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METEOROLOGICAL OFFICE

THE OBSERVATORIES' YEAR BOOK 1961

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

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PREFACE

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

The General Introduction to the Meteorological Tables and the parts of the Sectional Introductions which 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

PREFACE (contd.)

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, and soil temperatures (at depths of 10, 20, 30 and 122 cm). Daily and hourly tabulations of atmospheric smoke pollution. Records from a set of Galitzin seismographs (3 components) and a short period vertical seismograph.

LERWICK OBSERVATORY

Terrestrial magnetism

TABLES

Aurora

Atmospheric electricity

ESKDALEMUIR OBSERVATORY

Terrestrial magnetism

ESKDALEMUIR OBSERVATORY - *continued*

Atmospheric electricity

KEW OBSERVATORY

Atmospheric electricity

Atmospheric pollution

LERWICK OBSERVATORY

ESKDALEMUIR OBSERVATORY

KEW OBSERVATORY

ERRATA IN PREVIOUS VOLUMES

Observatories' Year Books 1942, 1943 and 1944

Lerwick - Tables 7,11,15,19,23,27,31,35,39,43,47,51.

Eskdalemuir - Tables 105,109,113,117,121,125,129,133,137,141,145,149.

Delete the figures given at the foot of the above tables for the mean of the 3-hour range indices K and for the mean of the sum of the K indices.

Observatories' Year Book 1954

Page iii Last line of second paragraph insert "adopt an" in front of "abridged".

Observatories' Year Book 1956

Page vii In title of Table 166 for "totals" read "total".

Observatories' Year Book 1957

Cover and title page delete the words "Meteorological and".

Title page, under *Universal Decimal Classification* delete 551.506.1.

Page 4 In footnote 7 add "," after "*Weather*".

Page 5 1st paragraph 2nd line for "quick run" read "quick-run".

Page 7 8th line the denominator inside the brackets should read H instead of π.

Page 17 Under "TABULATIONS" 2nd paragraph 1st line for "Table" read "Tables" and for "contains" read "contain".

Observatories' Year Book 1958

Cover and title page delete the words "Meteorological and".

Title page, under *Universal Decimal Classification* delete 551.506.1.

Page 3 In footnote 7 add "," after "*Weather*".

Page 4 6th paragraph 2nd line for "quick run" read "quick-run".

Page 12 2nd paragraph, under "AURORA", 3rd line, for "aurorae" read "auroral".

Observatories' Year Book 1959

Cover and title page delete the words "Meteorological and".

Title page, under *Universal Decimal Classification* delete 551.506.1.

Page 3 In footnote 7 add "," after "*Weather*".

Page 4 6th paragraph 2nd line, for "quick run" read "quick-run".

Page 7 1st paragraph last line for "disturbances" read "disturbance".

Page 8 In footnote 2 for "*Sci.*" read "*sci.*".

In footnote 5 for "*Atmosph.*" read "*atmos.*" and for "*Terr.*" read "*terr.*".

Page 13 2nd paragraph, under "AURORA" 3rd line, for "aurorae" read "auroral".

ERRATA IN PREVIOUS VOLUMES - continued

Observatories' Year Book 1960

Page vii Fig.7 For "Site Plan" read "Site Plan, 1961".

Fig.8 Add ", July 1961".

Page 1 In footnote 7 add "," after "*Weather*".

Page 2 6th paragraph 1st line for "quick run" read "quick-run".

Page 3 1st line under "TABULATIONS" for "Table" read "Tables".

Page 5 1st paragraph last line for "disturbances" read "disturbance".

Page 6 In footnote 2 for "*Sci.*" read "*sci.*".

In footnote 5 for "*Atmosph.*" read "*atmos.*" and for "*Terr.*" read "*terr.*".

Page 11 2nd paragraph, under "AURORA", last line, for "aurorae" read "auroral".

Page 15 1st line under "TABULATIONS" for "Table" read "Tables" and for "contains" read "contain".

Fig.3 19 should be marked at the south corner of building C on the northeast wall of the protruding section.

Delete "Scale 1/500" and note that 13 mm is equivalent to 100 ft.

Fig.9 In key, for "towns" read "built-up area".

Observatories' Year Books 1957, 1958, 1959, 1960

Introduction under "ATMOSPHERIC POLLUTION" Line 2, for "1926" read "December 1920 (continuous recording started 1 January 1921)".

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 contoured map of the surrounding country. The history of the Observatory is described by M.J. Blackwell in a paper marking the fiftieth anniversary of the commencement of observations (*Met. Mag., London* 87, 1958, p.129), and by J. Crichton (*Met. Mag., London* 79, 1950, p.337).

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

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

Figs. 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. Rigaud[1], R.H. Scott[2], C. Chree[3], O.J.R. Howarth[4], R.S. Whipple[5], F.J.W. Whipple[6] and A.J. Drummond[7].

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1. RIGAUD, G.: Dr. Demainbray and the King's Observatory at Kew. *Observatory, London* 5, 1882, p.279.
2. SCOTT, R.H.: The history of the Kew Observatory. *Proc. roy. Soc. London*, 39, 1885, p.37.
3. CHREE, C.: Description of the Kew Observatory, Old Deer Park, Richmond, Surrey. *Rec. roy. Soc., London*, 1st. edn., 1897, p.137.
4. HOWARTH, O.J.R.: The British Association for the Advancement of Science: a retrospect 1831-1921. London, 1922.
5. WHIPPLE, R.S.: An old catalogue and what it tells us of the scientific instruments and curios collected by Queen Charlotte and King George III. *Proc. opt. Conv., London*. Pt. II. 1926.
6. WHIPPLE, F.J.W.: Some aspects of the early history of Kew Observatory. *Quart J.R. met. Soc., London*, 63, 1937, p.127.
7. DRUMMOND, A.J.: Kew Observatory. *Weather*, London, 1947, p.69.

TERRESTRIAL MAGNETISM

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

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

The principal magnetographs at Lerwick and Eskdalemuir are La Cour instruments, each set consisting of *H*, *D* and *Z* variometers. The *H* and *D* magnets are about 1 cm 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 4γ/mm for *H* and about 6γ/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 $1'$/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 about three times weekly and from these the baseline 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 baselines 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

Tables 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. It was decided to rearrange the order of the magnetic elements in Lerwick Tables 14 and 15 and in Eskdalemuir Table 36, commencing with the 1960 *Observatories' Year Book*, to conform with the other magnetic tables, that is, in the standard order of *H*, *D* and *Z*.

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

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

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

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

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

in which 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 $\Sigma\ (a_n \cos 15nt^\circ + b_n \sin 15nt^\circ)$ and $\Sigma\ c_n \sin(15nt^\circ + \alpha_n)$. 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 0·1γ.

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 disturbance at one of the stations is relatively small.

NOTES ON THE RESULTS

Comparing mean values on all days of 1961 with those of 1960, at Lerwick *H* increased by 27γ, *D* (west) decreased by 3·5′ and *Z* increased by 19γ. The changes deduced in *X*, *Y*, *I* and *F* are +29γ, −10γ, −1·4′ and +26γ respectively. The ranges between the extreme values recorded during 1961 were *H* 2651γ, *D* 4°18·7′ and *Z* 1321γ. The range of 4°18·7′ in declination corresponded to a range of 1097γ in the component of force perpendicular to the magnetic meridian.

Similarly at Eskdalemuir *H* increased by 31γ, *D* (west) decreased by 5′ and *Z* increased by 15γ. The changes deduced in *X*, *Y*, *I* and *F* are +35γ, −20γ, −1·6′ and +25γ respectively. The ranges between the extreme values recorded during 1961 were *H* 1566γ, *D* 2°32·2′ and *Z* 1087γ. The range of 2°32·2′ in declination corresponded to a range of 743γ 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 as the Lerwick standard by B.M.Z. No.83, in 1953.

B.M.Z. No.83, on its arrival, using the Rude Skov calibration 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 24 November 1957, the instrument suffered an accidental knock and its readings immediately afterwards were found to be 150γ lower than previously. On 28 September 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 Varian[1] and Waters and Francis[2].

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 $2{\cdot}67513 \times 10^4$ 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 $0{\cdot}5\gamma$) 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 ($<0{\cdot}1\gamma$). 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

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

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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. atmos. 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 ⅓. 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.

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

$$\text{Lerwick} \qquad Z_{pm} - Z_{BMZ83} = -8{\cdot}5\gamma$$

At Lerwick the proton magnetometer, using the Schuster-Smith value of H, has been accepted as the standard instrument for measuring Z since 1 August 1961. However, as there is still some uncertainty due to the uncertainty in H baseline values, which will be removed when the proton vector magnetometer is brought into use, it was considered preferable to make no discontinuity in the Z baseline until absolute determinations are made; accordingly the accepted Z baseline is derived from the relation

$$Z = Z_{pm} + 9\gamma$$

This, in effect, continues the B.M.Z.83 baseline.

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:-

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

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 in 1960 at Lerwick comprising observations on 33 days the standard deviation of a single observed Z baseline about a mean value was $1{\cdot}7\gamma$. 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 probable that the random error of the proton magnetometer is due solely to the short term random error of the frequency measuring apparatus (1 part in 10^5, 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 was used for measuring Z directly; over a period of six months from August, 1960, the mean difference between Z baselines derived directly from the proton vector magnetometer (Z_{pvm}) and Z baselines derived from the proton magnetometer total force values and the Eskdalemuir H standard (Z_{pm}) was $-0{\cdot}6\gamma$, with a standard deviation of $2{\cdot}0\gamma$ over 27 observations; that is

$$\bar{Z}_{pvm} - \bar{Z}_{pm} = -0{\cdot}6\gamma$$

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 14–16γ in the Eskdalemuir Z measurements, possibly caused by an error of 6γ 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 1–2γ.

It is seen that the difference (Eskdalemuir Z - Lerwick Z) in 1960 was in fact $-8{\cdot}5\gamma$. 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.

The proton vector magnetometer will eventually be designated the standard absolute instrument at Lerwick and Eskdalemuir.

Horizontal Component

Since 1 January 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. Calibration of the potentiometer at the National Physical Laboratory in 1933, and recalibration in 1938 and 1953, showed negligible change in the standard resistances. Recalibration of the external standard

resistance alone at the National Physical Laboratory in 1961, and subsequent recalibration of the potentiometer at Eskdalemuir, using the standard resistance, also showed negligible change in the internal standard resistance.

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 13γ low. This was generally confirmed when it was installed at Lerwick in 1939 as it then gave results 11γ 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 + 11γ) 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 1 January 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 1 June 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 by hand, 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
		γ
Dec. 1930	Direct at Abinger	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 ±3γ; that is,

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

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 the fixed marks have been measured at intervals; the latest measurements were made in 1948 and 1961.

Following the 1948 measurement at Lerwick a review was made of the results obtained from five determinations made at intervals from 1923 to 1948 and it was then concluded that (i) the original determination, made in October 1922, was in error by about 3½′ and (ii) an apparently uniform small drift of about 1′ occurred between 1923 and 1948. Accordingly, values of westerly declination published previous to 1948 were considered to be 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, up to 1946, in succeeding volumes. The required corrections were incorporated in the tables for 1947 and 1948 and thereafter the 1948 Ordnance Survey value for the azimuth of the fixed mark was used. The 1961 Ordnance Survey value showed that the apparent trend from 1923 to 1948 had been reversed; the value itself was 0·2′ less than the 1948 value. However, the error estimated by the Ordnance Survey in the 1948 value was ±0·2′; the 1961 value, which is considered to be the most accurate measurement so far made with an estimated error of only ±4″, was adopted from 8 November 1961, causing a discontinuity of 0·2′ in the value of *D*.

The observations 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. Further observations of the fixed mark at Eskdalemuir were made in July 1961, by the Observatory staff, using a Tavistock theodolite, with Polaris as a reference star. The value determined was only 7″ (and the standard deviation of the observations was 6″) from the value adopted after the Ordnance Survey determination in 1948. The 1961 value was brought into use on 1 September 1961, and, with the scatter in baseline values, the effect of the change on declination measurements was negligibly small.

At Lerwick, during the period mid-January to the end of June 1961, there was a considerable scatter in *D* absolute measurements and anomalously high values, with a large scatter, were obtained. Routine observations of declination, made in the course of a measurement of *H* by the Schuster-Smith magnetometer, indicate, however, that there was no marked change of baseline during this period and *D* values have been derived on the assumption that the baseline was, in fact, unchanged from the value on either side of the most disturbed period. A new magnet system was used in the Kew declinometer after 1 July 1961, and the scatter became very small. Detailed investigation has not produced any explanation of the large scatter and of the high values, but it seems probable that the cause was a loose lens or graticule in the magnet system.

AURORA

A special watch for Aurora is kept at Lerwick Observatory. Up to 2200h. 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 2200h. 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 auroral 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 ⏀; 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 ••. 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.

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 just above a natural open level surface. 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 takes up the potential of the air because of the ionisation caused by a small radioactive collector fitted to its tip. The potential of the boom is recorded by an electrostatic voltmeter. The use of valve voltmeters for these measurements is discussed below.

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. 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 Benndorf electrograph, which had been the standard recording instrument since 1926, was replaced on 1 January 1961 by the valve voltmeter electrograph. This electrograph had been recording in a position similar to that of the Benndorf electrograph since 1959; the boom projected about 80 cm through a window, and about 420 cm above the ground. On 13 July 1961 this electrograph was moved into the newly constructed Observatory buildings. In its new position the boom projects 58 cm from the north-east wall of the electrograph room at a height of 206 cm above the ground. The instrument is 160 m from the site of the absolute potential gradient measurements. A site plan, Fig.3, in this *Observatories' Year Book* shows the old and new positions of the electrograph and the site of the absolute potential gradient measurements.

The valve voltmeter electrograph is constructed on the pattern described by A.W. Brewer (*Journal of Scientific Instruments*, 30, 1953, p.91). A pen record is obtained on a chart, 7·5 cm wide, which normally moves at a speed of 1·2 cm per hour, but the speed can be increased if required.

The scale value of the electrograph is 4·4 volts per scale division (1 scale division = 1·5 mm) on its sensitive scale, and 21·5 volts per scale division on its insensitive scale; these figures have remained very constant over the last three years, (1959-1961). The boom is automatically earthed at each hour, and then operates on the sensitive scale. When the voltage exceeds 90 volts, the electrograph automatically changes to its insensitive scale. Full scale deflection on the insensitive scale is obtained with about 540 volts, so with an exposure factor of around 2·5 the electrograph can record a range of +1350 to -1350 volts per metre in the open. Scale value measurements are made once weekly, using dry batteries and a calibrated voltmeter. The insulation is tested daily and, even in wet weather, is good. In fine weather the rate of leak is so small, that the time taken for the instrument to lose half its potential has never been measured; only after 15 minutes has a movement of the pen been detectable.

Tests of the rate of rise of potential of the electrograph and boom with the polonium collector fitted are made at intervals. The time taken for the potential to rise to half its final value is 2-3 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 1·8 volts per millimetre during 1961 and this, combined with an exposure factor of about 8, means that one millimetre on the record corresponded approximately to 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 1 January 1956.

Valve voltmeters, as now in use at Lerwick, have also been recording continuously at Kew since May 1958, and at Eskdalemuir since April 1959, in addition to the electrograph voltmeters.

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).

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*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

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 1 July 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 1 January 1956 the records and tabulations are considered reliable.

TABULATIONS

Tables 19 (for Lerwick), 39 (for Eskdalemuir) and 41 (for Kew) contain 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

‡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.

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 24h. 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. When by reason of defective record there is some doubt as to the correctness of either the character number or letter or both, round brackets are put around the doubtful entry.

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 1430h. 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 that marked changes have occurred since around 1951; those occurring in the period 1951-1959 were discussed by K.H. Stewart in the *Quarterly Journal of the Royal Meteorological Society*, 86, 1960, p.399 and attributed to the deposition on the ground of radioactive debris from nuclear explosions for test purposes. The results obtained since

1959 appear to confirm this hypothesis; the changes continue to be linked with the frequency of tests.

ATMOSPHERIC POLLUTION

The Owens atmospheric pollution recorder at Kew Observatory was originally installed in December 1920 (continuous recording started 1 January 1921) 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.

During 1961 an improved instrument for measuring the diurnal variation of smoke pollution was tested at Kew Observatory. This was designed at the Warren Spring Laboratory of the D.S.I.R. and operates on a similar principle to their standard daily filters. Air is drawn by a small pump through a filter and thence through an air meter. The filter material is however a continuous roll of glass fibre "paper" and the clamp which defines the area of the paper through which the air is drawn can be released automatically by a time switch. When this happens the filter paper is also wound on a suitable distance, so that when the clamp is allowed to reposition itself the air is drawn through a fresh area of the paper and a new stain is produced.

The instrument is operated from an hourly time switch so that 24 stains are produced every day. The air meter is only read once a day but it has been found that by using a const voltage transformer to supply the power for the electric pump the rate of air flow is extreme constant. During periods of light pollution a pump sucking 5·5 cu ft an hour is used but during times of heavy pollution a different pump sucking only 2·8 cu ft an hour is used.

The stains are much larger in diameter than those produced by the Owens recorder and the optical density is measured with a photoelectric reflectometer. This result is a much more accurate and sensitive reading. It is estimated that the minimum concentration of smoke that can be reliably detected by this apparatus is about 0·005 milligrams per cubic metre whereas with the Owens instrument the limit is at least twenty times this value. This instrument is expected to replace eventually the Owens recorder.

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 for Kew, Eskdalemuir and Lerwick are also published in these volumes.

During 1961 the highest estimate of pollution at Kew was 2·0 mg m^{-3}, this value occurring on 7 January from 17h. to 18h. There were seven 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 twenty-four, of which four were in January and twenty in December.

Late in 1960 there was also installed at Kew Observatory, on behalf of D.S.I.R., apparatus for the measurement of the concentration of sulphur dioxide in the atmosphere. Air which has already been passed through the daily smoke filter is bubbled through a weak solution of hydrogen peroxide causing the sulphur dioxide to be converted to sulphuric acid and to remain in solution. The acidity of the hydrogen peroxide solution is then found by titration against a 1/250 normal solution of sodium borate, using B.D,H.4·5 (a narrow range indicator); from this result, knowing the volume of air, the average sulphur dioxide concentration can be calculated. Measurements are made once daily and, since January 1961, the results have been passed at monthly intervals to D.S.I.R. and published by them alongside the smoke pollution data (see above).

A full description of this method of measuring the sulphur dioxide concentration (together with other methods of measuring atmospheric pollution) is given in the D.S.I.R. publication "*Measurement of Air Pollution*", (London, H.M.S.O. 1957).

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

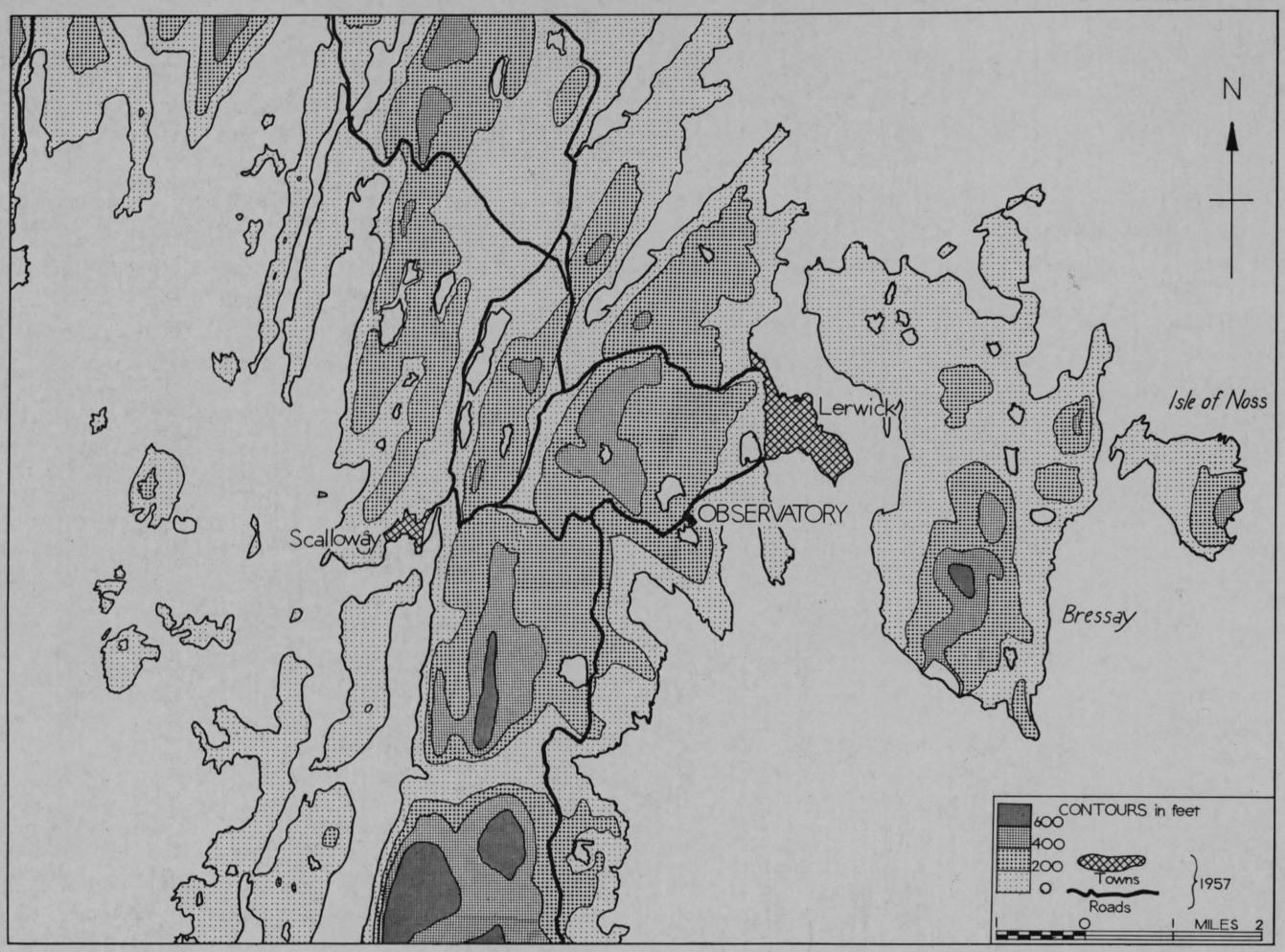

FIG. 1 - Contour map of surroundings

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

LERWICK OBSERVATORY

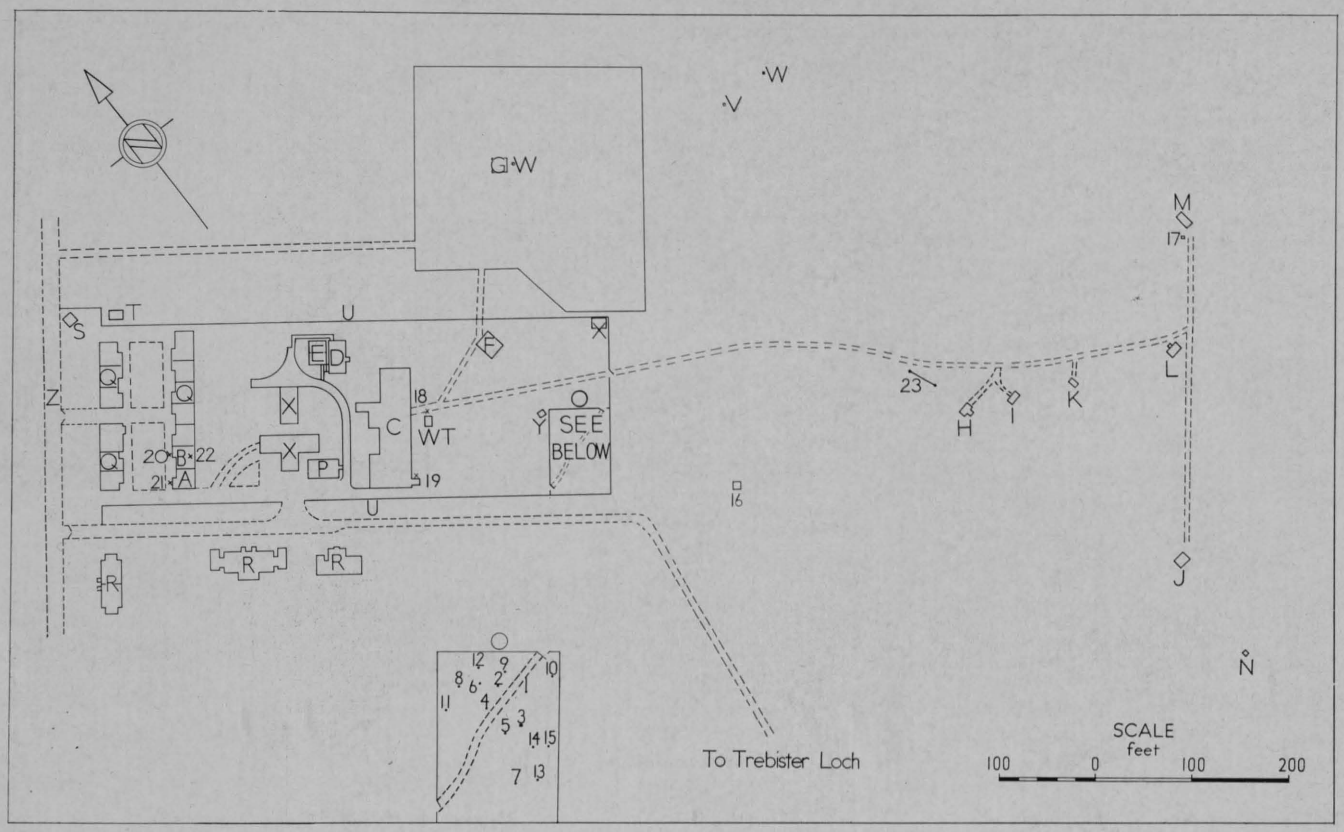

FIG. 3 - Site plan, 1961

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

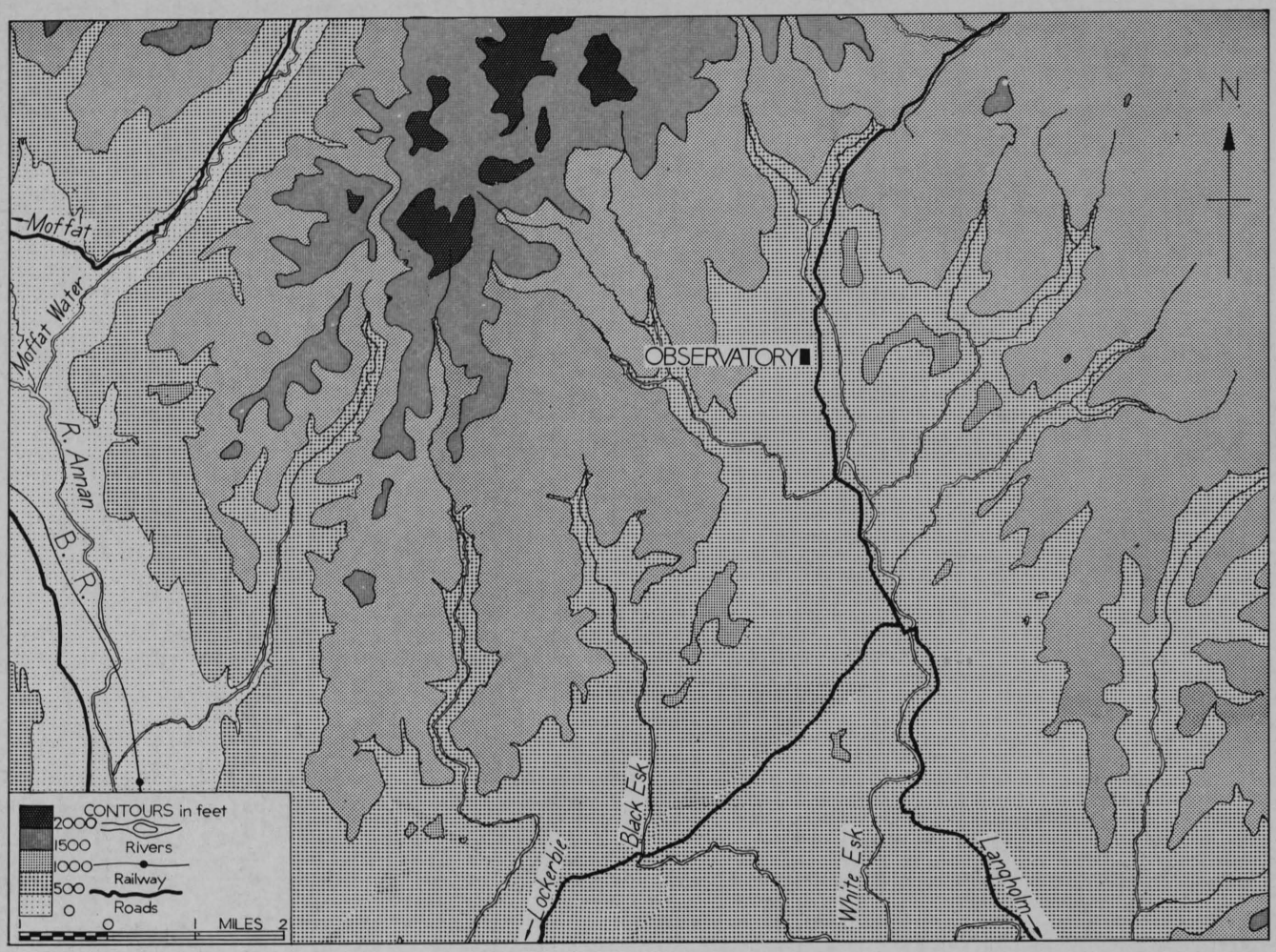

FIG. 5 - Contour map of surroundings

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

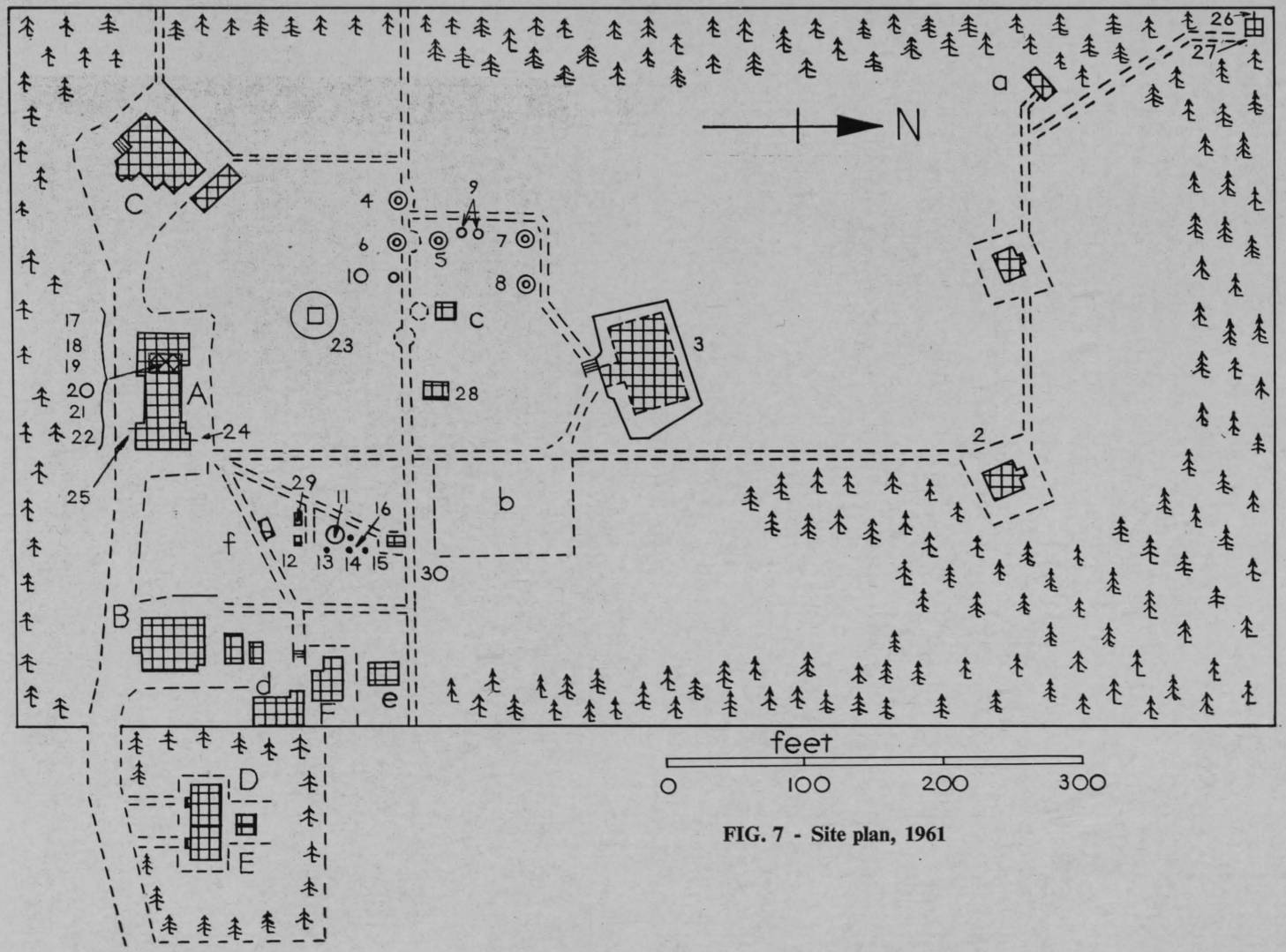

FIG. 7 - Site plan, 1961

INSTRUMENTS

1. West hut } for absolute magnetic observations
2. East hut } including those with proton magnetometer
3. Underground magnetograph chambers
4. } Meteorological Office tilting-siphon rain
5. } recorders (turf walled)
6. Standard 8-inch rain-gauge (turf walled)
7. Fuess snow recorder (turf walled)
8. Jardi rain recorder (turf walled)
9. Experimental snow-gauges
10. Canadian snow-gauge
11. Evaporation pan (American class 'A' type) with water-surface maximum and minimum thermometers
12. Apparatus for the chemical sampling of air and precipitation
13. Cup counter anemometer Mk. II
14. 4-foot earth thermometer
15. 1-foot earth thermometer
16. Standard 8-inch rain-gauge
17. Bi-metallic radiation recorders
18. Total radiation solarimeter
19. Diffuse radiation solarimeter
20. Daylight illuminometer
21. Sunshine recorder (Campbell-Stokes)
22. Direct-reading pressure-tube anemograph
23. Atmospheric electricity absolute observation pit
24. Boom for electrograph
25. Air pollution sampling unit
26. Atmospheric radioactivity sampling unit
27. Cloud searchlight
28. Ozone spectrophotometer hut
29. Large thermometer screen
30. Louvered 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. 8 - General view of the Observatory looking northwards (on the left) to south-eastwards (on the right), July 1961

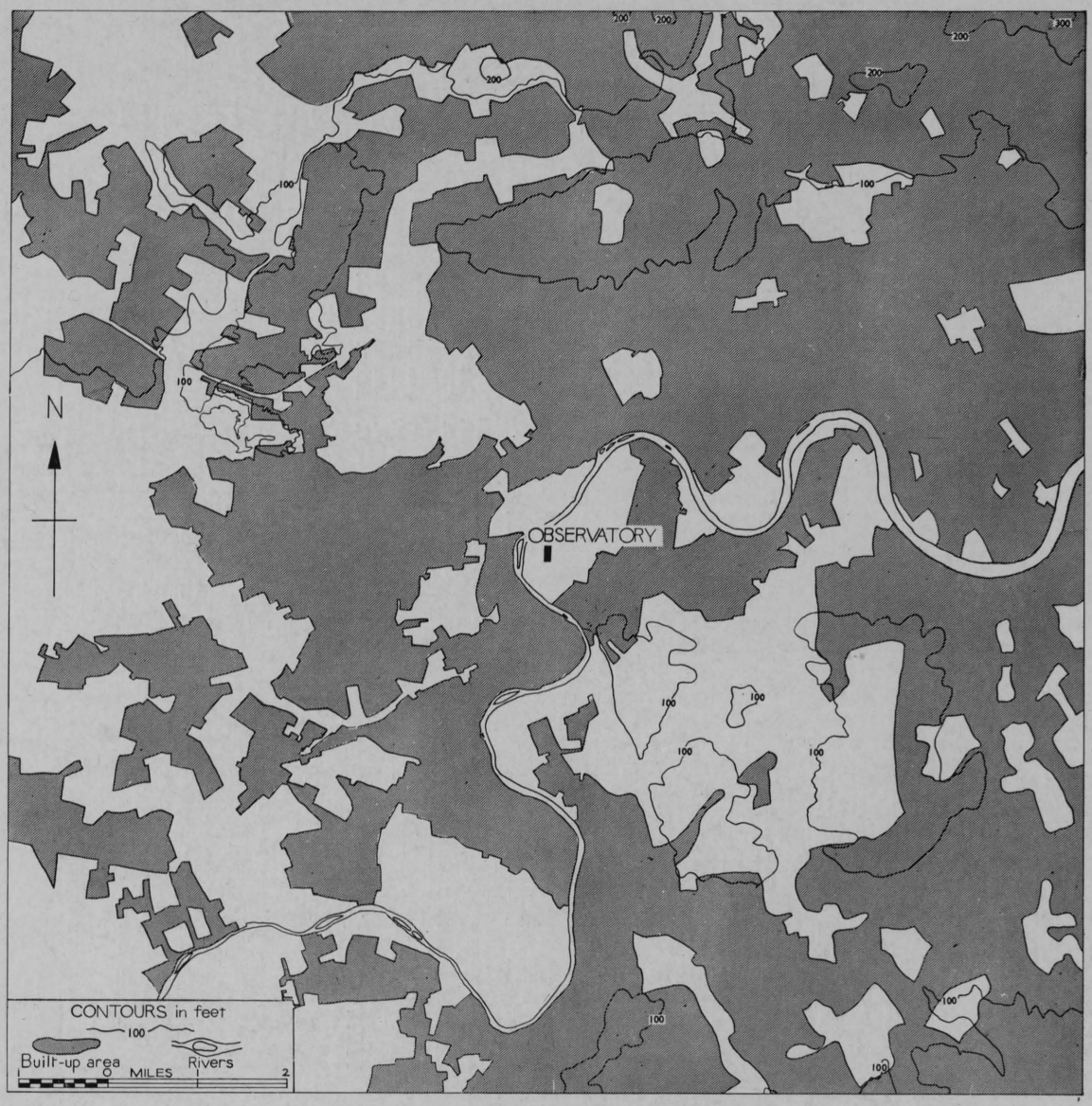

FIG. 9 - Contour and built-up area map

FIG. 10 - Aerial view, February 1961

KEW OBSERVATORY

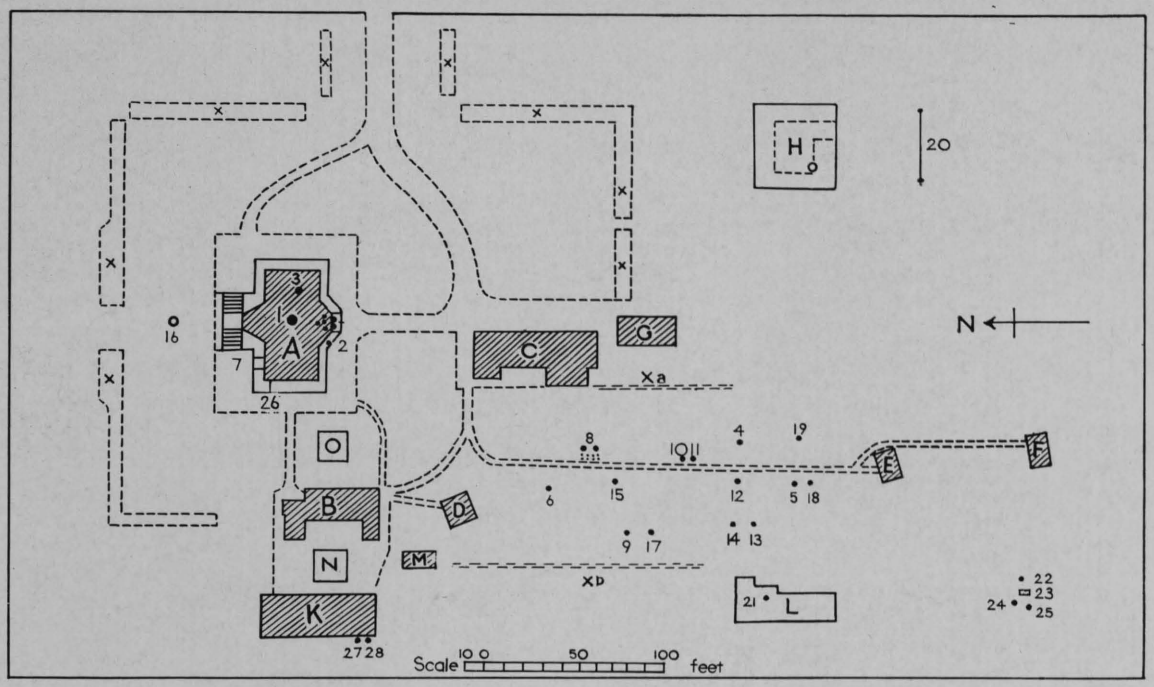

FIG. 11 - Site plan, 1961

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 1953)
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 1961

	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 12,000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1	538	544	549	557	559	551	549	560	562	564	555	546	548	552	550	552	552	558	561	562	561	560	556	557	554	1303
2 *q*	557	557	559	559	561	564	565	569	567	563	559	551	552	554	557	559	559	560	563	563	563	560	559	565	560	1445
3	562	562	563	563	562	569	571	564	557	560	557	554	557	560	557	558	556	556	559	559	564	567	565	562	561	1464
4 *q*	561	561	562	563	565	566	572	563	564	561	560	561	561	563	563	560	560	566	570	574	574	572	570	565	565	1557
5 *q*	566	565	565	566	569	572	572	573	569	560	558	563	564	562	562	564	563	566	570	567	549	552	554	559	564	1530
6	560	561	560	566	570	570	575	574	569	563	561	556	559	560	563	564	566	562	565	567	568	565	563	563	565	1550
7	558	556	542	560	562	569	576	573	569	569	568	565	569	568	557	552	554	560	567	569	570	572	568	556	564	1529
8 *d*	526	519	531	548	549	563	573	559	556	552	555	559	565	572	565	554	553	619	757	579	560	548	539	557	565	1558
9 *d*	541	541	540	527	548	566	570	548	537	529	537	540	560	572	593	598	609	682	787	659	604	547	539	527	*575*	1801
10	540	543	542	545	547	549	549	553	551	540	539	541	547	541	543	545	547	553	552	552	549	554	552	553	547	1127
11 *q*	553	554	554	556	561	562	565	564	562	553	547	546	546	550	555	556	558	560	561	562	562	562	562	563	557	1374
12	562	561	562	565	568	571	574	574	564	559	556	555	556	560	563	568	567	566	564	567	568	566	564	559	564	1539
13	560	557	558	558	560	565	568	569	559	546	555	555	541	549	559	569	566	570	571	572	558	557	564	559	560	1445
14	559	558	557	560	562	564	566	566	564	563	559	556	558	566	569	570	569	566	569	567	562	559	553	557	562	1499
15	561	557	555	563	566	565	570	572	574	570	566	564	559	556	559	561	554	561	566	564	563	546	538	507	559	1417
16	564	561	558	561	571	581	554	546	556	549	550	548	552	556	556	558	559	560	559	562	572	570	568	567	560	1438
17	565	564	565	569	568	574	573	563	565	563	555	551	553	550	551	557	562	558	562	566	567	567	566	569	563	1503
18	571	566	568	571	576	579	581	578	578	549	559	559	559	546	532	556	564	564	565	567	556	556	559	561	563	1520
19 *d*	562	558	533	557	559	562	565	568	570	567	559	556	556	560	563	539	534	555	562	549	523	492	433	408	541	990
20 *d*	189	408	404	471	559	571	535	544	545	536	540	552	541	546	568	597	628	603	558	547	545	550	546	550	*526*	633
21	550	550	551	551	553	555	566	546	539	532	529	526	523	537	550	567	555	543	542	547	551	558	552	556	547	1129
22 *d*	556	555	559	558	558	566	569	550	566	561	555	519	535	552	558	562	534	558	556	564	577	565	566	558	557	1357
23	558	555	548	543	554	561	560	559	551	550	553	553	552	554	555	556	562	564	566	565	570	569	565	569	558	1392
24	569	566	560	561	561	573	554	547	574	573	563	568	533	534	543	548	548	551	575	536	553	559	561	583	558	1393
25	567	544	552	556	550	559	566	565	560	555	545	525	538	536	550	551	556	554	558	558	557	561	561	555	553	1279
26	557	559	557	561	568	576	572	570	567	562	568	564	562	537	555	549	550	551	539	546	548	551	553	560	558	1382
27	549	549	549	559	564	568	570	562	553	555	550	547	551	554	549	560	564	566	560	566	567	565	567	563	559	1407
28	578	555	556	557	562	569	568	567	563	552	549	546	548	553	553	549	549	560	555	553	548	554	559	563	557	1366
29	552	546	554	555	562	567	569	569	559	553	553	545	546	557	554	562	565	560	556	556	549	561	560	557	557	1367
30	562	564	560	561	560	568	569	567	560	555	550	550	553	558	561	560	559	562	566	566	567	564	559	562	561	1463
31 *q*	564	563	557	570	575	575	572	569	569	565	560	559	561	565	569	565	567	567	568	567	570	570	568	566	567	1601
Mean	*546*	550	549	555	562	567	566	563	561	556	554	551	552	554	557	560	561	567	*575*	565	561	558	555	553	558	
Sum 16,000+	917	1059	1030	1217	1409	1570	1558	1451	1399	1229	1170	1080	1105	1180	1282	1366	1389	1581	1829	1498	1395	1299	1189	1156		Grand Total 415,358

MAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

2 LERWICK (D) — 9° + — JANUARY 1961

	Hour G.M.T. 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 800·0+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	
1	41·5	40·0	39·2	39·8	41·9	44·9	47·8	41·9	43·0	43·4	43·5	42·9	43·8	43·9	42·7	41·9	42·5	42·3	41·8	41·3	40·9	41·0	41·0	40·9	42·2	213·8
2 *q*	41·1	41·0	41·1	41·3	41·3	41·3	40·9	40·3	40·9	41·7	41·7	41·7	43·2	43·6	42·8	42·5	42·5	42·3	41·7	41·1	40·3	40·0	40·9	42·8	41·6	198·0
3	41·7	40·8	40·1	39·5	40·3	40·3	41·1	42·5	43·9	44·9	43·6	43·2	43·8	43·7	42·3	41·9	42·0	42·8	43·0	41·9	40·9	40·8	41·0	41·7	42·0	207·7
4 *q*	41·6	41·7	41·7	41·5	41·5	41·6	40·6	40·6	41·9	42·9	43·4	43·4	43·1	44·0	44·0	44·9	43·9	43·8	43·2	41·9	41·6	41·3	41·6	41·7	42·4	217·4
5 *q*	42·5	42·5	42·5	42·5	42·0	41·5	41·1	40·9	41·1	41·7	42·9	43·8	44·8	44·4	43·4	43·2	43·0	42·7	42·6	43·5	40·5	37·1	38·7	40·6	42·1	209·5
6	41·8	42·6	42·9	43·6	39·8	40·6	39·8	40·6	42·6	45·1	45·0	45·7	49·7	47·0	45·5	43·7	42·9	42·5	43·6	42·6	41·7	40·8	40·6	40·3	43·0	231·0
7	39·7	38·4	40·1	32·1	36·5	38·2	39·9	41·0	42·1	43·9	44·9	44·9	46·3	46·3	46·0	46·3	44·4	43·2	42·9	42·5	42·2	42·6	41·9	39·8	41·9	206·1
8 *d*	34·4	32·9	28·6	30·4	30·3	35·3	38·6	40·6	40·6	41·6	43·6	46·1	48·4	49·6	51·5	50·4	47·6	47·3	49·7	39·8	39·9	41·6	39·9	33·9	40·9	182·6
9 *d*	38·9	39·9	40·8	42·5	42·2	41·5	42·6	46·5	46·4	48·7	45·9	43·8	47·3	47·6	52·3	55·0	53·2	54·6	61·1	42·6	37·9	33·7	17·8	28·7	*43·8*	251·5
10	36·2	39·5	40·3	40·2	40·6	40·9	41·0	41·0	41·9	43·5	44·8	45·0	46·3	46·2	45·6	43·8	42·0	41·7	41·1	41·0	40·1	38·6	40·1	40·5	41·7	201·9
11 *q*	41·1	40·9	40·1	40·0	40·0	41·0	40·9	40·5	40·7	41·1	41·6	42·8	42·8	42·9	42·5	41·9	41·3	41·5	41·3	41·1	41·0	40·9	41·0	41·3	41·3	190·2
12	41·7	41·8	42·0	41·9	39·4	40·3	40·8	40·6	40·7	40·7	41·6	44·0	44·0	44·4	43·6	42·8	43·7	43·0	43·7	41·9	38·3	37·2	40·1	40·3	41·6	198·5
13	39·5	38·1	40·3	39·6	39·5	39·2	39·8	40·0	39·9	43·5	44·9	45·9	47·3	50·2	46·7	45·1	44·7	43·8	42·8	43·9	43·7	41·5	40·1	41·6	42·6	221·6
14	37·8	39·0	38·6	39·7	39·6	40·9	40·9	41·1	41·1	41·5	41·6	42·8	43·9	44·8	44·5	43·9	43·9	42·5	45·3	45·1	44·7	40·1	34·0	33·1	41·3	190·4
15	34·7	36·7	37·7	35·2	35·3	38·7	40·1	41·4	42·3	41·8	43·4	44·2	45·6	45·5	45·6	43·5	42·5	41·5	42·6	41·8	40·6	32·9	6·5	15·9	38·2	116·0
16	36·9	41·0	39·9	40·3	43·7	43·6	48·2	44·5	43·0	41·7	42·0	42·5	43·5	43·8	42·6	41·6	41·1	41·4	41·8	42·1	42·8	42·2	41·0	41·1	42·2	212·3
17	40·8	42·3	43·6	40·3	39·8	41·5	41·7	42·9	42·6	42·0	41·9	41·9	42·7	44·7	43·8	42·9	42·0	40·0	40·2	41·0	40·6	40·5	40·5	37·8	41·6	198·0
18	38·7	42·0	41·1	40·1	40·7	41·6	42·0	41·6	41·4	44·5	45·1	46·1	47·7	53·5	46·9	46·0	44·9	43·5	42·7	40·1	30·0	39·4	36·2	32·3	42·0	208·1
19 *d*	38·3	39·2	41·5	40·5	41·2	41·5	41·1	40·9	41·1	41·1	41·9	42·8	43·7	44·5	44·9	41·0	39·2	35·4	41·0	15·8	23·0	26·1	23·4	15·1	*36·8*	84·2
20 *d*	5·1	29·6	32·9	22·7	37·8	37·7	42·1	40·7	42·1	41·1	43·0	44·5	44·9	49·6	45·3	44·5	44·8	40·2	34·2	39·0	39·4	39·1	40·1	40·0	38·3	120·4
21	40·6	40·6	39·9	41·7	46·8	40·9	42·8	43·8	47·8	46·7	48·7	44·9	45·6	42·8	44·4	46·3	39·9	40·1	39·3	39·4	39·0	39·0	38·7	40·1	42·5	219·8
22 *d*	40·1	40·1	41·8	41·1	40·0	40·0	43·4	48·3	46·4	43·0	45·0	44·9	47·7	44·1	44·0	43·4	31·9	40·0	39·3	38·2	35·3	39·0	37·7	38·6	41·4	193·3
23	38·0	39·9	38·9	41·0	40·0	39·7	40·5	41·1	41·3	42·0	42·5	44·4	45·0	44·5	43·4	42·8	41·1	42·2	42·0	43·0	42·4	41·5	41·2	37·7	41·5	196·1
24	39·6	35·3	38·5	40·1	42·0	44·1	47·8	48·8	44·2	43·9	46·1	46·1	45·4	46·9	45·9	47·3	45·1	39·4	23·8	41·3	41·1	39·9	40·6	41·1	42·3	214·3
25	34·0	34·6	39·3	39·2	43·5	42·5	41·2	41·6	41·2	41·3	43·1	43·4	46·1	47·3	46·1	45·5	43·4	41·3	39·4	41·3	41·3	40·2	39·0	38·4	41·4	194·2
26	39·4	40·5	41·1	41·3	41·9	41·7	42·3	42·2	42·1	43·2	44·5	42·1	47·1	45·1	48·8	46·1	44·2	40·5	37·5	37·6	38·4	32·4	39·1	39·6	41·6	198·7
27	41·5	43·0	43·1	40·7	41·2	41·6	42·3	42·3	41·3	44·2	42·9	44·4	44·9	45·9	43·0	43·8	43·8	42·5	40·1	42·0	42·1	41·5	40·3	41·0	42·5	219·4
28	41·6	38·0	37·8	39·4	40·5	41·3	42·0	42·1	42·5	42·3	42·5	45·0	46·1	47·4	44·2	47·1	42·3	45·3	26·8	35·7	36·3	36·5	38·2	36·9	40·7	177·8
29	40·2	39·4	42·3	40·3	42·3	42·1	42·3	42·6	42·1	41·3	42·9	45·1	46·1	46·4	41·3	41·3	41·3	43·4	44·0	42·3	35·8	37·8	40·3	39·2	41·8	202·1
30	41·3	42·3	43·2	43·2	45·0	41·5	41·3	41·0	41·1	41·3	42·3	44·2	45·3	45·1	44·0	43·1	43·2	43·4	43·4	42·3	42·1	41·7	41·0	40·3	42·6	222·6
31 *q*	42·0	40·3	43·4	42·3	41·3	41·3	41·3	41·3	41·3	40·6	41·3	42·5	44·9	45·3	45·3	44·0	43·6	44·1	44·1	42·8	42·9	42·3	41·9	41·3	42·6	221·4
Mean	38·5	39·5	40·1	39·5	40·6	40·9	41·9	42·1	42·3	42·8	43·5	44·0	45·4	*45·8*	44·9	44·4	43·0	42·5	41·5	40·5	39·6	39·0	37·6	*37·5*	41·6	
Sum 1100·0	92·3	123·9	144·3	124·0	157·9	168·8	198·2	205·2	210·6	226·2	248·1	265·0	307·0	321·0	292·9	277·5	231·9	218·2	186·0	155·9	126·8	109·2	64·4	63·6		Grand Total 30918·9

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) + — JANUARY 1961

	Hour G.M.T. 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 7000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1	345	319	312	319	319	312	299	302	302	326	333	337	334	334	338	339	340	338	334	334	332	331	333	334	327	846
2 *q*	334	334	334	334	334	332	331	327	327	329	331	330	329	333	337	338	337	336	334	334	334	331	329	321	332	970
3	325	325	325	325	327	326	323	324	325	321	323	324	324	327	331	334	340	340	338	339	335	330	329	328	329	888
4 *q*	329	330	331	332	331	329	325	327	326	323	325	326	325	326	332	335	336	336	333	332	328	327	323	325	329	892
5 *q*	324	325	327	327	327	327	327	326	325	327	326	324	325	325	327	329	329	329	329	332	348	347	339	331	329	902
6	325	322	322	313	312	316	315	316	317	316	317	320	319	324	328	331	331	335	338	335	334	332	331	329	324	778
7	331	332	321	315	325	321	321	323	324	320	321	322	319	324	333	336	340	337	334	332	329	327	328	325	327	840
8 *d*	300	308	303	304	312	308	304	317	321	327	328	327	329	334	345	365	381	473	514	496	402	364	347	337	352	1446
9 *d*	331	327	327	320	302	308	307	315	325	321	336	361	372	380	394	434	473	517	524	547	486	393	332	267	*375*	1999
10	295	330	338	338	337	336	337	336	336	341	341	340	339	334	334	335	338	334	334	336	339	336	334	331	335	1029
11 *q*	328	327	327	327	325	325	325	327	328	334	334	334	334	330	328	328	327	327	325	326	326	326	327	325	328	870
12	325	325	321	317	321	320	320	321	326	327	328	328	328	326	327	327	328	329	334	334	336	331	333	334	327	846
13	328	330	331	329	328	325	323	323	330	332	327	329	335	331	330	336	338	335	335	338	352	354	349	346	334	1014
14	343	339	334	332	329	325	324	325	327	327	330	329	329	328	329	330	329	331	329	335	347	356	364	355	334	1026
15	338	340	335	320	320	319	315	315	313	320	321	323	327	334	338	337	342	339	331	331	329	340	260	220	321	707
16	272	309	322	317	273	248	270	289	300	317	325	329	327	327	327	330	330	331	331	330	323	325	325	325	*313*	502
17	325	323	313	309	317	317	318	319	315	317	321	325	324	331	338	339	336	336	334	324	321	320	320	317	323	759
18	309	307	317	319	318	317	317	315	313	322	317	322	327	346	368	359	342	337	337	360	371	335	312	291	328	878
19 *d*	303	308	293	297	316	323	325	324	321	320	321	323	320	323	334	366	431	457	458	412	297	289	166	144	324	771
20 *d*	92	177	151	186	239	241	248	314	328	344	358	378	370	390	431	476	488	429	395	346	348	339	331	327	322	726
21	327	325	327	318	292	285	303	319	323	329	332	341	358	352	346	363	435	403	374	355	344	334	334	329	339	1148
22 *d*	328	323	316	319	325	325	324	325	313	319	325	340	339	338	339	340	389	359	356	340	325	325	323	317	332	972
23	295	288	302	300	297	309	319	323	327	328	329	327	327	327	332	335	335	334	334	334	332	332	331	327	322	724
24	311	301	310	309	308	301	307	307	301	312	319	332	341	345	342	350	358	375	354	357	344	338	327	297	327	846
25	249	273	303	309	300	273	301	312	320	323	331	345	346	358	352	340	336	339	338	332	334	332	327	331	321	704
26	323	315	319	318	313	309	313	314	320	321	326	329	334	354	346	348	357	354	358	352	347	336	323	315	331	944
27	319	307	309	319	320	317	317	320	325	327	330	330	334	336	340	334	335	332	339	331	328	327	324	325	326	825
28	289	288	300	312	317	317	320	321	325	328	329	330	329	338	345	349	348	347	367	346	348	334	320	315	328	862
29	326	322	319	320	321	322	320	320	326	329	328	327	323	333	345	341	340	342	353	359	350	328	322	319	331	935
30	322	321	324	317	312	310	316	319	323	326	326	324	324	327	328	330	328	326	323	321	320	322	326	326	323	741
31 *q*	323	320	320	308	316	319	319	319	319	321	324	323	323	326	326	328	330	329	326	326	322	320	322	323	322	732
Mean	*310*	313	314	314	314	312	314	319	321	325	328	332	333	337	342	347	356	*357*	356	352	342	334	322	314	329	
Sum 9000+	614	720	733	729	733	662	733	884	951	1074	1162	1279	1314	1441	1590	1762	2027	2066	2043	1906	1611	1361	991	736		Grand Total 245,122

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

4 LERWICK — JANUARY 1961

	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. ′	′ h. m.	′	h. m.	γ	γ	h. m.	γ			°A.
1	09 09	575	527	00 37	48	06 19 49·7	37·3 02 08	12·4	00 10	355	286	06 54	69	2,2,2,1,1,1,0,1	10	0	80·0
2 *q*	07 29	571	547	11 35	24	23 18 44·6	37·8 21 50	6·8	16 50	340	317	23 38	23	0,0,0,1,1,1,1,2	6	0	80·0
3	06 29	572	549	17 01	23	09 31 44·9	38·6 03 01	6·3	17 07	342	319	09 08	23	1,1,1,1,1,1,1,1	8	0	80·3
4 *q*	20 05	576	556	16 30	*20*	15 13 46·1	39·8 06 54	6·3	16 48	338	321	22 33	17	0,0,1,1,1,1,1,1	6	0	80·2
5 *q*	05 33	574	544	21 35	30	12 58 45·4	35·1 21 51	10·3	20 47	356	321	11 12	35	0,0,0,1,1,0,2,2	6	0	79·9
6	06 56	578	550	11 41	28	12 28 51·2	38·9 04 20	12·3	17 52	338	303	03 54	35	0,2,2,1,2,1,1,1	10	0	79·7
7	21 04	578	523	02 30	55	15 13 47·5	30·4 03 19	17·1	16 25	340	300	02 58	40	3,2,1,1,2,1,1,2	13	0	79·3
8 *d*	18 42	822	509	01 24	313	18 36 63·9	26·0 02 36	37·9	19 02	556	288	00 11	268	3,3,2,2,2,5,6,3	26	1	79·2
9 *d*	18 30	*833*	449	23 35	384	18 24 *74·3*	-0·8 22 45	*75·1*	19 12	*563*	240	23 31	323	2,3,3,3,3,5,6,5	30	1	79·2
10	21 12	560	527	00 00	33	12 42 47·3	34·0 00 13	13·3	10 01	344	268	00 03	76	3,0,0,1,1,1,0,2	8	0	79·1
11 *q*	07 01	566	544	12 00	22	11 48 43·2	39·8 03 07	*3·4*	10 28	335	323	06 35	*12*	1,1,0,0,0,0,0,1	3	0	77·9
12	21 07	581	552	11 01	29	18 34 44·9	32·7 20 53	12·2	20 47	340	314	03 38	26	0,2,1,0,0,1,3,3	10	0	78·0
13	19 11	583	533	12 46	50	13 29 51·3	36·4 01 03	14·9	20 52	360	322	07 22	38	2,0,2,2,2,2,2,3	15	0	78·3
14	24 00	575	539	22 10	36	19 58 46·9	31·1 23 01	15·8	22 16	374	322	07 00	52	1,1,0,0,0,1,2,3	8	0	78·2
15	22 12	624	446	23 02	178	11 57 49·1	-10·0 22 01	59·1	22 02	379	195	23 28	184	2,2,2,2,2,2,0,5	17	0	78·9
16	05 10	594	534	07 07	60	06 51 49·5	30·3 00 00	19·2	18 58	336	240	05 20	96	3,3,3,1,0,0,2,1	13	0	78·9
17	23 51	593	545	14 10	48	13 49 46·5	32·3 23 52	14·2	15 50	340	303	23 54	37	2,1,1,1,1,2,1,2	11	0	78·3
18	08 07	588	507	14 33	81	13 48 57·0	22·5 20 16	34·5	20 12	392	287	23 02	105	3,1,2,2,3,2,4,3	20	0	78·6
19 *d*	18 38	608	363	22 03	245	16 47 52·7	*-17·5* 19 51	70·2	17 39	492	124	22 24	368	3,3,1,1,2,5,6,6	27	1	78·9
20 *d*	17 27	816	*21*	00 26	*795*	13 10 52·7	-6·9 00 01	59·6	17 26	538	*44*	00 20	*494*	7,6,4,3,4,6,4,2	36	2	78·9
21	16 28	589	516	12 42	73	10 39 51·1	35·7 16 50	15·4	16 43	454	268	04 51	186	1,3,2,2,3,4,3,2	20	0	79·0
22 *d*	20 19	603	503	11 36	100	12 40 52·5	22·2 16 40	30·3	16 38	403	285	23 57	118	1,1,3,3,3,4,3,3	21	0	78·9
23	23 33	574	534	02 59	40	13 05 45·5	35·3 00 09	10·2	17 43	340	287	01 36	53	2,2,1,1,1,2,1,1	11	0	78·7
24	18 23	611	526	12 33	85	06 52 51·5	5·8 18 19	45·7	18 10	394	263	23 59	131	3,2,3,2,2,3,5,3	23	0	78·7
25	00 45	592	520	11 30	72	04 47 52·8	29·8 00 41	23·0	13 20	364	234	00 46	130	3,3,2,3,3,2,2,1	19	0	78·3
26	05 45	580	525	13 11	55	14 49 49·9	27·9 21 33	22·0	18 50	364	309	05 42	55	1,1,1,2,2,3,2,3	15	0	78·3
27	17 45	573	541	14 17	32	01 59 47·1	36·5 18 24	10·6	18 17	342	303	01 08	39	2,1,2,2,2,1,2,1	13	0	78·3
28	00 31	599	528	19 52	71	13 40 49·1	13·1 18 40	36·0	18 27	388	261	00 52	127	3,1,1,2,2,3,4,2	18	0	78·7
29	21 35	573	538	12 13	35	12 45 47·7	31·8 20 01	15·9	19 59	368	317	02 55	51	2,1,1,1,2,2,3,2	14	0	78·8
30	06 36	571	543	11 02	28	04 31 47·6	39·1 00 00	8·5	15 32	331	304	04 57	27	2,2,1,1,0,0,0,1	7	0	78·6
31 *q*	06 15	577	550	02 35	27	01 53 46·0	39·4 01 34	6·6	16 35	330	304	03 15	26	2,1,0,0,0,0,1,0	4	0	78·6
Mean	- -	607	506	- -	101	- - 50·0	26·6 - -	23·4	- -	382	277	- -	105	-	-	0·16	78·8

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

TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

1 LERWICK (H) — 14,000γ (0·14 C.G.S. unit) + — FEBRUARY 1961

	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 12,000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1 *q*	569	569	565	565	566	570	572	571	569	564	558	554	558	562	565	564	565	562	563	568	569	568	570	569	566	1575
2 *q*	568	568	571	572	572	575	574	572	570	566	563	562	563	567	565	564	565	567	571	572	570	569	567	568	568	1641
3	567	567	566	570	571	572	572	570	566	562	554	562	572	582	570	560	567	567	573	575	575	569	566	559	568	1634
4 *d*	561	562	564	564	564	564	564	571	572	563	557	558	557	579	581	565	587	697	886	818	583	422	282	143	561	1464
5	346	443	527	443	322	479	523	514	487	497	509	515	532	530	527	523	524	534	537	539	538	540	542	542	*501*	13
6	540	549	549	552	552	560	570	571	550	544	539	538	539	556	563	556	549	554	552	553	545	546	532	549	550	1208
7	549	538	543	546	542	540	546	548	542	536	531	530	539	553	560	571	558	559	556	559	556	557	556	543	548	1158
8	546	546	551	547	549	552	553	550	549	547	545	547	553	554	566	563	551	562	566	547	557	553	562	556	553	1272
9	549	555	558	553	553	553	562	559	555	545	540	541	545	556	564	561	560	560	560	562	561	562	559	556	555	1329
10	559	557	556	555	555	558	556	555	556	559	557	555	555	555	559	560	563	567	567	564	558	564	559	558	559	1407
11	555	555	557	557	562	567	574	570	567	572	561	537	539	547	551	553	557	559	560	560	552	556	559	563	559	1410
12 *q*	563	562	562	564	565	569	567	565	561	555	552	555	555	557	559	560	559	562	564	566	566	566	565	564	562	1483
13	568	569	570	574	577	577	578	579	565	521	480	494	529	548	558	596	652	567	543	540	548	551	546	553	558	1383
14	554	555	557	558	560	562	559	557	554	547	543	545	549	551	556	555	555	562	563	564	550	551	549	554	555	1310
15	555	555	558	560	563	568	564	568	566	556	550	541	544	555	558	552	552	557	560	563	562	564	566	567	559	1404
16 *d*	567	574	570	571	578	578	580	574	546	539	516	526	552	559	545	543	540	544	547	546	536	549	552	552	553	1284
17 *d*	555	558	554	555	557	559	563	568	562	551	537	539	534	556	550	547	555	558	556	567	571	459	346	316	532	773
18 *d*	821	646	285	539	523	533	515	555	549	527	513	536	551	584	573	565	552	585	578	548	552	558	558	562	555	1308
19	559	551	554	555	558	562	558	556	548	550	536	546	543	536	561	567	542	559	547	559	558	564	565	560	554	1294
20 *d*	561	566	536	537	551	552	562	569	555	529	525	535	543	539	563	595	569	562	556	557	547	553	552	545	552	1259
21	553	541	543	539	551	563	565	553	549	548	543	533	539	547	561	573	568	575	574	552	526	537	530	540	550	1203
22	540	554	546	538	557	570	570	560	562	555	541	539	541	545	558	563	559	556	558	563	563	570	564	559	555	1331
23	561	556	560	564	567	562	558	561	561	549	539	537	540	543	557	559	555	562	566	568	583	560	561	566	558	1395
24	562	564	566	565	567	546	563	562	559	551	542	542	544	555	559	561	562	563	564	564	564	564	564	565	559	1418
25 *q*	564	564	562	563	566	567	567	569	564	550	541	543	550	558	564	564	564	566	569	573	573	568	574	566	563	1509
26 *q*	562	565	564	562	567	569	571	573	568	555	545	542	547	554	563	565	562	564	569	571	573	570	568	571	563	1520
27	573	571	571	569	566	582	577	573	569	560	554	552	555	561	573	574	570	570	574	575	574	574	570	570	*569*	1657
28	571	563	556	555	561	571	574	573	562	564	553	551	548	561	559	560	561	570	568	569	552	561	555	563	562	1481
Mean	561	558	547	554	551	560	563	563	557	549	540	541	547	555	560	562	561	567	*573*	570	559	551	541	*535*	555	
Sum 14,000+	1698	1623	1321	1512	1442	1680	1757	1766	1583	1362	1124	1155	1316	1550	1688	1739	1723	1870	2047	1962	1662	1425	1139	979		Grand Total 373,123

MAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

2 LERWICK (D) — 9° + — FEBRUARY 1961

	Hour G.M.T. 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 800·0+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	
1 *q*	40·3	39·3	39·5	40·2	41·2	41·5	41·9	41·8	41·7	42·2	42·3	43·4	44·9	44·9	43·9	44·6	45·1	46·0	45·3	45·3	43·8	43·1	42·3	42·1	42·8	226·6
2 *q*	41·8	42·2	42·0	42·1	42·4	42·2	41·8	41·3	41·3	41·8	42·4	43·6	44·2	44·7	43·8	43·5	43·7	43·5	43·2	43·0	42·5	41·7	42·3	41·5	42·6	222·5
3	41·4	41·5	42·1	41·4	41·3	40·2	40·5	40·8	42·5	44·9	46·6	50·9	52·1	56·7	57·3	45·0	47·1	49·9	45·2	44·1	43·4	42·3	40·3	39·1	*44·9*	276·6
4 *d*	38·0	39·4	38·9	39·4	40·1	39·2	40·1	40·2	42·3	43·7	45·3	46·2	46·6	50·1	54·4	53·0	54·2	55·5	45·9	34·1	51·6	32·7	38·9	−0·9	42·0	208·9
5	13·4	31·1	39·9	33·8	30·4	29·8	32·2	40·3	44·0	43·2	43·3	44·1	45·1	45·2	42·5	39·9	40·0	41·0	40·6	40·3	39·7	39·4	40·0	40·3	38·3	119·5
6	40·2	40·6	40·1	39·8	39·9	40·3	40·2	41·3	40·3	42·2	41·8	43·2	43·1	46·2	46·1	48·9	43·2	44·2	43·4	43·5	40·1	34·6	35·7	40·5	41·6	199·4
7	40·2	36·1	33·1	35·5	34·8	39·4	37·3	38·4	40·2	42·3	43·6	45·6	48·4	48·5	47·1	45·3	44·7	45·1	44·4	42·3	42·7	42·3	39·4	33·2	41·2	189·9
8	34·6	34·1	36·9	39·1	38·4	39·8	39·6	40·3	40·8	41·5	43·2	45·1	46·7	46·1	47·1	47·1	45·6	43·6	45·1	41·3	45·5	39·8	36·5	39·3	41·5	197·1
9	39·8	34·9	34·3	36·5	38·9	38·6	39·4	39·9	41·3	41·8	42·9	44·9	45·9	47·1	46·8	46·2	44·7	43·6	44·3	43·2	43·2	42·0	40·9	36·3	41·6	197·4
10	40·9	38·4	38·6	39·9	39·9	40·5	40·2	39·9	40·2	41·1	42·5	43·7	44·9	45·1	45·1	44·0	43·3	43·5	44·5	44·6	43·3	42·6	41·3	38·7	41·9	206·7
11	37·3	37·8	39·4	40·3	39·1	40·1	40·2	41·2	40·7	41·7	45·3	47·8	48·8	48·0	46·3	44·2	42·9	41·7	41·3	41·7	37·9	38·1	40·2	41·3	41·8	203·3
12 *q*	42·4	42·3	42·5	41·8	41·3	39·6	40·1	39·9	39·6	39·9	41·6	43·6	44·2	44·2	43·2	42·5	42·1	42·2	42·5	42·3	42·2	41·1	39·5	40·5	41·7	201·1
13	42·3	42·7	42·7	42·7	42·3	42·6	41·8	41·8	41·5	39·2	46·1	51·4	50·4	49·7	46·5	50·9	44·9	47·3	37·7	38·8	41·2	40·6	39·2	39·9	43·5	244·2
14	40·9	41·9	40·3	40·1	40·3	40·1	39·9	39·6	39·4	40·1	41·3	42·3	43·2	43·3	43·0	42·3	42·3	42·9	42·8	42·7	37·7	37·7	38·4	33·6	40·7	176·1
15	38·2	41·1	40·6	41·3	41·9	41·8	41·9	40·7	40·8	41·5	42·9	44·4	43·5	44·5	44·2	43·0	42·3	41·7	41·3	41·1	39·8	40·8	41·3	41·5	41·8	202·1
16 *d*	42·6	41·1	37·5	38·4	38·9	40·6	41·8	44·0	45·9	45·6	40·8	46·8	54·2	48·3	49·5	50·8	43·5	38·6	41·1	40·3	34·5	36·3	40·2	40·1	42·6	221·4
17 *d*	40·4	40·3	41·3	41·2	40·8	40·8	40·8	40·8	40·3	40·5	43·6	46·4	47·0	43·1	47·0	43·6	43·7	42·1	42·5	37·2	33·0	24·7	2·1	5·5	37·9	108·7
18 *d*	24·5	17·3	10·4	33·8	37·7	42·5	46·1	41·7	43·0	43·5	43·0	44·2	46·9	41·3	43·7	44·8	41·7	19·5	29·0	41·1	41·2	40·3	38·4	37·7	*37·2*	93·3
19	35·5	36·0	38·6	40·5	40·8	40·8	42·1	43·6	45·1	44·2	44·0	47·6	48·2	45·6	45·5	45·9	39·7	42·5	32·5	33·6	40·6	41·3	40·6	37·3	41·3	192·1
20 *d*	36·3	31·7	37·3	41·1	38·2	41·1	41·1	43·4	43·4	43·4	44·4	46·1	48·9	42·6	46·3	51·7	31·7	43·2	36·0	28·2	34·0	32·0	38·2	35·9	39·8	156·2
21	40·9	42·7	44·0	44·9	44·4	41·9	41·5	40·9	40·7	41·3	41·6	44·4	46·5	45·1	41·6	46·3	43·7	34·0	29·3	35·3	34·1	26·9	35·5	39·3	40·3	166·8
22	42·5	42·3	42·7	49·7	41·6	39·9	40·7	41·3	41·1	42·3	42·8	44·6	46·1	48·0	47·4	43·4	37·2	37·9	42·6	42·4	38·8	33·6	43·8	41·1	42·2	213·8
23	35·3	38·6	40·2	40·2	40·3	42·4	43·2	44·0	40·8	39·4	40·5	42·5	46·3	46·1	46·3	45·9	42·7	42·5	42·6	41·5	30·5	39·7	38·3	38·4	41·2	188·2
24	39·4	42·5	40·9	40·1	38·7	45·5	47·7	42·0	38·8	38·6	39·8	42·0	44·3	44·9	44·6	43·2	41·8	41·3	41·7	41·7	41·5	40·7	41·2	41·3	41·8	204·2
25 *q*	41·3	41·3	41·2	41·5	40·9	40·6	40·3	40·0	39·6	39·9	41·2	43·0	45·6	46·0	45·1	44·1	42·9	42·6	42·4	42·3	41·4	41·3	37·9	38·4	41·7	200·8
26 *q*	38·2	38·1	38·8	41·3	39·9	39·4	39·5	39·4	39·2	38·7	40·3	43·0	45·4	46·4	47·1	45·6	44·3	44·0	44·0	42·5	41·1	41·3	40·5	41·1	41·6	199·1
27	41·3	41·8	41·5	44·4	40·1	36·5	37·5	39·2	38·2	39·0	42·2	44·9	49·0	49·3	49·0	47·5	44·4	43·7	44·0	42·5	42·0	41·7	41·0	40·7	42·6	221·4
28	36·9	33·6	33·0	34·5	38·6	37·5	38·0	37·9	37·7	41·1	43·7	45·9	49·0	49·6	48·0	45·9	43·3	42·9	42·5	38·7	37·2	34·3	34·6	38·0	40·1	162·4
Mean	38·1	38·2	38·5	40·2	39·7	40·2	40·6	40·9	41·1	41·6	42·8	45·1	*46·8*	46·5	46·4	45·7	43·1	42·4	41·4	40·6	40·2	38·3	38·2	*36·5*	41·4	
Sum 1000·0+	66·8	70·7	78·3	125·5	113·1	125·2	137·4	145·6	150·4	164·6	199·0	261·6	309·4	300·6	298·4	279·1	206·7	186·5	157·7	135·6	124·5	72·9	68·5	21·7		Grand Total 27799·8

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) + — FEBRUARY 1961

	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	
1 *q*	320	319	321	322	321	320	319	318	318	320	322	323	321	323	324	326	326	332	333	328	328	331	330	326	324	1771
2 *q*	326	325	322	321	320	320	319	318	314	314	318	319	320	322	321	322	322	323	321	320	320	320	320	319	320	1686
3	318	318	319	319	319	319	318	317	315	311	317	311	312	315	344	337	325	333	333	330	326	325	323	323	322	1727
4 *d*	323	319	321	323	323	323	321	317	313	313	315	314	314	318	340	376	374	459	488	206	289	407	434	276	338	2106
5	133	211	306	305	176	214	279	293	313	328	335	338	332	334	338	340	340	338	338	336	337	334	332	332	303	1262
6	331	332	333	337	334	332	329	324	330	328	333	332	332	330	345	417	394	354	346	351	360	364	357	344	345	2269
7	325	318	316	324	323	313	308	319	325	332	337	335	331	331	337	339	341	343	338	338	345	363	357	314	331	1952
8	313	324	335	337	333	332	331	333	332	332	332	332	333	335	337	350	345	338	340	363	351	353	343	335	337	2089
9	332	330	310	313	321	321	313	323	329	334	335	337	337	333	333	342	342	338	336	336	336	334	335	336	331	1936
10	330	315	319	322	324	324	326	327	325	323	324	329	330	330	329	329	329	325	330	338	352	352	347	343	330	1922
11	337	329	324	292	312	316	316	321	322	320	320	320	327	326	329	329	328	324	324	326	331	329	323	322	323	1747
12 *q*	322	323	322	320	320	317	317	319	322	323	324	324	323	326	326	327	327	324	321	320	320	322	322	322	322	1733
13	319	320	320	317	315	313	311	311	314	328	335	319	328	366	367	432	515	466	432	381	344	330	328	321	*351*	2432
14	327	328	332	330	328	326	325	322	323	327	328	330	329	332	332	332	333	328	326	327	346	340	326	285	328	1862
15	292	308	319	321	322	319	318	318	318	319	318	324	325	327	332	338	333	331	327	323	320	319	318	314	321	1703
16 *d*	312	286	285	294	302	306	305	304	304	302	318	328	353	382	388	372	395	390	360	347	354	338	326	324	332	1975
17 *d*	317	312	321	327	327	327	324	320	320	319	316	317	329	331	335	340	343	353	391	384	357	239	103	-21	305	1331
18 *d*	-36	-106	37	161	241	267	280	290	308	326	341	360	348	393	367	360	367	385	345	345	334	329	327	319	*279*	688
19	296	306	311	318	320	321	320	318	320	320	321	320	347	342	331	341	357	342	360	340	328	325	322	314	327	1840
20 *d*	302	274	292	266	278	300	311	314	324	332	335	328	340	362	339	367	417	357	371	357	346	316	258	273	323	1759
21	286	286	285	297	300	305	312	318	323	327	329	332	334	347	353	341	372	373	347	352	332	313	304	306	324	1774
22	294	305	304	274	280	300	306	314	320	325	327	328	327	329	341	370	367	353	334	330	330	322	290	246	317	1616
23	254	289	304	312	309	310	305	304	308	316	317	322	322	325	327	333	333	329	327	328	326	319	324	313	315	1556
24	300	293	301	308	306	286	273	296	313	321	325	320	314	316	320	320	320	322	321	322	320	322	321	320	312	1480
25 *q*	320	320	320	318	317	318	318	318	321	325	320	318	314	314	314	315	317	317	314	315	317	320	312	312	317	1614
26 *q*	312	302	308	314	314	315	314	314	315	319	320	319	318	314	315	321	321	320	320	319	320	320	322	318	316	1594
27	316	316	314	305	300	293	301	306	312	313	310	308	308	313	316	322	321	318	318	315	315	315	318	316	312	1489
28	305	297	306	303	294	294	302	306	308	301	306	307	311	316	322	326	320	318	320	328	335	310	310	317	311	1462
Mean	294	*293*	304	307	306	309	311	314	318	321	324	325	327	333	336	345	*351*	348	345	332	333	329	319	303	322	
Sum 8000+	226	199	507	600	579	651	721	802	909	998	1078	1094	1159	1332	1402	1664	1824	1733	1661	1305	1319	1211	932	469		Grand Total 216,375

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

4 LERWICK — FEBRUARY 1961

	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.	′	′	h. m.	′		h. m.	γ	γ	h. m.	γ						
1 *q*	00 53	579		552	11 44	27		17 16	46·4	38·3	00 41	8·1		18 15	339	314	00 53	25		1,1,0,1,1,1,2,1	8	0		78·7
2 *q*	05 55	576		561	11 39	*15*		13 52	45·6	40·6	21 24	*5·0*		00 23	327	312	09 18	15		0,0,0,0,1,0,0,1	2	0		78·2
3	14 19	591		545	10 25	46		14 17	66·0	36·6	23 51	29·4		14 58	355	308	10 52	47		0,0,1,2,3,2,2,2	12	0		78·2
4 *d*	18 29	*979*		-237	22 47	*1216*		19 54	*95·4*	*-42·7*	23 34	*138·1*		22 51	*640*	-22	20 04	662		1,1,1,1,3,6,7,8	28	2		78·0
5	23 50	547		225	04 23	322		13 01	46·7	-7·6	00 28	54·3		15 37	344	19	00 03	325		6,6,4,3,2,2,1,1	25	1		78·0
6	06 51	594		525	16 04	69		15 24	56·6	29·7	22 09	26·9		15 38	460	315	07 16	145		2,2,3,2,2,4,3,3	21	1		78·0
7	22 41	575		525	11 09	50		22 02	54·0	24·0	23 05	30·0		22 16	384	298	06 07	86		3,3,2,1,2,1,1,4	17	0		78·0
8	15 09	576		540	19 32	36		13 07	48·0	31·7	22 01	16·3		19 33	369	301	00 02	68		3,1,1,1,1,2,3,3	15	0		78·1
9	14 53	571		538	11 10	33		13 26	48·0	29·4	01 43	18·6		15 50	349	302	02 49	47		3,2,2,1,2,1,0,2	13	0		78·2
10	18 07	570		547	00 17	23		19 53	46·2	37·0	23 57	9·2		20 49	358	311	01 23	47		2,0,1,0,1,0,2,2	8	0		78·8
11	03 07	590		533	11 36	57		12 01	49·4	36·1	00 40	13·3		00 14	341	280	03 28	61		2,2,1,2,1,1,2,2	13	0		78·9
12 *q*	05 40	571		549	10 11	22		11 36	45·3	38·6	05 35	6·7		16 42	329	315	05 45	*14*		0,1,0,1,1,0,0,1	4	0		78·9
13	16 18	840		463	10 42	377		16 20	66·3	35·2	16 35	31·1		16 19	581	305	07 55	276		1,0,3,3,3,6,4,2	22	1		78·9
14	18 23	571		539	23 56	32		20 10	44·7	22·9	23 18	21·8		20 53	362	275	23 48	87		1,0,1,1,1,1,3,3	11	0		79·2
15	05 49	572		535	11 38	37		14 25	45·3	35·4	00 10	9·9		15 16	339	283	00 00	56		3,1,1,2,1,1,1,1	11	0		79·2
16 *d*	07 05	591		485	10 58	106		12 43	57·7	31·9	21 05	25·8		16 38	404	274	01 35	130		3,3,3,3,3,3,3,3	24	0		79·0
17 *d*	20 37	629		-4	24 00	633		12 14	51·5	-15·8	24 00	67·3		19 02	414	-86	23 59	500		2,0,1,3,3,3,4,7	23	1		79·0
18 *d*	17 55	641		*-257*	00 29	898		00 59	77·2	-22·6	00 03	99·8		17 35	436	*-318*	00 57	*754*		8,5,3,3,3,6,4,2	34	2		79·4
19	15 32	584		516	16 07	68		12 39	50·6	22·9	18 59	27·7		12 48	369	286	00 38	83		2,2,2,2,3,3,4,2	20	0		79·3
20 *d*	15 17	618		513	13 04	105		15 41	56·9	19·5	21 26	37·4		16 04	454	245	22 52	209		3,3,3,3,4,5,4,4	29	0		79·4
21	17 45	629		504	21 52	125		16 08	50·0	16·3	17 42	33·7		17 34	401	280	00 59	121		2,2,2,2,3,5,3,4	23	0		79·5
22	21 33	592		529	03 08	63		03 26	53·1	29·3	21 33	23·8		15 26	379	240	23 33	139		2,3,2,2,2,3,2,4	20	0		79·2
23	20 26	602		532	11 02	70		12 11	48·7	21·9	20 21	26·8		20 07	337	240	00 11	97		3,2,2,1,2,2,4,2	18	0		79·2
24	04 27	575		537	12 19	38		05 55	49·8	34·9	00 03	14·9		10 43	327	261	06 08	66		2,3,3,1,1,1,1,1	13	0		79·2
25 *q*	22 42	586		532	10 56	54		12 56	46·4	34·3	22 47	12·1		09 35	327	306	22 47	21		0,0,0,1,0,0,2,3	6	0		79·2
26 *q*	20 30	577		541	11 14	36		14 46	47·5	36·8	02 04	10·7		15 48	325	298	01 53	27		1,1,0,1,1,1,2,1	8	0		79·2
27	15 14	608		546	11 16	62		15 11	54·2	34·2	05 45	20·0		15 31	327	288	05 23	39		1,3,2,2,2,3,1,0	14	0		79·2
28	17 52	579		541	11 54	38		13 14	51·1	27·5	20 03	23·6		20 01	352	283	04 53	69		2,2,1,2,2,2,3,3	17	0		79·2
Mean	- -	611		445	- -	166		- -	53·5	23·4	- -	30·1		- -	383	233	- -	151		-	-	0·29		78·8

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

TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

1 LERWICK (H) — 14,000γ (0·14 C.G.S unit) + — MARCH 1961

	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+
	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	563	563	564	564	561	564	569	566	561	555	546	547	542	544	560	563	563	568	574	573	565	562	559	555	560	2451
2	564	559	561	568	556	546	570	578	567	565	557	548	548	555	558	566	566	569	571	570	566	566	562	552	562	2488
3 q	557	577	564	568	571	573	574	574	566	554	547	545	550	552	562	560	568	574	576	579	578	576	575	576	567	2596
4 q	578	576	576	578	580	577	575	574	570	561	552	552	564	568	563	557	566	571	572	574	574	573	572	573	570	2676
5	573	574	573	571	575	577	579	576	571	559	548	545	553	561	571	570	575	570	575	578	571	443	230	88	529	1706
6 d	-74	84	226	354	484	542	539	529	513	517	537	565	563	597	581	549	547	552	551	553	556	557	559	557	*481*	538
7 q	561	560	563	562	562	560	560	559	558	552	546	544	549	555	565	567	571	568	571	571	566	556	567	559	561	2452
8 q	556	565	561	559	560	564	564	564	555	547	542	541	548	556	568	569	569	566	568	572	571	568	556	564	561	2453
9	564	562	560	564	564	561	568	558	559	553	545	542	546	566	580	581	567	582	572	575	570	575	571	579	565	2564
10 d	569	557	555	567	570	567	586	566	499	463	442	501	586	515	515	518	528	532	549	550	552	548	546	545	539	1926
11	542	541	547	550	550	552	553	550	545	539	535	533	536	545	550	550	557	554	560	560	554	552	553	552	548	2160
12	545	531	550	553	557	559	559	557	556	552	541	540	539	547	546	556	556	560	563	565	564	562	562	553	553	2273
13	553	552	550	555	560	567	571	565	550	551	547	539	539	541	558	546	559	562	567	572	567	566	567	571	557	2375
14 d	564	539	549	543	568	575	564	539	550	546	522	512	534	541	552	567	577	595	587	564	564	574	565	562	556	2353
15 d	559	563	566	563	535	560	571	564	559	539	519	536	553	577	589	557	556	557	560	571	572	592	554	522	558	2394
16	496	515	511	546	549	552	555	506	544	543	541	544	536	555	563	574	561	555	564	567	569	569	570	570	548	2155
17	571	568	565	568	567	572	569	542	559	536	541	540	545	541	558	554	566	564	564	571	569	569	570	568	560	2437
18	566	564	557	562	565	571	570	565	554	540	535	537	543	554	550	576	582	568	568	559	567	570	586	564	561	2473
19 d	567	568	571	573	582	534	520	549	551	539	530	525	529	555	536	574	616	667	569	558	572	555	567	548	561	2455
20	536	546	556	557	559	561	564	560	554	527	499	518	529	539	533	551	554	564	564	593	586	559	561	561	551	2231
21	553	553	547	553	557	571	576	571	564	552	545	537	533	540	550	561	565	572	568	559	564	565	568	569	558	2393
22	568	566	552	567	562	555	563	552	545	556	550	540	531	542	553	559	567	571	572	571	571	571	569	569	559	2422
23	569	568	566	564	563	567	564	562	554	546	534	532	546	552	564	565	566	575	568	573	575	571	576	572	562	2492
24	571	568	571	572	570	567	568	568	560	553	548	529	540	556	567	570	557	568	568	573	575	571	578	576	564	2544
25 q	570	568	569	569	569	570	571	568	560	550	542	537	546	553	547	563	572	574	579	582	579	579	579	583	566	2579
26	577	576	575	573	576	575	577	572	566	553	537	542	557	546	556	561	567	571	575	578	578	583	574	570	567	2615
27	579	578	578	578	581	581	574	575	563	545	536	539	536	545	569	607	677	666	578	634	622	571	558	560	*580*	2930
28	557	560	561	526	529	541	550	549	538	531	529	526	536	542	550	571	565	565	568	562	562	566	566	568	551	2218
29	566	568	568	565	565	568	566	561	553	546	530	529	537	541	555	564	573	576	588	586	592	570	575	574	563	2516
30	571	566	543	525	573	569	562	552	532	540	528	529	536	542	560	564	570	564	566	570	573	574	573	573	556	2355
31	573	574	576	576	577	580	582	574	557	541	529	525	530	541	553	581	577	588	591	597	594	591	591	592	570	2690
Mean	541	545	549	555	561	564	566	559	553	544	*535*	536	544	551	557	564	570	*574*	570	573	572	565	557	549	556	
Sum 16,000+	764	909	1031	1193	1397	1478	1533	1345	1133	851	580	619	860	1064	1282	1471	1660	1788	1666	1760	1738	1504	1259	1025		Grand Total 413,910

MAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

2 LERWICK (D) — 9° + — MARCH 1961

	Hour G.M.T. 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 800·0
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	
1	40·0	41·1	41·1	39·7	41·7	41·4	39·2	39·3	38·9	39·7	42·1	46·1	48·0	47·1	46·5	44·3	43·1	42·9	43·5	43·2	40·9	42·3	40·6	34·4	42·0	207·1
2	35·5	34·4	35·6	35·1	36·0	39·4	40·3	39·1	39·5	39·7	41·4	43·2	44·9	45·4	45·0	43·8	43·4	43·5	42·9	41·2	40·3	42·8	37·9	33·6	40·2	163·9
3 q	36·2	34·9	36·7	38·9	40·5	40·5	40·3	39·8	39·3	38·9	41·3	44·9	46·6	45·7	45·4	43·8	43·2	43·5	43·5	43·4	43·0	42·3	41·6	41·3	41·5	195·5
4 q	41·3	41·3	41·3	41·3	41·1	40·9	40·3	40·1	39·6	39·3	41·1	43·9	47·3	48·1	47·1	45·4	43·5	43·0	43·1	42·5	42·1	41·5	41·4	41·0	42·4	217·5
5	40·0	40·3	41·1	41·3	38·7	39·3	39·6	39·5	39·2	39·6	42·1	45·4	47·0	46·1	46·4	45·7	44·5	44·9	44·9	45·3	40·1	31·4	5·8	7·0	39·0	135·2
6 d	-13·9	-10·7	-6·6	6·5	24·6	34·0	47·3	48·8	46·7	48·3	48·0	48·8	50·4	55·0	51·7	48·0	45·4	44·1	43·9	43·0	42·5	42·1	40·6	40·3	*36·2*	68·8
7 q	40·2	39·9	40·1	39·8	39·2	39·0	39·1	39·1	39·2	40·1	41·2	42·3	45·3	46·1	45·9	45·3	44·2	44·2	44·2	44·2	42·5	40·8	38·9	37·9	41·6	198·7
8 q	38·0	35·5	37·9	37·7	38·7	39·2	39·2	38·8	39·1	39·3	42·3	45·3	47·5	47·3	47·5	46·4	46·0	47·1	47·7	45·9	45·9	42·2	38·3	37·5	42·1	210·3
9	38·3	38·8	40·1	41·6	37·6	37·7	38·2	41·3	40·2	41·6	43·0	45·0	46·8	49·2	52·4	53·9	53·2	53·8	49·1	45·9	45·3	43·6	41·5	40·1	44·1	258·2
10 d	39·2	39·4	33·8	29·6	34·4	38·4	39·4	38·1	47·6	41·6	38·3	43·8	48·5	47·3	46·2	43·0	39·4	36·3	39·4	40·5	40·6	40·3	40·1	39·7	40·2	164·9
11	39·2	39·7	40·1	39·4	40·4	39·5	38·2	37·9	38·7	41·0	42·0	44·8	45·9	45·9	45·1	43·2	41·5	42·0	41·3	39·4	38·8	40·6	40·6	40·5	41·1	185·7
12	35·5	34·9	36·5	39·3	39·8	39·6	39·4	38·9	38·5	39·7	40·3	43·5	45·0	46·3	44·0	42·4	41·2	40·7	41·3	41·4	41·5	41·3	41·0	37·3	40·4	169·3
13	33·6	29·4	36·8	38·9	38·4	39·4	40·2	41·3	43·2	41·5	43·4	45·4	47·1	46·1	45·6	44·4	43·7	43·5	43·2	42·4	41·3	39·5	41·1	41·0	41·3	190·4
14 d	41·2	43·2	35·0	39·4	31·9	35·8	41·1	46·0	48·1	43·1	47·2	49·2	48·9	48·5	47·0	45·1	43·7	38·4	34·8	39·3	42·3	37·2	38·1	40·1	41·9	204·6
15 d	40·1	41·4	41·0	40·0	42·1	42·6	40·3	39·6	40·6	43·6	48·2	49·4	47·4	50·1	37·7	43·5	42·5	41·8	42·1	41·3	40·1	21·8	35·3	37·7	41·3	190·2
16	47·3	37·5	34·8	36·1	38·7	40·3	42·6	45·0	45·1	43·5	43·0	47·0	48·0	46·6	44·5	43·5	42·1	41·3	42·1	42·7	42·3	41·9	41·6	41·0	42·4	218·5
17	41·2	41·4	42·7	39·8	37·7	38·2	39·2	49·5	42·3	42·5	42·3	44·7	47·5	47·1	45·4	41·8	39·7	39·8	40·4	41·3	41·0	40·3	40·3	41·3	42·0	207·4
18	41·0	40·6	41·3	40·0	38·9	38·7	38·1	37·5	37·7	38·6	40·1	43·9	46·7	49·6	45·2	42·8	36·5	39·9	31·7	41·1	42·2	41·7	37·5	39·2	40·4	170·5
19 d	42·3	41·1	41·2	40·9	42·6	59·3	59·2	42·7	38·9	40·5	42·1	44·0	47·9	53·6	47·3	47·3	52·5	39·7	43·2	40·6	32·9	38·0	42·3	42·5	44·3	262·6
20	39·9	43·6	37·8	37·3	39·1	40·5	39·7	38·1	37·3	41·3	42·7	45·5	45·3	47·1	45·5	43·4	42·8	42·1	40·5	26·4	37·3	38·6	42·1	42·5	40·7	176·4
21	39·4	38·6	44·0	42·0	44·0	41·9	40·1	39·1	38·4	38·9	39·9	43·2	46·1	47·3	47·1	44·4	44·0	43·0	39·4	33·6	38·4	41·0	40·9	40·7	41·5	195·4
22	41·3	42·3	44·0	39·6	39·4	42·7	40·7	42·3	42·3	42·3	41·1	43·2	43·9	46·1	45·1	43·2	43·2	42·8	42·5	42·3	42·0	41·6	40·8	40·9	42·3	215·6
23	40·2	40·3	40·3	39·8	42·0	41·3	42·3	42·2	42·3	39·2	41·1	43·5	48·0	49·9	42·3	44·2	44·0	43·4	40·9	40·9	39·6	39·4	40·3	41·9	42·1	209·3
24	40·8	41·7	42·0	40·5	39·8	40·2	40·1	39·2	39·0	40·3	43·2	44·5	47·3	48·8	47·6	45·7	43·8	43·2	43·1	43·2	42·2	40·7	38·9	42·3	42·4	218·1
25 q	41·0	42·6	40·7	40·1	39·7	39·2	38·8	37·7	37·2	39·0	41·6	44·1	47·6	49·0	47·2	45·9	44·5	43·7	43·1	43·0	42·3	39·1	40·2	38·8	41·9	206·1
26	40·3	40·7	40·3	39·8	39·2	39·6	40·1	39·1	39·5	41·0	43·8	45·1	48·3	47·4	46·6	45·1	43·8	43·8	43·5	43·0	42·9	42·7	37·7	36·4	42·1	209·7
27	41·1	40·1	40·5	40·2	40·5	38·8	38·8	37·7	37·7	38·9	40·1	46·7	49·3	51·9	51·8	58·0	56·9	55·4	52·1	51·6	47·5	44·0	42·2	39·8	*45·1*	281·6
28	39·7	38·6	36·5	36·8	39·0	39·2	36·5	36·7	37·9	38·8	42·6	45·9	48·6	49·7	47·7	47·2	42·2	42·1	42·5	42·3	39·1	40·3	40·9	41·1	41·3	191·9
29	41·1	40·6	40·6	40·7	40·2	39·4	38·3	36·7	35·5	38·2	40·1	42·9	46·1	47·3	47·1	45·9	44·9	43·8	42·5	42·3	35·3	39·3	40·7	41·3	41·3	190·8
30	41·6	44·8	41·8	39·1	34·2	36·1	35·3	36·3	42·2	40·9	42·3	44·2	47·6	47·4	46·4	44·0	42·6	41·0	41·0	41·1	41·2	41·3	41·3	41·2	41·5	194·9
31	41·0	41·0	41·0	40·8	40·6	40·3	38·9	36·5	36·2	37·4	40·1	43·4	42·2	48·3	47·1	47·6	45·1	45·4	43·1	42·8	43·0	42·9	42·6	41·3	42·0	208·6
Mean	38·2	*38·0*	38·1	38·1	38·7	40·1	40·3	40·1	40·3	40·6	42·2	44·9	47·0	*48·1*	46·4	45·4	44·1	43·2	42·5	41·8	41·2	40·1	39·1	38·8	41·6	
Sum 1100·0+	83·6	79·0	80·0	82·0	100·7	142·4	150·8	143·9	147·9	158·3	208·0	292·8	357·0	391·3	337·4	308·2	267·1	240·1	216·5	197·1	176·4	142·5	113·1	101·6		Grand Total 30917·7

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) + — MARCH 1961

	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	
1	318	319	319	318	314	301	303	306	310	311	310	308	313	312	313	316	318	316	314	320	324	325	321	312	314	1541
2	306	305	304	303	308	300	293	296	306	312	310	311	312	313	317	320	320	320	320	321	324	323	330	329	313	1503
3 *q*	318	300	307	314	316	317	315	315	316	318	314	310	311	315	320	327	327	320	320	317	316	316	316	315	316	1580
4 *q*	314	318	318	318	318	317	316	314	316	316	312	306	304	310	320	325	324	322	320	318	316	316	315	316	316	1589
5	312	313	311	306	302	306	308	312	310	312	310	306	308	310	313	315	320	327	327	328	359	300	154	211	303	1280
6 *d*	308	238	111	134	132	152	188	226	266	279	282	294	315	361	360	353	345	334	333	331	325	325	326	323	*277*	641
7 *q*	321	323	323	324	326	325	325	323	322	320	318	317	314	317	320	324	325	327	325	325	331	334	320	318	323	1747
8 *q*	318	308	318	320	320	322	322	324	325	320	318	318	316	316	320	327	333	339	347	358	358	353	355	337	329	1892
9	327	322	319	294	293	308	314	313	310	312	314	314	315	313	321	332	337	344	357	372	363	358	348	330	326	1830
10 *d*	320	318	270	278	303	290	266	286	305	324	343	373	389	368	355	367	371	367	341	337	333	333	333	333	329	1903
11	332	330	324	322	322	322	324	327	325	324	324	322	322	323	330	330	331	331	329	345	352	340	335	332	329	1898
12	311	305	296	316	322	322	323	324	322	322	322	318	317	318	321	323	324	324	324	323	326	327	327	331	320	1688
13	324	305	315	319	320	318	318	320	321	314	314	316	318	318	324	341	341	338	329	326	327	327	322	313	322	1728
14 *d*	315	249	201	182	218	264	273	280	282	297	315	316	321	334	345	377	388	393	370	344	337	321	313	314	306	1349
15 *d*	306	315	924	320	315	306	310	315	320	327	333	328	344	348	395	366	340	333	328	322	327	280	262	258	322	1722
16	188	138	219	278	307	296	305	314	306	314	317	320	337	334	333	339	345	338	330	322	320	320	319	320	302	1259
17	320	322	320	307	319	319	316	314	296	317	318	318	323	328	330	339	339	339	333	327	323	320	317	316	322	1720
18	318	316	320	320	323	323	326	323	323	322	316	312	314	327	343	352	384	383	381	346	326	317	284	293	329	1892
19 *d*	306	313	316	320	308	305	257	276	300	312	316	323	333	348	365	345	376	471	405	373	306	278	267	245	323	1764
20	199	237	279	301	312	319	320	324	322	325	331	327	334	339	347	345	339	334	341	333	308	316	306	305	314	1543
21	285	280	298	274	299	300	311	314	315	316	316	313	312	313	322	340	337	343	349	354	337	327	322	315	316	1592
22	314	308	282	280	294	300	305	314	320	316	322	330	329	325	329	331	328	324	324	324	324	323	322	320	316	1588
23	318	318	316	318	318	318	320	320	318	320	321	317	315	322	353	349	331	327	332	329	327	325	318	317	324	1767
24	316	316	310	310	315	316	316	319	320	317	313	316	308	310	317	333	334	333	330	327	326	327	318	297	319	1644
25 *q*	298	304	308	314	316	318	318	320	322	320	316	312	308	310	316	313	314	318	319	319	324	327	323	316	316	1573
26	313	314	316	313	310	306	304	304	300	304	303	300	304	312	314	314	316	315	313	314	315	314	315	315	310	1448
27	306	310	312	313	310	306	306	304	308	312	310	308	316	317	322	333	407	491	440	425	431	390	351	335	*344*	2263
28	328	322	306	296	267	290	293	304	313	318	319	320	320	320	327	343	360	347	337	340	333	322	319	318	319	1662
29	318	318	320	321	320	320	323	327	325	322	324	318	314	316	317	317	316	316	318	331	322	329	326	324	321	1702
30	322	307	278	227	225	253	290	305	307	301	310	312	312	315	315	318	318	318	314	314	313	312	314	314	301	1214
31	315	316	314	314	314	312	313	315	316	318	316	310	309	312	314	310	313	310	312	312	312	311	308	306	313	1502
Mean	307	300	*296*	*296*	299	302	304	309	312	315	316	317	320	323	330	334	339	*343*	337	335	331	324	313	311	317	
Sum 9000+	514	307	174	174	286	371	421	578	667	762	807	813	907	1024	1238	1364	1501	1642	1462	1377	1265	1036	706	628		Grand Total 236,024

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

4 LERWICK — MARCH 1961

	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	h. m.	γ	γ	h. m. ′	′ h. m.	′	h. m.	γ	γ h. m.		γ			°A.
1	20 04	581	530	12 51	51	12 31	49·3	31·9 23 34	17·4	20 40	327	299	05 16	28	1,2,1,1,2,0,2,3	12	0	79·1
2	07 32	582	541	05 19	41	14 20	45·9	31·7 22 58	14·2	23 26	334	290	06 40	44	2,2,2,2,1,2,2,3	16	0	79·1
3 *q*	01 13	595	544	11 22	51	12 13	47·1	32·3 01 08	14·8	15 48	330	296	01 22	34	3,1,1,0,1,1,0,1	8	0	79·2
4 *q*	04 43	581	548	11 25	*33*	12 54	50·3	38·8 09 06	11·5	15 11	327	300	12 38	27	0,0,1,1,3,1,0,1	7	0	79·4
5	20 46	593	−46	23 31	639	12 29	47·3	−12·6 23 41	59·9	20 39	384	104	22 31	280	1,2,1,1,1,2,3,7	18	1	79·5
6 *d*	14 01	610	*−306*	00 30	*916*	13 35	56·9	*−44·1* 01 12	*101·0*	00 15	507	*−3*	02 05	*510*	7,6,4,3,3,2,1,1	27	2	79·6
7 *q*	22 26	578	449	11 25	129	12 54	47·3	36·5 22 27	10·8	21 05	343	313	12 26	30	1,0,1,2,1,1,2,3	11	0	79·8
8 *q*	19 57	578	538	11 14	40	20 20	49·0	34·4 01 17	14·6	22 36	367	306	01 10	61	2,1,0,0,1,2,2,2	10	0	79·7
9	14 01	599	540	11 48	59	15 16	56·2	36·7 04 18	19·5	19 42	387	286	04 02	101	2,2,2,1,3,3,3,3	19	0	80·0
10 *d*	12 10	638	387	11 07	251	08 43	61·3	27·3 03 37	34·0	11 53	430	257	02 17	173	4,4,4,5,5,2,1,1	26	1	80·3
11	19 02	575	523	11 49	52	12 48	48·7	36·7 20 32	12·0	20 29	359	320	11 35	39	1,1,1,1,2,1,2,1	10	0	80·0
12	19 27	568	507	01 06	61	13 41	48·0	25·9 01 04	22·1	23 35	337	277	02 00	60	3,1,1,1,2,1,0,2	11	0	79·8
13	19 14	582	535	11 49	47	12 58	48·0	26·4 01 35	21·6	15 53	345	296	01 27	49	3,1,2,1,2,3,1,2	15	0	79·7
14 *d*	17 58	629	497	11 18	132	08 31	52·0	19·4 18 08	32·6	18 01	430	155	03 46	275	5,4,3,3,3,4,4,2	28	1	79·8
15 *d*	21 33	621	481	23 55	140	13 41	53·3	9·8 21 29	43·5	14 40	405	235	22 14	170	2,3,2,3,4,3,3,5	25	1	80·0
16	15 30	588	473	07 48	115	07 46	49·8	30·1 02 03	19·7	16 05	347	117	01 11	230	4,3,4,2,2,3,1,1	20	0	80·0
17	14 33	582	522	07 19	60	07 41	54·1	37·0 03 48	17·1	17 38	342	288	08 05	54	2,2,3,2,2,2,1,1	15	0	80·0
18	16 17	606	533	10 10	73	13 34	50·7	24·0 18 16	26·7	18 09	407	270	22 50	137	2,1,1,1,2,3,4,3	17	0	79·8
19 *d*	17 28	*733*	501	06 07	232	06 00	*71·5*	23·8 20 26	47·7	17 28	*511*	211	24 00	300	1,4,5,2,4,5,5,4	30	1	79·4
20	19 59	625	489	10 28	136	13 54	48·1	21·1 20 14	27·0	14 33	353	186	00 35	167	4,2,2,3,3,2,4,2	22	0	79·0
21	16 52	590	528	12 53	62	13 43	48·0	31·0 19 16	17·0	19 30	359	267	03 22	92	3,3,1,1,1,2,3,1	15	0	79·0
22	07 11	575	523	08 02	52	13 46	46·5	37·7 03 55	*8·8*	11 44	335	275	02 56	60	2,2,3,2,1,2,1,0	13	0	79·0
23	17 37	587	525	12 02	62	13 10	51·9	35·3 20 46	16·6	14 40	364	308	12 26	56	0,2,2,2,3,3,2,2	16	0	79·4
24	22 48	606	522	11 16	84	13 36	50·3	37·3 22 15	13·0	16 57	337	286	24 00	51	1,1,1,2,2,2,1,3	13	0	79·2
25 *q*	23 29	588	531	11 48	57	13 50	50·9	36·7 08 28	14·2	21 43	329	285	00 02	44	2,0,0,1,2,1,1,2	9	0	79·4
26	21 39	587	522	10 48	65	12 54	50·0	29·0 22 59	21·0	22 24	324	296	11 07	28	1,1,1,2,2,1,0,3	11	0	79·4
27	16 54	728	532	10 06	196	16 41	64·1	36·9 08 47	27·2	17 41	*511*	302	00 40	209	2,1,1,2,2,5,4,3	20	1	79·0
28	02 04	589	499	03 42	90	13 18	51·2	33·2 03 13	18·0	16 15	364	251	04 20	113	3,3,3,2,3,3,2,1	20	0	78·6
29	20 24	609	523	10 36	86	12 31	48·3	33·2 20 12	15·1	20 01	343	310	12 35	33	1,1,1,1,2,1,3,2	12	0	78·7
30	04 15	585	517	03 26	68	12 38	49·0	32·8 04 46	16·2	01 04	324	207	04 09	117	3,3,3,2,2,1,1,1	16	0	78·8
31	19 27	603	522	12 01	81	13 35	49·2	35·5 08 35	13·7	16 15	321	302	24 00	*19*	1,0,1,1,1,3,1,1	9	0	78·3
Mean	− −	603	469	− −	134	− −	51·4	27·3 − −	24·1	− −	370	255	− −	116	−	−	0·26	79·4

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

TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

1 LERWICK (H) — 14,000γ (0·14 C.G.S. unit) + — APRIL 1961

	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+
	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	588	563	553	563	575	589	585	560	541	541	530	530	527	536	557	573	575	571	575	580	571	570	572	575	563	2500
2	571	567	567	567	561	549	555	565	548	536	523	518	520	529	556	571	570	580	573	582	571	536	530	534	553	2279
3 *d*	530	517	518	462	493	543	544	529	501	508	510	518	519	539	553	582	596	610	593	582	570	571	554	543	541	1985
4 *q*	549	553	559	562	564	564	561	557	555	541	528	524	528	536	545	553	561	569	579	571	573	571	571	572	556	2346
5 *q*	566	565	571	562	569	573	573	564	553	542	534	522	536	546	557	562	562	575	581	577	576	575	574	576	562	2491
6	574	573	568	575	578	583	580	569	559	545	530	528	539	547	562	586	599	600	579	582	596	564	561	539	567	2616
7	575	576	572	561	577	580	576	571	561	550	536	536	542	550	559	560	569	578	582	587	584	582	582	576	568	2622
8	578	576	576	576	579	579	580	573	562	552	543	528	535	543	553	562	575	583	586	594	591	591	588	585	570	2688
9 *d*	586	586	580	584	592	586	576	573	564	545	488	472	531	550	548	548	554	579	579	588	584	582	580	576	564	2531
10	581	564	568	566	569	560	550	562	557	541	532	543	545	551	552	569	584	574	584	582	586	584	585	575	565	2564
11 *d*	579	561	534	558	538	560	574	566	558	541	540	534	537	541	553	599	630	653	567	566	573	571	574	573	566	2580
12	575	569	569	566	569	572	562	550	548	540	530	533	528	567	559	574	573	590	587	575	581	576	573	573	564	2539
13	569	569	568	567	569	580	581	573	559	541	530	527	539	559	576	612	580	593	589	590	595	592	590	592	573	2740
14 *d*	594	590	588	585	585	584	576	560	549	533	531	548	553	596	620	682	712	756	649	529	431	465	230	-47	542	1999
15 *d*	164	61	431	222	419	468	408	497	537	527	517	525	537	554	543	624	581	587	582	586	574	559	559	559	*484*	621
16	562	557	546	555	557	566	567	558	548	536	522	524	529	542	557	571	584	599	579	595	574	537	511	548	555	2324
17 *q*	560	562	563	560	560	561	562	554	546	534	524	522	522	543	542	541	552	563	569	572	574	571	570	570	554	2297
18 *q*	572	568	563	566	566	570	570	566	552	529	527	520	528	541	553	567	571	576	577	580	577	575	575	577	561	2466
19	577	578	569	560	569	577	578	573	563	545	532	523	523	536	553	566	584	591	584	584	578	580	582	584	566	2589
20	588	570	563	573	572	576	577	569	556	549	542	535	541	548	559	566	566	577	580	580	586	580	579	577	567	2609
21 *q*	575	576	575	573	575	576	573	566	557	545	531	524	527	545	557	565	566	578	584	580	588	575	579	577	565	2567
22	578	577	577	577	576	576	573	569	562	554	548	545	556	569	569	572	582	576	589	588	587	567	558	569	571	2694
23	568	569	570	567	559	565	564	563	552	542	538	537	531	533	554	576	575	577	601	597	585	580	576	559	564	2538
24	567	567	546	565	576	575	573	567	555	541	533	527	530	556	566	586	582	604	607	593	581	573	567	568	567	2605
25	567	563	546	565	572	575	575	571	560	545	540	535	534	540	554	565	586	601	609	593	583	579	580	578	567	2616
26	569	565	552	564	577	566	576	582	568	548	535	530	528	536	569	562	573	600	622	591	588	585	578	580	569	2644
27	579	582	586	582	577	581	594	586	566	546	537	537	546	545	564	586	575	590	605	605	596	589	578	576	*575*	2808
28	574	558	569	563	562	570	570	558	543	535	534	532	529	540	548	557	567	582	593	602	591	578	574	575	563	2504
29	574	568	569	570	569	567	565	559	551	540	533	523	533	545	555	574	576	582	590	594	599	586	560	566	565	2548
30	570	570	569	571	569	573	569	566	559	541	533	534	547	540	573	567	588	585	588	592	596	603	574	570	569	2647
Mean	559	551	559	553	562	568	566	563	553	540	530	*528*	534	547	559	576	582	*593*	589	584	578	572	559	549	560	
Sum 15,000+	1759	1520	1785	1587	1873	2044	1967	1876	1590	1213	911	834	1020	1403	1766	2278	2448	2779	2662	2517	2339	2147	1764	1475		Grand Total 403,557

MAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

2 LERWICK (D) — 9° + — APRIL 1961

	Hour G.M.T. 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 800·0+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	
1	39·9	43·0	29·4	31·6	35·7	36·2	36·8	39·3	41·3	43·8	44·7	48·6	50·4	49·4	47·5	46·0	44·9	42·5	41·9	41·3	38·8	38·4	40·4	41·3	41·4	193·1
2	40·3	40·4	39·8	39·1	36·6	38·7	41·2	37·3	35·5	38·2	41·3	44·0	47·1	48·8	49·0	47·6	47·7	45·8	40·9	31·7	36·5	29·9	32·8	33·9	40·2	164·1
3 *d*	30·5	28·8	23·3	26·1	43·7	28·3	32·9	34·3	36·9	44·2	43·3	44·0	46·3	49·0	48·0	48·3	47·7	46·9	44·1	41·2	42·8	38·7	39·4	37·1	39·4	145·8
4 *q*	40·8	40·1	38·4	38·6	38·2	38·1	37·9	38·9	38·2	39·8	42·3	44·5	46·3	47·1	46·3	44·9	43·2	42·0	42·3	41·8	42·1	41·5	41·1	39·8	41·4	194·2
5 *q*	38·8	37·8	36·9	35·4	39·7	37·9	37·9	37·3	37·0	38·1	41·8	42·7	44·8	45·3	45·7	44·7	43·2	42·9	42·5	42·5	42·1	41·6	41·2	40·8	40·8	178·6
6	37·1	35·1	36·2	36·0	36·5	37·8	38·5	36·8	35·9	37·2	40·3	44·8	48·3	48·8	47·5	47·2	46·8	46·3	46·5	45·1	40·1	31·1	34·1	30·5	40·2	164·5
7	32·7	37·0	36·5	42·5	41·7	39·1	38·4	38·4	38·9	40·8	44·7	46·6	49·0	49·6	47·8	45·0	42·7	41·8	41·7	42·3	42·5	42·5	42·1	41·3	41·9	205·6
8	40·8	40·1	40·2	39·8	40·2	39·3	38·2	37·2	38·0	38·8	42·3	43·8	46·1	47·8	46·7	44·9	43·4	41·7	41·4	42·5	42·9	42·8	41·5	41·2	41·7	201·6
9 *d*	40·7	40·7	41·8	40·1	35·9	39·3	35·3	35·3	34·4	36·2	36·1	51·7	50·9	51·9	49·0	46·1	43·4	42·9	42·3	41·2	42·8	40·8	40·7	40·5	41·7	200·0
10	46·2	39·8	36·0	36·7	37·8	39·4	40·1	38·4	39·9	41·9	42·2	45·0	47·1	49·4	45·9	45·1	44·7	42·5	37·0	43·7	43·7	42·1	39·9	38·6	41·8	203·1
11 *d*	38·8	36·0	43·9	41·8	44·2	45·0	41·7	37·7	36·0	38·6	40·3	43·5	48·2	49·3	49·2	47·4	45·3	31·1	41·3	41·8	42·3	42·3	42·3	39·4	42·0	207·4
12	40·0	40·5	40·0	39·3	38·3	38·3	40·5	37·4	39·2	39·4	41·9	45·1	47·3	49·3	47·1	45·1	43·2	38·4	41·8	42·5	42·7	36·2	40·2	40·6	41·4	194·3
13	41·5	42·5	42·3	41·3	40·0	38·2	36·5	34·9	34·6	36·4	40·3	44·4	48·0	49·9	48·3	46·4	48·2	47·3	46·3	44·9	44·8	42·5	43·2	42·8	42·7	225·5
14 *d*	41·0	39·6	39·8	38·4	37·5	36·3	34·6	33·0	33·4	36·3	43·0	48·4	52·0	56·9	58·2	59·6	54·0	53·6	52·1	32·7	34·1	26·3	-3·4	-31·9	37·7	105·5
15 *d*	-54·3	27·8	27·5	17·1	37·1	38·6	47·3	42·3	38·4	40·1	41·3	43·5	45·1	48·4	48·4	45·9	45·5	45·3	45·4	42·3	33·8	35·9	39·6	41·3	*36·0*	63·6
16	41·3	40·2	43·4	40·1	39·6	36·3	35·8	34·8	35·2	36·1	39·2	43·1	44·7	44·8	44·8	45·5	42·8	38·3	42·5	35·5	36·1	28·8	29·8	36·5	39·0	135·2
17 *q*	39·2	40·3	39·8	41·2	38·9	37·8	35·9	35·0	34·9	36·5	38·9	42·5	45·9	47·4	47·4	47·4	45·1	42·4	40·5	40·6	41·1	41·1	41·3	40·9	40·9	182·0
18 *q*	41·9	40·6	40·8	39·9	39·8	40·7	40·7	39·4	38·3	40·3	42·7	44·7	46·9	49·1	48·5	46·9	44·1	43·3	43·0	42·3	41·9	41·0	39·1	40·0	42·3	215·9
19	39·7	37·9	37·9	41·3	40·5	39·3	36·8	34·9	35·8	35·3	37·0	40·9	45·1	47·3	47·3	46·8	44·6	44·0	39·4	41·8	41·1	42·1	41·5	41·5	40·8	179·8
20	37·5	36·5	36·0	38·4	38·0	38·8	38·3	38·2	35·7	35·5	37·3	35·5	43·2	45·0	45·5	44·2	43·2	42·5	41·9	40·8	38·7	39·6	39·9	41·3	39·6	151·5
21 *q*	41·3	41·1	40·3	39·9	39·4	38·4	37·1	35·3	34·6	35·3	38·2	41·9	45·6	47·4	46·5	44·1	43·2	42·2	42·3	42·6	42·5	39·3	41·6	41·5	40·9	181·6
22	41·3	40·4	40·6	39·8	39·2	38·1	36·1	34·4	34·0	36·0	40·3	45·1	49·9	52·1	52·8	52·1	50·5	46·6	44·8	41·8	40·6	33·3	34·0	38·8	41·8	202·6
23	40·3	39·9	39·7	38·7	37·3	37·7	35·7	33·3	33·1	37·1	41·3	45·5	48·6	48·7	48·0	47·3	45·3	43·4	42·9	41·2	40·7	37·1	33·5	30·8	40·3	167·1
24	39·6	34·8	37·5	34·4	35·4	36·4	35·9	35·7	35·7	38·7	42·2	46·2	48·4	50·7	49·7	49·4	46·6	44·0	41·5	37·5	38·4	37·4	33·4	32·5	40·1	162·0
25	38·1	38·7	44·9	36·6	34·9	35·7	35·8	36·3	35·9	38·1	41·2	45·0	48·4	48·8	49·2	47·0	45·4	43·8	42·5	40·7	40·2	40·0	40·7	38·1	41·1	186·0
26	37·1	34·4	36·3	39·6	33·8	36·4	41·2	38·7	36·6	37·0	39·9	43·7	47·9	48·9	49·0	45·6	44·5	44·0	42·7	41·3	42·1	42·4	41·3	41·8	41·1	186·2
27	41·8	43·9	41·3	42·6	39·7	38·2	35·4	34·8	33·3	36·4	38·5	43·3	48·4	49·7	47·9	48·7	46·3	43·2	41·9	42·3	41·5	37·9	40·4	41·4	41·6	198·8
28	40·9	36·5	43·7	40·6	40·1	39·9	36·5	34·5	34·4	36·7	40·8	44·4	46·1	46·9	46·1	44·8	43·2	41·9	38·9	36·5	37·7	37·5	39·9	38·1	40·3	166·6
29	40·1	39·4	40·1	39·5	39·0	39·3	38·8	38·2	37·3	37·9	40·1	43·2	46·6	47·4	46·3	45·9	45·1	44·6	44·0	42·6	42·5	41·2	32·8	34·6	41·1	186·5
30	36·2	32·7	37·5	36·8	35·1	35·7	36·3	36·4	36·5	37·9	41·3	45·6	48·8	48·2	50·2	47·4	48·0	45·8	43·2	43·2	42·4	37·5	35·4	36·3	40·6	174·4
Mean	36·4	38·2	38·4	37·8	38·5	38·0	37·8	36·6	*36·3*	38·1	40·8	44·4	47·4	*48·8*	48·1	46·9	45·4	43·4	42·7	40·9	40·7	38·3	37·3	36·4	40·7	
Sum 1000·0+	91·1	146·5	151·8	133·2	153·8	139·2	134·1	98·4	88·9	144·6	224·7	331·2	421·4	463·3	443·8	407·3	361·8	301·0	279·5	228·2	219·5	148·8	119·7	91·3		Grand Total 29323·1

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) + — APRIL 1961

	Hour G.M.T. 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 7000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1	307	262	158	190	252	279	292	300	302	300	309	314	314	319	322	332	349	356	348	337	339	326	317	315	302	239
2	315	319	322	318	317	309	294	287	296	305	307	315	322	322	334	343	344	346	358	344	329	329	298	282	319	655
3 *d*	275	268	239	178	142	180	252	287	305	313	319	328	329	334	355	394	415	417	405	373	347	330	309	298	308	392
4 *q*	252	254	287	310	315	317	319	319	319	319	319	317	314	315	318	321	322	322	324	326	321	318	317	315	312	480
5 *q*	315	312	290	297	295	302	310	315	315	312	309	309	305	302	307	319	321	318	322	320	319	317	315	314	311	460
6	309	305	300	299	303	302	305	312	315	315	316	309	307	311	313	316	328	343	362	348	321	271	279	256	310	445
7	292	305	310	309	296	307	315	316	317	314	316	315	313	315	320	322	322	321	320	319	319	319	317	317	314	536
8	316	315	315	315	314	315	317	318	319	316	315	317	309	309	309	314	315	317	317	316	316	315	317	316	315	562
9 *d*	315	313	308	300	298	305	311	311	307	305	326	326	315	303	308	315	319	330	349	356	342	330	319	310	318	621
10	232	263	292	306	305	300	306	308	307	314	322	317	324	334	345	332	336	337	339	325	320	322	311	292	312	489
11 *d*	295	307	275	260	249	256	266	292	307	313	317	319	321	339	345	363	395	402	370	345	329	323	317	309	317	614
12	305	319	322	323	322	322	320	319	319	319	322	324	328	329	347	356	349	339	329	328	325	322	322	318	326	828
13	319	317	317	317	317	317	317	320	324	330	326	322	323	329	337	363	368	340	332	326	321	321	319	318	327	840
14 *d*	309	315	322	326	326	324	325	326	324	319	314	316	332	360	393	431	460	472	427	362	345	298	105	172	*333*	1003
15 *d*	193	181	41	120	171	224	251	243	298	329	345	349	351	356	365	390	418	392	367	364	383	343	330	321	*297*	125
16	311	322	317	325	328	334	338	339	342	338	336	332	336	345	350	351	360	361	349	341	313	280	221	264	326	833
17 *q*	309	323	326	330	331	332	329	330	328	326	326	321	314	315	321	326	329	330	331	332	332	329	327	326	326	823
18 *q*	322	322	326	328	328	323	324	321	322	322	323	325	323	323	326	336	343	341	334	332	330	328	327	319	327	848
19	315	309	316	321	319	324	326	326	326	328	328	324	319	312	311	313	321	335	358	344	341	329	321	307	324	773
20	256	275	284	298	309	315	317	317	319	319	317	313	307	308	314	321	330	331	334	333	329	325	319	317	313	507
21 *q*	317	319	322	323	325	327	328	329	326	324	321	317	312	311	318	326	326	325	326	325	324	330	326	323	323	750
22	322	322	321	323	322	324	323	324	320	315	311	307	304	312	322	341	360	370	365	372	360	315	324	327	329	906
23	326	326	326	327	328	320	322	318	318	310	312	315	317	312	312	330	340	337	336	346	346	328	306	266	322	724
24	259	256	247	249	292	307	315	316	322	320	317	315	310	311	326	334	353	360	359	360	349	335	316	305	314	533
25	305	297	247	267	284	294	302	306	313	315	311	305	302	307	315	324	329	339	348	354	346	335	328	316	312	489
26	300	288	281	260	288	309	302	305	313	318	320	316	315	317	332	356	346	339	340	342	332	330	332	328	317	609
27	326	318	304	309	310	317	313	312	317	316	317	314	315	330	342	339	343	336	338	343	345	337	321	304	324	766
28	269	277	258	280	270	279	287	304	312	314	314	314	314	318	324	328	330	331	334	333	327	321	315	310	307	363
29	303	317	324	326	326	324	324	326	326	324	317	315	313	317	320	320	323	324	323	322	322	326	315	294	320	671
30	296	294	301	312	317	314	313	313	312	313	308	305	307	314	317	332	330	334	334	325	323	315	321	312	315	562
Mean	296	297	*287*	291	297	303	309	312	316	317	319	318	317	321	329	340	347	*348*	346	340	333	322	307	302	317	
Sum 8000+	885	920	598	746	899	1102	1263	1359	1490	1525	1560	1535	1515	1629	1868	2188	2424	2445	2378	2193	1995	1647	1211	1071		Grand Total 228,446

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

4 LERWICK — APRIL 1961

	TERRESTRIAL MAGNETIC ELEMENTS												3-hr. range indices *K*	Sum of *K* indices	Magnetic character of day, *C* (0-2)	Temperature in magnet house 20U +
	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.	′	h. m.	′	′	h. m.	γ	γ	h. m.	γ				°A.
1	05 33	594	525	12 18	69	12 25	50·9	23·5	02 39	27·4	17 14	359	144	02 20	215	5,4,3,2,2,2,2,2	22	0	78·0
2	19 04	594	514	11 08	80	14 22	51·0	27·5	19 02	23·5	18 56	370	275	23 50	95	1,2,2,2,2,2,3,3	17	0	78·0
3 *d*	17 41	615	402	03 25	213	04 40	52·5	16·1	03 03	36·4	17 48	423	132	04 46	291	3,5,4,3,3,3,4,3	28	1	77·9
4 *q*	18 15	584	518	12 05	66	13 17	47·3	36·3	00 10	*11·0*	19 09	329	232	00 55	97	3,1,1,1,1,1,1,0	9	0	78·0
5 *q*	17 56	584	516	11 25	68	14 32	46·3	31·8	03 00	14·5	16 28	325	274	02 47	51	2,3,1,1,1,2,1,0	11	0	78·2
6	20 55	617	501	23 32	116	13 09	50·4	20·9	23 54	29·5	18 45	369	233	23 39	136	2,1,1,1,1,3,4,4	17	0	78·1
7	19 15	593	532	11 53	*61*	13 22	50·4	21·5	00 00	28·9	14 57	324	274	00 00	50	3,2,1,1,1,1,1,1	11	0	78·2
8	19 07	606	522	11 33	84	13 49	48·3	35·9	07 36	12·4	07 47	322	307	13 05	*15*	0,1,1,2,1,1,1,1	8	0	78·3
9 *d*	17 31	606	454	11 47	152	11 40	57·6	32·1	08 30	25·5	19 03	362	288	24 00	74	1,2,1,4,3,3,2,2	18	0	78·3
10	16 18	607	524	10 08	83	14 02	50·9	29·9	18 12	21·0	14 30	355	219	00 30	136	4,2,2,2,3,3,3,2	21	0	78·2
11 *d*	17 21	698	520	04 27	178	13 00	51·5	4·0	17 31	47·5	17 20	451	235	04 15	216	3,3,3,2,2,5,3,1	22	1	78·4
12	17 56	605	516	12 21	89	13 49	50·9	30·5	21 29	20·4	15 27	358	300	00 19	58	2,1,2,1,3,2,2,3	16	0	79·0
13	15 21	658	520	11 04	138	15 38	51·2	33·5	08 28	17·7	15 58	392	313	01 25	79	1,2,2,2,3,4,2,1	17	0	79·4
14 *d*	18 17	*1129*	−317	23 39	*1446*	18 30	*80·8*	−88·0	23 32	168·8	18 16	560	−14	23 15	574	2,2,2,3,4,5,8,8	34	2	79·4
15 *d*	15 28	651	*−450*	01 05	1101	06 47	55·9	*−135·7*	00 48	*191·6*	01 07	*689*	*−101*	00 32	*790*	9,7,5,3,3,4,3,3	37	2	79·2
16	19 43	610	467	22 07	143	02 23	48·2	19·0	21 53	29·2	16 58	374	192	22 41	182	3,2,1,2,3,3,3,4	21	0	79·2
17 *q*	20 27	575	513	11 50	62	13 21	48·1	32·7	07 55	15·4	19 49	335	294	00 00	41	2,1,1,1,2,1,1,0	9	0	79·1
18 *q*	19 07	583	517	11 45	66	14 01	49·7	38·4	22 36	11·3	16 28	345	316	00 55	29	1,1,1,1,2,1,0,1	8	0	79·2
19	16 59	604	520	11 27	84	15 00	47·7	34·1	06 38	13·6	18 50	362	275	24 00	87	1,2,2,1,2,2,2,3	15	0	79·1
20	00 00	608	531	11 36	77	00 03	46·6	33·1	00 53	13·5	18 56	336	246	00 19	90	3,2,2,1,1,1,2,2	14	0	79·0
21 *q*	20 11	591	521	11 40	70	13 46	48·1	34·3	08 57	13·8	21 17	332	309	12 48	23	1,0,1,1,2,1,1,2	9	0	79·2
22	18 55	608	539	11 54	69	14 45	54·0	29·8	21 42	24·2	17 03	377	301	12 25	76	1,0,1,2,2,3,2,3	14	0	79·3
23	18 33	609	520	13 18	89	15 02	49·9	26·0	23 33	23·9	20 32	355	260	23 32	95	1,1,1,2,3,2,3,3	16	0	79·3
24	17 57	624	517	11 54	107	13 27	51·2	26·1	23 01	25·1	19 01	371	225	02 57	146	3,4,1,2,2,3,3,3	21	0	79·6
25	18 34	613	530	12 59	83	02 12	50·9	34·3	04 16	16·6	19 15	356	222	02 35	134	4,3,1,1,1,2,2,2	16	0	79·7
26	18 13	667	518	12 36	149	14 10	51·3	32·1	01 30	19·2	15 25	359	251	03 26	108	2,3,2,2,3,4,4,1	21	0	79·8
27	19 31	610	529	13 31	81	14 01	51·5	30·5	06 58	21·0	16 18	348	289	24 00	59	2,3,2,2,2,2,2,3	18	0	80·0
28	19 24	609	523	12 26	86	02 10	49·5	32·9	19 14	16·6	19 08	338	242	02 25	96	3,2,3,1,1,2,2,2	16	0	80·3
29	20 09	604	514	11 25	90	12 55	48·7	28·0	22 25	20·7	22 21	337	292	23 11	45	2,0,0,2,1,1,1,3	10	0	82·1
30	21 35	623	521	10 35	102	14 21	50·9	30·6	01 19	20·3	17 30	340	285	01 00	55	2,1,1,2,3,3,1,3	16	0	82·3
Mean	− −	629	453	− −	177	− −	51·4	19·4	− −	32·0	− −	375	237	− −	138	−	−	0·20	79·1

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

TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

1 LERWICK (H) — 14,000γ (0·14 C.G.S. unit) + — MAY 1961

	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 13,000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1	575	580	547	559	564	567	565	558	545	530	515	527	545	520	552	563	574	570	579	583	581	585	577	569	560	430
2	499	448	420	486	565	579	566	550	535	528	535	540	534	548	560	568	575	568	574	577	576	576	576	575	*544*	58
3 *q*	571	568	569	567	569	572	572	569	557	546	542	541	543	547	556	560	568	575	574	577	580	580	578	574	565	555
4	576	574	573	573	569	569	569	565	557	548	546	546	548	552	552	563	574	596	610	611	601	573	470	537	565	552
5	571	578	577	569	575	579	575	557	564	562	556	548	556	566	579	594	712	628	622	606	581	578	555	545	581	933
6 *d*	577	573	578	576	576	515	508	545	544	530	492	525	527	564	569	564	576	581	580	586	588	587	570	570	558	401
7 *d*	567	534	555	563	563	566	552	519	541	532	529	525	540	529	548	576	585	591	595	595	584	588	584	567	559	428
8	567	562	562	553	554	564	565	562	559	537	539	536	536	550	546	561	592	610	622	596	579	584	573	571	566	580
9	575	574	572	563	559	549	552	535	538	511	540	546	552	565	584	568	576	587	584	584	583	573	571	568	563	509
10	569	564	569	570	569	568	565	560	551	552	559	551	550	558	574	575	579	588	594	598	595	596	601	586	573	741
11	582	572	568	560	564	579	582	574	557	556	555	556	558	551	577	589	584	621	620	621	596	589	583	577	578	871
12	568	549	532	573	561	549	564	553	543	529	525	537	539	557	567	573	581	613	609	602	593	581	582	577	565	557
13	468	471	484	543	529	559	563	545	535	537	542	533	554	574	568	594	586	595	603	586	581	580	579	577	554	286
14	578	573	566	545	566	565	564	554	551	546	528	528	547	563	570	569	574	586	590	588	583	581	579	578	565	572
15 *q*	576	575	575	573	573	571	564	558	552	541	541	543	543	552	557	562	582	590	607	606	600	579	575	572	569	667
16 *d*	532	517	569	579	583	559	517	563	552	543	535	541	555	590	589	607	613	588	599	585	588	581	585	573	568	643
17	551	577	572	574	569	563	567	560	551	542	535	538	530	559	580	588	588	585	586	586	583	581	582	578	568	625
18 *q*	575	575	573	576	577	574	569	563	551	536	530	529	535	541	554	569	585	595	598	594	588	585	586	587	569	645
19	584	584	585	584	588	579	570	567	563	546	543	541	553	570	573	595	598	605	605	606	602	593	594	600	580	928
20	568	575	579	564	556	582	572	559	541	541	544	550	553	553	575	601	596	617	612	604	601	591	587	580	575	801
21 *q*	576	577	575	579	575	569	561	556	552	546	546	551	559	571	576	576	592	609	623	623	602	595	596	589	578	874
22	591	594	586	585	587	586	577	569	559	550	550	557	579	593	592	603	620	616	624	627	600	591	586	591	*588*	1113
23	592	589	588	597	591	582	579	580	571	557	554	543	558	580	612	591	630	606	607	593	588	581	582	582	585	1033
24	575	557	564	575	568	576	572	565	559	554	554	559	568	574	592	611	595	591	601	598	594	595	596	596	579	889
25 *d*	580	555	558	575	559	470	525	536	520	523	544	558	580	625	685	674	665	675	658	609	594	575	560	563	582	966
26	552	518	541	563	567	563	556	551	551	545	545	546	544	559	575	586	584	591	597	597	598	592	589	588	567	598
27	584	572	567	560	570	574	560	553	549	541	539	543	558	579	581	592	592	595	593	591	592	583	574	576	572	718
28	572	570	568	573	572	570	567	563	554	541	540	537	545	564	579	609	605	617	630	619	596	600	583	581	577	855
29 *q*	580	580	580	574	566	564	571	568	560	547	541	541	546	552	557	570	579	590	590	596	595	591	588	583	571	709
30	582	576	579	578	584	584	573	560	550	544	543	557	557	578	581	583	606	605	617	614	606	600	600	611	582	968
31 *d*	606	602	594	595	578	586	584	569	543	524	535	552	580	599	569	583	612	611	642	614	594	586	584	569	584	1011
Mean	568	562	562	568	569	565	563	558	550	541	*539*	543	551	564	575	584	596	600	*605*	599	591	585	578	577	571	
Sum 16,000+	1619	1413	1425	1604	1646	1532	1446	1286	1055	765	722	825	1072	1483	1829	2117	2478	2595	2745	2572	2322	2150	1925	1890		Grand Total 424,516

MAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

2 LERWICK (D) — 9° + — MAY 1961

	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	36·1	38·7	36·1	36·5	29·7	33·7	33·9	33·6	34·8	37·2	40·8	46·8	49·9	50·5	49·1	46·3	45·1	42·3	41·7	40·9	40·6	41·1	38·4	27·9	39·7	51·7
2	19·7	11·7	23·8	39·7	39·4	35·3	34·3	35·1	37·1	39·2	41·3	46·1	49·0	50·4	49·0	47·7	45·6	44·2	42·9	42·9	41·9	40·1	40·3	41·3	39·1	38·0
3 *q*	42·1	41·7	41·0	41·1	40·1	38·7	37·1	36·6	36·8	39·0	41·3	43·3	45·1	46·2	46·5	44·9	43·8	42·5	41·7	41·4	41·5	41·7	41·1	40·7	41·5	95·9
4	40·1	39·6	39·4	38·7	38·5	38·4	38·0	36·5	35·9	36·9	38·7	41·9	43·4	44·2	45·1	45·1	45·4	45·7	45·6	42·6	41·3	39·9	31·4	27·5	40·0	59·8
5	36·1	37·1	38·1	39·7	35·5	36·8	38·4	43·8	42·8	39·9	40·1	41·9	42·8	44·9	45·5	45·8	44·5	46·0	48·5	44·4	43·2	40·0	38·7	33·6	41·2	88·1
6 *d*	38·9	37·0	37·3	39·8	38·7	49·9	49·5	39·3	36·0	36·9	39·4	40·0	44·2	41·7	40·8	44·9	45·3	44·5	43·9	43·2	40·0	37·2	40·5	40·8	41·2	89·7
7 *d*	41·0	46·8	40·3	39·2	36·1	36·9	39·6	44·7	42·7	40·7	39·9	42·7	44·9	46·1	44·9	41·3	43·8	43·2	44·0	43·4	43·1	39·0	34·3	37·7	41·5	96·3
8	35·0	36·5	38·0	37·4	36·0	36·4	37·0	35·5	35·5	38·1	39·1	40·3	43·2	44·2	44·4	44·0	**44·0**	**43·2**	**34·7**	41·8	**42·8**	42·3	**41·8**	**39·9**	39·6	51·1
9	40·1	39·4	39·3	38·4	38·9	40·5	39·1	38·1	39·2	39·9	40·8	40·4	43·2	44·2	42·6	39·9	41·7	42·5	42·5	41·6	41·3	41·3	41·8	41·9	40·8	78·6
10	40·5	38·5	36·5	36·5	37·1	37·2	36·5	37·0	37·3	38·4	40·5	42·4	44·8	42·7	41·8	41·7	41·7	41·9	42·8	42·6	41·9	39·2	41·1	40·0	40·0	60·6
11	45·0	36·5	30·9	30·2	35·1	34·2	36·9	37·3	37·0	41·5	41·6	43·1	44·2	44·7	45·7	46·1	44·2	44·8	40·5	38·9	43·6	41·9	41·4	39·8	40·2	65·1
12	38·3	42·9	40·9	36·5	34·6	35·8	36·7	38·5	35·9	37·9	38·9	41·1	45·2	46·5	45·9	44·3	43·1	41·9	42·3	41·3	40·8	39·7	40·4	42·3	40·5	71·7
13	37·9	23·1	30·8	35·1	43·7	36·0	33·1	32·2	35·6	38·5	39·5	44·7	45·2	46·5	45·6	45·2	41·3	41·9	37·5	40·8	39·7	37·0	40·8	41·0	38·9	32·7
14	41·9	41·9	42·8	47·1	38·9	33·6	32·7	34·6	33·4	36·0	38·5	41·7	44·0	44·7	42·9	41·1	40·8	40·2	40·2	40·2	40·2	39·4	39·3	39·5	39·8	55·6
15 *q*	38·8	38·0	37·4	36·5	36·0	35·6	35·6	36·3	36·9	38·8	41·8	43·5	44·7	45·5	45·7	45·8	45·8	44·0	42·8	41·0	37·0	37·0	37·5	35·1	39·9	57·1
16 *d*	34·1	23·7	30·3	32·7	32·9	39·9	52·5	41·0	41·8	38·7	41·8	43·5	45·8	48·7	49·2	45·1	41·3	43·4	44·7	43·3	41·7	38·2	38·2	38·4	40·5	70·9
17	42·0	35·2	36·6	35·5	34·6	35·2	35·2	34·8	35·3	37·2	39·4	42·0	43·2	44·2	44·2	42·0	44·7	44·3	43·2	41·8	40·7	40·3	40·3	40·0	39·7	51·9
18 *q*	40·0	41·0	38·8	37·2	35·7	35·2	35·0	35·1	35·9	36·7	38·3	41·3	44·1	44·2	43·5	44·1	44·2	43·6	42·8	42·2	41·4	40·8	40·3	40·0	40·1	61·4
19	39·8	40·2	37·6	35·7	34·9	35·3	36·6	36·9	35·9	38·3	41·7	43·5	43·1	44·9	46·9	48·9	47·0	45·1	44·8	45·3	44·1	41·3	40·3	46·8	41·5	94·9
20	41·1	28·7	32·8	33·6	34·5	32·1	31·3	31·0	31·7	37·1	40·4	44·4	45·8	44·8	44·1	42·6	42·6	43·9	43·6	38·0	42·7	41·4	39·3	38·7	*38·6*	26·2
21 *q*	37·8	36·7	37·7	35·9	33·4	33·2	34·6	35·8	37·0	39·6	41·0	43·2	45·2	45·2	44·8	44·1	44·4	44·8	45·1	42·3	39·2	41·0	41·2	39·8	40·1	63·0
22	36·8	34·1	31·5	32·1	33·2	32·4	33·5	34·5	35·6	38·0	40·5	45·2	47·0	47·1	47·0	47·4	47·2	45·6	45·1	38·5	41·0	40·3	40·3	39·4	39·7	53·3
23	38·6	37·0	37·1	37·6	41·6	35·5	35·3	37·1	37·6	40·5	41·9	43·5	43·5	44·2	45·1	43·0	43·1	42·1	43·0	40·9	39·4	41·2	40·3	40·3	40·4	69·4
24	41·3	45·1	39·3	38·7	37·7	35·2	34·6	34·4	35·4	37·2	37·9	39·4	42·4	42·5	42·4	43·4	43·0	43·2	42·3	41·7	41·4	41·1	40·2	35·8	39·8	55·6
25 *d*	34·9	33·0	30·9	28·5	36·5	46·7	58·2	42·4	38·4	36·6	38·4	40·0	43·0	46·8	46·9	48·7	46·6	45·0	38·2	41·6	41·4	38·3	38·2	38·2	40·7	77·4
26	37·8	44·0	38·4	35·4	34·0	32·9	32·9	34·2	34·0	35·4	37·7	40·8	42·9	44·8	45·5	46·2	44·1	42·9	41·9	42·0	42·2	41·2	40·7	41·2	39·7	53·1
27	39·2	36·9	32·6	31·4	32·9	31·6	31·5	33·9	37·4	40·0	42·2	44·7	45·7	46·0	45·1	43·0	43·2	42·3	42·2	42·3	42·3	41·1	39·9	38·4	39·4	45·8
28	37·4	36·3	36·0	35·4	33·8	32·6	32·8	32·6	34·5	36·9	39·5	45·0	49·4	50·0	51·9	53·7	50·6	47·8	40·3	42·6	40·1	40·2	33·7	37·5	40·4	70·6
29 *q*	38·4	38·3	36·5	36·0	37·6	40·0	36·8	34·8	34·5	36·4	39·3	43·0	45·1	46·1	46·4	45·4	43·2	41·2	40·9	40·3	40·2	40·0	40·0	39·1	40·0	59·5
30	39·2	38·3	36·7	34·2	32·6	31·4	31·9	32·8	36·9	38·4	40·0	43·5	46·5	46·5	46·1	44·8	43·4	43·1	42·5	42·3	41·3	40·5	40·2	41·3	39·8	54·4
31 *d*	38·0	38·3	35·0	38·5	42·9	40·7	40·2	39·8	39·2	39·3	46·7	49·6	47·4	49·6	47·4	44·9	42·6	41·6	40·3	43·6	41·4	42·3	40·3	35·2	*41·9*	104·8
Mean	38·3	36·7	*36·1*	36·5	36·4	36·4	37·1	36·5	36·7	38·2	40·3	43·0	45·0	*45·8*	45·5	44·9	44·1	43·5	42·3	41·8	41·3	40·2	39·4	38·7	40·2	
Sum 1100·0+	87·9	36·2	20·4	30·8	27·1	28·9	51·3	30·2	38·0	85·2	148·9	232·5	293·9	318·6	312·0	291·4	267·3	248·7	212·5	195·7	179·4	146·0	122·2	99·1		Grand Total 29904·2

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 1961

	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	
1	310	312	279	248	265	294	308	310	313	312	314	321	332	338	324	324	325	333	327	327	324	321	325	291	312	1477
2	217	123	144	175	258	303	318	322	326	328	325	323	323	330	335	340	342	343	337	331	329	329	327	321	298	1149
3 *q*	321	324	327	331	328	329	332	329	329	329	328	326	321	320	321	327	327	329	333	330	327	322	322	323	326	1835
4	322	327	328	329	329	331	331	328	326	325	321	316	319	323	323	324	321	321	329	350	338	328	206	265	319	1660
5	311	308	325	329	325	323	321	322	311	311	314	318	317	321	327	344	389	457	382	382	372	347	317	283	*336*	2056
6 *d*	295	299	304	315	321	312	260	277	308	327	342	343	344	381	406	346	338	339	334	341	346	291	306	306	324	1781
7 *d*	316	267	270	297	306	318	325	324	316	325	324	340	347	355	362	366	341	327	327	329	335	328	301	287	322	1733
8	281	307	315	315	314	316	321	325	325	328	328	328	327	325	329	329	327	338	359	349	342	295	291	316	322	1730
9	324	327	327	323	321	312	310	322	326	342	331	330	322	323	342	363	342	331	335	338	338	335	328	314	329	1906
10	297	308	317	325	325	321	326	325	323	322	325	325	322	320	320	322	320	320	320	320	321	322	315	276	318	1637
11	219	262	279	300	296	289	293	304	312	313	312	314	318	320	325	338	349	341	376	361	337	332	323	305	313	1518
12	290	268	244	256	291	289	298	312	318	320	317	314	314	316	322	328	331	337	336	335	331	331	322	280	308	1400
13	166	102	127	218	243	271	304	318	318	316	318	320	315	323	335	332	347	338	340	334	328	322	318	318	*290*	971
14	316	308	290	255	263	300	314	318	318	317	319	320	314	321	333	332	328	326	322	321	321	321	320	320	313	1517
15 *q*	322	323	326	326	327	324	322	321	319	316	308	306	308	314	322	326	325	328	326	331	334	322	317	299	321	1692
16 *d*	244	180	268	305	314	305	240	245	281	301	312	316	320	328	361	397	388	360	352	347	332	325	305	298	309	1424
17	268	272	303	315	323	325	325	326	324	323	319	317	323	321	332	346	338	331	326	326	326	323	318	317	319	1667
18 *q*	317	311	315	321	326	327	325	326	326	323	321	319	315	314	313	317	321	322	326	327	326	324	321	319	321	1702
19	319	317	315	323	322	326	321	317	314	311	308	304	304	309	316	317	331	337	336	334	330	331	321	258	318	1621
20	249	277	308	306	258	232	255	282	300	303	302	301	306	313	315	332	346	338	339	344	327	317	311	311	303	1272
21 *q*	311	305	311	305	313	319	318	317	313	309	304	299	298	300	305	311	312	315	325	339	340	327	315	308	313	1519
22	292	291	300	308	311	313	312	309	301	295	294	294	293	296	305	306	306	326	333	352	338	332	323	320	310	1450
23	318	321	321	317	311	313	319	316	314	315	314	319	318	319	329	350	346	351	341	344	339	331	324	320	325	1810
24	317	303	259	278	290	301	317	322	321	321	320	317	317	317	317	321	333	326	320	323	321	319	314	288	312	1482
25 *d*	276	233	201	257	278	243	143	200	244	265	284	300	320	377	386	394	389	381	336	350	355	350	333	324	301	1219
26	308	277	269	298	317	322	322	325	325	327	322	321	326	329	327	323	320	313	312	315	315	319	318	299	315	1549
27	268	296	298	308	311	311	311	311	311	308	304	298	300	307	322	332	335	335	332	327	325	324	320	314	313	1508
28	313	311	308	308	312	316	316	314	309	302	300	297	293	298	307	311	327	353	368	354	347	326	318	317	318	1625
29 *q*	319	321	323	324	319	304	300	306	311	311	308	300	300	307	311	314	319	322	321	316	314	314	314	317	313	1515
30	317	317	311	316	318	317	318	319	313	300	294	291	294	293	304	311	315	323	321	316	316	314	313	306	311	1457
31 *d*	305	108	311	314	309	294	290	294	296	304	304	295	305	321	331	323	344	366	364	360	352	335	316	283	318	1624
Mean	292	*284*	288	298	305	307	304	309	313	315	314	314	315	322	329	334	336	*339*	337	337	333	324	314	303	315	
Sum 8000+	1048	805	923	1245	1444	1500	1415	1586	1691	1749	1736	1732	1775	1979	2207	2346	2422	2507	2435	2453	2326	2057	1722	1403		Grand Total 234,506

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

4 LERWICK — MAY 1961

	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	h. m.	γ	γ	h. m.	′	′	h. m.	′	h. m.	γ	h. m.	γ	γ				°A.
1	16 54	605	11 22	507	98	13 05	52·6	24·1	24 00	28·5	17 16	341	03 52	234	107	3,3,1,2,3,3,1,3	19	1	82·6
2	16 39	586	*324*	02 55	262	13 48	51·0	5·4	00 56	45·6	16 25	346	82	01 24	264	5,5,2,2,1,2,1,1	19	1	82·3
3 *q*	19 59	585	537	10 56	*48*	14 18	46·8	36·3	08 05	10·5	18 47	335	318	13 45	*17*	0,1,1,0,1,1,1,0	5	0	82·4
4	19 54	641	418	22 46	223	18 13	46·5	18·6	23 09	27·9	19 38	358	145	22 37	213	0,1,2,1,1,2,3,5	15	1	82·4
5	16 42	*778*	515	23 10	263	16 51	51·2	30·5	23 24	20·7	17 07	*493*	248	23 08	245	2,2,2,2,2,5,3,4	22	1	82·9
6 *d*	21 07	627	460	05 51	167	06 12	53·7	23·6	21 05	30·1	14 12	438	250	06 23	188	2,4,4,3,4,3,4,4	28	1	82·7
7 *d*	18 00	608	494	07 31	114	01 17	51·1	28·3	21 57	22·8	15 17	371	242	01 34	129	3,2,3,3,3,3,2,3	22	0	83·0
8	18 31	643	530	09 47	113	13 25	45·0	27·1	18 23	17·9	18 20	370	272	00 14	98	3,2,2,1,2,3,3,3	19	0	82·8
9	14 32	602	494	09 35	108	13 41	44·9	36·5	07 09	*8·4*	15 27	371	298	24 00	73	1,2,2,3,2,3,1,2	16	0	82·9
10	23 10	610	545	11 48	65	10 10	45·9	35·6	03 16	10·3	21 00	328	229	24 00	99	2,2,1,2,2,2,2,4	17	0	82·7
11	19 12	641	538	13 32	103	00 22	48·7	26·9	03 27	21·8	18 53	400	209	00 18	191	4,3,2,2,3,3,3,2	22	0	82·6
12	17 36	630	510	02 08	120	13 42	47·0	32·2	03 53	14·8	17 55	346	235	02 22	111	3,3,3,2,2,3,2,4	22	0	82·8
13	18 29	618	396	02 13	222	14 00	47·6	*5·1*	01 38	42·5	16 24	351	*75*	01 08	276	5,4,2,2,3,2,2,2	22	1	82·7
14	18 59	595	510	11 04	85	03 33	51·7	31·3	06 27	20·4	14 33	336	226	03 45	110	3,4,2,2,2,2,1,1	17	0	82·7
15 *q*	18 45	611	537	09 52	74	13 52	46·3	30·3	24 00	16·0	20 16	337	275	24 00	62	0,1,0,1,1,2,2,3	10	0	82·5
16 *d*	15 59	637	462	06 04	175	06 21	60·3	20·0	01 38	40·3	16 03	410	150	01 22	260	4,4,4,2,4,4,3,2	27	1	82·5
17	15 45	600	521	12 31	79	00 19	49·5	33·7	05 05	15·8	15 08	350	241	00 41	109	3,1,1,2,3,2,1,1	14	0	82·5
18 *q*	18 27	602	527	11 33	75	12 41	44·8	33·7	06 59	11·1	05 05	329	310	01 38	19	1,0,1,1,1,2,1,1	8	0	82·7
19	23 21	623	534	10 02	89	23 32	50·1	34·0	05 09	16·1	19 11	339	230	23 50	109	2,2,1,2,2,2,1,4	16	0	82·8
20	17 29	623	528	03 58	95	12 18	46·5	26·4	01 29	20·1	19 37	350	227	05 36	123	4,4,3,2,2,2,3,1	21	0	82·5
21 *q*	19 26	634	544	10 20	90	12 38	46·0	33·0	05 20	13·0	20 15	346	296	12 43	50	1,1,1,1,1,2,2,2	11	0	82·5
22	17 03	647	546	10 45	101	16 10	48·5	28·9	04 09	19·6	19 15	361	287	12 07	74	2,2,2,2,1,3,3,1	16	0	82·5
23	16 21	659	537	11 41	122	04 42	47·7	33·6	06 49	14·1	16 46	358	305	05 04	53	1,3,2,2,3,3,2,1	17	0	82·5
24	15 43	621	546	01 49	75	01 47	51·4	33·5	07 10	17·9	16 25	338	249	02 17	89	3,3,1,1,1,3,1,3	16	0	82·3
25 *d*	14 36	709	398	05 58	*311*	06 06	*73·2*	24·9	03 52	*48·3*	14 04	413	117	06 23	*296*	4,5,5,3,4,3,4,2	30	1	82·3
26	18 46	603	504	01 40	99	01 40	48·4	32·4	05 37	16·0	13 50	331	245	01 56	86	3,2,2,1,2,2,1,2	15	0	82·1
27	17 30	599	538	11 10	61	13 03	46·4	29·8	02 57	16·6	16 38	337	257	00 26	80	3,2,2,1,2,2,1,1	14	0	81·8
28	18 00	645	529	11 24	116	15 21	54·5	30·6	22 36	23·9	18 17	374	290	12 12	84	1,0,1,2,3,3,3,3	16	1	81·8
29 *q*	19 55	601	540	11 44	61	14 28	46·9	33·5	08 39	13·4	18 09	327	297	05 50	30	1,3,2,1,1,1,2,1	12	0	81·7
30	19 02	626	536	10 10	90	14 06	47·2	30·5	05 16	16·7	17 28	330	287	11 26	43	1,1,2,2,3,3,1,2	15	0	81·9
31 *d*	18 31	661	517	10 07	144	11 10	53·5	27·2	24 00	26·3	17 29	375	271	23 57	104	3,3,3,3,4,3,3,3	25	1	82·1
Mean	- -	628	504	- -	124	- -	49·8	28·3	- -	21·5	- -	361	238	- -	122	-	-	0·32	82·5

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

TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

1 LERWICK (H) — 14,000γ (0·14 C.G.S. unit) + — JUNE 1961

	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 12,000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1 *d*	562	569	577	580	574	582	588	580	555	528	534	554	503	567	601	598	661	613	623	610	594	584	581	581	579	1899
2 *d*	574	549	580	580	576	581	582	570	541	522	549	539	555	581	632	653	666	682	648	595	578	573	575	576	586	2057
3	579	576	570	562	546	528	560	559	543	526	534	542	545	552	566	583	592	595	600	595	589	584	581	577	566	1584
4	577	581	574	556	564	571	581	582	571	552	546	558	558	568	572	574	583	588	597	597	595	592	588	581	575	1806
5	576	570	572	566	556	568	580	571	554	546	541	550	554	552	557	570	595	609	616	621	601	592	590	589	575	1796
6	581	580	581	580	587	592	583	569	568	572	568	562	560	567	576	588	633	701	652	641	616	601	588	574	593	2220
7	574	573	567	567	571	571	561	566	555	548	549	563	563	591	564	573	607	641	644	630	605	581	573	580	580	1917
8	557	520	563	571	581	568	552	549	539	540	552	541	556	566	566	595	598	606	606	609	601	594	577	577	570	1684
9	571	570	573	578	580	578	571	566	556	545	541	541	545	563	570	588	587	591	595	611	598	585	579	577	573	1759
10 *q*	575	573	577	574	577	575	564	561	553	552	552	555	555	563	577	581	588	591	591	591	590	588	585	584	574	1772
11 *q*	584	583	583	584	581	577	573	566	556	546	543	552	569	577	584	595	596	595	594	595	596	595	594	592	580	1910
12	592	590	591	590	581	556	575	567	561	549	545	555	567	585	590	585	605	605	602	595	590	588	584	584	581	1932
13 *q*	584	584	584	584	581	578	571	562	551	540	547	559	573	581	576	588	595	602	605	601	595	591	588	588	579	1908
14	591	583	583	584	584	580	577	576	571	563	556	552	556	569	581	588	593	600	606	612	609	605	594	598	584	2011
15	608	600	598	600	602	591	590	587	581	566	562	575	583	570	596	632	634	631	633	610	595	586	591	590	*596*	2311
16	581	556	587	577	583	577	563	549	539	534	535	550	560	583	604	626	604	603	605	606	604	594	577	577	578	1874
17	580	584	585	580	574	576	573	563	551	539	529	521	524	549	576	594	597	604	617	621	610	595	584	578	575	1804
18	575	575	580	583	585	579	569	560	555	550	538	530	532	549	567	610	605	644	659	646	622	598	554	545	580	1910
19	564	570	572	561	554	577	577	570	560	545	535	531	542	539	551	571	585	602	608	609	607	599	583	576	570	1688
20	581	573	574	570	564	577	572	571	563	552	549	546	549	556	562	574	599	624	640	627	618	609	602	592	581	1944
21 *d*	489	358	484	534	585	588	580	559	544	541	539	541	531	521	589	566	612	705	741	698	621	504	186	37	527	653
22 *d*	117	318	287	249	495	519	497	485	464	492	514	556	547	568	561	600	602	667	701	656	627	609	598	573	*513*	302
23	517	544	571	567	569	565	560	555	549	542	534	528	538	549	580	566	580	592	585	588	596	595	578	564	563	1512
24	552	549	559	553	567	565	561	557	552	534	530	534	547	567	578	584	591	581	588	598	591	584	580	583	566	1585
25	583	580	574	574	573	579	573	559	552	545	545	548	569	577	585	612	637	652	620	604	595	594	583	574	583	1987
26	572	576	580	581	577	574	568	560	553	545	543	552	566	569	612	602	619	615	583	590	588	580	577	577	577	1859
27	577	577	577	574	574	571	550	523	527	534	531	538	555	558	559	574	590	587	588	590	590	586	581	581	566	1592
28 *q*	581	583	584	583	580	577	575	567	555	547	553	558	579	577	580	589	594	599	606	612	600	598	595	589	582	1961
29 *d*	590	590	571	397	469	369	558	580	573	556	550	538	544	557	574	585	601	602	615	608	598	587	579	574	557	1365
30 *q*	560	561	566	573	571	566	563	558	549	536	531	525	530	542	562	577	584	588	595	590	588	587	585	580	565	1567
Mean	557	557	564	557	569	565	568	562	551	543	*543*	547	552	564	578	591	604	617	*619*	612	600	589	570	562	572	
Sum 16,000+	704	695	924	712	1061	955	1047	847	541	287	275	394	555	913	1348	1721	2133	2515	2563	2356	2007	1658	1110	848		Grand Total 412,169

MAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

2 LERWICK (D) — 9° + — JUNE 1961

	Hour G.M.T. 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 800·0+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	
1 *d*	33·0	34·5	33·8	34·8	37·8	34·8	34·3	36·1	38·2	42·8	44·1	41·0	47·0	46·3	48·9	46·6	47·6	41·3	42·7	43·1	42·9	40·0	40·1	38·6	40·4	170·3
2 *d*	40·8	44·7	37·9	34·4	32·8	33·6	32·9	34·9	36·3	37·7	40·2	44·3	44·8	44·9	43·7	37·4	43·7	42·0	38·6	43·0	43·0	41·8	41·3	40·3	39·8	155·0
3	39·8	40·0	38·8	39·4	41·1	49·0	40·0	35·1	36·4	37·2	37·5	37·6	41·2	43·4	43·8	43·8	43·7	43·5	41·8	41·3	41·0	40·0	39·7	38·2	40·6	173·3
4	37·8	37·3	36·3	39·2	39·4	37·2	36·1	36·0	34·8	36·3	39·8	41·9	42·6	43·9	44·6	44·5	43·4	41·6	40·6	40·5	39·7	39·8	39·6	39·2	39·7	152·1
5	38·5	37·3	36·3	34·0	33·8	38·4	35·3	32·5	32·1	34·8	39·2	42·1	43·9	44·1	43·7	44·3	44·1	42·9	42·0	40·5	41·0	40·1	40·1	38·4	39·1	139·4
6	37·5	37·3	36·3	37·6	36·1	34·0	31·9	34·0	37·6	36·8	36·8	38·8	40·5	41·5	42·4	43·0	44·9	49·2	42·6	41·0	44·7	40·0	37·6	39·7	39·2	141·8
7	39·0	38·6	36·7	34·9	34·2	34·4	35·9	34·8	36·9	38·8	43·5	43·9	45·3	45·8	45·8	43·8	43·1	40·1	37·3	37·3	38·8	40·4	42·4	37·8	39·6	149·5
8	39·0	42·8	38·8	36·1	30·9	31·7	32·8	32·4	35·7	39·1	40·0	42·8	43·4	43·6	42·0	39·9	40·7	40·9	41·1	42·2	37·8	40·0	40·2	39·5	38·9	133·4
9	38·7	37·4	36·0	35·6	34·3	33·9	33·7	32·8	33·9	34·4	36·8	40·2	43·3	44·4	42·9	41·3	40·1	40·0	40·0	39·0	39·1	40·0	39·2	39·5	38·2	116·5
10 *q*	39·5	45·6	38·2	37·5	34·8	33·5	34·0	33·9	35·2	37·8	40·4	42·0	42·3	43·0	43·5	42·9	41·9	41·0	40·0	39·8	39·5	39·4	39·5	39·3	39·4	144·5
11 *q*	39·5	39·3	37·7	35·6	33·0	31·4	31·4	31·5	32·0	34·4	38·1	42·1	44·5	45·8	46·2	46·1	42·6	40·9	40·1	39·7	40·0	39·7	39·6	39·5	38·8	130·7
12	38·8	39·0	39·5	41·4	42·0	42·5	37·2	32·7	32·3	34·5	38·1	41·7	43·4	45·2	46·6	44·8	44·2	43·3	42·5	41·9	41·4	40·9	40·0	39·5	40·6	173·4
13 *q*	39·2	38·1	37·2	35·7	35·2	34·5	34·4	33·7	34·0	35·9	38·8	42·2	45·7	45·8	44·8	43·5	42·1	41·5	41·6	41·7	41·9	41·8	41·8	41·3	39·7	152·4
14	39·7	37·2	36·2	35·2	33·7	33·0	32·5	32·1	32·8	35·4	38·5	42·1	44·9	45·9	45·3	44·9	44·6	42·8	41·0	40·6	40·9	40·7	39·9	38·9	39·1	138·8
15	40·2	37·9	35·6	35·9	33·3	35·0	34·2	34·0	35·2	37·6	40·4	44·4	46·9	48·9	49·4	48·6	47·4	46·9	44·9	42·4	41·2	41·9	41·7	39·8	*41·0*	183·7
16	36·2	35·5	31·3	30·5	31·5	30·9	31·3	32·2	34·4	35·9	38·2	42·0	45·3	47·2	47·8	46·9	43·4	44·8	44·1	42·6	40·4	36·6	38·8	37·6	38·6	125·4
17	37·8	36·7	35·7	33·9	31·8	31·9	32·3	32·7	32·8	33·8	36·6	41·6	45·7	47·3	47·1	46·7	44·2	41·9	41·0	41·1	40·6	36·5	37·6	35·9	38·5	123·2
18	33·8	34·4	33·8	32·4	30·9	31·2	31·7	31·8	32·3	31·9	37·3	42·4	47·2	50·1	50·6	50·8	46·2	48·5	47·2	41·0	45·1	43·7	38·9	35·2	39·5	148·4
19	32·1	32·8	33·2	34·2	37·1	32·4	30·4	31·0	33·2	35·2	39·3	42·8	43·9	45·6	45·8	44·4	42·9	41·6	41·3	40·7	36·7	34·8	34·7	37·0	37·6	103·1
20	38·0	36·6	36·1	37·2	37·7	31·2	29·0	32·1	32·4	34·2	37·6	40·5	41·7	42·5	43·2	43·7	43·7	43·4	44·3	43·9	42·0	41·9	40·7	32·8	38·6	126·4
21 *d*	20·5	23·4	20·6	19·1	28·1	29·5	29·8	32·9	36·9	39·9	40·1	42·2	49·9	51·5	49·1	48·2	49·6	47·0	47·5	51·5	44·0	39·7	41·2	30·7	38·0	112·9
22 *d*	18·8	22·5	19·1	32·4	34·8	35·2	30·3	30·4	32·8	35·2	36·2	39·3	41·4	44·0	49·1	49·4	47·6	42·7	27·3	43·1	42·7	39·7	38·3	41·6	*36·4*	73·9
23	36·4	34·7	35·4	33·1	31·7	32·8	32·8	32·3	32·5	34·2	36·7	40·2	41·9	43·4	43·6	41·9	43·6	41·5	42·1	40·9	40·7	40·2	40·5	37·8	38·0	110·9
24	37·7	39·0	38·1	35·9	31·9	32·3	33·3	32·7	32·9	35·2	37·6	39·9	40·9	43·5	43·3	42·4	42·0	41·8	40·1	38·8	38·6	39·7	39·0	39·7	38·2	116·3
25	39·0	39·2	39·4	35·9	33·1	29·3	29·4	31·7	32·6	34·1	35·7	39·0	42·1	42·5	43·8	44·8	45·5	44·3	43·6	43·8	43·0	42·7	36·3	36·9	38·7	127·7
26	36·5	35·4	35·6	34·7	33·4	33·0	32·2	33·1	34·1	35·7	38·0	41·4	43·3	43·8	45·4	44·5	44·1	40·0	40·0	41·9	41·7	41·0	40·1	39·5	38·7	128·4
27	38·4	38·6	38·5	37·6	35·2	32·3	32·8	32·9	38·1	38·9	40·7	42·4	44·1	45·7	46·6	45·7	43·0	41·1	40·0	39·2	39·4	39·5	39·2	38·9	39·5	148·8
28 *q*	39·3	39·5	38·7	38·4	36·9	36·5	34·1	34·0	35·2	35·9	40·5	45·6	47·6	48·9	47·6	46·2	44·4	42·5	41·7	40·9	40·8	40·7	38·8	38·7	40·6	173·4
29 *d*	38·5	34·6	32·7	34·2	35·1	32·2	34·8	31·0	30·9	35·2	38·6	41·7	44·4	45·7	47·6	46·4	43·8	41·4	38·2	37·7	37·9	38·5	38·9	36·7	38·2	116·7
30 *q*	41·8	39·0	36·3	34·1	32·2	31·4	30·8	31·4	32·7	34·8	37·9	42·6	45·2	44·8	44·3	43·6	42·4	40·8	40·0	39·1	39·0	38·8	38·9	38·7	38·4	120·6
Mean	36·9	37·0	35·3	35·0	34·5	34·0	33·1	*33·0*	34·2	36·1	38·8	41·7	44·1	45·3	*45·6*	44·7	44·0	42·7	41·2	41·3	40·9	40·0	39·5	38·2	39·0	
Sum 900·0+	205·8	208·9	159·8	150·9	133·8	119·0	91·6	88·7	127·2	183·6	263·2	350·7	424·3	459·0	468·5	441·0	420·5	381·2	335·2	340·2	325·5	300·5	284·6	247·2		Grand Total 28110·9

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) + — JUNE 1961

	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	
1 *d*	253	267	292	306	308	305	311	311	314	306	296	304	325	317	346	352	354	389	349	346	342	330	321	296	318	1640
2 *d*	306	237	267	298	310	315	323	321	322	330	326	331	332	341	381	432	396	414	389	358	339	328	323	319	*335*	2038
3	319	319	320	313	300	266	268	300	315	318	313	318	318	315	318	326	333	333	332	333	329	326	323	310	315	1565
4	308	309	313	311	302	302	313	319	323	326	326	323	325	331	330	333	336	338	339	334	333	332	326	321	323	1753
5	314	314	312	310	306	299	297	307	321	325	319	313	314	312	313	318	321	328	337	339	345	338	325	322	319	1649
6	319	316	316	315	313	312	319	319	310	307	310	310	308	312	322	326	324	342	404	394	370	355	347	339	330	1909
7	332	328	328	328	325	323	321	316	315	317	318	318	322	325	360	357	353	355	367	355	341	316	278	301	329	1899
8	295	190	237	274	301	311	315	325	318	313	320	329	327	334	349	358	362	349	343	338	340	329	318	316	316	1591
9	322	325	326	327	327	325	322	321	323	321	319	315	313	313	325	331	341	336	327	323	328	313	318	321	323	1762
10 *q*	321	316	317	318	317	317	319	317	314	309	309	311	316	313	313	315	316	318	318	317	321	321	321	322	317	1596
11 *q*	322	323	325	325	327	326	319	319	318	311	307	305	305	309	309	303	308	314	318	317	315	315	316	317	316	1573
12	318	319	319	314	310	301	270	291	300	302	304	308	314	319	333	338	334	327	325	324	319	317	318	319	314	1543
13 *q*	321	325	325	325	323	323	318	317	315	306	298	295	302	311	321	325	331	329	327	325	323	321	321	320	319	1647
14	315	322	325	324	322	319	316	313	313	300	301	298	305	305	306	314	320	325	325	325	323	322	322	317	316	1577
15	299	303	311	315	315	318	311	308	309	315	308	301	303	315	321	347	367	368	358	348	337	325	315	311	322	1728
16	274	222	258	295	313	322	322	321	321	315	302	300	303	302	307	321	347	335	328	326	328	327	321	311	309	1421
17	309	307	307	306	311	314	320	323	322	321	315	311	313	307	307	310	315	319	321	325	329	329	316	303	315	1560
18	303	309	313	315	318	318	317	318	313	313	314	313	301	303	309	315	334	329	341	363	347	276	266	265	313	1513
19	303	317	318	315	278	272	295	309	318	325	328	327	324	318	313	321	325	323	325	331	331	320	303	301	314	1540
20	309	308	309	303	287	296	310	313	316	317	318	315	307	303	306	309	309	309	317	333	335	327	307	297	311	1460
21 *d*	306	129	67	185	272	311	323	327	326	322	318	322	338	355	340	355	345	374	315	377	367	339	369	209	304	1291
22 *d*	47	−18	32	97	81	164	220	265	295	315	336	361	388	410	400	382	389	381	345	329	341	307	307	295	*270*	469
23	234	228	243	289	317	326	331	333	330	327	327	322	325	333	336	347	333	334	337	333	330	331	322	295	315	1563
24	285	289	290	290	305	322	323	327	329	333	328	319	316	315	315	321	325	325	325	334	337	331	328	327	318	1639
25	327	326	323	323	325	322	325	327	323	318	322	323	321	322	323	329	347	361	368	356	343	327	311	307	329	1899
26	307	311	321	329	331	331	329	331	331	327	321	318	316	322	318	335	342	358	361	342	333	329	329	328	329	1900
27	331	331	331	329	323	323	330	333	318	311	313	315	324	341	350	343	341	336	330	329	327	327	327	326	329	1889
28 *q*	327	327	327	327	325	321	315	318	317	317	317	313	319	327	327	327	326	326	326	328	329	325	325	321	323	1757
29 *d*	303	298	287	128	117	162	207	288	309	321	329	327	338	341	347	348	351	355	344	345	340	336	323	310	298	1154
30 *q*	301	298	321	321	325	329	334	335	329	324	323	320	318	317	321	327	331	331	327	326	327	325	323	323	323	1756
Mean	298	*283*	289	295	298	303	308	316	318	317	316	316	319	323	329	335	339	*342*	339	338	335	325	319	309	317	
Sum 8000+	930	495	680	855	934	1095	1243	1472	1527	1512	1485	1485	1580	1688	1866	2065	2156	2261	2168	2153	2049	1744	1569	1269		Grand Total 228,281

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

4 LERWICK — JUNE 1961

	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.	′	′	h. m.	′	h. m.	γ	γ	h. m.	γ				°A.
1 *d*	16 23	727	478	12 30	249	16 15	53·5	25·6	00 05	27·9	17 01	411	236	00 34	175	3,3,2,3,5,5,3,3	27	1	82·0
2 *d*	17 09	707	506	09 18	201	01 03	52·3	27·1	18 04	25·2	15 13	486	208	01 27	278	4,2,3,3,4,4,4,1	25	1	82·0
3	18 32	604	515	05 23	89	05 22	45·9	33·7	07 41	12·2	17 10	336	243	06 00	93	2,4,3,2,2,1,1,1	16	0	82·0
4	19 00	600	539	10 10	61	13 31	45·4	33·8	08 11	11·6	18 34	340	299	05 00	41	1,2,2,2,3,2,0,1	13	0	82·3
5	19 21	627	534	10 05	93	15 35	44·8	31·6	08 33	13·2	20 01	345	287	05 50	58	1,3,2,2,2,3,2,2	17	0	82·8
6	17 20	748	553	13 28	195	17 20	52·6	31·2	06 09	21·4	18 28	413	303	08 58	110	1,1,2,2,2,5,3,2	18	0	84·0
7	17 30	659	524	14 40	135	15 10	48·3	29·8	08 20	18·5	18 43	380	262	22 10	118	1,2,3,3,4,4,3,3	23	0	84·0
8	15 40	621	501	02 05	120	00 22	47·7	28·6	05 03	19·1	16 14	366	172	01 36	194	4,3,2,3,3,3,3,2	23	0	84·0
9	19 30	616	531	10 31	85	13 31	44·8	32·5	07 53	12·3	16 28	342	309	13 29	33	1,1,1,1,2,2,2,2	12	0	84·1
10 *q*	19 10	594	545	12 41	*49*	14 12	43·8	32·8	07 48	*11·0*	00 07	323	308	11 21	*15*	1,1,1,1,2,1,0,1	8	0	83·8
11 *q*	20 18	600	540	11 23	60	15 14	47·4	30·1	05 33	17·3	05 07	328	303	15 28	25	0,1,0,1,1,1,1,0	5	0	83·8
12	16 35	620	528	05 37	92	14 33	47·3	31·5	07 54	15·8	15 13	342	262	06 11	80	1,3,3,1,2,2,1,0	13	0	83·7
13 *q*	18 01	608	535	09 50	73	13 07	46·7	33·0	07 46	13·7	15 33	332	294	11 40	38	0,1,1,2,2,1,1,1	9	0	83·5
14	23 48	621	550	11 29	71	12 59	46·3	31·8	07 00	14·5	18 00	327	296	11 38	31	1,0,1,1,1,0,1,2	7	0	83·6
15	16 19	656	547	11 49	109	15 18	50·2	30·2	04 56	20·0	16 50	375	291	11 11	84	2,2,1,3,3,3,3,1	18	0	83·5
16	15 39	631	530	09 51	101	14 07	49·1	24·8	02 56	24·3	16 38	354	204	01 16	150	4,2,1,3,3,3,3,2	21	0	83·8
17	18 49	624	517	11 51	107	13 16	47·6	30·5	04 18	17·1	21 24	333	298	23 57	35	1,1,0,2,3,1,1,2	11	0	83·8
18	18 04	666	518	11 50	148	14 43	52·3	30·2	04 40	22·1	19 29	378	217	21 49	161	1,1,1,2,3,3,3,4	18	0	83·8
19	21 00	616	525	11 33	91	14 28	46·5	29·3	06 53	17·2	20 26	332	265	05 16	67	2,3,3,1,1,2,3,2	17	0	83·8
20	18 52	655	542	11 50	113	18 59	45·7	27·3	06 15	18·4	20 21	341	242	23 59	99	1,2,2,1,1,3,3,4	17	0	83·9
21 *d*	19 03	*769*	*-438*	23 53	*1207*	22 33	70·5	−2·8	23 44	73·3	22 10	*488*	−13	24 00	501	6,5,3,4,4,5,5,7	39	2	83·9
22 *d*	18 21	716	−313	00 06	1029	00 14	*72·3*	*-18·2*	00 48	*90·5*	13 09	416	*-218*	00 09	*634*	7,7,4,4,3,4,5,4	38	2	83·6
23	16 50	609	484	00 18	125	16 48	45·2	30·8	08 01	14·4	15 12	352	209	00 16	143	4,3,1,1,2,3,2,3	19	0	83·6
24	19 19	606	526	10 04	80	13 47	44·2	31·3	04 58	12·9	20 00	341	275	00 01	66	2,2,1,1,2,2,2,1	13	0	83·9
25	17 36	659	534	11 01	125	16 33	46·4	27·5	05 55	18·9	18 22	373	302	22 25	71	1,2,2,2,2,3,3,3	18	0	83·9
26	14 41	652	538	10 04	114	14 40	47·2	31·9	06 17	15·3	18 11	367	305	01 08	62	1,1,0,1,3,2,2,1	11	0	84·0
27	16 04	597	515	07 43	82	13 47	47·2	30·9	05 50	16·3	14 50	353	308	09 50	45	0,1,2,3,3,2,0,1	12	0	85·4
28 *q*	19 40	615	543	09 34	72	13 39	49·2	32·5	07 17	16·7	19 58	330	309	11 55	21	1,1,1,2,2,2,1,1	11	0	85·5
29 *d*	19 00	625	248	05 20	377	14 44	48·3	8·2	05 13	40·1	17 19	359	6	03 49	353	3,6,5,2,3,2,2,2	25	1	85·5
30 *q*	18 23	604	523	11 16	81	06 56	45·5	30·2	12 35	15·3	06 19	335	283	00 46	52	2,1,1,1,1,0,1,1	8	0	86·0
Mean	− −	642	457	− −	184	− −	49·1	26·9	− −	22·2	− −	363	235	− −	128	−	−	0·23	83·8

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

TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

1 LERWICK (H) — 14,000γ (0·14 C.G.S. unit) + — JULY 1961

	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 12,000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1	579	576	559	579	579	563	556	551	557	562	548	542	567	563	574	578	605	591	608	610	604	595	588	586	576	1820
2	589	581	577	578	577	569	561	552	538	542	542	540	551	561	585	615	610	600	614	613	596	599	598	603	579	1891
3	587	586	588	588	590	589	563	558	558	557	547	537	519	539	564	574	589	610	606	608	609	598	591	589	577	1844
4	589	584	586	591	591	586	575	567	558	552	547	540	550	556	575	581	603	595	608	618	632	606	477	373	568	1640
5 *d*	403	411	376	496	309	523	539	541	532	539	540	553	589	594	640	669	635	603	601	614	593	583	571	570	543	1024
6	547	563	555	532	572	586	577	561	553	555	547	545	557	562	582	622	689	679	613	599	596	587	578	572	580	1929
7	573	553	518	550	574	569	561	543	550	544	536	551	564	570	616	599	608	599	600	601	598	588	582	577	572	1724
8	577	578	567	552	567	573	564	550	544	545	548	555	551	565	575	595	595	618	610	602	596	590	587	576	574	1780
9	565	578	580	581	573	571	549	551	560	550	534	536	539	563	578	595	605	601	600	596	587	580	584	582	572	1738
10	581	588	573	580	533	564	557	539	546	528	529	527	561	569	591	629	629	599	594	592	596	596	581	575	573	1757
11 *q*	574	573	561	578	582	579	573	571	556	543	539	542	550	556	572	584	606	642	650	624	606	592	590	582	580	1925
12 *q*	572	577	581	583	586	584	569	551	543	541	517	530	553	568	586	592	599	614	610	597	595	593	588	582	575	1811
13 *d*	582	581	581	583	587	586	582	574	558	550	550	553	596	589	800	695	657	909	925	868	649	559	376	390	*620*	2880
14 *d*	368	442	534	581	589	591	580	567	458	357	467	713	607	826	923	1031	925	725	658	576	491	523	504	488	605	2524
15	492	516	498	510	475	450	465	461	481	489	503	518	523	557	654	624	630	625	608	599	592	526	494	410	529	700
16	349	238	400	497	547	536	542	536	539	528	528	539	555	570	603	564	584	623	665	635	618	598	574	562	539	930
17	550	546	561	567	558	550	556	561	548	529	508	500	527	577	542	558	565	590	547	659	663	465	479	496	554	1302
18 *d*	286	358	496	443	456	296	380	517	536	531	502	544	468	681	737	913	844	793	696	626	552	319	394	183	523	551
19	75	305	445	488	544	567	559	547	529	516	512	517	525	553	550	568	582	589	596	582	570	565	564	561	*517*	409
20	560	561	559	564	540	557	542	545	554	553	548	541	537	552	571	569	596	612	639	639	643	615	581	557	572	1735
21	558	494	514	519	392	452	462	466	492	516	520	522	551	596	589	684	725	684	650	615	581	570	573	570	554	1295
22	571	565	559	569	567	562	555	533	513	534	551	557	551	564	567	578	576	580	584	584	583	583	579	579	564	1544
23	574	572	572	574	578	577	570	559	550	543	535	547	561	592	629	644	624	658	654	616	598	584	560	535	584	2006
24	548	532	545	565	554	537	569	572	550	528	532	557	537	548	565	603	586	589	601	608	596	589	586	578	566	1575
25	559	518	457	529	561	582	570	568	555	538	535	551	570	568	586	595	608	602	592	592	588	582	584	590	566	1580
26	563	580	585	555	561	580	581	574	560	544	540	544	557	557	568	581	590	597	592	599	650	632	565	430	570	1685
27 *d*	604	607	630	643	637	625	610	606	319	254	406	574	570	584	546	541	564	627	634	596	535	479	565	554	555	1310
28	542	495	489	489	507	530	512	524	516	501	516	532	530	535	556	581	564	589	579	595	584	575	565	556	540	962
29 *q*	551	554	552	528	520	549	547	542	542	536	537	542	542	567	555	561	569	575	588	597	589	584	574	571	557	1372
30 *q*	566	568	558	570	578	571	561	549	544	535	532	532	537	553	567	568	574	586	598	604	607	584	574	572	566	1588
31 *q*	570	573	573	573	574	574	569	565	557	544	529	518	524	543	552	566	571	589	609	603	592	585	580	578	567	1611
Mean	523	527	540	553	547	553	550	548	532	*522*	527	545	549	577	603	621	623	*629*	627	615	596	569	554	533	565	
Sum 16,000+	204	353	729	1135	958	1128	1056	1001	496	184	325	899	1019	1878	2698	3257	3307	3493	3429	3067	2489	1624	1186	527		Grand Total 420,442

MAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

2 LERWICK (D) — 9° + — JULY 1961

	Hour G.M.T. 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 700·0+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	
1	38·8	38·4	40·1	35·7	32·4	28·0	28·9	33·2	34·0	33·5	38·0	43·4	44·9	45·0	46·0	46·8	44·7	42·3	40·0	39·1	38·8	38·9	38·8	39·8	38·7	229·5
2	38·8	38·3	37·6	35·4	34·2	31·6	32·5	32·8	32·4	32·0	35·4	38·6	41·9	44·0	45·8	46·0	45·2	44·1	44·1	44·8	42·2	41·7	40·7	40·2	39·2	240·3
3	38·5	37·6	36·7	35·4	34·1	34·0	35·7	36·1	36·7	36·3	37·8	41·2	44·9	45·5	46·3	47·7	47·5	43·7	44·9	44·1	42·8	40·5	38·9	38·8	40·2	265·7
4	36·9	35·4	35·9	36·2	35·4	33·0	29·0	28·7	32·4	35·3	38·7	44·7	48·6	50·2	49·8	47·0	45·4	42·4	42·4	42·3	43·7	38·8	27·8	27·9	38·7	227·9
5 *d*	37·9	38·8	39·4	29·1	36·9	33·0	35·7	35·7	37·8	36·9	38·6	42·1	42·3	42·0	45·7	40·7	38·3	40·2	42·0	41·9	41·1	41·7	44·8	35·8	39·1	238·4
6	42·0	39·2	38·2	39·3	34·0	30·4	31·6	30·2	30·6	32·1	34·2	37·3	39·7	40·7	41·2	41·5	38·0	38·8	39·7	42·5	42·3	41·7	39·9	38·3	37·6	203·4
7	35·2	33·2	35·2	35·2	31·8	31·6	31·6	32·7	31·2	32·9	35·7	37·7	41·6	42·7	40·5	39·8	40·2	40·3	41·0	39·6	39·6	41·1	40·6	39·8	37·1	190·8
8	39·3	38·8	39·5	37·4	32·3	30·0	31·1	32·6	34·3	35·9	37·0	39·8	42·6	43·1	44·1	43·7	41·1	41·3	40·2	39·3	40·5	40·5	39·8	38·6	38·5	222·8
9	36·4	36·6	36·4	37·9	39·2	41·2	35·6	35·9	33·8	34·5	37·4	39·3	40·7	41·7	42·5	42·6	38·3	37·2	40·1	40·8	40·0	39·4	39·4	39·2	38·6	226·1
10	39·2	40·0	35·6	34·9	41·8	38·0	39·8	36·5	35·0	36·3	36·9	42·1	42·6	44·4	43·2	44·8	41·9	41·1	41·2	40·6	40·4	35·7	36·1	37·7	39·4	245·8
11 *q*	37·8	38·8	41·7	36·9	36·2	31·1	31·6	32·1	32·1	33·7	36·4	40·7	43·4	44·0	44·5	44·0	42·6	41·6	40·2	39·6	40·7	40·7	41·3	39·4	38·8	231·1
12 *q*	35·4	35·5	35·5	34·0	32·7	32·1	33·7	36·4	35·5	36·3	39·4	42·4	46·5	47·4	46·6	45·3	43·0	40·4	39·6	39·9	39·9	40·3	40·4	39·5	39·1	237·7
13 *d*	38·8	37·6	36·8	35·0	32·1	30·3	29·2	29·8	31·4	33·6	37·0	37·6	34·0	58·4	51·9	65·1	54·3	47·6	54·6	42·6	46·5	45·2	33·2	39·0	*40·9*	281·6
14 *d*	27·7	36·2	29·5	26·8	26·7	25·1	25·8	28·6	23·0	13·2	19·4	12·8	28·5	24·5	29·2	40·2	50·8	48·9	38·8	39·8	39·3	38·8	38·2	40·3	*31·3*	52·1
15	38·7	37·3	38·3	39·2	37·0	38·1	34·5	38·0	37·3	37·1	42·0	45·0	46·9	48·2	40·5	43·3	41·6	40·8	40·9	38·8	40·3	36·4	31·6	22·5	38·9	234·3
16	18·4	29·6	26·1	33·7	27·8	29·2	28·0	29·0	31·3	32·6	35·9	38·8	42·6	43·9	45·0	44·6	45·1	46·0	40·4	40·7	40·4	40·7	38·8	38·3	36·1	166·9
17	38·2	35·2	33·9	33·0	32·4	31·1	30·2	28·6	28·6	29·7	32·5	37·1	40·3	44·3	43·8	45·1	43·0	41·7	46·9	44·0	37·5	41·2	31·2	29·8	36·6	179·3
18 *d*	25·9	19·8	25·3	31·6	30·8	48·2	49·6	26·8	26·3	30·5	34·0	37·3	32·7	31·4	39·8	46·4	53·8	56·6	48·4	45·9	42·3	45·7	32·7	23·9	36·9	185·7
19	9·3	23·1	10·5	13·6	29·8	27·8	28·5	28·8	29·8	31·6	34·6	37·8	40·5	41·9	42·3	43·0	42·1	39·8	37·4	38·0	38·3	37·7	37·6	38·3	32·6	82·1
20	36·7	35·9	35·4	35·3	34·3	30·4	34·0	35·9	32·3	33·2	37·0	42·0	45·5	47·0	47·6	47·2	47·0	45·1	45·9	44·2	41·1	41·7	34·5	36·5	39·4	245·7
21	34·8	35·5	25·5	23·6	35·2	38·4	35·3	34·4	40·4	38·8	38·5	41·4	43·6	43·8	40·6	40·6	44·1	45·9	42·0	43·0	44·1	42·3	42·1	41·7	39·0	235·6
22	40·0	37·8	37·7	35·0	32·6	31·6	32·2	34·4	36·4	41·2	37·3	37·8	40·6	42·2	42·2	41·4	41·2	41·0	40·6	40·0	39·8	39·8	39·6	37·8	38·3	220·2
23	37·4	35·8	35·8	36·0	34·2	32·1	31·5	31·1	33·6	37·6	40·8	42·6	45·9	47·7	48·1	46·9	46·3	47·9	44·3	43·9	43·5	41·9	38·8	35·8	40·0	259·5
24	32·3	31·5	29·3	29·7	35·8	39·8	38·8	33·8	33·8	34·4	37·6	39·0	41·8	42·7	40·7	40·2	41·1	40·3	40·3	41·1	39·9	38·3	39·9	39·3	37·6	201·4
25	38·4	41·7	45·5	29·8	28·2	32·2	33·5	33·8	36·4	39·3	42·3	42·0	44·2	45·2	47·0	47·6	45·5	44·1	42·1	40·9	40·4	39·3	38·3	38·5	39·8	256·2
26	44·6	34·3	35·2	41·2	35·3	31·1	33·0	33·0	30·5	37·8	40·2	41·2	43·6	44·1	43·1	42·3	41·2	40·2	40·2	40·7	45·0	36·4	34·5	36·1	38·5	224·8
27 *d*	31·5	36·8	35·9	33·4	32·1	35·0	34·5	36·4	8·5	1·4	24·3	55·2	56·3	54·9	47·2	42·1	43·1	40·7	36·9	40·1	44·6	29·7	30·9	37·0	36·2	168·5
28	36·3	41·2	36·7	33·9	31·2	29·7	31·2	29·5	30·8	31·7	34·0	37·6	41·7	43·6	43·8	39·9	37·1	36·6	38·6	39·3	29·7	34·1	37·3	38·5	36·0	164·0
29 *q*	38·3	36·9	36·1	35·2	35·2	35·2	35·6	33·2	34·1	35·9	38·7	40·5	42·6	45·4	46·3	45·5	44·7	43·7	42·5	41·2	40·1	40·2	39·6	37·4	39·3	244·1
30 *q*	37·5	34·0	33·1	31·9	31·8	30·2	31·2	34·1	33·5	35·7	37·7	40·6	42·8	44·6	45·5	45·0	43·1	41·4	39·4	35·7	33·9	35·0	38·3	38·8	37·3	194·8
31 *q*	37·8	37·4	37·0	36·6	35·6	34·5	34·0	32·9	33·0	35·4	37·6	40·5	43·4	44·8	45·5	45·1	42·7	41·7	40·7	37·1	40·1	38·3	38·3	39·1	38·7	229·1
Mean	35·5	35·7	34·7	33·6	33·5	33·0	33·1	32·7	*32·1*	33·1	36·3	39·9	42·5	44·2	44·1	*44·6*	43·7	42·7	41·8	41·0	40·6	39·5	37·5	36·9	38·0	
Sum 900·0+	198·8	208·2	175·4	141·9	139·1	124·0	127·4	115·0	96·8	126·4	226·9	336·1	417·2	469·3	466·3	481·4	454·0	423·4	396·3	371·5	358·8	323·7	263·9	243·6		Grand Total 28285·4

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) + — JULY 1961

	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	
1	321	312	298	277	288	298	304	310	304	305	310	312	308	314	323	328	337	347	344	337	329	326	326	323	316	1581
2	316	317	321	326	329	329	328	330	329	322	319	317	310	308	311	327	349	371	358	350	345	337	331	311	329	1891
3	303	320	326	327	329	329	333	326	324	317	315	313	316	316	322	344	347	369	354	348	328	330	331	327	329	1894
4	321	319	322	323	321	325	326	325	324	317	310	302	293	294	297	302	307	323	323	323	323	313	189	93	301	1215
5 *d*	35	93	−89	63	66	131	217	250	275	287	309	320	334	369	378	436	415	378	348	339	333	299	253	281	*255*	120
6	274	267	274	280	278	309	316	326	327	322	322	323	320	318	321	333	365	379	369	339	334	335	330	317	320	1678
7	286	243	207	237	285	308	323	329	330	335	334	329	337	339	349	365	354	350	347	347	343	338	335	333	320	1683
8	327	318	310	288	294	313	314	318	322	326	319	315	318	320	327	328	333	329	333	339	337	335	328	307	321	1698
9	282	310	323	316	313	295	308	312	310	320	325	325	324	323	331	329	350	358	342	329	328	328	326	326	322	1733
10	327	302	294	284	276	236	261	284	305	320	323	323	329	331	326	337	373	374	341	329	329	329	329	328	316	1590
11 *q*	331	330	315	294	315	324	326	323	326	322	323	320	317	322	322	323	311	321	333	339	343	340	325	315	323	1760
12 *q*	312	322	326	331	329	330	330	331	331	331	340	327	314	315	320	324	321	326	337	339	337	333	331	329	328	1866
13 *d*	326	326	329	332	331	329	326	325	325	311	305	302	299	287	278	360	424	479	525	351	335	311	133	61	321	1710
14 *d*	73	81	197	292	318	330	335	335	357	446	458	529	509	482	497	499	471	434	375	329	210	279	281	232	*348*	2349
15	202	213	182	227	233	284	310	312	325	340	343	345	353	363	389	404	404	399	380	374	349	278	215	156	307	1380
16	87	114	141	172	288	322	333	336	337	343	343	336	335	339	342	355	346	343	355	355	353	354	349	339	305	1317
17	311	260	280	295	318	330	335	335	341	342	343	345	355	378	399	365	342	335	335	331	293	114	239	205	314	1526
18 *d*	171	134	181	221	220	144	112	245	298	325	334	343	416	483	483	448	365	377	397	393	365	224	221	143	293	1043
19	79	146	105	71	164	292	343	353	357	350	345	341	331	333	335	334	336	344	348	349	342	339	335	331	292	1003
20	330	331	333	330	322	330	320	308	312	329	336	323	319	313	314	319	322	323	324	335	351	348	288	276	322	1736
21	258	209	89	118	109	114	188	265	318	321	335	336	343	364	410	458	480	450	422	385	362	350	334	329	306	1347
22	328	328	326	322	329	321	316	328	339	320	314	315	322	331	350	363	343	329	325	327	329	330	329	322	329	1886
23	314	316	323	322	325	328	329	333	332	328	327	320	322	324	343	393	432	393	375	369	354	325	301	287	338	2115
24	281	262	267	281	286	280	289	308	319	330	329	337	349	343	347	352	354	339	329	329	337	343	334	317	318	1642
25	281	236	180	191	228	248	293	310	322	329	333	329	331	335	333	341	342	337	331	327	329	334	330	326	303	1276
26	265	247	283	288	256	289	296	304	316	316	316	320	324	331	338	337	329	324	323	319	306	343	286	111	299	1167
27 *d*	225	276	301	310	307	302	298	302	342	388	380	307	304	313	359	375	372	390	368	345	322	216	225	255	316	1582
28	287	301	287	334	322	339	343	341	340	339	327	324	332	334	340	352	362	355	349	342	350	337	337	338	334	2012
29 *q*	341	338	342	342	330	310	314	326	328	329	331	332	333	335	338	339	339	338	337	338	344	342	335	325	334	2006
30 *q*	310	310	325	329	334	334	335	334	334	330	330	330	325	323	336	349	357	353	349	351	344	333	329	328	334	2012
31 *q*	329	330	333	334	337	336	337	338	339	334	332	328	327	327	334	336	342	346	347	359	357	342	330	323	337	2077
Mean	266	265	*259*	273	283	293	305	316	325	331	333	331	334	339	348	360	*362*	362	356	344	334	316	299	277	317	
Sum 8000+	233	211	31	457	780	1089	1438	1802	2088	2274	2310	2268	2349	2507	2792	3155	3224	3213	3023	2666	2341	1785	1265	594		Grand Total 235,895

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

4 LERWICK — JULY 1961

	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.	′	′	h. m.	′	h. m.	γ	γ	h. m.	γ					°A.
1	16 20	625	532	11 34	93	15 22	47·3	27·3	05 29	20·0	16 57	353	273	03 29	80	3,2,2,2,2,3,1,1	16	0	86·0
2	19 03	639	528	10 51	111	17 10	47·1	30·0	09 33	17·1	17 28	378	293	23 59	85	1,1,1,2,2,3,3,3	16	0	86·0
3	17 34	642	486	12 24	156	16 10	49·3	32·1	07 56	17·2	17 56	376	292	00 07	84	2,1,3,2,4,4,2,1	19	0	86·0
4	20 59	642	302	23 39	340	13 58	52·0	15·8	23 10	36·2	21 18	330	39	23 40	291	2,1,2,2,3,2,3,6	21	1	85·8
5 *d*	15 21	721	60	02 00	661	02 04	*94·2*	9·5	04 32	84·7	15 46	458	−171	02 30	629	7,7,4,3,3,4,2,3	33	2	85·2
6	17 17	739	521	03 20	218	17 31	48·2	27·9	07 27	20·3	17 09	393	259	01 05	134	3,3,2,2,2,5,3,2	22	1	85·2
7	14 45	640	509	02 40	131	13 12	44·9	28·8	08 14	16·1	15 18	371	197	02 34	174	4,4,3,3,3,3,2,1	23	1	85·4
8	17 47	627	535	09 55	*92*	15 04	45·7	29·0	05 53	16·7	19 46	343	277	24 00	66	2,2,2,2,2,2,2,3	17	1	85·6
9	16 11	621	525	10 49	96	15 38	43·1	31·7	07 04	*11·4*	17 02	365	270	00 12	95	3,2,3,2,2,2,2,1	17	1	85·5
10	16 13	652	507	04 38	145	04 47	46·5	32·0	08 25	14·5	16 48	394	223	05 06	171	3,3,3,2,2,3,2,2	20	1	85·6
11 *q*	18 40	661	531	10 50	130	02 36	45·8	30·0	05 43	15·8	19 27	345	282	03 12	63	3,3,1,1,1,4,3,2	18	0	86·0
12 *q*	17 51	622	498	10 41	124	13 46	47·8	31·4	05 30	16·4	10 41	350	304	00 08	46	2,1,2,3,2,1,2,1	14	0	85·9
13 *d*	19 10	*1415*	82	22 57	*1333*	15 38	74·8	5·3	22 53	69·5	17 44	563	*−192*	22 58	*755*	1,1,1,5,6,7,7,7	35	2	86·0
14 *d*	15 52	1177	266	09 50	911	16 34	64·7	−20·8	09 50	85·5	15 37	*581*	14	00 15	567	6,3,5,7,7,7,6,4	45	2	86·0
15	14 25	689	356	23 50	333	13 57	50·2	19·0	23 29	31·2	15 38	413	111	24 00	302	3,4,3,3,5,3,3,5	29	2	85·9
16	18 40	691	74	01 12	617	14 33	47·4	3·1	02 28	44·3	18 34	364	30	00 59	334	6,5,2,2,3,3,3,3	27	1	86·2
17	20 14	738	334	21 32	404	21 28	70·5	16·6	21 01	53·9	14 40	414	28	21 37	386	4,3,2,3,4,3,5,5	29	1	86·5
18 *d*	15 31	1058	3	21 54	1055	21 59	84·5	3·5	23 42	81·0	15 08	531	56	21 48	475	6,6,6,3,7,6,5,7	46	2	86·6
19	18 05	598	*−199*	00 45	797	01 02	53·2	−6·6	00 21	59·8	08 19	358	12	00 54	346	7,6,3,1,2,1,2,1	23	2	86·5
20	18 47	661	524	06 28	137	15 51	48·8	28·2	05 13	20·6	21 20	365	215	23 54	150	1,3,3,3,2,3,3,5	23	0	86·3
21	16 18	748	341	01 59	407	17 09	51·3	16·0	02 51	35·3	16 14	513	58	04 40	455	5,5,5,3,4,4,4,2	32	1	86·0
22	20 55	589	497	08 47	*92*	09 20	44·1	30·0	05 25	14·1	15 10	367	309	06 13	58	2,2,3,3,2,3,1,1	17	0	86·0
23	17 50	687	522	10 21	165	17 34	49·9	29·7	07 23	20·2	16 13	451	275	23 40	176	1,1,2,2,4,4,4,3	21	0	85·9
24	15 10	615	513	10 00	102	13 31	43·7	27·3	02 47	16·4	15 50	356	253	02 05	103	2,3,3,3,3,3,2,2	21	0	86·0
25	16 23	613	444	02 37	169	02 23	52·5	24·4	04 21	28·1	15 49	348	155	02 35	193	5,4,3,2,2,2,2,2	22	0	86·0
26	19 51	687	286	23 17	401	00 28	53·3	14·2	23 15	39·1	21 48	365	175	23 13	190	4,3,2,1,1,1,4,6	22	1	86·0
27 *d*	17 47	688	171	09 30	517	21 18	85·3	*−36·8*	21 11	*122·1*	21 00	525	65	21 03	460	5,3,6,7,4,5,6,7	43	2	86·2
28	15 15	631	437	02 03	194	01 42	49·1	19·8	20 22	29·3	16 10	370	256	02 11	114	4,3,3,3,2,4,4,2	25	0	86·0
29 *q*	19 34	603	500	04 18	103	14 15	46·6	32·2	07 32	14·4	04 07	346	305	05 40	*41*	2,3,2,1,3,1,2,2	16	0	86·0
30 *q*	19 56	625	526	10 46	99	15 04	46·4	28·3	05 38	18·1	16 40	362	304	01 10	58	2,1,2,1,2,1,3,2	14	0	86·0
31 *q*	18 51	616	511	11 43	105	13 55	46·8	32·0	08 10	14·8	19 36	364	320	13 59	44	1,0,1,2,3,2,2,2	13	0	86·0
Mean	− −	708	378	− −	330	− −	54·0	19·1	− −	35·0	− −	400	171	− −	230	−	−	0·77	85·9

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

TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

1 LERWICK (H) — 14,000γ (0·14 C.G.S. unit) + — AUGUST 1961

	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 13,000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1	572	570	559	573	586	585	581	572	558	545	534	538	551	561	572	571	580	579	593	601	596	588	588	598	573	751
2 *d*	535	466	582	583	539	446	526	545	509	528	531	522	545	541	561	594	614	619	605	622	591	561	564	567	554	296
3	556	569	570	557	524	543	558	553	531	530	532	531	528	540	580	596	592	601	610	611	592	585	571	568	564	528
4 *d*	540	441	528	577	575	563	550	554	554	551	527	534	538	560	569	596	589	589	603	609	600	586	579	573	562	485
5	576	575	569	570	560	556	564	565	556	539	517	538	554	572	570	564	580	580	587	595	595	587	589	589	569	647
6	593	573	574	577	577	572	570	564	554	545	543	535	552	566	573	591	593	586	585	592	585	585	588	575	573	748
7 *q*	573	574	575	578	580	577	568	558	552	543	539	543	549	555	554	568	577	581	591	599	591	592	595	584	571	696
8	581	579	579	576	578	584	550	570	553	525	505	524	552	566	560	589	614	636	654	616	581	574	577	577	575	800
9 *q*	573	571	570	569	571	564	558	556	544	532	533	538	544	549	564	583	588	589	593	595	594	591	588	585	568	642
10	584	585	588	584	586	574	574	563	550	535	528	538	546	579	590	605	606	604	597	595	591	583	580	580	577	845
11 *d*	563	536	557	518	563	589	585	571	545	524	538	551	573	577	614	600	590	621	641	641	629	578	557	560	576	821
12	568	569	564	550	550	556	554	543	534	528	526	530	535	545	560	569	580	592	591	612	597	585	594	580	563	512
13 *q*	574	573	578	576	576	573	566	557	545	531	524	524	529	536	549	563	575	587	595	594	592	588	584	582	565	571
14	581	579	579	580	580	576	566	556	539	534	532	539	544	529	550	574	623	595	594	601	593	588	584	584	571	700
15	584	581	579	579	580	572	552	540	548	535	528	530	534	553	568	589	595	600	589	590	582	579	579	577	568	643
16	563	574	570	574	559	574	577	566	551	539	533	539	550	567	577	589	590	589	588	591	591	589	586	580	571	706
17	580	577	580	584	581	576	570	566	556	549	537	541	556	568	575	577	591	604	606	601	604	588	588	588	577	843
18	589	588	591	593	595	593	586	572	561	547	541	546	557	578	586	589	603	598	595	592	594	595	595	594	582	978
19	589	589	590	588	577	581	571	544	566	554	537	536	543	554	564	572	587	595	587	584	583	584	586	588	573	749
20	583	579	580	579	579	577	572	568	558	546	535	527	539	555	579	610	642	621	603	589	586	580	579	579	577	845
21	577	577	577	577	575	577	577	572	565	550	542	533	541	550	563	574	587	581	585	586	589	588	589	586	572	718
22 *q*	583	579	577	578	579	578	573	568	555	544	538	540	552	561	570	577	584	591	594	595	591	588	584	584	573	763
23 *q*	580	579	577	578	579	578	575	568	557	551	546	545	547	552	566	572	582	589	591	596	594	594	595	591	574	782
24	589	589	589	589	591	589	588	584	570	552	544	547	566	584	598	602	609	637	621	639	644	601	598	601	*593*	1221
25	596	601	596	590	590	583	580	569	555	547	552	554	570	597	583	577	588	591	595	595	594	606	595	593	583	997
26	586	591	588	577	579	584	579	571	560	542	551	560	563	580	588	590	586	586	588	605	603	581	578	558	578	874
27	570	569	579	578	580	578	564	562	568	558	554	556	564	573	583	598	589	592	589	590	588	588	586	587	577	843
28	585	583	580	573	585	582	575	566	554	542	540	545	557	567	580	588	584	585	588	595	593	581	581	580	575	789
29	580	584	580	578	579	579	579	572	559	550	549	540	550	561	577	580	594	613	623	605	574	578	582	562	576	828
30 *d*	573	510	522	521	552	575	574	563	545	528	510	526	555	563	595	658	737	630	578	583	573	543	548	470	564	532
31 *d*	526	505	374	455	524	519	557	531	515	541	536	534	538	570	562	583	612	642	608	596	594	568	580	576	*548*	146
Mean	574	565	568	570	572	569	568	562	551	541	*535*	538	549	562	573	587	599	600	599	*601*	594	584	583	577	572	
Sum 16,000+	1802	1515	1601	1659	1729	1653	1619	1409	1067	765	582	684	1022	1409	1780	2188	2561	2603	2567	2615	2404	2102	2067	1896		Grand Total 425,299

MAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

2 LERWICK (D) — 9° + — AUGUST 1961

	Hour G.M.T. 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 800·0+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	
1	39·2	40·0	41·5	33·6	32·3	31·3	32·0	33·4	34·8	37·9	40·3	42·5	44·0	45·6	45·5	44·3	43·3	41·7	41·2	41·8	41·2	38·4	40·7	39·8	39·4	146·3
2 *d*	41·9	20·8	26·4	22·1	25·7	42·6	38·0	39·7	43·6	40·9	39·4	41·7	42·6	42·1	45·0	48·7	40·2	42·5	42·2	40·7	37·2	43·3	41·2	39·7	38·7	128·2
3	38·3	36·9	37·5	39·3	43·6	38·7	35·5	33·5	36·8	37·3	37·2	38·8	42·8	41·7	42·6	43·8	43·2	42·8	36·9	37·8	39·3	33·5	38·8	37·8	38·9	134·4
4 *d*	39·3	36·9	25·4	28·7	31·1	30·4	33·3	34·7	36·0	35·9	38·3	39·2	42·4	43·6	41·6	38·6	39·0	39·7	40·1	39·8	35·4	35·4	37·4	38·8	36·7	81·0
5	38·8	38·4	38·3	36·8	36·1	35·2	34·7	33·3	34·5	37·1	43·3	44·6	45·1	43·0	41·4	40·7	39·8	39·2	39·7	37·9	38·5	39·9	40·2	36·2	38·9	132·7
6	34·0	36·0	35·9	35·0	33·3	33·9	34·0	34·5	36·4	37·6	39·8	42·8	44·5	44·5	41·4	41·2	39·5	37·9	37·6	38·7	38·8	39·3	36·4	37·1	37·9	110·1
7 *q*	37·6	36·9	36·9	36·7	35·5	34·1	33·6	33·5	34·0	35·4	37·8	41·2	44·8	45·9	44·1	43·1	41·7	40·6	39·7	39·2	39·7	39·4	38·8	37·3	38·6	127·5
8	38·7	37·4	36·1	36·3	35·9	35·0	36·3	36·9	34·2	32·8	42·4	44·6	44·5	46·0	44·4	42·6	43·3	43·6	43·8	39·5	39·4	41·1	40·1	39·5	39·8	154·4
9 *q*	38·6	38·0	39·3	37·6	34·1	30·3	31·3	32·2	33·0	34·5	37·6	42·4	45·5	46·1	45·6	44·4	43·8	42·3	40·6	40·6	40·9	41·3	40·7	40·0	39·2	140·7
10	39·1	39·4	36·7	31·7	32·8	36·6	38·8	37·7	38·9	41·4	44·1	46·0	47·6	48·6	48·5	45·7	43·8	42·6	41·2	40·2	41·1	41·2	39·6	39·3	*40·9*	182·6
11 *d*	39·1	36·9	27·4	35·9	39·2	30·5	30·4	31·8	35·5	41·1	44·1	45·7	45·2	47·9	48·8	50·3	50·8	47·5	43·1	46·1	38·1	35·4	40·6	38·7	40·4	170·1
12	35·4	36·2	35·2	34·7	34·5	32·6	31·6	31·1	32·2	36·3	40·7	44·6	46·5	45·5	45·4	44·1	42·9	42·9	42·4	43·0	41·2	40·7	39·4	35·7	39·0	134·8
13 *q*	36·4	38·0	35·2	32·9	31·9	32·1	32·0	31·9	34·7	36·7	38·1	40·2	43·4	45·7	46·0	44·2	42·0	40·7	40·1	40·1	39·8	39·3	38·9	37·4	38·2	117·7
14	36·4	35·9	35·6	35·4	34·6	32·9	31·0	29·7	31·4	34·5	37·6	43·6	47·9	49·8	50·1	48·9	48·8	41·7	40·7	42·0	40·6	39·5	39·0	38·2	39·4	145·8
15	37·8	37·0	36·5	35·6	34·4	31·6	33·4	33·4	33·9	33·8	38·9	43·2	46·3	47·4	46·2	45·8	42·6	41·4	38·5	36·5	39·8	38·9	39·0	39·8	38·8	131·7
16	43·4	39·0	38·9	36·1	36·9	33·6	31·9	31·3	32·9	35·7	38·4	41·0	44·1	45·5	45·7	43·9	41·7	39·9	40·0	40·7	40·5	39·8	38·0	35·7	38·9	134·6
17	34·8	35·2	35·9	35·0	33·9	32·7	32·6	33·5	34·7	36·9	39·8	43·6	44·8	46·7	47·4	44·8	43·4	43·2	42·4	40·6	39·4	36·7	37·6	37·0	38·9	132·6
18	36·8	36·8	35·6	35·6	34·8	33·4	32·5	33·4	34·0	37·3	40·8	42·7	44·8	46·5	45·4	43·9	42·9	40·5	39·3	39·3	39·5	38·8	39·4	38·7	38·9	132·7
19	38·8	39·6	40·7	37·8	40·0	39·2	36·0	38·8	40·6	40·7	40·5	43·7	45·8	46·0	45·1	42·4	39·8	39·8	40·0	39·4	39·0	39·2	39·1	37·6	40·4	169·6
20	37·4	36·9	36·3	36·2	34·8	33·9	33·5	33·8	34·5	35·9	38·3	41·9	45·0	45·7	43·6	43·6	43·6	41·9	38·2	39·3	37·8	40·3	40·3	39·5	38·8	132·2
21	38·9	39·2	37·6	36·4	34·4	32·3	31·2	32·2	33·2	35·2	37·6	41·2	44·1	45·5	44·3	42·2	40·0	38·7	37·7	38·7	39·5	39·5	39·3	38·8	38·2	117·7
22 *q*	38·5	37·5	36·9	35·4	34·2	32·8	32·3	32·8	35·0	37·8	41·2	43·9	45·3	45·3	42·9	41·8	40·2	39·8	39·4	39·7	40·6	40·2	40·2	38·0	38·8	131·7
23 *q*	37·5	37·2	36·2	35·0	33·5	32·8	32·4	33·0	34·9	36·4	39·8	42·8	46·1	46·9	45·1	42·9	40·8	38·8	38·8	39·8	39·6	36·7	37·6	39·0	38·5	123·6
24	38·8	37·8	37·4	36·2	35·0	33·8	32·5	32·7	33·0	34·8	38·6	42·6	44·1	44·5	44·7	41·8	41·2	40·4	39·8	41·6	41·2	40·5	37·1	37·1	38·6	127·2
25	36·7	37·6	35·1	34·8	33·1	31·1	32·5	33·0	34·2	37·0	40·7	44·1	45·8	49·6	46·0	40·7	40·1	40·3	40·8	41·6	39·8	38·0	37·6	37·4	38·7	128·6
26	36·8	37·8	35·5	37·5	37·7	36·3	33·4	33·9	36·3	40·0	43·1	46·7	47·1	47·0	46·0	44·1	41·7	40·9	40·9	41·9	39·0	37·8	35·0	30·2	39·4	146·6
27	28·9	36·9	36·3	34·4	34·1	35·0	39·3	39·4	33·4	34·5	38·4	41·7	45·5	46·6	45·2	43·2	39·8	38·6	39·4	39·3	36·9	38·8	37·8	38·3	38·4	121 7
28	40·2	36·6	35·6	35·9	34·4	32·8	32·5	32·5	33·8	36·1	39·3	43·6	46·2	46·2	44·6	43·3	41·2	39·7	39·3	39·4	39·0	37·8	36·7	37·5	38·5	124·2
29	37·4	38·0	35·2	35·5	34·0	33·5	33·3	33·5	34·1	35·9	39·3	41·7	44·1	44·6	43·4	41·9	41·0	42·3	32·6	27·3	31·6	38·7	40·1	34·4	37·2	93·4
30 *d*	25·8	24·4	35·0	40·2	35·3	30·6	30·6	31·3	33·8	38·8	40·3	43·1	42·1	46·0	46·0	48·7	44·1	37·8	38·2	39·6	37·8	34·5	27·3	28·2	*36·6*	79·5
31 *d*	31·6	37·4	36·4	46·0	42·6	37·4	34·4	36·2	38·7	37·4	40·1	42·4	43·1	43·7	43·8	41·6	39·3	32·1	31·8	37·4	37·8	37·1	31·1	39·8	38·3	119·2
Mean	37·2	36·5	35·8	35·5	35·0	33·8	*33·5*	33·8	35·1	36·9	39·9	42·8	44·9	*45·8*	45·0	43·8	42·1	40·7	39·6	39·7	39·0	38·7	38·2	37·5	38·8	
Sum 1000·0+	152·9	132·6	108·5	100·3	83·7	49·0	36·8	48·6	87·0	143·6	235·8	327·8	392·1	419·7	395·8	357·2	305·5	261·8	226·4	229·5	210·0	201·0	185·0	162·5		Grand Total 28853·1

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 1961

	Hour G.M.T. 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 7000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1	315	306	298	275	311	325	327	331	335	336	328	316	320	325	323	327	331	339	339	341	349	355	339	325	326	816
2 *d*	186	105	213	259	278	228	225	294	308	300	318	336	348	378	390	396	414	378	376	386	384	339	301	283	309	423
3	265	286	311	319	277	279	318	339	347	351	344	339	345	352	345	362	361	354	372	365	358	329	301	253	328	873
4 *d*	259	192	208	263	300	317	322	326	326	333	344	345	340	344	348	354	350	340	337	350	355	341	329	331	319	654
5	329	332	334	335	332	325	312	320	322	330	330	330	327	329	347	347	343	350	352	356	354	346	336	319	335	1037
6	297	319	326	329	332	334	330	330	331	330	330	329	320	326	336	339	347	345	343	341	341	336	330	330	331	951
7 *q*	332	335	334	333	335	335	336	335	332	330	328	325	321	322	330	330	336	334	330	332	336	335	328	320	331	944
8	328	333	338	335	323	313	321	304	320	331	328	325	337	346	348	350	366	385	398	408	383	350	342	339	344	1251
9 *q*	338	339	329	316	316	324	327	329	332	329	321	321	331	338	339	347	352	352	348	343	340	337	333	331	334	1012
10	332	325	307	312	319	313	304	308	313	321	325	330	345	367	405	434	433	411	395	380	364	351	341	329	*349*	1364
11 *d*	296	245	239	251	258	313	327	331	334	327	318	324	337	375	414	426	429	425	412	399	370	364	340	274	339	1128
12	304	335	343	341	324	327	332	335	335	331	328	326	321	324	335	342	342	338	338	330	341	337	307	312	330	928
13 *q*	329	324	299	312	324	330	332	335	335	324	317	312	316	324	327	333	335	334	331	330	330	330	330	330	326	823
14	330	331	333	336	339	341	342	344	343	336	332	326	327	327	327	327	338	383	381	351	341	336	332	330	339	1133
15	330	333	335	337	340	343	347	338	335	335	322	314	312	316	326	338	355	359	359	350	341	336	331	327	336	1059
16	294	296	310	318	327	325	331	336	338	334	329	324	318	320	326	335	343	351	347	340	337	336	334	330	328	879
17	328	330	332	333	337	340	340	340	339	337	335	325	315	314	316	321	328	333	339	346	340	342	360	355	334	1025
18	352	355	358	358	360	366	366	363	363	330	330	330	324	324	330	336	334	337	339	338	336	334	332	330	343	1225
19	330	329	323	323	323	299	300	308	292	303	316	333	341	354	353	349	344	341	338	338	337	337	336	329	328	876
20	330	332	333	334	336	336	336	336	337	336	337	338	333	330	341	349	370	407	406	380,	358	344	338	334	346	1311
21	334	336	335	336	337	337	336	338	340	337	332	330	320	320	324	328	329	336	332	328	326	327	326	326	331	950
22 *q*	332	332	331	330	329	330	330	332	336	329	323	315	312	315	317	322	325	324	327	331	332	333	332	325	327	844
23 *q*	329	332	332	331	331	332	330	332	328	320	318	321	320	320	323	329	326	326	326	326	329	329	326	326	327	842
24	326	326	326	323	326	323	320	320	317	315	322	322	317	320	320	326	323	326	332	329	326	326	322	316	323	749
25	310	304	304	318	321	324	320	318	315	314	306	309	315	327	357	356	346	335	328	327	324	318	323	321	323	740
26	325	327	328	324	313	313	317	318	318	318	312	312	312	317	323	327	328	327	322	317	328	343	302	259	318	630
27	252	312	324	331	330	329	329	317	314	316	312	315	318	328	335	339	348	342	334	332	331	325	324	324	323	761
28	309	312	321	327	329	332	333	333	328	324	323	321	318	321	328	332	332	332	331	327	329	336	331	327	327	836
29	324	319	321	327	329	329	329	329	328	321	315	317	315	316	322	331	327	329	354	378	361	335	322	213	325	791
30 *d*	194	192	237	271	283	309	323	329	327	317	318	322	376	401	388	393	477	462	416	368	353	252	239	178	322	725
31 *d*	179	178	88	138	175	238	283	324	338	333	330	330	339	347	363	364	370	375	380	367	352	327	272	248	*293*	38
Mean	304	*302*	305	312	316	320	323	328	329	327	325	325	327	334	342	348	354	*355*	354	349	345	334	324	309	329	
Sum 9000+	419	352	450	675	794	909	1025	1172	1206	1128	1071	1062	1140	1367	1606	1789	1982	2010	1962	1834	1686	1366	1039	574		Grand Total 244,618

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

4 LERWICK — AUGUST 1961

	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.	′	′	h. m.	′	h. m.	γ	γ	h. m.	γ				°A.
1	19 29	608	531	11 01	77	02 49	50·5	29·8	05 18	20·7	21 30	357	259	03 12	98	3,3,1,1,1,1,2,2	14	0	86·1
2 *d*	17 10	649	397	05 33	252	00 36	52·2	13·8	01 26	38·4	16 16	428	*66*	01 12	362	6,5,4,3,3,3,3,4	31	1	86·1
3	19 06	630	508	04 43	122	04 44	46·7	28·7	07 03	18·0	18 25	384	242	23 20	142	3,3,3,2,3,3,3,4	24	0	86·2
4 *d*	19 33	620	363	01 20	257	01 10	47·9	22·5	02 27	25·4	20 18	361	160	01 20	201	5,4,3,3,3,3,3,2	26	1	86·0
5	20 21	602	509	10 09	93	12 09	46·1	32·2	07 10	13·9	20 00	359	297	24 00	62	1,1,2,2,3,2,2,2	15	0	86·0
6	00 01	605	531	11 30	74	13 06	46·5	32·0	00 20	14·5	17 00	349	291	00 08	58	2,1,1,2,2,2,2,2	14	0	86·0
7 *q*	22 50	610	534	10 15	76	13 14	46·1	35·0	22 16	*11·1*	16 42	339	313	22 58	26	1,1,1,1,2,1,2,2	11	0	86·0
8	18 29	663	494	10 30	169	13 43	47·4	30·9	08 05	16·5	19 04	427	300	07 30	127	1,2,3,3,3,3,4,1	20	0	86·0
9 *q*	19 22	598	530	09 57	68	13 15	46·5	29·3	05 30	17·2	16 50	353	312	03 41	41	1,2,1,1,1,1,1,0	8	0	86·1
10	15 35	616	524	10 23	92	14 03	51·2	31·3	03 50	19·9	15 57	440	299	02 26	141	3,3,1,2,4,3,2,2	20	0	86·0
11 *d*	20 17	661	467	03 44	194	15 52	53·2	25·0	02 37	28·2	15 57	437	223	01 57	214	4,4,2,3,4,3,4,4	28	1	86·0
12	19 46	621	523	10 34	98	12 36	46·7	30·7	07 28	16·0	16 45	347	275	00 00	72	3,2,0,1,1,2,2,3	14	0	85·8
13 *q*	18 45	598	522	10 40	76	14 30	46·3	30·7	07 10	15·6	08 30	337	293	02 12	44	2,2,1,1,1,1,1,0	9	0	85·9
14	16 48	634	519	13 31	115	14 02	52·5	29·1	07 13	23·4	18 02	398	317	13 57	81	0,0,1,2,3,4,3,1	14	0	85·9
15	15 50	611	517	10 56	94	14 03	48·5	29·7	05 50	18·8	18 12	363	309	12 11	54	1,1,2,2,2,2,2,2	14	0	85·9
16	16 57	598	529	10 43	69	14 13	46·5	30·6	07 12	15·9	17 55	354	278	00 57	76	2,2,1,1,1,2,1,1	11	0	85·8
17	20 21	619	529	11 00	90	14 18	48·2	31·8	05 57	16·4	19 17	350	311	12 53	39	1,1,1,1,1,1,2,1	9	0	85·9
18	16 20	612	539	10 21	73	13 08	47·0	31·7	06 30	15·3	07 50	366	321	13 13	45	1,0,1,1,2,2,1,1	9	0	85·9
19	17 24	595	524	12 00	71	12 41	47·0	35·0	05 51	12·0	13 50	358	288	08 35	70	2,3,3,2,2,2,0,1	15	0	86·1
20	16 23	653	516	11 41	137	13 38	46·7	33·2	06 26	13·5	18 04	417	327	13 40	90	0,0,0,2,2,3,3,1	11	0	86·2
21	17 02	597	527	11 29	70	13 10	46·5	30·6	06 35	15·9	17 26	339	317	13 00	22	1,1,1,1,1,2,1,1	9	0	86·2
22 *q*	19 38	598	536	11 45	62	13 20	45·9	31·1	06 38	14·8	08 17	335	306	13 16	29	0,0,1,1,0,0,1,1	4	0	86·0
23 *q*	21 30	605	541	10 53	64	13 35	47·5	32·1	07 04	15·4	21 21	333	316	10 02	*17*	0,0,1,1,0,1,1,2	6	0	86·1
24	17 13	657	541	10 20	116	14 20	45·9	31·7	07 58	14·2	18 30	343	311	23 52	32	0,0,0,1,1,2,2,2	8	0	86·0
25	21 05	610	541	09 41	69	13 29	50·6	29·5	05 07	21·1	15 05	364	295	01 50	69	2,1,2,2,3,2,1,2	15	0	86·1
26	19 56	627	531	09 30	96	13 40	47·5	26·3	23 53	21·2	21 16	353	211	23 56	142	1,2,1,3,2,2,3,4	18	0	85·9
27	15 42	605	551	10 40	*54*	13 12	47·6	25·8	00 41	21·8	16 25	352	206	00 07	146	4,2,3,1,1,2,1,1	15	0	86·0
28	20 04	598	534	10 50	64	13 14	47·6	31·6	06 08	16·0	21 41	337	301	01 02	36	2,1,1,1,1,2,1,1	10	0	86·0
29	18 04	643	527	23 43	116	12 50	45·0	19·2	19 08	25·8	19 51	395	139	23 41	256	2,1,0,1,2,3,4,5	18	0	86·1
30 *d*	16 20	*863*	435	23 35	*428*	16 21	54·4	*9·6*	00 28	*44·8*	16 18	*528*	92	23 53	*436*	4,3,2,3,4,6,4,5	31	1	86·4
31 *d*	17 35	677	*309*	02 09	368	03 40	*59·2*	20·1	00 04	39·1	17 21	387	*66*	02 44	321	5,5,4,1,3,4,3,4	29	1	86·3
Mean	- -	628	506	- -	123	- -	48·4	28·4	- -	20·0	- -	374	259	- -	114	-	-	0·16	86·0

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

TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

1 LERWICK (H) — 14,000γ (0·14 C.G.S. unit) + — SEPTEMBER 1961

	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 12,000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1 *d*	537	573	549	562	551	508	498	544	550	516	520	545	548	555	571	599	602	603	630	603	572	540	545	563	558	1384
2	574	568	570	566	570	569	559	544	538	517	528	545	552	562	567	592	592	584	587	589	592	579	590	570	567	1604
3	577	573	573	577	559	555	556	562	560	552	537	541	553	552	567	566	579	587	588	585	584	583	579	579	568	1624
4	580	580	576	577	577	575	574	563	556	541	545	550	556	549	561	577	581	590	588	588	589	597	583	585	572	1738
5	563	547	569	573	577	574	570	556	556	549	545	541	548	568	574	587	575	581	597	590	573	563	577	579	568	1632
6	580	577	572	570	562	571	570	561	549	543	535	539	548	555	570	571	574	581	587	588	591	589	588	587	569	1658
7 *q*	587	584	580	579	577	579	575	568	556	545	542	545	553	563	570	571	574	580	586	595	594	595	594	591	574	1783
8 *q*	588	587	584	584	582	580	579	575	563	552	551	556	563	571	580	585	585	586	598	597	596	597	599	594	*581*	1932
9	594	591	588	591	588	581	573	573	570	544	539	547	561	577	581	582	584	587	586	590	588	587	578	582	578	1862
10	582	572	566	580	579	573	565	554	540	533	539	554	561	576	585	581	582	578	578	584	586	587	587	590	571	1712
11	582	583	582	583	575	568	572	568	558	543	543	555	562	558	567	564	590	616	618	593	568	548	558	564	572	1718
12	575	574	572	571	561	543	525	530	545	535	532	521	531	542	551	564	572	578	576	579	575	575	578	585	558	1390
13	571	566	568	569	575	578	575	566	552	541	536	539	550	563	575	579	596	607	589	588	590	582	564	576	571	1695
14 *d*	568	572	583	583	567	564	582	572	548	547	536	559	564	579	530	576	588	567	587	589	566	581	560	545	567	1613
15	566	573	571	571	571	565	555	544	527	516	516	521	525	542	568	569	566	570	573	577	578	577	573	570	558	1384
16	572	572	568	571	571	568	565	564	554	546	539	532	544	552	564	568	578	586	584	586	578	571	575	578	566	1586
17	577	555	517	560	556	561	575	565	552	543	543	539	546	557	564	561	575	582	581	578	575	575	573	573	562	1483
18	572	567	564	565	572	569	566	565	557	551	550	553	554	557	570	574	560	562	574	578	579	581	580	579	567	1599
19 *q*	578	577	576	577	577	575	575	571	566	558	550	550	546	558	559	565	571	575	582	581	578	578	582	581	570	1686
20	583	578	574	578	586	594	584	582	575	571	564	554	553	549	557	578	589	584	590	593	590	578	587	588	577	1859
21 *q*	586	582	582	581	581	581	578	572	570	564	557	540	538	540	552	561	570	584	589	589	582	583	585	584	572	1731
22	583	582	580	579	580	579	579	575	569	561	558	552	548	535	551	566	568	582	595	594	580	575	582	584	572	1737
23 *q*	582	581	580	580	578	576	572	561	554	547	544	550	557	561	568	574	579	589	593	590	593	591	592	592	574	1784
24 *d*	590	590	590	590	591	595	594	591	572	550	550	533	544	579	606	602	621	649	589	581	570	545	510	504	577	1836
25 *d*	535	557	460	506	539	559	531	532	532	523	520	528	534	538	557	569	567	571	572	574	573	564	554	563	544	1058
26	543	534	557	578	573	574	572	567	559	532	525	527	527	557	563	579	568	598	579	580	573	572	552	560	560	1449
27	547	547	523	549	523	552	572	550	541	526	510	523	554	557	552	557	563	575	570	577	576	580	574	574	553	1272
28	573	569	567	569	572	572	572	563	556	544	536	541	545	551	557	561	568	572	577	579	579	579	575	568	564	1545
29	579	573	574	578	576	582	583	577	563	551	542	540	541	545	559	567	570	572	577	582	581	581	585	582	569	1660
30 *d*	579	579	575	575	579	592	580	576	568	561	552	548	541	550	559	569	573	579	586	598	572	623	191	−165	*527*	640
Mean	573	572	566	572	571	570	567	563	555	543	*539*	542	548	557	565	574	579	585	*587*	587	581	579	562	550	566	
Sum 16,000+	1203	1163	990	1172	1125	1112	1026	891	656	302	184	268	447	698	955	1214	1360	1555	1606	1595	1421	1356	850	505		Grand Total 407,654

MAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

2 LERWICK (D) — 9° + — SEPTEMBER 1961

	Hour G.M.T. 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 800·0+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	
1 *d*	41·3	36·7	32·1	34·6	32·4	33·0	40·2	44·3	41·5	42·2	40·2	39·8	43·9	45·2	43·7	41·5	37·8	40·8	26·8	28·0	32·6	31·6	29·2	31·6	37·1	91·0
2	34·2	34·5	35·1	35·2	35·8	34·5	34·2	34·3	35·2	38·8	41·2	44·6	45·8	43·9	43·8	39·2	38·0	39·3	36·9	36·1	35·8	38·3	36·9	36·0	37·8	107·6
3	39·3	35·0	34·9	34·6	34·8	40·1	37·4	36·8	36·7	38·1	41·4	43·6	45·9	44·8	42·6	40·2	38·9	38·3	37·3	38·2	39·4	38·6	38·5	37·8	38·9	133·2
4	37·4	36·9	36·0	36·1	35·4	35·0	33·9	33·5	35·4	38·3	41·7	42·6	43·4	42·3	40·3	38·3	37·1	37·9	38·9	38·8	39·0	36·4	34·5	35·2	37·7	104·3
5	35·2	42·2	30·6	29·5	33·8	32·6	33·0	33·2	34·0	36·9	39·4	41·5	44·1	44·6	43·6	42·2	39·8	38·1	38·5	37·6	31·1	32·5	34·5	36·4	36·9	84·9
6	37·9	37·9	38·8	37·3	35·6	34·4	32·4	32·9	34·2	35·9	39·1	42·6	45·3	45·0	43·8	41·2	39·6	39·3	39·0	38·4	38·0	37·8	37·6	37·6	38·4	121·6
7 *q*	38·5	37·6	36·6	35·0	34·2	34·2	33·3	33·0	35·2	38·5	41·5	44·3	45·5	45·3	43·2	40·7	39·2	38·8	38·9	39·6	39·1	39·1	38·8	38·3	38·7	128·6
8 *q*	37·8	37·5	36·8	36·3	35·7	35·0	34·5	34·1	35·9	38·9	41·5	44·0	43·6	43·1	42·1	41·2	41·0	41·1	40·3	40·1	40·4	39·3	36·9	38·3	39·0	135·4
9	37·7	36·7	35·5	33·7	33·0	31·5	29·7	38·0	39·3	41·7	47·0	48·5	48·4	46·5	43·4	40·0	38·7	39·0	39·8	40·0	39·8	39·0	35·4	36·7	*39·1*	139·0
10	32·8	34·2	37·1	34·0	34·0	34·1	33·9	33·5	34·8	37·6	41·6	45·0	45·8	45·3	43·8	41·6	41·4	40·0	39·9	38·3	39·3	38·3	37·6	37·6	38·4	121·5
11	38·3	37·0	35·9	35·2	34·5	34·8	35·1	33·6	34·5	37·2	40·9	46·7	48·9	46·5	44·8	41·2	38·2	38·3	35·4	31·6	34·4	26·4	27·8	32·1	37·1	89·3
12	34·3	35·2	32·5	32·5	30·8	43·0	45·9	40·7	35·2	36·6	40·2	43·6	46·3	46·0	44·2	42·6	40·3	39·3	38·3	37·3	34·5	37·8	35·9	35·2	38·3	118·2
13	34·5	35·0	33·4	31·2	29·2	29·2	30·2	31·9	33·3	36·2	38·8	41·5	43·6	44·6	44·0	42·4	41·9	43·1	41·4	39·6	40·1	37·3	31·1	31·1	36·9	84·6
14 *d*	36·4	39·1	31·1	31·1	31·6	39·3	38·3	37·6	41·8	43·1	44·4	47·0	49·4	45·8	41·7	40·7	40·5	40·0	40·4	34·5	30·9	35·9	28·0	30·4	38·3	119·0
15	34·5	35·0	34·8	35·6	34·6	34·4	33·6	34·0	36·2	40·2	42·6	45·0	46·4	43·7	41·2	41·0	39·3	38·3	38·4	38·3	37·9	35·7	34·7	37·6	38·0	113·0
16	38·2	35·2	34·7	34·5	34·5	34·5	35·0	34·8	35·5	38·0	39·8	43·2	44·6	44·8	42·4	40·7	38·8	38·1	37·5	36·5	35·2	31·6	36·0	37·4	37·6	101·5
17	39·8	37·4	24·9	24·4	31·0	32·6	35·0	34·5	34·8	34·2	36·9	40·7	42·3	42·4	41·7	39·7	37·8	35·7	35·2	37·8	38·2	38·3	37·9	37·4	36·3	70·6
18	36·9	36·2	36·3	37·2	32·4	34·0	35·2	35·2	35·9	36·6	37·5	38·9	41·3	42·4	44·0	42·4	40·4	40·4	40·0	39·2	38·8	38·6	38·2	37·4	38·1	115·4
19 *q*	36·9	36·8	36·9	36·9	35·5	35·3	35·0	34·5	34·5	35·4	36·9	39·3	41·2	42·2	41·6	40·3	39·8	39·3	39·2	39·8	39·2	37·8	36·4	35·9	37·8	106·6
20	35·9	32·8	32·6	31·6	30·6	31·8	34·5	39·4	40·1	40·8	41·7	42·4	43·4	43·8	44·2	44·1	46·8	45·0	42·5	40·0	33·5	35·5	37·1	36·9	38·6	127·0
21 *q*	36·9	36·4	35·9	35·8	35·4	35·2	34·5	33·8	33·5	38·2	40·7	42·6	44·4	38·8	40·0	40·2	40·4	38·9	38·4	39·4	38·0	37·8	37·2	36·9	37·9	109·3
22	36·8	36·1	35·9	35·8	35·7	35·4	34·8	33·8	33·8	35·7	39·3	42·6	46·5	45·9	43·6	42·4	39·8	38·7	39·1	40·2	37·3	36·5	37·9	38·0	38·4	121·6
23 *q*	37·4	36·7	36·4	36·2	36·0	35·4	34·5	34·0	34·5	36·9	39·7	41·9	42·6	42·4	41·7	40·0	39·0	39·3	39·1	39·8	39·1	38·4	37·8	37·7	38·2	116·5
24 *d*	37·3	37·2	37·2	37·1	36·8	36·5	36·1	35·4	35·2	40·7	43·6	47·6	46·1	49·6	53·2	50·1	53·2	39·8	21·5	32·3	31·1	27·0	22·5	29·6	38·2	116·7
25 *d*	38·3	34·3	28·9	40·2	35·4	29·8	38·3	37·4	40·9	40·5	42·2	43·6	43·1	40·7	42·4	38·2	39·8	38·7	38·0	34·3	31·1	34·0	35·0	35·0	37·5	100·1
26	38·4	40·9	39·8	34·1	34·5	35·0	35·6	35·5	35·7	36·7	39·4	41·4	43·1	42·4	39·9	34·6	36·3	28·2	34·6	35·2	34·6	32·6	35·4	38·3	36·8	82·2
27	32·6	34·0	33·0	34·5	36·4	41·7	42·3	41·7	42·4	37·9	39·8	43·2	40·0	44·9	44·4	42·2	40·3	28·2	37·8	38·1	35·9	31·7	36·9	37·3	38·2	117·2
28	36·4	36·1	36·8	36·4	35·7	35·4	34·5	33·5	33·0	33·9	36·1	38·3	40·6	41·9	41·6	40·2	39·1	38·6	38·0	38·0	34·3	35·9	35·9	39·8	37·1	90·0
29	36·5	34·0	34·0	35·2	36·8	37·6	36·3	35·2	35·4	36·9	39·3	42·2	43·6	42·7	42·6	41·2	38·9	37·8	39·0	38·8	37·4	37·6	38·0	38·0	38·1	115·0
30 *d*	37·0	38·0	36·5	35·7	38·3	35·3	35·9	35·4	35·3	35·5	37·4	41·1	42·9	45·0	43·9	42·2	40·5	39·4	38·4	39·3	31·1	21·0	5·2	29·2	*35·8*	59·5
Mean	36·9	36·4	34·7	34·6	34·3	35·0	35·1	35·5	36·1	37·9	40·4	43·0	*44·4*	44·1	43·1	41·1	40·1	38·6	37·6	37·5	36·2	35·3	*34·2*	35·9	37·8	
Sum 1000·0+	105·4	92·6	41·0	37·5	30·4	50·6	53·1	65·5	83·7	138·1	211·8	289·3	332·0	322·5	293·4	232·5	202·6	157·7	128·5	125·1	87·1	58·3	24·8	76·9		Grand Total 27240·4

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) + — SEPTEMBER 1961

	Hour G.M.T. 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 7000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1 *d*	221	194	279	303	313	292	283	266	284	309	324	344	333	328	333	352	374	363	381	351	342	298	243	261	*307*	371
2	281	302	318	322	324	330	332	335	335	336	336	332	337	346	351	355	360	354	345	337	328	329	316	297	331	938
3	261	301	321	322	322	301	301	311	318	324	331	331	331	331	338	341	341	350	355	352	345	341	335	332	327	836
4	329	331	333	332	329	332	332	334	335	335	327	327	335	335	329	330	329	328	330	330	329	324	324	318	330	917
5	316	272	263	299	317	324	327	327	325	321	318	319	328	337	350	358	362	350	341	347	350	329	324	327	326	831
6	328	328	326	317	317	320	327	329	325	322	322	323	327	331	331	332	329	327	327	328	329	329	329	329	326	832
7 *q*	327	320	318	322	325	324	327	327	327	324	319	317	315	316	324	329	330	331	328	327	327	327	327	327	324	785
8 *q*	329	329	329	329	329	329	325	321	320	314	314	316	318	322	328	328	328	325	325	331	330	328	325	327	325	799
9	327	329	328	324	325	327	329	314	308	313	311	311	315	322	331	333	339	342	336	335	332	330	334	324	326	819
10	318	326	324	325	330	332	335	335	332	321	318	314	315	321	332	343	344	347	339	337	330	325	325	321	329	889
11	318	321	327	328	329	330	327	325	319	315	314	310	313	318	322	329	338	358	378	373	358	327	299	283	327	859
12	312	329	329	312	301	284	275	297	311	320	322	336	335	335	340	337	337	339	344	342	344	340	334	286	323	741
13	297	315	320	318	312	313	315	317	318	319	320	319	314	315	324	336	344	351	373	372	354	330	304	318	326	818
14 *d*	284	289	316	330	324	300	300	312	319	314	316	313	327	376	392	352	356	361	348	365	371	348	263	170	323	746
15	270	317	330	330	330	334	338	339	339	332	335	337	334	334	343	345	341	339	337	337	337	338	335	331	333	982
16	320	324	328	327	330	333	333	332	331	332	335	335	334	338	350	347	348	354	364	358	350	339	335	331	*338*	1108
17	315	258	214	239	269	298	304	316	323	327	324	335	332	334	336	330	340	354	361	354	346	340	338	334	318	621
18	327	316	302	292	300	321	327	331	335	335	332	327	324	329	339	355	367	350	335	334	332	332	333	333	329	908
19 *q*	332	330	330	321	321	326	327	328	327	327	327	324	326	326	332	328	328	332	332	334	335	338	334	332	329	897
20	321	312	308	302	298	294	302	302	308	314	324	332	335	339	341	350	365	380	373	369	379	366	348	341	333	1003
21 *q*	341	339	338	334	332	332	333	332	331	330	332	332	327	324	322	318	312	309	309	307	332	331	329	330	327	856
22	331	331	331	328	326	326	325	325	325	322	317	316	316	322	322	328	331	326	326	331	345	346	334	331	328	861
23 *q*	331	331	332	331	330	329	329	330	328	322	320	320	320	320	323	326	325	322	322	322	322	322	322	324	325	803
24 *d*	326	327	327	326	325	321	320	317	322	323	319	327	317	325	356	401	421	434	407	365	342	267	209	217	331	941
25 *d*	212	263	226	246	231	277	309	325	322	331	335	335	354	368	362	363	354	350	346	345	346	334	317	305	315	556
26	303	298	310	317	328	334	334	337	326	332	332	338	339	342	359	379	383	373	350	336	293	308	290	243	329	884
27	235	213	218	225	233	260	281	313	322	337	356	366	394	363	359	360	368	384	363	355	346	335	327	330	318	643
28	332	331	331	330	332	335	338	339	336	331	329	325	323	323	326	331	332	335	336	336	339	335	334	310	331	949
29	289	311	320	325	327	326	326	331	335	335	334	332	330	326	326	334	344	357	349	345	343	339	334	331	331	949
30 *d*	330	320	326	320	310	299	310	320	326	327	328	327	330	333	332	332	333	333	333	334	360	196	40	289	308	388
Mean	*305*	307	310	313	314	316	319	322	324	325	326	327	329	333	338	343	347	*349*	346	343	341	326	308	308	326	
Sum 9000+	163	207	302	376	419	483	571	667	712	744	771	820	878	979	1153	1282	1403	1458	1393	1289	1216	771	241	232		Grand Total 234,530

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

4 LERWICK — SEPTEMBER 1961

	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. ′	′ h. m.	′	h. m.	γ	γ	h. m.	γ			°A.
1 *d*	18 57	671	473	22 06	198	01 04 52·4	15·2 18 53	37·2	18 30	398	166	01 19	232	4,4,4,3,2,3,4,4	28	1	86·3
2	15 31	609	504	09 48	105	12 06 47·5	32·6 06 28	14·9	16 32	364	258	00 01	106	3,1,2,3,3,3,2,3	20	1	86·2
3	18 28	597	524	10 54	73	12 37 46·8	33·4 04 11	13·4	18 10	361	253	00 28	108	3,3,2,2,2,2,2,1	17	0	86·1
4	21 31	609	539	09 59	70	12 20 43·8	32·6 06 55	11·2	13 04	339	312	23 24	27	1,1,2,2,2,1,0,2	11	0	85·9
5	18 23	604	535	11 06	69	14 20 45·7	18·3 20 56	27·4	16 10	367	241	02 00	126	4,3,2,1,2,2,4,3	21	0	85·8
6	20 02	594	532	10 21	62	12 26 46·0	32·1 06 22	13·9	15 24	335	310	03 17	25	1,2,1,1,1,1,1,0	8	0	85·8
7 *q*	21 20	598	541	10 08	57	13 03 45·8	32·3 07 20	13·5	17 00	332	313	13 14	19	1,1,2,1,2,1,1,1	10	0	85·7
8 *q*	19 16	605	548	10 09	57	11 25 44·6	33·9 07 15	10·7	19 40	337	312	09 40	25	0,1,1,1,1,1,1,1	7	0	86·0
9	00 31	595	534	10 16	61	11 05 49·1	28·7 06 18	20·4	17 30	343	303	08 03	40	1,1,3,2,2,1,1,2	13	0	85·5
10	23 31	595	531	09 25	64	12 30 46·9	32·1 00 34	14·8	17 34	352	312	11 24	40	2,1,1,2,2,2,1,1	12	0	85·6
11	17 58	628	535	09 50	93	12 17 50·8	22·0 21 24	28·8	19 10	388	277	23 27	111	1,2,1,2,2,3,3,3	17	0	85·8
12	23 02	610	507	11 36	103	05 39 49·0	29·8 04 08	19·2	20 25	347	255	05 56	92	2,4,3,2,2,1,2,3	19	0	86·0
13	17 26	617	535	10 12	82	17 53 46·0	27·1 23 51	18·9	18 58	383	282	00 01	101	3,1,2,1,1,3,2,3	16	0	85·7
14 *d*	13 38	606	499	14 38	107	12 45 50·5	17·7 22 58	32·8	14 09	405	147	23 42	258	3,3,2,3,4,3,3,5	26	1	86·0
15	00 33	581	513	10 19	68	12 20 46·8	30·4 00 17	16·4	14 50	346	201	00 01	145	4,1,2,1,2,1,0,2	13	0	86·0
16	18 24	592	529	11 21	63	13 17 46·0	29·8 21 40	16·2	18 46	367	315	00 56	52	2,1,1,1,2,2,2,3	14	0	86·0
17	16 50	585	499	02 22	86	01 10 43·6	21·0 03 02	22·6	18 14	362	203	02 10	159	4,4,2,1,1,2,2,0	16	0	86·0
18	22 40	582	543	16 46	*39*	14 43 44·7	31·8 04 51	12·9	16 30	370	282	03 51	88	3,3,1,2,2,3,1,0	15	0	86·0
19 *q*	18 41	585	541	12 20	44	13 56 43·1	34·2 08 23	*8·9*	21 15	340	315	03 35	25	0,1,1,1,2,1,1,1	8	0	86·2
20	16 20	614	545	13 39	69	16 20 49·1	29·0 03 54	20·1	20 14	396	291	05 22	105	2,2,3,2,2,3,3,2	19	0	86·2
21 *q*	18 14	593	534	12 40	59	12 24 44·9	32·8 07 53	12·1	00 01	342	308	17 45	34	0,0,0,1,0,0,0,0	1	0	86·2
22	18 26	599	527	13 20	72	12 52 48·2	33·0 07 55	15·2	20 59	356	315	12 17	41	0,0,0,1,2,2,2,2	9	0	86·0
23 *q*	19 49	599	543	10 17	56	12 57 43·0	33·5 07 58	9·5	01 30	333	316	13 34	*17*	1,1,1,1,1,1,1,0	7	0	86·2
24 *d*	17 48	726	447	23 51	279	16 15 *62·8*	7·3 18 08	55·5	17 47	*453*	188	22 02	265	0,0,2,3,4,5,4,5	23	1	86·2
25 *d*	15 30	599	373	02 53	226	03 50 46·2	24·3 02 09	21·9	13 16	374	193	02 51	181	5,4,4,2,3,3,3,3	27	1	86·0
26	17 36	666	520	11 20	146	12 38 44·1	11·8 17 28	32·3	17 23	394	237	23 21	157	3,2,1,1,2,4,3,3	19	0	86·0
27	17 30	603	501	10 42	102	13 53 46·4	16·3 17 25	30·1	17 18	402	198	01 14	204	3,3,3,3,3,4,2,3	24	0	86·2
28	12 21	588	533	10 37	55	23 32 44·1	32·8 07 59	11·3	21 03	342	274	23 59	68	1,0,1,1,1,1,2,3	10	0	86·0
29	22 10	587	536	10 58	51	12 40 44·0	32·8 02 20	11·2	17 21	359	275	00 01	84	3,2,1,1,1,2,1,1	12	0	86·0
30 *d*	21 13	*727*	*-558*	23 55	*1285*	23 49 56·8	*-39·9* 23 55	*96·7*	23 37	440	*-102*	22 17	*542*	2,2,2,1,1,0,5,9	22	2	85·9
Mean	- -	612	482	- -	130	- - 47·3	25·0 - -	22·3	- -	368	252	- -	116	-	-	0·23	86·0

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

TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

1 LERWICK (H) — 14,000γ (0·14 C.G.S. unit) + — OCTOBER 1961

	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+
	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*	-253	-182	-182	366	561	508	455	448	416	458	566	557	561	530	523	531	533	547	551	554	555	557	562	555	*428*	277
2	547	541	542	543	546	547	548	545	539	535	530	525	529	534	538	537	551	557	567	559	559	560	560	558	546	3097
3	558	558	559	560	561	561	558	551	543	529	527	524	533	541	548	559	561	565	568	563	564	558	562	559	553	3270
4	561	561	561	567	569	567	565	562	554	545	539	543	548	559	559	559	570	570	568	566	566	562	566	568	561	3455
5	569	565	567	569	572	571	567	564	558	543	535	535	536	541	551	557	562	568	573	577	576	575	576	576	562	3483
6	576	575	573	574	574	573	572	570	562	550	543	543	542	545	554	557	565	568	570	573	576	573	569	574	565	3551
7	567	551	558	573	584	590	579	569	558	546	541	545	544	548	560	567	569	573	574	578	578	580	580	580	566	3592
8	580	579	579	578	576	573	566	562	574	565	556	545	544	554	562	569	575	575	580	582	583	583	583	583	571	3706
9	583	583	580	583	579	580	580	580	570	558	548	545	548	559	564	569	573	576	579	580	579	579	579	578	572	3732
10 *q*	577	577	577	577	579	580	579	574	565	552	544	542	548	556	565	569	575	581	584	585	581	578	580	583	571	3708
11	580	584	580	583	584	588	587	591	576	545	541	544	535	544	560	564	570	577	577	583	568	568	572	573	570	3674
12	562	485	537	555	567	573	569	569	548	537	540	541	546	564	557	552	549	574	552	552	556	562	568	557	553	3272
13	552	565	568	572	553	582	578	580	557	543	548	544	544	552	559	569	573	557	565	575	576	576	573	566	564	3527
14	560	563	570	573	573	576	575	565	561	562	550	538	539	539	558	563	569	570	574	576	576	577	575	580	565	3562
15 *q*	574	573	575	576	580	580	579	574	565	552	545	546	553	561	568	575	576	579	582	583	586	582	579	579	572	3722
16 *q*	579	578	577	576	576	575	574	572	566	557	548	542	546	554	563	568	574	577	578	579	579	580	579	579	570	3676
17 *q*	578	578	578	578	579	578	577	576	571	559	548	544	547	555	563	570	575	578	580	583	584	584	591	591	573	3745
18 *q*	590	587	586	585	587	584	584	577	568	556	546	541	547	556	563	570	574	580	584	582	580	580	580	581	574	3768
19	584	582	581	589	588	586	583	578	573	562	558	558	559	563	569	573	577	581	584	587	583	578	571	560	*575*	3807
20	491	516	535	550	547	554	569	573	569	552	546	545	550	556	561	568	572	577	572	572	572	571	571	571	557	3360
21	569	569	575	572	573	575	576	574	568	556	554	557	562	563	567	578	583	572	568	565	572	557	546	566	567	3617
22	571	568	571	570	572	577	575	572	565	561	547	549	557	563	569	564	570	575	579	580	581	580	582	580	570	3678
23	576	575	575	578	581	579	576	569	563	557	551	550	557	565	574	569	567	575	580	582	579	589	569	575	571	3711
24	578	577	579	582	575	572	568	573	564	554	547	555	558	563	563	566	569	570	572	572	572	576	577	581	569	3663
25	583	582	582	582	582	583	583	579	568	557	552	556	566	567	573	569	559	566	557	557	561	568	570	571	570	3673
26 *d*	578	577	574	586	578	572	597	580	546	516	517	521	533	553	569	570	550	557	566	562	493	266	320	466	531	2747
27 *d*	479	534	539	475	545	569	573	567	561	544	543	559	555	556	575	572	575	574	583	539	512	374	521	543	540	2967
28 *d*	561	557	567	572	569	573	573	572	572	550	542	549	839	929	972	901	648	462	536	-212	-241	96	-115	405	499	1977
29 *d*	384	312	156	368	475	530	530	556	551	547	547	529	533	536	543	547	550	554	554	557	556	557	563	548	503	2083
30	553	555	557	557	560	561	562	563	558	559	554	533	532	540	554	558	556	558	558	562	559	562	563	564	556	3338
31	561	560	561	561	565	566	557	564	568	564	550	544	547	546	550	559	565	567	569	570	570	568	567	567	561	3466
Mean	533	532	*530*	556	568	570	568	566	557	547	545	543	556	564	573	*574*	569	567	571	546	542	541	540	562	555	
Sum 16,000+	508	485	437	1230	1610	1683	1614	1549	1277	971	903	849	1238	1492	1754	1799	1635	1560	1684	923	791	756	739	1417		Grand Total 412,904

MAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

2 LERWICK (D) — 9° + — OCTOBER 1961

	Hour G.M.T. 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 700·0+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	
1 *d*	13·1	8·0	-27·3	1·9	24·4	43·1	38·3	42·8	35·0	34·0	36·2	42·1	45·8	43·9	41·7	39·9	37·8	37·3	36·6	36·8	37·0	36·8	35·5	36·0	31·5	56·7
2	35·7	35·0	35·0	35·1	35·0	35·0	34·3	33·0	31·6	32·3	34·3	37·2	39·3	41·0	40·5	37·3	35·8	32·2	30·9	37·5	37·3	36·9	36·4	36·3	35·6	154·9
3	36·1	35·7	35·8	35·4	35·4	35·1	33·8	32·3	31·5	32·6	35·4	37·3	40·6	40·5	40·4	40·0	38·9	35·6	32·4	36·3	35·6	34·0	34·8	34·4	35·8	159·9
4	35·3	34·4	33·8	34·2	32·5	33·6	34·2	34·3	34·4	35·6	38·0	41·1	43·2	44·0	42·2	40·1	40·0	36·4	36·2	35·7	35·4	31·7	32·4	31·0	36·2	169·7
5	35·8	36·3	36·5	35·8	35·8	35·4	34·8	34·4	34·4	35·6	38·1	40·9	42·8	43·2	42·7	41·1	39·3	38·3	37·5	35·2	36·6	37·3	37·4	37·4	37·6	202·6
6	36·9	36·1	36·3	35·4	35·1	34·7	34·5	34·8	34·8	36·4	39·5	40·9	42·1	42·5	42·4	40·9	39·2	35·7	38·1	37·6	33·3	33·0	35·4	34·7	37·1	190·3
7	34·4	40·1	39·2	32·0	31·3	32·4	33·2	32·9	33·1	34·9	38·4	42·2	43·5	43·0	41·7	39·6	38·3	38·1	37·8	37·4	37·1	37·1	37·1	36·9	37·2	191·7
8	36·5	35·9	35·9	35·9	35·7	34·9	35·8	38·8	37·7	36·3	37·6	39·5	41·2	41·9	41·4	40·2	39·5	39·6	39·3	38·8	38·2	37·3	36·7	36·4	38·0	211·0
9	36·4	36·9	36·7	35·9	37·0	36·2	35·9	34·8	33·5	33·1	34·6	38·5	40·2	41·4	40·5	38·3	37·3	37·4	37·2	37·3	36·9	36·8	36·5	36·5	36·9	185·8
10 *q*	36·3	36·4	36·5	36·5	36·1	35·7	35·0	34·1	33·4	33·8	35·7	38·0	40·3	41·1	41·4	40·3	39·0	39·1	38·4	37·9	37·0	36·4	36·9	35·5	37·1	190·8
11	36·3	34·8	35·4	35·0	35·9	34·8	34·7	34·0	32·7	35·2	41·7	44·3	44·0	42·4	44·3	42·2	39·5	38·9	38·8	39·3	32·1	31·1	34·5	32·7	37·3	194·6
12	31·3	23·9	28·3	27·3	30·5	34·8	37·1	35·5	34·9	36·9	39·3	42·1	43·2	45·3	44·3	46·0	36·8	36·6	38·1	36·3	35·0	29·4	28·8	28·5	35·4	150·2
13	23·1	27·4	31·1	31·6	38·5	42·2	36·8	36·5	37·3	36·7	35·0	38·1	40·0	40·9	40·5	38·6	36·7	33·1	37·6	38·4	37·9	37·7	35·9	33·3	36·0	164·9
14	29·7	29·0	34·0	34·0	34·7	34·8	34·7	35·7	35·7	35·7	37·2	39·6	41·5	42·0	41·7	40·0	38·1	37·7	37·0	37·1	37·0	36·9	36·6	36·7	36·5	177·1
15 *q*	35·1	35·9	36·0	36·1	36·0	35·9	35·8	34·9	34·1	35·0	36·6	39·2	41·7	42·2	42·0	40·8	39·8	38·8	37·9	37·2	33·4	35·9	36·9	37·1	37·3	194·3
16 *q*	36·7	36·3	36·1	35·9	36·0	35·9	35·4	34·5	33·7	33·7	35·0	37·9	40·2	41·7	41·3	39·3	38·1	38·3	38·1	37·7	37·6	37·2	36·9	36·7	37·1	190·2
17 *q*	36·3	35·9	36·1	36·1	36·1	36·1	35·7	34·9	34·0	33·9	35·2	37·9	40·5	41·5	40·5	39·3	38·8	39·0	38·9	38·7	38·1	37·7	37·9	37·6	37·4	196·7
18 *q*	37·0	36·9	36·9	36·8	36·6	36·4	36·4	35·0	34·1	34·0	35·6	38·7	40·9	42·6	41·7	40·3	39·1	38·8	38·8	37·9	37·3	37·0	37·0	36·8	37·6	202·6
19	36·1	36·9	37·0	32·6	32·6	33·3	34·8	34·9	34·2	34·8	36·6	39·3	40·7	41·5	41·1	40·1	39·8	39·7	39·3	39·0	37·9	36·9	32·5	34·0	36·9	185·6
20	32·9	5·7	13·4	20·4	21·3	25·6	30·0	33·3	33·2	35·0	37·7	39·0	40·7	40·8	39·6	38·7	38·0	37·9	38·1	38·1	37·3	36·9	36·3	35·0	32·7	84·9
21	35·4	36·3	35·5	35·9	36·0	36·7	36·2	35·0	34·2	34·0	36·7	41·2	43·0	43·6	41·0	41·0	41·7	41·0	41·1	37·9	35·4	28·8	25·0	29·8	36·8	182·4
22	32·2	34·3	34·3	34·5	35·9	36·0	36·0	35·0	34·9	35·4	36·1	38·8	42·1	43·1	43·1	39·3	40·0	38·8	37·7	37·3	37·1	35·9	34·8	35·5	37·0	188·1
23	36·5	36·8	36·9	36·9	36·8	36·0	35·7	34·8	34·7	35·8	38·6	41·3	41·9	41·8	41·0	40·4	39·2	38·4	38·4	38·3	35·0	25·2	32·3	37·4	37·1	190·1
24	38·3	37·1	37·1	36·2	36·9	37·7	37·5	37·2	36·8	38·1	40·1	42·7	43·5	43·4	42·8	41·2	39·8	38·3	37·5	36·6	35·4	35·6	35·0	36·0	38·4	220·8
25	36·1	36·2	36·3	36·9	36·6	36·4	35·8	35·4	34·8	35·9	38·6	41·8	44·4	44·1	45·4	45·9	44·2	38·9	32·6	35·0	32·1	31·5	22·4	31·1	37·0	188·4
26 *d*	35·6	35·7	38·1	39·3	35·2	41·7	40·8	39·0	37·9	39·4	41·6	46·4	50·5	50·2	47·9	48·1	48·2	40·2	37·8	35·9	28·7	20·5	15·1	25·2	38·3	219·0
27 *d*	30·1	36·3	27·3	38·0	37·5	41·6	38·7	39·2	36·3	36·7	36·4	40·0	41·7	42·1	40·9	38·9	38·1	40·7	32·6	28·3	25·4	14·6	18·3	23·5	34·3	123·2
28 *d*	29·0	31·6	33·5	32·4	35·1	35·3	34·9	34·4	35·4	43·6	40·3	39·4	27·8	37·6	52·3	64·4	53·5	30·0	57·4	-18·4	-2·4	-3·8	-0·2	7·5	*30·4*	30·6
29 *d*	36·3	54·8	46·5	41·7	41·5	41·3	46·5	43·2	35·5	33·1	35·0	35·5	36·7	37·9	37·9	37·5	37·3	36·7	35·9	35·8	34·7	33·5	33·3	35·7	*38·5*	223·8
30	34·5	34·6	34·7	35·0	35·1	35·0	34·8	34·1	33·7	33·1	32·4	37·0	39·8	41·0	39·6	37·6	34·1	27·9	36·5	36·4	35·7	33·5	33·9	35·1	35·2	145·1
31	35·0	35·0	34·2	35·1	35·1	35·2	35·9	35·2	34·2	34·5	35·2	38·0	39·6	39·9	39·3	38·0	37·4	37·0	36·6	36·2	36·1	36·0	35·4	34·9	36·2	169·0
Mean	33·9	33·7	32·8	33·7	34·8	36·1	35·9	35·6	34·6	35·3	37·1	39·9	41·4	*42·2*	42·0	41·1	39·5	37·3	37·8	35·1	34·2	32·4	*32·2*	33·4	36·3	
Sum 900·0+	150·0	146·2	117·1	145·8	178·2	218·8	214·0	203·9	171·7	195·1	248·7	335·7	383·4	408·1	403·1	375·3	323·3	256·4	271·1	189·5	161·2	105·3	97·7	135·2		Grand Total 27035·0

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) + — OCTOBER 1961

	Hour G.M.T. 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 7000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1 *d*	241	480	453	162	246	212	268	254	326	351	318	366	387	389	354	349	351	358	360	355	352	357	351	351	333	991
2	352	352	350	350	349	349	349	349	348	349	350	350	350	352	353	359	356	363	357	345	346	347	347	347	*351*	1419
3	346	346	344	343	344	344	347	350	352	351	345	342	342	347	352	352	351	350	357	355	352	355	348	347	348	1362
4	346	344	344	341	342	342	341	342	345	347	345	345	347	352	363	361	363	376	377	360	348	352	341	323	349	1387
5	309	330	336	337	336	337	341	341	342	345	342	336	337	341	342	343	342	341	341	341	340	341	340	341	338	1122
6	341	340	341	340	340	339	336	335	336	336	335	336	341	343	348	355	354	360	363	361	352	338	337	336	343	1243
7	339	329	279	288	301	310	322	330	335	337	339	337	341	338	339	342	344	341	340	339	340	340	341	342	331	933
8	344	345	345	344	344	342	338	330	323	327	329	330	335	339	341	345	347	347	345	342	341	341	342	341	339	1147
9	342	337	340	339	339	337	337	338	341	340	335	334	336	341	346	348	347	343	342	341	340	340	339	341	340	1163
10 *q*	342	343	343	343	343	343	342	344	345	344	341	337	335	337	341	342	341	340	340	340	342	344	342	334	341	1188
11	339	332	336	337	338	337	335	334	337	341	332	331	337	338	344	352	350	341	342	339	356	350	333	313	339	1124
12	253	193	176	221	267	284	303	315	332	339	334	334	332	338	357	374	380	362	357	356	348	340	311	291	312	497
13	279	266	281	302	302	278	302	315	332	335	335	335	333	333	338	341	352	371	359	346	341	337	333	299	323	745
14	257	274	301	319	330	333	334	338	337	337	338	340	338	339	339	339	345	342	339	337	336	335	334	327	329	888
15 *q*	329	332	332	333	333	334	335	336	338	338	335	330	326	324	327	332	337	338	338	337	335	331	332	331	333	993
16 *q*	330	330	331	332	333	333	334	334	335	335	336	335	329	326	329	333	333	333	334	334	334	333	333	333	333	982
17 *q*	333	331	330	329	330	331	333	334	333	330	330	328	323	321	322	325	327	328	329	331	331	332	329	328	329	898
18 *q*	329	328	327	326	325	327	327	329	329	331	330	327	322	321	324	325	324	324	323	328	329	331	331	330	327	847
19	328	327	313	298	305	311	318	323	327	331	329	326	327	329	332	331	330	329	330	331	335	342	347	347	327	846
20	264	201	254	259	250	259	298	327	340	346	343	340	340	340	342	340	336	337	337	337	337	338	339	340	314	544
21	340	337	325	331	331	330	331	334	337	338	332	327	334	340	346	342	345	360	375	377	356	344	306	320	339	1138
22	328	328	328	334	335	331	331	335	335	337	338	335	335	338	349	358	353	341	337	335	334	331	330	331	336	1067
23	334	337	337	335	334	333	332	334	335	334	329	331	335	337	341	347	346	340	335	334	336	325	334	334	335	1049
24	334	337	336	335	337	334	330	328	331	332	332	328	333	340	343	349	350	349	349	344	345	339	336	334	338	1105
25	334	335	337	337	338	336	335	335	335	331	330	328	330	335	346	357	368	375	394	372	357	337	304	298	341	1184
26 *d*	314	326	329	308	314	317	303	320	332	352	350	350	360	374	378	386	393	369	357	349	231	155	106	224	317	597
27 *d*	224	242	282	223	183	223	258	294	312	328	346	340	343	346	341	346	357	378	412	330	311	221	231	259	*297*	130
28 *d*	280	285	302	313	326	334	339	341	341	335	329	353	491	388	229	391	299	284	304	159	351	417	311	174	320	676
29 *d*	130	57	63	108	246	302	336	325	345	357	354	354	350	350	350	350	351	351	353	353	355	354	337	333	299	164
30	342	346	346	346	345	346	346	347	350	353	351	352	348	350	350	354	358	369	358	353	355	353	348	341	350	1407
31	337	338	340	342	342	343	347	344	347	351	353	351	350	354	352	350	348	347	348	348	348	348	350	349	347	1327
Mean	311	314	315	*308*	317	320	327	330	337	340	338	338	344	343	341	349	348	348	*349*	339	339	334	324	321	332	
Sum 9000+	640	728	781	555	828	911	1128	1235	1433	1538	1465	1488	1667	1640	1558	1818	1778	1787	1832	1509	1514	1348	1043	939		Grand Total 247,163

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

4 LERWICK — OCTOBER 1961

	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.	′		′	h. m.	′	h. m.	γ		γ	h. m.	γ					°A.
1 *d*	05 09	679		*-1236*	01 08	*1915*	01 11	*123·0*		*-118·1*	02 49	*241·1*	02 40	*986*		47	00 42	*939*	9,7,5,5,4,2,1,2	35	2	86·2
2	18 03	575		520	10 50	55	12 56	41·7		21·9	17 56	19·8	17 54	372		343	19 50	29	0,1,1,1,1,3,3,0	10	0	86·3
3	18 11	574		520	11 00	54	12 54	42·2		30·4	18 09	11·8	18 04	358		339	12 12	19	1,0,1,1,1,2,2,2	10	0	86·3
4	23 35	584		537	10 56	47	14 00	45·9		24·9	23 31	21·0	17 45	384		304	24 00	80	1,1,0,1,3,2,2,3	13	0	86·2
5	19 25	582		533	10 03	49	13 32	43·6		32·3	19 16	11·3	09 37	347		299	00 12	48	2,0,1,1,1,1,2,1	9	0	86·3
6	20 59	601		537	11 59	64	13 41	43·2		29·6	21 30	13·6	18 05	364		327	21 03	37	1,0,0,1,1,2,2,2	9	0	86·3
7	05 03	594		534	10 55	60	01 52	46·3		29·6	03 58	16·7	15 59	345		273	02 20	72	3,2,2,1,1,0,0,0	9	0	86·2
8	20 45	587		541	12 36	46	13 50	42·7		34·5	09 42	8·2	16 58	349		320	08 06	29	0,1,2,2,1,1,0,0	7	0	86·3
9	01 40	588		541	11 55	47	13 33	41·8		32·6	09 05	9·2	15 50	350		332	11 32	18	1,1,1,1,1,0,0,0	5	0	86·3
10 *q*	18 13	591		540	11 40	51	14 22	41·7		32·7	08 40	9·0	21 49	347		328	23 15	19	1,0,0,0,0,1,1,2	5	0	86·2
11	07 21	596		523	12 24	73	11 24	45·5		29·5	21 19	16·0	20 45	370		304	23 30	66	2,1,2,2,2,2,3,3	17	0	86·0
12	05 10	582		387	02 48	195	15 33	47·7		18·9	01 49	28·8	16 45	383		153	01 46	230	5,4,3,2,2,3,2,3	24	1	85·9
13	23 59	593		533	23 35	60	05 03	48·6		20·9	00 25	27·7	17 34	376		250	24 00	126	3,4,3,2,1,2,2,4	21	0	86·0
14	00 00	593		530	12 00	63	13 14	42·9		26·7	00 43	16·2	16 48	346		248	00 02	98	3,2,1,2,2,0,0,1	11	0	86·0
15 *q*	20 36	592		542	10 34	50	13 37	42·8		31·9	20 37	10·9	09 01	340		323	13 24	17	0,0,0,0,1,1,2,1	5	0	86·0
16 *q*	19 55	581		539	11 25	42	14 07	41·8		33·3	08 55	8·5	10 27	338		325	13 40	13	0,0,1,1,0,0,0,0	2	0	86·0
17 *q*	22 13	596		542	11 24	54	13 50	41·7		33·5	09 52	8·2	07 55	334		319	13 50	15	0,0,0,1,0,1 0,1	3	0	85·2
18 *q*	00 13	591		539	11 18	52	13 16	43·5		33·7	09 09	9·8	22 55	332		320	13 17	*12*	0,0,1,1,1,1,1,1	6	0	84·9
19	04 07	594		519	24 00	75	14 25	42·5		30·0	22 11	12·5	23 58	352		295	03 25	57	2,2,2,1,1,1,1,3	13	0	81·9
20	17 22	586		448	00 31	138	00 08	45·9		0·8	01 30	45·1	00 00	349		185	01 27	164	5,3,3,1,1,1,1,1	16	0	81·1
21	16 12	590		532	22 13	58	13 56	44·6		17·1	22 42	27·5	19 08	387		289	22 32	98	2,1,1,1,2,2,3,3	15	0	81·2
22	22 24	586		544	10 12	42	13 39	44·5		31·6	00 34	12·9	15 12	363		324	00 00	39	2,1,1,1,2,2,0,1	10	0	81·1
23	21 22	608		545	11 34	63	11 19	42·4		20·3	21 57	22·1	15 57	350		317	21 30	33	1,0,1,1,1,2,3,4	13	0	81·8
24	03 18	583		544	10 45	39	12 11	44·5		34·1	22 05	10·4	16 50	352		328	07 32	24	1,1,1,1,2,0,1,1	8	0	81·6
25	00 26	587		545	18 16	42	12 49	46·7		15·8	22 27	30·9	18 21	408		294	23 10	113	1,0,0,1,2,3,3,4	14	0	81·3
26 *d*	20 11	617		166	22 00	451	12 54	53·4		6·7	21 03	46·7	16 06	405		66	22 31	339	2,3,3,2,3,3,6,6	28	1	81·0
27 *d*	18 35	603		259	21 28	344	13 07	45·5		-2·2	21 44	47·7	18 34	430		154	04 05	276	5,5,4,3,2,3,5,6	33	1	80·6
28 *d*	14 33	*1277*		-596	19 59	1873	16 10	49·7		-67·5	19 43	117·2	20 59	599		*-335*	19 16	934	3,2,3,4,8,8,9,8	45	2	80·3
29 *d*	22 30	597		30	02 39	567	01 59	72·9		18·7	00 00	54·2	06 23	367		12	01 56	355	6,6,4,3,2,1,1,3	26	1	80·0
30	22 47	574		525	11 43	49	13 25	42·0		22·2	17 19	19·8	17 31	372		336	23 45	36	1,0,1,2,1,3,1,2	11	0	79·7
31	19 48	573		540	13 40	*33*	13 05	40·3		33·3	08 47	*7·0*	14 03	354		336	00 35	18	1,1,2,1,1,1,0,1	8	0	79·6
Mean	- -	615		397	- -	218	- -	47·8		17·4	- -	30·4	- -	391		250	- -	140	-	-	0·26	83·9

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

TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

1 LERWICK (H) — 14,000γ (0·14 C.G.S. unit) + — NOVEMBER 1961

	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 13,000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1	570	567	567	567	568	577	579	577	566	556	553	546	548	553	559	566	569	573	569	565	567	571	571	569	566	573
2	569	570	571	573	577	579	578	574	563	553	547	551	552	555	558	564	569	572	574	576	574	573	573	576	568	621
3	574	571	569	568	571	577	578	577	566	558	555	553	555	557	561	567	573	576	576	577	574	574	578	576	569	661
4	575	572	571	571	572	574	577	574	571	565	560	559	562	565	571	578	583	578	578	578	581	574	574	560	572	723
5 *d*	568	573	576	578	588	582	584	585	569	549	550	559	566	552	554	556	556	557	568	566	566	562	602	576	568	642
6	559	563	565	553	549	580	584	581	548	538	548	535	539	553	567	571	573	577	577	578	579	579	581	584	565	561
7 *d*	581	570	565	567	572	578	573	549	532	539	531	542	549	602	605	638	580	629	637	563	316	406	499	551	553	274
8 *d*	495	466	504	530	545	553	553	547	559	556	545	542	541	550	563	563	563	566	567	568	565	545	554	560	*546*	100
9	562	554	556	559	567	571	576	578	559	558	546	536	538	545	556	568	563	570	571	571	567	569	571	566	562	477
10	567	567	562	560	563	572	581	581	577	564	556	554	557	561	564	570	573	573	571	573	574	577	576	574	569	647
11	574	573	573	574	577	579	580	578	572	562	556	556	559	565	573	574	577	580	581	581	581	580	591	573	574	769
12	581	574	566	569	580	585	581	581	566	561	556	559	552	561	566	567	555	557	569	575	571	570	562	563	568	627
13	566	568	567	567	568	573	573	574	571	566	560	559	562	567	571	574	575	577	580	582	580	578	577	578	571	713
14	578	577	578	583	587	594	592	577	555	578	570	564	564	569	571	574	582	579	565	563	562	567	574	579	574	782
15 *q*	572	574	572	570	574	576	576	575	567	564	560	559	560	564	571	574	578	578	580	580	579	576	585	575	572	739
16	579	578	577	578	578	579	580	580	577	569	563	563	568	571	577	580	582	584	585	586	585	579	564	560	576	822
17 *d*	573	571	574	577	578	588	589	589	585	578	577	574	577	587	568	549	571	574	574	569	569	563	536	531	572	721
18 *d*	569	548	545	544	568	578	582	577	546	494	500	542	566	560	576	577	553	584	553	548	535	521	512	504	549	182
19	532	546	542	556	566	564	567	562	565	561	560	555	553	556	564	570	571	571	572	574	573	573	576	574	563	503
20	574	574	573	574	579	581	592	576	568	578	572	566	563	552	556	573	571	558	551	545	560	560	557	564	567	617
21	564	570	555	566	576	581	578	574	570	569	569	567	566	567	572	577	580	577	574	574	577	574	577	573	572	727
22 *q*	569	579	571	573	577	580	581	582	579	576	573	569	572	578	578	581	580	577	578	581	580	579	579	578	577	850
23 *q*	578	578	578	578	579	580	582	583	581	575	571	570	571	574	578	581	583	585	580	577	581	581	581	582	579	887
24 *q*	578	577	572	574	577	578	581	581	578	575	571	567	567	570	570	576	576	580	581	582	582	585	585	583	577	846
25	581	581	581	581	582	584	588	587	581	566	570	570	571	573	574	574	577	582	578	582	581	580	579	580	578	883
26	578	577	578	579	582	585	586	584	581	577	578	567	571	574	577	580	584	581	574	577	582	579	580	574	579	885
27	576	570	567	574	578	581	583	585	581	577	571	568	569	567	572	575	577	578	581	577	581	584	584	583	577	839
28	581	579	578	579	584	586	586	584	581	574	570	571	573	573	575	575	575	574	568	574	574	579	581	582	577	856
29	581	578	576	579	581	581	584	584	583	576	572	572	574	578	583	584	585	587	587	585	584	583	584	580	*581*	941
30 *q*	582	581	581	581	584	588	587	584	580	576	572	570	571	574	577	581	581	580	579	581	581	585	587	587	580	930
Mean	569	567	567	569	574	579	*580*	577	569	563	559	*559*	561	566	570	575	574	577	576	574	565	567	571	570	570	
Sum 16,000+	1086	1026	1010	1082	1227	1364	1411	1320	1077	888	782	765	836	973	1107	1237	1215	1314	1278	1208	961	1006	1130	1095		Grand Total 410,398

MAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

2 LERWICK (D) — 9° + — NOVEMBER 1961

	Hour G.M.T. 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 700·0+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	
1	34·0	34·8	35·2	35·2	34·9	35·6	35·6	35·4	35·7	35·5	36·6	38·8	39·8	40·1	39·7	38·9	38·1	37·9	38·1	34·1	34·0	35·7	35·7	35·5	36·5	174·9
2	35·9	36·0	36·3	36·4	36·4	36·2	35·8	35·4	35·9	37·7	40·9	41·9	42·7	45·0	42·9	41·7	39·8	38·0	37·6	36·9	36·6	36·1	35·9	35·0	*38·0*	213·0
3	32·6	34·1	35·7	33·1	34·0	35·0	35·4	35·5	34·2	34·7	36·4	38·0	39·0	39·0	38·7	38·2	38·0	38·1	38·3	37·9	36·9	35·9	35·0	35·0	36·2	168·7
4	33·8	34·4	35·5	35·5	35·7	35·7	35·5	35·0	34·2	34·2	36·2	38·0	39·1	39·5	39·0	38·6	39·2	40·1	39·1	38·2	37·8	35·8	31·0	31·7	36·4	172·8
5 *d*	30·7	31·0	33·7	34·7	33·7	37·0	37·7	36·1	35·4	37·5	41·1	41·1	44·2	44·9	48·5	44·4	43·4	39·0	35·5	31·2	29·4	32·9	29·3	27·6	36·7	180·0
6	32·0	32·7	34·7	34·4	37·0	41·2	36·3	37·4	39·7	40·4	40·0	40·3	39·7	38·3	37·7	37·1	36·6	36·3	36·7	36·5	36·1	35·6	35·3	34·9	37·0	186·9
7 *d*	33·8	34·1	34·5	33·8	34·1	35·3	36·0	37·0	40·9	38·1	35·3	36·4	42·4	46·8	45·0	40·0	26·3	32·7	35·0	29·5	6·2	19·9	20·8	28·6	33·4	102·5
8 *d*	35·4	25·8	24·9	30·7	34·1	35·4	37·2	37·2	32·8	31·1	32·2	35·2	37·6	37·2	38·1	37·3	36·2	35·6	35·2	35·0	19·7	27·0	27·6	33·5	*33·0*	92·0
9	35·0	37·2	39·3	34·6	34·4	34·8	33·9	35·0	33·8	35·2	37·6	39·6	42·0	41·7	41·5	39·8	36·8	35·4	28·5	26·6	31·9	33·1	32·3	32·7	35·5	152·7
10	34·3	34·5	35·0	35·2	36·2	35·7	35·0	34·8	34·1	34·7	35·7	37·4	38·9	40·0	38·6	36·4	36·3	36·1	36·2	35·9	35·4	35·1	35·1	35·2	35·9	161·8
11	35·2	35·2	35·6	35·5	35·7	35·7	35·2	34·8	34·0	34·1	35·1	36·8	39·1	39·8	39·5	39·0	37·1	36·7	36·7	36·6	36·2	35·2	30·6	31·4	35·9	160·8
12	34·8	31·1	31·1	31·4	31·1	32·1	35·0	35·1	34·6	35·7	37·0	39·6	41·1	45·4	46·8	46·8	39·3	39·6	37·9	37·3	35·4	27·2	35·2	33·9	36·4	174·5
13	29·8	34·4	33·3	34·1	35·4	35·2	35·4	35·0	34·7	34·3	34·8	36·2	37·3	37·7	37·6	37·0	36·2	36·2	36·3	36·6	36·4	35·0	34·3	33·9	35·3	147·1
14	33·2	34·8	35·5	34·2	36·2	37·6	37·4	38·9	40·8	36·2	36·3	37·0	38·9	38·4	38·4	38·0	38·4	38·6	37·1	34·7	32·2	33·8	35·1	34·5	36·5	176·2
15 *q*	35·3	35·7	35·7	36·5	36·5	36·5	35·7	34·5	35·3	33·9	35·0	37·1	38·1	38·9	38·9	38·1	37·6	37·3	37·0	36·4	36·2	35·7	34·1	33·8	36·2	169·8
16	35·0	35·4	35·5	35·9	35·8	35·6	35·4	35·2	34·8	34·9	36·2	38·1	39·2	39·0	38·7	38·2	38·1	37·6	37·3	37·3	36·6	36·1	24·2	27·6	35·7	157·7
17 *d*	31·4	33·3	36·1	34·8	34·6	35·0	35·2	35·2	35·1	35·3	36·5	37·3	39·0	41·8	44·1	41·5	39·6	38·1	35·7	33·3	30·6	29·5	22·4	26·2	35·1	141·6
18 *d*	35·3	24·1	29·5	35·7	36·2	37·5	38·8	44·3	38·6	39·6	45·9	43·3	39·1	41·5	48·3	46·3	42·9	28·1	30·9	24·5	19·4	26·0	21·0	15·1	34·7	131·9
19	24·9	26·2	35·4	37·6	37·5	38·1	38·3	36·0	35·1	35·0	37·3	37·4	38·2	37·9	37·9	36·6	36·1	36·2	35·7	35·6	35·3	35·0	34·4	35·0	35·5	152·7
20	35·1	35·2	35·0	36·1	36·6	38·0	38·1	38·8	37·8	37·6	38·7	39·9	40·2	41·0	37·6	37·2	30·6	29·3	32·4	29·7	28·0	30·4	31·3	35·7	35·4	150·3
21	32·6	31·7	29·5	30·4	33·4	34·6	35·3	35·4	35·1	35·4	36·9	37·4	37·6	37·4	37·4	36·9	36·9	36·6	36·2	34·3	34·7	35·1	34·8	34·6	35·0	140·2
22 *q*	36·2	35·0	35·1	35·3	35·2	35·2	34·8	34·8	34·6	34·8	36·7	38·2	38·3	38·2	37·4	37·1	37·2	37·1	36·5	36·2	35·7	35·4	35·2	35·2	36·1	165·4
23 *q*	35·2	35·4	35·9	36·2	36·1	36·1	36·0	35·4	34·8	34·3	35·4	37·2	38·8	38·4	37·9	37·4	37·0	37·1	36·8	36·2	35·7	35·5	35·1	35·0	36·2	168·9
24 *q*	35·0	34·6	34·3	34·6	34·6	34·4	34·4	34·7	34·8	34·6	35·5	36·9	37·8	38·3	37·9	37·8	37·6	37·6	37·3	36·5	35·3	33·6	31·6	32·6	35·5	152·3
25	34·3	35·9	36·1	36·7	35·7	35·6	36·0	35·9	35·8	37·8	38·3	38·5	39·8	40·4	40·2	39·9	37·6	38·1	37·8	36·0	35·4	35·2	34·8	35·0	36·9	186·8
26	34·8	36·6	36·6	36·6	36·7	36·6	36·2	36·6	36·8	36·3	36·5	37·4	37·8	39·1	39·5	38·5	37·3	37·6	36·6	35·9	35·5	34·6	30·8	28·4	36·2	169·3
27	31·8	32·9	36·4	36·6	36·3	35·8	35·7	35·6	35·4	35·1	35·2	37·1	38·6	38·9	38·6	39·0	37·9	37·7	33·0	35·4	35·3	35·0	35·3	35·5	36·0	164·1
28	35·6	36·1	36·4	36·6	36·3	36·1	35·7	35·4	35·1	35·2	36·1	37·6	38·9	39·0	38·9	38·9	38·5	38·8	35·6	36·1	35·2	34·7	34·8	35·6	36·5	177·2
29	36·0	35·8	37·5	37·4	36·6	36·7	36·3	35·6	35·4	36·1	37·1	38·5	40·0	39·5	39·1	38·7	37·8	37·2	36·8	36·5	35·2	35·7	33·7	34·8	36·8	184·0
30 *q*	35·8	35·7	36·1	36·1	36·4	36·1	35·9	35·4	34·9	35·1	35·8	36·9	37·9	39·0	38·5	38·5	38·5	38·7	38·9	37·7	35·9	35·1	35·2	36·5	36·7	180·6
Mean	33·8	33·7	34·7	35·1	35·5	36·0	36·0	36·1	35·7	35·7	36·9	38·2	39·4	40·1	*40·1*	39·1	37·4	36·8	36·1	34·8	32·8	33·4	*32·1*	32·7	35·9	
Sum 900·0+	114·8	109·7	141·4	151·9	163·4	180·4	179·2	181·4	170·2	170·4	208·3	245·1	281·1	302·1	302·9	273·8	222·9	203·4	182·7	144·6	84·2	100·9	61·9	80·0		Grand Total 25856·7

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) + — NOVEMBER 1961

	Hour G.M.T. 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 7000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1	343	343	343	342	341	337	337	338	344	346	347	348	345	341	343	343	343	344	351	362	359	350	349	345	345	1284
2	344	344	344	343	341	339	339	342	345	347	344	340	344	345	347	348	346	346	344	343	344	345	344	337	344	1245
3	323	321	325	329	330	329	330	334	342	345	344	343	344	344	343	341	340	338	340	341	343	342	337	332	337	1080
4	327	334	337	338	337	336	335	337	340	341	341	340	341	341	342	341	340	343	345	349	352	354	350	336	341	1177
5 *d*	294	313	322	330	330	330	323	327	336	341	336	336	342	364	397	392	393	392	376	383	372	359	285	260	343	1233
6	288	308	325	325	325	308	294	311	322	339	344	350	348	347	351	350	348	346	342	341	339	338	338	338	335	332	975
7 *d*	336	336	309	320	322	319	319	321	311	330	353	403	405	431	457	481	442	465	485	387	211	178	246	294	*353*	1461
8 *d*	291	203	179	220	247	291	305	327	334	343	344	345	354	358	354	350	348	346	344	344	350	341	333	335	*316*	586
9	338	333	303	314	321	325	327	327	339	341	342	347	347	345	348	353	357	355	357	353	344	341	333	334	339	1124
10	330	333	341	341	339	337	339	339	339	339	339	339	339	342	347	348	349	350	349	348	344	341	340	339	341	1191
11	340	341	342	342	342	342	342	342	343	344	342	337	336	336	339	344	344	344	343	341	341	339	330	330	340	1166
12	312	287	291	314	325	322	323	323	335	340	341	346	353	362	383	406	434	413	378	366	366	361	343	292	347	1316
13	308	314	321	331	336	339	340	341	343	342	339	336	336	336	337	340	342	342	342	342	344	344	343	340	337	1078
14	336	336	335	332	327	322	327	331	334	329	331	333	335	331	331	334	336	341	339	340	341	344	344	344	335	1033
15 *q*	344	345	345	345	346	346	346	345	345	344	341	339	337	336	336	336	337	339	339	341	341	344	337	333	341	1187
16	333	335	336	336	336	336	337	339	341	344	344	340	337	337	337	338	338	338	338	338	341	345	339	308	337	1091
17 *d*	324	329	332	334	335	332	332	334	337	340	338	338	338	338	351	375	355	349	352	357	363	361	317	224	337	1085
18 *d*	178	250	262	250	286	312	320	317	333	371	356	363	433	416	402	467	457	438	339	373	356	326	274	251	339	1130
19	246	265	291	292	300	302	320	332	337	341	342	345	351	349	345	345	345	344	341	340	340	341	343	343	327	840
20	343	343	342	339	332	323	319	324	326	324	327	335	347	362	369	365	376	375	376	392	376	357	344	323	347	1339
21	311	298	295	294	295	307	319	327	333	335	336	338	340	342	342	342	342	341	342	342	338	337	336	331	328	863
22 *q*	312	316	332	336	335	335	334	334	335	332	330	332	336	337	338	342	341	341	338	335	333	334	334	335	334	1007
23 *q*	335	336	336	336	336	335	332	330	331	334	332	331	331	330	332	334	336	336	338	337	334	331	329	328	333	1000
24 *q*	328	329	335	334	334	334	333	330	331	329	329	332	333	334	335	341	342	339	340	337	337	327	320	323	333	986
25	326	328	331	333	333	333	331	332	331	331	330	330	333	334	336	341	343	343	345	344	343	341	339	335	335	1046
26	335	334	334	335	335	335	333	334	335	333	332	334	331	332	333	338	339	342	348	348	342	341	336	327	336	1066
27	317	318	322	327	331	334	335	335	334	335	335	334	335	336	336	338	338	340	346	343	343	338	337	335	334	1022
28	331	331	331	333	334	334	334	335	335	333	333	332	333	333	333	336	337	339	353	348	347	343	339	334	336	1071
29	334	332	331	325	330	334	334	335	337	337	337	334	333	330	331	331	332	331	334	334	335	335	334	334	333	994
30 *q*	327	325	327	328	328	328	331	332	334	334	334	334	332	330	330	330	331	333	337	341	344	342	336	331	332	979
Mean	*318*	319	320	323	326	327	330	332	336	339	339	341	345	347	350	*356*	355	354	351	350	342	337	330	322	337	
Sum 9000+	534	560	599	698	772	822	887	966	1079	1169	1169	1232	1348	1403	1504	1668	1649	1629	1540	1488	1262	1120	909	648		Grand Total 242,655

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

4 LERWICK — NOVEMBER 1961

	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. ′	′ h. m.	′	h. m.	γ	γ	h. m.	γ					°A.
1	06 44	581	542	11 42	39	12 10 40·6	27·3 19 57	13·3	19 56	372	336	05 30	36	1,1,1,1,1,0,3,1	9	0	79·3
2	23 54	584	544	10 26	40	13 33 45·7	32·9 24 00	12·8	15 02	350	322	24 00	28	0,0,2,1,1,1,0,1	6	0	79·8
3	22 28	595	549	08 07	46	13 03 39·7	31·2 00 23	8·5	08 08	347	319	01 45	28	2,1,2,0,0,0 0,2	7	0	80·0
4	16 43	584	545	23 48	39	23 54 43·2	26·6 23 25	16·6	22 15	357	296	24 00	61	1,0,0,1,0,1,1,3	7	0	79·3
5 *d*	22 17	614	534	13 45	80	14 23 52·8	21·2 23 58	31·6	14 47	409	241	23 00	168	3,2,2,2,3,2,2,4	20	0	79·2
6	05 52	596	516	09 11	80	09 15 44·0	21·3 23 58	22·7	14 47	353	279	00 00	74	3,3,3,3,2,1,1,1	17	0	79·4
7 *d*	15 51	*730*	*212*	20 40	*518*	15 10 51·5	*-15·8* 20 46	*67·3*	15 12	*527*	*114*	21 05	*413*	2,2,3,4,4,5,7,5	32	2	80·0
8 *d*	20 33	584	388	01 32	196	11 51 39·1	10·4 20 32	28·7	13 33	362	162	02 04	200	5,4,2,2,2,1,4,3	23	1	80·2
9	19 07	584	531	11 31	53	14 04 43·4	17·7 19 00	25·7	18 41	364	294	02 40	70	3,2,2,2,2,2,4,1	18	0	80·2
10	07 28	584	551	11 14	33	13 49 40·8	33·6 00 28	7·2	18 45	352	330	00 29	22	1,1,1,1,1,0,1,1	7	0	80·0
11	22 34	607	553	11 05	54	13 47 40·0	26·9 22 52	13·1	16 56	346	318	22 37	28	0,0,1,0,1,1,0,2	5	0	79·7
12	00 49	598	549	12 06	49	15 20 49·5	20·0 21 17	29·5	17 55	441	280	01 55	161	3,2,1,1,3,3,2,4	19	0	80·0
13	19 55	583	557	11 00	26	13 38 38·0	28·0 00 19	10·0	20 41	347	296	00 00	51	2,0,1,0,0,0,0,1	4	0	80·0
14	06 50	598	542	08 09	56	08 37 43·9	30·0 20 57	13·9	22 28	345	318	04 37	27	1,2,3,1,1,1,1,1	11	0	79·8
15 *q*	22 28	592	558	11 04	34	13 36 39·1	31·6 22 25	7·5	04 10	347	330	22 52	17	0,0,0,0,0,0,0,1	1	0	80·1
16	22 09	601	528	22 52	73	13 00 39·8	21·8 22 06	18·0	21 57	352	292	23 23	60	0,0,0,1,1,0,1,3	6	0	80·0
17 *d*	23 50	603	479	23 04	124	14 52 48·0	14·5 23 25	33·5	15 27	383	165	24 00	218	2,1,1,1,3,3,2,5	18	0	80·1
18 *d*	17 52	625	479	10 03	146	15 10 *52·9*	-5·5 19 54	58·4	15 59	496	160	00 05	336	4,4,4,4,4,5,5,4	34	1	80·1
19	22 54	577	524	00 40	53	05 00 42·3	17·4 00 01	24·9	12 46	357	239	00 01	118	4,2,2,1,1,0,0,1	11	0	80·2
20	06 43	595	535	19 48	60	13 35 43·3	24·7 16 10	18·6	19 27	398	307	23 59	91	0,1,2,2,2,3,2,3	15	0	80·0
21	01 27	588	551	02 34	37	23 59 42·0	27·6 01 43	14·4	19 38	346	289	03 59	57	3,2,2,1,1,1,2,3	15	0	80·2
22 *q*	01 28	585	566	00 00	19	20 00 41·9	33·3 01 42	8·6	15 41	342	305	00 17	37	2,0,0,0,1,1,0,0	4	0	80·2
23 *q*	17 33	587	569	11 34	*18*	12 56 39·8	34·3 23 46	5·5	19 18	340	322	23 38	18	0,0,0,0,0,0,1,1	2	0	80·3
24 *q*	22 00	590	566	12 43	24	13 10 38·8	30·4 22 40	8·4	16 15	344	314	22 36	30	1,0,0,1,0,1,1,1	5	0	80·2
25	06 00	589	562	09 22	27	12 03 40·4	33·2 00 03	7·2	16 21	347	320	00 00	27	1,1,1,1,0,1,1,1	7	0	79·6
26	06 12	588	560	11 24	28	14 02 40·0	24·1 22 57	15·9	18 50	355	324	23 30	31	0,0,0,2,1,1,2,3	9	0	79·5
27	18 40	590	564	13 35	26	13 58 39·6	29·9 00 46	9·7	18 28	351	312	00 43	39	2,1,1,1,1,1,2,1	10	0	79·0
28	06 21	588	562	18 10	26	17 56 39·5	33·7 22 05	5·8	18 28	358	331	04 16	27	0,0,0,0,1 1,2,1	5	0	78·9
29	22 15	590	570	11 37	20	12 43 40·6	32·4 22 17	8·2	09 00	339	323	03 30	*16*	1,1,1,0,0,0,0,2	5	0	79·0
30 *q*	23 10	590	568	12 04	22	18 02 39·6	34·5 21 00	*5·1*	21 00	346	322	01 10	24	1,0,0,0,0,0,1,1	3	0	78·9
Mean	- -	597	528	- -	68	- - 42·7	24·3 - -	18·4	- -	369	285	- -	84	-	-	0·13	79·8

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

TERRESTRIAL MAGNETIC FORCE: HORIZONTAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

1 LERWICK (H) — 14,000γ (0·14 C.G.S. unit) + — DECEMBER 1961

	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 12,000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1 *d*	583	583	585	588	596	598	601	591	569	576	566	536	548	751	785	751	774	680	634	539	533	495	473	390	*597*	2325
2 *d*	398	455	545	551	549	545	553	561	557	549	529	546	558	552	646	762	735	610	623	464	229	150	147	262	*503*	76
3 *d*	138	375	462	532	503	512	499	499	501	530	531	551	594	601	573	562	552	551	560	568	539	523	560	569	516	385
4	560	557	551	557	563	569	569	569	561	538	549	549	549	563	570	567	548	566	572	572	571	569	582	576	562	1497
5	572	572	569	567	572	575	575	572	571	568	565	565	564	568	579	579	578	635	558	557	567	563	555	569	571	1715
6	565	566	566	569	558	569	573	573	573	569	567	567	565	553	557	572	609	601	571	564	567	573	567	570	570	1684
7	570	572	576	573	578	582	585	581	575	566	563	558	548	557	566	567	571	573	575	576	577	576	575	574	571	1714
8 *q*	573	572	572	573	575	576	576	575	572	567	567	568	570	571	576	576	580	580	582	583	582	581	580	580	575	1807
9	579	580	580	582	583	585	583	585	582	573	570	569	570	575	580	583	584	584	583	577	578	576	578	579	579	1898
10	579	580	580	585	585	583	583	583	581	575	569	560	562	572	578	580	576	566	563	563	571	582	570	570	575	1796
11	572	578	569	571	582	587	590	582	561	551	554	557	561	567	573	583	597	601	639	639	587	573	568	564	579	1906
12	558	560	546	558	571	573	573	571	569	567	566	566	566	568	575	576	580	580	581	582	582	581	580	578	571	1707
13	577	578	578	580	581	583	584	584	583	580	579	579	579	581	585	589	583	585	589	587	586	585	575	567	582	1957
14	575	577	580	582	585	589	587	585	583	581	575	575	574	580	585	590	590	592	591	587	585	582	578	578	583	1986
15	578	578	582	585	585	594	592	590	585	578	574	568	564	567	568	575	582	583	582	580	578	575	578	575	579	1896
16	576	576	575	577	584	589	589	590	589	584	576	573	573	576	577	582	583	585	582	582	582	580	582	575	581	1937
17	580	577	573	579	582	585	583	583	581	577	572	571	576	578	579	578	575	575	578	582	582	586	585	583	579	1900
18 *q*	583	583	581	583	589	592	591	591	587	584	578	576	576	580	583	585	587	587	589	587	586	586	587	584	585	2035
19 *q*	585	583	585	585	587	589	591	591	589	583	578	578	582	587	589	589	589	583	582	585	583	585	587	587	585	2052
20 *q*	588	586	587	587	591	593	594	589	585	580	573	570	573	582	587	586	583	582	582	583	581	587	585	586	584	2020
21	585	583	585	592	591	593	594	593	593	583	576	577	582	587	591	592	591	591	591	590	587	586	586	585	588	2104
22	588	584	585	589	592	597	597	597	594	587	580	578	582	576	572	575	575	567	571	571	570	578	578	580	582	1963
23	581	579	583	594	594	593	601	589	587	585	579	571	565	566	578	582	586	585	582	585	583	580	612	579	584	2019
24	589	585	585	585	588	592	592	594	592	587	575	566	562	576	581	568	570	574	572	575	580	587	582	584	581	1941
25 *q*	583	583	583	584	585	586	587	587	582	575	569	566	569	575	580	582	582	585	585	585	583	583	583	585	581	1947
26	585	584	585	587	591	590	589	590	586	581	576	570	570	575	576	582	581	579	576	576	580	580	582	585	581	1956
27	586	592	592	580	583	590	590	586	594	590	587	586	585	592	592	593	596	593	594	595	596	593	590	583	590	2158
28 *d*	583	584	577	578	589	593	591	591	587	568	558	558	564	572	580	545	576	564	571	565	565	575	561	568	573	1763
29	564	557	566	582	580	583	583	582	580	574	566	565	573	575	577	583	579	586	585	582	580	582	586	571	577	1841
30 *d*	573	576	580	576	584	576	593	590	586	573	575	567	560	568	568	561	560	560	577	581	583	575	572	570	574	1784
31	578	580	580	580	580	583	587	582	580	575	570	569	569	575	585	582	580	581	572	571	579	578	582	589	579	1887
Mean	*557*	567	572	577	579	582	583	581	578	573	568	566	569	579	587	590	*591*	586	584	575	565	561	561	561	575	
Sum 17,000+	284	575	743	891	956	1044	1075	1026	915	754	612	555	633	966	1191	1277	1332	1164	1092	833	532	405	406	395		Grand Total 427,656

577 at 0-1h. January 1, 1962.

MAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

2 LERWICK (D) — 9° + — DECEMBER 1961

	Hour G.M.T. 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 700·0+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	
1 *d*	36·2	36·3	36·4	36·9	36·8	37·5	37·5	35·9	32·7	34·5	38·5	43·0	42·1	41·1	49·6	50·6	45·9	38·2	32·8	32·5	32·8	28·7	22·9	16·9	36·5	176·3
2 *d*	23·6	35·3	33·2	35·6	39·0	45·9	39·9	38·6	35·3	35·9	38·3	39·6	41·4	37·9	49·2	46·9	27·5	32·5	27·0	28·0	15·7	-18·9	-26·8	12·4	*29·7*	13·0
3 *d*	2·9	7·8	8·0	17·6	32·6	44·5	52·1	43·4	35·7	35·8	37·6	37·2	42·0	39·8	43·2	42·7	41·0	37·8	35·2	29·3	34·7	34·3	31·5	32·4	33·3	99·1
4	34·1	35·4	36·2	36·0	34·8	33·8	34·9	35·4	35·5	36·8	38·7	38·4	38·7	38·9	37·4	37·3	30·5	33·9	35·4	34·8	34·4	33·6	31·5	34·8	35·5	151·2
5	33·9	34·8	34·9	35·8	35·3	35·0	34·6	33·9	33·4	33·6	34·8	36·0	36·8	37·7	39·6	37·8	41·1	32·8	34·6	34·0	32·0	32·7	31·9	31·6	34·9	138·6
6	32·0	35·4	39·5	37·8	40·6	34·5	34·0	33·8	33·5	33·9	35·4	37·6	39·8	41·5	43·9	44·1	49·2	37·3	31·5	30·9	29·3	27·9	30·5	33·8	36·2	167·7
7	35·6	35·9	36·3	35·8	35·4	34·9	35·1	34·8	34·3	34·5	34·9	38·3	37·8	37·3	37·4	37·3	36·3	35·4	34·9	34·4	34·0	33·9	34·0	34·4	35·5	152·9
8 *q*	34·6	34·7	34·9	35·0	34·9	34·7	34·4	34·0	33·4	33·0	33·9	36·1	36·7	36·8	37·3	36·8	36·4	36·2	35·8	35·3	35·0	34·9	34·8	34·9	35·2	144·5
9	35·3	35·9	36·0	36·0	35·9	35·4	35·4	34·9	34·9	34·6	35·4	36·4	37·3	38·1	37·5	37·4	37·5	37·2	36·8	36·1	32·5	33·6	33·6	34·6	35·8	158·3
10	35·2	35·4	35·8	35·9	36·2	36·1	35·6	34·9	34·2	34·5	35·8	37·8	40·1	38·7	38·2	36·8	35·9	33·0	36·7	34·3	29·9	26·1	27·6	33·4	34·9	138·1
11	33·8	35·7	29·6	33·8	34·4	33·4	35·9	37·8	35·7	39·5	39·3	39·4	42·4	44·3	44·7	44·8	50·3	52·0	47·0	40·7	28·5	25·2	27·4	28·6	*37·7*	204·2
12	30·5	31·0	32·0	32·0	33·9	35·4	35·2	34·8	34·6	34·9	36·2	37·8	38·1	38·6	38·9	37·8	36·8	36·2	35·4	34·8	34·5	34·5	34·5	34·6	35·1	143·0
13	34·8	35·2	35·4	35·9	35·7	35·5	35·2	34·7	34·4	34·6	35·7	36·7	37·3	37·7	37·8	36·7	37·7	37·7	36·4	36·0	35·9	29·0	23·6	23·7	34·7	133·3
14	29·3	33·6	34·8	34·4	34·8	34·6	34·6	34·9	35·4	36·2	36·8	36·8	37·1	37·7	36·8	36·8	36·5	36·4	36·4	35·5	35·4	35·6	32·9	29·6	35·1	142·9
15	34·1	36·7	36·4	37·3	37·8	38·4	36·5	36·3	36·1	36·3	37·0	37·2	38·3	38·8	39·6	36·8	35·9	35·9	35·8	35·6	34·8	25·2	29·6	32·5	35·8	158·9
16	34·0	35·4	36·0	36·4	35·9	35·9	36·7	37·3	36·9	36·6	37·3	37·5	37·6	37·8	37·7	36·4	36·8	36·4	36·2	35·7	34·8	34·4	29·8	30·4	35·8	159·9
17	33·2	34·5	36·6	36·7	36·5	35·1	35·1	35·5	34·9	35·5	36·4	36·9	38·0	38·1	37·5	37·0	37·0	37·0	36·5	36·0	35·1	33·5	33·4	35·0	35·9	161·0
18 *q*	35·9	36·6	37·7	38·1	36·1	35·6	36·0	35·9	35·7	35·8	36·3	37·2	38·2	38·3	38·2	37·2	36·8	36·6	36·3	36·2	35·9	34·8	35·2	35·8	36·5	176·4
19 *q*	36·3	36·3	36·8	36·8	36·8	36·4	36·3	36·0	35·7	35·7	36·3	37·9	39·1	38·9	38·2	37·2	37·2	36·8	37·2	37·1	36·3	35·2	35·5	36·2	36·8	182·3
20 *q*	36·7	37·1	36·6	35·6	36·0	36·2	35·8	36·3	37·1	37·1	37·6	39·3	39·8	39·3	38·1	37·7	37·2	38·1	38·0	36·8	35·3	34·0	32·6	35·3	36·8	183·6
21	36·1	36·6	36·8	38·2	37·2	35·9	35·3	35·3	35·4	35·0	35·9	37·6	38·7	38·4	37·3	36·8	36·7	36·8	36·8	36·3	35·8	34·6	34·2	35·5	36·4	173·2
22	36·2	36·8	37·2	36·7	36·5	36·8	36·0	36·2	35·8	35·9	37·2	39·0	40·0	40·7	42·1	40·4	37·8	38·1	36·5	34·6	32·9	34·3	33·8	35·3	36·9	186·8
23	36·3	36·3	37·5	36·7	32·9	34·8	36·6	35·8	36·0	36·8	38·2	38·2	40·0	41·1	39·7	39·5	38·7	37·7	36·3	35·9	35·8	33·8	11·6	25·6	35·5	151·8
24	34·0	34·3	36·4	36·6	37·5	37·3	37·1	36·4	35·0	35·9	37·7	39·4	40·0	38·2	42·6	40·6	38·2	38·7	37·2	33·5	33·8	30·2	34·3	35·8	36·7	180·7
25 *q*	35·8	35·9	36·3	36·3	36·2	36·2	35·8	35·3	35·1	35·5	36·6	37·5	38·1	38·2	37·6	37·1	36·8	36·8	36·3	35·8	35·9	34·7	34·8	34·8	36·2	169·4
26	35·2	35·8	35·8	36·4	35·9	36·1	36·2	35·8	35·1	35·2	36·5	38·6	40·1	41·4	40·0	38·6	38·9	39·2	38·0	36·5	34·9	34·6	34·4	34·6	36·8	183·8
27	33·1	34·8	32·4	33·6	36·3	36·2	36·1	36·8	37·1	36·3	36·8	38·6	40·0	42·6	41·5	38·9	38·1	38·1	37·0	36·4	36·0	35·1	35·3	35·0	36·8	182·1
28 *d*	35·8	35·1	33·4	33·7	33·8	35·2	36·3	36·6	37·1	38·7	38·5	38·0	42·4	40·8	42·6	38·1	42·6	39·3	35·3	34·7	28·0	29·0	30·4	33·8	36·2	169·2
29	33·7	37·0	36·3	37·1	35·6	35·5	35·2	34·7	34·8	35·8	36·3	37·5	39·9	39·3	37·8	37·1	36·3	38·6	37·6	36·3	35·3	30·9	20·3	27·1	35·2	145·9
30 *d*	34·2	36·2	35·4	37·2	35·8	34·5	34·2	35·3	35·8	34·3	33·8	38·1	36·6	38·1	37·9	34·3	26·6	36·9	37·2	35·2	31·3	30·0	31·6	34·3	34·8	134·8
31	33·9	34·3	35·1	35·6	35·5	35·5	35·0	34·2	34·1	34·8	36·1	38·2	40·4	40·1	40·0	38·1	38·1	36·3	31·9	29·8	34·9	33·9	34·3	32·3	35·5	152·4
Mean	33·1	34·6	34·7	35·4	35·9	36·2	36·3	35·9	35·2	35·6	36·6	38·0	39·2	39·2	*40·0*	38·9	37·8	37·2	36·0	34·8	33·3	30·6	*29·1*	31·8	35·6	
Sum 900·0+	126·3	172·1	175·7	197·5	212·6	222·8	224·6	211·5	190·7	203·5	235·8	277·8	314·8	316·2	339·9	305·6	272·3	253·9	216·0	179·0	131·4	49·3	1·0	85·0		Grand Total 26515·3

32·4 at 0-1h. January 1, 1962

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

3 LERWICK (Z) — 47,000γ (0·47 C.G.S. unit) + — DECEMBER 1961

	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	
1 *d*	333	331	331	328	325	325	322	327	335	330	337	349	354	492	500	463	424	482	445	385	365	365	325	189	365	2762
2 *d*	206	99	183	283	307	301	309	321	333	340	353	385	385	402	502	548	555	507	419	344	158	64	117	68	312	1489
3 *d*	38	6	79	59	39	93	151	221	282	360	357	374	450	419	381	398	416	389	371	367	335	193	297	326	*267*	401
4	332	332	331	329	332	335	340	341	344	352	351	354	355	349	355	366	381	366	353	351	352	351	340	335	347	2327
5	334	339	345	345	343	342	342	344	344	344	345	346	347	349	352	348	357	434	420	397	397	376	345	342	357	2577
6	341	339	336	323	320	321	333	338	339	342	344	344	350	356	364	387	453	437	414	400	360	340	342	340	357	2563
7	340	339	340	342	341	341	338	340	342	344	344	346	358	353	352	350	349	348	346	345	345	344	344	345	345	2276
8 *q*	344	346	346	346	344	344	343	343	343	342	343	343	343	343	344	345	343	343	340	340	337	337	337	337	342	2216
9	338	339	340	340	340	339	338	337	337	337	338	338	339	339	341	343	343	343	343	346	346	342	337	335	340	2158
10	335	335	337	336	338	338	337	337	336	336	336	339	336	334	338	342	345	355	355	365	378	367	348	332	343	2235
11	322	306	305	318	319	323	322	324	333	338	342	345	350	351	358	370	399	469	517	528	455	396	373	354	*367*	2817
12	336	327	321	301	325	336	342	342	342	341	339	338	338	339	341	343	344	344	345	344	343	341	340	339	337	2091
13	337	337	337	337	337	337	338	338	338	337	336	334	332	332	334	337	340	340	340	340	341	342	336	318	336	2075
14	307	314	321	327	330	332	333	334	334	334	336	336	337	334	335	335	335	336	337	341	341	343	347	345	333	2004
15	335	333	332	331	328	323	327	331	333	337	338	341	343	345	346	345	341	339	340	341	343	351	328	332	337	2083
16	334	334	332	332	330	331	331	329	332	336	341	341	338	339	340	338	337	336	339	339	340	341	337	335	336	2062
17	328	328	330	323	325	330	332	334	337	337	340	341	338	338	340	339	339	339	339	339	339	337	337	337	335	2046
18 *q*	334	334	334	328	328	328	329	330	334	334	334	337	337	338	337	337	335	334	331	332	334	334	334	337	333	2004
19 *q*	335	337	335	334	332	330	328	330	331	332	334	335	335	335	337	337	335	337	334	334	335	334	333	333	334	2012
20 *q*	331	333	331	331	330	327	327	329	327	331	334	334	334	334	335	338	337	337	337	338	339	333	332	331	333	1990
21	331	333	333	326	326	326	326	326	326	331	333	333	333	333	333	333	333	332	331	331	331	330	330	330	330	1930
22	327	330	330	330	330	328	328	327	328	330	332	330	331	338	341	342	351	361	361	356	356	344	336	334	338	2101
23	330	331	329	315	318	319	317	318	320	324	327	334	338	338	336	344	344	344	342	341	338	338	324	323	331	1932
24	318	324	325	326	327	329	327	328	330	330	330	333	333	337	338	350	356	350	353	353	338	331	331	331	335	2028
25 *q*	333	334	334	336	336	336	336	336	337	337	334	334	334	336	336	336	337	337	337	336	336	336	335	333	335	2052
26	331	332	332	333	333	334	334	334	334	333	333	332	333	334	336	338	341	345	348	350	346	341	337	328	336	2072
27	321	309	306	317	322	325	328	330	327	327	328	328	329	329	335	335	338	338	338	336	334	335	334	338	329	1887
28 *d*	332	327	322	322	324	327	328	329	331	332	331	345	339	342	345	404	460	423	389	371	359	348	334	272	347	2336
29	250	285	292	299	321	331	336	338	339	339	342	342	342	342	342	342	348	351	348	349	351	343	293	305	328	1870
30 *d*	322	329	331	322	304	322	322	328	334	340	343	345	352	351	355	368	393	371	356	351	345	345	342	331	342	2202
31	312	327	334	334	335	334	334	338	340	342	342	344	346	345	345	345	345	345	358	363	348	348	345	335	341	2184
Mean	314	*311*	317	318	319	322	325	329	333	337	339	342	345	350	354	359	366	*368*	362	357	344	331	328	318	337	
Sum 9000+	747	649	814	853	889	987	1078	1202	1322	1449	1497	1600	1709	1846	1974	2146	2354	2412	2226	2053	1665	1270	1170	870		Grand Total 250,782

331 at 0-1h. January 1, 1962.

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

4 LERWICK — DECEMBER 1961

	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.	′	′	h. m.	′	h. m.	γ	γ	γ	h. m.	γ				°A.
1 *d*	14 03	*1011*	307	23 53	704	14 09	*84·1*	7·1	23 14	77·0	14 59	558	140	23 51	418	0,1,3,3,7,6,5,6	31	2	79·0
2 *d*	16 20	1005	−177	21 13	*1182*	14 22	59·5	*−38·5*	22 20	*98·0*	15 30	*584*	28	23 50	*556*	6,4,3,3,6,7,7,7	43	2	79·0
3 *d*	12 43	637	*−230*	00 35	867	00 45	60·5	22·3	01 09	82·8	12 43	496	*−48*	00 45	544	8,5,6,3,4,3,5,5	39	1	78·7
4	22 25	601	532	16 24	69	10 05	39·7	26·4	16 39	13·3	16 51	388	328	01 10	60	1,1,1,2,2,3,0,3	13	0	78·5
5	17 40	745	533	18 28	212	18 05	45·5	12·2	17 39	33·3	17 30	510	328	00 01	182	2,1,1,0,2,5,3,3	17	0	78·0
6	17 28	708	544	14 24	164	16 16	55·2	20·6	20 12	34·6	17 00	508	311	04 55	197	3,3,2,1,2,5,4,3	23	0	78·0
7	06 43	588	539	12 09	49	12 38	40·7	33·6	08 15	7·1	12 55	361	337	01 50	24	1,1,1,2,2,0,0,1	8	0	77·7
8 *q*	19 49	583	565	09 56	18	14 34	37·3	32·9	09 17	*4·4*	02 00	347	337	23 00	10	0,0,0,0,0,0,0,0	0	0	78·1
9	16 40	587	564	12 05	23	13 35	38·6	31·3	20 25	7·3	19 55	349	335	07 50	14	0,0,1,1,0,0,2,2	6	0	78·1
10	21 54	591	556	19 21	35	12 25	41·0	23·7	21 03	17·3	21 00	388	319	23 59	69	0,1,1,1,1,2,3,3	12	0	78·5
11	19 07	671	546	09 45	125	17 12	57·4	22·6	21 16	34·8	19 33	542	289	01 55	253	3,2,2,2,1,5,5,3	23	1	79·0
12	19 22	583	532	02 50	51	14 31	39·3	29·1	01 04	10·2	00 01	347	294	03 25	53	2,3,0,1,1,1,0,0	8	0	79·5
13	21 55	602	560	22 20	42	17 11	38·3	16·7	21 55	21·6	21 14	349	308	23 59	41	0,0,0,1,1,1,1,3	7	0	79·7
14	17 43	595	567	00 02	28	13 50	37·8	24·4	22 59	13·4	23 00	353	306	00 21	47	3,2,1,1,1,0,0,3	11	0	79·8
15	22 04	619	553	22 35	66	14 08	40·6	18·4	21 59	22·2	21 40	357	319	05 24	38	2,2,1,1,1,1,0,3	11	0	79·9
16	07 34	592	567	23 26	25	13 11	38·7	26·2	22 59	12·5	14 00	342	328	04 50	14	1,1,1,1,1,0,0,2	7	0	79·9
17	21 41	593	567	02 38	26	13 00	38·8	32·1	21 42	6·7	11 36	342	321	03 45	21	2,1,1,1,0,1,1,2	9	0	80·1
18 *q*	05 43	593	575	11 17	18	02 50	40·1	33·5	21 57	6·6	11 20	338	325	04 12	13	1,1,1,0,0,0,0,1	4	0	80·1
19 *q*	07 19	592	578	10 55	*14*	12 51	39·4	34·8	21 24	4·6	17 19	339	328	06 11	11	0,0,0,1,0,1,1,1	4	0	79·8
20 *q*	21 42	597	568	12 01	29	11 50	40·2	30·4	22 03	9·8	20 34	341	326	06 40	15	1,0,1,1,1,1,1,2	8	0	79·7
21	08 13	596	575	10 53	21	03 22	41·2	33·5	22 20	7·7	01 05	334	321	03 38	13	0,2,0,0,0,0,0,1	3	0	80·0
22	05 42	600	562	19 50	38	13 45	43·1	31·4	20 08	11·7	18 00	369	326	00 36	43	1,1,0,1,2,2,2,1	10	0	80·0
23	22 37	643	556	13 04	87	13 47	42·2	−6·4	22 35	48·6	16 50	346	309	03 25	37	1,2,1,1,2,1,1,5	14	0	79·2
24	07 00	596	551	12 44	45	14 42	44·0	25·6	21 12	18·4	16 00	362	314	00 15	48	2,1,1,2,2,2,3,3	16	0	79·2
25 *q*	07 24	589	565	11 39	24	13 08	38·7	33·8	21 22	4·9	16 03	340	331	23 04	*9*	0,0,0,0,0,0,0,1	1	0	79·1
26	05 39	592	567	11 48	25	14 07	41·9	33·1	23 37	8·8	19 26	352	325	23 59	27	0,0,1,1,1,1,2,1	7	0	78·5
27	20 33	600	574	03 43	26	13 28	43·5	30·1	02 50	13·4	16 48	339	300	02 13	39	1,2,1,1,1,1,1,1	9	0	77·9
28 *d*	23 59	600	533	15 08	67	16 39	48·8	23·1	20 58	25·7	16 22	472	223	23 59	249	2,2,1,2,2,4,3,4	20	1	78·5
29	22 16	603	539	01 34	64	12 27	41·1	10·8	22 30	30·3	17 44	356	221	00 02	135	3,3,1,1,1,2,2,4	17	0	77·4
30 *d*	06 48	597	537	16 15	60	03 55	44·8	15·8	16 32	29·0	16 15	412	297	04 24	115	2,3,2,2,2,4,3,3	21	1	76·8
31	23 14	596	562	00 01	34	12 12	41·1	21·9	19 15	19·2	18 42	368	308	00 05	60	2,1,1,1,1,1,3,2	12	0	76·2
Mean	− −	657	516	− −	141	− −	46·1	21·6	− −	24·5	− −	406	294	− −	112	−	−	0·26	78·8

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

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 1961

	Horizontal (*H*) force			Declination (*D*) (west)			Vertical (*Z*) force			North component (*X*) all days	West component (*-Y*) all days	Inclination (*I*) (north) all days	Total force (*F*) all days
	a	*q*	*d*	*a*	*q*	*d*	*a*	*q*	*d*				
	14,000γ +			9° +			47,000γ +						
	γ	γ	γ	′	′	′	γ	γ	γ	γ	γ	° ′	γ
January	558	563	553	41·6	42·0	40·3	329	328	341	14350	2451	72 54·1	49518
February	555	564	551	41·4	42·1	39·9	322	320	315	14347	2450	72 54·2	49510
March	556	565	539	41·6	41·9	40·8	317	320	311	14349	2451	72 54·0	49506
April	561	560	539	40·7	41·3	39·4	317	320	315	14353	2448	72 53·7	49507
May	571	570	570	40·2	39·3	41·2	315	319	315	14364	2447	72 53·0	49508
June	573	576	552	39·0	38·6	38·6	317	319	305	14366	2443	72 52·9	49510
July	565	569	569	38·0	38·7	36·9	317	331	307	14360	2437	72 53·4	49508
August	572	571	561	38·8	38·3	38·1	329	329	316	14366	2442	72 53·2	49521
September	566	574	554	37·8	37·3	37·4	326	326	317	14361	2437	72 53·5	49517
October	555	572	500	36·3	37·3	34·6	332	333	313	14351	2429	72 54·4	49519
November	570	577	558	35·9	36·1	34·6	337	335	337	14366	2429	72 53·5	49528
December	575	582	553	35·6	36·3	34·1	337	336	327	14371	2429	72 53·2	49530
Year	565	570	550	38·9	39·1	38·0	325	326	318	14359	2441	72 53·6	49515

DAILY RANGE AND MEAN MONTHLY VALUES

6 LERWICK 1961

	Mean daily range						Mean daily range expressed as percentage of yearly mean					
	1961			Mean 1932-53			1961			Mean 1932-53		
	H	*D*	*Z*	*H*	*D*	*Z*	*H*	*D*	*Z*	*H*	*D*	*Z*
	γ	γ	γ	γ	γ	γ	%	%	%	%	%	%
January	101	99	105	100	102	104	64	93	81	63	90	78
February	166	128	151	124	113	123	105	120	116	78	100	92
March	134	102	116	216	149	176	85	95	89	135	132	132
April	177	136	138	204	120	163	112	127	106	128	106	122
May	124	91	122	195	111	141	78	85	94	122	98	106
June	184	94	128	150	94	109	116	88	99	94	83	82
July	330	148	230	158	96	110	209	138	177	99	85	83
August	123	85	114	178	111	135	78	79	88	111	98	101
September	130	95	116	209	133	170	82	89	89	131	118	128
October	218	129	140	188	129	164	138	121	108	118	114	123
November	68	78	84	107	101	112	43	73	65	67	89	84
December	141	104	112	89	93	96	89	97	86	56	82	72
Winter	119	102	113	105	103	109	75	95	87	66	91	82
Equinox	165	115	127	204	134	168	104	108	98	128	119	126
Summer	190	105	149	170	103	123	120	98	115	106	91	92
Year	158	107	130	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 1961

Range	Number of cases, 1961			Percentage distribution					
				H		*D*		*Z*	
	H	*D*	*Z*	1961	1932-53	1961	1932-53	1961	1932-53
γ				%	%	%	%	%	%
0 - 9	0	0	1	0·0	0·0	0·0	0·0	0·3	0·3
10 - 19	6	3	29	1·7	1·4	0·8	0·4	7·9	6·8
20 - 29	28	13	35	7·7	4·9	3·6	2·3	9·6	10·5
30 - 39	24	22	31	6·6	6·3	6·0	4·0	8·5	9·3
40 - 49	24	27	26	6·6	7·5	7·4	7·3	7·1	7·2
50 - 59	31	45	27	8·5	9·3	12·3	10·0	7·4	6·2
60 - 69	47	55	22	12·9	9·1	15·1	12·3	6·0	5·1
70 - 79	27	32	13	7·4	8·6	8·8	10·5	3·6	4·4
80 - 89	26	34	17	7·1	7·4	9·3	9·2	4·7	3·9
90 - 99	22	19	19	6·0	5·8	5·2	7·0	5·2	3·4
100 - 109	18	15	13	4·9	4·3	4·1	5·6	3·6	3·3
110 - 119	11	15	12	3·0	3·5	4·1	4·0	3·3	2·9
120 - 129	11	15	7	3·0	2·9	4·1	3·6	1·9	2·6
130 - 139	9	7	10	2·5	2·2	1·9	3·1	2·7	2·6
140 - 149	8	8	8	2·2	2·4	2·2	2·9	2·2	2·3
150 - 159	2	5	4	0·6	1·6	1·4	1·8	1·1	2·0
160 - 169	5	4	5	1·4	1·5	1·1	1·9	1·4	1·8
170 - 179	3	2	6	0·8	1·1	0·6	1·4	1·7	1·4
180 - 189	0	3	6	0·0	1·1	0·8	1·5	1·6	1·4
190 - 199	7	5	6	1·9	1·0	1·4	1·1	1·6	1·5
200 +	56	36	68	15·3	18·3	9·9	10·0	18·6	21·1
Days omitted	0	0	0	..	..	..	..	..	..

DIURNAL INEQUALITIES OF THE TERRESTRIAL MAGNETIC ELEMENTS

ALL DAYS

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

8 LERWICK 1961

HORIZONTAL FORCE

	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
	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.	*-12·6*	-8·0	-8·8	-2·9	+3·3	+8·5	+8·1	+4·6	+3·1	-2·5	-4·4	-7·3	-6·5	-4·1	-0·7	+1·9	+2·6	+8·8	*+16·8*	+6·2	+2·9	-0·3	-3·8	-4·9
Feb.	+5·4	+2·7	-8·0	-1·3	-3·7	+4·7	+7·5	+7·8	+1·3	-6·7	-15·1	-14·0	-8·2	+0·1	+5·1	+6·8	+6·3	+11·5	*+17·9*	+14·8	+4·2	-4·4	-14·5	*-20·2*
Mar.	-15·6	-10·8	-6·9	-1·8	+4·9	+7·5	+9·2	+3·2	-3·6	-12·8	*-21·5*	-20·3	-12·4	-5·9	+1·2	+7·3	+13·3	*+17·5*	+13·6	+16·5	+15·9	+8·3	+0·3	-7·1
Apr.	-1·9	-9·8	-1·0	-7·6	+1·9	+7·6	+5·1	+2·0	-7·5	-20·1	-30·1	*-32·6*	-26·5	-13·7	-1·6	+15·4	+21·1	*+32·1*	+28·2	+23·4	+17·5	+11·1	-1·7	-11·3
May	-2·2	-8·9	-8·4	-2·7	-1·4	-5·1	-7·8	-13·0	-20·3	-29·8	*-31·2*	-27·9	-19·9	-6·6	+4·6	+13·8	+25·5	+29·2	*+34·1*	+28·5	+20·5	+14·9	+7·6	+6·5
June	-15·6	-16·0	-8·4	-15·3	-3·8	-7·3	-4·2	-10·9	-21·1	-29·5	*-30·0*	-25·9	-20·7	-8·6	+5·8	+18·2	+32·0	+44·7	*+46·3*	+39·5	+27·7	+16·1	-2·1	-10·9
July	-42·4	-37·6	-25·5	-12·4	-18·1	-12·6	-14·9	-16·7	-33·0	*-43·0*	-38·5	-20·0	-16·1	+11·6	+38·1	+56·1	+57·7	*+63·7*	+61·6	+50·0	+31·3	+3·4	-10·7	-32·0
Aug.	+2·6	-6·6	-3·8	-2·1	+0·3	-2·1	-3·3	-10·0	-21·1	-30·9	*-36·7*	-33·5	-22·5	-10·1	+1·9	+15·1	+27·0	+28·5	+27·3	*+28·8*	+22·1	+12·3	+11·1	+5·7
Sept.	+7·2	+5·9	+0·1	+6·3	+4·6	+4·2	+1·3	-3·2	-11·0	-22·8	*-26·7*	-23·8	-18·0	-9·6	-1·0	+7·6	+12·5	+19·0	*+20·7*	+20·4	+14·5	+12·3	-4·5	-16·0
Oct.	-22·5	-23·2	*-24·8*	+0·9	+13·1	+15·4	+13·2	+11·1	+2·3	-7·5	-9·7	-11·4	+1·1	+9·3	+17·7	*+19·2*	+13·9	+11·5	+15·5	-9·0	-13·4	-14·5	-15·0	+6·8
Nov.	-0·5	-2·5	-3·0	-0·5	+4·2	+8·8	*+10·4*	+7·3	-0·8	-7·1	-10·6	*-11·1*	-8·8	-4·2	+0·2	+4·6	+3·8	+7·1	+5·9	+3·7	-4·6	-3·1	+1·0	-0·2
Dec.	*-17·3*	-7·9	-2·4	+2·3	+4·4	+7·3	+8·3	+6·7	+3·1	-2·1	-6·7	-8·6	-6·0	+4·7	+12·0	+14·8	*+16·6*	+11·1	+8·8	+0·5	-9·3	-13·3	-13·3	-13·7
Year	-9·6	-10·2	-8·4	-3·1	+0·8	+3·1	+2·7	-0·9	-9·1	-17·9	*-21·8*	-19·7	-13·7	-3·1	+6·9	+15·1	+19·4	+23·7	*+24·7*	+18·6	+10·8	+3·6	-3·8	-8·1
Winter	-6·3	-3·9	-5·5	-0·6	+2·1	+7·3	+8·6	+6·6	+1·7	-4·6	-9·2	-10·3	-7·4	-0·9	+4·1	+7·0	+7·3	+9·6	*+12·3*	+6·3	-1·7	-5·3	-7·7	*-9·3*
Equinox	-8·2	-9·5	-8·1	-0·5	+6·1	+8·7	+7·2	+3·3	-4·9	-15·8	-22·0	*-22·0*	-13·9	-5·0	+4·1	+12·4	+15·2	*+20·0*	+19·5	+12·8	+8·6	+4·3	-5·2	-6·9
Summer	-14·4	-17·3	-11·5	-8·1	-5·7	-6·8	-7·5	-12·7	-23·9	-33·3	*-34·1*	-26·8	-19·8	-3·4	+12·6	+25·8	+35·5	+41·5	*+42·3*	+36·7	+25·4	+11·7	+1·5	-7·7

DECLINATION

	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
Jan.	-3·10	-2·07	-1·42	-2·08	-0·98	-0·62	+0·32	+0·54	+0·72	+1·23	+1·93	+2·47	+3·83	*+4·29*	+3·37	+2·88	+1·40	+0·97	-0·08	-1·05	-1·99	-2·54	-4·00	*-4·02*
Feb.	-3·27	-3·13	-2·86	-1·16	-1·62	-1·18	-0·75	-0·46	-0·28	+0·22	+1·45	+3·70	*+5·39*	+5·08	+5·00	+4·31	+1·73	+1·00	-0·02	-0·80	-1·21	-3·05	-3·21	*-4·88*
Mar.	-3·37	*-3·53*	-3·49	-3·43	-2·83	-1·47	-1·21	-1·43	-1·30	-0·97	+0·64	+3·37	+5·45	*+6·55*	+4·82	+3·87	+2·54	+1·68	+0·91	+0·28	-0·38	-1·48	-2·42	-2·80
Apr.	-4·35	-2·51	-2·33	-2·96	-2·27	-2·75	-2·93	-4·12	*-4·42*	-2·58	+0·10	+3·64	+6·66	*+8·05*	+7·41	+6·18	+4·66	+2·65	+1·92	+0·21	-0·07	-2·44	-3·40	-4·35
May	-1·88	-3·54	*-4·06*	-3·71	-3·83	-3·78	-3·05	-3·73	-3·49	-1·96	+0·09	+2·79	+4·76	*+5·57*	+5·35	+4·69	+3·92	+3·31	+2·15	+1·61	+1·07	0·00	-0·77	-1·51
June	-2·19	-2·08	-3·71	-4·02	-4·58	-5·07	-6·00	*-6·08*	-4·80	-2·93	-0·27	+2·65	+5·09	+6·26	*+6·58*	+5·65	+4·98	+3·67	+2·12	+2·30	+1·81	+0·97	+0·45	-0·80
July	-2·57	-2·26	-3·33	-4·41	-4·50	-4·99	-4·87	-5·28	*-5·87*	-4·91	-1·67	+1·86	+4·47	+6·15	+6·05	*+6·54*	+5·67	+4·67	+3·80	+3·00	+2·59	+1·46	-0·47	-1·13
Aug.	-1·59	-2·24	-3·02	-3·30	-3·82	-4·94	*-5·33*	-4·95	-3·72	-1·89	+1·08	+4·04	+6·13	*+7·02*	+6·25	+5·00	+3·33	+1·92	+0·78	+0·87	+0·25	-0·04	-0·55	-1·28
Sept.	-0·98	-1·41	-3·14	-3·26	-3·48	-2·82	-2·73	-2·32	-1·71	+0·10	+2·56	+5·14	*+6·57*	+6·24	+5·30	+3·24	+2·26	+0·75	-0·21	-0·34	-1·59	-2·56	*-3·67*	-1·94
Oct.	-2·47	-2·58	-3·53	-2·60	-1·56	-0·24	-0·40	-0·73	-1·77	-1·00	+0·71	+3·52	+5·06	*+5·87*	+5·70	+4·80	+3·12	+0·97	+1·44	-1·19	-2·11	-3·90	*-4·16*	-2·95
Nov.	-2·08	-2·26	-1·20	-0·85	-0·46	+0·10	+0·05	+0·14	-0·24	-0·23	+1·03	+2·25	+3·46	+4·16	*+4·19*	+3·22	+1·51	+0·87	+0·18	-1·09	-3·10	-2·56	*-3·85*	-3·24
Dec.	-2·53	-1·06	-0·93	-0·24	+0·25	+0·58	+0·64	+0·21	-0·45	-0·04	+1·00	+2·35	+3·55	+3·59	*+4·37*	+3·25	+2·18	+1·58	+0·36	-0·83	-2·36	-5·02	*-6·58*	-3·87
Year	-2·53	-2·39	*-2·75*	-2·67	-2·47	-2·27	-2·19	-2·35	-2·28	-1·25	+0·72	+3·15	+5·03	*+5·74*	+5·37	+4·47	+3·11	+2·00	+1·11	+0·25	-0·59	-1·76	-2·72	-2·73
Winter	-2·75	-2·13	-1·60	-1·08	-0·70	-0·28	+0·07	+0·11	-0·06	+0·29	+1·35	+2·69	+4·06	*+4·28*	+4·23	+3·41	+1·71	+1·11	+0·11	-0·94	-2·17	-3·29	*-4·41*	-4·00
Equinox	-2·79	-2·51	-3·12	-3·06	-2·53	-1·82	-1·82	-2·15	-2·30	-1·11	+1·00	+3·92	+5·93	*+6·68*	+5·81	+4·52	+3·15	+1·51	+1·01	-0·26	-1·04	-2·59	*-3·41*	-3·01
Summer	-2·06	-2·53	-3·53	-3·86	-4·18	-4·69	-4·81	*-5·01*	-4·47	-2·92	-0·19	+2·83	+5·11	*+6·25*	+6·06	+5·47	+4·47	+3·39	+2·21	+1·95	+1·43	+0·60	-0·33	-1·18

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.	*-19·3*	-16·0	-15·5	-15·6	-15·5	-17·8	-15·4	-10·7	-8·5	-4·4	-1·7	+2·1	+3·3	+7·3	+12·1	+17·8	+26·2	*+27·5*	+26·8	+22·3	+12·8	+4·8	-7·2	-15·4
Feb.	-28·2	*-29·2*	-18·2	-14·9	-15·6	-12·9	-10·5	-7·6	-3·8	-0·6	+2·2	+2·8	+5·1	+11·3	+13·8	+23·1	*+28·9*	+25·7	+23·0	+10·3	+10·8	+7·0	-3·0	-19·5
Mar.	-10·3	-17·0	*-21·4*	-21·3	-17·7	-15·0	-13·3	-8·2	-5·5	-2·3	-0·8	-0·8	+2·4	+6·2	+13·0	+17·1	+21·5	*+26·0*	+20·3	+17·5	+13·8	+6·5	-4·1	-6·6
Apr.	-21·1	-20·0	*-30·7*	-25·8	-20·7	-13·8	-8·5	-5·3	-1·0	+0·2	+1·4	+0·5	-0·1	+3·7	+11·6	+22·3	+30·2	*+31·0*	+28·6	+22·5	+15·9	+4·3	-10·3	-14·9
May	-23·3	*-31·2*	-27·4	-16·9	-10·6	-8·7	-11·5	-6·0	-2·6	-0·7	-1·1	-1·2	+0·1	+6·7	+14·1	+18·5	+21·0	*+23·7*	+21·4	+22·1	+17·9	+9·2	-1·6	-11·9
June	-19·3	*-33·9*	-27·8	-21·8	-19·3	-13·9	-8·9	-1·4	+0·5	+0·1	-0·9	-0·8	+2·2	+5·9	+11·8	+18·4	+21·5	*+24·9*	+21·8	+21·4	+17·9	+7·7	+2·0	-8·1
July	-51·4	-52·2	*-58·0*	-44·2	-33·9	-23·9	-12·5	-0·9	+8·3	+14·4	+15·5	+14·2	+16·7	+21·9	+31·0	+42·7	*+45·1*	+44·6	+38·5	+27·1	+16·5	-1·5	-18·1	-39·9
Aug.	-25·0	*-27·0*	-24·0	-16·7	-12·9	-9·2	-5·3	-0·7	+0·4	-2·1	-3·9	-4·1	-1·7	+5·6	+13·3	+19·2	+25·6	*+26·4*	+24·8	+20·7	+15·9	+5·7	-5·0	-20·0
Sept.	*-20·3*	-18·9	-15·6	-13·2	-11·7	-9·7	-6·7	-3·5	-2·0	-1·0	0·0	+1·6	+3·6	+6·8	+12·7	+17·0	+21·1	*+22·8*	+20·7	+17·3	+14·8	-0·1	-17·7	-18·0
Oct.	-21·2	-18·4	-16·7	*-24·0*	-15·2	-12·6	-5·5	-2·0	+4·3	+7·7	+5·4	+6·1	+11·9	+11·0	+8·4	+16·8	+15·5	+15·7	*+17·2*	+6·8	+7·0	+1·6	-8·2	-11·6
Nov.	*-19·2*	-18·3	-17·1	-13·7	-11·3	-9·7	-7·4	-4·8	-1·1	+2·0	+2·0	+4·0	+7·9	+9·8	+13·0	*+18·6*	+18·0	+17·2	+14·3	+12·6	+5·0	+0·3	-6·7	-15·4
Dec.	-22·7	*-25·7*	-20·5	-19·3	-18·1	-14·8	-12·0	-8·0	-4·1	+0·1	+1·5	+4·8	+8·4	+12·9	+16·9	+22·4	+29·2	*+31·1*	+25·0	+19·4	+6·9	-5·7	-9·0	-18·7
Year	-23·4	*-25·6*	-24·4	-20·6	-16·9	-13·5	-9·8	-4·9	-1·3	+1·1	+1·6	+2·4	+5·0	+9·1	+14·3	+21·2	+25·3	*+26·4*	+23·5	+18·3	+12·9	+3·3	-7·4	-16·7
Winter	-22·3	*-22·3*	-17·8	-15·9	-15·1	-13·8	-11·3	-7·8	-4·4	-0·7	+1·0	+3·4	+6·2	+10·3	+13·9	+20·5	*+25·6*	+25·4	+22·3	+16·1	+8·9	+1·6	-6·5	-17·3
Equinox	-18·2	-18·6	*-21·1*	-21·1	-16·3	-12·8	-8·5	-4·7	-1·1	+1·1	+1·5	+1·9	+4·5	+6·9	+11·4	+18·3	+22·1	*+23·9*	+21·7	+16·0	+12·9	+3·1	-10·1	-12·8
Summer	-29·7	*-36·1*	-34·3	-24·9	-19·2	-13·9	-9·5	-2·3	+1·7	+2·9	+2·4	+2·0	+4·3	+10·0	+17·5	+24·7	+28·3	*+29·9*	+26·6	+22·8	+17·1	+5·3	-5·7	-20·0

"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 1961

	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.	-2·3	-2·6	-3·1	+0·2	+3·6	+5·3	*+6·6*	+5·0	+3·7	-2·2	-5·7	*-6·6*	-5·7	-3·8	-1·3	-1·8	-1·2	+1·3	+3·8	+4·0	+1·1	+0·6	+0·1	+1·0
Feb.	+0·8	+1·2	+0·4	+0·8	+2·8	+5·6	*+5·8*	+5·6	+2·0	-6·4	-12·6	*-13·2*	-9·8	-4·8	-1·2	-1·0	-1·4	-0·2	+2·8	+5·6	+5·8	+3·8	+4·4	+3·2
Mar.	-0·3	+4·6	+2·0	+2·5	+3·8	+4·2	+4·1	+3·2	-2·8	-11·9	-18·8	*-20·8*	-13·3	-7·8	-3·6	-1·5	+4·6	+6·0	+8·5	*+11·0*	+9·0	+5·7	+5·2	+6·4
Apr.	+4·7	+5·0	+6·5	+4·9	+7·1	+9·0	+8·1	+1·7	-7·1	-21·6	-30·9	*-37·3*	-31·5	-17·6	-8·9	-2·1	+2·7	+12·4	*+18·3*	+16·3	+17·9	+13·6	+14·1	+14·7
May	+5·2	+4·6	+3·9	+3·4	+1·6	-0·4	-3·0	-7·6	-16·1	-27·2	*-30·4*	-29·4	-25·2	-17·8	-10·5	-3·0	+10·8	+21·4	+28·0	*+28·8*	+22·5	+15·6	+14·2	+10·6
June	+0·8	+0·8	+2·9	+3·6	+2·0	-1·4	-6·8	-13·2	-23·1	*-31·8*	-30·8	-26·2	-14·8	-8·0	-0·1	+10·0	+15·4	+19·0	*+22·2*	+21·8	+17·9	+15·8	+13·4	+10·6
July	-2·6	-0·3	-4·2	-2·8	-1·2	+2·1	-5·4	-13·6	-20·8	-29·5	*-38·4*	-36·4	-28·0	-11·9	-2·8	+5·0	+14·6	+31·9	*+41·8*	+35·8	+28·6	+18·3	+12·0	+7·8
Aug.	+6·2	+4·7	+5·0	+5·3	+6·6	+3·5	-2·4	-9·1	-19·8	-30·3	*-34·4*	-32·5	-26·2	-19·9	-9·8	+2·1	+10·8	+16·9	+22·4	*+25·3*	+22·0	+20·1	+18·8	+14·7
Sept.	+9·9	+7·9	+6·1	+5·9	+4·7	+3·9	+1·5	-4·9	-12·5	-21·1	-25·5	*-26·1*	-22·9	-15·7	-8·5	-3·1	+1·5	+8·5	+15·3	*+16·1*	+14·3	+14·5	*+16·1*	+14·1
Oct.	+7·8	+6·7	+6·8	+6·6	+8·4	+7·5	+6·8	+2·8	-4·8	-16·7	-25·6	*-28·8*	-23·6	-15·5	-7·4	-1·4	+3·0	+7·1	+9·8	+10·6	+10·2	+8·9	+10·0	*+10·8*
Nov.	-1·3	+0·7	-2·3	-1·9	+1·1	+3·3	+4·3	+3·9	-0·1	-3·9	-7·7	*-10·1*	-8·9	-5·1	-2·3	+1·5	+2·5	+2·9	+2·5	+3·1	+3·5	+4·1	*+6·3*	+3·9
Dec.	+0·2	-0·7	-0·6	+0·2	+3·2	+5·1	*+5·6*	+4·4	+0·8	-4·3	-9·2	*-10·6*	-8·2	-3·1	+0·8	+1·4	+2·0	+1·3	+1·8	+2·4	+0·8	+2·3	+2·2	+2·2
Year	+2·4	+2·7	+1·9	+2·4	+3·6	+4·0	+2·1	-1·8	-8·4	-17·2	-22·5	*-23·2*	-18·2	-10·9	-4·6	+0·5	+5·4	+10·7	+14·8	*+15·1*	+12·8	+10·3	+9·7	+8·3
Winter	-0·7	-0·3	-1·4	-0·2	+2·7	+4·8	*+5·6*	+4·7	+1·6	-4·2	-8·8	*-10·1*	-8·1	-4·2	-1·0	0·0	+0·5	+1·3	+2·7	+3·8	+2·8	+2·7	+3·3	+2·6
Equinox	+5·5	+6·1	+5·3	+5·0	+6·0	+6·1	+5·1	+0·7	-6·8	-17·8	-25·2	*-28·3*	-22·8	-14·1	-7·1	-2·0	+2·9	+8·5	+13·0	*+13·5*	+12·9	+10·7	+11·3	+11·5
Summer	+2·4	+2·5	+1·9	+2·4	+2·3	+0·9	-4·4	-10·9	-19·9	-29·7	*-33·5*	-31·1	-23·5	-14·4	-5·8	+3·5	+12·9	+22·3	*+28·6*	+27·9	+22·7	+17·5	+14·6	+10·9
DECLINATION																								
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
Jan.	-0·31	-0·69	-0·21	-0·45	-0·75	-0·64	-1·01	-1·25	-0·79	-0·37	+0·21	+0·87	+1·79	*+2·07*	+1·63	+1·33	+0·89	+0·90	+0·61	+0·11	-0·71	*-1·65*	-1·15	-0·43
Feb.	-1·29	-1·44	-1·29	-0·70	-0·94	-1·43	-1·36	-1·60	*-1·81*	-1·58	-0·53	+1·24	+2·77	*+3·16*	+2·53	+1·98	+1·54	+1·57	+1·40	+1·00	+0·11	-0·38	-1·59	-1·36
Mar.	-2·56	*-3·06*	-2·56	-2·34	-2·06	-2·15	-2·36	-2·80	-3·02	-2·58	-0·40	+2·20	+4·96	*+5·34*	+4·72	+3·46	+2·38	+2·39	+2·42	+1·90	+1·26	-0·72	-1·82	-2·60
Apr.	-0·87	-1·29	-2·03	-2·27	-2·07	-2·68	-3·37	-4·09	*-4·67*	-3·27	-0·49	+1·99	+4·63	*+5·99*	+5·61	+4·33	+2·49	+1·30	+0·85	+0·69	+0·67	-0·37	-0·41	-0·67
May	-0·89	-1·16	-2·03	-2·97	-3·75	-3·76	-4·49	*-4·59*	-4·09	-2·20	+0·03	+2·55	+4·53	*+5·14*	+5·07	+4·55	+3·97	+2·92	+2·35	+1·13	-0·45	-0·20	-0·29	-1·37
June	+0·52	+0·95	-1·73	-3·08	-4·93	-5·89	-6·40	*-6·45*	-5·53	-3·58	-0·21	+3·55	+5·72	*+6·31*	+5·93	+5·12	+3·33	+1·99	+1·34	+0·89	+0·89	+0·74	+0·37	+0·15
July	-1·28	-2·12	-1·96	-3·72	-4·34	*-6·02*	-5·42	-4·90	-5·00	-3·24	-0·68	+2·30	+5·10	+6·60	*+7·04*	+6·34	+4·58	+3·12	+1·84	+0·06	+0·30	+0·26	+0·94	+0·20
Aug.	-0·95	-1·16	-1·78	-3·15	-4·84	-6·26	*-6·35*	-6·00	-4·36	-2·51	+0·22	+3·42	+6·35	*+7·30*	+6·06	+4·61	+3·02	+1·76	+1·05	+1·20	+1·44	+0·71	+0·56	-0·34
Sept.	-0·81	-1·30	-1·78	-2·27	-2·94	-3·28	-3·95	*-4·42*	-3·58	-0·73	+1·76	+4·12	*+5·15*	+4·06	+3·42	+2·17	+1·58	+1·18	+0·87	+1·44	+0·86	+0·17	-0·88	-0·84
Oct.	-1·01	-1·01	-0·96	-1·01	-1·13	-1·29	-1·63	-2·61	*-3·42*	-3·21	-1·67	+1·05	+3·43	*+4·53*	+4·10	+2·71	+1·67	+1·51	+1·13	+0·59	-0·60	-0·45	-0·17	-0·55
Nov.	-0·64	-0·86	-0·73	-0·40	-0·38	-0·48	-0·78	-1·18	-1·27	-1·60	-0·46	+1·12	+2·04	*+2·42*	+1·97	+1·64	+1·44	+1·42	+1·16	+0·46	-0·39	-1·08	*-1·90*	-1·52
Dec.	-0·44	-0·18	+0·16	+0·06	-0·30	-0·49	-0·64	-0·80	-0·90	-0·88	-0·16	+1·30	*+2·08*	+2·00	+1·58	+0·90	+0·58	+0·59	+0·42	-0·06	-0·62	-1·58	*-1·72*	-0·90
Year	-0·88	-1·11	-1·41	-1·86	-2·37	-2·86	-3·15	*-3·39*	-3·20	-2·15	-0·20	+2·14	+4·05	*+4·58*	+4·14	+3·26	+2·29	+1·72	+1·29	+0·78	+0·23	-0·38	-0·67	-0·85
Winter	-0·67	-0·79	-0·52	-0·37	-0·59	-0·76	-0·95	-1·21	-1·19	-1·11	-0·23	+1·13	+2·17	*+2·41*	+1·93	+1·46	+1·11	+1·12	+0·90	+0·38	-0·40	-1·17	*-1·59*	-1·05
Equinox	-1·31	-1·67	-1·83	-1·97	-2·05	-2·35	-2·83	-3·48	*-3·67*	-2·45	-0·20	+2·34	+4·54	*+4·98*	+4·46	+3·17	+2·03	+1·59	+1·32	+1·15	+0·55	-0·34	-0·82	-1·17
Summer	-0·65	-0·87	-1·87	-3·23	-4·47	-5·48	*-5·67*	-5·49	-4·75	-2·88	-0·16	+2·95	+5·43	*+6·34*	+6·03	+5·15	+3·73	+2·45	+1·65	+0·82	+0·55	+0·38	+0·39	-0·34
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.	-0·4	-0·9	-0·2	-2·5	-1·4	-1·7	-2·6	-2·9	-3·0	-1·3	0·0	-0·7	-0·8	-0·1	+2·0	+3·5	*+3·8*	+3·3	+1·4	+1·9	+3·6	+2·1	0·0	*-3·1*
Feb.	0·0	-2·2	-1·3	-1·0	-1·6	-2·0	*-2·6*	-2·6	-1·9	+0·2	+0·8	+0·6	-0·8	-0·2	+0·1	+2·2	+2·6	*+3·2*	+1·8	+0·4	+1·1	+2·6	+1·2	-0·6
Mar.	-6·1	-9·2	-5·1	-1·8	-0·6	-0·1	-0·6	-0·6	+0·3	-1·0	-4·3	-7·2	*-9·3*	-6·2	-0·7	+3·4	+4·8	+5·3	+6·4	+7·6	+9·1	*+9·4*	+5·9	+0·6
Apr.	*-16·7*	-13·6	-9·5	-2·1	-0·9	+0·6	+2·3	+3·1	+2·3	+1·0	-0·1	-1·9	-6·1	-6·4	-1·7	+5·9	*+8·5*	+7·6	+7·7	+7·3	+5·5	+4·8	+2·7	-0·3
May	-0·8	-2·1	+1·6	+2·5	+3·7	+1·8	+0·5	+0·9	+0·8	-1·3	-5·0	-8·9	*-10·4*	-7·9	-4·4	+0·1	+1·9	+4·4	+7·3	*+9·7*	+9·4	+2·9	-1·0	-5·7
June	-1·0	-1·6	+3·6	+3·8	+4·0	+3·7	+1·6	+1·8	-0·8	-6·0	-8·6	*-10·6*	-7·4	-4·0	-1·2	0·0	+3·0	*+4·1*	+3·8	+3·2	+3·6	+2·0	+1·8	+1·2
July	-6·4	-5·0	-2·8	-5·0	-2·0	-4·3	-2·6	-0·6	+0·6	-1·8	+0·2	-3·6	*-7·8*	-6·6	-1·0	+3·2	+3·0	+5·7	+9·6	*+14·2*	+14·0	+7·0	-1·0	-7·0
Aug.	+3·1	+3·6	-3·9	-4·5	-1·9	+1·4	+2·1	+3·7	+3·7	-2·4	-7·5	*-10·1*	-8·9	-5·0	-1·7	+3·3	*+5·9*	+5·2	+3·5	+3·5	+4·5	+4·0	+0·9	-2·5
Sept.	*+5·9*	+3·6	+3·2	+1·3	+1·2	+1·8	+2·1	+1·4	+0·4	-2·7	-3·8	-4·4	*-4·9*	-4·6	-0·4	-0·3	-1·6	-2·4	-2·9	-2·0	+3·0	+3·1	+1·2	+1·8
Oct.	+0·1	+0·2	0·0	+0·1	+0·2	+1·0	+1·7	+2·8	*+3·4*	+3·1	+1·8	-1·2	-5·5	*-6·8*	-4·0	-1·1	-0·2	0·0	+0·3	+1·4	+1·6	+1·7	+0·8	-1·4
Nov.	*-5·4*	-4·5	+0·4	+1·1	+1·1	+1·0	+0·5	-0·5	+0·6	-0·1	-1·4	-1·1	-0·8	-1·3	-0·4	+1·9	+2·7	+3·0	*+3·7*	+3·5	+3·2	+0·9	-3·4	-4·7
Dec.	-0·2	+1·2	+0·3	-0·6	-1·6	-2·6	*-3·0*	-2·0	-1·3	-0·4	+0·2	+1·0	+1·0	+1·6	+2·1	*+3·0*	+1·8	+2·0	+0·2	+0·4	+0·5	-0·8	-1·4	-1·4
Year	-2·3	-2·5	-1·1	-0·7	0·0	+0·1	-0·1	+0·4	+0·4	-1·1	-2·3	-4·0	*-5·1*	-4·0	-0·9	+2·1	+3·0	+3·5	+3·6	+4·3	*+4·9*	+3·3	+0·6	-1·9
Winter	-1·5	-1·6	-0·2	-0·7	-0·9	-1·3	-1·9	-2·0	-1·4	-0·4	-0·1	-0·1	-0·3	0·0	+0·9	+2·7	+2·7	*+2·9*	+1·8	+1·5	+2·1	+1·2	-0·9	*-2·5*
Equinox	-4·2	-4·7	-2·9	-0·6	0·0	+0·8	+1·4	+1·7	+1·6	+0·1	-1·6	-3·7	*-6·5*	-6·0	-1·7	+2·0	+2·9	+2·6	+2·9	+3·6	*+4·8*	+4·7	+2·7	+0·2
Summer	-1·3	-1·3	-0·4	-0·8	+0·9	+0·7	+0·4	+1·5	+1·1	-2·9	-5·2	-8·3	*-8·6*	-5·9	-2·1	+1·7	+3·5	+4·9	+6·1	+7·7	*+7·9*	+4·0	+0·2	-3·5

"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 DISTURBED DAYS

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

10 LERWICK 1961

HORIZONTAL FORCE

	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
	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.	-78·0	-36·7	-39·4	-20·6	+1·8	+12·7	+9·6	+1·0	+2·0	-3·9	-3·6	-7·6	-1·4	+7·5	+16·6	+17·2	+18·8	+50·5	+91·2	+26·8	+9·0	-12·5	-28·2	-32·8
Feb.	+62·2	+30·5	-48·9	+2·4	+3·9	+6·5	+6·0	+16·7	+6·1	-9·0	-21·1	-11·9	-3·4	+12·7	+11·7	+12·2	+9·9	+38·5	+73·8	+56·5	+7·1	-42·6	-92·7	-127·1
Mar.	-101·9	-76·7	-45·4	-18·9	+8·9	+16·7	+17·1	+10·5	-4·4	-18·1	-28·9	-11·1	+14·1	+18·1	+15·8	+14·1	+25·9	+41·7	+24·3	+20·3	+24·4	+26·3	+19·3	+7·9
Apr.	-48·7	-76·3	-9·1	-57·1	-13·9	+8·9	-3·7	+5·7	+2·5	-8·5	-22·1	-19·9	-3·9	+16·7	+24·1	+67·7	+75·3	+97·7	+54·7	+30·9	+7·1	+10·3	-39·9	-98·5
May	+2·0	-14·2	+0·4	+7·2	+1·4	-31·3	-33·2	-24·0	-30·4	-40·0	-43·4	-30·2	-14·0	+11·0	+21·6	+30·4	+39·8	+38·7	+44·4	+27·4	+19·2	+13·0	+6·2	-2·0
June	-85·9	-75·5	-52·5	-84·3	-12·5	-24·5	+8·7	+2·5	-16·9	-24·5	-15·1	-6·7	-16·3	+6·5	+39·1	+48·1	+76·1	+101·5	+113·3	+81·1	+51·3	+19·1	-48·5	-84·1
July	-120·5	-89·2	-45·7	-19·9	-53·5	-44·8	-30·9	-8·1	-88·5	-122·8	-76·1	+18·3	-3·1	+85·8	+160·1	+200·7	+155·9	+162·4	+133·7	+86·9	-5·1	-76·4	-87·1	-132·1
Aug.	-13·2	-69·1	-48·1	-29·8	-10·1	-22·3	-2·2	-7·9	-27·1	-26·2	-32·3	-27·3	-10·8	+1·5	+19·5	+45·6	+67·7	+59·5	+46·4	+49·5	+36·7	+6·6	+4·9	-11·5
Sept.	+7·4	+19·7	-3·0	+8·8	+11·0	+9·1	+2·6	+8·6	-0·4	-15·1	-18·8	-11·8	-8·2	+5·7	+10·2	+28·6	+35·8	+39·3	+38·4	+34·6	+16·2	+16·1	-82·4	-152·4
Oct.	-150·6	-140·9	-169·6	-27·0	+45·2	+49·9	+45·2	+44·2	+28·8	+22·5	+42·6	+42·6	+103·8	+120·3	+136·0	+123·8	+70·8	+38·3	+57·6	-100·4	-125·4	-130·5	-130·2	+3·0
Nov.	-0·4	-12·1	-4·8	+1·5	+12·5	+18·2	+18·5	+11·7	+0·6	-14·5	-17·0	-5·9	+2·2	+12·5	+15·6	+18·9	+6·9	+24·4	+22·1	+5·1	-47·4	-38·3	-17·0	-13·3
Dec.	-97·8	-38·1	-3·0	+12·2	+11·4	+12·1	+14·6	+13·6	+7·2	+6·5	-1·0	-1·2	+12·0	+56·1	+77·6	+83·4	+86·6	+40·3	+40·2	-9·4	-63·0	-89·1	-90·2	-81·0
Year	-52·1	-48·2	-39·1	-18·8	+0·5	+0·9	+4·4	+6·2	-10·0	-21·1	-19·7	-6·1	+5·9	+29·5	+45·7	+57·6	+55·8	+61·1	+61·7	+25·8	-5·8	-24·8	-48·8	-60·3
Winter	-28·5	-14·1	-24·0	-1·1	+7·4	+12·4	+12·2	+10·7	+4·0	-5·2	-10·7	-6·7	+2·3	+22·2	+30·4	+32·9	+30·5	+38·4	+56·8	+19·7	-23·6	-45·6	-57·0	-63·5
Equinox	-73·5	-68·5	-56·8	-23·5	+12·8	+21·1	+15·3	+17·3	+6·6	-4·8	-6·8	-0·1	+26·5	+40·2	+46·5	+58·5	+51·9	+54·3	+43·7	-3·7	-19·4	-19·5	-58·3	-60·0
Summer	-54·4	-62·0	-36·5	-31·7	-18·7	-30·7	-14·4	-9·4	-40·7	-53·4	-41·7	-11·5	-11·1	+26·2	+60·1	+81·2	+84·9	+90·5	+84·5	+61·2	+25·5	-9·4	-31·1	-57·4

DECLINATION

	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
Jan.	-8·90	-3·93	-3·15	-4·82	-1·97	-1·07	+1·30	+3·13	+3·05	+2·84	+3·61	+4·15	+6·14	+6·81	+7·33	+6·60	+3·07	+3·23	+4·80	-5·19	-5·17	-4·36	-8·49	-9·01
Feb.	-3·55	-5·94	-6·83	-1·12	-0·76	+0·93	+2·08	+2·12	+3·07	+3·44	+3·51	+6·04	+8·81	+5·18	+8·27	+8·88	+3·06	-0·13	-1·00	-3·70	-1·07	-6·70	-8·35	-16·24
Mar.	-10·98	-9·88	-11·88	-9·48	-5·64	+1·27	+4·70	+2·28	+3·62	+2·66	+4·00	+6·28	+7·86	+10·14	+5·22	+4·62	+3·94	-0·69	-0·08	+0·18	-1·08	-4·88	-1·48	-0·70
Apr.	-20·01	-4·78	-4·09	-6·65	+0·33	-1·86	-0·99	-2·83	-3·53	-0·28	+1·45	+6·87	+9·15	+11·74	+11·21	+10·11	+7·83	+4·60	+5·69	+0·49	-0·19	-2·56	-7·63	-14·07
May	-3·78	-5·40	-6·40	-5·42	-3·74	+1·67	+6·84	+0·28	-1·54	-2·72	+0·08	+2·00	+3·90	+5·42	+4·68	+3·82	+2·76	+2·39	+1·06	+1·86	+0·36	-2·16	-2·86	-3·10
June	-8·26	-6·63	-9·75	-7·60	-4·85	-5·51	-6·16	-5·51	-3·55	-0·42	+1·27	+3·13	+6·92	+7·91	+9·11	+7·02	+7·89	+4·31	+0·28	+5·11	+3·53	+1·36	+1·39	-0·99
July	-4·52	-3·05	-3·50	-5·71	-5·17	-2·56	-1·93	-5·43	-11·48	-13·77	-6·22	+0·11	+1·88	+5·35	+5·88	+10·01	+11·17	+9·92	+7·25	+5·17	+5·88	+3·33	-0·92	-1·69
Aug.	-2·61	-6·87	-8·03	-3·57	-3·37	-3·85	-4·81	-3·41	-0·63	+0·67	+2·29	+4·27	+4·93	+6·51	+6·89	+7·43	+4·53	+1·77	+0·93	+2·57	-0·89	-1·01	-2·62	-1·11
Sept.	+0·68	-0·33	-4·22	-1·65	-2·49	-2·60	+0·37	+0·63	+1·56	+3·01	+4·18	+6·43	+7·70	+7·87	+7·60	+5·15	+4·98	+2·35	-4·37	-3·70	-6·03	-7·48	-13·41	-6·23
Oct.	-5·79	-1·33	-10·99	-3·95	+0·13	+5·98	+5·23	+5·11	+1·41	+2·75	+3·29	+6·07	+5·89	+7·73	+9·53	+11·15	+8·37	+2·36	+5·45	-10·93	-9·93	-14·29	-14·21	-9·03
Nov.	-1·24	-4·91	-2·83	-0·62	-0·03	+1·47	+2·42	+3·39	+1·99	+1·76	+3·63	+4·09	+5·90	+7·87	+10·23	+7·34	+3·11	+0·13	-0·10	-3·87	-13·51	-7·50	-10·35	-8·37
Dec.	-7·57	-3·96	-4·82	-1·91	+1·50	+5·42	+5·89	+3·86	+1·22	+1·73	+3·24	+5·08	+6·79	+5·44	+10·40	+8·41	+2·62	+2·84	-0·61	-2·16	-5·60	-13·49	-16·18	-8·14
Year	-6·38	-4·75	-6·37	-4·37	-2·17	-0·06	+1·25	+0·30	-0·40	+0·14	+2·03	+4·54	+6·32	+7·33	+8·03	+7·55	+5·28	+2·76	+1·61	-1·18	-2·81	-4·98	-7·09	-6·56
Winter	-5·31	-4·69	-4·41	-2·12	-0·31	+1·69	+2·92	+3·13	+2·33	+2·44	+3·50	+4·84	+6·91	+6·33	+9·06	+7·81	+2·97	+1·52	+0·77	-3·73	-6·34	-8·01	-10·84	-10·44
Equinox	-9·03	-4·08	-7·79	-5·43	-1·92	+0·70	+2·33	+1·30	+0·77	+2·03	+3·23	+6·41	+7·65	+9·37	+8·39	+7·76	+6·28	+2·15	+1·67	-3·49	-4·31	-7·30	-9·18	-7·51
Summer	-4·79	-5·49	-6·92	-5·57	-4·28	-2·56	-1·51	-3·52	-4·30	-4·06	-0·65	+2·38	+4·41	+6·30	+6·64	+7·07	+6·59	+4·60	+2·38	+3·68	+2·22	+0·38	-1·25	-1·72

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.	-70·2	-52·3	-63·0	-55·7	-42·2	-39·9	-39·4	-21·9	-19·4	-14·7	-7·4	+4·9	+5·0	+12·1	+27·6	+55·3	+91·4	+106·1	+108·4	+87·3	+30·6	+1·1	-41·2	-62·5
Feb.	-71·9	-98·5	-64·3	-41·3	-21·3	-10·8	-7·3	-6·5	-1·7	+2·9	+9·5	+13·9	+21·3	+41·7	+38·3	+47·5	+63·7	+73·4	+75·5	+12·3	+20·5	+10·3	-25·9	-81·3
Mar.	-0·5	-24·9	-67·1	-64·7	-56·3	-48·0	-52·7	-34·9	-16·9	-3·7	+6·3	+15·3	+28·9	+40·3	+52·5	+50·1	+52·5	+68·2	+43·9	+29·9	+14·1	-4·1	-11·3	-16·9
Apr.	-37·2	-37·9	-77·6	-77·8	-77·4	-56·9	-33·6	-22·8	-6·4	+1·1	+9·6	+13·0	+15·0	+23·7	+38·6	+64·0	+86·8	+87·9	+69·0	+45·4	+34·6	+10·1	-38·6	-32·6
May	-27·7	-57·4	-44·1	-17·2	-9·2	-20·5	-63·2	-46·8	-25·9	-10·4	-1·7	+4·0	+12·3	+37·6	+54·3	+50·4	+45·2	+39·7	+27·8	+30·6	+29·1	+11·0	-2·7	-15·2
June	-62·0	-122·3	-115·9	-102·2	-87·3	-53·5	-28·2	-2·5	+8·3	+13·8	+16·1	+24·1	+39·2	+47·9	+57·9	+68·8	+62·1	+77·7	+43·4	+46·1	+40·9	+23·0	+23·7	+19·1
July	-140·7	-124·7	-122·9	-63·1	-58·3	-59·5	-49·1	-15·3	+12·7	+44·7	+50·5	+53·5	+65·7	+80·1	+92·3	+116·9	+102·7	+104·9	+95·9	+44·7	+6·3	-40·9	-84·1	-112·3
Aug.	-93·6	-134·0	-119·4	-80·0	-57·6	-35·4	-20·4	+4·4	+10·2	+5·6	+9·2	+15·0	+31·6	+52·6	+64·2	+70·2	+91·6	+79·6	+67·8	+57·6	+46·4	+8·2	-20·2	-53·6
Sept.	-42·1	-38·1	-21·8	-11·7	-16·1	-18·9	-12·3	-8·7	-2·0	+4·1	+7·7	+12·5	+15·5	+29·3	+38·4	+43·3	+50·9	+51·5	+46·3	+35·3	+35·6	-28·1	-102·3	-68·3
Oct.	-75·2	-35·0	-27·1	-90·2	-50·0	-35·4	-12·2	-6·2	+18·3	+31·6	+26·4	+39·6	+73·2	+56·4	+17·5	+51·4	+37·2	+35·0	+44·2	-3·8	+7·1	-12·2	-45·8	-44·8
Nov.	-52·8	-51·3	-56·6	-46·7	-33·5	-20·6	-17·7	-12·3	-7·2	+7·5	+8·0	+19·5	+37·0	+43·9	+54·8	+75·5	+61·5	+60·6	+41·7	+31·3	-7·0	-24·5	-46·4	-64·7
Dec.	-80·4	-108·2	-77·3	-63·8	-66·8	-53·0	-40·2	-21·4	-3·5	+13·8	+17·6	+33·0	+49·4	+74·6	+90·1	+109·6	+123·0	+107·8	+69·4	+37·0	-14·1	-63·6	-43·6	-89·4
Year	-62·9	-73·7	-71·4	-59·5	-48·0	-37·7	-31·4	-16·2	-2·8	+8·0	+12·7	+20·7	+32·8	+45·0	+52·2	+66·9	+72·4	+74·4	+61·1	+37·8	+20·3	-9·1	-36·5	-55·1
Winter	-68·8	-77·6	-65·3	-51·9	-40·9	-31·1	-26·1	-15·5	-7·9	+2·4	+6·9	+17·8	+28·2	+43·1	+52·7	+72·0	+84·9	+87·0	+73·7	+42·0	+7·5	-19·2	-39·3	-74·5
Equinox	-38·7	-34·0	-48·4	-61·1	-49·9	-39·8	-27·7	-18·1	-1·7	+8·3	+12·5	+20·1	+33·1	+37·4	+36·7	+52·2	+56·9	+60·7	+50·9	+26·7	+22·9	-8·6	-49·5	-40·7
Summer	-81·0	-109·6	-100·6	-65·6	-53·1	-42·2	-40·2	-15·1	+1·3	+13·4	+18·5	+24·1	+37·2	+54·5	+67·2	+76·6	+75·4	+75·5	+58·7	+44·7	+30·7	+0·3	-20·8	-50·1

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

RANGE OF MEAN DIURNAL INEQUALITIES FOR THE MONTHS, YEAR AND SEASONS FOR 1961

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

11 LERWICK 1961

	All days			Quiet days			Disturbed days		
	H	*D*	*Z*	*H*	*D*	*Z*	*H*	*D*	*Z*
	γ	′	γ	γ	′	γ	γ	′	γ
Jan.	29·4	8·31	46·8	13·2	3·72	6·9	169·2	16·34	178·6
Feb.	38·1	10·27	58·1	19·0	4·97	5·8	200·9	25·12	174·0
Mar.	39·0	10·08	47·4	31·8	8·40	18·7	143·6	22·02	135·3
Apr.	64·7	12·47	61·7	55·6	10·66	25·2	196·2	31·75	165·7
May	65·3	9·63	54·9	59·2	9·73	20·1	87·8	13·24	117·5
June	76·3	12·66	58·8	54·0	12·76	14·7	199·2	18·86	200·0
July	106·7	12·41	103·1	80·2	13·06	22·0	332·8	24·94	245·6
Aug.	65·5	12·35	53·4	59·7	13·65	16·0	136·8	15·46	225·6
Sept.	47·4	10·24	43·1	42·2	9·57	10·8	191·7	21·28	153·8
Oct.	44·0	10·03	41·2	39·6	7·95	10·2	305·6	25·44	163·4
Nov.	21·5	8·04	37·8	16·4	4·32	9·1	71·8	23·74	140·2
Dec.	33·9	10·95	56·8	16·2	3·80	6·0	184·4	26·58	231·2
Year	46·5	8·49	52·0	38·3	7·97	10·0	117·9	15·12	148·1
Winter	22·6	8·69	47·9	15·7	4·00	5·4	120·3	19·90	164·6
Equinox	42·0	10·09	45·0	41·8	8·65	11·3	132·0	18·55	121·8
Summer	76·4	11·26	66·0	62·1	12·01	16·5	152·5	13·99	186·2

AVERAGE DEPARTURE

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

12 LERWICK 1961

	All days			Quiet days			Disturbed days		
	H	*D*	*Z*	*H*	*D*	*Z*	*H*	*D*	*Z*
	γ	′	γ	γ	′	γ	γ	′	γ
Jan.	5·6	2·00	13·6	3·0	0·87	1·8	22·1	4·67	44·1
Feb.	8·0	2·32	13·7	4·2	1·44	1·4	29·7	4·62	35·9
Mar.	9·9	2·51	12·0	6·7	2·59	4·4	25·5	4·73	33·5
Apr.	13·8	3·46	14·3	13·1	2·38	4·9	33·5	5·79	41·6
May	15·4	2·94	12·9	14·2	2·69	4·0	21·9	3·09	28·5
June	19·2	3·54	13·0	13·0	3·15	3·4	45·6	4·94	49·4
July	31·1	3·85	28·0	16·5	3·22	4·8	83·7	5·50	72·6
Aug.	15·2	3·06	13·1	15·4	3·14	4·0	28·2	3·57	51·2
Sept.	11·4	2·68	11·5	11·7	2·23	2·5	24·3	4·38	30·9
Oct.	12·6	2·60	11·3	10·3	1·73	1·7	81·2	6·70	36·5
Nov.	4·7	1·76	10·4	3·6	1·14	2·0	14·2	4·44	36·8
Dec.	8·4	1·99	14·9	3·1	0·81	1·3	39·5	5·37	60·4
Year	10·8	2·58	13·7	8·9	2·04	2·2	29·6	3·93	42·0
Winter	6·1	1·95	12·9	3·3	1·05	1·3	23·3	4·69	43·2
Equinox	10·2	2·79	12·1	10·3	2·18	2·7	32·9	5·00	34·9
Summer	19·4	3·31	16·3	14·4	2·99	3·4	42·8	3·89	48·2

NON-CYCLIC CHANGE

13 LERWICK 1961

	All days			Quiet days			Disturbed days		
	H	*D*	*Z*	*H*	*D*	*Z*	*H*	*D*	*Z*
	γ	′	γ	γ	′	γ	γ	′	γ
Jan.	+0·7	+0·01	-0·9	+3·7	+0·23	-3·8	-3·4	-0·29	-4·8
Feb.	-0·2	-0·06	-0·1	+2·1	+0·02	-1·5	-66·7	-7·23	-30·5
Mar.	+0·9	+0·05	-0·4	+6·1	+0·23	+3·5	+87·9	+9·07	-19·7
Apr.	-0·6	-0·15	+0·1	+10·7	+0·42	+14·5	-5·5	+1·91	-6·4
May	-0·2	-0·07	-1·3	0·0	-0·94	-11·6	-11·5	+0·56	+0·6
June	+0·5	+0·15	+1·8	+8·5	-0·04	-0·8	-1·2	+3·79	+1·5
July	-0·1	+0·01	-3·0	-5·8	+0·43	-4·5	-30·5	-0·41	+25·8
Aug.	-0·6	+0·05	-2·7	+5·6	+0·45	-1·5	-5·6	+1·34	+20·1
Sept.	-25·5	-0·65	+30·5	+3·0	-0·31	-4·7	-166·4	-5·22	-26·2
Oct.	+25·1	+0·43	+2·6	+1·9	+0·01	-0·8	-147·2	+3·29	+23·6
Nov.	+0·5	+0·06	-0·5	+3·3	-0·28	-1·3	-13·3	-2·20	-21·5
Dec.	-0·1	-0·13	+0·1	+2·0	+0·01	-2·3	-7·1	-0·26	-13·8
Year	0·0	-0·03	+2·2	+3·4	+0·02	-1·2	-6·3	+0·36	-4·3
Winter	+0·2	-0·03	-0·3	+2·8	-0·01	-2·2	-22·6	-2·49	-17·7
Equinox	0·0	-0·08	+8·2	+5·4	+0·09	+3·1	+15·8	+2·26	-7·2
Summer	-0·1	+0·03	-1·3	+2·1	-0·03	-4·6	-12·2	+1·32	+12·0

AVERAGE RANGE OF DIURNAL INEQUALITY 1932-53 WITH 1961 AS PERCENTAGE OF THIS

14 LERWICK 1961

		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
	1961(%)	94	91	98	102	92	97	90	106	113
Winter	1932-53	24·4	7·87	41·1	15·1	4·65	7·7	85·0	13·84	116·6
	1961(%)	93	110	117	104	86	70	142	144	141
Equinox	1932-53	59·2	10·94	68·8	42·3	9·54	12·9	193·4	18·89	168·9
	1961(%)	71	92	65	99	91	88	68	98	72
Summer	1932-53	72·6	12·72	53·0	57·5	12·77	17·0	156·9	15·61	134·0
	1961(%)	105	89	125	108	94	97	97	90	139

"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 1961

15 LERWICK 1961

Type of day	Element	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
q	*H*	0·96	0·87	1·16	1·03	1·14	1·13	1·12	1·21	1·11	1·06	0·93	0·91
d	*H*	3·55	3·16	2·40	2·77	1·25	1·94	1·62	2·28	3·16	2·02	1·75	3·30
q	*D*	1·04	0·99	1·08	0·97	1·03	1·04	1·15	1·12	1·21	0·93	0·96	1·01
d	*D*	1·32	1·39	1·38	1·68	1·29	1·23	1·45	1·29	1·17	1·27	1·38	1·45
q	*Z*	1·60	1·18	1·09	1·20	0·74	0·65	0·84	0·70	0·70	0·77	0·78	1·09
d	*Z*	2·24	1·79	1·94	1·72	2·03	1·98	1·66	2·34	1·79	0·89	2·47	1·77

16 LERWICK 1961

(a) Disturbances without sudden commencement

Serial Number	From Date	From Hour	To Date	To Hour	Range (γ) H	Range (γ) D	Range (γ) Z	Notes
1a	Jan. 19	14	Jan. 20	23	795	296	494	
2a	Feb. 17	20	Feb. 19	04	898	421	754	
3a	Mar. 5	17	Mar. 6	19	916	426	510	
4a	June 20	16	June 23	05	1207	384	706	
5a	July 3	24	July 7	21	679	359	629	
6a	Nov. 6	23	Nov. 8	16	518	285	413	
7a	Dec. 1	03	Dec. 5	02	1241	520	632	

(b) Disturbances with a sudden commencement (ssc)

Serial Number	Date	Time of sudden commencement	End of disturbance Date	End of disturbance Hour	With initial reversed stroke H	With initial reversed stroke D	With initial reversed stroke Z	Magnitude of main stroke (γ) H	Magnitude of main stroke (γ) D	Magnitude of main stroke (γ) Z	Range of following disturbance (γ) H	Range of following disturbance (γ) D	Range of following disturbance (γ) Z
		h. m.											
1b	Feb. 3	09 07·7	-	-	No	No	No	+14	-8	+5		Small	
2b	Feb. 4	13 32·3	Feb. 5	14	No	Yes	-	+31	-28	+7	1216	583	662
3b	Mar. 9	13 27·3	-	-	Yes	Yes	Yes	+35	-28	-6		Small	
4b	Mar. 27	15 04·0	-	-	Yes	Yes	No	+57	-44	+5		Small	
5b	Apr. 13	14 51·1	Apr. 16	24	Yes	Yes	No	+39	-18	+8	1579	918	790
6b	July 13	11 13·1	See 7b		Yes	-	Yes	-168	+50	-23	1341	405	773
7b	July 17	18 25·7	July 19	20	No	No	No	+46	-20	+8	1257	386	519
8b	July 20	02 49·2	-	-	-	Yes	-	+5	-10	0		Small	
9b	July 26	19 50·0	July 30	24	Yes	No	Yes	+106	-20	+47	517	518	460
10b	Sept. 30	18 49·3	See 11b		No	Yes	-	+32	+10	+5		Small	
11b	Sept. 30	21 09·0	Oct. 1	24	No	Yes	Yes	+100	+50	-53	1963	1022	1088
12b	Oct. 26	19 41·1	-	-	No	No	Yes	+25	-5	-35		Small	
13b	Oct. 28	08 10·0	Oct. 29	24	-	Yes	Yes	-36	+40	+29	1873	595	934
14b	Dec. 5	13 58·8	-	-	Yes	Yes	-	+21	-20	0		Small	

Note:- In the case of an ssc* i.e. an ssc preceded on at least one component by one or more oscillations, timing of the sudden commencement has been made from the main stroke.

(c) Disturbances due to solar flare (sfe)

Serial Number	Date	Commencement	Max.	End	Movement (γ) H	Movement (γ) D	Movement (γ) Z	K	K′	Notes
		h. m.	h. m.	h. m.						
1c	July 12	10 23	10 40	11 35	-35	0	+20	3	1	Large S.E.A. complete S.W.F.
2c	Nov. 3	08 01	08 07	08 10	-29	+16*	+10	2	1	I.A.G.A. Bulletin indicates confirmation by ionospheric or solar observations.

*After initial movement of -3γ
S.E.A. = Sudden enhancement of atmospherics
S.W.F. = Short wave fade out.

Night commencing			
			JANUARY
1	b-cb	··	Cloudy or partly cloudy. Moonlight
2	c	··	Cloudy
3	b	··	Partly cloudy. Moonlight
4	cb	··	Cloudy then partly cloudy. Moonlight
5	b	··	Fine. Moonlight
6	b	··	Partly cloudy. Moonlight
7	ca	··	Partly cloudy
8	a	⌀	Partly cloudy. Faint rays 17h.45m. became faint glow then homogeneous arc until 21h.05m.
9	a	⌀	Mainly fine. A glow at 17h.39m. became homogeneous arc with rayed structure and then varying between faint and occasionally moderate rays and arcs or faint glows until 01h.15m.
10	ca	··	Partly cloudy
12	ca-a	··	Cloudy then fine
13	a-ca	··	Mainly fine then cloudy
14	ca	⌀	Partly cloudy. Faint rayed arc at 00h.30m.
15	a	⌀	Fine. Moderate rayed arc at 20h.02m. to 20h.03m. became a faint glow until 02h.00m.
16	ca-c	··	Partly cloudy to cloudy
17	c-ca	··	Cloudy then partly cloudy
19	cb	··	Mainly cloudy
21	c	··	Cloudy
22	cb-a	··	Partly cloudy. Moonlight
23	c	··	Mainly cloudy
25	ca	··	Variable cloud
27	c	··	Mainly cloudy
28	ca	··	Variable cloud
29	c-cb	··	Cloudy to variable cloud. Moonlight
30	c-cb	··	Cloudy to variable cloud. Moonlight
31	cb	··	Variable cloud. Bright moonlight
			FEBRUARY
1	b-ca	··	Fine to cloudy. Moonlight
2	cb	··	Variable cloud. Moonlight
3	b	··	Mainly fine. Moonlight
4	b	⌀	Partly cloudy. Moonlight. Starting 18h.28m. with faint homogeneous band from west to east, through zenith, with rays at west and east and pulsating surfaces to south. Then rays and arcs to become faint to moderate draperies to north-east until cloud cover at 19h.00m. At 19h.30m. homogeneous band and moderate rayed bands and rayed arc with rays flaming to corona persisted until 20h.15m. Re-appeared at 20h.40m. as diffuse rays and surface to become moderate to bright corona at 22h.37m., gradually fading out to no aurora at 01h.10m.
6	a-b	··	Mainly fine. Faint glow and rays 00h.30m. until 01h.30m. Faint glow and rays 22h.40m. to 23h.30m.
9	ca-a-c	··	Variable cloud then cloudy
10	ca	⌀	Variable cloud. Quiet homogeneous arc or band 01h.04m. to 02h.50m.
11	ca-c-a	··	Variable cloud
14	c-ca	⌀	Variable cloud. Moderate rayed arc 23h.00m. Slight rays 23h.20m. Faint glow 02h.00m.
15	ca	··	Partly cloudy
16	ca-a-c	··	Variable cloud then fine then cloudy
18	ca-a-c	··	Variable cloud then fine then cloudy
20	ca-a	⌀	Variable cloud. Faint glow to north
26	c	··	Mainly cloudy
27	cb-b	··	Variable cloud. Bright moonlight
28	b	··	Mainly fine. Moonlight
			MARCH
2	cb-c	··	Variable cloud then cloudy
4	cb	··	Variable cloud. Moonlight
5	b-c	⌀	Fine to cloudy. Bright moonlight. Homogeneous bands at 22h.45m. Faint bands and arcs 00h.45m. to 03h.00m.
6	cb	··	Mainly fine then partly cloudy
8	a-cb	··	Partly cloudy. Moonlight
9	a-ca	⌀	Fine then partly cloudy. Faint glow 23h.00m.
10	c-a-ca	··	Mainly cloudy then fine then partly cloudy
12	ca	··	Variable cloud
14	a	⌀	Mainly fine. Faint glow at 21h.00m.
15	ca	··	Partly cloudy
16	a	⌀	Mainly fine. Homogeneous band 02h.05m. to 02h.08m.
17	ca	··	Partly cloudy
20	ca	··	Partly cloudy
22	cb	··	Cloudy or partly cloudy
23	c-a	··	Cloudy to fine
24	c-ca	··	Cloudy to partly cloudy
25	c-cb	··	Cloudy to partly cloudy
26	c-cb	··	Cloudy to partly cloudy
28	c	··	Partly cloudy to cloudy
29	ca	··	Variable cloud
30	ca	··	Variable cloud
31	c-ca	··	Overcast then variable cloud
			APRIL
2	cb-ca	··	Partly cloudy to cloudy Moonlight
3	cb	··	Variable cloud. Moonlight
5	cb	··	Variable cloud. Moonlight
6	a-b	⌀	Partly cloudy. Moonlight. Faint glow and rays at 20h.41m. and again at 21h.14m. to 21h.27m. Homogeneous arc at 22h.50m. Rayed band at 23h.30m. Faint homogeneous arc or glow 00h.20m. to 01h.00m.
7	ca	··	Variable cloud
8	a	··	Mainly fine
13	c-ca	··	Variable cloud
14	c-a	⌀	Cloudy then variable cloud. Moderate rays to corona, with surfaces to south at 22h.35m. formed a curtain in east at 22h.41m., gradually becoming quiet by 23h.15m. in a band lying west to east then increasing in activity to form a moderate curtain to north-east by 23h.30m. This gradually faded to be replaced by flaming rays to corona between 23h.45m. and 23h.50m., becoming faint at 00h.05m. Moderate rays at 00h.20m. flamed up to corona at 00h.43m. gradually dying out at 02h.20m. Faint rayed band between 02h.45m. and 02h.50m.
16	b	⌀	Variable cloud. Faint glow at 22h.
17	a	··	Fine to partly cloudy
18	a	··	Mainly fine
19	c-ca	··	Cloudy then partly cloudy
24	ca	··	Variable cloud
			AUGUST
1	c	··	Cloudy
2	ca	··	Partly cloudy
3	ca	··	Partly cloudy
4	ca	··	Partly cloudy
5	c-ca	··	Cloudy, then partly cloudy
6	ca	··	Partly cloudy
7	ca	··	Partly cloudy
8	ca	··	Mainly cloudy
10	ca	··	Cloudy then partly cloudy
12	cb	··	Mainly cloudy
14	a	··	Fair
15	ca	⌀	Mainly fair. Faint glow to north at 23h.
22	a	··	Fine
23	ca	··	Partly cloudy
24	a-ca	··	Fine then partly cloudy
25	ca	··	Mainly partly cloudy
26	a-ca-c	··	Fine, then partly cloudy then cloudy
27	c	··	Cloudy
28	ca	··	Variable cloud
30	c-a	··	Cloudy then fair
31	b-cb	··	Partly cloudy, then fine, then cloudy. Moonlight
			SEPTEMBER
2	b-ca	··	Variable cloud
5	a	··	Mainly fair
9	c-ca	··	Cloudy, then variable cloud
10	c-a-cb	··	Cloudy, then fine, then mainly cloudy
11	c-ca	⌀	Fine, then variable cloud. Faint glow at 20h.45m. Faint homogeneous arc at 21h.30m. and 21h.45-50m. Faint glow 22h.45m. to 23h.45m.
12	ca-c	··	Partly cloudy then cloudy
13	ca-a	⌀	Cloudy to variable cloud, then fine. Glow at 21h.45m., becoming brighter 22h.15-20m., until 22h.25m. DS. 22h.30-50m. and 23h.20-30m. Faint glow at 00h.50m.
14	a-c	··	Variable cloud then cloudy. Faint glow and ray at 20h.50m. Diffuse surfaces and rays from 22h.20m. until fading to a faint glow at 00h.25m.
15	ca-a-ca	⌀	Partly cloudy, then fine, then partly cloudy. Glow to north at 24h.
16	a-c	⌀	Fine then cloudy. Faint arc at 20h.50m.
17	ca	··	Mainly cloudy
18	c-a-ca	··	Cloudy then fine then partly cloudy
20	a-c	··	Fair then cloudy
21	c-ca-c	··	Cloudy then fair, then cloudy
22	ca-a-c	··	Partly cloudy, then fair, then cloudy
24	a-ca	··	Fine then partly cloudy
25	c-ca-c	··	Cloudy then mainly cloudy, then cloudy
27	a-c	··	Mainly fine, then cloudy
28	c-ca	··	Cloudy then mainly cloudy
29	c-ca	··	Cloudy then partly cloudy
			OCTOBER
1	c-ca-c	··	Cloudy, then partly cloudy, then cloudy
2	ca-c	··	Partly cloudy, then cloudy
5	c-ca	··	Cloudy then variable
9	ca-c	··	Partly cloudy then cloudy
10	a	··	Variable cloud
11	a	⌀	Variable cloud. Faint glow 20h.45m. to 01h.50m.
13	a	⌀	Fine, then mainly fine. Homogeneous arc at 23h.30m. became rayed band at 23h.38m.
14	a	··	Variable cloud
15	c-a	··	Cloudy, then mainly fair
16	ca-a	··	Partly cloudy then fine to fair
17	a	··	Mainly fine
18	ca	··	Variable cloud
19	ca-a	··	Mainly cloudy, then cloudy, then fine
20	c-ca-c	··	Cloudy, then mainly cloudy, then cloudy
21	ca	··	Fair to cloudy
23	a	··	Variable cloud
24	b-cb	··	Variable cloud then mainly cloudy. Moonlight
25	cb-b	··	Cloudy then fair. Moonlight
26	a-cb	⌀	Fair then partly cloudy to cloudy. Rayed band at 20h.44m.
27	c	··	Mainly cloudy
28	c-cb	⌀	Cloudy then partly cloudy. Moonlight. Bright rays to corona between 21h.29m. and 21h.32m. gave way to rays of varying intensity to occasional faint coronas until 22h.30m., when cloud obscured view. Faint glow between 23h.38m. and 23h.55m. Arc with rays to zenith at 00h.20m. persisted until 03h.20m. when a quiet arc was observed until 03h.50m. Display finished with a faint glow at 04h.20m.
29	c-ca	⌀	Fine becoming cloudy. A few rays between 22h.10m. and 22h.20m
30	ca	··	Variable cloud
31	c	··	Mainly cloudy

17 LERWICK (contd.) 1961

Night commencing				Night commencing				Night commencing			
			NOVEMBER				NOVEMBER (contd.)				DECEMBER (contd.)
2	c-ca	⏀	Cloudy becoming variable. Faint diffuse surface at 00h.50m.	28	ca	··	Variable cloud	5	ca-c	⏀	Partly cloudy then cloudy. Faint glow at 17h.35m.
3	a-ca	··	Variable cloud	29	a-ca	··	Variable cloud	6	a-ca	⏀	Variable cloud. A glow persisted between 17h.42m. until 21h. with occasional rays at 17h.43m.
4	a-c	··	Mainly fine becoming cloudy	30	ca	··	Variable cloud	7	a	··	Mainly fine
5	c-ca	··	Cloudy then partly cloudy					8	ca	··	Partly cloudy then cloudy
6	c-ca-c	··	Cloudy, then partly cloudy, then cloudy				DECEMBER	14	ca	··	Mainly cloudy
7	c-ca-c	⏀	Cloudy then partly cloudy, then cloudy. Glow from 20h.45m. to cloud cover at 01h.15m. with occasional flaming rays at 20h.45m. and rays at 21h.09m.	1	ca-a	⏀	Partly cloudy or fine. Faint glow from 20h.45m. to 23h.45m. A rayed band at 00h.05m. became a faint homogeneous arc at 00h.20m., with occasional faint rays to 00h.40m., and persisted until cloud obscured aurora at 02h.45m.	15	c-a	··	Cloudy becoming mainly fair to fine
								16	ca	··	Partly cloudy
								17	c-ca	··	Cloudy becoming fair
8	ca	··	Variable cloud					18	b-cb	··	Fine becoming cloudy. Moonlight
9	c-ca	··	Cloudy or partly cloudy					19	cb-b	··	Cloudy then variable. Moonlight
10	a	··	Mainly fine					21	cb	··	Cloudy or variable. Moonlight
11	ca-a	··	Variable cloud becoming fine	2	ca	⏀	Variable cloud. Faint glow at 17h.40m. with rays at 17h.45m. A bright glow at 00h.15m. became a pulsating rayed arc at 00h.20m. and band with rays flaming upwards at 00h.25m. This persisted, with rapid colour changes from green to red to mauve, until cloud cover at 00h.35m. At 01h.05m. occasional rays were seen behind cloud. A glow persisted from 01h.15m. to cloud cover at 03h.30m., with rays seen at 02h.30m. A glow was seen behind cloud at 04h.30m.	22	cb	··	Partly cloudy. Moonlight
12	a	⏀	Fine. Faint glow between 20h.45m. and 01h. with rays at 22h.50m.					23	cb-c	··	Partly cloudy then cloudy. Moonlight
14	c	··	Mainly cloudy					24	cb	··	Cloudy
15	ca-c	··	Partly cloudy then cloudy					25	b	··	Partly cloudy soon becoming fine. Moonlight
16	ca	··	Partly cloudy					26	ca	··	Partly cloudy then cloudy
17	ca	··	Mainly cloudy					27	ca	··	Variable cloud
18	c	··	Cloudy					28	ca	⏀	Variable cloud. Faint glow at 20h.08m., with sporadic rays at 20h.12m., was obscured by cloud at 20h.20m. A glow was seen through cloud at 20h.45m.
19	c	··	Cloudy								
20	cb	··	Variable cloud. Moonlight								
21	cb	··	Cloudy or partly cloudy								
23	cb	··	Partly cloudy								
24	cb	··	Variable cloud. Moonlight					29	ca-c	··	Partly cloudy until obscured then partly cloudy
25	c-b	··	Mainly cloudy then fine								
26	ca	··	Cloudy or partly cloudy					30	ca	··	Variable cloud
27	ca-c	··	Partly cloudy then cloudy	3	c-ca	··	Cloudy becoming variable	31	ca-a	..	Variable or fine

In the interests of brevity there have been omitted from Table 17 all dates on which the sky throughout the evening remained completely overcast and on which, therefore, no opportunity arose of determining whether or not aurora occurred. The nights on which aurora was actually seen are indicated by the symbol ⏀. The nights on which aurora was not seen, despite at least an occasional interval of more or less clear sky, are indicated by the symbol ··; in the latter case also, remarks on the weather are added to assist the reader in judging how far the fact of no observation of aurora may be taken as indicating that there was not actual aurora.

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

a = Condition 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

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.)				
7-8	63	R	2300-0300		23-24	63	HA,G	0001		22-23	63	R	2125-2200	
8-9	56	HA,RA	1650-0050	65	24-25	61	HA,R	2250-0150		24-25	60	RA	2130-2150	
9-10	55	HA,HB,RA,RB	1650-0250	63	25-26	63	G	0100-0300		30-1	53	HA,RA,RB,F	2000-0400	59
12-13	59	G	2120-2400											
13-14	59	G,HA	1700-0350											
14-15	59	G,HA,RA	2115-0440	66										
15-16	54	HA,RA	2050-0550	63	MAY					OCTOBER				
16-17	60	G	2205-2225											
18-19	62	G	2100-0300		4-5	58	HA,RA	2250-0215		2-3	57	HA	1950-2050	
19-20	56	RA,RB,F	1850-0600	63	5-6	56	G	2130-2350		4-5	62	G	2300-2340	
20-21	61	G	2350		6-7	58	HB,RA	2150-0150		11-12	59	G,HA	1950-0400	66
22-23	59	G	0140		7-8	61	G	0050-0150		12-13	61	G	2150-0250	
24-25	59	G	2230 and		8-9	61	G	2350-0040		13-14	61	G,HA,RB	2150-0100	66
			0050		10-11	60	G	2340		19-20	63	G	0200	
28-29	61	G	2050-2150		11-12	60	G	2315-0050		26-27	58	HA,RA	1830-0300	65
					12-13	58	G	2045-2305		27-28	58	RA	1850-2300	65
					15-16	56	G	2100-0150		28-29	50	HA,RA,RB,F	1730-0130	54
					19-20	58	G	2230-0020						
FEBRUARY														
										NOVEMBER				
3-4	61	G	1840-1940											
4-5	52	HA,HB,RA,RB,P,F	1730-0200	58	JUNE									
6-7	60	G	2040-2350							2-3	61	G	0050-0150	
7-8	59	RA	2050-0050		15-16	59	R	2300-0005		3-4	59	G	2130-0030	
8-9	59	G	1950-0035		20-21	58	G	2350-0050		5-6	61	G	2150 and	
10-11	58	G,HA	1910-0540	67									0250	
13-14	59	RA	1845-2400							6-7	62	G	0200-0300	
14-15	61	G,RA	2100-0210							7-8	58	HA,RB,F	1850-0500	64
16-17	61	G	2340-2350		JULY					8-9	61	G	1850-0200	
17-18	59	G,RA	1830-0550	63						9-10	61	G,RA	2150-0250	
18-19	58	G	1745-2340		4-5	55	G	0150-0155		11-12	60	G,P	2150-0400	
20-21	59	RA	2100-0240		13-14	54	G	0035-0040		12-13	60	HA,R	2050-0100	
					14-15	59	G	2240-0050		13-14	61	G	2250	
					17-18	57	G,R	2230-0150		14-15	63	G	2200-2300	
MARCH					18-19	58	G	2250		15-16	59	G	2030-2400	
					20-21	58	G	2145-0030		16-17	61	HA,R	2250	
5-6	56	HA,RA	1950-0330	62						17-18	61	HA	1850-2150	
9-10	60	HA	1925-0250							18-19	60	HA	1850-2050	
11-12	61	G	0040-0150							20-21	61	G	2250-0050	
13-14	60	G	2040-0040											
14-15	59	G	2050-0240		AUGUST									
15-16	60	HA,HB	2150-0250											
18-19	57	G	1830-2340		10-11	60	G	0150						
19-20	56	G	2000-2124		11-12	59	G	2030-2300		DECEMBER				
20-21	58	G	2225-2250		15-16	60	G	0040						
21-22	58	G	2205		29-30	58	HA	2230-0230		1-2	54	HA,HB,RA,RB	1715-0550	61
23-24	60	G	2020-0240		30-31	60	G	2040		2-3	54	HA,HB,RA	1720-0500	61
25-26	60	G	0340		31-1	58	HA,RA	2030-0050		3-4	61	RA,RB	2050-0300	
26-27	62	G	2050							5-6	59	G,HA	1735-0440	
										6-7	57	G,R	1720-0010	
APRIL										10-11	61	G	1720-2000	
					SEPTEMBER								and 0350	
2-3	60	G	2205							11-12	58	G	1730-0300	
3-4	60	G,RA	2050-2400		1-2	62	S	2200	65	13-14	59	G	2045-2400	
6-7	59	G,HA,RB	2040-0250	66	2-3	61	G	2350		22-23	62	G	2350-0300	
13-14	62	G	2150		9-10	61	HA,HB	0145-0220		24-25	62	G	2050 and	
14-15	52	HA,RA,RB,F	2040-0400	60	11-12	58	HA,R	2045-0020	66				0050	
15-16	60	G	2140-0150		13-14	58	G,R	1950-0350		28-29	60	G,R	1950-2300	
16-17	60	G	2140-2340		14-15	61	G,S,R	2050-2350	65	29-30	59	G,R	1950-0100	65
19-20	62	G	0235		16-17	60	HA,RA	2050-0250		31-1	60	G	2050	

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 3·44 (metre^{-1}) — JANUARY 1961

	Hour G.M.T. 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	
	volts per metre																									
1	195*	225*	Z+*	225	195*	225	210	215	185	195*	235	215	180	105*	105*	175	165*	135	115*	135*	180*	175	180	180	195	(13)
2	205	Z-*	Z±*	Z±*	155	150	Z±*	-225*	-225*	-185*	Z-*	-*	-*	Z±*	-45*	75	75*	105	120*	-*	120*	85*	45*	Z±*	138	(5)
3	Z-*	-*	55*	-30*	135*	-45*	-30*	Z-*	205*	Z±*	Z±*	115	115	(130)	(105)	(105)	(105)	(130)	(105)	(105)	(105)	(80)	(80)	(80)	(102)	(10)
4	(80)	(105)	(80)	(50)	(-130)	(80)	(80)	(80)	(80)	65	75	65	145*	135	Z-*	Z±*	Z+*	135*	Z+*	Z±*	75*	Z±*	Z±*	205*	(58)	(10)
5	Z-*	Z±*	Z+*	15*	95	Z±*	0	60	85	65	(90)	90	165	115	45	90	75	60	90	105	95	(65)	(55)	(60)	79	(19)
6	(60)	(65)	(75)	(85)	(85)	(85)	(75)	(75)	(30)*	(60)*	(95)	Z±*	(60)	75	345*	105	95	60	Z+*	(90)	90	(65)	55	65	(77)	(19)
7	60	65	45	(60)	Z+*	Z±*	(35)	(45)	55	30*	45	125*	Z+*	(145)*	(60)	(55)	(60)	105	-25	15	60	105	205	145	66	(18)
8	125	115*	75*	60	135	75	25*	125*	180*	90	Z+*	300*	85*	95*	105	155	145	105	105	95	75	135	125	5*	109	(14)
9	55	60	55	(90)	-225*	(85)*	Z+*	Z+*	75	Z±*	(75)*	(95)	105	90	60*	(60)*	55*	105	65	60	60*	45	45	75	70	(13)
10	75	60	45	60	65	85	65	75	75	90	90	115*	115*	115	135*	165*	135*	120	145	125*	135*	120*	105	95	85	(16)
11	105	85	45	15	45	45	55	60	125	120	210	175	90	95	85	105	105	105	125	125	135	120*	45*	-385*	98	(21)
12	Z-*	-375*	15*	105*	120*	85*	75	90	105	115	105	55	60	90	145*	150*	120*	105*	120	125	115	75	165	Z+	100	(13)
13	Z+*	85	45	Z+*	165	Z+*	105	Z+*	85*	225*	Z+*	435*	225*	135	120	210	120	125	120	120	115	90	175*	165*	121	(12)
14	75	75	85	45*	45*	-115*	45	60	60	85	90	90*	90*	95	85	85*	90*	85*	15*	75	-55*	0*	-15*	15*	75	(11)
15	55*	60	60	65	65	75	90	115	115	120	120	135	115	135	165	165	165	180	145	145	125	105	105	85	115	(23)
16	60	105	95	95	115	165	165	175	165	165	265	315	285	315	240	300	330	300	295	210	150	165	125	150	198	(24)
17	135	120	115	105	115	105	120	135	120	125	165	185	210	210	(165)	145*	135*	120*	165*	135*	125*	150*	150*	105*	142	(15)
18	135*	165	165	165	165	120	90*	125*	105*	85*	115*	120	135	180	195	135	115	185	185	135*	150*	165	125	90*	155	(15)
19	120	145	105	75*	90*	95	115	125	155	150	175*	90*	95*	105*	105*	115*	150*	235*	330	275	180	105	105	60*	154	(13)
20	-15*	45*	65	75*	35*	30*	25*	45*	Z-*	Z-*	-255*	-295*	-605*	-765*	-120*	45*	85*	85*	210	210	295	265	185	180	201	(7)
21	135*	75*	45*	60*	65*	75*	90	85*	55*	65*	90*	105*	85	105	150	145	95*	95*	135*	135*	85*	60*	90*	105	113	(6)
22	95	105	115	85	60	65	45	65	75	45*	-300*	-270*	90	-15*	-210*	Z-*	-45*	-55*	5*	415	120	30	65	225*	102	(14)
23	90	75	85	95	85	-60*	45*	65*	65*	75	105	115	(125)	150	125	105	120	105*	120*	125*	120*	125*	120	95	104	(15)
24	85*	90*	95*	85*	105	115	120*	75*	Z±*	90*	95	85*	85*	85*	120*	90*	120*	105*	105*	105	95	90	90*	75*	101	(6)
25	65	65	180	Z-*	Z±*	90*	90	115	120	120*	155*	180*	Z±*	135*	145*	345*	150*	145	115*	105*	95*	150*	Z+*	115*	111	(7)
26	120	90	Z±*	Z-*	120	150*	Z±*	300	120*	65*	65	90	90	95	85	75	75	75	65	60	75*	-15*	-90*	-185*	100	(14)
27	75*	120	135	165	155*	105*	-390*	-180*	-135*	-90*	15*	-210*	-210*	-135*	35*	60	45*	0*	-25*	-65*	-120*	-765*	-540*	-180*	60	(5)
28	Z*	150*	Z+*	(-105)	(85)	(125)	(145)	(145)	(145)	(145)	175	165	155	175	185	185	180	145*	Z+*	Z±*	Z+*	Z±*	Z±*	125	153	(14)
29	135	(120)	(125)	(120)	(120)	(Z+)	(125)	(125)	(120)	(120)	(115)	(115)	85	90	85	105	65	105	120	150	155*	-165*	-15*	55	(110)	(19)
30	75	15*	(65)*	(85)	(85)	(90)	(90)	30*	65*	-120*	Z±*	Z+*	Z+*	85*	90	75*	(25)*	(80)*	(50)*	(0)*	(180)*	Z+*	35*	30	(78)	(7)
31	Z+*	Z*	Z+*	-75*	-105*	Z±*	135*	120*	(-420)*	0	210	(-45)*	45*	105*	0*	(-525)*	-75*	-90*	(120)*	-375*	90	105	60	-	93	(5)
Mean	96	93	91	96	91	106	91	114	109	102	131	137	126	133	123	131	127	127	140	138	123	110	112	84	113	(403)
	(18)	(18)	(18)	(17)	(19)	(16)	(18)	(18)	(17)	(15)	(17)	(15)	(17)	(19)	(17)	(18)	(13)	(15)	(15)	(18)	(15)	(17)	(17)	(16)		
																							Mean for 0a days		[145	(5)]

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

19 LERWICK — Factor 3·24 (metre^{-1}) — FEBRUARY 1961

	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	(100)	(75)	(75)	(75)	(75)	(25)*	(75)	(75)	(100)	(75)	(75)*	(200)*	(-50)*	(Z+)*	(Z+)*	(Z+)*	(225)	(150)	(275)	(150)	(125)*	(Z+)*	(50)	(125)*	(113)	(14)
2	(25)	(75)	(100)*	(75)*	(100)*	(Z+)*	(Z+)*	(225)	(Z+)*	(Z+)*	(125)*	(100)*	(175)*	(100)*	(100)*	(125)*	(125)*	(150)*	(150)	(200)	(175)	(150)	(125)	(250)*	(141)	(8)
3	(125)*	(125)*	(100)	(75)	(100)	(100)	(75)	(75)	(150)*	-*	-*	(Z+)*	(175)*	(125)*	(200)*	(225)*	(150)	(150)	(150)	(175)	(175)	(125)	(75)*	(100)	(119)	(13)
4	(95)	(95)	(95)	(95)	(95)	(95)	(120)	(120)	(120)*	(145)*	(120)	(120)*	(335)*	(120)*	(145)	(240)	(Z+)*	(Z+)*	(170)*	(265)*	(190)*	(145)*	(145)	(Z+)	(122)	(12)
5	(425)*	(100)	(75)	65	50	40	75	90	105	125	140	170	125	135	85*	-40*	-630*	-215*	-420*	-855*	-70*	(Z-)*	-*	50*	100	(13)
6	(70)	(70)	(70)	(95)	(95)	(95)	(170)	(290)	(120)	(120)	(Z+)	(190)	(120)	(170)	(145)	(145)	(145)	(145)	(335)	(240)	(145)	(145)	(145)	(120)	(147)	(23)
7	(100)	(100)	(100)	(100)	(200)*	(125)*	(75)*	(75)*	(100)*	-100*	55*	90	120	100	105	105*	110*	175	180	Z+*	-280	-100	40	-105	(52)	(14)
8	75	85	(75)	(85)	(105)	(145)	(160)	(160)	145	145	170	155	145	120*	Z-*	-260*	-755*	-170*	(75)*	(135)	(135)	(140)	(145)	-*	(130)	(17)
9	-*	-*	-	-*	-*	-*	-*	-*	-*	-*	-*	-*	-	-	-	-	-	390*	210*	175	170	170	155	125	(159)	(5)
10	110	105	125	40*	-330*	-770*	-295*	215	260	30*	125	145	160*	140*	180	170*	160*	175	180	175	180	160	155	125*	164	(14)
11	100	105	90	70	70	65	65	110	70*	120*	120	170	155	135	90*	-210*	-110*	-295*	Z-*	Z-*	-350*	170*	205*	195*	105	(12)
12	105	70	65	65	110	110	120	140	110	110	110	120	120	140	145	75*	85*	90*	-5*	-70*	-55*	85*	140*	155*	109	(15)
13	105*	5*	105*	70*	-170*	55*	20*	100*	105	90	105	160	160	160	300	295	335	265	350	210	170	215	145	120	199	(16)
14	120	135*	110*	50*	5*	70*	140*	195*	40*	5*	65*	70*	70*	85*	(110)	190	195	215	155	135	135	190	135	190	161	(11)
15	265	215	155	170	180	135	140	140	135	125	105	140	140*	190*	140*	120	125	120	110	135*	140*	125*	105	110	144	(18)
16	135	145	145	110	135	125	140	155	125	205	245	175	205	205	240	300	285	300	335	180	210	215	205	140	194	(24)
17	160	140	210	180	140	125	145	155	135	140	135	180	170	140	90	85	85	75	55	50*	70*	50*	65*	85*	134	(19)
18	55*	50*	40*	-310*	-85*	-55*	210*	250	180*	180	145	135	110	55*	65	120	120	110	125	125	125	120	110	105	130	(15)
19	100	100	55*	5*	65*	30	55*	110	90	100	110	125	120	135	135	135	110	135	100	70	70	50	35*	70*	101	(18)
20	105*	105*	125*	55	100	75*	85*	125*	85*	100	135	110*	75	85	140	155	135	90	100	85	90	55*	55*	55	100	(14)
21	35	55	50	40	50	40	50	65	70	50	55	55	70	85	(100)	(105)	100	225	265	380	350	230	180	160	119	(24)
22	135	110	135*	135*	145	175	215	215	175	155	170	180	260	240	210	195	195	230	250	240	205	195	210	210	196	(22)
23	230	205	205	210	225	225	210	195	210	195	210	170	175	180	180	210	225	225	210	215	215	210	170	175	203	(24)
24	145	170	120	125	140	175*	110*	125	125*	140	140*	125*	135	155	140*	160*	125	155*	140*	125*	100*	105*	100*	65*	138	(10)
25	85*	55*	70*	Z*	-20*	55*	55*	155*	85*	20*	50*	55*	155*	140	195	240	250	280	Z-*	Z-*	-615*	Z-*	-170*	Z-*	221	(5)
26	-225*	125*	190	-85*	Z-*	Z-*	-615*	-345*	-70*	35	100	110	125	140	160	175	265	110*	-40*	85*	140*	180*	170	90	142	(11)
27	Z-*	Z-*	Z±*	-65*	-145	-75	Z*	70*	105	Z+	15*	280*	195	40*	215*	110	195*	110*	110	195	140*	40*	70	75	71	(9)
28	75	85	85	90	75	75	70	70	105	100	105	90	110	120	-	110	125	120	90	75	85	85	70	85	91	(23)
Mean	115	111	113	100	97	94	122	149	131	122	134	142	142	145	156	172	178	177	186	176	139	144	133	110	137	(423)
	(19)	(19)	(18)	(17)	(18)	(16)	(15)	(20)	(16)	(18)	(18)	(18)	(19)	(17)	(17)	(17)	(18)	(18)	(19)	(18)	(17)	(16)	(19)	(16)		
																							Mean for 0a days		[167	(5)]

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

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

19 LERWICK — Factor 3·07 (metre^{-1}) — MARCH 1961

volts per metre

	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
1	55	40	35	50	50	50	85	120	30*	-15*	-140*	-15	-20	15	50	50	55	50	50	100*	-70*	-125*	75*	70*	45 (16)
2	5*	20*	20	30	0	5	35	40	40	55	75	75	Z+*	Z+*	105	120	155*	90	90	85	70	70	65	35	58 (19)
3	30	50	20	30	20	20*	15	15	20	30	50	70	70	90	110	120	140	120	100	85*	(95)*	(95)*	(125)	(125)	67 (20)
4	(95)	(60)	(60)	(95)	(30)	(95)	(60)*	(155)*	75*	75	85	105*	105*	100	90*	85	85	70	40	40	30	35	(95)	(95)	71 (18)
5	(105)	(105)	(70)	(70)*	(70)*	(105)	(70)	(70)	(105)	(105)	(70)	(70)	(140)	(140)	(140)	(140)	(140)	(175)	(175)	(210)	(210)	(175)	(175)	(105)	(127) (22)
6	(180)	(145)	100	55	35	70	55	55	55*	55*	55	55	55	65	55	40	55	(70)	(110)	(110)	(110)	(70)	(70)	(70)	(77) (22)
7	(105)	(70)	(35)	(70)	(70)	(105)	(105)	(175)	(210)	85	105	100	100	105	110	100	105	100	100	100	70	40	-30	65*	(93) (23)
8	35*	110	125	90	50*	5*	(-30)*	(30)	(60)*	(30)*	(-30)*	(-60)*	(60)	(30)	(60)	(0)	(0)	(-30)	(0)	(125)	(155)	(155)	(155)	(185)	(78) (16)
9	(195)	(195)	(195)	(170)	(140)	(110)	(110)	(110)	(140)	105	110	110	155	160	155	170	160	145	210	215	210	195	215	245	164 (24)
10	275	210	180	160	140	110	120	120	100*	170	205	170*	90*	210*	50*	55	70	100	180	100	110*	85*	75	70	138 (17)
11	65	55	55	50*	70*	50	55	105	140*	50	40*	5*	(25)*	(50)*	(50)*	(50)*	(Z-)*	(Z-)*	(-70)*	(Z-)*	(-430)*	(Z-)*	(190)*	(25)*	(62) (7)
12	(25)*	(25)*	(25)*	(25)*	(-50)*	(-95)*	(-25)*	(50)*	(50)*	(Z-)*	125*	-30*	(65)*	(85)	(205)*	(105)*	(100)	(90)	(105)	(105)	(85)	(85)	(65)	(-30)	(77) (9)
13	35	40	40	50	50	105	-350*	-30*	-155*	70*	-70*	-210*	(95)*	(95)*	(50)*	(70)*	(95)*	(120)*	(120)*	(190)*	(170)*	(145)*	(265)*	(240)*	(53) (6)
14	(190)*	(120)*	(170)*	(50)*	(25)*	(25)*	(50)*	(70)*	(70)*	85*	90*	90	100	100	120	120	120	125	90	15*	75*	85	75	70	(100) (11)
15	55	90	120	120	65*	30*	65*	85*	50*	85*	70*	135*	40*	-250*	40*	105*	140	140	145	140	125*	120	105	85*	117 (10)
16	85*	70	75	75	100	110	110	135	85	85	85	75	55	55	5	0	90	125	105	70	30	55	55	70	75 (23)
17	65	50	20	5	70	85	(120)*	(95)*	(0)*	(Z-)*	(Z-)*	(Z-)*	(Z±)*	(Z±)*	(-480)*	(-480)*	(-310)*	90*	175	210	Z±*	125	120	155*	(93) (10)
18	0*	65*	65	-225*	40*	55	100*	Z±*	110*	-15*	Z±*	Z±*	105*	105	100*	100*	100*	85	85	85*	70*	55	65*	55*	75 (6)
19	90*	65	30*	50*	55*	Z±*	70*	50*	70	110*	90*	100	105*	125*	Z+*	85*	90*	90	100	85*	-140*	-250*	70*	55*	85 (5)
20	40*	5*	-65*	35*	40	50	70	70	65*	35*	40*	40*	20*	-50*	5*	85*	Z+*	75*	110	265	15*	Z-*	85*	55*	101 (6)
21	40	70*	50	40	35*	40	40	55	65	70	75	55	50	75	50	55*	85	70*	35*	40*	50*	55*	-5*	30*	56 (14)
22	-105*	-40*	40	40*	30*	40*	55*	55	65	65	65	55*	20*	50	70	65*	50*	(25)*	(0)*	(-25)*	(95)*	(120)	(95)	(95)	169 (9)
23	(70)*	(70)*	(70)	(70)*	(70)*	(50)*	(70)*	(70)*	(25)*	(70)*	(Z±)*	(170)*	(190)*	110*	140*	0*	20*	110	110	125	135	105	100*	70*	(109) (6)
24	55*	85	90	85	20*	100*	5	85*	100*	70	-20*	105	100	135*	70*	100	100	85*	65*	90*	100*	-365*	70	70	80 (11)
25	70*	75*	-140*	40*	55*	Z-*	-205*	35*	85*	120	140	125	140	85*	40*	35*	30*	-40*	-30*	5*	15*	35*	50*	110*	131 (4)
26	40*	70*	110*	100*	Z±*	155*	Z±*	Z+*	Z+*	350*	Z+*	Z+*	Z±*	Z±*	100*	180*	Z+*	125	Z+*	Z±*	-85*	Z+*	Z±*	Z+*	125 (1)
27	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	210	210	140	Z±*	Z±*	85*	65*	20*	-35*	85*	40*	55	55*	105*	70*	Z±*	Z+*	135 (3)
28	-85*	55	40	55	70*	140*	Z-*	Z-*	Z-*	55*	295	30*	70*	85	85	85	85	75	40*	5*	70*	70*	70*	30*	96 (9)
29	(0)*	(50)*	(70)*	(70)*	(50)*	(70)*	(120)*	(Z-)*	(-25)*	(120)*	85*	85*	105	100*	70*	100*	Z-*	155*	Z±*	120*	110	120	110	Z±*	(111) (4)
30	Z±*	20*	50	75	70*	75*	85	90	90	85*	85*	55*	90	100	105	105	120*	120	105	110	125	110	110	110	99 (16)
31	105	100	Z-*	85	75	75	90	110	110	105	105	100	75*	-*	155*	210*	490*	-100*	350*	160*	485*	205*	160*	180	103 (12)
Mean	100 (14)	89 (18)	71 (22)	74 (18)	63 (13)	76 (16)	70 (15)	92 (17)	91 (11)	89 (15)	109 (14)	80 (14)	86 (14)	85 (16)	87 (14)	86 (15)	96 (16)	94 (20)	107 (21)	134 (15)	112 (12)	101 (17)	97 (18)	100 (14)	91 (379)

Mean for 0a days [145 (2)]

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

19 LERWICK — Factor 3·27 (metre^{-1}) — APRIL 1961

volts per metre

	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
1	Z+*	225*	Z±*	285	Z+*	Z±*	270*	145	155	165	185	155	155	165	135	125	150	150	150	155*	155*	135	85*	105*	161 (14)
2	75*	65*	60*	75	85	125	105	115*	150*	Z+*	Z-*	125*	Z±*	Z±*	330	Z+*	225*	165	Z±*	Z±*	240	240	Z±*	Z±*	171 (8)
3	120	115	335	120	Z±*	Z±*	Z-*	(145)	(125)	120	125	120	195*	90*	275	Z±*	Z-*	195*	175	165	145	135	125	105	153 (16)
4	105	95	90	85	65	60	85	125	150	145	150	185	180	185	205	195	180	225	Z±*	Z±*	Z-*	150	135	Z±*	140 (20)
5	Z+*	Z+*	Z±*	Z+*	Z+*	135*	90*	120*	145*	120*	90*	90*	45*	115*	120*	115*	125*	155	155	270*	225*	255*	165*	155	155 (3)
6	165	145	150	150	125	145	180	145	105	105	115	145	150	155	150	180	185	185	185	210	135	125	120	105	148 (24)
7	85	75	75	60	65	60	60	75	85	60	65	65	75	(90)	205	175	Z-*	Z-*	Z-*	Z-*	-45*	60	65	65	82 (19)
8	65	30*	35*	30	65	75	90*	210*	60*	60*	60*	90	95	90	95	105	95	90	90	90	95	85	75	65	82 (17)
9	60	55	55	55	85	85	90	120	125	120	125	125	120	125	125	135	135	145	165	165*	155*	115*	90*	65*	108 (19)
10	75*	85*	45*	30*	-45*	-105*	-215*	145*	Z-*	(-55)*	(55)*	(0)*	(160)*	(180)*	(25)*	(110)*	(80)*	(135)*	(135)*	(110)*	(135)*	(110)*	(80)*	-30*	- (0)
11	-55*	-375*	-215*	-825*	-325*	-735*	-1125*	-195*	25*	(135)*	(430)*	(515)*	(650)	(515)	(700)	(Z+)	(Z±)*	(730)	(Z+)	(Z+)	(485)*	(Z±)*	(Z±)*	(Z±)*	(649) (4)
12	215*	325*	430*	430	80	25	55	55	25	55	90	145	150	135	135	135	150	155	205	165	120	90	105	75	123 (2)
13	-*	-*	-*	-*	-*	-*	-*	-*	(215)*	-*	(55)*	(Z-)*	(-380)*	(25)*	(25)*	(25)*	(0)*	(-55)*	(-245)*	(-25)*	(-55)*	(25)*	115	115	(115) (2)
14	90	85	85*	85	65	65	120	105	115	115*	115	105	135	95	Z-*	Z+*	205	255	255	165	120*	85	75	85	121 (19)
15	-30*	75	75*	85	-25	120*	-180*	95	75*	90	120	150	120	145	120	150	165	150	165	145	145*	120	105	95	115 (18)
16	95	120	95	65	85	90	205	205	265	195	235	175	135	275	165	185	270	360	245	215	255	330	295	195	198 (24)
17	-120*	85	75	75	85	90	105	95	105	105	75	90	90	120*	120	(135)*	105*	180*	145*	-295	135	85*	90	90	71 (17)
18	75*	85*	115*	105	65	25*	90	75*	120*	145*	135	125	150	150	135	120	150	145	205	255	235	240	150	135	152 (17)
19	115	120	90	90	90	95	75	85	75	120	115	135	145	150	155	175	150	165	150	75	95	90	75	75	113 (24)
20	90	105	85	95	135	120	180	150	120*	65*	85*	-35*	15*	75*	120*	135*	105*	120*	155	215	265	255	180	240	162 (14)
21	225	175	180	225*	185	180	180	175	(245)	(215)	(215)	(215)*	(-295)*	(-270)*	(-190)*	(245)*	180*	175*	205*	165*	155*	225*	405*	515*	197 (10)
22	525*	450*	360*	435*	570*	540*	450	395	435	420	305	285	150	165	270	285	450	255	195	375	390	365*	315*	360*	322 (15)
23	480	375	300*	255*	255*	150	115	95*	Z-*	Z-*	Z-*	Z-*	-135*	150*	155	155	185	150	125	150	255	Z+	120	35	188 (13)
24	175	65	165	60	150*	315*	360	615	675	215	165	135	215	325	360	(360)	275	240	315	325	305	360	365	390	294 (22)
25	525	390	255	285	355	420	510	485	390	365	420	315	300	405	495	495	435	415	355	270	345	450	660	675	417 (24)
26	600	540	445	355	355	315	435	Z-*	Z±*	115*	135	145	180	215	210	225	205	180	180	195	185	165	175	135	265 (21)
27	135	145	125	90	120	90	120	150	155	135	165	210	175	205	225	225	235	300	485	285	150	85	95	90	175 (24)
28	45	95	75	65	75	75	60	95	90	105	105	(45)	90	115	105	(120)	135	95	105	105	105	90	75	60	89 (24)
29	60	35	45	35	65	75	95	165	155	210	265	270	305	300	315	345	395	345	225	235	125	240	225	165	196 (24)
30	120*	60*	150*	155*	150	135	115*	255	120	135	155	150	180	210	215	235	195	135	95	120	180	195	155	85	163 (19)
Mean	180 (18)	152 (19)	146 (16)	126 (22)	113 (21)	124 (20)	175 (21)	185 (21)	189 (19)	162 (19)	163 (22)	153 (22)	179 (22)	201 (21)	225 (24)	206 (20)	217 (20)	226 (23)	199 (22)	173 (20)	198 (19)	177 (21)	163 (22)	147 (22)	175 (496)

Mean for 0a days [212 (7)]

Daily, monthly and annual means are computed excluding hours with precipitation and, of course, all indeterminate entries. The number of hours or days used in computing each mean is shown in round brackets. Entries in square brackets are means for 0a days (see Introduction) and the figure in round brackets is the number of days used in computing this mean.

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

19 LERWICK — Factor 3·35 (metre^{-1}) — MAY 1961

	Hour G.M.T. 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	
	volts per metre																									
1	60*	60*	50*	20	20	50	110	195	195	245	135	120	105	115	135	135	120	130	165	155	230	210	195	210	142	(21)
2	230*	245*	240*	335	195	180	185*	-75*	-675*	350*	350*	385*	-465*	Z±	155*	230*	385*	385*	400*	435*	505	495	520	735	424	(8)
3	510	245	215	285	315	520	680	315	285	210	235	225*	255*	245	285	370	330	360	315	365	305	300	635	580	360	(22)
4	365	365	465	510	285	240	275	450	420	270	225	210*	195*	Z-*	Z-*	Z-*	Z-*	Z-*	615*	565*	565*	795*	555*	525*	366	(12)
5	215	230	360	565	540*	565*	240*	225*	-135*	105*	-60*	185*	Z-*	-365*	Z-*	Z-*	Z-*	Z-*	Z-*	Z-*	140*	105*	105*	120*	342	(4)
6	65*	40*	45	50	100	155	225	205	155	125	155	125	140	155	195	270	135*	-1100*	Z-*	Z-*	-485*	-35*	110	105	145	(16)
7	155	120	135	150	150	150	155	125*	100*	125	125	120	105	135	135	105*	140*	140	150*	140	165*	165	125	180	139	(18)
8	240	240	215	155*	-165*	-950*	120*	125	120	150	185	270	270	(240)	180	245	210	165	180	185	155	120	110	95	185	(20)
9	90	80	90	80	-25*	90	95	110	125*	Z±	80*	95	95	95	30*	110	125	120	125	-95*	-15*	105*	110	95	100	(16)
10	35*	95	50*	45	80*	95	95	95	110	90	90	95	110	110	120	140	150	150	165	105	95	105	90	95	107	(21)
11	65	90	60	60*	20*	120*	270*	435*	365*	230	125	110*	125	90	110	75	75	120*	225*	150*	165*	120*	-80*	-450*	105	(10)
12	-285*	-165*	-20*	-360*	105*	120*	90*	95*	110*	90	75	65*	65*	665*	90*	95	95	90	90	90	90	65	65	60	82	(11)
13	50	50	50	60	60	60	65	75	75	75	75	75	95	95	105	125	135	125	125	125	150	135	110	95	91	(24)
14	80	75	65	75	75	80	90	110	105	105	120	120	95	120	135	135	125	120	110	125	120	110	80	60	101	(24)
15	60	50	50	60	75	65	80	95	95	90	80	75	80	80	90	95	80	110	125	125	125	110	90	65	85	(24)
16	65	60	60	60	65	75	90	90	(60)	65	75	65	65	95	135	120	135	125	120	125	125	120	120	110	93	(24)
17	95	95	95	80	80	105	95	110	105	105	95	105	95	110	125	120	150	120	105	110	65	60	105	120	102	(24)
18	95	95	105	95	105	95	105	120	135	110	105	90	75	65	65	75*	60	50	35*	35*	-15*	-80*	-75*	20*	92	(17)
19	50*	35*	50*	60*	35*	75*	80	60	65	45	45	35	50	45	50*	60*	60*	75	75	75	65	65	60	50	59	(15)
20	45	50	45	50	35	50	50	60	65	75	80	80	75	75	90	105	65	50	75	80	75	75	80	75	67	(24)
21	50*	75*	75	75	120	90	105	90	50	50	65	75	105	95	95	90	75	80*	60*	65*	80*	65	60	60	80	(18)
22	60	60	60	50	60	75	80	120	95	75	35	20	35	5	35	(50)	90*	90*	95	95	150	135	120	90	73	(22)
23	95	75*	80*	60*	35*	60*	60	80	90	80	80	75	80	140	150	155	165	150*	135*	135*	125*	110	105	90*	105	(14)
24	Z-*	Z-*	95	90	20*	65	90	90*	90*	90	225*	270*	95	60*	120*	75*	80	45*	110*	110	105*	80*	65*	80*	89	(8)
25	65	75	75	80	75	90	75*	Z-*	60	65	75	80*	75	Z-*	45*	90	80	80	80*	90*	95	90	Z-*	90*	78	(15)
26	45*	150*	Z±	Z-*	50*	60*	75*	65	75	50	50	45	50*	60	80*	65*	75*	80	65	65	90	60*	80*	35	62	(11)
27	80*	Z±	315*	105*	90	75	Z-*	75	90	80	80	90	0*	90*	120	150	140	140	110	95	95*	75*	80	65	99	(15)
28	60	50	50	50	50	80	90	75	75	60	65	80	135	165	120	125	140	125	125	120	105	125	105	140	96	(24)
29	135	-	-	-	-	-	-	-	120	120	105	80	90	(95)	120	135	125	110	105	75	Z+*	Z±	Z+*	-555*	109	(13)
30	60*	15	75	120	80	75	90	65	60	45	50	65	95	95	95	105	125	110	90	110	105	90	75	35	81	(23)
31	30	20	20	20	35	50	75	50	75	50	50	(-45)	-150*	15*	50*	Z±	Z+*	Z+*	-20*	35*	120*	50*	0*	15*	36	(12)
Mean	129	108	114	131	103	113	131	123	116	106	99	85	100	110	126	138	127	123	124	139	147	137	143	160	121	(530)
	(20)	(20)	(22)	(23)	(20)	(23)	(22)	(23)	(24)	(28)	(27)	(23)	(23)	(23)	(21)	(22)	(22)	(21)	(19)	(21)	(18)	(20)	(22)	(23)		
																							Mean for 0a days		[134	(7)]

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

19 LERWICK — Factor 3·25 (metre^{-1}) — JUNE 1961

	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	0*	45*	25*	65*	35*	Z±	-375*	-225*	-210*	-55*	105*	135*	Z-*	-105*	85	95	105	115	120	95	90	90	95	90	98	(10)
2	85	90	85	85	95	120	115	95	105	105	155	120	95	115	90	85*	210*	-35*	-375*	25*	120*	0*	300	155*	116	(16)
3	105*	375*	330*	300*	285*	315*	330*	450	375	240*	180*	155*	125	210	60*	95	90	155	95	65*	120*	90	90	105	171	(11)
4	115	125	125	115	95	105	115	120	135	145	135	135	150	165	255	390	205	265	305	305	285	255	245	270	190	(24)
5	390	390	420	205	180	240	330*	345*	390*	450*	540	450	375	240	175	165	210	435	495	300	240	360	270	375	323	(20)
6	375	450	450*	450*	360*	360*	330*	105*	-45*	-315*	-780*	-375*	135*	95*	145*	95*	105*	145	180	195	185	225	165	150	230	(9)
7	240*	165*	165	150	135	145	150	155	180	150	(145)	165	165	150	240	270	270	205	185	180	165	180	245	165	180	(22)
8	(150)	165	135	95	105	135	150	135*	155	150	145	120	115	115	125	145	150	125	135	-30	105	120	55*	0*	124	(21)
9	5*	90*	Z+*	Z±*	Z±*	Z±*	Z±*	0*	155*	145*	55	60*	Z±*	Z±*	Z±*	Z+	-210*	-1035*	115*	175	210	55*	45*	60	125	(4)
10	85*	45*	25*	45*	60	75	105*	65*	105*	90*	120	115	95	135	120	120	105	105	105	90	90	85	85	75	99	(16)
11	65	90	75	60	65	75	75	60	55	0	90	15*	60*	Z-*	-300*	Z-*	15*	90*	120	90	150	135	105	Z-*	82	(16)
12	30*	65*	60	65	135	155	120	125	75*	150	65*	0*	120	105	95	90	105	120	120	165	150	120	125	135	119	(19)
13	105	105	95	95	95	105	105	95	105	120	115	105	105	105	115	115	115	120	135	145	135	120	95	60	109	(24)
14	55	45	45	45	60	75	95	95	115	105	95	105	105	120	105	120	120	125	150	150	135	125	135	105	101	(24)
15	95	125	-	-	-	-	-	-	150	120	120	90	60	35	15*	105	120*	175*	265	225	165	150	105	105	128	(15)
16	105	90	115	125	150	165	135	105	120	120	90*	135*	90*	150*	180*	(165)*	165*	-165*	-360*	165*	90*	-660*	-105*	120*	123	(10)
17	30*	105*	145	150	135	120	90	90	85	85	75	85*	85	90	65*	65*	60	35*	55*	35	30*	60	90	90	93	(16)
18	90	75*	90*	75	75	60	75*	75	75	75	45	30*	30*	30*	75*	90	75	85	55*	95	90*	90*	0*	90*	76	(12)
19	90	90	90	90	90	75	90	60*	Z±*	Z±*	95	95	90	95	90	90	90	90	90	45*	90	65*	15*	95*	90	(17)
20	90*	75*	120*	105*	95	95	90	75*	125*	135*	(90)*	15*	105*	105	90	Z±*	0*	75*	105	95	85	25*	-150*	65	92	(9)
21	90	95	105	95	90*	-105*	90*	95	45	45	60	30*	-180*	-240*	30*	35*	-150*	15*	35*	55*	105*	-25*	5*	0*	79	(8)
22	0*	135*	240*	150*	150	240*	195	150*	165	135	90	60	95	90*	105*	60*	90	-30*	0*	45*	60*	150*	105*	85*	123	(8)
23	105	120	90*	75*	65*	60*	75*	95*	105*	105	120	115	120	135	135	150	135	90*	75	45*	90*	145*	165*	150*	120	(11)
24	165	75*	45*	75*	180*	-135*	195*	180	165	150	135	125	135	105*	30*	45*	115*	75*	60*	225*	180*	165*	155	135	149	(9)
25	105	75	75	75	105	105	75	90	105	105	75	85	90	105	95	105	125	105	135	175	135	135	120	105	104	(24)
26	90	75	60	75	90	175	150	120	155*	Z-*	Z±*	Z-*	135*	(75)*	55*	165	145	165	175	165	135	95*	125*	150	129	(15)
27	155	150	135	115	95	315*	210*	145	115*	150	120	120	105	115	115	120*	135*	120	120	120	135	165	105	90	125	(19)
28	75	55*	-60*	-75*	-60*	105*	120*	15*	-105*	-180*	25*	95*	45*	165*	-105*	375*	30*	-105*	-60*	135*	120*	145*	90*	15*	110	(2)
29	35*	75*	85	75*	75*	90*	155*	215*	270*	195*	180*	270*	270	255	185	180	165	105	105	210	255	180*	150*	330	195	(11)
30	215	330	125	90	105	285	435	540	420	225	210	165	215	270	285	300	215*	295	295	270	375	390	455*	315*	278	(21)
Mean	136	154	119	100	106	128	137	155	150	118	130	136	136	140	141	155	131	160	167	155	166	164	149	140	141	(443)
	(20)	(17)	(18)	(18)	(20)	(18)	(16)	(17)	(17)	(19)	(21)	(16)	(20)	(19)	(17)	(18)	(18)	(18)	(21)	(21)	(20)	(18)	(17)	(19)		
																							Mean for 0a days		[178	(9)]

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

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

19 LERWICK — Factor 3·27 to 10h. 12th, 1·8 from 12h. 12th (metre^{-1}) — JULY 1961

	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	480*	615*	540*	525*	525*	555	600	555	345	270*	195*	270*	240	135	90	90	75	125	120	150	135	120	105	85	220	(16)
2	85	85	120	165	150	135	165	150	105	105	125	125	145	120	135	155	150	135	90*	95*	150*	145	150	115	132	(21)
3	115	115*	75*	90*	105	120	125	150	105	120	90	165	155	175	145	175*	165*	195*	90*	45*	45*	-570*	-180*	90*	131	(12)
4	25*	-180*	95	135*	75*	75*	105*	75*	105	90	60	65*	-15*	55*	45	65*	65	30*	-90*	30*	45	0	35*	35*	63	(8)
5	85*	-120*	-45*	-435*	-645*	225*	85*	125	120	30*	55*	65	55	90	85	85	60*	55*	85	75	95	45	75	65	82	(13)
6	75	60	75	75	55	55	45*	45*	65*	35	55*	65*	75	60*	95*	95*	150*	245*	360*	185*	255*	175*	165*	150*	63	(8)
7	225*	285	180	120	120	210	105	90*	60*	90*	90	95	90	85	85	60*	75*	105	30*	210*	145	315*	405*	255*	132	(13)
8	165*	360*	300*	275*	175*	180*	360*	-525*	75*	180*	210*	195	90	90	90	90*	75	85	45*	60*	95*	120*	125	135	111	(8)
9	125	90	75	65	65	75*	85*	65*	95*	90	60*	65*	30*	45*	45	90	95	115	120	75*	75*	90	90	90	89	(14)
10	75	60	60	65	75	60	85*	60*	60	95	95	95	105	120	105	105	105	120	60	65	90	90	65	90	85	(22)
11	85	90	45	75	85	120	115	135	150	115	105	105*	75*	60	90	125	105	115	120	120	135	75	105	150	105	(22)
12	175	115	115	90	95	75	115	120	85	90	-*	-*	50*	50*	50*	80*	30*	50*	55*	50*	45	60	75	75	95	(14)
13	70	70	70	90	100	95	80	65	70*	-*	15*	175*	215*	185*	200*	145*	200*	215*	160*	120*	-175*	-145*	-350*	80*	80	(8)
14	130*	90*	55*	95*	70*	80*	210*	160*	255*	170*	240*	225	200*	375*	225*	145	145	145	140	150	145	110	110	110	143	(10)
15	95	90	90	90	95	120	115	135	130	130	110	110	110	135	125	90	210	200	190	185	160	175	320	370	149	(24)
16	375	410	425	295	280	280	240	215	215	250	170	170	240	240	185	215	215	265	280	280	330	425	415	450	286	(24)
17	290	190	255	215	225	210	170	210	200	185	170*	200*	145	145	120	155	170	160	170	130	130	145	160	130	175	(22)
18	110	135	135	210	240	210	160	130	160	160	120	125	130	110	55	90	95	120	130	95	120	115*	80*	55	132	(22)
19	45	70	80	120	85*	100*	70	105	105*	70*	90	80*	80*	40	30*	70*	70*	15*	40*	45*	50*	50*	95*	55*	77	(8)
20	70*	55	55	55	60	70	85	85	90	80	70	70	70	60	80	70	55	70	65	65	75	80	70*	90	71	(22)
21	70*	70*	55	50	50	50	70	100	65	70*	50*	50*	70*	50	70	35	65	50	50	65	55	70	55	70*	59	(17)
22	65*	45*	50*	90*	60*	90	80*	95	80*	20*	90*	105	85	65	80	70	75*	85	90	85	100	90	95	90	87	(14)
23	65	70	70	70	70	65	65	45	65*	55	55*	70*	75	80	80	90	80	50*	145*	80*	120*	240*	120*	85*	70	(14)
24	95*	90*	70*	120*	110*	110*	280*	230*	130*	150*	95	50*	95*	90	100	85	30	55*	105*	145*	-30*	70*	60*	55*	80	(5)
25	-190*	-215*	-160*	15*	30*	10*	40*	135*	110*	80*	50*	20*	-15*	80*	190*	225*	265*	240*	190*	225*	185*	185	150*	110*	185	(1)
26	90	95	90	40*	40*	50*	15*	90*	120*	150*	145*	225*	280*	175*	215	360*	360*	280*	105*	75*	110*	85*	95*	130*	123	(4)
27	70*	130*	75*	60*	65*	-40*	30*	85*	95*	50*	65*	70*	70	60*	60*	10*	-30*	-30*	-15*	60*	50*	25*	35*	60	65	(2)
28	50	50	55	55	60	65	70	60*	55*	40	80	65	90	70	25*	-15*	60*	55	50	55*	50*	85	110	85	67	(17)
29	70	75*	90	95	120	145	95	80	70*	70	70	70	70	70	90	95	110	145	125	110	120	140	135	110	101	(22)
30	95	65	65	70	65	70	95*	105*	130*	135*	160*	265*	170*	270*	200*	160*	190*	280*	190*	320*	305	240	185	210*	129	(9)
31	135*	160*	200*	160	135	265	310	200	110	130	160	160	145	175	145	120	120	105	115	115	160	190	145	135	157	(21)
Mean	116	116	110	111	113	146	153	150	136	108	102	123	115	105	103	106	109	122	116	121	133	128	140	131	121	(437)
	(18)	(18)	(21)	(20)	(20)	(21)	(18)	(18)	(15)	(17)	(15)	(15)	(19)	(21)	(22)	(18)	(18)	(18)	(16)	(14)	(18)	(20)	(18)	(19)		
																								Mean for 0a days	[140	(12)]

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

19 LERWICK — Factor 2·0 (metre^{-1}) — AUGUST 1961

	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	135	115	90	90	140	160	200	305	325	315	360	190	90	90	100	110	120	135	105	145	180*	240*	205	225*	168	(21)
2	135*	155*	110	140	145	180	180	145	145	120	120	115	100	125*	150*	125	115	120	105*	105*	135*	135	110	115	129	(17)
3	110	105	85	75	135*	105	95	110	115*	115	135*	115*	125*	125	125	125	135	115	125	155	160	180	200	250	131	(19)
4	170	125	125	110	155	155	180	135	125	135	160	180	180	190	155	135*	80*	100*	160*	55*	110*	155*	180	165	154	(17)
5	110	105*	80	70*	70*	75	70*	100*	85*	85	120	110	80*	85	115	180*	270	290	405	425	395*	305*	335*	225*	181	(12)
6	110	70	75	95	115	145	100	100	90	90	90	100	35*	270*	110	70	75	60	85	90	100	95	-	-	95	(20)
7	-	-	-	-	-	-	-	115	125	125	100	100	110	95	95	100	110	110	155	215	225	245	200	180	141	(17)
8	135	135	140	145	125	135	110	110	110	125	125	115	90	90	100	95	70	80	70	80	115	95	55	90	106	(24)
9	100	105	80	60*	60*	65*	65*	25	20	45	60	25*	30*	25*	20*	10*	10*	10*	25*	25*	10*	180*	225*	70*	62	(7)
10	35*	60*	25*	45*	115*	115*	100*	115*	80*	105*	75	50	50	40*	45*	60	70	65	80	70*	65*	95*	70	80	67	(9)
11	70	70	25*	60*	80	85	85	80	90	95	90	90	80	90	95	80	95	100	100	45*	80*	170*	215*	80*	87	(17)
12	20*	115*	115	105	115	135	130	90	80*	155*	105	115	125	120	125	115	115	110	135	145	145	115	100	100	118	(20)
13	110	160	215	180	155	155*	100*	110*	160*	160*	135	200	250	340	325	200	240	240*	200*	135*	115*	250*	315*	170*	209	(12)
14	225*	160*	135*	70*	100	145*	110*	155*	135*	215*	135	90*	35*	35*	120	100	95	105	115	115	115	115	110	95	110	(12)
15	90	85	85	90*	95	115	110	110	110	65	80	90	95	85*	90*	105	95	100	85	90	115	110	100	100	97	(21)
16	90	85	75	70	70	75	75	75	95	80*	65*	145*	145*	125	135	140	145	100	80	95	105	105	110	100	97	(20)
17	95	80	65	70	70	75	80	70	65	90	100	70	65	65	85	110	105	115	155	170	160	135*	145*	145	96	(22)
18	90	70	225*	495*	470*	360*	205*	200*	425*	470*	315*	225*	450*	335*	160	145	110*	180*	145*	225*	295*	245*	215	180	143	(6)
19	200*	200*	125	90	80	145	135	160	135	135	115	110	110	100	70	45	70*	100	110	100	100	70*	90*	70	107	(19)
20	70	65	70	65	70	65	65	65	70	70	80	80	90	70	70*	25*	20*	10*	70*	135*	215*	125*	110*	145	76	(15)
21	110	110	80*	70*	35*	135*	80*	115*	155*	125*	135*	145	100	100	110	80	90	135	100*	135	155*	125	135	100	113	(13)
22	100	55*	20*	-110*	100*	145	125	125	115	125	90*	90*	115	80	90	80	90	100	110	110	100	110	100	90	113	(18)
23	90	80	70	65	65	55	80	55*	-135*	-135*	0*	70*	80*	65	55*	135*	115*	260*	205	205	205	205	145	115*	118	(13)
24	115*	145	315*	Z±	135	115	Z-*	135*	160*	180*	125	115	115	125*	145*	135*	160*	200*	145*	150*	135	155	125	105	127	(10)
25	110	100	100	110	100	100	110	125	115	145	145	180	250	-90*	245*	135*	155*	-70*	250*	540	295	180	180	170	170	(18)
26	110	110	110	100	90	90	135	125	115	135	135	170	215	200	270	315	270	65*	100	125	155	205	295	110	160	(23)
27	110	110	80*	70	55	70*	80*	80*	115*	125	115	100	90	90*	110	100	80*	110	110	110	115*	135	125	110	105	(16)
28	80	70	80	70	80	90	100	100	115	180	65	70*	65*	80	145	135	200	325	405	415	340	225	405	335	184	(22)
29	245	225	245	245	280	425	380	Z+	425	350	290	360	605	720	605	495	-	-	Z+	250	260	260	245	Z±	364	(19)
30	Z±*	225*	70	90	55	35	55	55	55	55	65	55	45	45	45	35	45	45	55	65	70	65	65	55	56	(22)
31	65	80	55	45	55	55	55	90	65	80	80	155	225	225	225	270	235	290	235	430	295	200	70	115	154	(24)
Mean	109	105	103	101	107	120	123	110	126	128	123	130	145	148	153	135	139	129	144	191	168	153	154	131	132	(525)
	(23)	(22)	(22)	(20)	(23)	(23)	(21)	(21)	(20)	(22)	(25)	(23)	(22)	(21)	(23)	(24)	(21)	(21)	(21)	(22)	(19)	(20)	(23)	(23)		
																								Mean for 0a days	[146	(6)]

Daily, monthly and annual means are computed excluding hours with precipitation and, of course, all indeterminate entries. The number of hours or days used in computing each mean is shown in round brackets. Entries in square brackets are means for 0a days (see Introduction) and the figure in round brackets is the number of days used in computing this mean.

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

19 LERWICK — Factor 2·0 1st to 21st, 2·52 22nd to 30th (metre^{-1}) — SEPTEMBER 1961

	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	135	110	85	100	65	70	90	50	80*	125*	110*	160*	250*	240*	160*	200*	225*	270*	180	235*	270*	100*	160*	-225	111	(10)
2	335*	405*	295*	270*	335*	450*	405*	380*	425*	295*	250*	315*	235*	160*	170*	200*	115	125*	140*	135	120	125	110	90	116	(6)
3	80	85	65	65	65	70	70	80	70	70	115	90	70*	70*	100	80	70*	5*	30*	90*	115	105	100	160	88	(18)
4	125	155	135	70	75	70	80	80	70*	95*	70	55	40	40	70	55	80	80*	90*	35*	65*	65*	65*	-25*	80	(15)
5	55*	40	30*	-45*	-270*	-450*	-160*	-65*	-180*	-135*	0*	25*	100*	145	115	125	125*	110*	115	170*	245	160*	120*	115*	131	(6)
6	90	80*	65	65	70	30	70	180	180	145	145	150	145	135	125	110	100	90*	110	80	90	55*	65*	15	105	(20)
7	65*	90*	140*	155	160	155	155	115	115	100	80	70	40	65	65	70	70	90	60	70	100	75*	70	85*	95	(19)
8	70*	80*	55*	70	70	70	105	80*	65*	60	55	65	80	85	95	70	70	80*	70	45	55*	35*	75	70	72	(16)
9	55*	45*	40*	35*	60*	55	80	70	80	70	70	70	70	90	85	75	70	80	60	80	60	135	200	180	88	(19)
10	160	160	205	225	245	360	335	340	315	280	180	110	225*	180*	120*	90*	145*	120*	110	115	90	115	70	65	193	(18)
11	65	80	55	70	80	50	45	Z±*	-270*	200*	245*	135	100	115	110	100	110	95	80	90	105	90	75*	80	87	(19)
12	80*	55*	90*	Z±*	Z±*	90*	35*	135*	110	100	95	90	90	100	110	110	115	150	215	235	205	225	280	180*	149	(15)
13	125*	180*	190*	245*	270*	335*	-430*	0*	335*	65*	Z-*	225*	110*	125	115	125	130	135	150	315	250	340	245	225	196	(11)
14	70	160	145	125	100	100	115	145	115	110	110	110	125	145	180	160	200	215	250	225*	205*	180	235	200	150	(22)
15	245	270	225	155	-20*	90*	-115*	125*	0*	-565*	-135*	270*	155	115	165	170	155	160	170	115	120	125	105	110	160	(16)
16	100	110	110	130	155	200	315	200*	180*	160*	70*	-145*	Z±*	290*	290*	135	405	335	140	170	180	170	155	70	180	(16)
17	15*	-20*	35*	60*	65*	75	0*	45*	65*	-20*	65	60	75	80	80*	80*	105*	110*	100*	105*	180*	85	90	75*	76	(7)
18	65*	45	60*	40	60*	55*	60	45*	40*	65*	30*	20	20	25	55	35*	55	90	95	180	270	315	290	360	128	(15)
19	360	430	315	200	180	200	250	315	335	295	205	180	205	225	180	170	145	135*	70	25*	90*	Z±*	215*	160*	237	(18)
20	380*	270*	270*	180*	155	160	170	180	115	80	100	90	110	110	190	205	100	115	90	100	105	135	110	105	126	(20)
21	70	65	55	170*	270*	135*	Z-*	270*	425*	520*	510*	360*	340	145	115	150	150	160	205	160	270*	360*	380*	225	153	(12)
22	275	585*	440*	330*	365*	420*	385*	440*	385	330	275	255	230	365	530	585	640	640	605	735	770	660	495	405	481	(17)
23	310	310	420	770*	1045*	935*	1010*	990*	935*	605*	495	600*	605*	750*	825*	530*	570*	715*	605*	495*	640*	405*	55*	Z±*	384	(4)
24	55*	55*	-20*	20*	Z±*	35*	-55*	110	130	55*	-35*	110	105	115	110	130	130	125*	90*	145	125	130	125	-90*	122	(12)
25	75*	100*	0*	-75*	90*	90	115	125	155	185	110	70	90*	80*	65*	85*	100*	70*	110*	185	200	200	240	165	153	(12)
26	155	130	145	220	210	165	150*	190	130*	220*	220	135*	165*	190	285	295*	285*	265	230*	210*	110*	-275*	120*	20*	198	(11)
27	-275*	-75*	55*	65*	-110*	75*	130*	175	185	130	175	180	200	130	155	160	220	240	310	440	605	420	495	255	263	(17)
28	210	330	350	330	385	550	680*	660*	570	475	255*	Z-*	-165*	-20*	-275*	145*	255*	220*	330*	275*	330	350	350	15	354	(12)
29	75	75	45	45	55	95	115	145	155	140	150	210	285	285	265	350	295	385	495	495	515	495	440	440	252	(24)
30	440	385	405	440	440	420*	350*	255	200	220	230*	210	145*	145*	120*	155*	120*	220*	-80*	-220*	-65*	95*	125*	255*	333	(9)
Mean	174 (17)	173 (17)	177 (16)	147 (17)	157 (16)	142 (18)	136 (16)	160 (16)	201 (16)	174 (16)	151 (18)	117 (20)	134 (18)	135 (21)	153 (21)	157 (20)	168 (20)	210 (15)	179 (20)	205 (19)	230 (20)	232 (19)	214 (20)	173 (20)	171	(436)
																							Mean for 0a days		[207	(5)]

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

19 LERWICK — Factor 2·52 (metre^{-1}) — OCTOBER 1961

	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	550*	715*	605*	420*	295*	330*	475	450	485	505	330	430	350	330	420	505	605	605	475	440	495	540	495	405	463	(18)
2	310	295	330	330	240	275	330	365	330	385	395	350	385	385	330	340*	385*	440	460	385	365	320	295	265	344	(22)
3	230	185	230	220	220	165	165	155	180	175	185	230	230	220	185	210	155*	210*	200*	165	165	185	185	200	195	(21)
4	220	200*	220*	210*	220*	295*	460*	440*	405	420	385	285	370	605*	295	220	295	255	255*	165*	Z±*	Z±*	175*	210*	315	(10)
5	185	210	200	200	205	180	330*	220*	145*	165	185	185*	200*	210	130*	165*	Z±*	385*	110*	310*	405	475	440	385	265	(13)
6	495	625	605	570	395	265	255	275	230*	310*	220*	285	165*	220*	Z±*	Z±*	275*	Z±*	Z±*	295*	485	440	350	330	413	(13)
7	285*	210*	275*	220*	310*	275*	Z±*	200*	Z-*	130	265	295	350	385	385	385	350	275	240	200	230	255	220	165	275	(15)
8	175	155	255*	185*	155*	295	210*	220*	240	230	230	240	255	265*	Z±*	Z±*	220*	205*	210*	220	155	Z±*	110*	145*	220	(10)
9	155*	210	Z±*	50*	55*	65	100	110	105	110	110	115	125	180	240	265	255	275	530	440	405	220*	130*	120	209	(18)
10	-55*	-295*	-20*	175*	285*	165*	320	240*	210*	35*	95*	130	105	130	150	90*	100	115	185	440	330	330	360	475	244	(13)
11	440	330	240	240	0*	-165*	Z±*	90*	100	105	Z+*	130*	120	Z-*	165*	Z-*	Z±*	Z±*	Z±*	Z+*	Z±*	165*	130	110	202	(9)
12	295	Z+	120	240	110	120	100	110	105	110	100	105	95	95	75	45*	55*	0*	-20*	35*	45*	45*	75	70	120	(16)
13	60	80	70	110	130	130	120	120	125	130	180	200	185	215	220	240	275	275	295	295	275	320	330	295	195	(24)
14	350	340	285	220	190	240	185	135	35*	70*	100*	45*	130	135	115	120	105	110	110	105	90	75*	65*	65	168	(18)
15	60	70	75	80	90	145	275	275	350	200	165	90*	100*	115*	95	95*	100	55*	0*	100*	120	110	105	100	142	(17)
16	165	100	155	Z±*	Z+*	Z±*	Z±*	Z±*	Z+*	Z±*	Z±*	Z±*	Z±*	135	165*	Z±*	Z±*	Z±*	130	275*	Z-*	Z±*	165*	110	133	(6)
17	Z±*	120	105	100	Z±*	100*	65*	165*	0*	55*	155*	130*	45*	0*	100*	100*	330*	115	130*	100*	-75*	110*	105	100	108	(6)
18	90	100	100*	Z-*	Z±*	Z±*	145*	130*	110	75*	95	90*	95*	95	100	100	110	130	100	105	100	110	100	75	101	(15)
19	75	75	75	75	75	85	90*	165*	100*	95*	110*	110*	110	110*	90*	75*	110*	110*	100*	110*	90*	55*	25*	Z-*	81	(7)
20	Z±*	-295*	50*	50*	75*	105	120	80	90	95	120	130*	90	90	95	75	Z±*	255*	Z±*	110*	Z±*	295	Z±*	Z±*	114	(11)
21	Z±*	Z±*	Z±*	Z±*	145*	210*	145*	Z-*	Z±*	145	330	275	Z±*	Z±*	275*	215	220	165	210	275	275	255	220	230	235	(12)
22	210	185	200	220	230	215	200	240	255	220	220	210	220	210*	-165*	-145*	120*	-35*	0*	145*	175*	185*	55*	Z±*	217	(13)
23	110*	-55*	145*	145*	95*	90*	35*	110*	135*	135	135*	110*	100*	125*	125	145	135	130	135	145	120	110	100	100	125	(11)
24	100	90	125	105	130*	175	210*	Z-*	Z±*	Z±*	45*	-10*	10*	-155*	75*	190*	240	240	210	210	180	155	145	130	162	(13)
25	100	110	75	105	105	130	175	165	130	140*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	120*	115*	Z-*	Z±*	Z±*	110*	95*	122	(9)
26	90	80	75	90	90	120	100	130	130*	130	165	200	Z±*	Z±*	Z±*	255	210	210	210	385	210*	165*	110*	Z±*	159	(16)
27	200*	Z-	220	330	385	255	255	Z±*	Z+*	-285*	Z-*	-295*	-295*	-440*	-550*	-460*	Z-*	Z-*	Z-*	Z-*	Z-*	-660*	45*	55	250	(6)
28	-45*	27*	10*	35*	35*	45*	45	100	330*	165*	75*	-210*	35*	20*	15*	-100*	55*	55*	75*	75	75	75	70	60	71	(7)
29	60	60	60	65	75*	-35*	70	70	70	65	-55*	90*	130	Z-*	95*	110*	110*	Z-*	100*	95	90	75	70	65	75	(14)
30	55	50	65	75	75	90*	-165*	-110*	-275*	-275*	-10*	65*	75*	Z±*	Z±*	Z±*	110	255	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	98	(7)
31	Z±*	Z±*	Z+*	90*	90	90	90	-330*	90*	165*	90	130*	110*	110*	200*	130*	75*	55*	35*	35*	Z±*	Z-*	-45*	20*	90	(4)
Mean	188 (20)	173 (20)	174 (19)	188 (18)	175 (15)	170 (18)	188 (18)	185 (15)	205 (15)	192 (18)	209 (17)	239 (14)	203 (16)	200 (13)	202 (14)	228 (12)	222 (14)	240 (15)	253 (13)	249 (16)	242 (18)	253 (16)	211 (18)	178 (22)	205	(294)
																							Mean for 0a days		[299	(4)]

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

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

19 LERWICK — Factor 2·50 (metre^{-1}) — NOVEMBER 1961

	Hour G.M.T. 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	
	volts per metre																									
1	20*	0*	-65*	-35*	35*	55*	55*	60*	60	25	75*	85*	55	-295*	Z-*	-110*	-*	Z-*	-310*	-285*	-495*	-110*	-45*	Z-	47	(3)
2	-275*	45*	45*	-10*	-10*	-295*	-570*	35*	265*	110*	10*	Z-*	-75*	-330*	-495*	-220*	-220*	75*	95	100*	95	90	90	90	92	(5)
3	275*	100*	230*	95	310	Z+*	Z±*	100	210*	110*	100*	275*	275*	175*	Z+*	440*	330*	Z+*	Z±*	Z+*	Z±*	Z-*	275*	165*	168	(3)
4	145*	200*	275*	Z+*	130*	220*	Z+*	100*	100*	100	Z±*	Z±*	165*	95	110*	95	90	90	90	100	90	75	65	60	86	(11)
5	55	70	65*	-220*	-100*	45*	75*	100*	165*	200*	130*	75*	90	75*	55*	70*	90	110	65*	Z±*	Z±*	-110*	155*	110*	83	(5)
6	-35*	35*	35*	45*	60*	65	65	110	200	130*	130*	90*	55*	65*	110*	-240*	-55*	20*	35*	Z±*	0*	80*	95	95	105	(6)
7	55	-55*	-110*	90*	145*	200*	255	285	275	220	145	120	130	165	200	185*	185*	210*	220	220	175	210	200	210	193	(16)
8	295	255	55*	-880*	-385*	-220*	0*	65*	35*	-90*	-35*	100*	150	Z±*	100	90	75	95	100	105	Z±*	90*	75	90	130	(11)
9	75	65	60	65	100*	25*	60*	75*	20*	35*	Z-*	-240*	Z-*	-55*	-825*	Z-*	Z±*	Z±*	Z±*	Z±*	-20*	65	75	70	68	(7)
10	55	35	60	80	175	Z±*	Z-*	185	Z+*	95	95	145*	100*	75	95	175	120	105	115	90	90	95	60	55	98	(19)
11	55	55	55	55	60	60	60	65	65	65	Z+	Z+	40	60	60	60	-35*	65*	70	70	70*	65	55	55	59	(19)
12	55	55	50	45	50	55	70	80	100	90	100	95	100	100	75	100	100	100	100	90	90	110	60	70	81	(24)
13	65	55	55	55	60	65	75	75	110	100	75	55	145	Z+	330	75	80	85	85	80	65	65	45	55	85	(23)
14	40	35	45	25*	25*	55*	50	90	100	75	95	90	90	90	100	105	95	90*	90*	75	75	90	65*	65*	79	(17)
15	95*	80*	60*	60*	60	55	45	50	50	50	55	55	55	50*	50*	65*	80	75*	75*	90*	75	65	65	70*	58	(13)
16	55*	40*	40*	45	50	40	45	45	55*	45	55	65	55	75	75	75	75	90	75	70	70	65	55	50	61	(20)
17	45	45	50	45	45	-55*	45	45*	20*	60*	55	55	55	60	65	65	65	65	70	70	65	65	55	55	57	(20)
18	20	5*	20*	20	45	50	50*	55*	45*	75*	75	65*	70*	60*	45	25	70	80	65	20	60	65*	55*	55	48	(13)
19	45	45	40	40	45	35	50	60	50	65	50	55	70	75	70	75	80	100	75	70	70	75	50	45	60	(24)
20	45	50	45	45	45*	35*	45	75	65	80	95	90	90	90	75	65	65*	55*	120*	110*	115	100	95	80	75	(18)
21	75	80	75	65	65	75	75	75	90	100	90	80	80	95	110	110	125	145	160	165	155	155	200	220	111	(24)
22	200	175	145	120	125	130	160	165	165	145	145	145	165	230	200*	220*	55*	-10*	185*	145*	175*	175	135	90*	158	(16)
23	165*	255*	255	340*	-130*	275*	90*	75*	100*	Z±*	115*	295	Z+*	Z±*	Z±*	Z±*	Z+*	120*	110*	0*	55*	120*	55*	155*	275	(2)
24	Z±*	Z-*	Z±*	Z±*	Z-*	Z±*	145*	Z±*	130*	120*	110*	285*	Z±*	165*	220	Z±*	Z±*	Z-*	90*	120	120	130*	550*	275	184	(4)
25	Z±*	330*	Z+*	Z±*	Z+*	Z±*	Z±*	Z±*	95*	90*	310*	Z±*	110*	Z±*	75*	Z±*	Z±*	Z±*	Z±*	275*	Z±*	Z±*	255*	255	255	(1)
26	55	70	75	75	55	50	50	55	55	65	60	70	70	90	90	95	95*	100	105	100	95	75	70	75*	74	(22)
27	75*	65*	35*	65*	75	65*	65*	75*	75	75	440	715*	495	Z+*	90	Z+	45*	75*	75	75	65	50	45	50	124	(13)
28	45	40	55	55	55	70	70*	90*	100	90	95	115	-130*	110*	130*	165*	275*	Z±*	Z-*	Z±*	120	100*	90	80*	77	(12)
29	110*	200*	55*	Z+*	Z+	Z±*	Z±*	65*	110	145	330	Z±*	55*	110*	55*	-200*	75*	80*	105*	110*	125	Z±*	155	135	167	(6)
30	Z-*	165*	Z-*	550*	70*	55	100*	Z-	Z+*	Z±*	550*	165*	Z±*	495*	130*	Z-*	Z±*	Z±*	35*	150	120	110	35*	90*	109	(4)
Mean	75 (17)	75 (15)	76 (14)	60 (15)	85 (15)	62 (13)	78 (14)	101 (15)	104 (16)	91 (18)	121 (17)	92 (15)	114 (17)	100 (13)	112 (16)	86 (14)	88 (13)	97 (12)	100 (15)	98 (17)	97 (20)	95 (19)	87 (21)	103 (20)	92	(381)
																						Mean for 0a days			[78	(4)]

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

19 LERWICK — Factor 2·46 (metre^{-1}) — DECEMBER 1961

	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	105*	155	Z±*	200*	Z±*	130*	75*	125*	90*	220	Z±*	Z±*	105	90	120	90	110*	165	100	145*	165*	90	75	65	116	(11)
2	65	65	55	60	65	65*	65	65	115*	Z±*	Z±*	275*	75*	75	Z+*	75	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	65	110*	66	(9)
3	Z±*	60*	55*	Z±*	Z±*	Z±*	Z±*	Z-*	65*	70*	185*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z+*	130*	105*	100	105	95	90	98	(4)
4	110	Z±*	155*	90*	310*	75*	Z+	Z+*	121*	20*	65	80	130	120	130	130	100*	100*	220*	240*	175*	240*	550*	Z+*	109	(7)
5	440*	310*	75*	-35*	-240*	-130*	145*	90*	20*	75	100	95	75	90	100	100	95	110	120	Z±*	Z±*	Z±*	Z±*	Z+*	96	(10)
6	Z+*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	130*	Z+*	Z+*	155	220*	Z±*	Z±*	385*	Z±*	Z-*	Z+*	110	255	Z+*	440*	155*	95*	173	(3)
7	Z±*	Z±*	220	Z+*	Z±*	Z-*	110	Z±*	Z±*	-550*	Z-*	120*	185*	90*	120*	110*	100*	165*	110	90	90	75	75	75	106	(8)
8	80	90	145	100	130	100	0*	100	110	145	185	165	115	165*	220*	220	365	Z±*	165	45*	Z±*	135*	255	165	155	(17)
9	80	75*	45*	Z-*	-35*	90*	165*	155*	165*	185	155*	90*	100*	130*	175*	35*	130	100*	-365*	-495*	230*	165*	175*	160*	132	(3)
10	145*	175*	130*	155*	155*	130*	145*	240*	330*	265	220	275	295	310	310	145*	155*	210*	185*	185*	165*	130*	110*	-495*	279	(6)
11	-220*	-385*	-220*	-75*	-10*	45*	45*	-100*	-10*	-90*	35*	90*	115*	95*	80*	100*	100*	-20*	0*	-220*	-440*	-385*	-165*	100*	-	(0)
12	130*	155*	100*	110*	100*	90*	90*	100*	145*	70	135	140	275	310	310	350	-255*	100*	185	165*	120*	75*	75*	100*	222	(8)
13	100	130	145	140*	140*	165*	165*	145*	100*	110*	90*	75*	110*	140*	110*	115*	120*	110*	-55*	Z-*	-650*	-880*	-165*	130*	125	(3)
14	90*	90*	75*	90*	90*	90*	100*	265*	320*	130*	110	110*	90*	105*	130	220	200	240	185	135	130	255	230	130	179	(11)
15	120	110*	210	205	175	170	175	230	240	275	275	275	285	340	320	365	340	340	330	330	240	240	275	240	261	(23)
16	Z-*	-35*	20*	255	265	275	275	275*	275	255	155	145	155	130	155	160	125	130	135	210	145	105	100	150	180	(20)
17	150	90	105	130	75	75	80	65	65	60	75	25*	35	65	100	100	185*	180*	255	330	145	200	145	155	119	(21)
18	155	100	130	85	95	115	115	110	140	135	185	165	145	145	115	115	125	130	130	110	105	120	105	100	124	(24)
19	95	100	75	70	80	65	65	75	75	75	-	-	100	100	125	130	155	130	155	185	165	155	110	100	108	(22)
20	110	120	45*	90*	90	90	110	135	175	100	110	100	95	90	90	85	100	110	85	90	65	40	55*	45*	100	(20)
21	35*	45*	70*	65*	50*	65*	35	60	45	55	45	45*	45*	35*	45*	20*	75*	90*	65	65	55	55	55	45	53	(11)
22	45	-20*	-145*	0*	60	0*	65	65	130*	145*	75	90	90	65*	60	70	110	115	120	100	90	85	75	65	81	(17)
23	65	65	50	55	45	45	55	50	65	60	65	65	65	75	65	75*	75*	90	95*	100*	110	90	Z±*	55*	66	(18)
24	Z±*	Z±*	0*	Z-*	-405*	-530*	Z-*	Z-*	-20*	65*	50*	65*	90*	105	85	90	85	90	90	90	85	70	65	85	85	(11)
25	70	70	65	65	60	65*	70*	65	85	100	Z-*	Z±*	Z±*	Z±*	130	130	120	330*	185*	145	110	100	90	85	93	(16)
26	65	65	65	65	55*	60	55	60	60	60	65	65	70	75	85	90	90	100	90	95	85	75	65	55	72	(23)
27	Z±*	130*	110*	165*	110*	100	75	110	120*	Z±*	Z±*	Z±*	Z±*	90*	130*	90	75	90	0*	100	110*	145*	85	85	90	(9)
28	Z±*	90	Z±*	185*	75*	90	90	130*	90*	100	120	110	110	120*	130*	125*	110*	120*	145	120*	115	125	-	-	110	(10)
29	-	-*	-*	-*	-*	-	-	-*	-*	120*	105	105	100	165	120*	Z+*	Z±*	530	385*	385	310	Z±*	Z±*	Z±*	243	(7)
30	-495*	-440*	-585*	-575*	-110*	100	175	185	110	200	175	175	130	120	365	495*	825*	825*	Z+*	Z±*	Z-*	-585	-330	Z±*	68	(12)
31	Z±*	Z±*	Z±*	185	230	90	Z-*	Z±*	Z-*	Z+*	100	210*	220	165*	Z±*	200	Z±*	Z±*	130	-35	165	75*	145	185	147	(11)
Mean	94 (14)	95 (12)	115 (11)	116 (11)	114 (12)	106 (13)	103 (15)	98 (14)	120 (12)	135 (18)	126 (20)	137 (15)	137 (19)	141 (17)	155 (18)	148 (19)	151 (14)	169 (14)	142 (19)	158 (17)	128 (18)	78 (18)	95 (18)	110 (17)	125	(375)
																						Mean for 0a days			[124	(1)]
Annual Mean	127 (218)	121 (215)	116 (217)	114 (216)	110 (212)	118 (215)	128 (209)	136 (215)	141 (198)	127 (223)	132 (231)	129 (210)	135 (226)	137 (221)	147 (224)	145 (217)	147 (207)	156 (210)	154 (221)	152 (218)	159 (214)	147 (221)	142 (233)	134 (231)	136	(5222)
																						Annual mean for 0a days			[165]	

Daily, monthly and annual means are computed excluding hours with precipitation and, of course, all indeterminate entries. The number hours or days used in computing each mean is shown in round brackets. Entries in square brackets are means for 0a days (see Introduction) and the figure in round brackets is the number of days used in computing this mean.

	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
		hr.		hr.		hr.		hr.		hr.		hr.
1	1b	0·5	(1b)	(1·2)	2a	5·0	1b	1·1	1a	0·2	2b	5·9
2	2c	(6·0)	(1b)	(0·7)	1b	1·9	1c	1·7	1b	2·3	1a	2·5
3	2(b)	(3·3)	(1b)	(0·1)	1a	0·3	1c	2·3	0a	0·0	1a	0·1
4	(1c)	(2·2)	(0b)	0·0	1b	0·5	1b	1·4	2b	4·3	0a	0·0
5	(1)b	2·3	(2c)	(6·7)	(0a)	(0·0)	1c	1·2	2c	10·5	0a	0·0
6	1b	0·7	(0b)	0·0	1a	0·1	0a	0·0	2b	4·8	2b	3·9
7	1b	2·5	(2b)	(3·1)	1a	1·1	2b	3·9	0a	0·0	0a	0·0
8	1b	0·6	2(b)	(3·5)	(2a)	4·4	1b	0·1	1a	1·9	1a	1·0
9	1b	1·3	(1b)	-	0a	0·0	0a	0·0	1b	1·8	2c	8·1
10	1a	0·1	(1b)	2·5	1b	0·1	2b	8·3	1b	0·5	1a	0·3
11	1a	1·4	2b	5·1	2c	6·4	2c	9·9	1b	2·1	2b	3·8
12	1b	2·4	1a	2·1	2b	4·1	1b	0·3	2b	3·1	1a	0·9
13	1c	0·9	1b	1·4	2a	4·5	2(b)	(5·9)	1a	0·1	0a	0·0
14	1a	2·6	1a	1·6	1a	0·6	1b	1·0	0a	0·0	0a	0·0
15	0a	0·0	0a	0·0	1b	1·5	1b	1·1	0a	0·0	(1a)	(0·1)
16	0a	0·0	0a	0·0	1a	1·0	0a	0·0	0a	0·0	2a	3·9
17	0a	0·0	1a	0·3	2c	7·7	1b	1·1	1a	0·1	1b	0·4
18	0a	0·0	1a	2·5	1b	2·2	1b	0·3	1a	2·5	1b	0·7
19	1a	0·1	1a	0·3	2b	3·6	0a	0·0	1a	0·1	1b	1·2
20	2b	6·5	1a	0·5	2b	3·8	1a	1·3	0a	0·0	(1)b	(2·5)
21	0a	0·0	1a	0·1	1a	0·7	1a	2·8	1a	0·1	2b	5·7
22	2c	4·4	0a	0·0	1a	2·7	0a	0·0	1a	0·6	1a	1·7
23	1b	0·4	0a	0·0	1a	1·5	2b	5·1	1a	0·1	1a	0·1
24	1b	0·5	1a	0·1	1a	1·8	1a	0·4	1b	1·5	1b	1·6
25	1b	1·1	2c	6·3	2a	3·1	0a	0·0	1b	1·6	0a	0·0
26	2b	3·1	2b	7·2	2c	5·2	1b	0·5	1b	0·9	1a	2·9
27	2b	13·8	2c	6·1	2c	5·6	1a	0·1	1b	1·0	0a	0·0
28	1c	2·9	0a	0·0	2b	4·4	1a	0·1	0a	0·0	2b	8·1
29	1(b)	1·2			2b	4·7	0a	0·0	(1b)	(2·3)	0a	0·0
30	(1b)	(1·9)			1a	0·7	1a	0·1	1a	0·3	0a	0·0
31	(2b)	(7·3)			1b	1·7			2b	4·9		
Total	-	70·0	-	51·4	-	80·9	-	50·0	-	47·6	-	55·4
No. of days used	-	31	-	27	-	31	-	30	-	31	-	30
Mean	-	2·3	-	1·9	-	2·6	-	1·7	-	1·5	-	1·8

	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
		hr.		hr.		hr.		hr.		hr.		hr.
1	0a	0·0	0a	0·0	1a	0·2	0a	0·0	2b	10·9	1c	1·7
2	1a	0·2	1a	0·2	0a	0·0	0a	0·0	2b	10·4	1c	2·2
3	1b	2·3	1a	0·1	1a	0·5	0a	0·0	1c	1·5	1c	1·7
4	2b	3·8	1a	0·3	1a	0·3	1b	1·1	1c	0·8	1c	1·1
5	2b	3·8	0a	0·0	2b	6·5	1b	1·1	2b	3·1	2c	4·9
6	1a	0·3	1b	0·5	1a	0·5	1b	2·1	2b	4·3	1c	2·2
7	1a	0·6	0a	0·0	0a	0·0	1b	1·1	1b	1·1	1c	2·6
8	1b	1·1	0a	0·0	1a	0·2	1b	1·7	2b	7·2	1b	1·3
9	1a	0·4	2b	5·1	1a	0·3	1b	1·4	2c	8·9	2b	4·0
10	0a	0·0	1a	0·5	0a	0·0	1b	2·0	1b	0·5	1b	1·5
11	0a	0·0	2a	3·9	1b	1·1	1c	2·2	1b	0·3	2c	11·1
12	1a	0·5	1a	0·5	1b	1·7	1b	1·4	0a	0·0	1b	1·5
13	1a	2·9	1a	0·7	2b	3·4	0a	0·0	0b	0·0	2b	4·3
14	1a	0·3	1a	1·5	0a	0·0	1a	0·6	1a	0·1	1a	0·1
15	0a	0·0	0a	0·0	2b	3·3	1a	0·4	0a	0·0	1a	0·1
16	0a	0·0	1a	0·9	1b	0·9	1c	2·6	0a	0·0	1b	0·9
17	0a	0·0	1a	0·9	1b	1·8	1c	2·5	1a	0·5	1a	0·2
18	0a	0·0	1a	1·1	1a	0·5	1b	0·5	1a	0·3	0a	0·0
19	1a	0·7	1a	0·1	1b	1·3	1b	1·0	1a	0·1	1a	0·1
20	0a	0·0	1a	1·1	1a	0·1	2c	4·5	1a	0·1	1a	0·2
21	1a	0·2	1a	0·8	1b	0·4	2c	3·0	0a	0·0	1a	0·4
22	1a	0·1	1a	1·3	0a	0·0	1b	1·7	1a	0·9	1b	1·6
23	0a	0·0	1a	2·5	1b	0·7	1b	1·5	2c	3·6	1b	0·4
24	1a	1·2	1b	0·7	2b	3·7	1b	2·7	1c	2·2	2c	5·1
25	2a	5·1	1a	0·8	1b	0·8	2c	4·8	2c	4·3	1b	0·7
26	1b	1·1	1a	0·2	1a	1·4	1b	1·5	1a	0·1	1b	0·3
27	2a	3·4	1a	0·2	1b	2·1	2c	14·3	1b	0·2	1c	1·9
28	1a	0·1	0a	0·0	2b	3·8	2b	3·3	1b	1·8	1b	0·8
29	0a	0·0	1b	0·7	1a	0·1	1b	2·1	1c	2·8	-c	-
30	0a	0·0	1b	1·5	1a	2·8	2c	5·9	1c	2·6	2c	7·6
31	0a	0·0	1a	0·3			2c	3·3			2c	3·6
Total	-	28·1	-	26·4	-	38·4	-	67·0	-	68·6	-	64·1
No. of days used	-	31	-	31	-	30	-	31	-	30	-	30
Mean	-	0·9	-	0·9	-	1·3	-	2·2	-	2·3	-	2·1

Annual values: Character 0 1 2
No. of days used 70 217 77

Duration: Total 647·9 hr.
No. of days 363
Mean 1·78 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 1961

	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 18,000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1	765	774	777	784	785	781	787	783	788	782	772	765	771	778	776	775	774	782	785	787	787	784	781	782	779	705
2 *q*	781	781	781	784	787	790	772	775	772	787	784	779	782	790	784	781	779	785	787	787	787	784	784	789	783	792
3	787	787	789	788	789	795	798	789	783	785	780	780	782	787	785	781	778	781	784	784	789	792	789	787	786	869
4 *q*	787	787	788	789	792	794	799	792	789	786	785	788	789	791	788	784	785	791	797	801	802	799	799	792	791	994
5 *q*	794	793	793	796	799	802	801	801	796	787	786	790	791	791	791	790	789	792	796	791	771	776	779	785	791	980
6	787	787	787	796	796	798	800	797	791	789	786	778	785	787	790	788	790	785	789	792	792	790	787	787	790	954
7	782	778	780	785	787	797	801	797	793	793	792	788	795	792	783	776	780	786	792	794	795	798	791	784	789	939
8 *d*	764	752	758	777	773	789	793	781	774	773	777	782	785	783	772	768	764	752	753	752	772	768	760	771	771	493
9 *d*	765	767	769	765	782	795	797	780	763	763	755	753	763	764	772	763	748	748	733	725	732	730	752	753	760	237
10	763	764	767	769	773	775	775	778	773	762	765	767	771	767	769	769	772	779	779	777	775	780	779	779	772	527
11 *q*	779	780	779	782	787	787	791	790	786	774	768	767	771	778	782	781	782	786	787	787	788	788	787	789	782	776
12	788	787	787	792	792	798	800	799	787	781	777	778	778	785	789	792	790	791	787	792	792	791	791	785	789	929
13	787	782	782	783	785	790	793	793	781	773	780	776	763	775	785	790	787	794	792	796	777	780	787	784	784	815
14	782	782	780	785	787	789	792	790	788	787	783	780	782	791	793	794	793	790	793	788	782	775	768	779	786	853
15	782	779	783	793	790	790	797	800	799	798	795	793	783	779	783	785	775	786	792	788	788	768	794	746	786	866
16	784	782	781	790	813	814	787	775	780	771	771	769	774	780	782	780	782	781	780	787	799	791	792	790	785	835
17	787	788	796	795	792	799	798	789	789	788	778	772	778	774	774	777	785	781	787	792	792	793	790	791	787	885
18	798	795	795	799	803	806	805	805	802	777	785	782	773	756	748	774	787	790	788	768	775	781	787	788	786	867
19 *d*	788	787	775	783	782	787	790	795	795	793	782	778	784	785	783	748	725	733	752	748	738	747	736	737	769	451
20 *d*	698	733	730	751	799	799	760	759	764	746	740	748	745	733	730	730	742	758	769	771	765	772	772	772	*754*	96
21	775	776	777	783	794	786	790	771	771	758	756	741	735	759	765	760	733	760	765	771	777	783	777	781	769	444
22 *d*	780	780	785	786	782	791	797	783	796	783	775	729	756	768	777	779	744	780	770	786	797	786	787	788	779	685
23	787	784	775	778	784	786	785	783	775	773	776	776	779	779	778	777	787	786	791	790	796	793	790	792	783	800
24	799	792	785	788	787	803	788	779	803	797	787	767	750	752	762	765	764	763	788	756	776	783	786	811	780	731
25	802	768	776	780	787	787	790	788	782	778	763	741	753	755	768	775	779	778	784	785	783	788	785	782	777	657
26	784	787	784	790	797	805	800	799	796	792	776	772	759	759	778	771	770	773	762	773	775	782	783	776	781	743
27	777	782	780	786	791	795	799	788	781	784	773	775	776	778	775	785	787	788	787	792	792	791	792	788	785	842
28	811	784	783	780	787	796	794	793	790	776	775	767	772	771	775	768	774	779	776	770	771	778	784	788	781	742
29	776	775	782	780	790	794	798	795	783	777	776	773	780	785	782	787	786	779	771	770	775	787	786	784	782	771
30	787	789	787	791	792	795	793	792	782	780	773	777	781	785	788	787	785	789	792	794	793	791	785	788	787	896
31 *q*	791	790	788	798	801	801	799	795	796	788	782	782	785	790	797	793	792	793	793	794	796	795	793	791	*793*	1023
Mean	781	780	780	785	790	*794*	793	788	785	780	776	*771*	773	776	777	777	775	779	781	780	782	782	782	782	781	
Sum 23,000+	1217	1172	1179	1336	1485	1614	1569	1434	1348	1181	1053	913	971	1047	1104	1073	1008	1139	1201	1188	1229	1244	1253	1239		Grand Total 581,197

MAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

22 ESKDALEMUIR (D) — 10° + — JANUARY 1961

	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 500·0+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	
1	24·1	23·3	22·6	23·3	24·6	26·9	28·9	24·9	25·7	26·0	26·2	26·3	26·9	27·0	25·8	24·9	25·4	25·3	24·9	24·1	23·7	23·9	23·9	23·9	25·1	102·5
2 *q*	24·0	23·9	24·0	24·1	24·1	24·1	23·7	23·1	23·3	24·1	24·3	24·4	25·7	26·0	25·9	25·5	25·1	25·1	24·2	23·7	23·1	23·0	23·5	24·5	24·3	82·4
3	24·1	23·7	23·3	22·8	23·4	23·3	23·4	24·1	25·7	25·9	25·3	25·3	26·2	26·5	24·9	24·4	24·4	25·4	25·2	24·2	23·4	23·3	23·6	24·0	24·4	85·8
4 *q*	23·9	24·1	24·3	24·4	24·4	24·4	23·3	23·3	24·1	25·0	25·3	25·8	25·3	25·9	26·0	27·1	26·2	26·4	25·5	24·4	24·0	23·8	23·9	24·0	24·8	94·8
5 *q*	24·8	24·8	24·9	25·1	24·7	24·2	23·8	23·5	23·3	23·9	25·1	26·7	27·3	27·1	25·9	25·6	25·7	25·4	25·1	25·3	23·3	21·2	22·5	23·4	24·7	92·6
6	24·5	25·0	25·5	25·7	23·2	23·6	22·8	23·0	24·2	26·8	26·9	28·0	30·9	29·2	27·7	26·4	25·8	25·9	25·9	25·1	24·1	23·4	23·3	23·1	25·4	110·0
7	22·6	21·9	23·6	17·8	21·0	22·1	22·8	23·6	24·2	25·6	26·9	27·3	28·4	28·5	27·7	27·6	26·4	25·9	25·4	25·0	24·3	24·6	24·1	22·8	24·6	90·1
8 *d*	18·5	18·4	15·5	15·7	16·9	20·3	21·5	23·3	23·2	24·8	26·6	28·8	30·3	30·6	31·3	30·5	29·2	29·0	29·5	23·7	22·8	24·1	22·9	18·4	24·0	75·8
9 *d*	21·7	22·5	23·9	26·1	25·1	24·0	24·4	27·7	28·1	30·9	29·0	27·4	29·7	29·9	32·4	32·7	32·3	33·1	33·8	23·0	20·0	16·1	7·3	15·1	*25·7*	116·2
10	20·5	22·8	23·3	23·3	23·5	23·9	23·7	23·6	24·0	25·9	27·4	27·7	29·1	28·5	27·8	26·2	25·1	24·7	24·2	24·0	23·3	22·6	23·5	23·6	24·7	92·2
11 *q*	24·0	23·8	23·4	23·4	23·3	24·0	23·5	23·1	22·9	23·3	24·1	25·1	25·9	26·5	25·8	25·0	24·5	24·3	24·1	24·0	23·8	23·8	23·8	24·0	24·1	79·4
12	24·1	24·4	24·4	24·6	22·8	23·4	23·5	23·3	23·3	23·1	24·3	26·4	26·9	27·3	26·4	25·6	25·8	25·1	25·7	24·2	21·9	21·1	23·0	23·3	24·3	83·9
13	22·3	21·9	23·6	22·6	22·5	22·5	22·8	22·8	22·5	25·5	26·2	27·8	29·3	31·4	28·7	27·8	26·9	26·0	25·2	25·9	25·7	24·5	23·1	24·1	25·1	101·6
14	21·8	22·3	21·8	22·5	22·8	23·6	23·6	23·7	23·7	23·7	24·2	25·3	26·4	27·7	26·8	26·1	25·8	24·9	26·9	26·6	26·3	22·8	18·3	18·5	24·0	76·1
15	19·0	21·1	21·9	19·6	19·9	22·4	23·3	23·7	24·2	24·1	25·1	26·2	27·3	27·6	27·6	26·0	24·6	24·7	24·8	24·2	23·3	16·5	−0·9	7·9	21·8	24·1
16	20·3	23·8	22·9	23·7	25·5	24·7	28·2	26·5	24·7	24·1	24·3	25·0	26·3	26·9	25·5	24·4	24·1	24·0	24·2	24·8	25·0	24·2	23·5	23·7	24·6	90·3
17	23·9	24·6	25·5	23·3	22·2	24·1	24·1	24·9	24·5	24·3	24·3	24·9	25·8	27·1	26·8	26·0	24·8	23·0	23·3	23·4	23·2	23·0	23·3	22·0	24·3	82·3
18	21·2	23·9	23·9	23·4	23·9	24·3	24·3	24·2	23·5	26·6	26·5	27·7	29·7	33·9	29·3	28·4	27·3	25·7	25·1	22·6	16·5	22·6	19·9	17·4	24·7	91·8
19 *d*	21·9	22·1	24·4	23·6	24·1	24·1	23·9	23·4	23·3	23·1	24·0	25·1	26·7	27·4	27·1	23·9	23·6	21·3	23·8	8·2	10·4	11·0	11·0	7·5	*21·0*	4·9
20 *d*	9·7	18·5	20·5	15·2	21·1	21·7	24·8	23·8	23·9	24·2	25·5	27·3	27·3	31·8	29·0	26·6	26·4	22·2	20·1	22·3	22·5	22·5	22·8	23·1	23·0	52·8
21	23·2	23·4	23·1	24·3	27·4	23·4	25·1	25·9	29·0	28·6	29·5	27·5	28·2	26·8	27·6	27·8	23·2	23·1	23·3	22·6	22·1	22·1	22·7	23·3	25·1	103·2
22 *d*	23·3	23·2	24·0	23·8	23·3	23·4	25·9	29·8	27·7	25·5	27·1	27·2	29·5	26·8	26·8	25·7	17·6	23·5	22·8	21·4	19·4	21·9	20·6	21·4	24·2	81·6
23	21·2	22·2	22·0	23·9	22·9	22·8	23·1	23·5	23·4	24·2	24·5	25·7	26·7	26·5	25·3	24·7	23·4	23·5	23·7	24·3	24·0	23·3	23·1	20·6	23·7	68·5
24	21·3	18·7	21·5	22·5	23·7	24·4	28·1	29·3	25·3	25·0	26·9	27·4	27·5	29·0	27·6	28·0	26·5	22·3	9·9	23·8	23·3	22·3	22·8	21·5	24·1	78·6
25	16·5	18·5	22·1	22·2	27·4	23·8	22·9	23·1	22·5	22·8	24·8	25·1	29·2	30·0	27·9	27·3	25·1	23·3	22·3	23·3	23·0	22·7	21·9	21·5	23·7	69·2
26	21·9	22·3	23·1	23·3	23·7	23·2	23·3	23·6	23·2	24·1	25·1	28·0	28·3	27·7	29·1	27·1	25·5	23·6	20·7	21·2	21·5	18·0	21·6	22·0	23·8	71·1
27	23·8	24·7	24·6	23·1	23·3	23·4	24·0	23·6	23·1	25·4	24·6	25·7	26·6	27·5	25·1	25·5	25·1	24·2	22·8	23·6	23·7	23·4	22·9	23·1	24·3	82·8
28	23·1	21·2	21·3	22·5	23·2	23·2	23·4	23·4	23·7	23·2	23·7	26·4	27·3	29·2	26·4	27·5	25·4	26·2	14·1	19·5	19·8	19·9	20·6	19·9	23·1	54·1
29	23·0	23·1	24·5	23·3	24·2	24·0	24·0	24·0	23·4	23·0	24·3	26·2	27·4	28·5	24·2	23·7	23·4	25·0	25·1	24·7	20·3	21·2	22·4	21·8	23·9	74·7
30	23·2	23·8	24·7	24·3	25·9	23·3	23·0	22·5	22·6	22·9	23·3	25·5	26·7	26·8	25·6	24·9	25·0	25·1	25·0	24·1	23·5	23·3	23·0	22·7	24·2	80·7
31 *q*	23·5	22·7	25·7	23·7	23·3	23·3	23·0	22·9	22·4	22·1	23·0	24·2	26·4	27·5	22·2	25·0	25·6	25·9	24·7	23·9	23·6	23·4	22·8	22·6	23·9	73·4
Mean	22·0	22·6	23·2	22·8	23·5	23·5	24·1	24·2	24·1	24·8	25·4	26·4	27·6	*28·2*	27·0	26·4	25·3	24·9	23·9	23·3	22·4	21·9	*21·0*	21·1	24·1	
Sum 600·0+	80·9	100·6	119·8	107·1	127·3	129·8	146·1	151·1	148·6	167·7	188·3	217·4	255·2	273·1	236·2	217·9	185·2	173·1	141·3	121·1	94·8	79·5	50·7	54·7		Grand Total 17967·5

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) + — JANUARY 1961

	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 9000+
	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	399	392	388	384	383	381	378	381	382	388	390	389	385	386	390	393	390	389	388	388	388	389	389	389	387	299
2 *q*	389	389	388	387	385	384	384	383	383	386	385	384	382	384	386	388	388	388	388	389	389	388	388	384	386	269
3	385	384	384	384	383	383	381	380	379	380	382	380	379	378	381	386	388	388	388	389	388	385	384	384	383	203
4 *q*	384	384	384	383	383	382	381	382	381	382	384	384	383	383	384	387	386	386	387	385	383	383	382	382	384	205
5 *q*	382	382	382	381	380	380	380	379	378	381	381	380	381	382	382	384	382	382	382	384	390	393	390	386	383	184
6	384	382	382	377	377	377	377	377	376	377	378	381	378	382	384	386	385	386	388	388	385	388	388	385	382	168
7	385	387	382	382	382	378	377	380	380	377	377	377	377	380	384	384	386	388	386	385	383	383	383	384	382	167
8 *d*	381	384	382	378	381	377	374	378	382	382	380	377	377	386	394	401	411	445	485	457	426	407	401	399	398	545
9 *d*	392	389	386	382	376	375	376	377	380	382	388	395	400	411	419	432	442	464	498	503	472	451	422	388	*413*	900
10	384	391	394	394	393	392	392	392	392	393	392	390	389	390	391	393	395	394	393	393	393	392	389	388	392	399
11 *q*	386	386	387	388	388	387	386	387	388	390	390	389	387	385	388	388	388	388	388	388	386	386	384	383	387	291
12	383	383	382	381	382	382	382	383	386	386	385	384	384	384	384	386	388	388	388	389	389	389	387	387	385	242
13	385	385	384	384	384	382	382	382	385	386	384	383	385	384	387	390	390	389	389	390	397	399	398	395	387	299
14	394	392	389	387	385	383	383	383	383	383	384	384	382	384	384	385	385	386	384	388	393	400	406	401	388	308
15	395	393	388	382	381	378	377	376	375	377	377	377	377	382	388	387	389	388	386	387	387	392	376	356	382	171
16	363	373	378	376	361	347	351	362	368	377	382	382	381	382	383	384	385	384	385	385	380	382	383	383	*376*	17
17	383	382	377	376	377	377	377	377	377	378	381	382	379	383	388	388	389	389	386	382	381	381	382	382	381	154
18	377	374	377	377	377	373	373	371	369	375	375	377	381	389	396	395	389	388	388	397	404	390	382	376	382	170
19 *d*	376	376	369	369	376	378	378	378	377	377	377	376	374	377	385	403	427	437	435	434	403	399	345	338	386	264
20 *d*	313	324	319	331	343	346	356	371	378	385	390	396	400	412	434	457	465	447	419	400	395	393	389	388	385	251
21	387	385	386	381	367	367	370	376	376	382	384	388	394	395	396	412	436	427	411	403	396	390	389	385	391	383
22 *d*	382	382	382	380	383	382	380	377	373	379	380	388	390	394	396	396	413	403	399	394	387	384	384	382	387	290
23	374	371	372	372	372	375	377	380	381	382	382	379	378	383	388	390	390	389	389	388	385	384	384	383	381	148
24	377	375	376	376	373	371	370	371	370	375	376	377	382	387	391	395	397	408	404	397	394	391	386	373	383	192
25	363	371	371	376	370	362	369	373	377	379	382	388	388	394	397	393	393	394	393	388	389	387	386	388	382	171
26	383	379	379	378	377	376	377	377	378	378	378	378	386	396	393	394	400	399	401	397	396	393	386	382	386	261
27	381	375	374	381	382	377	377	380	383	384	388	382	380	385	389	388	389	388	389	388	385	384	383	383	383	195
28	371	369	372	375	377	377	378	380	380	381	380	380	378	385	389	389	391	393	402	396	397	391	385	382	383	198
29	382	381	378	378	377	377	377	378	381	384	383	381	378	384	389	389	390	391	396	399	399	390	385	384	385	231
30	383	381	381	377	376	375	377	378	380	382	380	376	374	378	383	383	382	380	379	381	381	382	383	383	380	115
31 *q*	381	380	376	372	376	377	377	377	378	382	383	383	381	380	382	380	382	379	382	382	380	379	381	382	380	112
Mean	380	380	379	378	378	*376*	377	378	379	382	383	383	383	387	391	394	397	398	*399*	397	394	391	387	383	385	
Sum 11,000+	784	781	749	729	707	658	674	726	756	830	858	867	870	985	1105	1206	1311	1345	1376	1314	1201	1125	980	865		Grand Total 286,802

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

24 ESKDALEMUIR — JANUARY 1961

	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	γ	h. m.	γ	h. m.	′	′	h. m.	′	h. m.	γ	γ	h. m.	γ				°A.
1	09 09	792	760	00 10	32	06 17	30·5	21·8	02 05	8·7	00 10	401	377	06 40	24	2,3,3,2,1,1,0,1	13	1	83·9
2 *q*	23 16	797	775	11 36	*22*	13 35	26·6	21·8	21 49	4·8	16 12	389	380	12 12	9	0,1,1,2,2,1,1,2	10	1	83·9
3	21 08	799	773	17 01	26	13 10	27·3	22·0	02 59	5·3	16 58	389	377	12 46	12	1,1,2,1,1,1,1,2	10	0	83·8
4 *q*	20 03	804	780	15 30	24	15 10	27·5	22·5	06 54	5·0	15 31	388	380	09 01	*8*	0,0,1,1,1,1,1,1	6	0	83·9
5 *q*	07 21	803	764	20 29	39	12 59	27·7	20·4	21 50	7·3	20 50	396	378	08 31	18	0,0,1,1,1,1,3,2	9	1	83·9
6	03 46	804	774	11 23	30	12 28	31·8	22·3	07 15	9·5	19 14	388	373	03 50	15	1,2,2,2,2,1,1,1	12	1	83·9
7	21 03	806	771	02 18	35	13 25	29·4	16·5	03 18	12·9	02 00	388	375	12 26	13	3,2,1,1,2,1,1,3	14	1	83·9
8 *d*	06 26	801	731	18 40	70	18 37	*39·8*	13·9	04 03	25·9	18 46	503	373	06 28	130	3,3,3,2,3,3,3,3	23	1	83·7
9 *d*	05 59	802	699	18 52	103	18 25	38·0	-3·0	22 38	*41·0*	18 52	*527*	373	04 36	154	2,3,3,3,3,4,4,5	27	1	83·9
10	21 12	783	757	00 29	26	12 40	29·5	18·8	00 14	10·7	16 14	395	379	00 09	16	2,0,1,1,2,1,1,2	10	0	83·8
11 *q*	06 56	793	765	11 55	28	13 05	26·6	22·8	08 40	*3·8*	10 08	393	385	06 04	*8*	1,1,1,0,1,0,0,0	4	0	83·9
12	21 07	810	774	11 00	36	13 36	27·6	18·4	20 53	9·2	20 48	393	379	03 30	14	0,2,2,1,1,2,3,2	13	1	83·9
13	19 10	806	759	12 33	47	13 29	32·3	20·5	01 03	11·8	21 46	400	382	11 31	18	2,0,2,2,2,1,3,2	14	1	83·9
14	24 00	798	757	22 12	41	13 30	28·2	16·5	22 59	11·7	22 28	408	382	12 36	26	1,1,0,1,1,2,1,3	10	1	83·8
15	22 20	*879*	698	23 05	*181*	14 13	29·8	-6·9	22 14	36·7	22 01	408	351	23 28	57	3,2,3,3,2,2,1,6	22	1	83·7
16	05 12	832	760	07 07	72	06 50	29·1	16·3	00 01	12·8	18 56	388	345	05 24	43	3,3,3,1,1,1,3,3	18	1	83·7
17	23 53	809	765	14 00	44	13 49	28·5	17·4	23 52	11·1	16 23	391	373	03 08	18	2,2,1,2,2,2,2,2	15	1	83·7
18	08 07	814	717	14 32	97	13 46	36·3	12·0	20 15	24·3	20 14	411	369	08 21	42	3,1,2,2,4,3,4,3	22	1	83·8
19 *d*	22 20	825	696	20 28	129	18 01	29·2	*-11·5*	19 53	40·7	17 46	446	331	23 41	115	3,2,2,1,3,4,5,5	25	1	83·7
20 *d*	05 20	815	*664*	00 28	151	13 09	33·3	0·8	00 01	32·5	16 50	469	*297*	00 41	*172*	5,5,3,3,3,4,4,2	29	2	83·8
21	04 36	805	706	16 09	99	10 39	30·9	21·1	22 05	9·8	16 48	446	373	08 26	73	2,3,3,2,3,4,2,1	20	1	83·7
22 *d*	23 45	830	699	16 20	131	12 40	33·1	10·9	16 27	22·2	16 38	423	372	23 51	51	1,2,2,4,3,4,4,4	24	1	83·8
23	20 22	800	768	16 01	32	13 06	27·3	19·2	00 08	8·1	16 10	392	369	01 35	23	2,2,2,2,1,2,2,2	15	0	83·8
24	18 26	837	730	18 04	107	07 52	31·3	-0·9	18 18	32·2	18 09	417	365	23 59	52	3,2,3,3,2,3,5,4	25	1	83·7
25	00 47	819	729	13 15	90	13 13	32·4	13·3	00 45	19·1	14 21	399	353	00 53	46	4,3,2,3,3,2,2,2	21	1	83·8
26	05 47	810	740	13 10	70	14 23	30·2	13·8	21 35	16·4	18 41	403	374	05 40	29	1,2,2,2,3,2,3,3	18	1	83·7
27	06 14	802	765	14 13	37	13 35	28·9	20·3	18 20	8·6	18 29	390	372	02 09	18	2,2,2,2,2,2,2,1	15	1	83·7
28	01 34	841	742	18 23	99	13 31	30·1	5·3	18 38	24·8	18 37	408	363	00 48	45	4,1,1,2,3,3,4,2	20	1	83·7
29	21 33	801	752	19 50	49	13 40	29·3	17·5	20 01	11·8	19 57	403	377	12 18	26	2,2,2,1,2,2,3,2	16	1	83·7
30	04 48	800	768	10 50	32	04 29	28·2	21·9	00 01	6·3	22 58	383	372	12 12	11	1,2,1,2,1,1,0,1	9	0	83·7
31 *q*	06 15	804	779	11 04	25	13 36	28·1	22·0	09 04	6·1	11 03	384	372	03 16	12	2,2,1,1,1,1,1,1	10	0	83·8
Mean	- -	810	746	- -	65	- -	30·3	14·4	- -	15·8	- -	410	368	- -	42	-	-	0·81	83·8

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.

21 ESKDALEMUIR (H) — 16,000γ (0·16 C.G.S. unit) + — FEBRUARY 1961

	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 17,000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1 *q*	794	794	792	792	793	797	798	798	795	788	780	777	783	790	793	790	790	784	788	795	795	793	795	795	791	1989
2 *q*	794	795	798	800	800	802	804	800	798	793	787	785	783	788	791	791	791	793	798	795	798	795	793	793	794	2065
3	794	795	795	798	798	798	798	797	794	795	784	783	792	794	773	787	794	788	800	800	800	793	790	783	793	2023
4 *d*	784	786	787	789	790	790	790	797	797	788	781	780	780	800	783	772	788	795	788	794	752	598	566	671	764	1346
5	703	713	726	710	721	756	742	751	724	728	735	742	748	752	753	751	753	759	761	764	763	765	767	766	*744*	853
6	763	771	773	773	778	787	795	800	778	772	765	765	765	782	772	740	767	777	774	772	761	763	752	770	771	1515
7	774	767	768	766	767	775	775	772	763	755	751	749	762	772	780	778	781	781	783	789	778	772	777	775	771	1510
8	767	768	769	772	775	778	779	777	773	774	770	774	783	787	790	785	782	788	790	768	782	778	787	782	778	1678
9	776	780	786	779	778	783	790	783	778	768	761	762	765	778	787	780	783	785	786	788	788	790	787	782	780	1723
10	781	787	783	783	783	787	786	783	787	789	785	782	780	782	786	788	791	794	792	790	782	788	787	785	786	1861
11	782	784	788	807	789	797	803	798	796	791	777	763	767	777	779	780	785	787	787	787	780	785	787	792	786	1868
12 *q*	792	791	792	793	794	797	796	794	790	781	777	780	782	783	784	787	784	788	792	795	795	794	793	795	790	1949
13	798	798	799	804	806	807	808	810	793	743	713	731	751	753	752	748	753	743	747	767	780	782	777	785	773	1548
14	782	785	784	785	789	791	788	787	782	774	769	769	773	777	781	782	784	789	790	790	772	778	778	789	782	1768
15	788	783	787	788	792	798	794	796	794	783	775	765	774	783	781	775	780	783	788	790	789	793	794	795	786	1868
16 *d*	802	813	803	801	806	806	812	804	780	773	734	748	755	746	745	754	747	762	772	770	762	778	782	780	776	1635
17 *d*	785	785	780	782	784	787	793	799	791	779	769	763	754	784	772	771	776	775	766	773	746	747	733	727	772	1521
18 *d*	684	704	735	765	755	761	763	783	776	748	728	740	765	762	787	773	768	777	797	773	776	783	783	786	761	1272
19	790	774	782	780	783	788	785	784	777	776	766	773	750	771	786	782	767	780	769	788	787	792	792	786	779	1708
20 *d*	794	792	772	781	782	784	790	798	783	758	757	770	761	758	793	773	779	783	776	780	771	784	799	776	779	1694
21	784	782	783	774	788	792	796	781	781	773	769	758	758	760	781	790	771	789	792	772	757	771	767	775	777	1644
22	782	787	787	788	791	799	797	786	789	776	765	764	766	768	775	772	775	782	790	791	792	797	812	806	785	1837
23	791	784	787	792	795	792	790	794	792	780	771	766	765	772	781	780	783	789	793	793	805	787	788	795	786	1865
24	797	797	795	794	795	791	802	792	788	778	771	772	778	787	788	790	789	788	791	791	792	792	793	793	789	1944
25 *q*	793	793	792	793	794	795	796	798	792	779	774	776	781	790	793	794	793	794	798	802	801	798	803	797	792	2019
26 *q*	793	794	791	792	795	801	803	805	798	785	774	769	774	783	791	790	792	793	797	802	801	800	797	802	793	2022
27	802	801	802	807	798	811	807	803	799	792	783	782	786	791	802	799	799	800	804	806	805	804	800	799	*799*	2182
28	802	793	784	787	798	801	803	803	792	798	784	780	779	791	790	791	791	796	795	790	780	794	783	791	791	1996
Mean	781	782	783	785	786	791	*792*	792	785	776	*766*	767	770	777	781	778	780	784	786	786	782	778	777	781	781	
Sum 21,000+	871	896	920	975	1017	1151	1183	1173	980	717	455	468	560	761	869	793	836	942	1004	1015	890	794	762	871		Grand Total 524,903

MAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

22 ESKDALEMUIR (D) — 10° + — FEBRUARY 1961

	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 400·0+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	
1 *q*	21·9	21·4	21·6	21·9	22·7	23·2	23·4	22·9	22·6	22·6	23·0	24·2	26·2	25·9	25·2	25·3	26·1	26·4	26·0	25·6	24·6	24·1	23·0	23·0	23·9	172·8
2 *q*	23·1	23·4	23·3	23·4	23·6	23·4	22·9	22·5	22·6	22·7	23·5	24·7	25·9	26·4	25·4	24·7	24·8	24·6	24·4	24·0	23·6	23·0	23·2	22·7	23·8	171·8
3	22·8	22·9	23·4	22·8	22·8	21·8	21·9	22·0	23·0	24·4	26·3	29·2	31·1	34·2	34·0	25·2	26·9	28·7	25·6	24·1	23·7	22·3	21·1	20·5	*25·0*	200·7
4 *d*	19·6	20·4	20·3	20·9	21·3	20·8	21·2	21·1	22·2	23·4	24·7	26·3	26·8	30·1	31·7	30·9	30·2	32·5	22·3	6·4	15·1	0·3	6·9	−6·3	20·4	89·1
5	5·0	16·2	21·8	19·6	20·3	15·7	16·2	21·6	25·3	25·5	25·2	24·8	26·2	25·8	23·7	21·6	21·6	22·2	21·9	21·6	21·1	21·0	21·2	21·2	21·1	106·3
6	21·1	21·7	21·1	21·1	21·3	21·9	21·7	21·9	21·3	22·5	22·6	23·8	24·2	27·0	26·8	27·7	24·6	24·6	24·0	24·0	21·1	17·2	18·3	21·8	22·6	143·3
7	20·8	18·2	16·1	18·4	17·5	20·2	18·9	19·7	20·6	22·0	23·9	25·7	28·0	28·5	27·1	25·7	25·0	25·2	24·6	23·1	23·1	23·2	19·8	16·3	22·1	131·6
8	16·7	16·2	18·8	20·3	20·3	21·0	20·8	21·3	21·6	22·4	23·9	25·9	27·7	27·2	27·7	27·0	25·6	24·2	25·3	22·9	25·3	21·4	19·2	20·7	22·6	143·4
9	21·1	17·8	16·7	18·5	20·3	20·1	20·1	20·8	21·2	22·1	22·9	25·6	26·1	27·1	27·0	26·4	24·8	24·3	24·6	24·0	23·6	22·7	21·9	19·0	22·4	138·7
10	21·7	19·3	20·0	20·8	21·0	21·5	21·1	20·9	21·2	21·3	22·7	24·1	25·1	25·5	25·6	24·5	24·2	23·9	24·3	24·6	23·6	23·0	22·1	24·5	22·8	146·5
11	19·2	19·2	20·0	19·7	20·7	21·2	21·6	21·7	21·2	21·9	24·0	27·2	28·4	27·7	26·5	25·0	23·7	22·6	22·1	22·2	20·2	20·0	21·2	22·1	22·5	139·3
12 *q*	22·8	22·8	23·0	22·3	22·0	20·8	21·1	20·7	20·2	20·4	22·3	24·3	24·6	24·7	24·1	23·2	22·8	22·8	22·9	22·9	22·6	21·8	21·0	21·9	22·4	138·0
13	22·8	23·0	23·2	23·1	22·9	23·0	22·3	22·2	20·8	19·9	27·5	31·9	30·2	29·7	26·5	29·9	23·5	25·6	20·3	21·0	21·7	21·3	20·7	21·0	23·9	174·0
14	22·0	22·5	21·6	21·2	21·2	21·1	20·9	20·4	20·2	20·6	22·2	23·4	24·4	24·6	24·4	23·3	23·2	23·4	23·2	22·9	19·4	20·3	19·8	16·7	21·8	122·9
15	19·8	22·1	21·9	22·2	22·9	22·5	22·5	21·3	21·2	21·7	23·7	24·8	24·4	25·1	24·7	22·9	23·0	22·6	22·1	21·9	20·7	21·6	22·1	22·2	22·5	139·9
16 *d*	22·8	20·9	19·2	20·0	20·7	21·5	22·1	23·3	24·3	24·7	21·7	22·9	32·4	28·0	29·7	29·1	23·4	21·1	21·9	21·2	17·2	18·8	21·1	21·1	22·9	149·1
17 *d*	21·1	21·1	22·2	22·1	22·0	21·9	21·8	21·4	20·4	20·0	23·2	27·0	25·8	24·3	27·0	24·3	24·3	22·4	23·5	18·9	12·9	7·7	−7·7	−2·0	*19·4*	65·6
18 *d*	6·8	5·2	8·3	17·1	21·9	24·3	27·0	22·6	23·2	23·8	23·4	25·6	27·8	23·9	23·9	24·3	22·5	3·6	13·1	22·3	22·0	21·4	19·9	19·7	19·7	73·6
19	17·1	23·0	20·2	21·8	21·8	21·6	22·8	23·6	24·3	23·9	23·6	27·2	28·1	26·5	26·5	26·0	21·7	23·3	14·6	17·5	21·6	22·0	21·3	23·4	22·6	143·4
20 *d*	17·8	14·7	19·9	21·9	20·5	22·6	22·0	23·2	23·1	23·3	24·5	25·3	28·0	24·4	26·7	29·7	16·6	23·4	18·7	12·9	17·1	15·3	18·4	17·8	21·2	107·8
21	21·1	23·1	24·1	25·4	24·9	23·0	22·2	22·1	21·5	21·6	22·8	25·4	27·1	25·8	24·1	26·7	23·7	17·1	13·5	17·1	15·2	11·5	18·5	20·5	21·6	118·0
22	23·3	22·4	23·4	27·9	22·1	21·1	21·4	22·0	21·6	21·5	21·9	24·2	26·1	27·9	27·8	25·0	19·9	20·5	23·4	22·7	20·4	16·5	22·7	21·1	22·8	146·8
23	17·4	20·5	21·3	21·1	21·5	22·8	23·4	23·7	21·1	20·0	20·7	23·3	26·5	26·4	26·8	26·6	24·4	23·8	22·8	22·1	15·0	20·3	19·8	19·6	22·1	130·9
24	20·4	22·1	21·1	20·8	20·5	26·1	26·1	21·8	19·5	19·0	19·9	22·4	24·7	25·6	25·1	23·9	22·3	21·6	22·0	21·9	21·7	21·2	21·8	21·6	22·2	133·1
25 *q*	21·6	21·6	21·8	21·8	21·3	21·1	21·0	20·7	19·8	19·9	21·1	23·1	26·2	25·9	25·2	24·8	23·8	23·6	23·4	23·0	22·7	22·7	19·9	20·4	22·3	136·4
26 *q*	20·3	20·1	20·8	22·5	21·6	21·3	21·3	21·0	20·3	19·6	21·0	23·5	27·0	27·5	27·7	26·4	25·2	24·3	24·1	22·9	22·0	22·1	22·0	22·1	22·8	146·6
27	22·3	22·7	22·5	23·7	21·6	18·0	19·7	20·4	19·2	19·3	22·2	25·2	28·2	29·4	29·4	27·3	25·2	24·5	24·5	23·4	22·7	22·5	22·1	21·8	23·2	157·8
28	18·8	16·3	16·5	17·3	20·0	19·1	19·8	19·8	19·1	20·8	23·3	26·1	29·3	29·6	28·6	26·2	24·2	23·7	23·3	21·0	19·3	16·6	17·2	20·0	21·5	115·9
Mean	19·7	20·0	20·5	21·4	21·5	21·5	21·7	21·7	21·5	21·8	23·1	25·3	*27·0*	26·9	26·7	25·8	23·8	23·1	22·2	21·4	20·7	19·3	19·2	*19·1*	22·3	
Sum 500·0+	51·2	60·8	74·1	99·6	101·2	102·6	107·2	106·6	102·6	110·8	147·7	207·1	256·5	254·7	248·9	223·6	167·2	146·5	122·4	98·1	79·2	41·8	38·5	34·4		Grand Total 14983·3

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) + — FEBRUARY 1961

	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	
1 *q*	385	382	382	382	382	381	381	381	382	383	385	383	381	383	387	385	382	386	387	386	387	387	387	387	384	1214
2 *q*	386	384	383	382	381	381	381	381	379	381	382	383	382	386	383	381	381	382	381	381	381	381	381	381	382	1165
3	382	381	381	381	381	381	380	379	377	375	379	378	375	376	389	387	382	387	388	388	387	387	387	387	382	1175
4 *d*	387	386	386	386	383	383	381	380	377	378	378	377	381	383	395	408	408	438	514	548	538	422	362	281	*403*	1660
5	330	364	392	388	311	324	365	372	378	386	393	396	403	404	404	406	405	403	401	400	399	399	397	397	384	1217
6	397	394	396	396	393	392	389	386	385	386	388	390	391	388	399	421	417	404	400	403	406	409	410	401	398	1541
7	396	393	392	393	392	386	382	388	389	392	393	393	392	395	399	399	400	400	399	398	401	408	407	395	395	1482
8	393	397	399	398	396	394	393	393	393	392	392	391	393	394	399	401	399	399	400	408	401	404	401	396	397	1526
9	395	396	390	387	388	389	386	389	391	391	388	392	393	393	396	401	403	399	398	397	395	393	393	395	393	1438
10	392	387	387	387	388	388	390	389	388	388	386	388	390	392	392	392	392	392	392	394	401	402	399	399	391	1395
11	397	393	389	376	380	381	381	384	386	385	382	381	382	383	386	389	392	389	388	389	392	392	388	386	386	1271
12 *q*	386	386	385	383	383	383	384	385	386	387	386	387	387	387	386	387	388	388	387	387	387	387	387	386	386	1265
13	384	383	382	381	381	381	381	381	382	385	383	377	382	397	409	432	480	456	445	423	405	399	396	392	400	1597
14	392	391	392	390	388	387	386	386	386	387	387	388	390	389	391	392	389	388	388	388	397	397	392	380	389	1341
15	375	379	382	383	383	382	381	382	383	381	378	382	386	386	390	392	392	389	388	387	387	386	386	383	384	1223
16 *d*	382	371	369	371	374	375	373	373	375	374	381	386	393	411	418	415	425	422	410	404	406	393	393	391	391	1385
17 *d*	389	386	388	388	389	388	386	384	384	382	376	376	381	383	391	397	399	400	411	415	428	399	356	298	386	1274
18 *d*	230	176	247	317	347	359	364	371	379	383	388	400	401	427	418	416	417	429	410	403	398	396	397	393	*369*	866
19	387	388	388	390	391	390	388	386	386	386	385	383	399	395	394	404	410	405	411	403	395	393	393	393	393	1443
20 *d*	389	378	379	371	373	378	383	382	386	388	388	385	389	401	396	415	438	414	416	413	407	397	374	376	392	1416
21	379	377	375	379	381	382	385	386	388	390	391	386	389	395	401	401	418	424	411	408	405	394	389	385	392	1419
22	379	382	381	370	372	379	381	385	389	392	389	387	387	388	394	415	418	414	401	398	397	396	381	364	389	1339
23	365	374	380	383	383	383	381	380	383	385	382	379	379	381	388	396	396	396	394	393	394	390	392	388	385	1245
24	381	375	379	381	381	374	367	376	383	388	387	385	382	385	388	390	392	392	392	392	392	392	390	389	385	1233
25 *q*	388	387	387	387	388	388	388	389	390	390	385	378	378	379	384	387	387	387	386	386	387	388	386	386	386	1266
26 *q*	385	382	384	384	386	386	385	385	387	387	383	380	380	381	382	386	388	389	388	388	389	389	389	388	385	1251
27	386	385	383	379	379	376	378	381	383	382	376	371	373	377	382	386	387	386	386	386	386	386	387	387	382	1168
28	385	382	383	382	376	375	377	379	381	378	377	374	374	379	378	382	392	389	390	393	400	392	392	391	383	1201
Mean	379	*376*	380	381	380	380	381	383	384	385	385	384	386	390	393	399	*403*	402	402	402	402	395	389	381	388	
Sum 10,000+	602	539	641	675	630	646	677	713	756	782	768	756	813	918	1019	1163	1277	1247	1262	1259	1248	1058	892	675		Grand Total 261,016

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

24 ESKDALEMUIR — FEBRUARY 1961

	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	γ	h. m.	γ	′	h. m.	′	′	h. m.	γ	γ	h. m.	γ						°A.
1 *q*	00 51	804	775	11 32	29	12 44	26·9	20·7	01 07	6·2	18 16	388	380	12 29	8	2,0,1,1,1,2,2,1	10	0	83·7
2 *q*	05 18	805	783	12 24	*22*	13 50	27·0	22·3	07 50	*4·7*	00 23	387	378	08 14	9	2,1,1,1,1,1,0,1	8	0	83·7
3	19 02	808	757	14 40	51	14 16	*40·7*	18·7	23 51	22·0	14 58	393	374	12 59	19	0,1,0,2,4,3,2,2	14	1	83·8
4 *d*	20 51	*903*	*365*	22 40	*538*	20 04	37·3	-22·2	23 23	*59·5*	20 09	*615*	*145*	22 55	*470*	1,1,2,1,4,4,6,6	25	2	83·8
5	00 01	779	647	00 15	132	08 29	27·1	-8·1	00 21	35·2	16 00	406	285	04 32	121	5,4,4,3,2,2,1,1	22	1	83·6
6	13 40	797	704	15 42	93	15 13	33·0	13·9	22 00	19·1	15 50	429	384	09 10	45	2,2,3,3,2,2,3,3	20	1	83·6
7	22 51	797	742	11 06	55	12 17	29·3	10·6	23 04	18·7	22 21	411	379	06 01	32	3,3,2,2,2,1,2,4	19	1	83·7
8	22 04	795	756	19 20	39	12 46	28·6	15·4	01 36	13·2	19 37	410	391	11 30	19	2,1,1,0,1,1,3,3	12	1	83·7
9	06 14	799	757	12 07	42	13 26	28·0	14·4	01 42	13·6	15 51	404	383	06 16	21	3,2,2,2,2,2,0,2	15	1	83·6
10	18 06	798	776	00 08	*22*	14 10	26·1	18·7	23 54	7·4	20 58	404	386	10 28	18	2,0,2,1,0,0,2,2	9	0	83·7
11	03 08	828	756	11 22	72	12 00	29·2	18·9	00 20	10·3	00 12	399	375	03 29	24	3,3,1,2,2,0,2,2	15	1	83·7
12 *q*	05 38	801	775	10 55	26	13 24	25·2	20·1	05 33	5·1	17 05	389	382	03 01	*7*	0,1,1,1,1,1,0,1	6	0	83·8
13	07 53	826	697	10 40	129	15 29	35·4	14·7	16 34	20·7	16 22	514	375	12 00	139	1,1,3,3,3,4,4,2	21	1	83·8
14	23 20	799	762	20 25	37	13 31	25·3	10·4	23 19	14·9	20 51	403	375	23 50	28	1,1,2,2,1,1,3,3	14	1	83·9
15	07 56	802	760	11 21	42	11 41	26·0	18·5	00 18	7·5	15 18	393	375	00 12	18	2,1,1,2,2,1,1,1	11	1	83·9
16 *d*	01 25	836	716	14 10	120	12 40	35·2	16·0	21 04	19·2	17 16	457	368	02 54	89	3,3,4,3,4,3,2,3	25	1	83·8
17 *d*	14 07	813	689	23 50	124	14 07	30·2	-11·7	22 56	41·9	20 38	434	277	23 59	157	2,0,2,3,4,3,4,4	22	1	83·9
18 *d*	17 56	859	627	01 44	232	13 00	30·9	-14·6	17 40	45·5	17 35	447	146	01 10	301	5,4,4,4,4,6,5,2	34	2	84·0
19	00 33	801	725	12 40	76	12 36	30·5	10·7	18 58	19·8	18 50	413	382	11 23	31	3,2,2,3,3,4,4,2	23	1	83·9
20 *d*	21 29	833	710	16 09	123	15 40	32·8	7·6	21 25	25·2	16 10	446	368	03 31	78	3,2,3,3,4,5,4,4	28	2	83·8
21	17 44	849	740	17 28	109	13 10	29·4	6·9	21 04	22·5	16 58	428	375	01 41	53	2,2,3,3,3,5,4,4	26	1	83·9
22	22 30	837	749	15 10	88	03 20	30·6	14·1	21 30	16·5	16 59	424	361	23 39	63	3,3,2,3,2,4,2,4	23	1	84·0
23	20 29	828	759	11 03	69	12 10	28·8	9·2	20 20	19·6	20 18	400	362	00 16	38	2,1,2,2,2,2,4,2	17	1	84·0
24	06 06	807	767	12 17	40	05 49	28·3	17·7	00 02	10·6	17 25	393	364	06 10	29	2,3,3,1,2,2,0,0	13	1	83·9
25 *q*	16 41	814	765	10 54	49	12 57	26·8	17·6	22 44	9·2	08 31	391	376	12 20	15	0,0,1,2,1,1,2,2	9	0	84·0
26 *q*	07 15	807	768	11 14	39	14 29	28·5	19·3	02 00	9·2	16 45	390	377	12 02	13	2,1,1,1,2,1,1,1	10	0	83·9
27	15 10	837	775	11 16	62	15 10	33·5	17·0	05 43	16·5	23 43	388	370	11 50	18	1,3,2,1,3,3,2,1	16	1	84·1
28	00 51	810	765	11 55	45	13 19	31·4	13·6	19 51	17·8	20 08	404	372	04 50	32	2,3,2,2,2,2,3,2	18	1	84·0
Mean	- -	817	727	- -	89	- -	30·1	11·1	- -	19·0	- -	420	352	- -	68	-	-	0·89	83·8

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.

21 ESKDALEMUIR (H) — 16,000γ (0·16 C.G.S. unit) + — MARCH 1961

	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 18,000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1	792	792	793	794	794	797	801	795	790	784	781	774	767	782	792	794	793	796	802	797	791	792	789	786	790	968
2	793	786	793	796	786	786	805	808	796	793	787	779	781	784	787	793	795	798	800	798	797	794	787	779	792	1001
3 *q*	787	804	793	798	801	803	806	803	796	786	779	779	785	784	790	787	797	804	807	810	807	806	804	806	797	1122
4 *q*	808	806	807	809	810	808	807	806	801	791	785	786	797	797	789	787	796	800	802	804	804	802	802	802	800	1206
5	802	803	805	807	808	812	811	808	805	794	781	777	784	789	797	800	805	798	804	806	773	732	694	662	786	857
6 *d*	645	687	707	766	789	805	796	782	758	765	783	791	776	779	775	772	778	782	779	783	788	789	787	786	769	448
7 *q*	787	787	790	790	791	791	790	792	791	785	776	773	781	785	796	796	798	797	800	800	793	789	794	787	790	959
8 *q*	787	792	787	786	791	794	795	794	787	783	775	770	777	787	797	794	795	791	792	793	793	794	779	791	789	924
9	791	790	794	804	794	790	798	793	792	788	776	772	775	796	803	803	801	792	801	798	794	796	798	810	794	1049
10 *d*	798	791	795	798	798	810	824	798	751	699	675	705	742	732	736	736	739	756	778	779	779	777	774	771	*764*	341
11	769	768	775	778	779	780	782	778	777	771	766	765	770	779	775	779	781	782	786	779	777	781	781	780	777	638
12	777	772	776	781	784	787	788	789	786	781	771	773	774	779	776	782	784	787	791	794	794	791	792	782	783	791
13	783	780	797	785	788	796	802	797	784	786	783	772	774	777	786	771	785	791	799	805	796	796	797	803	789	933
14 *d*	799	811	804	812	798	806	799	782	794	778	753	750	766	768	771	770	784	785	794	789	792	802	797	792	787	896
15 *d*	791	794	796	797	774	794	802	793	789	762	748	765	779	788	788	782	787	787	791	802	799	824	792	775	787	899
16	790	793	766	774	780	786	789	743	779	769	767	768	760	785	790	793	784	783	793	797	797	798	798	798	783	780
17	800	798	800	799	794	801	801	787	792	766	770	771	771	771	782	782	791	787	793	799	797	797	798	797	789	944
18	795	794	790	793	795	800	799	793	781	763	766	767	771	774	775	787	787	777	786	791	799	801	821	813	788	918
19 *d*	797	798	802	804	815	797	783	786	777	762	754	751	747	763	747	791	805	788	776	779	808	791	808	800	785	829
20	796	786	781	783	786	789	792	789	782	754	731	745	752	758	759	776	783	789	790	818	814	789	797	796	781	735
21	798	790	791	797	794	805	808	806	799	783	776	769	769	772	779	784	795	794	791	784	793	796	798	800	790	971
22	798	801	800	801	793	790	799	789	784	792	781	766	762	771	781	789	795	801	801	801	801	801	799	800	791	996
23	799	798	797	796	797	796	798	799	792	782	765	766	779	774	773	791	796	805	797	802	803	799	806	804	792	1014
24	800	801	804	803	799	799	802	801	796	791	782	767	782	791	792	792	784	794	797	802	804	800	811	812	797	1106
25 *q*	800	801	798	798	799	801	804	801	794	786	779	774	782	787	786	800	805	805	809	812	807	808	807	812	798	1155
26	808	806	805	805	809	809	813	809	807	791	781	787	793	781	787	792	797	801	802	807	809	814	806	801	801	1220
27	813	809	809	810	814	814	812	810	792	776	771	775	765	779	796	816	842	787	787	807	788	787	789	792	797	1140
28	792	794	804	785	788	787	790	782	774	772	771	765	770	775	777	784	784	789	794	790	794	797	799	800	786	857
29	797	800	798	797	797	800	796	792	785	776	762	763	772	775	790	799	807	809	818	807	814	798	806	806	794	1064
30	805	812	805	791	812	802	793	783	779	776	765	764	767	774	791	797	802	795	798	800	802	804	804	804	793	1025
31	804	807	809	809	810	812	813	804	787	773	762	759	763	772	785	817	813	822	821	829	823	822	822	825	*803*	1263
Mean	790	792	793	795	796	798	*800*	793	787	776	768	*767*	772	778	782	788	793	793	796	799	798	796	795	793	789	
Sum 23,000+	1501	1551	1571	1646	1667	1747	1798	1592	1397	1058	802	788	933	1108	1248	1436	1588	1572	1679	1762	1730	1667	1636	1572		Grand Total 587,049

MAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

22 ESKDALEMUIR (D) — 10° + — MARCH 1961

	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 400·0+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	
1	21·3	22·0	22·1	20·7	22·6	21·9	20·1	20·0	19·3	19·7	21·8	26·5	28·2	27·4	26·5	24·8	23·7	23·5	23·8	23·5	22·1	22·8	21·8	17·3	22·6	143·4
2	17·8	16·9	17·9	17·4	19·0	21·9	21·5	20·3	20·3	20·7	21·6	23·0	25·2	26·3	26·0	25·2	24·6	24·3	23·9	22·2	22·0	22·8	20·3	17·1	21·6	118·2
3 *q*	18·5	17·4	19·0	21·1	22·0	21·8	21·7	21·1	20·3	20·3	22·0	25·2	27·3	26·6	26·4	24·9	24·2	24·3	24·2	23·9	23·2	22·9	22·5	22·1	22·6	142·9
4 *q*	22·2	22·4	22·4	22·4	22·3	22·1	21·7	21·2	20·4	20·2	21·6	24·0	27·5	28·0	27·2	26·2	24·4	23·9	23·8	23·1	22·8	22·4	22·3	21·9	23·2	156·4
5	21·4	21·4	21·7	22·0	20·5	20·9	21·0	20·9	20·3	19·7	22·3	26·1	28·0	27·5	27·4	26·1	25·1	25·0	25·4	25·4	20·4	14·7	0·2	6·8	21·3	110·2
6 *d*	−1·3	−2·3	−1·4	−0·1	13·4	17·3	25·2	26·9	27·9	28·4	27·6	28·3	30·7	33·7	29·9	26·8	25·4	24·3	24·1	23·5	23·1	22·9	21·9	21·5	*20·7*	97·7
7 *q*	21·2	21·2	21·1	21·0	20·7	20·7	20·7	20·6	20·5	20·9	21·2	22·8	26·1	26·8	27·1	25·6	24·6	24·7	24·6	24·4	22·9	22·9	20·4	20·0	22·6	142·7
8 *q*	19·8	17·5	19·7	19·6	19·9	20·6	20·5	20·1	20·0	19·4	22·0	25·4	28·0	27·9	27·8	26·8	27·2	26·5	26·9	25·7	25·4	22·9	20·0	19·3	22·9	148·9
9	20·1	20·3	21·2	21·4	18·9	19·4	19·7	21·6	20·7	21·9	23·0	25·4	27·1	30·1	31·5	32·5	31·1	31·2	28·2	25·2	25·3	24·3	22·3	21·8	24·3	184·2
10 *d*	20·3	19·9	14·9	13·5	15·9	19·8	19·7	19·2	29·9	28·2	22·3	28·4	30·6	27·5	27·4	25·3	21·8	19·8	21·5	21·9	22·0	22·0	21·9	21·8	22·3	135·5
11	21·3	21·7	21·9	21·6	22·2	21·1	20·7	20·3	20·6	21·7	22·5	25·5	26·9	27·1	26·5	24·7	23·2	23·6	23·1	21·4	21·3	22·5	22·5	22·5	22·8	146·4
12	18·7	19·0	19·4	21·5	21·9	21·7	21·7	21·1	20·4	20·8	21·8	24·7	26·5	27·4	25·9	23·9	22·8	22·4	22·8	22·9	22·9	22·7	20·4	22·3	136·2
13	17·9	14·3	20·5	21·5	21·1	21·6	21·9	22·6	23·5	22·4	24·0	26·2	28·8	28·1	27·2	26·1	25·2	24·9	24·4	23·5	23·0	21·9	22·6	22·5	23·2	155·7
14 *d*	22·6	24·0	18·2	21·8	15·4	18·7	22·2	26·1	26·9	24·1	27·9	29·6	30·1	29·4	28·3	26·9	25·0	19·8	17·6	21·4	23·6	20·1	20·8	22·4	23·5	162·9
15 *d*	22·3	23·2	22·8	22·2	24·7	23·9	21·6	21·2	21·8	24·1	29·1	30·7	29·9	31·6	22·2	25·3	24·0	23·2	23·5	22·7	22·3	8·9	16·5	20·5	23·3	158·2
16	27·8	19·4	18·9	19·9	21·5	22·5	23·6	26·0	25·3	24·1	24·7	28·8	30·1	28·7	26·8	25·2	23·5	22·9	23·5	24·1	23·5	23·3	23·1	22·8	24·2	180·0
17	22·7	22·9	23·7	21·5	20·3	20·8	21·4	28·4	22·4	22·9	23·5	26·2	29·2	28·7	27·4	24·2	21·9	21·5	22·4	22·9	22·6	22·2	22·2	22·9	23·5	164·8
18	22·4	22·0	23·1	22·0	21·4	21·0	20·6	19·5	18·8	19·2	21·9	25·2	28·2	30·5	27·2	25·3	20·3	21·5	16·4	23·3	23·5	22·9	18·8	21·1	22·3	136·1
19 *d*	23·4	22·7	22·7	22·5	23·7	36·4	35·1	22·4	19·3	21·3	23·3	25·7	29·4	34·5	28·6	29·0	31·4	19·7	24·3	22·3	16·1	20·0	22·8	23·0	25·0	199·6
20	21·3	22·9	20·1	20·1	21·6	22·9	21·9	20·0	19·3	22·4	24·2	23·1	27·7	29·0	27·8	25·6	24·7	24·1	22·9	12·4	19·2	21·1	22·9	23·3	22·5	140·5
21	20·8	20·7	25·8	23·2	24·5	23·3	22·2	20·9	20·0	20·3	21·9	24·7	27·6	28·9	29·1	26·7	25·9	24·7	22·0	18·0	21·5	22·7	22·6	22·2	23·3	160·2
22	22·4	23·2	24·4	21·2	21·5	24·2	22·9	23·4	23·7	23·3	22·9	24·7	25·5	27·5	26·9	24·9	24·7	24·0	23·6	23·6	23·5	23·1	22·6	22·5	23·8	170·2
23	21·9	22·0	21·9	21·9	23·6	22·9	23·9	23·2	22·7	20·9	22·6	25·2	29·6	30·7	25·8	26·3	25·5	24·4	22·8	22·9	21·5	21·5	21·9	22·8	23·7	168·4
24	22·3	22·9	22·8	21·9	21·5	22·2	22·0	20·5	19·9	21·1	23·7	25·8	28·3	29·3	28·7	27·2	25·3	24·9	24·4	24·2	23·5	22·4	21·1	22·7	23·7	168·6
25 *q*	22·1	23·3	22·2	21·7	21·6	21·5	21·0	19·3	18·9	20·6	22·6	24·7	28·4	29·8	28·4	26·8	25·4	24·7	24·3	24·1	23·4	21·6	22·2	20·8	23·3	159·4
26	21·7	22·3	22·1	21·9	21·5	21·6	21·9	20·9	20·6	21·4	24·3	26·5	29·8	28·9	28·4	27·0	25·5	25·1	24·8	24·2	23·9	23·9	20·6	19·7	23·7	168·5
27	22·5	21·9	21·9	21·9	22·1	20·6	20·9	19·5	18·8	19·8	22·4	27·7	30·9	32·6	32·6	36·8	35·4	33·2	31·1	30·3	27·0	25·1	23·7	22·3	*25·9*	221·0
28	21·9	21·0	19·1	21·4	21·9	21·5	18·8	18·0	19·1	20·0	23·2	26·8	29·2	30·1	29·2	28·8	24·2	24·2	24·1	23·7	21·9	22·3	22·6	22·7	23·2	155·7
29	22·7	22·3	22·2	22·4	22·1	21·7	20·7	19·1	18·2	20·2	21·9	24·3	28·0	29·2	29·1	27·7	26·1	24·7	23·4	23·1	17·8	21·7	22·7	23·0	23·1	154·3
30	22·6	25·3	23·7	21·7	17·2	18·3	18·1	18·5	22·5	21·7	23·2	27·0	29·8	29·6	28·9	26·3	24·6	22·7	22·3	22·6	22·6	22·7	22·6	23·2	157·1
31	22·6	22·6	22·5	22·5	22·4	22·2	20·7	18·3	17·2	18·7	21·5	25·1	28·8	30·5	29·2	28·9	26·2	25·8	24·2	24·0	23·8	23·6	23·4	22·7	23·6	167·4
Mean	20·8	20·5	20·6	*20·5*	20·9	21·8	21·8	21·3	21·3	21·6	23·2	25·9	28·4	*29·2*	27·8	26·7	25·3	24·2	23·7	23·1	22·5	21·8	21·1	21·1	23·1	
Sum 600·0+	45·2	36·3	38·5	35·3	48·9	77·0	75·6	61·1	59·5	70·4	118·5	203·3	281·4	303·9	261·4	227·8	182·9	149·5	134·3	116·4	97·6	76·9	54·6	55·0		Grand Total 17211·3

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 1961

	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	
1	390	388	388	387	383	379	381	381	383	380	382	374	378	377	380	385	387	386	387	390	392	393	393	393	385	1237
2	388	387	385	382	382	378	375	376	382	385	381	378	378	381	383	386	386	386	387	388	389	389	394	397	384	1223
3 *q*	392	385	383	383	382	382	382	383	385	385	380	374	376	382	386	389	390	386	385	383	384	385	386	386	384	1214
4 *q*	385	385	384	383	382	381	381	381	382	382	376	370	371	376	383	386	387	386	386	386	386	384	383	383	382	1169
5	385	383	382	378	376	376	377	380	381	380	374	370	369	375	382	385	386	385	387	387	407	400	358	310	378	1073
6 *d*	264	288	275	277	294	306	317	330	347	356	364	375	388	400	411	411	407	399	398	394	393	392	392	393	357	571
7 *q*	393	393	392	392	392	392	388	388	387	386	386	385	382	387	393	396	397	393	390	389	392	395	392	390	390	1370
8 *q*	390	388	389	389	389	388	388	389	388	382	376	375	378	383	388	393	398	397	399	404	404	404	407	401	391	1387
9	394	392	390	380	378	381	382	381	380	376	374	372	376	380	385	392	393	397	401	410	406	406	401	396	388	1323
10 *d*	392	389	376	377	381	375	363	366	361	368	379	391	434	420	415	417	422	415	404	400	398	398	398	397	393	1436
11	397	396	394	392	392	392	393	392	390	389	386	381	381	387	394	394	398	397	396	403	405	399	397	396	393	1441
12	391	386	383	387	390	391	391	391	390	387	382	377	374	381	389	391	391	391	391	391	391	391	391	395	388	1313
13	394	388	387	386	387	386	386	387	387	384	379	376	373	376	384	396	398	395	391	392	392	392	390	386	387	1292
14 *d*	384	363	344	330	338	356	362	363	365	374	373	373	377	390	397	413	419	429	421	404	398	393	388	387	381	1141
15 *d*	384	384	386	385	379	377	380	384	385	383	383	382	391	398	424	412	399	394	395	390	391	384	368	367	388	1305
16	343	319	343	366	376	373	377	384	379	382	378	374	381	387	389	395	398	393	391	387	386	388	388	387	378	1064
17	387	387	385	381	385	384	384	381	379	381	381	376	372	380	387	395	399	398	391	391	391	388	387	386	386	1256
18	386	385	385	385	386	386	387	388	388	387	381	377	380	386	397	407	421	420	422	399	392	388	378	377	391	1388
19 *d*	381	384	385	386	382	374	356	369	376	378	376	373	380	391	399	402	420	468	432	416	397	380	373	366	389	1344
20	347	355	370	373	383	385	388	391	389	381	384	381	387	391	397	398	397	397	399	398	386	386	384	387	385	1234
21	378	374	377	369	375	376	381	385	381	380	377	373	373	378	386	399	399	402	404	406	398	391	389	387	385	1238
22	386	382	373	372	375	376	378	379	380	380	383	381	380	383	388	392	394	391	391	390	389	388	387	386	383	1204
23	386	386	385	385	384	384	385	386	384	383	380	374	372	380	399	398	396	394	394	392	391	390	386	384	387	1278
24	385	384	380	381	383	384	384	385	381	376	367	365	365	371	380	392	392	392	391	390	388	390	386	376	382	1168
25 *q*	377	376	379	380	381	384	385	385	381	377	370	364	362	365	371	374	381	382	383	384	385	386	386	384	378	1082
26	380	380	380	380	378	376	374	374	368	364	360	357	359	368	373	379	382	383	381	383	383	381	384	385	375	1012
27	379	380	379	379	379	377	379	379	377	376	373	369	373	374	381	396	431	466	438	437	438	421	408	401	395	1490
28	395	391	385	376	361	371	374	379	378	374	368	367	368	374	384	396	404	401	396	397	396	391	390	388	383	1204
29	387	387	387	386	386	386	389	391	390	385	380	372	372	373	376	380	383	383	385	392	392	391	390	387	385	1230
30	386	379	367	350	345	359	369	375	372	372	368	367	369	374	383	386	386	386	384	384	384	383	383	384	375	995
31	384	383	381	381	380	381	384	386	381	379	374	368	365	370	377	377	377	377	378	379	379	379	379	379	378	1078
Mean	380	378	377	375	376	377	378	380	380	379	377	374	377	382	389	394	397	399	396	395	394	391	388	385	384	
Sum 11,000+	790	727	679	638	664	696	720	789	777	752	675	591	684	838	1061	1212	1318	1369	1278	1236	1203	1126	1016	921		Grand Total 285,760

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

24 ESKDALEMUIR — MARCH 1961

	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	γ	h. m.	γ	h. m.	′	′	h. m.	γ	γ	h. m.	γ				°A.
1	20 03	806	759	09 48	47	12 30	29·5	16·2	23 27	13·3	22 30	394	374	11 39	20	1,2,2,1,3,1,2,3	15	1	83·9
2	07 26	812	771	23 22	41	14 18	26·9	15·4	01 53	11·5	23 30	399	373	06 40	26	2,2,2,2,1,1,1,3	14	1	84·1
3 *q*	01 14	820	777	11 58	43	12 12	27·7	15·5	01 07	12·2	16 13	392	374	11 30	18	3,1,1,0,2,2,1,1	11	0	84·1
4 *q*	04 40	812	782	11 28	*30*	13 41	29·1	19·9	09 23	9·2	16 31	387	369	11 40	18	0,1,1,1,3,1,0,1	8	0	84·0
5	19 18	815	622	23 31	193	12 29	28·3	-3·2	23 00	31·5	20 46	416	287	23 58	129	1,2,1,1,1,2,4,5	17	1	83·8
6 *d*	05 34	821	*583*	00 10	*238*	13 34	35·4	*-9·0*	01 06	*44·4*	14 54	415	*244*	00 44	*171*	6,4,3,4,3,2,2,1	25	1	83·9
7 *q*	22 24	806	771	12 28	35	12 53	27·9	18·6	22 30	9·3	16 05	399	382	12 15	*17*	0,0,1,1,1,2,2,3	10	0	83·9
8 *q*	19 56	802	767	11 20	35	12 28	29·5	16·3	01 22	13·2	22 37	410	375	11 30	35	2,1,1,1,2,2,2,3	14	1	83·9
9	23 49	831	774	11 48	57	14 01	35·0	18·4	04 15	16·6	19 42	415	370	11 02	45	2,2,2,1,3,3,3,3	19	1	83·9
10 *d*	05 50	844	663	10 17	181	08 41	36·7	11·0	03 35	25·7	12 30	448	352	08 53	96	4,4,5,4,4,3,2,1	27	2	83·9
11	19 04	799	757	11 46	42	13 55	28·8	19·1	07 22	9·7	19 46	408	379	11 30	29	1,1,2,2,2,2,3,1	14	1	84·0
12	20 09	797	751	01 07	46	13 42	29·1	13·1	01 02	16·0	23 30	396	374	12 31	22	3,1,1,2,2,1,1,2	13	1	84·0
13	19 14	813	760	15 38	53	13 00	29·4	16·3	01 33	13·1	16 51	399	372	12 30	27	3,2,2,1,2,3,2,2	17	1	84·0
14 *d*	01 43	835	737	11 18	98	13 00	31·8	8·0	18 09	23·8	18 04	443	320	03 45	123	3,3,3,3,3,3,4,3	25	1	84·0
15 *d*	21 36	851	740	10 42	111	13 42	34·5	2·1	21 29	32·4	14 31	429	359	23 59	70	1,3,2,3,4,2,2,5	22	1	83·9
16	01 24	815	721	07 49	94	12 14	31·4	16·3	02 42	15·1	15 54	400	315	01 16	85	4,2,4,3,3,3,1,1	21	1	84·1
17	02 58	813	752	09 35	61	07 28	32·2	19·5	03 48	12·7	16 41	399	374	08 05	25	2,2,4,3,3,3,1,1	19	1	84·1
18	22 29	834	753	18 06	81	13 34	31·9	11·5	18 15	20·4	18 11	431	373	22 53	58	2,1,2,2,3,3,4,3	20	1	84·1
19 *d*	20 27	833	725	14 14	108	05 51	*42·9*	10·0	20 26	32·9	17 35	*484*	351	06 04	133	2,4,5,3,4,4,4,4	30	2	84·1
20	20 01	852	719	10 27	133	13 52	29·7	8·7	19 51	21·0	19 24	402	344	00 32	58	3,2,2,3,3,3,4,2	22	1	84·0
21	16 48	815	763	11 46	52	14 28	29·9	16·0	19 15	13·9	19 28	408	367	03 22	41	2,3,1,2,2,3,3,1	17	1	84·0
22	01 36	813	751	11 34	62	13 47	28·3	19·7	03 54	*8·6*	16 17	394	369	02 58	25	2,3,3,3,2,2,1,0	16	1	84·1
23	17 36	818	749	14 03	69	13 10	32·5	19·1	20 50	13·4	14 53	405	369	12 26	36	0,2,2,2,3,2,2,1	14	1	84·1
24	22 50	841	759	11 17	82	13 35	30·7	18·9	08 31	11·8	15 34	395	363	11 51	32	1,1,1,3,3,2,2,3	16	1	84·0
25 *q*	23 01	819	769	11 48	50	13 49	31·4	18·6	08 53	12·8	21 42	387	361	12 29	26	2,0,0,1,3,2,1,2	11	1	84·1
26	21 40	820	768	10 47	52	12 54	31·1	14·7	22 55	16·4	22 25	387	355	11 55	32	1,2,2,2,3,2,1,3	16	1	84·1
27	16 29	*874*	760	12 36	114	15 07	41·3	17·9	08 48	23·4	17 19	468	367	11 32	101	2,2,2,2,3,5,3,2	21	1	84·1
28	02 06	841	750	11 00	91	13 51	31·5	16·3	07 23	15·2	16 33	406	356	04 14	50	3,3,2,3,3,3,2,1	20	1	84·0
29	20 26	825	757	10 26	68	12 32	30·1	16·2	20 33	13·9	19 52	396	369	12 30	27	1,1,2,2,3,2,2,2	15	1	84·0
30	04 18	827	757	11 42	70	12 35	30·8	15·7	04 47	15·1	16 37	388	340	04 09	48	2,3,3,1,2,2,2,1	16	1	83·9
31	16 57	841	755	11 31	86	13 36	31·5	16·9	08 24	14·6	07 28	386	365	12 30	21	1,0,1,1,2,4,2,2	13	1	84·1
Mean	- -	824	743	- -	81	- -	31·5	14·0	- -	17·5	- -	409	356	- -	53	-	-	0·97	84·0

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.

21 ESKDALEMUIR (H) — 16,000γ (0·16 C.G.S. unit) + — APRIL 1961

	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 18,000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1	822	832	827	811	803	820	814	791	780	777	763	760	760	770	787	797	793	790	800	807	795	800	802	807	796	1108
2	802	798	798	800	793	789	799	803	776	764	752	744	752	761	776	793	792	803	794	810	798	768	768	778	784	811
3 *d*	779	771	778	787	815	788	780	759	733	744	737	733	734	752	757	771	784	791	793	796	798	797	788	780	773	545
4 *q*	803	794	788	790	793	794	791	789	784	771	759	754	760	769	780	787	796	802	808	802	805	803	803	803	789	928
5 *q*	798	796	812	797	808	805	807	799	787	775	767	759	772	783	790	793	795	807	810	808	809	806	806	807	796	1096
6	804	803	804	807	810	817	813	804	794	777	763	758	768	778	795	814	821	817	796	811	827	810	795	795	799	1181
7	800	804	802	799	811	809	809	804	797	787	768	768	772	783	791	793	805	809	812	816	815	814	814	807	800	1189
8	810	807	807	807	811	813	816	807	798	786	772	760	771	776	787	795	806	812	816	823	823	822	820	818	803	1263
9 *d*	818	818	816	820	822	814	810	807	802	775	708	714	772	790	784	781	785	799	793	805	813	812	810	809	795	1077
10	832	798	797	795	801	794	788	800	796	775	762	774	773	774	776	801	805	800	817	814	817	815	818	814	797	1136
11 *d*	811	795	797	810	793	810	815	800	793	769	769	765	767	760	775	799	820	825	786	795	804	804	805	805	795	1072
12	805	799	799	798	800	800	797	780	780	772	762	762	763	790	781	796	799	818	816	806	812	807	806	806	794	1054
13	803	804	804	801	802	810	811	804	787	765	760	761	772	787	797	832	809	822	821	822	828	825	824	825	803	1276
14 *d*	829	818	818	815	817	817	805	788	782	765	767	771	770	799	808	833	834	849	813	770	733	798	711	649	790	959
15 *d*	599	704	785	677	749	749	702	747	754	735	721	730	744	755	758	799	774	792	803	797	787	783	788	792	*751*	24
16	792	788	791	784	789	790	790	782	771	757	749	750	752	765	777	792	800	815	805	821	802	781	790	776	784	809
17 *q*	787	787	792	792	790	794	795	786	778	765	752	748	753	775	780	787	787	795	800	804	803	802	802	801	786	856
18 *q*	805	799	795	798	799	807	806	805	787	762	759	754	762	776	788	798	802	808	809	810	807	806	804	809	794	1054
19	809	809	800	794	803	812	809	809	797	776	760	751	756	776	792	805	815	815	803	814	806	814	803	823	798	1151
20	828	808	796	803	802	808	813	807	797	787	777	769	773	780	791	797	798	805	807	810	816	813	809	810	800	1204
21 *q*	807	807	806	805	805	806	805	800	791	777	765	757	762	778	786	794	800	809	814	813	817	804	810	810	797	1128
22	810	809	810	809	809	809	807	803	799	793	786	783	796	797	804	795	806	795	814	804	811	798	784	798	801	1229
23	798	799	800	797	791	799	797	798	790	785	775	771	785	775	790	799	800	815	822	819	809	811	812	803	797	1140
24	812	805	807	800	802	806	805	803	791	776	766	764	769	788	792	806	802	822	821	812	804	803	798	798	798	1152
25	801	802	813	802	804	806	806	806	794	780	777	774	772	777	789	795	814	821	824	810	808	809	811	810	800	1205
26	809	803	797	814	805	798	817	815	803	781	765	759	758	769	788	787	804	829	832	819	816	813	807	810	800	1198
27	810	815	816	816	809	814	826	819	795	783	775	776	778	775	799	814	804	819	829	823	817	814	813	813	*806*	1352
28	821	796	818	805	804	810	802	790	776	772	769	768	765	777	785	793	799	811	817	827	819	810	809	810	798	1153
29	811	797	802	803	802	800	797	792	783	776	772	767	775	783	794	813	812	818	825	825	828	817	801	805	800	1198
30	807	806	806	805	803	809	806	804	795	782	774	779	787	787	810	803	824	813	820	827	829	829	810	810	805	1325
Mean	801	799	803	798	801	803	801	797	786	773	762	*759*	766	777	787	799	803	*811*	811	811	809	806	801	799	794	
Sum 22,000+	2022	1971	2081	1941	2045	2097	2038	1901	1590	1189	851	783	993	1305	1607	1962	2085	2326	2320	2320	2256	2188	2021	1981		Grand Total 571,873

MAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

22 ESKDALEMUIR (D) — 10° + — APRIL 1961

	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 500·0+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	
1	21·8	22·9	12·6	15·8	18·7	19·0	18·9	20·4	21·5	22·7	24·9	29·0	30·4	30·3	29·0	27·2	25·6	23·6	23·0	23·0	20·5	20·5	22·2	22·7	22·8	46·2
2	21·9	22·1	21·9	21·0	19·7	22·3	22·4	18·2	16·8	19·5	21·8	24·3	27·5	29·1	29·8	28·3	28·0	26·2	23·0	16·0	19·2	14·4	16·3	16·9	21·9	26·6
3 *d*	15·0	14·2	10·1	13·3	22·2	14·1	15·1	16·8	19·1	24·5	23·6	25·9	28·4	31·4	30·5	30·1	28·7	26·9	24·0	22·5	23·5	20·6	21·3	19·7	21·7	21·5
4 *q*	21·6	21·1	20·3	20·8	20·6	20·7	20·2	20·9	19·9	20·9	24·0	27·0	28·6	29·0	28·5	26·9	25·0	23·9	23·3	23·2	23·2	22·7	22·5	21·5	23·2	56·3
5 *q*	21·2	20·1	18·5	18·7	21·3	20·3	20·0	18·5	17·5	18·9	22·6	24·0	26·3	26·5	27·2	26·1	25·0	24·3	23·7	23·5	23·1	22·7	22·5	22·1	22·3	34·6
6	19·2	17·8	18·8	18·6	19·2	20·1	20·4	18·2	16·9	18·5	21·4	25·9	30·0	29·9	29·1	28·4	27·2	26·0	26·8	25·7	21·5	14·2	17·1	15·7	21·9	26·6
7	16·0	19·4	19·1	24·2	22·6	20·7	20·1	19·5	19·6	20·9	24·4	26·9	29·4	30·4	29·0	26·3	24·5	23·2	22·7	23·2	23·4	23·4	23·2	22·4	23·1	54·5
8	22·4	21·7	21·8	21·4	21·8	21·5	20·5	19·0	19·1	19·0	22·3	24·2	27·1	28·5	28·1	26·3	24·9	22·9	22·6	23·6	24·0	23·6	22·7	22·4	23·0	51·4
9 *d*	21·8	21·8	23·1	21·4	17·9	17·3	18·0	17·3	16·6	18·0	21·0	32·6	30·6	31·3	29·6	31·9	25·2	24·5	23·8	22·6	24·0	22·7	23·2	21·7	23·2	57·9
10	23·3	20·5	18·4	19·6	20·7	21·9	22·7	20·6	20·4	21·8	22·9	25·9	28·1	30·2	27·6	26·5	25·4	23·8	19·4	24·5	24·1	23·2	20·9	20·0	23·0	52·4
11 *d*	20·0	19·3	25·4	23·8	24·6	25·7	22·4	19·6	18·0	19·7	21·4	24·1	28·7	30·4	30·4	28·6	25·9	14·7	22·2	23·4	23·5	23·3	22·6	20·9	23·3	58·6
12	21·5	22·0	21·6	21·3	20·4	20·5	21·5	19·2	20·4	20·0	22·8	26·7	28·8	30·7	27·9	26·5	24·5	20·8	22·5	23·3	23·6	19·5	22·0	21·9	22·9	49·9
13	22·6	23·2	23·3	22·6	21·8	20·5	18·6	16·9	16·2	17·5	21·5	25·1	29·3	31·3	30·4	28·6	28·6	26·8	25·7	25·4	25·2	23·2	23·5	23·6	*23·8*	71·4
14 *d*	21·9	21·0	21·2	20·6	19·9	18·7	17·3	15·7	15·2	17·8	23·9	29·4	32·4	37·3	37·9	37·8	31·4	28·0	23·6	12·6	16·0	8·9	−1·2	−5·1	*20·9*	2·2
15 *d*	−12·9	18·4	10·7	18·3	22·7	21·4	29·4	22·5	20·0	21·0	22·4	24·9	27·4	30·0	29·4	27·8	27·7	26·3	26·0	22·2	17·4	18·2	21·5	22·4	21·5	15·1
16	21·7	22·1	24·8	22·0	21·7	19·2	18·4	16·8	16·1	17·3	19·7	24·2	26·7	27·3	27·1	26·9	23·2	22·2	23·0	17·6	17·2	12·8	15·8	18·9	20·9	2·7
17 *q*	21·3	22·1	21·8	22·4	21·1	20·3	18·2	16·7	16·3	16·9	19·3	23·3	26·7	28·8	28·2	27·0	25·9	24·6	23·2	22·4	22·3	22·3	22·3	21·8	22·3	35·2
18 *q*	22·4	21·8	22·3	21·7	21·6	22·3	22·3	20·3	18·7	20·5	23·1	25·4	27·9	30·0	29·8	27·9	25·9	25·0	23·9	23·2	22·8	22·4	21·1	21·6	23·5	63·9
19	21·0	19·6	20·5	23·6	22·1	21·3	19·1	16·9	17·0	15·8	17·6	21·3	25·6	28·4	28·7	28·1	26·0	25·2	21·4	23·2	22·6	22·9	22·6	22·1	22·2	32·6
20	17·4	19·1	18·7	20·6	20·5	21·1	20·4	19·4	16·5	16·4	18·2	21·3	24·9	27·1	27·2	26·2	25·2	23·8	23·2	22·3	20·6	21·3	21·4	22·2	21·5	15·0
21 *q*	22·3	22·2	21·7	21·6	21·1	20·5	18·9	17·3	15·6	16·1	18·4	22·5	26·1	28·6	27·6	26·0	24·8	23·7	23·5	23·7	23·1	21·4	22·7	22·6	22·2	32·0
22	22·4	21·9	21·8	21·3	20·9	20·0	18·3	16·4	15·9	17·5	21·4	26·0	30·3	31·9	32·7	31·5	30·3	27·1	25·2	22·8	21·2	15·5	17·2	21·1	22·9	50·6
23	21·8	21·7	21·2	20·7	19·6	19·8	18·0	15·4	15·2	17·4	21·4	25·0	28·3	29·2	29·0	28·5	26·0	24·5	23·5	22·2	21·5	19·1	16·9	15·6	21·7	21·5
24	20·0	17·1	19·5	17·4	17·6	18·4	18·2	17·4	17·1	19·1	22·7	27·0	29·4	31·3	30·6	30·0	27·5	24·9	21·5	18·4	20·0	19·4	16·9	16·1	21·5	17·5
25	19·6	20·7	24·0	22·7	17·3	17·7	17·5	17·3	16·7	18·6	21·8	24·4	27·6	29·4	30·1	28·1	26·5	24·6	22·9	21·8	21·7	21·8	22·0	20·0	22·3	34·8
26	19·1	17·1	18·7	19·3	16·2	18·8	21·7	18·9	17·1	17·8	20·5	24·4	28·4	29·9	30·5	28·0	26·6	25·2	22·3	22·1	22·4	22·8	22·4	22·7	22·2	32·9
27	22·6	23·7	22·0	23·1	20·9	20·2	17·8	16·3	15·1	17·4	19·2	24·0	28·9	31·0	29·5	29·3	27·4	24·3	22·2	22·2	21·8	19·6	21·5	21·8	22·6	41·8
28	21·2	19·1	22·5	21·4	20·9	20·6	18·1	16·2	15·4	17·7	21·7	25·0	27·1	28·3	27·5	26·3	24·9	23·3	20·3	18·5	19·4	19·4	21·4	20·3	21·5	16·5
29	21·0	21·0	21·8	21·1	20·7	20·7	20·3	19·4	18·3	18·7	20·1	23·2	27·2	28·5	27·5	26·6	25·8	25·2	24·5	23·1	22·7	21·9	15·7	17·3	22·2	32·3
30	18·3	16·0	19·0	18·8	17·6	17·6	17·7	17·7	17·7	19·2	22·0	26·1	28·7	28·6	30·4	27·8	28·4	25·9	24·0	23·8	22·8	18·7	18·7	18·9	21·9	24·4
Mean	19·7	20·4	20·2	20·6	20·5	20·1	19·7	18·2	*17·5*	18·9	21·6	25·3	28·2	*29·8*	29·4	28·2	26·4	24·4	23·2	22·1	21·8	20·1	20·0	19·7	22·3	
Sum 500·0+	89·4	110·7	107·1	119·1	113·9	103·2	92·4	45·7	25·9	67·1	148·0	259·0	346·8	394·6	380·8	345·5	292·0	231·4	196·9	162·0	154·3	102·4	98·9	91·8		Grand Total 16078·9

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) + — APRIL 1961

	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	
1	378	361	327	328	351	363	370	373	372	368	370	371	371	375	384	391	398	403	400	394	395	391	387	386	375	1007
2	385	385	386	385	385	381	376	374	377	377	374	375	376	380	387	396	397	398	403	404	397	401	393	386	387	1278
3 *d*	382	379	368	338	309	321	345	361	367	371	374	370	373	380	396	418	427	434	433	419	404	398	390	386	381	1143
4 *q*	369	366	374	383	384	384	385	385	382	377	374	372	371	373	378	383	387	390	390	390	387	386	385	386	381	1141
5 *q*	386	386	379	379	373	377	379	381	381	373	367	367	367	368	373	381	383	382	384	384	383	382	383	381	378	1079
6	383	380	377	377	376	374	379	383	384	377	369	365	367	372	377	382	389	398	402	396	393	378	376	373	380	1127
7	379	380	381	378	373	377	379	379	374	372	369	367	366	368	379	383	385	385	385	384	382	382	380	381	378	1068
8	381	381	381	381	380	381	384	384	380	376	372	367	363	369	373	378	382	384	384	383	381	379	380	380	379	1084
9 *d*	380	379	377	373	373	376	379	377	370	368	372	364	368	369	374	381	386	393	398	403	397	391	388	383	380	1119
10	356	358	372	377	378	376	379	380	376	373	378	373	377	382	388	387	394	394	396	387	385	385	383	375	380	1109
11 *d*	374	379	363	358	352	353	359	373	378	383	381	374	371	382	391	403	421	440	415	398	391	388	386	385	383	1198
12	380	383	384	384	384	385	384	384	379	374	374	374	375	381	392	398	396	396	391	387	386	387	385	384	384	1227
13	382	379	379	379	379	382	385	387	387	386	380	374	373	378	390	406	397	392	388	384	384	385	383	383	384	1222
14 *d*	379	381	381	383	382	380	384	386	381	378	376	376	380	391	414	438	467	490	477	443	423	413	327	223	*394*	1453
15 *d*	196	181	257	252	287	323	327	343	375	388	397	398	401	402	407	430	433	425	413	413	420	409	397	391	*361*	665
16	387	390	384	387	388	394	398	402	401	398	391	383	384	393	399	402	409	410	403	399	391	384	362	373	392	1412
17 *q*	384	387	390	390	390	390	390	390	387	383	380	374	367	371	377	385	390	391	392	391	391	391	390	390	386	1261
18 *q*	387	387	387	387	386	383	384	381	380	377	374	373	372	376	384	391	397	395	392	391	390	390	390	387	385	1241
19	385	383	383	384	383	384	386	386	385	385	381	378	370	367	373	378	386	392	404	397	394	389	387	382	384	1222
20	365	367	370	374	378	380	381	381	381	381	377	373	369	372	378	385	390	392	392	391	388	387	386	383	380	1121
21 *q*	384	384	384	385	385	386	387	386	386	383	373	366	362	367	377	384	385	387	387	385	386	389	386	385	382	1169
22	385	385	384	385	385	385	385	385	379	371	365	359	358	368	379	387	397	403	405	409	408	397	395	390	385	1249
23	387	387	387	388	387	385	383	380	379	370	368	366	362	363	369	384	390	390	396	399	399	394	388	374	382	1175
24	366	363	355	356	369	374	378	380	379	373	368	362	362	367	378	386	396	403	408	412	403	397	391	385	380	1111
25	380	375	356	361	367	368	372	374	377	376	370	362	361	366	374	381	387	395	401	404	397	391	389	386	378	1070
26	379	376	371	360	369	374	371	376	376	372	369	364	358	361	376	389	390	392	399	394	391	390	388	387	378	1072
27	385	381	376	377	378	380	377	377	377	375	373	364	362	369	378	383	388	391	394	397	397	396	387	379	381	1141
28	367	367	358	362	359	362	367	373	372	370	367	363	364	367	373	379	384	386	391	392	388	385	383	381	373	960
29	377	380	382	383	381	381	390	384	379	376	367	358	358	366	373	377	379	380	380	383	384	386	387	379	378	1070
30	376	375	373	376	379	377	377	378	378	374	365	360	362	367	374	379	383	388	389	384	384	386	386	384	377	1054
Mean	373	371	371	370	372	375	377	379	379	377	374	370	*369*	374	382	391	396	*400*	400	397	393	390	384	378	381	
Sum 11,000+	184	145	126	110	150	236	320	383	379	305	215	92	70	210	465	725	893	999	992	897	799	707	518	328		Grand Total 274,248

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

24 ESKDALEMUIR — APRIL 1961

	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	γ	h. m.	′	′	h. m.	′	h. m.	γ	h. m.	γ	γ				°A.
1	02 14	852	11 07	755	97	13 08	31·0	10·8	02 40	20·2	17 12	404	02 30	324	80	4,2,3,1,2,2,2,3	19	1	84·1
2	00 08	812	12 43	727	85	14 20	31·3	13·2	21 04	18·1	18 58	408	07 30	373	35	1,2,2,1,2,2,3,3	16	1	84·1
3 *d*	18 13	816	12 02	752	64	14 16	32·1	6·7	03 03	25·4	17 56	438	04 44	303	135	3,4,3,3,2,2,2,3	22	1	84·1
4 *q*	18 14	815	11 40	752	63	13 41	29·2	17·7	00 09	11·5	18 55	391	01 00	362	29	2,1,2,2,1,1,2,0	11	0	84·1
5 *q*	02 27	828	11 12	752	76	14 33	27·7	15·4	02 58	12·3	00 42	387	12 35	366	*21*	3,3,1,2,1,2,1,0	13	1	84·1
6	20 54	853	11 18	754	99	13 09	31·4	8·7	23 56	22·7	18 24	403	11 39	363	40	2,1,1,2,2,2,4,3	17	1	84·0
7	19 14	825	11 11	764	61	13 23	30·9	8·8	00 01	22·1	17 53	386	12 33	364	22	3,3,1,2,2,1,1,1	14	1	84·1
8	19 06	839	11 32	756	83	13 50	29·1	17·7	07 36	*11·4*	17 32	386	12 29	363	23	1,1,2,3,1,1,2,2	13	0	84·0
9 *d*	17 32	829	10 38	688	141	11 40	37·3	14·6	08 27	22·7	19 03	404	11 29	363	41	1,2,2,5,4,3,3,3	23	1	84·1
10	00 08	866	14 19	748	118	13 25	31·5	15·3	18 11	16·2	18 08	398	00 39	344	54	4,3,3,3,3,4,3,3	26	1	84·1
11 *d*	17 39	890	13 41	749	141	12 58	31·9	-1·5	17 30	33·4	17 28	457	04 16	347	110	3,3,2,2,3,5,4,2	24	1	84·1
12	17 42	833	12 04	747	86	13 42	32·3	15·8	21 27	16·5	15 20	400	11 00	373	27	2,1,2,2,3,3,3,3	19	1	84·1
13	15 08	856	11 04	755	101	15 05	32·9	15·1	08 26	17·8	15 38	413	12 19	372	41	1,2,2,2,4,4,3,2	20	1	84·2
14 *d*	18 23	942	23 29	557	385	15 21	*41·9*	-14·3	23 38	56·2	17 32	*514*	23 47	124	*390*	2,2,2,3,4,4,6,6	29	2	84·2
15 *d*	00 37	*948*	00 50	*318*	*630*	06 34	33·3	-25·9	00 19	*59·2*	15 46	408	01 02	*59*	349	8,5,5,2,3,4,3,2	32	2	84·2
16	19 37	834	12 01	737	97	12 37	28·6	5·9	21 42	22·7	16 47	414	22 32	356	58	3,2,2,2,3,3,3,4	22	1	84·2
17 *q*	19 27	808	11 48	742	66	13 58	29·5	14·4	07 49	15·1	18 21	392	12 44	366	26	1,2,1,2,2,2,1,0	11	0	84·1
18 *q*	19 09	814	11 40	752	62	14 00	30·7	18·1	08 26	12·6	16 48	397	12 01	372	25	1,2,2,1,1,1,1,1	10	0	84·0
19	23 59	864	11 29	748	116	14 59	29·1	15·2	09 10	13·9	18 39	406	13 00	366	40	1,2,2,1,2,3,3,3	17	1	84·0
20	00 01	864	11 36	768	96	14 10	27·7	15·3	00 43	12·4	18 50	394	12 48	368	26	4,1,2,1,1,1,2,1	13	0	84·0
21 *q*	20 11	821	11 20	756	65	13 57	29·2	15·3	08 55	13·9	21 28	390	12 30	360	30	0,0,0,1,2,1,1,1	6	1	84·0
22	18 49	829	11 17	778	*51*	14 44	33·8	13·6	21 42	20·2	20 05	412	11 57	356	56	1,0,1,1,3,3,3,3	15	1	83·8
23	18 27	830	12 26	758	72	15 01	30·6	11·9	23 31	18·7	20 32	402	12 46	362	40	1,1,1,1,3,2,3,2	14	1	84·0
24	17 55	837	11 38	756	81	14 07	32·0	11·9	23 00	20·1	19 13	415	02 58	348	67	3,1,1,2,3,3,3,3	19	1	84·2
25	18 33	829	12 57	768	61	14 04	30·6	16·3	08 16	14·3	19 36	405	02 44	348	57	3,1,1,0,2,2,2,1	12	1	84·3
26	18 14	888	12 36	748	140	14 10	32·5	15·4	04 20	17·1	18 33	402	03 30	357	45	2,3,2,2,3,4,4,1	21	1	84·1
27	06 06	838	13 29	755	83	13 54	32·3	13·7	08 27	18·6	19 50	399	12 12	359	40	2,2,3,3,3,3,2,2	20	1	84·2
28	19 22	834	12 17	759	75	13 55	28·9	15·1	08 37	13·8	19 07	393	02 24	352	41	3,2,2,2,1,2,2,1	15	1	84·2
29	20 08	835	11 24	756	79	12 53	29·2	12·6	22 30	16·6	22 20	394	11 48	356	38	2,0,0,2,1,2,2,3	12	1	84·2
30	21 36	845	10 29	763	82	14 20	31·0	14·2	01 19	16·8	18 12	390	11 54	358	32	2,1,1,2,3,3,1,3	16	1	84·1
Mean	- -	846	- -	731	115	- -	31·3	10·9	- -	20·4	- -	407	- -	339	67	-	-	0·90	84·1

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.

21 ESKDALEMUIR (H) — 16,000γ (0·16 C.G.S. unit) + — MAY 1961

	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 18,000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1	807	812	799	820	798	796	796	791	778	762	746	753	763	757	792	798	807	798	808	810	809	815	809	809	793	1033
2	792	770	759	791	807	803	790	778	766	756	763	766	767	780	791	795	800	795	801	805	805	803	804	804	*787*	891
3 *q*	801	799	799	798	802	802	801	799	786	773	771	771	774	779	788	788	794	803	803	805	809	809	804	806	794	1064
4	806	804	804	803	803	803	801	798	786	781	779	776	776	781	785	794	808	826	833	826	817	807	787	780	799	1164
5	806	811	803	805	805	810	806	798	805	801	787	777	787	794	798	805	866	793	838	817	805	806	802	787	805	1312
6 *d*	813	808	808	809	810	777	783	787	778	766	727	754	755	757	771	791	803	809	813	812	810	821	803	805	790	970
7 *d*	801	801	796	802	797	797	789	757	782	773	761	745	758	748	764	793	817	824	825	822	809	817	822	805	792	1005
8	797	792	793	788	788	798	795	798	793	774	772	766	767	779	779	790	821	826	828	834	813	826	810	802	797	1129
9	806	806	806	798	797	791	785	769	771	746	778	780	785	792	797	783	803	815	813	810	807	804	803	806	794	1051
10	806	798	797	799	800	799	798	794	787	784	784	782	781	789	801	800	806	814	821	823	822	825	829	841	803	1280
11	834	809	802	787	805	811	814	801	786	785	787	787	784	782	797	805	804	837	814	838	818	816	814	810	805	1327
12	787	802	790	810	788	813	794	780	778	762	759	773	774	786	793	800	805	826	829	821	814	808	812	844	798	1148
13	794	780	796	790	787	790	786	765	762	766	771	762	789	801	793	816	803	814	819	803	804	805	806	820	793	1022
14	808	805	805	801	795	787	787	775	774	769	751	755	775	785	789	794	800	811	815	814	808	807	806	806	793	1022
15 *q*	804	803	802	801	800	799	791	785	778	772	776	776	774	778	782	790	810	818	831	826	821	825	806	807	798	1155
16 *d*	801	789	799	803	813	792	802	802	791	771	765	766	778	800	786	807	809	808	818	811	818	808	817	807	798	1161
17	805	803	799	801	797	796	794	787	779	770	762	760	753	779	794	806	812	815	816	813	810	810	810	808	795	1079
18 *q*	807	807	803	803	803	802	798	790	782	764	756	757	765	773	785	801	815	823	825	821	815	813	814	815	797	1137
19	820	815	811	810	817	808	804	801	792	779	780	777	784	797	801	826	821	830	830	833	832	821	826	851	811	1466
20	814	799	805	798	814	829	808	788	773	774	777	782	781	779	797	817	812	836	829	823	829	819	814	810	804	1307
21 *q*	807	808	807	810	804	800	794	788	786	785	784	787	798	803	806	806	822	835	843	840	822	822	826	821	809	1404
22	826	822	812	814	814	817	809	804	803	798	798	804	817	827	822	837	848	830	843	838	824	818	817	820	*819*	1662
23	823	819	816	826	826	808	805	807	803	794	824	774	786	805	824	811	841	822	826	812	813	811	812	811	812	1499
24	809	803	805	809	801	801	798	790	784	784	783	789	799	805	819	833	815	821	826	824	823	823	828	833	809	1405
25 *d*	819	813	806	808	801	765	829	789	769	769	774	778	786	791	826	819	829	851	857	813	802	791	786	791	803	1262
26	790	785	790	792	790	788	778	775	778	771	772	770	766	783	801	814	816	824	828	826	826	818	817	821	797	1119
27	819	801	798	790	800	801	788	781	775	771	778	783	791	803	801	814	810	816	816	817	817	809	803	805	799	1187
28	800	800	798	803	798	796	792	789	783	777	774	775	785	803	810	836	825	826	834	827	813	825	808	808	804	1285
29 *q*	808	808	808	803	799	805	805	797	783	778	773	778	780	783	791	803	808	815	818	824	824	821	818	812	802	1242
30	814	810	812	808	815	814	802	786	780	785	787	797	794	814	814	818	829	831	843	842	835	828	831	845	814	1534
31 *d*	835	836	824	828	819	830	822	805	782	765	780	794	809	812	795	816	821	823	846	826	816	812	814	810	813	1520
Mean	808	804	802	803	803	801	798	789	782	774	*773*	774	780	789	797	807	815	820	*825*	821	816	814	811	813	801	
Sum 23,000+	2059	1918	1852	1908	1893	1828	1744	1454	1253	1005	979	994	1181	1445	1692	2006	2280	2415	2589	2456	2290	2243	2158	2200		Grand Total 595,842

MAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

22 ESKDALEMUIR (D) — 10° + — MAY 1961

	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 400·0+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	
1	18·0	19·7	18·3	17·5	13·0	15·4	15·3	15·0	15·7	17·7	20·9	27·2	30·1	30·1	28·8	26·6	25·4	22·8	22·1	21·7	21·4	21·4	19·4	11·9	20·6	95·4
2	7·7	3·0	15·8	22·0	20·2	16·4	15·6	16·2	17·9	20·1	22·5	27·1	29·1	30·6	29·1	27·8	26·5	25·0	23·7	23·2	22·2	21·0	21·2	21·6	21·1	105·5
3 *q*	22·2	22·2	22·1	22·4	21·3	20·6	19·0	17·8	18·0	19·1	20·8	23·6	25·4	26·6	26·5	24·9	24·1	22·9	22·3	21·9	21·7	21·6	21·0	20·8	22·0	128·8
4	20·4	20·1	19·9	19·6	19·4	19·2	18·6	17·4	16·2	18·0	20·1	23·0	24·2	25·0	25·7	25·5	25·8	25·7	25·0	22·2	20·4	19·5	13·8	12·2	20·7	96·9
5	17·8	19·2	19·6	21·2	17·5	18·3	19·0	23·3	22·0	18·8	20·1	22·0	22·9	25·1	26·1	26·2	24·0	25·0	26·8	23·5	23·3	21·3	19·8	16·3	21·6	119·1
6 *d*	19·2	18·6	19·1	21·0	20·1	29·9	28·7	19·8	17·4	17·9	19·6	21·3	24·7	23·9	22·8	24·8	25·0	24·4	23·7	22·9	20·1	18·0	20·9	21·1	21·9	124·9
7 *d*	21·9	25·4	20·9	20·2	17·6	18·9	20·3	23·7	22·0	20·8	20·3	23·6	25·7	26·8	26·0	23·7	23·9	23·0	23·4	22·8	22·8	19·8	16·0	18·8	22·0	128·3
8	17·1	18·3	19·6	19·2	18·4	18·2	18·5	17·3	17·0	18·1	19·2	21·2	24·3	25·5	25·5	24·8	24·6	23·4	17·6	21·9	22·9	21·8	21·6	21·1	20·7	97·1
9	21·1	20·5	20·7	20·6	20·8	21·8	20·4	20·1	20·6	21·2	21·4	21·6	23·9	25·3	24·4	22·0	22·8	22·8	22·7	21·9	21·6	21·9	22·0	22·0	21·8	124·1
10	21·0	19·5	18·3	18·4	19·0	18·9	18·2	18·2	18·1	20·2	22·1	18·9	25·5	23·8	23·6	23·0	22·8	23·0	23·5	23·1	22·8	21·2	22·2	20·4	21·1	105·7
11	21·5	18·0	14·9	14·8	18·2	16·5	18·0	16·6	18·3	21·5	21·8	23·2	24·6	25·2	26·4	26·9	25·3	25·3	21·6	20·0	23·0	22·4	22·2	20·8	21·1	107·0
12	19·7	23·6	22·5	17·6	17·6	18·4	18·0	18·4	16·3	18·2	19·4	22·0	25·3	26·8	26·6	25·6	24·5	23·6	23·2	22·0	21·6	21·3	21·6	22·6	21·5	116·4
13	21·2	10·6	15·2	19·8	24·0	17·2	15·1	13·9	16·5	19·1	21·5	24·9	26·0	27·5	26·6	25·6	23·5	23·1	19·4	21·4	20·9	19·2	21·9	22·1	20·7	96·2
14	22·8	22·6	23·5	26·4	19·6	16·4	15·2	16·3	15·4	17·2	20·2	22·8	24·4	26·4	24·8	22·9	22·2	21·8	21·2	21·1	21·1	21·2	21·0	21·2	21·2	107·7
15 *q*	20·9	20·2	19·9	19·3	18·8	17·8	17·7	17·6	18·0	20·5	22·5	23·8	25·3	27·3	27·1	26·3	26·1	24·8	23·4	22·4	18·9	18·7	19·4	18·3	21·5	115·0
16 *d*	18·3	10·1	14·9	16·6	16·7	21·3	29·8	20·6	21·7	19·1	21·9	24·5	27·0	29·8	30·0	27·0	23·6	24·5	24·7	23·7	22·5	19·4	19·6	20·1	22·0	127·4
17	22·9	17·7	19·1	18·6	18·0	18·3	17·8	17·0	16·8	18·0	20·3	23·2	23·9	25·7	26·3	24·5	25·6	25·1	23·8	22·8	22·1	21·8	21·7	21·3	21·3	112·3
18 *q*	21·4	22·0	21·0	19·8	18·8	18·1	17·7	17·4	17·4	18·2	19·7	22·1	25·1	26·0	25·5	25·8	25·6	24·7	24·0	23·1	22·8	22·4	22·0	21·7	21·8	122·3
19	21·4	21·9	20·0	19·1	18·5	18·7	18·7	17·7	16·4	18·5	21·7	23·2	24·1	26·7	28·6	29·1	27·7	26·6	25·7	25·6	24·7	22·5	21·9	23·9	22·6	142·9
20	21·1	13·6	16·7	17·5	16·7	13·8	13·4	13·4	14·4	18·1	22·6	25·6	27·2	26·3	26·4	25·2	24·5	25·1	24·5	19·8	22·8	22·5	20·8	20·7	*20·5*	92·7
21 *q*	20·0	19·0	20·1	18·0	16·5	15·6	16·4	17·3	18·6	20·4	22·0	24·0	26·7	26·6	25·8	25·0	25·6	25·8	25·9	23·1	21·3	22·5	22·4	21·5	21·7	120·1
22	18·7	17·0	15·3	16·0	16·3	14·9	15·3	16·1	16·6	18·5	21·7	24·7	26·7	28·0	27·9	28·1	28·0	26·9	25·7	21·0	21·8	21·9	22·1	21·4	21·3	110·6
23	20·4	19·7	19·8	20·4	23·2	18·3	17·8	18·6	19·1	21·2	22·6	23·9	25·0	25·6	26·5	24·9	24·7	23·6	23·8	21·9	21·2	22·4	21·9	21·9	22·0	128·4
24	22·4	25·4	21·0	20·6	20·5	17·9	17·0	17·0	17·5	19·3	18·9	21·9	24·2	24·4	24·6	25·4	24·8	24·6	23·6	22·8	22·8	22·5	22·3	18·1	21·6	119·5
25 *d*	17·7	16·4	15·0	13·8	19·3	26·8	30·2	21·6	19·3	18·3	19·9	21·6	25·8	28·8	28·8	29·3	27·9	24·6	19·0	21·6	21·8	20·1	20·6	20·7	22·0	128·9
26	21·1	25·4	21·4	18·8	17·5	16·3	15·8	16·6	16·8	17·9	20·2	23·0	25·2	27·0	27·5	27·8	25·7	23·8	22·9	23·1	23·1	22·7	22·2	21·7	21·8	123·5
27	19·2	19·3	16·4	16·8	17·4	14·6	13·9	16·2	18·7	20·8	22·5	24·0	27·8	28·6	27·9	25·4	25·5	24·0	23·5	23·4	23·1	22·1	21·1	20·4	21·4	112·6
28	19·4	19·3	19·1	18·0	16·9	15·6	15·8	15·5	16·5	18·4	21·3	26·4	29·7	31·2	31·9	33·5	30·8	28·8	22·6	22·6	21·0	21·2	16·4	20·1	22·2	132·0
29 *q*	21·2	20·9	19·7	19·2	20·4	21·8	18·6	16·2	16·7	18·2	20·9	23·8	25·6	27·2	28·0	27·0	25·1	23·4	22·6	21·9	21·8	21·5	21·4	21·0	21·8	124·1
30	21·2	20·7	18·9	18·2	16·5	14·7	15·2	15·1	17·5	18·5	21·1	24·6	26·9	27·6	27·4	26·1	25·2	24·4	23·8	23·5	22·6	22·1	22·0	22·9	21·5	116·7
31 *d*	19·7	20·1	18·5	21·1	23·3	21·7	20·9	20·1	20·1	21·4	26·8	28·3	28·3	30·6	28·4	26·3	24·5	22·8	21·2	23·2	22·6	23·1	22·1	18·3	*23·1*	153·4
Mean	19·9	19·0	18·9	19·1	18·8	18·5	18·5	*17·7*	17·9	19·1	21·2	23·6	25·8	*27·0*	26·8	26·0	25·2	24·4	23·1	22·4	22·0	21·3	20·8	20·2	21·6	
Sum 500·0+	118·6	90·0	87·2	92·5	82·0	72·3	71·9	48·0	53·5	93·2	156·5	231·0	300·6	336·0	331·5	307·0	281·3	255·3	216·9	195·1	182·7	161·0	144·5	126·9		Grand Total 16035·5

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) + — MAY 1961

	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	
1	375	373	363	345	348	356	359	361	362	360	359	358	362	362	363	370	376	381	379	379	378	377	380	374	367	800
2	352	316	310	304	336	360	368	371	372	372	371	367	366	372	376	380	386	387	387	384	382	382	382	379	365	762
3 *q*	378	378	378	380	378	380	381	382	382	376	374	372	366	365	370	374	376	380	382	380	378	377	377	379	377	1043
4	378	379	380	381	380	381	377	375	374	372	365	365	371	371	371	371	371	374	382	393	391	388	361	371	376	1022
5	379	377	379	378	378	377	378	376	370	368	364	364	364	368	374	382	408	435	413	410	401	393	385	374	*383*	1195
6 *d*	371	371	371	374	377	369	348	355	364	364	365	368	371	388	401	388	388	387	384	386	391	373	372	372	375	998
7 *d*	375	358	357	366	368	372	374	371	367	369	367	368	374	376	383	393	385	382	383	383	384	381	374	366	374	976
8	362	371	375	376	375	375	377	377	373	371	371	370	369	370	374	378	381	390	404	395	388	369	365	371	376	1027
9	374	375	376	375	373	371	370	373	370	375	368	363	362	365	379	394	388	384	387	388	388	384	382	377	377	1041
10	369	370	375	377	378	378	378	377	377	372	369	365	368	373	378	381	380	382	382	382	381	379	377	365	376	1013
11	341	351	359	367	365	364	365	366	366	365	364	363	363	363	369	378	387	390	410	406	391	387	382	382	373	944
12	368	358	347	350	362	361	365	367	367	367	365	361	361	365	369	372	378	390	388	391	387	383	381	365	369	868
13	329	305	298	327	332	353	368	371	369	368	366	365	365	372	380	384	390	391	394	390	387	382	378	378	*364*	742
14	376	371	365	348	353	367	375	378	377	375	371	368	365	372	381	382	382	383	382	382	382	380	378	378	374	971
15 *q*	378	378	378	379	381	381	378	376	371	366	360	356	356	364	371	375	377	377	382	388	391	384	381	376	375	1004
16 *d*	359	334	358	370	375	372	342	348	355	360	366	365	368	376	389	404	409	398	397	395	388	386	377	374	374	965
17	360	362	371	376	379	382	382	382	379	373	368	366	369	372	379	385	384	383	382	382	382	380	379	378	376	1035
18 *q*	377	374	375	378	381	382	380	379	376	374	370	364	359	361	366	372	377	379	382	382	380	377	377	377	375	999
19	377	377	377	379	379	381	377	371	371	366	360	358	359	363	369	371	378	386	385	384	382	384	381	358	374	973
20	351	361	371	372	354	339	342	350	353	355	353	350	356	363	371	379	387	388	389	392	384	378	377	377	366	792
21 *q*	375	372	372	371	375	377	372	369	365	356	350	348	348	354	360	366	371	377	382	391	389	382	376	375	370	873
22	368	366	369	371	373	371	369	363	352	346	345	342	348	355	365	370	371	378	383	397	389	384	378	377	368	830
23	376	376	376	375	372	376	377	375	371	366	362	362	363	371	384	390	393	397	394	390	390	384	380	377	378	1077
24	375	367	355	360	365	372	377	377	376	372	369	365	363	368	371	378	386	382	382	381	378	377	375	368	372	939
25 *d*	361	348	332	350	355	340	292	315	324	332	346	353	364	388	412	424	430	432	427	418	412	406	394	388	373	943
26	379	364	360	370	379	382	379	379	379	378	374	372	374	372	374	377	379	380	382	382	382	381	380	374	376	1032
27	362	368	371	375	376	376	375	372	371	366	359	350	354	363	374	382	387	388	388	387	386	385	383	382	374	980
28	378	376	375	374	376	377	377	375	369	359	350	345	348	354	363	367	376	390	407	401	397	388	388	382	375	992
29 *q*	379	378	378	378	377	369	368	371	374	369	361	353	353	358	360	365	371	377	378	377	377	377	376	377	371	901
30	376	376	372	376	377	377	374	372	369	358	349	345	348	352	358	366	373	378	377	376	375	374	372	370	368	840
31 *d*	370	369	371	371	367	360	359	361	360	359	362	359	364	374	378	378	393	401	410	407	399	389	382	375	376	1018
Mean	369	365	364	367	369	370	368	369	368	365	363	*360*	362	367	375	38[illegible]	385	388	*390*	390	387	382	378	375	373	
Sum 11,000+	428	299	294	373	444	478	403	435	405	329	243	170	221	390	612	776	918	1027	1084	1079	990	851	730	616		Grand Total 277,595

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

24 ESKDALEMUIR — MAY 1961

	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	γ	h. m.	′	h. m.	′	′	h. m.	γ	h. m.	γ	γ					°A.
1	16 52	845	11 22	735	110	12 36	32·4	23 40	9·8	22·6	17 12	382	03 47	339	43	2,3,1,3,3,4,1,3	20	1	84·2
2	16 37	814	02 50	745	69	13 30	31·0	00 52	*0·6*	*30·4*	17 06	388	02 59	*285*	103	5,4,2,3,2,2,1,1	20	1	84·2
3 *q*	20 53	816	10 56	763	*53*	14 14	27·0	08 20	17·4	9·6	18 15	383	13 00	364	*19*	0,1,1,1,1,1,2,1	8	0	84·2
4	19 56	857	22 49	756	101	16 55	26·7	23 08	5·8	20·9	19 41	395	22 42	350	45	1,1,2,1,2,3,3,3	16	1	84·2
5	16 40	*925*	11 22	771	154	18 21	28·1	23 25	14·0	14·1	17 09	*445*	10 31	363	82	2,2,3,2,3,5,4,3	24	1	84·3
6 *d*	21 10	869	*711*	10 16	*158*	05 48	34·5	21 05	9·3	25·2	14 11	407	06 39	346	61	2,4,4,4,3,2,3,4	26	2	84·2
7 *d*	18 56	844	11 50	727	117	13 34	28·5	21 55	13·1	15·4	15 36	394	01 45	350	44	3,3,4,3,3,4,3,3	26	1	84·3
8	18 31	857	11 48	761	96	13 55	26·3	18 22	12·6	13·7	18 20	405	00 01	360	45	2,2,2,2,2,3,4,3	20	1	84·2
9	17 48	824	09 27	721	103	13 38	26·1	07 00	18·2	*7·9*	15 22	394	11 54	361	33	0,2,2,4,3,3,2,2	18	1	84·1
10	23 31	848	11 46	774	74	12 10	26·5	23 39	17·4	9·1	18 30	382	23 59	347	35	2,1,1,2,2,2,2,2	14	0	84·1
11	19 16	856	08 27	767	89	15 00	28·0	03 23	12·5	15·5	19 04	416	00 31	339	77	3,3,3,2,4,4,4,2	25	1	84·1
12	18 32	849	10 11	748	101	13 41	27·4	03 46	14·9	12·5	17 44	393	02 30	344	49	3,3,2,3,2,3,3,3	22	1	84·0
13	15 01	833	08 16	744	89	13 58	29·1	01 37	1·9	27·2	18 36	396	02 22	288	108	4,4,3,3,4,3,3,2	26	1	84·0
14	18 56	821	11 03	739	82	03 30	29·4	06 26	13·8	15·6	17 24	384	03 50	340	44	3,3,2,3,2,2,2,1	18	1	84·0
15 *q*	18 36	835	09 24	770	65	13 50	28·2	23 59	14·5	13·7	20 18	393	11 33	355	38	0,0,0,2,2,3,2,1	10	0	83·9
16 *d*	14 20	837	05 57	736	101	06 22	35·6	01 38	7·6	28·0	16 25	413	01 22	358	55	4,4,4,2,4,4,3,2	27	2	84·0
17	15 38	825	12 29	744	81	00 22	27·9	07 50	15·7	12·2	15 06	387	00 41	353	34	3,1,2,3,3,3,1,1	17	1	83·8
18 *q*	18 26	831	11 03	754	77	15 36	26·3	08 47	16·6	9·7	18 47	383	12 40	358	25	1,1,1,1,1,1,2,2,1	10	0	83·9
19	23 19	884	10 02	769	115	15 30	30·0	08 31	14·9	15·1	17 33	387	23 59	347	40	2,1,2,2,3,3,2,4	19	1	83·7
20	20 06	845	08 41	766	79	13 01	28·0	05 51	11·3	16·7	19 51	395	05 40	336	59	3,4,3,2,3,3,3,1	22	1	83·8
21 *q*	19 31	852	08 02	783	69	12 43	27·2	05 30	15·3	11·9	20 10	393	12 30	346	47	1,1,2,1,2,2,3,2	14	1	83·8
22	16 52	868	10 45	791	77	16 10	29·1	04 08	13·0	16·1	19 31	400	11 50	341	59	2,2,2,2,2,2,3,4,2	19	1	83·8
23	16 10	876	11 37	768	108	14 41	28·5	06 46	16·3	12·2	17 11	398	12 01	359	39	3,3,2,3,4,4,3,2	24	1	83·8
24	23 32	844	10 13	779	65	01 43	29·1	07 08	15·9	13·2	16 20	388	02 15	353	35	3,2,1,2,2,3,2,2	17	1	83·8
25 *d*	18 21	880	05 38	735	145	05 58	*41·0*	03 53	11·1	29·9	18 11	436	06 26	287	*149*	3,5,5,3,4,3,4,2	29	2	83·9
26	18 21	832	12 17	757	75	14 25	28·9	15·2	06 44	13·7	00 04	385	01 54	353	32	3,0,2,2,3,2,1,2	15	1	83·8
27	00 10	844	09 22	768	76	13 42	29·0	13·3	06 30	15·7	17 50	389	11 36	348	41	3,2,2,2,2,2,1,2	16	0	83·8
28	15 20	858	11 11	764	94	15 22	35·0	14·4	07 17	20·6	18 18	411	11 16	342	69	1,1,1,2,3,4,3,3	18	1	83·9
29 *q*	19 50	830	10 21	771	59	14 40	28·2	15·5	08 10	12·7	18 05	379	11 53	350	29	1,3,1,1,1,2,2,1	12	0	83·8
30	18 55	852	08 46	778	74	13 58	28·5	14·2	05 15	14·3	17 26	380	11 29	342	38	2,1,2,2,3,3,2,3	18	1	83·8
31 *d*	18 29	867	10 06	756	111	13 29	32·1	12·9	23 59	19·2	18 41	412	08 52	356	56	3,3,3,3,4,4,3,3	26	1	83·9
Mean	- -	849	- -	757	92	- -	29·5	12·9	- -	16·6	- -	397	- -	344	53	-	-	0·90	84·0

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.

21 ESKDALEMUIR (H) — 16,000γ (0·16 C.G.S. unit) + — JUNE 1961

	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 18,000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1 *d*	811	802	804	808	808	812	812	805	779	765	771	778	736	798	803	810	852	817	838	828	817	810	810	814	804	1288
2 *d*	812	813	812	806	802	808	803	795	766	748	770	759	768	792	807	810	841	841	830	814	807	802	806	807	801	1219
3	808	808	803	802	796	795	801	787	767	756	764	766	771	779	795	806	815	819	825	820	815	810	810	809	797	1127
4	809	810	803	795	803	806	811	811	796	783	773	781	776	783	796	799	802	809	817	821	819	818	815	810	802	1246
5	806	801	803	799	790	810	810	802	782	774	771	779	778	780	785	799	819	833	835	838	821	818	820	820	803	1273
6	813	812	814	814	821	822	814	805	805	802	799	814	814	797	801	814	852	895	844	839	833	824	814	807	820	1669
7	806	802	796	798	803	805	797	802	791	792	793	803	796	813	774	797	822	848	844	844	824	823	811	811	808	1395
8	803	799	805	805	804	795	782	775	774	774	777	767	785	787	783	809	808	824	828	831	824	822	810	808	799	1179
9	802	801	803	808	812	808	802	797	786	784	782	780	783	794	795	810	806	817	824	837	821	817	809	808	804	1286
10 *q*	807	808	806	808	808	804	794	790	784	785	783	785	782	794	807	814	818	819	820	819	817	815	814	814	804	1295
11 *q*	813	813	811	811	808	805	805	795	787	780	780	785	798	806	816	829	828	824	820	822	826	824	824	822	810	1432
12	823	821	823	826	818	800	814	799	797	789	783	782	794	809	812	818	828	833	827	821	819	820	814	814	812	1484
13 *q*	814	814	814	814	815	809	805	797	787	781	787	797	806	809	806	821	825	831	831	829	825	822	819	821	812	1479
14	825	815	814	817	817	817	814	811	806	802	793	790	789	802	811	818	825	828	835	840	837	831	822	834	816	1593
15	844	834	831	833	834	828	826	821	810	796	794	799	806	791	815	824	841	842	844	832	823	819	826	824	*822*	1737
16	834	815	821	803	810	806	794	780	767	767	778	790	794	813	830	845	820	828	836	834	828	820	809	812	810	1434
17	815	817	819	816	808	810	805	794	782	770	765	757	756	785	830	825	829	835	843	843	832	820	816	813	808	1385
18	808	808	809	813	817	813	804	794	793	785	770	764	775	785	803	831	821	867	869	855	844	852	805	794	812	1479
19	795	797	804	799	810	814	807	795	780	764	756	756	766	768	784	796	814	828	833	833	826	823	811	804	798	1163
20	808	803	803	805	809	805	798	794	792	786	775	773	775	780	788	798	827	844	857	841	842	837	841	830	809	1411
21 *d*	793	795	811	787	809	809	799	785	767	767	758	760	745	738	802	784	817	838	861	858	814	776	726	719	788	918
22 *d*	744	755	731	753	814	774	741	724	698	713	724	747	728	738	752	795	786	837	889	864	833	829	822	817	*775*	608
23	784	798	795	786	787	783	777	774	772	765	760	756	761	769	791	782	807	813	810	811	818	813	806	802	788	920
24	788	791	795	788	790	790	785	781	773	756	756	760	778	796	803	807	811	806	809	814	813	808	806	808	792	1012
25	808	807	803	799	800	800	795	783	777	774	771	775	795	802	806	824	838	849	821	814	816	818	813	802	804	1290
26	801	802	803	803	799	796	789	782	776	777	777	784	793	795	833	822	829	821	802	817	813	807	806	806	801	1233
27	805	807	806	806	806	799	778	753	777	771	767	769	776	778	780	797	807	808	811	812	814	811	807	809	794	1054
28 *q*	810	811	810	812	813	809	803	794	784	777	783	791	804	803	809	819	825	827	830	831	822	824	820	820	810	1431
29 *d*	826	824	823	791	801	728	810	796	797	779	768	763	763	778	789	797	814	821	836	825	814	806	807	801	798	1157
30 *q*	802	797	795	802	802	797	791	784	794	764	757	756	760	772	788	805	808	815	825	818	814	814	814	809	795	1083
Mean	807	806	806	804	807	802	799	790	781	774	*773*	775	778	788	800	810	821	831	*833*	830	822	818	811	809	803	
Sum 23,000+	1217	1180	1170	1107	1214	1057	966	705	446	226	185	266	351	634	994	1305	1635	1917	1994	1905	1671	1533	1333	1269		Grand Total 578,280

MAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

22 ESKDALEMUIR (D) — 10° + — JUNE 1961

	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 400·0+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	
1 *d*	15·7	17·6	17·7	18·5	20·7	17·4	16·6	17·6	19·4	22·5	23·5	23·3	27·7	27·5	30·0	27·2	28·2	23·5	23·3	23·3	23·3	21·0	21·6	20·0	22·0	127·1
2 *d*	22·3	23·7	19·5	17·9	17·3	17·2	15·9	16·6	17·5	19·8	21·9	25·4	26·8	27·8	28·2	23·1	26·2	22·9	21·3	23·5	23·7	23·0	22·6	21·6	21·9	125·7
3	21·5	21·3	20·9	21·6	22·9	24·9	21·0	17·5	18·0	19·1	19·1	20·9	23·0	25·2	25·7	25·5	25·2	25·1	23·3	22·6	22·4	21·4	21·1	19·7	22·0	128·9
4	19·9	19·7	19·2	21·9	21·4	19·8	18·8	18·3	17·1	18·2	21·7	23·3	24·5	26·5	26·8	26·7	25·4	24·0	22·5	21·7	21·2	21·4	21·0	20·9	21·7	121·9
5	20·0	19·3	19·0	17·9	18·2	20·5	17·2	15·4	14·7	17·9	21·0	22·7	24·3	25·0	25·0	25·6	25·5	24·8	23·5	21·3	21·8	21·5	21·7	20·4	21·0	104·2
6	19·3	19·4	19·3	20·1	18·7	15·9	14·9	16·2	18·5	16·9	18·2	20·3	22·4	23·5	24·1	24·5	26·2	28·8	23·6	21·7	23·9	20·9	20·2	21·3	20·8	98·8
7	20·9	20·5	19·0	18·0	17·6	17·5	18·2	17·1	17·4	19·1	23·2	24·1	25·4	27·4	27·2	25·4	24·4	21·9	19·2	18·3	19·3	20·9	22·8	20·0	21·0	104·8
8	21·3	23·5	20·5	18·5	14·7	14·7	15·6	15·0	16·9	20·0	22·2	24·3	25·2	25·1	24·2	22·7	22·9	22·3	22·1	22·6	19·1	21·0	21·0	21·0	20·7	96·4
9	20·9	19·9	19·2	18·8	17·5	16·8	16·3	15·0	15·6	16·3	18·2	21·4	24·4	26·4	24·9	24·1	22·7	21·6	21·0	19·9	20·1	21·0	20·9	21·2	20·2	84·1
10 *q*	21·3	22·5	20·5	20·0	18·0	16·3	15·6	15·8	16·5	19·3	22·4	23·9	24·5	25·2	26·0	24·9	23·2	22·0	21·3	21·3	21·1	21·0	21·1	21·1	21·0	104·8
11 *q*	21·5	21·3	20·6	19·2	16·6	14·6	13·9	13·6	14·6	16·3	19·2	23·8	26·0	27·4	28·0	27·0	23·7	22·4	21·8	21·4	21·3	21·2	21·3	21·4	20·8	98·1
12	21·0	21·2	21·5	22·8	22·8	23·2	17·5	14·7	14·1	15·4	19·4	22·8	25·6	27·3	27·9	25·9	25·2	23·7	22·9	22·6	22·3	21·9	21·6	21·2	21·9	124·5
13 *q*	21·0	20·7	20·1	18·9	18·2	17·4	16·6	15·6	15·9	16·5	19·4	23·3	27·3	28·1	26·6	25·2	24·1	22·7	22·6	22·8	22·8	22·6	22·8	22·6	21·4	113·8
14	21·0	19·9	19·5	18·7	17·3	16·0	15·0	14·6	14·7	17·2	19·9	22·5	25·3	26·5	26·6	26·3	25·7	23·9	22·2	21·8	22·1	22·0	21·5	21·0	20·9	101·2
15	21·5	20·5	19·1	19·4	17·5	17·7	16·9	16·4	16·7	18·2	21·2	24·1	28·3	30·0	30·8	29·9	28·1	27·3	25·4	22·7	21·9	22·7	22·4	21·2	*22·5*	139·9
16	18·6	17·7	15·1	15·3	15·5	14·5	14·4	15·1	16·6	17·4	19·2	23·2	26·9	28·5	28·7	28·1	25·5	25·7	24·4	23·1	21·8	18·9	21·0	19·9	20·6	95·1
17	19·9	19·2	18·6	17·8	16·0	15·2	15·4	15·4	14·9	15·1	17·6	22·6	26·6	28·4	28·4	28·0	25·4	22·8	22·3	22·1	21·6	18·9	19·7	18·4	20·4	90·3
18	17·0	17·9	17·4	16·6	15·2	14·8	15·2	14·3	14·4	14·1	18·8	23·0	27·3	30·8	31·9	31·7	28·0	28·7	27·2	22·3	24·4	21·8	19·8	17·3	21·2	109·9
19	16·6	17·2	17·1	18·4	19·1	15·4	14·1	14·3	15·5	16·7	20·7	23·8	25·3	27·2	27·6	26·6	25·5	23·4	22·6	21·8	19·3	17·3	17·4	19·2	20·1	82·1
20	20·3	19·0	18·9	20·2	20·3	13·9	12·5	15·0	15·6	17·2	19·5	22·6	23·2	24·4	26·0	26·0	26·0	25·1	24·9	24·0	22·9	23·0	22·0	15·6	20·8	98·1
21 *d*	9·5	13·8	6·3	6·7	12·8	12·7	12·3	14·7	17·4	19·9	22·0	25·4	30·7	30·8	29·9	28·9	30·0	26·9	24·9	25·6	21·0	18·1	18·0	18·3	*19·9*	76·6
22 *d*	10·1	12·0	10·5	21·1	16·7	15·6	12·9	12·9	16·5	18·9	19·5	22·9	25·4	27·0	30·4	31·3	28·9	24·6	12·8	23·1	22·7	20·7	20·7	22·0	20·0	79·2
23	19·2	17·4	17·9	16·5	15·5	15·6	15·7	15·6	15·6	17·1	19·4	22·3	24·7	25·5	26·3	24·5	24·9	23·4	23·9	22·7	22·0	21·6	21·6	19·4	20·3	88·3
24	20·0	21·1	20·2	18·5	15·9	16·2	16·4	15·1	15·4	17·0	18·6	21·5	23·2	25·2	25·2	24·2	23·6	23·3	22·0	21·4	21·1	21·6	20·9	21·5	20·4	89·1
25	20·9	21·0	21·3	18·9	17·1	13·1	13·4	14·6	14·5	16·1	18·6	21·7	23·5	24·4	25·5	26·5	26·7	25·5	24·4	24·2	23·7	23·3	18·1	19·0	20·7	96·0
26	19·0	18·4	18·9	18·2	17·2	16·5	15·3	16·0	16·7	18·4	20·9	23·8	25·9	26·4	27·5	26·1	24·8	22·0	22·0	23·0	22·6	22·1	21·8	21·4	21·0	104·9
27	20·8	21·0	20·9	20·1	18·1	14·8	15·2	16·0	19·1	19·3	21·8	24·0	26·1	27·2	27·4	26·5	24·2	22·5	21·6	20·7	20·9	21·2	20·9	20·8	21·3	111·1
28 *q*	21·1	21·3	21·0	20·9	19·4	19·0	16·4	15·5	16·0	16·9	21·6	26·3	28·3	29·2	28·4	27·0	25·1	23·4	22·3	21·8	21·8	21·8	20·8	21·0	21·9	126·3
29 *d*	20·7	17·8	16·9	21·0	18·0	21·5	17·5	14·3	13·9	17·0	19·8	22·9	26·3	27·4	29·1	28·1	26·1	23·6	20·0	19·0	19·7	20·2	20·3	19·4	20·9	100·5
30 *q*	22·6	21·1	19·4	18·0	16·4	15·2	13·8	14·3	14·9	16·6	20·0	23·5	26·0	26·4	26·6	26·0	24·0	22·6	21·6	20·8	20·9	20·9	21·0	20·8	20·6	93·4
Mean	19·5	19·6	18·5	18·7	17·7	16·8	15·7	*15·4*	16·1	17·7	20·3	23·2	25·7	26·9	*27·4*	26·5	25·5	24·0	22·4	22·1	21·8	21·2	20·9	20·3	21·0	
Sum 400·0+	185·4	186·9	156·0	160·4	132·6	103·9	70·5	62·5	84·6	130·4	208·5	295·6	370·1	407·7	420·9	393·5	365·4	320·4	272·9	263·1	252·7	234·9	227·6	208·6		Grand Total 15115·1

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) + — JUNE 1961

	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	
1 *d*	361	361	367	374	374	371	375	373	371	365	359	360	366	368	383	390	400	413	403	397	393	386	382	375	378	1067
2 *d*	372	352	358	368	374	377	380	380	379	378	375	371	374	383	407	432	424	442	435	406	390	383	381	380	*388*	1301
3	378	379	381	375	369	349	353	365	369	369	367	368	370	371	375	380	386	388	388	388	384	382	380	377	375	991
4	374	374	376	373	369	366	374	379	382	382	378	373	374	380	381	379	385	388	391	389	388	384	380	378	379	1097
5	377	377	376	375	373	366	365	369	372	371	365	365	366	364	368	371	374	381	387	391	391	385	378	376	374	983
6	376	375	375	374	374	372	371	370	368	365	363	359	359	366	373	377	379	395	417	419	407	400	393	387	380	1114
7	383	382	382	382	384	381	375	372	366	363	362	362	363	372	385	390	395	403	411	408	401	387	367	373	381	1149
8	369	334	345	359	371	377	376	377	371	367	368	365	361	374	382	393	400	400	395	392	394	387	381	378	376	1016
9	378	379	381	382	382	383	381	378	377	374	364	359	358	365	372	381	388	389	388	384	387	380	377	378	378	1065
10 *q*	378	375	375	377	378	379	377	378	373	371	369	363	368	370	371	376	380	379	379	380	378	379	377	377	375	1007
11 *q*	377	377	377	378	382	382	378	380	376	368	361	358	362	365	366	368	371	376	377	378	377	377	376	376	373	963
12	375	375	375	371	371	369	355	362	364	362	359	359	365	372	378	377	382	387	385	382	378	377	377	377	372	934
13 *q*	377	377	377	378	378	377	375	374	369	360	353	346	351	362	370	378	382	384	383	382	381	377	377	377	373	945
14	375	376	377	377	377	375	373	377	374	370	361	353	355	361	367	372	376	377	381	381	378	378	377	375	373	943
15	368	368	371	375	375	372	371	371	371	370	363	359	358	365	376	387	399	403	402	395	388	381	376	376	377	1040
16	363	342	353	366	372	374	373	374	374	366	357	352	355	362	367	378	390	386	380	382	383	384	380	375	370	888
17	373	372	372	372	375	372	372	371	366	365	360	357	356	354	360	369	374	377	382	382	383	383	378	373	371	898
18	372	373	375	377	378	377	375	372	371	369	365	358	352	353	359	370	384	384	396	407	397	377	365	365	374	971
19	375	378	378	377	360	356	365	372	377	376	374	369	367	368	366	375	381	382	386	389	390	386	377	371	375	995
20	372	374	374	373	365	365	373	375	371	369	375	367	361	363	363	365	369	376	380	387	385	384	377	377	373	940
21 *d*	356	305	289	330	360	369	374	374	368	363	354	357	365	372	384	397	401	430	452	448	434	407	339	276	371	904
22 *d*	217	245	252	241	262	299	323	342	348	360	371	374	390	406	407	404	412	419	436	407	402	395	390	381	*353*	483
23	362	357	360	372	382	386	388	390	387	382	378	369	371	378	388	393	393	391	393	393	390	393	387	377	382	1160
24	371	368	369	369	375	380	382	385	385	379	371	369	371	371	375	379	385	391	388	394	391	387	384	384	379	1103
25	384	383	381	382	385	387	388	385	379	377	377	375	374	374	377	383	396	406	408	405	398	389	385	381	386	1259
26	378	378	381	384	387	388	388	388	382	377	368	365	368	373	378	387	390	401	401	390	388	385	382	382	383	1189
27	382	382	382	382	381	381	383	385	374	368	368	366	368	381	385	390	394	393	389	388	387	385	384	384	382	1162
28 *q*	382	382	382	382	382	379	377	375	371	371	369	368	368	372	375	380	381	385	386	389	388	384	383	381	379	1092
29 *d*	375	371	365	311	289	285	310	351	363	367	372	372	378	389	395	401	406	407	404	406	401	397	389	382	370	886
30 *q*	378	374	382	384	389	388	389	388	381	377	374	368	365	369	377	384	389	390	388	387	386	385	382	382	381	1156
Mean	369	365	366	367	369	369	371	374	373	370	367	*363*	365	371	377	383	389	394	*396*	394	391	385	379	374	376	
Sum 10,000+	1058	945	988	1020	1073	1082	1139	1232	1179	1101	1000	906	959	1123	1310	1506	1666	1823	1891	1826	1718	1564	1361	1231		Grand Total 270,701

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

24 ESKDALEMUIR — JUNE 1961

	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	γ	h. m.	γ	h. m.	′	h. m.	′	′	h. m.	γ	γ	h. m.	γ				°A.
1 *d*	16 23	926	709	12 13	217	16 15	33·1	10·2	00 08	22·9	17 01	417	357	00 42	60	3,3,3,4,5,5,3,2	28	1	83·8
2 *d*	18 10	872	730	09 15	142	14 47	30·3	12·7	18 05	17·6	18 02	450	345	00 29	105	3,2,3,4,4,4,4,1	25	1	83·8
3	18 30	829	744	09 42	85	05 20	26·5	16·4	08 47	*10·1*	17 10	390	342	05 54	48	2,3,3,3,2 2,1,2	18	1	83·7
4	18 59	824	763	12 49	61	13 29	28·2	16·2	09 18	12·0	18 46	392	365	05 30	27	1,2,2,2,3,2,1,1	14	1	83·8
5	17 51	848	764	10 08	84	15 35	26·3	14·1	08 34	12·2	19 52	394	363	11 20	31	1,3,2,2,3,3,2,2	18	1	83·9
6	17 23	*961*	784	13 27	177	17 21	31·6	14·0	06 00	17·6	19 22	424	358	11 51	66	2,2,2,2,3,5,4,3	23	1	83·9
7	17 29	876	732	14 39	144	15 00	29·0	12·8	08 21	16·2	18 48	417	357	11 59	60	2,2,3,4,5,4,3,3	26	1	83·8
8	18 22	840	756	11 21	84	01 09	27·0	12·9	05 04	14·1	16 52	401	324	01 36	77	3,2,3,3,4,3,2,2	22	1	83·9
9	19 18	842	769	10 30	73	13 31	26·9	14·4	07 15	12·5	17 42	390	356	12 10	34	0,1,2,2,2,3,2,2	14	1	83·9
10 *q*	18 55	822	774	12 42	*48*	14 21	26·2	14·9	07 50	11·3	16 49	382	363	11 44	*19*	1,2,2,1,2,2,0,0	10	0	83·9
11 *q*	15 21	833	775	10 22	58	15 10	28·4	13·5	07 29	14·9	05 04	383	356	11 30	27	0,1,0,1,1,2,2,0	7	0	84·0
12	16 33	845	776	10 18	69	14 31	28·8	13·7	08 45	15·1	17 33	388	353	06 19	35	1,3,2,2,3,3,2,1	17	1	84·0
13 *q*	18 00	837	779	09 58	58	13 07	28·6	15·1	07 46	13·5	17 41	384	345	11 40	39	0,1,0,2,2,2,2,2	11	0	84·0
14	23 46	868	785	12 23	83	14 16	26·8	14·4	08 16	12·4	18 49	382	352	11 42	30	2,0,1,2,1,1,1,3	11	0	84·0
15	16 14	868	772	11 46	96	14 42	31·9	14·1	08 03	17·8	17 21	404	358	11 38	46	2,2,2,3,4,3,3,2	21	1	84·1
16	15 20	852	764	09 12	88	14 06	30·0	10·9	02 57	19·1	16 24	391	350	11 31	41	3,2,1,3,3,3,3,2	20	1	84·0
17	18 45	848	750	12 33	98	14 50	29·0	14·6	08 46	14·4	19 03	384	353	13 25	31	1,2,1,2,3,2,1,2	14	1	84·2
18	17 56	884	759	11 45	125	15 07	33·1	13·0	08 52	20·1	19 30	410	351	12 03	59	1,1,2,3,3,4,3,4	21	1	84·2
19	21 01	836	751	10 48	85	14 20	28·0	13·3	06 53	14·7	20 50	390	355	05 20	35	2,3,2,2,2,2,3,2	18	1	84·1
20	18 51	880	770	11 49	110	16 25	26·8	11·1	06 18	15·7	19 16	388	361	12 20	27	1,3,2,2,1,3,3,3	18	1	83·9
21 *d*	19 04	883	674	22 36	209	13 05	33·9	−0·7	02 42	34·6	18 50	*455*	207	23 59	248	4,4,3,4,5,4,5,5	34	2	84·0
22 *d*	18 28	923	*651*	00 22	*272*	15 22	*36·4*	−2·7	00 50	*39·1*	18 21	448	*137*	00 20	*311*	6,5,3,4,3,5,5,4	35	2	84·0
23	16 49	841	752	11 56	89	14 30	27·0	14·1	08 03	12·9	16 03	395	353	01 50	42	3,2,2,2,2,3,2,2	18	1	84·2
24	19 20	824	749	10 42	75	14 33	26·0	14·3	07 57	11·7	19 50	393	366	01 56	27	2,2,1,2,2,2,2,2	15	1	84·2
25	17 36	854	761	11 02	93	16 18	27·4	12·0	05 56	15·4	18 06	411	372	12 49	39	1,2,1,3,3,3,3,3	19	1	84·4
26	14 44	873	773	10 04	100	14 41	29·3	15·1	06 47	14·2	18 10	403	365	12 09	38	1,1,1,1,4,3,3,1	15	1	84·3
27	20 56	817	744	07 29	73	13 52	28·0	13·6	05 51	14·4	16 30	396	365	11 44	31	1,2,3,2,3,2,1,1	15	1	84·3
28 *q*	16 54	855	771	09 28	84	13 40	29·6	14·5	07 50	15·1	19 30	390	366	11 54	24	1,1,1,2,2,2,1,1	11	0	84·4
29 *d*	18 32	841	659	05 18	182	03 24	31·4	11·0	08 03	20·4	19 10	408	276	03 48	132	2,5,3,3,3,3,2,1	22	1	84·4
30 *q*	18 22	833	755	11 03	78	14 06	26·8	13·4	06 55	13·4	17 11	392	364	12 12	28	2,1,1,1,1,1,2,1	10	0	84·5
Mean	− −	858	750	− −	108	− −	29·1	12·6	− −	16·5	− −	402	341	− −	61	−	−	0·87	84·1

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.

21 ESKDALEMUIR (H) — 16,000γ (0·16 C.G.S. unit) + — JULY 1961

	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 18,000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1	808	810	807	818	811	797	791	783	789	790	775	768	791	788	795	802	819	814	828	833	828	819	813	813	804	1290
2	816	808	807	805	804	797	792	782	769	779	775	773	785	793	814	832	819	815	838	835	820	822	825	834	806	1339
3	817	812	813	814	817	817	795	793	790	787	776	760	754	772	789	799	811	828	837	840	835	823	816	816	805	1311
4	814	812	813	818	822	816	809	798	790	786	779	776	787	795	811	811	837	817	834	842	855	836	786	767	809	1411
5 *d*	783	781	791	792	755	806	798	788	776	770	764	763	788	793	826	811	811	811	826	831	821	820	818	797	797	1120
6	800	804	803	786	807	806	802	783	781	782	774	770	784	790	803	829	868	848	822	825	820	808	804	803	804	1302
7	810	799	775	796	797	793	782	767	776	769	763	778	785	786	824	803	823	811	821	820	821	813	811	807	797	1130
8	809	809	805	796	797	800	795	783	774	770	778	787	774	790	799	817	814	836	828	820	819	813	815	814	802	1242
9	799	803	809	814	811	814	778	788	789	797	761	761	768	790	799	819	815	821	827	825	813	807	812	811	801	1231
10	811	826	809	816	792	817	801	775	772	761	759	758	784	792	807	834	813	811	824	821	818	816	804	803	801	1224
11 *q*	800	804	807	811	812	803	799	795	780	774	766	772	779	783	805	817	832	860	855	829	825	816	821	814	807	1359
12 *q*	805	806	809	811	815	813	799	783	768	768	747	771	790	804	817	824	832	839	829	820	822	819	816	813	805	1320
13 *d*	812	812	811	814	818	819	813	804	784	773	775	794	813	833	975	883	828	944	922	885	844	809	802	781	*831*	1948
14 *d*	753	775	782	795	803	800	790	781	674	554	642	725	746	843	881	906	872	862	844	795	791	763	748	770	779	695
15	767	779	776	768	744	728	725	720	714	710	721	735	740	765	824	802	821	816	815	813	812	790	769	743	*767*	397
16	721	718	771	763	765	765	766	763	754	744	744	756	772	783	806	784	831	844	864	838	824	809	797	791	782	773
17	794	793	797	797	781	776	783	788	768	754	725	717	737	767	749	783	793	815	868	889	848	831	784	800	789	937
18 *d*	768	766	797	767	768	715	763	746	749	739	711	729	637	754	790	918	961	938	861	813	777	755	728	699	777	649
19	687	730	774	775	780	770	768	758	742	738	736	742	751	766	770	793	806	807	813	804	795	791	791	790	770	477
20	787	788	787	792	783	784	780	787	786	777	773	768	763	779	795	799	823	836	861	855	854	834	811	821	801	1223
21	808	807	833	788	770	763	726	714	727	740	741	740	753	775	796	807	823	822	817	809	795	796	801	799	781	750
22	803	795	791	797	794	798	782	765	748	780	789	784	775	779	772	790	803	811	812	810	808	806	805	806	792	1003
23	804	799	798	800	805	804	796	784	801	775	765	775	788	807	827	825	811	858	848	825	814	813	799	785	804	1306
24	789	784	783	797	791	784	805	795	779	757	763	776	756	774	792	817	806	814	829	832	815	811	812	810	795	1071
25	803	787	775	792	802	813	793	795	775	759	756	775	786	786	802	811	827	822	816	817	813	807	814	818	798	1144
26	832	812	810	805	809	807	810	795	788	774	766	767	777	777	787	804	811	818	814	823	872	836	832	834	807	1360
27 *d*	858	850	855	867	864	853	841	829	560	482	587	804	781	802	748	731	752	790	838	813	810	809	808	784	780	716
28	774	750	753	739	749	752	745	749	733	720	747	760	757	764	778	788	784	800	804	810	800	796	787	781	767	420
29 *q*	779	784	783	770	770	790	779	770	767	763	761	765	766	783	781	790	801	810	819	822	811	808	801	804	787	877
30 *q*	803	798	790	796	804	800	791	773	774	764	761	761	768	781	789	790	795	811	822	822	830	807	801	799	793	1030
31 *q*	796	801	800	801	803	805	799	793	784	774	760	751	753	771	776	796	797	813	829	819	814	811	809	808	794	1063
Mean	794	794	797	797	795	794	787	778	760	*749*	750	763	767	786	804	813	821	830	*834*	827	820	809	801	797	795	
Sum 23,000+	1610	1602	1714	1700	1643	1605	1396	1127	561	210	240	661	788	1365	1927	2215	2439	2742	2865	2635	2424	2094	1840	1715		Grand Total 591,118

MAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

22 ESKDALEMUIR (D) — 10° + — JULY 1961

	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 300·0+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	
1	20·8	20·2	21·8	18·4	15·4	12·6	13·3	16·2	15·9	15·4	19·7	23·6	26·0	26·4	27·5	27·9	26·6	24·5	21·7	20·7	20·4	20·5	20·6	21·2	20·7	197·3
2	20·6	20·3	20·1	19·1	18·2	15·4	16·2	15·2	14·9	14·1	17·0	20·3	23·7	25·7	27·8	27·8	27·0	25·7	25·1	25·1	22·9	22·6	22·1	21·5	21·2	208·4
3	20·1	20·2	19·8	19·1	18·1	17·4	18·5	18·8	18·1	17·5	20·2	22·9	26·4	26·4	27·8	28·8	27·7	25·3	25·4	23·9	23·2	21·7	21·0	20·6	*22·0*	228·9
4	19·2	18·2	18·8	19·1	18·3	15·7	12·9	11·7	14·3	17·0	20·1	25·0	27·5	30·1	30·6	28·1	26·5	23·9	24·2	23·7	24·2	19·6	12·8	13·2	20·6	194·7
5 *d*	18·0	22·4	21·1	13·8	23·0	15·5	18·2	17·4	18·6	17·3	20·0	23·3	23·9	24·6	28·1	24·7	22·4	22·4	22·7	21·9	21·6	21·0	23·6	19·0	21·0	204·5
6	23·5	20·7	20·3	22·4	17·0	13·9	14·4	13·1	13·4	14·4	16·8	19·2	21·5	22·4	23·4	23·7	20·9	19·6	21·5	22·9	23·0	22·7	21·8	20·6	19·7	173·1
7	18·2	17·0	18·9	17·9	15·5	15·4	15·2	15·0	14·1	15·4	18·5	21·7	24·7	25·4	24·6	23·1	22·6	21·9	22·6	21·4	21·0	22·2	22·4	21·6	19·8	176·3
8	21·4	20·8	21·5	20·0	16·0	13·8	14·0	15·5	16·3	17·9	18·8	21·9	24·2	24·7	26·1	25·1	23·4	22·9	21·8	20·9	21·5	21·6	21·1	20·2	20·5	191·4
9	19·1	19·3	19·4	20·4	21·9	22·2	18·0	18·3	15·6	16·6	19·9	22·3	23·5	24·8	25·7	25·3	21·5	20·5	21·6	21·6	21·5	21·2	21·5	21·2	21·0	202·9
10	21·5	20·8	18·8	18·3	24·0	19·6	20·6	18·6	16·5	16·6	18·6	23·3	23·9	25·5	26·1	27·9	25·0	23·1	21·8	21·3	21·5	18·3	18·9	19·9	21·3	210·4
11 *q*	20·1	21·3	23·5	19·1	19·1	14·6	14·7	14·8	14·0	14·6	17·4	22·4	25·2	25·9	26·1	25·5	24·7	23·4	21·5	20·6	21·7	22·3	22·1	20·5	20·6	195·1
12 *q*	17·9	18·5	18·9	18·0	16·4	15·5	16·5	18·8	17·5	18·7	19·7	23·6	27·1	28·7	28·8	27·5	24·8	22·5	21·2	21·0	21·2	21·6	21·8	21·2	21·1	207·4
13 *d*	20·7	19·8	19·4	18·4	16·1	13·9	12·3	12·3	13·4	14·6	18·2	19·9	23·1	36·7	33·2	40·4	33·6	29·8	27·3	13·9	21·9	21·5	18·4	21·0	21·7	219·8
14 *d*	15·4	19·8	14·6	13·7	12·8	11·7	10·6	11·8	9·0	9·5	12·2	11·7	20·0	18·5	20·6	24·1	23·7	22·9	16·3	18·4	19·4	20·0	20·8	21·8	*16·6*	99·3
15	21·0	20·9	20·9	21·7	20·7	23·1	20·3	20·9	19·9	20·1	23·0	25·8	27·8	29·7	24·6	26·0	24·5	22·5	21·7	20·0	20·2	16·5	13·6	9·8	21·5	215·2
16	8·8	19·3	15·4	15·6	13·0	14·1	12·4	11·8	13·2	15·2	18·8	21·8	25·2	25·9	26·7	26·3	26·5	26·3	21·1	20·2	20·5	21·0	20·6	20·4	19·2	160·1
17	20·0	16·5	16·7	16·4	16·5	14·8	13·8	12·2	12·3	12·5	15·5	20·5	23·7	28·1	27·0	26·9	24·8	23·8	27·0	26·3	14·4	17·3	16·2	13·6	19·0	156·8
18 *d*	16·1	10·3	12·1	18·8	16·6	27·5	29·7	11·2	9·4	12·0	14·5	22·1	21·9	25·0	29·6	28·3	24·2	27·0	22·0	20·9	19·7	22·9	17·0	14·5	19·7	173·3
19	13·6	12·0	7·5	6·0	12·7	12·7	12·6	12·7	13·2	14·3	17·1	20·6	22·3	24·2	24·4	25·2	24·4	22·4	20·0	20·1	20·3	19·9	19·9	20·0	17·4	118·1
20	19·4	18·9	18·2	18·3	17·9	14·6	16·2	18·0	15·5	16·3	19·1	22·8	25·2	26·5	27·9	27·4	27·7	26·2	25·7	24·1	21·1	22·1	15·3	19·3	21·0	203·7
21	17·0	17·6	7·3	8·5	21·3	21·8	18·3	17·3	21·9	20·3	20·5	22·5	25·3	26·1	25·8	24·6	26·2	24·5	21·6	22·0	23·3	22·5	22·6	22·2	20·9	201·0
22	21·1	19·3	19·5	17·4	15·5	14·3	14·9	17·3	18·8	20·3	17·7	18·4	21·6	23·8	24·4	22·7	22·7	21·9	21·0	20·9	20·6	20·8	20·6	19·2	19·8	174·7
23	18·8	18·0	18·4	18·7	17·6	15·5	13·7	13·1	14·8	17·9	21·4	23·9	26·8	28·9	29·2	28·1	26·7	26·3	22·6	22·7	22·4	21·2	19·7	18·2	21·0	204·6
24	15·7	15·3	14·6	14·5	18·7	20·9	18·2	14·6	14·9	16·2	18·9	21·0	23·3	24·8	23·0	22·2	22·2	21·2	20·6	20·8	20·7	19·9	20·9	20·0	19·3	163·1
25	19·7	22·5	26·0	15·0	13·7	14·4	15·8	15·6	17·0	19·9	22·5	22·7	25·4	26·4	27·9	28·1	26·2	24·5	22·4	21·7	21·3	21·0	20·4	20·5	21·3	210·6
26	24·0	16·4	17·2	23·4	17·5	14·3	14·8	14·1	14·3	16·9	20·1	22·1	24·2	24·7	24·3	23·5	21·8	20·8	20·4	21·1	23·7	18·2	17·3	18·8	19·7	173·9
27 *d*	14·6	19·4	17·4	15·5	14·1	16·5	15·5	15·7	3·8	5·4	24·3	35·0	33·2	32·6	25·8	22·4	22·9	20·3	15·0	17·3	21·0	14·9	13·7	18·2	18·9	154·5
28	17·4	22·3	19·7	17·7	15·7	13·0	13·7	11·5	12·9	14·2	16·3	19·5	23·1	25·2	25·3	21·8	19·9	18·8	20·0	19·8	13·3	16·2	19·0	19·9	18·2	136·2
29 *q*	20·0	19·0	18·7	17·9	18·8	17·3	17·1	15·1	16·0	17·3	19·9	21·4	23·3	26·9	27·2	26·6	25·6	24·4	22·9	21·6	20·8	21·1	20·8	19·1	20·8	198·8
30 *q*	18·8	16·1	16·2	15·4	15·5	13·7	14·3	16·1	15·6	17·0	19·6	22·1	23·6	24·9	26·3	26·0	24·5	23·1	20·3	17·4	15·8	17·1	19·9	20·0	19·1	159·3
31 *q*	19·3	19·1	19·1	18·8	18·3	17·3	16·3	15·5	15·2	16·6	18·4	20·3	23·6	26·1	26·6	26·2	23·8	22·9	21·7	18·3	20·8	19·8	19·8	20·3	20·2	184·1
Mean	18·8	18·8	18·1	17·3	17·3	16·2	15·9	15·2	*14·9*	15·9	18·9	22·1	24·5	26·3	*26·5*	26·2	24·7	23·4	22·0	21·1	20·8	20·3	19·5	19·3	20·2	
Sum 400·0+	181·8	182·2	161·8	137·3	135·9	103·0	93·0	70·2	60·3	92·0	184·7	283·6	360·2	415·6	422·4	412·2	365·0	325·3	280·7	252·5	244·9	229·2	206·2	197·5		Grand Total 14997·5

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) + — JULY 1961

	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	
1	382	378	372	365	368	368	369	371	375	379	377	371	372	377	384	387	394	398	398	395	391	387	387	386	380	1131
2	384	382	384	386	388	388	384	385	384	376	374	371	368	370	374	381	381	394	403	398	397	392	387	381	384	1212
3	376	381	385	386	382	382	385	379	375	373	364	363	368	371	382	385	391	401	395	392	387	387	385	385	382	1160
4	383	382	384	384	385	386	384	380	375	370	361	350	346	352	358	364	372	381	385	384	382	385	358	326	372	917
5 *d*	298	297	248	278	254	298	327	339	351	373	364	363	380	397	407	443	442	427	409	404	398	387	364	371	*359*	619
6	367	364	366	364	366	378	379	383	381	375	375	373	369	371	378	387	410	427	416	398	394	394	390	385	383	1190
7	375	360	340	349	369	380	386	387	385	385	384	381	380	387	396	401	400	404	399	400	397	391	388	387	384	1211
8	385	384	379	369	374	381	380	379	380	379	371	368	372	376	380	385	390	393	393	394	392	391	387	380	382	1162
9	369	376	378	380	378	374	378	376	378	374	373	373	372	376	384	387	397	400	397	392	391	357	385	385	380	1130
10	385	375	372	368	360	345	353	365	372	378	374	370	374	380	388	396	411	410	401	394	392	392	391	387	381	1133
11 *q*	387	386	380	374	381	386	385	384	384	377	377	373	369	374	376	377	383	397	405	403	398	399	387	384	384	1226
12 *q*	381	385	385	386	385	386	385	388	391	386	382	370	363	365	373	375	377	384	391	391	388	387	385	385	382	1174
13 *d*	384	384	384	385	385	385	384	384	378	368	364	352	348	337	351	379	420	461	528	575	456	417	353	316	395	1478
14 *d*	321	316	345	380	391	398	399	399	399	416	424	493	479	521	554	597	594	534	493	450	397	397	394	374	*436*	2465
15	360	360	346	356	359	365	378	378	379	384	389	395	400	403	428	438	445	441	432	430	423	396	374	353	392	1412
16	327	272	298	327	374	389	396	396	397	394	393	387	385	390	397	402	402	404	421	425	419	411	404	400	384	1210
17	391	375	375	379	386	390	392	394	393	389	384	386	390	400	412	404	403	404	404	407	434	344	391	368	391	1395
18 *d*	310	303	333	332	330	287	274	334	362	369	361	366	387	426	473	515	523	510	504	475	449	376	362	327	387	1288
19	279	280	309	301	326	381	401	405	404	398	396	390	386	387	394	398	399	406	409	407	404	400	398	397	377	1055
20	396	396	396	394	388	394	388	383	385	385	378	371	372	375	380	381	383	391	396	402	409	404	391	379	388	1317
21	369	353	304	310	281	285	320	366	366	374	380	375	386	400	427	452	472	477	462	446	425	410	400	398	385	1238
22	396	396	396	393	398	395	396	395	393	385	385	386	386	393	404	410	404	400	397	397	397	397	396	393	395	1488
23	390	390	392	394	397	397	397	396	393	387	384	380	377	382	399	417	436	429	430	423	419	402	391	385	399	1587
24	383	375	374	379	377	372	377	388	391	387	383	388	396	396	400	409	407	403	398	403	403	402	397	393	391	1381
25	384	362	337	338	352	357	375	388	397	400	393	391	388	388	393	398	403	403	401	397	396	397	396	393	384	1227
26	372	366	374	372	363	375	377	383	384	380	378	377	380	388	393	396	382	381	393	391	386	404	393	344	381	1132
27 *d*	364	374	378	380	380	375	375	380	398	399	390	375	374	385	401	419	433	458	470	445	419	347	368	374	394	1461
28	382	383	373	389	387	401	396	396	395	393	387	385	391	392	398	412	411	414	410	410	416	407	401	401	397	1530
29 *q*	401	400	400	398	388	382	385	391	392	392	391	390	389	391	394	397	397	393	396	400	402	398	397	394	394	1458
30 *q*	388	387	392	393	397	393	395	397	391	391	393	385	382	381	391	393	401	404	405	407	404	397	392	391	394	1450
31 *q*	393	393	393	395	396	393	391	397	396	393	386	383	380	382	387	392	397	398	403	413	407	398	394	391	394	1451
Mean	370	365	*364*	367	369	373	377	383	385	384	381	380	381	387	399	409	415	417	*417*	415	405	392	387	378	387	
Sum 11,000+	462	315	272	384	445	566	691	866	924	909	815	781	809	1013	1356	1677	1860	1927	1944	1848	1572	1153	986	713		Grand Total 288,288

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

24 ESKDALEMUIR — JULY 1961

	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	γ	h. m. ′	′ h. m.	′	h. m.	γ	h. m.	γ	γ				°A.
1	16 19	844	11 32	759	85	15 00 28·3	11·4 06 03	16·9	17 20	399	03 22	363	36	2,2,2,3,3,3,1,2	18	1	84·6
2	19 03	868	10 51	755	113	14 48 29·2	12·8 09 32	16·4	17 27	403	12 08	372	31	1,2,2,3,2,4,4,3	21	1	84·6
3	18 45	856	12 19	718	138	16 03 29·8	14·7 07 54	15·1	17 41	404	11 13	359	45	2,2,3,3,4,4,3,2	23	1	84·6
4	20 58	868	23 42	755	113	13 57 32·2	4·9 22 53	27·3	21 32	389	23 49	313	76	2,1,2,2,3,3,3,5	21	1	84·5
5 *d*	14 52	872	04 16	716	156	02 03 39·8	10·2 02 54	29·6	15 43	451	04 42	226	225	4,5,3,3,4,4,3,3	29	2	84·5
6	16 46	905	11 43	759	146	15 21 25·8	11·0 07 26	14·8	17 45	429	04 02	358	71	2,3,2,3,3,5,2,1	21	1	84·5
7	14 34	845	11 10	756	89	13 13 26·7	12·0 08 14	14·7	17 29	406	02 33	339	67	3,1,3,3,4,3,2,1	20	1	84·5
8	17 44	852	09 22	764	88	14 59 27·2	12·8 05 51	14·4	19 41	396	11 30	368	28	2,2,2,3,3,3,2,2	19	1	84·6
9	15 56	836	10 48	752	84	14 26 26·1	14·9 08 26	*11·2*	16 59	403	00 10	368	35	2,2,3,2,2,3,1,1	16	1	84·5
10	16 01	845	11 02	754	91	15 27 28·5	15·0 08 25	13·5	16 50	416	05 06	342	74	3,3,3,2,2,4,2,2	21	1	84·5
11 *q*	17 31	869	10 47	760	109	02 33 26·6	13·4 06 00	13·2	18 08	406	12 29	368	38	3,2,2,1,2,3,3,2	18	1	84·5
12 *q*	17 51	843	10 36	721	122	13 45 29·0	14·9 05 55	14·1	18 50	392	12 59	361	31	2,1,2,3,1,1,2,0	12	1	84·6
13 *d*	14 30	*1113*	16 09	694	419	15 33 *47·7*	−12·7 19 30	*60·4*	19 21	*687*	23 00	280	*407*	0,1,2,6,7,7,6,5	34	2	84·6
14 *d*	15 14	1033	09 49	419	*614*	15 17 32·6	*−16·0* 09 48	48·6	16 14	641	01 29	307	334	4,3,6,7,6,6,5,3	40	2	84·6
15	14 26	848	09 01	701	147	13 58 31·3	8·7 23 30	22·6	16 29	446	23 59	338	108	3,4,3,3,4,3,4,4	28	1	84·5
16	18 44	888	01 07	678	210	14 32 29·0	5·7 00 48	23·3	19 10	426	01 24	255	171	5,4,2,2,4,4,4,2	27	1	84·6
17	19 08	934	11 29	710	224	21 28 32·3	0·2 21 06	32·1	20 16	451	21 16	322	129	2,2,2,3,4,3,5,6	27	2	84·5
18 *d*	15 52	1019	12 19	559	460	21 57 38·4	5·7 01 38	32·7	15 41	544	06 06	261	283	4,5,5,4,7,6,5,5	41	2	84·5
19	18 39	818	00 45	655	163	00 38 26·7	−3·4 03 16	30·1	19 02	410	*220* 00	53	190	5,4,1,0,2,2,2,1	17	1	84·4
20	18 48	892	12 16	750	142	15 57 28·6	9·4 22 35	19·2	21 07	413	23 56	363	50	1,2,3,2,2,3,4,4	21	1	84·5
21	16 52	846	06 51	697	149	17 04 28·5	2·8 02 47	25·7	17 28	478	04 43	267	211	4,5,4,2,3,3,3,3	27	1	84·6
22	18 52	818	08 46	736	82	14 38 24·8	13·4 05 23	11·4	15 43	411	10 55	385	26	2,2,3,3,3,3,1,1	18	1	84·6
23	17 38	880	10 20	756	124	14 41 30·8	12·3 07 21	18·5	16 10	439	12 19	374	65	1,1,1,3,4,5,4,3	22	1	84·5
24	19 10	838	10 00	744	94	13 29 25·4	11·3 07 36	14·1	15 30	410	05 31	369	41	2,2,3,3,3,3,2,2	20	1	84·7
25	16 22	832	10 20	752	*80*	02 20 29·9	11·5 03 58	18·4	17 49	404	02 46	328	76	4,3,2,2,3,3,2,2	21	1	84·6
26	19 58	949	11 00	760	189	00 25 31·7	13·0 05 41	18·7	21 32	410	23 27	332	78	4,4,2,2,3,2,5,3	25	1	84·6
27 *d*	21 19	958	09 12	*349*	609	11 38 44·3	−9·7 21 15	54·0	18 17	484	21 10	255	229	3,4,7,8,5,5,4,7	43	2	84·7
28	15 12	838	09 40	716	122	01 43 29·6	7·6 20 21	22·0	20 19	420	02 09	362	58	4,3,3,3,3,4,4,2	26	1	84·7
29 *q*	19 00	829	04 14	749	*80*	14 55 27·8	14·0 07 31	13·8	20 20	403	05 38	380	*23*	2,3,2,1,3,2,2,2	17	1	84·6
30 *q*	20 20	842	10 46	755	87	15 03 27·0	12·6 05 37	14·4	19 49	409	13 11	380	29	2,2,3,2,2,2,3,2	18	1	84·7
31 *q*	18 50	834	11 42	747	87	13 56 27·9	14·6 08 09	13·3	19 41	414	12 01	379	35	1,0,1,2,3,3,2,2	14	1	84·6
Mean	− −	881	− −	706	175	− − 30·4	8·0 − −	22·4	− −	439	− −	332	106	−	−	1·19	84·6

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.

21 ESKDALEMUIR (H) — 16,000γ (0·16 C.G.S. unit) + — AUGUST 1961

	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 18,000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1	807	809	805	808	813	812	812	798	783	770	768	774	779	787	800	801	808	805	818	825	821	814	822	831	803	1270
2 *d*	852	781	817	819	789	775	791	782	764	770	767	747	754	745	764	790	808	826	822	813	800	802	807	808	791	993
3	805	802	802	795	796	783	783	778	756	754	762	762	754	763	800	804	811	825	822	823	814	815	814	809	793	1032
4 *d*	795	768	794	800	802	790	786	788	783	775	752	758	770	779	790	809	809	819	825	827	818	815	810	803	794	1065
5	806	805	800	799	798	792	799	793	790	771	761	777	791	801	790	794	806	802	809	814	821	815	821	822	799	1177
6	823	802	805	807	804	802	802	797	783	779	775	774	783	798	804	816	812	809	811	819	814	815	815	807	802	1256
7 *q*	804	804	806	808	810	806	799	795	788	781	779	786	793	795	792	803	807	814	822	823	820	822	825	815	804	1297
8	813	811	810	810	816	818	790	806	791	762	752	767	784	791	788	813	823	836	845	801	805	807	807	809	802	1255
9 *q*	806	805	807	808	805	791	786	784	772	767	771	775	774	778	793	806	813	814	820	823	822	820	819	817	799	1176
10	818	823	823	814	817	815	816	797	783	771	764	767	768	786	782	791	798	808	810	816	811	812	811	814	801	1215
11 *d*	820	811	813	802	819	816	811	798	792	760	775	787	791	783	800	792	791	825	834	839	836	802	793	819	805	1309
12	796	795	794	788	794	791	784	771	764	760	758	761	775	780	787	795	808	823	822	842	823	816	830	809	794	1066
13 *q*	804	811	815	809	805	804	798	805	773	768	761	763	764	771	782	794	806	816	825	824	822	817	814	813	799	1164
14	811	809	810	810	810	807	799	786	767	762	758	763	770	768	786	814	844	803	820	831	823	822	817	814	800	1204
15	816	811	810	810	810	803	786	775	774	767	765	772	775	790	796	813	813	821	812	816	814	809	812	814	799	1184
16	814	809	807	807	795	809	807	795	779	773	771	772	784	797	809	818	818	814	819	823	823	820	818	809	804	1290
17	810	807	812	815	812	807	798	792	784	779	770	781	794	806	811	809	817	830	828	824	826	809	809	813	806	1343
18	813	814	814	812	814	814	807	798	790	780	768	776	789	805	811	814	830	824	820	821	822	824	823	824	809	1407
19	819	819	823	817	809	823	806	790	807	790	768	760	770	768	783	791	808	822	811	811	808	811	813	815	802	1242
20	810	806	808	808	807	805	800	796	787	776	763	757	769	787	798	823	839	814	807	810	813	811	810	809	801	1213
21	807	808	806	807	805	807	806	800	791	777	772	767	776	785	796	804	814	807	814	817	823	821	822	818	802	1250
22 *q*	815	811	809	810	810	809	806	796	783	779	777	778	788	801	806	810	816	822	823	824	822	818	818	817	806	1348
23 *q*	813	811	809	810	810	807	803	794	790	787	783	781	783	789	795	803	809	814	819	824	824	825	823	822	805	1328
24	818	818	818	816	814	811	808	801	791	778	777	784	793	803	817	814	823	830	813	830	835	829	829	831	*812*	1481
25	828	833	824	819	818	811	806	798	786	782	789	787	801	814	796	805	814	820	824	823	823	837	822	821	*812*	1481
26	815	823	818	812	816	820	806	796	785	774	783	794	797	810	816	821	816	816	821	835	826	809	813	801	809	1423
27	798	794	807	806	810	807	796	793	792	785	783	785	792	796	808	822	810	817	816	816	815	815	815	817	804	1295
28	822	811	811	802	812	810	803	790	780	773	768	775	787	797	805	815	815	815	817	824	821	810	810	811	803	1284
29	811	818	810	811	810	810	809	800	790	782	778	770	780	792	806	808	825	835	846	812	789	806	813	840	806	1351
30 *d*	822	768	772	784	799	805	803	790	778	764	744	747	734	756	786	825	806	786	789	807	802	823	791	788	*786*	869
31 *d*	780	796	753	777	790	784	786	756	743	771	766	760	758	782	771	793	821	838	812	813	813	802	824	822	788	911
Mean	812	806	807	807	807	805	800	791	781	773	*769*	771	778	787	796	807	814	818	819	*821*	818	815	815	815	801	
Sum 23,000+	2171	1993	2012	2000	2019	1944	1792	1538	1219	967	828	907	1120	1403	1668	2010	2238	2350	2396	2450	2349	2273	2270	2262		Grand Total 596,179

MAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

22 ESKDALEMUIR (D) — 10° + — AUGUST 1961

	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 400·0+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	
1	20·1	20·8	22·9	16·1	15·5	14·4	14·6	15·4	16·3	18·2	20·0	22·3	24·7	26·4	26·2	25·4	24·2	22·5	22·0	22·5	21·9	20·0	21·5	20·7	20·6	94·6
2 *d*	19·3	7·8	10·9	8·3	14·7	27·0	21·1	20·9	23·6	21·0	20·7	23·2	25·1	25·0	26·5	28·7	22·7	23·0	23·0	20·6	18·5	22·7	21·6	20·2	20·7	96·1
3	19·8	18·8	19·8	21·1	23·4	19·2	17·1	15·2	18·0	18·5	18·3	20·7	23·8	22·9	24·1	24·6	23·8	23·4	18·7	18·4	19·9	15·4	19·9	18·8	20·1	83·6
4 *d*	20·0	20·2	12·2	12·8	14·2	13·3	15·4	15·6	16·7	17·5	19·1	20·8	23·4	25·4	23·6	21·5	20·9	20·8	20·6	20·3	17·8	18·0	19·0	20·4	*18·7*	49·5
5	20·1	20·0	20·1	19·0	19·0	18·2	17·0	15·3	16·3	18·7	23·5	24·5	25·7	24·8	23·7	23·0	21·7	20·7	20·8	19·1	19·8	21·0	21·2	17·2	20·4	90·4
6	16·6	18·3	18·2	17·8	16·5	16·3	16·1	16·7	17·8	19·0	21·7	23·8	25·7	25·3	23·6	23·1	21·0	19·8	19·3	20·0	20·1	20·8	18·8	19·1	19·8	75·4
7 *q*	19·4	19·1	18·9	18·9	18·1	16·5	16·1	15·9	15·8	16·9	18·4	22·2	24·8	26·3	25·3	24·2	23·5	22·1	20·8	20·2	20·8	20·9	20·0	18·9	20·2	84·0
8	20·1	19·3	18·4	18·8	18·0	16·2	18·0	17·4	16·2	15·2	21·8	24·3	24·6	26·2	24·8	24·5	24·7	24·2	22·8	19·1	20·2	21·7	20·9	20·8	20·8	98·2
9 *q*	20·1	19·7	20·1	19·0	16·4	13·4	14·4	14·3	14·6	15·8	19·2	23·6	26·5	27·3	26·7	25·8	25·4	23·4	21·7	21·5	21·6	21·8	21·6	21·0	20·6	94·9
10	20·6	20·4	17·5	15·2	16·4	19·2	18·9	17·9	19·3	21·0	23·7	26·3	27·8	29·9	30·3	27·8	25·9	23·6	21·9	21·0	21·7	21·7	20·9	20·6	*22·1*	129·5
11 *d*	20·3	18·4	12·8	20·7	19·6	13·4	12·5	13·1	16·9	20·9	23·5	25·4	27·2	29·9	30·7	30·7	30·1	27·4	22·4	23·6	18·7	17·5	21·4	18·9	21·5	116·0
12	17·6	18·3	17·7	17·8	17·1	14·8	13·2	13·2	14·5	17·9	22·0	25·2	26·3	26·4	26·9	25·9	24·2	23·7	23·1	22·9	21·4	21·5	19·9	17·5	20·4	89·0
13 *q*	18·5	19·2	16·7	15·8	15·2	14·4	13·7	13·6	15·5	17·2	19·1	21·5	24·6	26·8	27·0	26·0	23·6	22·1	21·0	20·9	20·7	20·4	20·0	18·9	19·7	72·4
14	18·2	18·0	17·9	17·8	17·3	15·5	13·0	11·7	13·4	16·3	19·3	25·5	29·8	30·9	30·8	29·7	29·0	23·5	22·5	22·3	21·4	20·6	20·1	19·4	21·0	103·9
15	19·2	18·7	18·3	17·8	16·9	14·4	14·7	14·6	14·2	14·8	19·8	23·3	27·1	28·2	27·1	26·5	24·1	22·7	19·9	18·3	20·7	20·2	20·4	20·5	20·1	82·4
16	23·4	20·0	19·9	18·3	19·7	16·4	14·3	13·6	14·6	17·0	19·3	22·2	24·4	26·4	27·2	26·0	23·6	21·8	21·3	21·5	21·4	20·9	19·4	17·5	20·4	90·1
17	17·3	17·5	18·2	17·6	16·9	15·4	14·9	15·3	16·4	18·2	21·3	25·2	26·4	27·8	28·6	26·0	24·7	24·4	22·8	21·1	20·0	18·4	20·1	19·3	20·6	93·8
18	18·9	19·0	18·1	18·4	17·9	16·8	15·8	15·9	15·6	17·9	21·6	23·7	25·7	27·7	26·8	25·1	24·1	21·8	20·7	20·6	21·0	20·2	20·6	20·0	20·6	93·9
19	20·1	20·5	21·0	19·2	21·1	18·9	17·1	19·3	19·1	19·8	21·5	24·5	26·0	25·5	25·3	23·3	21·4	20·7	20·0	20·2	20·0	20·3	20·2	19·0	21·0	104·0
20	18·8	18·7	18·3	18·1	17·0	16·4	15·6	15·5	16·1	16·7	19·1	22·9	26·2	27·0	25·2	25·3	24·3	21·9	19·6	20·3	19·2	21·5	21·0	20·1	20·2	84·8
21	20·0	20·0	19·2	18·3	17·3	15·5	14·4	14·6	14·9	16·7	19·0	21·6	23·7	25·7	25·5	23·6	21·7	20·0	19·4	20·0	20·8	20·7	20·6	20·1	19·7	73·3
22 *q*	19·7	19·1	18·8	18·4	16·7	15·4	14·9	14·9	16·5	18·8	22·7	26·1	27·4	27·1	25·2	23·2	21·6	20·8	20·6	20·9	21·2	21·0	21·1	19·3	20·5	91·4
23 *q*	19·1	19·0	18·2	17·3	16·2	15·5	14·6	15·2	16·3	17·6	20·9	23·8	26·7°	27·3	25·9	23·3	21·8	19·8	20·0	20·6	20·7	18·3	19·1	20·2	19·9	77·4
24	20·0	19·4	19·0	18·3	17·8	16·8	15·4	14·6	14·9	17·3	20·6	23·8	26·0	26·7	26·3	23·8	22·7	21·8	21·7	23·1	22·6	21·5	18·8	18·9	20·5	91·8
25	18·3	18·8	17·3	17·3	16·0	14·4	15·1	14·8	15·4	18·3	22·4	25·2	27·3	30·8	27·9	22·8	22·0	21·5	21·8	22·2	21·0	20·1	19·3	19·3	20·4	89·3
26	19·0	19·8	18·0	20·0	19·7	17·8	15·1	15·6	17·8	21·5	23·9	27·3	28·0	28·2	27·0	25·6	23·1	22·1	22·0	22·6	19·8	19·3	16·2	13·5	21·0	102·9
27	13·1	19·0	18·4	17·3	17·1	17·5	20·2	19·9	14·7	16·6	19·6	23·3	26·8	28·2	27·1	25·3	21·4	20·3	20·6	20·5	18·6	20·1	19·2	19·4	20·2	84·2
28	20·6	18·3	17·7	19·0	16·9	15·5	14·8	14·4	14·7	17·1	20·9	25·2	27·4	27·7	26·4	25·0	22·4	21·1	20·8	20·8	20·1	19·7	18·9	19·2	20·2	84·6
29	19·0	19·3	17·4	18·0	16·9	16·4	15·9	15·2	15·3	17·4	20·5	22·6	25·0	25·7	25·0	23·3	22·5	22·8	15·1	10·3	14·7	20·3	21·0	13·9	18·9	53·5
30 *d*	11·0	11·1	19·1	22·9	18·3	14·6	13·7	13·3	14·6	18·9	21·1	24·5	26·0	29·5	29·1	30·3	23·5	20·0	19·7	21·0	19·2	14·4	11·4	12·8	19·2	60·0
31 *d*	15·2	19·5	21·0	27·2	22·0	20·0	16·0	17·6	19·2	18·9	20·5	22·9	24·2	26·0	24·8	23·7	21·8	15·3	14·3	19·1	18·7	18·3	14·7	20·0	20·0	80·9
Mean	18·8	18·6	18·1	18·1	17·6	16·4	15·6	*15·5*	16·3	18·0	20·8	23·8	25·9	*27·1*	26·5	25·3	23·5	21·9	20·7	20·5	20·1	20·0	19·6	18·9	20·3	
Sum 400·0+	183·4	176·0	162·0	162·5	145·8	109·5	83·6	80·5	105·2	157·6	245·0	337·4	404·3	439·0	420·6	383·0	327·4	279·0	240·9	235·5	224·2	219·2	208·8	185·4		Grand Total 15115·8

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) + — AUGUST 1961

	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	
1	388	384	377	372	385	389	388	393	393	390	378	374	375	380	387	391	394	396	396	396	398	401	396	391	388	1312
2 *d*	343	310	340	358	365	336	338	365	369	368	374	384	391	405	414	420	432	426	419	429	427	404	388	379	383	1184
3	372	377	383	387	367	370	385	394	396	396	387	383	382	391	398	410	410	409	419	420	413	401	385	366	392	1401
4 *d*	364	337	345	364	378	385	387	387	387	387	386	385	381	390	400	410	404	400	401	406	409	399	392	391	386	1275
5	390	391	391	393	391	391	385	388	385	382	379	375	374	382	396	400	403	405	406	409	406	398	394	390	392	1404
6	380	382	386	388	392	392	387	387	386	380	379	375	371	382	391	395	400	399	398	398	397	392	391	390	388	1318
7 *q*	391	391	390	390	391	392	391	387	386	383	378	374	374	375	383	387	392	392	392	394	392	391	390	385	387	1291
8	385	387	390	388	385	382	383	380	380	380	374	374	378	382	385	391	405	417	427	435	417	401	397	396	392	1419
9 *q*	394	393	388	384	385	387	386	386	386	380	373	370	377	385	392	400	401	401	400	398	397	393	392	391	389	1339
10	391	388	379	381	385	380	382	385	380	379	376	377	383	396	421	434	439	433	432	421	411	404	399	395	*398*	1551
11 *d*	384	364	361	356	353	379	391	385	386	376	369	370	382	392	419	429	426	440	442	432	423	415	405	386	394	1465
12	385	394	397	397	390	390	390	391	385	380	376	373	365	373	384	391	396	393	391	392	396	393	384	384	387	1290
13 *q*	388	387	379	380	385	385	386	384	381	368	362	358	360	368	377	385	390	391	391	387	386	387	387	387	381	1139
14	388	389	388	387	390	392	392	396	391	391	381	370	372	373	375	381	394	413	410	399	396	393	390	388	389	1339
15	387	389	390	391	392	394	397	391	391	380	368	364	364	372	380	387	401	404	403	397	392	391	390	386	388	1301
16	372	374	378	381	385	386	391	393	391	387	378	374	377	385	390	395	398	394	388	387	387	387	386	387	385	1251
17	386	386	386	387	391	391	390	387	388	385	378	373	369	368	369	377	387	388	391	393	391	391	389	386	384	1227
18	384	384	385	386	387	390	390	387	381	380	380	379	375	376	385	391	393	394	391	389	386	386	385	384	385	1248
19	383	383	381	381	381	378	377	369	362	364	366	370	378	384	391	396	398	397	394	392	391	388	389	386	382	1179
20	386	387	387	388	390	391	391	391	390	385	378	377	374	377	391	400	410	426	429	415	404	396	391	389	393	1443
21	389	388	388	390	391	392	395	397	394	394	386	375	372	371	378	384	388	392	392	390	387	386	385	385	387	1289
22 *q*	385	385	385	386	386	387	387	390	386	380	369	366	366	368	374	377	380	382	384	385	386	386	385	385	381	1150
23 *q*	385	385	385	385	387	389	390	391	385	379	373	372	373	376	380	385	387	387	385	385	386	387	385	384	384	1206
24	382	384	382	383	385	385	385	385	385	381	377	371	367	372	375	379	381	385	385	379	381	385	384	381	381	1139
25	379	373	374	377	380	382	381	378	375	369	364	368	370	380	396	398	396	390	384	385	385	382	385	385	381	1136
26	385	384	385	381	377	375	378	380	378	371	367	362	367	377	384	386	385	384	379	378	385	393	383	372	379	1096
27	364	378	382	385	385	385	386	384	384	377	373	372	377	385	391	396	399	396	389	387	387	385	385	385	384	1217
28	378	379	382	383	385	387	388	389	387	385	381	378	378	381	387	392	391	391	385	385	386	384	383	380	384	1225
29	385	382	384	385	385	387	390	388	385	380	372	371	372	374	381	387	386	385	404	419	410	394	388	356	385	1250
30 *d*	343	338	351	358	368	378	383	385	378	369	368	371	392	404	415	425	476	473	443	419	411	371	366	351	389	1336
31 *d*	340	332	297	307	319	340	367	381	385	384	380	375	382	387	403	409	414	425	423	411	404	393	374	359	*375*	991
Mean	379	377	377	379	381	383	385	386	384	380	375	*373*	375	381	390	396	402	*403*	402	400	398	392	388	383	386	
Sum 11,000+	756	685	696	759	816	867	937	974	916	790	630	560	618	811	1092	1288	1456	1508	1473	1412	1327	1157	1023	860		Grand Total 287,411

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

24 ESKDALEMUIR — AUGUST 1961

	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	γ	h. m.	′	′	h. m.	′	h. m.	γ	γ	h. m.	γ	γ			°A.
1	23 51	836	09 56	764	72	02 46	28·8	13·4 05 16	15·4	21 39	402	03 10	37			3,2,2,1,1,2,2,3	16	1	84·6
2 *d*	00 30	*901*	11 24	723	*178*	05 50	31·7	4·8 01 20	26·9	19 44	433	01 19	130			5,5,4,4,4,4,3,2	31	2	84·6
3	19 06	845	09 19	736	109	15 09	25·9	12·3 07 04	13·6	18 33	420	04 49	62			2,2,2,3,3,3,3,3	21	1	84·6
4 *d*	18 13	838	11 01	729	109	01 05	29·4	10·9 02 29	18·5	15 17	411	01 26	85			4,3,3,3,3,3,3,2	24	1	84·6
5	23 59	842	09 54	744	98	12 48	26·3	14·1 07 57	12·2	19 45	410	12 30	37			1,1,2,3,3,2,2,3	17	1	84·6
6	00 02	842	10 54	766	76	13 07	27·2	15·4 22 46	11·8	16 53	403	12 10	34			3,1,1,2,3,3,2,3	18	1	84·6
7 *q*	22 50	842	10 16	775	67	13 12	26·7	14·5 07 20	12·2	19 28	396	12 40	25			0,0,1,1,3,2,2,3	12	1	84·7
8	18 28	860	10 28	744	116	13 37	27·9	13·1 08 06	14·8	19 10	439	11 11	70			1,2,3,2,3,3,4,1	19	1	84·7
9 *q*	19 20	826	09 20	765	61	13 15	27·8	12·7 05 30	15·1	15 59	403	11 20	35			1,2,1,1,1,1,1,0	8	0	84·7
10	02 14	832	10 36	760	72	13 58	32·3	14·7 03 07	17·6	16 40	439	10 49	65			3,3,2,1,3,2,2,2	18	1	84·6
11 *d*	23 19	857	09 09	748	109	14 14	33·1	11·1 02 37	22·0	18 11	446	04 01	104			3,3,2,3,4,3,3,4	25	1	84·6
12	19 34	853	10 15	756	97	14 44	27·1	12·8 06 48	14·3	20 15	398	12 22	35			1,2,1,0,2,2,3,3	14	1	84·6
13 *q*	18 42	830	10 39	758	72	14 30	27·3	12·8 07 10	14·5	18 21	392	12 03	34			2,1,1,1,0,1,1,1	8	0	84·7
14	16 46	861	10 47	751	110	13 57	33·1	11·1 07 02	22·0	18 01	416	11 45	48			0,0,2,1,3,4,3,1	14	1	84·7
15	15 47	834	10 56	756	78	14 05	29·9	12·8 07 40	17·1	18 11	407	12 10	46			1,1,2,2,3,3,2,3	17	1	84·6
16	15 29	826	09 49	765	61	14 44	27·7	13·2 07 21	14·5	16 30	399	00 49	31			2,2,2,1,1,2,1,1	12	1	84·6
17	18 54	841	10 35	767	74	14 10	29·0	14·3 06 56	14·7	19 51	394	13 48	26			1,1,1,2,2,2,3,1	13	1	84·6
18	16 20	841	10 19	768	73	13 50	28·1	15·1 06 26	13·0	17 41	394	13 05	20			1,1,1,1,3,3,1,2	13	1	84·7
19	05 16	830	12 00	751	79	13 03	26·6	15·8 05 52	*10·8*	17 02	399	08 21	37			2,3,3,3,2,3,1,2	19	1	84·7
20	16 19	848	11 37	744	104	13 32	27·8	15·3 06 48	12·5	18 10	433	12 39	59			1,0,0,3,2,4,2,2	14	1	84·7
21	20 51	825	11 31	760	65	13 12	26·3	13·8 06 34	12·5	07 55	397	13 06	28			2,2,1,2,2,2,2,1	14	0	84·6
22 *q*	19 38	827	10 56	775	52	12 44	27·9	13·9 06 38	14·0	07 35	391	13 01	26			1,1,1,0,2,1,1,1	8	0	84·7
23 *q*	21 31	830	11 55	779	51	13 35	27·9	14·1 07 03	13·8	07 14	391	11 01	20			1,0,1,1,1,2,1,1	8	0	84·6
24	17 08	856	10 02	773	83	14 20	27·2	14·0 07 55	13·2	18 15	390	12 24	24			0,0,0,1,2,3,3,2	11	1	84·6
25	21 03	845	11 14	774	71	13 25	31·8	12·9 07 30	18·9	14 56	400	10 58	38			2,1,2,2,3,2,1,3	16	1	84·5
26	19 55	858	09 20	763	95	13 26	29·5	11·0 23 56	18·5	21 33	397	23 59	38			2,2,1,3,3,3,3,4	21	1	84·7
27	15 28	826	09 58	776	*50*	13 10	28·8	11·4 00 40	17·4	16 18	401	00 06	43			3,2,3,1,2,3,1,2	17	1	84·6
28	19 31	828	10 48	763	65	13 10	28·7	13·8 08 09	14·9	15 50	393	01 01	*18*			2,2,1,2,2,2,2,2	15	1	84·5
29	18 03	875	11 00	767	108	13 30	26·2	6·1 19 08	20·1	19 34	422	23 49	81			2,1,0,2,2,4,5,4	20	1	84·5
30 *d*	21 22	870	12 56	*704*	166	14 15	*33·7*	*3·3* 00 17	*30·4*	16 42	*494*	23 59	*170*			4,3,2,3,5,4,4,5	30	2	84·6
31 *d*	17 38	879	07 57	719	160	03 47	32·5	9·6 00 06	22·9	17 48	428	*291* 02 48	137			4,4,3,2,3,4,3,4	27	2	84·6
Mean	- -	845	- -	756	90	- -	28·8	12·4 - -	16·5	- -	411	358 - -	53			-	-	0·94	84·6

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.

21 ESKDALEMUIR (H) — 16,000γ (0·16 C.G.S. unit) + — SEPTEMBER 1961

	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 18,000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1 *d*	802	810	778	794	785	754	755	793	787	754	744	767	775	783	792	806	806	819	823	824	798	795	800	798	789	- 942
2	800	800	798	796	800	796	788	772	772	745	760	774	776	785	786	806	806	805	811	817	819	809	820	810	794	1051
3	812	795	798	804	790	797	786	796	792	783	766	771	779	781	791	793	802	802	808	808	812	811	808	808	796	1093
4	808	806	803	806	805	801	801	787	780	773	776	777	786	789	800	808	810	819	818	816	817	824	813	813	801	1236
5	801	805	805	797	802	801	797	784	788	785	780	774	773	789	790	801	795	806	820	813	794	802	805	807	796	1114
6	809	808	807	805	794	801	797	790	782	774	767	772	773	782	798	799	806	812	815	815	818	817	815	815	799	1171
7 *q*	817	815	812	807	805	810	806	799	791	783	779	780	790	798	802	801	801	808	816	824	822	824	822	820	805	1332
8 *q*	817	816	813	813	813	809	810	808	801	789	786	787	796	804	807	813	817	817	825	822	825	826	828	822	*811*	1464
9	824	820	821	822	816	810	801	812	806	779	777	783	798	809	810	810	808	809	812	817	817	816	805	812	808	1394
10	807	800	804	808	805	801	792	779	769	770	776	789	796	809	814	807	810	801	810	813	816	817	815	822	801	1230
11	815	814	812	813	805	800	803	800	792	779	777	790	793	796	801	797	813	826	824	809	792	783	794	796	801	1224
12	800	801	803	805	794	806	764	774	774	766	758	746	760	775	786	798	803	806	802	806	803	805	805	825	790	965
13	800	799	801	803	806	808	804	794	779	768	764	771	787	800	808	806	822	829	805	810	817	821	802	811	801	1215
14 *d*	818	817	810	812	797	808	816	806	780	779	769	793	778	775	755	802	810	791	813	803	790	808	820	806	798	1156
15	790	798	797	801	801	796	787	778	763	752	746	752	762	774	794	796	796	801	804	807	808	805	801	803	788	912
16	805	802	799	802	803	799	799	798	787	776	767	758	774	780	790	800	806	810	805	810	807	802	805	812	796	1096
17	817	821	785	797	789	790	806	796	783	773	776	769	772	784	790	790	801	800	802	805	805	806	804	804	794	1065
18	806	804	806	808	802	797	797	796	788	783	783	785	787	789	791	787	777	794	808	810	811	812	811	810	798	1142
19 *q*	809	808	808	811	808	806	808	808	804	794	784	784	782	789	789	798	803	805	812	812	810	809	813	813	803	1267
20	817	812	808	813	820	824	817	824	814	806	790	779	777	773	781	794	803	801	813	813	806	802	816	814	805	1317
21 *q*	816	814	812	813	812	810	806	803	801	796	787	780	776	778	786	797	806	817	822	819	814	816	818	817	805	1316
22	814	813	812	812	812	810	811	807	801	797	796	790	786	778	793	801	800	814	825	822	805	808	814	817	806	1338
23 *q*	814	812	812	811	810	809	804	794	784	780	780	784	790	798	805	805	813	822	825	826	823	823	824	824	807	1372
24 *d*	823	824	823	823	821	829	830	824	802	784	779	771	790	810	793	780	783	769	793	805	786	801	771	767	799	1181
25 *d*	796	803	768	785	803	785	765	764	771	754	750	756	744	755	774	790	796	799	801	801	799	801	798	802	*782*	760
26	797	789	802	812	802	806	801	799	789	766	757	753	763	786	782	794	784	819	802	812	812	805	797	810	793	1039
27	809	802	791	803	787	797	810	782	771	754	732	734	765	783	778	784	783	798	797	805	807	812	806	805	787	895
28	803	802	801	803	804	805	803	794	787	776	770	774	782	789	792	795	799	803	806	809	810	810	806	813	797	1136
29	813	805	804	809	809	817	815	809	794	785	776	773	775	781	790	794	796	799	807	812	812	813	817	813	801	1218
30 *d*	811	813	807	812	817	826	810	808	801	794	784	780	774	783	794	802	805	809	818	824	793	923	746	651	799	1185
Mean	809	808	803	807	804	804	800	796	788	777	*771*	773	779	787	792	799	802	807	811	813	808	*813*	807	805	798	
Sum 23,000+	1270	1228	1100	1200	1117	1108	989	878	633	297	136	196	359	605	762	954	1060	1210	1342	1389	1248	1406	1199	1140		Grand Total 574,826

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

22 ESKDALEMUIR (D) — 10° + — SEPTEMBER 1961

	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 400·0+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	
1 *d*	21·2	16·2	16·3	17·5	15·8	16·7	22·5	22·7	21·0	22·4	22·5	22·2	25·3	26·5	25·3	22·7	20·3	22·3	11·5	11·3	15·2	14·3	13·4	15·0	19·2	60·1
2	16·7	17·1	17·6	18·2	18·1	16·6	15·7	16·0	17·0	19·1	22·2	25·2	26·5	26·1	25·2	21·8	20·5	20·7	19·1	18·3	17·7	20·1	18·4	18·3	19·7	72·2
3	19·0	17·5	17·4	17·3	17·9	21·2	18·2	18·4	17·8	19·2	22·3	25·4	27·7	26·2	24·3	21·8	20·6	19·8	19·1	19·7	20·7	20·0	20·0	19·4	20·5	90·9
4	18·9	18·4	18·2	18·2	17·4	17·2	16·4	15·7	16·9	19·7	22·8	24·2	25·1	24·1	22·7	20·5	18·8	19·3	20·2	20·5	20·5	18·4	17·5	17·4	19·5	69·0
5	18·0	22·6	13·9	13·7	16·5	15·4	15·0	14·9	15·7	18·2	20·9	22·4	25·0	26·4	25·5	23·6	21·3	19·6	19·7	19·1	14·8	14·6	17·7	18·7	18·9	53·2
6	19·8	19·9	20·2	19·1	18·3	16·6	15·4	15·4	15·8	17·8	20·2	23·7	26·7	27·0	25·7	22·9	21·3	20·8	20·5	20·1	20·0	19·3	19·3	19·3	20·2	85·1
7 *q*	19·9	19·0	18·2	17·4	17·0	16·7	15·5	15·1	16·1	18·7	22·4	25·1	26·4	26·3	24·8	22·7	21·3	20·9	21·1	21·5	20·8	20·6	20·5	20·1	20·3	88·1
8 *q*	19·7	19·3	18·9	18·5	18·2	17·5	17·2	16·5	17·5	19·7	22·5	25·1	25·1	24·9	24·4	23·1	21·9	22·3	21·7	21·4	21·8	20·9	19·7	20·1	20·7	97·9
9	19·7	18·8	17·8	16·0	15·6	14·4	12·8	18·8	19·1	22·4	27·7	29·0	29·7	28·3	25·2	22·0	20·6	20·2	21·0	21·2	21·0	20·5	18·5	19·0	*20·8*	99·3
10	15·9	17·9	19·8	17·2	17·0	16·7	16·3	15·3	16·2	18·7	22·7	25·9	26·6	26·5	25·2	22·7	22·6	21·4	21·5	20·1	20·8	20·0	19·3	19·3	20·2	85·6
11	19·6	18·9	18·3	17·7	17·0	17·4	17·2	15·3	15·0	17·4	22·0	27·8	29·9	27·9	26·2	22·7	19·7	19·3	16·5	13·6	16·0	10·8	12·1	14·1	18·9	52·4
12	17·6	17·7	15·7	15·2	13·5	21·8	17·4	20·8	16·5	18·6	22·3	25·3	27·8	27·3	25·4	23·5	21·6	20·5	20·0	18·9	17·4	19·4	18·3	17·0	20·0	79·5
13	16·5	17·2	16·3	15·2	12·9	12·4	12·6	13·3	14·6	17·7	20·7	23·6	25·7	26·1	24·9	23·6	23·3	23·7	22·7	20·9	21·0	18·1	14·6	14·7	18·8	52·3
14 *d*	18·5	19·0	15·1	14·6	15·5	20·2	18·2	18·2	21·2	22·7	23·7	27·2	29·9	28·4	23·6	21·8	21·4	21·4	21·7	17·3	14·6	18·4	11·8	12·0	19·9	76·4
15	17·3	17·4	17·4	17·9	17·1	16·8	15·6	15·3	16·4	20·1	22·9	26·1	27·6	25·4	23·4	22·7	21·3	20·4	20·2	20·1	19·8	18·2	17·5	19·2	19·8	76·1
16	19·2	17·5	17·3	17·1	17·1	17·2	17·3	16·4	16·7	18·2	20·5	25·3	26·6	26·7	24·5	22·6	20·9	20·0	19·5	18·7	17·2	14·7	18·3	19·4	19·5	68·9
17	20·3	16·6	10·5	10·2	15·0	15·6	16·9	15·9	15·7	16·3	18·9	22·0	24·3	24·1	22·9	20·9	19·5	18·3	18·1	19·2	19·8	19·9	19·5	19·2	18·3	39·6
18	18·7	18·1	18·2	18·3	14·9	16·6	17·0	16·6	16·7	17·3	18·7	20·6	23·1	24·5	25·5	24·0	22·3	22·1	21·3	20·6	20·2	20·2	19·8	19·3	19·8	74·6
19 *q*	18·9	18·7	18·7	18·2	17·4	17·4	17·3	16·8	16·2	17·1	18·5	21·2	22·4	22·7	23·1	21·8	21·2	20·5	20·5	20·8	20·3	19·7	18·9	18·2	19·4	66·5
20	17·9	15·2	15·2	14·4	13·8	14·2	16·4	19·2	20·0	21·2	22·0	23·0	24·5	25·0	24·9	24·7	27·1	25·5	23·4	20·8	16·6	18·7	19·2	19·2	20·1	82·1
21 *q*	19·0	18·3	18·1	18·1	17·7	17·6	16·7	16·1	15·3	15·4	17·9	18·8	20·7	21·7	22·3	22·2	22·0	21·0	20·2	20·5	20·2	20·0	19·5	19·3	19·1	58·6
22	19·3	18·8	18·5	18·4	18·2	17·9	17·1	15·9	15·7	17·9	21·0	24·2	26·7	26·1	25·1	24·1	21·8	20·8	20·4	20·9	19·1	19·1	20·0	20·0	20·3	87·0
23 *q*	19·7	19·2	18·9	18·7	18·3	17·7	16·5	15·6	16·1	18·1	20·9	23·8	24·6	24·1	23·8	22·3	20·8	20·9	20·9	21·0	20·6	20·0	19·8	19·7	20·1	82·0
24 *d*	19·4	19·5	19·6	19·2	19·0	18·7	18·1	16·4	15·8	20·6	24·3	27·4	26·7	30·8	28·0	29·9	30·0	20·0	9·1	15·6	14·4	10·0	7·8	15·1	19·8	75·4
25 *d*	19·3	16·8	15·9	23·6	16·7	14·7	19·2	19·1	21·0	20·6	23·6	25·3	24·9	23·8	24·6	20·9	21·6	20·7	20·2	18·1	15·4	16·6	18·0	17·3	19·9	77·9
26	20·0	22·3	20·9	16·6	17·2	17·5	17·7	17·2	16·9	18·0	21·0	23·8	25·5	24·9	22·6	19·1	19·0	13·9	16·3	16·7	16·4	15·7	18·1	19·2	19·0	56·5
27	15·3	16·7	16·9	17·1	21·1	22·8	21·8	21·7	22·3	19·8	21·8	25·4	24·1	26·5	25·7	24·0	21·0	13·7	19·5	19·6	18·1	15·9	18·7	18·8	20·3	88·3
28	18·5	18·2	18·2	18·3	17·9	17·7	16·7	15·2	14·5	15·1	17·2	20·0	22·6	23·7	23·6	22·4	20·9	20·5	20·0	19·6	17·5	18·3	18·0	20·7	19·0	55·3
29	17·8	16·9	16·9	17·7	19·1	19·2	18·2	16·9	16·5	18·2	20·8	23·6	24·4	24·1	24·0	22·8	20·7	20·1	20·4	20·0	19·3	19·5	19·9	19·5	19·9	76·5
30 *d*	19·0	19·1	18·7	18·2	19·4	16·9	17·4	16·9	16·4	16·9	18·1	22·3	23·7	25·6	24·9	23·2	21·4	20·6	20·0	20·5	12·1	4·5	−7·0	8·3	*17·4*	17·1
Mean	18·7	18·3	17·5	17·3	17·0	17·3	17·0	16·9	17·1	18·8	21·4	24·2	25·7	25·7	24·6	22·8	21·6	20·4	19·5	19·2	18·3	17·5	*16·9*	17·9	19·6	
Sum 500·0+	60·6	48·8	23·6	17·8	10·6	19·3	10·3	7·6	12·6	63·1	143·0	224·9	269·8	271·7	237·3	183·0	146·7	111·2	86·3	76·6	49·3	26·4	7·1	36·8		Grand Total 14144·4

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 1961

	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	
1 *d*	349	336	364	374	380	373	365	358	364	371	375	385	381	384	391	405	415	409	422	410	401	385	366	367	380	1130
2	369	376	385	385	387	388	387	387	380	380	378	377	380	389	395	403	406	403	397	394	389	387	382	377	387	1281
3	363	375	382	385	384	373	372	374	374	376	375	379	380	384	388	393	393	400	401	401	397	394	391	389	384	1223
4	388	388	389	388	388	391	391	396	391	383	375	377	377	378	385	390	391	391	388	388	388	387	387	384	387	1279
5	382	364	362	374	380	385	385	387	381	374	371	369	374	381	395	401	403	399	398	400	403	396	389	387	385	1240
6	387	387	385	381	381	384	388	387	383	380	377	375	377	380	386	384	383	381	380	380	381	381	381	380	382	1169
7 *q*	385	383	380	382	385	385	386	385	380	371	366	365	366	371	379	386	388	386	385	385	385	385	385	386	381	1140
8 *q*	385	385	385	385	385	385	386	384	375	370	368	368	371	375	383	385	383	379	381	385	385	386	385	385	381	1144
9	385	385	384	382	381	384	385	379	372	368	365	361	364	372	382	388	391	391	388	388	388	390	391	388	381	1152
10	387	388	385	385	386	388	391	392	390	378	371	369	374	384	391	396	394	392	386	389	386	385	385	384	386	1256
11	381	381	384	385	385	385	384	382	383	369	364	362	365	371	377	384	392	406	417	416	409	399	387	380	385	1248
12	384	388	390	385	378	365	362	364	371	374	370	371	377	382	386	389	389	391	392	393	394	392	391	375	381	1153
13	375	380	382	382	380	380	381	381	378	378	376	370	368	373	380	386	391	393	403	404	398	394	388	387	384	1208
14 *d*	373	370	380	384	384	371	370	373	375	371	368	367	373	396	402	401	407	403	398	407	410	400	375	341	383	1199
15	363	381	387	388	388	390	391	390	387	380	379	377	372	378	389	394	393	393	391	391	391	391	391	388	386	1263
16	385	386	386	386	386	386	385	385	382	379	378	378	377	384	394	394	397	400	404	403	400	396	390	387	389	1328
17	382	362	348	354	361	371	373	379	380	380	374	375	380	380	385	390	394	401	403	399	395	391	391	391	381	1139
18	387	383	377	372	382	382	384	385	385	382	380	379	375	379	387	398	404	397	391	390	389	388	388	388	385	1252
19 *q*	387	387	387	385	384	385	385	385	385	381	379	375	374	380	385	385	387	390	390	390	390	390	390	387	385	1243
20	383	381	378	375	372	370	371	368	371	373	373	373	374	378	380	390	400	406	404	404	410	408	396	393	385	1231
21 *q*	390	387	386	385	385	385	387	387	386	385	380	375	374	375	377	380	381	384	385	385	386	386	386	385	383	1202
22	385	385	385	384	382	383	385	385	381	376	371	364	362	364	369	377	382	383	385	387	395	396	385	387	381	1138
23 *q*	387	387	387	385	385	385	389	387	382	378	374	374	373	374	374	379	380	379	380	380	381	382	382	383	381	1147
24 *d*	383	381	381	380	380	379	378	378	379	375	370	374	368	375	398	422	439	464	452	416	410	388	362	356	*391*	1388
25 *d*	346	361	349	344	343	361	371	378	375	378	380	381	394	406	406	409	400	397	396	395	397	392	379	372	380	1110
26	368	362	366	369	377	380	381	384	383	382	381	384	386	389	398	414	416	414	402	396	378	382	377	361	385	1230
27	356	344	342	339	342	350	358	371	379	382	390	393	407	400	398	401	407	411	404	400	397	394	388	389	381	1142
28	385	385	390	388	389	389	385	385	381	383	378	376	376	378	380	385	390	390	390	391	391	390	390	380	385	1245
29	374	381	384	384	384	382	382	384	385	383	380	380	380	380	381	387	394	399	396	394	393	391	391	390	386	1259
30 *d*	390	385	386	349	377	373	376	380	381	384	380	377	378	381	384	387	387	390	388	388	401	349	266	197	*368*	834
Mean	378	377	379	377	379	380	381	381	380	377	375	*374*	376	381	387	393	396	*397*	397	395	394	389	381	375	383	
Sum 11,000+	344	324	356	324	381	388	414	440	399	324	246	230	277	421	605	783	877	922	897	849	818	675	435	244		Grand Total 275,973

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

24 ESKDALEMUIR — SEPTEMBER 1961

	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	γ	h. m.	γ	h. m. ′	′ h. m.	′	h. m.	γ	γ	h. m.	γ				°A.
1 *d*	18 59	884	723	10 30	161	13 04 28·3	3·6 18 50	24·7	18 32	430	327	01 19	103	4,4,4,3,3,3,4,3	28	2	84·7
2	23 58	835	731	09 48	104	12 30 27·6	14·4 06 26	13·2	16 58	409	366	00 09	43	2,2,2,4,3,3,2,3	21	1	84·5
3	00 00	835	750	10 53	85	12 36 28·5	16·2 08 26	12·3	18 33	403	361	00 20	42	3,2,2,2,3,2,2,2	18	1	85·1
4	21 39	837	766	11 19	71	12 40 25·8	14·8 06 54	11·0	07 34	397	374	10 58	23	1,1,2,2,2,1,1,2	12	1	85·4
5	18 09	829	765	12 43	64	14 18 27·2	7·9 20 56	19·3	20 54	407	356	02 01	51	4,2,2,1,2,3,3,3	20	1	85·5
6	20 03	821	762	10 36	59	13 30 27·2	15·1 07 04	12·1	15 06	391	374	12 00	*17*	1,2,1,2,2,1,1,0	10	0	85·7
7 *q*	20 44	828	778	10 07	50	13 02 26·8	14·6 07 18	12·2	16 06	390	364	11 53	26	0,1,1,1,1,1,1,1	7	0	85·7
8 *q*	19 06	833	785	11 02	48	11 40 25·4	16·1 07 35	9·3	19 51	387	368	10 58	19	0,1,1,1,2,2,2,1	10	0	85·8
9	00 19	825	769	00 51	56	12 29 30·0	12·0 06 16	18·0	17 10	393	359	11 43	34	1,2,3,3,2,2,1,2	16	1	85·9
10	23 28	828	767	09 25	61	13 12 28·1	14·4 07 40	13·7	15 40	397	368	11 20	29	2,1,1,3,2,3,2,2	16	1	86·1
11	17 57	836	771	09 51	65	12 14 31·5	7·9 21 22	23·6	19 00	422	362	11 45	60	1,2,1,3,2,3,3,3	18	1	86·0
12	23 04	849	731	11 31	118	12 07 28·7	12·8 04 05	15·9	20 21	395	355	05 53	40	2,3,4,3,2,1,1,3	19	1	86·0
13	17 25	842	762	09 59	80	13 03 26·5	12·1 04 31	14·4	18 53	408	367	12 11	41	1,1,1,1,1,3,2,3	13	1	86·0
14 *d*	22 36	841	726	14 35	115	12 49 31·0	5·4 22 54	25·6	19 51	413	332	23 44	81	3,3,3,3,5,3,3,4	27	2	86·0
15	19 42	811	743	10 37	68	12 18 28·0	14·9 07 32	13·1	15 36	395	343	00 00	52	3,1,2,1,2,1,0,2	12	0	85·9
16	19 44	817	751	11 19	66	12 54 27·5	12·8 21 12	14·7	18 40	407	375	12 02	32	2,1,1,2,3,2,2,2	15	1	86·0
17	01 20	830	759	11 49	71	13 15 25·1	8·2 03 04	16·9	18 14	404	345	02 18	59	3,3,2,2,1,1,1,0	13	1	85·9
18	03 34	818	768	17 34	50	14 42 26·2	14·8 04 30	11·4	16 15	407	368	03 44	39	2,2,1,2,2,3,1,0	13	1	85·8
19 *q*	23 05	816	778	12 10	*38*	14 56 25·1	16·3 08 22	8·8	21 12	391	374	12 01	*17*	1,1,1,1,2,1,1,1	9	0	85·9
20	16 18	832	767	13 40	65	16 17 29·2	12·8 03 47	16·4	20 09	414	366	07 21	48	2,2,2,1,2,3,3,3	18	1	85·9
21 *q*	18 13	825	774	12 44	51	14 24 22·7	14·8 08 50	*7·9*	00 10	390	373	12 17	*17*	1,1,1,1,2,2,1,1	10	0	85·9
22	18 21	828	766	13 15	62	12 48 28·4	15·5 07 54	12·9	21 05	397	360	12 11	37	0,1,1,2,3,3,2,2	14	1	85·9
23 *q*	19 48	831	778	09 39	53	13 28 25·3	14·8 07 55	10·5	07 02	390	372	11 59	18	0,0,0,2,1,1,1,1	6	0	85·9
24 *d*	14 05	872	735	17 49	137	14 02 *39·0*	-0·7 18 00	39·7	17 57	*497*	345	24 00	152	1,1,2,3,5,5,4,4	25	2	85·7
25 *d*	04 18	828	720	12 20	108	12 35 27·5	10·1 04 58	17·4	15 34	410	332	02 56	78	4,4,4,3,3,3,3,3	27	2	85·5
26	17 38	890	748	11 22	142	12 01 26·2	2·9 17 34	23·3	17 23	421	360	23 28	61	3,2,2,2,3,5,3,3	23	1	85·5
27	17 30	828	716	11 45	112	11 41 27·2	6·6 17 19	20·6	17 18	420	337	04 38	83	3,3,3,3,3,4,2,2	23	1	85·4
28	23 48	833	766	10 44	67	23 26 25·0	14·5 08 35	10·5	20 31	391	371	23 58	20	1,0,0,2,1,1,2,3	10	0	85·5
29	00 01	824	771	10 53	53	12 37 25·0	15·8 02 22	9·2	17 19	401	371	00 00	30	1,1,1,1,2,2,2,1	11	1	85·4
30 *d*	21 26	*1046*	*574*	23 37	*472*	13 21 27·2	*-20·9* 22 30	*48·1*	20 58	413	*10*	24 00	*403*	2,2,2,2,2,1,4,8	23	2	85·5
Mean	- -	842	750	- -	92	- - 27·6	10·7 - -	16·9	- -	406	348	- -	59	-	-	0·90	85·3

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.

21 ESKDALEMUIR (H) — 16,000γ (0·16 C.G.S. unit) + — OCTOBER 1961

	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 17,000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1 *d*	573	397	420	777	815	811	719	720	670	671	765	734	736	736	757	759	763	771	773	779	780	777	779	775	*719*	257
2	773	769	768	771	773	775	778	779	774	766	758	752	757	763	768	767	777	778	794	791	789	789	787	786	774	1582
3	786	786	783	787	789	789	787	782	770	757	751	753	762	769	772	784	786	789	793	789	790	784	790	787	780	1715
4	788	788	789	795	795	796	794	792	783	773	766	769	772	778	774	785	792	785	787	794	794	789	795	803	787	1876
5	799	794	795	798	801	799	796	794	787	772	767	766	768	772	781	786	792	797	802	806	804	803	805	805	791	1989
6	805	804	802	804	803	803	803	802	792	782	776	773	772	774	780	785	793	791	794	800	806	804	799	803	794	2050
7	796	797	809	810	814	818	805	797	789	777	770	776	773	785	794	799	799	802	805	807	807	809	810	809	798	2157
8	809	808	808	808	808	803	803	802	811	800	786	778	777	785	792	796	803	803	809	812	813	812	811	812	802	2249
9	813	816	811	811	810	808	811	808	797	788	781	777	777	789	793	798	801	805	808	809	807	807	807	807	802	2239
10 *q*	806	805	807	808	809	809	809	803	793	782	775	774	782	788	796	801	807	812	816	817	814	808	811	812	802	2244
11	812	813	810	813	814	820	820	824	805	776	778	772	766	781	794	795	801	808	808	812	792	797	805	811	801	2227
12	821	784	809	802	801	806	802	799	773	768	772	771	774	786	774	772	777	802	795	796	800	793	801	798	791	1976
13	795	804	800	804	800	821	807	811	786	773	776	772	772	780	786	796	793	780	794	805	807	807	803	812	795	2084
14	805	794	800	800	802	805	803	795	792	789	776	764	768	766	790	793	796	800	805	807	807	807	805	811	795	2080
15 *q*	803	804	805	807	809	810	809	806	797	788	781	780	788	796	803	807	806	811	814	816	816	815	812	812	804	2295
16 *q*	811	811	809	809	809	809	808	807	802	792	781	776	782	790	796	800	807	809	812	813	813	813	812	812	803	2283
17 *q*	811	811	812	812	812	812	812	812	807	797	788	784	789	800	806	811	812	817	820	821	823	822	832	830	*811*	2453
18 *q*	828	825	825	824	825	824	824	817	809	800	787	782	782	790	795	802	807	814	820	816	813	812	812	813	810	2446
19	816	818	821	823	817	816	814	811	805	795	793	794	792	796	800	805	809	813	816	819	813	808	804	795	808	2393
20	784	788	777	798	790	793	793	797	793	781	777	774	779	785	790	796	800	802	801	802	802	800	800	799	792	2001
21	799	801	805	801	804	805	807	804	796	786	790	796	793	792	796	806	805	791	788	790	802	790	789	796	797	2132
22	801	802	801	799	802	807	805	800	795	791	778	783	790	795	796	793	799	807	811	811	811	811	813	811	801	2212
23	807	805	806	810	812	810	807	798	793	786	786	783	791	799	803	800	799	808	813	813	811	816	798	805	802	2259
24	811	809	812	814	807	807	804	807	797	785	776	787	791	794	794	796	797	798	800	802	800	806	808	811	801	2213
25	813	814	813	814	814	815	813	810	801	792	785	790	800	797	798	792	784	789	780	786	791	803	806	804	800	2204
26 *d*	807	808	808	825	810	811	832	808	772	743	746	751	760	773	786	787	773	790	793	799	783	717	744	778	783	1804
27 *d*	796	794	788	795	827	816	803	799	786	771	764	784	779	780	799	795	792	782	775	782	764	728	783	783	786	1865
28 *d*	792	793	795	798	795	797	799	798	805	788	771	746	731	806	928	796	930	1065	861	444	328	478	558	732	756	1134
29 *d*	725	711	651	710	725	756	761	788	772	766	768	745	753	757	764	771	776	779	777	780	778	780	788	777	757	1158
30	778	779	776	782	786	788	789	789	781	776	773	760	755	767	776	780	771	783	788	788	786	788	791	792	780	1722
31	789	788	788	788	792	793	783	795	795	788	773	768	769	769	776	785	792	796	797	798	797	795	794	793	788	1901
Mean	792	785	784	800	802	804	800	799	788	777	775	*771*	773	782	792	791	798	*806*	802	791	785	786	792	799	791	
Sum 23,000+	1552	1320	1303	1797	1870	1932	1800	1754	1428	1099	1014	914	980	1238	1557	1538	1739	1977	1849	1504	1341	1368	1552	1774		Grand Total 588,200

MAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

22 ESKDALEMUIR (D) — 10° + — OCTOBER 1961

	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 300·0+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	
1 *d*	0·4	5·1	−6·8	7·6	11·4	20·4	19·9	25·1	20·8	20·1	19·6	23·7	27·2	24·1	22·5	21·1	19·7	19·1	18·9	18·8	19·0	18·8	18·1	18·2	17·2	112·8
2	17·9	17·5	17·5	17·7	17·7	17·8	17·5	15·9	14·3	14·3	16·1	18·9	21·4	22·7	22·4	20·4	18·8	15·2	14·0	19·7	19·4	19·1	18·8	18·7	18·1	133·7
3	18·5	18·4	18·5	17·9	18·0	17·7	16·9	15·2	14·0	14·5	17·0	19·8	23·0	23·0	22·4	21·5	20·8	18·1	16·0	19·0	18·0	17·5	17·9	17·5	18·4	141·1
4	17·9	17·4	17·0	16·8	15·9	16·8	17·0	17·0	16·6	17·0	19·2	23·0	25·2	25·8	24·2	22·3	21·2	18·5	18·2	18·2	17·3	15·4	15·6	14·9	18·7	148·4
5	17·4	18·6	18·8	18·2	18·0	17·9	17·0	16·7	15·8	17·4	19·8	22·9	25·1	25·8	25·1	23·4	21·7	20·5	19·6	18·1	18·8	19·3	19·3	19·3	19·8	174·5
6	18·8	18·1	18·5	17·9	17·6	17·3	17·1	16·9	16·3	17·0	20·0	21·9	23·8	24·2	24·2	23·3	22·0	19·1	20·1	19·0	16·5	15·5	17·6	17·0	19·2	159·7
7	17·0	21·5	19·4	14·8	14·3	14·7	15·2	14·8	14·3	15·2	18·7	23·9	25·0	25·4	24·2	21·8	20·6	20·3	20·1	19·7	19·4	19·3	19·3	19·1	19·1	158·0
8	18·8	18·5	18·5	18·5	18·3	17·6	18·4	20·2	18·3	17·4	18·6	21·2	23·8	25·0	24·3	22·5	21·7	21·5	21·1	20·5	20·2	19·5	19·0	18·7	20·1	182·1
9	18·7	19·2	19·1	18·4	19·2	18·4	18·4	17·2	15·9	15·5	17·3	20·9	23·3	24·6	23·6	21·5	20·0	20·1	19·5	19·5	19·4	19·1	19·0	19·1	19·5	166·9
10 *q*	18·9	19·0	19·2	19·2	18·9	18·3	17·8	16·6	15·6	15·7	17·7	20·4	23·2	23·8	23·9	22·6	21·4	21·4	20·6	19·9	19·2	18·8	19·0	17·8	19·5	168·9
11	18·6	17·4	18·1	17·9	18·6	17·8	17·5	16·5	14·9	17·2	22·4	25·6	25·7	24·5	26·0	24·4	21·8	21·2	20·9	20·9	16·0	15·2	17·4	16·2	19·7	172·7
12	14·0	13·2	13·4	13·3	14·9	16·9	19·2	17·6	17·0	18·8	20·4	23·1	24·8	27·1	26·1	27·0	20·6	19·4	20·2	18·8	17·5	13·4	13·1	13·1	18·5	142·9
13	9·7	11·4	14·4	15·4	21·6	21·5	19·0	18·2	18·5	19·0	17·1	20·4	22·8	23·8	23·2	21·7	19·6	17·2	19·8	20·3	20·1	19·5	18·3	16·4	18·7	148·9
14	13·5	13·1	17·0	17·1	17·8	17·8	17·7	18·4	17·8	17·4	18·7	21·5	23·7	24·5	24·2	22·5	20·8	19·9	19·5	19·4	19·4	19·1	18·8	18·7	19·1	158·3
15 *q*	17·9	18·5	18·5	18·6	18·6	18·4	18·2	17·4	16·3	16·8	18·3	21·7	24·1	25·1	24·3	22·7	21·5	20·8	20·2	19·8	17·0	18·5	19·2	19·2	19·7	171·6
16 *q*	18·7	18·6	18·5	18·4	18·5	18·5	17·9	17·1	15·7	15·2	17·2	19·8	22·7	24·2	23·9	22·0	20·5	20·6	20·2	20·0	19·7	19·5	19·3	19·0	19·4	165·7
17 *q*	18·6	18·4	18·4	18·6	18·6	18·5	18·3	17·5	15·8	15·4	16·9	20·0	22·8	23·8	23·1	21·6	20·9	21·1	20·8	20·6	20·3	19·8	20·1	19·6	19·6	169·5
18 *q*	19·4	19·3	19·1	19·1	18·9	18·8	18·7	17·5	16·2	15·6	17·3	20·3	23·1	24·6	23·9	22·6	21·2	20·9	20·6	19·9	19·4	19·3	19·3	19·1	19·8	174·1
19	18·5	18·8	18·5	15·0	15·6	16·4	17·3	17·2	16·5	16·5	18·6	21·1	22·5	23·5	23·2	22·2	21·6	21·5	21·0	20·6	19·7	19·0	16·5	17·5	19·1	158·8
20	17·2	−0·2	4·1	7·8	8·3	10·8	13·4	15·7	15·2	16·3	18·8	21·2	22·6	22·9	21·9	20·9	19·9	19·8	20·1	19·9	19·3	18·9	18·7	17·8	*16·3*	91·3
21	18·1	18·6	17·5	18·3	18·6	19·1	18·4	17·3	16·4	16·0	18·2	22·1	24·1	24·8	22·9	22·4	22·4	22·1	22·1	20·5	18·3	13·5	10·9	14·5	19·0	157·1
22	15·7	17·3	17·1	17·6	18·6	18·3	18·0	17·1	16·5	17·0	17·9	21·0	24·3	24·5	24·6	21·5	21·5	20·5	19·4	19·2	19·1	18·3	17·4	18·0	19·2	160·4
23	18·6	18·8	19·0	19·1	18·9	18·3	17·8	16·8	16·5	17·0	19·6	22·8	24·1	24·1	23·3	22·2	21·1	20·5	20·2	20·0	17·7	11·0	16·0	19·3	19·3	162·7
24	19·9	19·2	19·5	18·7	19·3	19·9	19·3	18·5	17·8	19·4	21·2	24·4	25·2	25·1	24·3	22·5	21·5	20·5	19·7	18·9	18·0	17·9	17·6	18·4	20·3	186·7
25	18·6	18·5	18·9	19·3	18·9	18·7	18·1	17·3	16·6	17·3	19·3	23·6	26·1	25·5	26·2	26·1	24·8	21·0	16·3	17·9	15·5	14·9	9·9	14·6	19·3	163·9
26 *d*	17·9	18·2	20·3	20·3	17·9	23·0	20·8	19·9	19·5	21·9	24·4	29·2	31·9	30·7	28·1	27·7	27·8	21·8	19·7	17·7	9·4	3·8	3·3	11·1	20·3	186·3
27 *d*	15·4	16·7	13·3	21·6	18·2	21·1	19·3	19·7	17·6	17·8	18·6	21·9	23·3	23·6	22·9	21·3	20·4	21·4	15·2	11·3	9·9	4·7	5·7	9·8	17·1	110·7
28 *d*	13·3	15·2	16·8	15·8	18·3	18·1	17·7	17·3	18·2	24·3	21·9	24·0	26·5	31·1	40·3	42·5	29·6	26·3	32·8	−22·3	−10·7	−9·8	4·2	8·2	17·5	119·6
29 *d*	21·3	32·4	34·6	28·8	26·8	23·2	27·6	23·2	17·5	15·4	17·1	17·5	19·0	20·2	20·2	20·1	19·8	19·0	18·6	18·2	17·7	16·4	15·7	17·8	*21·2*	208·1
30	17·4	17·3	17·6	17·8	17·9	17·8	17·5	17·1	16·3	16·1	15·7	18·6	22·3	23·3	22·4	20·5	17·9	13·8	19·3	18·9	18·3	16·9	17·2	17·4	18·1	135·3
31	17·5	17·6	17·1	17·8	17·9	18·0	18·5	17·9	16·6	16·5	17·4	20·2	22·2	22·5	22·1	20·8	20·1	19·7	19·0	18·9	18·8	18·4	18·1	17·6	18·8	151·2
Mean	16·9	17·1	17·1	17·5	17·8	18·3	18·2	17·8	16·6	17·1	18·7	21·8	24·0	*24·6*	24·3	23·1	21·4	20·1	19·8	17·8	17·0	*15·8*	16·1	16·9	19·0	
Sum 400·0+	124·1	131·6	131·4	143·3	152·0	167·8	165·4	150·8	115·3	131·0	181·0	276·6	344·8	363·8	353·9	315·6	263·2	222·8	213·7	151·8	127·6	90·5	100·3	123·6		Grand Total 14141·9

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 1961

	Hour G.M.T. 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 7000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1 *d*	69	−9	41	191	329	316	332	331	361	369	380	400	417	417	404	404	404	408	406	404	404	406	407	406	*333*	997
2	405	404	404	403	403	403	403	404	402	400	398	397	396	398	401	407	407	411	408	400	399	399	400	400	402	2652
3	399	398	398	397	397	397	400	401	401	395	387	382	384	391	397	400	401	403	406	404	403	404	402	401	398	2548
4	398	398	397	396	397	396	396	397	400	400	394	391	391	394	403	404	409	416	414	409	403	407	399	392	400	2601
5	384	388	391	392	393	393	395	396	395	394	387	384	384	385	390	391	394	396	396	396	395	394	394	394	392	2401
6	394	393	393	392	391	391	391	391	391	389	383	381	385	385	389	395	398	403	404	403	401	394	392	391	393	2420
7	391	385	367	368	375	373	384	384	385	380	374	373	377	380	385	389	391	390	390	390	391	391	391	391	383	2195
8	391	391	391	390	388	389	385	382	380	385	383	380	380	385	390	392	393	391	391	391	391	391	391	391	388	2312
9	391	386	386	386	386	385	385	388	390	387	384	380	383	387	391	393	392	391	390	390	390	390	390	391	388	2312
10 *q*	391	391	390	388	388	388	388	391	391	391	385	380	380	381	384	387	388	386	387	387	390	391	391	387	388	2301
11	388	385	385	386	385	382	384	383	387	390	381	377	383	385	391	397	397	394	393	393	403	403	396	387	389	2335
12	367	345	326	339	358	365	371	378	387	390	385	383	381	388	400	407	410	407	404	403	400	400	389	380	382	2163
13	375	368	368	374	371	362	370	377	387	392	392	388	387	387	391	398	405	411	403	397	395	393	392	381	386	2264
14	365	369	375	383	386	388	389	391	392	391	390	389	388	389	391	394	398	397	394	391	391	391	391	389	388	2312
15 *q*	390	391	391	390	390	390	389	391	391	390	387	384	380	381	383	388	391	391	391	391	391	387	387	386	388	2321
16 *q*	387	387	388	388	388	388	387	387	388	388	385	384	378	379	384	390	391	389	388	388	387	387	386	386	387	2278
17 *q*	386	387	387	385	385	385	385	386	387	384	378	372	368	368	373	380	384	383	384	385	385	385	382	381	382	2165
18 *q*	382	382	381	381	381	382	382	384	382	381	374	368	369	371	379	385	387	386	386	387	388	387	386	385	381	2156
19	385	384	377	372	374	376	379	381	384	382	380	378	376	378	381	383	384	384	384	385	387	390	394	396	382	2174
20	371	351	362	361	356	357	370	382	388	388	384	383	385	388	391	393	392	393	391	391	391	392	392	393	381	2145
21	393	390	385	386	386	386	387	391	393	391	380	372	379	385	388	391	394	400	406	409	403	403	391	390	391	2379
22	389	387	386	387	387	387	388	390	391	392	389	384	383	387	394	400	398	393	391	391	391	391	390	388	390	2354
23	389	390	388	387	385	385	386	390	390	386	379	377	381	386	391	393	392	391	390	390	391	392	392	390	388	2311
24	390	390	388	388	388	386	384	384	386	387	383	380	385	388	393	397	398	397	397	396	396	394	391	390	390	2356
25	388	388	387	386	386	385	385	386	386	384	380	378	379	387	394	401	403	407	416	407	404	396	384	378	391	2375
26 *d*	380	384	384	374	375	374	368	376	384	387	382	381	389	401	408	414	412	406	403	401	368	342	322	358	382	2173
27 *d*	352	355	372	345	320	330	348	364	375	381	387	386	390	393	393	396	402	409	424	404	398	373	366	370	376	2033
28 *d*	372	374	377	381	385	390	391	392	387	380	377	390	480	539	609	565	664	519	545	313	184	272	160	246	404	2692
29 *d*	297	271	243	284	349	381	391	388	403	408	401	404	406	407	409	410	410	410	409	409	410	410	404	401	380	2115
30	403	404	403	404	403	404	403	404	407	411	409	396	399	401	407	410	414	417	407	406	406	406	403	400	*405*	2727
31	399	399	399	400	400	400	400	400	403	403	401	398	399	402	405	406	406	403	403	402	401	402	402	402	401	2635
Mean	373	*368*	368	374	380	381	384	386	389	389	386	384	389	393	400	402	*407*	403	403	394	388	389	383	385	387	
Sum 11,000+	561	406	410	584	785	814	896	970	1074	1076	959	900	1042	1193	1389	1460	1609	1482	1501	1213	1037	1063	857	921		Grand Total 288,202

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

24 ESKDALEMUIR — OCTOBER 1961

	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	γ	h. m.	γ	h. m.	′	′	h. m.	′	h. m.	γ	γ	h. m.	γ				°A.
1 *d*	05 04	911	*−226*	02 42	1137	06 56	37·6	−31·9	03 04	69·5	13 01	432	*−305*	01 07	*737*	9,8,5,6,3,2,2,2	37	2	85·4
2	18 03	802	747	12 13	55	14 04	23·6	10·0	17 56	13·6	17 57	413	394	12 26	19	1,1,1,2,2,3,2,0	12	1	85·5
3	18 10	797	746	10 48	51	12 54	24·3	13·7	08 30	10·6	18 20	407	382	11 30	25	1,0,1,1,2,2,2,1	10	1	85·4
4	23 38	821	763	10 55	58	13 38	27·3	12·1	23 32	15·2	17 40	419	382	11 52	37	0,0,1,2,3,2,2,3	13	1	85·4
5	00 01	817	763	10 02	54	13 40	26·2	14·9	00 01	11·3	19 24	397	382	00 16	15	2,1,1,1,1,0,1,0	7	0	85·4
6	21 00	836	766	11 57	70	13 32	24·9	13·8	21 30	11·1	17 56	406	381	11 11	25	1,1,1,2,2,1,3,3	14	1	85·3
7	05 03	824	762	10 54	62	12 04	26·6	13·0	05 03	13·6	00 23	393	363	00 29	30	3,2,2,2,2,1,1,1	14	1	85·3
8	08 32	819	773	11 54	46	13 51	25·7	16·1	09 43	9·6	16 18	395	377	12 00	18	0,1,3,2,1,2,1,1	11	1	85·4
9	01 31	820	772	11 52	48	13 27	24·9	14·8	09 04	10·1	15 42	394	380	11 31	14	1,1,1,1,1,0,0,0	5	0	85·3
10 *q*	23 04	827	772	11 40	55	14 17	24·5	15·0	08 41	9·5	08 20	392	379	11 50	13	0,0,0,0,1,0,2,2	5	0	85·3
11	07 22	830	748	12 23	82	12 39	27·4	14·0	21 19	13·4	20 44	409	374	11 04	35	2,1,2,3,3,2,3,3	19	1	85·4
12	00 29	838	729	01 48	109	15 32	28·3	9·1	00 01	19·2	16 53	414	316	02 07	98	5,2,3,2,3,3,2,3	23	1	85·4
13	23 59	839	769	12 01	70	05 01	27·4	9·2	00 26	18·2	17 33	413	358	05 23	55	2,3,2,2,1,3,1,3	17	1	85·3
14	00 01	839	754	11 44	85	13 16	25·1	11·9	00 48	13·2	16 36	399	364	00 28	35	3,1,2,3,2,1,0,2	14	1	85·3
15 *q*	20 40	822	773	10 32	49	13 22	25·4	15·7	20 36	9·7	20 24	392	380	12 31	12	1,0,0,1,0,2,1,1	6	0	85·5
16 *q*	19 53	815	771	11 17	44	14 11	24·5	14·9	09 09	9·6	16 08	391	376	12 44	15	0,0,0,1,1,1,0,0	3	0	85·3
17 *q*	22 11	841	781	11 42	60	13 46	23·8	15·1	09 18	8·7	08 15	387	366	12 56	21	0,0,0,0,1,0,0,2	3	0	85·3
18 *q*	00 14	831	779	12 29	52	13 13	25·6	15·1	09 31	10·5	16 16	387	368	12 46	19	0,0,1,1,1,1,1,1	6	0	85·1
19	03 03	832	788	23 53	44	23 59	24·6	14·3	03 31	10·3	23 49	397	371	03 10	26	2,2,1,2,1,1,1,3	13	0	85·2
20	03 54	816	763	02 03	53	00 08	28·4	−3·3	01 39	31·7	17 33	394	346	01 29	48	5,3,3,2,1,1,1,1	17	1	85·1
21	16 09	812	777	21 52	*35*	13 55	26·0	5·9	22 41	20·1	19 17	410	371	11 20	39	2,1,1,3,2,3,3,3	18	1	84·9
22	22 43	816	773	10 11	43	13 39	25·8	15·0	09 09	10·8	16 06	401	381	12 20	20	1,1,1,2,2,2,1,1	11	0	84·8
23	21 23	832	777	11 32	55	13 46	24·9	8·0	21 45	16·9	22 05	396	375	11 25	21	0,1,1,1,1,3,2,4	13	1	84·7
24	03 19	816	772	10 44	44	12 11	26·1	17·2	22 04	8·9	16 20	399	380	11 30	19	1,2,1,2,2,1,1,1	11	0	84·8
25	21 57	820	762	18 20	58	12 50	28·3	5·4	22 22	22·9	18 24	420	377	11 40	43	1,0,0,1,3,3,3,3	14	1	84·7
26 *d*	20 19	863	701	20 58	162	12 54	33·7	−4·2	21 02	37·9	16 01	419	312	22 10	107	2,3,4,2,3,3,5,5	27	2	84·7
27 *d*	03 59	851	669	21 32	182	03 32	28·6	−4·9	21 43	33·5	18 37	430	320	04 03	110	3,4,2,3,3,3,4,5	27	2	84·7
28 *d*	17 41	*1340*	195	20 12	*1145*	17 57	*91·5*	*−60·7*	19 09	*152·2*	14 40	*782*	46	22 55	736	2,1,4,4,8,9,9,7	44	2	84·7
29 *d*	22 29	827	571	02 30	256	02 04	43·3	10·1	00 00	33·2	21 03	412	230	02 50	182	6,5,4,3,2,2,1,4	27	2	84·6
30	22 50	800	744	16 51	56	13 13	23·9	10·5	17 15	13·4	17 03	421	385	11 35	36	0,0,1,3,1,3,1,2	11	1	84·5
31	19 47	802	763	13 41	39	13 05	23·0	15·6	09 05	*7·4*	15 30	408	397	12 20	*11*	1,0,3,1,2,1,0,0	8	1	84·5
Mean	− −	844	703	− −	141	− −	29·1	7·2	− −	21·8	− −	417	333	− −	85	−	−	0·84	85·1

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.

21 ESKDALEMUIR (H) — 16,000γ (0·16 C.G.S. unit) + — NOVEMBER 1961

	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 18,000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1	795	794	794	795	796	804	808	806	793	783	778	770	776	786	790	796	798	801	794	788	798	801	799	796	793	1039
2	796	797	800	802	804	808	808	802	792	784	780	783	780	786	789	794	798	800	804	805	804	801	802	804	797	1123
3	804	801	800	795	800	807	807	804	791	783	781	780	781	785	790	795	803	805	805	804	803	803	807	807	798	1141
4	803	799	799	799	801	804	806	804	799	794	788	790	791	796	801	807	812	807	808	807	808	801	801	795	801	1220
5 *d*	810	803	806	807	817	813	817	815	796	779	780	785	789	760	759	776	776	782	793	788	793	792	841	812	795	1089
6	791	792	793	788	792	820	810	808	776	768	773	767	772	780	792	796	801	805	805	808	808	808	810	813	795	1076
7 *d*	810	803	804	798	802	808	804	788	773	764	748	737	743	762	749	774	764	754	720	733	723	738	772	783	*769*	454
8 *d*	772	789	800	786	788	782	786	776	784	778	765	763	757	772	788	790	793	794	795	794	786	777	783	790	783	788
9	792	793	801	793	799	803	803	808	785	787	771	761	764	777	786	794	792	796	795	800	796	797	800	795	791	988
10	796	795	792	792	797	803	810	811	803	790	782	782	784	789	793	798	799	801	799	801	804	805	804	803	797	1133
11	803	801	803	804	807	810	810	807	799	787	783	784	790	797	803	804	806	810	811	811	811	808	819	803	803	1271
12	815	814	799	798	808	812	811	808	792	785	781	776	771	776	776	776	763	781	797	803	796	796	797	809	793	1040
13	797	799	797	797	798	803	803	803	801	794	790	792	792	797	802	803	804	807	810	812	807	808	807	807	801	1230
14	807	806	808	811	821	826	822	803	795	808	799	794	792	798	803	804	807	805	783	782	783	796	807	801	803	1261
15 *q*	800	801	803	805	807	809	808	806	800	794	789	788	790	795	803	804	807	810	809	809	810	806	815	807	803	1275
16	808	808	807	808	810	810	810	810	805	797	792	792	800	804	808	810	812	815	815	817	816	808	796	801	807	1359
17 *d*	802	802	805	806	808	821	821	822	815	809	808	805	808	816	792	771	801	804	803	799	795	795	786	822	805	1316
18 *d*	828	787	788	803	799	804	813	818	785	732	756	766	739	761	771	748	756	777	786	755	767	767	772	765	777	643
19	783	785	782	785	804	796	795	788	795	790	788	782	783	788	795	796	799	799	801	803	802	801	804	803	794	1047
20	803	803	801	807	811	814	823	804	799	811	804	794	785	774	783	794	794	787	774	764	779	788	788	803	795	1087
21	795	808	795	806	809	809	807	803	799	797	797	794	796	799	804	806	808	806	805	804	806	805	808	807	803	1273
22 *q*	806	810	801	803	807	810	811	812	808	804	803	799	800	808	810	809	809	806	809	810	810	809	808	808	807	1370
23 *q*	807	807	809	810	811	811	813	815	811	803	799	801	805	808	811	813	815	814	810	808	813	812	811	813	810	1430
24 *q*	808	807	806	806	807	810	811	811	810	806	801	795	795	802	804	806	806	811	811	812	812	817	815	813	808	1382
25	812	812	813	813	815	817	821	819	811	796	802	802	799	802	804	803	808	813	809	812	811	810	810	810	809	1424
26	809	808	810	811	814	818	819	817	815	807	806	794	804	806	808	810	813	810	803	810	814	808	809	803	809	1426
27	806	803	801	806	809	812	813	816	811	807	799	797	798	797	804	806	807	808	809	810	814	815	815	814	807	1377
28	812	810	810	812	815	819	818	815	813	811	801	799	803	801	804	804	804	803	795	806	807	810	813	814	808	1399
29	813	810	810	812	812	812	815	814	812	804	801	801	806	811	815	815	816	819	818	816	815	813	812	810	*812*	1482
30 *q*	814	812	811	812	815	819	819	814	810	806	800	796	799	805	809	811	811	811	809	812	811	816	818	817	811	1457
Mean	803	802	802	802	806	810	*811*	808	799	792	788	*786*	786	791	795	797	799	801	799	799	800	800	804	804	799	
Sum 23,000+	1097	1059	1048	1070	1183	1294	1322	1227	978	758	645	569	592	738	846	913	982	1041	985	983	1002	1011	1129	1128		Grand Total 575,600

MAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

22 ESKDALEMUIR (D) — 10° + — NOVEMBER 1961

	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 300·0+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	
1	16·7	17·2	17·6	17·8	17·6	18·0	17·8	17·5	17·2	17·5	18·7	20·6	21·8	22·6	22·2	21·2	20·5	19·9	19·8	17·5	17·5	18·1	17·9	17·7	18·8	150·9
2	18·0	18·2	18·6	18·8	18·8	18·7	18·2	17·8	17·9	18·8	21·9	22·7	23·9	25·6	23·9	22·9	21·2	20·0	19·6	18·8	18·7	18·4	18·1	16·9	*19·9*	176·4
3	15·3	16·3	17·6	16·4	17·0	17·3	17·6	17·3	16·0	16·3	18·2	20·2	21·5	21·5	21·4	20·5	20·2	19·8	19·8	19·6	18·8	18·4	17·3	17·5	18·4	141·8
4	16·6	17·5	17·9	18·1	18·2	18·0	17·9	17·2	16·3	16·2	18·4	20·3	21·5	22·0	21·5	20·7	20·9	21·4	20·7	20·2	19·7	18·3	15·4	15·6	18·8	150·5
5 *d*	13·9	14·9	17·1	17·9	17·1	19·2	19·1	17·9	17·5	18·6	22·1	22·6	25·7	26·1	28·6	25·4	24·6	21·4	18·3	15·1	14·1	16·6	11·6	11·0	19·0	156·4
6	15·8	16·6	18·0	18·3	21·1	21·6	18·3	19·2	21·2	22·2	21·6	22·6	22·1	21·4	20·8	20·0	19·6	19·1	19·2	19·1	18·6	18·4	18·1	17·9	19·6	170·8
7 *d*	17·2	17·5	17·5	17·4	17·7	18·1	18·0	19·3	22·0	20·1	18·8	20·3	24·4	27·2	25·6	17·5	13·5	13·0	13·9	8·1	0·2	7·3	7·9	13·2	*16·5*	95·7
8 *d*	19·2	12·0	10·4	15·0	17·6	18·6	19·7	19·7	16·1	14·6	15·3	18·2	20·6	20·7	21·5	20·5	19·1	18·8	18·2	17·9	6·8	12·8	12·9	17·0	16·8	103·2
9	18·0	19·5	20·4	17·8	17·9	18·1	17·3	17·4	16·5	17·3	19·4	22·0	24·6	24·4	24·1	22·5	19·9	18·4	14·6	13·0	15·6	16·4	15·6	16·0	18·6	146·7
10	17·2	17·5	18·3	19·1	19·6	18·9	17·9	17·1	16·1	16·7	18·0	20·2	21·9	22·6	21·5	19·9	19·3	18·8	19·1	18·5	18·3	17·7	17·7	17·8	18·7	149·7
11	17·9	18·0	18·4	18·5	18·8	18·6	18·2	17·4	16·3	16·2	17·6	19·5	21·5	22·5	22·1	21·2	20·0	19·5	19·3	19·0	18·7	18·1	14·4	15·5	18·6	147·2
12	18·3	14·6	15·0	15·5	15·2	15·6	17·6	17·2	17·5	18·2	19·1	21·5	23·2	26·3	26·6	26·7	22·1	22·3	20·2	19·7	17·9	13·2	17·9	15·8	19·1	157·2
13	13·9	17·1	16·6	17·5	18·4	18·4	18·4	17·9	17·5	17·1	17·5	19·2	20·3	20·7	20·3	19·6	19·1	18·9	18·9	19·2	18·8	18·1	17·4	17·1	18·2	137·9
14	16·6	17·7	18·6	17·6	19·1	19·8	19·2	19·9	21·8	17·1	17·9	19·1	21·1	21·0	20·8	20·4	20·7	20·8	19·3	17·9	16·7	17·0	17·0	17·0	18·9	154·1
15 *q*	17·7	18·1	18·3	18·5	18·6	18·5	18·3	17·6	16·5	16·3	17·6	19·7	21·5	21·8	21·5	20·6	20·1	19·5	19·3	19·1	18·9	18·5	17·0	17·2	18·8	150·7
16	17·8	18·3	18·4	18·6	18·7	18·4	18·2	17·7	17·0	17·0	18·4	20·5	21·8	21·8	21·3	20·6	20·5	20·0	19·5	19·5	19·1	18·7	11·1	11·5	18·5	144·4
17 *d*	15·6	16·7	18·7	17·9	17·8	18·1	17·9	17·8	17·5	17·6	19·1	20·1	21·5	23·8	24·9	23·5	21·8	20·2	18·7	16·7	15·0	13·5	9·2	10·7	18·1	134·3
18 *d*	15·4	9·9	14·5	19·5	19·1	20·1	20·5	24·6	20·0	22·9	28·4	26·1	22·0	23·7	28·1	26·8	24·3	12·3	14·3	11·9	6·4	12·0	8·7	4·3	18·2	135·8
19	10·7	11·9	19·6	20·0	20·0	19·6	20·1	18·1	17·3	17·3	19·3	19·8	21·3	21·1	21·2	19·8	18·9	18·6	18·5	18·4	18·1	17·9	17·6	17·7	18·5	142·8
20	17·8	18·3	17·7	19·0	19·3	19·7	19·4	20·0	19·4	20·0	20·3	21·8	21·5	22·5	20·9	19·5	15·0	13·7	15·2	14·0	13·1	13·2	15·5	18·2	18·1	135·0
21	15·4	14·3	13·5	14·9	16·8	17·7	17·8	17·9	17·7	17·8	18·9	19·7	20·6	20·4	20·1	19·5	19·4	19·2	18·7	17·5	17·7	17·6	17·3	17·5	17·8	127·9
22 *q*	18·4	17·3	18·0	18·3	18·1	17·9	17·7	17·1	16·8	17·0	18·9	20·0	20·9	21·0	20·2	19·8	19·6	19·4	19·0	18·7	18·1	17·9	17·9	17·9	18·6	145·9
23 *q*	18·1	18·4	18·6	19·0	18·9	18·7	18·6	18·2	17·4	16·7	18·2	19·7	21·5	21·1	20·4	19·8	19·5	19·2	19·1	18·8	18·3	18·0	17·6	17·6	18·8	151·4
24 *q*	17·5	17·2	17·3	17·6	17·6	17·3	17·1	17·2	17·1	16·9	17·8	19·5	20·6	21·3	20·5	20·0	19·7	19·7	19·4	18·8	18·0	16·8	14·9	16·0	18·2	135·8
25	17·1	18·3	18·6	19·2	18·4	18·3	18·4	18·1	18·0	19·3	20·0	21·4	22·1	22·9	22·5	21·7	20·2	20·2	20·0	18·5	17·9	17·6	17·3	17·4	19·3	163·4
26	18·1	18·7	18·9	19·0	19·2	19·1	18·7	18·8	18·6	17·9	18·4	19·1	20·0	21·6	21·7	20·7	19·7	19·5	18·9	18·7	18·0	17·2	14·7	13·2	18·7	148·4
27	14·8	15·9	19·1	19·1	19·0	18·7	18·4	18·2	17·8	17·1	17·6	19·5	21·1	21·4	21·2	21·3	20·2	19·9	16·9	18·2	17·9	17·5	17·6	17·8	18·6	146·2
28	17·9	18·4	18·6	18·9	18·6	18·5	18·0	17·7	17·3	17·5	18·4	20·0	21·2	21·4	21·2	21·1	20·6	20·6	18·6	18·6	17·8	17·3	17·6	18·0	18·9	153·8
29	18·1	18·1	20·0	19·6	19·2	19·2	18·4	18·1	17·6	17·6	19·3	20·8	22·0	21·8	21·4	20·7	20·0	19·6	19·1	18·9	18·5	18·2	16·9	17·6	19·2	160·7
30 *q*	17·9	17·6	18·5	18·6	18·9	18·6	18·3	17·8	16·9	17·1	17·8	18·9	20·4	21·3	20·9	20·8	20·4	20·5	20·6	19·6	18·5	17·8	17·7	17·8	18·9	153·2
Mean	16·8	16·7	17·7	18·1	18·4	18·6	18·4	18·3	17·8	17·8	19·1	20·5	21·8	*22·5*	22·3	21·2	20·0	19·1	18·6	17·7	16·4	16·6	*15·6*	15·9	18·6	
Sum 400·0+	102·9	102·0	130·3	143·4	152·3	157·3	151·0	147·7	132·8	132·9	172·9	215·6	254·1	273·5	268·9	235·2	200·6	174·2	156·7	129·5	91·7	98·5	67·8	76·4		Grand Total 13368·2

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) + — NOVEMBER 1961

	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 9000+
	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	400	399	399	399	400	397	396	396	398	398	396	396	396	393	396	397	398	400	403	408	407	402	401	400	399	575
2	398	397	397	396	396	396	396	397	401	399	395	394	394	393	395	399	400	401	401	400	400	400	400	398	398	543
3	394	390	389	393	393	391	392	394	398	398	396	395	395	395	397	397	396	396	396	397	397	398	396	393	395	476
4	391	393	393	393	393	392	391	394	397	396	393	390	391	393	395	395	394	394	395	398	400	401	401	398	395	471
5 *d*	380	382	384	387	388	387	384	388	393	393	388	390	392	406	418	418	420	419	416	419	414	408	385	369	397	528
6	374	381	387	386	380	372	381	385	396	397	401	398	397	400	402	401	399	397	396	396	396	396	396	393	392	407
7 *d*	393	392	381	384	385	384	384	386	384	389	398	416	426	442	464	453	458	460	472	478	396	361	378	391	*411*	855
8 *d*	382	349	329	342	352	369	377	387	397	403	403	403	405	410	409	407	404	401	401	401	409	404	401	398	389	343
9	398	396	383	385	387	387	390	390	397	397	397	397	398	399	402	408	407	406	407	406	401	400	401	399	397	538
10	397	397	398	397	396	394	395	395	397	397	394	391	392	397	398	402	403	402	401	400	399	397	397	397	397	533
11	397	397	397	397	396	396	396	397	398	397	395	393	391	392	396	398	398	398	396	395	394	395	392	392	396	493
12	385	375	374	382	385	385	384	385	390	393	396	397	402	406	413	422	436	427	416	410	409	410	401	383	399	566
13	387	387	389	392	393	394	396	396	396	396	393	390	391	393	396	398	398	397	396	395	396	397	397	396	394	459
14	394	393	393	392	388	384	386	387	387	389	389	386	387	388	390	391	394	397	407	413	411	406	395	393	393	440
15 *q*	395	395	394	394	394	394	395	397	398	397	393	390	390	391	392	394	396	397	397	397	397	397	395	392	395	471
16	391	391	391	392	391	393	393	394	395	394	391	390	388	390	393	394	394	394	394	394	395	397	398	387	393	424
17 *d*	388	389	390	391	391	391	391	391	391	391	389	388	390	391	398	408	403	400	403	404	409	408	398	366	394	459
18 *d*	337	358	364	359	369	380	381	378	387	400	393	397	424	427	426	445	446	446	417	420	420	406	389	378	398	547
19	369	370	374	375	378	379	386	391	393	397	394	396	398	397	398	400	401	400	399	399	399	399	399	398	391	389
20	398	397	397	395	392	389	387	389	389	388	386	389	397	404	406	408	415	414	414	421	418	410	404	393	400	600
21	389	381	376	375	373	378	384	387	391	391	391	392	392	392	393	395	394	394	394	395	393	394	394	391	389	329
22 *q*	385	385	388	391	391	390	389	390	391	392	390	388	391	392	392	394	392	393	393	392	392	392	392	392	391	377
23 *q*	392	392	392	392	390	389	389	389	391	392	391	389	388	389	392	393	393	394	394	394	392	392	391	389	391	389
24 *q*	391	389	392	391	391	391	389	388	391	392	390	388	386	387	392	393	394	393	392	392	392	391	387	387	390	369
25	388	388	388	388	388	387	386	386	387	388	386	386	386	388	391	393	394	393	394	394	394	394	393	392	390	352
26	391	390	389	389	388	387	386	386	387	388	387	386	383	384	388	391	392	392	394	394	392	392	392	391	389	339
27	386	385	385	386	388	389	389	388	387	388	386	386	386	387	388	391	392	393	395	393	392	390	389	388	389	327
28	388	388	388	389	388	388	388	388	388	387	386	386	386	388	391	392	392	394	399	398	397	394	392	389	390	364
29	388	388	387	386	388	389	389	390	388	388	386	386	385	386	388	389	390	389	389	390	389	390	390	389	388	317
30 *q*	387	386	386	387	387	387	388	388	392	390	386	386	386	386	388	388	389	389	389	389	389	391	390	389	*388*	313
Mean	388	387	*386*	387	387	388	389	390	393	393	392	392	394	396	400	402	*403*	402	402	*403*	400	397	395	390	394	
Sum 11,000+	633	600	574	605	619	629	658	697	775	805	759	759	813	886	987	1054	1082	1070	1060	1082	989	912	834	711		Grand Total 283,593

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

24 ESKDALEMUIR — NOVEMBER 1961

	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	γ	h. m.	′	′	h. m.	′	h. m.	γ	γ	h. m.	γ				°A.
1	06 46	811	11 38	765	46	13 53	23·0	12·6	19 57	10·4	19 55	412	392	13 35	20	2,2,1,1,1,0,3,1	11	1	84·7
2	23 53	815	12 30	773	42	13 32	26·5	15·1	23 59	11·4	08 52	402	391	13 20	11	0,0,1,2,1,0,0,2	6	0	84·5
3	22 29	824	08 06	772	52	13 07	22·0	13·9	08 10	8·1	08 07	401	388	02 40	13	2,1,3,1,1,0,0,2	10	1	84·7
4	23 56	827	23 32	783	44	23 53	22·7	12·3	23 24	10·4	22 10	402	382	23 59	20	1,0,0,0,0,1,2,3	7	0	84·6
5 *d*	22 47	857	13 44	741	116	14 18	*31·5*	9·0	23 32	22·5	19 31	422	368	23 35	54	2,2,2,3,4,2,2,4	21	1	84·5
6	23 24	827	09 07	746	81	09 12	24·9	9·5	00 01	15·4	14 40	403	370	05 30	33	2,3,4,3,2,1,1,2	18	1	84·4
7 *d*	15 59	850	20 41	*659*	*191*	13 37	31·4	*-14·9*	20 13	*46·3*	18 48	*497*	351	20 59	*146*	2,2,3,3,3,5,5,5	28	2	84·3
8 *d*	01 53	858	01 33	738	120	13 09	22·1	1·2	20 32	20·9	20 28	410	*327*	02 41	83	5,2,3,2,3,1,4,3	23	1	84·2
9	07 24	813	11 18	757	56	14 24	25·5	6·6	18 59	18·9	18 55	410	379	02 42	31	2,1,3,2,2,3,3,1	17	1	84·3
10	07 21	814	11 16	776	38	13 49	23·3	15·9	08 56	7·4	16 34	403	391	11 41	12	1,1,1,1,1,1,1,1	8	0	84·2
11	22 27	830	10 40	783	47	13 45	22·9	11·7	22 53	11·2	08 34	400	390	23 59	10	0,0,0,0,0,1,0,3	4	0	84·3
12	00 43	833	16 19	758	75	15 20	28·1	8·5	21 18	19·6	16 55	438	372	01 54	66	3,2,2,1,2,3,2,3	18	1	84·3
13	19 10	814	11 00	788	26	13 26	20·8	12·9	00 18	7·9	16 30	398	385	00 01	13	2,1,1,1,0,0,1,1	7	0	84·3
14	04 32	834	18 55	772	62	08 37	23·9	15·0	20 57	8·9	19 25	415	384	05 20	31	1,2,3,1,2,2,2,2	15	1	84·3
15 *q*	22 37	824	11 23	787	37	13 35	22·0	15·7	09 07	6·3	08 30	400	389	11 14	11	1,1,0,0,0,0,0,2	4	0	84·2
16	23 13	822	22 37	778	44	13 00	22·5	8·9	22 13	13·6	22 38	403	384	23 23	19	0,0,0,1,1,0,1,3	6	0	84·3
17 *d*	23 54	*884*	15 24	749	135	14 54	27·3	3·9	23 40	23·4	21 17	410	338	23 59	72	1,2,1,1,4,4,2,5	20	1	84·3
18 *d*	17 52	850	08 56	710	140	10 22	30·0	-10·4	19 55	40·4	17 35	457	333	00 33	124	4,2,5,4,4,5,5,3	32	2	84·3
19	04 58	813	00 02	772	41	12 46	21·8	5·5	00 00	16·3	16 02	402	365	00 54	37	4,2,2,1,2,0,0,1	12	1	84·3
20	06 47	827	19 20	757	70	13 36	24·7	11·3	20 06	13·4	20 01	423	385	06 47	38	0,1,3,2,3,3,3,3	18	1	84·3
21	22 53	820	00 43	787	33	23 56	22·7	12·5	01 42	10·2	19 38	397	372	04 29	25	3,2,1,2,0,1,1,3	13	1	84·4
22 *q*	01 06	817	00 30	795	22	00 01	22·2	16·4	01 41	5·8	15 34	395	382	00 13	13	2,0,1,1,1,1,0,0	6	0	84·2
23 *q*	23 19	819	10 37	799	*20*	12 55	22·2	16·6	09 18	5·6	19 24	394	388	12 18	*6*	0,0,0,0,1,1,1,1	4	0	84·3
24 *q*	21 45	821	11 49	793	28	13 10	21·7	14·1	22 41	7·6	16 10	394	386	22 39	8	1,0,0,0,0,1,1,1	4	0	84·1
25	06 03	822	09 13	794	28	13 38	23·1	16·1	00 03	7·0	16 17	396	385	11 39	11	0,0,1,2,1,1,1,0	6	0	84·1
26	06 13	821	11 24	787	34	13 56	22·3	10·3	22 58	12·0	18 51	397	382	13 00	15	0,1,0,2,1,1,2,3	10	1	84·2
27	18 33	820	13 27	794	26	13 54	22·0	13·7	00 50	8·3	18 24	396	382	01 20	14	2,0,0,1,1,2,2,0	8	1	84·2
28	06 24	820	18 13	787	33	12 59	22·0	17·0	09 08	5·0	18 43	401	386	10 10	15	0,0,0,0,1,2,2,1	6	0	84·1
29	17 56	820	11 01	799	21	12 41	22·7	16·1	22 18	6·6	07 48	391	385	10 49	*6*	1,1,0,0,0,0,0,1	3	0	84·2
30 *q*	06 03	820	11 13	795	25	13 28	21·7	16·8	08 55	*4·9*	20 51	394	386	01 04	8	1,0,0,0,0,0,0,1	2	0	84·0
Mean	- -	828	- -	770	58	- -	24·0	10·5	- -	13·5	- -	409	377	- -	32	-	-	0·60	84·3

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.

21 ESKDALEMUIR (H) — 16,000γ (0·16 C.G.S.) + — DECEMBER 1961

	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 17,000+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1 *d*	814	815	818	823	830	831	834	820	800	810	791	763	763	743	734	793	761	752	754	756	758	746	741	759	784	1809
2 *d*	744	800	788	775	782	790	784	792	783	774	743	749	762	742	740	753	707	719	707	710	662	666	659	718	*744*	849
3 *d*	708	759	801	829	805	790	771	749	728	734	746	744	728	766	769	766	761	772	778	786	796	804	782	792	769	1464
4	788	786	785	790	792	796	795	798	789	765	779	778	776	791	792	785	769	797	800	800	798	796	809	806	790	1960
5	798	798	795	795	801	802	802	800	799	797	792	790	791	796	806	808	797	769	760	767	783	788	790	798	793	2022
6	793	796	802	803	800	800	799	801	801	795	794	793	788	777	778	793	773	774	779	779	792	798	794	798	791	1990
7	801	801	805	801	808	812	816	808	802	796	793	785	773	785	793	796	799	801	803	804	805	803	802	802	800	2194
8 *q*	802	801	801	802	804	805	805	802	799	795	793	795	798	801	806	805	809	811	811	811	810	809	808	808	804	2291
9	808	809	809	813	814	815	814	814	809	802	796	795	798	803	808	811	814	814	812	805	805	805	808	808	808	2389
10	808	809	809	815	814	812	813	813	810	803	794	788	790	802	808	806	804	793	792	786	785	797	796	801	802	2248
11	802	817	799	802	813	817	820	812	790	790	785	785	784	789	791	794	799	777	771	755	770	786	790	790	793	2028
12	788	791	787	798	799	801	801	800	799	796	794	793	792	796	802	804	809	809	809	811	811	809	809	808	801	2216
13	806	807	808	810	810	813	814	814	814	809	808	806	806	810	813	815	810	817	818	817	815	809	802	798	810	2449
14	804	806	808	810	813	817	816	815	813	809	802	800	802	808	813	819	820	822	820	817	814	811	803	804	811	2466
15	807	807	812	818	818	825	823	821	815	806	799	792	789	794	797	804	811	813	812	809	808	801	808	802	808	2391
16	805	806	805	808	815	818	819	822	820	812	802	799	801	804	806	810	812	814	811	811	813	811	809	804	810	2437
17	809	808	804	813	812	813	813	813	810	806	801	799	806	809	809	807	805	805	807	811	811	814	813	813	809	2410
18 *q*	813	814	814	817	820	822	822	821	817	813	808	806	806	811	815	817	817	818	820	818	817	817	818	815	816	2577
19 *q*	817	815	817	817	820	820	817	822	818	813	807	806	811	818	819	819	818	813	813	816	815	816	817	818	816	2582
20 *q*	819	819	818	818	822	824	824	820	817	809	800	798	802	811	817	814	813	811	811	813	812	818	815	816	814	2541
21	816	815	816	826	824	825	825	825	824	809	803	805	809	818	823	823	822	822	822	819	817	816	816	816	818	2636
22	820	817	818	821	824	829	829	829	824	813	805	806	809	801	801	805	802	793	797	798	797	807	808	809	811	2462
23	811	811	817	831	825	824	832	822	819	815	804	793	786	793	809	811	817	815	810	814	812	808	826	808	813	2513
24	821	814	814	816	819	822	824	825	822	818	805	796	789	798	808	791	798	802	801	801	811	815	811	813	810	2434
25 *q*	812	812	813	814	815	817	817	817	812	801	795	794	797	804	809	812	811	814	815	816	813	813	813	813	810	2449
26	815	814	817	818	821	821	820	821	818	814	805	800	797	802	806	811	810	809	806	806	809	811	813	817	812	2481
27	817	827	824	804	813	820	818	815	825	821	815	809	809	820	820	821	824	822	822	824	826	823	818	811	*819*	2648
28 *d*	813	813	808	809	818	824	824	824	820	801	786	785	794	798	799	749	762	783	800	793	793	802	791	819	800	2208
29	801	794	802	813	805	810	811	809	809	802	790	793	798	801	805	810	806	813	814	810	807	808	825	800	806	2336
30 *d*	801	806	810	813	818	802	822	819	815	797	799	790	785	793	790	777	783	788	806	808	812	805	801	806	802	2246
31	806	806	806	808	808	811	816	810	808	801	796	792	793	802	811	808	806	809	794	799	810	807	810	814	805	2331
Mean	802	806	807	811	812	814	*814*	812	807	801	795	*791*	791	796	800	801	798	799	799	799	800	801	800	803	802	
Sum 24,000+	867	993	1030	1130	1182	1228	1240	1173	1029	826	630	527	532	686	797	827	749	771	775	770	787	819	805	884		Grand Total 597,057

803 at 0-1h. January 1, 1962.

MAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, G.M.T.

22 ESKDALEMUIR (D) — 10° + — DECEMBER 1961

	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 300·0+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	
1 *d*	18·5	18·9	19·0	19·6	19·7	20·1	19·7	18·4	16·1	17·7	20·0	23·9	23·9	28·7	33·0	33·8	29·2	21·9	15·5	15·8	15·7	13·7	10·0	7·6	*20·0*	180·4
2 *d*	10·4	17·0	14·5	18·5	21·6	25·8	21·2	20·6	17·6	18·5	20·3	22·7	23·6	21·2	29·4	28·8	7·4	14·8	8·1	11·1	0·1	-15·6	-15·5	-9·1	*13·9*	33·0
3 *d*	0·1	-1·6	2·1	6·6	17·7	24·1	29·1	24·8	20·0	21·2	21·5	21·5	26·0	23·2	24·2	23·4	22·7	20·7	18·2	14·1	17·2	15·6	15·2	15·8	17·6	123·4
4	17·2	18·3	19·3	19·1	22·7	17·5	17·9	17·9	17·7	19·8	20·8	21·0	21·5	21·8	20·8	20·2	15·4	17·9	18·4	17·9	17·5	16·9	15·1	17·4	18·7	150·0
5	17·2	17·8	18·0	18·5	18·4	17·9	17·5	17·2	16·4	16·6	17·8	19·3	20·2	21·1	22·2	20·3	21·4	15·9	17·5	17·4	15·7	16·2	15·4	15·4	18·0	131·3
6	15·7	18·2	21·2	20·4	22·3	18·1	17·2	17·0	16·8	16·5	17·5	19·4	21·9	23·5	25·6	24·4	27·3	22·1	15·0	15·2	13·9	12·7	14·7	17·1	18·9	153·7
7	18·4	18·5	18·8	18·6	18·5	18·2	18·1	17·5	16·9	17·7	17·9	20·5	21·2	20·7	20·7	20·2	19·2	18·4	17·8	17·4	17·0	16·8	17·0	17·2	18·5	143·2
8 *q*	17·7	17·8	18·0	18·2	18·2	17·8	17·5	17·0	16·4	15·9	16·8	18·7	19·5	20·0	20·0	20·3	19·4	19·0	18·7	18·2	18·0	18·0	17·8	17·9	18·2	136·8
9	18·5	18·8	19·2	19·3	18·8	18·7	18·5	17·9	17·5	16·2	17·5	19·3	19·7	20·8	20·5	20·5	20·1	19·9	19·4	18·9	16·7	17·0	17·0	17·6	18·7	148·3
10	17·9	18·6	18·8	18·9	19·4	19·1	18·6	18·0	17·2	17·1	18·2	20·2	22·5	21·3	20·7	19·8	18·7	17·1	19·3	18·1	14·7	11·2	12·2	16·0	18·1	133·6
11	16·9	17·9	14·2	17·6	18·1	17·5	18·7	19·7	18·6	21·5	21·3	22·0	24·5	25·9	25·7	25·4	28·5	30·2	25·7	20·9	12·4	10·4	12·6	13·4	20·0	179·6
12	14·5	14·7	16·3	16·1	17·6	18·4	18·1	17·7	17·5	17·2	18·1	19·5	20·5	21·5	21·6	20·7	19·6	19·2	18·4	17·9	17·6	17·5	17·4	17·4	18·1	135·0
13	17·8	18·0	18·2	18·6	18·6	18·5	18·2	17·8	17·5	17·6	18·2	19·4	20·2	20·7	20·5	19·6	20·1	19·9	19·0	18·6	18·5	13·9	10·4	10·1	17·9	129·9
14	13·5	16·8	17·9	17·8	18·2	17·9	17·7	17·9	18·0	18·4	19·2	19·5	19·7	20·5	20·2	19·7	19·3	19·2	19·0	18·5	18·2	18·3	16·4	14·5	18·2	136·3
15	17·3	19·2	19·3	20·0	20·6	20·3	19·1	18·9	18·6	18·9	19·4	19·5	20·7	21·4	21·8	19·8	18·8	18·7	18·6	18·4	17·9	11·8	14·1	16·3	18·7	149·4
16	17·2	18·0	18·7	19·4	19·0	18·7	19·2	19·3	19·0	18·9	19·7	20·0	20·2	20·8	20·6	19·7	19·7	19·3	18·9	18·5	18·0	17·8	14·5	14·8	18·7	149·9
17	16·4	17·5	19·4	19·5	20·2	18·2	18·1	18·0	17·6	17·8	18·7	19·4	20·5	20·8	20·2	19·6	19·5	19·5	19·0	18·5	17·9	16·8	16·8	17·9	18·7	147·8
18 *q*	18·4	18·8	19·5	19·8	18·2	18·2	18·2	18·3	17·9	17·7	18·3	19·3	20·1	20·9	20·6	19·9	19·3	18·8	18·7	18·5	18·4	17·9	17·8	18·3	18·8	151·8
19 *q*	18·7	18·7	19·0	19·0	18·9	18·8	18·6	18·2	17·7	17·3	18·5	20·1	21·1	21·4	20·5	19·7	19·3	18·9	19·3	19·4	18·7	17·9	18·0	18·4	19·0	156·1
20 *q*	18·7	19·2	18·9	18·6	18·7	18·6	18·1	18·3	18·6	18·2	19·4	21·1	22·0	21·7	20·6	20·2	19·6	19·9	19·7	18·9	18·0	16·7	15·9	18·2	19·1	157·8
21	18·5	19·0	19·4	19·8	19·8	18·5	18·2	18·0	17·5	17·0	18·0	19·7	21·2	21·3	20·1	19·2	18·9	19·1	19·0	18·4	18·1	17·4	17·1	17·9	18·8	151·1
22	18·4	19·1	19·5	19·1	18·9	19·1	18·4	18·2	17·9	17·5	18·7	20·9	22·1	22·7	23·3	22·0	20·0	20·4	19·0	17·5	16·3	17·3	16·7	17·7	19·2	160·7
23	18·2	18·7	19·7	18·4	16·1	17·9	18·3	17·7	18·1	18·2	19·2	19·3	22·0	23·2	21·7	21·3	20·5	19·8	18·6	18·5	18·2	17·2	2·0	11·7	18·1	134·5
24	16·6	17·2	18·8	19·1	19·9	19·7	19·3	18·5	17·5	17·4	19·1	20·6	21·7	21·0	23·8	22·0	20·5	20·5	19·5	16·8	17·1	13·4	16·9	17·8	18·9	154·7
25 *q*	18·1	18·3	18·6	18·7	18·7	18·6	18·2	17·8	17·3	17·2	18·0	19·7	21·1	21·2	20·5	19·9	19·5	19·2	18·7	18·5	18·4	17·6	17·5	17·6	18·7	148·9
26	17·8	18·4	18·5	19·0	18·7	18·7	18·8	18·3	17·6	17·2	17·7	20·0	22·0	23·2	22·1	20·8	20·8	20·9	20·4	19·1	17·9	17·5	17·2	16·7	19·1	159·3
27	16·1	18·0	15·8	17·3	19·3	19·1	18·8	19·4	18·9	18·3	18·7	20·0	22·0	23·7	22·7	20·7	20·2	19·9	19·4	19·0	18·5	17·8	17·8	17·8	19·1	159·2
28 *d*	18·2	17·4	16·2	17·0	17·4	18·2	18·9	19·0	19·2	20·5	20·7	20·4	24·2	23·2	23·8	21·1	24·0	21·8	18·5	18·1	13·4	14·0	14·2	16·1	19·0	155·5
29	15·6	19·7	19·3	18·9	18·3	18·2	17·9	17·6	17·6	17·8	18·5	19·8	22·4	21·8	20·3	19·7	18·8	20·5	19·6	18·7	18·2	15·1	6·9	12·3	18·1	133·5
30 *d*	17·6	18·8	18·5	18·9	17·9	17·7	17·2	17·9	18·2	17·0	16·8	20·4	20·2	21·0	20·5	18·4	10·4	19·5	19·6	18·1	15·1	14·3	15·5	17·7	17·8	127·2
31	17·0	17·3	18·2	18·4	18·7	18·2	17·6	17·0	16·9	17·7	18·9	20·8	22·6	22·6	22·2	20·5	20·0	18·8	16·4	15·1	18·2	17·3	17·4	15·8	18·5	143·6
Mean	16·5	17·5	17·8	18·3	19·0	18·9	18·7	18·4	17·7	17·9	18·8	20·3	21·7	22·0	*22·3*	21·3	19·9	19·7	18·5	17·7	16·5	14·9	*13·9*	15·2	18·5	
Sum 400·0+	113·1	143·0	152·8	168·7	189·1	186·3	180·9	169·8	150·3	156·5	183·4	227·9	271·0	282·8	290·4	261·6	218·1	211·7	172·9	150·0	111·5	60·4	32·0	71·3		Grand Total 13755·5

16·9 at 0-1h. January 1, 1962.

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) + — DECEMBER 1961

	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	
1 *d*	387	386	386	383	382	382	381	383	388	383	386	388	394	472	547	486	534	480	468	433	420	417	411	367	*419*	2044
2 *d*	351	316	334	370	381	378	382	388	395	396	402	413	416	432	465	515	551	494	499	447	387	319	318	318	403	1667
3 *d*	263	252	280	272	262	278	302	337	365	392	398	408	434	443	431	432	434	426	422	418	408	363	386	394	*367*	800
4	396	394	392	392	394	397	398	398	398	399	401	402	403	402	405	411	416	410	404	403	403	402	398	394	401	1612
5	394	394	396	397	395	394	394	395	394	394	392	392	394	394	395	397	400	436	432	426	424	417	404	401	402	1651
6	398	395	391	386	382	386	391	392	394	397	394	391	393	398	404	414	433	440	433	426	412	404	400	398	402	1652
7	397	395	394	395	394	392	392	394	395	398	397	396	403	401	399	400	400	401	400	399	399	399	400	400	397	1540
8 *q*	399	399	398	396	396	395	395	395	396	395	393	393	395	395	397	397	397	395	395	394	394	394	394	393	395	1490
9	394	393	393	393	393	393	393	392	393	393	393	392	393	393	398	398	396	395	395	396	399	399	396	395	395	1468
10	395	394	393	393	393	393	392	392	393	394	393	392	391	392	395	399	400	403	402	409	417	418	409	399	398	1551
11	394	386	385	387	387	387	387	387	392	394	398	399	399	400	405	411	417	439	460	480	465	437	422	413	410	1831
12	405	399	393	384	390	394	396	396	395	394	393	393	392	395	399	400	399	399	399	399	397	396	395	395	396	1497
13	395	395	395	395	395	394	394	393	394	393	391	391	389	392	394	395	397	395	395	395	394	398	398	392	394	1459
14	384	383	386	389	392	393	393	393	392	390	392	392	390	389	393	393	393	393	393	393	393	393	396	398	391	1396
15	393	390	389	389	388	386	387	387	388	389	392	392	393	394	396	398	396	394	393	394	395	399	392	389	392	1403
16	390	389	389	388	387	389	388	387	387	389	392	393	393	393	395	394	393	393	393	393	393	393	393	392	391	1386
17	387	387	386	383	386	387	388	390	392	393	393	393	391	392	393	393	393	393	394	394	394	393	392	390	391	1377
18 *q*	389	389	387	386	386	387	387	387	389	390	390	391	390	390	391	391	390	389	389	390	390	390	390	390	389	1338
19 *q*	389	388	387	387	387	387	387	387	388	389	387	387	387	389	390	390	389	389	389	389	389	390	389	388	388	1318
20 *q*	387	387	387	386	384	384	385	386	387	389	388	387	386	387	391	392	392	391	391	392	393	392	391	388	388	1323
21	387	387	387	383	382	382	383	384	385	387	387	386	386	387	387	387	387	386	386	387	387	388	388	387	386	1263
22	385	386	386	385	384	383	382	382	383	386	386	386	388	393	395	394	398	402	403	402	402	399	394	392	391	1376
23	389	388	386	380	382	380	378	379	381	384	386	389	393	392	392	393	393	393	393	393	392	393	394	386	388	1309
24	382	383	383	383	383	383	383	382	383	384	384	383	382	385	391	398	400	399	399	399	393	392	389	388	388	1311
25 *q*	383	383	383	383	383	382	382	382	383	389	386	384	385	388	392	392	392	392	391	390	389	389	388	388	387	1279
26	387	387	387	387	387	387	387	387	387	387	386	380	382	384	388	391	393	393	394	396	395	393	392	388	389	1325
27	386	377	376	380	382	382	384	385	382	382	382	386	387	385	389	392	392	391	390	389	388	387	387	389	385	1250
28 *d*	389	387	385	385	384	384	385	384	383	382	384	391	388	392	398	425	440	432	419	411	408	401	396	376	396	1509
29	361	368	370	373	382	387	388	389	390	387	387	387	388	393	395	393	396	396	396	396	397	397	382	378	386	1275
30 *d*	382	386	387	382	377	382	382	384	386	392	392	392	395	398	400	411	421	409	402	399	399	396	394	389	393	1437
31	382	386	387	388	389	387	387	390	391	391	392	393	393	395	396	397	397	395	403	405	396	397	394	391	393	1422
Mean	384	*382*	383	383	383	384	385	387	389	390	391	392	393	398	403	406	*411*	408	407	404	400	395	393	389	393	
Sum 11,000+	900	829	858	860	869	895	933	987	1049	1102	1117	1142	1193	1335	1506	1579	1729	1643	1622	1537	1412	1244	1172	1046		Grand Total 292,559

391 at 0-1h. January 1, 1962.

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

24 ESKDALEMUIR — DECEMBER 1961

	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	γ	h. m.	γ	h. m.	′ ′	h. m.	′	h. m.	γ	γ	h. m.	γ				°A.
1 *d*	16 08	*863*	654	15 17	209	14 10	*46·8*	0·8	23 22	46·0	14 21	*617*	346	23 52	271	0,1,3,4,6,5,4,4	27	2	84·1
2 *d*	01 40	844	*591*	20 43	*253*	14 51	35·6	*-27·2*	20 56	*62·8*	16 28	616	298	01 49	*318*	5,3,3,4,4,6,5,5	35	2	83·9
3 *d*	03 31	848	618	00 53	230	06 20	32·5	-14·5	00 04	47·0	13 05	446	*196*	00 49	250	6,5,4,4,4,2,3,4	32	2	84·0
4	20 28	823	751	16 20	72	12 19	22·0	12·3	16 39	9·7	16 44	418	392	23 57	26	1,1,1,2,2,3,1,2	13	1	84·2
5	17 54	824	732	18 28	92	14 04	24·4	2·2	17 42	22·2	15 43	468	392	10 29	76	2,1,1,0,2,4,4,2	16	1	84·1
6	17 29	842	737	17 55	105	16 18	30·2	5·5	20 10	24·7	17 03	462	379	04 40	83	3,2,1,1,3,5,4,2	21	1	83·9
7	06 44	819	758	12 08	61	12 37	23·4	16·7	08 37	6·7	12 42	405	391	06 45	114	2,1,1,1,3,0,0,0	8	1	83·9
8 *q*	18 45	813	790	09 56	23	13 12	20·6	16·0	09 12	4·6	01 02	399	392	11 51	7	0,0,0,1,0,0,0,0	1	0	83·9
9	16 40	817	788	12 06	29	13 38	21·5	15·8	20 26	5·7	21 10	400	391	11 05	9	0,0,0,1,1,1,1,1	5	1	84·1
10	03 49	818	774	20 11	44	12 26	23·1	10·1	22 13	13·0	21 02	421	390	12 59	31	0,1,0,2,1,2,2,3	11	1	84·0
11	01 43	832	741	19 45	91	17 12	31·7	8·9	21 16	22·8	19 45	488	380	01 53	108	3,1,3,2,1,3,4,2	19	1	84·0
12	19 20	813	783	02 47	30	14 30	22·8	13·6	00 55	9·2	00 00	409	382	03 30	27	2,2,0,1,1,1,0,0	7	1	84·0
13	18 41	821	793	22 14	28	13 05	20·0	6·1	21 58	13·9	22 14	400	389	12 48	11	0,0,0,1,0,1,1,3	6	1	83·8
14	17 42	825	794	22 43	31	13 52	20·8	11·7	00 07	9·1	23 01	400	382	00 57	18	2,0,0,0,1,0,1,2	6	0	84·2
15	22 07	856	785	12 00	71	14 08	22·5	7·1	22 00	15·4	21 48	404	384	05 16	20	1,2,1,2,1,1,0,4	12	1	84·3
16	07 31	824	797	11 42	27	14 09	21·4	12·3	22 57	9·1	13 56	395	386	07 32	9	1,1,1,1,1,1,0,0,2	7	1	84·2
17	21 39	820	796	11 24	24	13 00	21·4	15·8	00 19	5·6	18 27	395	383	03 36	12	2,1,1,1,0,1,1,2	9	0	84·2
18 *q*	05 57	824	805	12 22	19	02 50	21·5	16·9	21 58	4·6	14 40	392	384	03 05	8	1,1,1,0,0,0,0,1	4	0	84·0
19 *q*	07 03	823	806	11 12	*17*	12 52	21·5	17·1	09 20	*4·4*	14 39	392	386	05 56	*6*	0,0,0,1,0,1,1,1	4	0	84·0
20 *q*	21 42	829	794	11 54	35	12 41	22·2	14·8	22 04	7·4	21 04	393	383	04 05	10	1,0,1,1,1,1,1,2	8	0	83·9
21	03 30	831	801	10 52	30	03 22	22·0	16·7	22 09	5·3	15 20	388	379	04 36	9	0,2,0,0,0,0,0,1	3	1	83·9
22	05 43	831	786	17 50	45	14 01	24·0	15·4	20 16	8·6	17 58	405	382	06 00	23	1,1,0,1,2,2,2,1	10	1	83·9
23	22 45	852	778	12 45	74	13 40	23·4	-8·1	22 38	31·5	22 30	398	377	06 07	21	1,2,1,1,2,1,1,5	14	1	83·9
24	07 09	829	778	12 43	51	14 41	24·8	11·6	21 22	13·2	15 58	403	380	00 13	23	2,1,1,2,2,2,3,3	16	1	83·9
25 *q*	23 00	820	792	11 38	28	13 09	21·5	17·0	09 07	4·5	16 00	393	383	11 53	10	0,0,0,0,0,0,0,1	1	0	83·7
26	05 38	825	794	12 18	31	13 47	23·4	16·0	23 37	7·4	19 22	398	379	11 43	19	0,0,1,1,1,1,2,1	7	0	83·8
27	01 03	838	801	12 41	37	13 28	24·4	14·0	02 13	10·4	15 51	392	374	02 12	18	1,2,1,1,1,1,1,1	9	1	83·7
28 *d*	23 53	852	731	15 19	121	16 40	27·0	10·2	20 57	16·8	16 23	444	357	23 59	87	2,2,1,2,2,4,3,4	20	1	83·8
29	00 01	845	779	11 48	66	12 28	23·2	0·2	22 27	23·0	16 53	398	357	00 04	41	3,3,1,1,1,2,2,4	17	1	83·8
30 *d*	06 38	828	751	15 52	77	03 53	24·5	5·3	16 33	19·2	16 14	427	374	04 22	53	2,3,2,2,2,4,3,3	21	1	83·7
31	23 13	821	778	18 32	43	12 11	23·2	9·8	19 15	13·4	19 13	408	381	00 41	27	2,1,1,1,1,1,3,2	12	1	83·6
Mean	- -	831	763	- -	68	- -	24·7	8·7	- -	16·0	- -	425	372	- -	53	-	-	0·84	83·9

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

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 1961

	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	781	788	766	24·1	24·4	23·6	385	384	394	16505	3030	69 42·5	48389
February	781	792	771	22·3	23·0	20·7	388	385	388	16507	3021	69 42·6	48391
March	789	795	778	23·1	22·9	22·9	384	385	382	16514	3027	69 41·9	48390
April	794	792	781	22·3	22·7	22·1	381	382	380	16520	3024	69 41·5	48389
May	801	800	799	21·6	21·8	22·2	373	374	374	16527	3021	69 40·9	48384
June	803	806	793	21·0	21·1	20·9	376	376	372	16530	3019	69 40·8	48387
July	795	797	793	20·2	20·4	19·6	387	390	394	16522	3013	69 41·7	48395
August	801	803	793	20·3	20·2	20·0	386	384	385	16529	3015	69 41·2	48396
September	798	806	793	19·6	19·9	19·2	383	382	381	16526	3011	69 41·3	48392
October	791	806	760	19·0	19·6	18·7	387	385	375	16519	3007	69 41·9	48394
November	799	808	786	18·6	18·6	17·7	394	391	398	16528	3007	69 41·5	48403
December	802	812	780	18·5	18·8	17·7	393	390	395	16531	3007	69 41·3	48403
Year	795	800	783	20·9	21·1	20·4	385	384	385	16522	3017	69 41·6	48393

DAILY RANGE AND MEAN MONTHLY VALUES

26 ESKDALEMUIR 1961

	Mean daily range						Mean daily range expressed as percentage of yearly mean					
	1961			Mean 1932-53			1961			Mean 1932-53		
	H	*D*	*Z*	*H*	*D*	*Z*	*H*	*D*	*Z*	*H*	*D*	*Z*
	γ	γ	γ	γ	γ	γ	%	%	%	%	%	%
January	65	77	42	78	83	47	66	90	69	76	90	75
February	89	93	68	84	89	53	91	108	111	82	97	84
March	81	85	53	126	113	85	83	99	87	124	123	135
April	115	100	67	125	103	77	117	116	110	123	112	122
May	92	81	53	116	91	71	94	94	87	114	99	113
June	108	81	61	105	84	55	110	94	100	103	91	87
July	175	109	106	110	85	56	179	127	174	108	92	89
August	90	81	53	113	93	68	92	94	87	111	101	108
September	92	82	59	117	106	81	94	95	97	115	116	129
October	141	106	85	107	102	76	144	123	139	105	111	121
November	58	66	32	73	79	47	59	77	52	72	86	75
December	68	78	53	66	74	42	69	91	87	65	80	67
Winter	70	79	49	75	81	47	71	92	80	74	88	75
Equinox	107	93	66	119	106	80	109	108	108	117	115	127
Summer	116	88	68	111	88	63	118	102	111	109	96	100
Year	98	86	61	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 1961

Range	Number of cases, 1961			Percentage distribution					
				H		*D*		*Z*	
	H	*D*	*Z*	1961	1932-53	1961	1932-53	1961	1932-53
γ				%	%	%	%	%	%
0 - 9	0	0	16	0·0	0·0	0·0	0·0	4·4	2·3
10 - 19	2	1	58	0·5	0·8	0·3	0·4	15·9	14·1
20 - 29	24	16	67	6·6	3·9	4·4	2·5	18·4	19·8
30 - 39	28	18	63	7·7	6·0	4·9	5·0	17·3	16·0
40 - 49	32	32	42	8·8	7·8	8·8	7·4	11·5	10·2
50 - 59	35	40	24	9·6	10·4	11·0	12·1	6·6	7·5
60 - 69	37	66	15	10·1	11·7	18·1	12·9	4·1	5·6
70 - 79	40	45	14	11·0	10·6	12·3	12·3	3·8	3·6
80 - 89	37	29	11	10·1	9·0	7·9	10·7	3·0	3·0
90 - 99	24	28	2	6·6	7·3	7·7	8·3	0·5	2·4
100 - 109	21	15	9	5·8	5·8	4·1	5·9	2·5	2·1
110 - 119	17	19	3	4·7	5·1	5·2	4·0	0·8	1·7
120 - 129	11	10	5	3·0	3·3	2·7	3·5	1·4	1·7
130 - 139	6	3	7	1·6	2·9	0·8	2·6	1·9	1·2
140 - 149	12	6	2	3·3	2·3	1·6	2·2	0·5	0·8
150 - 159	4	7	3	1·1	1·9	1·9	1·7	0·8	0·9
160 - 169	5	6	0	1·4	1·5	1·6	1·6	0·0	0·7
170 - 179	2	2	4	0·5	1·5	0·5	1·2	1·1	0·4
180 - 189	5	1	1	1·4	0·9	0·3	1·0	0·3	0·6
190 - 199	2	5	1	0·5	0·9	1·4	0·8	0·3	0·5
200 +	21	16	18	5·8	6·3	4·4	4·0	4·9	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 1961

NORTH COMPONENT

	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
	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.	+1·9	0·0	-0·4	+4·9	+9·1	*+13·1*	+11·3	+6·8	+4·1	-1·7	-6·3	*-11·5*	-10·8	-8·9	-6·1	-6·6	-7·5	-3·2	-0·3	-0·1	+1·9	+2·9	+4·0	+3·4
Feb.	+2·3	+2·9	+3·3	+4·3	+5·9	+10·5	*+11·5*	+11·2	+4·5	-5·0	-15·3	*-16·9*	-15·1	-7·9	-4·0	-5·9	-2·5	+1·8	+4·8	+5·8	+2·1	-0·1	-1·1	+2·8
Mar.	+3·4	+5·1	+5·8	+8·1	+8·5	+10·2	*+11·9*	+5·7	-0·3	-11·5	-20·9	*-23·8*	-21·4	-16·5	-10·8	-3·9	+2·3	+2·5	+6·5	+9·6	+9·1	+7·6	+7·4	+5·3
Apr.	+8·8	+6·4	+10·1	+5·2	+8·7	+10·7	+9·3	+6·0	-3·7	-17·8	-31·4	*-36·9*	-32·6	-23·7	-13·5	-0·8	+4·9	+14·5	+15·3	*+16·5*	+14·4	+13·8	+8·5	+7·3
May	+8·9	+5·1	+3·1	+4·8	+4·5	+2·7	+0·2	-8·5	-14·9	-23·9	-26·6	*-28·1*	-24·3	-16·9	-9·0	+1·7	+11·3	+16·1	*+22·8*	+19·3	+14·3	+13·4	+11·2	+13·0
June	+5·3	+4·0	+4·6	+2·5	+6·7	+2·4	+0·3	-7·9	-17·1	-25·5	*-29·3*	-29·2	-28·4	-20·4	-9·0	+2·2	+13·7	+24·3	*+28·3*	+25·6	+18·2	+14·3	+7·8	+6·3
July	+0·6	+0·2	+4·5	+4·7	+2·9	+2·7	-3·7	-11·5	-29·3	-41·3	*-42·9*	-32·5	-30·5	-13·8	+3·8	+13·3	+21·6	+32·5	*+37·7*	+31·1	+24·6	+14·5	+7·2	+3·5
Aug.	+11·9	+6·3	+7·3	+6·9	+8·1	+6·7	+2·6	-5·4	-16·1	-25·7	-32·6	*-32·8*	-27·8	-19·8	-10·9	+1·1	+9·8	+14·7	+17·3	*+19·1*	+16·3	+14·1	+14·3	+14·7
Sept.	+11·3	+10·3	+6·9	+10·3	+7·7	+7·3	+3·5	-0·1	-8·1	-20·7	-28·3	*-28·7*	-24·8	-16·8	-10·5	-2·7	+1·9	+7·9	+12·9	+14·7	+11·0	*+16·7*	+10·5	+7·7
Oct.	+3·2	-4·4	-4·9	+10·4	+12·5	*+14·1*	+9·9	+8·9	-0·5	-11·3	-15·5	*-21·3*	-21·2	-13·5	-3·1	-2·7	+5·2	+13·9	+10·1	+0·9	-3·6	-1·7	+3·9	+10·3
Nov.	+5·3	+4·1	+2·9	+3·2	+6·7	+10·1	*+11·3*	+8·2	+0·6	-6·8	-11·5	-15·4	*-15·6*	-11·5	-7·7	-4·6	-1·3	+1·4	+0·1	+0·7	+2·6	+2·6	+7·4	+7·1
Dec.	+1·4	+4·5	+5·4	+8·1	+9·2	+10·7	*+11·3*	+9·5	+5·5	-1·2	-8·2	-12·5	*-13·7*	-9·2	-5·9	-4·1	-5·3	-4·4	-3·2	-2·8	-1·1	+1·3	+1·7	+3·1
Year	+5·4	+3·7	+4·1	+6·1	+7·5	+8·4	+6·6	+1·9	-6·2	-16·1	-22·4	*-24·1*	-22·2	-14·9	-7·2	-1·1	+4·5	+10·1	*+12·7*	+11·7	+9·1	+8·3	+6·9	+7·1
Winter	+2·7	+2·8	+2·8	+5·1	+7·7	+11·1	*+11·4*	+9·0	+3·7	-3·7	-10·3	*-14·0*	-13·8	-9·3	-5·9	-5·3	-4·2	-1·1	+0·4	+0·9	+1·3	+1·7	+3·0	+4·0
Equinox	+6·7	+4·4	+4·5	+8·5	+9·4	+10·6	+8·6	+5·1	-3·2	-15·3	-24·1	*-27·7*	-25·1	-17·6	-9·5	-2·6	+3·5	+9·7	*+11·2*	+10·5	+7·8	+9·1	+7·6	+7·7
Summer	+6·7	+3·9	+4·9	+4·8	+5·6	+3·6	-0·2	-8·4	-19·4	-29·1	*-32·9*	-30·6	-27·8	-17·7	-6·2	+4·5	+14·1	+21·9	*+26·5*	+23·8	+18·3	+14·1	+10·1	+9·3

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.	-10·5	-7·7	-4·7	-5·7	-1·7	-0·6	+1·7	+1·7	+0·8	+2·7	+5·2	+8·9	+15·1	*+18·3*	+12·9	+9·9	+4·5	+3·4	-1·2	-4·4	-8·3	-10·5	*-14·9*	-14·4
Feb.	-12·5	-10·7	-8·3	-3·6	-3·0	-1·9	-0·9	-1·1	-3·0	-3·3	+1·3	+11·6	+20·7	*+21·7*	+21·3	+16·5	+7·2	+4·2	+0·5	-3·5	-7·6	-14·7	-15·4	*-15·4*
Mar.	-10·9	*-12·0*	-11·5	-11·7	-9·3	-4·5	-4·5	-7·9	-9·3	-9·6	-3·6	+9·4	+22·4	*+26·9*	+21·1	+17·0	+10·9	+5·7	+4·0	+1·6	-1·5	-5·0	-8·7	-8·9
Apr.	-11·7	-8·7	-8·5	-7·5	-7·7	-9·1	-11·1	-19·5	*-24·5*	-20·4	-9·4	+8·0	+23·4	*+32·9*	+32·5	+28·9	+21·1	+12·8	+7·3	+1·7	+0·1	-8·7	-10·2	-11·6
May	-6·3	-11·7	-12·4	-11·3	-13·0	-14·9	-15·4	-20·8	*-21·1*	-16·3	-6·7	+4·9	+16·8	+23·9	*+24·6*	+22·6	+20·2	+16·9	+12·0	+7·9	+4·9	+1·3	-1·7	-4·2
June	-6·4	-6·4	-11·4	-11·0	-14·9	-20·4	-26·4	*-29·1*	-27·2	-21·1	-8·9	+5·5	+18·1	+25·7	*+30·0*	+27·5	+24·9	+19·5	+12·3	+10·2	+7·2	+3·4	+1·1	-2·3
July	-6·8	-6·8	-9·3	-13·2	-13·7	-19·0	-21·8	-26·9	*-31·7*	-28·8	-14·3	+3·5	+16·1	+28·1	+32·4	*+32·4*	+26·4	+22·0	+15·8	+10·1	+7·7	+3·4	-1·7	-3·8
Aug.	-5·3	-7·4	-9·5	-9·5	-12·0	-18·0	-23·0	*-24·9*	-22·9	-16·2	-3·5	+11·3	+22·9	*+29·9*	+28·6	+24·7	+17·4	+10·6	+4·9	+4·4	+2·1	+0·9	-0·8	-4·5
Sept.	-2·7	-4·9	-9·6	-10·0	-11·6	-10·3	-12·4	-13·6	*-14·1*	-8·1	+3·7	+17·2	+25·4	*+27·1*	+22·7	+15·0	+9·9	+5·0	+1·9	+0·5	-4·6	-7·4	-11·7	-7·3
Oct.	-9·8	-10·0	-10·2	-5·4	-3·7	-0·9	-2·0	-4·5	-11·9	-11·4	-4·2	+10·2	+21·0	+25·5	*+25·8*	+19·7	+12·7	+7·9	+5·8	-5·8	-10·5	*-16·1*	-13·5	-8·6
Nov.	-8·0	-8·4	-3·8	-1·7	+0·4	+1·9	+1·1	0·0	-3·9	-5·3	+0·5	+6·9	+13·2	*+17·2*	+17·2	+12·1	+7·0	+3·1	0·0	-4·5	-10·3	-9·2	*-13·5*	-12·1
Dec.	-9·4	-4·0	-2·3	+0·8	+4·2	+4·0	+3·3	+1·2	-2·6	-2·9	+0·2	+6·5	+13·2	+15·9	*+17·8*	+13·4	+6·2	+5·3	-0·6	-4·2	-10·0	-17·9	*-22·3*	-15·8
Year	-8·4	-8·2	-8·5	-7·5	-7·2	-7·8	-9·3	-12·1	*-14·3*	-11·7	-3·3	+8·7	+19·1	*+24·4*	+23·9	+20·0	+14·0	+9·7	+5·2	+1·1	-2·6	-6·7	-9·5	-9·1
Winter	-10·1	-7·7	-4·8	-2·6	0·0	+0·9	+1·3	+0·4	-2·2	-2·2	+1·8	+8·5	+15·6	*+18·3*	+17·3	+13·0	+6·2	+4·0	-0·3	-4·2	-9·0	-13·1	*-16·5*	-14·4
Equinox	-8·8	-8·9	-10·0	-8·6	-8·1	-6·2	-7·5	-11·4	*-15·0*	-12·4	-3·3	+11·2	+23·1	*+28·1*	+25·6	+20·2	+13·7	+7·8	+4·7	-0·5	-4·1	-9·3	-11·1	-9·1
Summer	-6·2	-8·1	-10·7	-11·3	-13·4	-18·1	-21·7	-25·4	*-25·7*	-20·6	-8·3	+6·3	+18·5	+26·9	*+28·9*	+26·8	+22·2	+17·3	+11·2	+8·1	+5·4	+2·2	-0·8	-3·7

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.	-5·4	-5·4	-6·5	-7·1	-7·9	*-9·4*	-8·8	-7·2	-6·3	-3·9	-3·0	-2·6	-2·6	+1·1	+5·0	+8·2	+11·7	+12·7	*+13·7*	+11·7	+8·1	+5·7	+1·0	-2·8
Feb.	-9·8	*-12·0*	-8·4	-7·1	-8·8	-8·3	-7·1	-5·8	-4·3	-3·3	-3·8	-4·3	-2·2	+1·5	+5·1	+10·3	*+14·3*	+13·2	+13·8	+13·7	+13·3	+6·5	+0·6	-7·1
Mar.	-3·8	-5·8	-7·4	-8·6	-7·8	-6·8	-6·0	-3·8	-4·2	-5·0	-7·5	*-10·1*	-7·2	-2·2	+5·0	+9·8	+13·3	*+14·9*	+12·0	+10·7	+9·5	+7·1	+3·5	+0·4
Apr.	-8·1	-9·4	-10·0	-10·6	-9·2	-6·3	-3·6	-1·5	-1·6	-4·1	-7·1	-11·2	*-11·9*	-7·2	+1·3	+9·9	+15·5	*+19·2*	+18·8	+15·7	+12·4	+9·3	+3·0	-3·3
May	-4·5	-8·7	-8·8	-6·2	-3·9	-2·8	-5·4	-4·2	-5·2	-7·6	-10·4	*-12·9*	-11·1	-5·7	+1·5	+6·8	+11·3	+14·9	*+16·7*	+16·5	+13·7	+9·1	+5·3	+1·6
June	-7·4	-11·1	-9·7	-8·7	-6·9	-6·5	-4·7	-1·6	-3·4	-5·9	-9·3	*-12·5*	-10·7	-5·1	+1·0	+7·5	+12·9	+18·2	*+20·4*	+18·2	+14·6	+9·6	+2·7	-1·6
July	-17·7	-22·5	*-23·9*	-20·2	-18·3	-14·4	-10·3	-4·7	-2·9	-3·2	-6·4	-7·5	-6·5	0·0	+11·1	+21·5	+27·3	+29·5	*+30·1*	+27·0	+18·0	+4·6	-0·9	-9·7
Aug.	-7·1	-9·4	-9·0	-7·1	-5·1	-3·5	-1·2	0·0	-1·9	-6·0	-11·1	*-13·5*	-11·5	-5·3	+3·8	+10·1	+15·5	*+17·2*	+16·1	+14·0	+11·3	+5·9	+1·5	-3·7
Sept.	-5·2	-5·8	-4·8	-5·8	-3·9	-3·7	-2·8	-2·0	-3·3	-5·8	-8·4	*-9·1*	-7·4	-2·6	+3·5	+9·5	+12·6	*+14·1*	+13·3	+11·7	+10·6	+5·9	-2·1	-8·5
Oct.	-14·4	*-19·5*	-19·3	-13·6	-7·2	-6·3	-3·6	-1·3	+2·1	+2·2	-1·6	-3·4	+1·1	+6·0	+12·2	+14·5	*+19·4*	+15·2	+15·9	+6·7	+0·9	+1·7	-4·8	-2·9
Nov.	-6·1	-7·2	*-8·0*	-7·1	-6·6	-6·3	-5·3	-4·0	-1·3	-0·4	-1·9	-1·9	-0·1	+2·3	+5·8	+7·9	*+8·8*	+8·4	+8·1	*+8·8*	+5·8	+3·2	+0·6	-3·5
Dec.	-9·3	*-11·6*	-10·8	-10·6	-10·3	-9·6	-8·3	-6·5	-4·6	-2·8	-2·3	-1·6	+0·1	+4·7	+10·1	+12·6	*+17·4*	+14·5	+14·0	+11·2	+7·1	+1·8	-0·6	-4·6
Year	-8·2	*-10·7*	-10·5	-9·4	-8·0	-7·0	-5·6	-3·5	-3·1	-3·8	-6·1	-7·5	-5·8	-1·0	+5·5	+10·7	+15·0	+16·0	*+16·1*	+13·8	+10·4	+5·9	+0·8	-3·8
Winter	-7·7	*-9·1*	-8·4	-8·0	-8·4	-8·4	-7·4	-5·9	-4·1	-2·6	-2·7	-2·6	-1·2	+2·4	+6·5	+9·7	*+13·1*	+12·2	+12·4	+11·3	+8·6	+4·3	+0·4	-4·5
Equinox	-7·9	-10·1	*-10·4*	-9·7	-7·0	-5·8	-4·0	-2·1	-1·7	-3·2	-6·1	-8·5	-6·3	-1·5	+5·5	+10·9	+15·2	*+15·9*	+15·0	+11·2	+8·3	+6·0	-0·1	-3·6
Summer	-9·2	*-12·9*	-12·9	-10·5	-8·5	-6·8	-5·4	-2·6	-3·3	-5·7	-9·3	-11·6	-9·9	-4·0	+4·3	+11·5	+16·7	+19·9	*+20·8*	+18·9	+14·4	+7·3	+2·1	-3·3

"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 1961

DECLINATION (measured positive towards the west)

	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
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
Jan.	-2·19	-1·55	-0·93	-1·34	-0·69	-0·60	-0·08	+0·08	0·00	+0·61	+1·28	+2·22	+3·44	*+4·01*	+2·82	+2·23	+1·18	+0·80	-0·24	-0·89	-1·74	-2·23	*-3·16*	-3·03
Feb.	-2·60	-2·27	-1·80	-0·88	-0·83	-0·78	-0·60	-0·64	-0·78	-0·48	+0·83	+2·96	*+4·72*	+4·66	+4·45	+3·54	+1·54	+0·79	-0·07	-0·93	-1·61	-2·95	-3·06	*-3·21*
Mar.	-2·33	-2·60	-2·53	*-2·65*	-2·20	-1·29	-1·35	-1·80	-1·86	-1·51	+0·05	+2·77	+5·30	*+6·02*	+4·66	+3·57	+2·11	+1·05	+0·56	-0·03	-0·63	-1·29	-2·02	-2·00
Apr.	-2·68	-1·98	-2·09	-1·69	-1·87	-2·23	-2·58	-4·14	*-4·80*	-3·44	-0·73	+2·97	+5·90	*+7·48*	+7·03	+5·85	+4·07	+2·04	+0·90	-0·26	-0·52	-2·26	-2·37	-2·60
May	-1·60	-2·53	-2·61	-2·44	-2·78	-3·09	-3·11	*-3·87*	-3·70	-2·41	-0·37	+2·02	+4·28	*+5·42*	+5·27	+4·48	+3·64	+2·81	+1·58	+0·87	+0·46	-0·23	-0·76	-1·33
June	-1·48	-1·44	-2·46	-2·31	-3·24	-4·19	-5·32	*-5·57*	-4·84	-3·31	-0·71	+2·19	+4·68	+5·93	*+6·37*	+5·46	+4·51	+3·02	+1·44	+1·11	+0·77	+0·16	-0·07	-0·70
July	-1·39	-1·37	-2·04	-2·83	-2·87	-3·93	-4·25	-4·99	*-5·31*	-4·29	-1·30	+1·90	+4·36	+6·15	*+6·37*	+6·04	+4·53	+3·24	+1·80	+0·89	+0·64	+0·15	-0·61	-0·89
Aug.	-1·50	-1·73	-2·19	-2·17	-2·71	-3·87	-4·72	*-4·82*	-4·02	-2·32	+0·49	+3·47	+5·63	*+6·75*	+6·15	+4·94	+3·14	+1·59	+0·35	+0·18	-0·18	-0·34	-0·68	-1·44
Sept.	-0·95	-1·36	-2·19	-2·39	-2·62	-2·34	-2·63	-2·73	-2·55	-0·88	+1·79	+4·51	+6·02	*+6·07*	+4·94	+3·12	+1·92	+0·72	-0·10	-0·43	-1·33	-2·10	*-2·74*	-1·75
Oct.	-2·10	-1·86	-1·87	-1·47	-1·20	-0·69	-0·77	-1·24	-2·39	-1·88	-0·27	+2·83	+5·02	*+5·63*	+5·31	+4·07	+2·38	+1·08	+0·79	-1·20	-1·99	*-3·19*	-2·87	-2·12
Nov.	-1·81	-1·84	-0·88	-0·46	-0·16	+0·02	-0·20	-0·31	-0·80	-0·81	+0·53	+1·96	+3·23	*+3·88*	+3·74	+2·60	+1·45	+0·58	-0·01	-0·92	-2·17	-1·95	*-2·98*	-2·69
Dec.	-1·94	-0·97	-0·65	-0·14	+0·51	+0·42	+0·25	-0·11	-0·73	-0·54	+0·33	+1·76	+3·16	+3·54	*+3·79*	+2·85	+1·45	+1·24	-0·01	-0·75	-1·98	-3·64	*-4·55*	-3·29
Year	-1·88	-1·79	-1·85	-1·73	-1·72	-1·88	-2·11	-2·51	*-2·65*	-1·77	+0·16	+2·63	+4·65	*+5·46*	+5·07	+4·06	+2·66	+1·58	+0·58	-0·20	-0·86	-1·66	-2·16	-2·09
Winter	-2·13	-1·66	-1·07	-0·71	-0·29	-0·23	-0·16	-0·25	-0·58	-0·31	+0·74	+2·23	+3·64	*+4·02*	+3·70	+2·81	+1·41	+0·85	-0·08	-0·87	-1·87	-2·69	*-3·44*	-3·05
Equinox	-2·01	-1·95	-2·17	-2·05	-1·97	-1·64	-1·83	-2·48	*-2·90*	-1·93	+0·21	+3·27	+5·56	*+6·30*	+5·49	+4·15	+2·62	+1·22	+0·54	-0·48	-1·12	-2·21	-2·50	-2·12
Summer	-1·49	-1·77	-2·33	-2·44	-2·90	-3·77	-4·35	*-4·81*	-4·47	-3·08	-0·47	+2·39	+4·74	*+6·06*	+6·04	+5·23	+3·95	+2·67	+1·29	+0·76	+0·42	-0·07	-0·53	-1·09

INCLINATION

	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
Jan.	-0·13	-0·04	-0·08	-0·43	-0·77	*-1·08*	-0·97	-0·64	-0·43	-0·02	+0·28	+0·58	+0·46	+0·39	+0·37	+0·51	*+0·73*	+0·48	+0·37	+0·35	+0·17	+0·07	-0·05	-0·12
Feb.	-0·24	-0·35	-0·33	-0·41	-0·56	-0·87	*-0·92*	-0·86	-0·37	+0·29	*+0·89*	+0·86	+0·69	+0·30	+0·13	+0·44	+0·43	+0·16	+0·02	0·00	+0·28	+0·34	+0·27	-0·17
Mar.	-0·19	-0·34	-0·42	-0·61	-0·64	-0·78	*-0·87*	-0·37	+0·03	+0·74	*+1·23*	+1·20	+0·95	+0·71	+0·58	+0·29	+0·05	+0·13	-0·18	-0·38	-0·35	-0·27	-0·29	-0·23
Apr.	-0·63	-0·55	*-0·81*	-0·51	-0·71	-0·75	-0·56	-0·20	+0·49	+1·31	+2·00	*+2·04*	+1·56	+0·98	+0·53	-0·05	-0·19	-0·63	-0·63	-0·71	-0·64	-0·57	-0·36	-0·42
May	-0·62	-0·41	-0·27	-0·33	-0·24	-0·07	+0·04	+0·70	+1·10	*+1·57*	+1·57	+1·47	+1·12	+0·68	+0·33	-0·21	-0·70	-0·89	*-1·23*	-0·95	-0·65	-0·67	-0·58	-0·76
June	-0·46	-0·46	-0·41	-0·25	-0·43	-0·07	+0·18	+0·83	+1·36	+1·78	*+1·79*	+1·54	+1·38	+0·90	+0·25	-0·29	-0·88	-1·37	*-1·49*	-1·35	-0·92	-0·74	-0·46	-0·43
July	-0·39	-0·49	-0·77	-0·65	-0·48	-0·30	+0·25	+0·96	+2·23	*+2·97*	+2·83	+1·90	+1·65	+0·57	-0·37	-0·73	-1·06	-1·67	*-1·92*	-1·49	-1·26	-0·88	-0·47	-0·43
Aug.	-0·89	-0·56	-0·59	-0·51	-0·51	-0·31	+0·08	+0·65	+1·29	+1·73	*+1·90*	+1·68	+1·26	+0·81	+0·47	-0·12	-0·47	-0·67	-0·79	-0·96	-0·81	-0·79	-0·89	*-1·00*
Sept.	-0·83	-0·76	-0·45	-0·70	-0·46	-0·44	-0·15	+0·12	+0·62	+1·31	*+1·61*	+1·45	+1·14	+0·71	+0·50	+0·23	+0·06	-0·23	-0·54	-0·68	-0·40	*-0·86*	-0·60	-0·63
Oct.	-0·45	-0·07	-0·03	-0·95	-0·96	*-1·07*	-0·71	-0·56	+0·23	+0·93	+1·03	*+1·19*	+1·17	+0·73	+0·19	+0·30	-0·02	-0·63	-0·34	+0·17	+0·38	+0·34	-0·21	-0·64
Nov.	-0·40	-0·35	-0·35	-0·36	-0·61	-0·84	*-0·88*	-0·64	-0·03	+0·50	+0·70	*+0·88*	+0·86	+0·60	+0·44	+0·35	+0·22	+0·08	+0·19	+0·22	+0·10	+0·02	-0·31	-0·41
Dec.	-0·21	-0·53	-0·59	-0·80	-0·91	*-0·99*	-0·98	-0·79	-0·44	+0·04	+0·48	+0·71	*+0·74*	+0·53	+0·42	+0·42	+0·70	+0·58	+0·57	+0·51	+0·37	+0·17	+0·14	-0·13
Year	-0·46	-0·41	-0·43	-0·55	-0·60	*-0·63*	-0·46	-0·07	+0·50	+1·10	*+1·35*	+1·29	+1·08	+0·66	+0·32	+0·10	-0·09	-0·38	-0·49	-0·44	-0·31	-0·32	-0·32	-0·45
Winter	-0·25	-0·32	-0·33	-0·50	-0·71	*-0·95*	-0·94	-0·74	-0·31	+0·20	+0·59	*+0·75*	+0·69	+0·45	+0·34	+0·43	+0·52	+0·33	+0·29	+0·27	+0·23	+0·15	+0·01	-0·20
Equinox	-0·53	-0·43	-0·43	-0·69	-0·69	*-0·76*	-0·57	-0·25	+0·34	+1·07	+1·47	*+1·47*	+1·21	+0·78	+0·45	+0·20	-0·02	-0·34	-0·42	-0·40	-0·25	-0·34	-0·37	-0·48
Summer	-0·59	-0·48	-0·51	-0·44	-0·42	-0·19	+0·14	+0·79	+1·50	+2·01	*+2·02*	+1·64	+1·35	+0·74	+0·17	-0·33	-0·78	-1·15	*-1·36*	-1·19	-0·91	-0·77	-0·60	-0·65

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.	0·0	-1·4	-1·2	+3·8	+8·6	*+12·8*	+11·4	+7·0	+4·2	-1·2	-5·3	*-9·7*	-7·9	-5·5	-3·7	-4·7	-6·6	-2·5	-0·5	-0·9	+0·4	+1·0	+1·2	+0·7
Feb.	0·0	+0·9	+1·8	+3·6	+5·2	+10·0	*+11·2*	+10·8	+3·9	-5·5	*-14·8*	-14·5	-11·1	-3·9	-0·1	-2·8	-1·2	+2·5	+4·8	+5·1	+0·7	-2·7	-3·9	0·0
Mar.	+1·4	+2·9	+3·6	+5·9	+6·7	+9·2	*+10·9*	+4·2	-2·0	-13·0	-21·2	*-21·7*	-17·0	-11·4	-6·8	-0·8	+4·2	+3·5	+7·1	+9·7	+8·7	+6·6	+5·7	+3·6
Apr.	+6·5	+4·7	+8·4	+3·8	+7·2	+8·9	+7·1	+2·4	-8·0	-21·2	-32·6	*-34·8*	-27·9	-17·4	-7·4	+4·4	+8·6	*+16·6*	+16·4	+16·5	+14·2	+12·0	+6·5	+5·1
May	+7·6	+2·9	+0·8	+2·7	+2·1	0·0	-2·6	-12·1	-18·5	-26·4	*-27·4*	-26·8	-20·9	-12·3	-4·4	+5·7	+14·7	+18·9	*+24·6*	+20·4	+14·9	+13·4	+10·7	+12·0
June	+4·1	+2·8	+2·5	+0·5	+3·9	-1·3	-4·4	-13·0	-21·7	-28·9	*-30·4*	-27·7	-24·7	-15·4	-3·4	+7·1	+18·0	+27·4	*+30·0*	+27·0	+19·2	+14·7	+7·9	+5·8
July	-0·6	-1·0	+2·7	+2·3	+0·4	-0·8	-7·6	-16·2	-34·5	*-45·8*	-44·8	-31·3	-27·1	-8·5	+9·6	+18·9	+26·0	+35·9	*+39·9*	+32·4	+25·6	+14·9	+6·8	+2·8
Aug.	+10·7	+4·9	+5·5	+5·1	+5·8	+3·3	-1·6	-9·8	-20·0	-28·2	*-32·7*	-30·2	-23·2	-14·1	-5·6	+5·5	+12·8	+16·4	+17·9	*+19·6*	+16·4	+14·0	+13·9	+13·6
Sept.	+10·6	+9·2	+5·0	+8·3	+5·5	+5·3	+1·2	-2·5	-10·5	-21·8	*-27·2*	-25·1	-19·8	-11·6	-6·2	+0·1	+3·6	+8·7	+13·0	+14·6	+10·0	*+15·1*	+8·2	+6·3
Oct.	+1·4	-6·1	-6·6	+9·3	+11·7	+13·7	+9·4	+7·9	-2·6	-13·2	-16·0	*-19·1*	-17·1	-8·7	+1·6	+0·9	+7·4	*+15·1*	+11·0	-0·1	-5·4	-4·5	+1·4	+8·6
Nov.	+3·8	+2·5	+2·2	+2·8	+6·7	+10·3	*+11·3*	+8·1	-0·1	-7·6	-11·2	*-13·9*	-13·0	-8·2	-4·5	-2·4	0·0	+1·9	+0·1	-0·1	+0·7	+0·9	+4·9	+4·8
Dec.	-0·3	+3·7	+4·9	+8·1	+9·8	+11·3	*+11·7*	+9·5	+4·9	-1·7	-8·0	*-11·2*	-11·1	-6·2	-2·6	-1·6	-4·1	-3·4	-3·3	-3·5	-2·9	-1·9	-2·3	+0·2
Year	+3·8	+2·2	+2·5	+4·7	+6·1	+6·9	+4·8	-0·3	-8·7	-17·9	-22·6	-22·2	-18·4	-10·3	-2·8	+2·5	+6·9	+11·7	*+13·4*	+11·7	+8·5	+7·0	+5·1	+5·3
Winter	+0·9	+1·4	+1·9	+4·6	+7·6	+11·1	*+11·4*	+8·9	+3·2	-4·0	-9·8	*-12·3*	-10·8	-5·9	-2·7	-2·9	-3·0	-0·4	+0·3	+0·1	-0·3	-0·7	0·0	+1·4
Equinox	+5·0	+2·7	+2·6	+6·8	+7·8	+9·3	+7·1	+3·0	-5·8	-17·3	-24·3	*-25·2*	-20·5	-12·3	-4·7	+1·1	+5·9	+11·0	*+11·9*	+10·2	+6·9	+7·3	+5·5	+5·9
Summer	+5·5	+2·4	+2·9	+2·7	+3·1	+0·3	-4·1	-12·8	-23·7	-32·3	*-33·8*	-29·0	-24·0	-12·6	-0·9	+9·3	+17·9	+24·7	*+28·1*	+24·9	+19·0	+14·3	+9·8	+8·5

"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 GEOGRAPHICAL COMPONENTS OF MAGNETIC FORCE

INTERNATIONAL QUIET DAYS

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

30 ESKDALEMUIR 1961

NORTH COMPONENT

	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
	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.	−1·4	−1·3	−2·4	+1·9	+5·5	+6·9	+5·1	+3·6	+0·7	−2·9	−7·0	*−7·5*	−6·0	−2·0	−0·4	−3·3	−3·5	+0·3	+3·6	+4·0	+1·4	+1·5	+1·2	+1·7
Feb.	+2·1	+2·4	+1·8	+2·5	+3·9	+7·3	+8·1	*+8·2*	+4·3	−5·0	−12·6	*−15·2*	−13·9	−7·8	−3·7	−3·3	−3·3	−2·7	+1·5	+5·2	+5·9	+4·1	+5·2	+5·2
Mar.	+1·0	+5·5	+2·0	+3·0	+5·1	+6·0	+7·2	+6·6	+1·6	−6·0	−14·7	*−19·3*	−14·1	−10·9	−7·1	−4·6	+1·5	+2·9	+5·6	*+7·8*	+5·3	+5·3	+3·7	+6·7
Apr.	+8·5	+5·4	+7·9	+5·6	+8·1	+10·5	+10·9	+7·0	−2·1	−18·3	−30·2	*−38·7*	−33·8	−20·9	−12·1	−4·0	+1·4	+10·4	+15·0	+14·5	*+15·7*	+12·1	+13·0	+14·3
May	+5·9	+5·7	+4·7	+4·7	+3·9	+4·2	+1·3	−4·1	−13·3	−23·0	−27·1	*−27·3*	−24·9	−20·9	−13·8	−5·9	+6·5	+16·3	+22·0	*+22·2*	+18·2	+18·1	+13·8	+13·0
June	+2·8	+2·3	+1·9	+4·9	+6·2	+2·9	−1·1	−8·3	−13·6	−24·6	*−27·0*	−25·5	−20·4	−14·4	−6·1	+7·1	+12·0	+15·6	*+18·2*	+17·1	+14·2	+13·3	+11·8	+10·8
July	+0·5	+3·0	+1·7	+2·9	+6·1	+9·3	+0·4	−10·3	−18·0	−24·8	*−36·3*	−34·0	−29·2	−17·8	−9·3	+0·9	+10·3	+26·6	*+32·1*	+25·4	+23·2	+15·0	+11·9	+10·5
Aug.	+6·4	+6·5	+7·8	+8·3	+8·5	+5·2	+0·7	−2·9	−17·2	−23·2	−27·9	*−28·5*	−27·0	−21·5	−14·0	−3·2	+4·8	+11·8	+18·3	*+20·1*	+18·4	+17·2	+16·7	+14·4
Sept.	+8·7	+7·5	+6·3	+6·2	+5·2	+4·8	+3·4	−0·4	−6·6	−15·7	−23·1	*−25·5*	−22·5	−16·2	−11·6	−5·6	+0·3	+6·5	+12·7	+13·1	+11·7	+12·8	*+14·8*	+13·1
Oct.	+6·5	+5·8	+6·3	+6·6	+7·5	+7·5	+5·0	−1·1	−10·6	−21·4	*−27·1*	−24·2	−17·1	−10·4	−4·2	+0·4	+5·2	+9·4	+10·0	+10·1	+8·2	+9·8	*+10·2*	
Nov.	0·0	+0·6	−1·2	−0·2	+2·0	+4·5	+5·3	+4·9	+1·6	−3·3	−8·5	*−12·4*	−11·7	−6·3	−2·1	−0·4	+0·9	+1·9	+1·2	+2·2	+3·7	+5·1	*+7·1*	+5·1
Dec.	+1·0	+0·4	+0·6	+1·5	+4·3	*+5·9*	+5·5	+5·1	+1·6	−4·4	−10·7	*−12·9*	−10·8	−5·0	−0·3	+0·3	+1·0	+1·1	+1·7	+2·8	+1·8	+3·6	+3·4	+2·6
Year	+3·5	+3·7	+3·1	+4·0	+5·5	+6·3	+4·5	+1·2	−5·1	−13·5	−20·5	*−22·8*	−19·9	−13·4	−7·6	−2·2	+2·7	+8·0	+11·8	*+12·0*	+10·8	+9·7	+9·4	+8·9
Winter	+0·5	+0·5	−0·3	+1·4	+3·9	*+6·1*	+6·0	+5·4	+2·0	−3·9	−9·7	*−11·9*	−10·5	−5·3	−1·6	−1·7	−1·3	+0·1	+2·0	+3·6	+3·2	+3·5	+4·2	+3·7
Equinox	+6·2	+6·1	+5·7	+5·3	+6·4	+7·2	+7·3	+4·6	−2·0	−12·7	−22·4	*−27·6*	−23·7	−16·3	−10·3	−4·6	+0·9	+6·2	+10·7	*+11·3*	+10·7	+9·6	+10·4	+11·0
Summer	+3·9	+4·3	+4·1	+5·2	+6·2	+5·4	+0·3	−6·4	−15·5	−23·9	*−29·5*	−28·8	−25·4	−18·7	−10·7	−0·3	+8·4	+17·5	*+22·6*	+21·2	+18·5	+15·9	+13·6	+12·1

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.	−1·9	−2·7	+0·1	−0·7	−1·0	−0·5	−3·5	−5·1	−5·6	−3·9	−1·3	+3·0	+7·6	*+10·8*	+3·9	+5·8	+4·6	+5·4	+2·5	+0·3	−3·7	*−6·2*	−5·0	−2·9
Feb.	−5·1	−5·5	−4·4	−2·8	−3·3	−4·1	−4·0	−5·9	−8·9	*−10·8*	−6·6	+1·7	+12·0	*+13·6*	+11·6	+8·5	+6·8	+5·9	+5·8	+4·1	+1·3	−0·7	−5·1	−4·1
Mar.	−10·5	−11·7	−9·8	−8·2	−7·1	−6·7	−7·6	−11·0	−14·1	*−14·2*	−7·9	+3·9	+20·0	*+22·3*	+20·9	+14·8	+11·4	+10·0	+10·2	+8·0	+4·1	−0·9	−6·5	−9·2
Apr.	−3·1	−5·1	−7·3	−7·2	−6·2	−7·3	−11·7	−18·3	*−25·6*	−23·3	−11·5	+1·7	+15·8	+25·4	*+25·5*	+19·6	+13·3	+9·9	+6·9	+5·2	+4·0	+0·3	+0·1	−1·2
May	−2·0	−3·5	−5·1	−9·1	−12·2	−14·0	−19·0	*−23·1*	−22·4	−16·5	−7·8	+3·5	+14·7	+20·9	*+21·5*	+19·1	+18·8	+15·7	+13·4	+7·7	+1·1	+1·2	0·0	−3·0
June	+2·4	+1·6	−3·7	−7·7	−15·9	−22·5	−29·4	*−32·3*	−30·1	−24·4	−8·0	+10·3	+22·6	+27·8	*+28·6*	+25·6	+16·5	+10·2	+7·3	+5·5	+4·8	+4·3	+3·5	+3·2
July	−5·6	−7·3	−5·1	−12·0	−12·6	−21·7	−22·7	−23·3	*−26·7*	−22·1	−13·4	+1·7	+15·5	+27·2	*+31·3*	+29·9	+23·3	+19·1	+11·6	+1·7	+2·7	+2·7	+4·7	+1·2
Aug.	−2·9	−3·5	−6·7	−9·9	−16·6	−24·5	−26·9	*−27·3*	−25·1	−18·6	−5·6	+11·1	+24·1	*+29·9*	+26·5	+20·9	+15·8	+9·5	+6·6	+6·9	+7·5	+4·7	+4·0	+0·1
Sept.	−0·9	−3·9	−5·7	−7·6	−10·1	−11·9	−15·8	−19·6	*−19·6*	−13·5	−1·7	+9·6	+15·3	*+16·9*	+16·5	+11·3	+7·5	+7·0	+7·0	+7·9	+6·1	+3·8	+1·4	+0·1
Oct.	−3·2	−3·0	−3·1	−2·8	−3·0	−4·0	−5·6	−10·8	−18·4	*−21·0*	−14·3	−0·7	+13·5	*+20·3*	+19·1	+12·8	+7·6	+7·8	+6·2	+4·1	−0·5	−0·5	+0·8	−1·3
Nov.	−3·6	−4·5	−2·7	−1·2	−0·7	−1·4	−2·2	−4·4	−8·2	*−9·9*	−4·2	+2·3	+9·5	*+12·1*	+9·8	+7·7	+6·2	+5·4	+4·4	+2·2	−0·8	−3·3	−6·7	−5·7
Dec.	−2·0	−0·9	+0·3	+0·8	−0·3	−0·7	−2·2	−3·3	−5·6	*−8·3*	−4·7	+2·7	+8·0	*+10·4*	+8·2	+6·2	+3·5	+2·2	+1·6	+0·2	−2·0	−5·0	−6·1	−2·9
Year	−3·2	−4·1	−4·5	−5·7	−7·4	−9·9	−12·5	−15·3	*−17·5*	−15·5	−7·3	+4·3	+14·9	*+19·8*	+18·6	+15·2	+11·3	+9·0	+6·9	+4·5	+2·0	0·0	−1·3	−2·2
Winter	−3·1	−3·4	−1·7	−1·0	−1·3	−1·7	−3·0	−4·7	−7·1	*−8·2*	−4·3	+2·4	+9·3	*+11·7*	+8·4	+7·1	+5·3	+4·7	+3·6	+1·7	−1·3	−3·8	−5·8	−3·9
Equinox	−4·4	−5·9	−6·5	−6·4	−6·6	−7·5	−12·2	−14·9	−17·5	*−18·1*	−8·8	+3·7	+16·2	*+21·3*	+20·5	+14·6	+10·0	+8·7	+7·6	+6·3	+3·4	+0·7	−1·1	−2·9
Summer	−2·0	−3·1	−5·1	−9·7	−14·3	−20·7	−24·5	*−26·5*	−26·1	−20·4	−8·7	+6·7	+19·2	+26·5	*+27·0*	+23·9	+18·6	+13·6	+9·7	+5·4	+4·0	+3·2	+3·0	+0·3

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	+0·4	−0·5	−1·6	−1·4	−1·9	−2·2	−2·2	*−2·3*	+0·4	+0·7	+0·2	−1·1	−1·0	+0·5	+1·6	+1·4	+0·7	+1·6	+1·8	+1·7	*+2·0*	+1·1	−0·4
Feb.	+1·3	−0·4	−0·5	−1·1	−0·7	−0·8	−0·9	−0·5	+0·1	+1·0	−0·5	−2·5	*−3·1*	−1·4	−0·3	+0·5	+0·5	*+1·8*	+1·1	+0·9	+1·5	*+1·8*	+1·3	+0·9
Mar.	+2·2	+0·2	+0·3	+0·2	0·0	+0·2	−0·4	0·0	−0·5	−2·8	−7·6	*−11·6*	−11·4	−6·6	−0·9	+2·4	+5·4	+3·6	+3·4	+4·0	+5·1	*+5·6*	*+5·6*	+3·6
Apr.	−0·4	−0·5	+0·4	+2·4	+1·2	+1·5	+2·6	+2·2	+0·8	−3·9	−8·8	−12·0	*−14·6*	−11·5	−4·6	+2·4	+6·0	+6·5	*+6·6*	+5·8	+5·0	+5·1	+4·4	+3·4
May	+3·9	+2·5	+2·7	+3·7	+4·9	+4·3	+2·3	+1·9	+0·1	−5·3	−10·5	−14·9	*−17·1*	−13·1	−8·1	−3·1	+0·9	+4·5	+7·7	*+10·1*	+9·5	+5·9	+3·9	+3·3
June	+2·1	+0·6	+2·3	+3·4	+5·4	+4·7	+2·8	+2·6	−2·3	−7·0	−11·1	*−15·8*	−13·5	−8·8	−4·5	+0·8	+4·2	+6·5	+6·2	*+6·8*	+5·7	+4·0	+2·7	+2·2
July	+0·4	+0·5	+0·4	−0·5	−0·3	−1·6	−1·5	+1·7	+1·2	−1·9	−3·8	−9·5	*−13·0*	−11·1	−5·4	−2·9	+1·3	+5·6	+10·3	*+13·1*	+10·2	+6·1	+1·4	−0·7
Aug.	+4·2	+3·9	+1·0	+0·6	+2·4	+3·7	+3·6	+3·2	+0·4	−6·3	−13·4	*−16·4*	−14·4	−9·9	−3·2	+2·4	+5·6	*+6·3*	+6·0	+5·4	+5·0	+4·5	+3·4	+2·0
Sept.	*+4·5*	+3·5	+2·7	+2·1	+2·5	+2·7	+4·3	+3·3	−0·7	−5·3	−8·9	*−10·9*	−10·7	−7·3	−2·7	+0·7	+1·5	+1·3	+1·9	+2·7	+3·1	+3·5	+3·3	+2·9
Oct.	+2·0	+2·5	+2·2	+1·2	+1·2	+1·5	+1·0	+2·6	+2·6	+1·7	−3·4	−7·6	*−10·2*	−9·1	−4·6	+0·8	+3·0	+1·9	+2·0	+2·4	*+3·0*	+2·3	+1·2	−0·2
Nov.	−1·0	−1·6	−0·6	0·0	−0·4	−0·7	−1·0	−0·6	+1·6	+1·6	−1·0	*−2·8*	*−2·8*	−2·0	+0·2	+1·4	+1·8	*+2·3*	+2·0	+1·8	+1·4	+1·6	0·0	−1·2
Dec.	−0·1	−0·4	−1·2	−1·9	−2·4	*−2·6*	−2·3	−2·2	−1·0	+0·9	−0·8	−1·2	−0·9	+0·2	+2·6	*+2·9*	+2·4	+1·6	+1·5	+1·4	+1·4	+1·5	+0·8	−0·2
Year	+1·6	+0·9	+0·8	+0·7	+1·0	0·9	+0·7	+1·0	0·0	−2·2	−5·8	−8·7	*−9·4*	−6·8	−2·6	+0·8	+2·8	+3·5	+4·2	*+4·7*	+4·4	+3·6	+2·4	+1·3
Winter	+0·2	−0·5	−0·7	−1·1	−1·2	−1·5	−1·6	−1·4	−0·4	+1·0	−0·4	−1·6	*−2·0*	−1·1	+0·7	+1·6	+1·5	+1·6	+1·5	+1·5	+1·5	*+1·7*	+0·8	−0·2
Equinox	+2·1	+1·4	+1·4	+1·5	+1·2	+1·5	+1·9	+2·0	+0·5	−2·6	−7·2	−10·5	*−11·7*	−8·6	−3·2	+1·6	+4·0	+3·3	+3·5	+3·7	+4·1	*+4·1*	+3·6	+2·4
Summer	+2·7	+1·9	+1·6	+1·8	+3·1	+2·8	+1·8	+2·3	−0·1	−5·1	−9·7	−14·1	*−14·5*	−10·7	−5·3	−0·7	+3·0	+5·7	+7·5	*+8·9*	+7·6	+5·1	+2·9	+1·7

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

DIURNAL INEQUALITIES OF THE MAGNETIC ELEMENTS, DECLINATION, INCLINATION, AND HORIZONTAL FORCE

INTERNATIONAL QUIET DAYS

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

31 ESKDALEMUIR 1961

DECLINATION (measured positive towards the west)

	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
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
Jan.	-0·32	-0·49	+0·10	-0·21	-0·40	-0·35	-0·90	-1·17	-1·16	-0·67	0·00	+0·89	+1·76	+2·25	+0·80	+1·29	+1·06	+1·07	+0·36	-0·09	-0·80	-1·31	-1·06	-0·65
Feb.	-1·10	-1·19	-0·95	-0·66	-0·81	-1·09	-1·10	-1·49	-1·95	-2·00	-0·87	+0·91	+2·94	+3·03	+2·47	+1·84	+1·49	+1·29	+1·12	+0·63	+0·05	-0·30	-1·23	-1·03
Mar.	-2·16	-2·56	-2·04	-1·76	-1·62	-1·57	-1·80	-2·46	-2·90	-2·64	-1·04	+1·50	+4·54	+4·90	+4·46	+3·14	+2·24	+1·91	+1·84	+1·32	+0·62	-0·38	-1·44	-2·10
Apr.	-0·93	-1·22	-1·76	-1·65	-1·54	-1·86	-2·77	-3·94	-5·08	-4·03	-1·20	+1·76	+4·43	+5·90	+5·58	+4·09	+2·64	+1·62	+0·83	+0·52	+0·22	-0·39	-0·46	-0·76
May	-0·61	-0·90	-1·19	-2·01	-2·59	-2·98	-3·87	-4·49	-4·01	-2·48	-0·57	+1·71	+3·87	+4·98	+4·83	+4·05	+3·55	+2·56	+1·89	+0·73	-0·45	-0·42	-0·51	-1·09
June	+0·37	+0·24	-0·82	-1·73	-3·42	-4·64	-5·87	-6·18	-5·56	-4·01	-0·62	+3·02	+5·29	+6·12	+5·98	+4·89	+2·88	+1·48	+0·79	+0·48	+0·44	+0·37	+0·26	+0·24
July	-1·15	-1·58	-1·09	-2·53	-2·75	-4·70	-4·59	-4·31	-4·71	-3·54	-1·37	+1·59	+4·19	+6·12	+6·63	+5·99	+4·31	+2·88	+1·15	-0·59	-0·31	0·00	+0·51	-0·15
Aug.	-0·81	-0·94	-1·63	-2·29	-3·65	-5·12	-5·43	-5·39	-4·43	-2·90	-0·11	+3·27	+5·83	+6·80	+5·85	+4·33	+3·01	+1·48	+0·65	+0·65	+0·83	+0·32	+0·19	-0·51
Sept.	-0·50	-1·05	-1·38	-1·76	-2·22	-2·57	-3·30	-3·92	-3·70	-2·15	+0·50	+2·86	+3·90	+3·99	+3·74	+2·48	+1·50	+1·17	+0·94	+1·10	+0·80	+0·29	-0·26	-0·46
Oct.	-0·88	-0·82	-0·85	-0·80	-0·88	-1·08	-1·40	-2·36	-3·67	-3·84	-2·10	+0·86	+3·60	+4·72	+4·23	+2·72	+1·52	+1·38	+0·90	+0·46	-0·47	-0·40	-0·20	-0·64
Nov.	-0·72	-0·92	-0·51	-0·24	-0·22	-0·44	-0·64	-1·06	-1·71	-1·84	-0·58	+0·92	+2·34	+2·66	+2·05	+1·56	+1·22	+1·02	+0·84	+0·36	-0·29	-0·84	-1·62	-1·34
Dec.	-0·44	-0·20	+0·03	+0·10	-0·22	-0·36	-0·64	-0·84	-1·19	-1·50	-0·56	+1·02	+2·00	+2·28	+1·67	+1·24	+0·66	+0·40	+0·26	-0·06	-0·47	-1·14	-1·36	-0·68
Year	-0·77	-0·97	-1·01	-1·29	-1·69	-2·23	-2·69	-3·13	-3·34	-2·63	-0·71	+1·69	+3·72	+4·48	+4·02	+3·13	+2·17	+1·52	+0·96	+0·46	+0·01	-0·35	-0·60	-0·76
Winter	-0·65	-0·70	-0·33	-0·25	-0·41	-0·56	-0·82	-1·14	-1·50	-1·50	-0·50	+0·93	+2·26	+2·55	+1·75	+1·48	+1·11	+0·95	+0·65	+0·21	-0·38	-0·90	-1·32	-0·93
Equinox	-1·12	-1·41	-1·51	-1·49	-1·57	-1·77	-2·32	-3·17	-3·84	-3·17	-0·96	+1·75	+4·12	+4·88	+4·50	+3·11	+1·97	+1·52	+1·13	+0·85	+0·29	-0·22	-0·59	-0·99
Summer	-0·55	-0·79	-1·18	-2·14	-3·10	-4·36	-4·94	-5·09	-4·68	-3·23	-0·67	+2·40	+4·79	+6·01	+5·82	+4·81	+3·44	+2·10	+1·12	+0·32	+0·13	+0·07	+0·11	-0·38

INCLINATION

	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
Jan.	+0·13	+0·13	+0·14	-0·16	-0·38	-0·49	-0·35	-0·23	-0·04	+0·25	+0·49	+0·46	+0·27	-0·03	-0·01	+0·19	+0·21	-0·07	-0·23	-0·22	-0·01	+0·02	+0·01	-0·09
Feb.	-0·04	-0·10	-0·08	-0·15	-0·23	-0·45	-0·51	-0·48	-0·17	+0·49	+0·89	+0·91	+0·69	+0·31	+0·10	+0·13	+0·15	+0·15	-0·14	-0·36	-0·36	-0·22	-0·25	-0·27
Mar.	+0·11	-0·21	-0·01	-0·09	-0·25	-0·31	-0·39	-0·30	+0·05	+0·50	+0·87	+0·93	+0·41	+0·28	+0·19	+0·19	-0·10	-0·22	-0·40	-0·51	-0·27	-0·20	-0·03	-0·24
Apr.	-0·53	-0·31	-0·42	-0·22	-0·42	-0·56	-0·51	-0·19	+0·47	+1·38	+1·90	+2·22	+1·66	+0·78	+0·37	+0·09	-0·11	-0·64	-0·90	-0·87	-0·95	-0·67	-0·74	-0·83
May	-0·26	-0·27	-0·18	-0·11	+0·01	0·00	+0·20	+0·59	+1·14	+1·57	+1·61	+1·38	+1·03	+0·79	+0·45	+0·08	-0·63	-1·14	-1·41	-1·30	-0·97	-1·05	-0·81	-0·73
June	-0·16	-0·16	-0·02	-0·14	-0·08	+0·20	+0·49	+1·00	+1·19	+1·73	+1·59	+1·15	+0·73	+0·40	-0·06	-0·75	-0·88	-0·99	-1·13	-1·02	-0·85	-0·82	-0·75	-0·69
July	+0·04	-0·09	-0·04	-0·06	-0·25	-0·39	+0·21	+0·99	+1·53	+1·84	+2·44	+1·97	+1·41	+0·57	+0·10	-0·49	-0·92	-1·83	-1·99	-1·36	-1·30	-0·86	-0·80	-0·72
Aug.	-0·28	-0·29	-0·41	-0·41	-0·30	+0·04	+0·37	+0·60	+1·43	+1·59	+1·56	+1·33	+1·13	+0·81	+0·52	+0·02	-0·37	-0·73	-1·13	-1·27	-1·17	-1·07	-1·06	-0·90
Sept.	-0·45	-0·36	-0·28	-0·26	-0·16	-0·11	+0·07	+0·34	+0·65	+1·06	+1·31	+1·28	+1·03	+0·68	+0·49	+0·25	-0·08	-0·47	-0·87	-0·89	-0·76	-0·80	-0·91	-0·79
Oct.	-0·34	-0·28	-0·32	-0·37	-0·42	-0·41	-0·40	-0·14	+0·36	+0·99	+1·49	+1·60	+1·17	+0·65	+0·34	+0·14	-0·05	-0·39	-0·64	-0·65	-0·58	-0·48	-0·62	-0·66
Nov.	+0·01	-0·03	+0·10	+0·03	-0·13	-0·30	-0·35	-0·28	+0·03	+0·37	+0·59	+0·72	+0·58	+0·22	+0·03	-0·03	-0·09	-0·13	-0·08	-0·13	-0·20	-0·25	-0·39	-0·30
Dec.	-0·04	-0·02	-0·07	-0·15	-0·34	-0·44	-0·39	-0·35	-0·07	+0·41	+0·74	+0·78	+0·59	+0·21	-0·02	-0·02	-0·05	-0·06	-0·10	-0·15	-0·06	-0·14	-0·13	-0·14
Year	-0·15	-0·17	-0·13	-0·18	-0·25	-0·27	-0·13	+0·13	+0·55	+1·02	+1·29	+1·23	+0·89	+0·47	+0·21	-0·02	-0·24	-0·55	-0·75	-0·72	-0·63	-0·54	-0·54	-0·53
Winter	+0·01	-0·01	+0·02	-0·11	-0·27	-0·42	-0·40	-0·33	-0·06	+0·38	+0·68	+0·71	+0·53	+0·18	+0·02	+0·07	+0·06	-0·03	-0·14	-0·22	-0·16	-0·14	-0·19	-0·20
Equinox	-0·30	-0·29	-0·26	-0·24	-0·31	-0·34	-0·31	-0·07	+0·38	+0·98	+1·39	+1·51	+1·07	+0·60	+0·35	+0·17	-0·08	-0·43	-0·71	-0·73	-0·64	-0·54	-0·58	-0·63
Summer	-0·17	-0·20	-0·17	-0·18	-0·16	-0·04	+0·32	+0·80	+1·32	+1·69	+1·80	+1·46	+1·07	+0·64	+0·25	-0·28	-0·70	-1·17	-1·41	-1·23	-1·07	-0·95	-0·85	-0·76

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.	-1·7	-1·8	-2·3	+1·8	+5·2	+6·7	+4·4	+2·6	-0·3	-3·6	-7·1	-6·8	-4·5	0·0	+0·3	-2·2	-2·6	+1·3	+4·0	+4·0	+0·7	+0·4	+0·3	+1·2
Feb.	+1·1	+1·4	+1·0	+1·9	+3·2	+6·4	+7·3	+7·0	+2·6	-6·9	-13·6	-14·6	-11·5	-5·2	-1·6	-1·7	-2·0	-1·6	+2·5	+5·8	+6·0	+3·9	+4·2	+4·4
Mar.	-0·9	+3·3	+0·2	+1·5	+3·7	+4·7	+5·7	+4·5	-1·0	-8·5	-15·9	-18·3	-10·3	-6·7	-3·2	-1·9	+3·5	+4·7	+7·3	+9·1	+6·0	+5·1	+2·5	+4·9
Apr.	+7·8	+4·4	+6·5	+4·2	+6·8	+9·0	+8·6	+3·6	-6·7	-22·2	-31·8	-37·8	-30·4	-16·0	-7·3	-0·4	+3·8	+12·0	+16·0	+15·2	+16·1	+12·0	+12·8	+13·8
May	+5·4	+5·0	+3·7	+3·0	+1·6	+1·6	-2·2	-8·2	-17·1	-25·6	-28·0	-26·2	-21·8	-16·8	-9·7	-2·4	+9·8	+18·8	+24·0	+23·2	+18·1	+18·0	+13·6	+12·2
June	+3·2	+2·6	+1·2	+3·4	+3·2	-1·2	-6·4	-14·0	-18·8	-28·6	-28·0	-23·2	-16·0	-9·2	-0·8	+11·6	+14·8	+17·2	+19·2	+17·8	+14·8	+13·8	+12·2	+11·2
July	-0·5	+1·6	+0·7	+0·7	+3·7	+5·2	-3·7	-14·3	-22·5	-28·4	-38·1	-33·1	-25·9	-12·6	-3·5	+6·3	+14·3	+29·6	+33·7	+25·3	+23·3	+15·2	+12·5	+10·5
Aug.	+5·8	+5·8	+6·6	+6·4	+5·4	+0·7	-4·2	-7·8	-21·4	-26·2	-28·4	-26·0	-22·2	-15·8	-9·0	+0·6	+7·6	+13·3	+19·2	+21·0	+19·4	+17·8	+17·2	+14·2
Sept.	+8·4	+6·7	+5·2	+4·7	+3·3	+2·6	+0·5	-3·9	-10·0	-17·9	-23·0	-23·3	-19·4	-12·9	-8·4	-3·5	+1·7	+7·6	+13·7	+14·3	+12·6	+13·3	+14·8	+12·9
Oct.	+5·8	+5·2	+5·6	+6·0	+6·8	+6·7	+6·4	+3·0	-4·4	-14·2	-23·6	-26·8	-21·4	-13·2	-6·8	-1·8	+1·8	+6·5	+10·4	+10·6	+9·8	+8·0	+9·8	+9·8
Nov.	-0·6	-0·2	-1·7	-0·4	+1·8	+4·2	+4·8	+4·0	+0·1	-5·0	-9·2	-11·8	-9·8	-4·0	-0·3	+1·0	+2·0	+2·8	+2·0	+2·6	+3·5	+4·4	+5·8	+4·0
Dec.	+0·6	+0·2	+0·6	+1·6	+4·2	+5·7	+5·0	+4·4	+0·6	-5·8	-11·4	-12·2	-9·2	-3·0	+1·2	+1·4	+1·6	+1·5	+2·0	+2·8	+1·4	+2·6	+2·2	+2·0
Year	+2·9	+2·9	+2·3	+2·9	+4·1	+4·4	+2·2	-1·6	-8·2	-16·1	-21·5	-21·7	-16·9	-9·6	-4·1	+0·6	+4·7	+9·5	+12·8	+12·6	+11·0	+9·5	+9·0	+8·4
Winter	-0·1	-0·1	-0·6	+1·2	+3·6	+5·7	+5·4	+4·5	+0·7	-5·3	-10·3	-11·3	-8·7	-3·1	-0·1	-0·4	-0·3	+1·0	+2·6	+3·8	+2·9	+2·8	+3·1	+2·9
Equinox	+5·3	+4·9	+4·4	+4·1	+5·1	+5·7	+5·3	+1·8	-5·5	-15·7	-23·6	-26·5	-20·4	-12·2	-6·4	-1·9	+2·7	+7·7	+11·9	+12·3	+11·1	+9·6	+10·0	+10·3
Summer	+3·5	+3·7	+3·1	+3·4	+3·5	+1·6	-4·1	-11·1	-19·9	-27·2	-30·6	-27·1	-21·5	-13·6	-5·7	+4·0	+11·6	+19·7	+24·0	+21·8	+18·9	+16·2	+13·9	+12·0

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

DIURNAL INEQUALITIES OF THE GEOGRAPHICAL COMPONENTS OF MAGNETIC FORCE

INTERNATIONAL DISTURBED DAYS

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

32 ESKDALEMUIR 1961

NORTH COMPONENT

	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
	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.	−3·3	−0·1	−1·2	+10·3	+18·2	*+26·3*	+20·2	+11·3	+10·4	+3·4	−3·1	−11·3	−4·3	−4·7	−4·6	−12·3	*−23·4*	−13·9	−12·9	−6·3	−1·5	−1·7	+1·0	+3·6
Feb.	+2·0	+9·1	+7·1	+13·2	+12·1	+13·4	+16·9	*+23·8*	+12·9	−3·3	−19·0	−14·4	−13·9	−5·4	−0·9	−8·0	−1·4	+7·8	+9·9	+11·1	−5·7	−24·9	*−29·5*	−12·9
Mar.	−7·5	+2·6	+8·9	+22·9	+19·9	*+23·3*	+20·5	+9·5	−6·6	−26·8	*−38·1*	−30·5	−22·6	−19·6	−18·7	−11·3	−2·1	+2·5	+15·6	+8·4	+15·8	+11·7	+14·8	+7·3
Apr.	−5·4	+3·4	+21·4	+3·5	+18·9	+17·0	+3·3	+2·9	−3·9	−20·9	−39·9	*−42·0*	−29·4	−18·0	−12·5	+7·7	+13·5	*+28·3*	+15·1	+13·1	+7·3	+20·9	+3·8	−7·9
May	+16·8	+13·5	+11·1	+13·7	+11·0	−8·3	+2·3	−10·2	−16·9	−27·6	*−36·9*	−32·9	−25·4	−22·5	−15·2	+2·3	+13·8	+21·9	*+31·8*	+16·7	+11·6	+12·2	+11·0	+6·3
June	+8·7	+7·9	+8·9	−0·8	+16·7	−3·5	+5·0	−7·1	−27·8	−37·1	−34·8	−34·1	*−50·2*	−30·4	−10·1	−0·4	+22·2	+33·9	*+57·1*	+42·0	+22·4	+11·4	+1·2	−1·1
July	+4·3	+5·1	+16·6	+17·1	+11·5	+8·1	+10·1	+2·1	−75·0	*−120·2*	−93·8	−31·7	−43·4	+5·2	+43·6	+48·7	+46·2	*+70·8*	+63·4	+35·1	+14·7	−2·0	−10·9	−25·5
Aug.	+23·1	−3·9	+1·2	+4·9	+8·8	+3·3	+6·2	−6·5	−19·0	−24·0	−32·4	−35·5	*−35·5*	−29·8	−16·6	+2·6	+10·5	+24·5	+23·1	*+25·7*	+21·8	+17·3	+14·0	+16·2
Sept.	+15·9	+20·5	+5·5	+11·9	+12·6	+8·4	+1·7	+5·9	−5·1	−21·5	*−30·7*	−24·8	−27·1	−19·0	−17·0	−1·6	+3·1	+2·3	+18·1	+19·9	+4·0	*+37·2*	+2·8	−23·2
Oct.	−16·9	−57·6	*−64·1*	+20·4	+33·8	+35·3	+20·1	+20·1	+0·7	−13·2	+1·1	−12·0	−14·3	+3·8	+38·7	+14·3	+41·7	*+73·5*	+32·9	−34·0	−64·1	−52·7	−21·3	+13·7
Nov.	+19·6	+14·0	+16·4	+14·2	+16·6	+18·6	*+20·9*	+15·9	+3·9	−14·0	−16·8	−17·5	*−22·8*	−17·1	−20·8	−18·1	−10·3	−2·9	−5·4	−8·4	−4·8	−7·1	+11·6	+14·2
Dec.	+0·3	+21·6	+27·9	*+30·9*	+29·3	+24·1	+23·7	+18·5	+8·8	+2·2	−8·6	−17·0	−18·3	−16·3	−20·6	−18·5	*−25·5*	−18·5	−9·2	−7·1	−10·7	−6·9	−16·1	+6·0
Year	+4·8	+3·0	+4·9	+13·5	+17·4	+13·9	+12·6	+7·1	−9·8	−25·3	*−29·4*	−25·3	−25·6	−14·5	−4·6	+0·4	+7·3	+19·2	*+19·9*	+9·7	+0·9	+1·3	−1·4	−0·3
Winter	+4·7	+11·1	+12·6	+17·2	+19·1	*+20·6*	+20·4	+17·4	+9·0	−3·0	−11·9	−15·0	−14·8	−10·8	−11·7	−14·2	*−15·1*	−6·9	−4·2	−2·7	−5·7	−10·2	−8·3	+2·7
Equinox	−3·5	−7·8	−7·1	+14·7	+21·3	+20·9	+11·4	+9·5	−3·7	−20·6	−26·9	*−27·4*	−23·4	−13·2	−2·4	+2·2	+14·0	*+26·6*	+20·4	+1·9	−9·2	+4·3	0·0	−2·5
Summer	+13·2	+5·7	+9·4	+8·7	+12·0	−0·1	+5·9	−5·4	−34·6	*−52·3*	−49·5	−33·6	−38·7	−19·4	+0·3	+13·3	+23·2	+37·8	*+43·8*	+29·9	+17·7	+9·7	+3·9	−1·0

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.	−23·3	−13·2	−9·9	−11·5	−4·1	+0·3	+6·2	+12·0	+10·0	+11·1	+13·5	+15·7	+24·5	+27·5	*+27·5*	+19·0	+6·8	+8·5	+9·6	−20·4	−23·0	−22·5	*−33·0*	−31·5
Feb.	−15·0	−19·4	−12·2	+0·9	+5·0	+9·9	+13·6	+12·3	+11·9	+10·9	+10·4	+20·7	+34·4	+25·9	*+35·0*	+33·0	+13·1	+0·9	−2·2	−19·7	−20·1	−44·3	−50·0	*−55·2*
Mar.	−28·6	−26·6	*−35·6*	−30·4	−17·8	+5·6	+12·7	+2·8	+9·8	+6·4	+8·4	+22·1	+31·5	*+38·0*	+18·1	+16·3	+12·4	−7·4	−0·9	−1·4	−4·7	−18·5	−8·1	−4·2
Apr.	*−45·5*	−15·1	−16·1	−12·5	+0·1	−10·2	−7·8	−18·1	−22·3	−13·4	−5·7	+18·4	+31·2	+46·1	+44·5	*+46·6*	+30·5	+14·9	+11·7	−4·9	−4·9	−12·9	−22·4	−32·3
May	−11·0	−17·8	*−20·4*	−15·6	−11·9	+6·0	+19·3	−7·0	−13·5	−18·4	−9·2	+2·3	+15·8	*+24·7*	+22·1	+20·4	+16·4	+12·3	+6·9	+6·3	+1·0	−8·3	−9·7	−10·7
June	−24·5	−18·1	*−31·8*	−19·4	−15·9	−20·6	−28·3	−29·6	−24·8	−13·2	−4·2	+9·0	+23·0	+30·2	*+40·9*	+33·8	+38·7	+23·1	+8·2	+17·6	+9·9	+0·5	−1·1	−3·4
July	−12·3	−5·3	−10·3	−14·5	−13·2	−11·3	−9·8	−29·0	−57·2	*−60·8*	−25·8	+8·2	+16·1	+40·1	+47·0	*+50·6*	+37·0	+37·2	+16·8	+0·9	+8·2	+2·0	−6·5	−8·1
Aug.	−10·0	−23·7	*−23·7*	−7·3	−9·6	−11·2	−20·1	−20·7	−12·5	−7·3	−1·1	+10·1	+19·2	+30·1	+31·4	*+35·1*	+20·7	+10·8	+4·1	+9·1	−3·2	−6·0	−9·4	−4·8
Sept.	+4·1	−1·7	−9·5	−0·8	−7·3	−7·4	−0·4	−1·7	−1·7	+3·1	+10·4	+23·6	+29·2	*+35·3*	+27·0	+22·0	+19·1	+9·2	−10·2	−9·6	−23·6	−25·3	*−51·3*	−32·5
Oct.	−27·8	−16·1	−26·5	+4·6	+5·5	+18·9	+15·6	+15·5	+0·5	+3·8	+8·5	+20·7	+31·8	+36·8	*+47·5*	+41·7	+31·4	+27·7	+17·8	−55·3	−59·1	*−68·5*	−49·7	−25·4
Nov.	−3·6	−14·9	−7·3	+1·7	+3·8	+8·9	+10·4	+13·6	+5·2	+2·7	+12·0	+15·4	+21·3	+29·6	*+36·0*	+21·7	+12·8	−3·4	−6·1	−20·2	*−46·6*	−27·4	−35·8	−29·5
Dec.	−23·2	−13·8	−12·8	−2·0	+11·3	+21·8	+22·0	+15·7	+4·4	+6·9	+9·3	+17·3	+26·0	+25·7	*+38·5*	+33·5	+0·7	+6·9	−10·0	−12·3	−28·5	−47·2	*−51·4*	−38·8
Year	−18·4	−15·5	−18·0	−8·9	−4·5	+0·9	+2·8	−2·8	−7·5	−5·7	+2·2	+15·3	+25·3	+32·5	*+34·6*	+31·1	+19·9	+11·7	+3·8	−9·1	−16·2	−23·2	*−27·3*	−23·0
Winter	−16·3	−15·3	−10·5	−2·7	+4·0	+10·3	+13·0	+13·4	+7·9	+7·9	+11·3	+17·3	+26·6	+27·2	*+34·3*	+26·8	+8·3	+3·2	−2·1	−18·1	−29·5	−35·3	*−42·5*	−38·7
Equinox	−24·4	−14·9	−21·9	−9·8	−4·9	+1·7	+5·1	−0·4	−3·4	0·0	+5·4	+21·2	+30·9	*+39·1*	+34·2	+31·7	+23·3	+11·1	+4·6	−17·8	−23·1	−31·3	*−32·8*	−23·6
Summer	−14·5	−16·2	−21·6	−14·2	−12·7	−9·3	−9·7	−21·6	*−27·0*	−24·9	−10·1	+7·4	+18·5	+31·5	*+35·3*	+35·0	+28·2	+20·8	+9·0	+8·5	+4·0	−3·0	−6·7	−6·7

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.	−25·0	−22·7	*−26·2*	−25·7	−22·0	−22·1	−21·0	−17·5	−15·8	−12·7	−10·8	−7·3	−5·6	+2·3	+11·8	+24·1	+37·8	+45·5	*+53·4*	+43·9	+22·8	+13·1	−5·6	−14·7
Feb.	−33·0	*−48·9*	−34·6	−21·7	−15·1	−11·8	−10·9	−10·3	−8·2	−7·3	−6·2	−3·5	+0·6	+12·7	+15·2	+21·9	+29·1	+32·2	+43·9	*+48·3*	+47·0	+13·1	−12·0	−40·5
Mar.	−20·7	−20·0	−28·5	*−30·6*	−26·8	−24·1	−26·0	−19·2	−14·9	−9·8	−6·7	−2·8	+12·3	+18·2	+27·5	+29·4	+31·8	*+39·3*	+28·4	+19·2	+13·7	+7·8	+2·1	+0·4
Apr.	−37·6	*−40·0*	−30·7	−39·0	−39·2	−29·2	−21·0	−11·8	−5·7	−2·2	+0·2	−3·4	−1·2	+5·0	+16·5	+34·2	+47·0	*+56·6*	+47·4	+35·4	+27·1	+20·0	−2·2	−26·2
May	−6·9	−18·2	−16·4	−7·9	−5·8	−11·6	*−31·1*	−24·2	−20·2	−17·3	−13·0	−11·6	−5·9	+6·2	+18·4	+23·3	*+26·8*	+25·8	+26·1	+23·6	+20·6	+12·9	+5·6	+0·8
June	−35·8	−45·2	−45·8	*−47·2*	−40·2	−31·9	−19·6	−8·0	−6·2	−5·4	−5·8	−5·2	+2·6	+11·6	+23·2	+32·8	+36·6	+50·1	*+54·0*	+40·8	+32·0	+21·6	+4·2	−13·2
July	−58·8	*−59·5*	−56·6	−43·3	−46·3	−45·6	−42·5	−27·1	−16·6	−9·3	−13·6	−4·5	−0·6	+18·9	+43·0	+76·3	*+88·1*	+83·8	+86·5	+75·5	+29·6	−9·5	−26·0	−41·9
Aug.	−30·6	*−49·3*	−46·6	−36·8	−28·8	−21·9	−12·2	−4·8	−4·4	−8·7	−10·0	−8·4	+0·2	+10·1	+24·8	+33·2	+45·0	*+47·3*	+40·2	+34·0	+29·4	+10·9	−0·4	−12·2
Sept.	−12·3	−13·9	−8·5	−14·3	−7·7	−9·2	−8·5	−7·1	−5·7	−4·7	−5·9	−3·7	−1·7	+7·9	+15·7	+24·3	+29·1	*+32·0*	+30·7	+22·7	+23·3	+2·3	−30·9	*−53·9*
Oct.	−81·1	*−100·1*	−91·6	−60·1	−23·5	−16·9	−9·1	−4·9	+7·0	+9·9	+10·3	+17·1	+41·3	+56·3	+69·6	+62·7	*+83·3*	+55·3	+62·3	+11·1	−22·2	−14·5	−43·3	−18·9
Nov.	−21·7	−23·8	*−28·2*	−25·1	−20·8	−15·6	−14·3	−11·8	−7·4	−2·5	−3·6	+1·0	+9·7	+17·4	+25·2	*+28·5*	+28·4	+27·4	+24·1	+26·6	+11·8	−0·3	−7·6	−17·4
Dec.	−41·1	*−50·0*	−41·1	−37·1	−38·3	−34·6	−29·1	−20·3	−12·1	−6·4	−3·1	+2·9	+9·9	+32·0	+52·7	+58·3	*+80·5*	+52·8	+46·5	+26·1	+8·9	−16·2	−14·5	−26·7
Year	−33·7	*−41·0*	−37·9	−32·4	−26·2	−22·9	−20·4	−13·9	−9·2	−6·4	−5·7	−2·5	+5·1	+16·5	+28·6	+37·4	*+47·0*	+45·7	+45·3	+33·9	+20·3	+5·1	−10·9	−22·0
Winter	−30·2	*−36·3*	−32·5	−27·4	−24·1	−21·0	−18·8	−15·0	−10·9	−7·2	−5·9	−1·7	+3·7	+16·1	+26·2	+33·2	*+43·9*	+39·5	+42·0	+36·2	+22·6	+2·4	−9·9	−24·8
Equinox	−37·9	*−43·5*	−39·8	−36·0	−24·3	−19·9	−16·1	−10·7	−4·8	−1·7	−0·5	+1·8	+12·7	+21·9	+32·3	+37·7	*+47·8*	+45·8	+42·2	+22·1	+10·5	+3·9	−18·6	−24·7
Summer	−33·0	*−43·1*	−41·3	−33·8	−30·3	−27·7	−26·3	−16·0	−11·9	−10·2	−10·6	−7·4	−0·9	+11·7	+27·3	+41·4	+49·1	*+51·7*	+51·7	+43·5	+27·9	+9·0	−4·1	−16·6

"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 MAGNETIC ELEMENTS, DECLINATION, INCLINATION, AND HORIZONTAL FORCE

INTERNATIONAL DISTURBED DAYS

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

33 ESKDALEMUIR 1961

DECLINATION (measured positive towards the west)

	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
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
Jan.	-4·58	-2·65	-1·94	-2·71	-1·49	-0·90	+0·51	+2·01	+1·64	+2·11	+2·84	+3·57	+5·10	+5·71	*+5·72*	+4·29	+2·23	+2·22	+2·41	-3·87	-4·58	-4·47	*-6·68*	-6·49
Feb.	-3·09	-4·25	-2·73	-0·31	+0·57	+1·51	+2·11	+1·61	+1·93	+2·33	+2·79	+4·71	*+7·45*	+5·43	+7·09	+6·95	+2·69	-0·11	-0·81	-4·37	-3·85	-8·01	-8·99	*-10·65*
Mar.	-5·49	-5·45	*-7·51*	-6·97	-4·33	+0·28	+1·81	+0·21	+2·21	+2·27	+3·09	+5·59	+7·19	*+8·39*	+4·33	+3·71	+2·57	-1·58	-0·75	-0·59	-1·53	-4·17	-2·17	-1·11
Apr.	*-8·97*	-3·18	-4·03	-2·65	-0·67	-2·68	-1·69	-3·75	-4·35	-1·92	+0·33	+5·25	+7·37	*+9·96*	+9·43	+9·11	+5·65	+1·96	+1·79	-1·47	-1·25	-3·38	-4·65	-6·21
May	-2·83	-4·07	*-4·51*	-3·65	-2·79	+1·52	+3·79	-1·03	-2·09	-2·69	-0·49	+1·67	+4·11	*+5·79*	+5·01	+4·03	+2·79	+1·66	+0·21	+0·65	-0·23	-2·11	-2·35	-2·39
June	-5·25	-3·93	*-6·73*	-3·87	-3·81	-4·02	-5·87	-5·69	-3·97	-1·29	+0·43	+3·07	+6·47	+7·19	*+8·61*	+6·81	+6·97	+3·40	-0·45	+1·99	+1·17	-0·31	-0·27	-0·65
July	-2·64	-1·25	-2·68	-3·55	-3·08	-2·57	-2·34	-5·91	*-8·76*	-7·83	-1·76	+2·81	+4·82	+7·89	+7·86	*+8·39*	+5·76	+4·89	+1·06	-1·11	+1·12	+0·47	-0·90	-0·69
Aug.	-2·86	-4·62	*-4·82*	-1·64	-2·26	-2·37	-4·28	-3·92	-1·82	-0·58	+0·96	+3·34	+5·16	*+7·14*	+6·92	+6·96	+3·78	+1·27	-0·02	+0·90	-1·44	-1·84	-2·40	-1·56
Sept.	+0·25	-1·10	-2·11	-0·60	-1·94	-1·79	-0·14	-0·56	-0·15	+1·42	+3·21	+5·66	+6·87	*+7·80*	+6·05	+4·48	+3·72	+1·77	-2·72	-2·66	-4·89	-6·46	*-10·43*	-5·68
Oct.	-4·98	-1·13	-3·00	+0·17	-0·13	+2·52	+2·41	+2·39	+0·08	+1·25	+1·68	+4·61	+6·94	+7·29	*+8·16*	+7·89	+4·81	+2·88	+2·39	-9·91	-9·58	*-11·87*	-9·24	-5·63
Nov.	-1·45	-3·51	-2·08	-0·17	+0·15	+1·11	+1·33	+2·15	+0·90	+1·05	+3·03	+3·75	+5·13	+6·59	*+8·02*	+5·03	+2·95	-0·57	-1·03	-3·77	*-9·22*	-5·27	-7·65	-6·47
Dec.	-4·70	-3·57	-3·60	-1·54	+1·20	+3·51	+3·56	+2·48	+0·56	+1·31	+2·20	+4·12	+5·92	+5·79	*+8·52*	+7·44	+1·08	+2·07	-1·68	-2·22	-5·36	-9·27	*-9·78*	-8·04
Year	-3·88	-3·23	-3·81	-2·29	-1·55	-0·32	+0·10	-0·83	-1·15	-0·21	+1·53	+4·01	+6·04	+7·08	*+7·14*	+6·26	+3·75	+1·65	+0·03	-2·20	-3·30	-4·72	*-5·46*	-4·63
Winter	-3·45	-3·49	-2·59	-1·18	+0·11	+1·31	+1·88	+2·06	+1·26	+1·70	+2·71	+4·04	+5·90	+5·88	*+7·34*	+5·93	+2·24	+0·90	-0·28	-3·56	-5·75	-6·75	*-8·27*	-7·91
Equinox	-4·80	-2·71	-4·16	-2·51	-1·77	-0·42	+0·60	-0·43	-0·55	+0·75	+2·08	+5·28	+7·09	*+8·36*	+6·99	+6·30	+4·19	+1·26	+0·18	-3·66	-4·31	-6·47	*-6·62*	-4·66
Summer	-3·39	-3·47	-4·69	-3·18	-2·99	-1·86	-2·17	-4·14	*-4·16*	-3·10	-0·21	+2·72	+5·14	+7·00	*+7·10*	+6·55	+4·83	+2·81	+0·20	+0·61	+0·15	-0·95	-1·48	-1·32

INCLINATION

	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
Jan.	-0·12	-0·39	-0·45	-1·17	-1·69	*-2·27*	-1·92	-1·32	-1·19	-0·67	-0·23	+0·37	-0·15	+0·04	+0·26	+1·17	*+2·38*	+1·93	+2·05	+1·74	+0·93	+0·70	+0·19	-0·22
Feb.	-0·77	-1·56	-1·17	-1·41	-1·22	-1·29	-1·54	*-1·96*	-1·19	-0·09	+0·97	+0·61	+0·51	+0·35	+0·01	+0·67	+0·65	+0·27	+0·46	+0·69	+1·77	*+2·49*	+2·24	+0·51
Mar.	+0·32	-0·35	-0·85	-1·89	-1·75	*-2·19*	-2·13	-1·13	-0·05	+1·44	*+2·23*	+1·66	+1·40	+1·27	+1·68	+1·27	+0·77	+0·89	-0·31	-0·06	-0·64	-0·35	-0·82	-0·42
Apr.	-0·03	-1·02	-1·96	-1·04	*-2·20*	-1·71	-0·64	-0·26	+0·39	+1·48	*+2·69*	+2·45	+1·52	+0·75	+0·69	-0·23	-0·10	-0·64	+0·03	+0·07	+0·25	-0·72	-0·03	+0·26
May	-1·14	-1·12	-0·89	-0·91	-0·72	+0·19	-1·15	+0·15	+0·77	+1·60	*+2·20*	+1·84	+1·33	+1·33	+1·19	+0·18	-0·44	-0·94	*-1·52*	-0·58	-0·26	-0·38	-0·46	-0·27
June	-1·16	-1·42	-1·33	-0·88	-1·90	-0·31	-0·47	+0·62	+1·97	+2·46	+2·19	+2·00	*+3·07*	+1·92	+0·75	+0·43	-1·01	-1·26	*-2·50*	-1·96	-0·80	-0·22	+0·04	-0·21
July	-1·58	-1·74	-2·36	-2·01	-1·73	-1·51	-1·59	-0·46	+5·19	*+8·38*	+6·12	+1·87	+2·64	-0·35	-2·36	-1·92	-1·30	*-3·02*	-2·23	-0·45	-0·33	-0·13	+0·15	+0·73
Aug.	*-2·15*	-0·68	-0·95	-1·14	-1·17	-0·62	-0·47	+0·55	+1·28	+1·44	+1·89	+2·00	*+2·10*	+1·84	+1·33	+0·23	+0·17	-0·56	-0·57	-0·95	-0·67	-0·79	-0·82	-1·31
Sept.	-1·40	-1·67	-0·46	-1·13	-0·93	-0·69	-0·32	-0·54	+0·21	+1·26	*+1·74*	+1·25	+1·38	+1·01	+1·18	+0·44	+0·29	+0·53	-0·31	-0·63	+0·60	*-2·07*	-0·33	+0·58
Oct.	-0·55	+1·51	+2·27	-2·87	-2·86	*-2·96*	-1·73	-1·62	+0·12	+1·06	+0·08	+0·96	+1·58	+0·70	-1·40	+0·11	-1·06	-3·80	-0·84	+3·16	*+4·36*	+3·92	+0·92	-1·06
Nov.	-1·77	-1·32	-1·69	-1·57	-1·64	-1·71	*-1·84*	-1·49	-0·50	+0·83	+0·87	+0·99	+1·48	+1·19	+1·55	*+1·63*	+1·22	+0·91	+1·02	+1·45	+1·16	+0·79	-0·52	-1·01
Dec.	-0·76	-2·48	-2·69	-2·91	*-2·99*	-2·69	-2·53	-1·90	-0·92	-0·38	+0·39	+0·98	+1·14	+1·55	+2·19	+2·25	*+3·65*	+2·43	+1·86	+1·25	+1·26	+0·61	+1·31	-0·59
Year	-0·92	-1·02	-1·04	-1·58	*-1·73*	-1·48	-1·36	-0·77	+0·51	+1·57	*+1·76*	+1·41	+1·50	+0·97	+0·59	+0·52	+0·44	-0·27	-0·24	+0·31	+0·63	+0·32	+0·15	-0·25
Winter	-0·86	-1·44	-1·50	-1·77	-1·89	*-1·99*	-1·95	-1·67	-0·95	-0·08	+0·50	+0·74	+0·74	+0·78	+1·01	+1·43	*+1·97*	+1·39	+1·33	+1·28	+1·28	+1·15	+0·80	-0·32
Equinox	-0·41	-0·38	-0·25	-1·73	*-1·94*	-1·88	-1·20	-0·88	+0·17	+1·31	*+1·69*	+1·58	+1·47	+0·93	+0·54	+0·40	-0·02	-0·75	-0·35	+0·63	+1·14	+0·19	-0·07	-0·16
Summer	-1·51	-1·24	-1·38	-1·23	-1·38	-0·56	-0·92	+0·22	+2·30	*+3·47*	+3·10	+1·93	+2·29	+1·19	+0·23	-0·27	-0·65	-1·45	*-1·71*	-0·99	-0·52	-0·38	-0·27	-0·26

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.	-7·4	-2·5	-3·0	+8·1	+17·2	*+25·9*	+21·0	+13·3	+12·0	+5·3	-0·6	-8·3	+0·2	+0·3	+0·4	-8·7	*-21·8*	-12·1	-11·0	-9·9	-5·6	-5·7	-5·0	-2·1
Feb.	-0·7	+5·4	+4·8	+13·1	+12·8	+15·0	+19·1	*+25·6*	+14·8	-1·3	-16·8	-10·4	-7·5	-0·6	+5·4	-1·9	+1·0	+7·8	+9·3	+7·4	-9·2	-32·5	*-38·0*	-22·6
Mar.	-12·5	-2·2	+2·3	+17·0	+16·4	*+23·9*	+22·4	+9·8	-4·7	-25·2	*-35·9*	-26·0	-16·5	-12·4	-15·1	-8·2	+0·2	+1·1	+15·2	+8·0	+14·7	+8·2	+13·1	+6·4
Apr.	-13·5	+0·6	+18·1	+1·2	+18·6	+14·9	+1·8	-0·4	-7·9	-23·0	*-40·3*	-38·0	-23·3	-9·4	-4·3	+16·0	+18·8	*+30·5*	+17·0	+12·0	+6·3	+18·2	-0·3	-13·6
May	+14·5	+10·1	+7·2	+10·7	+8·7	-7·1	+5·7	-11·3	-19·0	-30·5	*-37·9*	-31·9	-22·1	-17·7	-11·0	+5·9	+16·5	+23·7	*+32·5*	+17·5	+11·6	+10·5	+9·1	+4·3
June	+4·2	+4·5	+3·0	-4·3	+13·6	-7·1	-0·2	-12·3	-31·8	-38·9	-35·0	-31·9	*-45·2*	-24·5	-2·6	+5·7	+28·8	+37·5	*+57·6*	+44·5	+23·8	+11·3	+1·0	-1·7
July	+2·0	+4·1	+14·5	+14·2	+8·9	+5·9	+8·2	-3·1	-84·1	*-129·2*	-96·9	-29·7	-39·8	+12·3	+51·3	+57·0	+52·1	*+76·3*	+65·4	+34·7	+15·9	-1·6	-11·9	-26·5
Aug.	+20·9	-8·1	-3·1	+3·5	+6·9	+1·2	+2·5	-10·1	-20·9	-24·9	-32·1	*-33·1*	-31·5	-23·9	-10·7	+8·9	+14·1	+26·0	+23·5	*+26·9*	+20·9	+15·9	+12·1	+15·1
Sept.	+16·4	+19·9	+3·7	+11·6	+11·1	+6·9	+1·6	+5·5	-5·3	-20·6	-28·3	-20·1	-21·4	-12·3	-11·9	+2·4	+6·5	+3·9	+16·0	+17·9	-0·3	*+32·0*	-6·5	*-28·7*
Oct.	-21·6	-59·5	-67·8	+20·9	+34·2	+38·1	+22·6	+22·5	+0·8	-12·3	+2·6	-8·1	-8·4	+10·3	+46·6	+21·5	+46·6	*+77·3*	+35·6	-43·3	*-73·6*	-64·1	-29·8	+8·9
Nov.	+18·6	+11·1	+14·8	+14·3	+17·0	+19·9	*+22·4*	+18·1	+4·8	-13·3	-14·4	-14·5	*-18·6*	-11·5	-14·0	-13·9	-7·8	-3·5	-6·4	-11·9	-13·0	-11·9	+5·0	+8·7
Dec.	-3·8	+18·8	+25·2	+30·0	*+30·8*	+27·6	+27·2	+21·0	+9·4	+3·4	-6·8	-13·6	-13·4	-11·4	-13·4	-12·2	*-25·0*	-17·0	-10·8	-9·2	-15·6	-15·2	-25·0	-1·0
Year	+1·4	+0·2	+1·6	+11·7	+16·3	+13·8	+12·9	+6·5	-11·0	-25·9	*-28·5*	-22·1	-20·6	-8·4	+1·7	+6·0	+10·8	*+21·0*	+20·3	+7·9	-2·0	-2·9	-6·3	-4·4
Winter	+1·7	+8·2	+10·5	+16·4	+19·5	+22·1	*+22·4*	+19·5	+10·3	-1·5	-9·7	-11·7	-9·8	-5·8	-5·4	-9·2	-13·4	-6·2	-4·5	-5·9	-10·9	*-16·3*	-15·7	-4·3
Equinox	-7·8	-10·3	-10·9	+12·7	+20·1	+20·9	+12·1	+9·3	-4·3	-20·3	*-25·5*	-23·1	-17·4	-5·9	+3·8	+7·9	+18·0	*+28·2*	+20·9	-1·3	-13·2	-1·4	-5·9	-6·7
Summer	+10·4	+2·7	+5·4	+6·0	+9·5	-1·8	+4·1	-9·2	-38·9	*-55·9*	-50·5	-31·7	-34·7	-13·5	+6·7	+19·4	+27·9	+40·9	*+44·7*	+30·9	+18·1	+9·0	+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.

RANGE OF MEAN DIURNAL INEQUALITIES FOR THE MONTHS, YEAR AND SEASONS OF 1961

The ranges are derived from the diurnal inequalities printed in Tables 28 to 33

34 ESKDALEMUIR 1961

	All days			Quiet days			Disturbed days			All days			Quiet days			Disturbed days		
	X	-Y	Z	X	-Y	Z	X	-Y	Z	D	I	H	D	I	H	D	I	H
	γ	γ	γ	γ	γ	γ	γ	γ	γ	′	′	γ	′	′	γ	′	′	γ
Jan.	24·6	33·2	23·1	14·4	17·0	4·3	49·7	60·5	79·6	7·17	1·81	22·5	3·56	0·98	13·8	12·40	4·65	47·7
Feb.	28·4	37·1	26·3	23·4	24·4	4·9	53·3	90·2	97·2	7·93	1·81	26·0	5·03	1·42	21·9	18·10	4·45	63·6
Mar.	35·7	38·9	25·0	27·1	36·5	17·2	61·4	73·6	69·9	8·67	2·10	32·6	7·80	1·44	27·4	15·90	4·42	59·8
Apr.	53·4	57·4	31·1	54·4	51·1	21·0	70·3	92·1	96·6	12·28	2·85	51·4	10·98	3·12	53·9	18·93	4·89	70·8
May	50·9	45·7	29·6	49·5	44·6	27·2	68·7	45·1	57·9	9·29	2·80	52·0	9·47	3·02	52·0	10·30	3·72	70·4
June	57·6	59·1	32·9	45·2	60·9	22·6	107·3	72·7	101·2	11·94	3·28	60·4	12·30	2·86	47·8	15·34	5·57	102·8
July	80·6	64·1	54·0	68·4	58·0	26·1	191·0	111·4	147·6	11·68	4·89	85·7	11·34	4·43	71·8	17·15	11·40	205·5
Aug.	51·9	54·8	30·7	48·6	57·2	22·7	61·2	58·8	96·6	11·57	2·90	52·3	12·23	2·86	49·4	11·96	4·25	60·0
Sept.	45·4	41·2	23·2	40·3	36·5	15·4	67·9	86·6	85·9	8·81	2·47	42·3	7·91	2·22	38·1	18·23	3·81	60·7
Oct.	35·4	41·9	38·9	37·3	41·3	13·2	137·6	116·0	183·4	8·82	2·26	34·2	8·56	2·26	37·4	20·03	7·32	150·9
Nov.	26·9	30·7	16·8	19·5	22·0	5·1	43·7	82·6	56·7	6·86	1·76	25·2	4·50	1·11	17·6	17·24	3·47	41·0
Dec.	25·0	40·1	29·0	18·8	18·7	5·5	56·4	89·9	130·5	8·34	1·73	22·9	3·78	1·22	17·9	18·30	6·64	55·8
Year	36·8	38·7	36·0	34·8	37·3	14·1	49·3	61·9	88·0	8·11	1·98	26·8	7·82	2·04	34·5	12·60	3·49	49·5
Winter	25·4	34·8	23·7	18·0	19·9	3·7	35·7	76·8	80·2	7·46	1·70	22·2	4·05	1·13	17·0	15·61	3·96	38·7
Equinox	38·9	43·1	37·1	38·9	39·4	15·8	54·0	71·9	91·3	9·20	2·23	26·3	8·72	2·24	38·8	14·98	3·63	53·7
Summer	59·4	54·6	61·9	52·1	53·5	23·4	96·1	62·3	94·8	10·87	3·38	33·7	11·10	3·21	54·6	11·79	5·18	100·6

NON-CYCLIC CHANGE

35 ESKDALEMUIR 1961

	All days			Quiet days			Disturbed days		
	H	D	Z	H	D	Z	H	D	Z
	γ	′	γ	γ	′	γ	γ	′	γ
Jan.	+0·8	-0·03	-0·6	+3·6	-0·05	-1·2	-4·7	-0·27	+1·9
Feb.	0·0	-0·06	+0·3	+2·9	+0·20	-0·9	-23·4	-5·19	-17·5
Mar.	+1·0	+0·05	-0·4	+5·5	+0·21	-0·1	+14·7	+4·08	+11·3
Apr.	-0·5	-0·13	0·0	+8·6	+0·29	+2·7	-5·4	+1·12	-0·2
May	+0·1	-0·05	-0·4	+6·5	-0·73	-3·9	-12·4	+0·42	+1·6
June	-0·1	+0·13	+0·5	+8·9	+0·07	-1·3	-7·2	+2·55	+3·6
July	0·0	-0·02	+0·2	+7·7	+0·24	-2·8	-35·7	+1·28	+5·5
Aug.	+0·1	+0·01	-1·1	+5·5	+0·27	-2·0	-12·2	+1·36	+6·9
Sept.	-6·7	-0·54	-7·4	+4·2	-0·17	-2·1	-50·7	-4·50	-56·8
Oct.	+5·9	+0·41	+8·6	+2·6	-0·06	-1·6	+26·8	+3·01	+59·1
Nov.	+0·7	+0·03	-0·4	+3·3	-0·17	-0·6	-9·8	-1·49	-5·3
Dec.	-0·2	-0·06	+0·1	+2·1	+0·14	-1·2	-4·4	-0·28	-1·6
Year	+0·1	-0·02	-0·1	+5·1	+0·02	-1·3	-10·4	+0·17	+0·7
Winter	+0·3	-0·03	-0·1	+3·0	+0·03	-1·0	-10·6	-1·81	-5·6
Equinox	-0·1	-0·05	+0·2	+5·2	+0·07	-0·3	-3·7	+0·93	+3·3
Summer	0·0	+0·02	-0·2	+7·1	-0·04	-2·5	-16·9	+1·40	+4·4

AVERAGE RANGE OF DIURNAL INEQUALITY 1932-53 WITH 1961 AS PERCENTAGE OF THIS

36 ESKDALEMUIR 1961

		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
	1961(%)	95	94	93	100	93	103	92	106	107
Winter	1932-53	19·3	6·95	21·2	16·2	4·44	5·9	34·4	11·45	66·5
	1961(%)	123	107	105	105	91	63	113	136	121
Equinox	1932-53	43·1	10·18	37·1	39·7	9·69	14·8	75·4	15·11	108·9
	1961(%)	86	90	71	98	90	107	71	99	84
Summer	1932-53	59·7	11·84	33·9	50·4	11·76	21·9	83·7	13·11	82·4
	1961(%)	104	92	99	108	94	107	120	90	115

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

HARMONIC COMPONENTS OF THE DIURNAL INEQUALITY OF MAGNETIC FORCE

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

Longitude of Eskdalemuir Observatory, 3°12′W.

37 ESKDALEMUIR 1961

	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.	+5·3	+5·3	-4·5	-1·9	+0·8	-2·5	+0·4	-0·1	-11·4	-1·0	-0·2	+4·1	-1·2	-1·0	+0·4	+1·8	-0·6	-10·3	-2·7	-0·7	-0·1	+1·2	-0·6	-0·3
Feb.	+6·3	+3·2	-7·3	-0·5	+2·4	-1·4	+0·2	+3·0	-13·2	-3·8	-0·1	+6·7	-1·9	-2·5	+0·7	+2·1	-1·9	-10·8	-4·7	-1·6	-0·7	+0·2	-1·8	-0·4
Mar.	+12·1	+1·3	-9·0	-0·6	+2·2	-1·8	-0·7	+1·1	-10·9	-9·3	+1·4	+5·7	-2·1	-4·8	+1·7	+2·5	+1·2	-10·1	-4·4	-1·1	+2·4	-0·1	-1·0	-0·5
Apr.	+17·9	-3·0	-13·4	-0·6	+4·1	-0·9	-0·9	+1·7	-10·6	-15·6	+1·2	+12·9	-3·1	-5·1	+1·2	+1·7	+1·1	-11·2	-7·9	-3·5	+2·3	+1·0	-1·0	-0·7
May	+16·5	-9·3	-9·6	+1·4	+1·7	-0·4	+1·6	-0·1	-6·9	-18·0	+1·6	+7·1	-1·8	-3·3	+1·3	+0·2	+3·7	-10·4	-6·8	-2·3	+0·8	-0·6	-0·5	-0·7
June	+16·7	-11·4	-12·7	+0·6	+0·6	+1·0	+1·4	-0·5	-5·7	-22·1	+3·7	+9·8	-2·3	-2·6	+0·2	-0·3	+2·1	-11·3	-7·9	-3·3	+1·0	+0·4	-0·7	+0·1
July	+17·5	-18·8	-16·7	+6·3	-0·3	-1·8	+1·2	+1·9	-5·3	-23·5	+1·6	+11·9	-2·0	-4·1	+1·0	+0·9	-5·8	-20·2	-10·5	-4·2	+2·1	+1·3	-0·9	-0·3
Aug.	+19·5	-7·5	-10·4	+1·9	+2·3	-1·8	+1·1	+0·1	-8·2	-17·3	+6·2	+9·3	-3·2	-3·5	+0·1	0·0	+1·3	-10·1	-8·5	-1·7	+2·4	-0·4	-1·1	-0·2
Sept.	+17·1	-5·3	-8·7	-0·1	+1·6	-2·3	-0·4	+1·1	-11·1	-11·0	+5·9	+6·5	-2·8	-2·1	+2·5	+1·8	+0·5	-10·7	-6·7	-1·4	+0·6	-0·4	-1·4	0·0
Oct.	+7·9	+3·0	-10·2	+2·4	+4·4	-1·3	+2·7	-1·7	-12·1	-5·9	0·0	+10·4	-0·7	-3·7	+3·3	+2·0	-7·7	-7·5	-5·7	+0·1	+2·8	-0·3	+0·1	-1·0
Nov.	+8·1	+3·4	-5·1	-0·7	+3·2	-2·0	+0·9	+0·2	-9·5	-1·8	-0·9	+6·7	-1·1	-2·5	+0·8	+1·3	-2·3	-7·4	-2·2	-1·2	+0·4	-0·1	-0·9	-0·2
Dec.	+5·6	+6·3	-4·4	-0·2	+2·1	-1·6	-1·1	+0·3	-10·6	-0·1	-2·6	+8·3	-1·5	-0·7	+0·8	+2·5	-4·1	-11·6	-3·5	-0·2	+0·8	+0·4	-0·6	-0·6
Year	+12·6	-2·8	-9·4	+0·7	+2·1	-1·4	+0·5	+0·7	-9·7	-10·8	+1·5	+8·3	-2·0	-3·0	+1·2	+1·4	-1·1	-10·9	-5·9	-1·7	+1·2	+0·2	-0·9	-0·4
Winter	+6·3	+4·6	-5·3	-0·8	+2·1	-1·9	+0·1	+0·9	-11·2	-1·7	-0·9	+6·5	-1·4	-1·7	+0·7	+1·9	-2·3	-10·0	-3·3	-0·9	+0·1	+0·4	-1·0	-0·4
Equinox	+13·8	-1·0	-10·3	+0·3	+3·1	-1·6	+0·2	+0·6	-11·2	-10·5	+2·1	+8·9	-2·2	-3·9	+2·2	+2·0	-1·2	-9·9	-6·2	-1·5	+2·0	+0·1	-0·8	-0·5
Summer	+17·5	-11·7	-12·5	+2·7	+1·1	-0·7	+1·3	+0·6	-6·6	-20·3	+3·3	+9·5	-2·3	-3·4	+0·7	+0·2	+0·3	-12·9	-8·4	-2·9	+1·6	+0·1	-0·8	-0·2
												QUIET DAYS												
Year	+12·1	-1·5	-7·8	+0·2	+1·8	-1·1	+0·1	+1·1	-3·9	-11·6	+2·6	+7·3	-2·3	-2·7	+1·1	+1·3	+3·9	-1·8	-3·3	-1·0	+1·4	+0·2	-0·9	-0·2
Winter	+4·7	+1·6	-4·1	-0·5	+1·8	-1·9	-0·5	+1·0	-3·3	-4·0	-0·1	+4·5	-1·7	-1·4	+1·2	+1·5	+0·4	-1·7	-0·4	-0·5	+0·4	+0·2	-0·6	-0·4
Equinox	+14·1	+0·4	-8·4	-0·5	+3·1	-0·9	-0·3	+1·8	-4·1	-11·9	+2·0	+7·2	-3·0	-4·0	+1·4	+1·9	+4·7	-1·1	-3·7	-0·7	+2·2	+0·1	-1·1	-0·4
Summer	+17·5	-6·8	-10·9	+1·4	+0·5	-0·4	+1·1	+0·5	-4·4	-18·9	+6·1	+9·9	-2·1	-2·6	+0·4	+0·7	+6·6	-2·5	-5·7	-1·7	+1·5	+0·2	-0·9	+0·2
												DISTURBED DAYS												
Year	+12·1	-4·8	-14·7	+3·9	+1·7	-2·3	+2·9	+0·3	-21·0	-7·2	-2·6	+11·9	-0·1	-4·0	+2·4	+1·6	-16·2	-32·7	-13·7	-1·6	+0·4	+0·5	-0·8	-0·9
Winter	+7·5	+10·9	-7·0	+0·2	+0·7	-1·4	+1·0	+2·8	-26·1	+1·5	-4·6	+10·5	+0·3	-2·4	+1·1	+2·9	-14·2	-32·5	-12·9	-2·0	-1·3	+0·2	-1·3	-0·4
Equinox	+7·9	-2·6	-17·4	+4·4	+3·3	-3·5	+3·3	-3·5	-25·9	-3·7	-2·0	+13·6	+0·7	-2·8	+3·8	+1·7	-21·6	-28·9	-12·9	-0·1	+1·3	0·0	+0·1	-1·3
Summer	+21·0	-22·7	-19·9	+7·0	+1·3	-2·1	+4·2	+1·8	-11·0	-19·5	-1·0	+11·5	-1·4	-6·9	+2·4	+0·1	-12·9	-36·7	-15·1	-2·8	+1·2	+1·2	-1·3	-0·9

HARMONIC COMPONENTS OF THE DIURNAL INEQUALITY OF MAGNETIC FORCE

Values of c_n, α_n in the series $\Sigma c_n \sin(15nt + \alpha_n)$, t being mean local time, reckoned in hours from midnight

37 ESKDALEMUIR 1961

	North component								West component								Vertical component							
	c_1	α_1	c_2	α_2	c_3	α_3	c_4	α_4	c_1	α_1	c_2	α_2	c_3	α_3	c_4	α_4	c_1	α_1	c_2	α_2	c_3	α_3	c_4	α_4
	γ	°	γ	°	γ	°	γ	°	γ	°	γ	°	γ	°	γ	°	γ	°	γ	°	γ	°	γ	°
												ALL DAYS												
Jan.	7·5	48	4·8	254	2·7	172	0·4	111	11·4	268	4·1	3	1·6	240	1·9	25	10·3	187	2·8	262	1·2	3	0·7	254
Feb.	7·1	67	7·3	272	2·8	130	3·0	17	13·8	257	6·7	5	3·2	227	2·2	31	11·0	193	5·0	258	0·7	294	1·9	271
Mar.	12·2	87	9·1	273	2·8	139	1·3	339	14·3	233	5·9	20	5·2	213	3·1	48	10·2	176	4·6	263	2·4	102	1·1	257
Apr.	18·1	103	13·4	274	4·3	113	1·9	347	18·9	217	13·0	11	6·0	221	2·1	49	11·2	177	8·6	253	2·5	77	1·2	250
May	18·9	123	9·7	285	1·7	112	1·6	105	19·2	204	7·3	19	3·7	218	1·3	93	11·0	164	7·1	257	1·1	137	0·9	229
June	20·3	127	12·7	279	1·2	43	1·5	120	22·9	198	10·5	27	3·5	231	0·4	162	11·5	173	8·6	253	1·1	77	0·7	292
July	25·6	140	17·8	297	1·8	199	2·3	44	24·1	196	11·9	14	4·6	215	1·3	59	21·0	199	11·3	255	2·5	69	0·9	265
Aug.	20·9	114	10·6	287	3·0	137	1·1	98	19·2	209	11·2	40	4·7	232	0·1	84	10·1	176	8·7	265	2·4	110	1·1	273
Sept.	17·9	110	8·7	276	2·8	154	1·2	351	15·6	229	8·8	49	3·5	243	3·1	66	10·8	180	6·8	265	0·7	133	1·4	281
Oct.	8·4	72	10·5	289	4·6	116	3·2	135	13·4	247	10·4	7	3·7	201	3·9	71	10·8	229	5·7	277	2·8	105	1·0	189
Nov.	8·8	70	5·2	268	3·8	132	0·9	92	9·6	262	6·7	359	2·7	213	1·6	45	7·7	201	2·5	249	0·4	114	1·0	270
Dec.	8·5	45	4·4	273	2·7	137	1·2	299	10·6	273	8·8	349	1·6	254	2·6	30	12·3	203	3·5	273	0·9	76	0·9	236
Year	12·9	106	9·4	281	2·5	134	0·9	51	14·5	225	8·5	17	3·6	223	1·8	53	11·0	189	6·2	260	1·3	90	0·9	260
Winter	7·8	57	5·4	267	2·9	141	0·9	18	11·3	265	6·5	358	2·2	230	2·1	32	10·2	196	3·4	261	0·5	21	1·1	262
Equinox	13·8	97	10·3	278	3·4	127	0·6	31	15·3	230	9·1	20	4·5	219	2·9	60	10·0	190	6·3	263	2·0	98	1·0	249
Summer	21·1	127	12·8	289	1·3	135	1·5	79	21·3	201	10·1	26	4·1	224	0·7	86	12·9	182	8·9	257	1·6	94	0·8	267
												QUIET DAYS												
Year	12·2	101	7·8	278	2·1	130	1·1	17	12·2	202	7·7	26	3·5	229	1·7	53	4·3	118	3·4	259	1·4	92	0·9	272
Winter	4·9	74	4·1	269	2·6	147	1·1	347	5·2	223	4·5	5	2·1	240	1·9	52	1·7	171	0·7	220	0·5	72	0·7	252
Equinox	14·1	92	8·4	273	3·2	117	1·8	2	12·6	202	7·5	22	5·0	227	2·3	49	4·8	106	3·8	265	2·2	97	1·2	262
Summer	18·8	115	11·0	284	0·6	141	1·2	76	19·4	196	11·7	38	3·3	229	0·8	45	7·1	114	5·9	260	1·5	91	0·9	299
												DISTURBED DAYS												
Year	13·1	115	15·2	291	2·9	153	2·9	96	22·2	254	12·1	354	4·0	191	2·9	70	36·5	210	13·8	270	0·6	52	1·2	237
Winter	13·3	38	7·0	278	1·6	163	3·0	33	26·1	277	11·5	343	2·4	183	3·1	33	35·5	207	13·1	268	1·3	288	1·4	268
Equinox	8·3	111	17·9	291	4·8	146	4·9	149	26·1	255	13·8	358	2·9	175	4·2	79	36·1	220	12·9	276	1·3	100	1·3	187
Summer	30·9	141	21·1	296	2·5	159	4·5	79	22·4	213	11·6	1	7·0	201	2·4	99	38·9	203	15·3	266	1·7	55	1·6	247

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

38 ESKDALEMUIR 1961

(a) Disturbances without sudden commencement

Serial Number	From		To		Range (γ)			Notes
	Date	Hour	Date	Hour	*H*	*D*	*Z*	
1a	Jan. 19	14	Jan. 20	23	161	219	172	
2a	Feb. 17	20	Feb. 19	04	232	222	301	
3a	Mar. 5	17	Mar. 6	19	238	217	172	
4a	June 20	16	June 23	05	272	191	311	
5a	July 3	24	July 7	21	189	170	225	
6a	Nov. 6	23	Nov. 8	16	199	226	170	
7a	Dec. 1	03	Dec. 5	02	272	361	421	

(b) Disturbances with a sudden commencement (ssc)

Serial Number	Date	Time of sudden commencement	End of disturbance Date	Hour	With initial reversed stroke *H*	*D*	*Z*	Magnitude of main stroke (γ) *H*	*D*	*Z*	Range of following disturbance (γ) *H*	*D*	*Z*
		h. m.											
1b	Feb.	3 09 07·5	-	-	No	No	No	+15	-9	-1		Small	
2b	Feb.	4 13 31·8	Feb. 5	14	Yes	Yes	Yes	+39	-29	-1	538	290	470
3b	Mar.	9 13 27·3	-	-	Yes	Yes	Yes	+45	-38	-3		Small	
4b	Mar.	27 15 03·5	-	-	Yes	Yes	No	+73	-55	-2		Small	
5b	Apr.	13 14 51·2	Apr. 16	24	Yes	Yes	No	+62	-30	-3	630	331	455
6b	July	13 11 13·2	See 7b		No	Yes	No	-130	+67	+4	694	311	432
7b	July	17 18 25·9	July 19	20	No	No	No	+74	-27	-6	460	204	324
8b	July	20 02 49·1	-	-	No	No	No	+8	-10	-2		Small	
9b	July	26 19 51·1	July 30	24	Yes	No	No	+150	-22	-9	609	263	229
10b	Sept.	30 18 48·3	See 11b		Yes	Yes	No	+39	+5	-4		Small	
11b	Sept.	30 21 09·5	Oct. 1	24	No	No	No	+192	+40	-36	1272	339	737
12b	Oct.	26 19 41·1	-	-	Yes	No	No	+66	-12	-9		Small	
13b	Oct.	28 08 10·1	Oct. 29	24	Yes	Yes	Yes	-67	+48	+6	1145	743	736
14b	Dec.	5 13 59·8	-	-	No	Yes	No	+22	-21	-2		Small	

Note:- In the case of an ssc* i.e. an ssc preceded on at least one component by one or more oscillations, timing of the sudden commencement has been made from the main stroke.

(c) Disturbances due to solar flare (sfe)

Serial Number	Date	Commencement	Max.	End	Movement (γ) *H*	*D*	*Z*	*K*	*K'*	Notes
		h. m.	h. m.	h. m.						
1c	July 12	10 22	10 36	11 35	-39	+9	+6	3	2	Large S.E.A. complete S.W.F.
2c	Nov. 3	08 03	08 06	08 10	-28	+18*	+4	3	1	I.A.G.A. Bulletin indicate confirmation by ionospheric or solar observations.

*After initial movement of -7γ
S.E.A. = Sudden enhancement of atmospherics
S.W.F. = Short wave fade out.

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

39 ESKDALEMUIR — Factor 8·55 (metre^{-1}) — JANUARY 1961

	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	95	95*	Z*	Z*	Z*	Z*	Z*	125	Z*	100*	110	Z*	90*	135	Z*	190	Z*	Z*	Z*	Z*	Z*	Z*	-165*	-120*	131 (5)
2	-55*	70*	35*	Z*	Z*	-310*	-45*	Z*	-30*	30	15	70	85	105	105	140	155	105	110	170	185	215	250	160	127 (15)
3	110	125	290*	-40*	Z*	Z*	170*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	85	115	Z*	Z*	Z*	Z*	Z*	Z*	Z*	(109) (4)
4	Z*	Z*	Z*	Z*	80	105	120	115	140	160	165*	145	175	165	145	130	170	215	275	275	200	320	285	280	184 (19)
5	240	180	170	220	165	115	100*	Z*	Z*	210*	10*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	10*	35*	60*	182 (6)
6	65*	130	-115	35	75	Z*	Z*	Z*	Z*	Z*	-5*	120*	175	190	180	175	170	155	155	180	225	255	170	200	147 (16)
7	155	140	105	80	75	75	80	80	90	95	165	170	170	170	185	185*	115*	140*	Z*	Z*	Z*	Z*	Z*	-50*	122 (15)
8	225	315	265*	235	150	Z*	110	Z*	15*	90	Z*	Z*	Z*	70	120*	Z*	Z*	105*	210	165	140	235	265	180	184 (13)
9	105	155	100	105	65	90	105	85	-*	-*	-*	-*	-*	-*	-*	-	-	-	-	-	-	-	-*	-*	101 (8)
10	-*	-	-	-	-	-*	-	-	-	120	95	115	Z*	130*	120*	275	430	555	610	540	385	280	230	240	323 (12)
11	250	170	140	145	160	165	130	100	160	180	185	225	215	270	285	290	285	250	250	Z*	Z*	Z*	Z*	Z*	203 (19)
12	Z*	Z*	0*	90*	115*	100*	Z*	Z*	-*	-*	-*	-*	-*	160*	-10*	-5	90*	55*	115*	65*	65*	70*	120	95	70 (3)
13	160	110	65	60	60	55	60	70	95	120	170	310	Z*	115*	155	155	195	180	235	180	140	130	125	110	134 (22)
14	100	100	95	90	85	85	90	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91 (8)
15	-	-	-	-	-	-	-	-	170	150	130	160	325	345	350	340	160	140	195	295	310	330	250	325	248 (16)
16	425	470	400	360	185	215	230	315	230	235	140	185	215	245	185	135	110	105	150	170	165	170	170	150	223 (24)
17	155	130	135	170	130	120	95	105	110	115	120	155	185	170	220	215	230	195	190	235	195	200	200	190	165 (24)
18	140	155	150	95	85	90	70	95	95	100	40	45*	100*	105	95	55	40	50	65	30	95	65	55	55	83 (22)
19	-245*	10*	120	Z*	Z*	Z*	-170*	Z*	25*	80*	220	140	130	140	165	130	125	90*	95*	110	120	95	85	70	127 (13)
20	70	80	95	150	250	150	160	160	190	240	225	335	365	205	225	230	315	275	255	Z	640	365	245	585	253 (23)
21	235	220	100	60	40	185	120	225	225	270	255	225	220	215	230	205	105	160	125	95	200	280	150	215	182 (24)
22	190	150	230	85	80	85	85	55	50	65	50*	100*	85	105	70	100	145	115	115	155	170	110	70	85	109 (22)
23	95	80	95	155	115	105	110	95	65*	25*	85	105	90	170	115	135	170	205	200	145	135*	35*	15*	75	123 (19)
24	80	120	135	105	95*	95	25*	80*	105	100*	80*	100*	175	145*	160*	160	155	165	190	160	125	105	75	65	126 (16)
25	-	-	-	-	-	-	-*	-*	-*	-*	50*	105*	120	145	160	95	170	185	135	95	105	65*	65	60	121 (11)
26	65	50	70	60	65	65	65	55	80	75	90	130	135	160	170	170	130*	115	105	65*	10*	80*	-340*	150*	96 (18)
27	-90*	-230*	-280*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	Z*	80*	40*	Z*	105*	130	150	120*	135	245	210	185	175	176 (7)
28	175	95	105	100	130	180	115	125	130	115	90	90	75	170	230	245	220*	165*	185*	260	210*	370*	Z*	90	140 (18)
29	70	40	55	65	60*	Z*	Z*	Z*	-15*	Z*	Z*	Z*	Z*	Z*	Z*	85*	-5*	Z*	Z*	Z*	Z*	105	80	80	71 (7)
30	65	-10*	Z*	-10*	30*	-40*	-65*	55*	65	70	80	130	150	180*	120	125*	160*	270	Z*	Z*	Z*	Z*	165	165	128 (10)
31	225	190	215	225	190	185	165	140	115	100	160	180	160	220	185	175	350*	Z*	Z*	Z*	Z*	185*	555*	350	187 (17)
Mean	156 (22)	153 (21)	123 (20)	130 (20)	115 (19)	120 (18)	112 (17)	119 (17)	128 (16)	129 (18)	132 (18)	169 (17)	171 (19)	175 (20)	179 (20)	166 (23)	178 (19)	189 (19)	198 (18)	189 (18)	214 (17)	204 (17)	162 (20)	174 (23)	158 (456)
																								Mean for 0a days	[194 (2)]

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

39 ESKDALEMUIR — Factor 8·21 from 1st-16th, 6·98 from 17th-28th (metre^{-1}) — FEBRUARY 1961

	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	150	160	180*	110	105	110	115	110	115*	180*	225	170	145	130*	145*	155	145*	375*	175	225	80	15	85	145	134 (17)
2	125	60	130	145	240*	230*	155*	195	-	-	-	-	-	-	-	320	220	215	160	170	250	225	320	425	211 (14)
3	495	325	200	200	175	190	205	240	375	375	320*	425*	320	245	190	210	180	125	190	300	400	395*	340*	Z-*	260 (19)
4	Z±	Z-*	Z-*	Z±	330*	205	185*	Z-*	130*	110*	110	Z-*	-330	335	440	350	405	465	440	500	495	370	300	220	307 (14)
5	155	250	265	135*	120*	-230*	Z+*	Z-*	-135*	-65*	15*	215*	250*	165	70*	80	90	105*	230*	215*	220*	230*	315*	290*	167 (6)
6	240*	95*	Z-*	5*	Z-*	Z-*	-140*	-15*	Z±	150*	285*	210*	150	140	95*	Z±	Z-*	-40*	45*	140	125*	Z-*	Z-*	60*	143 (3)
7	50*	65*	85	105	95	75	80	75	65	100	60	180	205	165	190	185	170	175	335	300	280	290	310	190*	168 (21)
8	155	145*	-60*	95*	140*	250*	205*	270*	-185*	Z-*	-125*	15*	Z-*	125*	Z-*	Z-*	Z-*	110*	Z-*	Z-*	135*	-25*	Z-*	15*	155 (1)
9	110*	Z±	Z±	40	Z-*	-15*	65	105	105*	Z+*	120	150	90	145	150*	175	175	165	215	335	395	225	230	210	177 (16)
10	150	50*	-10*	95*	100*	60*	-5*	-25*	-5*	130	130	175	190	175	165	200	215	400	355	460	335	300*	155*	20*	237 (13)
11	-25*	75*	130	110	85	115	115	140	75*	Z+*	Z±	Z-*	50*	Z-*	Z-*	Z+*	115*	120	80*	Z-*	85*	60*	65*	Z-*	116 (7)
12	-190*	90*	95	-100*	70	130	150	Z-*	Z-*	-10*	120*	Z-*	Z-*	Z-*	Z-*	5*	25*	55*	175*	160	125	50	30	30	93 (9)
13	-60	-45	-30*	35*	40*	80*	75*	125*	125*	205*	185*	125	155	135	85	115	170	160	115*	-10*	30	-15	-25*	-20*	78 (11)
14	10*	25*	15*	40*	10	35	150	45	35*	125*	-100*	-30*	160	145	155	130*	175*	175*	115*	230*	210*	Z-*	Z-*	160*	100 (7)
15	150*	170*	125*	115*	35	105	95*	205*	270*	245*	235*	240*	210	180	215	180	190	255	165	515	215	245*	75*	15*	206 (11)
16	25	35	-15	25	95	290*	245*	250*	215*	130*	195*	175	160	90	-	-	-	-	-	-	-	-	-	-	74 (8)
17	-	-	-	-	-	-	-	-	-	-	155	160	125	125	155	180*	160*	75*	75	110*	110*	85*	85*	65	123 (7)
18	30	105*	90*	50*	100*	170	225	-45	Z-*	100*	Z-*	80	85*	100*	105*	Z-*	145	155	120	125	100	125	115	235	122 (13)
19	225	145	145	130	200	305*	275*	185*	195	165	160	155	130	170	150	85	175	165	100	90	105	105	60	80	140 (21)
20	85	60	75	80	60	-*	-*	-*	105	130*	155	180	145	125	100	205	150*	105*	100	105	115	60	105	70	107 (18)
21	40	75	155	35	30	25	50	55	40	25	45	65	75	125	125	125	130	65	105	30	25	25	25	25	63 (24)
22	30	30	35	15	25	40	90	105	145	120	110	175	160	190	180	170	105	80	55	30	25	50	70	105	89 (24)
23	80	85	40	25	35	55	85	95	110	200	175	280	305	220	265	215	150	185	160	145	150	145	140	125	145 (24)
24	80	80	65	75	100	100	140	115	140	185	190	35	Z-*	Z-*	Z-*	Z-*	-175*	40*	20*	15*	15*	10*	275	205	127 (14)
25	235	265	240	260	160	35	40	40	65	75*	-270*	0*	-5*	-70*	0*	-60*	Z-*	Z-*	45*	75*	45*	Z±	Z-*	Z±	149 (9)
26	Z±	Z-*	25*	25*	110	130	135	150	-	-	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	40*	50	70	107 (6)
27	60	60	75	75	85	90	75	80	90	80	60*	80*	85*	75*	65*	95*	90*	140	285*	Z±	100*	120	135	60*	90 (13)
28	65*	80*	Z-*	40*	50	50	35	45*	25*	-*	-*	-*	-*	-*	-*	-	-*	-	-	-	-	-	-	-	45 (3)
Mean	121 (17)	113 (14)	115 (15)	95 (15)	85 (18)	98 (17)	110 (16)	100 (15)	133 (10)	153 (9)	136 (12)	150 (14)	141 (17)	169 (17)	186 (13)	185 (15)	180 (14)	191 (15)	183 (15)	227 (16)	195 (16)	128 (14)	150 (15)	144 (14)	145 (353)
																								Mean for 0a days	[120 (4)]

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

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

39 ESKDALEMUIR — Factor 7·17 (metre^{-1}) — MARCH 1961

	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	–	–	–	–	–	–*	–*	–*	–*	125*	200	195	195	140	145	175	120	160	115	110	100	15	65	85	130	(14)
2	100*	130*	120*	85*	Z–*	Z–*	Z–*	Z–*	Z–*	–30*	25	25	55	135	160	120	135	105	50	25	25	25	30	35	68	(14)
3	40	70	110	50	40	65	65	100*	100	90	75	70*	95	105*	130*	105*	145*	195*	35	-30	-25	20	-15	-5	46	(17)
4	0	-40	35*	55*	–*	–*	–*	–*	95*	140*	85	95	50	195	120	130	35	125*	95*	–*	–*	–*	–*	–	74	(9)
5	–	–	–	–	–	–	–	–	175	155	110	150	155	160	230	265	280	205	135	25	20	20	15	15	132	(16)
6	15	15	15	20	65	120	125	40	155	160	170	140	125	135	210	165	115	65	30	10	20	25	20	15*	85	(23)
7	10*	30	15	15	20	10	45	30	60*	255*	190*	305	355	275	345	255	225	245	235	340	270	145	275	305	187	(20)
8	360	205	240	220	130*	70*	60	80	120*	150	110	135*	125*	95*	95*	135*	145*	150	175	170	180	135	275*	150*	172	(13)
9	175*	125*	180*	200*	195*	90*	165*	90*	165*	110*	90*	130	115	195	180	130	200	190	210	185	125	20	15	35	133	(13)
10	85	175	210	120	–5	-45*	95*	65*	40*	80	–	–	–	–	–*	–*	–*	–	–	–	–	–	–	–	111	(6)
11	–	–	–	–	–	–	–	–	–	–	120	125	95*	Z–*	Z–*	Z–*	30*	15*	25	15	25	5	-40	-100*	39	(7)
12	-85*	-60*	-15*	-5*	-25*	-65*	-80*	30*	30*	-5*	20*	15*	25*	20*	15*	25*	35*	25*	20*	10*	25*	25*	15*	25*	–	(0)
13	40*	25*	25*	25	30	35	55*	25*	25	35*	70*	40	65	60	90	70	95	90	95	90	50*	50*	90*	65	63	(14)
14	30	25*	15	10	35	40	30	25	50	65	65*	60*	65*	80	50	15	5	5	15	-25	40	245	130	110	49	(20)
15	150	170	100	35	10	65	90*	70*	30*	-10*	-40*	10*	5	15	10	35	55	75	85	70	-40	-145	-65	-135	27	(18)
16	-15	-35	-45	25	50	35	40	80	30	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	18	(9)
17	–	–	–	–	–	–	–	–	45	90	-35	-120	-70*	Z–*	-15*	55	60	Z–*	50*	45*	45	35	40	70	29	(10)
18	65	80	50	40	–	–	–	–	–	45	125	190	165	120	95	120*	Z–*	20*	Z+*	155	175	155	180	130	118	(15)
19	130	80	90	105	115	105	100*	140*	175	185	130	155	155	105	105	100	110	105	55	90	140	170	160	215*	122	(21)
20	415*	-25*	10*	30*	35*	40	40	50	45	65	55	60	65	65	105	40	120	120	115	120	135	105	90	95	81	(19)
21	100	90	100	105	100	–	–	–	75	105	80	90	95	105	90	90	125	130	120	195	170	155	145	85	112	(21)
22	75*	50*	40*	35	55	40	50	65	40	35	55	75	65	80	90	100	110	140	165	175	130	65	45	40	79	(21)
23	40	50	35	40	50	55	40	35	40	35	50	45	70	85	95*	100*	70*	5*	10*	Z–*	Z–*	50*	60	65	50	(16)
24	–5	40*	-20*	Z–*	–	–*	–	–	40	85	110	85	110	105	120	125	130	125	125	120	140	75	40	50	93	(17)
25	45	35	45	25	25	20	20	35	30	40	65	90	90	80	95	70	50	60	50*	55*	50	70	50	25	51	(22)
26	5*	15*	–*	–*	–*	–*	–*	–*	10*	45	40*	80*	100	115	120	85*	130	105	110	65	70	45	–	–	91	(10)
27	–	–	–	–	–	–	20	50	65	100	130	140	130	125	135	115	95	80	120	110*	125	110	135	110	105	(17)
28	65	45	–	–	–	–	–	–	–	–	–*	–*	–	–	–	–*	–*	–*	–*	–*	–	–	–*	–*	55	(2)
29	–	–*	–*	–*	–*	–*	–*	–*	15*	25*	140*	125*	105*	110*	120*	110*	10*	Z–*	130	160	110	50	45	15*	99	(5)
30	Z–*	Z–*	Z–*	Z–*	Z–*	Z±*	Z±*	Z+*	115*	360*	25*	75	140	120	90	90	105	105	90	40	195	310	285	115	135	(13)
31	115	Z–*	105	80	90	90	80	130	–	–	–	–	–	–*	–*	–*	–*	–*	85*	105*	80*	110*	145*	80	96	(8)
Mean	76 (16)	69 (14)	77 (14)	59 (16)	49 (14)	55 (13)	51 (12)	56 (11)	73 (15)	90 (17)	92 (18)	105 (20)	114 (21)	119 (21)	129 (20)	113 (19)	115 (20)	119 (19)	106 (21)	100 (21)	97 (23)	81 (23)	77 (22)	69 (20)	91	(430)
																						Mean for 0a days			[102	(8)]

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

39 ESKDALEMUIR — Factor 7·62 (metre^{-1}) — APRIL 1961

	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	155	135	120	125	115	135	145	130	100	–	–	–	–	–*	–*	–*	–*	–*	–*	–*	–*	–*	–*	–	129	(9)
2	–	–	–	–	–	–	–	–	165	190	185	190	155	120	65*	85*	70	55*	65*	30*	35*	55*	50	45	130	(9)
3	30	50	90	80	65	85	105	135	145	150	115	140	135	135	115	140	100	90	75	95	115	130	90	85	104	(24)
4	65	70	70	75	95	100	100	110	130	55*	–*	–*	–*	–*	–*	–*	–*	–*	–*	–*	–*	–*	–*	–*	91	(9)
5	–*	–*	–*	–*	–*	–*	–*	–*	–*	–*	–*	–*	–*	–*	–*	–*	–*	–*	–*	–*	–*	–*	–*	–*	–	(0)
6	–	–	–	–	–	–	–	–	65*	110	115	165	115	70	10	35	60*	70*	105*	95	110	95	95	90	92	(12)
7	80	80	80	70	70	75	105	110	125	75	80	75	70	75	70	85	85	85	155	140	100	85	65	65	88	(24)
8	90	110	105	125	145	120	120	170	255	175	150	170	150	145	155	130	120	175	250	185	190	195	155	105	154	(24)
9	135	75	90	0	-15*	-70*	50*	Z–*	-60*	-50*	-25*	10*	60*	-15	165*	10*	60*	110	95	50	15	15	-50*	-20	50	(11)
10	–5	30	35	35	60	65	55	60	40*	90*	70*	75*	125	105	85	175*	135*	105	70	60	70	45	45	50	61	(18)
11	30	85	-30	65	55	210	295	185	180	230	235	245	195	225	320	345	305*	270*	205*	235*	195*	135*	125*	Z–*	179	(16)
12	130*	105*	150*	160*	165	220	55*	-180*	-80*	-25*	55	55	115	110	105	55*	Z±*	-60*	110*	Z–*	175*	85*	Z–*	Z–*	118	(7)
13	Z–*	-75*	Z±*	Z±*	Z–*	180	Z+*	55*	Z–*	60	30*	65*	125*	Z–*	Z–*	170*	195	175	185	175	185*	265	225	140*	183	(8)
14	120*	120*	115	160	150*	95*	-60*	95*	75*	50*	50*	15*	Z–*	65	110	-55*	Z–*	70*	100	75	140	195	70	135	117	(10)
15	225	250	255	190	210	120	130	175	140	130	155	130	100	130	140	140	170	155	170	175	90	65	65	45	148	(24)
16	35	30	25	25	35	40	40	55	60	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	38	(9)
17	–	–	–	–	–	–	–	–	160	135	115	105	95	85	50	110	85	65	80	110	30	55	55	50	87	(16)
18	25	70	70	55	70	40	55	30	35	45	–5	-40*	-35*	155	150	140	135	135	90	80	85	65	65	55	75	(22)
19	-10	5	15	20	10	25	45	70	55	75	125	120	50	30	-35*	65*	45*	105*	240*	Z+*	Z±*	-220*	Z–*	-245*	45	(14)
20	-55*	190	370	235	170	175	175	200	170	175	180	205	210	165	180	150	155	200	180	195	195*	115*	90*	95*	194	(19)
21	–5*	-275*	0*	30*	-95*	30*	175	Z±*	185*	110*	140*	130	140	Z–*	160*	195	180	195	185	175	160	70	55	40*	151	(11)
22	75	80	60	55	85	Z–*	Z–*	-245*	10*	105*	75	Z+*	Z–*	70	110	105	105*	115*	110	170	-35*	-125*	255*	195	99	(12)
23	Z±*	Z–*	95*	180	175	160	170	180*	170	155	145	115	85	50	65*	25*	Z+*	Z–*	75*	90*	35	50*	50*	75*	131	(11)
24	125*	55	50	55*	65*	95	125	170	165	135	130	95	100	120	115	140	110	105	135	115	105	85	55	50	107	(21)
25	70	65	65	60	70	65	95	110	115	185	200	205	185	135	170	180	165	175	180	50*	-85*	Z±*	Z–*	145*	131	(19)
26	5*	-5*	-35*	50	20	40	45	50	55	65	95	55*	60*	30*	35*	25*	25*	55*	80*	135*	90	65*	55*	65*	57	(9)
27	50*	45	75	75	55	60	70	75	75	115	115	85	55	25	–5*	100*	95	30	20*	25	25	35	25	55	61	(20)
28	50	40	35	70	55	75*	95*	85*	110*	65*	65	115	50	45	35	60	55	40	50	80	40	45	70	55	56	(19)
29	65	55	50	90	165	170	160	280	30	185*	130	120	35	30	70	55	65	65	35	55	60	40	25	20	81	(23)
30	20	25	20	15	20*	20	30	-100*	-85*	-65*	110	25*	110*	80*	95*	75	70*	100*	100*	120	65	40	55	50	50	(13)
Mean	67 (17)	77 (20)	84 (21)	84 (22)	95 (20)	105 (21)	112 (20)	124 (17)	123 (19)	130 (17)	122 (21)	137 (18)	114 (19)	94 (22)	117 (17)	130 (16)	119 (15)	119 (16)	126 (17)	114 (19)	85 (18)	90 (17)	74 (17)	66 (17)	104	(443)
																						Mean for 0a days			[107	(6)]

Daily, monthly and annual means are computed excluding hours with precipitation and, of course, all indeterminate entries. The number of hours or days used in computing each mean is shown in round brackets. Entries in square brackets are means for 0a days (see Introduction) and the figure in round brackets is the number of days used in computing this mean.

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

39 ESKDALEMUIR — Factor 7·77 (metre^{-1}) — MAY 1961

	Hour G.M.T. 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	
	volts per metre																									
1	60	25	275	245	90	110	125	130	120	105	145	130	125	85*	65*	55*	115*	125*	125*	110*	210	Z±	Z±	Z+	135	(14)
2	140*	200*	130*	200	0*	150	155	170	165*	150*	130*	185*	Z±	Z±	170	175	160	160*	135*	145	190	210	235	190	179	(12)
3	80	-110*	75	70	55	75	110	115	Z-	Z-*	-15	Z±*	-25*	Z-*	135	130	130*	120*	95*	20*	95*	85*	100*	60*	83	(10)
4	35*	Z-*	105*	125*	150*	Z±	Z±	Z+	105*	120*	135*	Z-*	Z+*	215	195*	220*	160*	150	130*	40*	40	40*	-40*	-40*	135	(3)
5	-85*	-205*	-105*	50	40	40	55	55	75	85	90	90	90	90	105	105	115	125	110	115	85	70	95	100	85	(21)
6	55	50	55	55	60	80	105	-*	Z-*	Z-*	Z-*	Z-*	-70*	40*	100	Z-*	100	35	150	135	Z±	115	195	95	92	(15)
7	115	110	110	90	85	85	120	125	100	70	Z-*	Z±*	Z±*	Z±*	Z+*	Z±*	Z+*	Z-*	Z-*	Z-*	50*	-130*	-60*	35*	101	(10)
8	-5*	-115*	50*	125*	110*	30*	25*	15*	-45*	-110*	-80*	25*	Z±*	Z-*	55*	60*	70	50	55	60	50	35	45	30	49	(8)
9	25	20	20	10	45	40	65	70	85	35*	65*	130	70	75	185	85*	140	120	110	90	45	65	45	20	70	(21)
10	20	40	70	40	85	165	230	200	160	175	170	145	115	110	105	135	115	90	65	35	20	20	25	25	98	(24)
11	-	-	-	-	-	-	-	-	145	175	140	145	180	170	180	165	165	190	240	255	170	130	85	65	163	(16)
12	25	-	-	-	-	-	65	125	115	140	135	125	105	115	125	140	150	135	175	200	195	70	30	20	115	(19)
13	25	25	25	30	30	40	55	60	75	75	65	70	90	120	130	135	170	100	50	25	40	40	90	-25	64	(24)
14	15	-5	-15	-20	5	20	25	50	70	35	25	70	85	55	130	50	25	55	55	55	30	15	10	15	36	(24)
15	20	25	10	25	30	25	65	105	80	90	90	75	85	95	105	110	100	105	120	95	45	40	50	40	68	(24)
16	40	40	35	45	40	40	55	60	60	70	75	90	100	110	140	145	130	120	115	135	90	70	85	100	83	(24)
17	85	75	70	50	45	55	55	40*	50	70*	50	20	35	50	40	65	95	100	115	120	95	100	85	90	70	(22)
18	40	65	40	40	20	10	0	10	20	70	60	70	75	75	70	65	60	55	50	55	35	40	35	5	44	(24)
19	10	5	15	15	25	10	15	30	80	90	70	50	55	60	70	55	65	55	55	30	40	50	40	25	42	(24)
20	25	40	45	40	40	40	45	55	65	60	50	50	50	75	85	95	90	95	80	80	45	40	25	25	56	(24)
21	20	25	40	40	50	40	40	55	60	70	70	70	85	85	90	95	85	70	25	10	25	25	20	10	50	(24)
22	-	-	-	-	-	20	55	40	90	50	60	50	65	-	-	-	-	-	-	-	-	-	-	-	54	(8)
23	-	-	-	-	-	-	-	-	110	100	95	95	85	70	80	65	90	115	95	110	105	95	120	90	95	(16)
24	85	60	70	80	95	80	75	90	85	70	55	110	90	100	110	105	105	105	120	155	150	100	120	65	95	(24)
25	65	85	105	70	45	55	60	60	75	65	70	45	60*	Z+*	95	95	135	Z±*	100*	50	70	70	65	100	74	(20)
26	80	90	75	70	65	100	100	95*	120*	115	100	90	90	100	85	95	115	90	75	55	50	Z+	85*	50*	86	(19)
27	5*	40	40	55	80	75	75	80	-	-	-	-	-	-	-	-	-	-*	-	-	-	-	-	-	64	(7)
28	-	-	-	-	-	-	-	-	55	60	55	55	80	80	90	110	95	110	100	70	90	40	50	85	77	(16)
29	80	90	75	85	70	40	35	40	75	95	90	65*	200*	Z+*	Z±*	160	55*	65*	135*	50*	40	25	45	10	66	(16)
30	40	25	-20	-15*	Z-*	Z-*	Z-*	-65*	10*	70*	195	55	70	45	30	-5*	80*	105	90	60	45	60	65	90	64	(15)
31	75	75	55	55	55	75	75	115	90	85	85	70	60	-	-	-	-	-	-	-	-	-	-	-	94	(13)
Mean	49 (22)	48 (21)	58 (22)	63 (23)	53 (22)	61 (24)	74 (25)	84 (22)	84 (23)	89 (22)	84 (24)	82 (23)	86 (22)	95 (20)	107 (23)	109 (21)	108 (22)	99 (22)	98 (21)	95 (23)	80 (25)	66 (23)	72 (23)	55 (23)	79	(541)
																								Mean for 0a days	[84	(10)]

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

39 ESKDALEMUIR — Factor 7·73 (metre^{-1}) — JUNE 1961

	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	-	-	-	-	-	-	-	-	110	85	75	70	80	70	85	90	110	135	125	115	110	100	70	75	94	(16)
2	70	80	85	80	70	110	85	95	75	110	70	90	65*	95	100	95	110	120	125	140	160	190	165	255	112	(23)
3	235	150	110	40	70*	105	95*	95*	55	35	35*	55	40*	35*	75	40	85*	105*	140	130	155	115	160	125	108	(16)
4	155	135	85	75	80	100	70	55	75	70	85	95	130	120	135	125	120	160	135	140	160	125	130	110	111	(24)
5	120	110	100	90	55	30*	35*	70	35	40	30	30	50	55	80	85	100	100	110	120	80	75	75	55	76	(22)
6	-5	25*	40*	55	135	100	95*	115*	220*	175*	110*	85	40	35*	70	35*	35*	75*	200	140	100	80	95	55	88	(13)
7	55	50	40	50	35	65	-5*	25*	125*	-*	-*	-*	-*	-*	-	-	-	-	-	-	-*	-*	-	-	49	(6)
8	-	-	-	-	-	-	-	-	120	100	65*	95*	Z-*	Z±*	Z-*	Z-*	Z-*	Z-*	160	220	95	-15*	-10*	70	127	(6)
9	100	100	80	110	175	185	160	135	105	Z-	Z-*	100*	135	80*	Z-*	Z-*	40*	60*	135	120	135	170	135	110	131	(16)
10	115	105	70	35	70	135	80	Z-*	Z±*	Z+*	105*	105	45	100	55*	35*	35*	15*	-115*	Z-*	Z-*	Z±*	Z-*	Z-*	86	(10)
11	-240*	-205*	-175*	-125*	10*	10*	-35*	80*	75*	40*	25	40*	45*	30*	45	45	15*	15	35	60	85	100	100	60	57	(10)
12	50	85	90	85	80	55	60	90	50	0	30	35	5	0	25	10	55	70	40	55	95	105	100	100	57	(24)
13	115	140	105	105	125	150	155	160	160	150	125	120	90	85	85	85	70	70	65	75	60	50	60	70	103	(24)
14	70	70	65	-5	55	150	90	115	125	140	100	120	160	155	170	150	140	110	165	100	60	40	35	35	101	(24)
15	30	25	45	60	120	85	115	135	135	145*	125*	200*	140*	185*	180*	280*	270	195	165	175	245	275	215	160	144	(17)
16	135	110	75	30	65*	210*	205*	180	110	175*	165*	170	155	140	130	120	95	95	60	55	40	65*	110*	95*	106	(16)
17	225*	205*	165*	140*	190*	25*	85	90	115	90	80	110	105	60	85	90*	120*	30*	-10*	-105*	60*	50	40	55	80	(12)
18	40	30	25	15	45	40	30	25	45	60	55	45	60	65	80	85	85	80	75	85	60	80	90	80	57	(24)
19	50	65	50	35	20	40	45	65*	70	80*	90	100	95	80	95	90	95	105	110	105	110	70	50	45	73	(22)
20	75	55	70	55	55	75	80	85	90	75	105	115*	70*	100*	95*	115*	105	110	110	105	105	60	40	50	79	(19)
21	70	55	55	45	50	55	75	125	165	120	120	140	125	140	140	125	95	40*	Z±*	Z-*	-105*	-180*	70*	65*	100	(17)
22	70*	55*	35*	50*	35*	55	75	80	95	110	105	95	100	120	135	135	130	120	105	115	95	55	55	60	97	(19)
23	45	45	30	40	15	30	80	85	120	125	150	110	100	120	130	115	115	135	145	110	105	115	75	70	92	(24)
24	65	75	60	60	55	55	85	110	165	160	160	180	215	150	120	95	80	90	125	70	140	90	70	40	105	(24)
25	40	25	5	10	30	20	40*	45	25	40*	40*	40*	35*	45*	70*	55*	-15*	15*	30*	35*	30*	25*	10*	15*	25	(8)
26	15*	10*	0*	10*	35*	40*	55	100	150	165	120	115	145	165	155	125	165	120	135	125	100	60	70	105	121	(18)
27	230	180	175	125	135	230	200	135	150	155	160	115	65*	90	75	70*	35*	45*	40	40	25*	15	70	60	125	(19)
28	50	85	95	85	115	100	85	45*	105	135	100	125	120	105	110	90*	110	110	95	95	95	135	180	150	108	(22)
29	145	75	85	55	105	135	165	155	170	175	170	135	135	145	135	160	175	165	140	130	125	100	45	30	127	(24)
30	30	30	40	40	45	55	85	100	175	170	150	135	140	130	145	150	160	155	145	165	170	175	115	165	120	(24)
Mean	87 (24)	82 (23)	71 (23)	57 (24)	76 (22)	93 (23)	92 (21)	103 (21)	89 (26)	108 (21)	100 (21)	103 (23)	106 (21)	104 (21)	105 (23)	101 (19)	119 (20)	113 (20)	115 (25)	112 (25)	112 (24)	101 (24)	93 (24)	88 (25)	98	(543)
																								Mean for 0a days	[104	(12)]

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

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

39 ESKDALEMUIR — Factor 7·36 (metre^{-1}) — JULY 1961

	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	165	105	110	120	110	50*	25*	105*	130*	85*	155*	95*	85	65	50	60*	90	65	70	100	90	50	25	30	83	(16)
2	30	35	45	35	50	30	30*	25*	5*	15*	15*	25	25	30	20	25	65	65	70	90	85	65	90	50	49	(19)
3	50	100	90	100	100	140	100	85	80	85*	30*	40*	30*	-25*	-95*	-80*	-85*	-15*	10*	35	25*	30*	20*	30	83	(11)
4	15	15	-50	-5*	10	25	35	40	85	110	110	115	85	95	95	95	100	115	135	175	160	90	80	135	81	(23)
5	160	170	85	100	80	55	55	75	95	110	105	95	120	115	110	105	115	110	85	70	55	50	25	20	90	(24)
6	20	25	30	30	35	50	100	110	130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	59	(9)
7	-	-	-	-	-	-	-*	-*	-*	-*	-50*	70*	100*	85	100	40*	Z-*	95*	80*	105	60*	135*	135	80*	106	(4)
8	45*	25*	Z-*	Z-*	110*	120	45*	30*	100*	85*	70*	65*	50	85	50*	65*	50*	80*	110*	50*	65*	165	130	120	112	(6)
9	65	85	95	120	80	90	35*	85*	115	85*	120	150*	150	135	120	120	100	105	90*	15*	90*	65	100	80	105	(16)
10	105	125	65	105	65	90	85	95	95	90	85	85	80	85	100*	70*	95	50*	65*	40*	65*	50*	85*	50	87	(16)
11	50	45	110	75	70	85	180	125	110	100	95	90	100	105	110	115	105	105	100	85	-65*	10*	-15*	-10*	98	(20)
12	-40*	-20*	20*	10*	70*	-65*	10	175	285	225	195	120	105*	-5*	-45*	120*	65*	135*	105*	-25*	Z-*	Z-*	-25*	-50*	168	(6)
13	30*	15*	-35*	-25*	-75*	-*	-*	-*	0*	25*	25*	10*	15*	25*	75	80	105	Z+*	115*	45*	115	175	160	120	119	(7)
14	-15*	-25*	35*	40*	45*	75	75	10*	35*	140	145	170	150	155	135	115	110	115	130	150	105	50	35	40	111	(17)
15	35	40	35	35	40	50	80	95	100	160	195	135	120	140	120	110	105	65*	10*	-5*	-15*	25*	10*	-35*	94	(17)
16	25*	15*	30*	15	25	25*	35*	55	185	85	100	65	75	70	50*	65*	65	70	65*	65	55	90	-10*	60*	73	(14)
17	80	60	70	55	50	65	55	65	55	40*	35*	40*	30*	35*	65*	60	70	100	80	80	95	70	55	60	68	(18)
18	55	45	90	55	65	65	80	50*	50*	55*	60	90	90	55	70	115	95	80	90	80	55	60	Z-*	Z-*	73	(19)
19	40*	80	145*	80	80	40	75	105	95	150	155	130	120	110	120	110	120	120	145	155	145	120	80	80	110	(22)
20	70	65	55	85	65	145	90	90	110	120	85	70	85	105	90	65	90	105	90	95	90	95	75	100	89	(24)
21	105	80	75	70	45	40	35	50	65	65	110	35	60	65	85	90	85	100	130	105	100	150	115	90	81	(24)
22	85	95	80	70	70	115	80	80	105	105	105	100	70	85	90	65	90	105	135	145	105	100	105	90	95	(24)
23	85	65	70	90	105	45	125	125	150	140	155	120	90	105	85	65*	65	55	80	65	80	75	100	80	94	(23)
24	70	60	55	50	60	120	95	85	105	115	115	105	110	120	100	105	130	125	135	180	215	210	175	155	116	(24)
25	120	130	105	70	105	105	140	120*	90	65*	25*	25*	25*	-135*	Z-*	Z-*	Z-*	Z-*	155*	125*	180	155*	120*	185*	116	(9)
26	165	110	90	80	50	55*	70*	85*	100*	120*	60*	50*	55*	65*	80*	35*	120*	30*	65*	85*	90*	115*	100	105	100	(7)
27	90	115	80	85	100	110	135	105	115	75	65	70	90	115	30*	25*	100*	60*	170	225	200	210	225	240	131	(20)
28	175	175	175	225	200	145	155	155	145	155	150	155	120	105*	85*	90*	110*	120	155	125	140	155	160	130*	157	(19)
29	120*	105	110	90	75	55*	75	50	95	80	55	95	75	85	100	105	105	130	160	175	160	190	180	150	111	(22)
30	125	70	125	190	105	105	110	130	125	125	120	90	55	60*	55*	115*	125	135	105	110	135	150	80	105	115	(21)
31	85	50	65*	185*	190*	210*	260*	250*	110	100	105	115	120	120	115	135	130	130	145	150	160	85	70	70	111	(18)
Mean	88 (22)	82 (25)	78 (23)	85 (24)	74 (25)	83 (23)	90 (22)	95 (20)	115 (23)	118 (19)	116 (21)	99 (21)	92 (23)	97 (22)	94 (19)	95 (17)	98 (22)	103 (20)	116 (19)	117 (22)	120 (21)	112 (22)	105 (22)	91 (22)	98	(519)
																						Mean for 0a days			[101	(10)]

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

39 ESKDALEMUIR — Factor 7·31 (metre^{-1}) — AUGUST 1961

	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	50	80	55	50	50	80	105	125	170	160	155	120	100	120	20	135*	110*	130	190	175	160	95	90	95	108	(22)
2	45	35	20	50	95	120	135	135	120	105	Z-*	90*	100	125	135	150	140	170	175	120	110	135	135	160	114	(22)
3	130	110	40	45	25	25	105	120	140	70*	Z-*	Z-*	Z-*	Z-*	Z-*	Z-*	Z-*	Z-*	Z-*	Z-*	Z-*	Z-*	25*	20*	82	(9)
4	25*	30*	165*	115	110	65	100*	135*	115*	125	110	110	105	115	110	115	120*	135*	155	155	140	130	135	145	121	(16)
5	85	120	125	110	50	50	110	185	170*	95*	Z-*	Z-*	Z-*	Z-*	Z-*	Z+*	Z±*	Z±*	Z-*	130	255	330	235	190	152	(13)
6	200	95	125	170	130	170	220	180	Z+*	Z+*	Z-*	Z-*	Z+*	Z+*	Z-*	100	95	115	150	170	160	130	195	160	151	(17)
7	120	170	75	45	110	195	300	190	145	165	165	155	130	50	130	150	150	120	100	85	-15*	-90*	Z-*	75*	137	(20)
8	-15*	25*	-90*	-25*	Z-*	Z-*	Z±*	Z±*	Z-*	Z-*	Z+*	Z+*	Z+*	Z+*	250	245*	Z-*	Z±*	Z-*	Z-*	75*	Z-*	Z±*	Z±*	250	(1)
9	110	155	105	70*	130	200	165	175	125*	135*	80	Z+*	Z-*	-135*	Z-*	125*	Z-*	Z±*	30*	135*	205	350	185	270	177	(12)
10	250	225	205	115	120	100	160	185	300	190	100*	60*	35*	Z-*	Z-*	150	Z-	80	115	235	330	310	230	215	195	(18)
11	230	210	180	110	105	150	110	115*	25*	50	85	100	70	65	95	60	100	135	145	110	145	145	155	120	122	(22)
12	110	85	75	80	105	70	100	65	150	155	145	135	150	115	125	120	120	150	160	-	-	-*	-	-*	117	(19)
13	-*	-*	-*	-*	-*	-	-	-	165	100*	80*	105*	95*	95	90	70*	65*	80*	85*	105*	70	80	55	50	86	(7)
14	40	65	70	65	45	40	50*	45	50	55	30	15	20	20	-	-	-*	-*	-*	-*	-*	-	-	-	43	(13)
15	-	-	-	-	-	-	-	-	130	140	155	130	125	125	115	120	90	95	55	20	45	40	60	50	93	(16)
16	35	50	50	50	25	25*	30*	55*	85*	170*	120*	125*	105*	120	140	165	195	170	160	185	180	190	180	155	128	(16)
17	125	160	110	105	70	35	30	50	60	90	105	120	100	150	95	90	100	45	20*	5*	15	-5*	10	25	80	(21)
18	25	15	20	20*	20*	15*	15*	25*	35*	45*	40*	15*	40*	55*	25*	-45*	-30*	35*	65*	120	75	40*	15*	30*	51	(5)
19	25*	65*	45*	90*	175	200	165*	150*	-	-	-	-	-	-	-	-	-	-	-	-	-*	-*	-	-	187	(2)
20	-	-	-	-	-	-*	-*	-	-*	-*	35*	35*	80*	65*	55*	80*	65	45	85	85	65	65*	15*	105	75	(6)
21	95*	35*	-15*	20*	Z±*	-15*	-65*	Z±*	Z-*	150	50*	75*	-30*	Z-*	-65*	Z-*	130*	-65*	-25*	-15*	0*	15*	50*	55	103	(2)
22	50	60	50	40	25	35	40	50	70	80	90	75*	70	105	95	-5*	40*	80	55	35	45	50	55	45	58	(21)
23	35	15	15	15	20	10*	10*	25	30*	40*	40	85	25	20	25	15*	-*	-*	-	-*	-	-*	-	-	29	(11)
24	-	-	-	-	-	-	-	-	85	90	145	170	145	140	145	145	140	135	110	135	100	80	55	50	117	(16)
25	45	30	25	25	25*	25*	0*	65*	45*	60*	40*	55*	-10*	-95*	-10*	45*	85*	65*	10*	-10*	-5*	-10*	-20*	85*	31	(4)
26	65*	85	145	130	60	50	95	160	155	115	120	110	105	90	40*	-95*	50*	95*	105	140	120	115	120	95	111	(19)
27	65	55	50	45	40	45	45	40	30	35	25	10	20*	30*	25*	35*	40	65	60	25	25	20	15	10	37	(20)
28	25	20	25	20	35	55	50	65	50	35	40	65	105	120	120	150	145	125	65	55	45	55	35	40	64	(24)
29	15	15	25	30	25	25	105	160	160	115	155	120	150	95	80	60	70	25*	5	-55	15	55	155	145	75	(23)
30	160	125	140	120	85	60	80	120	120	105	105	120	115	120	115	90	95	105	135	65	55	50	40	25	98	(24)
31	65	40	45	50	50	85	55	55	125	130	225	235	215	190	220	195	215	200	185	160	145	135	75	120	134	(24)
Mean	92 (22)	88 (23)	92 (23)	72 (22)	73 (23)	88 (21)	112 (18)	112 (19)	124 (18)	110 (19)	110 (18)	113 (16)	108 (17)	104 (19)	117 (18)	124 (15)	117 (15)	116 (17)	116 (19)	107 (20)	114 (22)	131 (19)	111 (20)	106 (22)	104	(465)
																						Mean for 0a days			[91	(5)]

Daily, monthly and annual means are computed excluding hours with precipitation and, of course, all indeterminate entries. The number of hours used in computing each mean is shown in round brackets. Entries in square brackets are means for 0a days (see Introduction) and the figure in round brackets is the number of days used in computing this mean.

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

39 ESKDALEMUIR — Factor 7·99 (metre^{-1}) — SEPTEMBER 1961

	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	165	215	225	200	285	160	215	55*	145	Z-*	200	170	195*	185	205	190	155	120	270	185	Z+*	Z±*	Z±*	Z±*	194	(17)
2	Z±*	115	235	260	170	195	270	220	385	200	140	155	155	165	190	120	105	Z±*	Z-*	Z-	70	110	35	90	169	(20)
3	25	80*	105	70	70	55*	40*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-	-	-	-*	-*	-*	-	-	68	(4)
4	-	-	-	-	-	-	-	-	-	-	-	125	100	120	85	45	25	50	90	60	65	90	25	15	69	(13)
5	55	40	15	40	70*	125*	175	180	175	90	70*	50*	-105*	Z±*	160*	170	170	205	200	185	180	115	50	30	122	(17)
6	40	45	30	25*	30*	40*	60*	90*	110*	80*	100*	Z-*	120	140	160	150	Z±*	Z±*	Z±*	25	35	35	50	-25*	75	(11)
7	125	130	130	105	195	315	115	240	-	-	-	-	-	-	-	-	-*	-*	-	-	-	-	-	-	169	(8)
8	-	-	-	-	-	-	-	-	105	70	45	75	105	45	90	85	100	85	30*	15*	30	25	60	55	70	(14)
9	45	90	70	140	205	70	75	35	100	120	175	130	70*	70*	120*	155*	190	165	200	200	155	185	185	190	136	(20)
10	170*	85*	150*	150*	110*	130*	175*	240*	235*	70*	55*	220*	290*	340	185	120	115	125	100	120	135	110	55	100	137	(11)
11	55	Z-*	45	30	15	20	110	90	115	120	110	Z±*	Z±*	-15*	255	Z-*	130	135	110	10*	70	40	35	45	85	(18)
12	25	15	15	20	25	20	105	105	80	130	90*	15*	155*	-110*	-5*	-355*	Z±*	85*	Z-*	Z-*	-135*	-110*	30*	Z-*	54	(10)
13	Z-*	-135*	-70*	0*	Z-*	100	120	130	120	100	105	55	110	115	135	130	45	95	85	Z-	Z±*	20*	70	90	100	(16)
14	90*	100	40	40	45	90	80*	35*	55	75	55*	85*	130*	120*	140	140	115	120	55	35	30	40	25	20*	72	(16)
15	15*	70*	50*	30*	15*	5*	5*	-40*	-5*	5*	25*	85*	145*	75*	155	130	90	80*	85*	70	80	135	125*	80*	110	(6)
16	-120*	-35*	55	45	60	100	115	160	105	110	35*	-10*	55	25	20	20	5	5	5	15*	15*	10*	10	10	53	(17)
17	15	25	25	15	30	30	25	15	10	10	10	20	50	80	60	40	15	30	35	20	35	20	15	35	28	(24)
18	30	55	50	45	40	110	45	40	-5	45	85	85	120	110	135	105	90	45	-	-	-	-	-	-	68	(18)
19	-	-	-	-	-	-	-	-	15	10	5	5	15	15*	15*	25	40	55	40	40	55	55	60	25	32	(14)
20	20	20	-	-	-	-	-	-*	90*	100*	45*	55*	135*	145	75	100	65	55	15	10	10	5	15	40*	45	(12)
21	40	35	15	35	-	-	-*	-*	-*	40*	105	165	110	130	125*	125*	55*	45*	80*	60	45	15	10	25	61	(13)
22	30	25	20	25	15	15	75	180	235	195	125	160	145	155	145	100	130	100	80	-	-	-	-	-	103	(19)
23	-	-	-	-	-	-	-	-	55	70	120	110	110	115	120	100	80	100	60	100	140	310	185	35	113	(16)
24	Z+*	40	35	120	110	85	70	70	90	100	85	110	115	110	145	160	170	165	170	140	115	70	70	90	106	(23)
25	85	90	90	100	70	90	115	90*	155*	135*	200*	105	100	110*	140*	125	110*	140*	75*	130*	10*	-90*	75*	70*	97	(10)
26	65*	110*	115	75	75	25*	-15*	10*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	88	(3)
27	30	25	35	35	25	60	85	40	50*	95	155	110*	115	120	125	50*	-5*	-*	-*	-*	-*	-*	-*	-*	73	(13)
28	-*	-*	-*	-*	-*	-*	-*	-*	10*	15*	5*	20	70	70*	115*	50	0	5*	-*	-*	-	-	-	-	35	(4)
29	-	-*	-	-	-	-*	-*	-*	25*	-20*	-30*	40*	60*	55	30*	25	-*	-*	-*	-*	-*	-*	-	-	40	(2)
30	-*	-*	-*	-*	-*	25*	15*	15*	10*	5*	20*	45	115	-10	105	110	80	45	60	55	100	60	35	25	63	(13)
Mean	52	67	71	78	90	97	114	116	112	96	105	96	101	119	133	102	91	94	98	87	79	84	55	57	91	(402)
	(15)	(16)	(19)	(18)	(16)	(15)	(15)	(13)	(16)	(16)	(14)	(16)	(17)	(18)	(19)	(22)	(21)	(18)	(16)	(15)	(17)	(17)	(18)	(15)		
																								Mean for 0a days	[77	(2)]

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

39 ESKDALEMUIR — Factor 8·87 (metre^{-1}) — OCTOBER 1961

	Hour G.M.T. 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	
	volts per metre																									
1	20	15	15	10	10	10	10	15	30	35	80	85	80	85	60	30	15	10	5	5	5	10	15	15	28	(24)
2	10	5	15	15	15	15	15	15	20	25	45	90	95	110	100	60	25	-	-	-	-	-	-	-	40	(17)
3	-	-	-*	-*	-*	-*	-*	20*	25*	180*	270*	280*	220*	245	155	150	115	160	115	120	115	125	115	110	139	(11)
4	50	30*	30*	30*	50*	45	55	60	55	45	35	25*	80*	90	50	65	50	95	60	70	80	60	55	30	58	(18)
5	-5*	-15*	-55*	-250*	-355*	10*	45*	75*	110*	105*	110*	60*	60*	140*	160	115*	155	185	135	85	80	195	160	110	141	(9)
6	145	130	75	80	Z±*	30	45*	50*	80	30*	80*	90	70	115	135	110	105	110	100	115	60	45	15	65	88	(19)
7	60	65	60	75	60	70	75	95	85	60	20*	40*	50*	50*	15*	20	35*	30*	-30*	40*	125*	130	85	95*	72	(13)
8	45	75	165	175	80	85*	80*	125*	75*	35*	100*	Z±*	Z±*	80*	Z±*	Z-*	Z-*	Z-*	Z±*	Z-*	Z-*	80*	95	105	106	(7)
9	90	85	75	95	85	60*	70	110	110*	155	125	105	90	50	45*	25*	110*	60*	Z-*	Z-*	-105*	Z-*	Z-*	-85*	95	(12)
10	25*	20	40	30	35	45*	30*	90	110	125	130	155	160	180	155	185	205	185	180	205	155	130	100	110	128	(21)
11	100	85	-30*	-25*	0*	5*	65*	115	105	125	125	140	175	155	145	125*	135*	145	140	120	100	75	45	45	114	(17)
12	-	-	-	-	-	-	-	-	200	140	115	125	160	140	125	140	110	50	-	-	-	-	-	-	131	(10)
13	-	-	-	-	-	-	-	-	-	-	100	95	175	150	130	155	-	-	-	-	-	-	-	-	134	(6)
14	-	-	-	-	-	-	-	-	135	80	85	60	115	190	200	185	115	-	-	-	-	-	-	-	129	(9)
15	20	25	50	15	20	45	70	65	35	25*	15*	55*	50*	60	60	70	110	85	80	125	110	55	15*	0*	61	(18)
16	25*	50	25	20	20	15*	30*	20*	5*	0*	-5*	15*	-150*	-25*	45*	25*	0*	5*	25*	Z-*	Z-*	15	30*	15*	26	(5)
17	10*	-65*	-80*	-10*	-20*	-150*	-280*	-115*	15	50	60	115	135*	Z-*	55*	130*	125	130	125	125	80	-20*	10*	40	87	(10)
18	75	30	30	-	-*	-*	Z-*	Z-*	15*	80	35*	Z-*	85*	170*	160	70*	140	150	145	140	120	110	85	85	104	(13)
19	95	110	95	115	80	80	-	-	95	105	110	95	60	65	80	105	120	125	70	25	-30	-30	30	15	73	(22)
20	-	-	-	-	-	-	-*	-*	-	-*	-*	-*	-	-	-*	-*	-*	-	-	-	-	-	-	-	-	(0)
21	-	-*	-15*	-130*	-115*	50*	30	25	15*	-170*	-10*	-35*	-30*	-35*	-15*	-30	35	45	25	20*	15*	15*	25*	30	23	(7)
22	15	15	20	10	15*	5*	0*	15*	-80*	-15*	0*	10*	30	35*	20*	15*	5*	-95*	-40*	Z-*	Z-*	Z-*	Z-*	Z-*	18	(5)
23	Z-*	Z+*	-15*	40*	-110*	-75*	Z-*	-100*	Z-*	60*	60	60	80	Z±*	Z-*	Z-*	-5	55	50	70	-10	50	60	45	47	(11)
24	Z-*	Z-*	Z-*	Z-*	Z-*	Z±*	Z±*	Z±*	Z-*	Z-*	75	80	110	215*	105	110	160	Z-*	Z+*	Z-*	165	105	110	Z-*	113	(9)
25	75*	75	65	85*	Z+*	Z+*	Z+*	Z+*	Z+*	195*	50*	0*	Z-*	105	110	120*	115	75*	90*	80	Z-*	Z±*	Z-*	85	91	(7)
26	Z-*	Z+*	Z+*	Z+*	Z+*	Z-*	95*	140	Z+*	Z+*	Z±*	Z±*	Z-*	Z±*	Z+*	Z+*	Z+*	140	Z±*	Z-*	80	145	310	Z±*	163	(5)
27	Z-*	Z±*	Z-*	35	40	30	50*	50*	65	50	60	-130*	-25*	-20*	Z+*	-210*	65*	-115*	45*	110	60	65	45	45	55	(11)
28	40	10	65	45	45	65	65	50	80	70	60	75	85	80	65	85	70	55	85	80	75	50	50	50	63	(24)
29	50	50	45	30	40	30	35	40	65	60	50	70	30*	50*	75	80	55	45	50	50	55	40	45	25	49	(22)
30	40	40	55	45	60	75	120	130	150	115	130	85	90*	40*	-5*	Z-*	Z-*	0*	Z-*	Z-*	80	105	105	90	89	(16)
31	95	75	80	75	50	55	60	55	45*	110*	75*	100*	140*	185*	155*	135	80*	80*	65*	105	115	115*	80	95	83	(13)
Mean	59	53	57	54	45	46	55	72	83	83	85	95	106	121	115	97	96	104	91	96	79	78	84	63	81	(391)
	(16)	(18)	(17)	(16)	(14)	(12)	(11)	(14)	(16)	(16)	(17)	(16)	(14)	(15)	(18)	(17)	(19)	(17)	(15)	(17)	(19)	(19)	(19)	(19)		
																								Mean for 0a days	[33	(2)]

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

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

39 ESKDALEMUIR — Factor 9·42 (metre^{-1}) — NOVEMBER 1961

	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	85	95	65	95	65	70	75	45	-	-	-	-	-	-	-	-	-	-*	-*	Z-*	Z-*	Z±*	-10*	20*	74	(8)
2	5*	40*	80	85	85	45	Z-*	50	Z-*	70*	Z-*	Z-*	30*	50*	45*	Z-*	55*	85*	Z-*	125*	125	110*	Z-*	90*	78	(6)
3	105	115	110	90	85	105	120	125	90	80	90	110	115	85	85	95	140	130	110	135	100	90	80	105	104	(24)
4	105	95	125	115	115	140	135	55	60	60	50	60	60	75	90	110	85	70	55	80*	55*	30*	35	80	85	(21)
5	95	90	35	80	65	75	95	80*	135*	165*	170*	155	105*	55*	30	25	30*	65*	75*	105*	130*	85*	85*	70*	75	(10)
6	30*	20*	25*	-70*	55*	120	130	100*	50*	40	80	85	85	70	85	55	55	70	55	50	60	60	95	50*	75	(16)
7	Z-*	Z-*	50	80	75	70	80*	Z-*	95*	50*	60*	45*	45*	-35*	Z-*	55*	Z-*	-125*	-40*	-45*	Z-*	65*	-85*	Z-*	69	(4)
8	Z-*	Z-*	Z±*	60	45	90	115	95	130	135	125	115	120	125	110	65	65	70	85	100	70	70	60	65	91	(21)
9	105	80	95	155	145	175	120	125	125	110	100	135	175	200	140	95	115	140	140	130	110	100	290	75	133	(24)
10	125	115	90	80	70	65	125	180	165	175	175	270	305	145	165	285	295	130	190	100	105	120	105	-35	148	(24)
11	50	45	95	95	180	165	160	125	105	60	15	35	40	35	30	-30*	10*	105	130	90	65	105	85	100	87	(22)
12	100	85	75	60	55	70	75	60	55	45	35*	-*	-*	-	55*	70	50	20	30*	30*	70	65	-*	-*	64	(15)
13	-	-*	-*	35*	70	45*	40*	30	50*	40*	35*	45	65	50	60	80	95	80	95	80	100	60	-30	-5*	63	(14)
14	45*	30*	30*	50*	55*	80*	95*	105*	85	60*	50*	65*	70	100	80	80	100	120	145	105	115	50	40	30	86	(13)
15	40	35	30	20	20	30	40	35	45	70	75	85	75	70	60	30	50	35	55	55	60	60	35	50	48	(24)
16	40	40	50	50	55	50	60	45	-5	-45	-35	-40	-20	35	-15	10	20	45	80	65	115	115	115	65	37	(24)
17	100	95	135	105	70	80	50	55	40	25	45	55	65	50	35	40	40	40	50	50	30	25	35	45	57	(24)
18	50	60	60	65	60	100	160	150	95	145	140	110	115	95	75	30	35	45	70	45	35	50	50	20	77	(24)
19	30	15	20	65	20	20	35	50	45	55	50	50	40	50*	80*	85	75	45	30*	40*	80	75	45	50	47	(20)
20	30	35	35	85	65	100	85	110	150	100	115	30*	115*	125	75	70	85	90	120	185	135	100	100	80	94	(22)
21	85	80	80	65	80	55	50	70	70	50	25	55	35	30	50	35	140	200	215	175	150	170	155	140	94	(24)
22	105	85	65	90	105	100	100	95	80	80*	45*	40*	35*	55*	65*	105*	-25*	-10*	Z-*	Z-*	180*	65*	Z±*	Z-*	92	(9)
23	120*	115*	Z-*	-110*	60*	50*	100*	105	100	145	170	145*	140	115	115	120	165	185	140	135	120	90	75	80	125	(16)
24	65	45	45	45	-55*	-5*	-15*	-175*	Z-*	Z-*	Z-*	Z-*	Z-*	Z-*	Z-*	Z-*	70*	95*	65*	155	140	135	100	145	97	(9)
25	120	125	115	115	115	110	135	70	Z+*	150*	120	190*	-*	-	-	-	-	-	-	-	-	-	-	-	114	(9)
26	-	-	-	-	-	-	-*	-*	Z+*	65*	70	5*	Z-*	Z±*	Z-*	105*	95	115	125	135	115	60	80	-25*	99	(8)
27	-50	-40*	80*	95	75	100	105	110	90	85	65*	-80*	35*	120	120	95	90	95	85	75	80	75	65	70	83	(19)
28	50	45	40	40	35	30	35	35	30	60	180	70*	Z-*	Z±*	70*	115	140*	80*	105	80*	60*	25*	75*	Z-*	62	(13)
29	Z±*	90*	Z±*	30*	35*	Z-*	15*	Z-*	Z-*	Z+*	Z-*	65*	70*	Z±*	Z-*	Z±*	Z±*	Z-*	Z+*	Z±*	Z+*	125*	Z-*	65*	-	(0)
30	Z-*	Z-*	Z-*	Z-*	Z-*	Z-*	40*	30*	160*	165*	165*	70*	115	75	115	230	220	260	150	215	210	190	215*	Z+*	178	(10)
Mean	72 (20)	73 (19)	71 (21)	80 (23)	76 (23)	85 (23)	95 (21)	83 (22)	82 (19)	77 (18)	88 (18)	88 (15)	94 (17)	89 (18)	79 (19)	87 (21)	101 (20)	100 (21)	110 (20)	109 (19)	100 (22)	89 (21)	81 (20)	69 (17)	87	(477)
																						Mean for 0a days			[93	(4)]

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

39 ESKDALEMUIR — Factor 9·07 (metre^{-1}) — DECEMBER 1961

	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	185*	130	130	100	95	110	105	100	95	100	105	125	105	85	95	50	80	105	80	85	60	55	50	75	92	(23)
2	75	100	80	45	60	90	135*	150*	265*	180*	105	80*	170	140*	Z±*	Z-*	130	155	Z-*	140*	160*	135*	145	65	102	(12)
3	85	70	70	60	55	60	45	50	65*	85*	85*	60*	80	85	85	95	110	110	265	255	215	210	145	160	115	(20)
4	125	115	95	70	95	130	85*	210*	225*	Z+*	Z±*	Z±*	Z±*	Z-*	Z-*	Z+*	Z±*	105*	265*	85*	95*	120	60	95	101	(9)
5	125	70*	Z-*	Z-*	Z-*	60*	50*	-85*	65*	95*	Z+*	Z+*	80*	210	165*	Z-*	Z±*	Z±*	275*	240*	160	200	125	120	157	(6)
6	110	140	Z±*	55	80	100	100	Z+*	145*	65*	140	140	210	370	430	465	230	305	315	345	480	355	145	115	231	(20)
7	85	80	90	60	70	65	70	65	90	140	150	155	150	130	115	110	125	125	135	135	120	130	120	110	109	(24)
8	65	65	75	80	85	130	120	115	80	95	160	205	195*	150*	40*	40*	40*	0*	-20	-30	-65*	-155*	-10*	-5*	87	(14)
9	45*	-25*	-110*	Z-*	-5*	45*	5*	100*	130*	35*	60*	115*	65*	180*	245*	205	200	210	265	195	205	115*	135*	110*	213	(6)
10	155*	145*	215	130*	80	45*	Z-*	-280*	Z-*	25*	30*	30*	35*	30*	60*	70	55	45	-35*	-100*	-130*	Z-*	30*	40*	93	(5)
11	Z+*	-50*	-15*	Z-*	Z-*	Z-*	Z-*	Z-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-*	-	-	-	-	(0)
12	-	-	-	-	-*	Z-*	Z-*	55*	35	35	-40*	-20*	-30*	-30*	-5	5*	10*	-20*	-20*	5*	-5	15	20	20	16	(7)
13	20	30	20	20	30	0*	40*	30*	-140*	-275*	35*	40*	50*	75*	80*	Z-*	185*	Z-*	Z-*	Z-*	55*	55	30	15*	29	(7)
14	30*	50	65	50	50	45	50	60	65	75	100	105	70	95	85	65	35	110	110	95	115	80	70	15	72	(23)
15	30	30	30	60	65	50	80	50	30	40	65	95	80	60	30	65	175	245	160	100	15	75	65	-5	70	(24)
16	30	20	45*	-25*	-55*	70*	45*	65*	45*	45*	45*	80*	95*	100*	85*	50*	120	45	65	95	80	65	45	50	61	(10)
17	80	100	45	15	35	60	20	80	145	140	80	70	65	-	-	-	-	40	55	35	45	35	50	55	63	(20)
18	70	45	50	35	40	20	40	65	30	60	45	50	130	170	195	35	50	30	50	85	75	70	65	30	64	(24)
19	30	35	35	30	90	65	65	45	50	60	45	80	75	45	55	55	70	80	105	95	100	70	50	45	61	(24)
20	30	35	40	30	40	30	40	45	35	40	75	100	75	65	50	45	60	80	85	110	115	90	85	50	60	(24)
21	70	55	45	45	40	45	45	45	45	45	80	80	100	65	60	65	60	80	80	65	100	60	90	95	65	(24)
22	85	60	40	40	40	30	35	45	55	50	70	45	65*	60*	150	70	85	175	190	155*	Z-*	70*	70	65	74	(19)
23	70	65	95	70	65	75	60	50	50	45	65	75	65	95*	85*	80*	80*	80*	55	85	80	55	85	45	66	(19)
24	70	75	65	75	80	85	70	65	75	80	75	80	75	85	70	65	65	50	75	80	80	70	65	65	73	(24)
25	65	70	85	90	85	100	110	120	105	100	110	115	100	105	90	80	75	45	30	40	50	45*	125*	25*	84	(21)
26	45*	40	40	30	25	30	40	40	55	65*	65*	75	95*	115*	95*	75*	85*	95*	170*	130	85*	45*	30*	10	47	(11)
27	35	30	30	30	20	25	30	45	50	65	100	80	100	105	75	55	40	90	65	60	75	70	20	30	55	(24)
28	25	40	50	45	115	230	140	105	55	75*	120*	100*	60*	15*	60*	75*	185*	Z-*	280*	200*	210	245	100	130	115	(13)
29	Z±*	35*	30	60	60	65	100	125	65*	70*	35*	45*	65*	80*	125*	100*	70	65	90*	75*	110*	105*	35	65	67	(10)
30	-30*	75*	300*	215*	110*	460*	590*	290*	255	180	135	160	245	235	240	260	195	190	180	125	125	275	140	115	191	(16)
31	110	105	95	110	70	75	80	75	-	-	-	-	-	-	-	-	-*	-*	-*	-*	-	-	-	-	90	(8)
Mean	68 (22)	66 (24)	67 (24)	54 (24)	63 (25)	75 (23)	69 (21)	69 (20)	74 (19)	79 (17)	95 (18)	102 (18)	111 (17)	127 (15)	114 (16)	109 (17)	101 (20)	113 (21)	117 (20)	109 (20)	119 (21)	114 (21)	78 (24)	67 (24)	88	(491)
																						Mean for 0a days			[82	(7)]
Annual Mean	84 (235)	81 (238)	78 (242)	76 (247)	75 (241)	85 (233)	92 (219)	95 (211)	102 (220)	103 (209)	104 (220)	110 (217)	111 (224)	117 (228)	121 (225)	118 (222)	116 (227)	120 (225)	122 (226)	120 (235)	113 (245)	104 (237)	94 (244)	88 (241)	101	(5511)
																						Annual mean for 0a days			[92]	

Daily, monthly and annual means are computed excluding hours with precipitation and, of course, all indeterminate entries. The number of hours or days used in computing each mean is shown in round brackets. Entries in square brackets are means for 0a days (see Introduction) and the figure in round brackets is the number of days used in computing this mean.

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

40 ESKDALEMUIR 1961

	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
		hr.		hr.		hr.		hr.		hr.		hr.
1	2c	10·9	1a	0·7	(1a)	-	(1a)	-	1b	0·3	0a	...
2	2b	5·3	(1a)	-	2b	4·3	(1)a	-	1b	0·9	0a	...
3	2c	9·6	1b	1·1	2a	3·6	0a	...	2b	3·5	1a	0·6
4	1b	2·9	2c	3·5	(1a)	-	(1a)	-	2c	4·3	0a	...
5	2c	10·6	2b	3·9	(1a)	-	(2b)	-	2a	3·0	1a	0·5
6	2b	6·1	2c	8·3	0a	...	(1a)	-	2b	6·3	1a	0·9
7	2b	3·3	1a	0·6	1a	0·3	0a	...	2c	5·7	(1a)	-
8	2c	3·5	2c	7·4	0a	...	0a	...	2b	5·8	2c	-
9	(2c)	-	1b	1·6	0a	...	2b	9·9	1a	1·3	1b	1·9
10	(1b)	-	1a	2·7	(1a)	-	1a	0·3	0a	...	2c	7·7
11	2b	3·9	2c	4·1	2b	-	1b	2·1	0a	...	2a	5·9
12	2(b)	-	2c	7·2	2a	7·0	2b	6·1	0a	...	1a	2·6
13	1b	0·5	2a	4·3	1a	0·2	2c	4·2	1a	1·3	0a	...
14	(1)a	-	2b	5·3	1a	1·9	1b	2·5	2a	3·8	1a	0·5
15	(1a)	-	1a	0·3	2a	6·3	0a	...	1a	0·1	1a	0·1
16	0a	...	(1)a	-	(2a)	-	0a	...	0a	...	1a	1·1
17	0a	...	(1)a	-	2b	-	(1)a	-	1a	0·4	1a	1·6
18	1a	0·5	1b	2·1	(1)b	-	1a	2·2	1a	0·3	0a	...
19	2b	5·3	0a	...	0a	...	2b	6·7	1a	1·0	1a	0·1
20	1b	0·1	0a	...	1a	1·1	1a	0·5	0a	...	1a	0·3
21	1a	0·1	1a	0·3	0a	...	2b	4·9	0a	...	2b	3·2
22	1a	0·3	0a	...	0a	...	2b	5·0	0a	...	0a	...
23	1a	0·8	0a	...	1b	1·8	1b	2·4	0a	...	0a	...
24	1a	0·4	2b	5·3	(1)b	-	1a	0·2	0a	...	0a	...
25	(1a)	-	2b	6·4	0a	...	2b	3·6	1b	0·7	1a	1·9
26	2a	3·3	(2c)	-	(1a)	-	1a	1·8	1b	0·4	0a	...
27	2c	12·7	1b	0·7	0a	...	1a	0·9	(1a)	-	1a	0·4
28	1b	0·3	(1b)	-	(1a)	-	0a	...	(1)a	-	0a	...
29	2c	7·7			(1b)	-	1a	0·1	1b	1·2	0a	...
30	2b	3·8			2c	5·8	2a	3·3	2b	5·3	0a	...
31	1b	1·9			(1b)	-			0a	...		
Total	-	93·8	-	65·8	-	32·3	-	56·7	-	45·6	-	29·3
No. of days used	-	25	-	23	-	18	-	24	-	29	-	28
Mean	-	3·8	-	2·9	-	1·8	-	2·4	-	1·6	-	1·0

	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
		hr.		hr.		hr.		hr.		hr.		hr.
1	1a	0·6	1a	0·4	1b	1·7	0a	...	2(b)	-	0a	...
2	1a	0·6	1b	0·3	1b	2·5	0a	...	2c	4·6	1b	1·5
3	2a	4·2	2c	11·9	(2a)	-	(1a)	-	0a	...	0a	...
4	1a	0·7	1a	0·2	(1a)	-	1a	0·1	0a	...	2c	5·0
5	0a	...	2c	4·3	1b	0·8	2a	4·3	1a	1·1	2c	6·3
6	0a	...	2c	3·7	1b	1·8	1b	0·6	1a	1·5	1b	1·0
7	2(b)	-	1b	2·6	(1a)	-	1a	1·0	2c	6·4	0a	...
8	1b	0·8	2c	15·9	(1a)	-	2c	5·1	1b	2·3	2a	5·5
9	1a	0·1	2b	4·3	0a	...	2b	5·4	0a	...	2a	3·9
10	1a	0·3	1b	2·1	1a	0·5	1a	0·1	1a	0·6	2b	6·5
11	1a	2·5	1a	0·3	1b	2·3	1a	1·7	1a	1·3	2c	-
12	2b	8·7	(1a)	-	2b	7·5	(1)a	-	(1a)	-	2(b)	-
13	2b	-	(1a)	-	2b	5·3	(1)a	-	(1a)	-	2b	5·6
14	1a	1·9	0a	...	1a	0·1	(1)a	-	1a	0·3	1a	0·7
15	1a	2·5	0a	...	1a	1·9	1a	1·3	0a	...	1a	1·2
16	1a	0·3	1a	0·3	1a	1·7	2b	4·8	2a	5·5	2a	4·0
17	0a	...	1a	0·8	0a	...	2b	6·7	1a	0·1	(1)a	-
18	1b	1·7	1a	2·2	(1)a	-	2(b)	-	1a	0·7	1a	2·5
19	0a	...	(1a)	-	(1a)	-	1a	1·2	1a	0·7	1a	1·1
20	0a	...	(1a)	-	(1a)	-	(1a)	-	1a	0·3	1a	0·1
21	1a	0·3	2b	6·5	(1a)	-	2(a)	-	1a	0·6	1a	0·1
22	0a	...	1a	0·6	(1)a	-	2b	6·7	2b	4·0	1b	1·5
23	0a	...	(1a)	-	(1)a	-	2c	7·3	1b	2·0	0a	...
24	0a	...	(1a)	-	1b	0·4	2c	8·9	2c	9·3	0a	...
25	2b	5·4	2a	5·3	1a	1·3	1c	2·7	(1b)	-	1a	0·5
26	1a	0·9	1a	0·7	(1a)	-	2c	5·9	2(b)	-	0a	...
27	1a	0·8	1a	0·4	(1a)	-	2b	6·2	1a	2·4	0a	...
28	0a	...	0a	...	(1a)	-	1a	0·6	2b	3·9	1b	1·8
29	0a	...	1a	1·9	(1b)	-	1a	0·3	2c	9·0	1b	0·3
30	1a	0·1	0a	...	(1a)	-	2b	3·5	2c	5·9	1a	0·5
31	1a	0·1	0a	...			1a	0·4			(1a)	-
Total	-	32·5	-	64·7	-	27·8	-	74·8	-	62·5	-	49·6
No. of days used	-	29	-	25	-	15	-	24	-	25	-	27
Mean	-	1·1	-	2·6	-	1·9	-	3·1	-	2·5	-	1·8

Annual values: Character 0 1 2
No. of days used 72 191 102

Duration: Total 635·4 hr.
No. of days 292
Mean 2·18 hr.

KEW

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

41 KEW OBSERVATORY — Factor 4·34 (metre^{-1}) — JANUARY 1961

	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	760	610	530	480	595	570	545	530	495	505	495	445	435	470	470	530	395	395	-160*	15*	Z-*	Z-*	Z-*	Z±*	514 (18)
2	Z±*	Z±*	Z±*	180*	155	230	245	315	395	395	480	545	585	560*	545*	-600*	Z±*	Z±*	0*	315	Z±*	Z±*	85*	255*	366 (10)
3	295	225	255	225	255	245	315	365	560	595	560	395	415	460	595	595	435	Z±*	280*	-70*	-90	25	-385	-35	300 (21)
4	0*	35*	-20*	100*	150	130	155	255	395	355	265	270*	270	255	215*	225	245	205	240	245	205	225	230	295	241 (18)
5	290	265	215	215	200	405	460	570	810	725	695	790	610	585	575	495*	-70*	100	Z±*	180*	Z±*	Z±*	-55	190	425 (18)
6	280	230	100*	130*	230	215	290	340	415	530	395	405	340	255	255	175	155	85	105	130	165	205	180	155	252 (22)
7	90	150	140	225	165	130	215	305	675	925	925	975	765	670	510	480	365	495	230*	Z±*	Z±*	Z±*	65*	105*	456 (18)
8	15*	35*	50*	155*	205*	295*	245	255	340	460	415	380	340	330	415	415	635	700	645	405*	545*	445	460	365	428 (16)
9	240	90	10	60	65	200	365	430	430	435	495	660	815	635	165*	-385*	Z-*	Z-*	Z-*	Z±*	Z±*	215*	105*	165*	352 (14)
10	Z±*	355	290	280	395	495	660	745	Z±*	645*	595*	190*	Z±*	-35*	65*	165	200	35*	10*	340	620	570	670	660	460 (14)
11	560	435	430	415	405	255	415	510	685	645	710	720	695	670	710	940	840	875	835	790	395	435	570	530	603 (24)
12	365	100	150	570	675	600	725	675	825	850	760	765	790	745	700	695	625	635	695	645	480	415	390	380	594 (24)
13	330	345	330	340	330	295	245	330	610	595	530	430	340	295	295*	345*	340*	90*	-315*	-230*	-175*	100*	405	455	388 (16)
14	295	180	180	280	230	320	255	430	510	685	840	695	1075	860	835	825	570	635	925	955	905	890	975	885	635 (24)
15	745	575	660	560	545	505	610	575	595	625	585	420	430	495	535	585	660	610	495	480	435	370	345	270	530 (24)
16	215	200	130	200	245	280	320	495	695	710	710	745	835	735	650	585	600	555	470	480	495	460	545	595	498 (24)
17	495	395	365	315	280	245	200	105	125*	345	370*	415*	470*	560	735	620	560	595	530	415	340	330	455	415	415 (20)
18	240	-20*	-185	150	130	130	190	150	205	530	645	625	625	530	570	595	595	610	595	560	505	495	460	365	405 (23)
19	290	295	330	315	270	280	330	420	555	555	530	365	115	-105*	-495*	Z±*	445	395	-160	65*	295*	Z±*	Z±*	55*	333 (16)
20	200	-315*	35	25	-240	-345	-165*	65*	330	345	625	815	620	720	600	725	790	570	765	570	-90*	165*	-175*	575*	421 (17)
21	315*	65	240	390	370	370	190	430	545	570	495	-20*	405*	270*	395	460	535	535	555	635	660	530	520	455	447 (20)
22	395	485	505	430	485	455	345	320	280	355	305	265	140	-80	-125	-35	10	40	65	50	25	280	270	460	239 (24)
23	510	340	290	255	205	205	175	295	620	865	1040	1025	1050	875	1025	990	1090	875	745	760	710*	510*	395*	370*	662 (20)
24	405*	365	205	165	180	205	230	470	610	495*	340*	295*	295*	455	495	345	555	510	395	445	340	265	280	265	357 (19)
25	225	255	230	190	190	200	180	270	575	700	610	575*	530*	595*	585*	-*	-*	625	595	535	435	460	445	330	392 (18)
26	295	280	225	200	230	295	305	330	460	505	660	710	720	645	585	390	365	340	140	340	155	65	200	-10	351 (24)
27	75	75	0	35	40	15	-35	-220*	-315*	-350*	-315*	50*	-20*	-25*	50*	190*	295*	595	660	905	1000	395	595	925	367 (14)
28	530	445	295	295	180	165	215*	-265*	-10*	100*	35*	-635*	175*	295*	330	415*	Z±*	Z±*	-130	180	265	255	245	230	285 (12)
29	40	85	90	100	130	115*	-70*	50*	-45*	-20*	-70*	-105*	-20*	-20*	-80*	Z±*	-140*	-175*	-20*	-20*	-245*	-115*	-230*	-615	89 (5)
30	-845*	-600*	0*	150	230	230	245	390	510	545	595	470	435	435	505	495	530	470	480	530	570	535	560	460	446 (21)
31	420	320	280	280	225	215	205*	295	395	480	510	505	420	430	380	365	225	Z±*	Z±*	295	Z±	155	255	155	330 (20)
Mean	341 (24)	287 (25)	239 (26)	265 (27)	251 (30)	260 (29)	312 (27)	393 (27)	520 (26)	570 (26)	595 (25)	598 (22)	559 (23)	523 (23)	534 (22)	507 (22)	497 (23)	498 (23)	489 (20)	482 (22)	416 (19)	372 (21)	375 (23)	382 (23)	421 (578)
																									Mean for selected quiet days [416 (10)]

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

41 KEW OBSERVATORY — Factor 4·66 (metre^{-1}) — FEBRUARY 1961

	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	185	160	150	185	185	210	275	475	Z±*	Z±*	Z±	450	450	385	460	440	580	685	535	520	565	580*	265*	200*	383 (18)
2	Z-*	Z-*	245*	195*	-140*	175	315	280	Z±*	Z±*	Z±*	485	415	345*	520*	420*	670*	720	900	940	950	485	350*	-75*	567 (10)
3	635*	105*	245*	90	70	105	55	405	705	845	755	660	615	520	465	450	415	605	860	950	855	935	935	790	575 (21)
4	Z±*	Z±*	460*	195*	130	Z±*	Z±*	350*	495	500	450	460	430	370	420	475	450	520	650	855	900	905	835	580	554 (17)
5	650	615	565	600*	70*	335*	240*	210*	195*	395*	265	105	300	360	460	440*	545	430*	510	360*	300	315	315	220	395 (14)
6	175	175*	90*	70	80	160	175	-20*	175*	70	-45	325	405	405	450	385	475*	615	600	590	485	380	300	265	310 (19)
7	240	140	210	175	195	210	255	335	405	460	420	440	450	430	495	555	530	535	370	510	685	785	670	600	421 (24)
8	385*	290*	220*	370*	240*	315*	315*	0*	115*	-260*	-445*	175*	140	20	-95	175	175	165	185	255	265	255	265	195	167 (12)
9	230	195*	165*	140	160	200	210	350	520	580	440	475	420	405	385	420	510	730	1080	785	460	430	510	605	457 (22)
10	670	600	475	140	210	315	430	510	640	635	275	210*	350*	405	350	310	335	335	275	240	210	230	80	90	353 (22)
11	35	-20	95	125	140	230	265	335	475	440	370	165*	265	265	345	350	360	335	310	335	350	300	280	255	271 (23)
12	245	265	195	175	245	230*	130*	160	245	245	195	280	265	210	210	240	350	420	460	450	315	275	325	335	277 (22)
13	265	220	210	195	210	200	200	265	315	315	345	405	380	380	430	415	420	485	545	600	580	600	530	580	379 (24)
14	495	420	530	820	985	950	995	1040	880	915	430	460	440	500	475	485	600	600	535	230	140	325	265	300	576 (24)
15	290	315	335	345	275	315*	430*	465*	420*	195*	245*	265	210	240	345	265	230	300	335	160	245	245*	300*	175*	277 (15)
16	275*	175*	200*	210*	265*	395*	310	405	385	465	395	440	395	315	335	335	380	405	395	450	420	315	380	385	384 (18)
17	255	335	290	310	370	385	420	420	495	530	280	140	140	115	245	125	175	265	280	255	230	300	395	380	297 (24)
18	405	370	280	440	450	530	335*	200*	290*	300	35	210	350	325	385	380	395	460	460	605	565	495	485	450	399 (21)
19	420	280	90	200	265	350	465	570	705*	720*	535	460	405	220	265	545	485	385	385	345	370	335	350	325	366 (22)
20	265	255	230	230	220	200	275	265	370	350	300	335	245	265	245	280	360	385	350	245	210	280	105	150	267 (24)
21	200	265	245	245	245	230	255	290	300	335	380	345	370	405	450	460	460	420	430	415	325	350	325	335	337 (24)
22	315	310	245	220	275	385	430	385	440	405	460	500	460	530	545	565	625	475	495	530	615	475	440	465	441 (24)
23	350	370	335	245	195	325	415	395	450	465	580	600	530	495	475	580*	460*	350*	325	360	385	475	350	245	398 (21)
24	195	220	245*	Z±*	Z±*	Z±*	35*	90	360	210	290	350*	195*	-75*	130*	350	175	125	175	640	775	845	635	755	389 (15)
25	670	265*	-220*	-555*	-260*	Z±*	-110*	-220*	-220*	-275*	-165*	-500*	Z±*	Z±*	Z±*	265	315	475	460	465	420	450	415	315	425 (10)
26	230	315	335	265	240	240	255	300	290	310	315	300	310	315*	315*	60*	80*	105*	-20*	140*	35*	150*	350	345	293 (15)
27	315	300	280	300	380	475	530	680	765	810	350*	335*	640*	Z±*	Z-*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z±*	Z-*	Z±*	483 (10)
28	160*	255	370	385	300	125	240	300	350	370	385	370	385	350	415*	160*	-275*	70*	90*	20*	-260*	-20*	-645*	-685*	322 (13)
Mean	323 (22)	299 (20)	288 (19)	252 (21)	265 (22)	300 (20)	339 (20)	393 (21)	468 (19)	455 (21)	357 (22)	387 (22)	366 (24)	344 (23)	370 (22)	376 (22)	403 (22)	454 (23)	476 (25)	489 (24)	465 (25)	458 (23)	415 (23)	390 (23)	383 (528)
																									Mean for selected quiet days [363 (10)]

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

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

41 KEW OBSERVATORY — Factor 4·43 (metre^{-1}) — MARCH 1961

	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	-315*	25*	85	155	295	280	215*	215*	425	635	730	520	495	330	375	365	365	375	450	375	385	385	355	410	389 (20)
2	400	400	350	185	155	245	190	140	190	210	155*	285	260	315	315	280	280	295	385	385	485	450	530	575	318 (23)
3	565	365	390	315	445	485	420	450	445	435	750	450	385	400	420	385	390	470	550	550	485	450	315	250	440 (24)
4	60	80	95	85	85	140	50	35	50	505	520	460	350	295	295	295	285	410	355	645	680	575	575	245	299 (24)
5	225	70	35	25	50	15	25	10	45	445	590	520	350	210	330	330	355	330	350	425	555	540	330	450	275 (24)
6	410	420	235	95	80	35	35	155	420	715	590	425	340	295	270	315	320	340	470	590	590	445	320	250	340 (24)
7	210	210	225	155	120	150	245	295	420	470	520	540	390	365	420	390	435	425	365	445	330	210	270	270	328 (24)
8	225	330	175	50	70	85	190	330	505	445	385	280	340	350	270	245	225	210	280	155	140	270	315	390	261 (24)
9	225	200	70	390	315	270	190	365	350	385	320	400	400	385	460	505	505	400	350	280	225	190	550	955	362 (24)
10	965	1130	1210	940	1105	1185	1060	625	435	485	225	50	260	270	305	365	420	365	350	350	350	420	425	15	555 (24)
11	190	175	150	190	165	215	280	400	450	445	400	285	250	250	260	245	260	280	355	485	470	245	50	-70	268 (24)
12	15	0	60	85	175	175	175	150	95	10	10	15	60	70	150	130	120	105	85	185	235	175	175	165	109 (24)
13	105	70	95	35	35	85	85	165	280	330	280	385	250	375	390	315	305	315	280	225	225	70	-110	-45	189 (24)
14	35	85	120	140	120	190	210	260	285	375	420	450	485	460	435	365	320	445	470	450	435	460	365	385	324 (24)
15	375	400	365	330	320	270	190	460	645	695	715	590	365	330	320	250	315	420	555	730	1085	765	610	515	484 (24)
16	450	260	315	250	260	340	385	260	485	575	835	765	470	365	340	315	305	365	575	680	820	645	520	620	467 (24)
17	425	320	315	315	280	295	280	375	625	520	410	375	315	320	225	350	350	280	295	280	295	420	435	435	356 (24)
18	420	355	315	305	350	365	355	420	445	350	280	260	305	Z±*	Z±*	485	95	210	Z±*	Z±*	Z±	260	190	315	320 (19)
19	350	175	80	105	85	35	0	35	155	235	260	215*	185	155	155	190*	50	50	155	190	260	480	515	485	191 (22)
20	350	225	330	130	45	45	35	215	420	315*	305	210	200*	140*	70*	120*	155	105	60	80	105	60	-215	-45	138 (19)
21	85	200	320	295	245	250	365	350	385	340	295	330	280*	245*	210*	260*	355*	225*	245	235	330	505	420	280	304 (18)
22	190	175	35	50	115	105	165	250	505	Z±*	70*	Z±*	35*	0*	70	95	210	150	280	155	200	70	35	35	152 (19)
23	150	210	210	60	50	85	185	365	400	385	435	320	245	245	280	280	350	385	410	520	620	855	730	175	331 (24)
24	215	260	95	130	315	280	200	520	895	870	610	375	355	295	280	260	270	280	365	470	515	450	540	470	388 (24)
25	400	250	365	245	250	315	280	340	365	450	420	330	245	210	210	200	200	185	210	245	280	320	320	260	287 (24)
26	175	175	210	250	200	175	190	190	245	190	210	190	175	210	245	245	235	140*	140*	-55*	105	350	350	295	220 (21)
27	280	210	210	235	235	285	460	485	470	450	350	295	270	280	245	225	225	245	250	245	270	225	245	150	285 (24)
28	140	140	175	235	280	385	610	635	655	445	280	225	225	245	225	225	215	210	210	260	315	285	285	270	299 (24)
29	235	190	190	175	200	190	320	235	215	50*	-70*	-145*	80	140	85*	70*	10*	-90*	15*	-10	-35*	35*	120	150	174 (14)
30	120	35	15	50	105*	95	150	70*	85*	120	225	250	225	190	190	175*	175*	210	250	140*	235*	200*	-35	190	143 (16)
31	175	245	245	280	320	350	435	590	470	350	385	365	245	250	260	215	215	225	315	425	450	445	295	225	324 (24)
Mean	272 (30)	245 (30)	229 (31)	203 (31)	225 (30)	239 (31)	259 (30)	314 (29)	393 (30)	424 (28)	420 (28)	355 (28)	297 (28)	282 (27)	287 (27)	295 (26)	278 (28)	289 (28)	331 (28)	359 (28)	401 (28)	380 (29)	317 (31)	293 (31)	306 (695)
																				Mean for selected quiet days					[327 (10)]

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

41 KEW OBSERVATORY — Factor 4·51 (metre^{-1}) — APRIL 1961

	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	45	-20	20	90	150	95	200	175*	315*	210*	195*	150*	300*	350*	315	300*	255*	210*	35*	240*	220*	350	370	395	183 (11)
2	280	160	70*	80	130*	105*	165	60	195	245	200*	245*	140*	280	265	265	265	275	335	275	280	210	230	175	374 (18)
3	255	105	105	90	115*	70*	0*	-165*	-550*	Z±*	Z±*	-365*	-440*	300*	545*	10*	-130*	105	370	335	290	495	600	535	299 (11)
4	255	350	495*	90*	Z-*	-20*	440*	230*	Z±*	Z±*	-130*	70*	385*	315	245*	55*	10*	265*	310*	175*	230*	-90*	245*	275	299 (4)
5	140*	80*	80*	45*	95*	35*	280*	350*	315*	265*	280*	315	210*	385*	345	345	315	350	475	640	810	855	740	680	534 (11)
6	530	310	385	450	395	420	555	750	315	290	245	335	315	335	315	310*	350*	385	500	625	510	395	405	315	413 (22)
7	105	70	150	185	195	265	360	500	650	545	565	650	615	555	635	510	580*	605*	335*	Z-*	-675*	-310*	430*	300	403 (17)
8	385	345	275	140	105	105	230	415	565	510	545	475	335	380	495*	385	420	465	465	530	275	-100	-20	-20	313 (23)
9	-35	-90	-65	-55	20	140	210	245	280*	335*	335*	290*	200	255	175	395	460	460	545	440	265	185	20	0	189 (20)
10	20	90	-10	160	90	70	25	25	90	175	150	475	475	385	500	495	70*	385*	195*	80*	-365*	-255*	-550*	475*	201 (16)
11	210*	55	265	150	300	565	635	565	520	565	475	485	335	245	315	315	300	335	310	335	420	475	450	405	383 (23)
12	405	380	310	300	265	315	430	380	300	315	210	280*	195*	265*	175*	210*	220*	280	315*	185*	210*	220*	140*	210	315 (13)
13	195*	175*	195	195	210	245	430	370*	360	280	315	275	255	300	315	280	275	195*	Z±*	530	350	395	345	370	312 (19)
14	300	140	210	300	335	415	440	460	345*	105*	-75	265	275	335	310	255	300	345	405	420	315*	70*	105*	175	295 (19)
15	385	315	95	95	105	175	290	315	440	460	385	315	350	280	290	210	165	185*	350	510	720	350	415	405	323 (23)
16	300	265	175	165	105	90	280	35	315	240	230	310	255	210	230*	195*	280	245	280	240	245	310	430	175	235 (22)
17	60	140	95	70	70	60	-25	175*	90*	150*	175	530*	510	385	315	315	315	370	405	370	440	495	565	460	279 (20)
18	325	335	310	210	220	370	650	600	565	510	555	530	530	405	360	385	465	500	345	315	185	195	230	440	397 (24)
19	385	280	345	245	245	335	510	500	385	185	275	300	245	245	210	195*	210*	245*	105*	Z±*	-240*	-575*	175*	-110*	313 (15)
20	35*	150	255	315	415	580	380	590	580	415	360*	350	350	290	300	315	325	300	200	20	-130*	-255*	130*	165*	341 (18)
21	160*	-110*	Z±*	Z±*	70*	115*	335	385	335	325	280	275	290	275	290	315	280	275	300	360	420	380	345	265	318 (18)
22	Z±*	Z±*	265	275	185	265*	300	150	245	290	220*	255	300*	Z±*	Z±*	Z±*	-20*	360	460	500	520	395	475	460	342 (15)
23	335*	35*	160	90	70	140	160	280	275	245	195*	Z±*	130	Z±*	Z±*	Z±*	-35	Z±*	Z±*	535	510	345	125	230	217 (15)
24	310	360	315	350	335	520	600	460	450	315	300	245	230	Z±*	Z±	Z±*	240	275	265	405	430	440	530	510	375 (21)
25	720	615	465	405	495	510	370	300	370	350	280	230	240	165*	-155*	-35*	-80*	Z-*	Z-*	Z±*	105*	-110*	Z-*	-185*	412 (13)
26	55*	55*	160	335	395	555	600	535	335	420	385*	315	245	245	350*	0*	360	Z±*	315	165*	220	275	290	195	341 (17)
27	140	125	130	95	95	150	220	245	210	240	175	240	255	220	245	280	255	280	300	335	360	310	265	265	226 (24)
28	230	140	165	175	160	245	335	530	705	460	385	300	300	350	280	240	265	265	165	60	45	130	115	80	255 (24)
29	80	20	-25	-35	-35	35	115	80	175	195	280	240	185	175	210	185	210	280	195	80	60	55	160	150	128 (24)
30	125	95	70	70	90	70	105	175	20	150	150	210	175	240	240*	160*	175*	280*	210*	210*	95*	255*	350	310*	140 (15)
Mean	255 (22)	197 (24)	185 (26)	183 (27)	201 (25)	270 (24)	330 (27)	357 (24)	365 (23)	336 (23)	295 (20)	336 (22)	308 (23)	305 (22)	315 (19)	323 (17)	287 (19)	324 (19)	349 (20)	374 (21)	368 (20)	330 (21)	338 (22)	298 (25)	298 (535)
																				Mean for selected quiet days					[307 (9)]

Daily, monthly and annual means are computed excluding hours with precipitation and, of course, all indeterminate entries. The number of hours or days used in computing each mean is shown in round brackets. Entries in square brackets are means for selected quiet days (see Introduction) and the figure in round brackets is the number of days used in computing this mean.

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}) — MAY 1961

	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	215	95*	105	60	240	170	225	250	310	345	345	155*	205	180	120*	200	120	−25	−140*	−55*	15*	70*	120*	120*	196 (15)
2	120	140	180	240	290	445	525	465	430	290*	Z±	260*	395	345	Z±*	Z±*	Z±	Z±*	Z±*	Z±*	345*	140*	275	300	319 (13)
3	285	225	265	265	335	380	300	290	360	320*	260*	260	275	240	260	310	320	395	405*	230*	380*	480	360	290	310 (19)
4	205	225	85*	45*	35*	70*	165*	190*	205*	170*	190*	190*	250	265	240*	205*	Z±*	Z±*	Z±*	Z±*	−250*	325	395	170	262 (7)
5	165	155	170	140	155	180	310	325	285	275	240	230	265*	Z±*	465*	440	285	290	265	320	355	385	380	345	271 (21)
6	310	300	310	260	205	240	290	440	430	275	225	205	205	165*	120*	140*	205*	155*	140	155	140	275	275	265	260 (19)
7	265	225	205	205	200	205	250	310	265	240	200	180	180	170	180	225	−35	290	275	310	360	275	230	190	225 (24)
8	190	165	165	170	230	265	325	345	285	265	240	180	170	170	170	190	170	170	205	205	85	95	155	205	201 (24)
9	205	170	215	205	205	260	300	310	310	345	290	285	275	265	275	265	225	240*	310	240	275	180	190	165	251 (23)
10	120*	225	300	265	360	500	505	405	445	395	430	345	250	240	230	265	240	360	360	385	445	455	345	430	356 (23)
11	355	265	200	140	190	380	320	445	380	355	355	310	275	310	285	335	300	275	205	170	140	110	85	45	260 (24)
12	50	85	25	45	105	260	405	480	455	310	260	225	205	225	205	240	205	205	200	200	170	215	190	225	216 (24)
13	180	180	240	310	275	385	480	600	465	415	360	290	265	240	180	180	190	205	225	205	275	335	260	325	294 (24)
14	240	320	290	300	260	240	265	170	190	225	170	140	155	130	120	50	75	105	130	75	190	105	105	75	172 (24)
15	120	105	120	140	165	240	465	490	620	560	500	415	320	385	370	430	430	415	480	480	635	540	310	275	375 (24)
16	275	360	275	260	275	360	570	630	585	560	550	655	610	475	610	540	525	420	395	360	415	420	480	445	460 (24)
17	395	335	385	540	370	395	585	660	680	645	515	515	620*	Z±*	Z±*	600	540	645	395	465	500	360	50	0	456 (21)
18	35	60	35	215	140	35	120	310	480	465	560	430	345	345	320	290	205	225	155	140	260	290	240	225	247 (24)
19	215	170	145	225	325	345	475	440	445	290	260	310	240	320	265	240	155	205	170	180	240	85	75	45	244 (24)
20	120	205	205	170	45	75	170	120	95	145	105	85	105	85	85	120	130	155	190	225	250	250	325	320	157 (24)
21	290	205	250	240	200	170	140	155	170	155	140	95	145	140	155	155	140	200	225	265	415	535	585	525	237 (24)
22	415	275	345	290	325	300	290	345	265	250	230	200	170	170	165	170	105	145	130	110	140	285	170	145	226 (24)
23	140	120	50	50	85	75	190	230	225	205	250	225	205*	275	215	180	190	190	130	200	190	190	180	205	173 (23)
24	170	155	155	140	140	170	205	290	290	260	180	170	155	130	130	170	190	145	215	285	180	85	170	205	183 (24)
25	215	355	230	385	75	140	380	765	705	525	300	260	260	205	205	165	45	70	155	155	140	155	140	205	260 (24)
26	145	155	165	140	105	260	385	415	380	345	325	275	290	310	260	380	190	190	205	205	215	225	225	240	251 (24)
27	275	290	260	260	265	290	325	285	205	180	180	155*	110*	105	140	Z±*	Z±*	155	205	230	345	480	440	655	279 (20)
28	290	260	285	155	140	120	105	180	155	155	130	325	Z−*	Z±*	Z−*	Z±*	Z±*	225	−125	−210	50	70	85	105	132 (19)
29	105	95	105	75	75	120	50	120	170	130	70	75	70	85	95	110	165	190	205	190	230	310	310	265	142 (24)
30	180	205	180	230	155	165	380	655	415	360	395	380	455	380	395	380	345	355	225	170	170	50	260	230	296 (24)
31	200	170	170	215	310	465	445	465	455	440	385	360	325	335	325	405	335	310	285	275	225	205	230	165	313 (24)
Mean	212 (30)	207 (30)	201 (30)	211 (30)	208 (30)	255 (30)	326 (30)	380 (30)	365 (30)	326 (28)	293 (28)	275 (27)	254 (26)	242 (27)	235 (24)	271 (26)	223 (26)	241 (27)	221 (27)	222 (27)	261 (27)	268 (29)	251 (30)	243 (30)	258 (679)
																									Mean for selected quiet days [244 (10)]

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

41 KEW OBSERVATORY — Factor 4·53 (metre^{-1}) — JUNE 1961

	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	150	105	70	60	45	35	165	140*	140*	105*	85*	105*	60*	125*	55*	−80*	−70*	−215*	−215	−195	−275*	−80*	0*	150	37 (10)
2	270	225	210	210	175	175	200	270	280	315	325	280	245	225	255	245	235	220	210	220	155	155	225	220	231 (24)
3	155	175	235	245	140	150	200	245	280	235	235	225	195	165	140	115	85	105	115	125	85	95	245	210	175 (24)
4	195	105	60	80	60	60	80	130	210	220	140	140	125	130	115	15	35	85	35	0	35	70	35	140	96 (24)
5	95	70	175	60	85	70	175	295	335	280	175	130	155	130	80	80	85	70	130	125	125	125	125	115	137 (24)
6	115	105	95	85	115	150	245	350	340	295	195	175	140	210	210	175	155	105	115	155	140	70	55	60	161 (24)
7	70	80	60	125	95	85	140	245	210*	365*	255	210	210	200	195	155	175	165	220	255	210	265	365	315	186 (22)
8	130	55*	85*	10*	140*	175	295	280	305	295	305	270*	Z±*	560	Z±*	Z±*	Z±*	155	195	255	315	340	265	255	273 (15)
9	255	265	270	350	430	410	430	500	475	325	280	280	255	235	225	210	195	185	185	140	185	225	245	210	282 (24)
10	255	210	265	325	280	365	340	305	290	245	210	195	125	125	140	140	130	125	−35*	−45*	−195*	15*	125*	175	223 (19)
11	140	55*	85	115	130	155*	45	130	85	85*	125	130	140	80	105	125	105	105	80	125	115	130	95	80	108 (21)
12	115	95	85	105	140	175	210	290	290	200	200	175*	Z±*	Z±*	Z±*	Z±*	−65*	Z±*	Z±*	315*	Z±*	Z±*	−195*	−35*	173 (11)
13	−10*	−160*	−90*	−65*	−20*	−35	55	−10	35	175	335	325	315	340	270	265	265	195	185	195	305	325	315	210	214 (19)
14	210	80	35	35	55	45	210	435	490	265	185	165	125	140	70	70	70	125	150	70	−20	−145	−10	35	120 (24)
15	105	115	140	85	85	195	270	245	265	265	265	225	175	165	155*	165	105	−70	−55*	175	295	315	265	220	185 (22)
16	185	125*	210*	195	220	245	315	375	315	280	290	220	185	195	210	140	175	220	210	175	225	270	210	175	229 (22)
17	165	105	85	130	125	150	195	225	125	55	55	15	60	70	80	105	85	105	155	95	210	155	155	210	121 (24)
18	140	95	15	15	10*	85*	45*	105*	125	55*	80*	155	130	130	115	115	105	115	125	150	175	195	220	210	129 (18)
19	185	130	115	220	265	350	445	420	405	295	225	245	195	185	195	175	175	165	175	200	305	220	115	95	229 (24)
20	140	195	220	200	200	245	490	675	655	315	165	155	155	150	155	140	140	155	125	105	140	55	140	150	219 (24)
21	55	60	55	55	60	265	385	645	545	420	290	235	220	210	175	165	140	125	125	105	125	125	80	85	198 (24)
22	105	85	105	115	175	140*	305*	295	280	95	245	270	220	245	210	195	185	140	130	140	150	150	175	200	178 (22)
23	195	165	175	200	245	325	335	315	295	265	280	280	270	295	255	290	235	175	155	210	270	265	255	265	251 (24)
24	245	210	195	175	210	225	–	–	395	340	305	270	210	175	140	175	175	175	175	175	220	175	185	165	214 (22)
25	155	155	105	130	140	225	245	280	295	270	210	195	165	150	150	150	115	80	105	165	235	295	265	200	187 (24)
26	195	165	140	220	225	265	360*	220*	305*	365*	365	335	280	235	Z±*	Z±*	385*	350*	350*	150	35	−225	−160	−305	128 (15)
27	10*	−35*	−35	155	270	270	325	435	435	340	350	280	220	220	220	220	185	140	130	175	235	245	315	245	244 (22)
28	325	295	255	195	265	335	420	445	420	280	235	200	185	175	150	175	140	130	105	125	165	200	195	165	233 (24)
29	130	125	95	165	245	165	315	545	405	325	280	245	210	175	140	130	130	105	105	175	130	115	105	140	196 (24)
30	105	115	80	95	155	200	385	465	315	165	130	175	130	175	155	155	130	195	245	235	265	305	235	225	201 (24)
Mean	164 (28)	141 (25)	126 (27)	148 (28)	172 (27)	197 (27)	266 (26)	340 (26)	322 (27)	262 (25)	238 (28)	213 (27)	187 (27)	196 (28)	166 (25)	157 (26)	144 (26)	133 (27)	133 (26)	144 (28)	179 (27)	167 (27)	175 (27)	158 (29)	188 (644)
																									Mean for selected quiet days [201 (10)]

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

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

41 KEW OBSERVATORY — Factor 4·73 (metre^{-1}) — JULY 1961

	Hour G.M.T. 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean
	volts per metre																								
1	195	150	125	140	150	180	400	320	355	340	250	180	150	135	125	105	135	215	260	195	180	135	160	230	200 (24)
2	215	260	265	160	180	105	115	180	60*	35*	55	Z±	Z±	80	105	105*	45	105*	0*	140	35	-20	35	70	119 (17)
3	55	80	140	195	295	140	265	445	375	365	365	265	215	230	215	180	170	150	185	230	240	250	180	90	222 (24)
4	125	160	140	150	135	140	180	180	180	185	215	205	180	215	160	180	160	70	55	90	195	215	140	140	158 (24)
5	140	125	160	180	180	230	250	285	295	230	230	195	180	180	160	140	140	160	125	185	215	240	185	150	190 (24)
6	140	105	90	140	140	195	455	615	445	320	250	215	195	205	180	140	135	125	105	140	115	115	115	140	201 (24)
7	115	100	105	150	305	275	480	500	365	320	310	265	170	180	180	150	140	180	35*	265	215	265	225	265	240 (23)
8	205	185	170	115	170	205	180	170	140	45*	105*	0*	0*	25*	45*	105	125	115	125	135	140	185	180	170	157 (18)
9	180	140	135	115	135	135	180	70	160	125	180	180	140	105	105	115	115	125	140	185	275	275	330	185	160 (24)
10	125	80	80	45	90	115	160	250	205	230	195	205	160	140	90	125	140	55*	60	105*	135	180	170	140	142 (22)
11	140	115	180	170	160	140	260	205	215	215*	160*	225	180	225	215	205	195	215	250	230	230	260	265	180	203 (22)
12	205	215	125	105	160	230*	-365*	-90*	-110*	80*	320*	195*	90	225	140	195	140	140*	105	125*	115*	-110*	100*	195	158 (12)
13	140	115*	60*	70	0*	80	125*	Z±	-220*	-255*	55	230	195	230	195	180	170	170	230	285	180*	185	285	Z±*	180 (15)
14	310	320	340	340	320	355	310	390	385	340	250	205*	35*	-90*	115*	-55*	-145*	70*	160*	150*	25*	35	60*	140	295 (13)
15	105	60	70	70	125	125	150	215	240	260	240	260	265	Z±	Z±	Z±	Z±	Z±	Z±	Z±	0*	Z±	230*	170*	168 (13)
16	140	55*	100*	35*	-255*	-80*	70*	140*	-165*	90*	70	0*	35*	125*	125*	70*	90	150	140	215	225	340	355	285	201 (10)
17	225	160	140	180	160	70*	320	435	355	265*	285*	160*	305	305	265	260	240	240	215	285	355	410	535	390	289 (20)
18	275	250	150	260	295	305	345	550	465	365	355	320	285	275	310	320	240	225*	195	260	215	215	285	260	295 (23)
19	195	135	185	195	180	230	390	605	500	445	390	355	320	355	285	310	260	275	195	180	105	125	160	125	271 (24)
20	125	80	90	100	230	265	470	465	420	340	295	185	140	170	160	160	160	185	205	215	135	215	330	320	227 (24)
21	180	125	100	100	125	140	385	625	915	660	340	230	160	250	515	435	570	550*	310	160	80*	140	180	55	305 (22)
22	80	100	100	105	125	195	345	465	515	465	390	205	135	100	90	70	70	80	230	390	375	385	365	355	239 (24)
23	355	390	355	195	195	125	180	215	230	250	320	330	295	275	230	180	100	100	90	90	140	160	140	140	212 (24)
24	90	55	70	105	105	160	250	285	260	295	310	320	195	180	160	125	115	105	115	140	180	180	160	100	169 (24)
25	80	90	90	70	90	160	295	320	410	400	305	180	160	140	105	115	90	140	215	265	230	230	250	375	200 (24)
26	390	265	185	265	215	195	180	205	135	135	35	70*	20	100	115	105	140	150	195	250	275	260	215	195	184 (23)
27	180	115	125	140	180	225	265*	305	330	355	320	275	185	150	150	140	125	60	70	70*	90*	140*	80*	215*	191 (18)
28	70*	-20*	Z±*	135*	260	445	505	515*	445	445	410	355	340	250	225	215	215	195	205	180	295	320	320	285	311 (19)
29	230	250	250	250	285	295	355	320	285	230	230	195	180	170	140	150	140	150	160	125	70	100	90	105	198 (24)
30	195	140	140	140	105	170	295	250	305	250	185	140	115	125	125	125	115	140	135	170	180	180	150	100	166 (24)
31	70	45	80	70	135	275	455	445	375	295	250	230	185	180	160	140	140	140	140	160	180	265	170	115	196 (24)
Mean	173 (30)	153 (28)	149 (28)	149 (29)	180 (29)	200 (28)	302 (27)	345 (27)	345 (27)	319 (24)	252 (27)	239 (24)	190 (27)	192 (27)	182 (27)	173 (27)	159 (29)	151 (24)	165 (27)	199 (26)	197 (25)	209 (28)	221 (27)	189 (28)	209 (650)
																									Mean for selected quiet days [202 (10)]

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

41 KEW OBSERVATORY — Factor 4·73 (metre^{-1}) — AUGUST 1961

	Hour G.M.T. 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean
	volts per metre																								
1	90	60	60	70	55	105	230	365	405	445	445	400	310	250	210	205	195	195	175	170	105	Z±*	Z±*	Z±*	216 (21)
2	Z±*	105	160	170	45	35	185	195	300	310	300	220	185	90*	205	135	175	160	160	160	205	240	285	290	192 (22)
3	290	230	170	115	250	300	380	495	530	485	310	230	185	205	195	185*	205*	175*	185*	185*	250*	275	275	195	284 (18)
4	125	95	95*	135*	105	105	135	195	175*	105*	125*	140*	135*	135*	140	90*	115	70*	150*	175	95	135	170	205	138 (13)
5	230	175	70*	105*	105*	140*	115*	-235*	135*	175*	135*	90*	105*	160	150	150	175	170	205	250	285	205	265	195	201 (13)
6	175	175	150	150	140	185	210	250	265	210	175	170	-90*	150	Z±*	Z±*	60*	205	Z±*	250	365	175	140	175	196 (19)
7	175	175	170	230	285	365	345	355	405	355	230	185	135	115	90	95	105	160	210	320	255	210	210	175	223 (24)
8	Z±*	Z±*	105*	Z±*	-65*	35	55*	70*	105	55*	175	205	210	210	175	175	185*	150	80*	20*	175	195	250	205	174 (13)
9	175	175	160	175	205	240	320	355	300	250	210	195	195	210	160	170	175	210	255	290	265	355	335	265	235 (24)
10	310	265	230	230	310	400	565	620	495	355	275	195*	195	175*	320*	285*	325*	210*	35*	0*	-10	Z±*	Z±*	Z±*	326 (13)
11	Z±*	Z±*	-75*	185	240	175	Z+	600	710*	390	425	335	210	210	275	210	205*	210	240*	255	370*	265*	240	25	266 (15)
12	265	240	255	250	265	275	390	445	405	370	310	275	220	150	105	135	105	125	125	170	140	175	175	175	231 (24)
13	195	195	195	Z±*	355	160*	140	285	275	255	90*	Z±*	Z±*	Z±*	220	195	195	185	105*	55*	195	250	160	220	220 (16)
14	230	265	230	195	220	285	320	425	335	355	175*	115*	60*	90*	195	210	240	230	250	275	250	230	210	195	257 (20)
15	160	140	115	55	140	160	135*	210*	195*	210*	320*	285	265	300	285	220	195	210	175	175	210	210	230	220	197 (19)
16	175	185	210	255	325	425	405	565	550	285	265	265	210*	160*	185	160	95	135	175	160	125	135	175	150	246 (22)
17	140	175	150	150	175	195	300	370	390	355	310	300	255	250	220	170	175	140	170	285	320	250	185	230	236 (24)
18	250	275	285	135	150	250	275*	255*	125*	175*	205	185	175	175	140	175	185	220	255	230	210	250	265	230	212 (20)
19	170	135	95	90	80*	115	175	220	210	195*	160	150*	140	105	Z±*	60*	150	125	70*	140	160	150	125	80	141 (18)
20	45	35	55	80	95	140	195	220	210	195	195	175	105	115	105	125	125	160	195	185	230	210	195	160	148 (24)
21	160	Z±*	125*	170*	125	80	Z±*	70*	90*	55*	55*	0*	-75*	135*	230	210	240	230	240	230	230	195	185	175	195 (13)
22	140	140	125	140	175	210	265	310	325	290	275	250	220	255*	240	250	220	150	160	170	250	285	265	250	222 (23)
23	205	205	205	160	220	250	320	365	400	300	240	230	175	175	175	195	210	195	170	250	255	265	255	210	235 (24)
24	135	125	90	90	150	210*	0*	55*	35*	265*	175	210	210*	10*	Z±*	Z±*	-165*	115	175	255	250	210	150	195	166 (14)
25	355	300	285	255	210	285	380	405	355	255	210	210	230	210	240	265	255	285	325	405	425	365	355	250	296 (24)
26	140	140	140	140	140	135*	205*	370	335	335	265	140*	125*	170	160	175	205	195*	185	265	240	250	290	290	223 (19)
27	325	285	220	195	195	230	320	320	285	265	210	195	175	160	150	160	160	185	195	300	380	355	365	300	247 (24)
28	210	150	210	175	160	205	325	390	435	290	355	325	310	250	250	250	205	185	135	115	285	445	335	290	262 (24)
29	240	210	195	195	160	150	310	620	750	675	425	265	195	175	175	175	170	175	160	90	140	140	240	195	259 (24)
30	135	95	115	125	185	250	390	530	460	400	405	365	285	320	210	210	70	105	160	175	195	175	160	160	237 (24)
31	115	125	105	195	140	240	445	725	825	780	825	850	715	690	675	620	585	630	665	665	655	405	310	160	506 (24)
Mean	191 (28)	174 (28)	168 (26)	162 (26)	186 (28)	211 (27)	307 (23)	400 (25)	390 (24)	357 (23)	295 (25)	275 (23)	231 (22)	216 (22)	206 (27)	202 (25)	189 (25)	194 (27)	214 (23)	237 (27)	237 (29)	241 (28)	234 (29)	202 (29)	236 (619)
																									Mean for selected quiet days [216 (10)]

Daily, monthly and annual means are computed excluding hours with precipitation and, of course, all indeterminate entries. The number of hours or days used in computing each mean is shown in round brackets. Entries in square brackets are means for selected quiet days (see Introduction) and the figure in round brackets is the number of days used in computing this mean.

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

41 KEW OBSERVATORY — Factor 5·06 (metre^{-1}) — SEPTEMBER 1961

	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	215	280	325	345	370	305	435	500	530	625	660	705	725	715	615	690	640	605	520	355	345	365	355	290	480 (24)
2	305	465	400	300	325	345	465	435	345	345	365	400	370	335	355	345	335	230	160	65	185	175	160	140	306 (24)
3	185	140	160	85	110	150	185	260	Z±	Z±*	650	215	260	300	Z±*	Z±	Z±	Z+	Z±	130	175	185	215*	Z±*	213 (15)
4	10*	100*	65*	110*	335*	-190	30*	130	Z±*	Z±*	630	550	455	290	230	240	215	250	260	160*	95*	140	130	150	249 (14)
5	45*	130	120*	195*	215	185	215	120	225	150	185	225	205	195	225*	230	225	225	270	370	305*	250*	95*	Z±*	211 (16)
6	Z±*	100	160	140	225	250	400	485	380	325	290	260*	215	205	75*	175	-95*	-60	260	410	390	410	315	260	267 (20)
7	130*	185*	215	215	230	270	485	430	300	355	280	260	225	240	165	185	205	280	260	290	260	300	250	250	270 (22)
8	205	150	150	185	130	185	305	435	575	530	435	355	335	270	250	260	225	290	270	305	250	290	230	260	286 (24)
9	205	195	240	230	225	150	205	215	420	445	410	260	175	165	165	175	175	205	240	270	345	345	315	355	255 (24)
10	370	290	345	355	205	225	195	195	175	225	205	185	150	160	185	215	225	290*	380*	365	370	400	365	325	260 (22)
11	260	185	150	95	75*	205	325	305	260	290	270	240	205	230	225	225	85	0	445	250*	290	315	290	260	234 (22)
12	230	185	195	225	130	165	230	465	435	430	305	290*	225*	280*	280*	315	325	315	305	300	280	260	225	160	274 (20)
13	100	110	100	85	55	75*	-115*	Z-*	Z±*	110*	95	150	175	205*	130*	290*	365	250	20*	260	270	260	240	270	186 (15)
14	130*	-20*	95*	75*	Z±*	-65*	175*	290	300	300	365	305	230	225	240	225	315	290	280	290	305	300	300	195	280 (17)
15	150	130	100	55	35	75	110	160	165	140*	140*	140*	150*	185*	185*	130*	95*	110	100	120	150	85	85	110	109 (16)
16	95	95	100	110	130	140	140	55	130	165	150	150	175	185	260	270	290	300	305	370	280	260*	225	225	189 (23)
17	150*	85*	35*	185*	65*	20*	85*	100*	Z+*	Z+*	465*	420*	680*	95*	230*	205	250	305	625	690	670	625	605	630	512 (9)
18	465	465	465	305	325	445	500	615	765	755	530	520	485	410	390	335	370	400	300	120	185	225	205	85	403 (24)
19	55	185	175	185	185	185	195	280	260	345	260	225	205	195	230	250	250	315	300	230	165	150	150	185	215 (24)
20	165	85	110*	20*	95*	150*	140*	35*	225*	315	345	305	300	300*	270*	260*	315	280	185	280	195	250	240	230	249 (14)
21	420	595	410	225	500	430	260	430	465*	305	250	205	185	225	260	230	225	260	250	325	215	260	315	300	308 (23)
22	335	410	300	335	250	185	290	315	485	410	305	240	150	165	160	205	185	215	185	335	290	205	185	205	264 (24)
23	75	35	55	55	35	-40	95	270	335	335	300	260	225	185	185	130	130	95	95	110	110	130	110	130	144 (24)
24	85	140	65	30	130	160	130	185	225	185	160	165	175	205	205	215	240	315	420	410	185	165	215	150	190 (24)
25	225	120	140	205	205	345	370	380	595	490	435	455	410	365	240	260	205	185	120	165	230	215	185	150	279 (24)
26	35	85	65	85	65	35	55	110	230	300	380	225	300	290	280	315	325	315	280	390	370	205*	240*	185	215 (22)
27	195	205	215*	185	185	75*	205	215*	225*	280*	65*	95*	260*	500	690	430	365	280	335	410	485	335	400	300	344 (16)
28	225	195	150	130	110	150	225	370	305	Z±*	185	195*	150*	345	325	335	410	485	565	565	575	565	550	335	338 (21)
29	240	290	345	305	305	370	475	565	690	500	325	270	230	270	260	260	300	355	315	445	490	370	370	290	360 (24)
30	250	100*	-135*	75*	85*	185	335	490	490	355	270*	185*	55*	140	280	205	225	260	390	455	430	370	300	260	319 (17)
Mean	212 (24)	211 (25)	209 (23)	186 (24)	195 (24)	196 (25)	273 (25)	327 (26)	374 (23)	369 (23)	337 (26)	299 (23)	273 (24)	272 (25)	282 (22)	266 (26)	275 (27)	263 (28)	298 (27)	315 (28)	303 (28)	285 (27)	271 (27)	239 (28)	272 (608)
																								Mean for selected quiet days	[256 (10)]

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}) — OCTOBER 1961

	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	55*	35*	Z±*	Z±*	85*	105	85*	115*	295*	140*	245	210	315	150	175	200	185	220	290	475	560	395	545	525	306 (15)
2	435	405	335	385	375	315	435	435	640	630	350	210	200	220	195	155	225	265	340	365	295	350	365	490	351 (24)
3	405	335	335	295	265	280	335	505*	435*	350*	210*	105*	70*	115	225	235	290	290	290	375	395	350	340	305	303 (18)
4	175	185	155	115	150	140	220	265	385	270	270	245	225	245	225	165*	185*	55*	165*	165*	-10*	70*	Z±*	Z±*	218 (15)
5	515*	-25*	150*	220	265	315	435	545	525	435	315	165	125	140	220	220	315	315	360	360	305	Z±*	Z±*	Z±*	310 (18)
6	115	Z±*	Z±*	55	80	105*	105*	155	165	225*	185	200*	200*	265	295	295	235	295	280	255	225	105*	55*	105*	207 (14)
7	105	105	125	95	105	10	140	295	325	295*	210	105	225	245	265	225*	295*	375	385	315	350	385	435	410	239 (21)
8	15	155*	-35*	-125*	105*	130*	280	325	405	385	360	305	245	280	-35*	305	305	375	525	615	550	480	350	305	356 (18)
9	265	200	185	165	155	165	210*	290	245	140*	220	235*	220	225	265	290	290	325	360	335	280	265	165	105	239 (21)
10	95	70	85	105	125	140	200	280	280	200	220	235	235	265	265	265	290	305	265	225	210	200	185	140	204 (24)
11	85	140	130	165	195	225	295	435	315	305	265	270	265	220	265	225	385	435	435	405	350	280	385	235	280 (24)
12	245	255	280	420	360	255	350	435	690	605	505	525	385	295	360	410	220	200	95	140	150	150	45	140	313 (24)
13	235	265	265	305	245	280	305	430	475	545	465	265	305	335	545	525	475	305	210	315	105	280	280	290	335 (24)
14	280	210	235	255	225	280	410	480	335	505	490	490	395	270	325	350	340	295	150	175	140	270	155	210	303 (24)
15	210	130	210	150	210	220	315	560	630	490	405	210	165	185	155	195	35	25	25	60	95	55	85	45	203 (24)
16	115	80	85	70	25	45	70	105	245	350	340	340	315	280	290	340	405	465	550	545	360	225	270	210	255 (24)
17	155	185	195	165	95	60*	85*	0*	10*	-25*	-165*	-35	155*	Z±*	265	335	350	305	305	265	195	175	185	140	205 (16)
18	185	165	185	200	165*	200*	325	350	335	315	335	265	280*	255	265	150	140	140*	80*	85	45	35*	10	-75	196 (18)
19	55	45	25	70	85	115	185	185	245	165	150	150*	140*	210	155*	140*	225*	245	225	280	265	175	150	-275	137 (19)
20	-820*	-335*	-765*	-835*	-545*	Z-*	-455*	-80*	-65*	-365*	-180*	-55*	125	265	360	265	335	430	435	525*	560	655	615	550	418 (11)
21	405	385	405	315	335	350	295	375	435	455	385	265*	155*	225	265	280	235*	210	295	405	85*	15*	-65*	-55*	342 (17)
22	105	125*	150	130	105*	115	15*	-35	-35*	-365*	-110*	245*	200	-410*	-55	225	255	-10	60	-35	-10*	10*	-75*	-145*	92 (12)
23	-35*	115*	200	185	220	290	395	505	455	385	340	335	Z±*	305	280	295*	385	435	445	505	525	475	365	220	363 (20)
24	185	165	150	150	125*	-20*	0*	70*	10*	-455*	-145*	-430*	0*	-125*	-165*	225*	295*	365	455	435	-75*	-400*	185*	445	294 (8)
25	375	270	235	245	220	265	325	410	385	350	325	360	335	295	Z±*	Z±*	Z±*	Z±*	385	525	545*	Z±*	Z+*	Z±*	332 (16)
26	Z±*	175	150	140	165	220	265	335	175	245	200*	125*	95*	175*	125*	265	-25	-35*	-255	Z±*	Z±*	Z±*	Z±*	125*	192 (11)
27	Z±*	225	245	220	175*	335*	Z±*	Z±*	Z±*	315	Z±*	475	Z+	475	Z+	Z±*	Z+*	Z±*	595	385*	Z±*	245*	315	140	334 (9)
28	Z±*	105	125	140	115	115	225	340	325	335	375	335	280	305	280	315	350	435	435	560	575	455	315	335	312 (23)
29	270	265	165	560	280	490	745	525	245	220	185	335	290	210	165	140	125	140	155	175	185	185	80	575	280 (24)
30	1050	825	665	700	755	785	855	910	875	630	615	585	605	490	335	305	405	500	480	480	505	435	410	395	608 (24)
31	265	210	165	155	140	140	175	265	325	350	325	365	335	305	335	305	305	280	245	175	195	95*	15*	-25	240 (22)
Mean	243 (24)	225 (24)	211 (26)	221 (28)	216 (24)	236 (24)	323 (23)	368 (25)	394 (24)	386 (22)	328 (24)	300 (22)	276 (21)	262 (27)	263 (25)	275 (24)	276 (24)	301 (26)	324 (28)	326 (27)	309 (24)	312 (20)	275 (22)	243 (24)	287 (582)
																								Mean for selected quiet days	[278 (9)]

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

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

41 KEW OBSERVATORY — Factor 4·32 (metre^{-1}) — NOVEMBER 1961

	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	0	45	25*	55*	95	140	205	350	555	490	435	315	275	230	235	235	290	260	220	205	220	205	80*	125*	250 (20)
2	125	150	125	120	105*	Z±	Z±	Z±	80	195	255	260	255	235	255	275	300	365	370	0*	270	300	190*	215*	231 (17)
3	165	Z±	Z±	15*	135*	190	270	315	380	440	385	275	235*	365	300	315	350	290	315	330	150	120	140	110	274 (19)
4	95	150	235	245	245	255	315	380	405	425	340	330	325	300	270	270	230	230	150	-15	-75	110	230	205	235 (24)
5	165	15	-10	270	260	140	195	290	330	365	300	330	195	285	255	270	385	290	245	300	330	260	290	245	250 (24)
6	330	270	190	175	190	150	120	15*	165*	140*	10*	135	165	270	270*	220*	315*	350*	235*	125*	-100*	45*	160*	105*	199 (10)
7	140*	110	80	95*	120*	95*	0*	120*	340*	315	230	315	420	325	340	365	490	665	600	600	480	425	350	315	378 (17)
8	175*	40*	Z±	Z±	Z±	Z±	-50*	340*	625	735	685*	440*	350	350	340	410	395	420	625	685	640	505	535	270	492 (14)
9	370	395	350	340	505	505	285	790	815	555	365	315	520	425	535	535	545	535	570	270	330	370	395	505	463 (24)
10	435	380	490	365	220	315	300	380	500	460*	Z±	Z±	Z±	Z±	Z-*	Z-*	Z±	Z±	Z-*	Z±	Z±	Z±	Z±	Z±	376 (9)
11	Z±	175*	310*	Z±	Z±	Z±	Z±	Z±	Z±	Z±	Z±	Z±	Z±	Z±	Z±	460*	410	425	515	585	475	420	440	285	444 (8)
12	190	95	125	165	160	165	165	175	220	190	255	230	180	190	215	190	230	230	195	160	195	150	65	0	172 (24)
13	-115*	-105	140	140*	110*	180*	245*	275*	285*	300*	285*	440	205*	300*	355*	325*	350*	270	205	275	255*	165*	125*	285	216 (7)
14	205	140	160	175	245	245	365	475	595	585	520	615	535*	570*	365*	435*	310*	275*	365*	245*	260*	15	175	215*	323 (14)
15	95*	95	245*	220*	260*	205*	285*	515	575	570	595	595	570	530	530	600	650	610	615	545	490	410	355	315	509 (18)
16	190	195	215	175	140	150	190	325*	615	780	930	790	450	395	450	325	370	260	330	505	215	260	205	255	365 (23)
17	175	385	350	270	160	150	245	435	270	475	630	535	425*	310	310	435	355	395	310	490	440	355	395	310	356 (23)
18	380	385	260	260	275	330	395	410	555	650	520	695	745	710	650	560	555	405	350	355	405	380	405	330	457 (24)
19	300	125	95	105	110	120	135	165	135	175	245	270	310	310	235	325	380	365	535	490	435	380	285	205	260 (24)
20	175	195	205	150	120	95	55	315	235	460	520	505	440	575	570	505	425	475	545	630	585	420	440	425	378 (24)
21	330	270	325	315	350	290	190	230	220	585	895	910	710	555	595	630	500	380	570	535	450	480	460	480	469 (24)
22	380	385	365	340	380	395	420	395	420	435	515	500	395	365	175	110	285	150	190	235	220	255	275	275	327 (24)
23	165	180	135	110	65*	80*	190*	245	270	315	325	410	350	380	330	380	440	505	440	440	350	205	80	125	294 (21)
24	110	230	380	420	380	355	460	350	555	725	725	760	735	440	395	410	395	480	665	710	535	535	505	440	487 (24)
25	330	290	230	190	235	260	300	405	545	560	515	410	260	310	350	435	480	440	15	160	80	125	-200	95	284 (24)
26	0	-345	-205	-205	395	270	530	900	875	710	125	300	380	505	545	500	460	255	110*	180	125	40	80	85	283 (23)
27	-65	-40	-65	-60	-25	0	0	25*	-10*	160*	-265*	-295*	-330*	-575*	-415*	-295*	-100*	-85	-50	30	25	-40	10	85	-20 (14)
28	140	120	205	315	165	230	290	450	555	650	600	615	450	475	440	385	515	655	805	855	820	630	505	520	475 (24)
29	385	80*	55	150	205	190	195	220	220*	255	230	215	165	165	235	220	220	300	260	150	235	190	160	160	207 (22)
30	125	105	70	135	105	120	110	65*	-40*	-150*	-100*	-100*	-85	-65	-40	-10	40*	-85*	-175*	-215*	0*	-15*	95*	25*	52 (11)
Mean	208 (25)	162 (26)	180 (25)	197 (23)	223 (22)	220 (23)	249 (23)	390 (21)	449 (23)	485 (24)	455 (23)	443 (25)	372 (23)	357 (25)	355 (24)	361 (24)	402 (24)	368 (26)	384 (25)	388 (25)	337 (25)	289 (26)	274 (24)	264 (24)	325 (578)
																								Mean for selected quiet days	[336 (10)]

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

41 KEW OBSERVATORY — Factor 4·33 (metre^{-1}) — DECEMBER 1961

	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	70*	40*	80*	15*	120*	245*	240*	335*	445*	70*	-35*	0*	30*	-75*	-250*	65*	145*	50*	-65*	0*	70*	55*	Z±	Z±	- (0)
2	30	-60	-65*	50*	160	175	160	145	255	320	365	335	300	295	285	360	475	650	610	670	650	555	515	595	357 (22)
3	580	495	395	350	395	300	445	380	365	320	150*	-400*	175*	Z±	Z-*	Z-*	Z-*	-100*	50*	280*	485*	540	555	525	434 (13)
4	280*	350*	240	95	30*	95*	25*	-300*	125*	350*	320*	285*	50*	160*	225*	145*	135*	110*	190	325	Z±	Z±	Z±	50*	213 (4)
5	85*	10*	0*	50*	-10*	70	65	65	-85*	-200*	160	255*	255	295	285	300	335	365	460	475	420	460	350	270	289 (16)
6	205	185	175	190	175	200	280	350	540	540	570	430	365	460	420	-415*	135	125	150	125	105	230	225	190	277 (23)
7	175	240	240	95	110	190	110	175	510	675	670	690	770	730	770	650	500	630	845	825	745	605	670	685	513 (24)
8	375	200	135	145	120	110	135	215	270	255	270	285*	135*	-500*	80*	245*	160*	95	15	125*	25*	-85*	-35*	-40*	180 (13)
9	125	110	125	145	190	215	215	380	Z±	Z±	430	510	405	295	350	365	500	320	405	510	460	525	300	350	329 (22)
10	320	280	245	110*	-70*	0*	145*	145*	160*	205*	200	175	165	145	190	240*	240*	310	295	205*	55*	-90*	-15*	10*	233 (10)
11	0	40	80	80*	110	145*	135*	175	255	295	260	260	295	295	300	225	190	95	105	70	0	80	50*	120*	165 (19)
12	55	70*	65	125	125	185	125*	225*	340	255	215	230*	270	245	310	320	470	630	590	540	590	460	320	340	323 (20)
13	-165*	-400*	-85*	145	145*	175	160	160	190	205*	145*	Z±	-165*	240*	280*	360*	510	360*	270	280*	240	215	190	230	226 (11)
14	200	205	205	215	270	285	260	510	645	765	795	755	515	460	515	555	240	470	495	445	295	475	255	320	423 (24)
15	135	635	445	230	700	1225	1560	1195	1430	1400	955	860	795	1350	1025	1145	1270	920	1320	1305	540	405	310	285	893 (24)
16	255	215	105	205	340	380	295	350	415	405	350	260	350	540	685	605	380	570	890	1035	1050	1210	985	905	533 (24)
17	685	325	285	325	300	105	150	340	405	495	645	620	645	610	380	500	445	295	360	365	690	650	595	590	450 (24)
18	620	335	55	185	40	215	430	495	620	730	495	510	565	630	795	715	1000	1035	850	810	635	650	595	905	580 (24)
19	1225	1160	Z+	Z+	Z+	1290	1050	1305	1465	1345	1115	1050	920	940	900	1020	1055	1000	1000	1055	1050	915	725	805	1066 (21)
20	745	690	645	380	415	260	225	15*	160*	765*	890*	690*	285*	460*	715*	445*	875	860	765	825	295	255	1525	1175	662 (15)
21	555	460	495	325	175	190	125*	10*	125*	230*	565	620	580	470	460	730	685	365	335*	285*	495*	285	515	730	483 (17)
22	755	670	365	295	225	85	225	405	660	670*	675	595	730	765*	650	660	650	395	395	670	595	555	190	30*	497 (21)
23	-75*	0*	145	190	160	185	175	260	340	335	445	380	395	390	395	460	405	335	285	280	240	240	200	255	295 (22)
24	205	175	160	160	200	165	190	230	300	390	475	405	320	390	340	325	390	360	255	205	580	335	525	605	320 (24)
25	570	215	160	200	225	230	295	165	240	420	445	325	485	590	475	475	550	525	455	375	225	165	190	230	343 (24)
26	260	320	255	215	200	240	240	335	405	515	540	570	510	420	420	510	555	700	785	765	740	765	705	730	487 (24)
27	645	515	395	365	380	415	485	565	810	835	810	805	795	605	630	690	725	915	860	850	825	650	430	350	640 (24)
28	225	350	335	380	285	225	360	335	725	845	905	900	540	550	470	205	310	365	430	595	550	715	765	580	498 (24)
29	700	445	335	190*	Z±	Z±	Z±	Z±	730*	225*	Z±	Z±	365*	700	495	420*	160*	-35*	Z±	Z±	Z±	135*	240	110	432 (7)
30	30	-10	245	350*	Z±	Z±	Z±	-185*	30*	Z±	50*	205*	-215*	-165	-85	0	70	95	145	185	70	165	105	340	85 (14)
31	285	280	95*	Z±	Z±	Z±	Z±	Z±	Z±	Z±	Z±	Z±	Z±	475*	Z±	Z±	175*	205*	230	350	395	605	630	605	423 (8)
Mean	383 (26)	339 (25)	253 (25)	225 (22)	241 (22)	296 (24)	341 (22)	388 (22)	533 (21)	586 (19)	537 (23)	553 (20)	499 (22)	489 (23)	477 (24)	515 (21)	530 (24)	497 (25)	498 (27)	569 (24)	499 (24)	489 (26)	485 (26)	508 (25)	446 (562)
																								Mean for selected quiet days	[412 (10)]
Annual Mean	245 (313)	218 (310)	201 (312)	199 (316)	213 (313)	239 (312)	302 (303)	365 (303)	406 (297)	403 (286)	364 (299)	350 (285)	313 (290)	302 (299)	301 (288)	302 (286)	299 (297)	305 (303)	320 (303)	335 (307)	326 (301)	313 (305)	299 (311)	279 (319)	299 (7258)
																								Annual mean for selected quiet days	[297]

Daily, monthly and annual means are computed excluding hours with precipitation and, of course, all indeterminate entries. The number of hours or days used in computing each mean is shown in round brackets. Entries in square brackets are means for selected quiet days (see Introduction) and the figure in round brackets is the number of days used in computing this mean.

	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
		hr.		hr.		hr.		hr.		hr.		hr.
1	2	4·2	1	1·1	1	0·9	1	1·3	1	2·7	2	8·4
2	2	5·2	2	4·5	0	0·0	1	0·3	1	2·5	0	0·0
3	2	3·9	1	0·3	0	0·0	2	6·9	0	0·0	0	0·0
4	1	0·8	1	1·8	0	0·0	2	5·3	1	2·3	1	0·7
5	2	3·7	1	0·2	0	0·0	1	0·9	1	0·2	1	0·1
6	1	0·2	1	1·2	0	0·0	0	0·0	1	0·2	1	0·1
7	1	2·1	1	0·1	0	0·0	1	2·7	1	0·3	0	0·0
8	1	0·8	2	4·0	1	0·1	1	1·8	0	0·0	1	1·7
9	2	6·5	1	0·3	1	0·5	1	2·5	0	0·0	0	0·0
10	2	3·5	0	0·0	1	0·6	2	3·3	1	0·2	1	2·6
11	0	0·0	1	1·0	1	1·3	1	0·5	1	0·4	1	0·3
12	1	0·2	0	0·0	1	1·5	1	0·4	0	0·0	2	6·3
13	1	2·5	0	0·0	1	1·7	1	0·1	0	0·0	2	5·5
14	1	0·2	0	0·0	1	0·2	1	1·2	1	0·5	1	2·2
15	0	0·0	1	0·6	0	0·0	0	0·0	0	0·0	1	1·5
16	0	0·0	1	0·3	1	0·2	1	0·3	0	0·0	0	0·0
17	0	0·0	1	0·5	0	0·0	1	0·7	1	1·7	1	0·5
18	1	1·6	1	0·3	1	2·1	0	0·0	1	1·0	1	0·5
19	2	5·3	1	0·2	1	1·5	2	3·3	0	0·0	1	0·1
20	2	5·5	1	0·1	1	2·8	1	2·2	1	0·1	1	0·3
21	1	1·1	0	0·0	1	0·1	1	1·8	0	0·0	0	0·0
22	2	3·5	0	0·0	1	2·5	2	3·0	1	0·1	1	0·3
23	0	0·0	0	0·0	1	0·2	2	3·1	0	0·0	0	0·0
24	0	0·0	2	3·0	1	0·3	1	1·0	1	0·1	0	0·0
25	0	0·0	2	10·9	0	0·0	2	8·4	1	0·1	0	0·0
26	1	0·9	1	1·8	1	0·8	1	1·5	1	0·7	2	3·2
27	2	7·2	2	8·7	0	0·0	0	0·0	1	1·2	1	1·5
28	2	5·2	2	4·9	0	0·0	1	0·2	2	5·3	0	0·0
29	2	12·4			2	5·0	1	2·8	1	0·3	0	0·0
30	1	2·5			1	1·7	1	0·5	1	0·3	0	0·0
31	1	1·3			0	0·0			0	0·0		
Total	-	80·3	-	45·8	-	24·0	-	56·0	-	20·2	-	35·8
No. of days used	-	31	-	28	-	31	-	30	-	31	-	30
Mean	-	2·59	-	1·64	-	0·77	-	1·87	-	0·65	-	1·19

	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
		hr.		hr.		hr.		hr.		hr.		hr.
1	0	0·0	1	1·0	-	-	1	1·9	1	0·6	2	6·7
2	1	2·7	1	0·9	0	0·0	0	0·0	1	1·6	1	2·0
3	0	0·0	0	0·0	1	2·7	1	0·2	1	1·2	2	5·3
4	1	0·1	0	0·0	1	2·7	1	2·0	1	1·3	2	3·2
5	0	0·0	1	0·8	1	0·7	1	1·4	1	1·0	1	2·6
6	0	0·0	1	1·2	1	1·2	1	1·0	1	1·6	1	1·5
7	1	0·4	0	0·0	1	0·1	1	0·7	1	0·7	1	0·2
8	1	1·5	1	2·5	0	0·0	1	1·7	1	2·1	2	4·7
9	1	0·1	1	0·1	0	0·0	0	0·0	1	0·2	1	0·3
10	1	0·3	2	3·3	0	0·0	0	0·0	2	11·0	2	3·6
11	1	0·1	1	1·2	1	0·5	0	0·0	2	6·7	1	1·2
12	2	3·5	0	0·0	0	0·0	1	0·7	1	0·5	1	0·1
13	2	3·2	1	2·5	1	2·6	1	0·3	1	1·5	2	4·2
14	1	2·3	1	0·3	1	1·7	1	0·3	1	0·4	1	0·1
15	2	4·2	1	0·3	1	0·2	1	0·2	1	0·2	1	0·3
16	2	3·8	0	0·0	1	0·2	1	0·3	1	0·3	0	0·0
17	1	0·2	0	0·0	1	1·5	2	3·2	1	0·1	1	0·7
18	0	0·0	1	0·1	0	0·0	1	1·4	0	0·0	1	0·8
19	1	0·1	1	0·8	1	0·3	1	1·1	0	0·0	0	0·0
20	0	0·0	0	0·0	1	0·8	2	10·7	1	0·2	1	0·6
21	1	0·5	1	1·2	1	0·2	1	2·2	0	0·0	1	0·7
22	0	0·0	0	0·0	0	0·0	2	7·6	1	0·1	1	0·5
23	0	0·0	1	0·1	1	1·2	1	0·7	1	0·8	1	1·3
24	0	0·0	1	2·8	1	0·5	2	6·9	1	0·2	0	0·0
25	0	0·0	0	0·0	0	0·0	1	2·0	1	2·5	0	0·0
26	1	0·5	0	0·0	1	0·1	2	5·3	2	4·3	0	0·0
27	1	0·5	0	0·0	1	0·7	2	3·3	2	15·9	0	0·0
28	1	1·0	0	0·0	1	0·7	1	0·4	0	0·0	0	0·0
29	0	0·0	0	0·0	0	0·0	1	0·6	1	0·4	2	6·0
30	0	0·0	1	0·3	1	1·0	0	0·0	2	11·0	2	8·7
31	0	0·0	0	0·0			1	1·0			2	8·1
Total	-	25·0	-	19·4	-	19·6	-	57·1	-	66·4	-	63·4
No. of days used	-	31	-	31	-	29	-	31	-	30	-	31
Mean	-	0·81	-	0·63	-	0·68	-	1·84	-	2·21	-	2·05

Annual values: Character 0 1 2
No. of days used 105 203 56

Duration: Total 513·0 hr.
No. of days 364
Mean 1·41 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^{-16} amp. cm.$^{-2}$
$\lambda+$ = Conductivity due to positive ions, unit 10^{-10} ohm.$^{-1}$ cm.$^{-1}$

43 KEW OBSERVATORY 1961

	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	...	...	...	4·52	153	34	4·28	137	32	...	...	...	...	...	...	...	...	...
2	...	...	...	...	...	...	3·47	85	25	...	...	...	...	...	...	2·70	120	44
3	6·15	144	23	4·44	123	28	4·06	152	37	...	...	...	...	...	...	...	...	...
4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	5·24	113	22	...	...	...	...	...	...	3·42	150	44	...	...	...	1·02	71	70
6	...	...	...	4·18	127	30	2·84	182	64	3·22	178	55	...	...	...	1·98	114	58
7	...	...	...	4·98	173	35	4·12	104	25	...	...	...	...	...	...	2·02	152	75
8	...	...	...	...	...	...	2·91	114	39	...	...	...	1·64	137	84	...	...	...
9	...	...	...	3·87	121	31	...	...	...	...	...	...	2·71	115	42	2·14	188	88
10	...	...	...	3·10	85	27	3·77	95	25	5·48	95	17	2·16	120	56	...	...	...
11	6·74	131	19	...	...	...	...	...	...	3·23	137	42	...	...	...	...	...	...
12	7·00	128	18	...	...	...	...	...	...	...	...	...	1·94	107	55	...	...	...
13	2·68	85	32	3·74	116	31	3·61	144	40	3·31	194	59	...	...	...	2·50	121	48
14	...	...	...	5·76	198	34	4·71	199	42	2·92	190	65	...	...	...	...	...	...
15	...	...	...	...	...	...	3·26	185	57	...	...	...	3·13	138	44	...	...	...
16	6·74	125	19	...	...	...	3·35	218	65	...	...	...	5·88	241	41	1·95	154	79
17	7·92	95	12	...	...	...	...	...	...	3·08	159	52	...	...	...	...	...	...
18	5·86	58	10	...	...	...	...	...	...	3·28	145	44	2·88	192	67	...	...	...
19	...	...	...	...	...	...	...	...	...	2·09	116	56	...	...	...	1·90	101	53
20	5·79	66	11	2·85	95	33	...	...	...	2·91	193	66	...	...	...	1·45	85	59
21	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
22	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2·09	150	72
23	9·93	185	19	...	...	...	3·04	123	40	...	...	...	2·12	133	63	2·45	137	56
24	...	...	...	...	...	...	2·84	122	43	3·45	194	56	1·34	71	53	...	...	...
25	...	...	...	...	...	...	...	...	...	...	...	...	1·88	144	77	...	...	...
26	5·70	128	22	...	...	...	...	...	...	...	...	...	2·31	159	69	...	...	...
27	...	...	...	...	...	...	2·05	89	43	2·61	112	43	...	...	...	2·03	134	66
28	...	...	...	4·08	150	37	2·26	119	53	2·85	111	39	...	...	...	...	...	...
29	...	...	...				...	...	...	...	...	...	0·99	110	111	1·55	100	65
30	4·77	134	28				...	...	...	...	...	...	3·87	214	55	1·55	137	88
31	...	...	...				...	...	...				3·34	199	60			
Mean	6·21	116	20	4·15	134	32	3·37	138	42	3·22	152	49	2·59	149	63	1·95	126	66
No. of days used	12	12	12	10	10	10	15	15	15	13	13	13	14	14	14	14	14	14

	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	...	...	...	1·90	142	75	...	...	...	...	...	...	2·44	227	93	...	...	...
2	...	...	...	...	...	...	...	...	...	2·05	160	78	2·40	162	67	...	...	...
3	2·15	80	37	1·98	115	58	...	...	...	...	...	...	3·23	167	52	...	...	...
4	...	...	...	1·64	89	54	...	...	...	2·29	166	72	...	...	...	...	...	...
5	1·63	137	84	...	...	...	...	...	...	...	...	...	...	...	...	2·67	163	61
6	1·82	101	55	...	...	...	...	...	...	2·99	255	85	...	...	...	...	...	...
7	1·78	133	75	...	...	...	...	...	...	...	...	...	3·62	250	69	...	...	...
8	...	...	...	1·51	113	75	2·29	109	48	...	...	...	...	...	...	...	...	...
9	...	...	...	...	...	...	...	...	...	2·90	198	68	5·77	241	42	...	...	...
10	1·00	61	61	...	...	...	...	...	...	3·16	250	79	...	...	...	...	...	...
11	...	...	...	...	...	...	1·94	78	40	2·54	195	77	...	...	...	2·79	196	70
12	...	...	...	...	...	...	...	...	...	3·69	178	48	...	...	...	...	...	...
13	...	...	...	...	...	...	...	...	...	5·84	290	50	...	...	...	...	...	...
14	...	...	...	1·95	116	59	...	...	...	...	...	...	...	...	...	5·10	266	52
15	...	...	...	2·90	121	42	...	...	...	...	...	...	5·07	382	75	...	...	...
16	...	...	...	...	...	...	...	...	...	2·64	179	68	...	...	...	...	...	...
17	2·66	173	65	2·00	118	59	...	...	...	...	...	...	...	...	...	...	...	...
18	2·85	157	55	1·35	89	66	5·41	119	22	...	...	...	...	...	...	7·33	144	20
19	2·52	177	70	...	...	...	2·45	261	107	...	...	...	...	...	...	8·49	301	35
20	1·51	90	60	...	...	...	...	...	...	2·94	136	46	5·43	309	57	...	...	...
21	5·85	136	23	...	...	...	2·61	231	89	...	...	...	...	...	...	...	...	...
22	...	...	...	...	...	...	...	...	...	...	...	...	1·95	209	107	...	...	...
23	...	...	...	1·75	106	61	...	...	...	...	...	...	3·32	295	89	...	...	...
24	1·44	116	81	...	...	...	...	...	...	...	...	...	3·81	251	66	...	...	...
25	1·03	63	61	2·68	148	55	2·40	173	72	...	...	...	...	...	...	...	...	...
26	1·13	92	81	...	...	...	2·44	240	98	...	...	...	...	...	...	...	...	...
27	1·41	56	40	...	...	...	7·28	270	37	...	...	...	...	...	...	...	...	...
28	...	...	...	2·44	192	79	...	...	...	...	...	...	...	...	...	4·58	115	25
29	...	...	...	1·83	157	86	2·41	232	96	...	...	...	2·33	172	74	...	...	...
30	...	...	...	2·22	89	40	...	...	...	...	...	...	...	...	...	...	...	...
31	1·40	103	74	6·32	188	30				3·18	202	64				...	...	...
Mean	2·01	112	61	2·32	127	60	3·25	190	68	3·11	201	67	3·58	242	72	5·16	197	44
No. of days used	15	15	15	14	14	14	9	9	9	11	11	11	11	11	11	6	6	6

Year:				
Mean	3·25	152	54
No. of days used	144	144	144

44 KEW OBSERVATORY — Complete days only — 1961

	Hour G.M.T. 0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	10 to 11	11 to 12	12 to 13	13 to 14	14 to 15	15 to 16	16 to 17	17 to 18	18 to 19	19 to 20	20 to 21	21 to 22	22 to 23	23 to 24	Mean	No. of days used
	milligrams per cubic metre																									
Jan.	0·13	0·12	0·11	0·10	0·09	*0·09*	0·10	0·13	0·13	0·15	0·16	0·16	0·16	0·16	0·18	0·18	0·20	0·22	0·23	*0·24*	0·23	0·20	0·18	0·15	0·16	31
Feb.	0·12	0·11	*0·11*	*0·11*	*0·11*	0·12	0·12	0·13	0·12	0·13	0·14	0·13	0·13	0·14	0·16	0·17	0·20	*0·21*	0·21	0·19	0·19	0·17	0·15	0·13	0·15	27
Mar.	0·14	0·13	0·14	0·14	0·14	0·14	0·15	0·14	0·13	0·13	0·13	0·10	0·09	*0·09*	0·09	0·10	0·13	0·15	0·17	0·17	0·17	*0·17*	0·16	0·15	0·13	31
Apr.	0·12	0·11	0·11	*0·11*	0·11	0·11	0·13	0·12	0·13	0·13	0·13	0·13	0·12	0·11	0·12	0·12	0·12	0·13	0·15	*0·16*	0·15	0·14	0·13	0·12	0·13	30
May	0·07	0·07	0·07	0·07	0·07	0·07	0·08	0·07	0·07	0·07	0·07	0·06	0·06	0·06	*0·05*	0·06	0·06	0·07	0·08	0·08	0·09	*0·09*	0·09	0·07	0·07	30
June	0·07	0·07	0·07	0·06	0·07	0·07	*0·08*	0·08	0·07	0·06	0·05	0·05	0·05	0·05	*0·05*	0·05	0·05	0·06	0·06	0·06	0·06	0·06	0·07	0·07	*0·06*	29
July	0·08	0·08	0·07	0·08	0·08	0·09	*0·09*	0·09	0·08	0·08	0·08	0·07	0·07	0·06	0·06	*0·06*	0·06	0·06	0·07	0·07	0·07	0·08	0·08	0·08	0·07	31
Aug.	0·10	0·10	0·09	0·09	0·09	0·09	*0·10*	0·09	0·08	0·09	0·08	0·08	0·07	0·07	*0·07*	0·07	0·07	0·07	0·07	0·08	0·08	0·10	0·09	0·09	0·09	30
Sept.	0·11	0·10	0·10	0·10	0·11	0·11	*0·11*	*0·09*	0·10	0·10	0·10	*0·11*	0·10	0·11	*0·09*	*0·09*	0·10	0·10	0·10	0·10	0·11	0·11	0·10	0·10	0·10	20
Oct.	0·11	0·10	0·10	0·09	*0·09*	0·10	0·11	0·12	0·12	0·12	0·12	0·12	0·12	0·11	0·11	0·11	0·12	0·15	*0·15*	0·15	0·14	0·13	0·12	0·11	0·12	29
Nov.	0·11	0·11	0·11	0·10	0·10	0·09	*0·09*	0·10	0·11	0·11	0·11	0·11	0·10	0·11	0·10	0·11	0·14	0·16	0·16	*0·17*	*0·17*	0·15	0·13	0·12	0·12	30
Dec.	0·21	0·19	0·16	0·14	0·13	0·12	0·12	*0·11*	0·12	0·14	0·18	0·21	0·19	0·18	0·20	0·23	0·24	0·27	0·26	0·28	0·28	0·29	*0·30*	0·24	*0·20*	29
Year	0·11	0·11	0·10	*0·10*	*0·10*	0·10	0·11	0·11	0·11	0·11	0·11	0·11	0·11	0·10	0·11	0·11	0·12	0·14	0·14	*0·15*	0·15	0·14	0·13	0·12	0·12	347
Winter	0·14	0·13	0·12	0·11	0·11	*0·11*	0·11	0·12	0·12	0·13	0·15	0·15	0·15	0·15	0·16	0·17	0·19	0·21	0·21	*0·22*	0·22	0·20	0·19	0·16	0·16	117
Spring	0·13	0·12	0·13	0·13	0·13	0·13	0·14	0·13	0·13	0·13	0·13	0·11	0·11	*0·10*	0·11	0·11	0·13	0·14	0·16	*0·17*	0·16	0·15	0·15	0·13	0·13	61
Autumn	0·11	0·10	0·10	*0·09*	0·10	0·11	0·11	0·11	0·11	0·11	0·11	0·11	0·11	0·11	0·10	0·10	0·11	*0·13*	*0·13*	*0·13*	*0·13*	0·12	0·11	0·11	0·11	49
Summer	0·08	0·08	0·07	0·07	0·08	0·08	*0·09*	0·08	0·07	0·07	0·07	0·07	0·06	0·06	*0·06*	0·06	0·06	0·07	0·07	0·07	0·07	0·08	0·08	0·08	0·07	120