76	116	144	129	131	137	136	142	127	134	131	128	123	118	125	104	95	85	93	110 (489)	
	(22)	(22)	(21)	(20)	(20)	(18)	(18)	(20)	(21)	(20)	(20)	(19)	(19)	(18)	(19)	(18)	(20)	(21)	(22)	(22)	(22)	(23)	(22)	(22)		Mean for 0a days [121 (5)]

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

OCTOBER 1960

39 ESKDALEMUIR		Factor 8.39 (metre ⁻¹)																		Mean					
	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	25	60	-30	-40	-40	Z±*	Z±*	35*	70	15	75	Z±*	Z±*	30	-20	45	-5	-40	-95*	-105*	-95*	-70*	-60	-80	0 (15)
2	-95	-65	-70	-65	-75*	-95*	-135*	-170*	Z±*	Z±*	Z±*	Z±*	145*	-95*	240*	230	235	235	150*	185*	40*	-255*	Z±*	-40*	58 (7)
3	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	160	190	130	135	95	85	110*	130*	140	120	140	120	-*	-*	-*	-*	131 (10)
4	-*	-*	-*	-*	-*	-*	-*	-*	Z±*	Z±*	Z±*	Z±*	80	80	80	85	55	-*	-*	-*	-*	-*	-*	-*	81 (7)
5	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	125	65	105	95*	60*	Z±*	Z±*	140*	Z±*	Z±*	65	95	135	98 (6)
6	105	90	-*	-*	-*	-*	-*	115	145	115	95	95	100	130	70	70	50	-*	-*	-*	-*	-*	-*	-*	98 (12)
7	-*	-*	-*	-*	-*	-*	-*	-*	30	45	95	70	60	35	50	35	40	50	60	50	45	25	-15*	49 (14)	
8	0	-15	20	45	80	50	105	Z±*	Z±*	220*	215*	115	105	90	125*	95*	125*	145	135*	155	-*	-*	-*	75 (12)	
9	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	(0)
10	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	75	90	55	65	90	180	170	120	165	112 (9)
11	145	135	135	105	110	170	135	150	250	270	215	210	190	160	175	160	165	215	240	255	265	225	150	145	182 (24)
12	160	155	145	120	85	95	90	110	145	180	225	230	215	180	190	140	125	195	135	155	185	165	75	65	149 (24)
13	55	50	55	55	75	75	55	65	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	15	15	51 (10)
14	25	15	15	15	15	15	20*	15	10	-40*	10*	40	40	75	105	70	40	40	30	30	35	15*	20*	25*	34 (18)
15	25*	40	55	30	40	50*	45	50	50	75	80	105	155	155	125	105	105	65	85*	45	40	40	25	70	21 (21)
16	15*	20*	20	15	15	10	15	40	40	50	55	25*	55	70	80	55*	40*	55	30	15	15	25	30	30	35 (19)
17	40	30	35	40	40	30	25	30	30	25	40	80	Z	145	140	80	120	150*	15*	70	75	125	95*	25*	63 (19)
18	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	180	145	210	185	Z±*	Z±*	195*	210	255*	115*	125*	75	167 (6)
19	Z±*	125*	195*	200*	280*	280	195	155*	Z±*	Z±*	215*	115	30	115*	55*	115	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	145 (5)
20	Z±*	110	100	80	40	70*	25*	50*	15*	Z±*	Z±*	Z±*	-30*	60*	80*	90*	40*	15*	30*	35*	30*	50*	25*	15*	83 (4)
21	20*	-30	30	Z±*	Z±*	Z±*	100*	165*	115*	115*	195	155	125	175	195	215	135	70*	5*	-50*	30*	-140*	-95*	-15*	133 (9)
22	65*	80*	80	0*	-15*	15*	55	75*	40*	50*	80*	75	70*	50*	-5*	70	70	55*	55*	55	55	45	15*	25*	63 (8)
23	15	25	25	30	-25*	Z±*	Z±*	Z±*	Z±*	-30*	25*	30*	25*	120*	75*	135	160*	85*	40*	160	155	145	150	155	99 (10)
24	155	135	55*	35*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	145 (2)
25	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	(0)
26	-*	-*	-*	-*	-*	-*	-*	30	15	50	50	135	160	100	145	215	115	30*	35*	240*	245*	195*	170*	101 (10)	
27	125*	120*	110*	70*	80*	75*	Z±*	Z±*	Z±*	-305*	-320*	-300*	-220*	-200*	-155*	-105*	Z±*	Z±*	Z±*	Z±*	15*	-55*	-90*	-*	(0)
28	-110*	-80	-85	-100	-90	-95	-85	-60*	Z±*	Z±*	Z±*	Z±*	215*	275	280	295	250	215	240	205	235	195	175	160	117 (17)
29	120	135	180	125	80	Z±*	Z±*	Z±*	-20*	-15*	150*</														

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

40 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	2b	5.1	2c	6.1	2c	11.1	2a	5.7	0a	...	1a	0.3
2	(0a)	-	2b	10.1	2c	3.9	2b	15.5	1a	2.0	1a	2.2
3	1a	1.6	2c	11.6	2c	11.7	2c	15.7	1a	2.2	1a	0.3
4	2b	5.2	2c	6.8	1a	0.9	2a	4.4	(1a)	-	0a	...
5	1a	0.1	0a	...	1a	1.3	2c	6.8	1a	2.8	(2b)	-
6	1a	0.1	1a	0.2	1a	0.1	2c	8.5	0a	...	1a	0.1
7	0a	...	1a	0.5	(0a)	...	1b	0.5	(1a)	-	(2c)	-
8	1b	1.2	1a	0.2	(1a)	-	1b	0.5	(1b)	-	(2b)	-
9	1a	0.3	0a	...	2a	3.5	2c	9.0	2a	3.7	1a	0.7
10	0a	...	2b	5.8	1b	1.4	2c	15.5	2a	3.8	1a	0.3
11	2b	3.1	1b	0.5	2b	3.1	0a	...	1a	1.3	(2b)	-
12	2a	9.8	1c	2.5	2a	3.0	2c	9.8	2b	5.0	(2c)	-
13	1b	2.0	1b	1.4	2b	4.7	2b	5.7	2c	8.3	(2c)	-
14	1b	2.5	1b	0.4	1b	2.2	2c	4.7	1b	2.3	1a	0.6
15	(1a)	0.9	0b	...	2b	5.7	1c	2.9	0a	...	(1b)	-
16	0a	...	1b	0.6	2b	3.8	1a	0.2	1a	0.1	1b	0.9
17	0a	...	1b	0.1	1a	2.6	0a	...	1a	0.4	(1a)	-
18	2c	9.7	2c	4.4	1b	1.1	1a	0.2	1a	0.9	1a	0.6
19	2c	6.7	1c	0.9	1b	2.9	1a	0.7	1a	0.5	0a	...
20	0b	...	1c	2.1	1a	0.6	1a	1.3	1a	0.5	1a	0.1
21	2b	12.3	0b	...	1a	0.1	1a	0.3	0a	...	0a	...
22	2b	14.1	(0a)	(...)	1a	0.5	0a	...	1a	0.2	1a	0.1
23	2b	6.0	(0a)	(...)	1a	1.2	0a	...	2c	7.2	1a	0.1
24	1b	2.6	2c	3.9	1a	0.1	1a	1.9	1a	0.5	(0a)	-
25	1a	0.1	2c	14.4	0a	...	1a	0.3	1a	1.4	1a	0.5
26	(0a)	-	2c	6.1	1a	0.2	1a	0.2	1a	0.6	1a	0.3
27	(1a)	-	1c	2.6	0a	...	1a	0.9	1b	0.6	1a	2.1
28	1b	2.7	1b	2.9	1a	0.3	1a	0.1	0a	...	1a	0.6
29	1a	1.1	2c	6.6	1a	0.3	1a	0.5	1a	1.0	0a	...
30	1b	2.7			1a	2.2	1a	2.2	(0a)	-	1a	0.6
31	2c	11.4			2b	8.3			1a	0.3		
Total	-	101.3	-	90.7	-	76.8	-	114.0	-	45.6	-	10.4
No. of days used	-	28	-	29	-	30	-	30	-	27	-	21
Mean	-	3.6	-	3.1	-	2.6	-	3.8	-	1.7	-	0.5

	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	0.7	(2c)	-	1a	0.6	2b	13.7	(2b)	-	2c	6.9
2	(1b)	-	(1a)	-	1b	1.2	2b	14.6	(2b)	-	(2c)	-
3	(1a)	-	(1a)	-	2c	3.5	(2c)	-	(2c)	-	(2c)	-
4	1a	0.9	(1a)	-	1b	0.4	(2b)	-	(2b)	-	2c	8.0
5	2b	3.7	(0a)	-	0a	...	(2b)	-	(1a)	-	2c	4.9
6	(2b)	-	1a	0.5	(2b)	-	(1a)	-	(1a)	-	0a	...
7	(2a)	-	1a	0.1	(1a)	-	(1a)	-	(1a)	-	0a	...
8	0a	...	1b	2.2	(1a)	-	(2b)	-	(1a)	-	0a	...
9	1b	2.1	2c	5.7	(1a)	-	(1a)	-	(2c)	-	0a	...
10	2b	6.7	1a	0.2	0a	...	(1a)	-	2c	7.2	1a	1.1
11	1a	0.8	1b	1.3	1a	0.5	0a	...	2c	16.8	(2b)	-
12	1b	0.5	1b	0.2	1a	0.1	0a	...	2c	12.5	0a	...
13	2b	3.5	2c	7.1	1a	0.2	(1a)	-	2c	4.3	1b	0.3
14	(2c)	-	1b	2.6	2b	11.6	1a	1.0	1b	1.2	1a	0.1
15	(2b)	-	1a	0.1	2c	4.0	0a	...	2c	5.1	1a	0.1
16	(1a)	-	1b	0.8	2b	6.0	0a	...	2b	3.5	1a	1.6
17	(2b)	-	(2c)	-	(1a)	-	1b	0.2	2c	5.1	0a	...
18	(2c)	-	(2b)	-	(0a)	-	(1b)	-	0a	...	1a	0.5
19	(2c)	-	2b	4.0	2c	5.2	2c	7.7	0a	...	1a	0.1
20	1a	0.8	0a	...	0a	...	2b	3.9	2b	5.3	0a	...
21	2b	3.6	1b	1.5	(1a)	-	2b	5.5	2b	5.8	0a	...
22	2b	3.5	2c	3.5	1a	0.3	1a	2.1	1a	0.2	1b	0.6
23	1a	0.1	1b	1.4	1a	0.1	2b	4.1	1b	2.7	2b	3.9
24	1a	0.3	2b	3.1	1a	0.1	(2b)	-	2c	6.8	1b	1.6
25	1b	1.0	2c	5.3	0a	...	(1b)	-	0a	...	2c	9.8
26	1b	1.5	1b	1.6	1a	1.7	(1a)	-	0a	...	2c	6.3
27	0a	...	2c	5.7	1a	0.2	2b	14.7	0a	...	1a	0.1
28	1a	0.3	2b	3.9	2a	8.1	2b	10.6	2c	3.8	2c	4.1
29	1b	0.9	(1a)	-	2b	10.0	2b	3.7	2b	3.7	1a	0.4
30	2c	4.5	(1a)	-	2b	4.0	1a	0.3	2c	7.9	2c	6.6
31	(1a)	-	2a	4.7			1b	1.7			1c	1.9
Total	-	35.4	-	55.3	-	57.8	-	83.8	-	91.9	-	58.9
No. of days used	-	20	-	22	-	23	-	18	-	21	-	28
Mean	-	1.8	-	2.5	-	2.5	-	4.1	-	4.4	-	2.1

Annual values: Character 0 1 2
No. of days used 57 180 129

Duration: Total 821.9
No. of days 297
Mean 2.77 hr.

KEW

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

41 KEW OBSERVATORY		Factor 4.58 (metre ⁻¹)																				JANUARY 1960			
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	70*	35*	85*	85*	105*	55*	105*	Z±*	Z±*	Z±*	185	140	295	195	290	350	280	255*	195*	115*	265	295	350	360	273 (11)
2	375	445	445	350	405	360	220*	360*	-440*	Z±*	385*	515*	465*	435*	585*	665*	385*	420*	270*	595*	630*	80*	45	-10	302 (8)
3	70	270	185	15	70	15	105	155	175	140	245	385	270	270	350	325	175*	225*	360	295*	325*	280	155	105	197 (20)
4	140	210	195	125	165	295	365	410	420	505	500	405	365	335	315*	305	295	290*	225*	385	365	335	280	225	315 (21)
5	195	225	200	195	140	95*	125*	150*	105*	280	335	475	575	560	525	385	435	490	435	455	435	365	220	280	360 (20)
6	270	290	305	325	335	445	420	475	525	475	465	225	490	575	710	560	570	350	315	255	265	290	265	195	391 (24)
7	195	630	995	1130	1050	1315	1275	1190	805	615	605	410	645	665	515	405	735	665	630	560	420	15	15	945	685 (24)
8	770	535	550	420	245	715	700	645	855*	350	210	420	435	375	325	385*	500	195	325	0	105	185	25	195*	382 (21)
9	420	445	445	490	490	550	605	655	795	550	665	710	665*	700*	575*	665	715	585	665	700	805	805	785	560	624 (21)
10	410	200	410	430	385	455	515	525	575	665	805	645*	700*	620	420	420	515	475	655	525	445	280	125	70	451 (22)
11	0	-75*	-175*	-90	-185	Z±*	-135*	35*	85	125	175	155	175	350	245*	475*	200*	490*	735	535	640	655	395*	280*	258 (13)
12	-185*	-35*	0	55	95*	270*	280	410	645*	665	700	630	735	725	855	830	910	1065	825	735	840	700	490	615	635 (19)
13	560	210	465	585	435*	665*	645*	665*	505*	525*	785*	895*	840*	615*	365*	805	475	645	910	805	140	575	700	805	591 (13)
14	560	375	175	70	15	25	85	325*	385*	255	245*	280*	85*	15*	35*	125*	185*	35*	-20	0	-10*	35*	-165*	-130*	154 (10)
15	-80*	-45	15*	0*	225*	350	430	665	715	895	840*	825	840	795	825	685	475	315	245	455	410	665	490	435	551 (19)
16	405	270	335	335	350	305	125	125	155	85	35*	70	185	245	225	175	45	-10	-20	70	-55	-200	-35	45	140 (23)
17	140	0	225	280	280	305	295	290	420	265	315	435	505	505	375	295*	125*	-330	0	-355	55	105	350	350	245 (21)
18	165	-75	35	35	140	-80	35	125	115	95	245	315	315	375*	335*	295	410	420	325	315	375	325	210	220	198 (22)
19	265	210	220	235	280	265	280	270*	80*	-35*	-75*	430	420	395	475	465	350	265	Z±*	Z±*	130	210	305	245	303 (18)
20	195	175	155	140	125	140	200	405	490	525	475	490	420	505	505	500	665	585	455	665	105*	Z±*	Z±*	Z±*	391 (20)
21	195*	-100*	-20*	-10*	-145	-55*	-75*	85*	500*	575*	605*	385*	245	245*	195*	290	210	195	175	150	85*	150	220	165	165 (10)
22	125	155	55	130	140	60	105	175	155	225*	245	265	175*	115*	130	280	270	290*	235	155	125	70*	70*	55*	166 (16)
23	70	55*	70*	70*	105	105*	140	155	185*	-185*	-185*	-130*	-275*	-365*	-185*	0*	195	85	235	195	-45*	70*	-20*	60	138 (9)
24	-20*	130	195	150*	-300*	Z-	Z-	-145*	-45	10	0*	-385*	-185*	-110*	105	55	10	-190*	-365*	Z-	35*	140	225	295	112 (10)
25	265	155	245	265	255	280	385	365	700	965	1015	875	830	715	595	615	465	420	295	115	185	95	80	210	433 (24)
26	685	840	925	815	490	655*	525	465	375*	155	95	295	490	175	105	140	60	290*	535	620	455	455	420	290	430 (21)
27	315	350	255	315	340	335	420	490	560*	685	715	690	630	665	575	Z±*	Z±*	Z±*	Z±*	Z±*	-295*	-585*	-475*	-185*	432 (15)
28	Z±*	Z±*	Z±*	125*	Z-	Z±*	155*	295*	140*	15*	-20	-80	-35	-25	55	105*	140*	0*	105	115	55*	-20	-185	-275*	-10 (9)
29	-175*	70*	85	140	195	220	290	405	585	685	560	475	385	405	505	490	525	525*	405*	105*	45*	-100*	55*	80*	376 (16)
30	105*	-130*	55*	35*	140	140	175	185	245	255*	235*	295	130	165*	280	265	350	350	360	395	405	305	270	220	265 (17)
31	210	165	140	105	95	80*	125	175	210	265	220	315	325	350	350	350	385	350	280	270	360	395	435	350	271 (23)
Mean	296 (23)	260 (24)	302 (24)	287 (24)	236 (25)	325 (20)	343 (23)	404 (21)	410 (17)	421 (22)	417 (21)	402 (24)	420 (23)	448 (21)	413 (22)	420 (23)	410 (24)	414 (18)	377 (24)	338 (24)	313 (22)	309 (24)	260 (24)	306 (23)	353 (540)
																							Mean for selected quiet days		333 (9)

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

41 KEW OBSERVATORY		Factor 4.49 (metre ⁻¹)																				FEBRUARY 1960			
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	385	280	255	275	315	210	150	115	325	0	45*	-295	140	255	55*	175*	350	105*	-145*	0	115	265	130	300	188 (19)
2	440	460	440	350	160	290	220	245	335	255*	-90*	140*	325	265	275	175	240	245*	210	160	125*	160	60*	70	268 (18)
3	115	70	55	45	10	80	105*	-20*	125*	125*	125*	-100*	140*	105	160	300	220	310*	345	360*	315*	275	255	240	163 (14)
4	200	0*	Z±*	195	195	210	290	405	530	495	495	485	Z±*	Z±*	Z±*	385*	385	325*	Z±*	-20*	420	385	440	405	369 (15)
5	300	345	280	360	350	530	600	755	860	915	530	350	615	625	580	430	20	385*	280	265	245	300	150	-20	420 (23)
6	325	95	460	855	800	335	335	280	500	650	275	300	160	325	245	280	230	125*	90*	650	720	465	460	430	417 (22)
7	350	350	315	335	175	160	230	290	335	405	485	495	460	460	450	460	495	565	545	545	615	635	685	625	436 (24)
8	605	565	495	420	440	605	685	775	880	905	845	775	740	730	590	670	720	685	825	740	730	580	495	475	666 (24)
9	385	265	310	280	245*	265*	385*	720	915	950	860	790	755*	545*	600*	755*	670	775	705	670	635	615	600	705	638 (17)
10	670	695	600	325	220	210	245	460	510*	530	790	880	940	705	650	450	430	350*	500	495	450	460	420	315	520 (22)
11	310	230	385	565	280	220	230	440	530	460	580	500*	420*	310*	460*	335	60	360	590	345	520*	495*	-130*	-185*	370 (16)
12	240*	310*	380*	350	350	430	555	685	940	860	1020	890*	680	695*	635*	775	715	650*	680*	430*	545*	495*	385*	450*	669 (11)
13	460*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	230	565	720	Z±*	Z±*	Z±*	Z±*	670*	Z±*	600*	715	775	580*	335	405	Z±*	Z±*	535 (7)
14	Z±*	Z±*	Z±*	Z±*	70	35	80	300	325	300	350	350	385	345	370	360	350	415	565	370	Z±*	Z±*	-20*	160*	311 (16)
15	150	315	350	335	500	520	520	590	580*	405	650	530	460	395	420	440*	570	625	670	825	625	530	460	245	486 (22)
16	195	325	325	290	335	335	405	420	635	615	555	460	450	385	350	370	475	670	520	510	485	495	315	450	432 (24)
17	315	275	460	325	380	530	535	680	880	1055	835	600	465	420	440	420	460	600	615	720	845	600	685	705	577 (24)
18	650	485	230	160	300	55	35	335	570	625	485	280	385	350	345	385	360	335	315	335	440	300	300	280	347 (24)
19	Z±*	Z±*	55	Z±	Z±	255	315	370	385	360	420	385	405	395	405	460	450	580	1020	775	935	900	670	510	503 (20)
20	345	Z±*	Z±*	Z±*	125*	130*	Z±*	Z±*	-10*	-260*	Z-	Z-	315*	475*	Z±*	Z±*	150	530	Z±*	300*	695*	565*	600*	565*	342 (3)
21	265	315	350	290	275	290	310	325	465	510	475	510	530	465	380	345	290	175	415	640	740	985	1200	970	480 (24)
22	685	315	140	210	265	315	335	485	545	670	685*	685*	640	485*	495*	315*	495*	370*	140*	-55*	70	-20*	35*	-85*	390 (12)
23</																									

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

41 KEW OBSERVATORY												Factor 4.37 (metre ⁻¹)												MARCH 1960			
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			
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11														11-12		
	volts per metre																										
1	135	110	100	90	100	90*	40*	175*	200	225	235	250	150*	50*	120*	250	245*	210*	245	300	300	220*	160	220	195	(15)	
2	150	90	75	75	-20*	120*	100	170	245	405	260	260	260	250	250	235	260	285	275	285	355	395	370	410	248	(22)	
3	435	285	250	235	235	220	245	150*	-140*	-35*	120*	285	185	260	285	355	270	270	250	250	210	185	200	200	255	(20)	
4	200	200	195	200	200	220	300	470	580	605	470	470	540	505	420	470	410	640	200	100	50	195	150	150	331	(24)	
5	120	185	335	360	430	310	170	370	300	235	310	245	385	420	405	85	50	50	245	200	270	285	285	35	254	(24)	
6	50	90	100	0	-25	-60	90	120	60	-35	60	75	135	225	250	245	245	320	335	245	195	245	320	385	153	(24)	
7	355	370	210	85	135	100	-175	0	50	285	355	435	435	435	435	505	485	380	200	150	300	310	235	220	262	(24)	
8	195	200	160	195	220	170	200	285	330	320	445	455	540	595	510	430	360	405	200	65	220	320	335	410	315	(24)	
9	50	0	-80	-25	50	15	-380*	-335*	Z*	Z*	Z*	Z*	Z*	370	580	645	730	815	690	590	Z*	125	135	320	313	(16)	
10	320	250	330	385	435	615*	730	875	975	705	640	530	420	335	410	470	385	435	455*	Z*	Z*	Z*	Z*	Z*	508	(17)	
11	Z*	Z*	260*	330*	295*	345	345	385	250	570	605	850	875	805	680	485	435*	245*	150*	445*	630	420	Z*	220	533	(14)	
12	270	670	620	570	470	555*	705	655	Z*	Z*	260	220	300	385*	160	285	360	395	590	570	620	670	470	495	468	(20)	
13	480	270	200	Z*	470	135	175	150*	Z*	Z*	175	60*	-90	200	210	330	540	565	555	455	435	455	355	160	320	(19)	
14	85	270	270	320	430	595	540	470	405	355*	480	420	310	60*	250	260	330*	320	385	505	605	690	605	455	413	(21)	
15	590	420*	185*	385	445	435	470	615	705	805	805	-	-	-	690	680	740	755	670	570	590	605	470	320	586	(18)	
16	370	320	195	100	40	-35*	-60	300	-	-	460	470	505	565	570	580	580	530	540	480	510	370	360	335	387	(21)	
17	235	200	160	170	200	210	260	380	540	565	620	580	540	505	520	570	605	605	555	505	510	470	430	420	431	(24)	
18	295	200	195	210	505	605	530	655	750	690*	595	335	300	335	320	335	275	295	310	300	270	370	335	355	377	(23)	
19	260	160	120	170	175	235	225	235	270	145	120	175	200	260	335	380	235	260	100	355	435	380	380	370	249	(24)	
20	485	420	345	300	160	100	160	345	335	285	300	300	300	275	430	370	395	385	370	335	320	335	330	320	321	(24)	
21	295	235	185	90	170	245	330	520	555	410	335	300	295	330	380	470	460	505	385	335	480	530	565	505	371	(24)	
22	220	150	-95	65	380	420	335	135	370	775	740	775	605	620	630	695	605	520	530	410	235	210	245	195	407	(24)	
23	235	360	270	120	210	310	300	370	445	470	380	510	570	690	690	670	605	570	335	220	200	225	200	335	387	(24)	
24	355	360	260	220	170	235	300	590	505	665	790	590	730	840	840	630	645	630	355	150	430	285	210	250	460	(24)	
25	220	250	245	170	145	160	235	405	555	690	595	765	630	555	505	605	570	530	15	-55	-80	-175	-220	-285	293	(24)	
26	-290	-380	-365	-345	-105	-125	-35	-90	0	145	40	170	195	100	145	150	-35	-195	-90	-195	-290	-285	-250	-325	-102	(24)	
27	-220	-230	-230	-285	-255	-290	-195	-275	-265	-105	50	110	135	65	60	-95	-90	10	185	65	90*	35*	100*	100*	-93	(20)	
28	160	135	120	75	210	135	210*	405*	285*	360*	470	470*	370*	370*	245*	455*	170*	-515*	-435*	-345*	-95*	-285*	-45*	-175*	186	(7)	
29	-60*	-35*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	505*	400*	Z*	Z*	50*	570*	620*	540*	590*	435*	370*	320*	320*	275*	225*	-	(0)	
30	355*	430*	455*	355*	360*	335	370	530	670	805	830*	705*	670*	840	520	815	880	915	965	790	60*	75	145	170	588	(15)	
31	85	135	370	355	300	235	380	720	805	925	905	740	595	570	555	420	410	480	480	300	430	345	285	300	463	(24)	
Mean	219	196	168	159	219	212	260	369	401	450	411	413	396	438	430	425	422	432	366	307	329	309	273	257	326	(628)	
	(28)	(27)	(27)	(27)	(27)	(25)	(27)	(25)	(24)	(22)	(26)	(25)	(25)	(25)	(28)	(29)	(26)	(27)	(27)	(27)	(25)	(26)	(26)	(27)	(27)	[350	(8)]

Mean for selected quiet days [350 (8)]

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

41 KEW OBSERVATORY												Factor 4.44 (metre ⁻¹)												APRIL 1960		
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		
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11														11-12	
	volts per metre																									
1	145	285	105	120	240	485	655	465	355*	365	400	380	190	140	200	270	275	270	260	260	225	70	110	-80	254	(23)
2	10	95	95	140	205	240	260	270	285	250	275	275	270	275	310	320	305	295	270	205	145	105	70	80	210	(24)
3	120	Z*	Z*	Z*	Z*	-450*	-35*	335*	225*	225	295	215	190	205	140	0	70	275	355	365	310	275	235	218	151	(15)
4	-125	-215	-250*	95*	155	225	370	460	485	365	335	275	310	225	235	235	275	345	370	330	435	415	200	175	267	(22)
5	175	165	35	105	110	140	140	190	240	175*	190*	105*	130*	175*	285*	310	335	365	345*	200*	190	305	310	165	205	(16)
6	295	275	215	205	155	140	215	240	235	275	310	275	250	130*	-505*	-700*	-440*	-180*	250*	225*	365	310	415	270	261	(17)
7	275	355	310	240	205	270	250	435	435	345	320	310	310	305	275	250*	180*	-395*	-305*	Z*	Z*	205*	305*	190	302	(16)
8	205	140	120	130	70*	155	240	240*	320	345	285	275	205	225	235	215	250	270	275	400	520	435	440	330	273	(22)
9	345	320	225	175	175	190	240	105*	Z*	335*	155*	170*	215	225	200	140	175	205	275	465	615	570	500	415	298	(19)
10	260	225	130	95	70	70	Z*	Z*	85	120	175	175	175	175	120	175	Z*	190	180	120	95	95	85	105	139	(21)
11	105	95	50	95	120	165	270	285	270	235	240	240	205*	165*	Z*	225	190*	225	240	190	120	180	240	235	191	(20)
12	250	200	205	205	205	310	390	400	370	215	200	175	60	-190*	-80*	85*	70*	80*	130*	0	85*	140	70	35	202	(17)
13	15	0	50	70	85	105	145*	140*	110*	155	140*	140*	175	200	140	130	155*	35*	175*	335	425	425	345	275	183	(16)
14	200	175	175	155	180	Z*	260	330	295	240	270	225	225	240	205*	215*	Z*	205	240	250	260	295	225	225	233	(20)
15	240	225	190	175	200	205	205	205	225	215	190	205	190	155	240	260	285	240	225	250	380	270	275	275	235	(24)
16	275	35	50	-70	-10	200	460	710	545	370	270	295	240	200*	180	190	235	250*	320	425	560	590	570	500	315	(22)
17	400	365	355	295	225	205	260	295	250	275	260	205	225	205	205	200	205	310	355	400	500	485	640	520	318	(24)
18	400	225	240	260	260	260	240	205	275	310	275	330	270	225	175	175	175									

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

41 KEW OBSERVATORY		Factor 4.36 (metre ⁻¹)																				MAY 1960			
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	120	35	50	75	60	120	220	175	Z**	210*	245	175*	230*	305	205	260	195	255	285	175	210	100	175	170	172 (20)
2	145	110	70	15	40	40*	505*	Z**	Z**	Z**	280*	160*	120*	95	100	150	175	170	220	285	235	260	220	153 (15)	
3	150	125	100*	110	110	175	280	370	365	280	245	210	Z±	Z**	Z**	Z±	245*	125	135	345	370	345	260	235 (17)	
4	245	135	205	280	170	255	255	185	295	340	255	185	185	210	150	145	170	205	245	315	270	340	210	205	227 (24)
5	175	170	205	210	205	220	305*	440*	455*	390	260	210	230	235	220	205	195	145	150	210	255	100	50	235	204 (21)
6	170	185	125	150	135	235	315	585	560	340	260	235	210	205	185	170	160	135	120	125	150	85	95	170	213 (24)
7	150	60	100	95	160	100	135	220	395	380	220	170	150	125	110	100	100	230	175	100	40	50	10	85	144 (24)
8	135	205	125	75	35	75	160	175	295	255	170	160	145	100	135	170	170	195	230	125	145	100	25	70	145 (24)
9	120	160	260	220	205	270	415	775	845	745	540	405	205	185	170	150	95*	70*	425	475	100	100	145	185	323 (22)
10	135	170	160	170	150	125	340	585	585	640	565	525	475	515	540	505	475	405	285	220	135	185	235	160	345 (24)
11	110	75	75	70	135	170	340	515	355*	525*	Z**	Z**	Z**	Z**	640*	515	610	540*	305*	Z**	Z**	Z**	Z**	230	259 (11)
12	285	245	175	235	210	Z**	Z**	Z**	85	95*	40*	315*	220	340	295	450	455	345	340	425	600	590	Z**	Z**	331 (16)
13	Z**	120	Z**	15*	Z**	Z**	Z**	Z**	Z**	Z**	Z**	75*	230	255	255	235	260	260	270	270	455	450	425	330	293 (13)
14	235	230	255	255	245	220	280	320	340	220	205	150	185	185	175	175	195	210	255	345	430	450	370	475	267 (24)
15	330	295	175	125	125	100	75	205	305	625*	235*	100*	205*	220	175	230	260	255	260	270	295	345	280	185	225 (20)
16	195	185	205	150	110	125	280	415	490	505	415	390	340	285	270	255	255	255	295	330	305	245	255	280	285 (24)
17	145	120	185	160	110	255	390	370	395	530	525	405	390	355	315	295	285	320	320	395	370	370	450	390	327 (24)
18	305	345	285	195	195	150	340	430	405	490	-	405	285	355	405*	355	425	390	355	380	390	295	295	255	333 (22)
19	175	175	185	135	150	235	355	355	405	Z**	Z**	Z**	Z**	Z**	Z**	285*	210*	120*	Z**	285*	145	205	205	220*	227 (12)
20	-45*	150*	-15*	135*	Z**	Z**	-280*	Z**	355*	320*	340*	Z**	Z**	Z**	Z**	Z**	585*	500*	475*	505*	-200*	-225*	-60*	15*	0 (0)
21	-10*	120*	425	205	185*	230*	160	330	340	260	260	245	315	210	255	160	345	355	260	355	405	330	405	380	300 (20)
22	220	195	170*	150	160	145	150	160	150	145	150	100	100	120	110	110	110	175	175	185	255	260	220	162	217 (22)
23	170	205	100	110	195	220	380	455	390	255	185	160	150	185	170	175	210	195	285	255	220*	205	125	95*	217 (22)
24	35*	70	135*	100	100*	425	505	550	500	430	380	355	285	305	285	280	260	255	230	260	195	145	125	85	298 (20)
25	100	170	125	220	270	175	260	320	320	205	160	160	125	170	205	170	205	175	170	175	260	255	185	195	199 (24)
26	210	260	205	185	230	245	260	365	315	260	260	230	175	185	245	255	255	205	185	185	245	270	280	260	240 (24)
27	205	150	135	125	150	145	210	345	270	255	205	135	120	255	255	230	175	185	185	185	150	195	145	191 (24)	
28	110	220	320	245	235	285	185	255	260	255	255	210	125	135	95	145	220	260	265	305	295	235	365	225 (24)	
29	305	230	195	205	220	210	245	220	185	210	185	185	150	160	150	145	120	145	160	185	70	150	135	85	177 (24)
30	95	100	85	70	75	255	370	315	370	340	305	315	305	305	305	280	235	270	205	70	85	85	40	75	206 (24)
31	100	100	40	60	40	95	220	315	340	260	365	365	305	245	245	235	235	270	-10	0	-45	75	75	60	166 (24)
Mean	179 (27)	171 (28)	172 (26)	152 (29)	153 (27)	193 (26)	274 (26)	358 (26)	368 (25)	347 (23)	288 (23)	257 (23)	225 (24)	237 (26)	216 (26)	230 (28)	246 (27)	240 (26)	229 (28)	237 (28)	243 (28)	236 (29)	210 (28)	214 (27)	234 (634)
Mean for selected quiet days																							241 (10)		

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

41 KEW OBSERVATORY		Factor 4.17 (metre ⁻¹)																				JUNE 1960			
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	40	50	50	65	65	100	190	165	200	245	265	265	255	265	280	560	555	295	115	75	-70	35	35	50	173 (24)
2	40	40	35	40	35	25	75	180	200	280	-	-	-	-	-	-	-	315	230	255	200	180	130	200	145 (17)
3	130	130	115	140	200	245	280	395	470	575	610	545	535	530	480	445	445	365	365	345	265	150	200	230	341 (24)
4	200	115	100	115	130	125	280	320	470	480	530	345	270	330	205	165	165	180	180	215	85	130	125	50	221 (24)
5	40	-170	-10	65	85	175	40	130	230	150	90	75	65	85	90	100	100	115	130	15*	175	180	140	115	95 (23)
6	100	100	105	105	85	85	90	115	105	85	100	115	130	100	60*	35*	60*	115	115	175	230	200	215	165	125 (21)
7	165	115	60	65	75	90	190	200	230	Z**	Z**	Z**	Z**	Z**	205	190	155	175	190	245	245	315	255	165	183 (20)
8	85	100	130	115*	100*	115*	85*	50*	80*	60*	90*	150*	85*	130*	-10*	130*	165*	200	225	230	240	280	225	165	188 (10)
9	115	100	115	100	100	115	100*	125	165*	165*	165	165	Z**	Z±	Z**	Z**	180	130	165	205	315	295	230	190	161 (17)
10	150	Z**	Z**	Z**	Z**	Z**	Z**	Z**	415	330	245	230	165	180	150	180	140	165	165	180	225	180	190	190	205 (17)
11	165	155	165	130*	65*	165*	65*	85*	35*	130	175*	225	240	240	200	175	165	165	200	230	255	230	305	265	206 (17)
12	270	205	180	180	130	125*	115*	105	175	165	150	130	115	105	100	130*	150	215	225	240	100*	225	290	265	181 (20)
13	215	180	165	175	190	200	230	345	280*	230*	225	200	Z**	Z**	Z**	Z**	200	180	205	265	280	330	305	226 (18)	
14	205	140*	140	130	150	165	240	270	270	Z**	Z**	Z**	Z**	Z**	Z**	Z**	Z**	Z±	315	290	Z±	315	380	345	247 (13)
15	225	150	180	175	125	165	255	330	365	305	240	200	200	165	165	175	155	165	205	230	330	405	415	340	236 (24)
16	215	190*	155	130	130	200*	295*	365	395	290	245	240	245	215	215	215	190	180	165	245	265	245	180	240	227 (21)
17	125	165	150	180	200	265	330	315	270	280	340	320	265	270	290	280	280	200	150	165	180	155	125	100	225 (24)
18	100	100	130	125	130	200	125	215	340	315	320	320	245	140	200	255	200	240	230	150	140	75	200	125	193 (24)
19	125	85	165	225	165	150	190	265	280	255	240	215	180	130	130	155	140	140	155	180	105	100	165	150	170 (24)
20	215	230	230	230	265	255	340	455	430	420	365	345	280	295	315	315	295	280	280	125	200	155	90	50	269 (24)
21	50	35	35	35	50	100	150	280	405	420	460	505	435	390	480	460	390	355	280	280	280	280	255	180	275 (24)
22	100	65	85	130	200	230	245	240	295	330	295	295	290	245	280	245	245	245	200	255	215	100	75	35	206 (24)
23	-50	10	-35	65	290	415	Z**	Z**	Z**	Z															

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

41 KEW OBSERVATORY		Factor 4.72 (metre ⁻¹)																				JULY 1960				
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		185	125	140	125	135	205	525	535	425	305	250	240	215	185*	-20*	150*	180	115	80	135	160	125	180	185	218 (21)
2		230	215	100	160	180	80	140	230	455	490	420	305	170	140	140	140	135	115	125	275	180	80	45	35	191 (24)
3		25	25	20	20	10	20	70	195	225	215	215	170	105	90	80	90	80	90	80	115	150	180	180	150	108 (24)
4		115	90	70	60	90	125	160	140	185	225	225	185	170*	150*	170	105	140	70	160	150	125	105	180	160	138 (22)
5		90	90	125	100*	25*	60*	170*	195*	250*	185*	215	215*	285*	285	265*	230*	185*	215*	195	180	250	305	285	205	202 (11)
6		205	180	135	135	150	180	230	285	285	250	225*	230	195*	185*	205	180*	180	170	105*	135	185	230	205	180	198 (19)
7		140	125	90	125	150	195	285	305	305	285	Z±*	Z±*	Z±*	230*	215	195	140	180	105*	180	90*	135	105	125*	186 (17)
8		70*	-100*	-20*	35*	35*	10*	285*	-145*	25*	-220*	170*	100*	-25*	390*	Z±*	Z±*	250	Z±*	160	Z±*	Z±*	70	105	160	160 (5)
9		125	100	205	215	170	265	275	425	385	Z±*	Z±*	275*	250*	Z±*	250*	250*	250	225	240	150	320	340*	265*	230*	239 (14)
10		230*	180*	170*	135*	140*	180*	185*	160*	150*	140	185*	180*	185*	230	185	375	285*	Z±	80*	185	215	215	205	160	212 (9)
11		150	135	140	115	125*	Z±*	185	215*	20*	150*	90*	Z±*	45*	Z±*	Z±*	Z±*	Z±*	Z±*	105	55	150	195	225	240	154 (11)
12		230	215	215	225	240	275	340	390	390	365	275*	Z±*	305	340	125	Z±*	Z±*	Z±*	Z±*	420	340	340	285	250	294 (18)
13		250	250*	215*	185*	160*	125*	185*	170*	230*	195*	215*	265*	180*	215*	185*	205*	215*	225*	260*	250	285	320	195*	Z±*	276 (4)
14		Z±*	225	260	265	265	275	330	410	390	340	375	275*	285*	275*	330	260	250	195	285	320	355	410	385	365	315 (20)
15		320	295	285	250	285	295	375	390	375	275*	320	275	Z±*	Z±*	Z±*	260*	305	285	230	250	250	195	195	286 (19)	
16		250	275	240	195	205	275	340	375	305	250	215	215	205	180	215	230	310	295	305	355	320	205	105	195	253 (24)
17		80*	-75*	-55*	-55*	Z±*	Z±*	-20*	100*	185*	250*	260	195	195*	170	185	185	205	230	250	225*	Z±*	Z±*	215	211 (9)	
18		205	170	135	125	150	195	195	340	310*	Z±*	Z±*	Z±*	225*	35*	240	225*	250	265	275	275	260	185	225	185	216 (17)
19		185	205	250	250	215	240	305	365	260	305	105*	Z±*	Z±	Z±*	Z±*	Z±*	Z±*	Z±*	Z±	455	365	215	250	276 (14)	
20		240	240	230	305	320	410	410	480	425	420	320	355	365	345	365	340	365	375	310	320	260	320	195	215	330 (24)
21		215	185	70*	125	135	160	230	310	275	230*	215*	70	215	230	260	135	230	230	215	205	225	230	240	250	208 (21)
22		240	225	180	205	285	365	425	410	340	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	305	305	400	355	205	303 (14)
23		160	125	150	140	160	230	295	365	365	355	265	250	240	215	170	150	180	230	195	205	285	320	345	310	238 (24)
24		330	320	260	265	390	390	320	310	285	260	225	180	115	150	180	125	150	260	240	330	355	365	265	180	260 (24)
25		150	195	215	215	230	250	265	285	310	305	305	265	240	230	215	225	240	215	260	275	330	295	340	295	256 (24)
26		240	215	260	230	265	305	385	375	435	400	285	260	260	230	215	170	170	215	250	340	455	285	285	295	284 (24)
27		305	275	250	250	260	320	410	455	355	390	320	265	260	230	185*	285	180	180	355	340	295*	345*	320*	250*	299 (19)
28		115*	70*	80*	-65*	205*	140*	185	215	195*	215*	215*	250	250	230	240	250	225	230	285	260	250	230	215	135	230 (15)
29		150	125	135	115	105	125	195	240*	320*	340*	250*	230*	250	265	275	275	275	285	295	265	250	310	365	310	230 (19)
30		185	180*	185	180	180	205	285	345	320	310	215*	180	160	185	225	265	205	180	225	250	355	435	390	375	256 (22)
31		340	310	250	250	345	320	320	320	305	240	180	160	135	115	160	140	140	160	195	225	355	410	435	345	256 (24)
Mean		202 (26)	187 (25)	181 (25)	182 (25)	205 (24)	238 (24)	288 (26)	344 (24)	336 (22)	308 (19)	276 (15)	229 (18)	217 (17)	217 (17)	209 (21)	207 (19)	211 (24)	207 (23)	221 (24)	241 (29)	275 (27)	261 (28)	243 (27)	224 (27)	237 (556)
		Mean for selected quiet days																				233 (10)				

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

41 KEW OBSERVATORY		Factor 4.55 (metre ⁻¹)																				AUGUST 1960				
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		250	215	215	285	320	230	160*	185	250	185	Z±*	Z±*	225*	265*	250	425	285	215	265	250	180	295	320	355	262 (19)
2		265	195	230	225	140	215	355	425	425	320	250	Z±*	Z±*	Z±*	Z±*	105	160	170	80	80	135	160	90	70	205 (20)
3		70	70	55	90	125	185	215	275	285	250	195	160	140*	180	150	140	140	150	195	180	195	180	195	150	167 (23)
4		185	195	215	185	205	225	285	375	400	340	240	230	250	265	260	240*	195	180	135	125	125	135	140	230	223 (23)
5		150	185	170	185	265	90	250	570	615	515	480	535	340	310	275	285	275	250	265	250	140	100	180	80	282 (24)
6		80	10	70	105	100	170	265	305	410	295	250	205	150	140	160	215	230	215	160	105	45	55	80	105	164 (24)
7		135	90	105	90	90	125	140	140	125	105	125	160	160	Z±	Z±	Z±	Z±	Z±*	Z±*	Z±*	160*	170	230	205	133 (16)
8		140	150	160	140	135	150	285	305	355	320	345	355	265	305	260	240	205	180	180	180	150	285	295	265	235 (24)
9		185	170	135	160	160	240	355	465	375	240	260	250	215	Z±*	205	170	195	215	215	Z±*	295	305	355	365	251 (22)
10		305	275	275	240	285	320	410*	470*	265*	--	--	--	--	--	--	--	--	295	225	185*	195	140	215	160	244 (12)
11		240	170	275	310*	365*	375*	285*	505*	535*	-35*	-195*	-240*	-110*	285*	-260*	Z±*	-415*	-315*	-295*	-460*	-140*	-65*	-140*	-155*	228 (3)
12		-35*	90*	180*	185	225	320	465	615	605	515	400	410	320	285	240	260	215	230	195	205	180	185	180	170	305 (21)
13		170	180	140	185	195	225	275	425	400	355	275	260	215	160	160	185	170	140*	70*	55*	135	115	230*	Z±*	222 (19)
14		-35*	-460*	55*	20*	-100*	-20*	160	250	240	240	260	205	170	160	180	180	170	-10*	330	390*	355	425	400	340	254 (16)
15		310	295	250	230	215	250	285	425*	355	310	305	275	230	195	215	205	205	205	250	205	185	215	230	225	245 (23)
16		230	215	240	285	320	320	390	500	390	295	285*	0*	90*	230	225	230	195	185	160	125*	150	170	180	205	256 (20)
17		160	35	60	-20	70	80	355	390	390	390	310	225	170	140	160	180	215	195	160	195	305	425	390	240	217 (24)
18		275	260	225	260	225	265	215	225	285*	305*	305*	355	230	Z±*	535*	Z±*	Z±*	-35	425	295	410	435	265	205	267 (17)
19		135	90	215	205	250	305	465	455	385	310	275	250	185	195	180	180	140	135	100	80	160*	140*	185*	205	226 (21)
20		195*	140*	105*	125*	140	195	275	250	285	275	240	230	195	205	140	160	125	150	215	285	320	285	275*	265*	221 (18)
21		260*	250*	285*	225	215	250	250	285	285	250	230	195	170	180	180	170	195	215	265	240	260	250	285	250	231 (21)

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

41 KEW OBSERVATORY		Factor 4.65 (metre ⁻¹)																				SEPTEMBER 1960				
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	220	220	195	175	140	175	225*	295*	290*	245*	220*	395	375*	Z±*	Z±*	Z±*	Z±*	Z±*	280*	220*	235	225	220	265	224 (11)	
2	280	235	210*	200*	220	255	315	365	365	290	270*	255	265	265*	245*	255*	280*	255*	245*	305	270	255	245	210	275 (15)	
3	210	175	210	185*	265*	245*	280*	270*	245*	140*	265*	255*	245*	255	255	225	265	325	445	535	575	560	535	490	361 (14)	
4	405	350	315	280	265	315	430	535	385	305	Z±*	Z±*	225	175*	200	Z±*	Z±*	125	245	340	395	430	350	315	326 (19)	
5	335	140	165	175	225	225	315	525	480	420	445	375	365	385*	365	385	280	315	295	280	280	330	325	335	341 (24)	
6	270	220	245	265	270	325	435	480*	375*	420*	435*	350*	270*	335*	350*	325*	405*	315*	315*	420*	405*	350*	360*	220*	290 (7)	
7	195*	185*	220*	225*	265*	365*	350*	455*	435*	335	405	350	350	315	360	295	315	325	270	245	225	280	270	315	310 (15)	
8	350	315	325	360	315	315	335	350	375	420	385	360	350	325	295	290	265	290	225	265	280	340	350	315	325 (24)	
9	365	235	195	195	245	270	280	305	295	295	305	280	295	295	290	290	270	295	315*	385	375	365	315	305	293 (23)	
10	245	290	235	210	235	265	325	350	280	305	315	265	245	225	225	210	235	245	280	325	350	335	315	340	277 (24)	
11	290	220	265	245	270	270	270	280	290	295	270	220	185	200	175	195	210	255	245	220	290	420	375	315	261 (24)	
12	315	295	245	295	245	245	265	340	475	545	500	505	420	360	315	350	365	280	225	140	105	85	155	125	300 (24)	
13	105	280	210	265	125	315	490	780	760	675	545	480	445	455	430	435	305	280	235	125	200	305	315	245	367 (24)	
14	225	220	175	245	265	155	295	280	165	140	60	10*	155	60*	155	165*	55*	70*	10*	10*	265*	315	280*	280*	204 (14)	
15	235*	210*	140	200	200	270	490	595	535	475	385	270	265	225	210	210	220	290	335	210*	35*	55*	235*	280*	313 (17)	
16	Z±*	Z±*	-125*	175*	-35*	Z±*	Z±*	Z±*	-155*	-145*	140*	140*	315*	195*	295*	435*	315*	225	395	435	405*	85*	195	220	294 (5)	
17	195	175	195	210	225	270	295	360	395	315	255	235	245	280	280	280	270	295	360	480	545	315	255	225	290 (24)	
18	220	195	125	70	70	95	80*	220	265	295	315	315	280	225	255	270	270	255	335	140	85	85	140	125	202 (23)	
19	95	85	55	55	25	25	45	45	85	220	210	225	195	125	125	105*	140	150	0	-35*	10*	-10	-120	Z±*	89 (20)	
20	Z±	-35	95	140	165	125	125	-165*	-90	70*	105*	195*	10*	155	200*	200	140	165*	365*	245	270	210	200	125	138 (15)	
21	70	35	85	105	140	225	350	335	335	395	385	340	305	325	305	295	350	225	255	255*	315*	385*	430*	365*	256 (19)	
22	360*	305*	280*	295*	360*	295*	335*	465*	430*	335*	340	280	245	315	315	315	360	405	365	270*	155	-45*	225*	105*	309 (10)	
23	70*	70*	55*	-80*	165*	200*	210*	225*	375	350	350	365	290	335	290	295	315	325	290	360	265	350	475	385	338 (16)	
24	430	305	270	210	255	95	235	420	455	490	475	385	280	255	265	255	220	210	305	210	325	150	35	315	285 (24)	
25	360	420	365	245	130	335	385	480	350	315	270	305	305	315	315	335	305	375	445	410	430	430	410	395	351 (24)	
26	385	385	410	420	430	475	560	675	735	645	605	505	445	480	490	430	490	420	480	405	605	445	385	315	484 (24)	
27	315	270	295	245	280	305	405	385	420	525	420	385	385	430	430	465	490	525	430	435	410	405	315	265	385 (24)	
28	245	175	165	185	295	410	505	500	575	525	360	335	265	255	280	305	360	430	-10	245	210	255	245	325	310 (24)	
29	265	175	155	140	130	225	385	405	Z±*	Z±*	455	420	735	Z±*	Z±*	490	375	245	195	410	340	365	490	455	343 (20)	
30	435	350	140	80	-35	-20	290	435	410	505	Z±*	Z±*	185*	85*	-110*	Z±*	Z±*	175*	545	640*	Z±*	210*	395*	480	301 (12)	
Mean	276	229	211	209	205	239	340	407	379	395	366	341	314	297	288	310	296	296	300	315	314	303	283	300	299 (563)	
	(24)	(25)	(25)	(24)	(25)	(25)	(23)	(22)	(23)	(23)	(22)	(23)	(24)	(22)	(23)	(22)	(23)	(24)	(24)	(22)	(23)	(24)	(24)	(24)		Mean for selected quiet days [290 (10)]

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

41 KEW OBSERVATORY		Factor 4.52 (metre ⁻¹)																				OCTOBER 1960			
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	360	350	265	295	175	130	210	545	525	280*	Z±*	385*	410*	420*	480	410	465	490	595	550	80*	-130*	25*	390 (15)	
2	80*	140	195	155	175	255	220	235	280	315	315	305	315	335	335	315	315*	-110*	-535*	150*	195*	80*	105*	268 (14)	
3	Z±*	Z±*	85*	175*	210*	255*	270*	270*	140*	255	265	270	225	210	210	245	225	225	410	475	435	340	280	225	286 (15)
4	195	140	210	195	210	220	220	420	480	490	435	435	295	315	340	340	350*	210*	350	295	385	420	405	420	328 (22)
5	385	280	225	225*	Z±*	115	175	220*	305	350	295*	280*	235*	255*	280	270	290	405	535	570	585	490	410	410	353 (17)
6	420	350	405	360	325	340	405	515	605	560	405	325	325	305*	290*	265*	295*	-75*	445	395	335*	305*	500*	Z±*	412 (15)
7	350*	350*	245*	-260*	185*	280*	365	420	570	575	560	515	535	525	475	480	385	280	315*	365*	395	360	395	315	447 (16)
8	315	235	245*	315	350	155*	70*	-330*	195*	255	Z±*	Z±*	Z±*	Z±*	Z±*	-375*	Z±*	-175*	Z±*	Z±*	365	Z±*	Z±*	490*	297 (7)
9	Z±*	Z±*	Z±*	Z±*	Z±*	-220*	Z±*	Z±*	-275*	Z±*	Z±*	Z±*	105	60	175	140	80	45*	-20*	15	45	165	165	175	113 (10)
10	-30*	-10*	-75	-65	0	-75*	-35*	0*	25*	-90*	85*	130	85*	85*	-145	15*	-90*	55*	150	210*	295	315	350	255	121 (10)
11	195	35	155	295	265	265	335	430	525	515	420	385	350	295	325	315	280	335	360	265	280	235	95	140	296 (24)
12	165	165	175	270	155	155	255	430	595	595	545	515	420	365	340	340	325	385	420	385	225	35	0	-20	302 (24)
13	140	255	315	305	290	315	525	665	755	665	700	515	365	325	385	500	480	445	290*	295*	375	290	245	225	413 (22)
14	265	315	305	305	350	340	280	350	535	445*	410*	490	420	410	480*	Z±*	140*	595*	Z±*	105	280	245	200	325	316 (16)
15	185	80	70	35	80	130	175	210	305	385	365	365	385	270	335	Z±*	Z±*	290	395	445	420	360	350	290	269 (22)
16	225	290	255	155	245	225	245	185	185	210	235	270	245	270	350	295*	405	125	Z±*	155	475	405	395	315	267 (22)
17	105	245	290	585	605	675	645	690	780	745	760	475	455	395	455	480	475*	315*	295*	225*	235*	255*	295*	335*	524 (16)
18	335*	325	340	350	365	335	335	435	430	395	340	295	245*	290	325	375	340	235	430	435	405	435	410	395	365 (22)
19	350	270	140*	Z±*	165*	85*	305*	385	455*	365	270*	Z±*	Z±*	55*	115*	185	295	410	55*	185*	265*	-75*	-350*	Z±*	323 (7)
20	Z±*	-625*	-405*	125*	85*	245	255	350	545*	365*	315	290*	70*	550*	550*	Z±*	Z±*	Z±*	225*	80*	Z±*	Z±*	85*	55*	291 (4)
21	35*	105*	140*	130	125	140	265	455	475	385	545	735	825	805	770	805	630	715	685	715	700	630	735	685	569 (21)
22	700	685	620	465	235*	155*	155*	35*	-275*	-460*	105*	315*	225*	245*	270*	220*	515	525	620	585	505	420	405*	210*	564 (10)
23	405*	500*	500*	435*	490*	445*																			

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

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41 KEW OBSERVATORY												Factor 4.46 (metre ⁻¹)												NOVEMBER 1960		
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*	10*	165*	140*	85*	200*	155*	85*	175*	175*	315*	330	260*	-45*	85*	320*	295*	365	Z±*	Z±*	Z±*	50*	105*	190	295 (3)	
2	235	210	200	175	165	185	235	295	365	375	315	285	305	315	315*	425	460	550	660	540	610	485*	355*	Z±*	345 (20)	
3	Z±*	85*	Z±*	130*	250*	295	190	245	365	Z±*	350	Z±*	Z±*	175*	550	550	Z±*	Z±*	880	870	1130	885	820	565	592 (13)	
4	485	450	295*	Z±*	165	190	175	245*	285	Z±*	Z±*	225	285	420	470	480	495*	Z±*	Z±*	355	390	540	565	480	373 (16)	
5	365	315	225	215	210	185	280	385	420	435	460	365	365	Z±*	Z±*	Z±*	Z±*	420*	450	585	210	-65	-185	-230	263 (19)	
6	-275	-260	95	140	185	85	140	155	355	400	435	385	390	355	410	400	375	505	385	435	320	130	340	340	259 (24)	
7	385	225	210	270	315	340	245	400	565	600	730	755	680	610	645	575	540	565	420	350	385	250	260	235	440 (24)	
8	105	155	60	60	-110	150	140	350	520	435	460	485	495	420	425	400	400	575	420	280	245	270	425	435	317 (24)	
9	375	315	225	250*	70*	-665*	-390*	105	365	280*	70*	210*	155*	285	340	235	295	350	445	385	385	280	250	350	312 (16)	
10	200*	Z±*	25*	-30	45*	50*	-95*	-55*	-150*	280*	350	365*	450	445	620	Z±*	Z±*	825	Z±	835	785	645	645	470	549 (11)	
11	Z±*	215	210	155	210*	210	140*	270*	445	Z±*	Z±*	460	400*	400*	460*	485	610	625	555	Z±*	Z±*	Z±*	620	450	420 (12)	
12	445	305	330	385	520	480*	Z±*	Z-	165*	Z±*	Z-	Z-	-30*	400	270*	680	555	810	825	705	755	660	295	550	548 (15)	
13	555	540	620	575	320	620	620	660	625	355*	625	550	495	425	435*	280*	330	190	210	120*	85*	-30*	120*	25*	489 (15)	
14	210*	260	305	385	485	495	590	670	730	740	610	520	460	470	505	495	505	485	480	470	355	340	Z±*	0*	493 (21)	
15	-20*	270	385	425	480	520	610	620	645	720	800	655	540	485	575	Z±*	Z±*	955	785	215	320	565	540	445	550 (21)	
16	350	295	285	280	295	385	515	600	785	955	860	590	445	420	420	385*	530	620	680	740	660	655	530	445	537 (23)	
17	470	420	270	295	235	250	295	420*	235*	295*	Z±*	Z-	Z±*	Z±*	Z±*	-445*	-295*	190	530	425	620	800	590	810	430 (14)	
18	845	625	705	655	685	775	885	1070	1130	Z±*	Z±*	670*	670*	730	835	720	Z±*	Z±*	Z±	Z±	750	350	425	625	738 (16)	
19	590	680	720	880	860	820	775	680	920	835	730	765	695	460	470	520	565	520	420	470	190	555	620	550	637 (24)	
20	625	660	400*	185*	-35*	50*	165*	350	385*	260*	35*	-95*	130*	140*	365	420	400*	365*	485	480	270	165	210	210	385 (11)	
21	315	250	185	245	245	270*	355*	385	420	450*	350	215*	270	120	10*	-75*	45*	295	385	375	385	305	285	435	309 (17)	
22	390*	270*	-185*	-390*	-590*	-315*	-240*	-220*	-120*	120*	280*	420	470	550	515	565	610	670	625	590	555	555	635	600	566 (13)	
23	610	610	520	530	520	450	385*	-155*	105*	280*	260*	330*	185	390	450	585	695	680	655	625	645	645	540	425	542 (18)	
24	295	165*	-390*	70*	25*	155*	200	350	Z±*	Z±*	280*	305*	210*	140*	245*	Z±*	280*	520	680	625	520	515	385	295	439 (10)	
25	260	200	175	190	215	245	285	350	610	730	610	330*	-260*	-455*	-275*	-220*	-35*	-205*	-75*	35*	50	175	-65*	80	298 (14)	
26	165	155	115*	130	140	175	185	225	260	315	315	315	225*	-140*	105	175	315*	365	375	365	355	305	280	245	247 (20)	
27	200	200	175	140	190	190*	210*	245*	285	210*	155*	-480*	-425*	-260	-480*	Z-	60*	315	280	365	470	445	385	235	245 (14)	
28	210	280	505	485	400	480	485	590	685	730	750	905	670	515	520	505	590	600	450	530	435	355	315	315	513 (24)	
29	260	225	200	190*	-45*	70*	245*	450	655	590	620	565	450*	450*	390	425	450	420	365	410	435	520	460	260	428 (18)	
30	140	95*	105*	130	115	130*	105*	210*	315	250	245	215*	215*	315*	185*	70	185*	225*	60*	95	105	215	175	175	172 (12)	
Mean	348 (23)	317 (24)	315 (21)	305 (22)	316 (21)	361 (19)	381 (18)	447 (20)	534 (22)	579 (14)	529 (17)	504 (17)	424 (16)	398 (19)	478 (18)	458 (19)	501 (15)	522 (23)	511 (24)	485 (25)	457 (27)	425 (26)	418 (25)	370 (27)	429 (502)	
																						Mean for selected quiet days			424	(8)

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

41 KEW OBSERVATORY												Factor 4.20 (metre ⁻¹)												DECEMBER 1960	
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	115	90	65	50	40	50*	-80*	155	325	400	360	365	325	295	295	275	295	300	270	65*	Z±*	Z±*	260	Z±	238 (18)
2	Z±*	90*	145	165	185	235	295	425	585	555	530	495	450	455	475	495	505	490	320	275	340	455	585	520	408 (22)
3	340	245	-175*	15*	-50*	0*	-35*	10*	-155*	-60*	65*	65*	35*	-70*	-35*	-15*	-35*	-60*	35*	35*	-70*	-70*	-60*	-85	167 (3)
4	-70*	-35*	-215*	-200*	-390*	-260*	15*	-105*	-385*	-215*	100*	230	275	295	340	325	360	405	390	360	350	320	295	230	321 (13)
5	275	245	195	180	195	210	295	385	570	585	620	490	475	520	560	895	995	830	880	635	605	645	685	610	524 (24)
6	455	645	650	605	455	80	285	490*	620*	520*	605*	-590*	620*	455*	850	850	775	715	865*	830*	740	685	760	700	617 (15)
7	490	540	780	790	405	115	260	425	505	650	635*	595	480	455	520	570	605	530	400	465	455	440	570	505	502 (23)
8	520	490	335	320	340	335	235	100	520	710	765	660	560	295*	Z±*	Z±*	130*	630*	405	-130	385	65	365	465	392 (19)
9	360	50	-695	-750	-765	-385	-50	-140	-260*	340*	425	295	450	505	455	490	490	630	725	700	635	765*	530*	165	179 (20)
10	165*	-225*	-200*	-105*	105*	130*	40	75	165*	310	130*	220*	145	210*	195*	255*	115*	140	325	365	405	425	400	400	275 (11)
11	400	285	255	255	185	230	295	365	440	670	455	425	425	430	475	450	375	320	260	505	555	800	780	805	435 (24)
12	630	180	360	505	425	475*	230*	260*	440*	635*	0*	320*	145*	295	455	555	335	465	700	540	505	340	300	360	434 (16)
13	325	270	165	390	325	440	740	560	735	440	620	495	440	495	530	455	850*	1075*	765	700*	390*	520	635	675	501 (20)
14	145	145	75	205	35	245*	75*	100*	750*	800*	1025	915	780*	650*	360*	145*	40*	65	165	325	235	205	130	10	263 (14)
15	50	35	0	130	300	255	260	360	450	455*	465	400	325*	325*	400*	115*	310	270	400	360	300*	455	700	780	332 (18)
16	545	340	295	325	455	490	360	295	375	475	585	675	710	765	775	530	775	850	595	425	450	490	605	740	539 (24)
17	430	620	520	570	555	515	555	650	675	635	650	670	715	570	515	455	425	400	260*	260	275*	195*	165*	170*	547 (19)
18	165*	245*	130*	100*	115*	235*	340*	375*	650*	505*	360*	490*	375	230	220*	285*	325*	455*	65*	10*	0*	-25*	145*	815*	303 (2)
19	710*	620*	295*	15*	230*	100*	-165*	65*	-420*	-835*	-765*	Z-	-155*	275*	455	560	560	620	760	715	825	775	580	365	621 (10)
20	140*	-45*	-350*	-435*	-590*	-25*	40*	0*	115*	-175*	660*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	100	455	455	260	-235*	-45	-45	197 (6)
21	-260	-35*	-260*	Z-	Z±*	Z-	90*	55	245	360	415	425	405	425	360	430	295	145	275	255	320	440	115	80	266 (18)
22	-35	115	230	140	170	255	295	310	405	495	610	585	620	620	635	760	540	430	360	520	455	375	560	850	

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

42 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	1	0.7	2	3.9	1	0.7	1	0.7	1	0.4	1	0.8
2	1	2.0	1	1.3	1	0.2	1	0.3	1	1.0	-	-
3	1	0.5	1	2.4	1	1.3	2	6.2	1	2.7	0	0.0
4	0	0.0	1	2.5	1	0.7	1	2.2	0	0.0	0	0.0
5	0	0.0	1	0.7	1	1.0	1	0.2	1	0.2	1	2.5
6	0	0.0	1	0.5	2	3.7	2	4.2	1	0.2	1	0.3
7	1	1.1	0	0.0	1	2.0	1	2.4	1	0.4	1	1.8
8	1	1.5	0	0.0	1	0.2	0	0.0	1	0.2	1	0.7
9	0	0.0	0	0.0	2	7.5	1	0.3	1	0.3	1	2.0
10	0	0.0	0	0.0	1	1.6	1	0.8	0	0.0	1	2.0
11	2	6.1	1	1.8	1	1.2	1	0.2	1	2.7	1	0.1
12	1	2.2	0	0.0	1	0.3	1	2.3	2	3.0	1	0.3
13	1	0.6	-	-	1	2.6	1	1.2	2	5.0	1	1.0
14	2	4.3	2	3.5	1	0.5	1	0.7	0	0.0	2	4.3
15	1	2.6	1	0.2	0	0.0	0	0.0	1	0.4	0	0.0
16	2	4.3	0	0.0	1	2.2	1	1.6	0	0.0	0	0.0
17	2	3.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
18	1	2.5	1	0.7	0	0.0	1	0.1	0	0.0	1	0.2
19	1	2.3	1	1.9	1	0.2	1	0.2	2	4.5	0	0.0
20	1	1.5	2	8.0	0	0.0	0	0.0	2	11.4	0	0.0
21	2	5.0	0	0.0	1	0.1	1	0.2	1	1.2	0	0.0
22	1	0.2	2	3.2	1	1.5	1	0.2	0	0.0	1	0.4
23	2	8.2	2	6.3	0	0.0	1	0.6	0	0.0	2	5.6
24	2	11.4	2	4.8	1	0.2	1	2.1	1	0.3	1	2.4
25	0	0.0	2	10.0	2	5.4	1	0.4	0	0.0	1	1.6
26	0	0.0	2	4.9	2	15.4	1	0.8	0	0.0	1	0.1
27	2	6.8	1	0.1	2	13.1	0	0.0	0	0.0	1	0.6
28	2	8.7	0	0.0	2	6.7	0	0.0	0	0.0	1	0.4
29	1	2.2	1	0.1	2	7.9	0	0.0	1	0.1	0	0.0
30	1	1.5	-	-	1	0.7	0	0.0	1	0.2	0	0.0
31	0	0.0	-	-	1	0.2	-	-	1	1.9	-	-
Total	-	79.5	-	56.8	-	77.1	-	27.9	-	36.1	-	27.1
No. of days used	-	31	-	28	-	31	-	30	-	31	-	29
Mean	-	2.6	-	2.0	-	2.5	-	0.9	-	1.2	-	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	1	0.4	1	0.8	1	1.2	2	3.0	1	2.8	1	2.0
2	0	0.0	1	1.9	0	0.0	1	1.4	1	0.7	1	0.6
3	0	0.0	0	0.0	1	0.1	1	1.4	1	3.0	2	12.4
4	0	0.0	0	0.0	1	2.4	0	0.0	1	2.0	2	7.8
5	1	0.8	1	0.2	0	0.0	1	0.4	2	4.8	0	0.0
6	1	0.3	1	0.5	0	0.0	1	0.8	1	2.1	1	1.4
7	1	0.6	2	3.5	0	0.0	1	1.0	0	0.0	1	0.2
8	2	6.4	0	0.0	0	0.0	2	6.0	1	1.6	2	4.0
9	1	0.5	1	0.4	0	0.0	2	10.8	1	2.6	2	6.3
10	1	0.2	-	-	0	0.0	2	8.3	2	4.8	2	3.8
11	2	3.3	2	12.5	0	0.0	1	0.1	1	1.7	0	0.0
12	1	2.9	1	0.4	1	0.1	1	1.0	2	4.2	1	0.6
13	1	0.7	1	1.1	1	0.1	1	0.2	1	1.2	1	0.1
14	1	0.3	2	4.0	1	0.1	1	1.2	1	1.1	1	2.1
15	1	1.1	0	0.0	1	1.2	1	0.2	1	1.9	1	0.8
16	1	0.1	1	0.4	2	6.4	1	0.8	0	0.0	1	0.1
17	2	6.9	0	0.0	0	0.0	1	0.3	-	-	0	0.0
18	1	1.2	1	1.0	0	0.0	0	0.0	1	2.3	1	1.6
19	2	4.1	1	0.1	2	4.3	2	3.0	1	0.1	2	6.4
20	0	0.0	0	0.0	2	3.4	2	4.8	1	2.0	2	12.8
21	1	0.5	0	0.0	0	0.0	1	0.3	1	1.4	2	5.3
22	2	3.8	1	0.1	1	0.6	1	2.6	2	5.4	1	0.8
23	0	0.0	1	0.4	1	0.8	1	0.5	1	0.9	2	4.3
24	0	0.0	0	0.0	1	0.9	1	2.7	1	2.3	1	1.3
25	0	0.0	0	0.0	0	0.0	1	0.6	2	6.7	0	0.0
26	0	0.0	2	3.3	0	0.0	2	10.8	1	0.8	1	2.8
27	0	0.0	1	0.6	0	0.0	1	1.2	2	5.9	0	0.0
28	1	0.8	1	1.3	1	0.6	1	0.6	0	0.0	2	5.0
29	0	0.0	0	0.0	1	1.5	2	16.5	1	0.8	1	0.2
30	0	0.0	1	0.1	2	5.8	2	3.8	1	0.3	1	0.3
31	0	0.0	0	0.0	-	-	1	0.6	-	-	0	0.0
Total	-	34.9	-	32.6	-	29.5	-	84.9	-	63.4	-	83.0
No. of days used	-	31	-	30	-	30	-	31	-	29	-	31
Mean	-	1.1	-	1.1	-	1.0	-	2.7	-	2.2	-	2.7

Annual values: Character 0 1 2
No. of days 100 192 70

Duration: Total 632.8
No. of days 362
Mean 1.75 hr.

ELECTRICAL OBSERVATIONS, UNDERGROUND LABORATORY, WILSON METHOD
 Mean value for periods of twenty minutes about 14h.30m.

F = Potential gradient, unit 1 v.cm.^{-1} i = Air-earth current, unit $10^{-10} \text{ amp. cm.}^{-2}$
 $\lambda+$ = Conductivity due to positive ions, unit $10^{-10} \text{ ohm.}^{-1} \text{ cm.}^{-1}$

43 KEW OBSERVATORY

	JANUARY			FEBRUARY			MARCH			APRIL			MAY			JUNE		
	F	i	$\lambda+$	F	i	$\lambda+$	F	i	$\lambda+$	F	i	$\lambda+$	F	i	$\lambda+$	F	i	$\lambda+$
1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	...	...	...	...	...	...	2.55	107	42	...	...	...	...	...	...	4.48	272	61
3	...	...	...	...	...	...	3.21	146	45	...	...	...	...	...	...	...	...	...
4	3.90	120	31	...	...	...	4.53	127	28	2.35	119	51	1.51	99	66	...	...	...
5	5.03	179	36	6.13	179	29	...	...	...	...	...	...	2.03	171	84	...	...	...
6	6.59	237	36	...	...	...	...	...	...	...	...	...	1.91	159	83	...	...	...
7	...	...	...	...	...	...	4.27	233	55	2.73	137	50	...	...	...	3.39	259	76
8	...	...	...	5.65	239	42	5.11	221	43	2.25	124	55	...	...	...	...	...	...
9	...	...	...	...	...	...	...	...	...	...	...	...	1.58	140	89	1.22	-	-
10	...	...	...	...	...	...	4.80	266	55	...	...	...	5.24	249	48	1.61	137	85
11	2.02	144	71	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13	...	...	...	...	...	...	...	...	...	1.55	134	86	2.35	198	84	0.82	95	116
14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15	8.38	126	15	4.14	152	37	6.87	215	31	...	...	...	...	...	...	1.71	250	146
16	...	...	...	3.53	187	53	...	...	...	...	...	...	2.53	197	78	1.92	157	82
17	...	...	...	...	...	...	5.18	153	30	...	...	...	2.79	200	72	2.90	144	50
18	2.76	93	34	3.08	147	48	2.96	126	43	...	...	...	...	...	...	...	...	...
19	4.64	168	36	3.78	151	40	...	...	...	2.90	154	53	...	...	...	...	...	...
20	5.52	141	26	...	...	...	...	...	...	2.47	162	66	...	...	...	3.05	232	76
21	...	...	...	...	...	...	3.51	141	40	3.29	225	68	...	...	...	4.69	289	62
22	...	...	...	...	...	...	6.59	206	31	2.19	142	65	...	...	...	...	...	...
23	...	...	...	...	...	...	7.03	211	30	...	...	...	1.50	285	190	...	...	...
24	...	...	...	2.17	-	-	...	...	...	...	...	...	2.77	161	58	...	...	...
25	6.29	118	19	...	...	...	...	...	...	...	...	...	1.95	152	78	...	...	...
26	...	...	...	...	...	...	...	...	...	...	...	...	2.43	198	81	...	...	...
27	...	...	...	...	...	...	...	...	...	2.83	209	74	2.26	172	76	...	...	...
28	0.40	21	53	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
29	4.85	147	30	3.13	184	59	...	...	...	4.49	232	52	...	...	...	1.74	112	64
30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2.17	157	72
31	...	...	...	...	...	...	5.51	191	35	...	...	...	2.33	135	58	...	...	...
Mean	4.58	136	35	3.95	177	44	4.78	180	39	2.71	164	62	2.40	180	81	2.47	191	81
No. of days used	11	11	11	8	7	7	13	13	13	10	10	10	15	15	15	12	11	11

	JULY			AUGUST			SEPTEMBER			OCTOBER			NOVEMBER			DECEMBER		
	F	i	$\lambda+$	F	i	$\lambda+$	F	i	$\lambda+$	F	i	$\lambda+$	F	i	$\lambda+$	F	i	$\lambda+$
1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2.87	132	46
2	...	...	...	...	...	...	1.71	109	64	...	...	...	3.28	133	41	4.72	98	21
3	...	...	...	1.43	170	119	...	...	...	2.31	158	68	...	...	...	...	...	...
4	1.51	132	87	2.64	172	65	...	...	...	3.40	115	34	4.62	159	34	...	...	...
5	2.25	131	58	2.42	187	77	3.31	151	46	...	...	...	...	...	...	5.54	139	25
6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7	1.92	123	64	...	...	...	3.99	-	-	4.75	127	27	5.63	161	29	...	...	...
8	...	...	...	2.64	187	71	3.06	101	33	...	...	...	...	...	...	...	...	...
9	...	...	...	...	...	...	...	...	...	...	...	...	4.44	101	23	5.34	82	15
10	...	...	...	...	...	...	...	...	...	...	...	...	7.80	198	25	...	...	...
11	...	...	...	...	...	...	...	...	...	3.09	122	39	...	...	...	...	...	...
12	...	...	...	2.22	130	59	...	...	...	...	...	...	...	...	...	...	...	...
13	...	...	...	...	...	...	...	...	...	4.00	138	35	...	...	...	...	...	...
14	3.64	216	59	...	...	...	...	...	...	...	...	...	4.76	124	26	...	...	...
15	...	...	...	2.36	129	55	...	...	...	...	...	...	6.22	167	27	...	...	...
16	...	...	...	...	...	...	...	...	...	...	...	...	4.13	119	29	7.53	115	15
17	...	...	...	...	...	...	...	...	...	4.66	193	41	...	...	...	...	...	...
18	2.71	136	50	...	...	...	...	...	...	3.66	186	51	7.59	126	17	...	...	...
19	...	...	...	1.90	105	55	...	...	...	...	...	...	...	...	...	4.50	114	25
20	3.35	163	49	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
21	...	...	...	...	...	...	2.80	124	44	...	...	...	...	...	...	3.45	101	29
22	...	...	...	2.47	139	56	3.30	242	73	...	...	...	5.14	89	17	7.29	158	22
23	...	...	...	...	...	...	3.20	124	39	...	...	...	4.36	109	25	...	...	...
24	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25	2.22	104	47	2.20	116	53	...	...	...	3.71	215	58	...	...	...	...	...	...
26	...	...	...	2.57	204	79	4.75	188	40	...	...	...	...	...	...	...	...	...
27	1.72	119	69	...	...	...	4.17	137	33	...	...	...	...	...	...	...	...	...
28	2.78	145	52	...	...	...	2.71	156	58	3.60	244	68	4.58	106	23	...	...	...
29	...	...	...	...	...	...	3.28	225	69	...	...	...	...	...	...	6.38	67	11
30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6.79	81	12
31	...	...	...	2.69	137	51	...	...	...	3.96	110	28	...	...	...	...	...	...
Mean	2.46	141	59	2.32	152	67	3.30	156	50	3.71	161	45	5.21	133	26	5.44	109	22
No. of days used	9	9	9	11	11	11	11	10	10	10	10	10	12	12	12	10	10	10
Year: Mean										3.60	157	52						
No. of days used										132	129	129						

44 KEW OBSERVATORY

Complete days only

	Hour G.M.T.																								Mean	No. of days used
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to		
	<i>milligrams per cubic metre</i>																									
Jan.	0.13	0.12	0.12	0.11	0.11	0.11	0.11	0.13	0.15	0.16	0.20	0.18	0.19	0.19	0.17	0.17	0.18	0.19	0.19	0.20	0.23	0.20	0.17	0.13	0.16	19
Feb.	0.16	0.16	0.15	0.14	0.13	0.13	0.14	0.15	0.16	0.15	0.15	0.14	0.14	0.14	0.15	0.16	0.15	0.20	0.19	0.19	0.19	0.19	0.19	0.17	0.16	28
Mar.	0.12	0.12	0.11	0.12	0.11	0.11	0.12	0.14	0.14	0.13	0.13	0.13	0.14	0.13	0.13	0.14	0.15	0.16	0.18	0.18	0.18	0.18	0.15	0.13	0.14	29
Apr.	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.06	0.07	0.07	0.09	0.08	0.07	0.06	0.07	28
May	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	31
June	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.05	0.05	25
July	0.06	0.06	0.05	0.05	0.05	0.05	0.06	0.05	0.05	0.05	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.05	0.07	0.05	0.05	0.05	0.05	31
Aug.	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.06	0.05	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.05	0.05	0.05	0.05	31
Sept.	0.08	0.09	0.09	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.08	25
Oct.	0.12	0.11	0.11	0.11	0.11	0.11	0.10	0.11	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.13	0.14	0.15	0.14	0.14	0.12	0.12	0.12	0.11	22
Nov.	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.07	0.08	0.08	0.09	0.11	0.12	0.12	0.12	0.11	0.10	0.09	0.09	30
Dec.	0.14	0.13	0.12	0.12	0.11	0.11	0.12	0.13	0.14	0.16	0.18	0.18	0.18	0.18	0.19	0.23	0.24	0.26	0.27	0.27	0.25	0.24	0.20	0.17	0.18	31
Year	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.12	0.12	0.12	0.13	0.12	0.11	0.10	0.10	330
Winter	0.13	0.12	0.11	0.11	0.11	0.11	0.12	0.13	0.14	0.15	0.15	0.15	0.15	0.15	0.16	0.17	0.19	0.19	0.19	0.20	0.19	0.17	0.14	0.15	108	
Spring	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.11	0.11	0.09	0.09	0.09	0.10	0.09	0.09	0.09	0.10	0.11	0.13	0.13	0.13	0.13	0.11	0.09	0.11	57
Autumn	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.09	47
Summer	0.06	0.06	0.05	0.05	0.06	0.06	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.05	0.07	0.06	0.05	0.05	0.05	118