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METEOROLOGICAL OFFICE

THE OBSERVATORIES' YEAR BOOK 1965

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 geomagnetism.

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 *Meteorological Office 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 geomagnetism and atmospheric electricity tables; further changes in these tables were introduced in the 1964 volume. Full details of all the tables are given in the present Introduction.

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, unless otherwise stated below, to the Director-General, Meteorological Office, London Road, Bracknell, Berkshire, England.

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 and of radiation balance. Daily measurements of evaporation (until 30 September) and of smoke pollution in the air. Observations, when applicable, of noctilucent cloud.

Routine radiosonde and radar-wind upper air measurements (twice and four times daily respectively). Daily measurements of the total amount of ozone. Chemical sampling of the air and rain-water. Sampling for radio-activity of particulate matter in the air near the surface and sampling for radio-activity of rain-water.

There is a Radio and Space Research Station Unit, attached to Lerwick Observatory, which makes some measurements in connexion with its work on radio wave propagation, as well as solar proton measurements, using a neutron monitor, and magnetic micropulsation measurements, using a fluxgate magnetometer. Requests for information about this work should be addressed to the Director, Radio and Space Research Station, Ditton Park, Slough, Buckinghamshire, England.

Eskdalemuir Observatory

Full hourly synoptic observations of the weather and, when applicable, of aurora and noctilucent cloud. 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 and radiation balance. Daily measurements of evaporation, smoke pollution in the air, and soil temperatures (at depths of 30 and 122 cm). Chemical sampling of the air and rain-water. Sampling for radio-activity of particulate matter in the air near the surface and sampling for radio-activity of rain-water. Records from a set of the American world wide standard seismographs - 3 components on both short and long period instruments.

Kew Observatory

Three-hourly synoptic observations of the weather, 06-21 GMT. 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, total and diffuse daylight illumination on a horizontal surface and radiation balance. Continuous recording and three-hourly tabulations (00-21 GMT) of soil temperatures at surface and depths of 5, 10, 20 and 30 cm together with daily measurements at depths of 50, 100 and 122 cm. Daily measurements of evaporation. Daily and hourly tabulations of smoke, and daily tabulations of sulphur dioxide concentrations in the air. Records from a short period vertical seismograph.

CONTENTS

*In the *Observatories' Year Book* 1964 this table had the wrong addition of " – British Isles".

†It should be noted that the table headings in the *Observatories' Year Book* 1964 accidentally omitted the phrase "and for fair weather hours".

‡It should be noted that the table headings in the *Observatories' Year Book* 1964 accidentally omitted the sub-title "Monthly, seasonal and annual means for hours without hydrometeors and for fair weather hours".

ESKDALEMUIR OBSERVATORY - continued

Atmospheric electricity

KEW OBSERVATORY

Atmospheric electricity

Air pollution

†It should be noted that the table headings in the *Observatories' Year Book* 1964 accidentally omitted the phrase "and for fair weather hours".

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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 MSL and about 2½ km to the south-west of the port of Lerwick (population about 6000). The surrounding country is desolate moorland.

General views of the Observatory, a site plan and a contour map of the surrounding country are given in Figures 2 and 4, 3 and 1 respectively. An account of the history of the Observatory is given by W. G. Harper[1].

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

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

General views of the Observatory, a site plan and a contour map of the surrounding country are given in Figures 6 and 8, 7 and 5 respectively. The history of the Observatory is described by M. J. Blackwell[2] in a paper marking the fiftieth anniversary of the commencement of observations, and by J. Crichton[3].

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

Kew Observatory lies in the south-west corner of an area of parkland about 16 km west-south-west of the centre of London. The ground level is about 5 m above MSL. 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.

General views of the Observatory, a site plan and a contour map of the surrounding country are given in Figures 10 and 12, 11 and 9 respectively.

For the early history of the Observatory reference may be made to papers by G. Rigaud[4], R. H. Scott[5], C. Chree[6], O. J. R. Howarth[7], R. S. Whipple[8], F. J. W. Whipple[9], and A. J. Drummond[10].

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2. BLACKWELL, M. J.: Eskdalemuir Observatory - the first fifty years. *Met. Mag., London*, **87**, 1958, p.129.

3. CRICHTON, J.: Eskdalemuir Observatory, *Met. Mag., London*, **79**, 1950, p.337.

4. RIGAUD, G.: Dr. Demainbray and the King's Observatory at Kew. *Observatory, London*, **5**, 1882, p.279.

5. SCOTT, R. H.: The history of the Kew Observatory. *Proc. R. Soc., London*, **39**, 1885, p.37.

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

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

8. 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, p.502.

9. WHIPPLE, F. J. W.: Some aspects of the early history of Kew Observatory, *Q. Jnl R. met. Soc., London*, **63**, 1937, p.127.

10. DRUMMOND, A. J.: Kew Observatory. *Weather, London*, **2**, 1947, p.69.

Regular recording of the earth's geomagnetic 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 geomagnetic disturbance that it was decided to establish another geomagnetic observatory in an area considered unlikely to be similarly affected. This led to the building of Eskdalemuir Observatory which was opened in 1908, but geomagnetic observations were also continued at Kew up to 1924.

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

The principal magnetographs at Lerwick and Eskdalemuir are normal and quick-run La Cour instruments, each set consisting of *H*, *D* and *Z* variometers; the paper speeds are 15 mm/h for the normal and 180 mm/h for the quick-run. Time marks are made at five-minute intervals except at the hour, and two-minute breaks are made three times daily at Lerwick and twice daily at Eskdalemuir. Scale values of the *H* and *Z* variometers are measured about once a week at Lerwick and once a month at Eskdalemuir, during magnetically quiet periods, by passing a current through Helmholtz-Gaugain coils placed over the variometers, the resulting deflection being recorded on the photographic paper. The current is measured by a potentiometer using a standard resistance, and a standard cell. It is thought that the scale values adopted, about 4γ/mm for *H* and 5·6γ/mm for *Z* (at both observatories) are accurate to about ½ and 1 per cent respectively. The scale value for *D* is normally determined from the optics and geometry of the system, with small corrections for torsion and paper shrinkage, but is occasionally checked by a similar electrical method to that used with the *H* and *Z* variometers; the difference between the electrical and optical methods is small and the adopted scale values are accurate to about 1 per cent. Following a complete review made in 1963-64 of the scale values used at both observatories since the installation of the La Cour variometers, in comparison with the optical calculations, electrical determinations and analyses of absolute values, it was decided that the values hitherto adopted were in error by amounts varying up to 4 per cent, mainly because geometrical calculations had been used alone, without account being taken of the curvature of the prism face. Details of the correct scale values to be adopted, over various periods, are given in the section, "*Errata in Previous Volumes and in the Present Volume*" on page vii of the *Observatories' Year Book* 1962. The monthly and yearly mean values of *D* are unaffected, but the other values of *D* published in the *Observatories' Year Books* for Lerwick from April 1934 to December 1961, and for Eskdalemuir from January 1936 to December 1962, are in error by the proportion of their deviation from the mean monthly or yearly values; the correction is positive if the westerly declination is greater than the mean value and negative if it is less than the mean value. Tables (for Eskdalemuir only) of diurnal inequalities of the geographical components, which involve the value of *D*, are correspondingly affected. The Lerwick normal *D* variometer was moved a distance of 6 cm further away from the photographic paper on 24 February in order to improve the focussing of the image; this reduced the scale value from 0·97′/mm (see p.vii of the *Observatories' Year Book* 1962) to 0·94′/mm.

Complete sets (*H*, *D* and *Z*) of supplementary magnetographs with lower sensitivity are also operated to provide information during any breaks in the normal magnetograph records, and also to provide information when rapid geomagnetic disturbance renders the traces of the standard magnetograph indecipherable. Details of the Eskdalemuir instruments can be found in the *Observatories' Year Book* for 1938; a La Cour (storm) magnetograph replaced the older instruments at Lerwick from 1 January 1965, its sensitivities being about 11 γ/mm for *H*, 2′/mm for *D* and 13γ/mm for *Z*.

The magnetograph house (K*) at Lerwick, is above ground and is made of non-magnetic concrete: its internal dimensions are 4·9 m by 3 m with the semi-circular shaped roof about 3 m in the middle, and 2 m at the sides, above the floor; the walls and roof are

*The descriptive letters or numbers, are those given in the Figures published in this volume.

76 cm thick. An electric heater, controlled by a thermostat, enables the temperature to be kept reasonably constant. 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 1 degree Celsius.

At Eskdalemuir the magnetographs are placed in an underground chamber (3) 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 whole outer shell is covered with a thick layer of earth which forms a mound. The instruments and greater part of the rooms are below the undisturbed level of the surrounding ground. 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 degrees Celsius.

The temperature recorded by a thermometer inserted in the quick-run *Z* variometer, taken to be representative of the magnetograph house, is read daily at 09 GMT at Lerwick and at midnight at Eskdalemuir and the readings are given in Table 4 (for Lerwick) and Table 22 (for Eskdalemuir).

Baseline values of the magnetograms are computed from the absolute measurements, made twice weekly, and measured scale values using the ordinate of the variometer curve at the times of the absolute observations. The adopted values of the baselines are obtained by a graphical smoothing process. Normally one value is adopted for one day except when instrumental discontinuities have occurred.

TABULATIONS

Tables 1 and 19 give, for Lerwick and Eskdalemuir respectively, mean values of the horizontal component (*H*) of geomagnetic force for periods of 60 minutes ending at the exact hour GMT together with hourly, daily and monthly sums and means. Tables 2 and 20 give similar information for declination (*D*) and Tables 3 and 21 for the vertical component (*Z*).

Tables 4 and 22 contain the geomagnetic 3-hourly character figures K, K_H, K_D and K_Z, together with the daily character figure *C* and the temperature in the magnetograph house. K_H, K_D and K_Z refer to character figures assigned solely by reference to the variations in one magnetic component (*H, D* or *Z* respectively) whereas *K* is the higher figure out of K_H and K_D for that particular 3-hour period. These *K* figures are thus different from the *K*s published in the *Observatories' Year Book* 1963 and in previous years, in which each value of *K* was the maximum out of the corresponding K_H, K_D and K_Z, but if these *K* figures are required they can be readily obtained from the data in Tables 4 and 22. The decision to publish the *K* figures for each component in this way, and to discontinue the previous practice of publishing the daily ranges of the geomagnetic components, is in agreement with resolutions of the International Association of Geomagnetism and Aeronomy (IAGA) meeting at the International Union of Geodesy and Geophysics (UGGI) Assembly at Berkeley, California, U.S.A., in August 1963.

The geomagnetic character figures *C* are determined merely by inspection of the magnetograms. The standard is related to the general level of activity during the year, and the following recommendations, made in 1910 by Chree, Van Everdingen and Schmidt are adopted as guiding principles "that no one of the characters, 0, 1 and 2 should be attributed to more than two-thirds of the days of the year, and that in each quarter the number of days of character 2 should be on the average at least 6".

The geomagnetic character figures *K* have been derived generally in the conventional way (see, for example, IGY Instruction Manual, Part IV, Geomagnetism, Part I Section 1·7). The lower limit for $K=9$ is 1000γ for Lerwick and 750γ for Eskdalemuir.

Tables 1-4 are subdivided into monthly sections and the same monthly parts of each table are grouped together on facing pages. Tables 19-22 are treated similarly. The days selected by IAGA 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 14 and 34 entitled "Noteworthy Geomagnetic 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 IAGA.

Tables 5 (for Lerwick) and 23 (for Eskdalemuir) give the mean monthly and annual values of the geomagnetic 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.

The next set of tables (6-13 for Lerwick and 24-32 for Eskdalemuir) gives data on the diurnal inequalities of each geomagnetic 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 11 and 31.

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 23.

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 33, 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 GMT, 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 24-29, 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 14 and 34 are entitled "Noteworthy Geomagnetic 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 IAGA 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 1965 with those of 1964, at Lerwick *H* increased by 22γ, *D* (west) decreased by 3·3′ and *Z* increased by 21γ. The changes deduced in *X*, *-Y*, *I* and *F* are +23γ, −11γ, −1·0′ and +27γ respectively. The ranges between the extreme values recorded during 1965 were *H* 1034γ, *D* 1°27·6′ and *Z* 765γ. The range of 1°27·6′ in declination corresponded to a range of 373γ in the component of force perpendicular to the magnetic meridian.

Similarly at Eskdalemuir *H* increased by 27γ, *D* (west) decreased by 4·5′ and *Z* increased by 13γ. The changes deduced in *X*, *-Y*, *I* and *F* are +32γ, −17γ, −1·6′ and +22γ respectively. The ranges between the extreme values recorded during 1965 were *H* 358γ, *D* 1°0·5′ and *Z* 287γ. The range of 1°0·5′ in declination corresponded to a range of 298γ in the component of force perpendicular to the magnetic meridian.

It has been decided to discontinue this section after the 1965 *Observatories' Year Book*.

ABSOLUTE STANDARDS OF GEOMAGNETIC FORCE AT LERWICK AND ESKDALEMUIR

While the standard instrument for declination measurement continues to be the Kew pattern unifilar magnetometer, the standard instrument for *H* and *Z* became, at the end of 1964, the proton vector magnetometer.

Proton magnetometer

The basic instrument is the proton magnetometer (see, for example, G. S. Waters and P. D. Francis, A nuclear magnetometer, *Journal of Scientific Instruments*, 35, 1958, p.88) which measures the magnitude of the total field acting on a sample (usually water). It does this by enabling the free precession frequency (f) of the proton to be determined; this is related to the total magnetic field F at the proton sample by the equation

$$f = \gamma_p F/2\pi$$

where f is the precession frequency in cycles per second and γ_p is the gyromagnetic ratio of the proton. The value adopted for γ_p is $2{\cdot}67513 \times 10^4$ radians per gauss per second; this is the value as measured by Driscoll and Bender (R. L. Driscoll and P. L. Bender, Proton gyromagnetic ratio, *Physical Review Letters*, 1, 1958, p.413 and P. L. Bender and R. L. Driscoll, A free precession determination of the proton gyromagnetic ratio, I.E.R.E., *Transactions on Instrumentation*, 1-7, 1958, p.176), and recommended provisionally at the IAGA Meeting at the UGGI Assembly at Helsinki, Finland in 1960 (J. R. Nelson, The gyromagnetic ratio of the proton, *Journal of Atmospheric and Terrestrial Physics, London*, 19, 1960, p.292).

Proton vector magnetometer

To convert a proton magnetometer to a vector instrument, so that the components of magnetic force can be measured, as well as the total field, requires the addition of suitable coils so that artificial magnetic fields may be superimposed on the natural field. If this artificial field, for example, is made exactly equal in magnitude and exactly opposite in direction to the horizontal component of the field, then the resultant field (i.e. the natural field plus artificial field) is equal to the vertical component of the natural field. Similarly, if the artificial field is exactly equal in magnitude and opposite in direction to the vertical component then the resultant field is equal to the horizontal component. This principle is the basis of the proton vector magnetometers at Lerwick and Eskdalemuir, and has been described by Hurwitz and Nelson (Proton vector magnetometer, *Journal of Geophysical Research*, 65, 1960, p.1759).

A photograph of the Lerwick instrument is at Figure 15. It stands on the west pillar in the absolute hut, H (see Figure 3); the ancillary equipment is in an adjacent hut, I. The artificial field, opposing *H*, is produced by the Helmsholtz-Gaugain pair of coils, of 80 cm diameter, plane vertical (the *-H* coil) while the artificial field opposing *Z* is produced by the pair of coils, of 100 cm diameter, plane horizontal (the *-Z* coil). The whole system of coils is mounted on a rotating graduated base, which can be accurately levelled, and, in addition, each pair of coils can be further adjusted relative to the base so that the axis of the *-H* coil can be made closely horizontal and the axis of the *-Z* coil can be made closely vertical. The water sample is in a cylindrical plastic bottle, 14 cm long and 6 cm in diameter, and is mounted horizontally on the axis of a solenoid in the common centre of the Helmholtz-Gaugain coils. The solenoid serves a double purpose; firstly, it is used to produce the strong polarising field approximately at right angles to the resultant field, and, secondly, to detect the proton precession signal once the polarising current is switched off. When measuring *H* it has been found desirable, in order to increase the signal to noise ratio, to use as well a second coil, wound on top of the main solenoid coil and connected in series with it by a simple switching arrangement; it is easily disconnected when measuring *F* or *Z*.

Photographs of the Eskdalemuir instrument are at Figures 13 and 14. It is mounted on a pillar in the East Hut (34 on Figure 7). In this instrument only a single Helmholtz-Gaugain coil system, of 80 cm diameter, is used, but it can be rotated about a horizontal axis as well as about the usual vertical axis, so that the axis of the coil system can be set in any required direction. The dimensions of the water bottle and coil are similar to those of the Lerwick instrument.

To ensure that the artificial field is due solely to the coil system, which is rotated rigidly about the vertical axis, the lead-in wires are made from coaxial cable so that the external magnetic field, due to the coil currents flowing in them, is negligible. To minimise any physical distortion of the coils the lead-in cables are supported above the instruments.

The instruments at Lerwick and Eskdalemuir were carefully checked to ensure that the magnetic field at the water sample was unaffected by any residual magnetism in the materials used; any disturbance is considered to be much less than $0{\cdot}5\gamma$

The precession signal is amplified, and its frequency is measured by timing a selected number of cycles, in 10 microsecond units, using a 100 kilocycles per second quartz oscillator. At Lerwick, the precession frequency in the *H* field is about 620 cycles per second, in the *Z* field about 2020 cycles per second and in the *F* field about 2110 cycles per second. Usually 128 cycles of the precession frequency are timed in the *H* measurement; this takes about 0·21 seconds and is timed to the nearest 0·00001 second, or 1 part in 20,000. This random error in timing corresponds to about $0{\cdot}7\gamma$, but it can, of course, be reduced by taking the mean of repeated measurements. The frequency of the quartz oscillator is checked periodically against a standard broadcast radio frequency; it is kept within 1 part in 100,000 of its nominal value. When measuring *F* and *Z*, 2048 cycles are usually timed; measuring to the nearest 0·00001 second corresponds then to the nearest $0{\cdot}5\gamma$. The corresponding frequencies for the geomagnetic field at Eskdalemuir are about 720 cycles per second for *H*, 1930 cycles per second for *Z* and 2060 cycles per second for *F*; the random errors in timing are similar to those for Lerwick. The electronic measuring equipment is kept at a safe distance from the magnetometer bottle (and coils); this is readily checked by making magnetometer measurements with the equipment at different distances.

The procedure for measuring *Z* is as follows. The artificial field is made closely equal in magnitude, and opposite in direction, to *H* and the resultant field is measured. (At Lerwick the coil system with the horizontal axis is used; at Eskdalemuir the axis of the single coil system is made horizontal). The coil system is rotated through 180 degrees about a vertical axis, the current in the coil system is reversed in direction, and a fresh measurement is made. A mean of the two measurements is taken as the measurement of *Z*. The contribution to *Z* due to small misalignments of the axis of the field in the vertical plane is equal and opposite in the two measurements to the first order of approximation, and is cancelled out when taking the mean.

The procedure for measuring *H* follows similar principles. The artificial field is made equal and opposite to *Z* and the resultant field is measured. (At Lerwick the coil system with the vertical axis is used: at Eskdalemuir the axis of the single coil system is made vertical). The coil system is then rotated through 180 degrees in azimuth about a vertical axis (but in this instance there is no need to reverse the current direction) and a further measurement made. A mean of the two measurements gives *H* since the spurious field component in the direction of *H*, due to misalignment of the coil system, is thus cancelled. Each of these measurements consists of a number, usually between 5 and 10, of independent determinations of the precession frequency made in quick succession over a period of 1-2 minutes.

The accuracy required for the setting of the electric current and for the orientation of the coil systems has been fully discussed in the paper by Hurwitz and Nelson to which reference has been made above. A summary follows of their conclusions: these depend on the relative magnitudes of *Z* and *H*, but the difference between the results from Lerwick and from Eskdalemuir, for this purpose, is small and mean values are quoted here.

The effect of a deviation of the axis of rotation of the base from the vertical is by far the most important; a deviation of three seconds of arc leads to a possible error in *H* of $0{\cdot}7\gamma$ and in *Z* of $0{\cdot}2\gamma$. It is considered, however, that the maximum deviation likely for the present instruments is 1-2 seconds of arc (see below). Errors in the other adjustments detailed below produce only second order effects; these are now discussed.

To keep the error in the measurements of *H* and *Z*, due to errors in any one adjustment, below $0{\cdot}5\gamma$ the following tolerances must not be exceeded:-

The difference between the magnitude of the artificial *H* field and the natural *H* field must not exceed 200γ.

The azimuth of the artificial *H* field must not deviate by more than 50 minutes of arc from the true magnetic meridian.

The angle between the direction of the artificial *H* field and the horizontal must not exceed 50 minutes of arc.

The difference between the magnitude of the artificial *Z* field and the natural *Z* field must not exceed 120γ.

The axis of the artificial *Z* field must not deviate from the vertical by more than 6 minutes of arc.

In addition the coil currents must not change between the two halves of each measurement.

All these second order tolerances are easily met, and, in practice, the errors due to any one of these factors will probably not exceed 0·1γ.

When the instrument is first set up there are several preliminary determinations and adjustments to be made. First there is the determination of the base graduated scale reading when the -*H* coil axis is accurately set in the meridian; then there are the fine adjustments to the coil axes to make them as nearly as possible horizontal and vertical (for the -*H* and -*Z* fields respectively). Lastly there is the determination of the coil currents necessary to give fields of -*H* and -*Z*.

To determine the correct azimuth of the -*H* coil, the coil axis is first aligned approximately magnetic east-west, the coil current set to give an artificial field of about the same magnitude as *H* (using a rough, calculated, coil constant) and a measurement of the resultant field is made with the proton magnetometer. The coil is then rotated about the vertical axis through exactly 180 degrees and another field measurement is made. If the two field measurements are the same then the coil is exactly aligned east-west, and, from this, the graduated scale reading for north-south alignment is readily determined. If, however, there is a difference between the field measurements, then the azimuth of the coil is slightly altered until the new field measurement is about equal to the mean of the two previous measurements. This sequence of measurements is repeated until turning the coil through 180 degrees produces no change of reading.

The coil axes must now be adjusted relative to the axis of the rotating base. The axis of the coil producing -*H* is set in the meridian, and the -*H* field is generated, using the computed coil constant to set the current. A field measurement is made, and then the coil system is rotated about the vertical axis through exactly 180 degrees, the coil current is reversed and then another field measurement is made. If the two field measurements differ then the axis of the *H* coil is adjusted slightly in the vertical plane until the field measurement is about equal to the mean of the previous two measurements. The procedure is then repeated until, on rotation through 180 degrees and reversal of the current, the change in field measurement is very small. It is possible to make the setting so that the change in field on rotating the coil system is less than 10γ; this corresponds to an error in the orientation of the -*H* coil in the vertical plane, of less than one minute of arc. At Lerwick this setting, once made, does not have to be changed, but at Eskdalemuir, where one coil is used for measuring both components, a fixed mirror, on the coil system, is used to reflect a light beam on to a fixed card; by marking the position of the light spot when the adjustment is correct, the setting can be repeated whenever necessary.

The axis of the coil producing -*Z* has to be adjusted in two planes. This -*Z* field is generated and the orientation of the coil axis is adjusted until field measurements at any azimuth M of the rotating base, and at 180 degrees +M, differ by less than 50γ. Then field measurements are made at 90 +M and 270 +M; if these also differ by less than 50γ the adjustment is correct; if not an adjustment of the coil axis is made. The whole process of these four measurements is repeated, as necessary, until no difference is greater than 50γ. The error in orientation of the *Z* coil is then much less than 6 minutes of arc.

To determine the coil current necessary to produce a field of -*H*, the -*H* coil axis is set parallel to the meridian (magnetic north-south) and the current through the coils set to a value that gives a field of approximately $-2H$. Field measurements are then made first with the coil current on, and then with the coil current off. The coil current is adjusted until the two field measurements are the same and the current noted; then the coil is rotated through exactly 180 degrees and the procedure repeated; the mean of the two current readings gives the coil current for a field of $-2H$.

This is all that is necessary for the Eskdalemuir instrument, since the same coil is used for backing off both H and Z, but, at Lerwick, it is also necessary to determine the coil constant of the $-Z$ coil, independently of the $-H$ coil. In theory, a similar method could be applied, but, in practice, there are difficulties because of the large backing off field required, and a simpler method is used. It is seen that if, when measuring H, the current through the $-Z$ coil is varied from below the corrent value to above the correct value, the measured field at first falls to a minimum and then rises again. The minimum value occurs when the coil current is the correct value; in practice the minimum is determined by finding the two currents each of which gives a field a discrete amount (about 5-10γ) above the minimum, and taking the mean value. The coil constants of the Lerwick instrument are, for $-H$, about 103γ per milliampere, for $-Z$ about 322γ per milliampere, and for the Eskdalemuir instrument about 100γ per milliampere.

As can be seen from the discussion above on the allowable tolerances, the crucial adjustment is the setting of the vertical axis of rotation. The standard technique is used for this; each base is fitted with a sensitive spirit level (at Eskdalemuir 1 division equals 2·8 seconds of arc, at Lerwick 1 division equals 5 seconds of arc, a division at both places being about 2·5 mm wide) and the levelling adjustment is such that the change in bubble position throughout a complete rotation is ½ division or less. The levelling adjustment is checked before each observation. It is considered that the average systematic errors in a long series of field measurements, due to incorrect levelling, are unlikely to exceed 0·5γ. An upper limit to the magnitude of the remaining sources of error can be estimated by considering the internal consistency of the measurements since independent measurements of F, H and Z are available. For each observation the expression $F - \sqrt{(H^2 + Z^2)}$ is calculated (the measurements being corrected, as necessary, to the same time by using the magnetograms). The effect on measurement of H and Z of the maladjustments described above is always positive and thus, if present, the expression will not be zero. It is found that the mean value of this expression over many observations is less than 0·2γ, and has a standard deviation of 0·5–0·7γ. Thus, to summarize taking into account all sources of error it is considered that the mean values of H and Z are probably accurate to about ±0·5γ.

Older instruments

Older instruments, using proton magnetometers, from 1960, are described in the *Observatories' Year Book* 1963 (pages 6-7); the instruments previously in use are described in the *Observatories' Year Books*, 1957-59.

Review of past measurements

In view of the improved accuracy (particularly in Z measurements) that the new instruments have provided, the opportunity has been taken to review the whole series of geomagnetic measurements made at Eskdalemuir and Lerwick, and to estimate (where possible) the probable corrections to past values. Much weight has naturally been given to the various intercomparisons between the two observatories (and between the observatories and Abinger/Hartland) which have been reported in past *Observatories' Year Books*, but it will not be necessary in the following account to trace every step that was made. The errata arising from this review were listed on pages vii-xi of the *Observatories' Year Book* 1964.

Horizontal component

At Lerwick, from 1922 until 1939, the standard instrument for measuring H was Kew unifilar magnetometer L3951 mounted on the central pillar in Hut H. This was replaced in October 1939 by a portable Smith coil, placed on the central pillar in Hut I, which was standardized by comparison with L3951; this is referred to below as the Lerwick H standard.

Observations continued to be made twice monthly with L3951 until 1946, and the two instruments showed complete agreement during this period.

In June 1953 there was a decrease in the standard of $1 \cdot 3\gamma$ when, following a recalibration of the Smith coil potentiometer at the National Physical Laboratory (NPL) it was discovered that hitherto an old and slightly incorrect factor had been used to convert from international amperes to absolute amperes. Early in 1965, comparisons with the proton vector magnetometer showed that the Lerwick *H* standard, then in force, (i.e. 1γ below the pre-1953 standard) was, in fact, correct (error less than 1γ).

The position has not, however, been clear in the past, and the published Lerwick *H* values have been in error for two reasons. Firstly, it was decided, after the 1946 inter-observatory comparisons, to assimilate the Lerwick *H* values to the inferred Abinger standard and 6γ was subtracted from the Lerwick *H* values. This was backdated to 1 January 1934, the date on which the change from dip circle to dip inductor (for determination of inclination and thence vertical component) was made effective. Secondly, the recalibration of the Smith coil potentiometer at the NPL in 1953 showed a small change in the value of the resistances from the 1938 calibration, and, in order to avoid an apparent discontinuity, the correction was altered from -6γ to $+1\gamma$ from 1 June 1953. The present review has shown that both these decisions were incorrect; the first because subsequent inter-observatory comparisons led to the 6γ being attributed partly to experimental error and partly to an error in the Abinger standard; the second because it seems most probable that the changes in the resistances occurred during the transport of the potentiometer to the NPL. The correction for the period 1 June 1953 to 31 December 1964, of 1γ, can be ignored, but it seems best to repeal the correction from 1934 to June 1953, by now adding 5γ to the published values as previously amended for this period (i.e. 6γ by removing the assimilation to the inferred Abinger standard minus 1γ due to the incorrect conversion from international to absolute amperes).

In a number of previous *Observatories' Year Books* (particularly those for the years 1957-61) references are made to the "uncorrected coil" values of *H* derived from measurements with the Lerwick Smith coil magnetometer. This refers to *H* values obtained when the calibration constant first assigned to this instrument, in 1932, after calibration at Abinger, and not since altered, is used. The instrument was, however, modified before being used at Lerwick, and it is not surprising that changes were introduced into its effective constant. Essentially, as stated above, the instrument was recalibrated in 1938 against the existing Kew pattern magnetometer, and this was carried out by adding corrections to the "uncorrected coil" values.

At Eskdalemuir the standard instrument for absolute observations of *H* was the Kew unifilar magnetometer, Elliott 60, mounted on a pillar in the west absolute hut (34).

This Elliot 60 standard was replaced on 1 January 1934 by a Schuster-Smith coil magnetometer, placed on a specially built pillar in the same (west) hut, about 1·5 m south of the other pillar. This involved a discontinuity of -14γ, which is remarked on in the *Observatories' Year Book*, 1934 p.173. Of this total amount it was estimated that 10γ was due to the departure of the moment of inertia of the magnet system of the Elliott magnetometer, as determined in 1933, from the value originally determined in 1908, and as used up to and including 1933 in the reduction of the results of absolute observations. The likely suggestion was then made that the change occurred gradually throughout the period of use, 1908-33, a regular change of less than $0 \cdot 5\gamma$ per year being caused. Observations with the Elliott 60 magnetometer continued to be made up to 1948 with no change in the difference between the two magnetometers.

The current measuring potentiometer in the Schuster-Smith coil apparatus had been originally calibrated by the NPL in international electrical units but, as with the Lerwick instrument, the conversion factor used to convert international amperes to absolute amperes (0·99997) was an old value, subsequently found to be greater than the correct value (0·99985). There is no reason to doubt that the NPL calibration was correct in international units and so the original measurements of *H* were too high by a factor of 0·00012 *H* ($=2 \cdot 0\gamma$). This was put right in March 1954 when the potentiometer was recalibrated in absolute units, but, of course, there was a drop of 2γ in the *H* standard at this time.

Towards the end of 1964 a series of comparisons with the new proton vector magnetometer showed that the Schuster-Smith coil magnetometer was reading 3γ high. This was in good agreement with the expected value based on inter-observatory comparisons.

A summary of the required changes in the published *H* data as previously amended is given below.

Lerwick

1 January 1934 to 31 May 1953	add 5γ

Eskdalemuir

1908 to 31 December 1933	subtract 9γ in 1908 increasing uniformly to a subtraction of 19γ in 1933
1 January 1934 to 28 February 1954	subtract 5γ
1 March 1954 to 31 December 1964	subtract 3γ.

Vertical component

The earlier history of the measurements of *Z* at Lerwick and Eskdalemuir has been fully described in past *Observatories' Year Books*. At both observatories dip circles were originally used (at Eskdalemuir up to the end of 1913 and at Lerwick up to the end of 1933) and these were followed by dip inductors; these instrumental changes gave rise to discontinuities in the measurements of inclination, and thus of *Z*, which appear in the published values and must be noted. For Lerwick the present review has suggested no change to published values, as previously amended, up to 1954, but there is good evidence that sometime between then and April 1959 the measured value of *Z* became 7γ too high. It seems most probable that this took place when the balance magnetometer (BMZ) (No. 83) received an accidental knock on 28 September 1958 - a correction to its constant was applied from that time, but a review of the monthly mean quiet day values of *Z* around this date strongly suggests that the correction applied was 7γ too large. This reduction of 7γ is therefore made from then until 1 January 1962, when the *Z* values were first derived direct from the proton magnetometer total force measurements and the Smith coil values of *H*. No change is required since this latter date.

For Eskdalemuir the review of the published *Z* data has had to take account of the changes of the *H* standard (see above) because the dip inductor was the standard instrument for the measurement of *Z* up to May 1960, when the *Z* values were first derived from the proton magnetometer total force measurement and the Schuster-Smith coil value of *H*. There was no change in the *Z* standard at this time but there was a small change (of 1γ) when the proton vector magnetometer was brought into use (1 January 1965).

A critical re-examination of the inter-observatory comparisions, taking into account all the evidence now available, strongly suggested, however, that the *Z* standard at Eskdalemuir decreased by about 15γ between 1953 and 1954; 5γ of this was accounted for by the change in *H* standard in March 1954 (see above) and an examination of the quiet day monthly mean values indicated that a decrease of 10γ occurred in July 1953. This was presumably due to a change in the dip inductor (a decrease of only 0·25 minute in the measurement of the angle of dip would give this change of *Z* at Eskdalemuir). There is no evidence of any other discontinuity in the observations by the dip inductor and so the only other changes in *Z* at Eskdalemuir which are now proposed are the effects of changes in the *H* standard. Details of these are given in the previous section. On 1 January 1934 the sudden decrease of 14γ in *H* gave a consequence decrease of 37γ in *Z* and the gradual rise in *H* from 1908 to 1933 (10γ over the period) gave rise to a corresponding increase of 27γ in *Z*.

A summary of the changes in the published *Z* data, as previously amended, which are now considered necessary, is given below (changes of 1γ have been ignored).

Lerwick

Up to and including 27 September 1958	no change
28 September 1958 to 31 December 1961	subtract 7γ
1 January 1962 onwards	no change

Eskdalemuir

From 1908 up to 31 December 1933	subtract an amount varying steadily from 24γ in 1908 to 51γ in 1933
1 January 1934 to 30 June 1953	subtract 14γ
1 July 1953 to 28 February 1954	subtract 4γ
1 March 1954 onwards	no change.

Declination

It was decided in 1963 to re-examine all the available manuscript data on the determination of the azimuth of the fixed mark at Lerwick, from the first measurement in 1922 to the most recent value in 1961. (Measurements were made in 1922, 1923, 1930, 1932, 1937, 1938, 1939, 1940, 1944, 1948 and 1961, the last two being by the Ordnance Survey.) The clear conclusion was reached that the apparent drift of the mark between 1923 and 1948, mentioned in the 1938 and subsequent *Observatories' Year Books* was not real and was due to errors of observation with the instruments available at Lerwick. The most accurate observation (08°38·8′ ± 4″ east of south) is that made by the Ordnance Survey in 1961, and it is considered that this has always been the true value since declination observations began in 1922. The conclusion is consistent with the geology of the region, since both concrete pillars - that on which the declinometer stands and that, 117 m away, on which the azimuth mark is placed, are firmly cemented into solid bedrock. The change from the already published corrections for the years 1923 to 1946 are that (i) the original 1923 determination was in error by 4·2′ and not 3·5′, and (ii) that this figure of 4·2′ is the amount by which westerly declination is too large between 1923 and 1946, and not the range from 3·5′ in 1923 to 4·4′ in 1946, hitherto mentioned. In addition the published values of westerly declination from 1947 to 7 November 1961 are too small by 0·2′. Attention was drawn to these points in the *Observatories' Year Book* 1962, p.vii; in the Errata published in the *Observatories' Year Book* 1964, p.vii-ix mention is also made of the resulting changes in X, $-Y$.

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 negligibly different (only 7″, the standard deviation of the observations being 6″) from the value adopted after the Ordnance Survey determination in 1948; it was, however, brought into use on 1 September 1961.

Inter-observatory comparisons of H and Z, 1946-1960

There have been frequent inter-observatory comparisons, including comparisons with Abinger/Hartland, using quartz horizontal magnetometers (QHMs) for horizontal components and BMZs for vertical components. In such comparisons the portable instrument is operated first at one station and then at the other, and it is clear that, included in the final result, and inseparable from it, is the net effect of any site differences there might be between the observing pier used for the portable instrument and the observing pier used for the standard instrument at each Observatory. There seems to be no site difference in Z between the various piers involved, but there is some evidence that, at Eskdalemuir, the value of H at the QHM pier is 2-3γ higher than that at the Schuster-Smith pier.

The results of the various inter-observatory comparisons have been reported in previous *Observatories' Year Books* (1958 for *Z* and 1960 for *H*) and these have now been revised to take account of the changes now adopted, and are given below. In this revision account has been taken of all changes considered to be reliably known, including the small ones ignored for the purposes of corrections to published data.

Revised inter-observatory comparisons of horizontal component

Date	Instruments used for comparison	Difference Eskdalemuir *H* - Lerwick *H*	Difference Eskdalemuir *H* - Abinger (Hartland after 1957) *H*
		γ	γ
1938	Direct	-2	
1946	QHM 89	-4	+1
1948	QHM 89	-1·5	+1
1950	QHM 90, 91 & 92	-3	
1950	QHM 91 & 92		+5
1954	QHM 120		+2
1957	QHM 119A, 120 & 121A	+1	
1959	QHM 119A, 120 & 121A	-3	
1959	QHM 119A, 120 477, 478 & 479		+1
1960	QHM 119A & 120	0	+3

Revised inter-observatory comparisons of vertical component

Date	Instruments used for comparison	Difference Eskdalemuir *Z* - Lerwick	Difference Eskdalemuir *Z* - Abinger (Hartland after 1957) *Z*
		γ	γ
1948	BMZ 35	+4	
1949	BMZ 35		+5
1950	BMZ 35	0	0
1951-52	BMZ 35		+5
1952	BMZ 35	+4	
1952-53	BMZ 35	+1	
1954	BMZ 35 & 53		+4
1957	BMZ 35 & 53	-19	
1959	BMZ 35	0	+7

It is evident that the 1957 Eskdalemuir and Lerwick *Z* comparison is anomalous and there is some other evidence for this - but, apart from this, it is seen that the *H* and *Z* standards at the two observatories are now in good agreement. The small mean residual difference in *H* of about 2γ can be accounted for by the possible site difference between the QHM pier and the Schuster-Smith coil pier at Eskdalemuir.

Tables have now been prepared of the revised annual values of the geomagnetic components at Lerwick for the period 1923-66 and at Eskdalemuir for the period 1908-66, and these follow. It should be noted that the year to year changes mentioned in NOTES ON THE RESULTS in previous *Observatories' Year Books* should be amended accordingly.

LERWICK REVISED ANNUAL MEAN VALUES OF GEOMAGNETIC COMPONENTS

Year	*H* γ	*D* (west) ° ′	*Z* γ	*X* γ	−*Y* γ	*I* ° ′	*F* γ
1923	14655	15 40·3	46655	14111	3959	72 33·7	48902
1924	14642	15 26·5	46708	14113	3899	72 35·7	48950
1925	14621	15 13·5	46713	14108	3840	72 37·2	48948
1926	14618	14 58·6	46699	14121	3778	72 37·1	48933
1927	14607	14 45·7	46713	14123	3722	72 38·1	48944
1928	14585	14 32·9	46702	14117	3664	72 39·4	48926
1929	14556	14 19·4	46651	14104	3601	72 40·3	48869
1930	14527	14 7·0	46624	14088	3543	72 41·6	48835
1931	14517	13 55·4	46623	14090	3493	72 42·3	48830
1932	14495	13 41·9	46608	14083	3433	72 43·5	48809
1933	14477	13 29·8	46605*	14077	3379	72 44·6*	48802*
1934	14462	13 17·7	46716*	14074	3326	72 48·0*	48903*
1935	14445	13 5·3	46730	14070	3271	72 49·4	48911
1936	14428	12 53·6	46763	14064	3220	72 51·2	48938
1937	14411	12 42·4	46785	14058	3170	72 52·8	48955
1938	14401	12 31·6	46809	14059	3124	72 53·9	48973
1939	14394	12 21·4	46833	14061	3080	72 54·9	48995
1940	14389	12 11·1	46860	14065	3037	72 55·8	49018
1941	14382	12 1·0	46884	14067	2994	72 56·8	49040
1942	14386	11 52·5	46899	14078	2960	72 56·8	49055
1943	14378	11 43·5	46919	14078	2922	72 57·8	49072
1944	14380	11 35·1	46940	14087	2888	72 58·1	49093
1945	14376	11 26·3	46963	14091	2851	72 58·8	49113
1946	14363	11 17·1	46989	14086	2810	73 0·2	49135
1947	14363	11 8·7	47002	14093	2776	73 0·5	49147
1948	14371	11 0·9	47009	14106	2745	73 0·1	49156
1949	14378	10 53·1	47037	14119	2714	73 0·2	49184
1950	14388	10 45·5	47039	14135	2685	72 59·6	49190
1951	14402	10 37·7	47061	14156	2656	72 59·1	49215
1952	14417	10 29·9	47087	14176	2626	72 58·7	49244
1953	14435	10 22·8	47106	14199	2601	72 57·8	49268
1954	14450	10 15·6	47129	14219	2573	72 57·2	49295
1955	14464	10 9·2	47156	14238	2549	72 56·8	49324
1956	14469	10 2·8	47191	14247	2523	72 57·3	49359
1957	14486	9 57·5	47225	14268	2504	72 56·8	49396
1958	14507	9 52·7	47246	14292	2487	72 55·8	49423
1959	14523	9 48·1	47271	14311	2472	72 55·4	49452
1960	14538	9 43·4	47299	14329	2454	72 54·9	49483
1961	14565	9 39·1	47318	14359	2441	72 53·5	49509
1962	14591	9 33·3	47336	14388	2422	72 52·1	49534
1963	14610	9 28·5	47359	14411	2405	72 51·3	49562
1964	14634	9 24·4	47382	14438	2392	72 50·2	49590
1965	14656	9 21·1	47403	14461	2381	72 49·2	49617
1966	14672	9 17·8	47431	14479	2370	72 48·7	49648

*Due to the change from dip circle to dip inductor measurements from 1 January 1934, there was a discontinuity of 2·8′ in *I* and thus 116γ in *Z* and 121 γ in *F* (see *Observatories' Year Book*, 1938, pp.19-21). The values for the years 1923 to 1925 inclusive are based on the results from absolute observations only.

ESKDALEMUIR REVISED ANNUAL MEAN VALUES OF GEOMAGNETIC COMPONENTS

Year	*H* γ	*D* (west) ° ′	*Z* γ	*X* γ	−*Y* γ	*I* ° ′	*F* γ
1908	16821	18 33·3	45283	15947	5353	69 37·3	48306
1909	16826	18 30·1	45360	15956	5339	69 38·9	48380
1910	16826	18 23·3	45317	15967	5307	69 37·8	48340
1911	16836	18 12·4	45317	15993	5260	69 37·1	48343
1912	16836	18 3·9	45318	16006	5221	69 37·2	48344
1913	16811	17 54·9	45254*	15996	5171	69 37·3*	48276*
1914	16793	17 45·3	45159*	15993	5121	69 36·1*	48180*
1915	16774	17 35·9	45143	15989	5071	69 36·9	48159
1916	16744	17 26·1	45088	15975	5017	69 37·6	48097
1917	16720	17 17·1	45061	15965	4968	69 38·6	48063
1918	16702	17 8·1	45034	15961	4921	69 39·0	48032
1919	16700	16 58·7	45049	15972	4875	69 39·6	48045
1920	16693	16 48·7	45026	15980	4828	69 39·5	48021
1921	16681	16 37·3	45025	15984	4771	69 40·3	48016
1922	16666	16 25·8	44974	15985	4714	69 40·0	47963
1923	16661	16 13·8	44915	15997	4657	69 38·8	47906
1924	16658	16 1·2	44898	16010	4597	69 38·7	47889
1925	16650	15 48·4	44902	16020	4535	69 39·3	47890
1926	16632	15 35·3	44896	16020	4469	49 40·3	47878
1927	16615	15 22·7	44843	16020	4406	69 40·2	47822
1928	16602	15 10·5	44849	16024	4346	69 41·2	47823
1929	16586	14 58·9	44832	16022	4287	69 41·9	47802
1930	16568	14 47·1	44834	16019	4228	69 43·2	47797
1931	16565	14 34·8	44850	16032	4170	69 43·7	47812
1932	16553	14 23·7	44867	16033	4115	69 45·0	47823
1933	16539	14 12·1	44839	16033	4058	69 45·2	47792
1934	16531	14 0·6	44845	16039	4002	69 45·9	47795
1935	16520	13 48·8	44861	16042	3944	69 47·0	47806
1936	16512	13 37·4	44894	16047	3889	69 48·4	47834
1937	16501	13 26·9	44920	16049	3837	69 49·8	47855
1938	16499	13 17·1	44953	16057	3791	69 50·7	47885
1939	16502	13 7·3	44977	16071	3746	69 51·1	47909
1940	16503	12 57·9	45008	16082	3703	69 51·8	47938
1941	16503	12 48·2	45037	16093	3657	69 52·5	47965
1942	16513	12 39·8	45039	16111	3620	69 51·9	47971
1943	16511	12 31·2	45064	16118	3579	69 52·7	47993
1944	16518	12 23·0	45076	16134	3542	69 52·5	48007
1945	16522	12 14·5	45093	16146	3503	69 52·6	48025
1946	16512	12 5·9	45120	16145	3461	69 54·0	48046
1947	16520	11 57·1	45140	16162	3421	69 53·9	48068
1948	16532	11 48·9	45144	16182	3385	69 53·2	48076
1949	16544	11 40·9	45158	16201	3350	69 52·8	48093
1950	16564	11 33·2	45180	16228	3317	69 52·0	48121
1951	16581	11 25·5	45193	16252	3284	69 51·1	48139

ESKDALEMUIR REVISED ANNUAL MEAN VALUES OF GEOMAGNETIC COMPONENTS *(contd)*

Year	*H*	*D* (west)	*Z*	*X*	*-Y*	*I*	*F*
	γ	° ′	γ	γ	γ	° ′	γ
1952	16601	11 18·0	45203	16279	3253	69 50·0	48155
1953	16625	11 11·0	45213	16309	3224	69 48·7	48173
1954	16647	11 3·4	45228	16338	3193	69 47·4	48194
1955	16665	10 56·3	45250	16362	3162	69 46·9	48221
1956	16674	10 49·7	45277	16377	3132	69 47·0	48250
1957	16695	10 43·6	45296	16403	3107	69 46·0	48275
1958	16719	10 38·0	45320	16432	3085	69 45·0	48305
1959	16742	10 32·1	45344	16460	3061	69 44·1	48336
1960	16761	10 26·3	45370	16484	3037	69 43·4	48367
1961	16792	10 20·9	45385	16519	3016	69 41·8	48392
1962	16825	10 15·7	45396	16556	2997	69 39·8	48414
1963	16850	10 10·2	45413	16585	2975	69 38·6	48438
1964	16880	10 5·3	45427	16619	2957	69 36·9	48462
1965	16907	10 0·8	45440	16650	2940	69 35·4	48483
1966	16929	9 56·2	45462	16676	2921	69 34·5	48512

*Due to the change from dip circle to dip inductor measurements, on 1 January 1914, there were discontinuities in *Z*, *I*, and *F*; these were not determined at the time but the annual mean values suggest that the discontinuity in *I* was about -1½′ and thus -60γ in *Z* and -55γ in *F*. The values for the years 1908 to 1910 inclusive are based on the results from absolute observations only.

AURORA

An all-sky cine camera of the Alaskan type (compare IGY Instruction Manual Part II - Aurora and Airglow) continued in operation at Lerwick during 1965. When the sky was sufficiently clear for the photographing of aurora to be possible, but no aurora was visible, the camera was operated at a speed of 12 frames an hour. As soon as aurora became visible the speed was increased to four frames a minute; the speed was reduced again when no aurora had been visible for half an hour. The films were processed and the required data extracted at the World Data Centre at the Balfour Stewart Auroral Laboratory, University of Edinburgh, to which the camera belongs.

In addition to the photographing of the aurora, a visual watch of aurora was kept, and, in particular, hourly observations were made and recorded. The period of the hourly observations was from 20 to 10 minutes before each hour, i.e. the observational period for the hourly observation 23 was from 2240 to 2250 GMT. When aurora was observed detailed descriptions were recorded throughout the period of the display, but this work had to be suspended during the periods of the upper air soundings. Copies of the hourly observations and of the detailed description of the aurora were sent to the World Data Centre at Edinburgh.

A careful watch for noctilucent clouds is also maintained and notes of its occurrence or non-occurrence in very clear conditions are sent to the World Data Centre at Edinburgh.

The form of the Lerwick Auroral Log has been changed, and it now consists of the hourly auroral observations, with brief notes on form and brightness.

In Table 15 a symbol is given for each hourly observation during the hours of darkness, according to the following code (but to save space all nights during which the sky was overcast throughout have been omitted):-

L = aurora is observed
0 = observing conditions are good and aurora is clearly absent
X = observing conditions made a decision about the presence of aurora impossible
? = aurora is suspected but observing conditions are not good enough for a firm decision.

When aurora was observed a brief note has been added describing the structure, form and brightness according to the following code:-

Structure	H = homogeneous
	S = striated
	R = rayed
	A = arc
	B = band
	P = patch
	V = veil
	R = rays
	N = not identifiable
Brightness index	1 = comparable with Milky Way
	2 = comparable with moonlit cirrus cloud
	3 = comparable with brightly moonlit cirrus cloud or moonlit cumulus cloud
	4 = much brighter than 3

Complete definitions of the terms are given in the *International Auroral Atlas* (1963).

Table 16 is a general auroral table compiled in the Balfour Stewart Laboratory from all data available for the sector included within geomagnetic longitudes 70° and 90°E, extending from Iceland to France. Most of the observations used are made at British Meteorological Office stations, in British ships and aircraft, and by voluntary observers in the United Kingdom, but observations from Iceland and Faroes, Eire and France are also used. A more detailed analysis of the data appears annually in *Observatory*, London; for example that for 1965 is in Volume 86, December 1966.

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 (short grass) open level surface. This is also done at Kew Observatory but there, in addition, regular measurements are made on suitable afternoons* of the air-earth current and from these the air conductivity is deduced. These latter are expressed as mean values covering the period of observation which is normally about 20 minutes centred on about 1430 GMT.

Continuous recording of potential gradient

The methods 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 ionization caused by a small radioactive collector fitted to its tip. The potential of the boom is recorded by a valve voltmeter (as described by A. W. Brewer, *Journal of Scientific Instruments*, 30, 1953, p.91), and these recordings are used for the tabulations, except at Kew where the records from the older electrostatic voltmeter continue to be analysed. (Eskdalemuir retains the electrostatic voltmeter, previously in use, as a standby instrument).

The collectors are of polonium deposited on a copper rod about 4 cm long by 0·5 cm diameter; recoated collectors are supplied periodically by 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.

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*Mainly in fair weather as defined on page 20.

The potential of the boom is, of course, affected by the presence of buildings, Standardizing 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 factors are given at the head of Tables 17, 35 and 37.

The methods of making the standardization 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 (for position see Figure 3). The centre of the wire is exactly 1 m above a levelled piece of ground. The potential of this wire is measured at half-minute intervals for a period of 10 minutes by a Wulf electrometer; the exposure factor is calculated from the mean value of the observed potential and the mean reading of the electrograph. Observations are made on as many suitable days* as possible.

At Eskdalemuir absolute observations of potential gradient are made with a Wulf electrometer using a small pit about 50 m from the main building (for position see Figure 7). 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 that, in practice, 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 the exposure factor is then calculated and observations are made on as many suitable days* as possible.

The absolute measurements at Kew yielding the exposure factors are made with special (Wilson) apparatus in an underground laboratory; these are described on page 19.

At all three observatories, for any given month, a mean exposure factor is used and this is a smoothed running mean using also observations made during the preceding and following months.

Details of the methods of recording at Lerwick follow.

The boom projects 58 cm from the north-east wall of the electrograph room at a height of 220 cm above the ground. The instrument is 160 m from the site of the absolute potential gradient measurements (it is to be noted that at both sites the insulators are made of polytetrafluoroethylene which is kept clean). A pen record is obtained on a chart 7·5 cm wide, which normally moves at a speed of 1·2 cm per hour. The scale value of the electrograph is 3 volts per mm on its sensitive scale, and about 15 volts per mm on its insensitive scale. 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.

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*Mainly in fair weather as defined on page 20.

At Eskdalemuir the valve voltmeter replaced the electrostatic voltmeter from 1 January 1965. The output is normally recorded on the punched paper tape of a data logging equipment for later computer processing; the range at first was from −1250 to +3500 volts per metre, but from 1 July it was changed to −350 to +1100 volts per metre. In the event of failure of the data logging equipment the output is fed to a pen recorder (±230 volts per metre on the sensitive range and ±1150 volts per metre on the insensitive range, with automatic changeover). The electrograph boom projects through a wooden door a distance of 66 cm so that the collector is flush with the outer wall of the building and 4·8 m above ground level; it is supported on polythene insulators which are inspected regularly and cleaned as necessary of dust and spider webs. A leak test is carried out about three times per week; about 120 volts are applied to the boom and 5 per cent loss of potential over 2 minutes is accepted as satisfactory.

The Kew electrograph, which is also a quadrant electrometer recording photographically, is situated in the main observatory building. Its boom is supported on sulphur insulators which are kept dry and warm with two small electric heaters. The radio-active collector is 90 cm from the window of the building through which the boom projects at 360 cm above ground level. The insulators and boom are inspected regularly and kept free from dust and spider webs; provided the electric heaters are also functioning, the insulator then remains satisfactory but a leak test is performed at about monthly intervals (the loss of potential should be negligible [less than 5 per cent in 2 minutes]). The scale value of the electrograph has been fixed at about 17 volts per metre per millimetre, and the full scale deflections correspond to about +1600 volts per metre and −1000 volts per metre.

Kew: air-earth current and conductivity

Measurements of the air-earth current and potential gradient are made in an underground laboratory (for position see Figure 11) using a modified Wilson apparatus which was devised by C. T. R. Wilson (*Proceedings of the Cambridge Philosophical Society*, London, 13, 1906, pp.184 and 363) and is described in detail by F. J. Scrase (*Geophysical Memoir*, London, 7, No. 60, 1934). From these observations the conductivity can be calculated.

Briefly, the apparatus 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 sequence of measurements is as follows; firstly a measurement of potential gradient, secondly a measurement of air-earth current made by accumulating the charge on the test plate for a period of 5 minutes and lastly another measurement of potential gradient. This sequence is normally repeated four times and is supplemented by additional measurements of potential gradient at the beginning and the end of the series and between each sequence. There are 18-20 measurements of potential gradient in a complete set of operations; in half of these the test plate is first exposed to the field, earthed, shielded and then the potential (v) of the plate is measured with the electrometer; in the other half the plate is first shielded, earthed and then exposed to the field and its potential measured. These two slightly different procedures are adopted for convenience and give negligibly different results. If A is the area of the test plate (in square centimetres) and C is the capacity of the system (in farads) then the potential gradient F (in volts per centimetre) is given by

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

(A is 339 and C is $6{\cdot}1 \times 10^{-11}$).

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 (i) is measured by finding the potential (δv) acquired by the plate during a period of t seconds because of the charge collected. The relationship is:

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

The value of δv that is used is a mean result from the four observations each lasting five minutes. From the mean values of i and *F* the conductivity λ is deduced. There is a slight difference (about 1%) in the capacity of the system when shielded and when unshielded; a mean of the two values is used when computing the potential gradient but the shielded value is that applicable to, and used for, the air-earth current measurements.

The conductivity is that due to positive ions only since measurements are made only with positive fields. No measurements are made in precipitation or fog.

TABULATIONS

The potential gradient tables have been entirely recast with effect from the *Observatories' Year Book* 1964 to bring them more into line with recent requirements as discussed by the International Year of the Quiet Sun (IQSY) Working Group of the Joint Committee on Atmospheric Electricity of the International Association of Meteorology and Atmospheric Physics (IAMAP) and the International Association of Geomagnetism and Aeronomy (IAGA).

In 1957 (see *Observatories' Year Book* 1957 p.17) the change was made that only hours without precipitation were considered in obtaining the means - also, for this purpose, hours for which the mean was indeterminate, because of large fluctuations, were excluded. In 1964 the further change was made to exclude consideration of periods with hydrometeors (according to the World Meteorological Organisation definition); the main change is that periods with fog are now excluded as well as periods with precipitation. Thus tables 17 (Lerwick), 35 (for Eskdalemuir) and 37 (for Kew) contain mean values of potential gradient for those periods of 60 minutes, ending at exact hours GMT, which are without hydrometeors. Hours with hydrometeors are left blank, and hours for which no record is obtained, because of instrumental faults, contain a – . A distinction has also been drawn between "fair weather hours" and those hours without hydrometeors which are "non-fair weather hours". The criteria used to distinguish between these classes, which follow below, are at present, to a certain extent experimental, although based on the recommendations of the Working Group, but it is hoped that, in the future, a set of objective rules can be drawn up.

The criteria for fair weather hours that have been used are:-

a. There must be no hydrometeors.

b. There must be no low stratus cloud (low normally means at a height up to 100 metres above station level, but at Lerwick this limiting height is generally interpreted as being 300 metres).

c. There must be generally not greater than one eighth of cumuliform cloud, but there can be up to three eighths if there is no apparent effect on the potential gradient record.

d. The surface wind should normally be less than Beaufort force 5 (that is a mean hourly wind speed of less than 8 metres per second).

These weather criteria could not be applied as strictly at Kew, where weather observations are made only every 3 hours from 06 to 21 GMT daily, as at Lerwick and Eskdalemuir, where full observations are made throughout the 24 hours. At Lerwick there are occasions of very high potential gradients in hazy fine weather, usually with south-east winds, and, at this Observatory occasions with visibility of 5 kilometres or less are excluded. These criteria are supplemented by detailed study of the electrograms for the elimination of purely local effects.

For Lerwick and Eskdalemuir up to, and including 1956, the selection of the special 0a days - when no negative potential was recorded and there were no complete hours during which the range of potential gradient exceeded 1000 volts per metre - was made solely by reference to the electrogram. Similarly a "selected quiet day" at Kew was one of 10 selected calendar days in each month, characterised by no negative potential gradient, no large irregular movements, no indication of inferior insulation and no large non-cyclic change; when there were not 10 such calendar days in a month, it was sometimes possible to make the number up by using other spells of 24 hours. The daily mean potential gradient, for these 0a days, and for the selected quiet days, was found by taking the average of the 24 hourly values.

In 1957, when changes were made in the tabulation and publication of the hourly potential gradient tables, it was decided that, although no change was to be made in the criteria given above for 0a and selected quiet days, an additional criterion should be that hours with precipitation on these days should not be used in deriving the 0a and selected quiet day means.

As stated above, there has been a further change from 1964 in that hours with hydrometeors have been omitted from the main tables. However, to give an overlap with the previous period 0a and selected quiet days have been chosen according to the 1957-63 criteria and this procedure will continue up to and including 1966. All "precipitation hours" are, of course, included in the class of "hydrometeor hours", but the latter also includes other, non-precipitation, hours; thus the mean for an 0a day may occasionally include measurements for more hours than are shown in the main tables.

From 1964 the annual 0a day means have been computed by taking an average of the monthly means. It was decided to recompute the annual 0a day means for all years back to the previous change on 1 January 1957 on this basis, and these values are given in the Errata section on pages xii-xiv of the *Observatories' Year Book* 1964. No change has been required in the procedure for the selected quiet days at Kew, since there have, in fact, been an equal (or substantially equal) number of days used in each month.

Table 18 (for Lerwick), 36 (for Eskdalemuir), and 38 (for Kew), contain monthly mean hourly values of the potential gradient, transferred from tables 17, 35 and 37 respectively, together with seasonal and annual hourly mean values. For this purpose Winter is taken as January, February, November and December, the Equinox is March, April, September and October and Summer is May to August.

In all the tables 17, 18, 35, 36, 37 and 38, mean values for each month have been computed by averaging the mean for each hour, means for all hours without hydrometeors and means for fair weather hours being given separately; seasonal and annual values are the averages of the monthly mean values.

Table 39 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 about twenty minutes centred about 1430 GMT on the date in question. Monthly and annual means are also given (the annual means being calculated as described in the previous paragraph).

It should be pointed out that the unit of potential gradient used in Table 39 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 1951-59 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 radio-active debris from nuclear explosions for test purposes. There is further discussion of the matter by R. A. Hamilton in the same *Journal* in **91**, 1965, p.348 (and in the Discussion in **93**, 1967, p.139) and (with J. G. Paren) in the *Meteorological Magazine*, London, **96**, 1967, p.81, in relation to Lerwick and Eskdalemuir measurements.

AIR POLLUTION

The automatic sampler for recording the smoke concentration in air (it replaced the Owens' air pollution recorder on 1 January 1962) is in the building known as the Clinical House, with its outside intake level about 2 metres above ground. This instrument was designed at the Warren Spring Laboratory and operates on a similar principle to their standard daily instrument. 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 areas 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 constant voltage transformer to supply the power for the electric pump the rate of air flow is substantially constant. During periods of light pollution a pump sampling 5·5 cu ft an hour is used but during times of heavy pollution a different pump sampling only 2·8 cu ft an hour is used.

The stains are measured with a photo-electric reflectometer. The minimum concentration of smoke that can be reliably detected is about 5 microgrammes per cubic metre. The calibration was determined at Kew by comparing the results from daily and hourly measurements on the same day; full details are given in a paper by H. E. Painter (*Atmospheric Environment*, London, **1**, 1967, p.461).

The new instrument was run side by side with the Owens' recorder for 10 months in 1961 and considerable systematic differences were found between the results of the two instruments. These were only in part due to the greater sensitivity of the new instrument. In the table below is given the mean relation between the monthly mean hourly values of smoke concentration as found from the two instruments.

Relation between monthly mean hourly values of smoke concentration
as found by the two recording instruments in 1961
unit: microgrammes per cubic metre

Owens	Warren Spring	Ratio	Owens	Warren Spring	Ratio
75	27	2·8	160	230	0·7
100	45	2·2	200	310	0·65
120	85	1·4	300	460	0·65
140	175	0·8			

It is seen that the Owens' instrument reads too high at low concentrations and too low at high concentrations. It undoubtedly well underestimates the peak concentrations. A further discussion of the comparison between the Owens' instrument and the new sampler is in preparation; meanwhile the discontinuity in the records should be noted. The average diurnal change in air pollution will also be much more accurately measured with the new instrument.

A summary of the results obtained at Kew is given in Table 40. In this table are hourly means of the concentration of suspended matter, in microgrammes per cubic metre, for each month, the seasons and the year. 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.

In addition there are standard instruments at Kew, Eskdalemuir and Lerwick for the measurement of daily smoke concentration in the air. Data so obtained are incorporated in the records of the National Survey of Air Pollution maintained by Warren Spring Laboratory. Summaries of these data appear monthly and are also included in the Annual Table of Observations. Both may be obtained on request from the Director, Warren Spring Laboratory, Gunnels Wood Road, Stevenage, Hertfordshire, England.

During 1965 the highest measurement of pollution at Kew was 803 microgrammes per cubic metre,this value occurring from 20-21 and 21-22 hours GMT on 28 December. This was the first year since continuous recording began (1 January 1921) in which the maximum hourly value was below 1000 microgrammes per cubic metre.

Late in 1960 there was also installed at Kew Observatory, on behalf of Warren Spring Laboratory, standard daily apparatus for the measurement of the concentration of sulphur dioxide in the atmosphere. Air which has already been passed through a smoke filter is bubbled through a weak solution of hydrogen peroxide causing the sulphur dioxide to be converted to sulphuric acid which remains in solution. The acidity of the hydrogen peroxide solution is then found by titration against a 1/250 normal solution of sodium borate, using BDH 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 24 hourly and, since January 1961, the results have been passed at monthly intervals to Warren Spring Laboratory and published by them alongside the smoke pollution data (see above).

Full descriptions of the methods of measuring smoke and sulphur dioxide are given in the Instruction Manual of the National Survey of Smoke and Sulphur Dioxide. This may be obtained from the Warren Spring Laboratory (address as above) on request. Summarised details of these and other methods of measuring a variety of pollutants are given in the four parts of British Standard 1747.

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

FIG. 1 Contour map of surroundings

FIG. 2 General view from south—Loch of Trebister in the foreground, June 1965

LERWICK OBSERVATORY

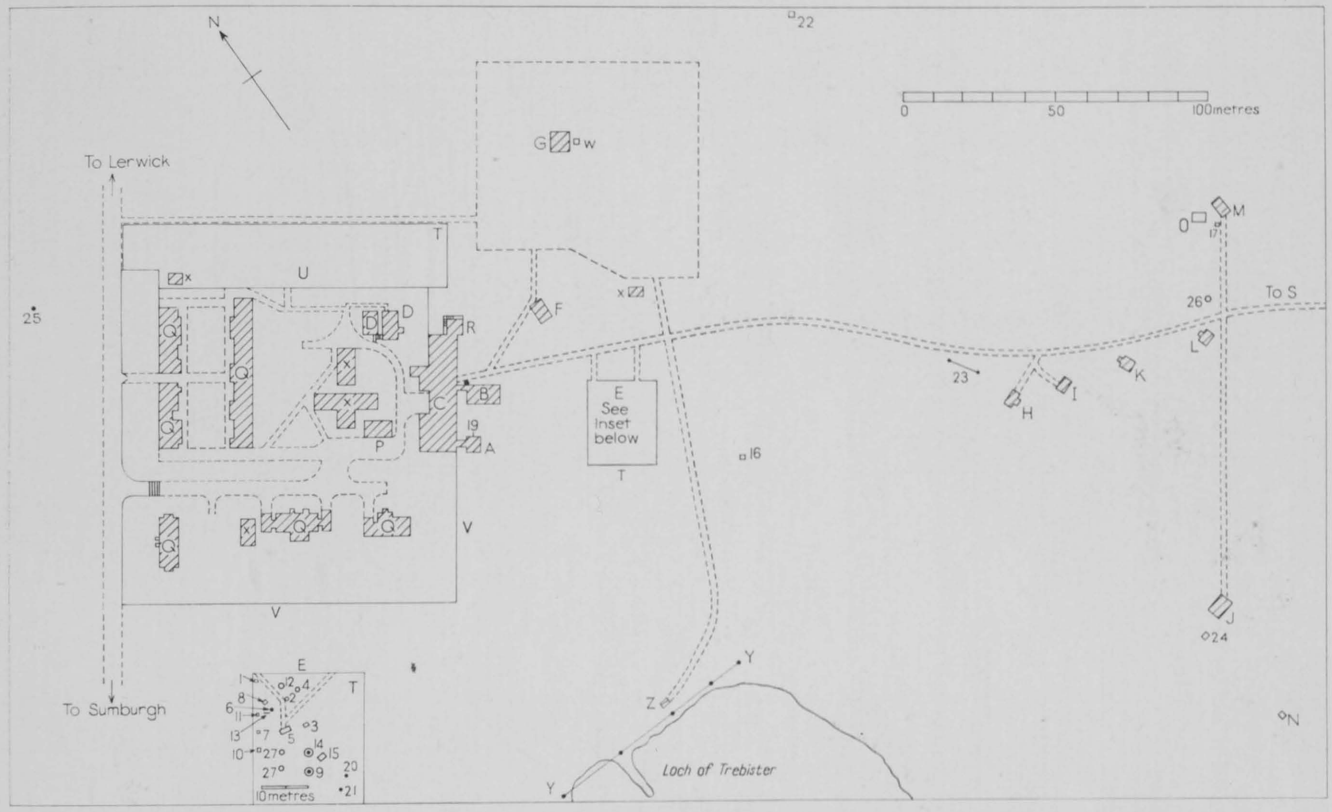

FIG. 3 Site plan 1965

FIG. 4 View from west-north-west, showing instrumental layout, June 1965

INSTRUMENTS

1. Small thermometer screen
2. Standard 5-inch rain-gauge for hourly reading
3. Sunshine recorder (Campbell-Stokes type)
4. Open-scale rainfall recorder
5. Large thermometer screen
6. Grass minimum thermometer
7. Total radiation solarimeter
8. Diffuse radiation solarimeter
9. Meteorological Office tilting-siphon rain recorder (turf-walled)
10. } Daylight illuminometers
11. }
12. Evaporation pan (American class 'A' type) with water-surface maximum and minimum thermometers
13. Electrical power panel
14. Standard 5-inch rain-gauge (turf-walled)
15. Gravity measuring site
16. Electrical anemograph (cup generator)
17. Cloud searchlight
18. Alidade for cloud searchlight
19. Boom for electrograph
20. } Radiation balance meters
21. }
22. Auroral camera
23. Stretched wire, between posts, for absolute measurements of atmospheric electric potential gradient
24. Coils for digitally recording proton vector magnetometer
25. Standard 5-inch rain-gauge, read monthly
26. Collector of precipitation for subsequent chemical analysis
27. Collectors of precipitation for subsequent radioactive analysis

BUILDINGS

A. Room for ozone spectrophotometer and electrograph
B. Neutron monitor room
C. Observatory building
D. Boiler house
E. Instrument enclosure
F. Old wind-finding radar (up to 1964)
G. Balloon filling shed
H. Absolute hut: declinometer, proton vector magnetometer
I. Hut: Schuster-Smith coil; controls for proton vector magnetometer
J. Hut: BMZ up to 1964; amplifier of digitally recording proton magnetometer
K. Magnetograph house: normal, quick-run and storm La Cour
L. Hut: supplementary magnetographs before 1965
M. Hut: fluxgate magnetograph. Air sampling equipment for separate analysis of smoke, chemical content and radioactivity of particulate matter
N. Azimuth pillar
O. Water tank
P. Power house for emergency generators
Q. Residential quarters
R. New wind-finding radar (from 1964)
S. Hut for ionosonde
T. Wire fence
U. Iron fence
V. Low wall
W. Radiosonde launching mast
X. Various huts for stores, etc.
Y. } Aerial masts and caravan containing transmitter for ionosphere experiments
Z. }

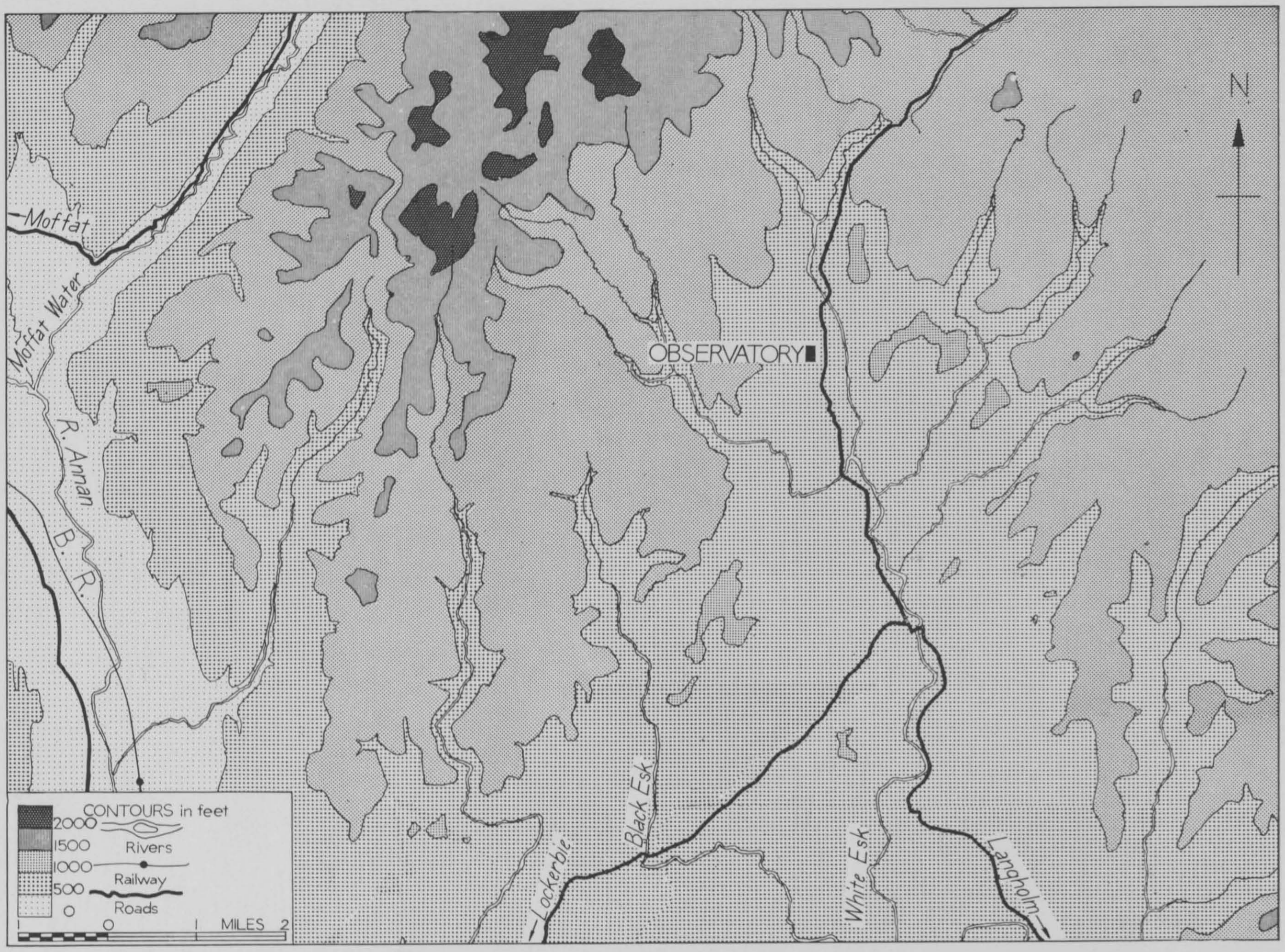

FIG. 5 Contour map of surroundings

FIG. 6 The Observatory and Davington village looking westwards, July 1965

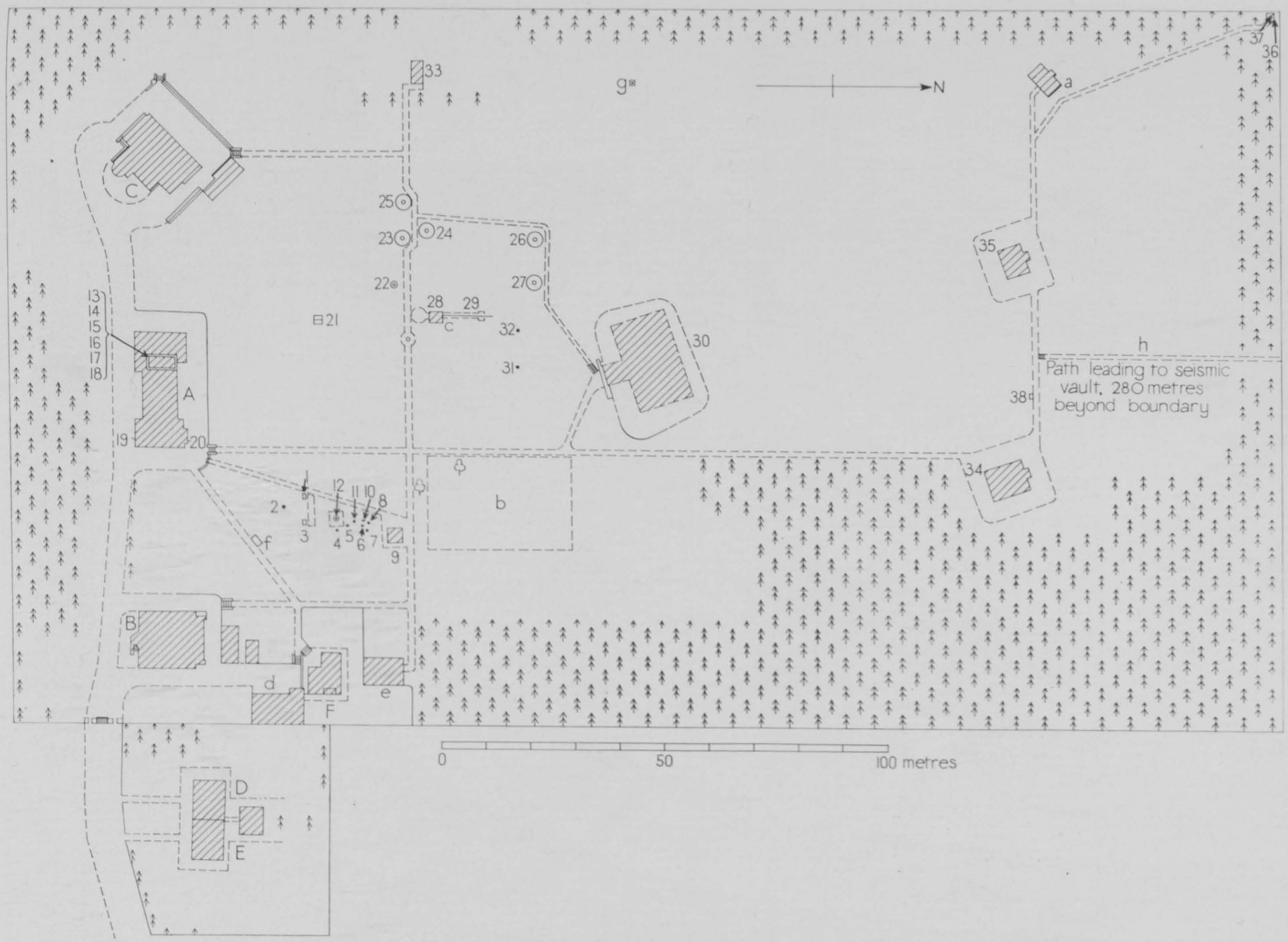

FIG. 7 Site plan, 1965

INSTRUMENTS

1. Large thermometer screen
2. Standard 5-inch rain-gauge for hourly reading
3. Sampling of air and collection of precipitation for subsequent analysis of chemical content
4. Cup counter anemometer Mark II
5. 4-foot earth thermometer
6. 1-foot earth thermometer
7.–8. Collectors of precipitation for subsequent radioactive analysis
9. Louvered hut—containing photothermograph and standard thermometers
10. Grass minimum thermometer
11. Standard 5-inch rain-gauge
12. Evaporation pan (American class 'A' type) with water-surface maximum and minimum thermometers
13. Total radiation solarimeter
14. Diffuse radiation solarimeter
15. Daylight illuminometer
16. Radiation recorder (bimetallic)
17. Sunshine recorder (Campbell-Stokes type)
18. Direct-reading pressure-tube anemograph
19. Air pollution sampling unit
20. Boom for electrograph
21. Atmospheric electricity absolute observation pit
22. International reference precipitation gauge
23. Standard 5-inch rain-gauge (turf-walled)
24.–25. Meteorological Office tilting-siphon rain recorders (turf-walled)
26. Fuess snow recorder (turf-walled)
27. Jardi rain recorder (turf-walled)
28. Microbarographs
29. Stretched wire, between posts, for atmospheric electric potential gradient recording
30. Underground chambers: La Cour normal and quick-run magnetographs, supplementary magnetographs
31.–32. Radiation balance meters
33. Hut for earth current recorders
34. East hut: absolute instruments—declinometer, proton vector magnetometer, Schuster-Smith coil
35. West hut: digitally recording proton vector magnetometer
36. Air sampling equipment for subsequent analysis of radioactivity of particulate matter
37. Cloud searchlight
38. Control box of the proton vector magnetometer

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
- g. Incinerator
- h. Path to seismic vault

The radiation instruments (13–17) and the head of the direct-reading pressure tube anemograph are mounted above a stone tower, the parapet of which is 10.5 metres above ground. The trees surrounding the Observatory are about 16 metres high.

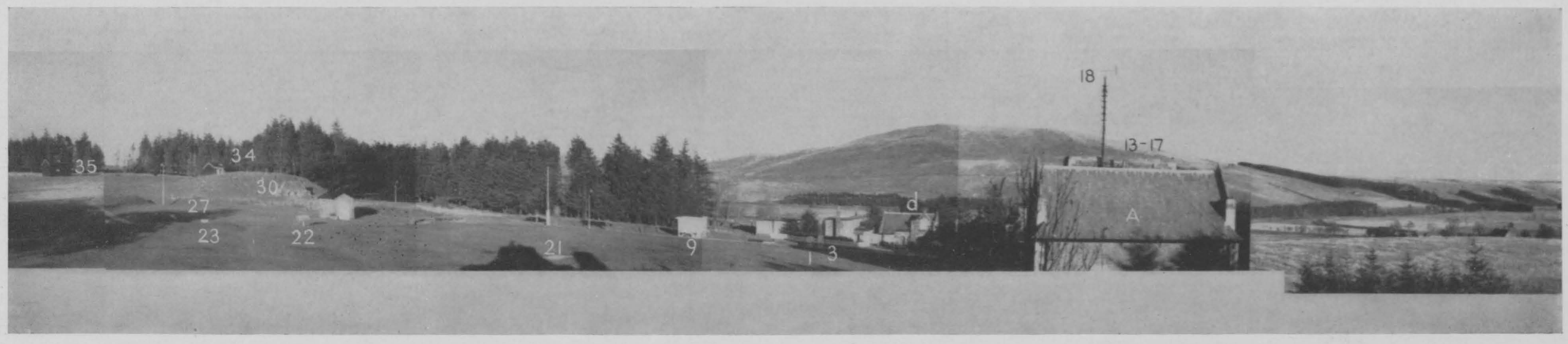

FIG. 8 General view of the Observatory looking northwards (on the left) and south-eastwards (on the right), November 1966

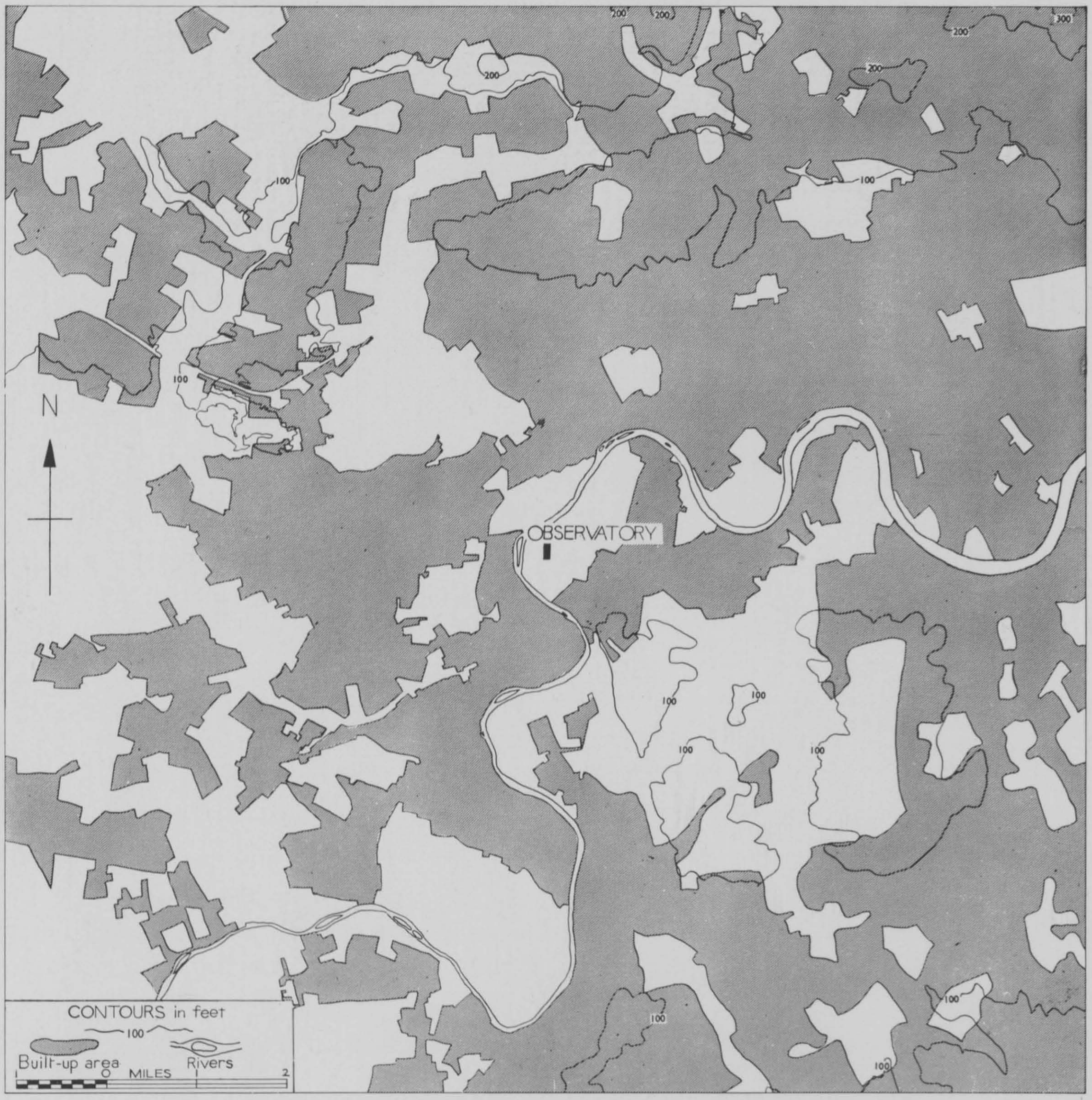

FIG. 9 Contour and built-up area map

FIG. 10 Aerial view of Observatory looking northwards from 500 feet, August 1965

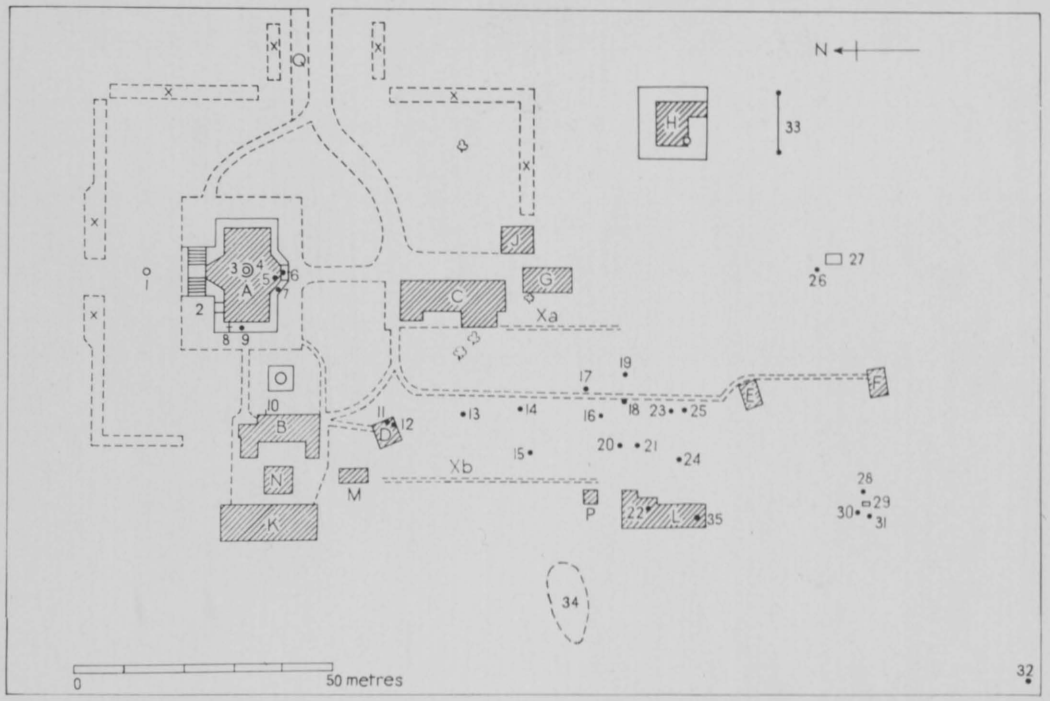

FIG. 11 Site plan, 1965

FIG. 12 General view from south-south-west, February 1967

INSTRUMENTS

1. Jardi rate of rainfall recorder
2. North-wall screen
3. Direct-reading pressure-tube anemograph
4. Solarimeters and daylight illuminometers
5. Normal incidence pyrheliometer
6. International reference sunshine recorder (installed July 1964)
7. Sunshine recorder (Campbell-Stokes type)
8. Boom for Dolezalek electrograph
9. Alidade for cloud searchlight
10. Boom for valve voltmeter recorder (installed May 1958)
11. Air sampling equipment for smoke and sulphur dioxide content (transferred from Clinical House, May 1963)
12. Rainfall chronograph recording unit
13. Large thermometer screen
14. Pillar for any special equipment
15. Grass minimum thermometer
16. International reference precipitation gauge
17. Standard 5-inch rain-gauge
18. Meteorological Office tilting-siphon rain recorder
19. Radiation balance meters
20. Rainfall chronograph
21. Storm gauge
22. In vault: photobarograph
23. Radiation recorders (bimetallic)
24. Solarimeter calibration bench
25. Theodolite pillar
26. Experimental recording aspirated electrical resistance psychrometer
27. Soil and earth thermometers (new site from August 1964)
28. Meteorological Office standard evaporation tank recorder
29. Meteorological Office standard evaporation tank
30. Evaporation pan (American class 'A' type) with water-surface maximum and minimum thermometers
31. Cup counter anemometer
32. Cloud searchlight
33. Stretched wire, between posts, for atmospheric electric potential gradient measurements
34. Tethered balloon, used for low-level measurements
35. In vault: short period vertical seismograph. (The Galitzin three-component seismograph was in use until December 1964.)

BUILDINGS

A. Main observatory building
B. Clinical House
C. Workshops
D. Experimental hut
E. Store
F. Store
G. Carpenter's shop
H. Atmospheric electricity underground laboratory
J. Pump house (erected 1964)
K. Hut: occupied by International Seismological Summary Unit
L. Underground seismological house
M. Greenhouse
N. Hot water storage tanks
O. Static water tank
P. Balloon-winch hut (erected September 1963)
Q. Hardstanding for hydrogen cylinder trailer (laid in April 1964)
X. Shrubberies or hedges. X^a and X^b are hedges 1.2 metres high

The four trees shown are 6 to 8 metres high. Outside the Observatory limits, due south of the hut marked F and 6 metres from the boundary fence, are two trees 25 metres high.

The southern and western boundaries shown on Figure 11 in the 1960 and 1961 'Observatories' Year Books' were just beyond the limits of the experimental equipment; the true fenced boundary has always been as shown in the present Figure 11.

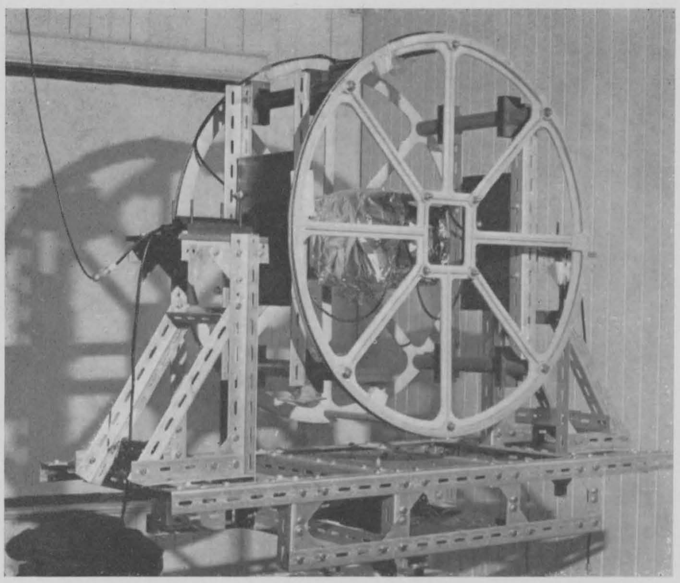

FIG. 13 Eskdalemuir: proton vector magnetometer (in East hut—see Figures 7 and 8) with coils (80 cm diameter) in position for annulling the horizontal component, H

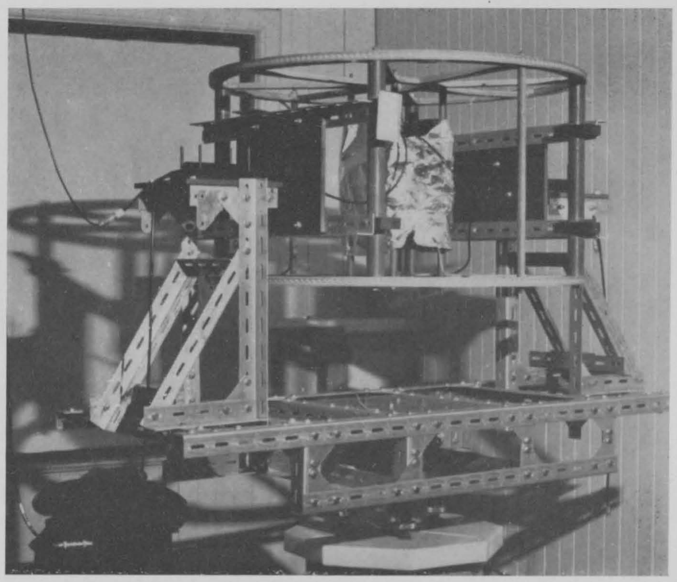

FIG. 14 Eskdalemuir: proton vector magnetometer (in East hut—see Figures 7 and 8) with coils (80 cm diameter) in position for annulling the vertical component, Z

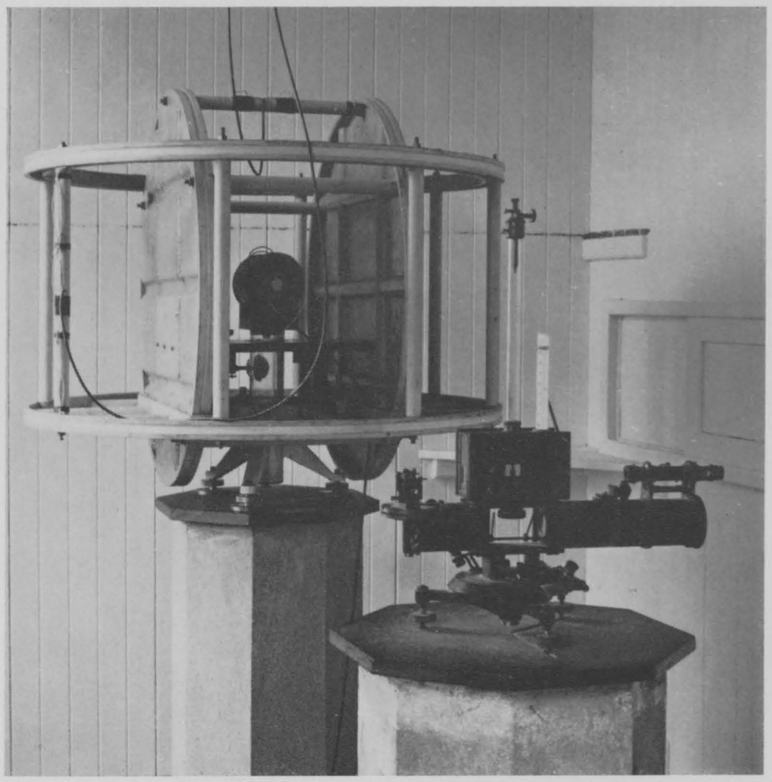

FIG. 15 Lerwick: proton vector magnetometer (in hut H—see Figures 3 and 4)—diameter of outer coil 100 cm. The Kew pattern unifilar magnetometer is to the right on the nearer pillar

LERWICK

| C

GEOMAGNETIC FORCE: HORIZONTAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, GMT

1 LERWICK (H) 14,000γ (0·14 CGS unit) + JANUARY 1965

	Hour GMT 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 15,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	647	648	649	652	654	657	660	661	656	650	646	647	647	649	652	655	654	652	642	643	644	649	645	647	650	606
2 *d*	642	646	649	649	651	659	660	660	657	653	645	641	645	638	630	634	647	634	626	640	646	644	641	653	645	490
3	627	645	645	647	649	649	649	648	643	643	641	641	641	644	647	645	635	645	649	650	650	649	648	649	645	479
4	650	647	649	650	652	654	655	656	655	651	649	646	647	645	650	652	653	652	640	638	633	639	645	649	648	557
5	649	649	649	649	652	654	655	653	652	648	646	645	645	648	648	642	638	646	648	648	648	648	648	649	648	557
6 *q*	648	648	647	648	651	652	654	656	652	650	648	645	648	651	652	652	652	651	652	649	649	649	649	649	650	602
7	650	649	650	652	656	657	660	658	656	653	652	653	652	649	644	639	648	650	647	647	649	651	651	650	*651*	623
8 *d*	644	649	645	646	648	649	646	641	632	631	636	641	640	637	630	625	635	639	632	633	634	635	653	641	*639*	342
9	641	640	640	642	652	648	649	649	648	648	646	644	643	650	651	648	649	651	643	641	638	642	653	648	646	504
10	640	639	642	645	647	647	650	649	647	647	645	645	647	652	654	656	650	641	637	642	645	644	645	651	646	507
11 *q*	641	643	645	644	646	648	649	649	647	645	644	641	642	646	648	648	649	650	649	650	650	650	650	648	647	522
12 *d*	649	647	643	643	645	653	659	662	659	654	645	649	646	636	633	635	644	639	643	645	635	630	638	642	645	474
13 *d*	650	637	630	637	649	649	654	650	646	646	645	639	638	641	641	645	642	641	644	635	638	640	644	647	643	428
14	645	642	645	645	645	649	652	654	650	646	641	636	646	644	642	647	645	649	649	649	648	649	648	649	646	515
15	649	649	649	654	653	658	654	653	652	649	645	635	638	644	646	648	648	645	641	639	646	649	648	649	648	541
16 *q*	646	646	646	648	648	648	650	651	648	646	644	640	639	643	643	646	648	649	649	648	645	641	644	636	645	492
17	637	644	645	647	648	651	652	654	655	653	643	644	643	646	619	629	648	639	633	634	637	640	645	645	643	431
18	644	644	644	646	648	653	655	653	651	648	644	640	640	644	648	648	647	648	646	641	642	648	652	643	647	517
19	644	642	642	642	647	653	655	652	647	646	644	645	645	648	653	654	654	653	652	651	648	644	641	648	648	550
20	644	645	646	648	651	653	654	653	650	646	640	640	641	646	648	649	655	654	641	644	655	652	670	661	649	586
21	637	629	635	633	641	648	651	650	647	646	642	640	640	647	648	648	649	649	648	644	640	642	647	653	644	454
22 *d*	658	647	651	656	651	655	622	678	666	656	644	645	641	640	634	640	640	640	639	637	648	640	640	644	646	512
23	648	644	641	640	642	644	650	655	649	643	640	643	640	637	637	640	642	644	645	647	645	644	653	644	644	457
24 *q*	641	642	643	644	646	648	649	649	646	641	638	638	640	641	647	650	649	651	650	649	651	649	650	648	646	500
25 *q*	647	647	648	647	648	649	651	652	652	648	646	645	644	645	648	648	649	651	653	654	652	651	650	652	649	577
26	649	649	649	648	651	653	654	655	660	659	653	651	644	643	646	651	653	651	648	649	651	649	651	649	651	616
27	655	653	651	651	651	651	655	655	653	650	645	641	642	647	652	654	652	648	648	649	646	641	648	652	650	590
28	643	648	647	649	653	654	659	659	659	655	647	637	634	640	646	646	649	651	649	646	641	641	644	646	648	543
29	644	649	650	648	651	651	651	650	648	644	643	641	637	638	639	642	646	651	650	651	651	651	648	652	647	526
30	644	644	646	646	649	651	653	656	653	648	641	635	641	642	644	644	647	648	649	649	649	648	647	649	647	523
31	648	648	649	649	649	651	651	652	653	649	644	641	641	645	648	649	649	648	647	647	645	643	652	654	648	552
Mean	645	645	645	647	649	*661*	652	654	651	648	644	642	643	644	644	645	647	*637*	645	645	645	645	648	648	647	
Sum 19,000γ+	1001	999	1010	1045	1124	1496	1218	1273	1189	1092	972	914	917	966	968	1009	1066	760	989	989	999	992	1088	1097		Grand Total 481,173

GEOMAGNETIC DECLINATION (WEST)
Mean values for periods of sixty minutes ending at exact hours, GMT

2 LERWICK (D) 9° + JANUARY 1965

	Hour GMT 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	22·5	23·0	23·6	24·0	23·5	23·2	22·7	22·4	22·2	22·4	23·3	24·7	25·1	25·3	24·7	24·2	24·5	24·7	24·3	24·8	23·7	22·3	22·1	19·4	23·4	162·6
2 *d*	18·9	22·5	24·2	24·4	24·7	24·3	23·6	23·1	22·6	23·5	24·1	25·5	28·2	29·2	27·5	24·9	25·4	26·7	21·1	18·5	14·4	19·4	19·5	13·5	22·9	149·7
3	19·4	23·1	23·1	23·1	22·6	22·6	22·6	22·2	21·4	21·5	22·2	24·0	25·1	25·4	24·6	24·4	22·8	22·7	23·8	22·8	22·3	22·3	22·2	21·6	22·8	147·8
4	23·3	22·3	22·8	22·9	23·0	23·2	23·2	22·9	22·9	23·3	24·3	24·3	26·1	25·5	25·3	24·8	25·2	24·1	23·1	19·7	19·3	20·6	20·4	22·6	23·1	155·1
5	23·2	22·2	22·5	23·3	23·5	23·4	23·3	23·1	22·5	22·6	23·0	23·8	25·2	25·4	25·2	24·8	25·7	24·3	23·4	22·8	22·2	21·9	21·9	21·7	23·4	160·9
6 *q*	22·5	23·3	23·3	23·3	23·1	22·8	22·5	22·3	22·3	23·7	23·3	23·8	25·2	25·4	24·5	23·7	23·4	23·3	23·1	22·6	22·5	22·2	22·2	22·3	23·2	156·6
7	22·9	23·4	23·5	24·4	22·8	22·6	22·8	22·7	22·4	22·9	24·3	24·7	24·9	25·3	25·3	25·6	24·4	23·8	23·7	22·5	22·2	22·3	22·2	20·6	23·4	162·2
8 *d*	13·5	14·7	21·2	22·2	22·0	21·7	23·1	24·2	23·7	26·1	24·7	26·4	28·6	28·3	29·0	23·3	25·7	21·2	24·4	22·3	19·6	19·8	17·3	18·5	22·6	141·5
9	21·3	21·3	21·3	21·5	20·7	20·7	22·2	22·2	22·3	23·2	24·6	25·6	27·1	25·7	25·8	26·4	24·3	23·9	22·6	21·4	22·2	14·4	16·5	19·0	22·3	136·2
10	21·8	21·9	22·4	21·9	22·2	22·5	22·6	22·4	22·5	22·9	23·7	25·2	26·2	25·7	25·4	24·2	25·6	24·9	25·8	23·6	22·0	21·5	19·4	16·8	23·0	153·1
11 *q*	21·4	22·1	21·2	21·4	22·3	22·4	22·4	22·6	22·4	23·1	23·9	24·3	24·9	25·0	24·0	23·1	23·0	23·0	23·0	23·0	22·7	22·5	22·4	21·8	22·8	147·9
12 *d*	21·2	20·5	20·5	20·1	20·3	22·2	22·4	22·5	23·2	24·2	23·6	25·6	25·8	26·6	27·3	30·1	29·0	25·1	25·0	23·3	20·9	17·4	18·5	22·2	23·2	157·5
13 *d*	24·8	15·6	9·6	18·3	22·4	22·8	23·4	23·8	22·4	23·2	26·0	26·0	26·0	25·9	23·7	22·5	24·4	23·1	22·4	15·4	14·1	19·9	20·1	22·2	21·6	118·0
14	22·5	22·6	22·3	23·5	23·8	22·5	22·5	22·5	22·5	23·6	23·5	25·0	24·0	25·2	22·3	22·6	22·7	23·4	23·2	22·6	21·9	21·9	21·7	22·3	22·9	150·6
15	22·6	22·9	23·2	24·2	23·0	22·2	22·8	22·2	22·0	22·0	22·8	23·9	24·3	25·3	24·3	23·5	23·2	21·6	17·9	21·6	22·2	22·2	22·2	22·5	22·7	144·6
16 *q*	22·7	22·8	22·8	22·7	22·7	22·3	22·2	22·2	21·9	22·6	23·8	24·2	25·1	25·8	25·2	24·4	23·7	23·1	22·8	22·5	21·4	21·5	19·6	15·5	22·6	143·5
17	19·3	22·5	23·2	23·3	23·3	22·6	22·5	22·5	22·4	22·7	23·3	24·2	25·3	27·7	29·9	27·3	25·3	26·2	22·2	22·0	15·5	18·0	20·3	21·4	23·0	152·9
18	22·6	23·1	23·3	23·2	23·2	22·9	22·5	23·1	22·8	22·3	23·0	24·2	25·3	25·4	24·4	23·4	23·1	22·9	22·4	21·9	20·7	19·9	18·7	20·5	22·7	144·8
19	21·6	22·2	23·9	24·3	22·7	21·9	22·2	22·4	22·2	22·2	22·8	24·4	25·0	25·2	24·3	23·8	23·5	23·4	22·8	22·6	21·8	20·0	19·1	15·1	22·5	139·4
20	20·1	22·4	23·1	23·0	23·0	23·0	22·2	21·9	21·4	22·1	23·1	23·8	25·2	25·4	24·3	23·3	23·3	23·4	21·3	22·8	23·3	21·4	15·6	12·8	22·1	131·2
21	8·4	9·6	4·2	17·5	22·2	21·6	22·2	22·2	21·8	21·9	22·4	24·0	25·4	25·9	25·0	24·2	23·8	23·8	24·6	23·1	21·3	21·2	20·7	18·9	*20·7*	95·9
22 *d*	18·0	20·2	23·3	23·8	23·5	28·3	33·4	29·3	24·5	25·3	25·1	27·2	27·4	27·9	28·8	33·2	30·7	31·1	25·2	23·8	21·9	21·8	20·7	19·3	*25·6*	213·7
23	20·3	21·3	21·9	22·2	22·8	24·0	23·0	23·2	23·0	24·8	25·0	26·0	26·8	26·2	26·0	24·9	24·8	23·7	22·9	21·0	20·2	21·2	19·1	18·0	23·0	152·3
24 *q*	21·0	22·2	22·2	22·4	22·5	22·5	22·5	22·2	21·5	21·2	22·1	23·1	24·7	25·1	24·7	23·8	23·5	23·6	23·5	22·7	22·1	22·0	22·0	22·2	22·7	145·3
25 *q*	22·2	22·4	22·6	22·8	23·0	23·1	22·6	22·5	22·1	22·2	22·8	23·4	24·0	24·5	24·3	23·8	23·6	23·6	23·4	23·2	22·7	22·3	22·2	22·2	23·0	151·5
26	22·2	22·2	23·3	23·2	22·8	22·5	22·2	22·2	22·2	22·5	22·5	23·9	24·8	25·2	25·4	24·6	24·3	24·7	23·3	22·9	22·4	22·2	22·2	22·1	23·2	155·8
27	21·8	22·2	23·2	22·2	22·4	24·8	23·1	22·2	21·5	21·5	22·3	23·0	24·1	25·9	26·2	25·2	25·1	24·9	23·6	23·6	22·1	20·0	20·0	18·9	22·9	149·8
28	19·8	23·9	21·6	22·6	22·7	22·5	22·9	22·8	22·2	21·9	22·5	24·7	25·5	26·3	26·0	24·4	23·7	23·3	23·3	20·2	19·4	20·1	20·0	19·3	22·6	141·6
29	20·5	20·9	23·2	22·3	22·6	22·5	22·2	22·0	21·3	20·7	21·6	23·8	24·8	26·6	26·0	24·6	24·8	23·6	23·1	22·7	22·1	22·0	21·2	16·3	22·6	141·4
30	15·3	19·6	21·4	23·5	22·8	23·2	23·2	22·8	22·6	22·3	22·5	23·8	25·2	26·5	26·1	24·9	24·0	23·7	23·1	22·9	22·4	22·0	20·8	20·6	22·7	145·2
31	20·8	22·2	22·7	22·9	23·2	22·8	22·4	21·8	21·2	20·9	21·6	24·0	25·7	26·1	25·1	24·3	24·3	24·3	24·1	23·3	20·3	19·4	19·9	20·9	22·7	144·2
Mean	20·6	21·3	21·6	22·6	22·7	22·9	23·0	22·8	22·3	22·7	23·3	24·5	25·5	*26·0*	25·5	24·8	24·5	24·0	23·2	22·0	21·0	20·8	20·3	*19·7*	22·8	
Sum 600·0′+	38·4	61·1	70·6	100·4	105·3	109·6	113·4	106·4	91·9	105·3	123·7	160·5	191·0	204·9	190·6	168·2	160·8	145·1	118·4	88·1	51·8	45·6	30·7	11·0		Grand Total 16992·8

GEOMAGNETIC FORCE: VERTICAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, GMT

3 LERWICK (Z) — 47,000γ (0·47 CGS unit) + — JANUARY 1965

	Hour GMT 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 9000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	394	394	393	392	391	389	387	387	388	389	390	390	392	395	394	395	395	396	402	401	402	400	401	396	394	453
2 *d*	397	395	392	394	392	390	390	390	390	389	391	393	393	399	408	411	402	410	421	407	384	382	387	372	395	479
3	371	359	382	389	392	392	392	392	393	392	392	392	393	395	397	399	405	401	398	396	394	392	392	391	391	391
4	389	391	394	394	394	393	392	391	390	390	389	390	391	395	396	398	398	399	406	407	410	403	398	389	395	487
5	374	381	388	392	393	393	394	393	393	392	392	392	393	395	398	400	406	401	399	398	396	395	393	389	393	440
6 *q*	388	389	391	393	394	394	394	393	393	391	392	392	392	392	395	396	396	397	397	397	396	394	392	391	393	439
7	390	389	389	390	389	390	391	391	391	391	387	387	387	390	395	402	397	398	399	399	397	395	392	387	392	413
8 *d*	359	342	371	382	387	390	391	391	395	392	389	390	393	402	411	430	416	417	422	425	424	420	400	395	397	534
9	394	394	394	389	378	385	388	389	392	391	391	392	393	391	393	395	396	398	406	410	411	409	384	376	393	439
10	384	391	393	393	393	394	393	394	395	395	394	393	394	392	394	395	399	406	412	409	407	406	404	396	397	526
11 *q*	395	394	393	392	392	392	394	396	397	398	397	395	395	395	395	395	394	395	395	396	397	396	396	397	395	481
12 *d*	394	393	393	392	393	391	390	388	390	390	393	392	395	401	390	408	407	411	412	407	412	417	404	393	398	556
13 *d*	335	330	316	348	366	380	385	390	394	395	395	400	401	401	403	404	402	403	402	408	403	397	395	392	*385*	245
14	389	391	391	389	389	389	389	389	391	392	395	398	397	401	405	403	400	398	397	396	399	397	398	397	395	480
15	397	397	395	390	386	385	387	387	389	390	392	398	398	396	398	399	398	399	402	399	396	395	395	396	394	464
16 *q*	397	397	397	395	394	393	392	391	392	392	393	394	396	398	401	400	400	397	396	395	396	397	393	392	395	488
17	392	392	394	394	394	393	391	391	389	390	392	392	397	404	421	420	407	413	417	417	412	384	385	388	*399*	569
18	391	395	395	392	389	386	388	389	389	391	391	392	392	394	397	399	400	399	400	402	399	394	384	388	393	439
19	390	392	392	394	394	396	393	394	394	392	390	391	391	391	395	398	398	398	398	398	396	398	395	382	394	450
20	384	388	392	395	396	395	395	394	393	392	391	391	391	392	394	397	397	398	408	407	398	398	377	339	392	402
21	358	343	348	381	392	397	397	397	397	394	393	392	391	392	394	397	398	399	400	403	405	402	394	382	389	346
22 *d*	365	370	373	369	373	366	372	335	341	372	382	387	392	397	409	417	423	432	454	443	410	427	417	405	393	431
23	392	383	389	392	392	394	395	395	397	397	396	395	396	398	402	403	403	404	405	404	404	404	393	392	397	525
24 *q*	392	393	394	396	395	396	397	397	400	399	398	397	398	397	397	396	396	396	397	399	399	399	398	397	397	523
25 *q*	396	395	393	392	392	392	393	394	396	396	397	397	396	395	395	394	393	394	394	395	396	397	397	395	395	474
26	393	392	391	391	391	391	391	391	389	389	391	393	395	396	397	394	393	395	397	397	397	397	397	396	393	444
27	389	387	387	389	390	387	385	388	390	391	392	393	394	396	395	395	396	398	397	399	400	402	392	387	392	419
28	391	386	389	391	391	391	389	389	390	390	393	397	396	396	397	399	397	396	397	402	405	406	404	400	395	482
29	396	386	387	392	394	392	393	393	393	393	393	395	397	399	403	402	400	397	396	395	395	395	396	395	395	477
30	395	392	389	391	391	391	391	388	389	389	393	397	396	399	401	401	399	398	396	396	396	397	397	394	394	466
31	395	396	395	396	396	395	394	392	391	391	391	394	397	398	400	400	399	398	399	400	405	404	390	381	396	497
Mean	386	*384*	387	389	390	390	391	390	391	391	392	393	394	396	399	401	400	401	*404*	403	401	400	395	389	394	
Sum 11,000γ+	966	917	983	1069	1093	1102	1113	1079	1111	1135	1155	1191	1222	1282	1370	1442	1410	1441	1521	1507	1441	1399	1240	1070		Grand Total 213,259

GEOMAGNETIC CHARACTER FIGURES (K, K_H, K_D, K_Z, AND C) AND TEMPERATURE IN MAGNETOGRAPH HOUSE

4 LERWICK — JANUARY 1965

	3-h range indices K	Sum of K indices	3-h range indices K_H	Sum of K_H indices	3-h range indices K_D	Sum of K_D indices	3-h range indices K_Z	Sum of K_Z indices	Geomagnetic character of day, C (0-2)	Temperature in magnetograph house 200°A+
1	0000 0112	4	0000 0101	2	0000 0012	3	0000 0001	1	1	86·0
2 *d*	2111 2233	15	1101 2223	12	2111 2233	15	0000 2132	8	1	86·0
3	3000 0201	6	2000 0201	5	3000 0100	4	2000 0100	3	1	86·1
4	1001 1022	7	1000 1021	5	1001 0022	6	0000 0012	3	1	85·8
5	1000 0101	3	0000 0100	1	1000 0101	3	1000 0000	1	0	86·0
6 *q*	1000 0000	1	0000 0000	0	1000 0000	1	0000 0000	0	0	86·3
7	0100 1212	7	0000 1212	6	0100 1111	5	0000 1001	2	1	87·0
8 *d*	3012 2323	16	2012 2213	13	3012 1322	14	3101 2212	12	1	87·0
9	1100 1114	9	1100 1112	7	0100 1114	8	0100 0013	5	1	86·9
10	1110 0213	9	0010 0212	6	1110 0113	8	1000 0101	3	1	86·3
11 *q*	1000 0000	1	0000 0000	0	1000 0000	1	0000 0000	0	0	86·3
12 *d*	1102 3323	15	1101 2223	12	1102 3323	15	0000 2113	7	1	86·8
13 *d*	4312 2232	19	3211 1111	11	4312 2232	19	3310 0010	8	1	86·3
14	1101 2100	6	0001 2100	4	1101 1100	5	0000 1000	1	1	86·1
15	1101 1220	8	0101 1110	5	1100 0220	6	0000 0010	1	1	86·0
16 *q*	0000 0002	2	0000 0001	1	0000 0002	2	0000 0000	0	0	86·0
17	2001 3332	14	1001 3322	12	2000 2232	11	0000 2223	9	1	86·0
18	0110 0002	4	0110 0002	4	0100 0002	3	0000 0001	1	1	86·1
19	1110 0013	7	0110 0002	4	1110 0013	7	0000 0002	2	1	86·0
20	2000 0124	9	0000 0123	6	2000 0024	8	1000 0023	6	1	86·0
21	4300 1111	11	2200 1001	6	4300 0111	10	2200 0002	6	1	86·0
22 *d*	3342 1242	21	1242 1232	17	3332 1242	20	2231 2242	18	1	85·5
23	2111 0022	9	1111 0012	7	2101 0022	8	2000 0000	2	1	86·0
24 *q*	1000 0000	1	0000 0000	0	1000 0000	1	0000 0000	0	0	86·0
25 *q*	0000 0000	0	0000 0000	0	0000 0000	0	0000 0000	0	0	86·3
26	1000 0000	1	0000 0000	0	1000 0000	1	0000 0000	0	0	86·2
27	1110 1101	6	0000 1101	3	1110 0001	4	0000 0001	1	1	86·2
28	2000 1021	6	1000 1011	4	2000 0021	5	0000 0011	2	1	86·1
29	2000 0002	4	1000 0001	2	2000 0002	4	1000 1000	2	1	85·8
30	2100 0001	4	0000 0000	0	2100 0001	4	0000 0000	0	1	85·6
31	0000 0012	3	0000 0001	1	0000 0012	3	0000 0002	2	1	85·8
								Mean	0·77	86·1

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

K_H For horizontal component. K_D For declination. K_Z For vertical component. (See Introduction).

GEOMAGNETIC FORCE: HORIZONTAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, GMT

1 LERWICK (H) 14,000γ (0·14 CGS unit) + FEBRUARY 1965

	Hour GMT 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 14,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	651	650	648	653	655	655	659	657	657	651	644	637	637	642	648	648	649	651	652	651	651	651	650	649	650	1596
2 q	648	649	649	651	652	654	654	656	655	654	648	646	645	647	649	651	655	657	658	655	654	652	653	653	652	1645
3	650	652	651	654	659	660	659	661	659	655	651	648	646	651	651	652	654	655	655	654	653	652	638	634	*652*	1654
4	645	648	655	651	651	659	662	658	653	654	644	649	651	647	651	648	643	645	653	642	641	647	647	653	650	1597
5	651	645	640	641	642	647	651	653	651	646	642	636	633	639	647	652	650	651	648	652	649	648	648	647	646	1509
6	640	652	646	646	648	650	650	651	651	648	644	640	636	633	646	641	621	623	648	651	648	648	650	647	644	1458
7 d	642	648	629	644	648	645	598	601	581	570	578	589	603	615	620	641	635	644	643	622	607	617	621	631	*620*	872
8 d	633	636	637	639	642	644	645	644	643	644	647	643	640	638	639	641	646	653	644	644	670	646	622	637	642	1417
9	639	637	639	640	641	641	645	646	648	646	638	635	632	633	648	651	648	626	644	646	644	642	637	641	641	1387
10	642	638	644	651	652	644	646	655	650	640	622	624	619	627	636	646	648	648	648	644	636	635	643	646	641	1384
11	649	649	646	648	648	646	651	640	648	647	641	634	628	633	644	648	648	650	636	642	648	650	649	648	645	1471
12 q	651	644	646	645	648	650	651	648	643	638	632	634	633	636	644	646	647	649	648	649	648	649	650	650	645	1479
13 q	651	651	651	651	652	652	654	654	650	644	641	641	645	651	655	654	651	651	641	648	649	651	656	645	650	1589
14	647	648	648	648	648	646	658	654	658	649	642	621	638	641	644	647	649	651	644	647	651	650	649	656	647	1534
15	637	637	642	644	653	653	649	651	648	644	640	640	645	639	633	640	636	647	645	644	649	645	648	655	644	1464
16	648	648	641	642	644	656	656	651	649	640	637	628	629	637	637	642	645	648	651	652	651	649	648	652	645	1481
17 q	652	648	648	651	654	655	655	653	649	641	634	632	630	629	643	650	651	652	653	652	651	652	651	650	647	1536
18	650	650	651	650	651	651	651	648	646	642	640	638	642	645	649	655	651	649	653	655	651	642	648	648	648	1556
19 q	651	651	649	649	646	651	652	651	647	642	636	633	637	647	648	651	648	646	648	649	651	649	657	651	647	1540
20	655	653	655	652	655	655	653	648	648	645	639	640	645	648	648	657	654	654	650	655	655	650	654	659	651	1627
21 d	655	655	655	640	649	651	662	659	656	647	632	621	623	630	640	641	639	638	640	645	661	661	644	647	645	1491
22	647	644	648	645	648	648	652	650	647	643	635	630	631	635	639	646	648	652	656	658	655	648	646	653	646	1504
23 d	650	650	649	653	658	660	660	659	659	650	633	622	626	643	647	655	643	664	659	628	642	642	658	637	648	1547
24	633	637	639	642	639	640	644	645	642	637	626	614	623	634	636	647	647	645	645	644	650	650	650	632	639	1341
25 d	639	591	637	642	644	646	655	646	647	640	636	631	629	632	639	643	650	652	650	646	648	660	654	644	642	1401
26	639	642	641	643	646	647	650	643	637	637	631	629	633	640	641	638	648	653	646	646	642	643	644	647	642	1406
27	644	642	639	644	648	649	650	650	648	638	630	625	633	644	640	644	645	646	646	647	647	648	650	661	644	1458
28	643	641	635	643	649	651	650	647	644	638	634	631	638	645	650	640	641	649	648	649	648	651	650	650	644	1465
Mean	646	644	645	647	649	650	*651*	649	647	642	636	*632*	634	639	643	647	646	648	648	647	648	647	647	647	645	
Sum 17,000γ+	1082	1036	1058	1102	1170	1206	1222	1179	1114	970	797	691	750	881	1012	1115	1090	1149	1152	1117	1150	1128	1115	1123		Grand Total 433,409

GEOMAGNETIC DECLINATION (WEST)
Mean values for periods of sixty minutes ending at exact hours, GMT

2 LERWICK (D) 9° + FEBRUARY 1965

	Hour GMT 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	22·0	22·3	25·3	23·4	22·5	23·2	23·6	23·1	22·6	22·2	22·3	24·4	25·8	26·1	25·1	24·0	23·4	23·3	23·1	22·8	22·4	22·3	22·3	22·3	23·3	159·8
2 q	22·3	22·8	22·7	24·3	23·2	22·9	22·8	22·2	21·5	21·3	21·9	23·5	25·2	25·8	25·5	24·8	24·1	24·1	23·8	23·6	22·6	22·8	22·4	22·3	23·3	158·4
3	22·7	21·8	22·2	22·9	21·4	22·0	22·8	22·4	21·9	21·4	22·2	23·3	24·9	25·9	25·5	24·6	24·5	24·5	24·9	24·1	23·9	22·5	14·7	16·5	22·6	143·5
4	20·6	22·4	22·0	17·9	19·1	20·0	21·4	24·2	22·3	23·5	23·9	24·4	26·6	27·0	26·9	28·8	29·2	24·7	24·4	21·5	21·1	20·8	21·4	18·8	23·0	152·9
5	17·3	18·8	20·5	21·2	22·2	22·3	22·1	21·9	21·6	21·6	22·0	23·5	25·3	25·5	25·3	25·2	24·3	23·5	20·8	22·1	22·3	22·0	19·7	19·1	22·1	130·1
6	21·2	19·9	19·7	20·8	21·0	21·4	21·7	21·8	21·1	21·5	22·4	24·3	26·2	27·1	28·4	25·5	11·0	28·3	27·5	26·7	23·3	22·3	22·3	22·0	22·8	147·4
7 d	21·0	17·4	11·1	8·0	7·2	18·3	30·4	35·0	30·4	31·3	29·8	31·2	30·1	31·7	33·0	32·2	27·4	24·4	20·3	16·6	9·8	12·9	15·7	18·6	22·7	143·8
8 d	20·6	22·4	22·3	22·0	21·7	22·0	21·9	22·3	22·2	21·6	23·5	23·6	24·0	24·0	24·5	24·1	22·9	24·2	25·3	25·5	8·8	−5·8	2·5	19·0	*20·2*	85·1
9	22·3	21·8	22·1	21·8	21·4	22·3	22·0	21·5	21·4	21·6	22·3	22·8	24·9	26·2	27·6	26·4	23·8	21·5	24·3	22·6	22·0	21·1	18·5	18·7	22·5	140·9
10	21·0	22·5	21·5	21·7	21·8	22·8	22·7	22·0	22·0	22·3	23·4	24·5	26·2	27·2	25·0	23·1	24·0	23·5	23·3	22·3	16·1	18·5	21·4	21·6	22·5	140·4
11	21·6	22·0	22·3	24·6	24·4	19·6	21·5	21·5	21·3	20·7	22·6	25·3	25·5	26·2	24·9	24·2	23·6	22·1	16·6	19·4	22·4	22·6	22·3	20·4	22·4	137·6
12 q	16·1	21·4	22·3	22·5	22·6	22·5	21·9	21·5	21·4	21·6	22·3	24·6	25·5	25·8	25·0	23·5	22·7	22·3	22·3	22·4	22·3	22·0	22·2	22·3	22·5	139·0
13 q	22·3	22·5	22·3	22·3	22·3	22·2	22·0	21·5	21·7	22·3	22·9	25·3	26·2	26·5	25·4	24·0	23·5	23·5	22·3	22·2	22·4	21·0	16·6	18·7	22·6	141·9
14	21·6	22·5	22·4	22·2	22·3	23·3	26·1	29·2	26·4	24·0	25·3	24·9	23·9	24·9	25·3	24·5	23·8	23·3	19·5	19·0	22·4	21·3	19·9	16·1	23·1	154·1
15	17·1	24·2	23·5	22·5	21·7	21·5	21·4	21·4	20·7	21·2	22·7	25·3	26·9	28·3	28·3	23·6	20·5	24·7	23·4	22·5	20·3	19·4	18·6	16·8	22·4	136·5
16	21·6	21·6	21·8	23·4	25·3	21·9	21·0	20·6	21·0	20·9	22·2	24·0	27·0	28·1	27·3	25·8	24·9	23·5	22·5	22·3	21·6	21·5	20·6	20·0	22·9	150·4
17 q	18·9	21·7	21·9	22·4	22·3	22·3	21·9	21·4	20·6	20·7	22·9	25·6	26·4	26·9	26·2	24·6	23·3	22·5	22·5	22·3	22·3	22·1	21·6	21·4	22·7	144·7
18	22·1	22·3	22·0	22·1	22·0	21·6	21·4	21·1	21·1	21·6	23·0	25·1	26·7	27·3	27·4	27·0	27·9	25·9	24·6	24·5	24·3	18·3	15·3	21·8	23·2	156·4
19 q	22·3	22·3	21·5	21·3	22·3	21·7	20·6	20·6	20·6	21·6	23·9	26·1	28·3	28·6	28·4	28·8	28·5	28·3	26·1	24·5	23·4	22·3	18·4	20·4	*23·8*	170·8
20	19·9	20·3	21·0	20·4	20·6	20·4	20·5	20·9	20·9	21·5	22·3	24·2	27·0	27·9	27·2	26·2	26·2	24·3	25·5	23·5	22·7	22·0	20·4	21·6	22·8	147·4
21 d	22·0	22·3	22·1	24·5	24·7	24·3	22·9	22·3	22·5	22·1	23·6	26·3	29·2	28·2	26·3	22·7	14·1	14·5	22·4	21·5	19·3	18·7	21·5	21·7	22·5	139·7
22	22·0	22·7	23·5	21·6	21·6	21·4	21·3	21·2	20·3	19·4	21·4	23·5	25·3	25·5	25·2	23·4	22·6	22·6	22·6	22·6	22·7	19·5	19·3	21·6	22·2	132·8
23 d	21·6	22·4	23·3	23·4	22·6	22·4	23·3	21·5	20·3	21·0	22·4	25·3	28·2	30·1	31·1	27·4	32·0	26·3	11·7	19·1	18·8	15·6	15·6	15·8	22·5	141·2
24	16·4	19·5	20·5	20·6	22·3	21·6	20·9	20·1	19·0	18·9	20·5	27·4	27·2	27·2	26·7	25·1	24·2	23·7	23·1	24·2	24·1	23·9	20·9	22·3	22·5	140·3
25 d	18·1	19·0	22·7	20·5	21·4	21·8	22·4	23·1	23·2	21·8	22·4	25·3	25·3	26·2	26·3	25·0	23·5	23·6	23·4	23·3	22·6	17·1	18·5	20·1	22·4	136·6
26	21·9	23·3	24·0	21·3	20·8	20·7	21·0	21·4	23·4	23·4	22·9	25·3	25·9	26·5	26·2	24·3	22·6	23·2	23·4	22·4	18·0	22·2	22·4	22·6	22·9	149·1
27	23·3	21·5	24·2	22·4	21·0	20·9	20·9	20·9	21·1	21·8	25·3	26·4	25·4	27·0	27·1	22·7	23·9	23·2	22·7	21·6	21·3	19·9	20·3	17·8	22·6	142·6
28	19·7	21·9	23·3	23·3	21·5	20·8	20·5	19·9	19·5	20·4	22·8	24·7	26·3	26·2	25·3	24·3	21·3	22·5	22·8	22·0	18·5	18·5	21·2	21·4	22·0	128·6
Mean	20·7	21·6	21·9	21·6	21·5	21·7	22·3	22·4	21·9	21·9	23·0	25·0	26·3	*26·9*	26·7	25·2	23·7	23·6	22·7	22·4	20·8	19·5	*19·2*	20·1	22·6	
Sum 500·0′+	79·5	105·5	114·0	105·3	103·2	108·1	122·9	126·5	112·0	113·2	145·1	200·1	235·4	253·9	246·4	205·8	163·7	162·0	135·1	127·1	81·7	47·3	36·5	61·7		Grand Total 15192·0

GEOMAGNETIC FORCE: VERTICAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, GMT

3 LERWICK (Z) — 47,000γ (0·47 CGS unit) + — FEBRUARY 1965

	Hour GMT 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 9000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	387	392	390	380	382	384	385	388	389	394	396	396	392	394	397	399	400	397	397	396	395	394	395	394	392	413
2 *q*	395	395	395	393	391	391	391	391	390	391	392	392	392	394	397	398	398	397	396	397	397	398	397	395	394	463
3	397	395	393	390	389	390	390	389	388	390	392	392	392	393	397	398	398	398	397	397	398	399	406	404	395	472
4	397	396	378	388	390	387	387	386	387	386	390	387	391	394	398	404	412	417	407	419	417	409	403	397	397	527
5	389	389	394	396	397	397	397	397	396	396	395	394	395	396	397	398	400	402	404	400	399	398	397	394	397	517
6	392	366	376	387	391	392	392	392	392	391	390	392	392	395	396	409	453	427	410	409	414	410	400	398	399	566
7 *d*	396	369	383	363	331	300	304	342	380	397	409	420	429	441	454	447	490	439	439	412	466	419	398	380	*413*	908
8 *d*	381	386	392	395	397	398	399	400	398	395	393	394	394	398	400	399	402	402	407	413	433	365	354	379	395	474
9	391	398	399	398	399	402	399	399	400	399	399	398	395	395	395	396	406	427	410	404	404	404	404	399	401	620
10	394	388	384	387	386	387	383	384	390	394	402	403	406	410	420	422	410	405	402	406	414	412	403	400	400	592
11	394	393	393	382	376	378	380	388	389	390	395	398	398	397	397	398	397	399	410	404	398	397	397	397	394	445
12 *q*	389	391	393	393	390	392	393	395	398	400	402	402	402	404	404	402	399	397	396	397	397	397	397	397	397	527
13 *q*	397	396	396	395	394	392	391	392	395	394	392	394	395	395	393	397	397	399	405	403	401	401	394	395	396	503
14	395	396	396	396	395	389	377	375	374	382	389	401	404	402	404	404	403	402	409	404	396	398	397	384	395	472
15	386	382	382	391	394	394	395	392	395	396	395	396	400	410	424	438	445	412	409	406	396	396	392	364	400	590
16	367	377	385	379	382	380	387	392	391	394	392	395	395	403	410	409	407	405	403	399	397	396	394	389	393	428
17 *q*	380	382	391	394	396	396	395	393	393	394	393	395	401	405	402	403	404	402	400	398	396	393	393	393	395	492
18	393	394	396	397	397	397	397	395	394	394	393	394	394	395	397	401	403	403	403	403	408	412	405	395	398	560
19 *q*	393	394	395	397	398	395	395	396	394	392	391	390	389	390	394	400	407	412	416	414	411	407	395	389	398	554
20	386	385	385	390	392	392	394	394	393	393	392	389	388	390	392	395	398	402	406	401	400	402	397	392	394	448
21 *d*	392	390	389	389	360	357	367	380	386	391	394	396	396	402	411	423	433	426	412	407	392	380	389	389	394	451
22	389	389	382	387	390	393	394	395	397	397	393	393	394	392	394	395	395	397	395	394	397	403	405	396	394	456
23 *d*	395	391	391	389	389	390	389	390	391	392	395	396	394	394	406	436	475	521	570	476	434	389	323	311	409	827
24	347	373	390	394	393	384	393	397	399	401	420	396	394	393	396	394	396	396	399	398	396	396	394	374	392	413
25 *d*	267	306	343	374	382	386	384	387	389	395	394	397	399	397	397	400	401	396	398	399	400	387	363	379	*380*	120
26	385	390	389	388	389	389	389	390	391	392	395	397	397	397	401	410	406	400	404	404	406	402	399	397	396	507
27	395	395	391	388	391	393	393	392	391	393	392	393	396	400	410	422	408	406	402	402	400	398	392	373	397	516
28	378	387	390	388	393	395	395	395	397	399	398	397	396	398	403	410	409	403	401	400	401	397	397	398	397	525
Mean	*384*	385	388	389	388	386	387	389	392	394	395	396	397	399	403	407	413	414	*415*	409	406	399	392	388	396	
Sum 10,000γ+	747	785	861	888	854	820	835	906	967	1022	1073	1087	1110	1174	1286	1407	1552	1589	1607	1462	1363	1159	980	852		Grand Total 266,386

GEOMAGNETIC CHARACTER FIGURES (K, K_H, K_D, K_Z, AND C) AND TEMPERATURE IN MAGNETOGRAPH HOUSE

4 LERWICK — FEBRUARY 1965

	3-h range indices K	Sum of K indices	3-h range indices K_H	Sum of K_H indices	3-h range indices K_D	Sum of K_D indices	3-h range indices K_Z	Sum of K_Z indices	Geomagnetic character of day, C (0-2)	Temperature in magneto-graph house 200°A+
1	2100 0000	3	1000 0000	1	2100 0000	3	1000 0000	1	0	86·0
2 *q*	0100 0000	1	0000 0000	0	0100 0000	1	0000 0000	0	0	86·1
3	1100 1003	6	0000 1002	3	1100 0003	5	0000 0001	1	1	86·1
4	3111 1222	13	1111 1122	10	3111 1222	13	2000 0212	7	1	86·5
5	2000 1111	6	1000 1111	5	2000 0111	5	0000 0000	0	1	86·8
6	2110 2421	13	2000 2321	10	2110 1421	12	2100 0311	8	1	87·0
7 *d*	3432 2333	23	3432 2232	21	3432 2333	23	3442 3443	27	2	87·0
8 *d*	1001 0265	15	0001 0244	11	1001 0165	14	2000 0043	9	2	86·7
9	2111 2322	14	1001 2311	9	2111 1222	12	1000 0210	4	1	86·7
10	2212 2232	16	1212 1111	10	2112 2232	15	1011 2212	10	1	86·4
11	1220 1222	12	1120 1121	9	1210 1222	11	0210 0010	4	1	86·5
12 *q*	2001 0000	3	1001 0000	2	2000 0000	2	0000 0000	0	0	86·9
13 *q*	0000 0122	5	0000 0122	5	0000 0122	5	0000 0011	2	1	86·1
14	1122 1032	12	0012 1012	7	1122 1032	12	0111 0021	6	1	85·9
15	3101 2412	14	2100 2212	10	3101 2412	14	1100 2312	10	1	85·9
16	1201 1002	7	1101 1001	5	1200 0002	5	2100 1001	5	1	86·2
17 *q*	2000 0000	2	1000 0000	1	2000 0000	2	1000 0000	1	0	86·9
18	0000 1003	4	0000 1001	2	0000 0003	3	0000 0002	2	1	87·0
19 *q*	0100 0002	3	0000 0002	2	0100 0002	3	0000 0001	1	0	86·8
20	1000 1101	4	1000 1101	4	1000 1101	4	0000 0001	1	0	87·0
21 *d*	1312 2332	17	1211 2232	14	1312 2311	14	0320 1121	10	1	87·0
22	1000 0002	3	0000 0001	1	1000 0002	3	0000 0001	1	0	87·0
23 *d*	1101 2444	17	1001 2444	16	0101 2333	13	0000 2454	15	2	86·3
24	2211 1113	12	1011 1113	9	2201 1013	10	3110 0003	8	1	86·6
25 *d*	4112 1113	14	4011 1103	11	3112 0013	11	4210 0003	10	1	86·3
26	1111 1221	10	1010 1211	7	1111 1221	10	0000 0101	2	1	85·8
27	1001 2212	9	0001 2202	7	1001 2112	8	1000 2102	6	1	85·7
28	1101 1221	9	1001 1210	6	1100 0121	6	1000 1100	3	1	86·0
								Mean	0·86	86·5

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

K_H For horizontal component. K_D For declination. K_Z For vertical component. (See Introduction).

GEOMAGNETIC FORCE: HORIZONTAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, GMT

1 LERWICK (H) — 14,000γ (0·14 CGS unit) + — MARCH 1965

	Hour GMT 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 14,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	650	648	649	646	649	651	655	655	648	639	631	625	628	636	647	645	640	654	632	639	643	650	650	651	644	1461
2	650	648	649	649	651	657	657	652	646	639	633	628	629	639	648	653	654	643	646	651	651	654	656	655	647	1538
3 d	655	649	645	651	653	658	651	644	650	638	635	642	644	646	663	665	657	700	657	633	639	642	611	616	648	1544
4 d	612	616	612	620	636	577	596	596	612	608	625	618	628	635	632	636	638	635	643	639	639	639	642	641	*624*	975
5	641	642	643	646	647	650	651	647	646	642	624	617	629	641	649	652	651	647	646	650	651	652	650	658	645	1472
6	648	648	647	648	647	650	649	649	648	644	642	636	633	639	647	646	650	648	649	644	642	641	648	645	645	1488
7	644	644	646	647	649	649	651	660	657	644	638	632	628	637	640	635	639	645	648	647	647	647	647	647	645	1468
8 q	647	647	646	646	650	651	653	651	647	642	635	626	628	632	643	648	651	651	652	652	654	653	651	651	646	1507
9	649	652	655	658	661	662	661	656	649	642	636	633	635	639	641	645	643	651	652	654	653	651	650	651	649	1579
10 q	657	650	651	652	652	654	654	653	650	641	637	638	640	642	646	643	646	649	652	654	656	657	657	656	649	1587
11 q	655	651	647	651	651	653	653	653	651	646	640	635	636	640	645	645	645	652	653	652	655	656	655	655	649	1575
12	653	653	652	651	652	654	654	651	648	642	636	632	640	642	648	654	660	659	655	640	639	649	659	655	649	1578
13	649	651	650	650	650	654	658	650	648	641	621	621	621	634	621	632	652	658	657	651	655	655	653	653	645	1485
14	651	651	650	650	648	651	654	652	645	640	636	634	636	643	644	649	639	648	651	651	658	633	628	649	645	1491
15	662	648	647	650	658	658	648	653	641	629	632	629	631	634	638	648	652	650	636	662	662	649	653	651	647	1521
16	648	648	647	652	650	650	649	646	639	633	628	625	630	638	644	647	648	644	650	654	656	655	668	654	646	1503
17	654	653	653	654	658	658	658	656	649	637	630	631	635	641	653	651	651	646	643	644	651	653	654	653	649	1566
18 q	651	652	652	651	653	654	654	650	639	629	625	622	628	639	643	648	649	652	655	656	658	658	658	658	647	1534
19	657	658	657	658	658	660	659	655	643	632	632	632	635	640	644	648	653	656	659	662	662	662	659	659	652	1640
20	657	651	658	655	657	658	657	654	646	634	627	633	643	640	646	655	657	661	665	663	661	661	661	658	*652*	1658
21	660	653	655	655	656	640	641	641	637	650	643	638	643	637	639	639	640	649	652	653	654	669	651	655	648	1550
22	654	654	652	653	655	657	658	655	648	639	629	626	630	639	647	659	655	660	657	654	655	638	647	650	649	1571
23 d	655	655	654	651	643	632	646	640	624	617	614	620	635	636	652	632	639	644	650	651	638	635	653	650	640	1366
24	650	648	647	646	650	651	650	646	643	625	625	621	629	639	652	649	649	644	653	653	652	667	658	655	646	1502
25 d	654	649	648	655	655	648	639	643	608	610	629	629	629	639	649	655	653	662	659	670	665	647	649	654	646	1498
26 d	639	650	634	652	655	647	647	645	625	632	628	623	625	639	639	643	656	659	658	658	654	657	657	654	645	1476
27	652	644	651	654	648	646	645	647	636	632	629	630	632	643	643	644	652	662	665	655	666	658	656	654	648	1544
28	652	654	651	653	653	651	652	644	635	632	626	624	626	632	639	647	654	653	655	660	658	657	654	654	647	1516
29	652	650	650	651	653	657	653	648	642	634	632	633	637	643	643	638	636	651	651	653	658	651	651	651	647	1518
30 q	651	651	651	651	651	654	655	652	644	632	625	623	629	639	644	647	648	654	658	660	661	659	658	658	648	1555
31	657	659	658	653	652	659	658	654	641	624	621	625	629	635	640	643	648	654	660	661	662	662	659	659	649	1573
Mean	651	649	649	650	652	650	651	648	642	635	631	*628*	632	639	644	647	649	653	652	653	*653*	652	652	652	646	
Sum 19,000γ+	1166	1127	1107	1159	1201	1151	1166	1098	885	669	544	481	601	798	969	1041	1105	1241	1219	1226	1255	1217	1203	1210		Grand Total 480,839

GEOMAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, GMT

2 LERWICK (D) — 9° + — MARCH 1965

	Hour GMT 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	21·7	21·7	22·3	21·6	21·4	21·0	20·4	20·2	19·8	20·5	22·8	25·8	29·2	27·8	28·4	27·6	25·8	17·7	23·7	22·6	22·3	20·3	20·6	21·5	22·8	46·7
2	22·5	22·4	22·3	22·3	21·8	21·5	20·4	20·6	19·6	21·4	22·4	24·6	25·9	27·1	27·1	25·7	26·6	22·3	25·9	18·4	22·6	21·3	21·1	21·3	22·8	47·1
3 d	20·7	20·5	28·2	22·1	20·2	18·8	22·6	26·6	25·6	21·0	20·9	26·1	29·4	31·1	31·1	32·4	33·4	19·2	15·2	22·6	21·9	18·6	13·9	13·9	23·2	56·0
4 d	8·0	8·1	4·0	8·3	11·2	26·5	37·3	33·6	30·7	28·9	27·9	27·9	28·1	29·3	28·1	25·4	24·3	20·7	21·6	22·9	21·0	21·4	22·3	22·2	22·5	39·7
5	21·8	21·9	21·5	21·5	21·4	21·4	21·5	21·5	20·4	23·0	24·3	27·1	25·9	25·9	25·2	24·7	24·2	23·4	19·6	20·7	22·5	21·4	21·3	20·3	22·6	42·4
6	21·4	21·6	21·1	20·5	20·8	20·5	20·5	20·2	20·3	20·7	22·7	25·3	25·9	26·3	26·4	25·8	25·3	24·2	23·8	23·7	21·7	18·1	19·8	19·9	22·4	36·5
7	25·4	19·7	20·2	21·2	20·5	20·0	17·7	20·4	20·3	21·4	21·7	24·2	26·7	28·3	30·1	30·1	27·0	23·3	21·7	21·5	21·6	21·3	20·7	20·4	22·7	45·4
8 q	20·6	21·1	21·5	21·7	21·5	21·5	20·7	19·6	18·6	19·4	21·5	24·0	26·0	26·3	25·4	24·4	23·3	22·3	21·8	22·0	21·6	21·6	21·6	21·4	22·1	29·4
9	21·4	21·5	21·5	21·4	21·4	21·5	21·3	19·8	19·7	20·8	22·4	25·3	27·8	29·2	27·6	26·5	24·7	22·9	22·6	22·6	22·1	20·5	20·0	21·0	22·7	45·5
10 q	21·4	21·7	21·4	21·3	21·3	20·8	20·6	20·2	19·5	20·5	21·8	24·8	26·8	26·9	26·3	24·4	23·2	22·6	22·5	22·2	21·8	21·7	21·6	21·7	22·4	37·0
11 q	21·6	21·6	22·5	19·5	19·3	19·0	19·7	19·7	21·3	21·6	24·0	25·5	27·2	28·9	28·2	27·1	24·0	22·0	21·5	20·3	21·3	21·3	21·0	21·1	22·5	39·2
12	21·3	21·4	21·1	20·9	20·7	20·6	20·4	19·6	19·0	19·5	21·6	24·5	27·1	27·6	27·0	25·3	24·0	23·8	25·2	20·3	21·3	18·8	21·0	21·7	22·2	33·7
13	21·9	21·4	20·6	19·6	20·3	20·6	18·8	18·1	18·2	20·4	22·5	27·3	29·8	30·9	30·9	26·4	23·2	22·0	22·0	21·3	21·5	21·5	21·4	21·2	22·6	41·8
14	21·5	21·5	21·2	21·3	22·4	21·0	19·6	18·7	18·7	20·2	22·6	25·3	26·1	27·8	29·1	28·4	25·2	23·3	22·4	21·5	15·0	13·9	15·5	17·0	21·6	19·2
15	16·7	20·7	21·4	20·6	19·2	19·0	21·5	22·5	23·1	23·1	24·6	25·8	27·1	27·2	25·9	24·3	22·6	22·6	19·3	18·0	14·6	20·6	21·4	21·4	21·8	23·2
16	21·5	22·1	22·3	22·3	19·5	19·2	18·9	18·2	18·2	19·4	21·5	24·9	26·5	27·1	26·0	24·1	22·1	21·5	21·6	21·4	21·4	20·4	19·3	20·5	21·7	19·9
17	21·5	21·3	20·6	20·5	20·2	20·3	20·3	18·6	18·4	18·9	20·8	23·3	25·3	25·7	27·1	26·1	25·2	19·4	21·2	20·5	21·7	22·5	22·7	22·5	21·9	24·6
18 q	22·5	22·3	22·3	21·7	21·5	21·1	20·4	19·3	19·3	20·2	22·5	25·6	28·1	28·4	27·0	24·7	23·2	22·5	22·5	22·5	22·5	22·5	22·4	22·4	22·8	47·4
19	22·3	21·9	21·6	21·2	20·6	20·5	20·3	19·8	20·5	23·3	26·0	28·9	29·1	28·6	27·4	24·9	23·4	23·1	22·9	22·4	22·4	22·1	21·5	22·3	*23·2*	57·0
20	20·4	22·5	20·8	20·5	19·9	20·1	19·9	19·5	19·0	20·5	23·6	26·6	29·2	29·0	28·1	25·5	24·1	23·4	23·5	23·0	22·5	21·4	20·7	17·7	22·6	41·4
21	19·5	21·2	20·4	20·5	20·2	19·9	20·6	20·5	19·5	20·4	22·5	25·6	29·0	30·1	28·1	28·1	24·9	23·9	20·6	21·6	20·9	16·3	21·7	20·6	22·4	36·6
22	21·0	21·3	21·3	21·2	21·2	21·1	20·8	19·8	18·9	19·6	21·6	24·2	26·3	27·4	27·4	26·1	24·3	24·4	24·8	22·5	23·5	8·5	5·2	17·7	*21·3*	10·1
23 d	20·8	20·5	20·5	20·5	20·5	24·2	29·0	29·6	23·7	24·4	25·2	25·8	27·4	29·2	30·1	29·1	26·2	19·2	11·7	15·7	12·7	12·0	20·4	21·8	22·5	40·2
24	21·8	20·6	20·5	20·6	20·9	20·2	20·7	20·2	21·2	23·1	25·2	28·0	28·0	29·2	27·7	26·3	25·3	22·3	20·0	20·9	19·8	19·4	21·1	20·8	22·7	43·8
25 d	22·0	22·5	21·5	19·4	19·8	19·5	23·3	23·5	22·7	25·7	24·2	27·4	27·3	27·5	25·7	24·0	23·3	22·7	22·1	11·6	15·7	20·6	21·8	21·6	22·3	35·4
26 d	21·7	20·6	17·7	18·4	18·2	18·8	21·6	22·1	22·2	22·0	23·5	26·6	27·2	27·4	26·7	24·4	22·5	22·5	22·2	21·6	20·9	19·2	20·3	23·5	22·2	31·8
27	22·1	22·2	21·3	19·4	20·3	20·7	22·9	21·5	20·5	21·5	23·4	25·0	26·1	26·7	25·7	24·5	22·6	22·1	21·5	17·9	16·7	20·3	21·6	21·3	22·0	27·8
28	20·9	20·9	20·7	20·5	20·3	20·5	20·6	19·7	19·4	20·7	22·7	24·9	26·7	27·3	26·5	24·9	23·1	21·1	21·2	21·5	21·5	21·5	21·5	21·4	22·1	30·0
29	21·7	21·7	22·9	20·8	20·6	20·4	19·7	18·2	18·0	19·2	21·3	24·6	26·8	28·1	26·5	25·2	23·3	22·5	21·4	20·2	15·9	19·5	20·7	21·6	21·7	20·8
30 q	21·7	21·7	21·5	21·3	20·7	20·1	19·1	17·9	17·7	18·7	21·1	25·0	27·8	28·5	28·0	26·7	24·5	22·7	21·7	21·5	21·4	21·5	21·5	21·5	22·2	33·8
31	22·1	21·6	20·9	20·6	21·4	21·3	19·4	17·9	17·5	19·2	21·0	23·6	26·6	28·1	27·6	26·1	24·3	22·5	21·1	21·4	21·3	21·0	20·8	21·2	22·0	28·5
Mean	21·0	21·0	20·9	20·4	20·3	20·7	21·3	20·9	20·4	21·3	22·9	25·6	27·3	*28·0*	27·5	26·1	24·5	22·2	21·6	20·9	20·4	*19·7*	20·2	20·8	22·3	
Sum 600·0′+	51·4	51·7	47·6	33·2	29·2	41·6	60·5	47·6	31·5	59·2	109·8	193·5	246·4	268·9	252·4	209·2	159·1	88·1	68·8	46·8	33·6	11·0	26·4	44·4		Grand Total 16611·9

GEOMAGNETIC FORCE: VERTICAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, GMT

3 LERWICK (Z) 47,000γ (0·47 CGS unit) + MARCH 1965

	Hour GMT 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 8000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	398	400	398	398	397	396	394	393	396	397	396	392	396	401	406	418	429	436	436	419	408	400	395	393	404	1692
2	396	398	400	400	397	393	392	395	397	397	397	400	400	400	401	405	416	440	456	438	411	406	400	399	406	1734
3 d	397	396	384	368	382	387	385	378	370	381	386	384	389	402	407	420	445	512	512	460	423	403	377	384	405	1732
4 d	376	358	302	271	236	249	287	322	344	364	378	394	393	406	414	416	420	430	426	420	417	410	403	403	368	839
5	403	404	405	405	405	403	401	400	397	394	399	399	396	401	407	408	409	410	413	409	403	401	400	390	403	1662
6	385	387	388	395	399	400	399	398	395	392	391	392	395	396	400	410	414	416	417	422	423	416	403	402	401	1635
7	387	373	392	398	401	401	396	391	391	394	394	392	395	402	411	416	415	414	413	410	408	405	402	398	400	1599
8 q	394	393	396	398	400	401	400	400	399	395	394	393	391	393	396	398	400	403	404	402	402	400	399	399	398	1550
9	397	396	395	394	395	395	395	399	400	396	394	392	390	393	400	406	407	405	405	404	404	404	401	396	398	1563
10 q	385	388	393	395	396	397	398	399	400	397	395	390	390	390	393	400	400	400	399	399	400	399	399	397	396	1499
11 q	397	396	391	387	392	394	394	395	395	397	396	394	390	391	396	402	402	402	403	406	402	400	400	398	397	1520
12	398	397	397	397	395	395	397	397	398	398	397	394	390	393	394	396	400	405	415	440	446	424	408	407	403	1678
13	405	402	400	398	397	394	391	394	393	392	395	390	392	396	420	424	409	403	403	407	404	401	400	401	400	1611
14	401	399	399	398	397	393	393	394	394	393	391	389	387	391	405	412	415	405	402	403	399	400	398	376	397	1534
15	348	358	381	390	389	388	390	383	384	387	382	384	389	395	400	404	408	413	426	403	384	389	394	395	390	1364
16	398	398	395	395	395	397	397	397	397	397	395	394	394	397	400	405	406	403	398	396	395	394	379	379	396	1501
17	389	395	398	398	397	394	392	394	395	395	395	391	392	394	398	407	414	426	428	424	410	401	398	397	401	1622
18 q	398	400	400	400	401	400	399	400	399	396	393	390	388	390	398	400	402	399	398	396	394	393	392	392	397	1518
19	394	395	396	397	398	396	396	395	397	395	390	388	387	390	396	398	400	399	397	398	396	394	393	390	395	1475
20	383	388	383	388	393	395	396	397	397	394	390	385	382	390	395	401	405	400	399	399	399	399	395	392	394	1445
21	370	376	388	392	396	395	394	393	392	390	389	390	390	398	407	411	415	419	420	414	407	388	377	385	396	1496
22	392	394	396	396	396	396	397	397	397	394	389	391	390	391	393	394	399	402	409	414	415	422	379	382	397	1525
23 d	392	395	397	396	397	380	357	366	378	388	389	392	389	394	402	431	436	449	443	433	353	303	375	393	393	1428
24	395	397	396	398	396	397	396	397	395	396	392	395	400	395	396	403	415	419	417	410	409	383	367	374	397	1538
25 d	380	379	381	388	392	394	390	389	403	401	392	396	399	402	407	410	407	402	407	411	398	404	403	394	397	1529
26 d	368	314	352	368	379	385	390	395	401	402	401	402	401	401	408	409	406	405	405	403	407	403	387	376	390	1368
27	379	389	384	391	393	390	390	393	398	395	395	398	401	402	407	415	409	405	410	413	404	396	399	401	398	1557
28	400	398	400	398	397	395	395	398	401	400	399	397	395	399	402	403	403	408	403	401	401	400	401	402	400	1596
29	400	400	397	397	397	396	398	399	398	396	394	393	395	401	407	415	414	410	408	408	407	402	400	400	401	1632
30 q	400	401	401	400	400	397	397	397	398	396	395	392	388	389	394	396	397	400	397	397	397	396	397	398	397	1520
31	397	395	397	398	397	391	393	394	396	397	396	396	396	397	400	402	404	404	401	399	396	396	397	394	397	1533
Mean	390	389	390	390	390	390	390	392	393	394	393	393	393	396	402	408	410	414	415	411	404	398	394	393	397	
Sum 12,000γ+	102	59	82	92	102	84	89	139	195	206	179	169	170	280	460	635	721	844	870	758	522	332	218	187		Grand Total 295,495

GEOMAGNETIC CHARACTER FIGURES (K, K_H, K_D, K_Z, AND C) AND TEMPERATURE IN MAGNETOGRAPH HOUSE

4 LERWICK MARCH 1965

	3-h range indices K	Sum of K indices	3-h range indices K_H	Sum of K_H indices	3-h range indices K_D	Sum of K_D indices	3-h range indices K_Z	Sum of K_Z indices	Geomagnetic character of day, C (0-2)	Temperature in magneto-graph house 200°A+
1	0000 2412	9	0000 2311	7	0000 1412	8	0000 1221	6	1	85·3
2	0100 2331	10	0100 2211	7	0000 1331	8	0000 0331	7	1	85·2
3 d	3232 3554	27	2122 3544	23	3232 2554	26	2210 2544	20	2	84·6
4 d	3532 1110	16	3422 1110	14	3532 1110	16	3332 1110	14	1	86·0
5	0012 2122	10	0012 2102	8	0011 1121	7	0000 0001	1	1	85·9
6	1000 1122	7	0000 1011	3	1000 0122	6	0000 0001	1	1	86·0
7	3111 2200	10	0011 2100	5	3100 1200	7	2000 1100	4	1	86·0
8 q	0001 0000	1	0001 0000	1	0000 0000	0	0000 0000	0	0	86·1
9	0000 1101	3	0000 1101	3	0000 1001	2	0000 0001	1	0	86·0
10 q	1000 0000	1	1000 0000	1	0000 0000	0	1000 0000	1	0	86·0
11 q	1100 0110	4	1000 0110	3	1100 0110	4	1000 0000	1	0	86·1
12	0000 2121	6	0000 2121	6	0000 1021	4	0000 0022	4	1	86·5
13	0112 2210	9	0112 2210	9	0112 1200	7	0001 2200	5	1	86·5
14	0100 1232	9	0100 1222	8	0100 1132	8	0000 0122	5	1	86·7
15	2121 1231	13	2121 1231	13	2011 1031	9	3000 0130	7	1	86·9
16	1100 0002	4	0100 0002	3	1100 0002	4	0000 0002	2	0	86·9
17	0000 2210	5	0000 2210	5	0000 1210	4	0000 0120	3	1	86·8
18 q	0000 0000	0	0000 0000	0	0000 0000	0	0000 0000	0	0	86·9
19	0011 1001	4	0011 1000	3	0011 0001	3	0000 0001	1	0	86·4
20	1001 2011	6	1001 2011	6	1000 1001	3	1000 0001	2	0	86·1
21	2001 2213	11	1001 2213	10	2000 1113	8	2000 0002	4	1	86·0
22	0000 0114	6	0000 0112	4	0000 0114	6	0000 0023	5	1	86·0
23 d	1232 2355	23	0231 2355	21	1232 1354	21	0220 0355	17	2	86·0
24	1113 3222	15	0113 3212	13	1111 1022	9	0001 0002	3	1	86·0
25 d	1233 2242	19	0233 2232	17	1112 1041	11	0022 0022	8	1	85·8
26 d	4122 2213	17	3122 2212	15	4121 0013	12	3210 0002	8	1	85·9
27	2121 1131	12	1110 1121	8	2121 0031	10	2010 0021	6	1	86·0
28	0111 0100	4	0111 0100	4	0110 0000	2	0000 0000	0	0	86·4
29	1100 2221	9	0100 2210	6	1000 1021	5	0000 0000	0	1	86·5
30 q	0000 1110	3	0000 1110	3	0000 1000	1	0000 0000	0	0	87·0
31	1101 0001	4	0100 0000	1	1101 0001	4	0000 0000	0	0	86·8
								Mean	0·71	86·2

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

K_H For horizontal component. K_D For declination. K_Z For vertical component. (See Introduction).

GEOMAGNETIC FORCE: HORIZONTAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, GMT

1 LERWICK (H) — 14,000γ (0·14 CGS unit) + — APRIL 1965

	Hour GMT 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 14,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	659	660	653	656	658	662	659	654	643	631	624	625	632	644	650	647	655	662	663	663	662	662	660	660	652	1644
2 q	661	659	659	659	656	659	659	652	645	633	628	630	637	645	652	656	657	659	662	662	661	660	660	660	653	1671
3 q	659	659	660	660	661	661	660	657	649	639	633	632	636	640	649	654	662	666	663	664	666	665	662	663	655	1720
4	663	663	666	666	662	666	668	659	637	627	627	633	641	651	651	647	648	659	666	664	663	660	661	661	655	1709
5	663	662	660	657	657	657	659	652	641	632	625	625	630	640	649	654	655	658	659	663	660	655	656	656	651	1625
6	656	655	653	652	656	660	663	659	646	633	623	622	635	638	653	650	653	656	666	671	673	670	674	680	654	1697
7	674	651	652	645	648	654	662	659	649	637	626	621	627	634	649	663	659	661	659	655	656	662	660	657	651	1620
8 q	664	659	659	660	661	660	659	652	641	629	619	622	630	640	646	663	659	664	670	673	674	674	670	665	655	1713
9 d	669	663	649	659	659	659	659	641	641	637	629	624	629	641	649	658	658	659	663	666	672	670	661	672	654	1687
10	648	656	656	656	660	665	663	650	638	622	619	625	633	642	653	657	659	663	665	664	664	663	662	663	652	1646
11	662	660	655	659	660	661	660	654	645	637	634	637	644	652	660	674	662	685	678	655	646	651	650	652	656	1733
12	641	652	650	649	644	653	655	649	640	629	626	627	634	641	656	666	671	674	670	663	664	662	662	660	652	1638
13	656	651	652	652	659	657	653	646	633	631	629	632	641	647	660	663	662	667	665	663	663	664	663	666	653	1675
14	662	662	656	654	660	663	663	655	641	633	636	637	647	656	658	666	669	668	670	670	669	666	667	663	658	1791
15	665	659	653	654	662	667	664	653	639	625	621	621	629	639	651	656	658	668	667	666	664	665	665	664	653	1675
16	668	658	661	662	662	662	662	654	644	634	629	629	637	644	655	660	662	663	662	667	666	667	665	666	656	1739
17 d	665	665	662	662	663	663	661	655	647	636	627	625	632	657	676	684	669	668	659	677	675	674	673	672	*660*	1847
18 d	668	665	653	634	590	473	415	382	458	513	564	606	632	643	634	647	639	645	644	652	633	629	628	621	*595*	268
19 d	620	618	613	632	637	634	629	623	614	607	603	611	609	625	640	682	703	658	662	654	652	637	635	634	635	1232
20 d	637	638	630	628	641	640	638	633	624	610	603	614	630	615	620	638	642	653	655	653	649	650	647	642	635	1230
21 q	643	643	641	643	641	641	640	634	626	617	610	607	611	623	636	646	644	655	658	651	652	652	652	651	638	1317
22	649	647	646	645	645	647	646	643	637	631	623	627	630	633	640	644	652	655	658	658	655	658	660	656	645	1485
23	653	654	655	655	651	651	653	648	645	637	634	629	626	626	633	641	647	662	659	664	663	659	662	656	648	1563
24	659	655	654	655	655	655	655	651	643	633	625	620	626	636	650	651	651	666	665	666	660	658	655	655	650	1599
25	655	655	654	654	654	654	651	644	633	624	620	618	622	628	629	643	654	667	665	666	662	667	668	665	648	1552
26	665	665	655	655	657	657	654	648	634	624	621	617	618	629	640	644	661	662	661	671	668	666	664	662	650	1598
27	660	658	656	658	655	652	649	644	637	629	618	614	629	640	654	662	665	666	669	660	658	659	660	657	650	1609
28 q	657	654	654	654	655	653	648	642	632	622	617	625	636	641	649	653	660	660	666	669	665	662	662	660	650	1596
29	659	659	659	659	658	656	653	647	640	629	624	628	636	650	657	665	669	677	677	672	667	668	669	669	656	1747
30	668	663	659	657	654	658	654	645	640	635	631	633	636	641	651	649	656	662	665	664	662	666	664	666	653	1679
Mean	658	656	653	653	653	650	647	639	633	625	*622*	624	631	639	648	656	659	663	*664*	663	661	661	660	659	649	
Sum 18,000γ+	1728	1668	1585	1591	1581	1500	1414	1185	982	756	648	716	935	1181	1450	1683	1761	1888	1911	1906	1844	1821	1797	1774		Grand Total 467,305

GEOMAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, GMT

2 LERWICK (D) — 9° + — APRIL 1965

	Hour GMT 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	21·2	22·1	22·6	21·3	21·4	19·8	18·7	17·9	17·0	18·3	21·6	26·2	28·3	28·9	27·9	24·6	23·1	22·5	22·1	21·7	21·5	21·2	21·2	21·2	22·2	132·3
2 q	20·6	20·9	21·0	20·5	20·5	19·9	18·8	17·5	17·0	18·9	21·5	24·7	26·7	27·2	26·3	24·9	23·0	21·4	20·6	20·8	21·0	21·3	20·9	20·9	21·5	116·8
3 q	20·9	20·7	20·8	20·4	20·4	20·2	19·3	17·9	17·0	18·4	20·5	23·2	26·2	27·5	27·5	25·5	24·3	22·7	21·6	21·5	22·0	21·5	20·8	21·0	21·7	121·8
4	21·3	21·4	21·1	20·4	20·4	20·6	18·5	17·5	18·8	23·4	25·3	26·4	28·3	30·0	28·2	26·4	24·4	22·6	21·9	21·8	21·5	21·5	21·2	21·2	22·7	144·1
5	21·4	21·3	21·5	20·5	21·4	19·3	18·5	16·8	16·6	17·7	20·2	23·4	25·4	26·3	24·9	23·4	22·0	21·3	20·6	21·1	20·7	19·8	18·4	20·9	21·0	103·4
6	21·5	20·8	20·9	21·0	20·3	19·7	18·6	18·5	17·8	18·6	20·5	23·9	27·4	28·7	28·0	27·7	24·0	22·4	21·6	21·9	21·8	21·9	19·8	16·7	21·8	124·0
7	17·3	16·1	15·9	16·7	16·8	19·1	18·7	17·0	17·7	19·1	21·7	25·3	29·1	31·0	30·1	29·3	26·7	25·2	23·5	22·5	20·8	19·4	20·5	23·3	21·8	122·8
8 q	22·0	20·5	20·5	20·4	19·6	19·0	18·4	17·8	18·3	19·9	22·5	25·1	28·3	29·2	27·6	26·7	25·4	24·3	23·2	22·8	22·2	21·5	20·6	18·8	22·3	134·6
9 d	17·5	20·0	16·5	14·0	14·5	17·0	16·8	16·0	18·4	20·4	21·7	24·5	27·4	28·5	27·7	26·9	26·3	24·4	22·6	22·0	18·7	19·3	20·3	14·8	20·7	96·2
10	15·8	18·7	19·1	19·3	19·7	18·7	18·6	18·6	19·1	21·0	22·4	24·6	26·3	27·0	26·2	24·4	23·2	22·4	22·0	21·7	21·7	21·4	20·7	20·8	21·4	113·4
11	19·8	20·5	21·5	20·3	19·7	18·7	17·9	17·6	17·8	19·2	21·3	24·1	26·0	26·3	26·3	26·7	24·8	23·1	22·4	15·3	17·9	17·7	18·7	18·6	20·9	102·2
12	22·5	21·7	19·0	17·5	19·2	17·7	15·9	15·9	16·7	19·5	21·3	23·9	25·9	26·4	24·2	22·3	21·5	21·6	21·7	23·2	20·1	18·7	18·6	19·4	20·6	94·4
13	20·7	22·4	23·1	19·5	17·0	16·8	16·2	16·3	17·9	19·8	21·6	23·9	26·1	26·3	24·3	22·4	20·7	20·2	20·4	20·8	21·4	21·2	21·0	21·3	20·9	101·3
14	21·2	20·4	20·2	21·0	18·7	16·9	16·8	17·3	19·1	20·9	23·6	25·3	26·5	26·4	25·0	23·7	21·9	21·0	21·1	21·6	21·9	21·5	18·5	18·9	21·2	109·4
15	18·7	19·1	19·4	18·8	20·1	17·8	17·1	16·3	17·5	19·6	22·7	26·3	28·5	29·6	28·9	27·5	24·9	22·6	20·9	20·3	20·1	20·7	21·2	20·5	21·6	119·1
16	21·8	20·8	20·5	19·6	19·0	18·8	17·1	16·2	17·0	19·1	21·9	24·9	27·7	28·7	27·7	25·8	24·0	22·3	20·0	19·5	20·2	20·3	21·1	21·1	21·5	115·1
17 d	21·3	21·2	21·0	20·4	19·5	18·5	17·4	16·4	16·3	17·8	20·7	24·0	26·7	30·2	32·2	34·8	34·0	29·5	21·4	22·9	22·8	21·9	21·8	21·6	23·1	154·3
18 d	20·0	14·5	20·5	10·9	26·3	22·3	26·5	44·1	26·5	24·1	29·3	27·0	25·2	28·1	30·1	24·9	26·6	24·0	22·2	21·0	21·8	21·3	21·0	22·9	*24·2*	181·1
19 d	21·2	23·8	21·7	18·7	17·1	16·4	16·0	16·2	18·0	20·3	22·1	24·4	26·7	27·4	27·8	26·6	17·6	23·2	22·3	21·0	16·2	18·6	18·5	15·9	20·7	97·7
20 d	18·2	16·8	17·0	19·1	16·8	17·0	16·0	16·0	17·1	20·6	23·7	24·8	26·8	29·0	25·7	24·0	22·8	21·8	21·0	21·3	20·0	19·6	20·9	20·4	20·7	96·4
21 q	20·8	20·0	19·4	19·2	18·1	17·3	16·6	16·3	16·8	17·7	19·4	21·7	24·0	24·8	24·5	23·3	22·6	22·0	21·9	21·7	20·8	20·9	20·7	20·3	20·5	90·8
22	20·2	19·7	19·1	19·1	19·1	18·2	17·9	17·4	17·9	19·7	21·7	22·1	23·2	24·1	24·1	23·3	23·2	22·9	22·8	22·0	21·5	21·0	16·2	16·5	20·5	92·9
23	18·9	19·6	19·6	19·6	19·1	19·0	17·9	17·5	17·5	18·6	20·1	22·4	24·8	26·1	25·7	25·4	24·8	23·4	22·2	21·0	21·5	20·4	20·7	19·7	21·1	105·5
24	18·8	20·4	20·6	19·1	17·8	17·6	17·3	16·7	17·3	18·0	20·5	23·1	25·8	26·2	25·3	24·4	22·9	20·5	20·9	21·2	20·9	20·7	20·3	20·1	20·7	96·4
25	20·3	20·2	20·1	19·5	18·4	17·1	16·0	15·0	15·7	17·8	20·6	23·4	25·5	26·7	26·7	25·0	23·1	21·6	20·9	19·8	20·7	20·8	19·9	18·9	20·6	93·7
26	19·7	23·5	18·8	18·6	17·0	15·4	13·8	13·2	14·2	17·5	20·4	22·8	24·9	25·7	24·7	23·6	22·9	22·9	21·1	21·9	21·2	20·9	20·8	19·9	20·2	85·4
27	19·9	19·8	19·7	19·1	18·5	17·8	16·5	15·4	15·6	18·1	21·8	24·8	26·6	26·7	25·9	23·8	22·5	20·6	20·5	20·9	21·2	21·2	20·9	20·9	20·8	98·7
28 q	22·1	20·9	19·9	19·4	18·5	18·2	18·0	18·2	18·8	19·7	21·8	24·6	26·7	26·3	24·8	23·4	23·0	22·4	22·1	21·8	21·5	21·3	20·9	20·5	21·5	114·8
29	20·3	20·2	20·2	19·1	18·3	17·3	16·5	16·4	17·6	20·0	21·5	22·8	24·7	25·5	24·9	23·8	23·7	23·7	23·2	22·3	22·3	21·5	20·8	20·8	21·1	107·4
30	20·5	21·3	21·0	20·5	18·7	18·1	16·5	16·4	18·8	20·5	20·8	22·7	24·5	25·1	24·4	22·4	21·3	21·1	21·1	21·2	20·5	20·1	18·3	20·4	20·7	96·2
Mean	20·2	20·3	20·1	19·1	19·1	18·3	*17·6*	17·7	17·7	19·5	21·8	24·2	26·3	*27·3*	26·6	25·2	23·7	22·7	21·7	21·3	20·9	20·6	20·2	19·9	21·3	
Sum 500·0′+	106·4	109·3	102·2	73·5	71·9	50·2	28·8	30·3	31·8	84·2	154·7	226·3	290·2	319·9	297·6	256·9	211·2	179·6	149·8	138·5	126·4	119·1	105·2	98·2		Grand Total 15362·2

GEOMAGNETIC FORCE: VERTICAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, GMT

3 LERWICK (Z) — 47,000γ (0·47 CGS unit) + — APRIL 1965

	Hour GMT 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 9000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	391	379	380	378	384	388	393	396	398	399	397	395	395	397	401	404	403	401	400	398	398	397	397	397	394	466
2 *q*	398	400	401	401	401	399	399	399	396	395	395	393	393	396	397	399	401	402	401	399	397	397	397	396	398	552
3 *q*	397	399	400	400	399	397	394	392	392	388	386	386	386	389	393	396	398	400	401	399	396	396	396	394	395	474
4	395	396	396	397	398	393	392	392	395	389	384	380	373	378	392	405	404	403	400	399	398	397	394	394	393	444
5	393	395	396	397	393	394	396	399	400	397	396	394	389	387	391	395	401	404	403	401	401	401	397	393	396	513
6	394	397	398	398	401	396	395	394	394	392	387	383	380	384	392	396	404	404	401	397	396	396	392	369	393	440
7	354	367	369	381	386	382	379	386	388	388	387	383	382	386	392	405	418	424	427	428	420	403	397	387	392	419
8 *q*	379	388	394	396	397	399	401	402	401	399	398	395	394	397	396	396	401	403	400	399	400	398	399	401	397	533
9 *d*	391	380	356	343	340	365	379	392	395	399	399	397	393	391	391	395	401	404	404	404	399	394	399	371	387	282
10	358	371	390	395	393	394	396	401	404	404	400	394	388	388	391	392	393	394	395	395	397	399	401	399	393	432
11	398	396	396	395	396	396	397	399	397	394	392	390	392	390	391	392	395	397	428	463	441	420	406	394	402	655
12	392	386	397	400	397	386	391	394	395	393	391	391	392	396	394	394	396	399	403	409	404	400	390	389	395	479
13	392	389	378	384	389	391	394	395	396	392	391	386	384	388	393	398	399	400	400	397	395	394	396	394	392	415
14	397	396	399	396	390	391	390	390	386	386	383	381	383	387	391	396	399	398	395	394	393	395	392	392	392	400
15	387	389	393	395	389	388	392	393	392	393	391	390	390	394	397	401	401	404	405	403	400	396	392	390	394	465
16	383	392	397	399	400	398	397	396	393	391	386	384	385	390	393	398	402	405	407	402	397	394	393	393	395	475
17 *d*	395	397	398	400	400	398	398	395	390	389	388	386	385	381	387	396	405	413	418	400	394	392	392	393	395	490
18 *d*	393	393	349	274	210	197	290	331	366	384	387	408	409	420	455	471	462	455	465	453	429	420	414	394	*385*	229
19 *d*	385	395	381	402	415	416	414	412	410	412	413	415	416	422	422	447	470	447	431	434	428	414	414	355	*415*	970
20 *d*	360	382	393	405	406	411	413	411	409	413	411	408	415	424	420	415	416	416	416	418	416	406	393	398	407	775
21 *q*	403	406	407	408	411	414	415	415	413	414	411	409	409	405	407	411	416	415	417	418	416	413	410	408	411	871
22	409	409	409	410	410	409	408	408	407	406	407	404	403	404	404	406	409	410	410	410	410	408	402	391	407	763
23	400	403	404	405	407	406	404	403	401	402	404	404	403	404	401	406	407	408	414	412	412	411	407	398	405	726
24	398	403	403	404	406	405	405	407	406	406	408	409	407	404	402	408	410	410	412	409	410	409	408	407	407	756
25	405	404	405	405	405	408	408	408	408	404	401	401	398	398	398	398	400	404	409	410	409	406	403	401	404	696
26	396	381	393	399	403	404	404	404	405	409	407	406	403	403	404	406	405	411	411	407	405	404	405	404	403	679
27	404	404	404	403	405	405	406	404	403	403	402	398	395	395	399	404	410	410	410	410	406	405	403	405	404	693
28 *q*	401	398	402	402	403	404	404	403	400	398	393	390	397	400	401	404	404	407	404	403	404	403	403	403	401	631
29	404	405	404	404	405	405	402	399	395	394	391	391	391	395	397	401	401	402	405	412	410	406	406	406	401	631
30	407	405	404	404	404	402	404	403	395	391	391	392	397	400	404	406	408	408	408	406	404	403	400	401	402	648
Mean	392	393	393	393	391	*391*	395	397	398	397	396	395	394	396	400	405	408	409	*410*	410	406	403	400	394	399	
Sum 11,000γ+	759	806	796	780	743	741	860	923	930	924	877	843	827	893	996	1141	1239	1258	1300	1289	1185	1077	998	817		Grand Total 287,002

GEOMAGNETIC CHARACTER FIGURES (K, K_H, K_D, K_Z, AND C) AND TEMPERATURE IN MAGNETOGRAPH HOUSE

4 LERWICK — APRIL 1965

	3-h range indices K	Sum of K indices	3-h range indices K_H	Sum of K_H indices	3-h range indices K_D	Sum of K_D indices	3-h range indices K_Z	Sum of K_Z indices	Geomagnetic character of day, C (0-2)	Temperature in magneto-graph house 200°A+
1	1110 1000	4	1000 1000	2	1110 1000	4	2100 0000	3	0	86·5
2 *q*	0000 0000	0	0000 0000	0	0000 0000	0	0000 0000	0	0	86·7
3 *q*	0000 1100	2	0000 1100	2	0000 0000	0	0000 0000	0	0	87·0
4	0111 2200	7	0011 2200	6	0110 1000	3	0000 1100	2	1	87·0
5	0100 0001	2	0100 0000	1	0100 0001	2	0100 0000	1	0	87·0
6	0110 2312	10	0110 2312	10	0110 1102	6	0000 0102	3	1	87·1
7	2210 2102	10	2200 2100	7	2210 1002	8	2110 0111	7	1	86·9
8 *q*	1000 1101	4	1000 1101	4	0000 0001	1	1000 0001	2	0	86·9
9 *d*	2210 0222	11	2210 0212	10	2210 0022	9	3320 0013	12	1	86·9
10	3100 0001	5	2100 0000	3	3100 0001	5	3000 0000	3	1	86·3
11	1000 0331	8	1000 0331	8	1000 0131	6	0000 0132	6	1	86·5
12	2200 1032	10	1100 1012	6	2200 0032	9	1100 0011	4	1	87·0
13	2110 1100	6	1110 1100	5	2100 0000	3	1000 0000	1	1	86·9
14	1100 2101	6	1000 2101	5	1100 0001	3	0000 0000	0	1	86·7
15	1100 0211	6	1100 0201	5	1100 0011	4	0100 0000	1	1	86·9
16	1000 0110	3	1000 0110	3	1000 0010	2	1000 0000	1	0	87·0
17 *d*	0000 2431	10	0000 2431	10	0000 2311	7	0000 0330	6	1	86·6
18 *d*	3655 3332	30	2655 3332	29	3553 3232	26	4443 3233	26	2	86·9
19 *d*	2212 3423	19	2202 3423	18	2111 0323	13	2200 1313	12	1	86·3
20 *d*	1212 3112	13	1212 3112	13	1111 2011	8	3100 2001	7	1	86·5
21 *q*	1000 1200	4	0000 1200	3	1000 0000	1	0000 0000	0	1	86·8
22	0002 1102	6	0002 1102	6	0001 0002	3	0000 0002	2	1	86·2
23	0000 1201	4	0000 1201	4	0000 0001	1	0000 0001	1	1	86·9
24	1102 2210	9	1002 2210	8	1100 1100	4	0000 1000	1	1	86·8
25	0110 1211	7	0000 1211	5	0110 0111	5	0000 0000	0	1	87·0
26	3000 1321	10	2000 1321	9	3000 0111	6	2000 0110	4	1	87·0
27	1110 1111	7	0000 1111	4	1110 0101	5	0000 0000	0	1	87·0
28 *q*	1010 1110	5	1000 1110	4	1010 1100	4	1000 0000	1	0	87·0
29	0001 1220	6	0001 1220	6	0000 0000	0	0000 0010	1	1	87·2
30	1111 1101	7	1101 1101	6	1110 0001	4	1000 0000	1	0	87·6
								Mean	0·77	86·8

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

K_H For horizontal component. K_D For declination. K_Z For vertical component. (See Introduction).

GEOMAGNETIC FORCE: HORIZONTAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, GMT

1 LERWICK (H) — 14,000γ (0·14 CGS unit) + — MAY 1965

	Hour GMT 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 15,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	667	662	660	658	659	655	654	651	647	640	636	641	649	651	655	658	660	665	669	670	666	665	664	662	657	764
2 q	663	662	662	660	659	657	653	647	638	628	625	630	643	654	661	662	665	666	666	664	664	665	666	662	655	722
3	662	662	662	659	659	658	655	651	641	637	633	632	639	647	658	670	672	675	673	670	669	669	667	667	658	787
4	666	664	663	662	662	662	660	655	647	636	631	628	636	651	661	667	681	675	680	689	684	680	678	689	663	907
5 d	686	676	644	651	644	618	613	642	638	629	620	624	633	635	652	645	685	679	679	667	662	662	655	644	649	583
6	653	648	648	651	651	653	649	639	626	626	628	635	636	641	657	664	667	666	676	673	670	668	663	651	652	639
7	652	659	656	651	644	648	650	643	633	626	629	630	630	645	656	664	670	667	660	666	662	660	659	658	651	618
8 d	656	658	655	654	654	655	656	651	638	623	622	625	636	644	663	662	661	667	669	684	663	645	605	584	647	530
9 d	568	630	664	651	643	627	636	634	633	630	634	640	645	644	655	654	664	670	667	670	674	651	647	636	644	467
10 d	649	652	648	648	659	655	641	636	637	639	629	636	643	647	651	661	669	671	677	676	669	667	656	655	653	671
11 q	654	655	653	653	651	649	648	644	637	629	629	630	641	649	649	655	660	666	667	669	663	663	665	662	652	641
12	659	660	653	650	660	655	647	643	637	639	633	636	640	647	652	663	670	674	674	669	665	664	660	661	655	711
13 q	656	655	655	655	656	655	649	644	643	637	634	632	644	655	664	661	664	674	673	674	673	666	663	665	656	747
14 q	663	657	657	656	654	652	651	649	646	640	636	635	643	642	648	659	670	681	678	684	675	669	667	669	658	781
15	667	671	668	667	665	663	663	663	659	647	634	629	633	640	649	664	677	681	678	674	677	675	677	680	663	901
16 d	678	675	673	678	684	674	648	636	648	644	630	621	635	691	624	661	665	672	675	674	674	677	671	659	661	867
17	661	656	648	646	640	642	648	646	641	631	627	633	638	657	659	673	666	675	675	670	668	663	663	663	654	689
18	663	663	662	658	660	663	661	659	643	630	629	632	642	655	661	666	674	677	674	667	667	666	665	663	658	800
19 q	660	660	659	660	660	659	655	650	640	629	625	625	636	652	658	666	667	673	674	673	671	670	669	669	657	760
20	667	666	666	664	663	662	656	648	637	629	625	629	644	655	662	670	683	684	685	686	682	678	671	673	662	885
21	671	663	666	670	670	666	659	650	637	626	624	634	648	663	667	681	677	687	685	681	676	655	657	659	661	872
22	652	655	664	659	656	655	651	651	644	635	634	630	634	639	651	667	669	686	700	691	682	674	670	667	659	816
23	666	664	659	658	661	660	656	646	638	633	629	633	640	637	639	643	662	677	679	680	677	670	663	671	656	741
24	667	662	661	663	666	663	654	651	661	656	646	645	647	650	652	655	666	676	674	677	671	667	659	659	660	848
25	662	663	663	665	665	662	659	655	643	632	628	630	640	652	654	663	674	679	685	679	673	667	663	663	659	819
26	663	662	666	670	670	665	658	650	641	638	638	647	659	670	680	681	684	681	676	679	681	677	674	674	666	984
27	667	666	664	670	673	667	659	648	641	632	629	637	641	649	651	659	670	686	683	686	680	678	678	676	662	890
28	670	667	670	672	670	667	663	656	647	633	625	643	647	649	668	665	673	677	681	679	673	672	671	670	663	908
29	669	666	664	670	667	663	656	651	644	640	638	640	653	654	662	665	666	672	678	683	679	676	672	668	662	896
30	667	664	661	661	664	663	660	658	652	647	643	644	656	662	667	667	664	668	676	681	677	677	676	673	664	928
31	671	667	667	669	666	666	664	663	657	648	637	644	643	651	662	671	680	680	681	679	681	681	677	678	666	983
Mean	661	661	660	660	660	657	653	649	642	635	631	634	642	651	656	663	670	675	676	676	673	668	664	662	657	
Sum 19,000γ+	1475	1490	1461	1459	1455	1359	1232	1110	914	689	560	650	894	1178	1348	1562	1775	1927	1967	1964	1848	1717	1591	1530		Grand Total 489,155

GEOMAGNETIC DECLINATION (WEST)
Mean values for periods of sixty minutes ending at exact hours, GMT

2 LERWICK (D) — 9° + — MAY 1965

	Hour GMT 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	20·4	19·7	19·3	18·7	17·6	17·1	17·0	17·3	19·3	22·3	24·7	26·1	25·8	24·9	23·9	23·0	22·4	22·0	21·4	20·9	20·9	20·5	19·9	21·1	105·2
2 q	20·1	19·9	19·6	19·2	18·7	17·4	16·1	15·8	16·9	19·0	20·9	24·7	27·7	27·7	26·2	24·7	23·2	22·8	21·8	20·9	20·9	20·2	19·9	19·0	21·0	103·3
3	19·1	20·2	20·0	18·9	17·2	15·8	15·2	15·3	16·5	18·5	21·7	23·6	24·8	25·4	24·8	24·9	24·0	22·8	21·5	20·9	20·9	20·9	20·6	20·2	20·6	93·7
4	20·6	20·0	19·3	18·4	16·4	16·0	14·8	14·6	15·3	18·1	23·8	26·6	27·8	28·5	28·3	27·6	26·9	25·7	23·9	22·9	23·8	23·2	23·3	23·9	22·1	129·7
5 d	23·5	21·8	9·5	9·6	9·6	22·8	25·9	16·5	15·3	20·4	23·3	24·8	26·1	28·7	29·3	28·5	27·5	25·6	23·6	22·6	20·2	19·3	16·5	17·4	21·2	108·3
6	19·1	18·5	21·2	20·9	19·3	18·3	18·0	17·9	19·0	21·0	23·0	26·5	29·5	28·9	27·7	26·6	24·8	22·9	21·6	21·0	21·8	20·8	20·2	22·7	22·1	131·2
7	21·5	18·5	18·2	18·7	19·5	19·5	18·2	18·3	18·3	21·0	23·7	27·4	29·3	29·3	28·4	25·6	23·9	22·8	20·9	19·2	21·9	21·9	21·6	21·4	22·0	129·0
8 d	21·2	21·8	20·1	20·3	18·2	17·7	16·2	16·1	17·9	20·8	23·7	27·4	28·3	28·3	28·6	28·6	26·6	25·7	24·4	23·6	23·4	19·3	12·1	2·9	21·4	113·2
9 d	14·2	23·0	19·5	13·8	14·7	17·9	17·5	16·4	18·3	21·0	22·5	23·7	24·6	24·8	24·7	23·9	22·8	21·8	21·6	21·1	19·0	16·6	15·2	17·6	19·8	76·2
10 d	19·5	18·4	15·3	15·3	16·6	18·8	19·2	19·0	19·0	20·8	23·2	24·6	26·2	25·9	24·8	23·5	23·0	21·9	19·9	21·8	21·8	18·0	21·4	21·4	20·8	99·3
11 q	20·8	20·8	20·3	19·9	19·2	18·3	17·6	17·6	18·4	19·4	21·2	23·9	26·4	27·4	26·6	25·2	24·1	23·2	22·7	22·4	22·0	21·8	21·5	21·0	21·7	121·7
12	20·9	20·3	21·4	21·8	16·6	15·4	16·2	18·1	20·1	21·3	24·2	25·7	25·7	25·0	24·8	23·8	22·9	22·3	21·7	21·2	21·6	21·5	21·8	20·5	21·5	114·8
13 q	20·8	20·2	19·3	18·8	18·7	18·3	18·3	18·2	18·1	19·7	22·5	26·3	26·7	25·4	24·9	24·8	24·0	23·0	22·8	22·2	22·0	21·3	21·3	19·5	21·5	117·1
14 q	18·6	18·6	18·8	18·3	18·1	18·0	18·3	17·9	18·4	19·0	21·5	25·0	27·8	28·7	28·0	27·5	25·7	24·5	22·7	21·6	20·0	20·3	21·1	20·8	21·6	119·2
15	21·1	22·0	20·4	19·4	17·9	16·7	15·2	14·5	15·2	18·4	22·5	26·1	28·4	29·2	29·2	27·6	25·7	24·4	22·6	21·6	21·8	21·0	18·3	20·7	21·7	119·9
16 d	20·5	19·0	19·1	19·0	16·9	17·3	17·4	20·1	23·9	22·4	25·0	30·3	34·5	32·6	31·3	26·6	25·6	23·6	21·8	21·4	21·7	20·9	19·2	20·1	22·9	150·2
17	20·8	21·9	22·8	21·1	19·6	17·4	16·8	15·8	17·7	19·3	22·2	26·7	29·1	28·4	26·3	23·0	22·2	21·2	21·2	21·9	22·2	21·3	21·7	21·4	21·7	122·0
18	21·2	21·1	21·2	21·1	19·5	15·8	14·8	16·0	19·1	21·5	24·4	27·0	28·7	28·2	26·1	24·1	22·8	21·8	21·4	21·5	21·8	21·8	21·2	21·5	21·8	123·6
19 q	21·2	21·1	20·4	19·2	18·0	17·0	16·3	17·3	18·2	20·3	23·9	26·7	28·3	27·5	25·9	24·4	22·7	22·0	21·2	21·3	21·5	22·0	21·9	21·1	21·6	119·4
20	21·1	20·9	20·5	20·2	18·5	16·3	14·5	14·3	17·3	20·3	23·1	25·7	26·8	26·6	25·5	24·9	23·2	23·6	23·7	24·0	23·5	23·2	22·7	21·2	21·7	121·6
21	18·1	18·1	18·7	18·3	17·3	15·7	15·2	15·3	16·1	19·0	20·9	23·6	26·3	26·3	24·9	23·9	22·1	22·2	22·7	22·5	20·0	18·0	20·2	18·2	20·1	83·6
22	16·3	17·4	15·4	10·6	12·1	13·3	14·8	16·3	19·8	23·0	24·2	26·2	28·5	28·1	26·6	25·9	24·1	24·0	24·1	19·8	22·9	22·7	21·8	21·5	20·8	99·4
23	21·5	21·1	20·1	17·5	14·2	12·0	13·4	14·2	18·0	22·1	24·8	27·0	27·8	26·7	25·4	24·8	23·2	22·1	21·8	21·2	21·2	21·2	21·1	19·8	20·9	102·2
24	22·1	21·2	21·2	19·0	16·7	15·3	15·3	17·9	18·2	19·7	21·2	23·2	24·8	24·9	25·2	23·9	24·0	23·9	23·2	22·1	21·8	20·9	20·2	20·3	21·1	106·2
25	20·1	19·7	19·4	19·1	18·2	17·3	15·7	15·3	16·2	19·1	22·0	24·1	25·3	26·0	26·7	26·7	25·7	24·1	23·0	22·2	21·9	21·3	21·6	21·2	21·3	111·9
26	20·9	20·3	20·1	17·4	16·0	15·6	17·3	17·5	17·4	18·5	20·5	23·2	25·7	26·5	26·0	24·9	23·9	22·9	22·7	22·9	22·9	23·1	22·1	19·4	21·2	107·7
27	19·4	17·4	13·5	16·8	16·4	16·3	17·5	18·8	20·2	24·4	27·6	27·3	27·8	27·8	26·7	24·2	21·7	21·4	22·3	23·9	23·9	23·5	23·7	22·8	21·9	125·3
28	21·7	20·1	19·6	19·1	17·9	17·9	17·9	17·9	18·7	21·5	25·1	28·6	29·9	27·7	25·7	24·9	22·9	21·6	22·7	22·3	22·3	22·7	22·5	21·7	22·2	132·9
29	21·2	20·4	19·7	18·4	17·1	15·7	15·8	15·6	16·8	18·7	21·2	24·3	26·1	26·5	25·7	24·7	23·0	22·2	21·2	20·9	21·1	20·8	21·2	21·0	20·8	99·3
30	20·6	20·2	20·0	19·2	17·9	17·3	17·3	17·8	18·7	21·1	24·2	26·0	25·8	25·6	24·9	24·9	24·9	24·7	23·6	22·7	22·0	21·4	21·3	21·3	21·8	123·4
31	21·5	21·1	20·1	19·1	19·1	18·6	18·3	19·1	19·1	21·0	24·3	26·7	28·6	29·1	28·4	26·8	24·9	23·6	23·0	22·9	21·9	22·0	22·0	20·9	22·6	142·1
Mean	20·3	20·2	19·2	18·3	17·3	17·0	16·8	16·9	18·1	20·3	23·1	25·7	27·4	27·3	26·5	25·3	24·0	23·1	22·4	21·9	21·8	21·1	20·6	20·1	21·4	
Sum 500·0′+	129·3	125·4	94·4	67·7	34·8	27·3	22·1	22·4	59·4	129·6	214·6	297·6	349·4	347·5	322·5	285·3	245·0	216·7	193·3	177·9	174·6	153·8	139·7	122·3		Grand Total 15952·6

GEOMAGNETIC FORCE: VERTICAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, GMT

3 LERWICK (Z) 47,000γ (0·47 CGS unit) + MAY 1965

Day	Hour GMT 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 9000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	402	404	406	408	409	409	407	403	396	394	396	392	392	397	403	404	407	408	406	406	405	404	404	405	403	667
2 q	406	407	409	409	409	409	408	404	397	395	395	387	387	392	399	401	404	405	409	407	405	402	401	400	402	647
3	400	398	397	398	401	401	399	392	387	387	391	395	395	396	396	396	400	403	405	403	402	398	398	398	397	536
4	398	400	402	405	406	405	402	398	394	392	400	396	389	388	391	394	398	403	404	401	401	398	395	388	398	548
5 d	383	342	320	340	355	369	349	348	360	372	386	392	391	399	408	417	425	444	442	427	415	401	369	364	384	218
6	368	386	394	400	405	408	409	409	406	404	400	392	394	401	402	403	410	416	414	412	409	405	388	363	400	598
7	346	375	392	397	401	396	400	400	399	391	391	391	391	391	396	405	410	413	414	414	409	406	405	405	397	538
8 d	403	401	401	398	396	393	393	395	396	397	394	392	391	394	395	403	406	405	405	405	421	397	338	305	393	424
9 d	307	305	288	342	376	383	383	393	395	395	393	393	396	399	401	405	404	405	406	408	405	401	373	380	*381*	136
10 d	360	352	361	359	352	359	373	384	387	393	396	400	399	402	405	404	405	408	412	411	410	406	403	405	389	346
11 q	405	405	405	405	403	402	400	402	402	403	404	400	392	396	401	407	410	409	407	405	406	405	401	402	403	677
12	404	400	394	387	379	387	392	392	392	389	393	395	397	402	404	404	405	406	406	404	404	402	405	399	398	542
13 q	402	404	406	405	404	401	403	401	396	394	395	393	386	386	391	399	404	406	409	409	409	409	403	399	401	614
14 q	397	399	404	405	406	402	400	396	392	395	396	393	393	397	399	397	399	400	405	405	411	409	404	401	400	605
15	402	395	397	401	402	401	400	394	389	389	390	390	393	400	401	401	405	408	409	408	401	401	391	384	398	552
16 d	383	392	401	400	399	401	403	398	381	380	385	394	395	418	455	433	428	419	416	412	406	396	374	389	402	658
17	397	401	401	399	397	396	402	405	401	397	392	391	395	402	412	419	425	418	415	412	409	407	404	404	404	701
18	404	405	406	407	405	409	410	409	407	405	404	401	398	403	406	409	408	411	414	414	408	406	405	404	*407*	758
19 q	405	405	408	409	409	409	410	409	406	404	400	396	396	397	401	403	408	409	409	408	405	405	402	402	405	715
20	402	403	405	405	406	406	405	402	394	387	383	378	382	386	392	397	399	404	404	405	403	401	401	397	398	547
21	397	401	401	402	401	401	403	404	401	398	391	384	390	396	401	406	411	413	417	415	414	414	405	397	403	663
22	395	389	380	382	387	389	390	388	388	387	383	385	391	392	395	397	405	401	403	421	417	409	406	405	395	485
23	402	398	387	387	392	394	396	397	396	397	397	396	396	396	402	405	405	409	407	406	409	408	399	373	398	554
24	369	378	385	384	390	391	390	383	381	391	394	391	392	396	395	393	396	398	405	407	409	405	405	405	393	433
25	401	402	401	401	400	399	396	400	401	401	396	388	383	383	387	392	396	401	405	407	406	407	405	404	398	562
26	401	401	396	396	397	398	398	401	399	396	391	387	382	382	388	388	392	398	401	400	399	398	396	391	395	476
27	397	392	393	396	396	396	396	395	391	386	379	380	388	395	400	404	403	402	404	405	404	404	401	403	396	510
28	405	408	408	405	403	401	397	397	400	400	398	393	401	409	410	418	420	419	416	413	411	405	404	404	406	745
29	405	408	409	406	405	405	403	405	401	393	392	396	397	401	403	407	409	404	399	399	401	400	401	402	402	651
30	404	405	405	405	404	405	403	398	392	391	388	388	389	395	396	397	400	398	397	400	400	398	399	400	398	557
31	401	402	402	402	402	398	399	396	391	387	387	384	383	390	394	398	403	406	404	401	400	399	397	396	397	522
Mean	392	392	392	395	397	397	397	397	394	394	393	*391*	391	396	401	403	407	408	*409*	408	407	403	396	393	398	
Sum 12,000γ+	151	163	164	245	297	323	319	298	218	210	180	133	134	281	419	506	600	649	669	650	614	506	282	174		Grand Total 296,185

GEOMAGNETIC CHARACTER FIGURES (K, K_H, K_D, K_Z, AND C) AND TEMPERATURE IN MAGNETOGRAPH HOUSE

4 LERWICK MAY 1965

Day	3-h range indices K	Sum of K indices	3-h range indices K_H	Sum of K_H indices	3-h range indices K_D	Sum of K_D indices	3-h range indices K_Z	Sum of K_Z indices	Geomagnetic character of day, C (0-2)	Temperature in magnetograph house 200°A+
1	1010 1010	4	1000 1010	3	0010 0000	1	0000 0000	0	0	87·8
2 q	0000 0001	1	0000 0001	1	0000 0000	0	0000 0000	0	0	87·9
3	1000 1100	3	0000 1100	2	1000 0000	1	0000 0000	0	0	87·2
4	0100 0212	6	0000 0212	5	0100 0010	2	0000 0000	0	1	87·0
5 d	4441 2333	24	3331 2323	20	4441 1133	21	3221 0223	15	2	87·5
6	2010 2112	9	0010 2111	6	2010 1012	7	2000 1003	6	1	87·5
7	1111 1020	7	1101 1010	5	1110 0020	5	3000 0000	3	1	87·5
8 d	1111 2234	15	1001 2234	13	1110 0114	9	0000 0124	7	2	87·4
9 d	5211 1133	17	5211 1123	16	3211 0033	13	3310 0013	11	2	87·3
10 d	3221 1112	13	3221 1112	13	2110 0112	8	2120 0000	5	1	87·3
11 q	0000 1000	1	0000 1000	1	0000 0000	0	0000 0000	0	0	87·5
12	1210 1001	6	1200 1001	5	1210 0001	5	0100 0000	1	1	87·8
13 q	0000 1101	3	0000 1101	3	0000 0001	1	0000 0000	0	1	87·7
14 q	1000 1010	3	1000 1010	3	0000 0010	1	0000 0000	0	1	87·5
15	1000 1212	7	1000 1211	6	1000 0002	3	1000 0001	2	1	87·8
16 d	1232 4211	16	1232 4211	16	1232 2001	11	2021 3202	12	1	87·8
17	1111 1210	8	1101 1210	7	0110 0000	2	1000 0100	2	1	87·7
18	0100 0111	4	0100 0111	4	0100 0000	1	0000 0000	0	0	86·9
19 q	0000 1000	1	0000 1000	1	0000 0000	0	0000 0000	0	0	86·8
20	0000 1201	4	0000 1201	4	0000 0001	1	0000 0000	0	1	86·9
21	1000 2222	9	1000 2221	8	1000 0022	5	0001 0001	2	1	86·8
22	2201 0221	10	2101 0220	8	1200 0021	6	1100 0110	4	1	86·8
23	0010 1101	4	0000 1101	3	0010 0001	2	1000 0002	3	1	87·2
24	1021 1221	10	0021 1221	9	1010 0000	2	2110 0000	4	1	87·3
25	0010 1110	4	0000 1110	3	0010 0000	1	0000 0000	0	0	87·4
26	0110 0111	5	0000 0110	2	0110 0001	3	0000 0001	1	0	87·9
27	2101 1211	9	1001 1211	7	2100 0000	3	0000 0000	0	1	87·7
28	0102 2210	8	0002 2210	7	0100 0100	2	0000 0000	0	1	87·2
29	0000 1100	2	0000 1100	2	0000 0000	0	0000 0000	0	0	87·6
30	0000 1100	2	0000 1100	2	0000 0000	0	0000 0000	0	0	87·7
31	0001 1111	5	0001 1111	5	0000 0000	0	0000 0000	0	1	87·6
								Mean	0·77	87·4

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

K_H For horizontal component. K_D For declination. K_Z For vertical component. (See Introduction).

GEOMAGNETIC FORCE: HORIZONTAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, GMT

1 LERWICK (H) 14,000γ (0·14 CGS unit) + JUNE 1965

	Hour GMT 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 14,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	668	667	669	671	670	668	661	658	653	645	636	638	647	656	674	681	687	686	687	685	679	674	671	667	667	1998
2	666	664	663	663	663	663	661	658	652	644	642	643	657	666	654	674	685	691	696	687	671	669	667	664	665	1963
3	665	666	663	663	660	658	651	644	633	625	621	626	637	661	678	675	679	701	705	679	683	684	673	657	662	1887
4	661	664	666	670	673	666	654	643	643	632	629	629	652	673	674	674	697	704	696	680	681	675	661	654	665	1951
5	641	659	636	632	641	641	644	646	635	627	622	626	633	647	655	662	669	674	676	674	666	664	666	666	650	1602
6	664	662	659	658	658	658	652	648	641	631	631	634	648	660	670	678	685	688	685	686	674	666	660	659	661	1855
7	657	655	654	657	657	655	651	643	632	622	622	628	640	647	659	667	677	666	668	670	667	664	661	660	653	1679
8	658	659	659	660	658	654	647	641	641	640	638	641	646	652	655	664	685	697	711	691	695	682	638	615	659	1827
9 d	652	659	659	658	661	664	637	627	626	629	633	648	661	664	677	675	677	669	680	688	684	673	666	663	660	1830
10 q	658	658	657	656	655	656	655	647	642	639	639	643	643	649	651	655	662	671	678	678	672	666	663	662	656	1755
11	660	662	662	661	659	656	649	646	643	640	639	641	647	656	665	665	674	675	674	694	697	690	678	677	663	1910
12	672	670	667	670	669	668	662	655	642	633	630	640	644	655	666	671	679	681	678	684	682	678	677	674	664	1947
13 q	670	668	669	671	672	670	662	651	637	631	633	641	654	660	664	670	673	681	689	692	686	682	681	678	666	1985
14	677	674	674	670	664	663	661	658	651	638	637	639	649	660	681	681	682	687	687	700	684	669	668	664	667	2018
15 d	669	673	669	667	666	659	655	648	641	638	639	645	659	690	694	694	711	731	740	698	687	686	685	657	*675*	2201
16 d	620	603	657	654	630	641	620	599	551	529	576	636	673	822	981	1036	987	810	717	597	454	436	468	678	666	1975
17 d	320	514	580	562	566	616	641	615	611	618	616	628	644	674	692	697	715	704	682	673	666	669	640	445	*616*	788
18	592	635	640	655	651	653	656	645	636	625	621	622	634	645	655	666	666	677	701	689	692	681	666	670	653	1673
19	657	659	656	658	659	658	652	643	635	628	626	628	637	648	649	655	661	667	668	670	668	665	664	662	653	1673
20 q	659	659	658	657	659	658	653	648	641	633	625	625	631	642	652	662	668	671	677	677	677	666	662	659	655	1719
21 q	658	661	662	663	663	662	659	654	648	641	632	633	639	648	663	669	669	673	678	678	679	674	672	668	660	1846
22	668	668	665	664	664	666	661	655	648	637	636	636	642	644	652	666	672	681	687	685	677	678	675	674	663	1901
23	663	656	662	666	666	661	655	652	647	641	632	633	630	641	648	668	674	676	677	678	674	674	669	665	659	1808
24 q	666	665	667	667	665	662	658	652	648	651	651	651	651	649	644	659	677	679	689	691	685	678	674	674	665	1953
25	670	670	669	670	670	670	667	659	651	646	643	641	632	645	672	721	708	720	727	700	692	680	678	678	674	2179
26	678	675	676	678	679	678	673	666	661	655	654	652	662	665	668	676	686	690	700	697	689	682	678	679	675	2197
27	671	661	665	662	652	644	645	642	639	634	642	649	663	659	663	660	666	674	677	678	675	668	669	669	659	1827
28	665	665	664	661	661	658	652	649	644	637	632	638	655	666	671	671	673	678	679	681	678	674	667	667	662	1886
29	672	675	680	684	677	673	654	639	639	636	637	641	651	649	654	663	688	693	711	707	698	681	689	671	669	2062
30 d	666	666	665	658	645	648	662	655	641	633	629	635	654	641	671	681	681	684	695	691	686	691	664	666	663	1908
Mean	649	656	660	659	658	658	654	646	638	632	*631*	637	647	661	675	685	690	689	*691*	683	673	667	662	658	661	
Sum 18,000γ+	1463	1692	1792	1786	1733	1747	1610	1386	1152	958	943	1110	1415	1834	2252	2536	2713	2679	2715	2478	2198	2019	1850	1742		Grand Total 475,803

GEOMAGNETIC DECLINATION (WEST)
Mean values for periods of sixty minutes at exact hours, GMT

2 LERWICK (D) 9° + JUNE 1965

	Hour GMT 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	19·6	19·7	19·2	17·5	15·6	15·2	15·0	15·3	16·1	18·5	21·8	25·0	26·8	26·9	26·8	26·2	25·8	23·4	23·3	23·2	22·4	20·3	16·8	20·2	20·9	100·6
2	20·2	21·1	21·2	19·3	18·3	16·0	15·3	15·4	16·3	19·3	23·0	26·8	29·9	30·5	28·8	26·2	25·5	22·2	22·1	20·9	20·5	20·2	20·0	20·2	21·6	119·2
3	20·5	21·2	20·3	19·2	18·0	16·4	15·4	16·8	18·8	20·4	23·7	27·5	29·7	29·9	29·8	28·8	27·1	26·9	20·9	23·0	23·0	21·1	14·2	17·0	22·1	129·6
4	19·6	19·6	19·2	18·5	17·1	15·7	15·2	14·3	15·1	18·0	19·5	22·4	25·3	28·8	29·9	26·4	25·7	18·8	20·7	21·2	21·3	17·0	16·3	21·8	20·3	87·4
5	23·0	21·2	17·5	17·2	16·1	17·1	14·6	13·6	15·5	19·2	23·3	25·7	27·7	27·9	26·7	24·8	22·8	21·2	21·2	21·8	22·0	21·8	21·3	21·2	21·0	104·4
6	20·9	20·2	19·4	17·6	16·2	14·3	14·6	15·6	17·4	20·1	23·2	27·0	28·5	27·3	23·2	22·1	21·9	22·1	23·3	20·2	21·9	22·1	22·1	22·0	21·0	103·2
7	21·3	21·8	17·2	16·9	15·2	13·9	14·2	15·1	17·4	19·7	22·1	24·9	26·7	26·3	23·9	21·9	21·2	20·3	20·9	21·8	22·0	21·9	21·6	21·3	20·4	89·5
8	21·2	20·7	19·9	19·1	17·5	15·4	13·7	13·6	17·8	21·2	23·8	26·1	29·0	29·4	28·5	26·8	25·9	25·0	24·0	20·4	22·0	18·2	11·0	16·7	21·1	106·9
9 d	14·3	18·3	15·9	12·0	16·4	13·2	13·1	16·4	19·4	23·0	25·1	28·7	30·0	29·9	29·4	29·2	26·6	25·3	24·1	23·2	16·0	19·5	22·0	21·2	21·3	112·2
10 q	21·2	21·2	19·6	18·6	18·0	17·5	16·5	16·8	18·0	20·9	23·2	25·0	25·8	25·1	24·4	23·7	22·8	21·7	21·4	21·3	21·2	21·3	21·3	21·0	21·1	107·5
11	20·2	20·0	19·4	18·4	16·9	15·8	15·6	15·9	16·9	19·0	21·8	24·6	25·5	25·8	25·4	24·2	23·0	23·5	22·9	22·8	22·7	22·5	21·1	22·5	21·1	106·4
12	22·8	22·3	21·1	18·6	16·8	15·4	15·2	14·7	16·1	17·5	20·3	25·4	29·1	29·8	29·0	26·6	23·0	22·1	22·2	22·9	22·6	22·0	22·0	22·2	21·7	119·7
13 q	22·0	21·2	20·5	19·1	17·4	15·4	13·8	13·8	15·4	18·5	22·6	26·0	27·8	27·8	26·8	26·8	25·6	23·3	22·5	22·6	22·6	21·8	21·3	21·2	21·5	115·8
14	20·5	20·4	19·9	18·4	17·4	16·4	15·7	14·6	15·3	18·4	20·9	23·0	24·8	26·9	27·6	25·7	24·2	24·1	23·1	22·3	20·2	16·6	14·5	16·5	20·3	87·4
15 d	18·5	19·1	18·3	17·5	17·3	17·5	17·5	17·4	18·6	20·1	23·3	28·6	34·3	37·7	34·4	33·8	30·1	30·5	27·9	18·3	21·8	22·5	15·8	14·6	*23·1*	155·4
16 d	12·5	24·7	17·7	13·7	16·3	25·9	15·1	13·9	22·9	23·4	19·7	22·7	21·3	17·9	19·8	25·7	31·1	28·9	25·0	18·6	16·9	15·7	3·3	13·5	19·4	66·2
17 d	21·8	27·6	15·1	21·2	28·9	18·9	18·5	23·3	23·0	24·4	26·1	25·7	25·0	22·0	21·0	23·0	24·6	21·9	23·1	23·9	23·2	23·3	16·2	23·1	22·7	144·8
18	10·1	12·8	12·0	16·3	15·7	14·8	13·8	13·6	14·9	17·4	19·5	23·0	25·0	25·0	25·1	25·0	23·2	22·3	24·3	22·1	22·2	22·5	22·1	19·0	*19·2*	61·7
19	18·1	17·4	17·2	17·6	16·0	15·6	15·4	15·3	15·6	18·0	19·3	21·9	24·3	25·1	24·6	23·5	23·2	23·1	22·3	21·2	20·9	20·7	20·4	19·9	19·9	76·6
20 q	19·6	19·3	19·7	19·3	18·3	17·1	16·1	15·5	15·8	17·5	20·4	23·9	26·8	27·7	27·0	25·4	25·0	23·5	22·4	21·3	20·5	21·8	21·3	21·3	21·1	106·5
21 q	21·3	20·4	19·4	18·3	17·5	16·4	15·0	14·4	15·4	17·1	19·5	22·4	23·9	24·0	24·7	24·7	23·1	21·2	21·2	22·0	22·2	22·3	22·1	21·7	20·4	90·2
22	21·0	20·4	19·4	19·3	18·5	16·3	15·4	15·1	15·7	17·7	20·2	24·1	27·8	28·8	27·9	26·8	25·1	24·3	23·0	22·2	21·9	21·6	19·8	18·5	21·3	110·8
23	20·1	20·3	19·6	17·5	16·3	15·5	14·8	14·5	15·5	18·1	21·3	25·1	28·7	28·2	26·9	25·7	23·1	21·9	21·7	21·8	21·5	21·3	21·3	20·3	20·9	101·0
24 q	20·3	19·1	18·4	17·6	16·8	15·8	15·8	16·9	17·7	18·6	19·5	21·5	23·3	24·8	25·5	25·1	24·1	23·9	23·2	22·9	21·1	21·4	21·3	21·0	20·7	95·6
25	20·5	20·3	19·6	18·6	17·3	16·0	16·3	15·8	17·0	19·1	22·1	25·5	27·8	28·2	28·2	26·9	23·1	26·2	25·7	20·6	23·6	24·1	22·9	23·3	22·0	128·7
26	20·3	19·8	20·0	20·6	18·5	15·5	15·2	16·7	19·8	21·3	23·0	23·9	23·9	23·7	23·3	23·1	23·6	17·5	21·5	21·5	19·3	20·3	19·6	15·5	20·3	87·4
27	18·6	17·9	14·6	16·5	16·8	16·0	16·7	16·7	19·2	19·3	21·4	25·1	25·7	24·8	23·0	23·1	22·2	20·6	21·3	21·3	21·0	20·6	20·6	20·8	20·2	83·8
28	21·4	20·4	20·0	19·3	18·4	16·7	16·2	17·0	16·7	17·5	20·0	23·9	26·0	25·1	25·1	24·2	22·3	21·4	21·3	21·3	20·3	21·2	21·0	21·0	20·7	97·7
29	20·5	20·2	20·0	19·1	14·9	13·8	12·7	14·2	15·2	18·1	22·5	25·8	26·7	28·8	29·3	28·6	26·0	25·9	23·4	22·2	22·4	21·3	11·7	15·5	20·8	98·8
30 d	16·3	17·5	17·7	18·5	17·2	13·7	11·9	11·3	12·4	17·0	19·1	23·3	27·1	29·5	27·7	27·9	26·4	23·4	22·0	22·0	18·4	14·3	16·5	20·3	19·6	71·4
Mean	19·6	20·2	18·6	18·0	17·4	16·1	*15·1*	15·5	17·0	19·3	21·7	24·8	26·8	*27·1*	26·5	25·7	24·6	23·2	22·7	21·7	21·3	20·7	18·7	19·8	20·9	
Sum 400·0′+	188·2	206·1	159·0	141·3	121·6	83·2	54·3	63·5	110·9	178·3	251·2	344·5	404·2	413·6	393·7	371·9	337·3	296·4	281·9	250·8	237·6	221·2	161·4	194·3		Grand Total 15066·4

GEOMAGNETIC FORCE: VERTICAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, GMT

3 LERWICK (Z) — 47,000γ (0·47 CGS unit) + — JUNE 1965

	Hour GMT 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 8000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	398	402	405	406	406	404	401	397	391	388	392	389	388	385	388	398	410	415	415	411	407	405	404	398	400	1603
2	397	399	401	402	406	406	406	402	398	395	392	387	387	392	402	403	410	415	420	424	422	412	405	401	403	1684
3	402	402	403	406	409	411	410	407	406	402	397	392	392	393	402	410	411	415	423	424	411	407	391	397	405	1723
4	397	400	402	404	408	410	410	409	402	397	395	401	398	397	410	426	424	443	434	425	420	407	406	389	409	1814
5	348	344	352	352	377	391	393	401	403	402	398	393	391	392	396	400	405	407	410	409	407	406	405	403	391	1385
6	403	403	404	406	402	402	402	400	405	403	399	401	396	396	399	401	407	419	420	415	408	407	406	402	404	1706
7	399	393	391	394	397	400	402	406	405	398	392	394	401	402	401	402	408	414	410	406	405	406	406	406	402	1638
8	406	402	402	402	402	403	406	404	401	395	391	389	389	398	403	404	398	398	405	424	414	405	365	276	395	1482
9 d	312	365	355	362	388	392	398	392	389	384	384	383	389	405	422	444	467	453	424	412	414	407	403	396	397	1540
10 q	389	392	399	402	404	405	406	405	401	392	387	389	394	393	397	402	406	406	403	402	402	404	405	404	400	1589
11	405	406	406	405	402	401	399	399	397	396	393	392	391	393	397	402	405	406	408	402	402	406	406	405	401	1624
12	402	402	402	401	403	401	397	397	397	392	388	384	391	400	405	402	404	406	406	406	406	405	404	402	400	1603
13 q	402	406	407	406	406	407	405	404	402	395	388	387	392	398	402	402	400	399	401	398	399	398	398	399	400	1601
14	401	402	402	404	404	401	400	397	392	388	381	387	391	393	392	397	399	397	397	394	407	403	391	393	396	1513
15 d	397	398	400	400	401	402	402	401	397	390	389	383	379	378	401	430	448	450	450	435	406	423	404	377	406	1741
16 d	317	287	358	380	380	334	353	353	375	395	419	450	484	539	580	598	589	551	471	386	339	283	229	216	403	1666
17 d	218	156	178	213	241	308	348	375	388	406	409	421	426	443	445	429	437	450	435	427	417	405	362	245	*358*	582
18	260	306	334	346	372	388	401	409	414	416	411	403	399	400	404	408	413	419	416	421	414	414	413	396	391	1377
19	389	385	398	405	409	414	418	419	419	418	413	407	407	409	407	406	404	403	406	407	409	410	409	407	407	1778
20 q	407	407	407	407	408	409	410	409	407	404	406	400	401	403	398	401	407	413	414	411	417	415	413	410	408	1784
21 q	405	404	407	408	409	411	411	412	411	411	411	405	399	398	398	405	407	409	413	412	411	411	407	406	408	1781
22	403	397	399	403	401	400	404	406	404	398	397	403	404	403	398	403	411	417	416	416	412	409	407	399	405	1710
23	400	401	394	401	403	402	398	397	399	398	399	401	399	396	395	396	406	410	411	409	408	408	408	408	402	1647
24 q	402	400	403	406	405	405	406	406	404	398	394	395	398	399	399	393	393	395	398	402	407	410	407	405	401	1630
25	406	404	404	405	405	407	407	407	406	402	398	393	394	390	386	398	439	465	461	462	431	412	412	407	*413*	1901
26	396	402	405	406	398	399	401	399	398	403	406	407	408	412	413	415	411	407	408	416	416	415	407	389	406	1737
27	358	353	373	393	398	394	393	398	397	396	399	396	394	407	419	419	415	409	405	403	407	408	405	403	398	1542
28	403	405	407	409	409	407	404	396	388	385	393	392	389	394	402	403	406	406	404	406	407	405	405	405	401	1630
29	404	405	403	399	398	397	403	402	388	381	379	382	389	403	407	412	417	421	417	421	415	411	389	376	401	1619
30 d	374	388	398	402	395	386	380	388	393	395	396	404	409	417	416	419	419	419	417	415	414	393	379	338	398	1554
Mean	*380*	381	387	391	395	397	399	400	399	397	397	397	399	404	409	414	419	*421*	417	413	409	404	395	382	400	
Sum 11,000γ+	400	416	599	735	846	897	974	997	977	923	896	910	969	1128	1284	1428	1576	1637	1518	1401	1254	1110	851	458		Grand Total 288,184

GEOMAGNETIC CHARACTER FIGURES (K, K_H, K_D, K_Z, AND C) AND TEMPERATURE IN MAGNETOGRAPH HOUSE

4 LERWICK — JUNE 1965

	3-h range indices K	Sum of K indices	3-h range indices K_H	Sum of K_H indices	3-h range indices K_D	Sum of K_D indices	3-h range indices K_Z	Sum of K_Z	Geomagnetic character of day, C (0-2)	Temperature in magneto-graph house 200°A+
1	0000 2112	6	0000 2111	5	0000 0102	3	0000 0000	0	1	87·6
2	1011 2221	10	0001 2221	8	1010 0111	5	0000 0000	0	1	87·9
3	0000 1333	10	0000 1333	10	0000 0123	6	0000 0122	5	1	87·9
4	1111 3333	16	0011 3333	14	1111 1323	13	0001 1212	7	1	88·0
5	2211 1010	8	2211 1010	8	2200 0000	4	2300 0000	5	1	88·1
6	0001 1120	5	0001 1120	5	0000 1120	4	0000 0000	0	0	88·3
7	1001 1210	6	1001 1210	6	1000 0000	1	1000 0000	1	1	88·5
8	1021 2334	16	0011 2334	14	1020 1023	9	0000 1125	9	2	89·0
9 d	3321 2332	19	3221 2321	16	3311 1232	16	4200 2321	14	2	88·4
10 q	1000 0000	1	0000 0000	0	1000 0000	1	1000 0000	1	0	88·3
11	0000 1221	6	0000 1221	6	0000 0111	3	0000 0100	1	1	87·8
12	0101 1111	6	0001 1111	5	0100 0000	1	0000 0000	0	0	87·7
13 q	0000 0000	0	0000 0000	0	0000 0000	0	0000 0000	0	0	87·7
14	0011 1221	8	0001 1221	7	0010 0011	3	0001 0121	5	1	88·0
15 d	1102 3333	16	0002 3333	14	1102 2233	14	0001 3234	13	2	87·8
16 d	4444 7776	43	4344 7776	42	4433 5534	31	4334 5555	34	2	87·8
17 d	7432 3217	29	7432 3217	29	5421 2204	20	6532 2225	27	2	87·9
18	4211 0122	13	4211 0121	12	4100 0022	9	5310 0012	12	1	88·1
19	1000 0000	1	0000 0000	0	1000 0000	1	1000 0000	1	0	88·0
20 q	0000 0010	1	0000 0010	1	0000 0010	1	0000 0000	0	0	87·9
21 q	0000 0000	0	0000 0000	0	0000 0000	0	0000 0000	0	0	88·1
22	0101 1011	5	0101 1011	5	0000 0001	1	0000 1000	1	1	88·4
23	1000 1100	3	0000 1100	2	1000 0000	1	0000 0000	0	0	88·0
24 q	0000 1100	2	0000 1100	2	0000 0000	0	0000 0010	1	0	88·1
25	0000 3331	10	0000 3331	10	0000 0221	5	0000 1431	9	1	88·1
26	2211 1123	13	1101 1121	8	2210 0113	10	1000 0012	4	1	88·0
27	2110 1000	5	2100 1000	4	2110 0000	4	3100 1100	6	1	88·0
28	0001 1100	3	0001 1100	3	0000 0000	0	0000 0000	0	0	88·0
29	1222 2223	16	1122 2222	14	1212 1113	12	0010 1112	6	1	88·0
30 d	1222 3233	18	0222 3223	16	1121 2133	14	2111 1004	10	1	88·1
								Mean	0·81	87·8

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

K_H For horizontal component. K_D For declination. K_Z For vertical component. (See Introduction).

GEOMAGNETIC FORCE: HORIZONTAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, GMT

1 LERWICK (H) — 14,000γ (0·14 CGS unit) + — JULY 1965

Hour GMT	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 15,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	657	658	664	662	663	663	650	634	618	614	629	638	653	656	668	672	678	679	684	700	704	674	659	663	660	840
2	660	656	656	655	659	659	648	644	636	629	626	625	627	637	644	666	683	685	686	685	680	670	667	664	656	747
3	655	658	647	654	659	660	656	645	640	636	637	638	644	650	662	676	677	686	700	696	691	677	663	663	661	870
4 *q*	659	656	660	666	664	657	649	645	644	637	630	631	639	647	656	667	675	682	682	679	678	675	672	673	659	823
5 *q*	667	669	670	672	671	667	658	650	643	640	637	638	647	659	670	673	674	678	682	680	677	675	676	674	664	947
6 *d*	676	666	666	666	664	657	680	680	657	637	631	635	644	671	672	711	696	696	696	683	676	670	664	669	669	1063
7	657	646	644	655	655	652	647	648	649	644	644	645	650	656	660	670	669	680	685	690	685	677	665	666	660	839
8 *d*	662	663	644	633	670	670	663	661	659	652	650	654	661	671	674	682	708	730	723	690	686	685	670	623	670	1084
9	663	657	641	633	663	662	652	643	637	630	629	634	641	655	679	696	679	675	681	684	686	686	689	681	661	876
10 *d*	670	672	670	637	659	655	640	630	629	623	629	623	637	671	681	676	683	678	670	667	667	667	666	664	657	764
11 *q*	663	663	662	661	657	655	649	644	637	633	630	630	640	651	663	671	678	675	671	670	670	667	665	663	657	768
12	662	663	664	664	663	657	648	642	640	637	632	632	640	647	650	652	674	680	696	696	684	678	681	674	661	856
13	671	672	670	666	670	666	663	657	648	648	649	651	637	654	674	685	690	687	696	693	674	671	669	667	668	1028
14	663	667	664	664	663	655	653	654	648	643	644	645	651	658	664	674	675	688	679	680	681	674	674	667	664	928
15	666	671	666	669	669	667	656	641	635	642	645	636	633	654	671	685	682	685	679	675	668	667	659	657	662	878
16	654	649	652	656	657	653	649	639	637	640	639	639	647	655	664	676	670	674	671	676	676	673	666	668	657	780
17 *q*	666	665	665	666	663	662	661	656	651	640	632	627	636	647	658	658	666	673	680	678	677	674	673	673	660	847
18	671	669	670	669	669	669	662	657	650	640	632	628	628	640	652	681	698	703	720	707	699	695	692	691	671	1092
19	689	685	681	678	671	666	648	636	643	629	625	628	637	655	655	681	695	691	688	681	677	666	666	662	6[illegible]4	933
20	660	662	663	665	663	659	654	647	640	632	640	644	647	650	662	679	688	699	703	688	677	663	658	657	66[illegible]	900
21	657	657	657	658	664	655	652	650	649	642	639	636	642	652	659	664	669	678	682	676	673	672	671	669	659	823
22	670	668	665	667	664	658	656	654	653	643	636	626	627	639	659	678	677	678	680	680	685	689	682	679	663	913
23 *d*	679	679	677	676	673	670	673	676	668	651	641	637	644	675	656	659	679	700	699	696	685	677	671	668	*671*	1109
24	669	662	662	662	665	659	661	653	640	629	629	639	636	650	662	667	672	681	677	679	679	673	670	668	660	844
25	668	660	655	662	662	660	661	657	650	654	654	651	652	657	666	658	669	685	677	676	677	673	670	669	663	923
26	669	666	666	667	666	667	672	672	667	658	648	647	650	653	658	662	666	678	678	676	677	677	674	671	666	985
27	667	670	673	673	676	676	674	672	661	650	645	642	644	656	659	666	685	689	689	695	682	677	673	665	669	1059
28 *d*	640	663	651	655	646	625	614	623	639	632	632	635	637	658	665	670	684	670	675	684	680	675	667	666	*654*	686
29	655	659	662	657	659	649	650	659	654	644	630	640	647	655	672	690	700	691	707	686	674	666	662	662	664	930
30	659	655	655	654	658	655	648	643	639	642	641	640	649	659	667	672	673	674	670	669	669	670	662	663	658	786
31 *q*	655	656	662	665	666	662	654	644	631	620	622	633	648	665	669	671	676	680	677	674	672	666	663	660	658	791
Mean	664	663	661	661	664	660	655	650	645	638	*636*	637	642	655	664	674	680	685	*687*	683	679	674	670	666	662	
Sum 19,000γ+	1579	1562	1504	1487	1571	1447	1301	1156	992	791	727	747	915	1303	1571	1888	2088	2228	2283	2189	2066	1899	1759	1659		Grand Total 492,712

GEOMAGNETIC DECLINATION (WEST)
Mean values for periods of sixty minutes ending at exact hours, GMT

2 LERWICK (D) — 9° + — JULY 1965

Hour GMT	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	18·1	17·8	17·4	15·9	15·9	15·9	14·6	15·6	17·7	21·1	21·5	26·2	27·3	26·3	26·7	26·1	24·6	23·1	24·2	22·9	16·0	18·3	18·3	17·7	20·4	89·2
2	16·7	17·2	18·1	19·4	16·9	15·7	14·6	13·9	13·9	17·2	19·8	23·1	25·3	25·4	26·2	24·3	24·0	22·5	21·5	21·0	21·6	20·6	19·3	19·5	19·9	77·7
3	21·5	21·5	25·3	20·5	16·6	15·2	14·3	13·9	14·7	16·0	18·9	22·4	25·7	27·2	26·9	25·5	24·8	24·2	23·3	22·1	17·5	17·0	18·9	18·3	20·5	92·2
4 *q*	17·7	16·0	15·3	15·7	15·6	15·1	15·5	16·4	17·0	18·3	20·2	23·3	26·0	26·8	25·9	23·9	22·4	21·5	21·7	21·5	21·7	21·5	21·4	19·1	20·0	79·5
5 *q*	17·7	17·7	17·7	17·0	15·7	14·7	13·9	15·1	16·0	17·7	20·5	23·3	25·5	27·1	26·3	25·1	23·3	22·5	22·1	22·4	22·1	22·0	21·5	20·7	20·3	87·6
6 *d*	19·6	18·4	17·8	14·9	13·0	17·9	25·4	21·6	20·4	21·5	23·4	28·2	31·3	27·9	30·4	29·6	26·3	22·7	22·3	21·7	23·1	22·5	21·6	21·3	*22·6*	142·8
7	22·0	18·8	19·4	14·6	15·3	14·0	14·7	14·7	15·7	18·4	19·7	22·6	25·0	26·5	26·6	25·3	23·7	23·4	22·9	21·8	18·8	21·9	17·8	18·8	20·1	82·4
8 *d*	19·5	18·5	20·9	16·1	13·8	14·7	14·0	14·0	14·7	16·6	19·8	23·1	25·4	27·3	26·2	24·7	24·4	24·7	24·4	22·5	21·7	19·6	18·7	21·0	20·3	86·3
9	15·6	14·8	20·2	16·9	13·5	12·3	13·6	15·8	16·5	16·8	20·8	23·4	25·5	26·1	25·4	24·8	23·7	21·7	22·1	22·5	23·0	23·1	22·6	19·8	20·0	80·5
10 *d*	18·8	18·8	12·3	10·2	16·7	11·1	14·0	16·7	19·6	21·7	22·1	26·1	26·9	27·2	25·4	23·5	21·7	21·3	21·4	22·5	22·5	21·6	21·5	21·1	20·2	84·7
11 *q*	20·5	20·0	19·8	18·9	17·4	15·0	15·0	15·9	17·1	18·3	20·6	23·3	25·2	24·5	23·5	22·9	21·7	21·0	20·9	21·5	21·2	20·7	21·2	20·4	20·3	86·5
12	20·7	20·2	19·3	18·7	17·1	16·2	16·4	16·9	17·8	17·7	18·5	21·9	25·1	26·9	27·8	26·3	25·7	25·5	24·2	23·7	22·0	21·3	21·2	20·4	21·3	111·5
13	19·9	19·6	19·4	17·1	15·9	14·2	14·3	14·7	15·4	17·0	19·7	23·4	26·2	26·6	26·9	27·2	26·3	23·5	22·8	21·7	21·4	21·5	20·8	20·5	20·7	96·0
14	19·9	19·1	16·4	13·3	13·3	14·5	13·9	15·1	16·8	19·6	21·6	23·7	25·5	25·5	26·1	25·8	24·1	22·6	21·7	21·7	21·7	21·9	19·7	15·8	20·0	79·3
15	18·6	18·7	17·9	17·6	15·7	13·8	14·2	16·8	19·6	19·6	20·5	25·4	29·0	31·0	27·5	25·7	23·7	22·6	21·7	21·9	23·3	22·6	23·3	17·1	21·2	107·8
16	19·1	19·1	19·1	17·2	16·7	16·7	16·5	16·5	18·4	20·0	21·8	24·6	26·7	27·4	27·1	26·4	24·5	22·6	21·7	21·7	21·6	20·6	20·7	21·0	21·2	107·7
17 *q*	20·9	20·0	19·8	18·9	18·0	16·7	16·5	17·1	17·9	19·9	22·4	24·6	25·8	27·2	27·4	26·7	24·8	22·6	21·5	21·0	20·7	20·7	20·7	20·3	21·3	112·1
18	19·9	19·7	19·4	18·5	16·9	15·4	15·0	15·0	15·1	16·2	18·6	21·0	24·7	26·5	26·1	25·7	26·7	26·3	25·0	24·4	21·8	23·4	21·2	19·8	20·9	102·3
19	19·0	18·4	18·8	17·8	16·4	13·4	9·2	17·5	19·1	19·3	25·1	26·6	29·3	31·3	33·5	32·3	27·9	26·8	24·5	20·3	17·5	21·4	20·5	19·1	21·9	125·0
20	18·5	18·0	17·4	16·9	16·0	15·9	15·8	16·1	16·9	19·7	20·9	23·3	25·1	25·7	26·1	26·3	26·3	24·7	22·4	23·1	23·1	18·8	17·9	19·6	20·6	94·5
21	19·0	18·1	20·9	18·1	18·2	17·0	15·2	14·7	15·3	17·0	20·6	22·9	24·5	25·7	25·6	24·7	22·8	22·6	22·9	21·9	21·2	21·0	20·8	20·7	20·5	91·4
22	20·3	20·1	19·5	18·9	17·2	15·1	15·9	16·4	16·9	18·5	19·9	21·9	24·1	24·5	24·5	23·9	23·5	23·5	23·3	23·1	23·2	23·3	20·9	20·8	20·8	99·2
23 *d*	22·6	20·4	19·1	18·5	17·4	22·7	21·2	18·7	17·3	17·1	18·8	21·8	24·7	25·3	26·7	27·5	27·5	25·7	23·8	21·0	20·8	12·8	19·7	20·8	21·3	111·9
24	20·7	19·9	19·2	19·4	17·5	15·0	14·0	13·1	16·5	17·8	19·7	22·2	26·4	27·7	24·6	23·8	23·3	22·3	20·8	19·7	20·5	21·9	21·6	20·9	20·4	88·5
25	20·8	22·7	25·4	19·2	15·4	15·4	16·1	17·0	17·7	18·9	20·6	22·0	23·8	24·5	23·7	23·7	23·2	23·0	22·1	21·8	21·9	21·9	21·7	21·0	21·0	103·5
26	20·8	20·5	20·1	20·0	20·1	20·0	17·5	16·1	17·5	20·7	22·1	24·5	26·6	26·8	26·1	23·8	21·9	20·5	21·0	21·3	21·7	22·0	22·0	22·1	21·5	115·7
27	20·1	19·2	18·5	18·2	16·3	15·1	13·7	12·7	14·8	17·1	19·1	23·0	25·9	27·6	29·6	28·5	26·3	24·9	22·8	21·9	17·9	18·6	19·9	21·4	20·5	93·1
28 *d*	16·3	13·7	13·6	17·1	18·0	23·8	22·1	19·0	18·4	19·5	21·0	23·5	24·9	24·8	25·9	26·6	25·7	23·8	22·8	19·3	18·1	20·2	17·1	19·0	20·6	94·2
29	18·2	17·7	17·1	16·6	17·2	15·4	16·2	16·1	15·5	17·4	21·8	24·0	26·5	26·9	26·0	23·0	22·6	22·2	23·1	14·4	18·9	21·0	20·2	20·8	19·9	78·8
30	20·8	22·1	17·2	15·8	15·1	13·6	13·9	14·2	16·0	17·2	20·1	22·8	24·6	24·7	24·6	23·5	22·5	22·0	21·9	21·2	20·9	17·2	20·1	18·9	*19·6*	70·9
31 *q*	18·7	18·2	17·7	17·2	16·8	16·2	16·3	17·2	17·4	19·3	21·8	25·6	28·6	28·7	27·0	24·9	23·0	21·2	21·0	19·5	19·6	20·9	20·7	20·0	20·7	97·5
Mean	19·4	18·9	18·7	17·3	16·3	15·7	*15·6*	15·9	16·9	18·5	20·7	23·7	26·0	*26·7*	26·5	25·5	24·3	23·1	22·5	21·5	20·9	20·7	20·4	19·9	20·7	
Sum 400·0′+	202·5	184·9	180·0	135·1	105·6	87·7	83·5	94·5	123·6	173·1	241·9	333·7	407·1	427·6	422·3	392·0	352·9	317·5	297·8	267·0	247·0	241·8	233·5	217·7		Grand Total 15370·3

GEOMAGNETIC FORCE: VERTICAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, GMT

3 LERWICK (Z) — 47,000γ (0·47 CGS unit) + — JULY 1965

Day	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 9000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	295	339	375	393	403	404	403	403	400	395	393	390	393	408	408	415	413	416	411	403	399	398	366	357	*391*	380
2	377	393	399	399	399	402	406	407	404	404	401	400	404	407	412	419	419	419	416	416	411	407	403	398	405	722
3	394	393	386	381	394	397	401	407	403	396	395	395	396	396	393	397	404	405	404	411	416	411	404	396	399	575
4 q	396	396	397	399	404	411	411	410	408	403	398	392	389	389	391	393	398	400	405	408	407	407	405	400	401	617
5 q	398	398	401	403	404	407	407	405	398	395	391	385	387	393	393	394	402	403	404	404	406	405	404	403	400	590
6 d	399	398	397	388	380	368	339	348	366	384	392	394	419	461	453	449	474	447	453	449	434	424	417	407	410	840
7	402	395	389	397	407	409	407	407	408	411	414	412	409	412	412	419	421	419	417	417	428	421	410	404	410	847
8 d	401	396	379	313	354	379	389	394	398	402	407	408	400	392	392	396	394	414	419	439	426	421	395	359	394	467
9	343	353	361	324	359	392	403	404	404	405	406	407	408	405	401	412	425	425	416	411	407	404	400	402	395	477
10 d	407	397	375	333	312	344	375	385	388	392	405	408	414	409	408	411	416	418	415	408	407	407	407	409	394	450
11 q	411	413	413	413	411	410	412	415	411	408	404	406	409	410	411	411	412	416	411	409	407	408	408	408	410	847
12	408	409	410	410	411	411	408	407	403	393	394	393	393	397	403	404	398	396	398	403	411	409	405	406	403	680
13	407	407	408	411	411	408	405	404	398	394	391	384	388	392	391	399	407	411	412	413	413	407	405	403	403	669
14	403	399	392	394	398	398	392	389	388	389	388	385	385	388	396	406	411	411	412	409	405	404	395	390	397	527
15	394	395	397	400	403	406	403	400	393	387	386	394	404	407	416	430	439	434	430	418	406	402	394	385	405	723
16	376	390	395	401	402	403	403	403	403	400	393	394	394	396	399	405	411	416	416	409	408	407	406	403	401	633
17 q	402	403	406	407	408	407	410	409	407	406	403	402	398	398	404	410	411	412	411	407	406	405	403	403	406	738
18	403	403	406	407	408	408	407	403	405	401	396	396	397	396	398	393	393	398	405	421	421	412	405	400	403	682
19	401	403	405	407	409	408	412	402	388	395	394	400	412	428	439	455	473	462	443	430	418	415	408	402	*417*	1009
20	398	403	404	407	407	407	411	411	407	403	400	399	398	398	397	398	407	419	430	429	428	421	407	405	408	794
21	399	397	397	395	403	405	406	407	402	401	402	394	393	398	396	397	399	403	404	406	404	405	405	403	401	621
22	403	403	403	403	404	407	403	402	402	403	401	394	391	390	389	395	403	403	404	404	404	402	408	405	401	626
23 d	384	382	389	391	393	389	385	394	400	407	407	407	403	399	417	419	416	428	436	443	433	411	398	403	406	734
24	407	407	405	403	403	405	402	402	402	400	403	403	405	403	407	413	407	403	408	413	410	408	409	409	406	737
25	408	405	382	378	390	398	404	406	403	398	394	396	401	403	402	404	404	403	407	409	407	407	407	407	401	623
26	407	407	407	407	403	395	390	389	389	389	389	394	393	390	398	405	411	410	407	403	404	402	404	405	400	598
27	407	407	407	407	404	400	395	395	397	395	397	397	398	403	405	408	416	420	420	415	416	411	405	385	405	710
28 d	332	356	371	383	385	367	368	382	395	396	400	404	407	407	413	419	417	421	415	423	418	410	393	362	393	444
29	380	398	403	403	407	396	395	390	394	392	393	397	401	416	433	439	430	425	425	437	423	414	411	404	409	806
30	400	392	397	402	404	411	411	405	402	398	398	398	397	398	403	407	413	417	414	413	411	408	407	397	404	703
31 q	398	403	407	411	413	410	411	417	416	412	405	396	398	402	405	409	412	416	418	416	416	411	407	407	409	816
Mean	*392*	395	396	393	397	399	399	400	399	399	398	397	399	403	406	411	415	416	416	*416*	413	409	403	398	403	
Sum 12,000γ+	140	240	263	170	293	362	374	402	382	354	340	324	384	491	585	731	856	890	886	896	810	684	501	327		Grand Total 299,685

GEOMAGNETIC CHARACTER FIGURES (K, K_H, K_D, K_Z, AND C) AND TEMPERATURE IN MAGNETOGRAPH HOUSE

4 LERWICK — JULY 1965

Day	3-h range indices K	Sum of K indices	3-h range indices K_H	Sum of K_H indices	3-h range indices K_D	Sum of K_D indices	3-h range indices K_Z	Sum of K_Z indices	Geomagnetic character of day, C (0-2)	Temperature in magneto-graph house 200°+
1	3122 2232	17	3122 2232	17	3112 1132	14	4200 2013	12	1	88·2
2	1111 2101	8	0011 2101	6	1111 1101	7	2000 0000	2	1	88·0
3	2200 1122	10	1100 1112	7	2200 0022	8	1100 0011	4	1	87·6
4 q	1010 0101	4	0010 0100	2	1010 0001	3	0100 0000	1	0	87·7
5 q	1010 0000	2	0000 0000	0	1010 0000	2	0000 0000	0	0	87·9
6 d	1333 3312	19	1222 3311	15	1333 3212	18	0232 3222	16	1	87·6
7	2111 1222	12	2111 1212	11	2111 0022	9	2200 0111	7	1	87·3
8 d	3312 2434	22	3302 2434	21	3311 1223	16	3410 2324	19	2	87·7
9	4311 3312	18	3301 3311	15	4311 0102	12	3400 1220	12	1	87·9
10 d	3422 3210	17	2412 3210	15	3422 0100	12	3321 1000	10	1	87·5
11 q	0000 1000	1	0000 1000	1	0000 0000	0	0000 0000	0	0	87·9
12	0000 0231	6	0000 0231	6	0000 0000	0	0000 0120	3	1	87·4
13	1112 2220	11	0102 2220	9	1111 0110	6	0001 0000	1	1	88·0
14	1100 1212	8	0000 1211	5	1100 0102	5	1000 0001	2	1	88·0
15	1112 3223	15	1012 3222	13	1111 1023	10	0001 1101	4	1	88·1
16	2111 1110	8	1111 1110	7	2110 0000	4	1000 0000	1	1	88·2
17 q	0000 1010	2	0000 1010	2	0000 0000	0	0000 0000	0	0	88·3
18	0000 0321	6	0000 0320	5	0000 0121	4	0000 0121	4	1	88·2
19	1232 2222	16	1021 2221	11	1232 1222	15	0021 1220	8	1	88·1
20	1001 1222	9	0001 1221	7	1000 0112	5	0000 0201	3	1	88·5
21	1010 0110	4	1000 0110	3	1010 0000	2	0100 0000	1	0	88·3
22	0110 1102	6	0110 1101	5	0110 0002	4	0000 0001	1	0	88·6
23 d	1211 3323	16	1111 3322	14	1211 0123	11	2120 2221	12	1	89·0
24	1121 2121	11	0111 2121	9	1121 1120	9	0000 0100	1	1	89·0
25	2211 1210	10	1010 1210	6	2211 0000	6	2200 0000	4	1	88·9
26	0100 0101	3	0100 0100	2	0100 0001	2	0000 0000	0	0	88·5
27	1111 2222	12	1011 2222	11	0111 1122	9	0000 0103	4	1	88·0
28 d	3331 2222	18	3331 2221	17	2321 0022	12	3230 0113	13	1	87·9
29	1221 3230	14	1221 3230	14	1121 1230	11	3110 2221	12	1	88·0
30	2100 0002	5	0000 0001	1	2100 0002	5	1000 0101	3	1	88·0
31 q	1010 1110	5	1000 1100	3	0010 0010	2	1000 0000	1	0	87·6
								Mean	0·77	88·1

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

K_H For horizontal component. K_D For declination. K_Z For vertical component. (See Introduction).

GEOMAGNETIC FORCE: HORIZONTAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, GMT

1 LERWICK (H) — 14,000γ (0·14 CGS unit) + — AUGUST 1965

Day	Hour GMT 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 15,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	658	658	660	658	662	658	651	644	638	628	626	632	647	658	666	669	679	688	699	687	687	675	677	670	661	875
2	669	673	676	677	678	674	664	657	644	634	631	631	638	650	691	690	705	695	692	689	671	658	661	661	*667*	1009
3	665	660	657	664	658	653	647	638	634	638	642	644	642	642	653	673	692	667	668	680	680	672	668	670	659	807
4	671	667	656	656	660	661	657	653	648	642	638	634	638	645	661	687	668	669	683	679	678	681	669	665	661	866
5 q	664	664	664	665	665	663	659	656	654	651	642	650	650	654	668	670	672	673	676	679	678	675	672	665	664	929
6 q	664	664	660	659	659	658	657	654	646	641	636	639	643	657	657	665	668	671	672	672	676	672	672	669	660	831
7	670	669	669	672	670	665	661	655	653	654	653	643	644	654	664	657	672	673	677	678	677	676	678	672	665	956
8	673	666	663	660	667	665	662	656	649	649	643	642	643	650	666	668	668	681	682	683	687	669	666	665	663	923
9	664	663	664	668	671	663	659	654	648	644	644	642	655	664	668	661	687	693	680	675	676	670	676	661	665	950
10 q	659	659	660	664	661	657	653	646	638	634	626	630	648	659	668	676	672	672	673	675	673	669	668	673	659	813
11	680	675	660	657	657	661	657	651	647	644	639	641	647	656	664	672	673	675	677	677	677	680	675	657	662	899
12	657	667	664	667	658	660	646	637	628	623	624	635	646	655	664	666	665	676	670	673	675	668	670	667	657	761
13 q	662	664	665	665	664	659	654	651	646	637	629	637	646	649	660	667	670	673	676	679	680	676	675	673	661	857
14	672	673	665	661	659	663	665	661	653	642	638	640	657	653	664	672	671	673	679	675	677	679	664	662	663	918
15	661	659	659	660	658	655	650	644	639	635	635	639	643	651	661	662	664	672	686	679	673	675	673	678	659	811
16	674	663	661	663	661	660	657	656	649	645	641	641	646	656	666	671	672	671	676	680	690	684	671	671	664	925
17	674	669	665	656	661	658	656	651	649	644	641	628	632	659	668	662	666	683	671	667	668	667	664	661	659	820
18 d	656	659	657	659	660	658	649	643	634	627	628	638	641	654	667	693	697	720	706	705	655	649	659	663	662	877
19 d	656	659	653	653	657	599	612	638	627	624	623	630	637	652	630	660	674	702	693	678	663	677	661	664	651	622
20 d	666	654	658	653	660	664	661	647	629	623	616	628	637	659	674	679	680	676	677	667	668	667	636	587	653	666
21	645	661	654	634	631	667	659	643	632	611	612	623	634	647	654	669	671	659	665	567	665	663	663	662	*650*	591
22	661	662	661	661	660	659	656	652	641	636	631	636	637	651	656	665	663	674	676	669	668	667	656	639	656	737
23	641	649	651	654	656	656	656	652	642	637	636	640	649	653	662	671	687	679	693	676	684	663	646	653	658	786
24 d	635	653	663	666	664	659	645	622	616	622	627	633	645	653	656	654	658	660	668	670	676	672	661	641	651	619
25 d	631	641	642	652	671	662	658	653	647	642	639	643	647	656	670	660	668	673	678	687	671	666	667	676	658	800
26	667	645	658	664	667	664	652	649	638	634	636	647	655	661	673	674	667	671	669	671	672	671	665	665	660	835
27	665	663	661	664	664	663	663	654	648	638	631	637	653	665	678	673	671	674	671	671	678	667	664	666	662	882
28 q	675	663	661	661	661	658	653	646	639	633	634	638	646	653	657	660	663	668	675	669	667	667	665	667	657	779
29	665	663	664	662	660	661	658	654	648	634	630	635	643	656	665	668	674	678	675	681	674	672	674	671	661	865
30	672	678	675	660	659	660	660	650	645	643	641	641	645	648	655	661	668	671	686	677	671	664	667	670	661	867
31	680	668	660	664	653	658	661	646	615	607	620	642	656	665	663	673	667	665	671	674	673	660	662	663	657	766
Mean	663	662	661	661	661	659	655	649	641	635	*633*	637	645	654	663	669	673	677	*679*	677	675	670	666	662	659	
Sum 19,000γ+	1552	1531	1486	1479	1492	1421	1298	1113	864	696	632	759	990	1285	1569	1748	1872	1975	2040	1989	1908	1771	1645	1527		Grand Total 490,642

GEOMAGNETIC DECLINATION (WEST)
Mean values for periods of sixty minutes ending at exact hours, GMT

2 LERWICK (D) — 9° + — AUGUST 1965

Day	Hour GMT 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	20·2	19·4	18·9	18·9	16·7	14·4	14·5	15·4	16·2	18·2	21·0	24·0	27·1	27·8	26·1	24·8	23·0	22·0	22·2	22·1	22·1	22·6	22·7	19·4	20·8	99·7
2	19·2	18·7	18·1	17·4	16·4	15·5	17·4	18·0	19·8	23·6	26·3	28·2	31·0	33·9	34·5	31·5	24·8	21·1	22·2	21·3	14·5	18·9	21·0	22·0	*22·3*	135·3
3	18·3	16·4	15·4	14·6	12·3	13·1	12·5	12·4	14·4	16·5	20·4	24·1	26·5	27·9	26·1	26·1	26·7	25·0	23·9	21·8	18·3	20·3	20·8	20·3	19·8	74·1
4	17·4	17·4	16·2	15·6	14·2	14·0	16·0	17·4	18·2	19·2	20·4	21·9	24·9	26·5	27·7	28·4	23·9	23·5	22·8	21·9	20·1	15·8	18·2	19·6	20·1	81·2
5 q	19·8	19·1	18·3	18·7	18·9	17·3	17·1	17·0	18·3	19·7	21·8	23·8	25·9	27·2	26·9	25·7	24·6	23·9	22·1	21·8	21·1	20·2	17·4	19·9	21·1	106·5
6 q	19·4	19·1	17·4	17·4	17·5	16·7	17·4	17·7	19·0	19·8	21·3	23·0	25·8	26·9	25·5	23·9	22·1	20·7	20·6	22·0	22·3	22·0	21·9	21·4	20·9	100·8
7	20·2	20·2	19·3	18·3	16·8	15·5	16·2	17·2	17·1	19·7	22·6	26·0	27·8	28·7	28·2	25·7	23·7	22·1	21·8	21·9	22·2	22·1	25·0	21·2	21·6	119·5
8	17·9	17·9	20·3	19·0	17·6	16·3	16·1	16·4	17·6	20·1	21·1	24·4	27·7	27·9	26·3	25·0	23·0	21·0	20·7	20·3	18·4	20·1	21·2	20·4	20·7	96·7
9	20·3	19·9	19·6	19·5	18·2	15·5	15·6	15·5	16·4	18·2	21·1	25·4	28·8	29·6	28·7	26·3	23·9	19·4	20·2	19·3	14·5	18·4	15·1	19·6	20·4	89·0
10 q	20·0	19·2	18·9	19·1	17·2	17·3	15·4	15·0	16·2	18·6	22·8	25·6	26·1	26·7	24·9	24·0	22·5	21·5	21·3	21·6	21·3	22·1	21·1	20·9	20·8	99·3
11	20·2	17·7	16·8	10·9	12·6	13·4	14·7	16·7	18·5	20·5	21·9	23·7	25·2	25·2	24·3	23·3	21·6	21·2	21·9	20·5	20·2	21·1	18·7	20·7	19·6	71·5
12	21·9	18·4	17·9	17·1	19·0	18·5	17·9	17·4	17·4	20·1	23·0	24·9	26·9	27·3	26·5	25·3	23·4	22·4	22·2	21·6	18·5	20·4	20·3	19·5	21·2	107·8
13 q	19·7	19·3	18·8	19·1	18·3	17·4	17·5	17·3	18·3	20·1	22·8	25·4	28·3	28·8	27·0	25·5	24·6	23·8	23·6	23·3	22·3	21·5	21·2	20·3	21·8	124·2
14	19·5	20·0	20·3	21·6	21·5	17·3	16·8	15·6	15·8	19·6	22·1	25·6	29·0	27·5	26·8	24·3	22·1	19·5	18·2	19·3	20·3	16·7	18·1	19·7	20·7	97·2
15	19·6	19·2	18·6	18·5	17·2	15·5	15·0	16·5	20·9	24·2	27·2	29·8	31·3	29·7	26·9	23·5	21·3	20·7	20·7	18·5	19·5	20·9	20·7	19·1	21·5	115·0
16	16·8	17·6	19·6	19·1	18·1	16·9	16·8	16·6	18·5	21·1	23·1	26·1	28·7	29·2	28·1	26·3	24·8	23·4	22·8	22·0	21·8	21·6	21·8	21·3	21·8	122·1
17	19·6	17·5	17·6	18·5	15·9	10·9	11·4	13·8	18·5	19·5	22·3	27·3	29·2	29·9	28·6	26·0	24·1	23·9	20·2	20·8	21·4	20·5	16·9	16·2	20·4	90·5
18 d	16·1	17·4	17·8	18·0	18·0	17·6	17·3	17·5	18·0	19·2	21·5	24·8	28·3	29·9	29·3	30·5	31·0	32·9	32·8	25·6	-4·2	9·1	17·5	18·5	21·0	104·4
19 d	20·7	20·9	12·3	14·0	15·5	21·0	31·6	24·6	20·0	19·2	22·1	24·0	25·6	27·8	29·3	26·1	25·0	13·3	16·1	12·4	17·6	17·0	18·3	19·2	20·6	93·6
20 d	17·9	18·5	19·0	19·6	18·6	15·7	14·9	16·5	19·4	20·4	23·4	27·8	29·7	27·0	26·1	26·0	23·9	20·9	16·4	18·4	20·3	20·4	20·5	30·6	21·3	111·9
21	20·5	25·2	14·7	17·8	22·1	16·4	15·6	18·5	19·5	21·6	21·1	24·9	27·0	27·0	25·2	22·2	20·3	18·1	18·5	20·5	20·5	20·3	20·2	20·2	20·7	97·7
22	20·0	20·3	20·3	18·7	17·7	17·6	17·2	16·5	18·2	18·6	21·5	25·0	26·2	26·8	26·2	23·9	21·2	18·2	19·8	19·5	20·1	21·3	19·6	18·0	20·5	92·4
23	19·1	20·2	19·6	18·5	17·5	16·5	15·8	16·1	17·6	19·3	21·3	22·4	23·0	23·1	22·0	22·3	22·2	22·3	22·9	21·3	15·6	7·5	10·0	19·4	19·0	55·5
24 d	16·6	14·7	15·3	13·6	13·7	15·3	16·2	16·6	15·9	18·4	21·0	23·8	25·8	26·1	24·8	22·5	21·5	20·5	20·4	20·3	22·3	9·2	14·8	9·1	*18·3*	38·4
25 d	17·2	16·1	24·1	15·3	15·5	16·8	17·9	15·8	16·5	18·4	22·3	25·1	27·5	29·4	29·0	27·7	24·7	22·3	20·5	11·6	17·2	20·1	20·3	22·9	20·6	94·2
26	20·3	24·7	21·4	17·7	16·3	16·4	16·6	16·6	17·6	20·5	23·4	26·9	28·2	27·9	25·8	23·0	20·2	20·6	20·5	20·5	20·3	17·7	19·6	18·8	20·9	101·5
27	19·5	19·4	20·1	18·5	16·8	15·0	13·5	14·6	16·5	20·4	24·1	26·5	27·9	27·2	24·5	22·2	20·4	19·8	20·4	20·7	15·5	15·7	19·2	21·1	20·0	79·5
28 q	20·8	18·6	18·3	17·3	17·1	15·7	14·7	14·8	16·5	20·1	24·1	26·7	27·7	27·0	24·8	22·5	21·2	20·3	20·2	20·4	20·4	20·3	20·0	20·0	20·4	89·5
29	19·7	19·5	19·8	17·3	15·6	13·7	13·7	15·7	16·5	18·6	21·3	24·7	26·5	26·8	25·7	23·9	22·2	21·3	20·8	22·3	21·3	21·0	20·2	19·1	20·3	87·2
30	19·5	21·4	15·3	14·7	16·5	16·3	16·6	19·6	20·5	19·8	21·3	24·1	26·0	25·8	24·2	22·5	21·4	20·5	20·9	20·3	16·8	21·0	19·8	17·5	20·1	82·3
31	18·1	18·3	14·8	12·1	9·9	15·8	14·9	16·4	20·9	25·0	26·9	29·4	30·0	30·0	26·1	23·6	22·7	21·4	21·1	21·0	20·2	18·5	20·6	21·2	20·8	98·9
Mean	19·2	19·1	18·2	17·3	16·7	*16·0*	16·3	16·6	17·9	19·9	22·5	25·3	27·4	*27·8*	26·7	25·0	23·2	21·5	21·3	20·5	18·8	18·9	19·4	19·9	20·6	
Sum 400·0'+	196·0	192·2	164·8	136·4	119·2	95·3	104·8	115·7	154·7	218·2	296·5	385·3	449·6	462·5	426·1	374·5	318·0	267·5	258·7	234·6	182·7	184·3	202·7	217·1		Grand Total 15357·4

3 LERWICK (Z) 47,000γ (0·47 CGS unit) + AUGUST 1965

	Hour GMT 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 9000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	406	407	409	411	414	416	416	416	412	408	406	401	390	391	398	406	408	407	407	414	412	412	398	398	407	763
2	403	403	403	405	407	406	403	402	403	404	406	399	393	402	414	448	475	463	441	435	439	429	415	407	*417*	1005
3	381	387	391	386	382	394	403	403	402	398	397	398	405	405	402	402	409	428	421	415	416	413	411	408	402	657
4	397	386	389	391	397	401	404	409	412	410	403	395	393	399	401	406	429	427	419	421	422	411	403	403	405	728
5 q	406	406	406	405	405	407	410	411	407	403	400	396	398	402	403	407	412	418	417	416	412	411	407	407	407	772
6 q	406	403	401	403	403	403	404	392	393	401	398	393	389	388	394	401	404	406	407	405	403	406	402	400	400	605
7	400	401	399	399	401	398	399	399	394	386	385	386	397	400	407	412	408	410	408	405	405	407	392	382	399	580
8	393	397	399	399	400	400	401	400	399	393	394	394	398	404	402	410	411	408	411	410	396	401	405	405	401	630
9	406	405	408	404	399	402	403	404	403	402	398	400	397	403	411	417	415	433	438	426	421	412	385	399	408	791
10 q	406	409	410	407	406	409	407	403	403	403	403	405	404	410	414	414	416	416	410	407	407	406	406	403	408	784
11	389	360	361	359	384	394	398	400	399	401	404	404	403	404	399	399	405	410	409	410	410	405	400	395	396	502
12	385	394	404	402	407	405	411	411	411	402	397	397	402	409	415	420	421	415	412	407	410	410	402	396	406	745
13 q	403	406	407	407	410	411	409	407	405	403	397	390	391	400	406	407	409	410	407	404	403	404	403	402	404	701
14	402	399	397	381	368	373	383	390	393	394	399	398	402	414	414	420	425	421	419	418	410	398	398	399	401	615
15	402	404	405	409	410	411	411	407	403	397	397	397	399	399	400	407	410	408	413	428	419	409	404	397	406	746
16	397	399	402	403	409	411	409	407	406	400	397	393	393	393	393	399	404	406	407	403	402	405	408	404	402	650
17	394	395	401	401	384	389	393	396	389	384	389	404	407	398	399	410	409	415	441	427	415	410	408	403	403	661
18 d	400	398	402	404	407	409	410	410	410	405	399	391	390	392	393	392	403	402	433	461	469	438	414	400	410	832
19 d	385	328	341	392	399	385	319	343	371	389	398	400	399	406	425	420	424	447	442	441	425	371	380	375	392	405
20 d	379	390	398	406	405	402	411	412	413	411	408	402	408	417	420	425	420	435	447	438	423	402	372	268	405	712
21	310	295	348	353	331	353	380	396	410	415	415	411	412	418	411	409	418	422	419	414	411	410	410	409	391	380
22	409	409	407	408	409	406	406	407	406	407	407	402	405	409	416	418	427	425	423	422	419	417	409	376	410	849
23	374	395	406	410	412	411	408	410	410	411	411	410	406	401	403	404	405	414	411	422	411	392	391	368	404	696
24 d	269	319	378	384	393	400	401	408	407	399	399	398	397	399	401	405	406	404	403	403	402	401	378	316	*386*	270
25 d	307	304	290	352	374	385	391	397	401	406	405	400	400	405	414	424	426	429	422	422	414	410	407	382	390	367
26	357	359	370	397	404	405	407	406	407	401	394	393	395	404	410	417	421	415	410	406	404	406	405	404	400	597
27	406	408	409	411	412	411	409	408	407	404	399	397	399	403	411	417	417	417	411	412	408	406	403	397	408	782
28 q	381	392	404	408	412	414	412	410	406	403	398	395	395	401	406	411	414	412	411	410	408	406	405	405	405	719
29	406	407	406	402	405	406	406	406	406	399	393	386	383	391	398	405	410	415	418	421	422	414	410	407	405	722
30	402	387	347	379	399	406	407	404	401	401	392	388	390	394	400	405	410	411	408	417	417	412	409	401	399	587
31	375	375	377	386	392	394	397	404	412	411	398	395	404	415	409	407	411	409	410	411	414	423	410	397	401	636
Mean	385	*385*	389	396	398	401	401	403	403	402	399	397	398	403	406	411	415	*418*	418	418	415	408	402	391	403	
Sum 11,000γ+	936	927	1075	1264	1340	1417	1428	1478	1501	1451	1386	1318	1344	1476	1589	1744	1882	1958	1955	1951	1849	1657	1450	1113		Grand Total 299,489

GEOMAGNETIC CHARACTER FIGURES (K, K_H, K_D, K_Z, AND C) AND TEMPERATURE IN MAGNETOGRAPH HOUSE

4 LERWICK AUGUST 1965

	3-h range indices K	Sum of K indices	3-h range indices K_H	Sum of K_H indices	3-h range indices K_D	Sum of K_D indices	3-h range indices K_Z	Sum of K_Z indices	Geomagnetic character of day, C (0-2)	Temperature in magneto-graph house 200°A+
1	0100 0222	8	0000 0222	6	0110 0002	4	0000 0012	3	1	88·1
2	0211 3323	15	0001 3321	11	0211 1323	13	0001 2313	10	1	88·0
3	2110 2321	12	1110 2320	10	2100 1121	8	2100 0210	6	1	88·1
4	2111 3313	15	2101 3312	13	1110 0213	9	1100 0201	5	1	88·0
5 q	0001 2212	8	0001 2211	7	0001 0012	4	0000 0000	0	0	87·9
6 q	1010 1100	4	0000 1100	2	1010 0000	2	0000 0000	0	0	88·0
7	0012 2222	11	0012 2221	10	0010 0002	3	0000 1102	4	1	88·0
8	2101 2221	11	1101 2220	9	2100 0121	7	1000 0110	3	1	88·0
9	0102 3332	14	0002 3322	12	0100 1232	9	0000 1223	8	1	88·1
10 q	0111 1101	6	0001 1101	4	0110 0000	2	0000 0001	1	0	88·4
11	2200 0112	8	2100 0112	7	2200 0012	7	3300 0102	9	1	88·4
12	2110 1212	10	2110 1212	10	2110 0011	6	2000 0011	4	0	88·4
13 q	0001 0010	2	0001 0010	2	0000 0000	0	0000 0000	0	0	88·7
14	1212 3212	14	1112 3212	13	1211 1112	10	1210 1101	7	1	88·6
15	0000 1122	6	0000 1122	6	0000 0021	3	0000 0022	4	1	88·9
16	2110 1122	10	2010 1122	9	2110 0011	6	1100 0010	3	0	88·6
17	2322 3221	17	2102 3221	13	2321 1021	12	1202 2030	10	1	88·5
18 d	1000 2354	15	1000 2342	12	1000 1254	13	0000 0143	8	2	88·5
19 d	3451 3433	26	2451 3333	24	3431 2433	23	4241 2323	21	2	88·3
20 d	2222 3324	20	1222 3324	19	2112 2224	16	2001 1225	13	2	88·4
21	4312 2210	15	3312 2200	13	4312 0110	12	4230 1110	12	1	88·3
22	0011 2223	11	0001 2222	9	0010 0213	7	0000 0103	4	1	88·4
23	1000 0334	11	1000 0322	8	1000 0134	9	3000 0224	11	1	88·8
24 d	3232 1014	16	3132 1014	15	3221 0003	11	4200 0004	10	1	88·5
25 d	4322 2332	21	4322 2322	20	3221 1132	15	3310 0013	11	1	88·7
26	3111 2202	12	3111 2201	11	3110 1102	9	2100 0000	3	1	88·3
27	1001 2133	11	0001 2122	8	1000 1033	8	0000 0002	2	0	88·3
28 q	1010 0010	3	1000 0010	2	1010 0000	2	2000 0000	2	0	88·0
29	0210 0121	7	0000 0121	4	0210 0011	5	0000 0010	1	0	88·3
30	3210 0121	10	2000 0121	6	3210 0021	9	3300 0011	8	1	88·4
31	2232 2211	15	2232 2211	15	1211 1001	7	2121 1012	10	1	88·3
								Mean	0·81	88·3

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

K_H For horizontal component. K_D For declination. K_Z For vertical component. (See Introduction).

GEOMAGNETIC FORCE: HORIZONTAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, GMT

1 LERWICK (H) — 14,000γ (0·14 CGS unit) + — SEPTEMBER 1965

	Hour GMT 0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	Sum 14,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	667	666	667	663	660	650	638	629	637	635	634	639	651	664	675	675	675	682	672	664	667	670	664	667	659	1811
2	663	666	666	660	656	654	653	644	633	628	627	635	639	648	651	665	664	665	668	669	669	673	667	663	655	1726
3	661	662	661	660	660	658	656	649	641	630	622	623	632	642	649	655	665	672	675	676	672	673	678	671	656	1743
4	677	656	654	664	660	664	671	668	655	646	638	641	611	624	643	660	673	679	672	673	657	659	665	663	657	1773
5	664	653	658	660	653	649	651	645	643	642	645	639	648	663	668	670	669	675	679	668	666	667	664	666	659	1805
6	658	657	656	658	657	657	654	652	646	641	642	646	653	657	657	672	667	663	665	668	670	668	667	663	658	1794
7	664	664	664	664	662	659	657	654	648	642	638	646	651	656	672	664	672	660	668	671	672	676	675	664	661	1863
8 q	664	663	657	657	661	661	660	656	646	638	634	635	642	654	658	660	664	671	666	664	665	666	665	665	657	1772
9 q	664	665	661	661	661	661	657	652	645	645	646	644	645	649	657	661	664	671	671	671	670	668	663	661	659	1813
10 q	664	665	665	665	663	662	661	655	645	640	639	639	647	657	660	661	658	666	672	672	669	668	670	668	660	1831
11	670	669	666	665	664	663	661	657	647	641	638	640	650	658	664	668	664	668	679	679	683	680	675	670	663	1919
12	676	672	654	666	673	666	661	653	638	628	628	634	646	656	664	670	673	675	660	678	679	675	675	672	661	1872
13	653	660	660	661	666	664	661	657	643	635	631	637	649	655	666	665	665	667	670	671	672	671	670	672	659	1821
14 q	669	664	664	664	664	663	663	658	649	638	631	632	638	649	654	661	669	672	675	667	657	660	664	668	658	1793
15	670	665	664	664	672	673	672	670	660	646	635	630	635	642	646	679	695	735	706	661	674	632	617	546	658	1789
16 d	513	528	607	635	655	661	662	642	586	617	637	650	613	636	657	641	650	672	656	658	658	657	633	635	632	1159
17 d	652	642	649	655	658	646	652	647	635	625	629	633	623	627	650	642	657	661	671	668	670	649	651	650	648	1542
18	645	649	654	651	648	656	660	656	649	638	634	635	638	654	651	650	658	679	664	652	643	610	619	644	647	1537
19 d	657	656	663	649	657	664	655	624	639	649	646	646	639	631	642	658	661	665	679	657	659	657	657	657	653	1667
20	658	658	657	657	656	655	652	643	640	635	630	635	642	649	652	655	658	661	665	664	657	660	655	655	652	1649
21	657	642	660	661	663	663	663	655	646	638	638	638	643	649	653	656	656	661	664	667	675	672	669	670	657	1759
22	661	660	661	664	668	673	664	660	659	657	652	649	651	654	661	664	664	672	679	677	676	675	677	677	665	1955
23	668	665	670	668	667	668	671	666	660	659	654	653	661	668	654	676	665	659	664	669	668	669	668	671	*665*	1961
24	674	666	664	665	665	652	657	656	640	640	641	641	633	652	657	660	664	667	672	665	661	678	670	665	659	1805
25	656	652	642	663	663	672	656	649	643	638	634	638	647	661	657	646	668	659	661	663	663	673	663	664	655	1731
26	664	663	656	660	671	671	666	651	639	640	634	631	642	649	664	661	660	663	662	666	666	673	668	646	657	1766
27 d	642	647	645	661	662	660	658	655	648	640	636	637	646	645	653	663	672	659	659	642	557	423	326	430	*615*	766
28 d	413	503	589	645	671	664	653	660	638	617	617	623	638	652	660	664	664	665	661	675	663	664	658	660	634	1217
29	657	656	655	656	655	654	653	645	639	653	645	634	634	656	659	663	672	672	674	682	672	675	672	676	659	1809
30 q	667	668	667	663	664	668	668	662	654	651	651	650	649	635	638	647	653	658	660	661	661	660	661	660	657	1776
Mean	649	650	655	659	662	661	659	652	643	639	*637*	638	641	650	656	661	665	*670*	670	667	663	657	651	651	654	
Sum 19,000γ+	468	502	656	785	855	831	766	570	291	172	106	153	236	492	692	832	959	1094	1089	1018	891	701	526	539		Grand Total 471,224

GEOMAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, GMT

2 LERWICK (D) — 9° +′ — SEPTEMBER 1965

	Hour GMT 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	20·8	19·9	18·6	17·3	16·3	15·4	16·3	17·0	17·7	20·2	23·3	25·6	26·0	24·3	22·3	20·1	19·4	20·0	20·6	20·0	20·3	21·4	18·7	19·4	20·0	80·9
2	17·5	20·0	17·2	15·8	16·6	16·5	15·5	15·6	17·2	19·2	21·7	25·1	27·9	29·9	27·0	23·3	21·4	20·6	20·3	20·3	19·4	17·5	17·6	18·2	20·1	81·3
3	20·2	19·3	18·6	17·8	17·8	17·5	16·5	16·7	17·5	19·2	21·4	24·3	26·6	26·9	25·1	22·9	21·5	21·4	21·2	20·9	21·1	20·5	20·8	19·1	20·6	94·8
4	13·6	10·3	12·5	12·0	12·6	14·5	14·6	15·6	16·5	20·3	23·2	25·8	30·5	31·8	30·1	27·4	25·4	24·1	22·3	13·7	19·4	20·3	20·3	21·9	19·9	78·7
5	18·0	20·4	20·5	18·5	19·0	17·7	17·2	16·7	17·3	19·4	22·0	24·0	25·8	26·1	24·5	23·0	22·6	22·7	21·6	17·3	20·5	21·5	20·8	19·6	20·7	96·7
6	22·3	19·2	17·3	17·5	16·7	15·7	15·7	16·5	18·5	20·5	21·4	23·0	25·6	26·2	25·2	23·3	16·6	21·1	21·5	20·6	16·3	18·2	18·3	19·4	19·9	76·6
7	19·4	19·1	18·5	18·2	18·0	17·3	17·4	17·6	18·5	20·2	22·0	23·4	24·3	24·2	24·2	21·9	21·4	22·3	22·1	21·3	20·8	20·3	14·4	13·6	20·0	80·4
8 q	19·3	18·3	18·4	18·4	16·8	16·6	16·6	16·8	17·9	20·5	22·3	24·5	25·9	24·9	22·4	21·0	20·3	20·1	21·0	20·6	20·5	20·3	20·1	19·6	20·1	83·1
9 q	19·5	19·1	19·5	17·9	17·7	18·2	18·0	17·5	17·9	19·3	21·4	24·1	25·6	24·1	22·1	21·0	19·8	19·6	20·3	20·6	20·6	19·2	18·5	18·5	20·0	80·0
10 q	19·2	19·0	19·0	18·6	18·3	18·3	17·3	17·2	17·7	19·2	21·0	23·8	25·8	25·0	23·5	22·1	21·1	20·1	20·2	20·1	19·5	19·0	19·4	19·3	20·2	83·7
11	19·2	18·7	18·5	18·1	17·8	17·0	16·4	16·7	18·5	20·2	22·2	25·2	26·9	26·7	25·6	24·3	23·3	22·2	22·3	22·0	21·8	21·3	20·3	19·5	*21·0*	104·7
12	14·8	10·1	11·6	16·8	13·9	15·6	15·8	15·5	15·7	18·3	21·9	25·4	27·7	26·3	23·9	22·4	20·6	20·3	20·6	20·4	21·0	20·3	19·8	20·2	19·1	58·9
13	18·5	10·9	15·4	17·7	17·5	17·4	18·2	18·9	20·2	21·0	22·2	23·7	25·8	25·0	23·3	21·5	21·1	20·9	20·7	20·3	20·0	19·8	19·6	19·1	19·9	78·7
14 q	18·1	18·6	18·9	18·6	18·6	18·6	18·4	17·4	16·7	16·7	18·5	21·9	24·6	25·7	24·7	22·5	21·0	19·7	19·6	19·5	18·5	18·7	19·4	16·8	19·7	71·7
15	18·4	18·2	18·0	17·1	16·0	16·4	15·7	17·1	20·3	19·9	21·3	21·4	24·2	26·2	24·8	27·6	29·0	27·3	18·6	20·3	17·1	7·0	2·9	-3·8	18·4	41·0
16 d	-17·3	-5·3	9·7	19·8	18·0	16·8	13·2	15·6	21·5	25·4	22·5	25·8	28·5	27·2	26·5	26·1	22·8	21·0	8·7	18·1	17·5	14·7	8·0	18·7	16·8	3·5
17 d	20·6	24·0	18·5	18·3	17·1	18·0	22·9	22·0	21·0	21·7	20·8	23·6	24·9	25·4	26·1	25·5	20·7	22·8	21·0	18·9	12·3	13·7	13·7	9·6	20·1	83·1
18	10·2	18·2	16·2	16·1	20·4	20·3	18·6	18·0	19·1	20·4	21·2	22·1	23·5	26·0	26·7	26·0	21·5	22·7	18·5	15·3	15·8	26·8	7·9	13·5	19·4	65·0
19 d	14·5	14·8	17·2	15·8	18·2	17·8	20·3	22·8	22·0	21·0	21·2	23·9	25·6	25·0	24·0	21·6	20·2	16·5	10·8	19·8	18·5	19·6	18·7	19·3	19·5	69·1
20	20·3	18·8	18·5	18·5	18·3	17·7	17·3	17·4	17·8	19·3	21·2	23·1	24·2	24·1	23·0	20·9	20·5	19·6	19·5	18·9	18·5	19·0	20·5	15·5	19·7	72·4
21	18·2	18·5	15·9	15·3	16·5	16·5	16·1	16·0	16·5	17·6	19·5	22·1	23·3	22·8	22·0	20·5	19·7	19·2	18·6	16·6	17·4	18·5	19·4	18·6	18·6	45·3
22	18·4	16·7	15·7	14·7	15·5	16·3	16·3	18·4	18·0	19·2	20·3	21·8	22·7	23·2	23·2	22·7	22·5	22·7	22·6	22·4	22·1	20·9	20·3	17·2	19·7	73·8
23	18·1	17·8	17·3	17·4	17·3	17·6	17·8	18·5	18·9	19·1	21·0	23·4	26·5	28·7	28·1	29·3	21·5	24·3	22·5	18·8	20·2	20·4	19·4	18·5	20·9	102·4
24	17·2	18·4	18·4	17·6	15·5	17·4	18·5	18·7	18·5	18·6	21·3	24·4	24·3	24·1	22·8	21·5	21·1	20·4	19·9	20·2	19·3	18·2	15·6	15·8	19·5	67·7
25	16·5	19·0	16·4	6·6	10·9	15·6	14·0	15·4	16·5	19·2	22·1	24·5	27·0	28·0	27·2	25·7	20·3	16·5	21·4	20·3	19·4	15·9	18·2	18·5	19·0	55·1
26	18·7	17·3	14·8	20·1	15·6	17·5	21·2	21·4	22·1	21·6	23·3	25·1	28·1	26·1	26·1	25·7	23·3	22·1	20·3	18·2	19·6	19·6	17·8	18·0	21·0	103·6
27 d	15·1	8·9	13·8	16·7	17·5	17·4	18·0	17·5	18·3	19·4	22·0	24·4	25·9	25·4	23·9	22·4	21·1	19·2	21·2	16·0	5·4	2·6	9·2	0·9	*16·7*	2·2
28 d	25·1	-3·0	6·5	5·0	11·6	17·2	18·4	21·6	21·6	20·4	23·0	27·5	28·0	26·6	26·6	25·8	22·9	22·3	22·5	17·4	11·4	12·6	18·6	19·1	18·7	48·7
29	18·5	18·5	18·1	18·1	17·6	17·7	17·5	17·7	18·5	20·4	22·3	23·2	24·6	24·8	24·6	21·6	17·5	21·1	21·5	18·1	19·5	18·0	19·2	19·3	19·9	77·9
30 q	18·0	18·5	17·4	19·0	19·0	17·8	17·2	16·4	17·0	17·8	20·3	21·9	23·6	24·2	24·4	23·2	22·0	21·1	20·7	20·6	20·6	20·4	20·1	20·0	20·1	81·2
Mean	17·0	*16·1*	16·6	16·6	16·7	17·1	17·2	17·7	18·5	19·8	21·6	23·9	25·8	*25·8*	24·8	23·4	21·4	21·1	20·1	19·3	18·5	18·2	17·3	16·8	19·6	
Sum 400·0′+	110·9	82·2	96·9	99·3	102·6	114·3	116·9	130·2	155·4	195·2	247·8	318·0	373·9	374·9	343·9	302·8	242·1	233·9	202·6	177·5	154·3	146·2	117·5	102·9		Grand Total 14142·2

3 LERWICK (Z) 47,000γ (0·47 CGS unit) + SEPTEMBER 1965

Day	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 8000γ+
Hour GMT	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	394	393	400	407	411	416	412	407	397	393	393	393	394	400	404	409	411	411	417	423	416	411	412	407	405	1731
2	401	390	385	400	407	411	411	411	409	406	400	398	404	409	411	407	411	412	411	413	417	414	404	405	406	1747
3	406	408	409	409	411	411	411	412	410	410	411	406	400	402	403	403	406	406	406	409	409	409	407	398	407	1772
4	376	374	380	394	401	400	397	400	402	400	401	399	411	416	414	421	418	423	451	443	423	418	409	393	407	1764
5	380	397	398	401	398	400	401	408	403	399	399	403	406	409	411	415	410	409	417	428	426	418	408	408	406	1752
6	404	396	406	407	409	408	409	406	408	407	405	403	405	409	413	423	444	437	426	420	414	409	407	408	412	1883
7	411	411	410	411	409	408	408	405	405	405	403	400	399	399	408	422	428	427	416	410	409	407	388	390	408	1789
8 *q*	395	399	406	406	404	405	404	405	400	400	400	402	406	407	408	409	410	412	412	412	410	410	409	411	406	1742
9 *q*	411	411	411	409	410	411	411	411	405	397	399	403	404	407	408	408	409	408	408	408	406	408	410	409	408	1782
10 *q*	410	411	411	412	412	410	410	410	408	405	403	400	397	401	404	410	411	411	411	409	408	407	406	406	408	1783
11	406	407	409	411	411	411	412	411	407	401	401	400	401	401	405	409	414	408	405	407	403	405	410	405	407	1760
12	388	382	388	372	383	397	405	407	406	403	397	394	394	394	399	405	409	419	424	412	407	407	406	398	400	1596
13	330	355	384	398	402	405	406	406	404	403	400	393	393	399	402	407	410	410	409	408	407	406	405	402	398	1544
14 *q*	401	404	408	410	411	412	412	410	409	408	407	405	399	403	411	414	416	418	417	421	419	411	397	396	409	1819
15	398	399	401	405	402	401	400	398	399	400	400	401	402	407	414	418	433	499	557	488	475	456	387	301	*418*	2041
16 *d*	216	227	296	346	395	416	414	411	418	400	408	414	438	429	424	448	440	433	477	439	426	411	373	368	394	1467
17 *d*	377	389	397	409	411	406	401	399	416	427	424	419	423	426	428	457	462	440	431	433	424	401	397	360	415	1957
18	357	388	397	399	395	387	401	411	413	414	411	410	410	419	440	451	469	483	495	467	408	300	319	365	409	1809
19 *d*	383	400	404	404	408	409	408	415	403	407	409	411	424	428	419	430	446	456	435	431	426	404	405	411	416	1976
20	412	411	413	414	414	414	416	417	417	417	414	411	405	405	411	417	420	419	417	421	423	419	394	385	413	1906
21	384	379	383	403	406	407	408	410	410	409	407	410	408	407	411	414	412	411	412	412	406	400	398	399	404	1706
22	403	407	409	406	402	397	398	398	400	401	405	406	406	408	411	410	408	405	403	408	411	411	412	411	406	1736
23	415	415	411	411	410	408	405	403	401	400	403	405	401	406	411	417	451	448	440	434	425	416	414	412	415	1962
24	402	411	412	406	403	405	400	400	401	402	405	407	409	411	415	415	414	412	412	420	422	397	404	405	408	1790
25	412	388	323	338	357	350	366	383	393	397	397	397	401	414	431	436	440	440	419	415	414	406	411	412	397	1540
26	410	409	410	392	371	381	381	389	395	389	394	401	407	432	440	437	429	423	420	417	411	406	408	366	405	1718
27 *d*	321	348	385	403	410	412	412	410	410	410	405	401	400	405	411	417	423	443	470	462	322	226	156	185	377	1047
28 *d*	73	187	240	305	331	348	377	383	392	412	420	414	421	430	419	421	422	440	432	435	429	422	418	413	*374*	984
29	414	415	415	417	417	417	417	417	417	415	413	412	412	399	405	420	426	412	404	399	401	397	392	365	409	1818
30 *q*	381	388	392	392	389	392	396	397	396	394	391	391	390	389	412	413	415	416	416	416	416	416	415	414	401	1627
Mean	*376*	383	390	397	400	402	404	405	405	404	404	404	406	409	413	419	424	426	*429*	424	414	401	393	387	405	
Sum 11,000γ+	271	499	693	897	1000	1055	1109	1150	1154	1131	1125	1109	1170	1271	1403	1583	1717	1791	1870	1720	1413	1028	781	608		Grand Total 291,548

GEOMAGNETIC CHARACTER FIGURES (K, K_H, K_D, K_Z, AND C) AND TEMPERATURE IN MAGNETOGRAPH HOUSE

4 LERWICK SEPTEMBER 1965

Day	3-h range indices K	Sum of K indices	3-h range indices K_H	Sum of K_H indices	3-h range indices K_D	Sum of K_D indices	3-h range indices K_Z	Sum of K_Z	Geomagnetic character of day, C (0-2)	Temperature in magnetograph house 200°A+
1	1110 0111	6	1110 0111	6	0110 0011	4	1110 0010	4	1	87·9
2	2111 1112	10	1001 1112	7	2110 1011	7	2100 0001	4	1	88·1
3	0000 0102	3	0000 0101	2	0000 0002	2	0000 0002	2	0	88·0
4	2222 3332	19	2122 3322	17	2211 1131	12	1101 2222	11	1	88·2
5	2112 2222	14	2112 2221	13	2110 0022	8	2010 0011	5	1	88·5
6	2111 2332	15	0001 2221	8	2111 1332	14	1000 0210	4	1	88·3
7	0101 2212	9	0001 2212	8	0100 0102	4	0000 0102	3	1	88·4
8 *q*	1100 1110	5	1100 1110	5	1100 0000	2	1000 0000	1	0	87·9
9 *q*	0000 0101	2	0000 0101	2	0000 0001	1	0000 0000	0	0	88·0
10 *q*	0001 0100	2	0001 0100	2	0000 0000	0	0000 0000	0	0	88·4
11	0000 0201	3	0000 0201	3	0000 0001	1	0000 0001	1	0	88·3
12	3300 1222	13	3300 1222	13	2200 0002	6	2200 0112	8	1	88·5
13	3100 1001	6	3100 1000	5	3000 0001	4	3000 0000	3	1	88·1
14 *q*	0000 0012	3	0000 0011	2	0000 0012	3	0000 0001	1	0	88·3
15	1111 2555	21	1100 2555	19	1011 0344	14	1000 0545	15	2	88·1
16 *d*	5333 4343	28	5333 4333	27	5132 2243	22	5421 2233	22	2	88·1
17 *d*	3222 3333	21	1211 3332	16	3122 1233	17	3120 1333	16	1	88·3
18	3211 2345	21	1101 2334	15	3211 1345	20	3110 2354	19	1	88·4
19 *d*	1232 2441	19	1232 2231	16	1121 1441	15	2110 1322	12	1	87·9
20	1010 1112	7	0010 1011	4	1000 0112	5	0000 0002	2	1	88·2
21	2110 0122	9	2000 0122	7	2110 0022	8	2000 0021	5	1	88·4
22	1110 0011	5	1000 0011	3	1110 0001	4	1000 0010	2	0	88·0
23	1012 3321	13	1002 3311	11	1011 1320	9	0000 1321	7	1	88·1
24	2212 2012	12	2211 2012	11	1212 1012	10	1000 0012	4	1	88·1
25	2320 2312	15	2220 2202	12	2310 1312	13	4230 2211	15	1	88·1
26	2221 2113	14	1221 2103	12	2211 2013	12	0210 2203	10	1	88·1
27 *d*	3001 1256	18	3001 1256	18	3001 1245	16	4100 0355	18	2	88·7
28 *d*	6321 2243	23	6321 2231	20	6321 1143	21	6431 1220	19	2	88·8
29	0011 1222	9	0011 1112	7	0010 0222	7	0000 1212	6	1	88·8
30 *q*	0110 0000	2	0000 0000	0	0110 0000	2	1000 0000	1	0	88·7
								Mean	0·87	88·3

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

K_H For horizontal component. K_D For declination. K_Z For vertical component. (See Introduction).

GEOMAGNETIC FORCE: HORIZONTAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, GMT

1 LERWICK (H) — 14,000γ (0·14 CGS unit) + — OCTOBER 1965

	Hour GMT 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 15,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	661	660	660	661	662	662	662	658	651	641	635	634	637	642	648	654	659	661	668	668	671	668	665	668	657	756
2 d	668	665	658	658	661	664	672	664	661	647	640	640	633	652	654	655	653	658	668	669	652	639	652	659	656	742
3	662	662	660	660	664	663	662	660	634	626	626	623	625	633	638	643	650	654	652	656	656	653	652	647	*648*	561
4 q	647	648	648	648	649	650	646	642	636	638	656	656	653	645	650	656	661	663	665	665	665	665	664	664	653	680
5	664	665	668	675	672	671	667	668	665	658	649	645	653	652	639	653	665	668	671	672	672	666	665	668	663	911
6 q	664	662	662	662	661	662	663	661	659	653	644	639	638	638	646	653	660	665	668	668	665	666	665	664	658	788
7	665	664	664	664	665	665	665	665	660	663	656	653	654	661	669	676	669	669	671	671	672	673	668	666	665	968
8 d	668	663	676	681	683	683	681	674	661	652	648	648	654	657	668	667	671	675	676	665	652	649	668	662	666	982
9	663	660	658	664	660	661	662	657	651	645	640	638	639	648	653	661	667	668	668	668	668	668	669	668	659	804
10	668	667	665	665	665	665	668	665	656	644	635	638	645	651	659	665	667	670	671	673	674	668	671	668	662	883
11	669	667	667	665	667	668	667	665	653	644	637	639	647	655	663	666	665	669	668	667	668	671	671	672	662	890
12	668	664	660	660	664	672	668	664	654	644	639	641	646	653	660	663	662	664	667	663	667	670	670	671	661	854
13	670	669	667	668	673	665	664	668	663	647	638	635	650	653	660	661	667	668	652	656	652	661	668	668	660	843
14	668	664	660	656	665	667	664	664	658	650	638	636	638	642	653	661	665	668	666	668	668	668	668	668	659	823
15 q	665	662	661	664	665	666	665	665	659	651	645	641	643	649	656	661	664	668	670	667	668	668	668	668	661	859
16 q	668	667	668	668	668	669	668	667	659	651	641	642	645	651	659	667	670	673	668	670	671	670	670	669	663	919
17	668	668	668	669	670	669	668	664	657	646	642	646	652	660	668	671	672	671	673	674	676	675	674	676	666	977
18	678	678	671	676	678	682	674	671	668	657	649	645	647	658	662	663	666	670	670	664	669	672	671	669	667	1008
19	668	668	668	671	671	672	672	668	665	658	649	645	647	653	663	661	660	667	671	670	671	671	671	671	665	951
20	670	668	669	669	670	670	671	672	667	660	648	646	649	656	662	667	669	671	672	672	672	668	671	671	666	980
21 q	671	669	671	671	671	674	671	663	657	656	650	647	650	656	660	664	666	668	671	672	672	671	669	669	665	959
22	668	672	672	672	673	678	677	673	659	652	648	651	657	661	668	674	680	684	694	662	671	668	659	657	*668*	1030
23 d	663	663	659	653	650	667	668	657	646	646	648	645	631	631	644	657	665	665	661	658	656	620	656	641	652	650
24 d	657	657	636	637	668	666	663	656	652	649	644	644	653	657	657	646	653	662	670	662	657	670	667	655	656	738
25	661	636	634	650	657	661	670	672	664	651	638	640	641	653	648	654	656	652	656	664	665	662	657	642	653	684
26	648	640	663	667	670	671	671	671	662	649	646	646	648	654	658	661	665	671	671	671	668	665	662	666	661	864
27	665	664	663	668	668	668	668	671	667	659	653	657	659	659	660	668	668	672	675	674	674	669	676	669	666	994
28 d	653	653	657	653	665	671	674	677	671	658	645	633	633	656	658	663	664	668	660	662	660	663	660	661	659	818
29	662	660	660	663	664	664	665	664	660	655	650	650	654	660	664	668	670	667	665	670	667	652	650	660	661	864
30	664	663	665	664	664	660	664	665	659	645	647	649	649	653	660	665	664	668	668	664	676	668	664	665	661	873
31	661	661	668	665	666	670	665	668	668	660	654	653	656	660	666	671	660	657	654	657	656	658	653	660	661	867
Mean	664	662	662	663	666	*668*	667	665	658	650	645	*643*	646	652	657	662	664	667	668	667	666	664	665	664	661	
Sum 19,000γ+	1595	1529	1526	1567	1649	1696	1685	1619	1402	1155	978	945	1026	1209	1373	1515	1593	1674	1700	1662	1651	1575	1614	1582		Grand Total 491,520

GEOMAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, GMT

2 LERWICK (D) — 9° + — OCTOBER 1965

	Hour GMT 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	20·0	19·7	19·5	19·4	19·4	19·3	18·7	18·3	19·0	21·0	23·7	25·2	25·1	24·7	23·6	22·1	21·3	21·1	21·0	20·8	20·6	20·1	19·5	21·0	103·2
2 d	20·0	13·2	12·2	14·5	13·8	18·0	16·8	16·3	18·0	19·0	20·8	25·7	27·5	30·5	30·4	29·3	28·7	25·7	24·4	24·3	22·8	3·1	14·5	19·0	20·3	88·4
3	20·0	19·2	18·5	19·0	18·4	18·6	18·7	18·0	19·5	20·3	22·1	24·3	25·3	25·3	24·8	23·4	22·1	21·9	22·1	21·7	21·3	21·2	19·5	19·8	21·0	105·0
4 q	20·2	19·9	19·6	20·1	19·7	19·2	19·1	18·7	18·3	18·5	19·7	21·3	22·6	23·9	24·3	23·3	21·8	21·2	20·6	20·5	20·4	20·2	20·0	20·0	20·5	93·1
5	19·9	19·9	19·9	18·5	18·5	18·3	17·5	17·5	17·5	18·1	20·4	23·3	27·1	28·9	28·8	26·4	24·2	22·6	21·5	20·9	20·4	19·9	19·6	18·5	21·2	108·1
6 q	18·5	19·5	19·6	19·5	19·6	19·3	18·7	18·2	17·6	18·2	19·5	21·6	23·3	25·0	24·8	23·4	21·8	20·9	20·4	20·2	20·3	20·2	20·4	20·3	20·5	90·8
7	20·2	19·8	19·5	19·3	19·3	19·3	18·7	17·8	17·5	17·5	21·0	23·3	25·3	27·2	28·4	28·8	26·9	25·0	22·2	21·3	20·4	19·5	19·1	18·3	*21·5*	115·6
8 d	17·8	17·4	19·0	17·5	17·9	18·5	18·5	18·5	18·2	18·3	20·1	22·3	23·6	23·9	24·9	24·2	22·5	21·7	21·5	20·1	12·8	18·1	14·4	14·4	19·4	66·1
9	18·3	20·7	20·3	16·7	17·5	17·6	17·6	17·0	16·8	18·6	20·5	23·4	24·5	25·2	24·4	23·2	21·6	21·2	21·2	20·6	20·1	20·3	20·1	19·5	20·3	86·9
10	19·5	19·2	19·2	19·5	18·8	18·7	18·5	17·5	16·6	17·7	20·7	24·2	25·1	25·2	23·9	22·3	21·3	20·8	21·1	21·2	19·3	18·8	20·5	20·3	20·4	89·9
11	20·4	20·4	20·3	19·8	19·6	19·5	18·8	18·0	17·6	17·7	19·8	23·0	25·2	25·3	24·2	22·7	21·4	20·8	21·0	21·1	19·2	20·4	20·2	19·1	20·6	95·5
12	17·1	15·4	17·9	18·2	19·7	18·8	18·9	18·8	18·3	19·6	21·5	25·3	25·7	26·1	25·0	23·1	21·4	20·5	20·6	14·8	17·5	19·2	20·2	20·4	20·2	84·0
13	20·0	20·7	20·3	19·6	17·7	19·3	21·6	21·4	20·7	20·2	22·0	25·2	26·3	27·2	26·3	24·3	23·1	23·1	9·1	12·0	13·2	18·6	19·7	19·7	20·5	91·3
14	19·8	17·9	16·8	19·5	20·6	18·8	18·7	18·1	17·6	18·6	20·8	23·3	25·3	25·3	24·1	23·2	21·7	21·2	21·1	21·0	20·7	20·2	19·6	16·0	20·4	89·9
15 q	17·2	18·6	19·0	19·4	19·6	19·6	19·6	18·6	18·5	18·8	20·4	22·4	24·0	24·5	24·2	23·3	21·6	21·2	20·7	20·5	20·4	20·3	20·2	19·8	20·5	92·4
16 q	19·6	19·6	19·3	19·5	19·4	18·9	19·3	18·6	17·8	18·4	20·2	23·2	25·2	25·5	24·5	22·7	21·4	20·5	20·5	20·3	20·5	20·3	20·2	20·0	20·6	95·4
17	19·9	19·7	19·9	20·2	19·8	19·6	19·3	18·4	17·6	18·6	21·2	24·0	25·2	25·3	24·3	22·4	21·4	21·2	20·8	20·7	20·6	20·5	19·9	20·5	20·9	101·0
18	19·8	17·6	19·6	18·7	18·8	18·5	20·5	20·5	20·4	19·8	22·5	24·4	27·0	27·6	25·9	23·8	21·5	20·7	20·9	20·1	20·3	20·1	20·3	20·2	21·2	109·5
19	19·8	19·7	19·7	19·8	20·3	19·7	19·6	18·5	18·1	19·4	21·4	24·3	26·2	25·1	24·5	23·4	20·5	20·7	20·7	20·6	19·7	19·1	19·8	20·3	20·9	100·9
20	19·9	19·7	19·9	20·0	19·9	19·6	19·0	18·1	18·1	19·5	21·4	23·4	24·0	24·0	23·4	22·6	21·5	21·4	21·4	20·5	15·5	17·6	19·3	19·7	20·4	89·5
21 q	19·8	19·9	20·0	19·6	19·6	18·9	18·5	18·3	18·3	18·7	20·2	21·4	22·6	23·3	22·6	21·7	20·7	20·5	19·9	19·7	19·7	19·7	19·7	19·7	20·1	83·0
22	19·8	19·7	18·6	19·5	19·3	19·1	19·1	17·9	17·7	18·9	19·8	20·9	23·5	25·3	26·3	25·3	28·4	34·7	30·8	21·5	19·2	13·6	13·6	13·7	21·1	106·2
23 d	13·9	15·1	18·0	18·0	20·0	18·9	19·7	19·5	17·6	17·9	20·0	25·5	25·3	28·0	25·3	25·7	21·7	14·1	22·2	8·3	9·3	11·6	12·1	16·6	*18·5*	44·3
24 d	15·3	12·1	9·8	19·6	18·3	18·4	19·8	19·8	20·7	19·9	21·7	23·4	24·7	25·3	25·1	16·7	22·3	23·4	14·1	15·7	17·7	16·8	21·2	19·0	19·2	60·8
25	16·3	14·1	16·2	18·6	21·9	21·9	22·4	21·7	20·5	21·1	21·5	24·4	25·3	25·3	24·4	23·6	22·5	25·6	22·2	20·6	18·7	16·1	15·9	14·5	20·6	95·3
26	19·7	26·8	17·6	18·7	19·5	19·4	18·9	18·6	18·1	17·9	20·1	23·2	24·3	24·2	23·3	21·7	21·5	21·1	20·6	20·3	19·0	18·2	18·7	23·5	20·6	94·9
27	20·7	18·9	19·7	19·7	19·0	19·0	18·7	18·7	18·7	19·7	21·5	24·4	25·7	26·4	25·5	23·4	22·9	22·4	21·5	20·9	19·7	18·7	15·7	17·3	20·8	98·8
28 d	22·5	19·7	12·3	16·6	17·7	17·7	17·9	18·0	18·6	19·5	22·6	26·2	23·4	23·5	25·3	23·5	21·9	21·5	19·5	18·6	19·4	17·0	17·3	18·9	20·0	79·1
29	20·2	19·8	18·4	18·5	18·6	19·0	18·7	18·4	17·6	17·7	19·4	21·5	22·5	23·1	22·7	21·8	21·5	21·6	20·4	20·5	21·3	22·5	14·8	17·4	19·9	77·9
30	17·7	19·5	17·9	17·6	18·1	19·9	23·5	21·5	20·8	19·8	20·9	22·9	23·0	23·5	23·2	21·7	19·7	18·5	20·7	19·9	12·8	18·7	18·0	17·0	19·9	76·8
31	18·7	17·7	20·6	18·6	19·3	17·9	18·4	19·5	18·1	18·6	20·5	22·5	23·1	23·1	22·7	22·0	23·2	20·9	16·1	17·0	15·9	14·1	15·4	17·7	19·2	61·6
Mean	19·1	18·7	18·4	18·8	19·0	19·0	19·2	18·7	18·4	18·9	20·8	23·5	24·7	*25·4*	24·9	23·4	22·4	21·9	20·7	19·6	18·7	*18·2*	18·4	18·7	20·4	
Sum 500·0′+	92·6	81·4	69·3	83·8	89·6	89·3	94·3	79·1	69·7	85·5	145·2	227·9	267·0	287·1	272·2	226·5	194·8	177·9	140·9	106·4	78·9	65·2	70·0	80·6		Grand Total 15175·2

GEOMAGNETIC FORCE: VERTICAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, GMT

3 LERWICK (Z) — 47,000γ (0·47 CGS unit) + — OCTOBER 1965

	Hour GMT 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 9000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	413	412	412	413	413	413	416	417	416	415	412	408	406	406	407	411	412	412	413	413	413	414	414	413	412	894
2 d	407	374	393	399	400	384	376	392	401	409	406	401	402	402	412	440	440	433	428	447	460	400	367	378	406	751
3	411	413	413	413	411	412	413	414	432	432	429	426	423	423	424	428	429	431	432	431	431	431	433	435	424	1170
4 q	433	432	431	429	428	429	430	432	432	415	415	411	407	408	409	410	411	411	412	413	413	415	416	415	419	1057
5	415	413	411	407	407	406	409	406	405	408	407	406	405	416	422	416	412	411	410	410	410	414	413	411	410	850
6 q	413	412	412	412	411	410	410	410	410	411	413	415	415	413	411	412	412	410	410	411	411	412	412	412	412	880
7	413	414	413	412	411	410	410	409	410	405	407	407	405	403	404	409	411	413	413	411	410	410	412	414	410	836
8 d	411	406	396	399	401	400	401	403	406	408	407	408	407	407	407	409	409	407	409	419	428	416	375	390	405	729
9	402	400	394	402	408	408	408	410	410	410	407	408	408	410	413	414	414	414	411	412	411	410	411	411	409	806
10	413	415	413	415	413	412	410	411	413	408	408	407	407	410	412	415	414	413	412	410	406	407	408	409	411	861
11	411	413	415	414	414	413	411	412	411	410	407	403	403	405	410	416	416	416	416	416	412	409	410	408	411	871
12	403	403	409	410	409	408	409	411	411	408	404	401	407	409	415	421	423	421	419	421	412	408	408	408	411	858
13	409	407	405	406	407	410	408	406	407	407	407	406	404	407	415	418	419	422	447	432	425	417	410	409	413	910
14	407	404	401	400	406	414	415	415	417	415	415	414	414	415	417	416	418	418	418	416	415	412	411	406	412	899
15 q	403	402	408	411	411	414	414	415	416	415	415	414	412	410	410	413	415	415	415	416	415	413	411	410	412	893
16 q	410	409	411	411	412	413	413	414	415	415	413	412	410	409	409	410	412	414	415	415	414	414	412	410	412	892
17	409	410	410	410	410	411	413	415	418	416	415	410	410	408	409	409	410	410	412	411	412	411	413	410	411	872
18	394	390	400	401	403	403	406	406	408	411	411	411	407	407	412	415	413	412	415	419	416	414	414	415	408	803
19	413	412	410	409	408	408	409	410	410	412	414	415	415	413	415	417	418	414	413	413	415	414	414	414	413	905
20	413	413	411	409	409	408	407	408	410	414	415	415	415	414	414	412	411	410	409	411	412	412	412	412	411	876
21 q	413	413	411	408	407	406	406	410	410	411	411	414	413	411	414	413	411	409	408	408	408	410	410	414	410	849
22	412	410	408	409	405	403	403	405	409	407	406	408	405	405	405	409	419	460	531	491	454	460	443	431	425	1198
23 d	426	427	423	421	411	390	383	388	405	408	407	403	415	436	445	432	431	426	418	421	394	366	372	378	409	826
24 d	344	335	354	368	366	389	397	404	405	407	408	411	409	412	421	445	435	426	425	419	420	408	391	367	399	566
25	350	354	350	368	385	395	396	399	402	408	414	415	417	420	434	440	447	455	445	433	427	420	403	394	407	771
26	386	352	362	395	405	408	409	410	414	414	414	411	412	413	415	419	419	416	414	414	413	414	413	401	406	743
27	392	406	411	413	413	414	411	410	409	409	409	408	410	416	422	420	420	419	419	418	417	418	407	385	411	876
28 d	350	328	349	380	395	405	408	409	409	409	412	417	433	417	413	417	420	421	427	426	421	408	417	411	404	702
29	400	390	402	408	406	413	412	414	415	414	413	410	409	408	411	415	418	419	420	418	419	410	405	413	411	862
30	413	412	410	411	412	411	400	403	408	416	416	414	413	412	412	417	420	420	419	421	418	412	412	411	413	913
31	411	408	403	404	408	409	410	408	411	413	412	411	410	410	412	416	424	428	436	438	441	433	422	421	417	999
Mean	403	400	402	405	407	407	407	409	411	412	411	410	411	411	415	418	419	419	422	421	419	413	409	407	411	
Sum 12,000γ+	500	389	451	567	605	629	623	676	755	760	749	720	728	755	851	954	983	1006	1091	1054	973	812	671	616		Grand Total 305,918

GEOMAGNETIC CHARACTER FIGURES (K, K_H, K_D, K_Z, AND C) AND TEMPERATURE IN MAGNETOGRAPH HOUSE

4 LERWICK — OCTOBER 1965

	3-h range indices K	Sum of K indices	3-h range indices K_H	Sum of K_H indices	3-h range indices K_D	Sum of K_D indices	3-h range indices K_Z	Sum of K_Z indices	Geomagnetic character of day, C (0-2)	Temperature in magnetograph house 200°A+
1	0000 0000	0	0000 0000	0	0000 0000	0	0000 0000	0	0	88·5
2 d	3221 2234	19	2221 2224	17	3211 1234	17	3230 2234	19	1	88·6
3	0100 0001	2	0000 0000	0	0100 0001	2	0000 0000	0	0	88·4
4 q	0000 0000	0	0000 0000	0	0000 0000	0	0000 0000	0	0	88·5
5	1111 2201	9	1011 2200	7	1110 1101	6	0000 1000	1	1	88·8
6 q	1000 0000	1	0000 0000	0	1000 0000	1	0000 0000	0	0	88·8
7	0002 2211	8	0002 2211	8	0001 1101	4	0000 0001	1	1	88·7
8 d	3131 2133	17	3121 2123	15	3130 1033	14	2100 0023	8	1	88·3
9	2111 0010	6	1000 0000	1	2111 0010	6	1100 0000	2	1	88·0
10	0010 0011	3	0000 0000	0	0010 0011	3	0000 0000	0	0	87·9
11	0000 1111	4	0000 0101	2	0000 1011	3	0000 0000	0	0	87·9
12	1111 1130	9	1101 1110	6	1111 0130	8	1000 0010	2	1	87·9
13	2110 1132	11	1110 1110	6	2110 1132	11	0000 0020	2	1	88·0
14	1201 1001	6	1201 1001	6	1201 1001	6	0100 0000	1	1	87·9
15 q	1000 0000	1	1000 0000	1	1000 0000	1	0000 0000	0	0	87·9
16 q	0000 0000	0	0000 0000	0	0000 0000	0	0000 0000	0	0	88·0
17	0000 1001	2	0000 1000	1	0000 1001	2	0000 0000	0	0	87·8
18	2010 1000	4	2000 1000	3	2010 0000	3	1000 0000	1	1	87·6
19	0001 1111	5	0001 1100	3	0000 1111	4	0000 0000	0	0	88·5
20	0001 0022	5	0001 0010	2	0000 0022	4	0000 0000	0	1	88·5
21 q	0000 0000	0	0000 0000	0	0000 0000	0	0000 0000	0	0	88·4
22	1012 1342	14	1012 1342	14	1001 1332	11	0000 0443	11	2	88·7
23 d	2222 2343	20	2222 2223	17	2222 2343	20	0220 3132	13	1	88·4
24 d	3311 2342	19	3310 2232	16	3211 1342	17	3200 2223	14	1	88·7
25	3211 2313	16	3211 2112	13	3211 2313	16	2300 2122	12	1	88·7
26	3110 0013	9	2010 0001	4	3100 0013	8	3200 0002	7	1	88·5
27	1111 1113	10	0011 1113	8	1101 1113	9	2000 0003	5	1	89·0
28 d	3212 2132	16	2212 2121	13	3112 2032	14	3201 2022	12	1	89·0
29	1000 0013	5	0000 0003	3	1000 0013	5	2000 0002	4	1	88·2
30	1121 0231	11	0021 0121	7	1121 0231	11	0020 0010	3	1	87·9
31	2110 0232	11	1110 0121	7	2110 0232	11	1000 0112	5	1	87·7
								Mean	0·68	88·3

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

K_H For horizontal component. K_D For declination. K_Z For vertical component. (See Introduction).

GEOMAGNETIC FORCE: HORIZONTAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, GMT

1 LERWICK (H) — 14,000γ (0·14 CGS unit) + — NOVEMBER 1965

Day	Hour GMT 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 15,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	662	663	659	658	662	663	664	667	663	656	652	649	649	656	661	666	667	667	669	668	661	663	663	663	661	871
2	664	660	661	663	663	666	667	667	660	652	651	652	652	650	649	652	659	659	661	659	662	668	671	664	660	832
3 q	663	663	663	664	665	666	667	664	659	651	645	645	649	655	657	661	663	667	667	667	667	667	667	664	661	866
4	667	672	669	669	674	678	682	685	678	667	663	659	647	648	652	663	667	670	671	674	672	673	673	671	669	1044
5 d	671	672	670	674	672	669	665	666	663	656	656	661	663	664	672	676	669	669	660	667	652	643	648	623	663	901
6 d	628	645	633	665	665	673	676	666	652	641	632	636	642	648	655	655	654	659	650	634	636	645	639	621	*648*	550
7	637	652	653	662	667	671	671	671	659	646	633	643	647	648	651	651	656	651	645	651	651	659	664	664	654	703
8	664	663	663	664	665	667	666	670	663	654	651	652	655	659	660	660	659	659	660	661	656	659	666	665	660	851
9	653	664	664	663	667	667	668	667	660	649	641	641	650	659	663	664	664	663	664	667	667	668	667	666	661	866
10 q	667	664	663	664	667	670	671	670	665	656	652	653	658	663	667	667	669	669	670	670	669	667	667	668	665	965
11	666	667	666	666	667	670	670	670	668	663	655	655	659	665	667	670	665	669	672	666	668	664	671	671	666	990
12	671	670	669	671	672	672	671	671	670	665	659	658	660	665	668	671	676	679	680	681	680	678	674	670	*671*	1101
13	668	665	663	667	674	673	669	668	665	660	653	648	649	656	661	665	668	674	667	655	655	631	650	662	661	866
14	664	662	664	664	665	664	664	664	664	659	654	652	653	659	664	667	668	669	662	660	665	668	668	666	663	909
15	668	660	661	663	669	668	668	668	664	654	650	650	656	663	667	667	668	669	661	653	660	666	668	665	663	906
16 q	665	665	664	664	665	667	668	668	664	658	653	650	654	660	665	668	670	672	672	671	669	666	663	665	664	946
17	665	665	666	665	670	674	677	674	666	660	654	649	653	656	662	666	668	671	673	672	672	670	669	669	666	986
18	664	660	661	672	675	677	680	680	677	672	666	659	656	657	660	661	668	668	668	666	667	668	667	670	667	1019
19 d	670	670	670	672	668	672	683	665	657	657	649	646	646	655	658	656	654	649	646	648	654	657	662	661	659	825
20 d	671	663	662	660	669	671	667	665	661	661	633	645	645	659	661	664	660	648	648	642	645	639	638	642	655	719
21	642	642	645	662	659	657	664	663	667	664	661	658	658	663	660	661	669	670	667	664	661	659	665	665	660	846
22	660	659	659	662	666	669	671	671	666	662	659	658	658	660	662	664	666	665	666	669	667	666	666	668	664	939
23 q	666	666	666	666	669	670	670	671	670	664	660	658	661	665	666	667	669	670	670	666	663	666	671	668	667	998
24	666	664	663	667	668	669	671	674	674	668	660	658	659	662	669	673	674	675	674	663	666	666	669	667	667	1019
25	666	667	667	670	671	673	673	671	669	664	659	660	662	668	671	670	666	673	675	674	662	664	662	666	668	1023
26	667	666	666	667	670	672	674	672	667	659	657	661	664	667	671	667	666	664	668	669	669	670	668	668	667	1009
27	665	665	668	668	669	671	671	668	667	662	661	661	665	669	671	672	672	665	649	657	663	665	665	665	666	974
28 q	664	663	664	665	668	669	670	670	667	661	660	660	664	667	670	671	672	672	672	671	669	669	668	668	667	1014
29	668	668	668	668	668	671	672	672	672	667	664	667	668	669	670	671	669	662	662	665	662	658	662	664	667	1007
30 d	664	665	665	666	669	673	675	678	680	681	681	679	662	646	653	661	656	665	650	657	643	641	645	658	663	913
Mean	663	663	663	666	668	670	*671*	670	666	660	654	*654*	655	659	663	665	666	666	664	663	662	661	663	662	663	
Sum 19,000γ+	876	890	875	971	1038	1092	1125	1096	977	789	624	623	664	781	883	947	971	982	919	887	853	842	896	857		Grand Total 477,458

GEOMAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, GMT

2 LERWICK (D) — 9° + — NOVEMBER 1965

Day	Hour GMT 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	18·9	18·9	19·1	19·2	19·3	19·0	18·9	18·9	18·0	17·8	19·5	21·4	22·7	23·5	22·7	21·6	21·6	21·8	21·6	21·7	20·1	17·3	18·6	18·0	20·0	80·1
2	17·9	17·4	19·7	19·2	19·4	19·4	19·6	18·9	18·7	19·2	20·7	22·9	23·5	25·0	23·7	22·4	18·3	20·8	20·0	19·0	18·4	17·0	17·2	18·7	19·9	77·0
3 q	19·6	20·0	20·2	20·1	20·0	19·7	19·1	18·2	17·8	18·0	19·7	21·3	21·9	21·8	21·4	20·8	20·3	20·1	20·0	20·0	19·6	19·5	19·5	19·2	19·9	77·8
4	19·2	19·5	19·3	17·8	19·0	18·0	17·4	17·6	17·4	18·2	20·9	23·9	22·9	22·8	21·9	21·5	20·3	19·8	19·8	19·5	19·8	19·7	19·8	19·9	19·8	75·9
5 d	20·0	19·4	19·7	19·7	19·8	19·6	19·3	18·3	17·9	18·1	20·8	23·1	24·3	24·5	23·7	24·9	25·0	25·8	26·5	22·4	17·2	12·0	5·8	1·5	19·6	69·3
6 d	6·1	5·1	11·0	13·1	12·1	20·1	19·1	21·2	21·0	20·2	21·9	23·7	24·9	24·5	23·1	21·4	21·0	20·3	17·7	12·0	17·1	11·5	15·6	21·9	*17·7*	25·6
7	9·6	11·2	16·7	18·1	19·3	19·1	19·1	18·9	18·5	19·2	21·2	24·7	26·4	27·7	25·7	23·6	21·5	20·3	21·5	19·1	18·1	19·7	19·6	22·4	20·1	81·2
8	21·0	20·9	20·7	20·5	20·1	19·9	19·8	19·1	18·6	19·1	21·1	23·1	24·3	24·3	23·9	22·9	20·8	21·7	21·7	20·6	13·8	17·6	18·1	15·4	20·4	89·0
9	19·9	20·0	18·9	19·6	19·6	19·2	19·0	18·5	18·1	19·2	21·3	22·0	23·1	23·8	22·7	21·9	21·8	21·4	20·7	20·2	19·9	19·4	19·0	18·9	20·3	88·1
10 q	19·5	19·8	19·8	20·1	20·1	20·1	19·8	19·1	18·3	18·8	20·1	21·9	23·2	23·0	22·1	21·9	21·6	21·2	20·9	20·2	20·1	19·8	19·2	19·1	20·4	89·7
11	19·0	19·9	20·1	20·1	20·1	20·1	20·0	19·3	19·0	19·2	20·7	22·2	23·1	22·9	22·6	22·4	21·7	21·5	21·8	20·1	17·1	17·5	18·4	19·8	20·4	88·6
12	19·9	20·3	20·4	20·5	20·5	20·4	20·3	19·8	19·2	19·6	20·3	21·6	23·4	23·6	23·3	22·6	22·2	21·6	21·5	21·1	20·5	19·8	19·3	19·3	20·9	101·0
13	19·9	20·2	20·6	22·2	19·6	17·6	18·8	18·9	18·7	19·7	20·9	22·5	23·7	24·3	23·4	22·2	21·5	21·2	21·5	20·9	16·5	1·9	15·2	18·7	19·6	70·6
14	20·5	20·6	20·6	20·2	19·7	19·5	19·7	19·7	18·7	18·7	20·4	21·8	23·1	23·5	23·4	22·2	21·6	22·6	20·5	21·4	18·9	19·0	18·6	17·7	20·5	92·6
15	15·4	18·6	18·7	19·7	19·5	18·5	18·9	18·5	18·3	18·7	20·3	22·0	23·4	22·8	22·2	21·0	20·8	20·9	21·3	20·8	20·7	19·7	19·6	19·5	20·0	79·8
16 q	19·5	19·4	19·2	19·7	20·2	19·5	19·2	18·9	18·9	19·0	20·3	21·6	22·9	22·7	22·1	21·5	20·9	20·6	20·4	20·4	19·8	19·2	18·7	18·8	20·1	83·4
17	19·6	20·3	20·4	20·8	21·4	20·4	19·0	18·8	18·5	18·7	20·8	22·6	24·2	23·6	22·7	21·7	20·8	20·2	19·8	19·9	19·5	19·5	19·4	17·7	20·4	90·3
18	16·4	17·9	19·1	21·7	18·6	18·8	18·8	18·7	18·9	19·7	21·6	22·8	24·1	25·6	25·3	24·5	22·5	22·6	21·5	20·6	19·9	19·5	18·6	19·5	20·7	97·2
19 d	19·7	19·8	20·3	19·6	18·5	21·1	20·8	20·4	23·3	24·4	22·5	23·5	24·9	24·9	24·8	22·6	23·2	16·9	16·9	15·0	15·8	17·4	19·3	19·7	20·6	95·3
20 d	19·7	21·5	16·0	17·7	19·0	20·5	21·5	23·3	24·1	24·8	25·4	25·5	27·3	24·5	23·2	20·9	17·9	14·7	12·8	16·6	13·0	13·6	12·9	12·8	19·5	69·2
21	15·1	15·4	17·7	19·8	21·5	23·0	22·9	20·5	19·1	20·8	20·8	22·0	23·3	22·9	22·4	19·8	20·8	20·7	20·0	16·8	13·1	16·6	17·5	19·4	19·7	71·9
22	19·5	20·3	21·8	20·8	18·8	18·7	18·9	18·9	18·8	19·6	20·8	22·4	23·5	22·9	22·3	21·4	20·7	19·9	18·7	19·7	19·5	18·0	16·0	16·9	19·9	78·8
23 q	19·4	20·0	20·3	20·4	20·1	20·0	19·8	19·7	19·7	19·7	20·5	21·3	22·2	22·7	22·3	21·4	21·1	20·9	20·6	19·4	18·2	17·6	17·5	17·7	20·1	82·5
24	18·5	18·6	19·6	19·5	19·0	18·9	18·7	18·0	18·8	20·0	20·6	21·7	23·5	23·4	22·5	22·0	21·5	21·4	21·5	20·1	18·9	17·9	17·9	18·7	20·1	81·2
25	18·7	19·6	19·9	20·3	20·3	20·2	19·7	19·3	18·9	18·8	19·6	21·4	22·6	23·5	22·7	22·6	22·4	21·6	20·8	20·4	15·8	10·4	16·0	17·8	19·7	73·3
26	19·2	20·2	20·0	20·0	20·2	19·7	19·4	19·7	19·7	19·6	20·4	22·4	24·1	23·4	23·5	22·9	22·7	23·7	22·5	21·4	20·2	19·9	19·8	19·1	*21·0*	103·7
27	18·8	17·7	17·7	18·8	18·8	18·7	19·5	19·6	19·0	19·6	20·6	21·6	22·2	21·7	21·5	20·6	20·8	19·9	16·9	20·8	19·2	18·2	18·5	18·6	19·6	69·3
28 q	19·5	20·1	19·7	19·7	19·7	19·5	19·4	19·5	19·5	20·0	21·5	22·4	22·6	21·7	21·5	21·1	20·7	20·3	20·1	20·1	18·7	19·4	18·8	18·9	20·2	84·4
29	19·4	19·8	20·0	20·2	20·4	19·7	19·7	19·2	19·4	20·4	21·5	22·3	22·6	22·1	21·7	22·0	22·7	22·5	21·5	19·7	18·7	16·5	16·4	18·6	20·3	87·0
30 d	18·8	19·7	19·7	19·7	20·1	20·2	19·8	19·7	19·7	20·1	20·8	22·2	23·5	26·1	28·1	33·7	28·3	22·9	19·5	15·4	11·9	13·4	13·9	14·6	20·5	91·8
Mean	18·3	18·7	19·2	19·6	19·5	19·6	19·5	19·3	19·1	19·6	20·9	22·5	23·6	*23·7*	23·1	22·4	21·6	21·0	20·3	19·5	18·0	*16·9*	17·5	18·0	20·1	
Sum 500·0′+	48·2	62·1	76·9	88·8	84·7	89·1	85·9	79·1	74·5	88·9	127·5	173·8	207·4	209·7	192·4	172·0	147·0	129·8	110·5	85·3	40·0	8·5	24·7	38·8		Grand Total 14445·6

GEOMAGNETIC FORCE: VERTICAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, GMT

3 LERWICK (Z) — 47,000γ (0·47 CGS unit) + — NOVEMBER 1965

	Hour GMT 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 9000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	419	417	418	416	415	416	415	415	417	417	416	412	411	412	414	414	415	414	415	418	426	426	422	421	417	1001
2	419	416	412	411	413	414	414	415	420	420	419	419	419	424	428	429	431	426	424	426	424	417	404	407	419	1051
3 q	410	413	413	413	413	413	413	416	419	421	421	420	418	417	417	417	415	415	414	415	416	416	417	418	416	980
4	414	410	410	412	409	409	407	407	410	411	408	408	417	418	419	416	415	413	413	413	414	414	414	416	412	897
5 d	414	415	413	411	410	411	412	411	413	413	411	412	412	416	417	418	422	427	442	444	451	448	399	387	418	1029
6 d	372	358	344	289	300	335	368	390	400	408	413	418	418	419	421	422	419	417	423	438	422	407	403	370	*391*	374
7	324	347	369	388	397	399	401	401	408	414	423	424	422	423	427	431	429	432	438	435	434	423	419	408	409	816
8	406	414	418	419	418	415	414	414	415	416	417	418	419	423	425	426	428	426	424	422	425	420	414	408	419	1044
9	392	397	409	415	417	415	414	414	414	417	417	418	418	420	422	423	424	422	420	417	414	414	414	415	415	962
10 q	414	417	418	418	416	414	414	414	414	415	414	414	414	415	419	418	418	417	416	415	414	413	413	411	415	965
11	413	414	415	417	416	415	413	412	410	412	412	411	410	412	413	415	419	419	417	419	417	413	409	408	414	931
12	409	411	413	413	413	413	413	411	411	410	410	408	408	411	412	411	412	412	411	411	410	410	412	411	411	866
13	411	412	413	405	401	406	410	410	413	413	414	414	414	411	412	413	416	416	423	433	433	417	413	411	414	934
14	411	413	413	414	414	415	415	415	415	416	416	415	413	412	413	413	414	416	425	426	424	421	418	416	416	983
15	410	410	412	411	407	413	414	415	416	418	418	417	414	413	412	413	413	415	423	430	426	421	418	416	416	975
16 q	414	413	412	412	411	412	413	413	415	416	417	417	415	413	413	413	413	413	413	415	417	419	419	416	414	944
17	414	413	412	408	406	405	408	411	416	419	420	420	417	416	414	414	414	413	412	413	413	415	416	415	413	924
18	415	413	410	398	398	403	404	406	407	409	411	413	415	415	417	416	414	415	415	417	418	420	421	421	412	891
19 d	417	416	414	410	411	406	399	407	411	413	418	420	426	426	425	426	428	439	441	436	430	424	420	419	420	1082
20 d	397	382	367	378	375	379	391	401	405	417	420	425	435	438	432	428	429	440	433	443	438	436	426	415	414	930
21	407	395	384	382	393	399	394	405	409	411	411	416	419	422	425	428	420	417	416	419	420	417	411	412	410	832
22	415	413	410	409	412	412	411	411	412	413	414	416	420	423	424	423	421	419	419	415	415	415	415	413	415	970
23 q	414	415	417	417	416	415	413	411	411	412	412	413	413	415	418	417	417	416	414	417	417	416	412	412	415	950
24	410	410	412	412	412	412	409	408	407	411	411	411	413	413	414	415	415	415	416	427	424	420	416	415	414	928
25	414	414	415	415	414	413	412	411	411	411	410	409	408	408	412	416	418	416	416	416	424	420	415	411	414	929
26	410	411	413	413	413	411	410	410	411	413	413	410	411	413	415	417	419	423	423	424	424	421	418	416	415	962
27	415	409	409	412	413	414	413	414	415	415	413	412	411	411	413	415	416	420	435	426	426	422	420	417	416	986
28 q	413	414	414	414	414	413	413	413	414	413	412	411	410	411	413	414	415	416	416	416	418	415	415	414	414	931
29	413	412	411	411	410	411	412	412	411	410	409	408	408	408	409	411	415	422	424	423	422	422	419	415	414	928
30 d	413	412	411	411	410	409	409	408	407	405	403	404	411	423	425	434	448	441	471	464	443	437	419	379	*421*	1097
Mean	407	407	407	*405*	406	407	408	410	412	414	414	414	415	417	418	419	420	420	423	*424*	423	420	415	410	414	
Sum 12,000γ+	219	206	201	154	167	217	248	301	357	409	423	433	459	501	540	566	592	612	692	733	699	599	451	313		Grand Total 298,092

GEOMAGNETIC CHARACTER FIGURES (K, K_H, K_D, K_Z, AND C) AND TEMPERATURE IN MAGNETOGRAPH HOUSE

4 LERWICK — NOVEMBER 1965

	3-h range indices K	Sum of K indices	3-h range indices K_H	Sum of K_H indices	3-h range indices K_D	Sum of K_D indices	3-h range indices K_Z	Sum of K_Z indices	Geomagnetic character of day, C (0-2)	Temperature in magneto-graph house 200°A+
1	0010 0121	5	0000 0110	2	0010 0021	4	0000 0010	1	1	88·1
2	2000 1211	7	2000 1111	6	1000 1211	6	1000 1001	3	1	87·6
3 q	0000 0000	0	0000 0000	0	0000 0000	0	0000 0000	0	0	87·3
4	1112 1000	6	1112 1000	6	1102 1000	5	0000 0000	0	1	87·0
5 d	0011 2244	14	0001 2223	10	0011 1244	13	0000 0124	7	2	87·4
6 d	3311 1133	16	3211 1123	14	3310 1033	14	3330 0024	15	2	87·9
7	3111 0112	10	3111 0110	8	3100 0012	7	3100 0102	7	1	88·0
8	1000 0132	7	0000 0122	5	1000 0131	6	1000 0011	3	1	88·0
9	2000 1000	3	2000 1000	3	1000 0000	1	2000 0000	2	0	88·3
10 q	0000 0000	0	0000 0000	0	0000 0000	0	0000 0000	0	0	88·1
11	0000 0122	5	0000 0121	4	0000 0022	4	0000 0020	2	1	88·6
12	0000 1001	2	0000 1001	2	0000 0001	1	0000 0000	0	0	87·7
13	1200 1034	11	0100 1013	6	1200 0034	10	0100 0022	5	1	87·7
14	0000 0121	4	0000 0100	1	0000 0121	4	0000 0000	0	1	87·5
15	1100 0010	3	1000 0010	2	1100 0010	3	0000 0000	0	1	86·8
16 q	0000 0000	0	0000 0000	0	0000 0000	0	0000 0000	0	0	86·5
17	0110 0001	3	0110 0000	2	0100 0001	2	0000 0000	0	0	87·0
18	1200 1111	7	1100 1111	6	1200 1011	6	0100 0000	1	1	86·6
19 d	0122 1322	13	0121 1221	10	0112 1322	12	0010 0120	4	1	87·0
20 d	3212 2331	17	2112 2231	14	3211 1331	15	3020 1122	11	1	87·1
21	2221 2222	15	1110 2212	10	2221 1121	12	2220 0101	8	1	86·7
22	1100 0001	3	1000 0001	2	1100 0001	3	0000 0000	0	1	86·8
23 q	0000 0011	2	0000 0001	1	0000 0011	2	0000 0000	0	0	86·5
24	1010 0011	4	0010 0011	3	1000 0011	3	0000 0010	1	1	86·4
25	0010 0123	7	0000 0111	3	0010 0023	6	0000 0011	2	1	86·2
26	0000 0101	2	0000 0100	1	0000 0101	2	0000 0000	0	0	86·2
27	1100 0221	7	0000 0221	5	1100 0221	7	0000 0110	2	1	86·1
28 q	0000 0010	1	0000 0000	0	0000 0010	1	0000 0000	0	0	86·2
29	0100 0111	4	0000 0001	1	0100 0111	4	0000 0000	0	0	85·9
30 d	0001 2333	12	0001 2223	10	0000 2333	11	0000 2233	10	1	85·8
								Mean	0·73	87·1

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

K_H For horizontal component. K_D for declination. K_Z For vertical component. (See Introduction).

GEOMAGNETIC FORCE: HORIZONTAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, GMT

1 LERWICK (H) — 14,000γ (0·14 CGS unit) + — DECEMBER 1965

Hour GMT	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 15,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1 d	666	660	661	665	666	668	668	668	661	664	661	663	665	655	626	643	649	660	653	634	649	645	623	650	655	723
2	651	650	651	659	655	666	667	667	661	651	649	649	656	658	664	658	656	657	664	662	660	662	660	662	658	795
3	663	661	662	664	665	664	664	663	662	660	659	659	659	664	665	666	666	665	667	666	662	666	663	665	663	920
4	669	669	672	664	666	669	673	672	669	665	667	667	663	666	667	676	659	651	655	660	670	657	658	661	665	965
5	658	660	663	660	660	666	661	661	661	663	658	659	660	663	667	670	670	671	670	669	668	667	666	666	664	937
6	664	665	664	666	669	670	672	670	667	664	658	656	660	664	668	670	671	670	670	667	665	667	666	667	666	990
7	660	668	661	663	669	671	675	683	677	669	661	660	662	666	669	669	669	670	670	669	668	663	662	663	667	1017
8	662	662	662	663	666	669	670	673	672	669	666	665	667	670	675	676	674	680	680	675	675	675	673	669	670	1088
9	668	669	669	668	669	672	672	674	672	668	658	659	661	646	664	670	671	670	666	665	665	666	664	669	666	995
10	663	664	666	666	667	669	671	671	670	667	665	665	667	670	672	669	673	667	667	664	659	672	650	656	666	990
11	662	661	658	660	655	669	677	668	665	662	658	658	658	661	666	659	667	653	666	661	661	665	661	666	662	897
12	650	655	658	660	663	665	668	669	669	667	664	664	665	666	657	644	659	664	662	657	663	664	663	664	662	880
13	660	661	657	659	662	665	670	671	671	664	660	657	657	660	655	654	662	664	663	664	665	665	664	664	662	894
14 q	663	662	662	662	664	667	667	666	664	663	663	663	666	667	668	668	665	666	666	664	663	662	658	652	664	931
15 q	658	662	663	664	666	666	666	666	666	665	665	666	665	667	669	669	670	670	669	668	667	667	665	664	666	983
16 q	664	664	663	665	669	670	670	669	668	664	665	664	667	672	672	671	671	672	672	671	670	669	667	667	668	1036
17 q	667	670	671	672	673	674	675	676	674	672	666	662	663	667	669	668	667	672	671	670	670	669	668	667	670	1073
18 d	667	667	667	670	672	673	679	678	678	675	673	662	657	664	667	671	666	667	657	647	643	651	655	643	665	949
19	630	643	651	656	659	659	660	654	654	652	651	652	655	658	659	661	663	664	655	652	639	650	655	661	654	693
20	666	655	655	658	662	665	667	665	662	660	659	660	661	664	665	667	669	669	661	656	648	658	657	661	661	870
21 q	664	664	664	666	669	673	671	671	667	662	660	659	660	662	663	663	658	668	674	674	673	673	673	673	667	1004
22	673	672	670	673	676	673	672	678	680	676	669	660	660	655	662	667	668	664	666	668	668	666	664	664	669	1044
23	656	655	658	662	666	669	669	668	667	660	658	658	660	666	668	669	668	669	669	669	668	668	667	665	665	952
24	665	662	663	665	669	674	675	675	675	676	673	670	667	669	670	675	671	670	663	674	671	658	622	631	666	983
25 d	648	654	650	658	669	670	671	675	669	664	661	656	654	657	658	661	657	667	672	671	670	670	665	663	663	910
26 d	664	661	664	668	670	675	671	674	656	660	653	636	646	641	639	656	657	653	670	665	667	657	672	664	660	839
27	657	662	664	667	669	666	671	674	671	667	653	645	647	659	662	663	664	665	661	643	659	661	657	646	661	853
28 d	660	657	654	660	667	666	676	667	656	649	642	640	647	652	652	656	646	654	660	646	660	655	662	664	656	748
29	661	661	661	661	663	666	669	665	661	658	661	666	666	660	661	658	649	663	655	657	660	662	679	666	662	889
30	658	662	662	665	664	672	674	673	670	665	663	651	650	657	662	662	660	668	666	665	666	668	668	666	664	937
31	666	667	667	668	670	672	672	669	666	665	663	665	668	670	670	669	669	667	664	666	665	663	661	663	667	1005
Mean	661	661	662	664	666	669	670	670	667	664	661	659	660	662	663	665	664	665	665	663	663	663	661	661	664	
Sum 20,000γ+	483	505	513	577	649	733	783	773	681	586	482	416	459	516	551	598	584	630	624	539	557	561	488	502		Grand Total 493,790

664 at 0-1h 1 January 1966.

GEOMAGNETIC DECLINATION (WEST)
Mean values for periods of sixty minutes ending at exact hours, GMT

2 LERWICK (D) — 9° + — DECEMBER 1965

Hour GMT	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	17·7	17·0	18·9	19·8	20·3	20·4	19·9	20·7	21·4	22·3	23·0	25·1	25·1	25·3	23·6	27·8	26·5	23·1	21·4	13·9	4·1	7·6	3·9	14·2	19·3	63·0
2	16·7	17·7	18·9	18·4	19·5	20·6	20·7	20·6	20·5	21·0	22·3	20·8	21·8	21·2	20·7	20·3	19·2	19·0	14·6	16·9	17·7	17·0	17·9	19·1	19·3	63·1
3	20·8	20·3	19·8	19·6	19·8	19·7	19·6	19·4	19·3	19·7	20·7	20·8	23·0	21·5	21·0	20·7	20·5	20·3	20·4	20·3	19·8	17·7	18·1	19·3	20·1	82·1
4	22·0	20·5	19·1	20·0	20·6	20·7	20·2	20·0	19·9	20·6	22·3	25·0	25·0	25·0	25·0	26·5	21·6	25·2	22·2	20·4	10·6	11·7	17·1	18·8	20·8	100·0
5	17·5	17·6	18·9	18·6	20·0	20·0	19·6	19·5	19·3	20·0	20·2	21·6	22·2	22·2	21·8	21·5	20·9	20·5	20·3	20·0	19·7	19·5	19·4	19·8	20·0	80·6
6	18·8	20·1	19·7	20·4	20·5	20·4	20·1	19·5	19·2	19·2	20·2	21·2	22·3	22·2	21·7	21·1	21·2	20·6	20·0	19·8	17·5	16·8	17·8	18·9	20·0	79·2
7	19·7	21·2	19·0	19·1	19·1	18·8	18·7	19·7	20·7	21·3	21·0	21·6	21·8	22·3	21·9	21·0	20·7	20·0	19·9	19·8	19·7	18·7	18·1	18·7	20·1	82·5
8	18·7	19·1	19·6	19·8	19·8	19·7	19·8	19·1	18·9	20·2	20·5	21·5	22·8	23·0	22·8	22·3	21·7	21·8	21·5	23·9	20·1	19·9	19·6	19·8	20·7	95·9
9	18·7	18·3	17·6	19·1	19·6	20·2	20·2	20·0	19·9	20·3	19·9	20·8	22·3	21·2	21·2	20·3	20·6	21·0	21·0	20·3	19·4	18·5	17·9	14·3	19·7	72·6
10	16·0	18·2	19·7	20·1	20·4	20·4	20·0	20·1	19·8	19·3	20·3	21·4	22·2	22·7	23·0	24·2	24·8	29·4	26·3	24·7	19·2	19·9	14·7	13·9	20·9	100·7
11	17·7	18·1	20·1	21·2	24·2	22·6	22·1	20·3	18·8	18·7	19·3	20·8	22·2	22·1	22·8	21·7	23·1	23·5	21·3	21·4	19·3	19·6	18·1	7·1	20·3	86·1
12	12·8	14·6	18·5	22·3	21·7	21·2	20·9	20·6	20·8	20·4	21·1	21·5	22·7	23·7	24·3	22·2	23·9	22·5	16·2	17·1	20·6	18·5	17·3	18·1	20·1	83·5
13	17·8	18·4	20·0	22·7	19·6	20·6	20·1	21·0	20·7	19·6	20·0	21·1	21·8	23·7	22·8	22·5	21·9	21·1	19·9	20·0	19·3	19·1	19·4	19·3	20·5	92·4
14 q	19·2	19·2	19·6	20·0	20·3	19·3	19·4	19·4	19·7	20·5	21·2	21·7	22·7	21·9	21·5	21·7	21·4	21·2	21·0	20·5	20·0	19·1	18·5	15·4	20·2	84·4
15 q	17·6	18·8	19·2	19·3	19·5	19·5	19·3	19·3	19·5	19·7	20·0	20·9	21·5	21·9	21·8	21·2	21·0	20·9	20·8	20·6	20·1	19·9	19·7	19·5	20·1	81·5
16 q	19·7	19·3	19·9	20·6	20·4	20·4	20·2	19·7	19·4	19·5	20·4	20·9	21·2	21·8	21·2	20·6	20·2	20·3	20·2	19·9	19·6	19·5	19·6	19·8	20·2	84·3
17 q	20·1	20·4	20·3	20·3	20·1	20·1	19·9	19·7	20·1	19·8	20·1	20·9	22·1	22·5	21·5	20·6	20·4	20·4	20·5	20·3	19·9	19·2	19·2	19·6	20·3	88·0
18 d	19·6	20·1	19·9	20·6	20·2	20·1	20·0	20·7	22·6	23·2	23·2	23·2	25·5	25·2	23·9	25·7	27·8	22·7	25·7	16·7	12·6	17·0	18·9	15·2	21·3	110·3
19	17·1	11·5	18·1	18·6	19·0	19·2	19·1	19·3	19·9	20·3	21·2	21·7	21·4	20·9	20·4	20·1	19·9	19·9	18·7	18·6	16·4	18·2	19·2	19·1	19·1	57·8
20	19·0	19·0	18·4	19·6	19·7	19·9	20·1	19·8	19·9	20·5	20·8	21·4	21·9	21·9	21·2	20·9	20·9	20·9	16·9	13·4	14·5	17·1	17·0	20·2	19·4	64·9
21 q	21·5	20·9	20·7	21·2	20·9	20·1	19·9	19·9	19·8	19·8	20·6	21·3	21·6	22·2	21·8	21·3	20·5	21·0	20·3	20·2	20·3	20·0	20·3	20·4	20·7	96·5
22	20·6	20·9	21·3	21·4	21·4	21·1	20·6	20·5	20·1	20·1	19·9	21·2	22·3	24·4	25·0	24·5	23·2	21·8	19·9	18·9	19·0	17·0	16·7	16·3	20·8	98·1
23	14·1	18·8	20·7	20·9	20·1	20·0	19·8	19·5	19·7	19·6	20·0	20·9	21·8	21·8	20·9	20·6	20·3	19·9	19·6	19·4	19·3	19·3	19·3	19·0	19·8	75·3
24	18·5	19·7	19·5	18·5	19·6	20·5	20·3	19·8	19·6	19·9	20·3	20·3	22·0	23·0	21·5	21·5	22·0	21·1	19·2	19·0	19·0	19·2	10·4	1·1	19·0	55·5
25 d	14·0	19·0	20·1	23·9	20·1	18·3	19·2	20·1	19·7	19·2	20·1	20·8	23·2	22·9	22·0	21·2	20·1	19·2	20·3	20·1	19·5	18·2	15·1	18·4	19·8	74·7
26 d	20·0	19·1	20·1	20·4	21·1	20·5	20·4	20·6	22·8	26·7	24·7	21·8	20·8	25·8	21·2	18·2	20·8	13·3	16·2	17·5	17·4	16·3	12·4	17·5	19·8	75·6
27	18·2	19·4	20·1	20·1	19·2	20·9	22·0	22·2	22·1	22·4	22·4	22·4	23·0	23·9	21·8	21·3	20·0	20·0	19·9	16·9	14·9	17·1	19·1	20·3	20·4	89·6
28 d	17·8	19·4	20·6	20·0	19·5	21·3	23·6	22·3	22·4	22·1	21·4	22·2	23·0	24·5	18·6	22·7	14·9	17·6	21·0	14·8	11·4	17·8	20·8	19·7	20·0	79·4
29	19·4	18·7	19·3	20·6	19·6	20·2	20·2	20·8	21·1	21·4	21·1	21·6	22·4	20·9	20·4	22·2	19·7	13·3	18·4	19·5	19·6	17·6	10·9	17·8	19·4	66·7
30	18·9	20·2	18·9	19·4	21·1	19·7	20·0	20·7	20·7	21·4	21·8	22·6	22·3	22·4	22·2	20·8	18·7	20·1	19·7	19·2	16·8	19·2	19·7	19·8	20·3	86·3
31	19·9	20·0	20·1	20·4	20·8	20·4	19·8	19·7	20·3	21·9	22·6	22·5	22·8	21·8	21·1	20·1	20·3	20·4	18·6	19·1	19·6	19·3	19·2	19·4	20·4	90·1
Mean	18·4	18·9	19·6	20·2	20·3	20·2	20·2	20·1	20·3	20·7	21·1	21·7	22·5	22·8	21·9	21·9	21·3	20·7	20·1	19·1	17·6	17·9	17·3	17·4	20·1	
Sum 500·0′+	70·1	85·5	106·6	126·9	127·7	126·8	125·7	124·5	128·6	140·6	152·6	171·5	196·7	205·8	180·6	177·3	158·7	142·0	121·9	93·1	46·9	55·5	35·3	39·8		Grand Total 14940·7

19·9 at 0-1h 1 January 1966.

GEOMAGNETIC FORCE: VERTICAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, GMT

3 LERWICK (Z) — 47,000γ (0·47 CGS unit) + — DECEMBER 1965

	Hour GMT 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 9000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1 *d*	374	394	405	407	409	410	411	412	416	415	417	412	412	423	451	437	452	437	436	456	430	402	392	395	417	1005
2	404	389	379	394	406	414	415	416	419	422	420	422	422	423	424	426	428	425	423	422	422	420	419	415	415	969
3	409	410	413	414	414	414	415	416	418	419	418	416	416	415	417	416	416	417	416	417	420	419	418	416	416	979
4	406	393	393	403	406	408	409	410	412	412	411	411	411	411	411	415	450	447	447	443	434	423	420	419	417	1005
5	419	418	417	418	418	415	415	415	417	415	417	417	416	417	417	417	416	415	415	415	415	416	417	417	416	994
6	417	414	414	414	413	411	411	412	413	414	415	419	419	420	420	419	417	415	414	415	417	416	415	415	415	969
7	415	410	414	414	413	411	409	405	407	411	412	411	416	417	419	419	419	417	415	415	415	418	420	419	414	941
8	419	419	419	417	416	415	411	411	411	408	410	411	413	414	415	417	416	413	411	413	411	410	411	413	413	924
9	410	399	404	411	412	411	410	408	408	407	410	411	415	427	419	419	419	420	421	423	421	419	419	417	414	940
10	415	415	415	416	416	415	414	412	410	409	406	408	411	413	415	418	418	424	445	450	452	436	388	411	418	1032
11	412	413	413	415	412	399	401	409	411	411	410	410	411	413	418	425	423	433	428	431	433	430	431	427	417	1019
12	419	409	411	416	418	420	420	419	415	411	408	405	407	411	420	431	428	427	431	432	422	421	421	417	418	1039
13	415	408	404	401	407	406	405	412	411	412	413	412	412	415	421	425	423	425	426	424	424	421	419	418	415	959
14 *q*	415	414	414	414	415	415	416	416	416	414	413	413	412	413	414	416	418	419	420	422	424	425	426	429	417	1013
15 *q*	422	417	415	414	414	415	416	417	417	417	416	415	415	412	414	414	414	414	415	417	417	417	417	417	416	978
16 *q*	415	413	413	411	410	411	412	414	415	416	415	414	411	410	410	411	412	412	412	413	414	415	415	415	413	909
17 *q*	414	411	408	407	407	407	408	409	412	413	414	415	413	412	413	415	416	414	414	415	415	416	416	416	413	900
18 *d*	414	413	411	409	408	408	406	406	405	409	412	417	416	413	418	421	437	505	512	518	480	445	432	411	*430*	1326
19	350	358	399	411	415	415	415	418	419	420	422	423	423	423	424	423	420	419	424	426	438	432	426	417	415	960
20	402	402	414	420	419	416	415	416	417	418	419	421	421	420	420	420	419	418	424	427	422	423	422	419	418	1034
21 *q*	419	419	419	418	415	413	413	413	415	416	416	418	420	421	422	423	428	421	417	415	414	414	414	415	417	1018
22	415	416	416	414	412	413	412	408	406	406	411	413	416	422	423	425	428	433	428	425	421	420	417	411	417	1011
23	407	414	417	418	418	417	416	415	413	414	416	417	418	418	419	421	421	420	418	417	417	415	415	417	417	998
24	417	417	414	418	416	414	413	411	409	407	408	409	410	410	414	416	418	420	426	419	421	421	418	380	414	926
25 *d*	392	398	403	389	388	398	405	408	412	412	413	413	413	417	420	422	430	428	420	418	417	414	416	414	*411*	860
26 *d*	412	414	414	414	414	413	415	413	418	412	416	430	439	442	455	452	440	445	432	426	425	425	403	398	424	1167
27	402	411	413	416	415	416	413	414	415	416	419	424	420	420	421	425	426	428	430	443	434	425	419	406	420	1071
28 *d*	392	403	412	408	412	412	406	412	418	422	424	428	428	434	447	451	464	465	438	443	430	421	397	409	424	1176
29	415	417	416	413	415	415	415	417	417	418	418	417	417	420	422	425	433	438	434	436	431	428	418	415	421	1110
30	419	420	419	418	418	412	414	415	418	418	418	420	420	418	420	423	427	422	423	422	422	420	419	419	419	1064
31	418	416	416	415	414	411	411	412	414	413	414	415	415	415	417	418	419	419	423	421	422	421	421	419	417	999
Mean	409	*409*	411	412	412	412	412	413	414	414	415	416	416	418	421	423	426	428	427	*428*	425	421	416	414	417	
Sum 12,000γ+	674	664	734	767	785	770	767	791	824	827	851	887	908	959	1060	1105	1195	1255	1238	1279	1180	1048	901	826		Grand Total 310,295

418 at 0-1h 1 January 1966.

GEOMAGNETIC CHARACTER FIGURES (K, K_H, K_D, K_Z, AND C) AND TEMPERATURE IN MAGNETOGRAPH HOUSE

4 LERWICK — DECEMBER 1965

	3-h range indices K	Sum of K indices	3-h range indices K_H	Sum of K_H indices	3-h range indices K_D	Sum of K_D indices	3-h range indices K_Z	Sum of K_Z indices	Geomagnetic character of day, C (0-2)	Temperature in magneto-graph house 200°A+
1 *d*	1011 3344	17	1001 3333	14	1011 3344	17	2000 3231	11	2	86·2
2	2101 1231	11	1101 0111	6	2101 1231	11	2200 0000	4	1	86·2
3	1000 0002	3	0000 0002	2	1000 0002	3	0000 0000	0	1	87·0
4	2011 2343	16	1011 2232	12	2011 1343	15	1000 0320	6	1	86·9
5	1100 0001	3	1000 0000	1	1100 0001	3	0000 0000	0	0	85·3
6	1000 0011	3	0000 0001	1	1000 0011	3	0000 0000	0	0	86·5
7	1010 0000	2	1010 0000	2	1010 0000	2	0000 0000	0	0	86·9
8	0000 0110	2	0000 0110	2	0000 0000	0	0000 0000	0	0	86·6
9	2001 2001	6	1001 2001	5	2000 1001	4	1000 1000	2	1	86·9
10	1000 0224	9	0000 0124	7	1000 0224	9	0000 0124	7	1	87·2
11	2221 0223	14	0221 0222	11	2211 0123	12	0110 0111	5	1	87·1
12	3111 2231	14	2011 2221	11	3101 1131	11	1000 0010	2	1	86·8
13	2210 1100	7	1100 1100	4	2210 1000	6	0000 0000	0	1	87·1
14 *q*	0000 0002	2	0000 0001	1	0000 0002	2	0000 0000	0	0	87·1
15 *q*	0000 0000	0	0000 0000	0	0000 0000	0	0000 0000	0	0	87·7
16 *q*	1000 0000	1	0000 0000	0	1000 0000	1	0000 0000	0	0	87·9
17 *q*	0000 0000	0	0000 0000	0	0000 0000	0	0000 0000	0	0	87·9
18 *d*	0011 1442	13	0011 1222	9	0011 1442	13	0000 1433	11	2	87·9
19	4000 0012	7	3000 0012	6	4000 0012	7	4000 0012	7	1	88·0
20	2000 0032	7	1000 0022	5	2000 0032	7	2000 0011	4	1	87·5
21 *q*	0000 0100	1	0000 0100	1	0000 0000	0	0000 0000	0	0	87·1
22	0001 1102	5	0000 1102	4	0001 1101	4	0000 0001	1	0	87·4
23	3000 0000	3	1000 0000	1	3000 0000	3	1000 0000	1	0	87·5
24	1000 1124	9	1000 0124	8	1000 1024	8	0000 0013	4	1	87·2
25 *d*	4311 1202	14	1211 1201	9	4301 1202	13	2200 0100	5	1	87·3
26 *d*	1123 3323	18	0023 2223	14	1123 3323	18	0002 2112	8	1	87·2
27	1112 1122	11	1112 1122	11	1101 1122	9	1000 0011	3	1	86·9
28 *d*	2221 3433	20	2221 1222	14	2121 3433	19	2010 2212	10	1	86·6
29	0101 1412	10	0001 1312	8	0100 1412	9	0000 0111	3	1	86·5
30	1101 1110	6	0101 1100	4	1100 1110	5	0000 0000	0	1	84·9
31	0000 0010	1	0000 0000	0	0000 0010	1	0000 0000	0	0	85·8
								Mean	0·68	86·9

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

K_H For horizontal component. K_D For declination. K_Z For vertical component. (See Introduction).

MEAN MONTHLY AND ANNUAL VALUES OF GEOMAGNETIC 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 1965

	Horizontal (*H*) component			Declination (*D*) (west)			Vertical (*Z*) component			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
Jan.	647	647	644	22·8	22·9	23·2	394	395	394	14454	2387	72 49·6	49606
Feb.	645	648	639	22·6	23·0	22·1	396	396	398	14449	2386	72 49·8	49607
Mar.	646	648	640	22·3	22·4	22·5	397	397	391	14451	2385	72 49·7	49608
Apr.	649	650	636	21·3	21·5	21·9	399	401	398	14454	2381	72 49·5	49611
May	657	655	651	21·4	21·5	21·2	398	402	390	14462	2383	72 49·0	49613
June	661	660	656	20·9	21·0	21·3	400	403	392	14466	2382	72 48·8	49616
July	662	660	664	20·7	20·5	21·0	403	405	399	14468	2381	72 48·8	49619
Aug.	659	660	655	20·6	21·0	20·4	403	405	397	14465	2380	72 48·9	49618
Sept.	654	658	636	19·6	20·0	18·4	405	406	395	14461	2375	72 49·3	49618
Oct.	661	660	658	20·4	20·5	19·5	411	413	405	14466	2379	72 49·0	49626
Nov.	663	665	658	20·1	20·1	19·6	414	415	413	14469	2378	72 48·9	49630
Dec.	664	667	660	20·1	20·3	20·0	417	415	421	14470	2378	72 48·9	49633
Year	656	657	650	21·1	21·2	20·9	403	404	399	14461	2381	72 49·2	49617

ALL DAYS

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

6 LERWICK 1965

HORIZONTAL COMPONENT

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

DECLINATION

Hour GMT	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.	-2·25	-1·51	-1·21	-0·25	-0·09	+0·05	+0·17	-0·05	-0·52	-0·09	+0·51	+1·69	+2·68	+3·12	+2·66	+1·94	+1·70	+1·20	+0·33	-0·64	-1·81	-2·01	-2·49	-3·13
Feb.	-1·91	-0·97	-0·68	-0·99	-1·07	-0·89	-0·35	-0·23	-0·75	-0·71	+0·43	+2·40	+3·65	+4·32	+4·05	+2·60	+1·10	+1·03	+0·07	-0·21	-1·84	-3·05	-3·45	-2·55
Mar.	-1·32	-1·31	-1·43	-1·90	-2·03	-1·63	-1·02	-1·44	-1·95	-1·07	+0·57	+3·27	+4·97	+5·70	+5·18	+3·77	+2·16	-0·13	-0·76	-1·47	-1·88	-2·62	-2·12	-1·54
Apr.	-1·12	-1·03	-1·27	-2·21	-2·28	-3·00	-3·70	-3·66	-3·61	-1·86	+0·48	+2·88	+5·00	+6·00	+5·25	+3·89	+2·38	+1·31	+0·32	-0·05	-0·46	-0·70	-1·16	-1·40
May	-1·14	-1·27	-2·27	-3·13	-4·19	-4·44	-4·60	-4·59	-3·39	-1·13	+1·61	+4·29	+5·96	+5·90	+5·09	+3·89	+2·59	+1·67	+0·92	+0·43	+0·32	-0·35	-0·80	-1·37
June	-1·31	-0·73	-2·29	-2·89	-3·54	-4·81	-5·79	-5·48	-3·89	-1·65	+0·79	+3·89	+5·89	+6·19	+5·54	+4·80	+3·65	+2·29	+1·80	+0·76	+0·33	-0·22	-2·21	-1·12
July	-1·22	-1·79	-1·95	-3·40	-4·35	-4·94	-5·06	-4·71	-3·77	-2·17	+0·05	+3·01	+5·38	+6·04	+5·87	+4·89	+3·63	+2·48	+1·85	+0·86	+0·21	+0·04	-0·22	-0·73
Aug.	-1·41	-1·54	-2·43	-3·34	-3·89	-4·66	-4·36	-4·00	-2·76	-0·70	+1·83	+4·69	+6·77	+7·18	+6·00	+4·34	+2·52	+0·89	+0·61	-0·17	-1·85	-1·79	-1·20	-0·73
Sept.	-2·61	-3·57	-3·08	-3·01	-2·89	-2·50	-2·41	-1·97	-1·13	+0·20	+1·95	+4·28	+6·16	+6·19	+5·16	+3·79	+1·76	+1·49	+0·45	-0·40	-1·16	-1·43	-2·39	-2·88
Oct.	-1·27	-1·65	-2·04	-1·56	-1·38	-1·39	-1·22	-1·72	-2·02	1·50	+0·41	+3·09	+4·34	+5·00	+4·51	+3·04	+2·02	+1·47	+0·27	-0·83	-1·73	-2·17	-2·00	-1·67
Nov.	-1·80	-1·32	-0·83	-0·44	-0·57	-0·42	-0·54	-0·76	-0·91	-0·44	+0·86	+2·39	+3·52	+3·59	+3·02	+2·34	+1·50	+0·93	+0·29	-0·56	-2·06	-3·11	-2·58	-2·10
Dec.	-1·69	-1·19	-0·51	+0·13	+0·17	+0·14	+0·10	+0·07	+0·20	0·58	+0·97	+1·57	+2·39	+2·69	+1·87	+1·77	+1·17	+0·63	-0·02	-0·96	-2·44	-2·16	-2·81	-2·67
Year	-1·59	-1·49	-1·67	-1·92	-2·18	-2·37	-2·40	-2·38	-2·04	-0·88	+0·87	+3·12	+4·73	+5·16	+4·52	+3·42	+2·18	+1·27	+0·51	-0·27	-1·20	-1·63	-1·95	-1·82
Winter	-1·91	-1·25	-0·81	-0·39	-0·39	-0·28	-0·15	-0·24	-0·49	-0·17	+0·69	+2·01	+3·06	+3·43	+2·90	+2·16	+1·37	+0·95	+0·17	-0·59	-2·04	-2·58	-2·83	-2·61
Equinox	-1·58	-1·89	-1·95	-2·17	-2·15	-2·13	-2·09	-2·20	-2·18	-1·06	+0·85	+3·38	+5·12	+5·72	+5·03	+3·62	+2·08	+1·03	+0·07	-0·69	-1·31	-1·73	-1·92	-1·87
Summer	-1·27	-1·33	-2·23	-3·19	-3·99	-4·71	-4·95	-4·69	-3·45	-1·41	+1·07	+3·99	+6·00	+6·33	+5·63	+4·48	+3·10	+1·83	+1·29	+0·47	-0·25	-0·58	-1·11	-0·99

VERTICAL COMPONENT

Hour GMT	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.	-8·1	-9·8	-7·7	-4·8	-4·1	-3·8	-3·4	-4·6	-3·5	-2·6	-2·1	-0·9	+0·2	+2·0	+4·8	+7·3	+6·1	+7·1	+9·8	+9·3	+7·1	+5·9	+0·6	-4·8
Feb.	-12·6	-11·2	-8·5	-7·6	-8·8	-10·0	-9·4	-6·9	-4·7	-2·8	-0·9	-0·5	+0·4	+2·7	+6·7	+11·0	+16·2	+17·5	+18·1	+12·9	+9·4	+2·1	-4·3	-8·8
Mar.	-6·7	-8·2	-7·5	-7·0	-6·8	-7·4	-7·1	-5·6	-3·8	-3·4	-4·3	-4·7	-4·5	-1·1	+4·7	+10·5	+13·2	+17·1	+18·1	+14·3	+6·7	+0·7	-3·1	-4·1
Apr.	-6·6	-5·1	-5·5	-5·9	-7·2	-7·2	-3·3	-1·2	-1·0	-1·1	-2·7	-3·8	-4·4	-2·2	+1·2	+6·1	+9·4	+10·0	+11·4	+11·0	+7·5	+4·0	+1·3	-4·7
May	-6·1	-5·7	-5·7	-3·1	-1·4	-0·6	-0·7	-1·4	-4·0	-4·2	-5·2	-6·8	-6·7	-1·9	+2·5	+5·3	+8·4	+9·9	+10·6	+10·0	+8·8	+5·3	-1·9	-5·4
June	-20·2	-19·8	-13·6	-9·1	-5·4	-3·6	-1·2	-0·4	-1·0	-2·9	-3·7	-3·3	-1·2	+4·0	+9·3	+14·0	+18·9	+21·0	+17·0	+13·1	+8·3	+3·4	-5·2	-18·4
July	-11·2	-8·0	-7·2	-10·2	-6·3	-4·0	-3·6	-2·7	-3·4	-4·3	-4·7	-5·4	-3·3	+0·1	+3·2	+7·9	+11·9	+13·0	+12·9	+13·2	+10·4	+6·4	+0·5	-5·2
Aug.	-17·5	-17·9	-13·0	-6·9	-4·5	-2·0	-1·6	-0·1	+0·8	-0·9	-3·1	-5·1	-4·3	-0·1	+3·6	+8·6	+12·9	+15·5	+15·4	+15·2	+12·0	+5·8	-1·0	-11·8
Sept.	-29·2	-21·7	-15·1	-8·3	-4·9	-3·2	-1·3	+0·1	+0·2	-0·6	-0·7	-1·3	+0·8	+4·0	+8·5	+14·5	+19·0	+21·4	+24·1	+19·1	+8·9	-4·1	-12·2	-18·0
Oct.	-8·0	-11·5	-9·6	-5·8	-4·6	-3·8	-3·9	-2·3	+0·3	+0·4	+0·1	-0·8	-0·6	+0·3	+3·3	+6·7	+7·7	+8·3	+11·1	+9·9	+7·3	+2·2	-2·5	-4·2
Nov.	-6·7	-7·1	-7·3	-9·0	-8·4	-6·8	-5·7	-4·0	-2·1	-0·4	+0·1	+0·3	+1·3	+2·7	+4·0	+4·9	+5·7	+6·4	+9·1	+10·3	+9·3	+6·0	+1·0	-3·6
Dec.	-8·3	-8·5	-6·3	-5·2	-4·7	-5·1	-5·3	-4·4	-3·4	-3·2	-2·6	-1·3	-0·7	+1·0	+4·2	+5·7	+8·5	+10·6	+9·9	+11·4	+8·1	+3·9	-0·9	-3·4
Year	-11·8	-11·2	-8·9	-6·9	-5·6	-4·8	-3·9	-2·8	-2·1	-2·2	-2·5	-2·8	-1·9	+1·0	+4·7	+8·5	+11·5	+13·1	+14·0	+12·5	+8·7	+3·5	-2·3	-7·7
Winter	-8·9	-9·1	-7·5	-6·7	-6·5	-6·4	-5·9	-5·0	-3·4	-2·3	-1·4	-0·6	+0·3	+2·1	+4·9	+7·2	+9·1	+10·4	+11·7	+11·0	+8·5	+4·5	-0·9	-5·1
Equinox	-12·6	-11·6	-9·4	-6·7	-5·9	-5·4	-3·9	-2·3	-1·1	-1·2	-1·9	-2·7	-2·2	+0·3	+4·4	+9·5	+12·3	+14·2	+16·2	+13·6	+7·6	+0·7	-4·1	-7·7
Summer	-13·7	-12·9	-9·9	-7·3	-4·4	-2·5	-1·8	-1·1	-1·9	-3·1	-4·2	-5·1	-3·9	+0·5	+ 4·7	+8·9	+13·0	+14·9	+14·0	+12·9	+9·9	+5·2	-1·9	-10·2

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

INTERNATIONAL QUIET DAYS

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

7 LERWICK 1965

HORIZONTAL COMPONENT

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

DECLINATION

Hour GMT	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.	−0·92	−0·31	−0·45	−0·36	−0·15	−0·25	−0·44	−0·51	−0·83	−0·32	+0·31	+0·89	+1·90	+2·29	+1·67	+0·88	+0·57	+0·45	+0·28	−0·07	−0·59	−0·78	−1·19	−2·07
Feb.	−2·57	−0·82	−0·82	−0·39	−0·42	−0·64	−1·11	−1·52	−1·80	−1·45	−0·18	+2·06	+3·35	+3·78	+3·14	+2·19	+1·46	+1·18	+0·45	+0·04	−0·36	−0·91	−2·72	−1·94
Mar.	−0·83	−0·71	−0·55	−1·29	−1·53	−1·89	−2·29	−3·05	−3·11	−2·31	−0·21	+2·59	+4·79	+5·41	+4·59	+3·07	+1·25	+0·03	−0·39	−0·69	−0·67	−0·67	−0·77	−0·77
Apr.	−0·21	−0·89	−1·17	−1·51	−2·07	−2·57	−3·27	−3·95	−3·91	−2·57	−0·35	+2·37	+4·89	+5·51	+4·65	+3·27	+2·17	+1·07	+0·39	+0·23	+0·01	−0·19	−0·71	−1·19
May	−1·20	−1·39	−1·82	−2·43	−2·97	−3·70	−4·19	−4·15	−3·50	−2·03	+0·50	+3·81	+5·88	+5·83	+4·82	+3·81	+2·43	+1·60	+0·73	+0·17	−0·22	−0·39	−0·36	−1·23
June	−0·09	−0·72	−1·44	−2·39	−3·36	−4·52	−5·53	−5·48	−4·50	−2·45	+0·08	+2·80	+4·55	+4·92	+4·72	+4·17	+3·16	+1·76	+1·17	+1·06	+0·56	+0·75	+0·50	+0·28
July	−1·42	−2·15	−2·47	−2·98	−3·83	−4·99	−5·08	−4·19	−3·45	−1·82	+0·57	+3·49	+5·70	+6·33	+5·49	+4·18	+2·51	+1·23	+0·92	+0·65	+0·53	+0·64	+0·57	−0·43
Aug.	−1·06	−1·95	−2·66	−2·68	−3·20	−4·13	−4·58	−4·64	−3·34	−1·35	+1·56	+3·90	+5·76	+6·31	+4·82	+3·32	+2·00	+1·03	+0·56	+0·82	+0·48	+0·21	−0·68	−0·50
Sept.	−1·18	−1·29	−1·36	−1·50	−1·92	−2·09	−2·50	−2·94	−2·56	−1·29	+0·70	+3·24	+5·10	+4·79	+3·42	+1·96	+0·84	+0·13	+0·36	+0·28	−0·06	−0·47	−0·50	−1·16
Oct.	−1·39	−0·96	−0·95	−0·84	−0·88	−1·27	−1·42	−1·98	−2·35	−1·94	−0·45	+1·52	+3·09	+3·98	+3·63	+2·42	+1·00	+0·41	−0·04	−0·22	−0·19	−0·32	−0·35	−0·50
Nov.	−0·65	−0·29	−0·30	−0·15	−0·13	−0·39	−0·69	−1·07	−1·30	−1·05	+0·27	+1·55	+2·41	+2·23	+1·74	+1·19	+0·77	+0·47	+0·25	−0·13	−0·86	−1·05	−1·41	−1·41
Dec.	−0·67	−0·57	−0·35	−0·01	−0·05	−0·40	−0·55	−0·69	−0·59	−0·43	+0·17	+0·85	+1·53	+1·77	+1·27	+0·79	+0·41	+0·48	+0·27	+0·01	−0·31	−0·75	−0·83	−1·35
Year	−1·02	−1·00	−1·20	−1·38	−1·71	−2·24	−2·64	−2·85	−2·60	−1·58	+0·25	+2·42	+4·08	+4·43	+3·66	+2·60	+1·55	+0·82	+0·41	+0·18	−0·14	−0·33	−0·70	−1·02
Winter	−1·20	−0·50	−0·48	−0·23	−0·19	−0·42	−0·70	−0·95	−1·13	−0·81	+0·14	+1·34	+2·30	+2·52	+1·95	+1·26	+0·80	+0·65	+0·31	−0·04	−0·53	−0·87	−1·54	−1·69
Equinox	−0·90	−0·96	−1·01	−1·29	−1·60	−1·95	−2·37	−2·98	−2·98	−2·03	−0·08	+2·43	+4·47	+4·92	+4·07	+2·68	+1·31	+0·41	+0·08	−0·10	−0·23	−0·41	−0·58	−0·91
Summer	−0·94	−1·55	−2·10	−2·62	−3·34	−4·33	−4·85	−4·61	−3·70	−1·91	+0·68	+3·50	+5·47	+5·85	+4·96	+3·87	+2·53	+1·41	+0·85	+0·67	+0·34	+0·30	+0·01	−0·47

VERTICAL COMPONENT

Hour GMT	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.	−1·5	−1·4	−1·5	−1·4	−1·6	−1·7	−1·0	−0·8	+0·5	+0·2	+0·3	0·0	+0·3	+0·4	+1·5	+1·2	+0·8	+0·7	+0·8	+1·4	+1·7	+1·6	+0·1	−0·6
Feb.	−5·3	−4·6	−2·1	−1·8	−2·4	−2·9	−3·2	−2·8	−2·1	−2·0	−2·1	−1·6	−0·3	+1·4	+1·9	+3·8	+4·8	+5·3	+6·4	+5·6	+4·3	+3·0	−0·9	−2·4
Mar.	−1·9	−1·2	−0·5	−0·7	+1·1	+1·0	+0·9	+1·5	+1·5	−0·6	−2·1	−4·9	−7·3	−6·2	−1·3	+2·5	+3·5	+4·0	+3·5	+3·3	+2·3	+0·8	+0·7	+0·1
Apr.	−4·9	−2·3	+0·3	+0·9	+1·7	+2·0	+2·1	+1·7	−0·1	−1·7	−3·9	−5·9	−4·7	−3·1	−1·7	+0·7	+3·5	+4·8	+4·1	+3·1	+2·1	+0·9	+0·5	−0·1
May	+0·8	+1·9	+4·2	+4·5	+4·0	+2·5	+2·0	+0·3	−3·6	−3·9	−4·2	−8·3	−11·4	−8·5	−4·0	−0·7	+2·8	+3·7	+5·6	+4·7	+5·0	+3·9	0·0	−1·3
June	−2·2	−1·4	+1·4	+2·6	+3·2	+4·1	+4·4	+4·0	+1·8	−3·2	−6·0	−8·0	−6·4	−5·0	−4·4	−2·6	−0·6	+1·1	+2·6	+1·8	+4·0	+4·4	+2·8	+1·6
July	−4·1	−2·5	−0·2	+1·5	+2·9	+4·0	+5·1	+6·1	+3·0	−0·3	−4·8	−8·9	−8·8	−6·7	−4·2	−1·7	+1·9	+4·4	+4·7	+3·7	+3·4	+2·1	+0·3	−0·9
Aug.	−4·5	−1·6	+0·7	+1·2	+2·4	+3·9	+3·6	−0·2	−2·1	−2·2	−5·7	−9·0	−9·5	−4·6	−0·3	+3·2	+6·2	+7·5	+5·6	+3·6	+1·7	+1·8	−0·3	−1·4
Sept.	−6·7	−3·6	−0·7	−0·5	−1·1	−0·2	+0·3	+0·3	−2·7	−5·4	−6·3	−6·1	−7·1	−4·8	+2·3	+4·5	+5·9	+6·8	+6·5	+6·9	+5·5	+4·2	+1·1	+0·9
Oct.	+1·3	+0·5	+1·5	+1·1	+0·7	+1·4	+1·5	+3·1	+3·5	+0·3	+0·3	+0·1	−1·7	−2·9	−2·5	−1·5	−0·9	−1·2	−1·1	−0·5	−0·9	−0·3	−0·9	−0·9
Nov.	−1·8	−0·3	0·0	+0·1	−0·8	−1·3	−1·6	−1·3	−0·2	+0·7	+0·4	+0·3	−0·8	−0·5	+1·2	+1·1	+0·8	+0·7	−0·2	+0·9	+1·6	+1·1	+0·4	−0·5
Dec.	+1·8	−0·3	−1·4	−2·3	−3·0	−2·9	−2·2	−1·3	−0·2	+0·1	−0·4	−0·1	−1·0	−1·5	−0·6	+0·7	+2·4	+0·9	+0·4	+1·3	+1·6	+2·3	+2·4	+3·3
Year	−2·4	−1·4	+0·1	+0·4	+0·6	+0·8	+1·0	+0·9	−0·1	−1·5	−2·9	−4·4	−4·9	−3·5	−1·0	+0·9	+2·6	+3·2	+3·2	+3·0	+2·7	+2·1	+0·5	−0·2
Winter	−1·7	−1·7	−1·3	−1·3	−1·9	−2·2	−2·0	−1·5	−0·5	−0·3	−0·5	−0·3	−0·5	−0·1	+1·0	+1·7	+2·2	+1·9	+1·9	+2·3	+2·3	+2·0	+0·5	−0·1
Equinox	−3·1	−1·7	+0·1	+0·2	+0·6	+1·1	+1·2	+1·7	+0·5	−1·9	−3·0	−4·2	−5·2	−4·3	−0·8	+1·5	+3·0	+3·6	+3·3	+3·2	+2·3	+1·4	+0·3	0·0
Summer	−2·5	−0·9	+1·5	+2·5	+3·1	+3·6	+3·8	+2·5	−0·2	−2·4	−5·2	−8·5	−9·0	−6·2	−3·2	−0·5	+2·6	+4·2	+4·6	+3·5	+3·5	+3·1	+0·7	−0·5

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

INTERNATIONAL DISTURBED DAYS

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

8 LERWICK 1965

HORIZONTAL COMPONENT

Hour GMT	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.	+4·9	+1·5	−0·2	+2·5	+5·1	+9·3	+4·5	+14·5	+8·2	+4·3	−0·7	−0·7	−1·7	−5·3	−10·2	−7·9	−2·1	−5·1	−6·9	−5·7	−3·6	−5·9	−0·5	+1·7
Feb.	+4·4	−3·4	+2·0	+4·2	+8·8	+9·8	+4·6	+2·4	−2·2	−9·2	−14·2	−18·2	−15·2	−7·8	−2·4	+4·8	+3·2	+10·8	+7·8	−2·4	+6·2	+5·8	+0·4	−0·2
Mar.	+2·5	+3·3	−1·9	+5·3	+7·9	−8·0	−4·7	−6·9	−16·7	−19·5	−14·3	−14·1	−8·3	−1·5	+6·5	+5·7	+8·1	+19·6	+12·9	+9·7	+6·5	+3·5	+1·9	+2·5
Apr.	+16·2	+14·3	+5·9	+7·4	+2·5	−21·7	−35·2	−48·7	−38·7	−35·0	−30·3	−19·5	−9·2	+0·7	+8·3	+26·2	+26·7	+21·1	+21·0	+24·9	+20·7	+16·4	+13·3	+12·7
May	−3·6	+7·2	+5·9	+5·4	+5·8	−5·2	−12·2	−11·2	−12·1	−18·0	−24·0	−21·8	−12·6	+1·2	−1·9	+5·6	+17·8	+20·8	+22·4	+23·2	+17·5	+9·4	−4·2	−15·4
June	−70·5	−32·8	−9·9	−16·0	−22·3	−10·2	−12·9	−27·0	−41·9	−46·4	−37·3	−17·4	+2·3	+42·4	+87·1	+100·8	+98·3	+63·8	+46·9	+13·6	−20·5	−24·8	−31·3	−34·0
July	+1·2	+4·4	−2·7	−10·8	−1·8	−8·8	−10·2	−10·2	−13·9	−25·2	−27·6	−27·4	−19·6	+5·0	+5·3	+15·4	+25·8	+30·6	+28·4	+19·8	+14·5	+10·6	+3·4	−6·2
Aug.	−6·0	−1·7	−0·3	+1·8	+7·5	−6·5	−9·8	−14·3	−24·3	−27·2	−28·3	−20·5	−13·4	−0·1	+4·5	+14·4	+20·5	+31·3	+29·6	+26·5	+11·7	+11·4	+1·9	−8·7
Sept.	−60·8	+41·1	−5·6	+12·7	+24·3	+22·8	+19·7	+9·3	−7·0	−6·7	−3·2	+1·5	−4·4	+1·9	+16·2	+17·3	+24·5	+28·2	+28·9	+23·7	+5·2	−26·3	−51·2	−29·9
Oct.	+4·0	+2·5	−0·6	−1·3	+7·6	+12·5	+13·8	+7·9	+0·4	−7·3	−12·8	−15·7	−17·0	−7·1	−1·6	−0·1	+3·4	+7·9	+9·2	+5·5	−2·4	−9·5	+2·8	−2·1
Nov.	+3·3	+5·4	+2·4	+9·9	+11·0	+14·0	+15·7	+10·4	+5·0	+1·7	−7·4	−4·2	−5·9	−3·2	+2·2	+4·9	+1·0	+0·4	−6·7	−8·0	−11·6	−12·5	−11·2	−16·6
Dec.	+1·2	+0·1	−0·6	+4·5	+9·1	+10·6	+13·3	+12·7	+4·2	+2·7	−1·8	−8·3	−6·0	−5·9	−11·4	−2·3	−4·7	+0·4	+2·7	−7·1	−2·0	−4·1	−4·4	−2·9
Year	−8·6	−3·4	−0·5	+2·1	+5·5	+1·5	−1·1	−5·1	−11·6	−15·5	−16·8	−13·9	−9·3	+1·7	+8·5	+15·4	+18·5	+19·1	+16·3	+10·3	+3·5	−2·2	−6·6	−8·3
Winter	+3·5	+0·9	+0·9	+5·3	+8·5	+10·9	+9·5	+10·0	+3·8	−0·1	−6·0	−7·9	−7·2	−5·5	−5·5	−0·1	−0·7	+1·6	−0·8	−5·8	−2·7	−4·2	−3·9	−4·5
Equinox	−9·5	−5·3	−0·5	+6·0	+10·6	+1·4	−1·6	−9·6	−15·5	−17·1	−15·1	−11·9	−9·7	−1·5	+7·3	+12·3	+15·7	+19·2	+18·0	+15·9	+7·5	−4·0	−8·3	−4·2
Summer	−19·7	−5·7	−1·7	−4·9	−2·7	−7·7	−11·3	−15·7	−23·1	−29·2	−29·3	−21·8	−10·8	+12·1	+23·7	+34·1	+40·6	+36·6	+31·8	+20·8	+5·8	+1·7	−7·5	−16·1

DECLINATION

Hour GMT	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.	−3·89	−4·47	−3·41	−1·41	−0·59	+0·69	+2·01	+1·41	+0·11	+1·29	+1·53	+2·97	+4·03	+4·41	+4·09	+3·63	+3·87	+2·27	+0·45	−2·51	−4·99	−3·51	−3·95	−4·03
Feb.	−1·40	−1·35	−1·75	−2·38	−2·53	−0·29	+2·12	+2·79	+1·67	+1·50	+2·29	+4·29	+5·30	+5·99	+6·19	+4·22	+1·93	+0·55	−1·44	−0·85	−6·19	−10·36	−7·29	−3·01
Mar.	−3·88	−4·09	−4·14	−4·79	−4·55	−0·96	+4·23	+4·55	+2·46	+1·87	+1·82	+4·23	+5·36	+6·37	+5·82	+4·53	+3·41	−1·66	−3·97	−3·65	−4·08	−4·17	−2·78	−1·93
Apr.	−2·24	−2·62	−2·54	−5·26	−3·04	−3·65	−3·34	−0·14	−2·62	−1·24	+1·62	+3·06	+4·68	+6·76	+6·82	+5·56	+3·58	+2·69	+0·02	−0·24	−1·98	−1·74	−1·38	−2·76
May	−1·44	−0·43	−4·53	−5·62	−6·03	−2·33	−1·98	−3·61	−2·35	−0·14	+2·31	+4·93	+6·72	+6·83	+6·51	+5·00	+3·87	+2·49	+1·04	+0·87	−0·01	−2·40	−4·35	−5·35
June	−4·57	+0·19	−4·31	−4·67	−2·03	−3·41	−6·03	−4·79	−1·99	+0·33	+1·41	+4·55	+6·29	+6·15	+5·21	+6·67	+6·51	+4·75	+3·17	−0·05	−1·99	−2·19	−6·49	−2·71
July	−1·64	−3·04	−4·26	−5·64	−5·22	−2·95	−1·66	−3·00	−2·92	−1·72	+0·02	+3·54	+5·64	+5·50	+5·92	+5·38	+4·12	+2·65	+1·94	+0·40	+0·24	−1·66	−1·28	−0·36
Aug.	−2·65	−2·84	−2·65	−4·26	−4·09	−3·07	−0·78	−2·15	−2·39	−1·24	+1·71	+4·74	+7·03	+7·68	+7·35	+6·20	+4·87	+1·63	+0·88	−2·69	−5·71	−5·20	−2·07	−0·30
Sept.	−6·79	−10·51	−5·24	−3·27	−1·91	−0·95	+0·17	+1·51	+2·50	+3·19	+3·51	+6·65	+8·19	+7·53	+7·04	+5·89	+3·15	+1·97	−1·55	−0·35	−5·36	−5·75	−4·75	−4·87
Oct.	−1·59	−3·99	−5·23	−2·25	−1·95	−1·18	−0·97	−1·07	−0·87	−0·57	+1·55	+5·13	+5·41	+6·75	+6·71	+4·39	+3·93	+1·80	+0·85	−2·09	−3·09	−6·17	−3·59	−1·91
Nov.	−2·74	−2·49	−2·25	−1·64	−1·69	+0·71	+0·50	+0·99	+1·61	+1·92	+2·69	+4·01	+5·38	+5·31	+4·99	+5·10	+3·49	+0·53	−0·92	−3·31	−4·59	−6·02	−6·09	−5·49
Dec.	−2·20	−1·11	−0·10	+0·91	+0·22	+0·09	+0·60	+0·85	+1·76	+2·67	+2·46	+2·59	+3·50	+4·71	+1·84	+3·09	+2·00	−0·85	+0·90	−3·43	−7·02	−4·65	−5·80	−3·03
Year	−2·92	−3·06	−3·37	−3·36	−2·78	−1·44	−0·43	−0·22	−0·25	+0·65	+1·91	+4·22	+5·63	+6·17	+5·71	+4·97	+3·73	+1·57	+0·11	−1·49	−3·73	−4·49	−4·15	−2·98
Winter	−2·56	−2·35	−1·88	−1·13	−1·15	+0·30	+1·31	+1·51	+1·29	+1·85	+2·24	+3·47	+4·55	+5·11	+4·28	+4·01	+2·82	+0·63	−0·25	−2·53	−5·70	−6·13	−5·78	−3·89
Equinox	−3·63	−5·30	−4·29	−3·89	−2·86	−1·69	+0·02	+1·21	+0·37	+0·81	+2·13	+4·77	+5·91	+6·85	+6·60	+5·09	+3·52	+1·20	−1·16	−1·58	−3·63	−4·46	−3·13	−2·87
Summer	−2·57	+1·53	−3·94	−5·05	−4·34	−2·94	−2·61	−3·39	−2·41	−0·69	+1·36	+4·44	+6·42	+6·54	+6·25	+5·81	+4·84	+2·88	+1·76	−0·37	−1·87	−2·86	−3·55	−2·18

VERTICAL COMPONENT

Hour GMT	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.	−23·7	−27·7	−24·7	−16·7	−11·5	−10·4	−8·1	−14·9	−11·7	−6·1	−3·7	−1·3	+1·1	+6·3	+10·5	+20·3	+16·3	+20·8	+28·5	+24·3	+12·9	+14·9	+6·9	−2·3
Feb.	−31·9	−29·8	−18·6	−16·1	−26·4	−32·0	−29·5	−18·4	−9·4	−4·1	−1·2	+2·4	+4·2	+8·3	+15·4	+22·9	+42·0	+58·6	+67·1	+43·2	+26·8	−10·1	−32·8	−30·6
Mar.	−8·2	−22·4	−27·6	−32·6	−33·6	−31·8	−29·0	−20·8	−11·6	−3·6	−1·6	+2·8	+3·4	+10·2	+16·8	+26·4	+32·0	+48·8	+47·8	+34·6	+8·8	−6·2	−1·8	−0·8
Apr.	−13·1	−8·5	−22·4	−33·1	−43·7	−40·5	−19·1	−9·7	−3·8	+1·5	+1·7	+4·9	+5·7	+9·7	+17·2	+26·9	+32·9	+29·1	+28·9	+23·9	+15·4	+7·3	+4·5	−15·7
May	−22·6	−31·5	−35·6	−22·1	−14·2	−8·9	−9·6	−6·3	−6·0	−2·5	+1·0	+4·3	+4·6	+12·5	+23·0	+22·5	+23·8	+26·3	+26·4	+22·7	+21·6	+10·3	−18·4	−21·3
June	−68·7	−73·6	−54·5	−41·0	−31·4	−27·9	−16·2	−10·6	−3·9	+1·6	+7·1	+15·8	+25·1	+44·0	+60·5	+71·6	+79·6	+72·3	+47·0	+22·6	+5·7	−10·2	−36·9	−78·0
July	−14·8	−13·7	−17·2	−37·9	−34·7	−30·0	−28·3	−18·9	−10·0	−3·3	+2·8	+4·7	+9·2	+14·1	+17·2	+19·3	+23·9	+26·2	+28·1	+32·9	+24·2	+15·1	+2·6	−11·5
Aug.	−48·6	−48·7	−34·8	−8·9	−1·0	−0·3	−10·2	−2·5	+3·8	+5·5	+5·2	+1·7	+2·2	+7·3	+14·0	+16·7	+19·2	+26·9	+32·8	+36·5	+30·0	+7·9	−6·4	−48·3
Sept.	−121·2	−85·1	−50·8	−21·9	−4·3	+3·0	+7·1	+8·3	+12·6	+15·9	+18·0	+16·5	+26·0	+28·3	+25·0	+39·3	+43·3	+47·2	+53·7	+44·7	+10·2	−22·5	−45·4	−47·9
Oct.	−17·2	−30·8	−21·7	−11·4	−10·2	−11·2	−11·8	−5·6	+0·5	+3·4	+3·2	+3·2	+8·4	+10·0	+14·9	+23·8	+22·2	+17·8	+16·6	+21·6	+19·9	−5·2	−20·4	−20·0
Nov.	−10·0	−16·0	−22·8	−32·8	−31·4	−24·6	−16·8	−9·2	−5·4	−1·4	+0·4	+3·2	+7·8	+11·8	+11·4	+13·0	+16·6	+20·2	+29·4	+32·4	+24·2	+17·8	+0·8	−18·6
Dec.	−24·3	−16·7	−12·2	−15·7	−14·9	−12·9	−12·5	−10·9	−7·4	−7·1	−4·7	−1·1	+0·5	+4·7	+17·0	+15·5	+23·5	+34·9	+26·5	+31·1	+15·2	+0·3	−13·1	−15·7
Year	−33·1	−34·9	−29·4	−23·8	−21·1	−18·8	−15·3	−9·5	−3·7	+0·9	+3·0	+5·1	+8·8	+14·4	+20·1	+27·2	+31·2	+34·3	+35·2	+30·1	+18·3	+1·2	−14·0	−26·3
Winter	−20·7	−26·1	−21·9	−19·3	−19·9	−19·5	−16·5	−12·0	−6·5	−2·1	−0·3	+1·9	+5·4	+9·1	+13·1	+20·0	+24·3	+29·3	+35·4	+30·4	+20·9	+4·3	−11·4	−17·9
Equinox	−39·9	−36·7	−30·6	−24·7	−22·9	−20·1	−13·2	−6·9	−0·6	+4·3	+5·3	+6·9	+10·9	+14·5	+18·5	+29·1	+32·6	+35·7	+36·7	+31·2	+13·6	−6·7	−15·8	−21·1
Summer	−38·7	−41·9	−35·5	−27·5	−20·3	−16·8	−16·1	−9·6	−4·0	+0·3	+4·0	+6·6	+10·3	+19·5	+28·7	+32·5	+36·6	+37·9	+33·6	+28·7	+20·4	+5·8	−14·8	−39·8

"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 SEASONS AND YEAR OF 1965

The ranges are derived from the diurnal inequalities printed in Tables 6-8

9 LERWICK 1965

	All days			Quiet days			Disturbed days		
	H	*D*	*Z*	*H*	*D*	*Z*	*H*	*D*	*Z*
	γ	'	γ	γ	'	γ	γ	'	γ
Jan.	23·8	6·25	19·6	9·6	4·36	3·4	24·7	9·40	56·2
Feb.	18·9	7·77	30·7	16·1	6·50	11·7	29·0	16·55	99·9
Mar.	24·9	8·32	26·3	28·1	8·52	11·3	39·1	11·16	82·4
Apr.	42·1	9·70	18·6	42·5	9·46	10·7	73·6	12·08	76·6
May	45·4	10·56	17·4	43·0	10·07	17·0	47·2	12·86	62·0
June	59·1	11·98	41·2	47·2	10·45	12·4	171·3	12·70	157·6
July	50·1	11·10	24·4	48·2	11·41	15·0	58·2	11·56	70·8
Aug.	45·4	11·84	33·4	41·4	10·95	17·0	59·6	13·39	85·2
Sept.	33·0	9·76	53·3	28·8	8·04	14·0	89·7	18·70	174·9
Oct.	24·2	7·17	22·6	23·4	6·33	6·4	30·8	12·92	54·6
Nov.	16·7	6·70	19·3	17·0	3·82	3·4	32·3	11·47	65·2
Dec.	11·8	5·50	19·9	7·6	3·12	6·3	24·7	11·73	59·2
Year	29·0	7·56	25·8	27·6	7·28	8·1	35·9	10·66	70·1
Winter	15·8	6·26	20·8	12·0	4·21	4·5	18·8	11·24	61·5
Equinox	30·0	7·92	28·8	29·5	7·90	8·8	36·3	12·15	76·6
Summer	50·0	11·28	28·6	44·4	10·70	13·6	69·9	11·59	79·8

AVERAGE DEPARTURE

Arithmetical average of diurnal inequalities in Tables 6-8 taken regardless of sign

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	All days			Quiet days			Disturbed days		
	H	*D*	*Z*	*H*	*D*	*Z*	*H*	*D*	*Z*
	γ	'	γ	γ	'	γ	γ	'	γ
Jan.	3·3	1·34	5·0	2·2	0·77	1·0	4·7	2·73	13·6
Feb.	3·8	1·64	8·1	3·5	1·47	3·0	6·3	3·24	24·2
Mar.	6·2	2·13	7·1	6·5	1·81	2·2	8·0	3·72	19·3
Apr.	11·0	2·29	5·2	10·7	2·05	2·4	19·9	2·90	17·5
May	10·4	2·72	5·1	10·1	2·47	3·8	11·9	3·38	16·6
June	13·9	2·99	9·1	11·0	2·54	3·3	37·9	3·77	37·7
July	12·0	2·86	6·6	11·9	2·73	3·6	13·7	2·95	18·4
Aug.	10·6	2·90	7·5	9·9	2·56	3·5	13·4	3·51	17·5
Sept.	8·1	2·62	10·1	7·7	1·73	3·8	19·7	4·27	33·3
Oct.	6·1	2·01	4·8	6·4	1·34	1·3	6·5	3·04	13·8
Nov.	3·3	1·54	5·1	3·5	0·91	0·8	7·3	3·10	15·7
Dec.	2·4	1·20	5·3	2·1	0·63	1·4	5·1	2·35	14·1
Year	6·3	2·15	6·5	6·6	1·70	1·8	8·6	2·89	19·2
Winter	2·6	1·39	5·8	2·6	0·94	1·3	4·6	2·78	16·2
Equinox	7·3	2·24	6·6	7·7	1·70	2·0	9·5	3·21	19·9
Summer	11·2	2·85	7·0	10·6	2·54	3·3	17·3	3·36	22·1

NON-CYCLIC CHANGE

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	All days			Quiet days			Disturbed days		
	H	*D*	*Z*	*H*	*D*	*Z*	*H*	*D*	*Z*
	γ	'	γ	γ	'	γ	γ	'	γ
Jan.	+0·2	−0·03	−0·3	+0·1	+0·08	−0·1	−4·5	+0·50	+3·3
Feb.	−0·1	0·00	+0·5	+0·2	+0·50	+1·1	−5·4	−1·10	−4·0
Mar.	+0·3	−0·01	−0·2	+4·0	+0·18	+0·5	−3·6	+0·99	+2·5
Apr.	+0·3	−0·03	+0·3	+3·8	−1·14	+3·7	−6·0	−0·69	−5·0
May	+0·2	0·00	−0·1	+4·3	−0·13	−1·8	−12·1	−1·16	−1·8
June	−0·4	−0·03	−2·7	+4·0	+0·04	+1·6	−25·6	+1·62	−20·5
July	−0·1	+0·03	+2·9	+3·6	+0·47	+2·5	−9·5	+0·19	−3·9
Aug.	+0·2	+0·03	−0·4	+5·0	+0·21	+1·6	−3·0	+2·60	−12·3
Sept.	−0·1	−0·03	+0·6	−1·5	+0·64	+9·9	+27·9	+5·70	+41·5
Oct.	0·0	−0·06	+0·2	+3·0	+0·30	−2·6	−2·7	+0·31	−12·8
Nov.	0·0	−0·07	−1·5	+1·2	−0·07	+0·2	−14·4	−2·48	−22·7
Dec.	0·0	+0·11	+1·4	+2·8	0·00	−1·1	+1·2	+1·75	+3·1
Year	0·0	−0·01	+0·1	+2·5	+0·09	+1·3	−4·8	+0·69	−2·7
Winter	0·0	0·00	0·0	+1·1	+0·13	0·0	−5·8	−0·33	−5·1
Equinox	+0·1	−0·03	+0·2	+2·3	−0·01	+2·9	+3·9	+1·58	+6·5
Summer	0·0	+0·01	−0·1	+4·2	+0·15	+1·0	−12·5	+0·81	−9·6

AVERAGE RANGE OF DIURNAL INEQUALITY 1932-53 WITH 1965 AS PERCENTAGE OF THIS

12 LERWICK 1965

		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
	1965(%)	59	81	48	74	84	79	27	75	53
Winter	1932-53	24·4	7·87	41·1	15·1	4·65	7·7	85·0	13·84	116·6
	1965(%)	65	80	51	79	91	58	22	81	53
Equinox	1932-53	59·2	10·94	68·8	42·3	9·54	12·9	193·4	18·89	168·9
	1965(%)	51	72	42	70	83	68	19	64	45
Summer	1932-53	72·6	12·72	53·0	57·5	12·77	17·0	156·9	15·61	134·0
	1965(%)	69	89	54	77	84	80	45	74	60

"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 1965

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Type of day	Element	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
q	*H*	0·96	0·90	1·25	1·12	1·26	1·19	1·21	1·13	1·12	0·86	0·96	1·10
d	*H*	0·88	0·88	1·62	1·45	1·18	2·37	1·33	1·35	2·55	0·87	1·08	0·84
q	*D*	1·10	1·10	1·06	0·99	1·02	1·08	1·07	1·07	1·08	0·96	0·91	1·05
d	*D*	1·16	1·28	1·18	1·14	1·16	0·96	1·24	1·17	1·30	1·27	1·16	1·30
q	*Z*	1·17	1·54	0·71	0·72	0·59	0·66	0·71	0·87	1·07	0·86	0·83	1·85
d	*Z*	2·30	2·17	1·93	2·02	2·19	1·95	1·83	2·36	2·99	2·56	1·95	2·24

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1965

(a) Disturbances without sudden commencement

All times GMT

Serial Number	From		To		Range (γ)			Notes
	Date	Hour	Date	Hour	H	D	Z	
1a	23 Feb.	09	23 Feb.	24	150	144	324	
2a	22 Mar.	17	23 Mar.	22	171	177	224	
3a	18 Aug.	13	21 Aug.	19	234	240	264	
4a	27 Sept.	09	28 Sept.	22	595	205	594	

Note: These are the main examples in a very quiet year. Only in this respect are they noteworthy.

(b) Disturbances with sudden commencement (ssc)

All times GMT

Serial Number	Date	Time of sudden commencement	End of disturbance		With initial reversed stroke			Magnitude of main stroke (γ)			Range of following disturbance (γ)		
			Date	Hour	H	D	Z	H	D	Z	H	D	Z
								γ	γ	γ			
1b	20 Jan.	16 13	-	-	Yes	No	No	-4	-2	-1		small	
2b	6 Feb.	14 15	8 Feb.	02	No	Yes	No	+14	-4	-2	111	163	287
3b	12 Mar.	12 29	-	-	Yes	No	No	+29	-16	-1		small	
4b	17 Apr.	13 14	21 Apr.	03	No	No	No	+21	-12	-1	410	181	334
5b	15 June	11 00	19 June	02	Yes	No	No	-17	+12	-5	946	215	575
6b	6 July	04 52	-	-	No	Yes	No	-23	-25	+3		small	
7b	18 July	15 34	-	-	No	No	Yes	+61	-8	-23		small	
*8b	15 Sept.	14 53	19 Sept.	22	No	No	No	+15	0	0	572	269	431
9b	5 Oct.	02 40	-	-	Yes	Yes	Yes	+15	-15	-5		very small	

*ssc not well defined

In the case of an ssc*, that is, an ssc preceded, on at least one component, by one or more small oscillations, timing of the sudden commencement has been made from the main stroke.

(c) Disturbances due to solar flare (sfe) Nil.

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	GMT	17	18	19	20	21	22	23	24	01	02	03	04	05	06	07	Notes
Jan.	1/2	X	X	O	X	O	O	O	X	O	X	O	O	O	O	O	
	2/3	X	O	O	X	X	X	X	X	X	X	O	O	O	X	X	N(1) 2330
	7/8	X	X	X	X	X	X	X	X	X	X	O	O	O	X	O	
	8/9	O	O	X	X	O	X	O	O	X	X	X	O	X	X	X	
	9/10		X	X	O	X	O	O	O	O	O	O	X	X	X	X	
	10/11		X	X	X	X	X	X	X	X	O	O	O	X	O	X	
	11/12		O	O	O	O	O	X	O	X	O	O	O	O	O	X	
	12/13		X	O	X	O	O	X	X	X	O	X	O	O	O		
	15/16		X	O	O	O	O	O	O	X	X	X	X	O	O		
	17/18		X	X	X	X	X	X	X	X	X	X	X	X	O		
	18/19		X	X	X	X	X	O	X	X	O	O	X	O	X		
	19/20		O	O	X	X	O	O	O	O	O	O	O	O	O		
	20/21		X	X	X	X	X	O	X	X	X	X	X	X	X		
	22/23		X	X	X	O	X	X	X	X	X	X	X	X	X		
	24/25		O	O	O	O	O	O	O	O	O	O	O	X	X		
	25/26		O	O	X	X	X	O	O	O	X	X	O	O	O		
	26/27		X	O	O	X	X	X	X	O	O	X	O	O	O		
	28/29		X	X	X	O	X	X	X	X	O	O	X	X	X		
	29/30		X	O	X	O	O	O	X	O	O	O	O	O	O		
	30/31		X	X	X	X	X	X	X	X	X	X	X	O	O		

	GMT	17	18	19	20	21	22	23	24	01	02	03	04	05	06	07	Notes
Feb.	3/4		X	X	X	X	X	X	X	X	O	O	X	X	X		
	4/5			X	O	X	X	X	X	X	X	X	X	X	O		
	5/6			X	X	X	X	X	O	X	O	X	X	X	X		
	6/7			X	X	X	O	O	O	O	L	L	L	L	X		N(1)
	7/8			X	X	X	X	L	L	L	L	X	X	X	O		N(1)
	10/11			X	X	X	X	X	X	O	X	X	X	X	X		
	13/14			O	X	X	X	X	X	X	X	X	X	X	X		
	22/23			X	X	X	X	X	O	O	X	X	X	X			
	23/24			X	O	L	X	X	L	L	X	X	X	X			N(1)
	24/25			O	X	O	X	X	X	X	X	X	X	X			
	25/26			O	X	L	L	L	L	X	X	X	X	X			N(1)
	27/28			X	X	O	X	X	X	O	X	O	X	X			
	28/1			X	O	X	X	O	O	O	X	X	X	X			

"In order to save space all nights during which the sky was overcast throughout have been omitted from the table; otherwise a symbol is given for each hourly observation during the hours of darkness according to the following code;"

L = aurora is observed
O = observing conditions are good aurora is clearly absent
X = observing conditions made a decision about the presence of aurora impossible
? = aurora is suspected but observing conditions are not good enough for a firm decision.

15 LERWICK (contd) 1965

	GMT	17	18	19	20	21	22	23	24	01	02	03	04	05	06	07	Notes
Mar.	3/4			X	X	X	L	X	L	L	L	L	L	L			N,B(1)
	4/5			O	O	O	O	O	X	X	X	O	O	O			
	5/6				O	O	O	O	O	O	O	O	O	O			
	6/7				O	X	X	O	X	X	X	X	X	X			
	18/19				O	O	O	O	O	O	X	X	X				
	19/20				X	X	X	O	O	X	O	X	X				
	22/23				O	X	X	X	X	O	O	X	X				
	23/24				O	L	L	L	L	L	L	X	X				R,N,A(1)
	24/25				O	L	X	X	O	O	O	O	O				N(1)
	25/26					X	O	O	L	L	L	O	O				N,A(1)
	26/27					O	O	X	X	X	X	X	X				
	28/29					X	O	O	X	O	O	O	O				
	29/30					O	O	O	O	X	X	X	X				

	GMT	17	18	19	20	21	22	23	24	01	02	03	04	05	06	07	Notes
Apr.	2/3					O	O	O	O	X	X	X					
	3/4					O	O	O	O	O	O	O					
	10/11					X	O	X	X	X	X	O					
	12/13					X	X	X	X	X	O	X					
	13/14					O	O	O	O	O	O	O					
	15/16						X	O	O	X	X	X					
	17/18						O	O	O	X	X	X					
	18/19						L	L	O	O	O	O					N(1)
	20/21						O	O	O	L	L						N,P(1 to 2)
	21/22						X	O	O	O	O						
	23/24						X	X	X	X	O						
	24/25						O	L	O	X	O						
	26/27						O	X	X	X	X						
	27/28						O	O	O	O	O						
	29/30						O	O	O	X	X						

When aurora was observed a brief note has been added describing the structure, form and brightness according to the following code:-

Structure.
- H = homogeneous
- S = striated
- R = rayed

Form.
- A = arc
- B = band
- P = patch
- V = veil
- R = rays
- N = not identifiable

Brightness Index.
- 1 = comparable with Milky Way
- 2 = comparable with moonlight cirrus cloud
- 3 = comparable with brightly moonlit cirrus cloud or moonlit cumulus cloud
- 4 = much brighter than 3

Complete definitions of these terms are given in the International Auroral Atlas (1963).

15 LERWICK (contd) 1965

	GMT	17	18	19	20	21	22	23	24	01	02	03	04	05	06	07	Notes
Aug.	7/8						O	O	O	X	X						
	9/10						O	O	O	O	O						
	10/11						X	X	X	O	O						
	11/12						X	X	X	X	O						
	18/19						X	X	X	L	X						A(1)
	19/20						X	X	X	O	X						
	23/24						O	L	L	L	X						B(1)
	25/26						O	L	L	L	O						B(1)
	26/27						O	O	O	O	O						
	28/29						O	O	O	X	X						
	29/30					X	O	L	L	X	X	O					B(1)
	30/31					X	X	L	X	O	O	O					N(1)
	31/1					X	L	L	X	L	X	O					B(1)

	GMT	17	18	19	20	21	22	23	24	01	02	03	04	05	06	07	Notes
Sept.	1/2				X	X	X	X	O	X	X	X					
	2/3				X	X	O	O	O	O	O	O					
	10/11				X	O	X	X	O	X	O	X	O				
	16/17				O	X	X	O	X	X	O	O	X				
	22/23				X	X	X	X	X	X	X	X	O				
	25/26				O	O	O	O	O	X	X	X	X				
	27/28				X	X	X	X	X	X	X	O	O				
	28/29				X	X	X	X	X	X	O	O	O				

	GMT	17	18	19	20	21	22	23	24	01	02	03	04	05	06	07	Notes
Oct.	8/9			X	X	X	X	X	X	X	X	X	O	O			
	14/15			X	X	X	X	X	X	X	X	X	X	O			
	15/16			O	X	X	X	X	X	X	X	X	X	X			
	17/18			O	X	X	X	X	X	X	X	X	X	X			
	18/19			X	X	X	X	X	O	X	X	X	X	X			
	19/20			O	O	O	O	X	X	X	X	X	X	X			
	23/24		X	X	X	X	X	X	X	X	X	O	X	X	X		
	24/25		X	X	X	X	X	O	O	X	X	O	X	O	X		
	27/28		X	X	O	O	L	L	X	X	X	X	X	X	X		B,N(1 to 3)
	29/30		X	O	O	X	X	X	X	X	X	X	X	X	X		
	30/31		X	O	O	O	X	X	X	X	X	X	X	X	X		

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L = aurora is observed
O = observing conditions are good and aurora is clearly absent
X = observing conditions made a decision about the presence of aurora impossible
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15 LERWICK (contd) 1965

	GMT	17	18	19	20	21	22	23	24	01	02	03	04	05	06	07	Notes
Nov.	1/2		X	X	X	X	X	X	X	X	X	X	X	O	X		
	8/9		O	O	X	X	X	X	X	X	X	X	X	X	X		
	11/12		O	X	X	X	X	X	X	X	O	O	X	X	X		
	12/13		O	X	O	X	X	X	X	X	X	X	X	X	X		
	13/14	X	O	O	O	L	O	O	O	O	X	X	X	O	O	O	A,B(1)
	14/15	X	X	O	O	O	X	X	X	X	X	X	X	X	X	X	
	15/16	O	O	O	O	O	O	O	O	O	O	O	X	X	X	X	
	17/18	X	X	X	X	X	X	O	X	X	O	X	X	X	X	X	
	18/19	X	X	O	X	X	X	O	O	X	X	X	O	O	X	X	
	19/20	X	X	X	X	X	O	O	X	X	X	L	X	X	O	X	N(1)
	20/21	O	L	X	X	X	X	X	X	X	L	L	L	X	X	X	N(1)
	21/22	X	O	X	X	X	X	X	X	X	X	L	L	O	O	X	B(1)
	22/23	O	O	O	O	O	O	O	O	O	O	O	O	O	O	X	
	23/24	X	X	X	X	O	O	O	O	O	O	O	O	O	O	O	
	24/25	X	X	X	X	X	X	X	X	X	O	X	X	X	O	X	
	25/26	O	O	O	O	X	X	X	O	X	X	X	X	X	X	X	
	26/27	X	X	X	O	O	O	X	X	O	X	X	X	O	X	X	
	27/28	X	X	X	X	X	X	X	O	X	O	X	X	O	X	X	
	28/29	O	O	X	X	X	X	O	X	O	O	O	O	X	X	X	
	30/1	X	X	X	X	L	X	L	X	X	X	X	X	X	X	O	B,N(1 to 2)

	GMT	17	18	19	20	21	22	23	24	01	02	03	04	05	06	07	Notes
Dec.	2/3	X	X	X	X	X	X	X	X	X	X	O	O	O	O	O	
	3/4	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	
	9/10	X	X	X	X	X	X	X	X	O	X	O	O	X	X	O	
	10/11	X	X	X	X	O	O	O	O	O	O	O	O	O	O	O	
	11/12	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	
	12/13	O	O	O	O	O	O	X	X	X	X	X	X	X	X	X	
	13/14	X	X	X	X	X	O	O	X	X	X	O	O	O	O	O	
	16/17	X	X	X	X	X	O	O	O	O	X	O	O	O	X	X	
	17/18	X	X	X	X	X	X	X	X	O	X	X	X	X	O	X	
	18/19	O	O	X	X	L	L	X	L	L	L	X	O	X	O	O	N,A(1 to 2)
	19/20	X	X	O	X	X	O	X	O	O	X	X	X	X	X	X	
	20/21	O	O	O	O	X	O	O	O	O	O	O	X	X	X	X	
	21/22	X	X	X	X	O	O	O	O	O	O	O	O	O	X	X	
	25/26	O	O	O	O	O	O	O	O	X	O	X	O	X	X	X	
	26/27	O	O	X	X	X	X	X	X	X	X	X	X	X	O	O	
	27/28	O	O	O	O	L	X	O	X	X	X	X	X	X	X	X	N(1)
	28/29	X	O	O	X	X	X	X	X	X	X	O	O	O	O	O	
	30/31	X	X	X	X	X	X	O	O	O	O	O	X	X	X	O	

When aurora was observed a brief note has been added describing the structure, form and brightness according to the following code:-

Structure.
- H = homogeneous
- S = striated
- R = rayed

Form.
- A = arc
- B = band
- P = patch
- V = veil
- R = rays
- N = not identifiable

Brightness Index.
- 1 = comparable with Milky Way
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- 4 = much brighter than 3

Complete definitions of these terms are given in the International Auroral Atlas (1963).

DATE	Φ_1	FORMS	TIME	Φ_2
JANUARY				
2-3	61	N,R	2250-2400	
7-8	60	N	0050-0100	
12-13	61	N	0350	
FEBRUARY				
3-4	61	HA	2200	
6-7	59	N	0130-0530	
7-8	59	HA	1820-0025	65
19-20	61	RA	2000	
20-21	55	N	0145	
23-24	55	HA,RA	1900-0115	64
24-25	60	N	1845-2350	
MARCH				
2-3	59	N	2400-0100	
3-4	58	HA,HB,P	2115-0500	65
22-23	60	N	2120-2400	
23-24	60	RA,RB	2020-2215	
24-25	62	N	2110-0200	
25-26	60	RA,N	2050-0150	66
27-28	61	N	0130-0250	
APRIL				
4-5	60	N	0245-0410	
17-18	55	Concealed by cloud	2150-0035	
18-19	63	N	2150-2300	
APRIL (contd.)				
19-20	56	HA,N,P	2215-2245 and 0050-0200	61
24-25	63	N	2230-2250	
MAY				
17-18	61	N	2350-2400	
JUNE				
16-17	57	Not identifiable in bright twilight	2400-0200	
30-1	58	Not identifiable in bright twilight	2245-0200	
JULY				
22-23	61	HA	2330	
AUGUST				
18-19	59	RA	0100	66
23-24	60	HB	2240-0050	68
24-25	62	N	2200-0200	
25-26	60	HB	2030-0045	64
29-30	60	N	2310-2350	
30-31	63	N	2140-2335	
31-1	63	HB	2130-0200	
SEPTEMBER				
15-16	59	HA	2350-0200	64
SEPTEMBER (contd.)				
16-17	59	HA	2000-2315	66
18-19	58	N,R	1930-2250	
20-21	63	HB	2200	
26-27	60	N	2250-2400	
27-28	53	HA,RA,RB,P	1830-0350	63
OCTOBER				
2-3	60	N,R	2100-2150	
22-23	61	HA	2115-0200	67
23-24	61	HA	2145-0100	66
27-28	60	HB,RB	2220-2400	
28-29	60	N	2145	
NOVEMBER				
5-6	57	N	1810-1900	
6-7	58	N	2015-0300	
13-14	59	HA,HB,R	2040-2155	65
19-20	63	N	0250-0330	
20-21	60	N	1740-0400	
24-25	60	N	0050-0400	
30-1	59	HB	1850-0415	
DECEMBER				
18-19	59	HA	1715-0100	65
19-20	61	N	2020-2050	
22-23	61	N	2350	
24-25	57	HA,RA,RB	2250-2330	65
26-27	58	N	0015	
27-28	61	N	2025-0100	
29-30	61	N	2250	

The above table was compiled in the Balfour Stewart Auroral Laboratory of the University of Edinburgh from all data available for the sector between geomagnetic longitudes 70° and 90°E., using mainly observations made at British Meteorological Office stations and by British voluntary observers on land and in ships and aircraft, but including also data from Iceland, Faroes, Ireland and France. Acknowledgment is made to the authorities in these countries responsible for the organization and collection of observations.

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 glow on the northern horizon was seen from the British Isles, the other forms reported are listed and the period of time (GMT) during which the display was observed from the British Isles is stated.

The standard abbreviations used are those defined in the International Auroral Atlas, (1963). The system of reporting defined therein came into operation on 1 January 1964.

N = denotes an aurora, the form of which is not identifiable because of adverse observing conditions. It includes the glow on the horizon, since this is the upper part of a display, the identifiable portion of which is below the horizon.

HA = homogeneous arc; RA = rayed arc; HB = homogeneous band; RB = rayed band; R = isolated rays; P = patch of diffuse luminosity. The two types of pulsing of auroral forms described as pulsation and flaming are designated by the symbols p_1 and p_2 respectively.

Under Φ_2 is given the lowest geomagnetic latitude in which aurora was situated overhead in the longitudes considered. In the absence of direct visual observations Φ_2 is deduced from measurements of elevation 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 (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

17 LERWICK — Factor 2·66 — JANUARY 1965

Hour GMT; volts per metre

Day	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				110	50	115								130+	170+	175+			205+		170	160				
2							145	150																		
3					120+									130+	125	110	130	110	120	145	180	160	145	115		
4		130+				95+	95+	115+	110+																	
5																										
6																										
7										110+	110+	130+	140+													
8		90+	100+	115+	115+					130+					155+			150+					120+	130+		
9									115+	120+		155+	145+	145+	140+	140+	125+	120+			145	150		140		
10	170	160+	155+	130+					120+	110+													170+	140+		
11	115+	100+	110+	120+	125+	130+	130+	185+	265+	265+	230+	170+						145+	125+	125+	125+					
12			85	85	70	95	130	130	215+	160+	230+								145	130	120	125				
13			80+			90+						110+	115+	115+	120+			205	120	125						
14													100+			120+	130+									
15		95+			155+		95				95+	100+						130		135						
16					130+	90+		95	100	110	130+	115+														
17	170+												145+	110+	95+	100+	125+	140+	150							
18				85+	155+				90+	95+	85+	90	95	100	95			120	155+	100+	110					
19			110+			85+	80	90	90	90	90	95	100	100	95			185	230			115	90	130		
20	115+	95+	95+	60+	55+	60+	65+	85+	110+	170+												130	130	100		
21	115	110	95	85	100	360	110+	110+													130+	155+				
22				140+			150+				160+	190+														
23		120+			110+												260+	250+	260+	240+	205+	155+	155+			
24										130+		290+	395		300+	300+	165	155	130	130	120	110	155	120		
25	90	90	80	85	85	80	65	80	85	180	120	115	110	110	110	100	125	120	155	130	95		160+	150		
26 0a	145	140	110	100	110	110+	120+	130+	150+	170+	145+	170+	190+	175+	200+	205+	205+	240+	210+	205+	170+	170+		130+	161	(23)
27	110+	100	95	90	100	95	110	140	150	175	170	100	90				150+	170	180		160+	140+	110+	100		
28	95			85	90			60		80		125	150	145	125	115				130+	35	95	90			
29	25	60	70	85			95	115								120+										
30			85+	90+	95	90		110+								100		90+		100	110	95	70			
31					85	95	85	80	80	80	115					115	120	120	110			95+				
Mean	115	107	98	98	103	113	105	112	129	136	140	140	148	126	144	142	153	153	164	141	134	133	127	125	129	
	(10)	(12)	(13)	(15)	(17)	(14)	(14)	(15)	(13)	(16)	(12)	(14)	(12)	(10)	(12)	(12)	(10)	(16)	(14)	(12)	(14)	(14)	(11)	(10)		
Fair Weather Mean	107	100	89	91	87	133	101	104	101	119	121	109	157	114	110	107	135	146	149	128	121	127	113	122	116	
	(6)	(5)	(6)	(8)	(9)	(7)	(8)	(9)	(5)	(6)	(5)	(6)	(6)	(4)	(5)	(6)	(4)	(9)	(9)	(7)	(9)	(9)	(6)	(7)		
Mean of 0a days																									[161	(1)]

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

17 LERWICK — Factor 2·65 — FEBRUARY 1965

Hour GMT; volts per metre

Day	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 0a	90	85			70		65				95	115	120	120	125	110	100	100	100	100	95	85	95	85	97	(18)
2	70	60	65		70	70				95	110+			155+	145					130+				85+		
3	90+	70	40	50+	35+			95+	70+	80+	80+	85+	95+	95+	90+								140+	115+		
4	100+	110	95	90	85	80	80	110+	85+	70+	85+	140+		145+				115+	130+	155+						
5				70+	65+	70+	90+	85+	85+	100+	100+	100+	100+	95+	90+							85+				
6		85+	80+					90+										110+				115	110	100		
7 0a	85	85	70	70	80	95	95	110+	100+	100+	110+	120+	130+					95+	100+	115+	95+	85	95	95	103	(21)
8	95	85	70	70	70	85	85	80	80	60	85	110	120	115	95	140	120+									
9	90			85+									85+			110+				100		95	90			
10	80+	65				60	65+	65+	65+						95+									95+		
11	80+	85			85+	70+	95+					95+						130+								
12	85+	85+		80+		85+	95+	110+																		
13										120+	115+								125+							
14								60+						95+						90+	85+			95		
15 0a	70+		70+	60+	60+	60	65	80	70	80	70	85	80	90	90	110	100	115	95	95	110	100			84	(21)
16 0a																									-	(0)
17											55+	50+	55+	95+	110+	120+			140+	140+	110+	100		70		
18 0a	60	50	55	60	55	55	55	60	65	70	80	85					95+	110+	100+	100+				85+	73	(17)
19 0a			70+			70+	80+	60+	110+			90+	115				115	125+	140+	145+	110+	110+	110+	85+	102	(15)
20 0a	85	85	85	70	65	60	60	60	70								60	60	100	80	80	65	65	65	71	(17)
21 0a	65	60	55					80+	70+	65+	70+	70+	70+									95+	90+	80	73	(12)
22	60	65	70	60	55	55	60				65+	65+											55			
23	80					55	65	60	70	80+									130+	145+	155	145	115+	110+		
24	100	80	70	55	40	35	50+	50+	55+																	
25	60+	60+					50	50	50	50									95+			100	100	95		
26	90	85	70	55	55		50											110+								
27	70+	60	35	55									95+			110+										
28																										
Mean	80	75	67	66	64	67	71	77	75	81	86	93	97	112	105	117	98	107	114	116	105	98	97	90	90	
	(20)	(18)	(15)	(14)	(14)	(15)	(17)	(17)	(14)	(12)	(13)	(13)	(11)	(9)	(8)	(6)	(6)	(10)	(11)	(12)	(8)	(12)	(11)	(14)		
Fair Weather Mean	81	75	65	65	65	65	66	65	68	70	83	99	109	108	114	120	94	92	98	94	110	99	87	86	87	
	(12)	(15)	(12)	(9)	(10)	(11)	(11)	(6)	(7)	(6)	(4)	(4)	(4)	(3)	(4)	(3)	(4)	(3)	(3)	(4)	(4)	(9)	(7)	(8)		
Mean of 0a days																									[86	(8)]

The potential gradient is reckoned as positive when the potential increases upwards. The small + denotes a non-fair weather hour (see Introduction). No entry is made for hours with hydrometeors and dashes are inserted for hours of defective record. The number of hours or days used in computing each mean is shown in round brackets. The mean for 0a days (see Introduction) and the figure in round brackets, which is the number of days used in computing this mean, are entered in square brackets.

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

17 LERWICK — Factor 2·67 — MARCH 1965

Hour GMT — volts per metre

	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							265+			155+	180+	155+	160	190	265	205	240	230	215	205	205+	215+				
2																										
3		180+	180+	200+	210+	235+	180+	170+	170+	180+	150+	175+	180+	185+	200+	200+	205+	210+				120				
4	95+	65+	50+	65	60				125	95	90	95	•115	100	125	140	110	110	100	95	90	80	70	65		
5	60	65	70	70	70	80	85	80	85	95	110	115	130	155	175	155+		155+	300+	95	85	90	100	70		
6	70	65	65	70	60	65	50		95	110	110	110	110	125	130	130	145		150	145	145	150+	155+	155+		
7	160+	170+	170+	115+	90+		95+			110+	130+								220+			90+				
8		60+								85		80	85			95	90	110	95	130	95	100	90	80		
9									110+	110+	120+	125+	125+	140+	140	120	120	110	95+	90+	85	70	65	25		
10 0a	80	80	60	70	85	80	80	70	85	95	100	115	140	145	130	150	230	230	230	250	290+	275+	180	170+	143	(24)
11 0a	175+	195+	170+	145+	155+	215+	205+	230+	235+	230+	230+	240+	250+	300+	310+	310+	325+	340+	350+	350+	360+	360+	340+	360+	266	(24)
12 0a	310+	370+	275+	230+	275+	205+	300+	455+	420+	310+								490+	480+	430+	325+	420	385	300	358	(24)
13 0a	275	290	275	265				205+	175+	190+	200+	275+	325+	400+	370+	420+	445+							455+	388	(24)
14	400+	360+																								
15								205+	240+				215+	230	250	310+										
16										150	130+	145+	155+	205	300+	300+	190	190								
17		110+			130+																					
18																		130+	140+	125+	115+	110+		85		
19	85+					125+							180+	250+						170+	180+	110+	130	95		
20 0a						90+			90+				120+	120+	110		100		85	95	95	85	70		96	(11)
21 0a		60	60			60	65			70	80			95	100									65	73	(9)
22	60	55	55	55	55	55	60	65		85+				70+	80	85	85	85+					55			
23		70	60	60	60	65	65+	65+		80+	85+								90	85	80	85	85	85		
24	85	80	80	80	85	80	80	95+			90+	115+	115+		115	115	100	95	95		85					
25 0a		60	65	85	80	60	60	80	110	110	100	115	130	145	150	140	125	130	120	120	100	95	70	70	101	(23)
26 0a	90	80	80	85	85	70	95	85	85	85	100+	110	110	115	110	90	90+	100	100+	95+	110	120	115+	115+	97	(24)
27	110+	100+									115+	120+	125+	125+	125+	120+	110+	145+	155	125+	115+					
28																							150+	120+		
29	100+	120+	125+	140+	160+	160+	140+								95+	100+	90+	85	70	80	80	80	80	65		
30 0a	60	60+	55+	55+	60+				70	100	85	120	120	145	120	130	100	110	120	70+	55+	85+	80+	95+	90	(21)
31 0a	110+	85+	85+	80+	85+								120+	130+	125+					120+	130+	110+	110+	115+	106	(24)
Mean	137 (17)	126 (22)	110 (18)	110 (17)	106 (17)	110 (15)	122 (15)	150 (12)	150 (14)	129 (19)	123 (18)	138 (16)	151 (20)	169 (20)	168 (21)	174 (19)	161 (18)	170 (18)	169 (19)	151 (19)	141 (20)	143 (20)	129 (18)	136 (19)	141	
Fair Weather Mean	97 (8)	91 (10)	87 (10)	91 (10)	71 (9)	68 (9)	72 (8)	76 (5)	94 (7)	99 (10)	96 (7)	107 (8)	122 (9)	150 (11)	143 (14)	127 (11)	136 (12)	136 (11)	127 (12)	130 (10)	95 (11)	122 (11)	115 (12)	91 (11)	106	
Mean of 0a days																									[167	(10)]

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

17 LERWICK — Factor 2·72 — APRIL 1965

Hour GMT — volts per metre

	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 0a	95+			110+	95+	125+	145+	190+	215+	190+	230+	240+	230+	220+	265+	325+	325+	310+	265+	265+					208	(24)
2											130+	265+	385+										110	120		
3	95+	115+			95+	100+	125+	130+	170+	145+	90+	150+	160+	170+	145+	130+	155+	145+	150	155	160	130	120	115		
4	70	85	70	70	95	145	130	205	140	130				60+	70+	145+	115+	180+	130+	160+						
5							145+	155+	205+	190+	215+	140+	130+	105+	85+	110+	70+	120+	110+							
6											60+			50+	70+							90+	65+	65+		
7	70+	70+	70+								85+	120+	115+	110+	110+	95+	120+	180+	155+	150+	190+	170+	155+	155+		
8	145+	110+																		155+	130+	125+	130+	130+		
9	115+	90+	110+	125+	155+	150+	185+	205+	210+	215+	190+											85+				
10												400+	505+	565+	530+					275+	215+	130+				
11		100+	95+	95+	100+	110+	120+	115+	120+	115+	120+	125+	120+	140+	150+	160+										
12					120+	130+	145+	145+	150+	145+	125+	155+	170+	180+	175+	185+	220+	290+	275+					110		
13	85+	70+	125+				190+	115+									140+	130+	115	100	90	90	80	70		
14	60	60	60	50	70	70	95	115+	120+	130+	125+	140+	160+	130+												
15																	130+		145	140		160+	145+			
16		95+					140+					145+	140+		150+	140+		130	125	120	120					
17																		120+			140+	130	130	120		
18	110	100			90			110+		110+		170+	95+	100+	120+	190+		115+			125	115+	100	110		
19	95+	190+	95	90	85	85+				130+				110+			120+	120+	115+	120+	110	95	80	80		
20 0a	85	80	85	70	65	65			110	100	85	120	120+	125+	130	150	145	140	140	120	100	110	95	70	105	(22)
21 0a	70	70	70	70	70	90	115	115	95	100	120	115	120	120	120	140	110	115	110	100	115	100	90	90	101	(24)
22	95	90	110	110	100	120	120	95	100	95	85	90	70	90	100	110	115									
23														145+	130+	130	170	180	190	170						
24	120	95	90	100	95	95	115			145+	125+	110	150+	190+	155+	150+	145	150	190+	175+	140	140	115	125		
25	130	115	125+	95	120	130	160	185	160	155+	115+						155+	170+	175+	185+						
26											170+	155+	95+	95+	155+	190+	240+	155+			155+	125+		85+		
27	110	110	100	100	110+	115+	120+	95+	90+			155+	170+	215+	230+	175+	175+	180+	180+	185+	115+	145	110	90		
28 0a	70	70	85	85	65	70	90	115	120	130	125	120	125	120	140	120	95	100	115	100	110	115	110	80	103	(24)
29 0a	65	95	95	95	95	70	100	130	130	150	175	145	160	160	155	180	175	180	145	150	175	190	175	170	140	(24)
30 0a	170+	145+	150+	120+	115+	125+	130+	145	130	130	120	155+	190+	190+	205+	180+	230+	190+	185+	155+	145+				163	(24)
Mean	98 (19)	98 (20)	96 (16)	92 (15)	97 (18)	106 (17)	132 (18)	139 (17)	142 (16)	139 (18)	131 (19)	161 (20)	171 (20)	154 (22)	161 (21)	158 (19)	157 (20)	162 (21)	159 (19)	157 (19)	137 (17)	125 (18)	113 (16)	105 (17)	133	
Fair Weather Mean	90 (11)	88 (11)	86 (10)	85 (11)	86 (11)	95 (9)	116 (8)	141 (7)	123 (8)	119 (7)	118 (6)	117 (6)	119 (4)	123 (4)	129 (5)	138 (6)	136 (7)	142 (7)	137 (9)	128 (9)	125 (10)	125 (10)	110 (12)	104 (13)	116	
Mean of 0a days																									[137	(6)]

The potential gradient is reckoned as positive when the potential increases upwards. The small + denotes a non-fair weather hour (see Introduction). No entry is made for hours with hydrometeors and dashes are inserted for hours of defective record. The number of hours or days used in computing each mean is shown in round brackets. The mean for 0a days (see Introduction) and the figure in round brackets, which is the number of days used in computing this mean, are entered in square brackets.

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

17 LERWICK | Factor 2·73 | MAY 1965

Day	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 0a																									177 (24)
2 0a							110+	110+	110+	110+	100+	90	95	100	115	120	140	120+	95+	120+	115	95+	85+	65+	111 (24)
3	60+	85+	300+	145+						120+														100+	
4																									
5																									
6						100+	85+	90+	100+	95+			110+	110+											
7										145+	155+	170+	240+	240+	395	360+	470+	420+	190+	190+					
8																									
9			120+								265+					90+	85+	85+				90+		80	
10	60+	35+	35+	35+			60	50	40+	35+	55	50+	65+	70+						145	140	95	70	60	
11	70	65	60	55	70	65	110	130	115	120	120	120	115	130	120	130									
12								95+	95+	110	110	120	125	160	145	125	115	115	100	85	100	85			
13													50+	25+		110+	110+	85+	95+	100+	100+	95+	95	100	
14	85	80	70	85	65	55						80	90	100	100	100	100	100	90	80	80	80	85	65	
15	55	60	65	65	55	5+									35+	40+	55+	50+	65+	90+	70+	55+	65+	50+	
16	55+	35+	25+	0+									85+		130+	50+	155+					150+	100	95	
17	95	95	85	85	90	85	95	110	90				80+	85					80+	85+	85+	90	80	80	
18	65	80				160+															110	145		150+	
19		110	95																100	100		100+	85+		
20 (0a)		–	–	–	–	–	–	–	95	90	80	85	95	115	125	125	125	130	130	130	130	100	120	85	110 (16)
21 0a	85	95	110	110	110	90	70	65	70		90	100	145+	250+	250+	350+	410+	350+	360+	350+	350+	290+	250+	155+	196 (23)
22 0a	180+												420+	515+	385+	350	360	360	350	325	240+	325+	310+	250+	330 (15)
23 0a	300+	300+	300+	270+	275+	275+	290+	275+	250+	235+	245+	235+	220+	235+	250+	275+	275+	275+	240+	215+	200+	160+	160+	150+	246 (24)
24	140+	130+	145+	130+	140+	145+	115+	145+	145+	145+	125+	120+	110+	110+	100+	110+									
25																									
26																								85+	
27	65+					85+	65+	55+	60+	55+	50+	55	40	55+	90+	90+	110+	100+	95+	80+				85+	
28 0a	85+	85+	65+	70+	70+	65+	55+	60+	90+	90+	90+	95+	95+	110	120	145	160+	125+	100+	70	65	70	60	40	87 (24)
29	40	50	35		80	90	60	80	70	65	70	80	70	70	55	60	70	70	80	120	95	80	70+	40+	
30	70+	70+	85+	100+	70+	65+	70+	25+		60+	60+	60+	55+							125		110			
31 0a					60	60	60	70	90	100+	95+	110+	110	120	125	130	65	55	100	90	80	60	55	60	85 (20)
Mean	94 (16)	92 (15)	106 (15)	96 (12)	99 (11)	96 (14)	96 (13)	97 (14)	101 (14)	105 (15)	114 (15)	105 (15)	121 (20)	144 (18)	159 (16)	153 (18)	175 (16)	163 (15)	142 (16)	139 (18)	131 (15)	120 (19)	113 (15)	94 (19)	119
Fair Weather Mean	71 (7)	79 (8)	74 (7)	80 (5)	76 (7)	74 (6)	76 (6)	84 (6)	88 (6)	96 (4)	87 (6)	91 (8)	93 (8)	110 (9)	144 (9)	143 (9)	139 (7)	138 (6)	136 (7)	127 (10)	102 (9)	91 (10)	83 (8)	74 (9)	98
Mean of 0a days																									[168 (8)]

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

17 LERWICK | Factor 2·76 | JUNE 1965

Day	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	60	55	55	80	70	80	65													125+	90+	90+	85	
2	65	65+	60+	50+					35+			35	50+	70+	30+	35+	70+	85	90	60+	70+	80+			
3				80+	70+	60+	50	60	10	30	85	95	95	110	120	115	95	85+	85+	120+	90+	90+	85+	80+	
4 0a	70+	65	65	80	90	125	155+	265+	420+	515+	515	540+										395+	310+	170+	359 (24)
5	155+	190+	145+	110+	110+	5+	-130+	-10+	-70+																
6									110+	80+	180+	210+	110+	70+	100+	140+	205	275+	275+	335+	360+	395+	385+	360+	
7 0a						90+	85	90	120	155	145	155	120	125	140	160	170	190	185	170	215	170	115	100	161 (24)
8	110	95	60	50	90	85	95	85	80	65				85	100	95	95	120	0	65					
9		65+	70+	100+																		110+	70+	55+	
10	40+	50+	40+	55+	55	60	60	70	55	50	55	60	55			145	110	70							
11 0a				30+		40+	55+	65+	70+	80+	60+	65+	70	80	90	85+	95	115	130	120	125	110+	100+	85	83 (20)
12 0a	70	65	65	60	65	70	70	85	85	80	85	85	80	85	90	85	90	90	125	95	125	110	100	85	85 (24)
13	90	60	60	50	65	60	85	80	95	110	95	100	90	70	50	80	80	35+							
14																									
15																									
16																									
17 0a																					140+	115+	125+	130+	227 (15)
18	115+	70+	80+		135	205	205+																		
19																125+	115+	130+	100+	170+		140+	155+		
20												130+						115+	120+	130+	120+	120+	115+	115+	
21	110+	95+			85+	80+	85+	90+	95+	140+	155+	160+	180+	170+	160+	150+	145+	125+	85+	100+	85+	80+	70+	65+	
22 0a	60+		70+	70	70	65	85+	80+	85+	85+	70+	85	85	80	95	90	100	90	95	95	130	155	120	110	90 (23)
23	110	100	90	95	110		120	125	145+	145+	145+	130+			155+								470+	420	
24	350+	335+	370+			185+			170+	145+	140+	145+	95+			140+	115+	120+	130+	150+	150+	145	140	140	
25	130	110	100	100	95	130	155	180	275	310	300	410+								160+	190+	190+	175+	160+	
26	155	120	110	110	110	145	145	125+	230+	215	180	145	155			180+	120+	100+	95+						
27						35+	55+			95+	110+	115+	125+	130+	130+	95+	70+	100+							
28									155+	125+	150+	150+	145+	130+	125+	130+	140+	130+	150+	150+	145+	140+	125+	130+	
29	120+	100	95	70	95+	110+			150+	120+	140+	140+			60+						125+	130+	125+	145+	
30	130+	110+	120+	140		85	150+	140+	130+			145+	130+	130+	130+	130+	140	145	140	125	120	100			
Mean	113 (17)	103 (17)	97 (17)	77 (17)	88 (15)	90 (19)	89 (18)	100 (16)	122 (20)	141 (18)	154 (17)	155 (20)	106 (15)	103 (13)	105 (15)	116 (17)	115 (17)	118 (18)	120 (15)	136 (15)	145 (16)	150 (19)	160 (18)	143 (17)	119
Fair Weather Mean	97 (8)	86 (9)	78 (9)	80 (11)	88 (11)	100 (11)	95 (10)	93 (9)	103 (7)	127 (8)	183 (8)	104 (7)	94 (8)	91 (7)	98 (7)	110 (7)	118 (10)	113 (8)	109 (7)	112 (6)	143 (5)	136 (5)	119 (4)	146 (7)	109
Mean of 0a days																									168 (6)

The potential gradient is reckoned as positive when the potential increases upwards. The small + denotes a non-fair weather hour (see Introduction). No entry is made for hours with hydrometeors and dashes are inserted for hours of defective record. The number of hours or days used in computing each mean is shown in round brackets. The mean for 0a days (see Introduction) and the figure in round brackets, which is the number of days used in computing this mean, are entered in square brackets.

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

17 LERWICK — Factor 2·83 — JULY 1965

Hour GMT	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+			90				115+		100+	85+									120+	145+	155+	145+			
2							80+	95+				80+	65+						95+			90	85			
3		70+			85+		90+								85+	85+	85+			110+	90+	95				
4 0a						95+		60+	60+		60+			95+	90			95	100	125	130		100	95+	92	(12)
5	100+	70	95	85	80	85	60	80	40	95	70	65			120+	85+	95+	100+	95+			95	110			
6																					80+	100	95	70		
7	90	50				95+		125+	145+	140			125	115	125	140	145	95	85	110	110	100	100	90		
8 0a	80	90	90	90	100	115	120	110	85+	60+			85+	65+	85+	90+	95	85+				95+	70+		89	(18)
9		50+					55+				95+	100+			80+			110+	95+					125		
10	100	110	110	110	130		130+				120+			85+	110+	150				130	130	90	185	170		
11 0a	185	125	100	90	130	120	120	110	130	150	155+	180+	200+	175+	130+	145	140	160	125	170	190	200	170	130	147	(24)
12 0a	100	110	90	85+				130+	140+	140+	160+	170+	160+	160+	160+	160+	160	160	155	145	130	110			138	(19)
13 (0a)		50+	-	-	-	80+	80	80	100+	110+	100	115+	115	125	150	145	155	130	140	130	125	145	110	95	114	(20)
14 (0a)	100	85	80	85	70	85	80		85	130	125	-	-	-	145	120	130	-	125	120	115	100	95	-	104	(18)
15 (0a)	90	85	80	80	90	-	145	130+	125+	120	120	-	-	145	170	155	160	-	155	155	170	185	125	-	131	(19)
16 (0a)	70	80	70	60	65	-	110	150	-	150	140	140	125	140	140	145	115	130	125	95	85	85	145	180	116	(22)
17 0a	155	145	90	80	70	85	95	110	110	120	130	125	130	125	150	150	145	150	130	120	125	115+	110+	100+	119	(24)
18 0a	100	80			80+	120+	110+			230+	230	240+	250+	205+											220	(24)
19 0a												335+	250+	290+											392	(24)
20						130	170	190	190	150	155	130	115	95+	100+											
21		145+				160	130	130	100	130	140	125	160	170	180	50	60	80	90		95+	130+	150+	150		
22	125	120	115	100	90	115	95	95+	115+	120	130	140	155	150	150	175+	170+	180+	155+		150+	175+				
23																										
24																										
25 0a							70+	60+	70+	70+	70+		70+	65+			55	60	65	70	80	85	90	70	70	(15)
26	60	55	60	60	60	35	60	85	90+	90+	95+	110+	85	70							130+	140+				
27					120+	120+	120+	100	85+												100+	120	100	95		
28 0a	100	80	85	85	150	190	190	170	150	130	130	125	125	125	130	130	130	130	150	170	190	175	170	115	139	(24)
29 0a	90	90	80	70	100	170	170	155+		130+	130+	130+	125+	125+	130+	130+	130+	130+	125+	130	115	95	95	90	119	(23)
30 0a	90	80	80	70	85	110	130	125+	120+	125+	110+	115+	110+	115+		125+	130	125	115	100	115	100	95	150	110	(23)
31			85										80+	85+	180+	170+	120+		140+	110+	110+	110+	120+	95+		
Mean	101 (17)	89 (20)	87 (15)	83 (15)	94 (16)	112 (17)	109 (22)	115 (21)	108 (18)	125 (20)	121 (21)	143 (17)	133 (19)	130 (21)	131 (20)	131 (18)	123 (18)	120 (16)	119 (19)	124 (17)	123 (22)	120 (24)	117 (21)	114 (16)	115	
Fair Weather Mean	102 (15)	91 (16)	87 (15)	83 (14)	94 (13)	117 (12)	117 (15)	119 (11)	115 (7)	130 (11)	134 (11)	121 (7)	126 (9)	129 (9)	143 (10)	133 (10)	125 (13)	119 (11)	120 (13)	126 (14)	129 (14)	116 (17)	117 (16)	118 (13)	117	

Mean of 0a days [140 (15)]

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

17 LERWICK — Factor 2·79 — AUGUST 1965

Hour GMT	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+	90+	85		80+	90	95																215+	150+		
2	120+	110+	95+	95+	140	125	155			110+	130+	130+	145	160	150+	155+	155+	160+								
3				110+	85+			90+	85+	120+			90+	90+	100+		85+	120+	120+	85+	95+	70+	70+			
4 0a				80+		85+	100+	95+	120+	125	110	110	130	140	115	100	125	145	125	120	120	110	100	120	114	(20)
5	95	85	85	80	95	70																				
6									240+																	
7																						125	115	110		
8	100			70	65	70	85	95+							125+	150+	150+	150+	150	160	190	190	175	130+		
9 0a	65	40	35	65+	80+	70+	50+	65+	90+	110+	120	125+	140	145	145	145	155+	150+	155+	145+	125+	130+	145	155	110	(24)
10 0a	215+	140+	125+	140+	120+				170+	200	180	205	190	240	245	240	220	240	250	220				140+	204	(24)
11 0a	125	155	170	140	130	130	155	170	175+	155+	180+	205+	190+	240+	215+	190+	190+	205+	180+	175+	200+	190+			176	(24)
12 0a			220+	230+	220+	230	250+	215+	250	220	190	190	205	220	240	230+	205+	230+	240	300	275	265	265	250	231	(24)
13 0a	260	210	190	200	215	230	250	290	265+	215+	190+	175+	180+	205+	215+	215	215	240	290+	310+	360+			350+	248	(24)
14 0a	360+	350	310	335	335	395+	410+	410	445	420	410	565	480	360	325	370	420	370	275	205	190	250	335	325	360	(24)
15 0a	350	310	350	310	335	300	275	325	420	430	350	385	480	455+										95+	313	(24)
16	65+	60+	80+																							
17 0a																									378	(24)
18				625+	540+	565+											120+	100+		145+		120	95+	85+		
19	85+	50+	30+	40+	35+	50+	65+	70+	25+	10+	40+	100+	60+	110+	130+			145	215	230	200	220	215			
20	100	90	95	110									95+	70+		80+	120+	190+	395	455						
21					240+	230+	230+	230+																		
22																										
23																						95+	85	100		
24	130	120	155																							
25			95+	110+		100+	155	155	150	130+	140+	120	120+	110+	120+	120+	125+	115+	95+	90+	90+	85	80	70		
26	80		60	65	80	70	145	110+								145+					115	115	110	110		
27	90	85	85	85	100				130	95	100	110	85	110	90	115	215	205+	175+	145+	130+	155+	180+			
28				155+	190+	125+	90+	110+	145+				120+	85+	110+	85+	85+	110+	125+	155+	155	155	130	90		
29	70	65	90		95+	95+	90	90	80+	85+	110+	100+						90	90+		110	110	95			
30	70		70			65	85	90	80	85+	95+							190+	120+							
31	90+	95+	65+														65+	90+		90+			95			
Mean	134 (19)	128 (16)	125 (20)	160 (19)	167 (19)	163 (19)	158 (17)	163 (16)	179 (16)	167 (15)	167 (14)	194 (13)	181 (15)	183 (15)	166 (14)	167 (14)	166 (16)	171 (19)	187 (16)	189 (16)	168 (14)	149 (16)	147 (17)	152 (15)	164	
Fair Weather Mean	128 (12)	151 (10)	137 (13)	155 (9)	166 (9)	138 (10)	149 (10)	219 (7)	246 (6)	248 (6)	209 (7)	241 (7)	232 (8)	196 (7)	193 (6)	197 (6)	239 (5)	205 (6)	236 (7)	241 (7)	169 (8)	159 (11)	150 (13)	148 (9)	190	

Mean of 0a days [237 (9)]

The potential gradient is reckoned as positive when the potential increases upwards. The small + denotes a non-fair weather hour (see Introduction). No entry is made for hours with hydrometeors and dashes are inserted for hours of defective record. The number of hours or days used in computing each mean is shown in round brackets. The mean for 0a days (see Introduction) and the figure in round brackets, which is the number of days used in computing this mean, are entered in square brackets.

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

17 LERWICK — Factor 2·70 — SEPTEMBER 1965

Day	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	80+	80	80	80	70	80			85	80	120	130	140	170	145	190	190	170	140	110	110	100	110	95	
2	110	110	95	110	110	100	125	110	85	110	145+	230+	240+	275+	215+	175	130	155+	180+	310+					
3	145+	130	115	120	175+			215+	155+																
4									180+	170+	125+	155+	120+	125+	130+	95+	90+	130+	70+						
5																125+								85+	
6				60+						110+		100+		115+	100+	85+	50+	70+	85	90	90	85	70	65	
7	55	60+	50+	50+	40+	50+																			
8																									
9							215+		145	140	115	-	-	180+	130	120+	100+	85							
10		70+								85+	90+	95+	100+	95+	110+	120+	120+	110+	125+	95+		95	115+	100+	
11 0a	115+	115	90	95	95+	110+	115+	130+	110	110	110	110	115	130	125	120	110+	110+	130+	85+	65+	60	65	95	105 (24)
12	60					55+	70+	95+	70+	95+	95+	110+	85+	60+	70+				80+	35+	40+				
13						110+	110+				65+	115+	110+		110+	100+	70+								
14		65+	65+	60+					90	90+	95+	110+	95+	140+	140+	155	200	205+	220+		250+	310	290	480+	
15	600+														125+	110+	100+	115+	95+	90+	115	115	100	90	
16	70	65	55	80+	95+	85+	85+				110+	115+	145+	145+		110+		125+		130+			115+	115+	
17	95+	95+	85+				120+	95+			95	95	110+	160+	150+	160+	130	155	155	210	240	275	240	175	
18	160	120+	90+	90+	100+	110+	120+	120+					60+	70+											
19	80	85	80	85	80	70	70	95	115	95	115	110+	125+	140+											
20													130+	145+	145+	85+	95+	145+	155+	145+	150+	150+	140+	110+	
21	95+	80+																							
22		110+	95+		110+	130+	120+	155+				100+	100+	120+	110	100	130	155+	190+	155+	130+				
23									230+	150+	170+	175+			130+	180+	240+	395+							
24												115+	145+	130+	65+	140+	120+	130+						240+	
25																		480+	455+	445+	455+	410+	370+	310+	
26 0a	265+	260+	250+	240+	240+	250+	290+	290+	290+	250+	300+	300+	290+	275+	275+	265+			275+					100	261 (18)
27	85+	80+										205+	205+	265+	215+	150+	120+	110+	70+						
28						25+	25+	35+	30+	35+	20+	-5+	-60+	-40+			30+	130+	145+						
29						25+	5	0	25	25	30+	25+						90+	95+	65+	60+	60+	40+		
30					65+						-20+	-5+	10+	5+	20+	30+	60+	95+	110+	100+	110+	110+	95+		
Mean	144 (14)	102 (15)	96 (12)	97 (11)	107 (11)	92 (13)	113 (13)	122 (11)	124 (13)	110 (14)	105 (17)	119 (20)	119 (19)	136 (20)	132 (19)	131 (20)	116 (18)	158 (20)	154 (18)	147 (14)	151 (12)	161 (11)	146 (12)	158 (13)	127
Fair Weather Mean	89 (6)	97 (6)	86 (6)	98 (5)	87 (3)	83 (3)	67 (3)	68 (3)	94 (7)	93 (6)	115 (4)	120 (2)	127 (2)	150 (2)	127 (4)	148 (5)	156 (5)	137 (3)	127 (3)	137 (3)	139 (4)	149 (7)	146 (6)	103 (6)	114
Mean of 0a days																									[183 (2)]

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

17 LERWICK — Factor 2·60 — OCTOBER 1965

Day	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				120+	120+	115+				195+	150+	120+	110+	110+	100+										
2 0a					275+	340+	330+	440+												185+	165+				338 (19)
3										310+	375+	330+	240+	350+	330+	275+	275+	475+							
4					585+	560+	515+			395+	420+	375+	420+												
5									220+	185+	145+	120+	105+	110+	95+	105+	110+	125+	125+	135+	145+	145+	125+	120+	
6 0a	120+	115+	120+	115	110	100	90+	90+	90+	130+	155+	180+	145+	135+	130+	130+	105+	85+	110			85	55	90	113 (22)
7 0a	65+	50+	40+	75+	55+	90+	100+	130+	135	125	130	130	130	120	150	145	145	175	185	145	125	95	65	65	111 (24)
8 0a	60	60	55	45	45	55	80	80	110	110	100	100	110	105	105	125	160	145	155	155	200	210	130	115	109 (24)
9	100	95	60	45	50	55	65	70	100	100	90	75	85	75	75	75	75	75	95	90	85	75	60	30	
10	40	30	30	60	35	40	35	20	20	30	40	45	40	45+	55+	90+	85+	105+	110+	120+	120+	85+	100+	100+	
11	105+	75+																		145+	120+	105+	110+	110+	
12	110+	100+	100+	105+	100	105	100									120+	180+	240+	210+	200	130	120	145+	115+	
13								130	130	155	130+	145+	175+	170+	170	145	125	145	90	120+			220+	210	
14	160+	130+	130+	130+																	155+	145+		110+	
15	100+	95			100+	100+									95+								75		
16	70+	65+	60+	55+	60+	65	60	60	95	105	90	85+		85+								185+	120+		
17		90+							120+	125+	110+	105+	105+	105+	95	90	90	100	125	120	130	125	115	110+	
18	105+	105+	100+		95+	100+	90+	85+	75+	85+	90+	100+	115+	120+	125+	130+	155+	165	160	155	150	145	120	105	
19 0a	90	85	90	85	75	120	145	165	185	220	165	145	120	125	135	175	210	200	175	155	200	215	215	240	156 (24)
20 0a	225	210	175	130	145	165	145	130	140	145	160	185	200+	200+	200+	240+	220+	240+	240+	230+	240+	240+	230+	230+	194 (24)
21 0a	240+	240+	265+	285+	285+	285+	285+	275+	250+	230+	250+	265+	240+	285+	275+	285+	330+	375+	430+	450+	475+	475+	450+	395+	317 (24)
22 0a	375+	360+	340+	330+	330+	310+	265+	285+	220+	220+	230+	240+	240+	240+	275+	310+	385+					440+	420+	420+	336 (24)
23 0a	385+	375+	385+				360+	360+	360+	350+	320+	295+	320+	350+	360+	340+	375+	420+	460+	475+	440+	395+	340+	320+	376 (24)
24 0a	310+	310+	330+	350+	310+	330+	340+	330+	330+	310+	285+	275+	295+	310+	295+	320+	240+	265+	275+	285+	320+	310+	285+	265+	303 (24)
25 0a	255+	265+	265+	350+	365+	420+	350+	375+	330+	255+	230+	220+	230+	265+	330+	375+	395+	430+	395+	330+	340+	320+	320+	295+	321 (24)
26	285+	310+	220+								95+	90+	100+	95+	80+				375+	200+					
27											120+			105+	110+		120+	125+	130+	125+	120+	120+	110+	105+	
28	100	90	75										145+	120+											
29			85+						100+	100+	105+					110+					115	110			
30								100+												145+					
31																90+			95			105	100	90	
Mean	165 (20)	155 (21)	154 (19)	152 (15)	174 (18)	186 (18)	197 (17)	184 (17)	167 (18)	185 (21)	173 (23)	173 (21)	175 (21)	165 (22)	171 (21)	184 (20)	199 (19)	216 (18)	207 (19)	198 (20)	199 (19)	193 (22)	178 (22)	173 (21)	180
Fair Weather Mean	103 (6)	95 (7)	81 (6)	80 (6)	80 (7)	88 (8)	90 (7)	93 (7)	114 (8)	124 (8)	111 (7)	113 (6)	97 (5)	106 (4)	122 (6)	126 (6)	134 (6)	144 (7)	132 (9)	146 (7)	142 (8)	129 (10)	104 (9)	118 (8)	111
Mean of 0a days																									[242 (11)]

The potential gradient is reckoned as positive when the potential increases upwards. The small + denotes a non-fair weather hour (see Introduction). No entry is made for hours with hydrometeors and dashes are inserted for hours of defective record. The number of hours or days used in computing each mean is shown in round brackets. The mean for 0a days (see Introduction) and the figure in round brackets, which is the number of days used in computing this mean, are entered in square brackets.

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

17 LERWICK | Factor 2·54 | NOVEMBER 1965

Day	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+				95+		
2	90+																									
3																										
4 0a		75+	70	65	65	70	75	90	110	90					135+	120+	125+	140+	140+	130+	140+	125+			104	(17)
5 0a	90+	75+	70+			100+						145+	145+	125	130+	115+	110	115	120	120	105	90	90	90	108	(17)
6 0a	70	65	70	70	65	65	65	70	75	65	110	95	90	90	75	90	120	125	125	110	90	115	110	130	90	(24)
7 0a	130	120	130	120	130	90	75	75	75	75	80	105	95	110	105	110	125	110	120	145	145	130	155	185	114	(24)
8	185	175	155	135										310+	375+	385+	195+	240+	230	260+	230+					
9 0a											360+			430+	430+	395+	340+				330+	320+	265+	210+	369	(24)
10 0a	165+	175+	135+	135	155	130+	70+	115+	175+	145+	125+	100+	110+	175+	130+	100+	105+	120+	55	140	150	100	105	80	125	(24)
11	55	40	90	20+	10+							100	125	150	155	140			170+	165+	155+	150+	130+			
12			100										165+	155+	155+			155	150	155	140	150	135	130		
13	120	125			115+	130+			135+			110+	110+					135	135	130	125	125	105	230		
14	200	110	75	100	95	70	95	130+	220+	130	120+	115+				130+	160+			155		250+	130	100		
15	90	115+				75+	100	120										100	115	110	130	140	120	100		
16	70	125	120	440	385	145	255	155	115	125	125	120	125	130+	110+	110+			125+		105+	110+	110+			
17						220+	100+	100+	100+						145+	155+	165+	160+	160+	135+	160+	130+	135+	125		
18	125	105	110	105				110	110	125	120				185+						200+					
19					65							125	120+	145+	135	125	145	200	145	210	185	275	285	275		
20			90+				130+				210+	150+		155+												
21		135+																			175+	175+				
22		130+	255+	115	105	110	90	100+	110+	155+			175+						175	160	130	125	125	100		
23	100	95	95	95	95	145	220+	165+	115+	110+	125+	140+	130+							165	155	125	135	130		
24	120	115	105	90	85	90	100	95	95	140	115					100	115	165	175	165	190					
25							120		110+	120+	130+		165+	240+		240+	220+		200+	220+	210+	175+	120+	110+		
26	100+	100	100				60+	95+	120+	175+				170	185	200	185	175								
27		275+								120+	170+						185+			175+		210+		55+		
28																										
29			65+	240+							175+	255+	130+	220+	230+	255+				230+						
30										175+	240+	55+								200+	195+		185+			
Mean	114 (15)	120 (18)	108 (17)	133 (13)	114 (12)	111 (13)	111 (14)	109 (13)	119 (14)	125 (14)	157 (14)	124 (13)	130 (13)	186 (14)	179 (15)	173 (16)	164 (14)	149 (13)	146 (16)	161 (21)	164 (21)	159 (19)	144 (17)	134 (16)	139	
Fair Weather Mean	115 (11)	107 (11)	102 (12)	134 (11)	125 (10)	98 (8)	108 (9)	102 (7)	97 (6)	107 (7)	110 (5)	109 (5)	109 (4)	129 (5)	131 (5)	127 (6)	133 (6)	142 (9)	140 (11)	147 (12)	140 (11)	137 (10)	136 (11)	140 (12)	122	
Mean of 0a days																									[152	(6)]

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

17 LERWICK | Factor 2·63 | DECEMBER 1965

Day	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean	
	volts per metre																									
1					115+	115+	125+	120	115+			140	140	140	125	125	120	150	140	185	145	150	120	105		
2	105	90	125	150			125	125	105	100	105	115	105+	110+	120+	105+			150+	160+	160	155				
3		120+	125+	110+	105+	130+	150+	160	160	200	205							220+	155+	150+	120+	195	170	105		
4	125	115	80	85	110	105	105	120	115	150	265	265+	265+	230+	160+	130+										
5														205+							355+					
6					140+									160+								115+		140+		
7	90	80	85	80				90															125+	80+		
8				90	100	105	105	115	185	155+			160+	150+	125+	120+	120	125	125	125	115	120	110	90		
9	80	55	70	80	80					35+													110+	115+		
10	110+	105+	115+	110+				140+						150+		140+							145+	115+		
11	100+	100+	85+	80	80	85	100	85	80	90	80	90	100	105	105	100	105			150	145	115	115	105		
12 0a	90	100	90	90	150	170	150	125	125	115	125	140	145	150+	190+	285+	285+	285+	310	250	195	230	285	185	178	(24)
13	110	125	105														205	200	195+		190+	150+	145+			
14 0a				110	105	110	115	100	125+	150+	115+	155+	170+	195+	265+	185+	140+	145+	205+	390+	380+	330+	290+	220+	190	(21)
15 0a	165+	240+	290+	300+	330+				505+																347	(10)
16																				450+	575+	480+	355+	265+		
17	220+	230	185+	210+	275+	220+	180+	205+	185+	205+	220+	235+	195+	165+	150+									105+		
18	105+	115+	125+														205+					160+				
19	230+								195		150+	110+	110	105+	130+	130+					105	105				
20	80	70	75+	80+	80	90										105	105	115	115	115	100	120	110	110		
21	105	90	80	100	90	85	115	115	125	105	145	195	140	115	170	130	140			120	105	105	100	90		
22	75	65	70	70	105	125	110	85	90				105													
23						80+		45+			55+							115+	105+							
24		70+																								
25															190+	150			160	150	145+	125+		105		
26														125												
27					85+	85+	85+	85+	85+											80+						
28													160+				130+	155+	160+	155+	130+	105+				
29	70+			100+	75+	80+	170+	150+	220	290	105	105	125	120+	120+	100+	125+									
30													100+	110+	125+	125+	135+	155+	195+	170+	160+			115+		
31	90+	85+	90+				110+	110	125	120	115	125	140+	125+	140+	160+	170+	160+	185+	160+						
Mean	115 (17)	109 (17)	112 (16)	115 (16)	126 (16)	113 (14)	125 (14)	116 (13)	159 (16)	143 (12)	140 (12)	152 (11)	144 (15)	145 (17)	151 (14)	139 (15)	153 (13)	166 (11)	169 (13)	187 (15)	195 (16)	173 (16)	168 (13)	128 (16)	143	
Fair Weather Mean	96 (9)	102 (10)	88 (8)	93 (10)	100 (9)	109 (8)	116 (8)	113 (12)	139 (11)	146 (8)	143 (8)	130 (7)	123 (6)	121 (4)	133 (3)	122 (5)	133 (6)	147 (4)	170 (5)	156 (7)	134 (8)	144 (9)	144 (7)	112 (8)	126	
Mean of 0a days																									[238	(3)]

The potential gradient is reckoned as positive when the potential increases upwards. The small + denotes a non-fair weather hour (see Introduction). No entry is made for hours with hydrometeors and dashes are inserted for hours of defective record. The number of hours or days used in computing each mean is shown in round brackets. The mean for 0a days (see Introduction) and the figure in round brackets, which is the number of days used in computing this mean, are entered in square brackets.

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Monthly, seasonal and annual means for hours without hydrometeors and for fair weather hours

18 LERWICK 1965

	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
Hour GMT																									
	volts per metre																								
	No hydrometeors																								
Jan.	115	107	98	98	103	113	105	112	129	136	140	140	148	126	144	142	153	153	164	141	134	133	127	125	129
Feb.	80	75	67	66	64	67	71	77	75	81	86	93	97	112	105	117	98	107	114	116	105	98	97	90	90
Mar.	137	126	110	110	106	110	122	150	150	129	123	138	151	169	168	174	161	170	169	151	141	143	129	136	141
Apr.	98	98	96	92	97	106	132	139	142	139	131	161	171	154	161	158	157	162	159	157	137	125	113	105	133
May	94	92	106	96	99	96	96	97	101	105	114	105	121	144	159	153	175	163	142	139	131	120	113	94	119
June	113	103	97	77	88	90	89	100	122	141	154	155	106	103	105	116	115	118	120	136	145	150	160	143	119
July	101	89	87	83	94	112	109	115	108	125	121	143	133	130	131	131	123	120	119	124	123	120	117	114	115
Aug.	134	128	125	160	167	163	158	163	179	167	167	194	181	183	166	167	166	171	187	189	168	149	147	152	164
Sept.	144	102	96	97	107	92	113	122	124	110	105	119	119	136	132	131	116	158	154	147	151	161	146	158	127
Oct.	165	155	154	152	174	186	197	184	167	185	173	173	175	165	171	184	199	216	207	198	199	193	178	173	180
Nov.	114	120	108	133	114	111	111	109	119	125	157	124	130	186	179	173	164	149	146	161	164	159	144	134	139
Dec.	115	109	112	115	126	113	125	116	159	143	140	152	144	145	151	139	153	166	169	187	195	173	168	128	143
Year	117	109	105	107	112	113	119	124	131	132	134	141	140	146	148	149	148	154	154	154	149	144	137	129	133
Winter	106	103	96	103	102	101	103	103	121	121	131	127	130	142	145	143	142	144	148	151	149	141	134	119	125
Equinox	136	120	114	113	121	123	141	149	146	141	133	148	154	156	158	162	158	177	172	163	157	155	141	143	145
Summer	111	103	104	104	112	115	113	119	127	135	139	149	135	140	140	142	145	143	142	147	142	135	134	126	129
	Fair weather																								
Jan.	107	100	89	91	87	133	101	104	101	119	121	109	157	114	110	107	135	146	149	128	121	127	113	122	116
Feb.	81	75	65	65	65	65	66	65	68	70	83	99	109	108	114	120	94	92	98	94	110	99	87	86	87
Mar.	97	91	87	91	71	68	72	76	94	99	96	107	122	150	143	127	136	136	127	130	95	122	115	91	106
Apr.	90	88	86	85	86	95	116	141	123	119	118	117	119	123	129	138	136	142	137	128	125	125	110	104	116
May	71	79	74	80	76	74	76	84	88	96	87	91	93	110	144	143	139	138	136	127	102	91	83	74	98
June	97	86	78	80	88	100	95	93	103	127	183	104	94	91	98	110	118	113	109	112	143	136	119	146	109
July	102	91	87	83	94	117	117	119	115	130	134	121	126	129	143	133	125	119	120	126	129	116	117	118	117
Aug.	128	151	137	155	166	138	149	219	246	248	209	241	232	196	193	197	239	205	236	241	169	159	150	148	190
Sept.	89	97	86	98	87	83	67	68	94	93	115	120	127	150	127	148	156	137	127	137	139	149	146	103	114
Oct.	103	95	81	80	80	88	90	93	114	124	111	113	97	106	122	126	134	144	132	146	142	129	104	118	111
Nov.	115	107	102	134	125	98	108	102	97	107	110	109	109	129	131	127	133	142	140	147	140	137	136	140	122
Dec.	96	102	88	93	100	109	116	113	139	146	143	130	123	121	133	122	133	147	170	156	134	144	144	112	126
Year	98	97	88	95	94	97	98	106	115	123	126	122	126	127	132	133	140	138	140	139	129	128	119	113	118
Winter	100	96	86	96	94	101	98	96	101	111	114	112	125	118	122	119	124	132	139	131	126	127	120	115	113
Equinox	95	93	85	89	81	83	86	95	106	109	110	114	116	132	130	135	141	140	131	135	125	131	119	104	112
Summer	99	102	94	99	106	107	109	129	138	150	153	139	136	131	145	146	155	144	150	151	136	125	117	121	128
																				Annual mean for 0a days					[173]

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

ESKDALEMUIR

GEOMAGNETIC FORCE: HORIZONTAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, GMT

19 ESKDALEMUIR (H) — 16,000γ (0·16 CGS unit) + — JANUARY 1965

Hour GMT	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 21,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	896	897	898	902	903	907	910	911	905	897	894	896	895	898	901	904	903	900	890	892	893	896	895	896	899	579
2 d	890	896	899	897	894	909	909	909	907	904	896	890	895	882	878	882	893	878	876	889	896	893	889	901	894	452
3	886	896	893	896	897	897	900	898	894	891	891	891	889	892	897	890	884	893	898	897	898	897	896	897	894	458
4	902	897	899	900	901	904	905	906	904	900	899	895	895	893	900	900	901	899	888	884	883	888	892	900	897	535
5	903	899	898	900	903	904	903	902	899	897	894	893	894	895	895	888	888	895	897	897	896	895	897	897	897	529
6 q	896	897	897	897	900	902	904	905	901	899	893	893	895	898	900	900	900	900	900	899	898	897	897	897	899	565
7	899	899	900	904	906	907	910	909	908	904	904	902	900	898	893	888	900	901	896	898	900	900	900	902	*901*	628
8 d	904	900	893	895	897	899	895	893	881	882	886	889	887	885	871	865	882	885	878	882	877	880	896	886	*887*	288
9	890	888	888	894	900	896	899	899	896	895	893	889	889	899	899	896	898	899	888	888	884	892	903	900	894	462
10	887	887	890	893	895	895	900	897	895	894	892	893	895	900	902	903	895	885	884	891	894	893	890	899	894	449
11 q	890	892	893	893	895	896	898	898	895	893	892	892	893	897	897	897	898	899	899	900	899	900	899	897	896	502
12 d	898	895	893	893	893	904	909	911	909	906	893	900	892	879	879	885	890	888	894	893	881	878	887	897	894	447
13 d	913	897	885	886	897	895	902	899	893	893	892	883	885	890	891	893	893	891	891	883	882	890	890	895	892	409
14	898	893	895	896	896	899	904	906	903	893	888	886	895	891	890	893	895	896	898	899	896	901	895	899	896	505
15	900	902	897	902	903	905	905	902	903	900	897	890	889	892	895	895	895	894	889	889	894	895	895	895	897	523
16 q	897	895	895	897	897	897	900	900	895	894	894	890	890	894	892	897	897	895	895	895	894	889	892	881	894	462
17	890	894	895	897	898	898	902	902	903	898	892	892	892	889	863	879	894	885	881	877	879	892	894	894	891	380
18	891	891	893	897	897	902	906	902	901	894	889	888	888	893	896	896	896	896	895	889	891	894	899	890	895	474
19	893	890	894	894	897	901	904	900	894	892	891	894	896	900	903	904	903	903	901	899	896	892	892	894	897	527
20	894	894	896	901	901	902	904	904	899	893	886	886	889	894	896	896	906	902	884	896	905	900	919	919	89[illegible]	566
21	881	884	881	880	887	895	900	898	896	894	889	887	889	896	897	898	898	898	898	893	889	890	896	902	892	416
22 d	909	898	902	908	903	911	889	925	909	902	890	892	882	881	877	881	886	882	875	877	894	882	886	888	893	429
23	896	892	889	889	891	896	899	905	899	893	888	889	885	882	884	887	890	892	893	893	893	892	898	890	892	405
24 q	891	891	891	893	895	898	900	896	896	893	888	887	888	890	896	899	898	899	900	899	901	899	901	899	895	488
25 q	897	896	897	897	899	900	902	903	901	896	892	892	893	894	897	898	899	901	903	904	902	901	899	902	899	565
26	900	898	900	900	903	904	905	911	914	913	903	900	893	890	894	901	902	900	897	898	900	899	901	899	901	625
27	905	903	901	901	902	906	905	907	903	900	894	889	891	896	900	901	900	896	898	898	894	891	898	899	899	578
28	895	901	896	900	903	904	910	911	911	908	897	886	887	890	895	895	898	900	900	896	891	889	891	894	898	548
29	897	901	900	897	900	900	901	901	899	894	893	892	889	887	885	891	897	900	899	901	901	900	897	899	897	521
30	893	895	897	897	899	901	904	908	906	901	892	886	889	890	894	894	896	898	900	899	899	897	897	900	897	532
31	898	898	900	900	900	901	902	903	904	900	896	889	887	892	896	898	900	899	898	896	892	892	906	905	898	552
Mean	896	895	895	897	899	901	903	*904*	901	897	893	891	*891*	892	892	893	896	895	893	893	893	893	896	897	896	
Sum 27,000γ+	779	756	745	796	852	935	986	1021	923	813	678	621	616	647	653	694	775	749	683	691	692	694	787	813		Grand Total 666,399

GEOMAGNETIC DECLINATION (WEST)
Mean values for periods of sixty minutes ending at exact hours, GMT

20 ESKDALEMUIR (D) — 9° + — JANUARY 1965

Hour GMT	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 1400·0′+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
1	62·9	63·2	63·9	64·3	63·9	63·5	63·0	62·5	62·1	62·1	63·3	64·8	65·2	65·6	64·7	64·2	64·4	64·4	64·1	64·7	63·3	62·4	62·1	60·3	63·5	124·9
2 d	60·2	63·1	64·1	64·2	64·5	64·2	63·7	63·0	62·6	63·1	63·7	65·3	67·9	68·3	67·6	65·8	65·6	66·0	62·2	60·1	58·0	61·4	60·6	57·0	63·4	122·2
3	61·5	62·4	63·4	63·4	63·2	63·1	62·8	62·3	61·6	61·5	62·1	63·8	65·5	65·9	65·2	64·7	63·6	63·3	63·7	63·1	62·7	62·6	62·4	62·1	63·2	115·9
4	63·3	62·8	63·2	63·4	63·5	63·6	63·3	62·9	62·8	63·1	63·9	64·0	66·5	65·5	65·2	64·8	64·3	64·0	62·6	61·1	60·5	61·7	61·3	62·9	63·3	120·2
5	62·8	62·6	63·1	63·6	63·9	63·9	63·4	63·1	62·5	62·5	62·9	64·0	65·8	66·0	65·4	64·5	65·2	64·3	63·5	63·1	62·6	62·1	62·2	62·0	63·5	125·0
6 q	62·6	63·1	63·5	63·7	63·5	63·3	63·1	62·7	62·5	63·2	63·1	63·9	65·3	65·6	64·9	63·9	63·7	63·6	63·2	62·9	62·9	62·4	62·4	62·5	63·4	121·5
7	63·0	63·3	63·6	64·3	63·2	63·1	63·1	62·9	62·6	62·9	64·0	64·3	64·6	65·2	65·0	65·1	64·7	63·9	63·9	62·9	62·6	62·6	62·4	61·4	63·5	124·6
8 d	55·0	56·8	61·5	62·8	62·6	62·1	63·3	63·9	63·4	65·2	64·3	66·1	67·8	67·8	67·9	63·9	65·2	62·5	64·8	63·3	60·7	60·9	58·6	59·4	62·9	109·8
9	61·2	61·4	61·6	62·0	60·9	61·4	62·8	62·6	62·6	63·2	64·2	65·5	67·0	66·1	65·9	65·5	64·1	63·9	63·0	62·2	63·1	57·3	57·8	59·4	62·7	104·7
10	62·0	62·2	63·0	62·5	62·6	63·1	62·9	62·5	62·6	63·1	63·9	64·5	65·6	65·4	65·1	63·9	65·1	64·3	65·2	63·5	62·4	62·2	60·5	58·7	63·2	116·8
11 q	62·0	62·6	61·7	62·0	62·6	62·7	62·8	62·9	62·9	63·3	63·9	64·2	64·8	65·1	64·3	63·4	63·2	63·2	63·3	63·2	62·9	62·7	62·6	62·2	63·1	114·5
12 d	61·5	61·4	61·3	61·2	61·5	62·7	62·9	62·5	62·9	63·4	63·5	65·2	65·9	66·2	67·6	68·1	67·9	64·5	64·3	63·3	61·3	58·9	59·6	61·3	63·3	118·9
13 d	60·8	56·8	53·8	61·2	63·0	63·1	63·4	63·8	62·8	63·2	65·4	65·6	65·9	66·2	65·1	62·4	63·9	63·4	62·8	60·0	57·0	60·3	61·4	62·1	62·2	93·4
14	61·5	62·7	62·9	63·2	64·0	62·9	62·8	62·5	62·4	62·9	63·2	64·7	64·6	65·5	64·0	63·2	63·4	63·4	63·4	63·3	62·5	62·7	62·3	62·9	63·2	116 9
15	63·1	63·6	63·8	64·2	63·6	62·7	62·9	62·5	62·1	61·8	62·5	63·2	64·6	65·5	64·8	64·0	63·4	62·5	60·3	62·4	62·6	62·6	62·5	62·7	63·1	113·9
16 q	62·9	63·1	63·3	63·2	63·2	62·8	62·6	62·5	62·0	62·2	63·1	63·8	65·0	65·8	65·2	64·4	63·9	63·2	62·7	62·6	61·9	61·9	60·4	57·9	62·9	109·6
17	61·0	62·8	63·6	63·7	63·4	62·9	62·7	62·3	62·2	62·2	62·8	63·9	65·2	67·6	69·0	67·1	64·7	65·4	62·8	62·7	57·7	60·1	60·8	61·8	63·3	118·4
18	62·8	63·4	63·6	63·4	63·6	63·2	62·6	63·0	62·5	62·1	62·9	64·2	65·9	65·9	64·7	63·8	63·4	63·0	62·7	62·2	61·6	60·9	59·8	61·2	63·0	112·4
19	62·2	62·5	63·9	64·6	63·5	62·6	62·4	62·6	62·2	61·9	62·6	64·7	65·4	65·3	64·9	64·0	63·7	63·6	63·1	62·8	62·2	61·0	60·5	58·0	62·9	110·2
20	61·0	62·9	63·5	63·6	63·5	63·5	62·7	62·4	61·7	62·0	63·0	64·2	65·6	65·9	65·1	64·0	64·0	63·6	61·7	63·3	63·7	62·2	56·3	54·6	62·7	104·0
21	52·9	53·2	50·3	60·4	63·3	62·6	62·9	62·5	62·2	62·1	62·4	63·7	65·8	66·5	65·1	64·6	63·9	63·9	64·6	63·2	62·0	61·9	61·7	59·7	*61·7*	81·4
22 d	58·4	61·2	63·3	63·2	63·7	67·4	72·1	67·4	63·6	64·3	64·7	66·7	66·8	67·3	68·2	71·2	69·4	69·4	65·1	63·4	61·8	62·2	61·8	61·0	*65·1*	163·6
23	61·1	61·8	62·8	62·9	63·7	64·4	63·3	63·4	62·9	64·0	64·0	65·7	66·5	64·6	64·5	65·0	64·7	63·9	63·2	61·7	61·8	61·9	63·8	63·8	63·6	125·4
24 q	61·5	62·4	62·7	62·9	63·0	62·9	63·0	62·6	61·8	61·4	62·5	63·8	65·0	65·6	65·1	64·4	63·9	64·2	63·7	63·2	62·7	62·4	62·4	62·4	63·1	115·5
25 q	62·4	62·8	62·9	63·1	63·3	63·6	63·0	62·9	62·3	62·4	63·0	63·8	64·4	65·2	64·9	63·9	63·8	63·8	63·7	63·5	63·0	62·8	62·4	62·4	63·3	119·3
26	62·4	62·7	63·3	63·4	63·4	63·0	62·8	62·7	62·4	62·4	62·7	63·7	64·6	65·4	65·9	65·0	64·4	64·6	63·7	63·3	62·9	62·5	62·4	62·2	63·4	121·8
27	61·9	62·6	63·4	62·9	63·7	64·8	63·1	62·5	61·7	61·4	62·4	63·5	64·4	66·4	66·6	65·6	64·9	64·8	63·7	63·7	62·7	61·3	60·9	60·1	63·3	119·0
28	61·2	63·3	62·2	63·2	63·3	63·2	63·1	63·1	62·4	62·0	62·7	63·9	64·8	66·6	66·6	64·9	63·9	63·7	63·5	61·8	61·2	61·7	61·2	60·8	63·1	114·3
29	61·8	61·3	63·2	63·0	63·2	63·1	62·8	62·4	61·8	61·0	62·0	63·8	65·0	66·7	66·5	65·2	64·9	63·9	63·3	63·0	62·4	62·2	62·0	58·5	63·0	113·0
30	57·4	61·1	62·2	63·9	63·6	63·7	63·3	62·9	62·7	62·5	62·6	63·5	64·8	66·8	66·5	65·3	64·5	63·9	63·5	63·2	62·9	62·4	61·7	61·7	63·2	116·6
31	61·8	62·8	63·3	63·6	63·7	63·3	62·8	62·4	61·6	61·3	61·8	63·9	65·7	67·0	65·9	64·9	64·6	64·5	64·1	63·6	61·5	60·9	60·6	61·2	63·2	116·8
Mean	61·2	61·9	62·3	63·1	63·3	63·3	63·3	62·9	62·4	62·6	63·2	64·4	65·5	*66·1*	65·7	64·9	64·5	64·1	63·4	62·8	61·8	61·7	61·2	*60·8*	63·2	
Sum 1800·0′+	96·1	117·9	131·9	157·0	161·6	162·4	161·4	150·2	134·4	139·7	159·1	195·9	231·9	248·5	237·4	210·7	200·3	186·6	165·4	146·3	117·1	111·1	97·4	84·2		Grand Total 47004·5

GEOMAGNETIC FORCE: VERTICAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, GMT

21 ESKDALEMUIR (Z) — 45,000γ (0·45 CGS unit) + — JANUARY 1965

	Hour GMT 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 10,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	431	432	429	428	428	427	427	426	427	427	428	426	425	429	432	432	431	432	434	434	435	436	437	436	430	329
2 *d*	434	432	430	430	428	426	427	428	429	428	427	427	428	433	439	439	436	438	445	443	436	432	432	432	432	379
3	421	420	424	427	431	431	430	432	432	431	429	426	426	428	432	433	437	435	433	432	432	432	432	432	430	318
4	429	431	431	432	431	431	429	429	428	428	428	428	429	432	433	433	433	433	435	439	440	438	437	433	432	370
5	425	426	428	429	429	429	429	429	430	429	430	430	426	428	436	437	437	437	436	435	433	433	432	432	431	345
6 *q*	431	431	431	432	431	431	431	430	430	431	432	431	430	431	433	432	432	432	432	432	432	432	432	432	431	354
7	431	430	429	428	428	428	427	428	428	427	426	426	426	428	433	435	435	434	433	433	432	432	431	427	430	315
8 *d*	422	415	421	425	428	429	429	429	432	428	426	425	428	435	440	451	447	447	447	450	448	446	440	439	434	427
9	436	436	436	432	428	430	430	431	431	432	431	431	429	431	433	434	436	437	439	442	442	443	433	427	434	410
10	428	432	433	433	433	433	433	433	432	432	432	429	430	432	435	435	437	439	440	439	439	438	438	437	434	422
11 *q*	433	433	433	432	432	431	432	433	434	433	433	431	427	430	433	433	433	434	435	434	434	434	433	433	433	383
12 *d*	432	432	433	432	432	432	431	429	429	427	428	429	430	436	442	439	440	442	443	442	444	448	443	436	*435*	451
13 *d*	411	408	404	412	419	426	428	431	432	432	432	433	433	434	436	438	438	438	437	438	439	436	433	432	*429*	300
14	431	430	429	429	429	430	431	431	432	431	430	432	433	437	439	439	438	437	435	434	435	436	434	433	433	395
15	432	432	431	429	429	429	429	430	430	431	430	432	431	432	433	433	434	432	435	438	435	433	433	435	432	368
16 *q*	433	433	431	431	431	431	431	431	431	431	430	431	432	432	433	433	433	433	432	432	432	433	433	433	432	366
17	435	433	433	432	432	431	431	431	432	432	431	430	432	434	442	442	440	442	443	443	444	436	433	433	435	447
18	435	436	435	433	432	430	431	432	432	433	433	430	430	431	437	438	437	437	437	438	438	438	433	434	434	420
19	433	434	433	433	433	434	433	433	433	433	430	429	430	430	434	435	435	434	434	434	434	436	436	434	433	397
20	431	431	432	432	433	432	432	431	431	430	429	427	428	431	433	435	433	433	439	436	432	434	428	418	431	351
21	423	417	420	427	431	434	434	434	434	433	432	428	427	428	431	434	434	434	434	435	435	435	434	430	431	338
22 *d*	421	422	421	418	418	416	412	401	411	417	423	425	431	438	442	445	446	450	459	457	445	447	446	442	431	353
23	424	430	431	433	434	433	434	435	434	432	431	432	432	435	438	440	440	440	441	440	439	438	435	434	435	435
24 *q*	434	434	434	435	434	434	434	435	435	434	432	433	435	435	438	440	438	438	437	436	435	435	435	435	435	445
25 *q*	434	433	432	432	434	432	434	434	434	434	434	435	434	431	434	434	434	434	434	434	434	434	434	432	434	405
26	431	430	430	430	430	430	431	430	429	428	428	429	430	429	432	434	434	434	435	435	435	434	434	433	431	355
27	429	428	428	429	430	428	428	429	430	430	430	430	430	431	434	435	435	435	435	435	436	438	435	434	432	362
28	432	428	429	429	429	430	429	428	428	428	428	430	427	424	431	435	436	435	436	439	441	441	440	438	432	371
29	436	430	430	431	432	433	434	434	435	434	431	430	432	432	437	441	438	437	436	436	435	435	436	438	434	423
30	438	435	432	432	432	431	432	431	431	430	434	435	435	435	437	439	438	437	435	435	436	437	437	435	435	429
31	436	434	434	434	434	433	433	434	433	434	435	434	431	434	439	440	437	436	436	438	441	441	437	431	435	449
Mean	430	429	*429*	430	430	430	430	430	431	430	430	430	430	432	435	437	437	437	437	*438*	437	437	435	433	433	
Sum 13,000γ+	332	308	307	321	335	335	336	332	349	340	333	324	327	386	501	543	532	536	562	568	548	541	486	430		Grand Total 321,912

GEOMAGNETIC CHARACTER FIGURES (K, K_H, K_D, K_Z, AND C) AND TEMPERATURE IN MAGNETOGRAPH CHAMBER

22 ESKDALEMUIR — JANUARY 1965

	3-h range indices K	Sum of K indices	3-h range indices K_H	Sum of K_H indices	3-h range indices K_D	Sum of K_D indices	3-h range indices K_Z	Sum of K_Z indices	Geomagnetic character of day, C (0-2)	Temperature in magneto-graph chamber 200°A+
1	0110 0222	8	0000 0222	6	0110 0011	4	0000 0000	0	0	84·6
2 *d*	2211 3333	18	1201 3333	16	2111 2233	15	0000 1111	4	1	84·6
3	4011 1311	12	2010 1301	8	4011 0111	9	2000 0000	2	1	84·5
4	2001 1123	10	2000 1123	9	1001 1022	7	0000 0010	1	0	84·5
5	2000 0201	5	2000 0201	5	0000 0101	2	0000 0000	0	0	84·6
6 *q*	1000 1000	2	0000 1000	1	1000 0000	1	0000 0000	0	0	84·6
7	0100 2212	8	0000 2212	7	0100 1101	4	0000 0000	0	0	84·6
8 *d*	4112 3323	19	3112 3323	18	4112 2322	17	2000 1101	5	1	84·6
9	1200 1124	11	1200 1123	10	1100 1124	10	0100 0002	3	1	84·6
10	0111 1223	11	0011 0222	8	0100 1113	7	0000 0000	0	0	84·5
11 *q*	1000 0100	2	0000 0100	1	1000 0000	1	0000 0000	0	0	84·5
12 *d*	1102 3334	17	1002 3334	16	1102 3223	14	0000 0112	4	1	84·5
13 *d*	4322 2232	20	4222 2122	17	4312 2232	19	2100 0000	3	1	84·5
14	1112 2101	9	1012 2101	8	1101 2100	6	0000 0000	0	0	84·4
15	1202 1220	10	1202 1210	9	1201 1220	9	0000 0000	0	1	84·5
16 *q*	0000 0002	2	0000 0001	1	0000 0002	2	0000 0000	0	0	84·5
17	2002 3233	15	1002 3223	13	2001 2232	12	0000 1102	4	1	84·5
18	1211 0012	8	0111 0012	6	1200 0002	5	0000 0000	0	0	84·4
19	1110 0013	7	1100 0002	4	1110 0013	7	0000 0000	0	0	84·4
20	0000 0234	9	0000 0233	8	0000 0024	6	0000 0012	3	1	84·4
21	3310 2012	12	2310 2002	10	3300 0011	8	1100 0000	2	1	84·4
22 *d*	3342 2342	23	2342 2342	22	3342 1232	20	0121 0120	7	1	84·4
23	2221 1122	13	2121 1022	11	2201 0122	10	1000 0000	1	1	84·4
24 *q*	1000 0000	1	0000 0000	0	1000 0000	1	0000 0000	0	0	84·4
25 *q*	0100 0001	2	0100 0001	2	0000 0000	0	0000 0000	0	0	84·4
26	1011 0100	4	1011 0100	4	1000 0000	1	0000 0000	0	0	84·4
27	1110 2212	10	1110 2202	9	1110 1111	7	0000 0000	0	0	84·3
28	2000 2022	8	1000 2022	7	2000 1021	6	0000 0000	0	0	84·1
29	2111 1112	10	2101 1111	8	2010 1102	7	1000 0000	1	1	84·4
30	2101 0001	5	1001 0001	3	2100 0001	4	0000 0000	0	0	84·4
31	0100 0012	4	0000 0012	3	0100 0011	3	0000 0001	1	0	84·4
								Mean	0·42	84·4

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

K_H For horizontal component. K_D For declination. K_Z For vertical component. (See Introduction).

GEOMAGNETIC FORCE: HORIZONTAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, GMT

19 ESKDALEMUIR (H) 16,000γ (0·16 CGS unit) + FEBRUARY 1965

Hour GMT	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 20,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	900	901	903	907	907	909	910	908	906	897	888	886	891	895	898	900	899	901	903	902	901	901	899	899	900	1611
2 q	899	901	900	904	904	905	908	909	904	901	898	895	894	897	900	900	904	908	909	906	904	903	903	903	902	1659
3	900	902	901	907	910	911	911	914	911	904	896	896	893	898	899	899	903	904	905	904	902	900	888	885	902	1643
4	898	901	909	900	901	911	911	911	903	904	894	898	899	895	897	893	885	894	902	886	889	895	896	901	899	1573
5	899	894	890	892	894	899	903	903	901	894	888	883	880	887	896	901	898	899	900	905	900	899	897	896	896	1498
6	895	908	896	896	899	900	901	903	903	900	893	887	884	881	896	877	862	881	901	902	897	899	901	896	894	1458
7 d	893	903	877	892	902	903	879	869	847	834	830	835	841	844	853	871	841	841	849	844	846	869	875	884	*863*	722
8 d	884	885	886	888	891	893	896	895	896	899	900	894	891	887	888	892	893	898	892	887	896	895	867	886	891	1379
9	886	884	886	888	889	889	896	897	898	897	888	886	884	882	897	898	890	871	896	896	893	890	887	890	890	1358
10	892	891	893	900	903	893	899	906	898	886	873	876	871	873	876	892	896	896	898	892	881	887	893	896	890	1361
11	900	901	897	904	905	897	901	892	902	899	890	884	882	886	894	898	898	895	885	894	900	901	900	896	896	1501
12 q	896	895	896	896	898	899	899	898	893	886	881	882	882	885	892	894	896	897	898	899	898	899	901	900	894	1460
13 q	901	902	901	901	901	903	904	904	901	897	894	892	897	905	910	906	903	899	889	900	898	899	907	894	900	1608
14	900	901	900	901	900	900	916	911	911	901	891	870	889	892	894	897	898	901	894	899	904	902	901	910	899	1583
15	889	897	896	897	903	903	901	903	899	891	888	885	889	879	872	872	881	896	891	890	898	891	898	905	892	1414
16	895	896	891	896	898	902	901	896	896	887	882	874	875	880	879	887	890	894	896	898	898	896	895	900	892	1402
17 q	899	896	896	899	902	902	903	903	897	886	880	877	872	870	987	897	898	899	901	900	899	901	898	898	894	1460
18	898	899	899	899	900	900	899	898	894	888	885	884	889	893	901	904	901	900	902	904	898	890	898	890	897	1522
19 q	902	901	901	900	899	904	905	902	898	894	887	884	891	899	899	899	895	894	898	898	900	898	906	900	898	1554
20	904	903	906	903	906	906	902	901	901	896	890	891	898	897	898	906	905	903	901	905	905	899	905	911	902	1642
21 d	906	907	906	896	911	909	913	913	908	898	880	869	871	875	884	882	879	887	891	896	912	910	894	896	896	1493
22	896	895	901	896	898	899	903	902	900	894	887	881	879	886	889	897	899	902	907	909	904	897	898	905	897	1524
23 d	900	902	902	906	908	912	914	913	912	899	885	872	879	891	889	884	867	862	846	872	895	898	923	896	893	1427
24	884	884	887	890	891	893	893	894	890	886	883	869	877	886	887	898	898	896	894	898	903	902	901	901	891	1385
25 d	911	866	889	891	894	899	906	901	903	893	889	881	879	881	891	893	899	903	899	898	899	913	906	897	895	1481
26	893	895	898	896	898	899	903	898	895	894	883	881	886	894	893	887	901	904	896	896	894	898	898	899	895	1479
27	899	896	897	898	900	902	904	906	904	891	891	882	890	896	887	894	897	898	899	898	899	900	904	917	898	1549
28	895	895	891	897	901	902	903	901	897	890	886	886	893	898	899	890	897	901	902	901	899	903	902	903	897	1532
Mean	897	897	896	898	901	902	*903*	902	899	892	886	*881*	884	887	891	893	892	894	894	896	897	898	898	899	895	
Sum 24,000γ+	1114	1101	1095	1140	1213	1244	1284	1251	1168	986	800	680	746	832	945	1008	973	1024	1044	1079	1112	1135	1141	1163		Grand Total 601,278

GEOMAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, GMT

20 ESKDALEMUIR (D) 9° + FEBRUARY 1965

Hour GMT	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 1400·0′+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
1	62·4	63·0	65·2	63·1	63·1	63·2	63·6	63·0	62·7	62·2	62·5	64·5	65·7	66·4	65·5	64·6	63·9	63·7	63·5	63·1	62·7	62·6	62·5	62·6	63·6	125·3
2 q	62·7	63·0	63·1	64·0	63·2	63·2	63·1	62·4	61·8	61·3	62·0	63·7	65·3	66·2	65·7	64·8	64·3	64·0	63·7	63·6	63·0	62·9	62·6	62·4	63·4	122·0
3	62·8	62·0	62·5	63·0	62·1	62·7	63·0	62·5	62·0	61·4	62·0	63·4	64·8	66·1	65·8	64·8	64·8	64·6	64·6	63·8	63·7	62·7	57·5	58·4	63·0	111·0
4	61·5	62·9	61·2	59·6	60·5	60·9	61·7	63·3	62·2	62·7	63·2	63·7	66·1	66·6	66·7	67·8	68·3	65·0	64·4	62·2	62·4	61·6	61·8	59·5	63·2	115·8
5	58·4	60·0	61·3	62·1	63·0	62·8	62·3	62·2	62·0	61·6	61·9	63·0	65·1	66·4	66·1	65·4	64·1	63·5	61·9	62·4	62·4	62·3	60·5	60·1	62·5	100·8
6	62·1	60·5	60·9	61·7	61·8	61·9	62·2	62·0	61·1	61·6	62·2	64·0	65·7	67·1	68·6	65·6	56·5	67·7	66·7	65·7	63·1	62·3	62·3	61·8	63·1	115·1
7 d	61·0	57·6	55·1	52·4	52·0	60·5	68·7	72·1	70·6	71·1	69·9	70·6	69·6	71·0	72·0	70·2	65·7	64·0	60·7	57·3	53·1	56·6	58·4	60·0	63·3	120·2
8 d	61·1	62·5	62·6	62·4	62·3	62·4	62·2	62·5	62·3	62·2	63·6	63·7	64·1	64·4	65·3	64·6	63·6	64·5	64·6	65·1	47·7	42·7	50·2	60·3	*61·1*	66·9
9	62·3	62·4	62·4	62·4	62·3	62·7	62·5	62·3	61·7	61·6	62·2	63·0	64·4	66·4	67·4	66·7	64·0	62·3	64·5	63·1	62·4	62·0	60·0	60·0	63·0	111·0
10	61·6	63·0	61·7	62·1	62·4	63·7	63·2	62·0	62·0	62·4	63·2	64·0	65·7	67·4	66·1	64·5	64·1	63·8	63·5	62·7	58·2	61·0	62·0	61·9	63·0	112·2
11	61·9	61·9	62·4	63·2	63·3	60·7	61·7	61·8	61·7	61·1	62·9	65·8	66·2	66·6	65·6	64·7	63·9	62·6	59·1	61·1	62·8	62·7	62·5	61·0	62·8	107·2
12 q	58·2	62·3	62·6	62·9	63·0	62·8	62·2	61·8	61·3	61·3	62·2	64·4	65·6	66·4	65·7	64·2	63·1	62·7	62·6	62·6	62·5	62·3	62·3	62·4	62·8	107·4
13 q	62·7	62·8	62·5	62·7	62·8	62·7	62·6	62·1	62·2	62·3	63·3	65·3	66·7	67·0	66·1	64·5	63·6	63·6	62·5	62·7	62·9	61·7	58·7	60·0	63·1	114·0
14	62·5	63·2	63·4	63·0	62·9	64·1	65·6	67·7	64·7	63·6	65·4	65·4	65·0	65·5	65·9	65·4	64·2	63·7	60·7	60·1	62·9	61·9	61·2	58·7	*63·6*	126·7
15	59·1	64·6	63·7	63·5	62·4	62·2	61·8	61·8	60·5	61·5	62·8	64·9	66·8	68·0	67·7	64·0	63·2	64·0	63·4	62·7	60·8	60·6	59·9	58·3	62·8	108·2
16	61·5	61·4	62·2	63·2	65·6	62·1	61·4	61·1	60·9	60·5	61·9	63·7	66·4	68·0	67·1	66·0	64·8	63·8	62·9	62·5	61·9	61·6	60·9	60·1	63·0	111·5
17 q	59·8	61·8	62·3	62·7	62·7	62·4	62·0	61·3	60·5	60·1	62·2	65·3	66·2	67·1	66·7	64·8	63·4	62·9	62·7	62·6	62·4	62·3	61·9	61·7	62·8	107·8
18	62·2	62·4	62·3	62·5	62·4	62·1	61·5	61·3	61·1	61·4	62·5	64·8	66·8	67·4	67·2	66·3	66·5	65·1	64·4	64·2	63·7	59·1	58·4	62·0	63·2	117·7
19 q	62·3	61·9	61·7	61·6	62·5	62·2	61·2	60·9	60·9	61·4	63·2	65·5	67·7	67·9	67·5	67·6	67·2	67·2	65·2	64·1	63·3	62·5	59·5	60·9	63·6	125·9
20	60·0	60·4	61·1	60·9	61·4	60·9	61·0	61·4	60·9	61·0	61·6	63·5	66·2	67·1	67·0	66·1	65·5	64·2	65·1	63·5	62·8	62·3	61·3	61·9	62·8	107·1
21 d	62·2	62·4	62·1	64·4	63·9	63·9	62·9	62·3	62·3	61·5	63·2	65·5	68·5	67·9	66·3	63·6	57·7	58·1	62·7	62·1	59·5	59·6	61·9	62·0	62·8	106·5
22	62·0	62·7	62·7	62·1	62·1	61·9	61·6	61·5	60·6	59·6	60·8	63·4	65·0	66·1	65·4	63·9	63·1	63·0	63·0	62·9	62·9	60·7	60·7	61·9	62·5	99·6
23 d	61·9	62·3	63·2	63·1	62·7	62·6	63·0	61·6	60·4	60·5	61·8	64·3	68·0	69·2	69·7	67·4	70·2	65·6	55·7	60·9	60·5	57·2	56·8	57·1	62·7	105·7
24	57·8	60·0	61·4	61·7	62·7	62·0	61·6	60·6	59·5	59·9	62·7	64·0	64·7	65·2	64·6	63·6	62·7	62·3	62·2	62·9	63·1	62·8	59·7	58·3	61·9	86·0
25 d	54·7	59·4	61·3	60·5	61·2	61·4	61·8	62·2	61·8	60·6	61·3	63·6	64·5	65·4	65·9	64·6	63·4	63·3	62·9	62·7	62·3	58·6	58·4	60·0	61·7	81·8
26	62·2	62·8	63·4	61·2	61·1	60·9	61·0	61·4	62·6	62·2	62·4	64·3	65·6	66·3	65·9	63·6	63·0	63·2	63·1	62·3	59·4	62·2	62·2	62·2	62·7	104·5
27	62·8	61·7	63·4	62·3	61·4	61·4	61·3	61·1	60·8	61·4	64·1	64·9	64·9	66·3	66·8	63·6	63·5	63·1	62·8	62·2	61·7	60·9	60·9	59·2	62·6	102·5
28	60·7	62·4	63·8	63·2	61·9	61·4	61·3	60·5	59·5	59·6	62·3	64·4	66·6	66·4	65·6	64·4	61·7	63·1	62·8	62·4	59·9	60·3	61·9	62·0	62·4	98·1
Mean	61·1	61·9	62·2	62·1	62·1	62·2	62·4	62·4	61·8	61·7	62·8	64·5	66·0	*66·9*	66·6	65·3	63·9	63·7	62·9	62·6	61·2	60·6	*60·3*	60·6	62·8	
Sum 1600·0′+	110·4	133·3	141·5	137·5	138·7	141·7	148·1	146·7	130·6	127·6	159·3	206·6	247·9	271·8	265·9	227·3	190·0	184·6	161·9	153·5	114·0	96·0	86·9	96·7		Grand Total 42218·5

GEOMAGNETIC FORCE: VERTICAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, GMT

21 ESKDALEMUIR (Z) 45,000γ (0·45 CGS unit) + FEBRUARY 1965

Hour GMT	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 10,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	431	430	428	425	426	428	428	430	432	437	435	428	423	428	434	435	435	435	434	434	434	435	435	435	431	355
2 *q*	435	435	435	432	431	431	430	430	431	435	435	432	434	435	437	438	438	436	434	435	435	436	436	435	434	421
3	434	434	433	430	430	429	428	428	427	430	433	431	428	431	435	437	436	435	434	434	434	436	441	441	433	389
4	436	434	427	429	429	427	427	426	427	427	429	431	432	433	437	440	441	443	440	445	445	442	440	438	434	425
5	436	434	435	435	435	434	434	434	434	434	434	432	429	433	437	438	438	438	438	436	435	436	436	435	435	440
6	434	424	427	430	431	433	431	430	429	429	428	428	428	431	434	445	468	451	442	441	443	440	438	436	435	451
7 *d*	437	429	434	430	420	399	391	402	419	424	432	438	447	455	461	464	483	504	504	496	485	459	448	440	*446*	701
8 *d*	435	436	437	438	440	440	439	438	435	432	428	429	432	433	436	438	439	440	441	444	455	438	430	430	437	483
9	435	439	440	440	440	440	439	439	438	433	433	433	430	432	436	439	446	452	444	443	442	441	441	439	439	534
10	436	433	433	433	432	432	430	430	433	435	438	438	436	438	449	454	447	444	443	444	448	446	441	440	439	533
11	436	435	435	430	427	429	429	432	433	434	434	438	432	432	435	439	438	440	445	445	440	437	437	438	435	450
12 *q*	437	434	434	434	434	434	436	438	440	440	439	438	436	437	440	441	440	439	438	438	438	438	438	436	437	497
13 *q*	436	435	434	434	435	434	434	436	437	435	434	433	434	434	437	438	438	439	441	441	440	440	437	437	436	473
14	436	436	435	434	434	431	425	423	425	428	428	435	437	434	435	438	439	440	443	440	437	438	438	436	434	425
15	435	429	429	431	433	434	434	434	434	435	434	435	435	442	453	461	461	444	444	444	441	440	439	429	439	530
16	425	428	429	427	426	427	430	432	432	432	431	430	430	433	440	442	441	438	437	435	433	433	432	431	432	374
17 *q*	434	432	432	434	435	434	434	432	434	435	432	431	435	440	442	443	442	439	437	436	436	434	434	434	435	451
18	436	436	436	436	436	435	434	433	433	434	435	433	433	434	435	444	440	438	439	438	441	444	444	436	437	483
19 *q*	434	435	436	436	436	434	434	433	433	432	430	428	429	432	436	440	441	443	444	444	444	443	439	436	436	472
20	434	434	432	434	434	433	434	433	433	433	431	430	430	432	433	437	437	438	438	437	437	437	435	434	434	420
21 *d*	434	433	433	432	419	417	420	426	428	430	430	432	432	435	440	451	458	456	444	442	435	430	432	432	434	421
22	433	432	429	432	433	434	434	434	435	435	432	427	427	428	432	434	435	435	434	433	435	437	439	436	433	395
23 *d*	434	433	432	430	432	432	430	430	431	430	427	423	425	428	436	457	469	486	513	479	459	444	416	406	441	582
24	418	426	432	434	434	431	434	434	436	436	431	430	429	431	435	437	440	439	440	438	437	438	438	430	434	408
25 *d*	394	400	414	427	431	432	430	430	432	434	433	428	431	432	433	436	440	438	438	438	437	436	431	427	*429*	302
26	430	431	430	432	432	433	433	432	432	432	430	427	427	431	434	442	441	439	440	439	441	438	436	435	434	417
27	434	434	432	431	432	432	432	432	432	432	426	424	427	432	440	450	442	440	438	437	437	437	434	427	434	414
28	427	429	431	429	431	433	433	433	434	434	432	427	427	429	437	441	439	437	435	435	438	436	434	434	433	395
Mean	432	431	432	432	432	431	*430*	431	432	433	432	431	431	434	438	443	*445*	445	444	443	441	439	436	434	435	
Sum 12,000γ+	96	80	94	99	88	62	47	64	99	117	94	69	75	145	269	399	452	446	442	391	362	289	219	143		Grand Total 292,641

GEOMAGNETIC CHARACTER FIGURES (K, K_H, K_D, K_Z, AND C) AND TEMPERATURE IN MAGNETOGRAPH CHAMBER

22 ESKDALEMUIR FEBRUARY 1965

	3-h range indices K	Sum of K indices	3-h range indices K_H	Sum of K_H indices	3-h range indices K_D	Sum of K_D indices	3-h range indices K_Z	Sum of K_Z indices	Geomagnetic character of day, C (0-2)	Temperature in magneto-graph chamber 200°A+
1	2100 0000	3	1100 0000	2	2100 0000	3	0000 0000	0	0	84·4
2 *q*	1100 0010	3	0000 0010	1	1100 0000	2	0000 0000	0	0	84·4
3	1110 2003	8	0010 2002	5	1110 1003	7	0000 0000	0	0	84·4
4	3222 2232	18	2222 1232	16	3211 2222	15	1000 0010	2	1	84·3
5	2110 2222	12	2110 2222	12	2100 1112	8	0000 0000	0	1	84·3
6	3110 3432	17	2000 3432	14	3110 1421	13	1000 0210	4	1	84·3
7 *d*	4442 3433	27	4432 3433	26	3441 3232	22	1221 1322	14	2	84·3
8 *d*	2001 1265	17	1001 1255	15	2001 0165	15	0000 0022	4	1	84·3
9	2112 3322	16	2112 3321	15	2111 2212	12	0000 0100	1	1	84·3
10	2223 2132	17	1223 2122	15	2212 2132	15	0000 1100	2	1	84·3
11	2331 1232	17	1231 1231	14	2311 1222	14	0100 0000	1	1	84·3
12 *q*	3101 1000	6	2001 1000	4	3100 0000	4	0000 0000	0	0	84·3
13 *q*	1011 1222	10	0010 1222	8	1011 1122	9	0000 0000	0	1	84·2
14	1233 2232	18	0223 2222	15	1232 1032	14	0000 0000	0	1	84·2
15	3212 3423	20	2212 3423	19	3111 2312	14	1000 1201	5	1	84·2
16	2211 1102	10	2211 1102	10	1211 1001	7	0000 0000	0	0	84·3
17 *q*	2000 1001	4	2000 1001	4	2000 1000	3	0000 0000	0	0	84·2
18	0000 2123	8	0000 2122	7	0000 1103	5	0000 0001	1	1	84·3
19 *q*	0100 1112	6	0100 1112	6	0100 0012	4	0000 0000	0	0	84·3
20	1011 2212	10	1011 2212	10	1001 1111	6	0000 0100	1	0	84·3
21 *d*	2322 3333	21	2322 3333	21	1322 2332	18	0210 0110	5	1	84·2
22	2001 1122	9	1001 1122	8	2000 0002	4	0000 0000	0	0	84·3
23 *d*	2112 3444	21	1112 3444	20	2111 3343	18	0001 1443	13	1	84·3
24	2222 2223	17	1122 2223	15	2212 1013	12	2000 0002	4	1	84·2
25 *d*	5222 2213	19	5222 2213	19	4112 1113	14	3110 0002	7	1	84·2
26	2121 2322	15	1120 2322	13	2121 2221	13	0000 0000	0	1	84·3
27	2113 3203	15	1013 3203	13	2112 3202	13	0000 0101	2	1	84·3
28	2111 2221	12	2101 2220	10	2111 1121	10	0000 0000	0	1	84·3
								Mean	0·71	84·3

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

K_H For horizontal component. K_D For declination. K_Z For vertical component. (See Introduction).

GEOMAGNETIC FORCE: HORIZONTAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, GMT

19 ESKDALEMUIR (H) — 16,000γ (0·16 CGS unit) + — MARCH 1965

	Hour GMT 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 21,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	903	901	902	900	903	906	910	910	904	892	882	880	881	887	896	888	883	892	883	893	897	901	903	903	896	500
2	902	900	900	901	903	910	907	904	897	891	882	877	882	891	897	900	896	880	884	900	903	908	907	904	897	526
3 *d*	906	901	913	909	903	907	908	906	907	892	890	898	895	893	909	901	885	876	876	883	887	917	862	869	896	493
4 *d*	871	878	890	901	908	875	886	878	877	871	877	869	878	880	875	882	881	879	889	887	887	890	894	892	*883*	195
5	893	894	895	898	899	903	904	901	899	896	872	874	886	891	898	899	900	896	898	903	904	903	901	909	897	516
6	902	903	901	898	898	901	901	903	905	895	894	887	886	891	897	894	898	897	899	893	893	895	899	894	897	524
7	908	896	897	897	900	901	908	918	912	917	908	905	876	883	882	880	891	895	898	897	898	898	897	899	898	561
8 *q*	899	898	898	899	902	904	906	906	906	900	891	882	886	889	897	901	903	903	904	905	906	906	904	903	900	598
9	901	906	909	913	915	917	916	910	903	898	892	890	893	893	894	896	898	903	905	906	905	903	902	901	903	669
10 *q*	909	902	903	903	905	906	908	908	905	898	895	898	899	898	899	895	898	901	905	908	909	910	909	908	903	679
11 *q*	906	903	903	903	903	904	906	906	906	899	896	890	892	894	895	896	897	902	903	906	907	908	906	907	902	638
12	906	905	904	904	905	907	906	906	903	896	892	891	898	896	900	906	909	904	899	880	883	900	913	906	901	619
13	902	904	903	903	903	909	913	903	905	899	882	883	879	883	865	891	903	908	906	903	907	906	905	904	899	569
14	903	904	902	902	901	905	908	909	903	898	894	894	896	900	894	898	891	901	902	900	908	886	884	905	899	588
15	923	900	898	902	911	911	903	915	901	892	899	896	891	889	890	897	898	896	885	907	911	901	904	902	901	622
16	900	902	901	900	901	900	901	898	892	885	879	880	886	894	897	897	897	896	901	905	907	905	921	907	898	552
17	904	904	904	908	910	911	913	908	898	890	884	887	890	894	905	900	894	890	888	895	905	905	905	904	900	596
18 *q*	904	904	905	905	905	906	907	901	892	883	878	880	889	895	895	900	902	904	906	909	909	910	910	909	900	608
19	909	909	909	911	911	913	914	911	897	886	886	886	891	895	897	901	904	908	911	913	913	913	909	911	905	708
20	908	907	909	907	908	909	909	908	900	889	884	892	897	892	898	909	909	913	917	914	912	911	911	908	*905*	721
21	917	905	906	908	908	912	915	915	910	904	897	890	894	885	892	889	892	896	901	904	905	918	909	904	903	676
22	906	905	904	906	909	910	912	912	906	897	904	879	885	889	899	909	905	911	906	906	905	886	902	901	902	654
23 *d*	907	908	905	904	899	898	915	908	881	879	875	878	893	891	896	868	887	874	897	896	925	897	898	899	895	478
24	903	900	900	898	904	903	905	904	898	889	889	877	884	894	903	897	892	893	901	903	904	924	916	910	900	591
25 *d*	908	907	903	905	906	897	903	902	862	874	892	885	885	892	897	901	902	913	906	912	909	899	902	909	899	571
26 *d*	905	912	889	903	906	897	904	898	877	885	880	873	880	887	887	892	906	909	907	908	904	909	914	912	898	544
27	903	901	904	904	902	898	901	898	892	890	884	882	883	892	892	892	903	910	908	902	917	909	906	904	899	577
28	903	905	903	905	905	904	907	895	889	889	882	881	885	886	892	900	904	901	909	911	909	908	906	905	899	584
29	904	903	906	906	906	910	906	901	896	892	890	892	889	895	895	886	889	900	901	904	907	903	904	903	899	588
30 *q*	904	903	903	904	904	907	909	908	900	891	884	883	891	897	900	904	903	907	912	912	913	911	910	910	903	670
31	910	912	910	906	906	914	911	906	893	880	874	874	881	888	892	897	901	907	911	912	914	913	911	911	901	634
Mean	904	903	903	904	905	905	*907*	905	897	891	887	*885*	888	891	894	896	897	899	901	903	905	905	904	904	899	
Sum 27,000γ+	1029	982	979	1013	1049	1055	1122	1056	816	637	508	433	521	624	725	766	821	865	918	977	1063	1053	1024	1013		Grand Total 669,049

GEOMAGNETIC DECLINATION (WEST)
Mean values for periods of sixty minutes ending at exact hours, GMT

20 ESKDALEMUIR (D) — 9° + — MARCH 1965

	Hour GMT 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 1400·0'+
	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'
1	62·3	62·4	62·8	62·4	62·3	62·1	61·4	61·0	60·1	59·9	61·6	64·5	67·5	67·5	67·5	66·8	65·3	60·4	63·6	62·7	62·3	61·0	61·6	61·9	63·0	110·9
2	62·5	62·4	62·5	62·5	62·3	61·9	60·9	60·9	59·6	60·7	61·6	63·6	65·3	67·1	67·2	65·9	66·2	63·1	65·2	60·0	62·8	62·1	61·9	61·8	62·9	110·0
3 *d*	61·1	61·4	66·4	62·3	60·9	60·3	63·1	65·3	63·4	60·2	60·1	64·7	68·3	68·9	69·7	70·4	70·9	59·4	58·9	62·7	61·8	57·3	55·0	55·4	62·8	107·9
4 *d*	51·0	51·1	48·0	50·7	53·1	63·6	71·4	69·6	67·4	65·8	66·0	65·5	66·9	67·9	66·6	65·0	63·7	61·3	62·0	62·5	61·2	61·3	61·9	62·0	61·9	85·5
5	61·8	61·9	61·9	62·2	62·0	61·9	62·3	61·6	60·6	62·3	62·9	65·1	64·9	65·4	65·2	64·9	64·4	63·4	60·5	61·6	62·7	61·8	61·6	60·7	62·7	103·6
6	60·9	61·7	61·3	61·1	61·6	61·3	61·4	61·2	60·8	60·6	62·4	64·6	65·4	66·2	66·3	65·3	65·0	64·1	63·6	63·4	61·4	59·6	60·4	60·6	62·5	100·2
7	64·5	59·9	60·8	61·8	61·3	61·0	61·6	61·1	60·4	60·5	60·8	63·3	64·9	67·4	68·9	68·5	66·3	63·4	62·3	62·1	62·0	61·6	61·3	61·1	62·8	106·8
8 *q*	61·0	61·3	62·1	62·2	62·3	62·3	61·7	60·7	59·3	59·1	60·9	63·5	65·6	66·3	65·8	64·9	63·7	62·8	62·6	62·5	62·3	62·3	62·0	61·8	62·5	99·0
9	61·9	62·3	62·3	62·3	62·4	62·4	62·1	60·9	60·0	60·5	61·8	64·3	67·0	68·0	67·4	66·3	64·6	63·5	63·2	62·9	62·4	61·4	61·0	61·5	63·0	112·4
10 *q*	61·6	62·2	61·9	61·9	62·1	61·9	61·6	61·0	60·4	60·4	61·8	64·6	66·5	66·6	66·6	64·9	63·8	63·3	63·1	62·8	62·5	62·4	62·3	62·3	62·9	108·5
11 *q*	62·1	61·9	62·8	60·3	60·7	60·5	60·9	60·7	61·3	61·4	63·3	65·1	67·3	68·3	68·2	67·1	64·3	62·6	62·3	61·4	61·9	61·9	61·8	61·8	62·9	109·9
12	61·8	62·1	61·9	61·7	61·8	61·9	61·4	60·7	59·8	59·8	61·6	64·2	67·2	67·9	67·6	66·3	64·7	64·2	64·7	61·3	62·2	60·6	62·3	62·6	62·9	110·3
13	62·6	62·0	61·5	60·8	61·1	61·5	59·9	59·1	58·9	59·9	61·7	66·1	68·5	69·9	70·0	66·5	63·9	62·7	62·8	62·2	62·4	62·4	62·3	62·0	62·9	110·7
14	62·3	62·2	61·8	62·0	62·8	62·1	60·8	59·8	59·1	59·8	62·4	64·6	66·3	67·6	68·2	67·7	64·8	63·6	62·8	62·3	57·1	56·0	58·0	58·6	62·2	92·7
15	58·6	60·9	62·0	61·7	60·7	60·5	61·9	62·3	62·2	62·0	63·6	64·8	65·9	67·4	66·4	65·2	63·7	63·2	60·6	59·3	57·1	61·8	66·9	62·2	62·5	100·9
16	62·2	62·5	62·5	62·7	60·8	60·4	60·1	58·9	58·2	58·6	60·8	64·0	66·3	67·3	66·8	64·9	63·2	62·3	62·3	62·0	62·1	61·2	59·8	60·9	62·1	90·8
17	62·3	62·1	61·7	61·6	61·5	61·4	61·3	59·5	58·8	59·4	61·1	63·8	65·5	66·2	66·9	66·0	64·7	59·8	61·4	61·2	61·8	62·3	62·4	62·3	62·3	95·0
18 *q*	62·2	62·2	62·1	61·9	61·7	61·4	60·6	58·9	58·5	59·0	61·6	64·5	67·2	67·5	66·6	64·6	63·1	62·5	62·6	62·5	62·4	62·4	62·2	62·3	62·5	100·5
19	62·2	61·8	61·7	61·6	61·3	61·0	61·0	60·2	59·8	61·7	64·6	67·9	68·8	68·6	67·7	65·2	63·5	63·0	63·1	62·5	62·3	62·1	61·7	62·0	*63·1*	115·3
20	60·3	62·1	60·7	60·7	60·6	60·7	60·7	59·8	58·8	59·3	62·0	65·1	68·7	68·4	67·8	65·7	63·9	63·3	63·7	63·0	62·6	61·7	61·3	59·0	62·5	99·9
21	59·8	60·9	60·8	60·9	60·9	60·7	61·3	60·6	59·4	59·8	61·5	64·2	67·5	68·5	67·2	67·4	64·9	63·8	62·2	61·8	61·3	57·0	61·3	61·1	62·3	94·8
22	61·2	61·3	61·3	61·6	61·5	61·6	61·3	60·0	58·7	58·4	59·8	62·6	65·2	66·9	67·0	65·8	64·3	64·2	64·3	62·6	63·6	52·6	50·3	58·7	*61·5*	74·8
23 *d*	60·8	60·8	60·7	60·8	61·3	62·7	66·1	66·2	61·4	63·1	63·0	64·4	67·0	68·7	69·6	68·0	66·0	59·4	55·1	57·7	53·1	55·7	60·8	61·8	62·3	94·2
24	61·6	61·0	60·7	61·0	61·2	60·7	61·3	60·7	60·6	61·9	63·4	66·3	67·5	68·2	67·8	66·1	64·7	62·8	61·0	61·3	60·8	59·7	60·7	60·8	62·6	101·8
25 *d*	61·7	62·4	62·0	60·1	60·5	60·1	63·4	62·7	61·4	63·4	62·8	66·1	66·3	66·9	65·8	64·4	63·4	63·1	62·3	54·6	57·8	61·1	62·0	61·5	62·3	95·8
26 *d*	61·6	60·5	59·2	59·4	59·4	59·6	62·1	61·7	61·2	62·0	63·0	65·7	67·1	68·1	67·2	65·0	63·4	62·8	62·3	61·8	61·4	59·8	61·0	62·7	62·4	98·0
27	61·8	62·4	60·8	60·1	60·8	61·1	62·8	61·2	60·2	61·0	63·0	64·7	65·5	66·5	66·0	64·8	63·2	62·5	61·5	59·4	59·1	61·5	61·7	61·5	62·2	93·1
28	61·2	61·1	61·1	61·1	60·8	60·9	60·8	59·6	59·3	59·9	61·8	63·9	66·0	66·8	66·5	64·9	63·3	63·3	61·4	61·6	61·5	61·5	61·7	61·7	62·1	89·9
29	61·6	61·6	62·4	61·2	61·0	60·6	60·1	57·9	57·4	58·9	61·1	64·2	66·6	68·2	66·6	65·1	63·3	62·7	61·4	60·3	57·8	60·5	61·1	61·7	61·8	83·3
30 *q*	61·8	62·0	61·8	61·5	61·2	60·8	60·0	58·4	57·5	58·0	59·9	64·0	66·9	68·6	67·8	66·1	64·6	63·1	62·3	61·9	61·7	61·8	61·9	61·7	62·3	95·3
31	62·0	61·5	61·2	61·0	61·9	61·2	59·7	58·2	56·9	58·5	59·7	63·1	66·0	67·7	67·6	65·7	64·5	62·8	61·6	62·1	61·9	61·7	61·5	61·3	62·1	89·3
Mean	61·3	61·3	61·3	61·1	61·1	61·3	61·8	61·0	*60·5*	60·5	62·0	64·6	66·6	*67·6*	67·3	66·0	64·5	62·6	62·1	61·5	61·1	60·5	61·0	61·2	62·5	
Sum 1800·0'+	100·3	101·9	100·7	93·1	93·8	100·1	115·0	90·4	61·4	75·8	121·6	203·0	265·6	295·5	286·5	245·4	199·3	140·6	126·7	106·0	93·3	76·1	91·7	97·3		Grand Total 46481·1

Mean values for periods of sixty minutes ending at exact hours, GMT

21 ESKDALEMUIR (Z) 45,000γ (0·45 CGS unit) + MARCH 1965

Hour GMT	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 10,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	434	433	433	433	432	432	432	432	433	433	430	427	425	432	436	444	452	457	452	446	442	439	437	435	437	481
2	435	436	436	435	434	433	432	434	436	434	434	429	428	430	433	437	448	458	431	454	444	443	439	439	437	492
3 d	437	437	427	421	426	429	426	422	421	425	419	418	421	428	433	444	456	489	491	465	451	447	443	444	438	520
4 d	440	432	411	396	377	371	377	390	400	410	420	427	431	436	443	447	450	455	453	449	449	446	443	442	425	195
5	443	442	442	440	439	439	437	437	434	432	432	431	432	436	440	443	443	443	444	442	439	439	438	436	438	523
6	432	433	434	435	436	435	434	435	434	431	426	425	426	430	435	439	443	444	443	446	448	447	440	440	436	471
7	432	431	435	437	437	437	433	431	430	431	429	426	426	432	439	443	443	444	444	444	443	442	440	439	436	468
8 q	437	437	437	437	438	438	437	437	435	432	429	424	422	426	432	436	439	439	438	438	437	437	437	436	435	435
9	436	435	434	433	432	432	432	434	434	431	427	420	418	422	432	439	439	439	438	437	437	437	437	436	433	391
10 q	431	431	433	434	435	435	434	436	436	432	428	422	422	425	431	437	439	437	436	435	435	435	434	434	433	387
11 q	433	433	431	432	432	433	433	434	431	431	427	425	422	424	431	436	439	440	440	440	438	436	436	435	433	392
12	435	433	434	435	435	434	435	436	436	434	430	424	421	422	427	432	438	442	445	456	460	452	443	440	437	479
13	439	437	437	436	435	433	432	433	432	428	428	420	421	425	437	443	443	443	442	442	440	439	438	438	435	441
14	437	437	436	435	433	433	433	433	433	431	426	418	417	421	432	439	440	439	439	440	442	443	443	435	434	415
15	420	418	425	430	431	431	430	426	426	426	419	415	417	424	430	437	442	443	449	442	435	434	435	435	430	320
16	436	435	433	432	432	433	435	437	437	435	431	425	422	426	431	436	441	438	436	436	436	436	431	430	433	400
17	432	435	436	436	435	433	432	434	434	434	430	426	427	430	432	439	444	453	453	450	443	440	438	437	437	483
18 q	439	438	438	438	437	437	438	440	438	436	431	425	424	430	436	438	438	438	436	434	434	434	434	435	435	446
19	435	436	436	435	435	434	433	435	435	431	427	425	427	429	435	436	438	435	433	435	435	433	435	434	433	402
20	432	432	430	431	432	432	433	435	435	430	423	418	418	425	430	434	437	436	432	434	435	435	435	436	431	350
21	425	425	430	432	432	431	431	431	431	429	425	424	424	428	435	440	443	448	448	443	441	435	428	431	433	390
22	433	435	435	435	435	434	432	433	432	426	421	421	424	425	430	435	436	437	440	442	442	454	438	432	434	407
23 d	432	436	436	436	436	427	412	414	420	419	420	421	420	425	433	451	453	462	463	457	430	411	428	434	432	376
24	436	436	436	436	436	436	436	434	431	429	421	423	427	428	434	440	448	449	449	445	442	432	425	425	435	434
25 d	430	428	430	433	434	436	431	431	436	434	428	426	429	436	443	446	443	442	443	447	442	440	439	436	436	463
26 d	428	407	417	422	427	430	432	434	438	436	430	426	427	432	438	442	446	443	442	442	443	441	432	428	433	383
27	431	432	432	434	434	433	433	434	435	432	429	431	432	434	441	446	444	444	446	447	444	438	438	438	437	482
28	439	437	438	437	437	435	437	439	438	433	431	426	422	428	432	437	442	444	442	439	439	439	439	439	436	469
29	439	438	436	436	436	437	438	438	437	433	430	428	430	434	438	445	445	445	443	444	444	442	440	440	438	516
30 q	439	439	439	438	438	437	439	440	437	433	429	422	421	425	428	432	434	437	437	437	437	436	438	438	435	432
31	437	436	436	437	435	433	435	439	439	437	436	433	431	431	433	437	439	439	438	439	438	437	438	438	436	471
Mean	434	433	433	433	432	432	431	432	432	431	427	424	424	428	434	440	443	445	444	443	441	439	437	436	435	
Sum 13,000γ+	464	430	423	417	403	383	364	398	404	348	246	151	154	279	460	630	725	802	766	747	665	601	539	515		Grand Total 323,314

GEOMAGNETIC CHARACTER FIGURES (K, K_H, K_D, K_Z, AND C) AND TEMPERATURE IN MAGNETOGRAPH CHAMBER

22 ESKDALEMUIR MARCH 1965

	3-h range indices K	Sum of K indices	3-h range indices K_H	Sum of K_H indices	3-h range indices K_D	Sum of K_D indices	3-h range indices K_Z	Sum of K_Z indices	Geomagnetic character of day, C (2-0)	Temperature in magnetograph chamber 200°A+
1	0101 3322	12	0101 3322	12	0000 2312	8	0000 0110	2	1	84·3
2	0111 2332	13	0011 2332	12	0111 1231	10	0000 0110	2	1	84·3
3 d	3333 3545	29	2223 3445	25	3333 2543	26	1110 0442	13	2	84·3
4 d	3532 2211	19	3432 2211	18	3532 1110	16	2331 0100	10	1	84·0
5	0022 2223	13	0022 2213	12	0011 1122	8	0000 0000	0	1	84·1
6	1100 1122	8	1000 1122	7	1100 0122	7	0000 0001	1	1	84·1
7	3111 2210	11	2011 2210	9	3110 1000	6	2000 0000	2	1	84·1
8 q	0001 0000	1	0001 0000	1	0001 0000	1	0000 0000	0	0	84·0
9	1021 2102	9	1020 2102	8	0001 1001	3	0000 0000	0	0	84·0
10 q	2001 2000	5	2001 2000	5	1000 1000	2	0000 0000	0	0	84·1
11 q	1101 0111	6	1000 0111	4	1101 0010	4	0000 0000	0	0	84·1
12	0000 3132	9	0000 3132	9	0000 2021	5	0000 0021	3	1	84·0
13	1223 3320	16	1223 3320	16	1121 1110	8	0000 0000	0	1	84·0
14	1101 2233	13	0101 2233	12	1101 1132	10	0000 0002	2	1	84·0
15	3122 2341	18	3122 2341	18	2121 1131	12	2000 0120	5	1	84·2
16	1201 1003	8	0101 1003	6	1201 0002	6	0000 0001	1	1	84·0
17	0010 2220	7	0010 2220	7	0010 1210	5	0000 0010	1	0	84·0
18 q	0000 1000	1	0000 1000	1	0000 0000	0	0000 0000	0	0	84·0
19	0012 2112	9	0002 2112	8	0011 1001	4	0000 0000	0	1	84·0
20	2003 3122	13	2003 3122	13	2001 1012	7	0000 0000	0	1	84·2
21	2012 2213	13	2002 2213	12	2011 2113	11	1000 0001	2	1	84·3
22	0000 1224	9	0000 1223	8	0000 0124	7	0000 0002	2	1	84·2
23 d	2332 3454	26	2232 3454	25	1332 1454	23	0110 0233	10	2	84·3
24	1123 4223	18	1123 4223	18	1113 2122	13	0000 0002	2	1	84·2
25 d	2344 2242	23	2344 2232	22	1233 1041	15	0010 0010	2	1	84·3
26 d	4232 2223	20	4232 2223	20	4222 1113	16	2100 0001	4	1	84·2
27	2221 2232	16	2221 2232	16	2121 1132	13	0000 0011	2	1	84·1
28	1122 1210	10	1122 1210	10	0111 0000	3	0000 0000	0	1	84·1
29	2111 3222	14	1111 3221	12	2010 2122	10	0000 0000	0	1	84·1
30 q	0000 2110	4	0000 2110	4	0000 1000	1	0000 0000	0	0	84·1
31	1222 0101	9	1222 0101	9	1111 0001	5	0000 0000	0	0	84·2
								Mean	0·81	84·1

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

K_H For horizontal component. K_D For declination. K_Z For vertical component. (see Introduction).

GEOMAGNETIC FORCE: HORIZONTAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, GMT

19 ESKDALEMUIR (H) 16,000γ (0·16 CGS unit) + APRIL 1965

Hour GMT	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 20,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	913	918	909	909	911	912	911	905	896	884	878	879	883	893	900	899	906	911	913	912	912	911	909	911	904	1685
2 q	911	909	910	909	908	909	907	904	897	883	880	886	889	894	902	907	909	909	909	909	909	909	909	912	903	1680
3 q	911	910	913	912	913	913	915	913	904	896	888	886	891	894	902	907	913	916	915	915	916	915	912	914	908	1784
4	913	915	918	917	914	920	919	908	888	887	887	893	902	909	901	892	901	909	914	913	910	910	911	910	907	1761
5	914	912	912	908	912	907	909	903	891	883	877	878	884	891	899	907	907	907	907	907	909	901	902	907	901	1634
6	907	905	904	905	910	914	915	913	900	888	882	882	892	891	906	901	902	910	915	923	922	920	923	930	907	1760
7	924	904	902	896	898	911	918	916	904	891	879	877	883	888	900	907	901	903	902	900	906	912	915	914	902	1651
8 q	914	907	908	910	911	910	907	903	894	880	874	879	883	891	900	913	911	915	920	923	924	924	918	914	906	1733
9 d	915	919	908	915	915	910	910	895	896	887	878	878	883	893	900	907	905	910	911	914	920	916	911	929	905	1725
10	904	903	902	905	912	912	910	900	889	872	873	880	890	896	904	908	909	914	915	914	914	913	914	912	903	1665
11	911	911	909	910	910	911	910	904	899	893	891	893	896	907	913	923	912	927	908	884	889	899	900	902	905	1712
12	899	904	899	898	899	905	905	902	898	887	885	884	890	895	911	918	922	920	914	910	913	913	911	908	904	1690
13	906	906	909	904	907	905	903	896	887	886	885	890	898	903	912	914	911	914	911	912	913	914	914	917	905	1717
14	913	912	908	909	911	915	915	908	899	887	889	892	900	907	912	913	917	918	917	917	917	913	915	913	909	1817
15	915	909	905	905	914	915	908	902	889	876	871	869	878	891	902	907	914	913	912	911	912	914	914	913	902	1659
16	917	908	910	911	911	915	913	906	896	890	888	888	893	896	907	911	913	910	909	915	915	916	915	915	907	1768
17 d	915	914	913	912	913	914	915	910	902	891	881	880	889	914	924	927	920	911	911	925	925	924	923	923	*911*	1876
18 d	919	912	939	924	930	823	747	733	766	783	819	837	860	862	829	858	871	880	869	883	881	872	873	859	*855*	529
19 d	871	876	870	877	880	883	880	874	864	854	843	851	852	860	878	899	907	902	901	896	893	886	893	889	878	1079
20 d	887	886	878	878	887	890	888	885	874	856	854	862	864	854	871	885	889	900	900	897	895	897	896	891	882	1164
21 q	891	891	889	891	889	890	886	883	876	863	855	853	857	871	882	891	890	904	904	899	899	899	899	899	885	1251
22	897	896	895	895	895	895	896	895	888	880	872	878	878	882	890	894	899	903	908	906	903	907	912	904	895	1468
23	901	902	904	905	900	900	901	900	898	890	882	876	876	875	884	889	896	910	905	912	909	907	913	909	898	1544
24	908	906	904	903	903	904	905	903	895	884	872	869	874	888	899	898	903	914	912	914	909	907	905	905	899	1584
25	907	906	903	903	903	903	902	896	886	879	874	872	876	883	892	898	905	915	911	914	910	915	916	911	899	1580
26	917	921	903	904	905	907	904	898	884	874	870	869	871	879	890	895	912	907	914	918	915	915	912	911	900	1595
27	912	910	907	907	905	902	900	895	888	881	871	870	884	894	907	911	908	912	913	907	908	908	910	907	901	1617
28 q	909	904	904	907	907	903	899	893	886	877	875	881	886	895	903	904	910	910	914	917	912	912	911	911	901	1630
29	910	910	910	910	909	908	907	903	897	887	880	883	895	904	909	916	922	927	924	917	917	918	920	920	908	1803
30	918	916	911	908	907	910	902	900	903	899	893	890	892	895	900	898	904	908	910	912	911	914	914	915	905	1730
Mean	908	907	905	905	906	904	900	895	888	879	*875*	877	883	890	898	903	906	*910*	910	910	910	909	910	909	900	
Sum 26,000γ+	1249	1202	1156	1147	1189	1116	1007	846	634	368	246	305	489	695	929	1097	1189	1309	1288	1296	1288	1281	1290	1275		Grand Total 647,891

GEOMAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, GMT

20 ESKDALEMUIR (D) 9° + APRIL 1965

Hour GMT	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 1400·0′+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
1	61·2	61·6	62·6	61·5	62·0	60·6	59·7	58·0	56·8	57·8	60·8	64·7	68·1	68·9	67·8	64·7	63·3	62·5	62·2	62·0	61·7	61·6	61·6	61·6	62·2	93·3
2 q	60·7	61·2	61·5	60·7	61·2	60·6	60·0	58·2	57·3	58·3	60·6	64·0	66·2	67·4	66·7	65·3	63·6	62·1	61·1	61·3	61·4	61·6	61·6	61·5	61·8	84·1
3 q	61·3	61·3	61·6	61·1	61·0	61·0	59·7	58·4	57·3	57·9	59·8	63·1	66·0	67·2	67·4	65·8	64·6	63·4	62·2	62·1	62·2	62·0	61·4	61·5	62·1	89·3
4	61·4	61·6	61·6	61·1	61·2	61·0	59·2	57·8	58·5	62·1	63·7	65·4	67·8	69·6	68·1	66·0	64·3	63·2	62·1	62·0	61·6	61·7	61·4	61·3	62·7	103·7
5	61·9	61·7	62·0	61·1	62·1	60·4	59·3	57·7	56·7	57·7	59·6	62·8	64·8	65·8	65·2	63·9	62·6	62·0	61·3	61·6	61·2	61·1	59·7	61·4	61·4	73·6
6	61·5	61·0	61·4	61·5	61·1	60·8	59·7	59·0	57·5	57·5	59·0	62·4	66·9	67·7	68·0	66·9	64·5	62·6	62·1	62·4	62·4	62·3	60·6	57·6	61·9	86·4
7	57·4	57·4	56·8	58·3	58·3	60·4	59·4	58·1	57·6	58·0	60·4	63·7	67·8	69·5	69·7	69·0	66·1	64·9	63·3	62·5	61·9	60·6	61·3	63·0	61·9	85·4
8 q	61·5	61·1	61·2	61·2	60·5	60·2	59·5	58·5	58·0	59·1	61·4	64·1	67·7	69·0	67·7	66·9	65·2	64·3	63·3	63·1	62·5	62·0	61·3	60·1	62·5	99·4
9 d	58·5	59·8	56·6	56·3	56·6	58·4	58·1	56·9	58·6	59·5	61·2	63·7	67·0	68·0	67·5	67·1	66·3	64·7	63·0	62·5	60·1	60·4	61·0	56·8	61·2	68·6
10	56·8	59·3	60·0	60·3	60·7	60·0	59·6	58·8	58·4	59·2	61·1	63·9	66·1	66·8	66·4	64·7	63·5	62·8	62·3	62·1	62·0	62·0	61·5	61·4	61·7	79·7
11	60·6	60·9	61·6	60·9	60·6	60·1	59·0	58·0	57·8	58·7	60·7	63·9	65·9	66·3	66·5	66·8	64·7	63·3	62·3	56·8	59·3	59·3	60·1	59·6	61·4	73·7
12	62·7	61·7	60·0	58·8	60·1	58·8	57·5	56·7	57·0	58·6	60·6	63·3	65·4	66·2	64·2	62·3	61·8	62·0	62·1	60·0	58·1	60·2	60·0	60·5	60·8	58·6
13	61·4	62·4	62·8	60·4	58·7	58·4	57·4	56·8	57·9	59·5	61·2	63·7	66·0	66·5	65·0	63·3	61·4	60·6	61·1	61·8	62·1	62·0	61·8	61·9	61·4	74·1
14	61·9	61·1	61·0	61·5	59·5	58·6	58·1	58·0	58·3	60·4	63·3	64·9	66·3	65·8	65·1	64·1	62·1	61·4	61·4	61·9	62·2	61·9	59·8	59·9	61·6	78·5
15	59·3	59·4	59·6	59·6	60·5	58·9	57·5	56·0	56·6	58·4	61·4	65·0	68·0	69·4	68·6	67·1	65·1	62·7	61·4	60·7	60·9	61·1	61·4	61·2	61·7	79·8
16	61·2	61·0	61·2	60·4	60·0	59·9	57·9	56·9	57·4	59·0	61·9	64·6	67·8	68·6	67·8	66·0	64·3	62·8	60·6	60·5	60·9	60·7	61·4	61·4	61·8	84·2
17 d	61·5	61·5	61·4	61·3	60·7	59·6	58·5	56·9	56·0	57·4	59·8	63·5	66·9	70·4	71·7	73·5	72·6	67·8	62·3	63·1	62·7	62·1	61·6	61·6	63·1	114·4
18 d	60·5	56·0	59·3	52·6	60·5	62·4	67·5	78·6	67·8	63·8	67·6	65·8	64·0	67·7	68·9	64·8	65·2	63·4	62·4	58·1	61·1	60·6	60·3	61·2	*63·3*	120·1
19 d	60·2	63·4	61·1	58·9	58·0	57·0	56·6	56·4	56·4	58·9	60·3	63·2	65·9	67·5	67·5	67·4	61·1	63·0	61·6	60·6	56·9	58·4	58·4	57·5	60·7	57·4
20 d	58·5	57·4	58·3	60·1	58·0	57·9	56·9	56·4	56·8	59·7	62·0	63·8	66·8	68·5	66·0	64·4	63·3	62·3	61·3	61·3	60·6	60·0	60·5	60·4	60·9	61·2
21 q	60·4	60·1	59·9	59·8	58·9	58·4	57·4	56·8	56·6	57·0	58·7	61·3	63·9	64·9	64·9	63·9	62·9	62·6	62·0	61·9	61·4	61·3	61·2	60·7	60·7	56·9
22	60·4	60·1	59·6	59·8	59·7	59·2	58·6	58·0	58·0	58·9	60·6	61·8	63·2	64·2	64·6	63·7	63·6	63·4	63·3	62·7	62·1	61·6	57·4	57·7	60·9	62·2
23	60·0	60·4	60·4	60·5	60·2	60·0	58·8	58·2	57·6	58·3	59·8	62·2	64·6	65·6	65·8	65·7	64·9	64·0	62·8	61·5	61·8	61·1	61·4	60·0	61·5	75·6
24	59·7	61·1	61·2	59·8	59·3	58·9	58·6	57·9	57·5	57·6	59·7	62·4	65·4	66·1	66·0	64·6	63·2	61·5	61·4	61·5	61·4	61·2	61·1	60·7	61·2	67·8
25	60·6	60·6	60·4	60·3	59·3	58·5	57·1	56·3	56·1	57·1	59·4	62·8	64·7	66·3	66·4	65·0	63·3	62·3	61·3	60·6	61·4	61·6	61·1	60·0	60·9	62·5
26	60·1	61·7	59·6	59·6	58·5	56·9	55·1	54·2	54·8	57·0	59·6	62·4	64·4	65·8	65·3	64·1	63·9	63·2	61·9	62·1	61·5	61·4	61·3	60·2	*60·6*	54·6
27	60·6	60·6	60·4	60·2	59·6	58·8	57·6	56·5	56·4	57·8	60·5	63·6	66·6	66·9	66·1	64·1	63·1	61·4	61·2	61·3	62·0	61·9	61·6	61·3	61·3	70·1
28 q	62·0	60·9	60·5	60·2	59·5	59·1	58·7	58·5	58·2	58·7	60·6	64·3	66·9	66·7	65·4	64·3	63·7	63·0	62·4	62·2	62·0	62·0	61·5	65·9	62·0	87·2
29	61·0	60·9	61·0	60·1	59·6	58·5	57·5	56·9	57·3	58·4	60·6	62·5	64·4	65·8	65·3	64·5	63·8	63·8	63·1	62·4	62·6	62·0	61·5	61·4	61·5	74·9
30	61·2	61·5	61·6	61·1	59·4	59·0	57·4	56·9	57·5	57·8	59·5	62·3	64·9	65·8	65·2	62·7	61·9	62·6	62·0	61·8	61·0	61·0	59·5	61·1	61·0	64·7
Mean	60·5	60·6	60·5	60·0	59·8	59·4	58·6	58·1	*57·7*	58·7	60·9	63·5	66·0	*67·2*	66·7	65·4	64·0	63·0	62·0	61·5	61·3	61·2	60·8	60·7	61·6	
Sum 1700·0′+	116·0	118·7	116·2	99·0	95·3	82·3	57·9	42·3	29·9	60·1	125·4	205·1	280·4	314·9	300·8	262·6	219·9	189·6	160·8	144·4	139·0	136·7	124·3	120·4		Grand Total 44342·0

GEOMAGNETIC FORCE: VERTICAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, GMT

21 ESKDALEMUIR (Z) — 45,000γ (0·45 CGS unit) + — APRIL 1965

Day	Hour GMT 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 10,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	435	428	427	426	427	429	433	437	437	434	429	421	424	428	433	437	437	438	437	437	437	437	437	437	433	382
2 q	437	437	436	436	435	433	436	437	437	431	428	425	425	427	429	431	436	437	436	435	435	434	435	435	433	403
3 q	437	437	436	435	433	432	432	432	431	427	424	421	420	422	426	431	432	435	436	434	433	433	435	433	431	347
4	435	433	433	433	433	431	431	430	428	421	418	415	410	415	425	433	436	437	437	436	435	435	434	433	429	307
5	433	435	433	435	432	433	435	437	436	433	429	424	421	423	425	428	434	436	437	436	435	437	437	435	432	379
6	435	436	437	435	434	433	432	432	429	424	415	410	410	415	426	429	437	437	437	434	432	432	432	428	429	301
7	422	426	427	431	432	427	426	427	425	425	422	412	413	417	426	438	445	450	451	451	447	442	438	433	431	353
8 q	429	433	434	435	436	437	439	440	434	431	429	426	424	427	432	437	439	438	437	436	436	435	437	438	434	419
9 d	436	430	420	416	411	420	426	433	433	432	432	423	418	422	430	435	438	440	441	440	439	435	437	430	430	317
10	422	426	430	434	433	434	437	440	437	433	427	420	418	422	427	431	433	434	434	435	436	436	437	436	431	352
11	437	434	434	434	434	436	438	438	434	429	426	422	423	423	426	427	432	438	452	471	462	452	445	440	437	487
12	436	433	436	438	434	433	434	434	431	425	421	420	420	425	429	433	433	437	439	442	441	439	434	433	433	380
13	434	433	426	427	432	433	435	436	434	432	425	416	412	420	430	434	437	440	438	436	435	434	436	434	431	349
14	434	434	435	433	432	432	432	432	427	423	420	419	420	424	431	433	435	434	433	433	434	435	436	436	431	337
15	434	434	434	434	431	432	435	434	431	428	423	418	416	421	427	432	433	440	441	440	439	438	437	437	432	369
16	432	433	434	436	434	433	438	438	433	430	426	420	421	427	432	434	437	439	440	439	436	434	433	433	433	392
17 d	434	434	435	435	435	434	434	434	432	427	425	421	419	418	425	430	430	438	444	437	434	433	433	433	431	354
18 d	436	439	422	397	356	342	358	351	380	410	426	435	450	454	469	485	476	470	472	475	458	457	455	449	430	322
19 d	444	445	441	447	452	451	451	449	447	445	447	446	444	451	453	469	489	470	464	462	462	458	441	434	453	862
20 d	430	438	441	445	447	450	450	450	450	447	441	439	441	445	447	451	454	455	456	452	451	448	441	443	446	712
21 q	445	447	447	447	449	450	451	450	445	442	442	438	437	438	443	447	450	451	451	450	449	447	445	445	446	706
22	446	446	447	446	446	446	445	445	442	440	438	437	434	436	439	442	445	445	445	445	445	445	444	440	443	629
23	440	441	441	443	444	443	440	440	438	438	436	433	433	434	435	440	443	446	449	447	447	445	443	440	441	579
24	443	441	441	443	444	444	445	445	443	439	436	435	435	436	438	442	444	445	447	445	444	444	443	441	442	603
25	441	442	443	442	444	445	445	445	439	434	430	427	424	424	428	430	435	440	443	445	444	443	441	440	438	514
26	439	431	436	438	440	444	444	444	442	440	436	434	432	432	436	438	440	444	444	444	444	442	441	440	439	545
27	441	440	440	440	442	444	444	443	443	438	429	425	421	423	434	439	444	445	445	445	444	443	442	443	439	537
28 q	441	439	440	440	440	441	440	439	437	432	421	418	423	430	434	436	437	438	442	443	442	441	441	441	437	476
29	441	441	440	440	441	443	441	439	435	427	421	421	420	426	433	435	437	437	440	443	441	440	440	440	436	462
30	440	438	437	436	437	438	438	437	429	426	423	423	426	429	435	440	440	440	443	440	441	440	440	439	436	455
Mean	436	436	435	435	434	434	435	436	434	431	428	425	425	428	433	438	441	443	444	444	442	441	439	437	436	
Sum 12,000γ+	1089	1084	1063	1057	1020	1023	1065	1068	1019	943	845	744	734	834	1003	1147	1238	1274	1311	1308	1258	1214	1170	1119		Grand Total 313,630

GEOMAGNETIC CHARACTER FIGURES (K, K_H, K_D, K_Z, AND C) AND TEMPERATURE IN MAGNETOGRAPH CHAMBER

22 ESKDALEMUIR — APRIL 1965

Day	3-h range indices K	Sum of K indices	3-h range indices K_H	Sum of K_H indices	3-h range indices K_D	Sum of K_D indices	3-h range indices K_Z	Sum of K_Z indices	Geomagnetic character of day, C (0-2)	Temperature in magneto-graph chamber 200°A+
1	2110 1110	7	2110 1110	7	2110 0000	4	1000 0000	1	0	84·2
2 q	0010 0001	2	0010 0001	2	0000 0000	0	0000 0000	0	0	84·3
3 q	0000 2111	5	0000 2111	5	0000 1001	2	0000 0000	0	0	84·4
4	1122 3211	13	0121 3211	11	1112 2000	7	0000 0000	0	1	84·4
5	0200 0112	6	0200 0110	4	0200 0002	4	0100 0000	1	0	84·3
6	1110 3323	14	1110 3323	14	1110 2103	9	0000 0101	2	1	84·4
7	3211 3212	15	3201 3210	12	2210 1012	9	1100 0000	2	1	84·4
8 q	2001 2212	10	2001 2212	10	0000 0001	1	0000 0000	0	0	84·4
9 d	3320 1323	17	3320 1323	17	2210 0123	11	2100 0001	4	1	84.4
10	3101 1011	8	2101 1011	7	3100 0001	5	1000 0000	1	0	84·5
11	1111 1431	13	1101 1431	12	1010 1231	9	0000 0021	3	1	84·5
12	2111 1132	12	1111 1122	10	2110 1132	11	1000 0001	2	1	84·4
13	2110 2201	9	1010 2201	7	2100 0000	3	1000 0000	1	0	84·5
14	2101 2202	10	2001 2201	8	1100 1002	5	0000 0000	0	0	84·5
15	1200 1212	9	1100 1212	8	1200 0011	5	0000 0000	0	0	84·5
16	2100 2120	8	2100 2120	8	1100 0010	3	0000 0000	0	0	84·5
17 d	0000 3442	13	0000 3442	13	0000 1221	6	0000 0210	3	1	84·5
18 d	3655 4342	32	3655 4342	32	3554 3232	27	3434 2221	21	2	84·5
19 d	3212 2324	19	2112 2324	17	3211 2323	17	1000 1302	7	1	84·5
20 d	3223 4122	19	3223 4122	19	1221 2011	10	1000 0001	2	1	84·5
21 q	1001 2220	8	1001 2220	8	1000 1100	3	0000 0000	0	0	84·5
22	1112 2103	11	1002 2103	9	0111 0003	6	0000 0001	1	1	84·5
23	1111 2212	11	0111 2212	10	1100 0012	5	0000 0000	0	0	84·5
24	2112 3210	12	2002 3210	10	2111 1100	7	0000 0000	0	1	84·5
25	1110 2322	12	1100 2322	11	0110 0111	5	0000 0000	0	1	84·5
26	3011 2332	15	3001 2332	14	3010 0111	7	1000 0000	1	1	84·6
27	1111 2221	11	1101 2221	10	1110 1000	4	0000 0000	0	0	84·6
28 q	2010 2210	8	2010 2210	8	2010 0000	3	0000 0000	0	0	84·6
29	0101 1331	10	0101 1331	10	0000 0110	2	0000 0000	0	1	84·6
30	2210 1211	10	2210 1211	10	2110 0011	6	0000 0000	0	0	84·6
								Mean	0·53	84·5

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

K_H For horizontal component. K_D For declination. K_Z For vertical component. (See Introduction).

GEOMAGNETIC FORCE: HORIZONTAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, GMT

19 ESKDALEMUIR (H) — 16,000γ (0·16 CGS unit) + — MAY 1965

Day	Hour GMT 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 21,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	916	911	910	907	907	904	903	899	899	893	889	896	899	901	906	909	909	913	918	916	914	913	913	911	907	756
2 q	913	911	910	910	909	906	901	897	892	885	880	887	895	906	911	913	913	914	913	911	911	914	914	909	905	725
3	912	912	913	909	909	907	906	906	901	897	889	884	891	903	914	922	923	923	920	917	916	917	915	914	909	820
4	916	917	916	913	913	911	913	909	903	892	879	874	880	895	906	915	923	921	924	932	925	925	925	937	911	864
5 d	936	941	897	901	890	886	890	898	891	879	863	875	880	879	890	893	918	911	916	914	907	916	911	897	899	579
6	903	894	899	899	899	901	897	889	882	883	883	887	883	892	908	914	913	911	923	919	917	915	916	918	902	645
7	911	905	903	901	898	903	901	895	890	889	885	882	883	899	907	909	916	911	905	913	910	910	909	907	902	642
8 d	907	909	905	907	906	909	907	901	888	880	882	880	890	895	913	909	910	914	921	931	903	905	895	871	902	638
9 d	870	916	928	891	889	882	887	885	885	885	890	895	896	895	904	902	911	914	913	914	919	905	902	892	*899*	570
10 d	914	907	901	902	913	907	892	888	890	890	879	883	890	895	898	909	913	915	921	916	913	913	907	905	903	661
11 q	904	905	902	902	902	901	901	895	889	883	882	886	897	897	898	901	907	912	915	916	911	911	914	913	902	644
12	912	914	910	910	909	904	898	895	893	894	886	888	891	896	906	913	918	919	918	915	913	914	911	911	906	738
13 q	908	906	905	905	907	904	897	894	894	892	889	892	906	913	917	913	913	918	918	919	918	914	914	913	907	769
14 q	916	910	908	907	906	906	905	904	902	896	894	892	895	895	906	918	925	931	924	928	919	918	918	919	910	842
15	919	926	920	919	916	916	915	916	912	903	890	882	882	887	900	916	923	930	925	921	926	924	925	933	914	926
16 d	930	926	923	930	936	927	901	894	905	902	885	874	887	907	859	898	906	918	918	918	920	925	925	907	909	821
17	910	909	902	899	895	898	898	896	894	885	885	887	889	897	901	911	910	921	918	918	915	913	914	913	903	678
18	913	913	913	909	914	910	907	902	890	879	880	884	893	901	907	913	922	922	918	912	916	913	914	913	907	758
19 q	910	909	908	910	911	909	904	897	888	882	881	880	889	904	907	914	915	921	921	920	919	918	919	918	906	754
20	919	917	916	915	914	914	911	902	897	893	886	889	899	908	915	923	933	930	932	936	933	927	925	926	915	960
21	922	914	917	919	921	917	910	901	892	883	886	894	903	911	916	928	921	934	927	925	923	906	911	911	912	892
22	904	908	916	908	907	907	906	904	900	890	889	887	894	895	905	921	914	935	944	931	926	923	921	917	911	852
23	918	918	915	911	911	909	906	896	890	885	883	885	887	884	888	894	909	920	926	927	921	918	918	926	906	745
24	923	915	916	916	916	914	906	916	916	908	901	900	898	901	906	913	917	924	923	923	915	917	914	911	913	909
25	915	915	914	916	918	917	914	907	898	890	887	892	900	908	908	919	929	928	930	925	920	917	915	916	912	898
26	917	915	919	921	921	918	913	902	896	896	900	908	918	928	936	936	937	929	924	928	930	930	928	927	920	1077
27	920	921	913	921	925	919	912	902	898	894	891	895	896	899	898	906	911	931	930	929	928	927	928	925	913	919
28	921	917	918	923	921	921	915	906	896	888	884	894	897	900	916	909	911	921	929	922	921	921	921	920	912	892
29	921	917	915	919	918	913	909	899	899	898	894	894	905	905	915	916	912	922	926	930	926	925	923	919	913	920
30	919	918	914	914	916	914	913	912	909	906	902	902	911	914	918	923	918	921	925	928	927	926	926	925	917	1001
31	925	921	921	923	924	922	917	915	913	906	902	908	903	904	916	925	931	928	930	929	930	930	928	928	*920*	1079
Mean	914	914	912	911	911	909	905	901	897	891	*887*	889	894	901	906	913	917	921	*922*	922	919	918	917	915	909	
Sum 27,000γ+	1344	1337	1267	1237	1241	1176	1055	922	792	626	496	556	727	914	1095	1305	1431	1562	1595	1583	1492	1450	1419	1352		Grand Total 675,974

GEOMAGNETIC DECLINATION (WEST)
Mean values for periods of sixty minutes ending at exact hours, GMT

20 ESKDALEMUIR (D) — 9° + — MAY 1965

Day	Hour GMT 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 1400·0′+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
1	60·7	60·8	60·6	60·4	60·1	59·0	58·1	57·4	57·2	58·8	61·7	64·5	66·3	66·4	66·0	64·5	63·4	63·1	62·5	62·1	61·6	61·4	61·2	60·7	61·6	78·5
2 q	60·8	60·7	60·7	60·5	59·9	58·6	57·2	56·6	56·7	58·4	61·3	64·6	68·1	68·7	67·4	65·5	64·1	63·2	62·3	62·0	61·7	61·3	60·8	60·1	61·7	81·2
3	59·8	60·5	60·4	59·8	58·9	57·5	56·3	55·8	56·4	58·2	61·4	63·6	65·3	66·2	66·1	66·0	64·8	63·5	62·4	62·0	62·1	61·9	61·5	61·3	61·3	71·7
4	61·3	61·1	60·5	60·0	58·5	58·0	56·3	55·6	55·7	57·5	61·2	64·3	66·3	67·4	67·1	66·8	65·9	64·3	62·6	62·4	62·7	62·2	62·1	62·6	61·8	82·4
5 d	61·8	59·8	50·8	52·1	53·1	62·2	61·7	54·5	54·6	58·1	61·3	64·2	66·1	68·0	68·9	68·5	67·8	65·4	63·2	61·3	59·9	58·7	56·7	57·5	60·7	56·2
6	58·2	58·6	60·8	60·3	59·4	58·6	57·8	56·9	57·7	59·4	61·1	64·4	67·9	68·1	66·9	66·1	64·6	63·0	61·9	61·2	61·4	60·4	60·3	61·9	61·5	76·9
7	60·3	58·4	58·6	58·1	59·8	59·4	57·9	57·6	57·2	58·8	62·4	65·4	67·4	67·9	67·1	65·2	64·0	62·4	60·6	59·6	61·5	61·5	61·2	61·2	61·4	73·5
8 d	60·7	61·0	60·0	60·3	58·6	57·7	56·7	56·7	57·7	59·2	62·3	65·9	67·0	67·1	68·4	67·2	65·9	65·2	64·0	62·7	61·7	58·1	54·1	47·6	61·1	65·8
9 d	55·6	60·7	57·1	54·8	55·8	58·3	56·5	56·1	57·6	59·9	61·1	63·1	64·4	64·6	64·7	63·7	62·6	61·6	61·3	61·2	58·9	57·6	56·2	57·1	*59·6*	30·5
10 d	58·6	58·4	56·6	56·7	56·7	57·4	58·0	58·1	57·8	59·5	61·4	63·2	65·0	65·1	64·1	63·3	62·6	61·6	60·1	61·1	61·1	58·6	61·0	60·7	60·3	46·7
11 q	60·5	60·4	60·3	59·9	59·4	58·2	57·8	57·8	57·8	58·9	61·1	63·0	66·0	66·8	66·1	64·9	64·0	62·9	62·6	62·0	61·7	61·6	61·4	61·1	61·5	76·2
12	60·8	60·1	60·9	60·7	56·8	55·7	56·1	57·3	59·3	60·5	64·0	65·2	66·0	65·4	64·7	63·6	62·8	61·9	61·3	60·9	61·2	61·2	61·0	60·2	61·1	67·6
13 q	60·4	60·1	59·6	59·4	59·1	58·5	58·1	57·8	57·7	59·4	62·1	64·4	65·5	65·5	65·0	64·3	63·7	62·9	62·3	61·5	61·2	61·1	60·6	59·4	61·2	69·6
14 q	58·8	58·7	59·0	58·7	58·5	58·1	57·9	57·2	57·4	58·4	60·7	63·6	66·5	67·8	67·3	66·1	65·0	64·1	62·5	61·3	59·8	60·5	60·9	60·7	61·2	69·5
15	60·8	61·3	60·5	59·9	58·5	57·2	56·1	55·1	55·6	58·1	61·3	64·4	68·0	68·9	68·5	66·5	66·0	64·4	62·2	61·6	61·6	61·0	58·7	60·1	61·5	76·3
16 d	60·2	59·5	59·6	59·7	57·8	58·1	57·1	59·6	61·0	60·1	62·5	67·7	71·4	72·7	69·1	66·7	65·2	63·1	61·7	61·3	61·5	60·3	59·0	59·8	*62·3*	94·7
17	60·5	61·5	62·3	61·4	59·8	58·2	57·1	56·5	56·8	58·5	61·2	64·3	67·5	67·9	66·2	64·0	63·0	61·6	61·1	61·3	61·6	61·1	61·4	61·3	61·5	76·1
18	61·3	60·8	61·5	61·3	60·3	56·9	56·0	56·6	58·4	60·0	62·6	66·3	68·1	68·0	66·2	64·4	62·7	61·6	61·5	61·6	61·4	61·2	61·1	61·2	61·7	81·0
19 q	61·1	60·9	60·6	60·1	59·3	57·6	57·3	57·5	57·7	59·4	62·6	65·4	68·0	67·7	66·2	64·4	62·6	62·1	61·5	61·5	61·5	61·7	61·6	61·2	61·6	79·5
20	61·1	60·7	60·7	60·7	59·4	57·0	55·1	54·7	56·6	58·8	61·4	63·2	65·7	66·0	65·2	64·7	63·4	63·6	63·3	63·6	63·4	62·9	62·1	61·7	61·5	75·0
21	58·5	58·8	59·3	59·0	58·1	56·9	56·1	55·9	56·1	58·1	59·8	62·4	65·2	66·1	64·7	64·2	61·8	62·5	62·2	61·8	59·4	58·0	59·7	58·5	60·1	43·1
22	57·2	57·8	56·0	53·1	54·1	53·8	55·0	56·1	58·7	60·5	61·7	64·1	66·3	66·5	65·3	65·5	63·8	64·2	63·5	60·1	62·2	62·2	61·5	61·5	60·4	50·7
23	61·1	60·4	59·5	57·8	55·1	53·3	54·1	55·0	57·7	60·8	63·1	65·8	66·8	65·8	65·1	64·7	64·0	62·7	62·1	61·5	61·4	61·2	61·1	59·7	60·8	59·8
24	60·7	60·7	60·7	59·2	57·8	55·9	55·3	57·2	57·1	58·6	60·8	63·2	64·2	64·9	64·6	63·2	63·7	63·6	63·2	62·2	61·6	60·7	60·4	60·4	60·8	59·9
25	60·1	59·7	59·6	59·5	58·6	57·3	56·1	56·0	56·1	57·9	60·1	61·6	63·7	64·8	65·8	65·8	65·0	63·4	62·8	62·1	61·6	61·3	61·3	61·0	60·9	61·2
26	60·7	60·4	60·2	58·5	57·2	56·5	57·0	57·0	56·8	57·3	59·9	62·5	64·8	65·8	66·1	64·9	63·4	62·4	62·1	62·8	62·9	62·6	61·6	59·8	61·0	63·2
27	59·8	57·8	55·1	58·1	57·5	56·9	57·2	57·4	58·7	62·2	65·3	66·2	66·9	66·9	65·9	64·0	62·1	61·7	62·1	63·1	63·1	63·1	63·3	62·4	61·5	76·8
28	61·3	60·4	60·7	60·3	58·7	58·4	58·0	58·1	58·6	60·7	64·5	67·6	68·7	67·1	65·8	65·0	63·1	61·6	62·7	61·8	62·0	62·1	62·1	61·6	62·1	90·9
29	61·3	60·5	60·3	59·7	58·0	56·1	55·7	55·7	56·5	57·7	59·7	65·4	63·7	65·8	65·6	64·4	62·7	62·4	61·1	60·8	61·1	60·5	61·0	60·7	60·7	56·4
30	60·7	60·3	59·9	59·6	58·5	57·8	57·5	57·7	58·4	59·6	62·6	64·2	65·1	64·8	65·0	64·7	64·4	63·8	62·7	62·1	61·6	61·3	61·3	61·4	61·5	75·0
31	61·4	60·7	60·4	59·9	59·7	58·8	58·3	58·6	58·1	58·9	62·6	65·0	66·9	67·4	67·2	65·9	64·5	63·4	63·0	62·5	61·7	62·1	61·8	60·8	62·1	89·6
Mean	60·2	60·1	59·5	59·0	58·2	57·5	56·9	*56·8*	57·4	59·1	61·8	64·5	66·4	*66·8*	66·2	65·1	63·9	63·0	62·2	61·7	61·5	60·9	60·6	60·2	61·2	
Sum 1700·0′+	166·1	161·5	142·8	129·5	103·0	83·9	65·4	60·1	79·7	132·2	214·8	298·7	358·8	372·1	352·3	318·7	282·6	253·2	228·4	213·0	206·1	189·4	178·0	165·2		Grand Total 45555·5

GEOMAGNETIC FORCE: VERTICAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, GMT

21 ESKDALEMUIR (Z) — 45,000γ (0·45 CGS unit) + — MAY 1965

Hour GMT	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 10,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	440	440	440	440	440	443	443	440	433	429	423	420	421	426	432	434	437	438	438	438	438	439	439	440	435	451
2 *q*	410	410	410	409	409	410	409	406	400	393	389	386	416	423	429	434	437	440	440	440	439	438	438	438	*419*	53
3	438	437	434	434	436	436	434	430	426	422	423	424	425	430	433	434	436	438	439	439	438	437	438	438	433	399
4	437	437	437	437	438	438	437	433	433	428	427	426	426	429	436	439	441	444	444	442	440	439	438	434	436	460
5 *d*	433	420	415	418	423	422	412	413	416	417	426	423	425	431	439	444	452	463	464	457	451	443	432	429	432	368
6	430	436	438	439	442	444	445	444	440	433	428	427	424	430	434	439	446	450	449	446	444	443	437	430	438	518
7	420	428	436	438	438	438	438	436	430	422	422	422	423	427	433	439	445	446	446	446	443	440	440	439	435	435
8 *d*	440	438	440	438	438	437	434	434	432	423	421	422	422	423	429	434	437	440	440	443	452	446	432	421	434	416
9 *d*	412	405	394	414	427	430	430	434	431	426	420	420	425	431	436	441	445	447	448	448	446	444	434	434	430	322
10 *d*	424	420	422	422	419	419	425	428	432	429	429	430	429	433	437	442	444	445	449	448	447	444	441	441	433	399
11 *q*	441	440	440	440	440	440	440	439	436	434	432	422	416	425	429	437	442	443	443	443	441	441	440	439	437	483
12	439	438	434	432	430	430	431	431	427	425	422	421	425	432	438	443	445	446	445	443	443	441	441	440	435	442
13 *q*	438	438	439	440	440	439	439	437	433	429	425	418	419	423	430	436	441	443	444	445	444	444	441	439	436	464
14 *q*	440	439	440	440	440	439	437	433	434	432	426	422	426	429	438	430	434	438	443	444	445	444	440	439	436	472
15	439	434	434	435	437	438	436	436	433	427	422	417	421	427	431	433	438	440	444	443	440	440	437	433	434	415
16 *d*	431	433	434	434	434	437	437	433	427	419	417	417	416	438	451	454	457	454	452	449	444	440	433	434	436	475
17	439	439	438	438	438	438	439	440	438	433	425	419	425	434	440	450	452	451	450	445	444	441	439	440	439	535
18	441	441	442	443	443	446	446	446	443	437	429	426	432	436	440	443	445	450	446	444	441	441	440	440	*441*	581
19 *q*	441	441	443	443	444	444	443	443	440	434	427	420	421	429	433	438	444	444	443	441	440	438	438	439	438	511
20	439	439	440	440	443	443	441	435	427	422	412	408	413	423	428	433	436	440	440	438	437	437	437	436	433	387
21	437	438	438	438	438	438	438	438	435	426	416	414	422	432	437	442	445	447	449	447	446	446	440	440	437	487
22	439	437	433	433	433	433	429	428	424	415	415	415	415	421	427	432	438	440	444	450	447	441	440	439	432	368
23	438	437	434	434	437	436	433	433	432	427	423	422	426	429	433	436	440	444	443	443	441	440	437	427	434	425
24	426	427	428	430	433	434	430	425	427	428	426	423	422	426	429	430	432	437	441	444	444	440	440	439	432	361
25	438	438	438	438	438	434	437	438	434	428	420	412	412	416	422	427	434	441	444	444	443	441	440	440	433	397
26	438	437	434	436	438	437	436	437	436	433	428	427	421	420	425	432	436	437	438	437	436	436	435	434	433	404
27	437	436	437	438	438	439	435	433	428	419	414	415	416	423	430	436	441	444	440	439	439	438	438	438	433	391
28	438	439	440	440	440	439	438	438	436	428	423	420	429	437	440	446	451	451	448	445	443	441	440	440	439	530
29	440	441	441	442	443	443	439	440	437	431	432	429	427	433	433	435	441	440	440	440	439	438	438	439	438	501
30	438	438	438	438	439	440	439	435	433	429	419	413	419	427	429	429	431	434	435	436	436	437	437	437	433	386
31	437	437	437	437	437	436	434	433	429	421	416	412	415	425	427	429	435	441	440	438	437	436	436	436	432	361
Mean	435	434	434	435	436	436	435	434	431	426	422	*419*	422	428	433	437	441	444	*444*	443	442	441	438	437	434	
Sum 12,000γ+	1478	1458	1448	1478	1513	1520	1484	1449	1362	1199	1077	992	1074	1268	1428	1551	1678	1756	1769	1745	1708	1654	1576	1532		Grand Total 323,197

GEOMAGNETIC CHARACTER FIGURES (K, K_H, K_D, K_Z, AND C) AND TEMPERATURE IN MAGNETOGRAPH CHAMBER

22 ESKDALEMUIR — MAY 1965

	3-h range indices K	Sum of K indices	3-h range indices K_H	Sum of K_H indices	3-h range indices K_D	Sum of K_D indices	3-h range indices K_Z	Sum of K_Z indices	Geomagnetic character of day, C (0-2)	Temperature in magneto-graph chamber 200°A+
1	2112 2111	11	2002 2111	9	1110 0000	3	0000 0000	0	1	84·7
2 *q*	0000 1101	3	0000 1101	3	0000 0000	0	0000 0000	0	0	84·7
3	1000 2200	5	1000 2200	5	0000 0000	0	0000 0000	0	0	84·7
4	0111 0222	9	0101 0222	8	0110 0010	3	0000 0000	0	1	84·7
5 *d*	4443 3423	27	4333 3423	25	4442 1123	21	2211 1222	13	1	84·8
6	2111 3222	14	2011 3222	13	2111 1012	9	0000 0002	2	1	84·8
7	2211 2120	11	2201 2120	10	2111 0020	7	2010 0000	3	1	84·8
8 *d*	2112 2334	18	2112 2334	18	1111 1214	12	0000 0123	6	1	84·8
9 *d*	4322 2233	21	4312 2233	20	3221 0032	13	2200 0001	5	1	84·8
10 *d*	3221 1222	15	3221 1222	15	2110 0012	7	1000 0000	1	1	84·8
11 *q*	0000 1112	5	0000 1112	5	0000 0001	1	0000 0000	0	0	84·8
12	2211 1111	10	2201 1111	9	1210 0001	5	0000 0000	0	0	84·8
13 *q*	0011 2211	8	0011 2211	8	0000 0001	1	0000 0000	0	0	84·8
14 *q*	1100 1120	6	1100 1120	6	1000 0010	2	0000 0000	0	0	84·8
15	2000 2222	10	2000 2222	10	1000 0012	4	1000 0001	2	1	84·8
16 *d*	2333 5323	24	2333 5323	24	1232 2112	14	0011 2101	6	1	84·8
17	2222 1220	13	2112 1220	11	2221 1000	8	0000 0000	0	1	84·9
18	1211 1221	11	1101 1221	9	0210 0000	3	0000 0000	0	1	84·8
19 *q*	1111 1001	6	1011 1001	5	0100 0000	1	0000 0000	0	0	84·7
20	1000 2212	8	1000 2212	8	0000 0112	4	0000 0000	0	0	84·7
21	2101 2222	12	2101 2222	12	1100 1122	8	0000 0000	0	1	84·8
22	2211 1331	14	2201 1331	13	2111 0121	9	1000 0010	2	1	84·8
23	1011 2112	9	1011 2112	9	0010 1002	4	0000 0002	2	0	84·7
24	2120 1332	14	2020 1332	13	1110 0100	4	0000 0000	0	1	84·8
25	1111 2221	11	1001 2221	9	0110 0000	2	0000 0000	0	0	84·8
26	1111 0222	10	0001 0222	7	1110 0012	6	0000 0000	0	0	84·8
27	2212 2322	16	2112 2322	15	2210 0011	7	0000 0000	0	1	84·9
28	1102 3321	13	1002 3321	12	0101 1210	6	0000 0000	0	1	84·9
29	1111 2201	9	1011 2201	8	0100 0000	1	0000 0000	0	0	84·9
30	1101 2110	7	1001 2110	6	1100 1000	3	0000 0000	0	0	84·9
31	1112 2211	11	1102 2211	10	1110 0001	4	0000 0000	0	1	84·9
								Mean	0·58	84·8

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

K_H For horizontal component. K_D For declination. K_Z For vertical component. (See Introduction).

GEOMAGNETIC FORCE: HORIZONTAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, GMT

19 ESKDALEMUIR (H) — 16,000γ (0·16 CGS unit) + — JUNE 1965

Day	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 21,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	919	920	921	923	923	921	919	914	911	903	892	896	904	914	926	930	931	931	933	931	928	925	921	920	919	1056
2	918	918	917	916	916	916	915	912	906	898	896	898	908	910	904	926	929	934	925	925	918	917	918	916	915	966
3	917	918	916	914	913	909	902	896	885	879	878	883	894	916	928	923	929	945	941	929	930	931	921	910	913	907
4	913	915	916	923	924	918	908	899	899	889	880	880	901	918	913	910	937	932	933	922	925	921	911	913	913	900
5	912	922	898	898	894	896	898	897	890	886	882	882	890	897	904	912	916	921	924	921	916	916	917	917	904	706
6	916	913	910	909	912	909	904	901	893	905	906	907	904	912	918	929	928	928	928	931	921	916	913	913	914	926
7	911	913	906	910	909	907	902	894	887	887	885	884	890	895	910	918	919	912	918	921	918	914	914	912	906	736
8	911	914	911	912	910	904	899	900	900	901	895	899	905	902	911	912	936	949	952	930	944	929	918	918	915	962
9 *d*	909	913	917	908	911	915	883	885	882	885	894	904	907	907	913	896	897	904	926	933	928	920	917	917	907	771
10 *q*	913	911	907	906	906	910	903	898	897	901	899	898	895	901	902	903	909	919	926	925	919	915	914	914	908	791
11	911	912	913	914	912	910	902	898	897	894	892	892	899	909	916	911	919	921	921	940	942	935	926	927	913	913
12	925	923	919	922	919	921	916	906	894	888	891	902	894	902	914	921	926	927	926	930	930	926	926	926	916	974
13 *q*	921	920	921	925	924	919	911	902	894	892	894	896	903	908	912	920	927	935	938	940	934	937	932	930	918	1035
14	929	926	926	921	918	916	915	915	907	899	898	898	905	912	930	929	931	938	937	947	930	921	918	915	920	1081
15 *d*	921	923	920	919	918	909	906	899	896	893	894	899	911	938	925	931	940	961	962	940	931	926	930	919	921	1111
16 *d*	919	926	913	903	898	922	884	866	820	794	816	847	874	915	952	958	980	932	931	892	840	841	853	863	*889*	339
17 *d*	848	895	902	881	877	877	900	866	870	861	862	863	878	890	916	930	935	925	925	920	915	925	918	887	894	466
18	899	913	907	912	902	904	900	889	876	868	866	873	884	893	902	912	915	922	948	930	940	922	916	919	905	712
19	912	908	902	906	907	907	899	890	880	875	872	875	880	889	897	906	915	919	918	918	917	916	916	914	902	638
20 *q*	912	912	910	910	910	909	906	902	897	890	883	882	883	893	906	912	916	918	928	925	924	918	916	914	907	776
21 *q*	915	916	914	914	914	915	913	908	899	887	880	882	891	902	911	912	916	918	925	926	927	922	923	919	910	849
22	919	920	914	913	916	917	911	906	899	891	889	885	893	897	909	917	919	924	930	928	926	925	924	923	912	895
23	914	910	913	914	916	912	911	908	902	896	883	882	883	890	902	919	919	925	923	926	923	923	919	914	909	827
24 *q*	919	916	916	916	914	911	905	900	900	902	901	900	897	897	896	912	929	928	938	938	930	926	926	924	914	941
25	919	920	918	919	921	920	918	911	902	899	899	898	888	900	929	954	927	931	949	925	935	926	926	929	919	1063
26	929	926	927	928	931	926	923	916	914	906	900	900	900	904	914	921	929	931	944	930	931	928	927	932	*922*	1117
27	935	918	914	910	903	897	894	892	892	886	890	896	907	900	902	905	909	916	924	924	921	914	918	918	908	785
28	916	914	913	911	911	909	904	903	900	894	890	892	906	912	918	920	919	924	925	925	921	922	915	916	912	880
29	922	925	932	939	928	927	896	887	898	893	892	892	897	891	901	911	932	934	947	946	941	928	936	927	918	1022
30 *d*	919	915	914	911	906	909	914	905	887	883	877	881	889	885	914	919	921	926	934	932	927	947	916	943	911	874
Mean	915	917	914	914	912	911	905	899	893	887	*886*	889	895	903	913	919	925	928	*933*	928	924	921	918	917	911	
Sum 26,000γ+	1443	1495	1427	1407	1363	1342	1161	965	774	625	576	666	860	1099	1395	1579	1755	1830	1989	1850	1732	1632	1545	1509		Grand Total 656,019

GEOMAGNETIC DECLINATION (WEST)
Mean values for periods of sixty minutes ending at exact hours, GMT

20 ESKDALEMUIR (D) — 9° + — JUNE 1965

Day	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 1400·0′+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
1	59·7	59·9	59·8	59·1	57·4	56·7	55·6	55·1	56·0	58·0	61·2	64·2	65·8	66·1	66·5	66·6	65·9	63·3	63·1	62·9	62·0	60·2	58·3	60·1	61·0	63·5
2	59·8	60·7	61·1	59·9	59·4	57·4	56·7	56·4	57·3	59·1	62·8	66·0	69·1	70·1	68·5	66·8	65·9	62·7	62·1	60·8	60·7	60·1	59·9	59·9	61·8	83·2
3	60·7	60·8	60·6	59·4	58·5	57·3	56·2	56·9	57·7	58·8	62·1	65·8	68·6	69·8	69·5	67·9	66·5	66·0	61·2	63·1	62·4	60·7	55·3	57·8	61·8	83·6
4	59·8	59·8	59·7	59·5	58·1	56·7	55·0	54·3	55·2	57·5	58·5	61·6	65·2	68·2	69·5	66·5	66·1	60·8	61·1	61·1	60·8	57·0	57·0	55·6	60·2	44·6
5	61·4	59·4	57·7	57·5	57·2	56·8	54·8	53·9	55·4	58·5	61·6	64·4	66·3	67·2	66·1	64·4	62·5	61·6	61·3	61·6	61·6	61·4	61·2	61·0	60·6	54·8
6	60·7	60·4	59·7	58·8	57·5	55·2	55·2	55·9	56·8	59·1	62·8	65·2	67·2	66·1	63·2	62·3	62·1	62·3	62·9	60·5	61·5	61·4	61·4	61·1	60·8	59·3
7	60·8	60·6	57·7	57·8	56·4	55·0	55·1	55·6	57·3	59·5	61·5	63·8	66·1	66·4	64·2	62·4	61·7	60·5	60·7	61·2	61·4	61·4	61·3	61·2	60·4	49·6
8	60·8	60·6	60·1	59·7	58·1	55·8	54·1	54·2	57·5	59·6	62·8	65·2	67·9	68·7	68·0	66·8	65·6	64·8	63·4	60·5	62·1	59·1	53·8	56·0	61·1	65·2
9 *d*	54·8	58·1	55·9	54·1	57·4	54·1	53·1	55·6	58·0	61·5	64·1	67·6	69·4	69·0	68·7	68·5	66·6	64·5	63·4	62·5	57·1	59·2	61·1	60·7	61·0	65·0
10 *q*	60·5	60·7	59·7	59·2	58·6	58·1	56·9	57·0	57·8	59·8	61·7	63·6	64·9	64·3	63·7	63·2	62·1	61·7	61·3	60·7	60·6	60·7	60·8	60·6	60·8	58·2
11	60·2	60·2	59·6	58·9	57·6	56·4	55·6	55·8	56·4	58·5	61·5	63·7	64·7	65·2	65·7	64·5	63·9	63·4	62·7	62·8	62·2	61·8	60·5	61·8	61·0	63·6
12	61·8	62·0	61·2	59·3	58·1	56·2	54·9	54·1	55·3	56·8	59·9	65·1	68·1	69·6	68·9	66·8	63·7	62·4	62·2	62·3	62·0	61·6	61·5	61·9	61·5	75·7
13 *q*	61·3	61·3	61·0	59·7	58·6	56·4	54·3	53·9	54·8	57·3	59·9	63·8	66·7	67·0	66·9	66·2	64·7	63·2	62·1	62·1	62·2	61·4	61·3	61·1	61·1	67·2
14	60·7	60·5	60·2	59·3	58·5	57·4	56·2	55·2	55·3	56·7	59·3	61·8	64·4	66·1	66·8	65·0	64·2	64·0	63·0	62·6	59·3	57·5	55·8	56·9	60·3	46·7
15 *d*	59·4	59·8	59·3	58·7	58·1	58·4	57·4	56·7	57·0	58·8	62·5	67·7	72·6	75·2	72·7	73·3	70·6	69·4	66·1	57·6	59·8	60·5	56·0	56·0	*62·7*	103·6
16 *d*	54·1	62·4	58·2	54·8	57·4	62·2	54·9	54·1	61·1	61·7	63·4	65·3	66·1	68·2	69·5	69·9	68·2	62·6	59·3	54·1	51·1	50·6	48·6	50·1	59·5	27·9
17 *d*	63·6	59·9	56·7	61·4	65·2	59·1	59·4	61·6	61·5	63·2	63·7	64·3	65·0	63·3	61·6	63·0	64·5	61·5	62·4	62·5	62·3	62·1	56·1	61·3	61·9	85·2
18	51·3	54·2	55·0	56·6	56·6	56·4	54·8	53·6	54·2	56·2	58·5	61·0	63·9	64·7	64·8	65·1	63·4	62·8	64·3	61·7	62·1	61·7	61·2	58·6	*59·3*	22·7
19	57·7	57·3	57·8	58·4	57·5	56·8	55·7	55·2	55·5	56·4	57·9	60·7	63·7	64·8	64·2	63·5	63·2	62·6	61·9	61·1	60·7	60·5	60·4	59·7	59·7	33·2
20 *q*	59·4	59·4	59·7	59·5	58·9	57·7	56·4	55·4	55·5	56·8	59·8	62·4	64·8	66·9	66·5	65·2	64·5	63·3	62·1	60·8	60·5	61·2	60·7	60·8	60·8	58·2
21 *q*	60·6	60·0	59·5	59·0	58·4	57·5	56·0	55·1	55·4	56·7	58·9	61·5	63·1	63·6	64·6	64·7	63·1	61·8	61·5	61·6	61·8	61·9	61·6	61·3	60·4	49·2
22	60·2	59·6	59·4	59·5	58·7	56·7	55·8	55·8	56·1	56·9	59·2	62·9	67·0	67·6	66·6	66·3	64·9	64·1	63·0	62·0	61·4	61·2	59·4	58·9	61·0	63·2
23	59·5	59·9	59·3	58·3	57·3	56·2	54·9	54·6	55·0	57·0	60·0	64·2	66·4	66·9	66·3	65·2	63·6	62·5	61·9	61·8	61·5	61·3	60·9	60·4	60·6	54·9
24 *q*	60·3	59·3	59·0	58·7	57·7	56·9	56·6	56·8	57·6	58·5	60·2	62·1	63·9	64·4	64·7	64·7	64·4	63·6	63·1	63·0	61·3	61·6	61·6	61·4	60·9	61·4
25	60·4	60·3	59·8	59·4	58·2	57·1	56·7	56·1	56·6	58·6	61·3	64·3	66·1	66·9	67·3	66·8	63·6	65·9	65·1	61·1	62·5	62·6	62·6	63·0	61·8	82·3
26	59·8	59·9	60·3	60·7	59·3	57·0	55·7	56·7	58·5	59·5	60·7	62·1	63·2	63·6	63·6	63·8	63·3	62·2	61·8	61·4	59·8	60·5	59·5	57·4	60·4	50·3
27	58·8	57·5	56·6	58·6	58·3	56·7	56·6	56·6	57·4	58·4	61·6	64·9	65·9	65·1	64·3	63·4	62·1	61·2	61·2	60·7	60·6	60·6	60·7	60·8	60·4	48·6
28	61·4	60·7	60·5	59·9	59·6	57·4	56·8	56·0	55·1	55·9	58·5	62·2	64·5	64·9	64·4	63·6	62·3	61·5	61·2	61·3	60·3	60·7	60·6	61·0	60·4	50·3
29	61·2	59·9	61·0	60·1	56·5	55·0	53·0	54·4	55·3	57·7	60·7	64·1	66·1	68·1	68·7	67·8	66·6	65·9	63·3	62·3	61·9	60·7	55·6	56·5	60·9	62·4
30 *d*	57·4	58·4	59·2	59·6	57·8	55·2	53·2	52·7	54·3	57·1	59·8	63·6	67·1	68·7	68·7	68·1	66·4	63·4	62·4	62·0	58·8	56·4	58·1	59·1	60·3	47·5
Mean	59·6	59·9	59·2	58·9	58·2	56·9	55·6	*55·5*	56·6	58·3	60·9	63·8	66·1	*66·9*	66·5	65·7	64·5	63·2	62·4	61·3	60·7	60·3	59·1	59·3	60·8	
Sum 1600·0′+	188·1	195·5	175·3	165·4	146·9	105·8	67·6	65·3	96·9	150·1	226·4	315·1	383·8	406·7	394·7	372·3	336·2	295·5	271·1	239·7	222·3	207·6	172·8	180·0		Grand Total 43781·1

Mean values for periods of sixty minutes ending at exact hours, GMT

21 ESKDALEMUIR (Z) 45,000γ (0·45 CGS unit) + JUNE 1965

	Hour GMT 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 10,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	438	438	439	440	441	439	434	431	429	427	422	419	422	423	427	436	440	445	445	442	439	440	440	438	435	434
2	438	437	436	438	439	439	438	438	436	431	426	422	423	430	434	437	443	447	450	451	447	444	439	438	438	501
3	438	438	439	440	441	443	443	438	434	430	419	414	417	426	434	439	441	446	453	446	443	442	438	438	437	480
4	438	438	438	439	440	441	440	440	437	428	427	432	427	429	439	449	455	467	462	454	450	447	444	435	441	596
5	418	415	418	419	429	433	434	435	431	427	423	422	422	425	431	437	441	446	445	444	442	440	440	440	432	357
6	439	440	440	443	443	444	440	439	438	432	427	422	424	427	434	439	445	451	451	450	445	444	441	440	439	538
7	438	436	434	438	439	440	440	439	437	425	414	418	427	435	439	444	450	449	443	440	439	439	439	439	437	481
8	438	437	438	440	440	443	444	438	435	427	423	421	417	425	427	432	436	438	446	453	447	446	433	405	435	429
9 *d*	411	423	422	424	432	437	440	434	431	424	413	411	415	425	437	455	469	467	457	452	455	450	444	441	436	469
10 *q*	438	437	439	441	443	442	443	442	438	430	421	421	422	427	433	438	443	444	444	444	444	444	441	441	437	500
11	440	440	441	441	442	441	439	439	437	434	430	424	424	427	430	437	439	440	441	440	441	443	443	439	437	492
12	439	438	438	438	440	440	438	439	436	427	418	412	420	430	435	438	441	444	444	444	444	442	440	439	436	464
13 *q*	440	440	440	443	444	445	442	441	438	432	423	422	428	434	438	436	436	438	440	439	438	438	438	438	437	491
14	439	439	438	440	440	440	438	438	433	426	417	415	422	430	430	435	435	434	434	437	445	445	440	438	435	428
15 *d*	438	438	439	438	438	437	437	437	431	427	420	409	411	412	431	443	460	464	479	476	458	458	445	437	440	563
16 *d*	416	390	420	429	429	405	416	411	409	409	426	451	468	493	550	578	581	567	528	484	446	434	411	398	*456*	949
17 *d*	358	344	358	360	367	399	417	432	433	441	443	443	450	464	471	469	472	478	467	459	452	447	437	389	*427*	250
18	398	408	416	418	427	434	446	448	448	447	442	433	433	440	444	445	450	456	454	454	450	449	447	444	439	531
19	440	439	443	444	446	451	454	451	447	439	436	432	436	441	441	441	444	444	444	445	445	445	444	444	443	636
20 *q*	444	444	444	445	446	448	446	445	443	436	433	427	430	434	436	439	444	450	450	448	448	447	445	444	442	616
21 *q*	444	444	444	445	447	449	449	448	451	448	445	437	433	434	438	443	445	450	450	446	445	444	442	441	444	662
22	441	440	440	441	441	440	440	436	436	428	428	432	433	429	433	438	446	451	451	451	448	445	444	440	440	552
23	440	440	438	442	443	441	436	434	433	433	429	429	427	427	429	434	442	445	448	445	444	444	444	443	438	510
24 *q*	439	438	440	441	443	444	444	441	438	433	430	427	429	432	427	427	433	437	438	439	441	440	440	440	437	481
25	441	440	440	441	443	445	443	441	437	434	427	420	420	422	418	434	458	472	476	480	463	450	447	444	443	636
26	441	441	441	442	440	443	440	438	434	434	437	438	438	444	445	447	447	446	445	452	450	449	445	440	442	617
27	426	420	427	435	439	438	437	439	436	433	431	428	432	440	446	445	446	447	444	444	444	444	440	440	438	501
28	440	440	441	442	443	444	443	435	429	427	426	422	429	434	441	439	440	443	444	444	444	444	441	441	438	516
29	440	440	438	436	437	436	438	436	428	419	419	422	426	429	432	440	446	450	452	453	450	448	442	434	437	491
30 *d*	430	433	437	438	436	432	429	432	433	430	428	429	431	437	442	447	451	452	451	451	451	444	436	421	438	501
Mean	432	431	433	435	437	438	439	438	435	431	427	*425*	428	433	440	445	451	*454*	453	450	447	445	440	435	438	
Sum 12,000γ+	968	935	1006	1061	1118	1153	1168	1135	1056	918	803	754	836	1005	1192	1361	1519	1608	1576	1507	1398	1336	1210	1049		Grand Total 315,672

GEOMAGNETIC CHARACTER FIGURES (K, K_H, K_D, K_Z, AND C) AND TEMPERATURE IN MAGNETOGRAPH CHAMBER

22 ESKDALEMUIR JUNE 1965

	3-h range indices K	Sum of K indices	3-h range indices K_H	Sum of K_H indices	3-h range indices K_Z	Sum of K_D indices	3-h range indices K_Z	Sum of K_Z indices	Geomagnetic character of day, C (0-2)	Temperature in magneto-graph chamber 200°A+
1	1001 2222	10	1001 2222	10	1000 1102	5	0000 0000	0	0	84·9
2	1122 2231	14	0012 2231	11	1121 0111	8	0000 0000	0	1	85·0
3	1000 2343	13	1000 2343	13	0000 0133	7	0000 0121	4	1	85·1
4	0223 3333	19	0223 3333	19	0211 2313	13	0001 1312	8	1	85·0
5	3221 2121	14	3221 2121	14	3220 0000	7	2200 0000	4	1	85·0
6	1112 2231	13	1112 2231	13	0101 1020	5	0000 0100	1	1	85·1
7	2102 2210	10	2102 2210	10	2101 0000	4	0000 0000	0	0	85·1
8	1022 2333	16	1022 2333	16	1021 1123	11	0000 0013	4	1	85·1
9 *d*	3322 3332	21	3322 3321	19	3310 2232	16	3100 0200	6	1	85·1
10 *q*	2101 1000	5	2001 1000	4	1101 0000	3	0000 0000	0	0	85·2
11	0001 2232	10	0001 2232	10	0000 1011	3	0000 0000	0	1	85·2
12	1102 2210	9	1002 2210	8	1101 0100	4	0000 0000	0	0	85·4
13 *q*	1000 0010	2	1000 0010	2	0000 0000	0	0000 0000	0	0	85·4
14	0112 2332	14	0002 2332	12	0110 1122	8	0000 0011	2	1	85·4
15 *d*	1213 4444	23	1213 4444	23	1112 3233	16	0000 2223	9	1	85·5
16 *d*	4444 5554	35	3444 5554	34	4433 4544	31	3313 5453	27	2	85·4
17 *d*	5442 3325	28	5442 3325	28	4421 2214	20	4420 2124	19	2	85·5
18	4312 1243	20	4302 1243	19	3110 0122	10	3210 1010	8	1	85·5
19	2110 0000	4	2000 0000	2	1110 0000	3	0000 0000	0	0	85·5
20 *q*	0000 1120	4	0000 1120	4	0000 0110	2	0000 0010	1	0	85·5
21 *q*	0000 0101	2	0000 0101	2	0000 0000	0	0000 0000	0	0	85·5
22	1111 2212	11	1101 2212	10	1110 0001	4	0000 0000	0	0	85·5
23	2001 2210	8	1001 2210	7	2000 0000	2	0000 0100	1	0	85·5
24 *q*	1000 1220	6	1000 1220	6	1000 0010	2	0000 0000	0	0	85·5
25	0101 3432	14	0001 3432	13	0100 1331	9	0000 1320	6	1	85·5
26	3322 1233	19	3212 1233	17	2321 1113	14	0000 0011	2	1	85·4
27	3212 2211	14	3212 2211	14	2110 0100	5	2000 1000	3	1	85·5
28	0111 2211	9	0101 2211	8	0110 0010	3	0000 0000	0	0	85·5
29	2233 3333	22	2233 3332	21	1221 1123	13	0010 0101	3	1	85·5
30 *d*	2223 3234	21	2223 3234	21	1221 2133	15	0100 1103	6	1	85·5
								Mean	0·67	85·3

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

K_H For horizontal component. K_D For declination. K_Z For vertical component. (See Introduction).

GEOMAGNETIC FORCE: HORIZONTAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, GMT

19 ESKDALEMUIR (H) — 16,000γ (0·16 CGS unit) + — JULY 1965

Day	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 21,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	929	907	909	907	908	912	898	877	866	871	884	892	896	899	915	915	921	926	930	945	946	915	922	914	909	804
2	907	904	906	908	912	911	898	894	892	884	881	871	870	882	892	911	925	926	932	927	924	918	916	914	904	705
3	907	910	907	909	909	910	903	894	891	890	891	886	889	900	914	924	923	931	944	935	929	922	911	914	910	843
4 q	910	907	910	912	912	906	903	899	896	889	886	886	889	897	907	915	924	929	929	925	926	922	917	921	909	817
5 q	916	917	919	921	921	918	907	905	900	896	897	903	904	910	921	925	924	924	927	927	929	924	924	923	916	982
6 d	923	916	917	919	924	930	955	936	914	891	884	890	878	887	892	929	909	923	923	915	919	914	911	920	913	919
7	908	900	902	900	903	900	902	902	897	890	890	893	895	899	904	906	913	921	925	929	924	923	918	919	907	763
8 d	918	916	909	909	921	918	912	912	908	900	897	899	912	928	927	928	955	957	943	922	930	926	924	906	920	1077
9	925	909	913	907	909	904	897	893	890	885	878	883	891	903	926	929	915	918	926	927	933	936	940	931	911	868
10 d	918	927	926	909	930	905	892	883	889	878	874	871	884	916	921	918	922	920	913	913	914	914	914	912	907	763
11 q	910	909	910	910	909	905	896	889	887	885	882	883	890	895	909	918	920	918	916	918	918	914	913	911	905	715
12	913	912	914	913	912	907	896	892	891	889	887	889	892	896	899	902	926	929	941	942	926	926	928	924	910	846
13	921	922	921	916	920	918	912	905	899	900	905	906	892	906	926	936	933	930	940	935	919	919	918	918	917	1017
14	914	920	918	912	911	909	910	909	903	899	898	902	906	911	916	918	919	931	926	928	931	923	924	915	915	953
15	919	919	917	919	919	916	909	897	895	902	905	886	886	902	918	924	921	923	922	922	920	918	918	911	912	888
16	911	907	910	911	914	909	904	897	893	893	893	893	897	904	914	922	918	919	919	924	925	923	916	918	910	834
17 q	918	915	915	916	918	916	914	909	902	892	883	876	886	895	906	910	917	921	929	928	926	925	924	923	911	864
18	921	920	920	921	922	921	917	911	904	896	889	883	881	891	903	951	948	953	964	945	942	945	943	942	922	1133
19	942	934	931	926	922	919	902	904	902	882	877	871	877	888	892	910	918	920	927	926	926	919	918	916	910	849
20	913	912	915	915	916	912	912	899	894	888	895	899	902	902	915	931	933	939	941	928	921	912	913	911	913	918
21	912	910	914	910	906	908	907	906	908	900	896	895	899	902	910	918	920	926	929	925	923	922	921	921	912	888
22	921	919	916	918	917	911	912	912	908	898	890	885	889	898	912	926	924	926	930	931	937	940	932	930	916	982
23 d	937	931	928	928	926	931	928	928	918	900	891	890	896	918	895	907	929	933	939	931	929	928	923	921	920	1085
24	921	916	914	917	917	914	918	911	900	891	884	894	894	901	914	918	921	930	926	925	927	922	923	921	913	919
25	919	918	921	918	912	912	909	905	902	912	909	902	902	908	919	912	922	934	923	924	927	925	923	921	916	979
26	921	920	920	921	921	926	924	926	925	918	907	900	907	912	911	911	913	924	927	927	926	928	926	924	919	1065
27	921	923	926	926	931	930	930	926	915	907	903	898	898	906	914	918	930	933	933	942	930	928	926	931	922	1125
28 d	926	921	911	914	905	903	878	885	894	886	883	882	890	908	914	916	928	916	922	926	926	920	923	926	908	803
29	907	909	914	911	913	904	907	912	905	900	890	897	900	899	914	935	943	935	947	926	919	916	914	917	914	934
30	914	916	908	907	910	906	902	897	894	895	894	895	903	911	915	921	920	919	921	918	920	920	919	918	910	843
31 q	910	908	914	915	918	915	907	891	878	872	877	891	904	911	916	920	926	927	923	923	921	916	914	911	909	808
Mean	918	915	915	914	916	913	908	903	899	893	890	890	893	903	911	920	925	928	930	928	926	923	921	919	913	
Sum 27,000γ+	1452	1374	1375	1345	1388	1306	1161	1006	860	679	600	591	699	985	1251	1524	1660	1761	1837	1759	1713	1603	1556	1504		Grand Total 678,989

GEOMAGNETIC DECLINATION (WEST)
Mean values for periods of sixty minutes ending at exact hours, GMT

20 ESKDALEMUIR (D) — 9° + — JULY 1965

Day	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 1400·0′+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
1	56·8	58·1	58·6	57·8	57·6	56·9	54·8	54·5	56·0	58·7	61·3	65·0	67·0	66·3	66·6	65·7	64·5	63·4	63·9	61·6	56·9	58·3	58·4	57·4	60·3	46·1
2	57·5	58·4	59·2	59·7	57·9	56·5	55·6	54·4	54·3	56·9	59·3	62·1	64·3	65·4	66·1	65·3	64·5	62·6	61·5	61·1	61·5	60·6	59·4	59·7	60·2	43·8
3	61·3	61·1	63·8	60·1	58·1	56·6	55·7	55·6	55·2	55·6	58·8	62·5	65·9	67·3	66·9	66·2	65·0	64·1	63·1	61·6	57·8	57·7	59·0	58·4	60·7	57·4
4 q	58·2	57·5	57·0	57·5	57·0	56·2	56·1	56·0	56·2	57·7	59·3	61·9	64·6	65·2	64·7	63·3	62·4	62·3	61·7	61·7	61·8	61·4	61·2	59·4	60·0	40·3
5 q	58·7	58·8	58·7	58·5	57·5	55·5	54·7	56·2	56·7	57·4	59·7	62·9	65·2	67·0	66·4	64·9	63·7	62·7	62·4	62·1	62·1	61·9	61·4	61·2	60·7	56·3
6 d	59·7	58·8	58·6	56·1	55·2	59·7	63·0	60·1	58·9	60·1	62·7	66·1	68·3	67·3	68·8	69·2	66·4	62·3	61·6	61·3	62·4	62·1	61·3	61·2	62·1	91·2
7	61·3	58·8	59·1	56·7	57·0	55·4	55·5	55·4	56·0	58·2	59·6	62·9	65·3	66·7	66·9	65·7	64·3	63·8	62·8	61·8	59·8	61·6	58·0	59·6	60·5	52·2
8 d	59·7	59·3	61·3	57·9	55·7	55·9	54·7	54·2	54·6	56·0	58·8	62·4	64·5	66·3	65·6	64·5	64·6	64·7	63·7	62·3	61·7	60·0	58·9	61·3	60·4	48·6
9	56·5	56·4	60·6	57·4	55·4	54·1	54·7	55·7	55·6	56·6	59·6	63·0	65·3	65·6	65·9	65·4	64·0	62·1	62·1	62·1	63·0	62·9	62·3	60·2	60·3	46·5
10 d	59·2	59·0	54·1	53·5	56·4	52·2	54·8	56·2	58·6	59·7	61·2	64·2	66·3	67·4	65·2	63·6	62·6	61·5	61·3	62·1	62·2	61·3	61·2	60·7	60·2	44·5
11 q	60·5	60·2	60·1	59·4	58·1	55·4	55·3	55·9	56·7	57·8	60·2	62·6	65·2	65·1	64·6	63·4	61·9	61·0	60·7	61·3	61·2	60·6	60·8	60·3	60·3	48·3
12	60·7	60·4	59·7	59·5	58·2	57·0	56·2	56·1	56·5	56·9	57·9	61·4	64·5	66·2	67·0	66·3	66·2	65·3	63·6	63·8	62·0	61·2	61·1	60·3	61·2	68·0
13	60·2	59·9	59·8	58·1	57·2	55·6	55·8	55·5	55·7	56·6	58·8	62·9	64·6	66·3	67·0	67·0	65·3	63·3	62·7	61·4	61·1	61·3	60·7	60·3	60·7	57·1
14	59·7	59·1	56·8	55·1	55·2	55·3	54·1	55·3	56·9	58·5	60·6	63·3	65·5	65·5	65·9	65·8	64·2	62·8	61·5	61·5	61·6	61·2	59·6	57·2	60·1	42·2
15	59·0	58·9	58·4	58·8	56·9	55·2	55·4	57·6	58·9	58·6	60·5	65·1	68·7	70·0	67·3	65·7	64·2	62·6	62·0	61·4	61·1	60·3	61·7	56·0	61·0	64·3
16	58·1	59·0	58·7	57·4	56·8	56·1	56·0	56·4	57·4	58·7	60·6	63·4	66·2	67·3	67·0	65·9	64·1	62·4	61·4	61·2	61·1	60·4	60·5	60·6	60·7	56·7
17 q	60·5	60·1	59·8	59·4	58·6	57·6	57·4	57·8	57·9	59·1	61·4	64·3	66·2	67·7	68·0	67·1	65·0	63·1	62·2	61·2	60·7	60·7	60·6	60·5	61·5	76·9
18	59·8	59·6	59·5	59·4	58·3	56·8	55·8	55·4	54·9	55·4	57·1	59·3	63·4	65·4	65·3	66·5	66·3	66·0	65·2	64·4	62·4	63·0	61·5	60·3	60·9	61·0
19	59·4	59·0	59·4	58·8	57·6	54·5	50·5	57·6	57·4	57·9	62·6	64·3	67·8	70·0	71·6	70·8	67·6	66·3	64·1	60·6	58·2	61·0	60·1	59·1	61·5	76·2
20	58·7	58·6	58·2	58·1	57·1	56·7	56·3	56·5	56·6	58·8	60·5	62·5	64·2	65·1	66·0	66·5	66·1	64·5	63·2	62·4	62·3	58·8	58·4	59·5	60·7	55·6
21	58·9	58·3	60·7	58·2	58·8	57·3	55·8	55·3	55·4	56·4	59·5	62·0	64·0	65·5	65·5	64·4	62·5	62·6	62·9	61·8	61·1	60·8	60·7	60·6	60·4	49·0
22	60·4	60·2	59·6	59·3	57·7	56·0	56·6	57·1	56·8	57·3	58·5	61·2	63·3	64·1	64·1	64·1	63·3	63·0	62·7	62·5	62·8	62·7	60·8	60·4	60·6	54·5
23 d	61·7	59·8	59·2	58·9	58·5	62·3	60·4	58·3	57·0	57·2	58·3	61·2	63·3	65·2	65·6	66·4	66·8	65·4	63·5	60·4	60·7	54·8	55·0	56·0	60·7	55·9
24	60·6	59·7	59·3	59·9	58·6	56·1	54·4	53·7	55·4	56·5	58·2	61·2	64·7	66·5	64·7	64·2	63·0	61·7	60·7	59·8	60·2	61·5	61·1	60·6	60·1	42·3
25	60·6	62·1	63·4	59·0	56·7	56·6	57·2	57·5	58·0	59·3	61·1	62·4	63·8	64·4	64·1	63·5	63·1	63·0	62·1	61·4	61·5	61·3	61·2	60·8	61·0	64·1
26	60·6	60·4	59·9	60·3	59·8	59·6	57·8	56·7	57·9	59·6	60·8	64·0	65·8	66·1	65·4	63·4	61·8	60·5	60·9	60·7	61·1	61·6	61·6	61·9	61·2	68·2
27	59·8	59·4	59·2	58·9	57·5	55·8	54·3	53·1	54·6	56·3	59·0	61·7	64·3	67·4	68·9	67·6	65·9	64·6	62·4	61·3	58·0	59·1	59·7	61·0	60·4	49·8
28 d	56·8	55·4	55·9	58·3	59·4	62·1	59·8	57·8	57·7	57·9	59·6	62·8	64·3	64·9	66·1	66·3	65·2	63·4	62·1	59·4	58·6	59·6	57·3	58·5	60·4	49·2
29	58·2	58·3	57·9	57·8	58·3	55·4	57·0	55·7	55·0	56·7	59·7	62·7	65·5	67·1	67·0	64·1	62·9	62·2	61·5	55·3	59·1	60·2	59·7	60·0	59·9	37·3
30	60·3	61·1	57·8	56·7	56·1	54·8	54·6	55·2	56·3	57·6	60·0	62·0	64·2	64·9	65·0	63·9	62·9	62·0	61·5	61·1	60·7	57·5	59·6	58·7	59·8	34·5
31 q	58·5	58·6	58·3	58·3	58·2	56·7	56·5	56·8	56·0	57·5	60·5	64·6	67·4	68·4	67·4	65·0	63·0	61·4	60·7	59·6	59·7	60·5	60·3	59·7	60·6	53·6
Mean	59·4	59·2	59·1	58·2	57·5	56·5	56·0	56·1	56·5	57·7	59·9	62·8	65·3	66·4	66·3	65·5	64·3	63·1	62·3	61·3	60·8	60·5	60·1	59·7	60·6	
Sum 1700·0′+	141·9	134·3	132·6	104·8	81·4	51·9	36·8	39·6	51·1	87·5	155·7	247·9	323·6	357·6	356·6	331·7	293·3	256·6	231·7	200·2	184·4	175·9	163·1	151·4		Grand Total 45091·6

GEOMAGNETIC FORCEL VERTICAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, GMT

21 ESKDALEMUIR (Z) — 45,000γ (0·45 CGS unit) + — JULY 1965

Hour GMT	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 10,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	432	415	427	435	441	441	439	439	437	434	433	423	426	438	441	444	448	451	450	448	448	446	430	428	437	494
2	433	438	441	440	440	441	440	437	434	435	431	428	430	434	438	444	449	452	452	452	447	445	444	441	440	566
3	439	438	434	433	438	439	439	439	436	430	431	431	430	435	438	443	446	446	446	450	452	448	444	435	439	540
4 *q*	439	440	441	442	445	445	441	441	440	435	427	417	416	420	427	431	438	441	445	445	441	441	441	439	437	478
5 *q*	439	439	440	441	444	445	443	439	433	430	424	418	420	428	438	440	441	441	444	442	441	440	439	439	437	488
6 *d*	439	439	439	436	434	422	402	407	413	421	416	421	430	450	455	467	478	481	474	469	461	455	449	444	442	602
7	442	441	439	441	445	447	446	445	445	444	441	437	436	439	445	450	451	455	456	455	458	452	447	444	446	701
8 *d*	441	439	433	409	421	428	433	431	433	434	435	436	431	428	434	438	441	455	469	469	463	458	447	433	439	539
9	424	426	424	412	428	438	441	439	437	435	439	437	434	437	444	452	458	458	452	447	444	441	440	441	439	528
10 *d*	444	438	430	417	407	415	424	428	425	429	435	437	439	441	442	446	454	456	452	446	446	446	446	445	437	488
11 *q*	445	445	446	446	446	449	450	448	442	436	435	435	488	445	449	451	452	453	450	446	445	445	444	444	445	685
12	444	445	444	445	446	446	444	442	437	434	428	423	424	430	434	436	436	438	438	441	445	444	441	441	439	526
13	442	442	442	444	445	445	442	441	439	436	430	423	418	426	434	439	444	446	451	448	447	444	442	441	440	551
14	441	439	436	439	439	438	433	433	432	430	430	429	425	430	434	439	443	446	447	444	441	441	439	438	437	486
15	439	438	439	439	440	441	438	435	430	428	425	424	430	438	443	45[illegible]	460	462	458	449	446	445	442	441	441	583
16	437	439	441	445	445	445	445	442	439	435	432	425	428	433	434	438	445	449	450	446	444	442	442	441	440	562
17 *q*	441	441	442	443	443	443	444	445	441	439	433	428	429	434	438	441	445	446	446	445	441	440	439	440	440	567
18	441	441	442	442	445	445	444	441	438	434	431	428	427	430	433	432	435	438	441	446	451	445	442	434	439	526
19	440	441	442	444	445	445	446	434	430	429	426	430	437	442	450	463	474	475	470	463	456	451	446	445	*447*	724
20	441	442	443	445	445	445	445	440	435	434	431	429	429	430	433	439	445	453	462	463	461	456	448	445	443	639
21	442	441	439	441	444	444	445	444	438	436	433	421	421	428	435	435	440	446	445	442	442	441	440	441	439	524
22	441	441	442	442	444	445	439	438	436	430	427	422	415	416	428	436	442	443	442	440	439	438	442	442	*436*	470
23 *d*	431	431	434	434	436	433	433	438	444	442	437	433	433	436	446	446	448	455	459	467	460	452	440	440	442	608
24	440	441	441	441	442	444	442	441	437	434	434	430	427	429	435	442	444	446	446	446	444	444	442	442	440	554
25	442	440	430	433	438	440	443	445	441	436	434	431	430	433	435	439	444	444	445	445	444	442	442	442	439	538
26	441	441	440	441	440	437	436	438	433	426	424	427	426	424	431	438	445	448	445	439	439	440	440	440	437	479
27	441	440	440	440	441	440	437	435	434	430	430	427	427	431	434	439	444	445	447	446	449	446	445	437	439	525
28 *d*	419	424	427	429	431	419	421	426	433	434	435	434	437	438	443	448	448	451	448	455	452	448	441	430	436	471
29	434	438	440	440	441	439	438	437	439	434	428	428	428	437	451	458	459	458	459	465	456	448	446	445	444	646
30	441	437	439	441	443	446	443	440	439	438	442	434	431	439	443	443	449	451	446	444	444	445	443	440	442	601
31 *q*	441	441	442	445	445	442	442	444	442	437	433	429	428	436	440	444	445	449	448	446	445	443	442	442	441	591
Mean	439	438	438	438	440	440	439	438	436	434	431	*428*	428	433	439	444	448	451	*451*	450	448	445	442	440	440	
Sum 13,000γ+	596	581	579	565	627	632	598	572	512	439	370	275	280	435	605	754	891	978	983	949	892	812	715	640		Grand Total 327,280

GEOMAGNETIC CHARACTER FIGURES (K, K_H, K_D, K_Z, AND C) AND TEMPERATURE IN MAGNETOGRAPH CHAMBER

22 ESKDALEMUIR — JULY 1965

	3-h range indices K	Sum of K indices	3-h range indices K_H	Sum of K_H indices	3-h range indices K_D	Sum of K_D indices	3-h range indices K_Z	Sum of K_Z indices	Geomagnetic character of day, C (0-2)	Temperature in magneto-graph chamber 200°A+
1	3223 3233	21	3223 3233	21	3112 1132	14	1001 1001	4	1	85·5
2	1111 2211	10	1111 2211	10	1111 0001	5	0001 1000	2	0	85·5
3	2111 2332	15	1111 2332	14	2100 0022	7	0000 0000	0	1	85·4
4 *q*	1110 1211	8	0010 1211	6	1110 0001	4	0000 0000	0	0	85·5
5 *q*	0111 1011	6	0001 1011	4	0110 0001	3	0000 0000	0	0	85·5
6 *d*	2333 4432	24	2333 4432	24	1333 2321	18	0121 1100	6	2	85·5
7	2112 1222	13	2112 1222	13	2111 0022	9	0000 0000	0	0	85·5
8 *d*	3312 3543	24	2212 3543	22	3311 2323	18	1200 0112	7	2	85·4
9	4311 3332	20	3311 3332	19	4310 0112	12	2200 0000	4	1	85·4
10 *d*	3422 3210	17	3422 3210	17	3322 1000	11	0200 0000	2	1	85·4
11 *q*	0100 1100	3	0000 1100	2	0100 0000	1	0000 0000	0	0	85·4
12	0000 1342	10	0000 1342	10	0000 0211	4	0000 0100	1	1	85·5
13	1112 3330	14	1102 3330	13	1111 1110	7	0000 0000	0	1	85·5
14	1100 0212	7	1100 0212	7	1000 0001	2	0000 0000	0	0	85·5
15	2123 3323	19	2113 3322	17	1122 2013	12	0000 0000	0	1	85·5
16	2011 2211	10	2011 2211	10	2000 0000	2	0000 0000	0	0	85·5
17 *q*	1000 2120	6	1000 2120	6	0000 0010	1	0000 0000	0	0	85·5
18	0000 1431	9	0000 1431	9	0000 0221	5	0000 0100	1	1	85·5
19	2332 3322	20	2231 3322	18	2332 1122	16	0021 1111	7	1	85·5
20	1012 2232	13	1002 2232	12	1010 0112	6	0000 0011	2	1	85·5
21	2210 0110	7	1210 0110	6	2110 0000	4	0000 0000	0	0	85·5
22	1111 1222	11	1111 1222	11	0110 0012	5	0000 0000	0	0	85·5
23 *d*	2322 4433	23	2222 4433	22	2321 1123	15	1110 1112	8	1	85·5
24	2223 3221	17	2213 3221	16	1221 2120	11	0000 0000	0	1	85·5
25	2221 2220	13	1121 2220	11	2210 0000	5	1100 0000	2	1	85·5
26	0101 1201	6	0101 1200	5	0100 0001	2	0000 0000	0	0	85·5
27	2222 3332	19	2222 3331	18	0111 1122	9	0000 1001	2	1	85·5
28 *d*	3332 3332	22	3332 3332	22	2332 1122	16	2220 0112	10	1	85·5
29	1332 3331	19	1332 3331	19	1221 2230	13	0000 1020	3	1	85·5
30	2100 0112	7	2000 0111	5	2100 0002	5	0000 0000	0	0	85·5
31 *q*	1100 0111	5	1000 0111	4	0100 0010	2	0000 0000	0	0	85·5
								Mean	0·65	85·5

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

K_H For horizontal component. K_D For declination. K_Z For vertical component. (See Introduction).

GEOMAGNETIC FORCE: HORIZONTAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, GMT

19 ESKDALEMUIR (H) — 16,000γ (0·16 CGS unit) + — AUGUST 1965

Hour GMT	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 21,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	910	910	911	910	915	913	905	899	892	886	882	890	909	918	919	920	929	937	946	935	936	927	931	921	915	951
2	920	925	927	928	930	930	922	915	897	889	884	891	903	905	930	922	925	932	936	930	913	910	914	917	916	995
3	919	913	911	921	911	906	902	897	894	897	897	899	891	893	909	924	937	911	919	929	930	923	920	923	911	876
4	925	925	913	911	912	913	908	901	895	894	893	893	895	897	915	930	909	915	932	929	928	933	924	918	913	908
5 q	917	917	917	917	918	914	911	910	909	906	901	905	904	907	917	921	920	918	928	928	929	927	924	920	916	985
6 q	917	917	912	912	912	911	908	905	903	900	895	897	904	911	908	912	916	916	921	922	929	924	924	923	912	899
7	922	922	923	924	922	919	915	910	913	916	909	902	902	909	910	907	921	920	925	928	929	929	938	925	*918*	1040
8	923	918	920	912	919	919	914	907	904	905	898	899	900	905	918	914	918	927	927	932	937	917	916	916	915	965
9	917	916	917	921	923	914	909	906	900	895	894	894	909	914	920	912	933	927	920	921	922	921	928	912	914	945
10 q	911	912	913	919	914	910	904	898	890	884	875	884	900	906	909	924	920	920	925	924	923	921	920	926	910	832
11	935	933	921	911	908	913	907	903	900	892	909	911	899	907	920	922	921	923	926	925	926	928	926	914	916	980
12	914	916	916	919	911	913	895	885	878	878	882	885	892	901	907	910	913	921	920	923	922	918	920	919	907	758
13 q	915	916	917	918	915	910	907	901	894	888	887	893	900	902	910	916	920	922	925	928	930	927	927	925	912	893
14	925	928	921	923	923	918	919	910	924	894	890	896	904	905	916	920	919	921	923	924	925	931	916	915	916	990
15	915	911	911	911	911	908	904	899	899	892	890	897	899	906	911	912	913	920	931	920	923	927	928	930	911	868
16	925	918	917	916	915	914	912	911	904	902	899	901	905	914	918	924	924	925	928	933	941	936	923	924	918	1029
17	930	921	920	916	923	912	914	903	909	903	895	878	892	917	920	912	915	928	907	920	919	918	917	911	913	900
18 d	911	913	910	912	913	911	904	899	892	888	890	900	905	914	927	945	946	968	949	932	890	892	911	915	914	937
19 d	921	930	906	903	911	867	920	903	888	880	879	884	888	898	872	907	917	930	926	916	908	941	915	915	905	725
20 d	915	909	911	904	913	915	909	898	883	879	876	886	887	908	917	913	922	915	915	914	917	926	915	911	907	758
21	920	926	907	903	909	922	907	893	880	864	870	882	884	897	908	918	913	906	914	917	917	916	915	914	*904*	702
22	913	915	913	911	911	913	909	907	898	891	888	894	892	903	905	912	905	920	921	915	916	918	910	906	908	786
23	898	902	903	905	907	908	910	904	896	891	889	896	904	913	917	924	937	927	936	922	934	916	904	922	911	865
24 d	932	906	909	920	912	907	892	873	872	879	883	890	901	908	907	904	911	913	919	921	927	920	924	912	906	742
25 d	908	920	920	902	924	913	909	902	899	897	895	899	903	910	916	905	915	918	921	932	920	917	921	938	913	904
26	929	915	915	915	919	915	902	900	889	893	899	906	912	911	920	920	918	923	921	922	924	921	919	919	914	927
27	919	917	917	918	917	916	913	901	897	890	891	899	909	920	927	921	921	922	921	919	924	917	917	921	914	934
28 q	931	916	913	913	913	910	905	900	892	888	890	896	903	906	910	910	913	919	924	920	920	919	919	919	910	849
29	919	918	921	919	915	913	907	905	896	888	889	899	905	912	918	919	924	927	922	934	923	923	926	923	914	945
30	926	938	937	909	910	913	912	904	899	898	901	903	904	904	908	913	920	934	935	927	921	920	920	925	916	981
31	939	927	916	918	906	913	908	897	865	864	882	899	908	916	920	923	919	920	921	924	922	909	920	920	911	856
Mean	920	918	916	914	915	912	909	901	895	891	*890*	895	900	908	914	917	921	923	*925*	925	923	922	920	919	912	
Sum 27,000γ+	1521	1470	1385	1341	1362	1273	1163	946	751	611	602	748	913	1137	1329	1436	1534	1625	1684	1666	1625	1572	1532	1499		Grand Total 678,725

GEOMAGNETIC DECLINATION (WEST)
Mean values for periods of sixty minutes ending at exact hours, GMT

20 ESKDALEMUIR (D) — 9° + — AUGUST 1965

Hour GMT	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 1300·0′+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
1	59·7	59·4	59·3	59·4	57·9	55·4	55·2	55·3	55·6	56·8	60·2	63·4	66·9	67·2	66·1	65·2	63·0	62·0	61·8	61·9	61·7	62·1	61·7	59·4	60·7	156·6
2	59·4	59·1	58·5	58·4	57·9	56·2	57·5	57·1	58·5	61·3	63·7	66·1	69·0	72·0	73·8	70·6	65·2	61·6	61·5	60·6	55·7	59·4	60·4	60·5	*61·8*	184·0
3	57·7	56·9	56·5	56·3	54·0	53·8	52·9	52·8	54·8	57·4	60·2	63·5	66·2	66·8	65·1	65·8	66·8	64·9	63·4	61·6	58·9	60·2	60·4	60·3	59·9	137·2
4	57·6	57·0	56·9	56·7	55·4	55·4	56·9	57·8	58·4	59·4	60·1	61·1	64·0	65·2	66·7	67·3	64·0	63·4	62·5	61·6	60·3	56·7	58·7	59·4	60·1	142·5
5 q	59·7	58·9	58·7	59·2	59·3	57·8	57·8	57·8	58·3	59·3	60·9	63·8	65·7	66·7	66·9	65·1	64·5	63·6	62·1	61·3	60·8	59·8	58·1	59·5	61·1	165·6
6 q	59·3	59·0	57·8	58·0	58·1	57·0	57·5	57·7	57·9	58·8	60·5	63·3	65·3	66·7	64·9	64·1	62·0	60·6	60·5	61·4	61·6	61·3	61·4	61·2	60·7	155·9
7	59·8	59·7	59·3	58·6	57·6	55·9	56·1	56·8	57·0	59·2	62·2	64·3	66·7	67·7	67·7	64·4	63·3	61·6	61·7	61·7	61·4	61·4	62·5	60·2	61·1	166·8
8	58·3	58·1	60·3	59·2	58·1	56·5	56·4	56·7	57·8	59·7	60·7	63·3	66·4	67·2	66·4	64·7	62·8	60·6	60·6	59·7	58·3	59·7	59·9	60·4	60·5	151·8
9	60·2	59·6	59·9	59·6	58·6	56·5	56·3	56·0	56·6	58·2	61·3	64·3	67·9	68·9	67·7	65·1	63·5	59·5	60·2	58·6	56·7	58·7	56·4	59·1	60·4	149·1
10 q	59·9	59·4	59·3	59·4	57·6	57·4	55·4	55·0	55·9	58·6	61·5	64·1	65·2	66·1	65·0	64·4	62·5	61·4	61·1	61·2	60·7	61·3	60·5	60·4	60·6	153·3
11	59·3	57·4	57·0	52·9	55·2	54·2	55·2	56·6	57·7	59·5	60·7	62·6	64·5	64·8	63·9	62·6	61·6	61·0	61·2	60·3	60·1	60·5	58·6	59·5	59·5	126·9
12	60·4	58·3	58·5	58·0	59·5	57·8	57·0	56·7	56·1	57·5	60·7	63·4	66·1	67·1	66·4	65·3	63·4	62·3	61·5	61·3	58·6	59·8	59·6	58·9	60·6	154·2
13 q	59·4	59·3	59·0	59·1	58·6	57·9	57·6	57·1	57·5	59·3	61·4	64·4	67·1	67·6	66·2	64·9	64·1	63·4	63·2	62·7	62·1	61·1	60·7	59·8	61·4	173·5
14	59·1	59·0	58·8	60·3	60·1	57·4	56·9	55·6	55·6	58·1	60·5	63·8	67·9	67·0	66·4	64·1	61·2	59·4	57·9	58·8	59·5	56·9	57·9	59·0	60·1	141·2
15	59·0	58·7	58·2	58·5	57·5	55·6	54·9	56·0	58·8	62·0	65·1	67·4	69·6	68·7	66·1	63·3	60·9	60·6	60·7	58·6	59·4	60·3	60·1	59·1	60·8	159·1
16	57·4	57·6	59·4	58·8	58·3	57·4	56·9	56·8	57·1	59·4	62·1	64·3	66·8	68·3	67·6	65·8	64·2	63·0	62·5	61·8	61·4	61·1	61·0	60·6	61·2	169·6
17	59·3	57·9	57·9	58·9	55·7	52·8	52·3	54·1	57·7	57·9	61·4	66·1	67·4	68·1	67·7	65·2	63·4	63·4	59·7	60·7	60·8	60·2	57·6	56·6	60·1	142·8
18 d	56·6	57·4	57·8	58·0	58·1	57·6	56·9	56·7	56·4	57·7	59·7	63·4	65·6	67·5	67·9	69·4	69·9	71·4	70·6	63·4	42·0	51·9	58·4	58·8	60·5	153·1
19 d	59·8	58·8	53·2	55·7	56·5	61·0	66·1	61·2	57·9	57·5	59·8	62·1	64·7	67·5	67·2	65·0	64·5	66·3	57·0	54·5	57·3	56·4	58·4	58·5	59·8	135·9
20 d	57·7	58·3	59·0	59·8	58·8	56·6	55·7	56·1	57·9	58·9	61·5	65·7	67·4	66·2	65·7	65·1	63·4	61·2	57·9	58·6	59·5	59·6	60·4	66·1	60·7	157·1
21	60·5	61·7	55·0	58·6	59·8	56·2	55·6	57·5	58·7	59·6	59·5	63·4	66·1	66·4	64·4	62·4	60·4	58·4	58·7	60·2	60·3	60·1	59·7	59·8	60·1	143·0
22	59·4	59·8	59·6	58·6	58·3	58·0	57·3	56·4	57·0	57·9	60·7	64·1	65·4	66·1	65·9	63·5	60·8	58·5	59·6	59·4	59·7	60·5	58·9	57·3	60·1	142·7
23	58·1	59·3	59·3	58·8	58·1	57·1	56·6	56·3	57·0	58·7	60·9	62·2	62·4	63·2	62·1	61·9	62·1	61·8	62·1	61·2	57·0	50·4	52·8	58·4	59·1	117·8
24 d	55·8	55·6	56·3	54·9	55·2	55·8	55·5	55·4	55·0	57·0	59·8	62·7	64·9	65·0	63·9	62·1	61·1	60·1	60·1	60·3	60·7	52·4	56·0	52·1	*58·2*	97·7
25 d	57·0	56·8	60·7	57·4	56·6	56·5	57·4	57·6	55·6	56·4	58·4	61·7	64·5	67·2	68·4	68·5	66·3	63·9	62·1	59·7	54·1	57·8	59·4	59·7	60·7	60·3	147·0
26	59·0	64·0	60·3	58·3	57·1	57·0	57·4	56·7	57·0	59·3	62·7	67·0	68·4	67·4	65·4	63·2	60·2	60·2	60·1	60·3	60·0	58·3	59·3	59·0	60·7	157·6
27	59·5	59·4	59·7	58·9	57·7	55·9	54·2	55·1	56·7	59·5	63·3	65·8	67·3	66·1	64·5	62·2	60·3	59·6	59·9	60·3	56·7	57·1	58·9	60·6	60·0	139·2
28 q	59·5	58·5	58·6	57·8	57·7	56·4	55·4	54·9	55·4	58·7	62·5	65·4	67·1	66·7	64·4	62·4	61·0	60·2	60·1	60·2	59·8	59·7	59·5	59·6	60·1	141·5
29	59·4	59·3	59·4	57·3	57·1	55·2	55·0	56·0	56·0	57·4	60·6	63·8	65·4	66·3	65·5	63·6	62·1	61·3	60·4	61·6	61·1	60·6	59·8	58·9	60·1	143·1
30	59·4	60·1	55·6	56·2	57·3	57·2	56·9	58·5	58·6	58·9	60·5	63·3	65·4	65·2	63·6	62·5	61·5	60·5	60·8	60·2	58·0	60·6	59·4	57·9	59·9	138·1
31	57·4	57·7	55·3	54·0	53·1	57·0	55·6	56·0	59·8	63·4	65·3	68·5	69·2	68·9	65·1	63·0	62·1	61·2	60·9	60·7	59·9	58·9	60·5	60·7	60·6	154·2
Mean	58·9	58·8	58·2	57·9	57·4	56·6	56·4	*56·4*	57·1	58·9	61·3	64·2	66·4	*67·0*	66·1	64·5	62·9	61·4	61·0	60·3	59·0	58·9	59·3	59·4	60·3	
Sum 1700·0′+	124·6	122·0	105·1	94·8	80·7	53·4	48·6	48·3	71·1	125·3	201·7	291·1	359·2	377·0	348·7	300·5	249·7	204·1	190·0	168·8	127·8	126·1	137·2	142·3		Grand Total 44898·1

GEOMAGNETIC FORCE: VERTICAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, GMT

21 ESKDALEMUIR (Z) 45,000γ (0·45 CGS unit) + AUGUST 1965

	Hour GMT 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 10,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	442	443	444	445	447	449	445	445	444	437	433	429	425	426	434	438	444	446	445	444	444	442	438	439	440	568
2	439	440	440	440	441	441	437	431	433	433	434	428	419	427	439	457	476	474	465	462	464	453	446	445	444	664
3	435	436	438	435	434	439	438	438	433	428	428	428	432	433	435	439	445	452	451	451	449	446	444	443	439	530
4	439	435	434	436	439	441	441	441	441	439	432	423	422	425	427	438	451	451	451	450	450	446	440	439	439	531
5 q	441	440	440	440	440	441	441	441	439	433	426	423	428	431	435	441	444	448	449	448	445	445	444	441	439	544
6 q	441	440	440	440	441	441	441	441	439	436	430	428	423	424	431	439	444	446	444	443	443	443	441	440	438	519
7	442	441	441	442	442	443	441	440	435	429	422	421	424	431	440	442	441	445	443	442	443	442	435	434	438	501
8	436	438	437	439	440	440	440	441	438	434	432	429	429	434	436	441	445	446	446	446	443	441	442	441	439	534
9	442	441	441	440	439	440	440	441	439	435	435	428	427	434	444	447	452	462	461	457	456	449	440	440	443	630
10 q	442	443	443	442	443	445	443	442	438	434	434	436	439	445	446	446	449	451	446	444	443	443	443	442	443	622
11	436	425	422	422	432	435	437	439	437	438	438	436	435	435	435	440	443	442	442	444	445	442	442	440	437	482
12	435	438	440	440	442	442	446	436	443	435	430	433	434	439	446	450	451	447	445	443	445	445	443	440	441	588
13 q	441	442	442	442	443	444	442	442	440	439	428	420	423	429	435	439	440	440	440	440	439	440	440	439	438	509
14	440	440	436	428	422	425	432	436	438	435	434	429	432	440	447	453	454	453	453	449	446	442	440	440	439	544
15	442	442	442	443	446	446	445	442	439	432	429	424	422	425	433	439	441	443	446	453	448	443	442	440	439	547
16	440	441	441	441	444	446	445	443	440	434	428	423	418	425	434	439	441	442	441	440	440	441	441	442	438	510
17	441	440	440	440	434	436	435	435	425	422	425	433	434	431	437	445	446	449	460	453	447	445	446	444	439	543
18 d	444	443	442	443	443	444	444	446	440	435	426	422	422	425	430	435	440	440	454	466	486	470	453	447	443	640
19 d	441	421	425	440	443	436	401	411	419	422	426	427	431	438	446	448	453	471	469	468	459	435	436	434	437	500
20 d	436	439	442	444	446	446	451	449	447	443	440	434	435	441	448	456	456	462	470	465	457	448	436	400	445	691
21	411	401	421	421	412	421	434	438	442	434	430	426	432	441	443	448	456	457	454	448	447	447	447	445	436	456
22	446	446	446	446	447	446	444	443	441	440	435	430	431	437	443	448	455	458	455	454	451	449	448	437	445	676
23	435	439	443	446	448	449	452	451	446	443	441	441	437	434	440	441	444	447	447	451	448	448	446	435	444	652
24 d	400	409	429	435	437	440	442	443	438	435	428	422	422	430	437	440	440	441	442	442	443	447	437	419	433	398
25 d	409	407	397	418	429	433	437	441	441	440	435	429	428	433	441	448	450	455	455	458	451	448	446	437	436	466
26	426	423	429	437	441	441	445	447	448	439	430	428	432	440	447	451	453	450	444	443	443	446	445	444	441	572
27	445	446	444	444	445	446	447	448	446	438	432	430	436	438	446	449	449	448	444	444	447	446	443	440	443	641
28 q	433	437	441	442	444	447	446	443	439	433	428	425	426	433	439	441	446	445	443	443	443	443	443	443	439	546
29	443	443	442	441	441	442	443	444	440	433	427	418	418	424	433	440	443	447	447	448	448	447	444	443	439	539
30	442	435	422	431	439	442	444	442	437	434	429	424	424	429	434	440	446	443	443	447	447	445	443	443	438	505
31	432	431	432	435	437	436	440	440	440	433	431	430	435	441	442	445	447	446	446	446	447	450	445	441	439	548
Mean	436	435	436	438	439	441	441	441	439	435	431	428	428	433	439	444	448	450	450	449	449	446	443	439	440	
Sum 13,000γ+	517	485	516	578	621	663	659	660	605	475	356	257	275	418	603	763	885	947	941	932	907	817	719	597		Grand Total 327,196

GEOMAGNETIC CHARACTER FIGURES (K, K_H, K_D, K_Z, AND C) AND TEMPERATURE IN MAGNETOGRAPH CHAMBER

22 ESKDALEMUIR AUGUST 1965

	3-h range indices K	Sum of K indices	3-h range indices K_H	Sum of K_H indices	3-h range indices K_D	Sum of K_D indices	3-h range indices K_Z	Sum of K_Z indices	Geomagnetic character of day, C (0-2)	Temperature in magneto-graph chamber 200°A+
1	0101 1333	12	0001 1333	11	0100 0112	5	0000 0000	0	1	85·6
2	1222 3333	19	1212 3333	18	1222 2333	18	0001 1201	5	1	85·6
3	3211 2321	15	2211 2321	14	3110 1120	9	0000 0100	1	1	85·6
4	2111 3323	16	2011 3323	15	2110 1213	11	1000 0100	2	1	85·6
5 q	0001 2222	9	0001 2222	9	0001 0012	4	0000 0000	0	0	85·6
6 q	1110 2111	8	1010 2111	7	1110 1000	4	0000 0000	0	0	85·6
7	1123 2322	16	1023 2322	15	0111 1112	8	0000 0001	1	1	85·6
8	2211 3231	15	2201 3231	14	2210 1121	10	0000 0000	0	1	85·6
9	1102 3333	16	0102 3333	15	1101 2233	13	0000 1211	5	1	85·6
10 q	0111 2212	10	0111 2212	10	0110 1000	3	0000 0000	0	0	85·6
11	3211 2222	15	3211 2222	15	2201 0012	8	2100 0000	3	1	85·6
12	2210 2323	15	1210 2323	14	2210 0112	9	0000 0000	0	1	85·6
13 q	0000 1222	7	0000 1222	7	0000 0001	1	0000 0000	0	0	85·6
14	2222 3223	18	2222 3213	17	1211 2122	12	1100 1010	4	1	85·6
15	1102 2233	14	1102 2233	14	0100 1022	6	0000 0010	1	1	85·6
16	3121 1232	15	3021 1232	14	2110 0021	7	0000 0000	0	1	85·6
17	3322 3232	20	3222 3232	19	2311 1122	13	0111 0010	4	1	85·6
18 d	2001 3454	19	1001 3454	18	2000 2354	16	0000 0033	6	1	85·6
19 d	3441 4434	27	3441 4434	27	3441 2333	23	3220 2222	15	1	85·6
20 d	2223 3334	22	2223 3333	21	1121 2234	16	0000 0114	6	1	85·6
21	4312 2210	15	3312 2210	14	4312 0110	12	2210 1000	6	1	85·7
22	0012 2323	13	0012 2322	12	0010 1113	7	0000 0002	2	1	85·7
23	2000 1434	14	2000 1433	13	2000 1234	12	0000 0103	4	1	85·7
24 d	4332 2113	19	4232 2113	18	3321 0003	12	3100 0002	6	1	85·7
25 d	4322 2333	22	4322 2333	22	3221 1132	15	2200 0112	8	1	85·7
26	3212 2202	14	3212 2202	14	3111 2102	11	1000 0000	1	1	85·7
27	1012 3233	15	1012 3222	13	1001 1033	9	0000 0001	1	1	85·7
28 q	2111 1110	8	2111 1110	8	1110 0000	3	0000 0000	0	0	85·7
29	1210 1132	11	1210 1132	11	1110 0021	6	0000 0000	0	0	85·7
30	3211 2232	16	3011 2232	14	3210 1022	11	2100 0000	3	1	85·7
31	3333 2222	20	3333 2222	20	2311 1002	10	1001 1000	3	1	85·7
								Mean	0·81	85·6

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

K_H For horizontal component. K_D For declination. K_Z For vertical component. (See Introduction).

GEOMAGNETIC FORCE: HORIZONTAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, GMT

19 ESKDALEMUIR (H) — 16,000γ (0·16 CGS unit) + — SEPTEMBER 1965

	Hour GMT 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 21,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	922	919	918	915	913	903	894	892	903	899	897	902	911	920	927	924	925	930	922	916	921	924	917	920	914	934
2	916	925	920	911	907	906	907	899	891	886	889	894	892	901	906	917	915	916	919	921	918	923	918	915	909	812
3	916	915	915	914	913	911	909	903	894	884	878	881	889	900	905	910	919	926	928	927	926	927	932	928	910	850
4	937	916	912	914	915	920	923	917	911	906	897	894	864	879	901	911	923	935	905	919	913	911	919	922	911	864
5	920	913	914	916	909	903	904	896	903	901	901	895	901	915	920	917	924	927	926	915	916	921	920	921	912	898
6	920	913	910	913	911	912	909	907	901	899	899	904	909	908	913	915	910	912	918	920	923	922	920	917	912	885
7	917	919	919	918	916	911	911	910	904	897	898	905	911	914	919	912	918	911	920	923	924	930	931	917	915	955
8 q	918	916	912	911	915	915	913	909	905	899	895	895	899	910	913	916	917	920	917	918	918	919	920	920	912	890
9 q	919	920	918	917	916	913	909	906	907	909	906	904	905	908	914	919	920	922	921	923	924	922	917	917	915	956
10 q	919	920	921	920	917	916	914	907	904	901	896	903	911	917	917	916	914	920	927	925	924	922	924	922	916	977
11	923	924	920	920	919	917	915	908	900	894	891	896	906	915	920	922	916	924	933	932	937	933	928	929	*918*	1022
12	934	926	915	929	923	919	912	903	890	882	886	896	907	917	920	924	924	919	916	934	932	925	929	930	916	992
13	938	911	913	915	919	918	915	908	896	887	887	900	909	914	920	918	918	921	924	924	924	923	923	926	915	951
14 q	922	918	917	918	918	916	916	912	903	892	885	886	897	904	907	915	922	922	924	917	908	915	921	920	911	875
15	923	920	919	918	926	926	925	926	915	899	888	882	887	892	896	920	931	927	888	907	905	883	889	867	907	759
16 d	872	875	888	902	902	910	912	894	848	879	887	890	849	885	890	872	896	915	888	904	908	908	899	901	*891*	374
17 d	908	902	900	907	910	901	912	903	884	876	879	882	872	877	896	875	898	914	918	915	921	907	906	916	899	579
18	897	905	905	905	906	911	908	905	899	890	886	889	891	899	889	889	892	904	892	897	911	919	883	898	899	570
19 d	908	906	914	902	907	918	909	883	902	904	899	899	882	884	895	899	901	901	922	905	908	917	909	909	903	683
20	912	908	908	907	906	905	900	894	891	887	884	892	903	906	905	906	905	911	915	913	906	912	917	907	904	700
21	915	907	908	910	913	914	914	906	902	896	893	893	900	904	906	905	906	911	913	918	928	928	923	921	910	834
22	914	912	913	915	917	922	915	915	914	910	905	902	905	908	913	916	918	924	930	924	925	924	926	925	916	992
23	919	917	921	919	917	921	923	921	915	913	903	905	916	919	906	918	902	901	911	912	919	921	918	921	915	958
24	920	917	918	917	918	905	912	911	895	897	896	897	895	909	908	913	915	916	920	911	911	927	917	915	911	860
25	909	921	922	915	918	926	904	901	895	887	888	894	902	903	897	895	908	907	913	913	914	920	914	913	907	779
26	915	914	908	923	926	921	922	903	891	895	890	883	891	888	905	907	908	912	912	916	915	920	918	919	908	802
27 d	923	897	898	909	911	910	909	905	897	889	889	887	897	897	904	909	913	896	889	871	866	832	835	858	891	391
28 d	904	866	887	902	925	913	896	910	884	863	861	868	879	892	905	904	909	900	905	907	899	904	902	909	896	494
29	907	907	905	907	906	904	902	896	891	896	886	886	884	892	892	891	900	910	912	917	912	917	917	920	902	657
30 q	902	905	904	904	902	905	907	902	896	895	891	889	889	890	895	899	904	909	912	914	913	911	912	912	903	662
Mean	*916*	911	911	913	914	913	911	905	898	894	*891*	893	895	902	907	909	912	915	915	915	*916*	916	913	914	908	
Sum 26,000γ+	1469	1334	1342	1393	1421	1392	1321	1152	931	812	730	793	853	1067	1204	1254	1371	1463	1440	1458	1469	1467	1404	1415		Grand Total 653,955

GEOMAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, GMT

20 ESKDALEMUIR (D) — 9° + — SEPTEMBER 1965

	Hour GMT 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 1300·0′+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
1	60·2	59·2	58·7	57·6	57·1	56·4	56·2	56·5	56·7	58·8	62·3	64·7	65·6	64·9	62·7	60·3	59·7	59·7	60·4	60·0	60·7	61·1	59·3	59·4	59·9	138·2
2	57·9	59·4	57·6	56·9	57·6	57·1	55·8	55·6	56·8	58·4	60·7	63·9	66·8	68·9	66·3	63·1	61·5	60·8	60·5	60·5	59·2	58·2	58·3	58·6	60·0	140·4
3	59·5	59·1	58·6	58·1	58·1	57·7	56·7	56·5	56·7	58·1	60·4	63·6	66·0	66·6	65·0	62·7	61·7	61·3	60·7	60·7	60·7	60·6	60·7	59·3	60·4	149·1
4	54·8	52·2	53·9	53·8	54·1	55·9	55·4	55·5	55·9	58·8	61·4	65·0	68·1	69·6	68·3	66·3	64·9	64·0	61·7	55·8	59·6	59·9	59·7	60·7	59·8	135·3
5	58·0	60·5	59·8	58·9	59·0	58·0	56·9	56·8	57·4	58·8	61·5	63·6	65·7	65·9	64·2	62·5	62·1	62·3	61·3	58·0	60·6	60·7	60·5	59·7	60·5	152·7
6	61·8	58·4	57·7	58·0	57·4	56·1	56·0	56·6	58·0	59·8	60·7	62·6	65·2	65·7	64·7	63·3	58·6	61·1	60·7	60·2	57·6	58·6	58·7	59·2	59·9	136·7
7	59·4	59·1	58·5	58·4	58·1	57·6	57·8	57·7	58·2	59·4	61·3	63·2	64·2	64·2	64·0	62·1	61·2	62·0	61·7	61·2	60·7	59·9	55·4	54·8	60·0	140·1
8 q	59·4	58·4	58·9	58·5	57·5	57·2	57·0	56·9	57·5	59·6	62·1	64·1	65·0	64·5	62·9	60·8	59·9	59·8	60·6	60·7	60·2	59·8	59·5	59·4	60·0	140·2
9 q	59·4	58·9	59·3	58·1	57·9	58·2	58·1	57·5	57·6	58·9	61·8	63·7	65·0	64·0	62·4	60·6	59·4	59·2	60·0	60·5	60·3	59·3	58·5	58·4	59·9	137·0
10 q	59·4	59·3	59·3	58·8	58·5	58·3	57·4	57·1	57·0	58·0	60·3	63·0	64·9	64·7	63·2	62·1	61·2	60·5	60·4	59·9	59·7	59·4	59·6	59·5	60·1	141·5
11	59·2	58·9	58·7	58·5	58·1	57·7	57·0	57·1	58·1	59·3	61·1	64·3	66·5	66·8	66·0	64·7	63·1	62·2	62·2	62·0	61·7	61·0	60·3	59·6	*61·0*	164·1
12	55·8	52·4	54·7	57·4	55·5	56·7	56·4	55·4	55·4	57·4	60·8	64·8	66·8	65·9	63·7	62·4	60·8	60·3	61·2	60·9	60·7	60·4	60·0	60·1	59·4	125·9
13	57·2	52·6	56·7	58·5	58·0	57·8	58·3	58·4	58·7	59·6	61·4	63·4	66·0	65·2	63·6	61·8	61·3	61·2	60·7	60·4	60·0	59·6	59·5	59·1	60·0	139·0
14 q	58·5	59·0	59·4	59·2	59·2	59·3	58·7	57·6	56·5	56·3	58·6	62·1	65·2	66·1	64·9	63·0	61·6	60·2	59·7	59·6	58·5	58·8	58·9	57·8	59·9	138·7
15	58·4	58·3	58·3	58·2	57·4	57·4	56·1	56·6	58·1	57·9	59·4	60·6	64·0	66·0	64·9	67·5	67·9	66·1	59·5	60·8	58·0	49·9	47·1	42·2	58·8	110·6
16 d	35·6	41·8	53·1	59·3	58·5	57·5	53·8	54·9	59·7	62·8	60·7	65·9	67·3	66·9	66·6	65·0	62·9	61·4	51·2	58·7	58·3	55·1	51·2	59·5	57·8	87·7
17 d	60·0	62·7	58·6	58·7	58·1	58·6	61·7	60·3	60·2	60·6	60·3	63·1	64·2	64·8	65·9	64·3	62·0	62·4	61·0	59·0	53·7	54·9	55·1	52·1	60·1	142·3
18	52·7	58·0	57·0	57·5	60·9	59·6	58·5	58·0	58·4	59·6	60·1	61·4	66·3	65·6	65·6	64·5	62·2	62·3	58·4	56·0	56·6	62·7	50·4	54·8	59·5	127·1
19 d	55·6	56·5	58·1	57·8	58·9	58·5	59·6	61·6	59·8	59·7	60·6	63·3	65·0	64·7	63·6	61·5	61·0	57·9	54·4	60·1	58·6	59·4	59·1	59·3	59·8	134·6
20	60·3	59·2	58·9	58·8	58·7	58·3	57·7	57·4	57·6	58·4	60·5	62·6	63·7	63·2	62·6	61·2	60·5	60·3	59·8	59·3	59·0	59·2	59·6	56·8	59·7	133·6
21	58·0	59·2	56·7	56·6	57·4	57·4	56·8	56·4	56·5	57·3	59·5	61·7	63·0	62·9	61·7	60·9	60·2	59·5	59·0	58·4	58·2	58·8	59·5	59·1	58·9	114·7
22	58·5	57·7	57·0	56·4	56·4	56·7	56·8	58·0	57·6	58·4	59·4	61·1	62·7	63·3	63·4	62·8	62·3	62·7	62·6	62·1	61·8	60·9	60·4	58·1	59·9	137·1
23	58·9	58·4	57·9	58·2	58·0	58·3	58·1	58·1	58·1	58·7	60·7	63·3	66·3	67·9	67·0	68·0	61·5	64·0	62·4	58·9	60·2	60·4	59·3	58·9	60·6	161·5
24	57·9	58·7	58·7	58·0	55·9	58·2	58·1	58·1	57·4	58·5	61·1	64·2	64·0	63·9	62·8	61·7	61·1	60·5	60·0	60·1	59·4	58·1	57·0	57·0	59·6	130·4
25	57·6	59·6	56·7	49·3	53·7	55·3	54·7	55·3	55·9	58·4	61·7	64·2	66·2	67·6	66·3	64·3	60·6	57·9	61·3	60·2	59·7	57·0	58·9	58·9	59·2	121·3
26	58·8	58·0	56·2	59·4	55·8	57·3	59·3	59·3	59·6	59·3	61·8	63·8	67·4	66·2	66·3	65·3	62·8	61·6	60·3	58·9	59·5	59·8	58·3	59·1	60·6	154·1
27 d	54·1	51·2	55·6	57·9	58·3	58·1	58·0	57·5	57·8	58·4	60·7	64·2	66·1	65·3	63·9	62·7	61·8	59·4	60·5	54·1	44·6	44·7	45·2	44·1	*56·8*	64·2
28 d	55·1	45·4	50·0	49·4	53·6	56·9	58·4	59·8	58·8	59·2	62·4	66·1	67·1	66·1	65·9	64·8	62·6	62·2	62·3	58·3	53·4	55·4	59·4	59·4	58·8	112·0
29	58·4	58·8	58·4	58·5	58·3	58·6	58·1	57·9	58·1	59·0	61·2	63·1	64·7	64·8	64·2	62·0	59·4	61·2	61·1	59·1	59·8	58·4	59·2	58·7	60·0	141·0
30 q	58·1	58·3	57·7	58·8	58·7	58·1	57·6	56·4	56·3	56·9	59·1	60·7	62·1	62·8	63·0	62·7	61·7	60·8	60·3	59·8	60·0	59·7	59·4	59·4	59·5	128·4
Mean	57·3	*57·0*	57·4	57·5	57·5	57·6	57·4	57·4	57·7	58·8	60·8	63·4	65·4	*65·5*	64·5	63·2	61·6	61·2	60·2	59·5	58·7	58·4	57·6	57·4	59·7	
Sum 1700·0′+	18·5	9·2	20·7	23·5	24·7	28·8	21·0	20·8	30·4	64·3	123·6	201·3	261·1	265·0	235·6	194·9	147·5	134·8	105·9	84·2	61·0	51·7	28·0	23·0		Grand Total 42979·5

GEOMAGNETIC FORCE: VERTICAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, GMT

21 ESKDALEMUIR (Z) — 45,000γ (0·45 CGS unit) + — SEPTEMBER 1965

Day	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 10,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	441	438	440	443	446	448	445	439	429	425	423	425	428	436	443	448	447	446	446	447	445	442	444	443	440	557
2	442	437	435	440	442	444	443	443	438	436	430	425	429	433	438	441	444	446	444	444	447	446	441	441	440	549
3	443	442	443	443	444	444	446	444	442	439	434	428	425	427	433	437	441	441	442	442	442	441	440	440	439	543
4	432	432	433	437	440	439	438	441	437	432	429	426	429	435	439	447	447	457	463	464	454	450	446	439	441	586
5	434	437	437	440	438	441	442	444	439	432	430	430	432	437	441	446	443	443	448	455	454	448	444	444	441	579
6	441	439	442	442	443	444	441	441	436	432	432	431	431	435	437	446	461	455	451	450	449	447	444	446	442	616
7	444	443	443	443	442	443	442	440	438	436	432	429	425	429	438	446	452	448	444	443	443	442	439	439	440	563
8 *q*	438	441	442	442	441	442	442	441	437	431	431	430	431	437	439	442	444	446	445	447	446	445	445	445	440	570
9 *q*	445	444	444	444	443	444	446	444	437	434	432	431	432	436	440	442	443	444	442	443	443	444	445	446	441	588
10 *q*	444	444	444	443	443	443	443	444	443	441	436	431	430	434	438	441	441	441	442	442	442	442	442	442	441	576
11	443	442	442	442	442	444	447	445	442	433	433	430	429	429	435	441	443	440	441	440	440	442	444	444	440	553
12	439	437	437	427	431	436	441	443	441	437	427	424	423	424	431	440	443	446	445	444	443	443	443	442	437	487
13	418	427	433	437	439	440	439	438	438	437	431	427	426	433	437	442	444	444	444	442	443	443	443	442	437	487
14 *q*	442	443	443	443	443	444	444	444	442	442	438	434	431	436	441	444	448	449	449	449	450	448	442	442	443	631
15	441	441	441	442	441	441	441	439	437	437	436	435	435	438	442	448	454	485	507	483	478	480	460	435	*451*	817
16 *d*	407	398	409	418	439	447	446	443	441	435	438	438	443	442	451	460	459	461	481	462	455	454	443	436	442	606
17 *d*	436	437	442	446	447	443	438	439	445	447	447	443	443	444	448	464	470	461	458	458	459	447	446	435	448	743
18	433	437	441	441	437	436	441	443	443	441	438	438	439	443	453	460	468	479	483	479	459	414	422	431	446	699
19 *d*	439	442	442	442	443	443	442	441	437	437	437	438	443	446	445	456	465	470	464	457	456	447	446	446	447	724
20	446	447	447	448	448	448	449	449	448	444	438	433	430	433	439	446	449	450	448	451	453	451	441	437	445	673
21	437	433	434	440	442	443	446	447	444	441	440	437	437	440	441	446	446	446	446	447	444	440	440	440	442	597
22	441	443	443	442	441	437	437	436	437	436	436	436	436	437	441	441	439	437	438	441	443	432	444	445	439	539
23	447	446	444	443	442	441	439	437	437	436	435	432	428	430	435	443	461	460	459	459	454	450	449	448	444	655
24	444	446	444	442	440	440	437	436	436	437	437	433	431	434	440	442	443	443	446	449	452	444	444	446	441	586
25	448	439	411	417	419	415	423	430	435	435	432	428	429	440	452	453	460	459	447	447	447	446	446	447	438	505
26	444	444	444	434	428	429	427	431	432	426	425	428	431	444	454	456	453	449	447	447	444	443	445	436	439	541
27 *d*	418	426	433	439	441	443	443	442	441	442	435	428	424	430	441	446	450	462	472	481	451	412	379	382	436	461
28 *d*	339	359	384	406	411	415	427	428	432	438	441	438	444	451	454	455	455	462	456	461	466	455	451	449	*432*	377
29	451	451	451	451	451	450	450	449	449	444	441	440	441	446	452	462	466	460	454	453	450	448	448	439	450	797
30 *q*	445	447	449	448	445	447	448	450	448	442	442	440	440	440	442	444	448	449	449	448	448	448	448	448	446	703
Mean	435	436	437	439	440	441	441	441	439	437	435	*432*	433	437	442	447	451	453	*453*	453	450	445	442	440	442	
Sum 12,000γ+	1062	1082	1117	1165	1192	1214	1233	1231	1181	1105	1036	966	975	1099	1260	1425	1527	1579	1601	1575	1500	1334	1254	1195		Grand Total 317,908

GEOMAGNETIC CHARACTER FIGURES (K, K_H, K_D, K_Z, AND C) AND TEMPERATURE IN MAGNETOGRAPH CHAMBER

22 ESKDALEMUIR — SEPTEMBER 1965

Day	3-h range indices K	Sum of K indices	3-h range indices K_H	Sum of K_H indices	3-h range indices K_D	Sum of K_D indices	3-h range indices K_Z	Sum of K_Z indices	Geomagnetic character of day, C (0-2)	Temperature in magneto-graph chamber 200°A+
1	1220 1222	12	1220 1222	12	0010 0122	6	0000 0000	0	1	85·7
2	2112 2223	15	2112 2223	15	2111 1011	8	1000 0000	1	1	85·8
3	0000 0113	5	0000 0112	4	0000 0003	3	0000 0000	0	0	85·8
4	3233 4333	24	3133 4333	23	2222 2131	15	1010 1111	6	1	85·8
5	3222 3222	18	3222 3222	18	2211 1122	12	1000 1011	4	1	85·9
6	2112 3332	17	1112 3322	15	2111 2332	15	1000 0100	2	1	85·8
7	1102 3313	14	1102 3313	14	0100 1203	7	0000 0000	0	1	85·8
8 *q*	2101 2110	8	2101 2110	8	1100 1000	3	0000 0000	0	1	85·8
9 *q*	1111 1101	7	1011 1101	6	1100 0001	3	0000 0000	0	0	85·8
10 *q*	1002 0111	6	1002 0111	6	0001 0000	1	0000 0000	0	0	85·9
11	1000 1222	8	0000 1222	7	1000 0001	2	0000 0001	1	0	85·9
12	3301 2333	18	3301 2333	18	3200 1103	10	1100 0001	3	1	85·9
13	4100 2111	10	3100 2111	9	4100 1001	7	2000 0000	2	1	85·9
14 *q*	1000 1022	6	1000 1022	6	0000 0012	3	0000 0000	0	0	85·9
15	2112 3434	20	2112 3433	19	1011 1334	14	0000 0434	11	1	86·0
16 *d*	5343 4354	31	3243 4353	27	5233 2144	24	2311 2122	14	2	86·0
17 *d*	3232 3443	24	2232 3443	23	3122 2233	18	1010 2222	10	1	86·1
18	3311 2344	21	2201 2344	18	3311 2344	21	1100 2233	12	1	86·1
19 *d*	2233 3442	23	2233 3342	22	2222 2441	19	0010 1221	7	1	86·1
20	1011 2122	10	1011 2122	10	1010 0102	5	0000 0002	2	0	86·1
21	2111 0233	13	2011 0233	12	2110 0022	8	1000 0010	2	1	86·1
22	1111 1222	11	1111 1222	11	1110 0011	5	0000 0000	0	0	86·1
23	2112 3422	17	2112 3422	17	1111 2321	12	0000 1210	4	1	86·1
24	2322 2023	16	2322 2023	16	1222 1012	11	0000 0011	2	1	86·1
25	3321 3313	19	2221 3303	16	3310 2312	15	3120 2100	9	1	86·1
26	2322 2213	17	2222 2213	16	1312 2112	13	0210 2002	7	1	86·1
27 *d*	3102 2354	20	3002 2334	17	3102 2253	18	2001 2234	14	1	86·1
28 *d*	5332 2343	25	5332 2342	24	5322 1143	21	4211 1110	11	1	86·1
29	1112 1323	14	1112 1323	14	0011 0212	7	0000 0102	3	1	86·1
30 *q*	1100 1000	3	0100 1000	2	1100 0000	2	0000 0000	0	0	86·1
								Mean	0·77	86·0

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

K_H For horizontal component. K_D For declination. K_Z For vertical component. (See Introduction).

GEOMAGNETIC FORCE: HORIZONTAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, GMT

19 ESKDALEMUIR (H) — 16,000γ (0·16 CGS unit) + — OCTOBER 1965

	Hour GMT 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 21,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	912	912	912	913	915	915	915	912	906	896	892	890	894	897	902	906	911	913	919	920	921	920	918	921	910	832
2 d	925	924	907	911	913	927	926	917	909	896	894	894	885	902	900	892	900	907	918	907	896	907	907	908	907	772
3	910	910	908	909	914	911	912	909	901	895	893	892	894	900	907	910	913	916	914	918	918	917	914	910	908	795
4 q	911	911	911	912	913	913	910	907	902	894	888	889	894	899	904	909	912	914	916	916	916	916	915	915	908	787
5	915	918	919	928	925	924	918	923	920	912	900	900	907	894	888	908	916	919	923	923	922	916	918	919	915	955
6 q	916	914	914	914	914	914	916	916	913	906	897	889	888	893	900	908	913	917	920	919	917	918	918	918	911	852
7	918	918	918	917	918	918	918	919	914	918	906	905	911	916	924	926	920	920	923	922	924	925	923	918	918	1039
8 d	919	920	932	934	938	937	933	928	915	906	899	899	906	911	921	920	923	927	926	913	903	909	931	914	*919*	1064
9	914	918	912	912	911	912	911	906	900	896	895	894	894	902	906	913	917	918	917	917	918	918	919	918	910	838
10	918	917	917	917	916	917	918	914	905	896	888	889	895	903	911	917	919	920	922	923	925	919	920	920	913	906
11	921	918	918	918	918	919	918	914	905	895	890	894	902	910	915	917	916	918	917	917	921	922	920	922	914	925
12	921	915	913	912	918	922	920	914	905	896	895	893	896	907	912	911	911	915	917	913	921	921	921	922	912	891
13	921	922	921	920	922	914	918	921	913	898	890	891	907	905	909	911	916	914	897	904	900	915	920	918	911	867
14	921	915	912	911	915	915	914	912	904	899	888	887	888	891	904	911	914	916	917	917	917	917	917	917	909	819
15 q	917	915	912	914	917	917	917	916	908	899	892	891	892	898	906	912	914	917	920	917	918	918	919	919	911	865
16 q	918	918	918	919	920	921	921	919	912	900	893	893	895	902	912	919	921	923	919	921	921	920	922	921	915	948
17	919	919	918	920	921	921	920	916	906	897	891	895	901	913	921	923	923	923	924	925	926	926	924	928	917	1000
18	933	930	924	926	930	932	928	924	921	907	898	897	903	912	913	914	916	920	917	916	921	924	922	921	919	1049
19	920	921	920	922	923	924	924	923	919	909	900	895	898	907	912	910	911	920	921	921	923	923	922	922	916	990
20	922	921	921	921	921	922	924	924	918	910	898	894	898	906	912	917	920	923	922	923	922	921	922	923	917	1005
21 q	923	921	923	924	923	925	921	913	910	906	901	900	904	910	912	915	917	920	923	924	924	922	921	920	917	1002
22	921	925	926	925	927	931	930	924	911	909	899	903	911	912	922	924	923	909	887	904	917	908	904	904	915	956
23 d	911	911	910	905	908	926	923	905	897	898	904	901	880	871	894	906	910	917	908	905	917	886	909	900	*904*	702
24 d	918	919	893	900	922	914	914	905	905	900	895	895	905	908	901	890	904	911	917	911	908	921	928	917	908	801
25	919	900	900	905	915	911	924	924	916	901	886	890	891	903	890	901	899	897	908	914	914	912	913	900	906	733
26	908	918	914	915	919	921	921	918	910	898	894	896	898	905	908	910	916	922	922	921	918	915	914	927	913	908
27	919	915	915	918	920	920	920	923	919	910	902	906	906	909	910	920	919	923	924	924	924	919	927	928	917	1020
28 d	930	920	909	908	915	921	923	925	919	908	889	871	872	908	911	912	912	916	908	913	915	911	910	912	910	838
29	917	914	911	911	913	913	916	913	910	906	900	899	904	910	916	917	918	915	917	919	916	918	901	910	912	884
30	913	914	915	914	915	913	922	916	904	896	898	898	902	903	911	913	911	916	919	911	925	918	914	914	911	875
31	913	912	920	914	916	919	915	920	916	911	904	901	904	910	914	916	904	906	901	905	900	907	905	908	910	841
Mean	918	917	915	916	919	920	*920*	917	910	902	895	*895*	898	904	909	912	914	917	916	916	917	916	917	917	912	
Sum 27,000γ+	1463	1425	1363	1389	1475	1509	1510	1420	1213	968	759	731	825	1017	1168	1278	1339	1412	1403	1403	1428	1409	1438	1414		Grand Total 678,759

GEOMAGNETIC DECLINATION (WEST)

Mean values for periods of sixty minutes ending at exact hours, GMT

20 ESKDALEMUIR (D) — 9° + — OCTOBER 1965

	Hour GMT 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 1300·0′+
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
1	59·2	59·1	59·0	59·1	59·0	59·1	58·7	58·2	57·6	57·9	59·7	62·3	64·1	64·4	64·4	63·3	61·9	60·7	60·8	60·5	60·5	60·2	59·6	59·3	60·4	148·6
2 d	58·8	53·2	53·8	55·1	54·9	57·7	56·4	56·5	56·8	57·5	59·0	63·4	64·7	68·5	67·9	67·1	66·7	64·2	63·1	62·8	60·7	48·4	55·0	58·2	59·6	130·4
3	58·9	58·3	57·8	58·3	58·0	58·2	58·3	57·7	57·7	58·4	59·7	62·2	63·5	63·7	63·4	62·3	61·1	60·6	60·5	60·4	59·7	59·4	58·3	58·6	59·8	135·0
4 q	58·7	58·6	58·5	58·7	58·7	58·3	57·9	57·6	56·8	56·8	58·1	60·6	61·7	62·7	63·4	62·4	61·2	60·3	59·9	59·5	59·5	59·4	59·4	59·4	59·5	128·1
5	59·3	59·0	59·2	58·3	58·2	58·0	57·4	57·3	56·8	56·7	58·6	61·4	65·6	66·6	66·3	65·1	62·8	61·6	60·7	60·2	59·5	59·3	59·0	58·1	60·2	145·0
6 q	58·2	59·0	59·0	58·8	59·0	58·7	58·3	58·0	57·3	57·0	58·3	60·6	63·0	64·4	64·5	63·1	61·4	60·3	59·7	59·4	59·4	59·4	59·4	59·4	59·8	135·6
7	59·4	59·3	59·0	58·8	58·9	58·7	58·3	57·4	56·6	56·9	59·8	62·5	64·1	66·0	67·0	67·1	64·8	63·6	61·6	60·6	59·9	59·4	59·0	58·3	*60·7*	157·0
8 d	57·2	57·4	58·6	57·8	58·3	58·2	58·2	58·0	57·0	57·0	58·7	61·5	63·3	63·5	64·1	63·3	61·8	61·1	60·7	59·2	54·8	58·3	54·5	55·3	59·1	117·8
9	58·0	59·6	59·2	56·8	57·4	57·7	57·4	56·5	56·0	56·9	59·3	62·3	63·7	64·6	64·0	62·7	61·2	60·5	60·3	60·0	59·3	59·4	59·3	59·0	59·6	131·1
10	59·1	58·8	58·9	59·2	58·8	58·7	58·2	57·0	55·8	56·5	59·0	62·6	64·2	64·5	63·5	62·0	60·6	60·3	60·3	60·1	58·3	59·1	59·6	59·6	59·8	134·7
11	59·6	59·5	59·5	59·4	59·3	59·3	58·4	57·5	56·3	56·3	58·0	61·6	64·6	64·5	63·6	62·3	60·8	60·4	60·2	60·1	59·3	59·4	59·3	58·4	59·9	137·6
12	56·9	55·4	57·9	58·0	59·4	58·6	58·5	58·0	56·8	57·5	59·7	63·5	64·6	65·1	64·1	62·5	60·6	60·0	60·8	55·8	58·0	58·8	59·3	59·4	59·5	128·4
13	59·0	59·4	59·2	58·9	57·9	58·7	60·6	60·1	58·7	57·7	59·5	63·1	64·9	65·6	65·0	63·2	62·0	61·7	51·6	53·8	54·4	58·5	58·7	58·7	59·6	130·9
14	58·8	57·1	56·5	58·9	59·4	58·2	58·4	57·4	56·5	56·8	58·5	61·1	63·9	63·8	63·5	62·4	61·1	60·3	60·2	60·2	59·6	59·3	58·7	56·0	59·4	126·6
15 q	56·8	57·9	58·5	58·9	59·1	59·2	58·9	58·2	57·4	57·7	58·8	61·1	63·5	64·3	63·8	62·8	61·2	60·6	60·4	59·7	59·7	59·5	59·3	59·2	59·9	136·5
16 q	58·9	58·9	58·7	59·2	59·0	58·7	58·8	58·1	56·9	56·8	58·5	61·4	63·8	64·6	64·1	62·6	61·0	60·2	59·8	60·1	59·8	59·6	59·3	59·3	59·9	138·1
17	59·3	59·2	59·3	59·4	59·3	59·1	58·6	57·8	56·7	57·0	59·6	63·0	64·7	64·9	63·9	62·1	60·6	60·6	60·4	60·3	60·3	60·1	59·6	59·5	60·2	145·3
18	58·5	57·3	59·1	58·4	58·9	58·6	60·0	59·7	58·8	57·9	60·3	62·1	64·8	65·8	64·2	62·8	60·9	60·4	60·2	59·5	59·7	59·5	59·7	59·7	60·3	146·8
19	59·2	59·1	59·1	59·2	59·4	59·3	59·1	58·2	57·5	58·0	59·5	62·5	64·6	64·4	63·9	62·7	59·9	60·2	60·2	60·0	59·4	59·2	59·4	59·6	60·1	143·6
20	59·3	59·3	59·3	59·4	59·4	59·3	58·8	58·0	57·7	58·4	59·9	62·3	63·1	63·6	63·1	62·0	61·1	60·9	60·6	60·0	56·7	58·2	59·2	59·5	60·0	139·1
21 q	59·4	59·4	59·3	59·3	59·3	58·7	57·9	57·8	57·6	57·8	58·9	60·5	62·2	62·8	62·4	61·4	60·4	59·9	59·4	59·3	59·3	59·3	59·3	59·4	59·6	131·0
22	59·3	59·0	58·2	59·2	58·8	58·9	58·6	57·3	57·1	57·6	58·0	60·1	62·7	64·4	65·3	64·6	67·0	71·0	67·8	61·4	59·1	55·5	54·8	54·2	60·4	149·9
23 d	54·5	56·4	57·8	57·3	58·9	57·9	58·2	57·7	56·6	56·7	58·4	62·5	62·5	65·1	63·9	64·4	61·3	56·3	60·5	51·2	50·6	53·1	53·0	55·9	*57·9*	90·7
24 d	54·8	52·8	52·6	59·1	57·9	58·1	58·7	58·4	59·1	57·9	59·6	62·3	63·9	64·3	64·1	58·2	61·6	61·9	55·2	55·8	57·5	56·8	59·2	57·9	58·7	107·7
25	55·1	54·9	57·0	58·5	61·2	60·8	60·8	60·0	58·6	59·0	59·2	62·8	63·7	64·5	63·3	63·4	61·4	63·8	60·9	59·6	58·1	56·0	55·2	54·2	59·7	132·0
26	59·1	63·2	56·7	58·2	58·8	58·7	58·4	57·9	56·9	56·8	58·5	62·1	63·2	63·4	62·4	60·9	60·5	60·2	59·6	59·3	58·6	57·9	58·2	61·2	59·6	130·7
27	59·0	58·2	59·2	58·7	58·8	58·6	58·2	58·1	57·6	57·9	59·5	63·1	64·3	65·0	64·0	62·4	61·8	61·3	60·9	60·1	59·0	58·2	56·6	56·6	59·9	137·1
28 d	60·2	57·5	53·4	57·2	57·7	57·7	57·9	57·7	57·6	57·8	60·5	63·5	62·5	62·9	64·0	62·6	61·2	60·5	58·5	58·6	57·9	56·6	56·8	57·8	59·1	118·6
29	59·1	58·4	58·0	58·2	58·4	58·8	58·4	58·0	57·2	57·2	58·4	60·5	62·1	62·8	62·2	61·4	61·0	60·6	59·7	60·0	60·2	60·1	55·3	57·1	59·3	123·1
30	57·4	58·8	57·8	57·5	58·1	59·8	61·4	59·8	58·7	58·5	59·6	61·9	62·2	62·8	62·3	60·9	59·4	58·4	59·7	58·8	55·0	58·2	57·5	56·8	59·2	121·3
31	58·0	57·3	59·0	58·2	58·7	57·9	57·9	58·8	57·8	57·9	59·4	61·6	62·2	62·4	62·2	61·5	61·9	60·4	56·8	58·2	57·0	55·5	55·5	57·4	58·9	113·5
Mean	58·3	58·1	58·0	58·5	58·7	58·7	58·6	58·0	*57·3*	57·5	59·1	62·0	63·6	*64·4*	64·0	62·8	61·6	61·1	60·0	59·2	58·4	58·1	58·0	58·2	59·7	
Sum 1700·0′+	109·0	101·3	99·1	112·0	118·9	118·2	115·6	98·7	76·5	80·8	132·5	222·0	271·9	295·9	283·8	245·5	210·2	192·8	160·2	134·5	110·8	101·6	97·0	103·0		Grand Total 44391·8

GEOMAGNETIC FORCE: VERTICAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, GMT

21 ESKDALEMUIR (Z) 45,000γ (0·45 CGS unit) + OCTOBER 1965

	Hour GMT 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 10,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	448	448	448	448	447	447	447	446	444	441	436	432	431	436	438	441	446	446	447	447	447	447	447	447	444	652
2 *d*	447	436	440	442	442	432	430	435	440	441	434	428	427	431	440	455	455	456	456	465	469	456	438	444	443	639
3	448	448	449	448	448	448	448	445	445	445	441	437	436	437	440	445	448	448	449	449	448	448	449	450	446	697
4 *q*	449	449	449	448	448	448	448	448	448	445	441	438	437	438	439	443	447	448	448	448	448	448	448	448	446	699
5	448	447	446	447	443	442	444	442	442	441	440	435	433	441	445	445	447	447	447	447	447	448	448	448	444	660
6 *q*	448	447	446	445	445	445	445	445	447	445	444	444	443	442	442	445	448	448	447	447	448	448	448	448	446	700
7	448	447	447	445	445	444	445	445	447	442	438	435	431	431	433	439	442	443	444	445	445	445	447	448	443	621
8 *d*	447	443	437	437	436	436	436	438	443	441	438	437	437	437	438	438	441	441	442	448	456	450	437	438	441	572
9	442	440	437	440	442	443	444	444	444	441	438	434	436	437	441	444	446	445	445	445	446	446	445	445	442	610
10	446	445	444	444	444	443	444	445	447	442	436	431	433	437	442	445	445	444	443	444	443	443	444	444	442	618
11	445	445	445	445	445	444	445	445	445	443	437	433	433	438	443	448	448	447	447	447	446	445	448	448	444	655
12	446	445	445	445	444	443	444	445	445	442	435	432	434	439	445	450	452	450	450	450	448	445	445	446	444	665
13	448	446	443	443	444	444	443	443	443	443	440	438	438	441	446	449	450	452	463	460	457	452	449	448	447	723
14	448	446	445	442	443	448	449	449	450	450	448	443	444	446	449	451	452	451	450	450	449	449	448	449	448	749
15 *q*	446	445	448	448	446	448	447	449	449	449	448	444	444	445	447	449	450	449	448	449	448	446	446	446	447	734
16 *q*	446	446	446	445	446	446	445	446	448	446	441	437	438	438	442	445	447	448	448	446	446	446	445	445	445	672
17	445	445	445	445	445	445	446	449	449	446	443	439	439	441	443	445	445	445	445	444	444	443	444	443	444	663
18	438	437	438	439	439	440	441	442	441	442	439	438	434	439	443	446	446	446	448	449	448	445	445	445	442	608
19	446	445	444	444	443	443	444	444	443	443	441	439	439	442	447	450	450	449	448	446	446	445	445	444	445	670
20	445	445	444	443	443	443	443	445	448	446	443	441	443	444	445	445	445	444	444	444	448	446	445	444	444	666
21 *q*	444	444	443	441	441	441	443	444	444	444	442	438	437	439	442	444	443	442	442	444	444	444	444	444	442	618
22	445	443	442	441	439	439	439	441	442	439	437	437	434	432	434	439	447	461	487	480	469	471	467	463	449	768
23 *d*	462	458	453	450	444	437	432	434	442	442	437	431	437	449	455	456	457	456	450	456	446	437	437	439	446	697
24 *d*	426	418	424	425	425	433	437	438	438	439	438	438	438	439	446	464	457	453	454	452	452	449	441	432	*440*	556
25	426	425	421	428	431	437	436	438	440	442	443	443	445	447	455	460	464	465	463	459	456	456	452	448	445	680
26	442	425	431	438	443	443	444	445	448	447	443	441	443	444	449	450	449	448	447	448	449	449	449	443	444	658
27	441	443	445	446	445	445	445	443	444	443	442	442	444	448	450	450	449	449	449	449	449	449	446	437	446	693
28 *d*	427	414	423	432	436	439	442	443	443	443	442	444	451	448	446	450	450	451	453	452	452	449	450	450	443	630
29	444	441	444	445	447	447	449	448	449	449	446	443	442	443	445	449	450	450	450	449	449	446	446	449	447	720
30	449	446	445	446	445	444	439	440	443	444	442	441	442	441	447	449	450	450	450	450	451	446	448	448	446	696
31	449	448	443	444	445	445	445	445	446	443	441	439	442	445	447	450	455	456	459	462	463	461	456	452	*449*	781
Mean	445	442	442	443	443	443	443	443	445	443	441	*438*	438	441	444	448	449	449	450	*451*	450	448	447	446	445	
Sum 13,000γ+	779	700	700	719	719	722	729	749	787	749	654	572	585	655	764	879	921	928	963	971	957	898	847	823		Grand Total 330,770

GEOMAGNETIC CHARACTER FIGURES (K, K_H, K_D, K_Z, AND C) AND TEMPERATURE IN MAGNETOGRAPH CHAMBER

22 ESKDALEMUIR OCTOBER 1965

	3-h range indices K	Sum of K indices	3-h range indices K_H	Sum of K_H indices	3-h range indices K_D	Sum of K_D indices	3-h range indices K_Z	Sum of K_Z indices	Geomagnetic character of day, C (0-2)	Temperature in magneto-graph chamber 200°A+
1	0001 0001	2	0001 0001	2	0000 0000	0	0000 0000	0	0	86·0
2 *d*	3332 3334	24	3332 3334	24	3311 2234	19	1221 1123	13	1	85·9
3	0111 1111	7	0111 1111	7	0110 0001	3	0000 0000	0	0	85·9
4 *q*	0000 0000	0	0000 0000	0	0000 0000	0	0000 0000	0	0	85·9
5	2122 3211	14	2122 3211	14	1111 1001	6	0000 1000	1	1	85·9
6 *q*	0000 0010	1	0000 0010	1	0000 0000	0	0000 0000	0	0	85·9
7	0013 3322	14	0013 3322	14	0002 1101	5	0001 0000	1	1	85·9
8 *d*	4232 3233	22	4232 3233	22	4231 2133	19	2010 0022	7	1	85·8
9	2111 1011	8	2111 1001	7	2111 0010	6	0000 0000	0	0	85·8
10	0111 0021	6	0111 0010	4	0010 0021	4	0000 0000	0	0	85·7
11	0001 1111	5	0001 1111	5	0000 1011	3	0000 0000	0	0	85·7
12	2212 2230	14	2212 2220	13	2111 1130	10	0000 0000	0	0	85·8
13	2221 2231	15	2221 2221	14	2110 1131	10	0000 0010	1	1	85·8
14	2212 1102	11	2112 1102	10	2201 1002	8	0000 0000	0	0	85·8
15 *q*	1101 1000	4	1101 1000	4	1001 0000	2	0000 0000	0	0	85·8
16 *q*	0000 0011	2	0000 0011	2	0000 0010	1	0000 0000	0	0	85·9
17	0001 2002	5	0001 2002	5	0000 1002	3	0000 0000	0	0	85·9
18	3111 1110	9	3111 1110	9	3111 1000	7	1000 0000	1	1	85·9
19	0012 2110	7	0012 2110	7	0000 1110	3	0000 0000	0	0	85·9
20	0001 0022	5	0001 0011	3	0000 0022	4	0000 0000	0	0	86·4
21 *q*	0010 0000	1	0010 0000	1	0000 0000	0	0000 0000	0	0	86·4
22	2113 2442	19	2113 2332	17	0012 1442	14	0000 0321	6	1	86·4
23 *d*	3333 3343	25	3322 3333	22	2233 3343	23	1211 2111	10	1	86·4
24 *d*	3322 3343	23	3322 3343	23	3211 2342	18	2100 1212	9	1	86·4
25	3222 3323	20	3222 3223	19	3211 2323	17	1100 1101	5	1	86·4
26	3110 0013	9	3110 0013	9	3100 0013	8	2000 0001	3	1	86·5
27	1112 2223	14	1112 2223	14	1112 2113	12	0000 1001	2	1	86·5
28 *d*	3213 3132	18	3213 3132	18	3112 2022	13	2101 1000	5	1	86·5
29	2110 0113	9	2110 0113	9	1010 0013	6	1000 0001	2	0	86·5
30	2222 2331	17	1122 2331	15	2221 1231	14	0010 0010	2	1	86·5
31	2111 1232	13	2111 1232	13	2110 1232	12	1000 0010	2	1	86·5
								Mean	0·48	86·1

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

K_H For horizontal component. K_D For declination. K_Z For vertical component. (See Introduction).

GEOMAGNETIC FORCE: HORIZONTAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, GMT

19 ESKDALEMUIR (H) — 16,000γ (0·16 CGS unit) + — NOVEMBER 1965

	Hour GMT 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 21,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	913	914	911	911	914	915	916	917	913	907	904	905	904	910	912	915	916	917	920	919	911	915	915	913	913	907
2	915	912	916	914	916	918	919	918	909	904	902	902	905	897	898	900	908	911	913	911	913	920	927	916	911	864
3 q	915	915	915	916	918	919	920	918	911	903	896	897	900	904	908	912	915	918	919	918	919	919	919	918	913	912
4	920	927	922	921	928	931	935	938	931	918	916	908	897	900	904	915	918	922	923	925	923	925	925	923	921	1095
5 d	924	922	925	927	925	920	917	918	913	907	910	914	916	915	920	923	918	918	911	913	895	893	909	886	914	939
6 d	894	906	908	939	923	923	922	915	904	894	882	889	893	900	906	904	904	910	894	890	892	898	894	903	904	687
7	910	911	908	914	919	924	924	923	911	898	884	896	899	903	901	901	905	896	896	900	904	913	917	923	907	780
8	917	914	915	916	917	918	918	921	914	904	901	902	906	908	910	909	910	911	912	913	909	913	916	911	912	885
9	916	916	915	915	918	920	921	919	913	898	892	892	899	911	913	915	914	915	917	919	920	919	919	916	913	912
10 q	919	917	917	918	921	923	924	923	917	910	904	906	912	916	919	920	921	922	922	923	921	920	920	922	918	1037
11	919	920	919	920	921	923	925	925	923	914	907	908	913	920	922	921	917	921	923	917	920	917	923	924	919	1062
12	924	920	923	923	925	925	925	925	923	917	910	911	914	918	921	927	928	932	934	933	932	930	926	923	924	1169
13	920	918	916	923	927	923	922	922	917	911	902	896	899	908	915	918	921	925	916	903	906	885	906	915	913	914
14	917	915	917	918	918	917	916	920	916	910	903	900	903	910	914	918	922	920	913	913	918	921	921	918	915	958
15	920	913	913	916	922	921	922	921	916	906	900	900	905	916	918	920	921	921	911	905	911	920	921	920	915	959
16 q	919	918	919	917	920	920	922	922	918	912	904	902	906	912	918	922	924	926	926	924	922	920	918	919	918	1030
17	918	919	920	920	925	929	930	927	918	909	903	898	905	908	916	920	920	924	926	925	926	923	923	922	919	1054
18	915	912	916	930	928	930	934	934	932	926	920	911	909	911	913	916	920	921	923	919	921	921	920	923	921	1105
19 d	923	923	924	926	920	928	937	918	915	911	899	897	893	908	910	907	904	899	896	899	909	911	915	914	912	886
20 d	927	927	923	915	925	924	918	921	920	895	887	893	888	907	908	912	905	898	896	890	891	887	893	898	906	748
21	901	903	905	918	911	911	918	913	917	915	911	909	909	911	909	911	920	921	918	913	911	912	915	915	912	897
22	913	913	915	916	916	920	922	922	916	911	908	908	908	911	913	916	918	917	920	921	918	917	918	920	916	977
23 q	919	919	919	920	922	923	924	923	921	915	910	909	913	917	918	919	921	922	922	919	916	919	923	920	919	1053
24	919	917	918	921	921	922	926	927	927	919	913	910	909	915	923	926	926	927	926	913	920	919	921	919	920	1084
25	919	919	921	924	925	927	928	926	921	916	910	912	917	923	925	923	919	927	927	926	912	916	916	919	921	1098
26	920	920	921	921	925	926	928	926	919	910	909	912	916	921	924	920	920	916	920	921	922	923	923	921	920	1084
27	918	919	921	923	924	924	924	923	919	914	913	914	919	924	925	925	925	916	905	912	917	919	917	917	919	1057
28 q	918	917	918	920	923	924	924	924	920	916	913	912	916	920	923	924	925	925	926	924	923	924	923	922	921	1104
29	923	923	922	923	923	926	928	927	928	921	920	920	921	922	923	924	921	914	916	919	916	911	916	917	921	1104
30 d	918	919	920	921	924	929	930	936	937	941	940	937	914	896	901	908	908	913	881	908	892	892	902	935	917	1002
Mean	917	917	917	920	921	923	924	923	919	911	906	906	907	911	914	916	917	917	915	915	914	914	917	917	916	
Sum 27,000γ+	513	508	522	606	644	683	719	692	559	332	173	170	208	342	430	491	514	525	452	435	410	422	501	512		Grand Total 659,363

GEOMAGNETIC DECLINATION (WEST)
Mean values for periods of sixty minutes ending at exact hours, GMT

20 ESKDALEMUIR (D) — 9° + — NOVEMBER 1965

	Hour GMT 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 1300·0'+
	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'
1	57·9	57·9	58·1	58·6	58·6	58·4	58·4	58·3	57·7	56·8	58·3	60·0	61·6	62·4	62·2	61·0	60·8	60·8	60·5	60·6	59·5	57·8	57·8	57·8	59·2	121·8
2	57·3	57·2	58·7	58·7	58·7	58·8	58·6	58·2	57·6	57·8	59·8	61·9	62·5	63·7	62·4	61·2	58·9	59·7	59·1	58·5	57·9	56·8	56·9	58·0	59·1	118·9
3 q	58·7	59·2	59·2	59·3	59·2	59·0	57·6	57·6	56·7	56·6	58·4	60·3	61·3	61·2	60·7	59·7	59·4	59·3	59·2	59·1	58·5	58·5	58·5	58·3	59·0	115·5
4	58·4	58·8	58·5	58·1	58·7	57·9	57·6	57·4	56·5	56·7	59·3	62·2	61·9	61·9	61·2	60·9	59·6	59·0	58·9	59·0	58·7	58·6	58·7	58·9	59·1	117·4
5 d	58·9	58·5	58·8	59·0	58·9	58·6	58·5	57·6	56·7	56·5	58·7	61·6	62·7	63·3	62·3	63·2	63·1	63·2	64·0	61·1	57·7	52·6	45·2	45·9	58·6	106·6
6 d	48·3	47·8	53·0	53·9	54·0	58·5	58·2	58·7	58·4	58·2	59·5	62·2	63·6	63·2	62·2	60·2	59·5	59·3	56·4	53·4	56·2	52·7	55·4	60·5	57·2	73·3
7	50·4	51·4	56·6	57·7	58·6	58·5	58·5	58·1	57·5	58·0	59·9	63·2	64·7	65·7	63·9	61·9	60·4	59·2	60·2	58·2	57·7	58·5	58·5	60·3	59·1	117·6
8	59·6	59·5	59·4	59·7	59·2	59·2	58·7	58·0	57·3	57·3	59·5	61·7	62·8	63·1	62·5	61·5	59·6	60·5	60·4	59·5	54·9	57·8	57·9	56·0	59·4	125·6
9	58·5	58·6	58·0	59·1	59·1	58·7	58·3	57·7	56·6	57·3	59·0	60·1	62·0	62·8	61·9	60·7	60·5	60·1	59·6	59·2	59·0	58·6	58·3	58·1	59·2	121·8
10 q	58·5	58·8	58·9	59·3	59·3	59·2	59·0	58·3	57·2	57·0	58·4	60·8	62·0	62·2	61·4	60·5	60·4	60·0	59·6	59·2	58·7	58·6	58·4	58·4	59·3	124·1
11	58·2	58·7	58·9	59·2	59·2	59·2	58·9	58·5	57·7	57·6	58·9	61·0	62·2	62·2	61·7	60·9	60·4	60·3	60·3	58·7	57·2	57·4	58·1	58·7	59·3	124·1
12	58·4	58·6	58·8	59·2	59·3	59·3	59·2	58·7	57·9	57·8	58·5	60·3	62·1	63·1	62·3	61·5	61·1	60·7	60·4	60·0	59·3	58·8	58·5	58·5	59·7	132·3
13	58·7	59·1	59·4	60·4	58·6	57·6	58·4	58·2	57·5	57·6	58·9	60·4	62·4	63·1	62·0	61·0	60·4	60·3	60·3	59·6	56·5	46·4	55·9	57·9	58·8	110·6
14	59·2	59·3	59·4	59·2	59·1	58·7	59·0	58·6	57·7	57·4	58·8	60·4	62·1	62·7	62·3	61·3	60·5	61·2	59·2	60·0	58·5	58·4	57·9	57·3	59·5	128·2
15	55·6	58·2	58·2	58·8	58·4	58·3	58·5	58·0	57·4	57·3	58·8	60·6	62·3	62·3	61·4	60·5	60·2	60·1	60·0	59·8	59·7	58·9	58·8	58·7	59·2	120·8
16 q	58·5	58·4	58·4	58·8	59·2	58·8	58·5	58·2	57·9	57·4	58·5	60·2	61·6	61·9	61·3	60·5	60·0	59·6	59·4	59·3	59·1	58·4	58·0	58·2	59·2	120·1
17	58·5	59·0	59·4	59·7	60·4	59·4	58·4	57·8	57·3	57·0	59·0	60·9	62·7	62·2	61·3	60·5	59·7	59·3	59·2	58·9	58·5	58·4	58·4	57·3	59·3	123·2
18	56·4	57·3	58·4	59·7	58·1	58·6	58·4	58·1	58·1	58·4	60·0	61·1	62·2	64·1	63·2	62·4	60·9	60·9	59·9	59·1	58·8	58·4	58·0	58·6	59·5	129·1
19 d	58·7	58·8	59·2	58·7	58·0	59·6	59·2	58·8	61·5	61·6	60·5	61·6	62·8	63·0	62·8	60·5	61·0	57·2	57·2	55·3	55·9	57·1	58·5	58·6	59·4	126·1
20 d	58·4	59·2	55·1	57·6	58·2	59·1	59·6	61·0	60·9	61·6	62·5	63·2	64·6	62·5	61·4	59·4	57·1	54·8	54·0	56·3	53·0	53·1	53·0	53·0	58·3	98·6
21	55·0	55·3	57·4	58·6	60·3	61·8	60·9	59·0	58·0	58·7	58·7	60·3	61·9	61·9	61·2	59·2	59·6	59·3	58·7	56·6	54·0	56·7	56·8	58·1	58·7	108·0
22	58·1	58·8	60·1	59·2	58·2	58·0	58·2	57·9	57·5	57·8	59·1	60·6	62·4	61·9	61·0	60·3	59·8	59·1	58·2	58·7	58·6	57·5	56·4	56·7	58·9	114·1
23 q	58·3	59·1	59·1	59·3	59·2	59·2	58·8	58·4	58·0	58·0	58·7	59·8	60·6	61·8	61·1	60·3	59·6	59·5	59·2	58·4	57·7	57·4	57·1	57·0	59·0	115·6
24	57·2	57·3	58·3	58·3	58·2	58·3	57·8	57·5	57·8	57·9	58·4	60·1	62·1	62·0	61·5	60·7	60·2	60·1	60·2	59·1	58·3	57·6	57·5	57·9	58·9	114·3
25	57·7	58·5	59·1	59·2	59·3	59·2	58·7	58·2	57·7	57·2	57·8	59·8	61·6	62·4	61·8	61·5	61·2	60·5	59·6	59·2	56·0	52·8	56·3	57·3	58·9	112·6
26	57·8	58·7	58·9	59·1	59·2	58·6	58·5	58·5	58·1	57·6	58·6	61·1	62·8	62·4	62·2	61·1	61·3	61·9	60·6	59·9	59·2	58·6	58·7	58·3	59·7	131·7
27	57·7	56·7	56·8	57·9	58·1	57·9	58·3	58·2	57·8	57·9	59·2	60·3	61·1	60·8	60·2	59·2	59·7	57·8	57·5	59·4	58·5	57·6	57·6	57·6	58·5	103·8
28 q	58·1	58·8	58·6	58·6	58·6	58·5	58·4	58·2	58·0	58·1	59·2	60·8	61·5	61·0	60·5	59·8	59·6	59·2	59·1	59·0	58·2	58·2	58·1	58·0	59·0	116·1
29	58·4	58·9	59·1	58·8	59·1	58·8	58·7	58·4	58·4	58·6	59·7	60·8	61·5	61·2	60·5	60·5	61·2	60·5	59·7	58·7	58·1	56·4	56·7	58·0	59·2	120·7
30 d	57·9	58·6	58·5	59·1	59·2	59·3	59·2	59·0	59·0	59·1	59·5	60·7	61·9	63·3	65·2	68·9	65·9	61·5	57·9	56·0	52·9	53·9	54·1	54·9	59·4	125·5
Mean	57·4	57·8	58·3	58·8	58·7	58·8	58·6	58·3	57·9	57·9	59·1	60·9	62·3	62·5	61·9	61·0	60·4	59·8	59·3	58·7	57·6	56·7	57·0	57·4	59·1	
Sum 1700·0'+	23·3	35·0	50·3	62·8	62·2	65·0	59·0	49·1	36·4	36·8	74·1	128·0	167·5	175·3	155·6	130·8	111·6	94·9	78·5	59·8	26·8	2·5	10·0	22·8		Grand Total 42518·1

GEOMAGNETIC FORCE: VERTICAL COMPONENT

Mean values for periods of sixty minutes ending at exact hours, GMT

21 ESKDALEMUIR (Z) — 45,000γ (0·45 CGS unit) + — NOVEMBER 1965

Day	Hour GMT 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 10,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	453	451	451	450	450	450	450	449	450	447	443	440	440	442	446	451	451	450	448	450	453	453	452	452	449	772
2	452	451	449	447	448	449	449	450	451	450	449	446	448	450	456	458	460	456	455	455	454	451	445	444	451	823
3 q	446	446	447	447	446	447	449	450	451	451	450	449	449	448	450	450	450	450	450	450	450	450	450	449	449	775
4	446	444	443	444	443	442	444	441	443	440	436	435	443	446	447	447	447	446	446	446	447	447	446	446	444	655
5 d	447	447	446	444	444	445	446	447	449	449	444	441	440	444	450	451	451	453	461	464	472	476	461	455	451	827
6 d	439	435	424	399	399	409	424	433	439	442	442	441	442	446	450	451	450	450	453	462	457	453	450	435	439	525
7	422	424	428	434	438	439	440	442	446	451	452	451	450	451	456	457	457	458	460	461	460	456	452	449	447	734
8	446	447	447	448	447	446	447	447	449	448	446	445	446	450	451	452	454	453	452	451	456	451	450	449	449	778
9	441	441	444	447	447	446	446	447	450	449	447	446	446	449	453	453	452	451	450	449	448	449	449	450	448	750
10 q	450	448	448	447	447	446	446	447	449	449	446	445	444	447	451	451	450	448	447	447	447	448	448	447	448	743
11	448	447	447	446	446	445	444	444	444	444	443	439	439	443	446	447	447	448	447	448	449	447	446	445	445	689
12	446	446	446	446	445	445	445	443	444	443	440	439	439	441	444	444	444	444	443	443	443	444	444	445	444	646
13	446	446	447	443	441	443	444	444	446	446	446	446	445	446	447	450	450	450	451	456	458	460	451	449	448	751
14	449	450	450	450	450	450	449	447	447	449	448	449	446	447	450	450	450	450	453	454	453	451	450	450	450	792
15	449	447	448	449	446	447	447	447	450	449	448	446	446	447	448	449	447	448	451	453	453	450	447	446	448	758
16 q	449	448	447	448	447	447	446	449	449	449	447	446	446	447	450	450	450	450	450	450	450	450	450	448	448	763
17	447	446	446	445	444	444	445	447	450	450	450	450	446	450	450	450	450	449	449	449	449	449	449	450	448	754
18	449	447	446	438	439	441	442	443	443	444	443	444	446	447	449	449	449	450	450	450	451	451	451	450	446	712
19 d	449	447	446	444	446	443	440	444	446	446	447	450	451	453	454	456	457	461	465	464	462	457	453	451	451	832
20 d	444	436	429	432	432	433	437	440	445	451	452	456	460	463	463	461	461	465	464	468	470	470	465	458	452	855
21	451	445	438	437	439	441	441	447	449	449	449	449	450	454	456	457	454	451	451	454	456	454	450	449	449	771
22	450	449	446	445	448	448	449	449	451	452	450	450	452	456	456	456	455	453	452	450	450	452	451	450	451	820
23 q	449	449	450	450	450	449	449	449	449	449	449	448	449	449	450	450	450	455	450	450	451	451	450	449	450	794
24	450	449	448	449	447	447	445	445	444	443	443	442	444	445	448	449	449	449	449	453	452	453	450	450	448	743
25	450	449	449	449	449	448	447	446	447	449	447	445	443	443	446	449	450	449	449	450	454	455	452	449	449	764
26	449	449	449	448	446	446	445	444	446	448	448	445	445	447	450	450	450	451	452	452	452	452	450	450	448	763
27	450	450	449	449	449	449	448	448	449	449	446	445	446	449	450	450	450	452	456	454	455	455	454	453	450	805
28 q	449	449	449	449	449	448	448	446	446	445	444	444	445	446	450	450	450	450	449	449	449	448	448	448	448	748
29	448	448	446	446	446	446	446	445	445	443	439	439	443	444	446	448	449	452	454	452	453	454	450	449	447	731
30 d	449	448	447	446	445	445	445	442	443	438	435	437	443	448	450	455	461	463	477	474	469	466	456	439	451	821
Mean	447	446	445	444	444	444	445	445	447	447	446	445	446	448	450	451	451	452	453	454	454	453	451	449	448	
Sum 13,000γ+	413	379	350	316	313	323	343	362	410	412	369	348	372	438	513	541	545	555	584	608	623	603	520	454		Grand Total 322,694

GEOMAGNETIC CHARACTER FIGURES (K, K_H, K_D, K_Z, AND C) AND TEMPERATURE IN MAGNETOGRAPH CHAMBER

22 ESKDALEMUIR — NOVEMBER 1965

Day	3-h range indices K	Sum of K indices	3-h range indices K_H	Sum of K_H indices	3-h range indices K_D	Sum of K_D indices	3-h range indices K_Z	Sum of K_Z indices	Geomagnetic character of day, C (0-2)	Temperature in magneto-graph chamber 200°A+
1	1011 1122	9	1011 1112	8	0010 1121	6	0000 0000	0	0	86·4
2	2011 2212	11	2011 2212	11	2001 1202	8	0000 1001	2	0	86·4
3 q	1000 0000	1	1000 0000	1	0000 0000	0	0000 0000	0	0	86·4
4	2213 2210	13	2113 2210	12	2213 1000	9	0001 0000	1	1	86·4
5 d	1102 3334	17	1102 3334	17	0001 2234	12	0000 1122	6	1	86·4
6 d	4322 2234	22	3312 2232	18	4311 1034	17	3220 0023	12	1	86·4
7	3112 0222	13	2112 0222	12	3011 0022	9	1010 0001	3	1	86·4
8	2011 0232	11	2011 0222	10	1001 0132	8	0000 0000	0	1	86·4
9	3101 1000	6	3101 1000	6	2100 0000	3	2000 0000	2	0	86·4
10 q	0000 1000	1	0000 1000	1	0000 0000	0	0000 0000	0	0	86·4
11	1000 0232	8	0000 0231	6	1000 0022	5	0000 0010	1	0	86·4
12	0001 2112	7	0001 2112	7	0000 1101	3	0000 0000	0	0	86·3
13	2211 1144	16	1101 1123	10	2210 0044	13	0000 0011	2	1	86·3
14	0010 0220	5	0000 0210	3	0010 0120	4	0000 0000	0	0	86·3
15	2100 0020	5	2100 0020	5	2100 0010	4	0000 0000	0	0	86·3
16 q	0100 0000	1	0000 0000	0	0100 0000	1	0000 0000	0	0	86·3
17	1111 1101	7	0111 1101	6	1101 0001	4	0000 0000	0	0	86·2
18	1201 1121	9	1201 1121	9	1200 1010	5	0100 0000	1	0	86·2
19 d	1232 2331	17	1232 2331	17	0222 1321	13	0000 0100	1	1	86·2
20 d	3233 2332	21	3233 2232	20	3221 1331	16	2011 0111	7	1	86·2
21	2222 2222	16	1211 2222	13	2222 1122	14	2010 1000	4	1	86·2
22	2111 1112	10	1010 1111	6	2101 1102	8	0000 0000	0	0	86·2
23 q	0000 0012	3	0000 0012	3	0000 0010	1	0000 0000	0	0	86·3
24	1010 1021	6	1010 1021	6	1010 1011	5	0000 0010	1	0	86·3
25	1010 1233	11	0000 1221	6	1010 0133	9	0000 0010	1	1	86·3
26	1111 1211	9	1111 1211	9	0100 1100	3	0000 0000	0	0	86·3
27	2000 0321	8	1000 0321	7	2000 0221	7	0000 0100	1	1	86·3
28 q	1000 1010	3	0000 1000	1	1000 0010	2	0000 0000	0	0	86·3
29	0100 0221	6	0100 0211	5	0100 0121	5	0000 0000	0	0	86·3
30 d	0002 3334	15	0002 3334	15	0001 2333	12	0000 2122	7	1	86·3
								Mean	0·40	86·3

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

K_H For horizontal component. K_D For declination. K_Z For vertical component. (See Introduction).

GEOMAGNETIC FORCE: HORIZONTAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, GMT

19 ESKDALEMUIR (H) — 16,000γ (0·16 CGS unit) + — DECEMBER 1965

	Hour GMT 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 21,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1 d	922	912	913	917	920	920	920	921	914	917	916	920	921	900	871	889	899	912	902	877	908	900	884	904	*907*	779
2	906	913	912	911	905	918	919	919	912	902	903	902	910	912	916	909	908	909	917	916	913	914	912	915	911	873
3	920	916	917	918	918	918	918	917	916	912	911	914	918	920	921	920	919	919	921	919	916	919	918	919	918	1024
4	929	924	922	917	919	922	925	925	922	917	924	921	918	928	929	925	905	905	908	912	920	911	912	917	919	1057
5	913	914	917	915	916	923	920	922	919	917	914	914	914	918	923	925	925	926	924	924	922	922	922	922	920	1071
6	918	922	921	922	925	925	927	925	922	918	912	909	913	918	922	925	926	926	925	922	920	922	922	922	921	1109
7	923	925	921	920	924	926	929	939	932	924	915	915	918	922	925	923	924	924	924	923	922	919	918	918	923	1153
8	918	918	918	920	922	926	928	930	929	929	924	922	925	930	932	933	930	939	937	930	931	930	929	924	927	1254
9	927	927	922	923	925	929	929	930	929	925	913	916	917	903	922	925	927	924	920	920	920	920	919	921	922	1133
10	918	920	922	922	922	925	927	927	927	925	925	922	921	925	926	924	928	918	910	913	904	928	912	909	921	1100
11	916	917	916	918	919	927	931	923	919	918	914	914	914	918	918	912	922	904	923	915	914	918	914	914	917	1018
12	905	910	914	916	918	921	923	924	926	924	925	926	924	922	907	898	913	918	913	914	918	918	916	917	917	1010
13	915	918	916	918	919	924	926	928	929	919	918	915	918	919	912	911	919	921	921	923	923	923	923	922	920	1080
14 q	922	920	919	920	922	925	924	923	922	919	919	921	924	923	926	923	921	923	923	922	921	920	916	913	921	1111
15 q	918	920	922	923	925	925	926	926	926	925	925	925	925	927	929	928	929	929	929	928	927	926	926	925	926	1214
16 q	924	923	923	926	929	931	930	930	927	923	924	925	929	935	933	930	930	931	931	931	930	930	928	927	928	1280
17 q	926	929	931	932	933	934	935	935	933	930	926	921	923	927	928	925	924	929	929	929	930	928	928	926	*929*	1291
18 d	926	926	926	930	931	931	940	938	942	933	928	918	918	924	925	927	910	892	887	878	892	908	913	906	919	1049
19	921	897	905	911	913	916	917	910	911	908	907	907	910	912	914	916	918	920	912	906	894	906	912	917	911	860
20	925	913	911	914	918	922	923	921	918	915	916	916	918	921	923	923	925	925	915	913	904	914	913	918	918	1024
21 q	921	920	921	923	926	927	927	926	920	917	917	916	915	917	918	918	914	926	930	930	929	930	930	930	923	1148
22	931	930	930	933	935	930	930	937	938	936	926	917	914	910	918	922	923	918	922	923	924	921	921	927	926	1216
23	911	913	916	920	924	925	925	925	922	915	911	910	913	921	924	924	924	925	925	925	925	924	922	920	920	1089
24	920	919	921	921	926	931	933	934	935	934	930	927	925	929	929	931	926	925	918	935	929	914	880	906	924	1178
25 d	902	910	909	925	922	924	924	929	920	914	913	910	911	911	913	913	906	924	928	926	925	923	914	919	917	1015
26 d	920	917	920	924	927	931	927	932	912	922	908	881	896	886	887	903	909	898	924	917	919	911	927	922	913	920
27	912	917	919	922	924	921	927	930	925	922	908	900	908	918	918	917	916	919	913	896	910	914	913	911	916	980
28 d	918	912	911	920	921	922	934	922	912	903	896	893	904	902	901	903	889	908	912	899	914	913	922	918	910	849
29	916	915	916	919	918	922	923	919	915	912	913	920	922	915	915	909	901	913	909	914	917	917	930	920	916	990
30	914	918	920	921	922	930	930	928	922	919	915	905	907	915	917	916	913	923	920	921	922	924	923	921	919	1066
31	921	922	923	925	927	928	927	923	920	920	918	919	924	926	925	924	923	922	919	920	920	919	918	920	922	1133
Mean	919	918	919	921	922	925	*927*	926	923	920	917	*914*	917	918	918	918	918	919	919	917	918	919	917	918	919	
Sum 28,000γ+	478	457	474	546	595	679	724	718	616	514	414	341	417	454	467	471	446	495	491	421	463	486	437	470		Grand Total 684,074

919 at 0-1h. January 1, 1966.

GEOMAGNETIC DECLINATION (WEST)
Mean values for periods of sixty minutes ending at exact hours, GMT

20 ESKDALEMUIR (D) — 9° + — DECEMBER 1965

	Hour GMT 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 1300·0'+
	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'
1 d	56·4	57·3	58·3	58·6	59·1	59·2	58·7	59·2	59·4	60·1	61·8	63·0	63·2	63·7	61·6	65·2	62·8	60·9	59·5	54·1	47·7	49·5	46·3	54·8	58·3	100·4
2	55·4	56·5	57·6	57·3	58·2	59·3	59·2	59·2	58·8	59·3	60·4	59·8	60·9	60·2	59·5	58·9	58·2	58·1	55·6	56·8	57·0	56·7	57·1	57·8	58·2	97·8
3	58·7	58·5	58·5	58·4	58·6	58·4	58·3	58·2	58·2	58·2	59·2	60·2	61·0	60·6	59·6	59·0	58·9	58·6	58·8	58·3	58·1	56·1	57·0	57·4	58·6	106·8
4	59·2	57·7	56·8	58·2	58·8	58·6	57·8	57·7	57·5	57·8	60·2	61·8	62·2	63·0	62·6	63·2	60·0	62·5	60·3	59·1	51·7	52·7	56·3	57·3	58·9	113·0
5	56·7	57·0	57·8	57·5	58·5	58·8	58·1	58·0	57·8	58·0	58·3	59·3	60·3	60·5	60·1	59·6	59·1	58·7	58·4	58·3	58·1	57·8	57·8	58·1	58·4	102·6
6	57·7	58·5	58·3	59·0	59·1	58·8	58·4	57·9	57·5	57·6	59·1	60·2	61·3	61·2	60·4	59·6	59·3	59·1	58·5	58·2	56·8	56·6	56·7	57·6	58·6	107·4
7	58·1	58·6	58·0	58·3	58·3	57·9	57·8	58·0	58·8	58·8	59·0	60·3	60·8	61·1	60·4	59·9	59·3	58·8	58·4	58·3	58·0	57·7	57·5	57·8	58·7	109·9
8	57·7	58·0	58·3	58·6	58·6	58·2	58·3	57·7	57·3	58·0	58·7	59·9	61·5	61·8	61·3	60·7	59·6	59·9	59·4	58·5	58·1	58·0	57·7	57·8	58·9	113·6
9	57·5	56·6	56·7	57·8	58·5	58·6	58·5	58·0	58·0	58·3	58·2	59·5	60·8	59·9	59·9	59·0	59·1	59·2	59·4	58·6	57·6	57·6	56·8	54·2	58·2	97·9
10	55·8	57·4	58·1	58·4	58·7	58·4	58·3	58·2	57·8	57·2	58·3	59·3	60·0	60·9	61·0	61·8	62·6	65·2	63·7	61·3	57·8	57·2	53·3	53·9	58·9	114·6
11	56·4	56·7	58·5	59·3	62·1	60·1	59·4	58·4	57·0	56·8	57·5	58·9	60·0	60·2	60·9	59·8	60·6	60·8	59·4	59·3	58·0	57·6	56·4	48·6	58·4	102·7
12	52·7	53·8	57·0	59·5	59·4	58·9	58·5	58·3	58·2	57·9	58·4	59·0	60·0	61·0	61·2	60·2	61·2	60·0	55·3	57·5	58·2	56·6	55·8	56·3	58·1	94·9
13	56·4	56·7	58·7	59·7	58·4	59·1	58·2	59·0	58·5	58·0	58·6	59·6	60·4	61·8	60·8	60·9	60·2	59·4	58·7	58·5	58·1	57·6	57·5	57·5	58·8	112·3
14 q	57·7	57·7	58·0	58·3	58·5	58·1	58·1	57·9	57·9	58·5	59·5	60·3	61·2	60·5	59·9	60·1	59·8	59·8	59·2	59·1	58·4	57·6	56·9	55·4	58·7	108·4
15 q	57·1	57·7	58·0	58·2	58·3	58·3	58·3	58·3	58·4	58·5	58·9	59·4	60·0	60·4	60·2	59·4	59·1	59·1	58·9	58·6	58·3	58·3	58·2	58·1	58·7	108·0
16 q	58·3	58·0	58·6	59·1	59·1	59·1	58·9	58·4	58·0	58·1	59·0	59·6	60·3	60·9	59·9	59·3	59·2	59·2	59·1	59·0	58·4	58·3	58·3	58·4	58·9	114·5
17 q	58·6	58·9	59·0	58·8	59·0	58·6	58·5	58·3	58·4	58·3	58·5	59·6	61·1	61·2	59·6	58·9	59·0	59·1	58·8	58·4	58·2	58·1	58·1	58·3	58·9	113·3
18 d	58·3	58·6	58·8	59·0	58·9	58·7	58·3	59·0	60·4	60·4	60·7	61·7	63·9	63·1	61·8	63·1	64·2	61·3	62·8	56·6	53·9	56·6	57·9	55·2	*59·7*	133·2
19	55·6	52·0	57·1	57·7	57·9	57·8	57·7	57·7	57·9	58·5	59·6	60·0	60·2	59·7	59·1	58·5	59·2	58·2	57·4	57·1	55·8	57·2	57·7	56·9	57·8	86·5
20	56·9	57·3	57·6	58·3	58·2	58·2	57·8	57·7	57·6	58·2	58·9	59·4	60·2	59·9	59·1	59·1	58·9	58·6	55·9	54·2	54·7	55·5	56·3	58·3	57·8	86·8
21 q	59·1	59·0	59·3	59·3	59·0	58·2	58·0	57·9	57·7	57·8	58·6	59·3	60·0	60·4	60·0	59·3	58·6	59·1	58·3	58·3	58·2	58·1	58·2	58·3	58·7	110·0
22	58·4	58·6	59·1	59·3	59·2	59·1	58·6	58·4	58·2	58·3	58·2	59·7	60·9	62·7	62·8	61·5	60·7	59·7	58·3	57·5	57·4	56·2	55·9	55·6	58·9	114·3
23	54·6	58·1	59·1	59·2	59·1	59·1	58·4	58·2	58·1	58·1	58·7	60·0	60·7	60·7	59·5	59·2	59·1	58·4	58·2	57·9	57·7	57·6	57·6	57·5	58·5	104·8
24	57·1	58·1	58·0	57·6	58·3	58·8	58·4	58·2	58·0	58·1	58·4	58·6	60·5	61·3	59·7	59·8	59·7	59·2	57·7	56·9	58·1	57·7	50·6	43·8	*57·6*	82·6
25 d	55·0	57·8	59·7	60·7	55·2	57·5	57·8	58·3	57·7	57·6	58·4	59·1	61·2	60·9	60·2	59·6	58·3	57·7	58·4	58·1	57·6	56·1	55·0	56·7	58·1	94·6
26 d	57·9	57·6	58·6	59·0	59·4	58·9	58·8	58·8	60·8	63·0	62·3	59·3	59·6	63·1	60·1	57·6	58·9	53·2	55·7	56·5	56·8	54·8	52·1	55·9	58·3	98·7
27	56·9	57·9	58·5	58·5	57·8	59·3	60·1	60·2	59·7	60·1	60·3	60·9	61·6	62·0	60·0	59·5	58·4	58·5	58·4	56·1	55·1	56·2	57·3	58·3	58·8	111·6
28 d	56·3	57·8	58·6	58·6	57·9	59·1	60·4	59·6	60·0	59·9	59·9	61·0	61·8	62·3	58·0	61·2	54·5	57·5	58·7	53·9	51·9	56·7	57·7	57·5	58·4	100·8
29	57·3	57·3	57·6	58·9	57·8	58·1	58·3	58·6	58·6	59·4	59·4	59·6	60·4	59·4	58·9	59·9	57·9	53·9	57·1	58·5	58·1	57·1	52·0	56·3	57·9	90·4
30	57·1	58·3	56·6	58·0	59·5	58·2	58·4	58·6	58·6	59·2	59·8	60·6	61·2	60·8	60·4	58·7	57·2	58·4	58·1	58·0	56·4	57·7	57·9	58·0	58·6	105·7
31	57·8	58·1	58·3	58·5	59·0	58·7	57·7	57·7	57·8	59·4	60·2	60·8	61·2	60·0	59·1	58·5	58·6	58·4	57·2	57·9	58·1	57·7	57·7	57·7	58·6	106·1
Mean	57·1	57·5	58·2	58·6	58·7	58·7	58·5	58·4	58·3	58·6	59·3	60·0	60·9	*61·1*	60·3	60·0	59·4	59·1	58·5	57·7	56·7	56·7	*56·2*	56·3	58·5	
Sum 1700·0'+	68·7	82·1	103·1	117·6	118·4	118·1	112·0	109·6	108·6	117·4	137·0	159·7	188·4	195·2	167·6	161·0	142·2	130·5	113·6	89·4	58·3	58·8	41·6	45·3		Grand Total 43544·2

58·1 at 0-1h. January 1, 1966.

GEOMAGNETIC FORCE: VERTICAL COMPONENT
Mean values for periods of sixty minutes ending at exact hours, GMT

21 ESKDALEMUIR (Z) — 45,000γ (0·45 CGS unit) + — DECEMBER 1965

Day	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1 d	434	440	445	446	447	447	448	448	449	446	443	440
2	445	441	437	441	446	449	450	450	453	454	450	452
3	446	448	449	449	450	450	450	450	450	450	449	448
4	444	439	439	443	444	445	447	448	448	448	443	441
5	453	451	450	450	449	449	449	449	449	449	449	448
6	450	448	448	448	447	446	447	449	449	450	450	451
7	449	445	446	446	446	446	445	443	445	446	447	447
8	452	451	450	449	449	446	446	445	445	442	442	443
9	446	443	443	445	445	443	445	445	446	445	446	446
10	450	449	448	448	446	446	445	445	444	442	439	442
11	450	450	449	449	445	440	441	445	445	445	444	443
12	457	452	450	450	450	451	450	449	448	443	439	438
13	452	450	448	445	446	446	445	445	444	444	445	445
14 q	450	450	450	449	449	450	449	449	449	449	447	446
15 q	453	450	450	449	449	449	449	449	448	448	449	449
16 q	448	447	446	446	448	448	448	449	449	449	446	446
17 q	445	445	444	444	444	444	445	445	446	446	445	445
18 d	446	445	445	445	445	445	443	443	442	442	448	446
19	428	435	438	449	451	451	452	454	453	452	453	455
20	448	445	449	450	450	450	450	450	450	450	451	451
21 q	451	451	450	450	449	449	449	449	450	450	450	450
22	450	449	448	447	445	445	445	444	443	442	445	448
23	450	450	450	450	450	450	449	449	447	445	447	449
24	452	451	449	450	449	448	446	445	444	443	444	444
25 d	444	444	445	437	440	442	444	445	446	449	448	445
26 d	449	450	450	449	449	448	449	447	449	445	448	461
27	446	449	450	450	450	450	449	449	450	450	451	453
28 d	445	448	450	449	450	449	446	448	449	451	456	457
29	452	454	454	452	452	452	452	452	450	452	452	452
30	452	453	454	452	451	449	450	450	450	449	450	450
31	451	451	451	450	450	449	449	449	449	452	453	449
Mean	448	447	448	448	448	447	447	448	448	447	447	448
Sum 13,000γ+	888	874	875	877	881	872	872	877	879	868	869	880

Day	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 10,000γ+
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1 d	442	453	469	471	468	463	464	473	466	452	449	445	452	848
2	450	452	455	457	459	457	458	456	455	455	453	450	451	825
3	446	448	450	450	450	451	450	450	453	452	450	449	449	788
4	443	441	444	450	463	463	466	464	463	457	455	451	450	789
5	449	449	451	451	451	450	450	450	450	450	450	450	450	796
6	451	452	453	452	451	450	450	451	451	450	450	450	450	794
7	449	450	451	451	451	450	450	450	450	451	452	452	448	758
8	443	444	448	449	448	446	445	446	446	446	446	448	446	715
9	448	454	450	451	450	450	451	452	453	452	452	453	448	754
10	445	445	448	450	450	450	461	464	469	466	448	452	450	792
11	444	445	450	455	455	458	456	456	457	458	460	460	450	800
12	441	446	452	457	457	456	459	458	453	453	453	452	451	814
13	445	446	450	455	455	455	456	455	452	452	450	450	449	776
14 q	448	448	448	449	448	449	451	452	448	448	449	456	449	781
15 q	447	447	449	449	449	449	449	449	449	449	449	449	449	776
16 q	446	445	446	447	448	447	448	447	447	447	446	446	447	730
17 q	443	445	448	449	450	449	449	449	449	449	448	446	446	712
18 d	446	445	449	452	457	485	489	498	487	471	463	457	456	934
19	456	457	457	457	456	455	457	458	464	462	457	455	453	862
20	451	452	452	453	452	452	455	457	459	457	456	453	452	843
21 q	450	450	452	455	456	452	450	450	450	450	449	450	451	812
22	447	450	451	455	455	458	457	456	455	455	453	452	450	795
23	450	451	452	453	453	452	451	450	450	450	450	451	450	799
24	442	443	447	449	450	450	453	450	450	452	456	449	448	756
25 d	445	450	452	455	458	457	453	452	451	450	452	450	448	754
26 d	460	463	472	473	467	469	462	456	456	457	449	445	455	923
27	450	451	455	456	459	459	460	464	463	458	455	449	453	876
28 d	456	460	469	470	477	476	466	469	463	457	446	449	457	956
29	451	454	455	459	463	465	462	461	458	457	455	451	455	917
30	451	452	455	452	459	457	457	455	455	452	452	452	452	859
31	450	452	453	454	455	455	456	455	454	453	452	450	452	842
Mean	448	450	453	454	455	456	456	457	456	454	452	451	451	
Sum 13,000γ+	885	940	1033	1086	1120	1135	1141	1153	1126	1068	1005	972		Grand Total 335,176

451 at 0-1h. January 1, 1966.

GEOMAGNETIC CHARACTER FIGURES (K, K_H, K_D, K_Z, AND C) AND TEMPERATURE IN MAGNETOGRAPH CHAMBER

22 ESKDALEMUIR — DECEMBER 1965

Day	3-h range indices K	Sum of K indices	3-h range indices K_H	Sum of K_H indices	3-h range indices K_D	Sum of K_D indices	3-h range indices K_Z	Sum of K_Z indices	Geomagnetic character of day, C (0-2)	Temperature in magneto-graph chamber 200°A+
1 d	2022 3344	20	2022 3343	19	2002 3244	17	1000 2021	6	1	86·2
2	2212 1232	15	2211 1232	14	2212 1231	14	1100 0100	3	1	86·1
3	1000 0002	3	1000 0001	2	0000 0002	2	0000 0000	0	0	86·2
4	2122 3343	20	2112 3332	17	2120 2343	17	1000 0210	4	1	86·2
5	1100 1002	5	1100 1002	5	1100 0001	3	0000 0000	0	0	86·2
6	1000 0021	4	0000 0001	1	1000 0021	4	0000 0000	0	0	86·1
7	2021 1000	6	2021 1000	6	1011 0000	3	0000 0000	0	0	86·1
8	0000 1222	7	0000 1222	7	0000 0110	2	0000 0000	0	0	86·0
9	2102 3012	11	2002 3011	9	2101 1012	8	1000 1000	2	1	86·1
10	2001 2235	15	1001 2235	14	2001 1234	13	0000 0023	5	1	86·1
11	2321 1323	17	1221 1322	14	2311 1223	15	0100 1100	3	1	86·0
12	3211 3332	18	2111 3322	15	3211 1231	14	1000 1010	3	1	86·0
13	2211 2210	11	2210 2210	10	2111 1010	7	1000 1000	2	0	86·0
14 q	0100 0102	4	0000 0101	2	0100 0002	3	0000 0000	0	0	85·9
15 q	1001 0000	2	1001 0000	2	0000 0000	0	0000 0000	0	0	85·8
16 q	1000 1000	2	1000 1000	2	1000 0000	1	0000 0000	0	0	85·8
17 q	0000 0100	1	0000 0100	1	0000 0000	0	0000 0000	0	0	85·8
18 d	0022 2442	16	0022 2432	15	0011 2342	13	0000 0322	7	1	85·8
19	4110 0123	12	4110 0123	12	4100 0021	8	3000 0011	5	1	85·9
20	2010 0132	9	2010 0122	8	2000 0032	7	1000 0010	2	1	85·9
21 q	0100 0200	3	0000 0200	2	0100 0000	1	0000 0000	0	0	85·8
22	0112 2213	12	0112 2213	12	0001 0111	4	0001 1000	2	1	85·8
23	3000 0000	3	2000 0000	2	3000 0000	3	0000 0000	0	0	85·8
24	1100 1134	11	1000 1134	10	1100 1124	10	0000 1002	3	1	85·7
25 d	4421 2312	19	2321 2312	16	4411 1202	15	0100 0100	2	1	85·7
26 d	1134 3324	21	1134 3324	21	1123 3323	18	0002 2111	7	2	85·7
27	2212 2133	16	1112 2132	13	2201 1123	12	0000 0011	2	1	85·7
28 d	3232 3433	23	2232 2333	20	3222 3433	22	1001 1212	8	2	85·7
29	1112 2423	16	0102 1322	11	1111 2423	15	0000 0101	2	1	85·7
30	1201 2210	9	1201 2200	8	1200 1210	7	0000 0000	0	0	85·7
31	0011 1110	5	0011 1110	5	0010 0010	2	0000 0000	0	0	85·9
								Mean	0·61	85·9

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

K_H For horizontal component. K_D For declination. K_Z For vertical component. (See Introduction).

MEAN MONTHLY AND ANNUAL VALUES OF GEOMAGNETIC 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*

23 ESKDALEMUIR 1965

	Horizontal (*H*) component			Declination (*D*) (west)			Vertical (*Z*) component			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 +			9° +			45,000γ +						
	γ	γ	γ	′	′	′	γ	γ	γ	γ	γ	° ′	γ
Jan.	896	897	892	63·2	63·2	63·4	433	433	433	16636	2949	69 36·0	48473
Feb.	895	898	887	62·8	63·1	62·3	435	436	437	16636	2947	69 36·2	48475
Mar.	899	902	894	62·5	62·6	62·3	435	434	433	16640	2947	69 35·8	48476
Apr.	900	901	886	61·6	61·8	61·9	436	436	438	16642	2942	69 35·8	48477
May	909	906	902	61·2	61·5	60·8	434	433	433	16651	2942	69 35·2	48479
June	911	912	905	60·8	60·8	61·1	438	440	439	16653	2941	69 35·2	48483
July	913	910	914	60·6	60·6	60·7	440	440	439	16655	2940	69 35·1	48485
Aug.	912	912	909	60·3	60·7	59·9	440	439	439	16655	2938	69 35·1	48485
Sept.	908	911	896	59·7	59·9	58·7	442	442	441	16652	2935	69 35·4	48485
Oct.	912	912	910	59·7	59·7	58·9	445	445	443	16656	2935	69 35·2	48490
Nov.	916	918	911	59·1	59·1	58·6	448	449	449	16660	2933	69 35·1	48494
Dec.	919	925	913	58·5	58·8	58·6	451	448	453	16664	2931	69 34·9	48498
Year	907	909	902	60·8	61·0	60·6	440	440	440	16650	2940	69 35·4	48483

ALL DAYS

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

24 ESKDALEMUIR 1965

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

"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)

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DECLINATION (measured positive towards the west)

Hour GMT	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.	−2·02	−1·30	−0·86	−0·05	+0·10	+0·12	+0·10	−0·27	−0·78	−0·61	+0·02	+1·21	+2·37	+2·90	+2·54	+1·68	+1·36	+0·90	+0·22	−0·40	−1·34	−1·52	−1·97	−2·40
Feb.	−1·73	−0·93	−0·62	−0·78	−0·73	−0·62	−0·40	−0·45	−1·01	−1·13	+0·01	+1·69	+3·18	+4·02	+3·82	+2·43	+1·10	+0·92	+0·10	−0·20	−1·61	−2·26	−2·57	−2·23
Mar.	−1·19	−1·14	−1·18	−1·42	−1·40	−1·20	−0·72	−1·51	−2·04	−1·98	−0·50	+2·11	+4·14	+5·11	+4·82	+3·49	+2·00	+0·11	−0·34	−1·01	−1·42	−1·97	−1·47	−1·29
Apr.	−1·05	−0·97	−1·04	−1·62	−1·75	−2·17	−2·99	−3·51	−3·92	−2·92	−0·73	+1·91	+4·43	+5·57	+5·11	+3·83	+2·41	+1·41	+0·44	−0·11	−0·28	−0·37	−0·77	−0·91
May	−1·03	−1·18	−1·78	−2·22	−3·07	−3·68	−4·28	−4·45	−3·82	−2·13	+0·54	+3·23	+5·18	+5·61	+4·97	+3·89	+2·72	+1·78	+0·98	+0·47	+0·26	−0·28	−0·65	−1·06
June	−1·20	−0·96	−1·63	−1·95	−2·58	−3·95	−5·21	−5·30	−4·25	−2·46	+0·07	+3·03	+5·33	+6·08	+5·68	+4·94	+3·73	+2·37	+1·57	+0·51	−0·07	−0·55	−1·72	−1·48
July	−1·19	−1·43	−1·49	−2·39	−3·15	−4·09	−4·58	−4·49	−4·12	−2·94	−0·75	+2·23	+4·67	+5·77	+5·73	+4·93	+3·69	+2·52	+1·70	+0·69	+0·18	−0·09	−0·51	−0·89
Aug.	−1·49	−1·58	−2·11	−2·45	−2·91	−3·78	−3·94	−3·95	−3·21	−1·47	+1·00	+3·89	+6·08	+6·65	+5·75	+4·18	+2·54	+1·08	+0·62	−0·07	−1·38	−1·44	−1·09	−0·92
Sept.	−2·42	−2·72	−2·33	−2·25	−2·20	−2·06	−2·33	−2·33	−2·01	−0·89	+1·10	+3·68	+5·68	+5·80	+4·83	+3·47	+1·88	+1·47	+0·51	−0·23	−0·99	−1·30	−2·10	−2·26
Oct.	−1·31	−1·56	−1·63	−1·21	−1·00	−1·02	−1·09	−1·65	−2·36	−2·21	−0·56	+2·33	+3·95	+4·71	+4·32	+3·10	+1·95	+1·39	+0·35	−0·49	−1·26	−1·54	−1·70	−1·51
Nov.	−1·61	−1·23	−0·71	−0·29	−0·31	−0·22	−0·43	−0·75	−1·17	−1·16	+0·09	+1·87	+3·20	+3·46	+2·80	+1·98	+1·33	+0·78	+0·23	−0·39	−1·49	−2·31	−2·05	−1·62
Dec.	−1·48	−1·04	−0·36	+0·10	+0·13	+0·13	−0·08	−0·16	−0·18	+0·10	+0·73	+1·47	+2·39	+2·60	+1·73	+1·50	+0·90	+0·53	−0·03	−0·81	−1·80	−1·79	−2·35	−2·23
Year	−1·48	−1·34	−1·31	−1·38	−1·57	−1·88	−2·16	−2·40	−2·41	−1·65	+0·09	+2·39	+4·22	+4·86	+4·34	+3·29	+2·13	+1·27	+0·53	−0·17	−0·93	−1·29	−1·58	−1·57
Winter	−1·71	−1·13	−0·64	−0·25	−0·20	−0·15	−0·20	−0·41	−0·79	−0·70	+0·21	+1·56	+2·79	+3·25	+2·72	+1·90	+1·17	+0·78	+0·13	−0·45	−1·56	−1·97	−2·23	−2·12
Equinox	−1·49	−1·60	−1·55	−1·63	−1·59	−1·61	−1·78	−2·23	−2·58	−2·00	−0·17	+2·51	+4·55	+5·30	+4·77	+3·45	+2·06	+1·09	+0·24	−0·46	−0·99	−1·29	−1·51	−1·49
Summer	−1·23	−1·29	−1·75	−2·25	−2·93	−3·87	−4·50	−4·55	−3·85	−2·25	+0·21	+3·09	+5·31	+6·03	+5·53	+4·49	+3·17	+1·94	+1·22	+0·40	−0·25	−0·59	−0·99	−1·09

INCLINATION

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

HORIZONTAL COMPONENT

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

"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 GEOMAGNETIC FORCE

INTERNATIONAL QUIET DAYS

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

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NORTH COMPONENT

Hour GMT	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.	−1·5	−1·9	−1·7	−0·9	+0·7	+2·2	+4·5	+4·2	+1·7	−0·9	−4·6	−6·2	−6·1	−3·8	−1·7	+1·0	+1·4	+1·9	+2·7	+2·9	+2·6	+1·3	+2·1	+0·2
Feb.	+3·2	+1·9	+1·5	+2·5	+3·2	+5·1	+6·7	+6·6	+2·2	−3·3	−9·3	−13·1	−13·3	−9·7	−3·1	−0·4	+0·4	+0·7	+1·0	+2·8	+2·1	+2·9	+6·9	+2·6
Mar.	+3·5	+1·0	+1·2	+2·1	+3·0	+4·7	+6·9	+6·4	+3·0	−4·7	−11·7	−16·3	−13·6	−11·1	−8·1	−4·9	−2·1	+1·5	+4·4	+6·6	+7·5	+7·7	+6·6	+6·3
Apr.	+7·0	+4·2	+4·9	+6·1	+6·3	+5·9	+4·5	+1·7	−5·3	−17·5	−24·4	−24·7	−22·8	−16·0	−6·7	+0·7	+4·0	+8·9	+11·3	+11·5	+11·1	+10·9	+9·4	+9·1
May	+5·0	+3·2	+1·6	+2·2	+2·8	+1·9	−1·2	−5·1	−9·5	−16·0	−20·7	−20·8	−14·2	−8·2	−2·6	+2·5	+6·3	+11·5	+11·3	+12·3	+9·5	+8·9	+9·9	+9·0
June	+4·6	+3·9	+2·8	+3·9	+4·0	+4·2	+0·1	−5·0	−10·1	−14·4	−19·3	−21·3	−20·9	−15·1	−10·0	−3·3	+5·1	+10·2	+18·0	+18·2	+14·5	+11·3	+10·1	+8·3
July	+4·0	+2·7	+5·3	+6·6	+8·0	+5·8	−0·5	−7·6	−13·6	−20·4	−24·2	−24·0	−19·5	−13·4	−2·9	+4·1	+9·9	+12·4	+13·9	+13·6	+13·6	+9·8	+8·2	+8·1
Aug.	+6·9	+4·9	+3·9	+5·4	+4·3	+1·9	−1·7	−5·5	−11·2	−17·1	−22·8	−19·8	−14·4	−10·8	−5·5	+1·5	+3·7	+5·9	+11·7	+11·6	+13·6	+11·4	+11·1	+10·9
Sept.	+5·3	+5·4	+3·9,	+3·6	+3·6	+3·1	+2·3	−1·8	−5·7	−10·3	−17·0	−18·1	−14·8	−9·4	−4·9	0·0	+3·2	+7·0	+8·5	+7·7	+6·1	+6·8	+7·9	+7·6
Oct.	+6·0	+4·5	+4·2	+5·1	+5·8	+6·7	+6·0	+3·6	−1·0	−8·8	−16·6	−20·3	−19·9	−14·9	−8·6	−1·8	+2·1	+5·6	+7·3	+7·3	+7·1	+6·9	+7·1	+6·7
Nov.	+0·8	−0·4	0·0	+0·4	+2·9	+4·1	+5·5	+4·9	+0·9	−5·1	−11·8	−13·5	−10·2	−6·1	−2·2	+0·7	+2·8	+4·4	+4·9	+3·8	+2·9	+3·3	+3·7	+3·3
Dec.	−2·5	−2·5	−2·0	−0·5	+1·6	+3·2	+3·4	+3·1	+0·8	−2·0	−3·3	−4·5	−3·5	−1·2	+0·4	−1·0	−2·1	+1·8	+3·0	+2·7	+2·4	+2·1	+0·9	−0·3
Year	+3·5	+2·3	+2·2	+2·9	+3·8	+4·1	+3·0	+0·5	−3·9	−10·1	−15·4	−16·9	−14·4	−10·0	−4·6	−0·1	+2·9	+5·9	+8·2	+8·4	+7·7	+7·0	+7·0	+6·0
Winter	0·0	−0·8	−0·6	+0·4	+2·1	+3·7	+5·0	+4·7	+1·4	−2·8	−7·2	−9·3	−8·3	−5·2	−1·6	+0·1	+0·6	+2·2	+2·9	+3·0	+2·5	+2·3	+3·4	+1·5
Equinox	+5·4	+3·7	+3·5	+4·1	+4·7	+5·1	+4·9	+2·4	−2·3	−10·4	−17·4	−19·9	−17·7	−12·7	−7·1	−1·5	+1·9	+5·7	+7·8	+8·3	+7·9	+8·0	+7·7	+7·4
Summer	+5·1	+3·7	+3·4	+4·5	+4·7	+3·4	−0·8	−5·8	−11·1	−17·0	−21·7	−21·5	−17·2	−11·7	−5·2	+1·2	+6·2	+10·1	+13·7	+13·9	+12·8	+10·4	+9·9	+9·1

WEST COMPONENT

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

VERTICAL COMPONENT

Hour GMT	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.	0·0	−0·1	−0·8	−0·5	−0·5	−1·2	−0·5	−0·3	−0·2	−0·3	−0·8	−0·7	−1·4	−1·1	+1·2	+1·5	+1·1	+1·2	+1·1	+0·7	+0·4	+0·7	+0·4	+0·1
Feb.	−0·8	−1·7	−1·8	−1·9	−1·8	−2·5	−2·4	−2·1	−1·0	−0·5	−2·0	−3·5	−2·4	−0·3	+2·4	+4·1	+3·8	+3·3	+2·8	+2·9	+2·6	+2·3	+0·8	−0·3
Mar.	+1·7	+1·5	+1·5	+1·7	+1·9	+1·9	+2·1	+3·3	+1·3	−1·3	−5·3	−10·5	−11·9	−8·1	−2·5	+1·7	+3·7	+4·1	+3·3	+2·7	+2·1	+1·9	+1·7	+1·5
Apr.	+1·6	+2·3	+2·4	+2·3	+2·3	+2·4	+3·3	+3·3	+0·6	−3·7	−7·4	−10·7	−10·4	−7·5	−3·4	+0·1	+2·5	+3·6	+4·1	+3·3	+2·8	+1·7	+2·4	+2·1
May	+0·8	+0·4	+1·2	+1·2	+1·4	+1·3	+0·4	−1·6	−4·6	−8·8	−13·4	−19·6	−13·6	−7·4	−1·4	+1·8	+6·4	+8·5	+9·4	+9·4	+8·6	+7·8	+6·2	+5·6
June	+1·4	+1·0	+1·9	+3·4	+5·0	+6·0	+5·2	+3·8	+2·1	−3·6	−9·2	−12·8	−11·2	−7·4	−5·1	−3·0	+0·6	+4·2	+4·8	+3·6	+3·7	+3·0	+1·6	+1·2
July	+0·9	+1·2	+2·1	+3·3	+4·5	+4·8	+3·9	+3·3	−0·5	−4·6	−9·7	−14·7	−13·9	−7·4	−1·7	+1·3	+4·1	+6·0	+6·5	+4·7	+2·5	+1·8	+0·9	+0·7
Aug.	+0·1	+0·9	+1·7	+1·7	+2·7	+4·1	+3·1	+2·3	−0·5	−4·5	−10·3	−13·1	−11·7	−7·1	−2·3	+1·7	+5·1	+6·5	+4·9	+4·1	+3·1	+3·3	+2·7	+1·5
Sept.	+0·5	+1·6	+2·2	+1·7	+0·8	+1·8	+2·3	+2·4	−0·8	−4·3	−6·4	−9·0	−9·5	−5·6	−2·2	+0·3	+2·6	+3·6	+3·1	+3·6	+3·6	+3·1	+2·2	+2·4
Oct.	+1·4	+1·0	+1·2	+0·2	0·0	+0·5	+0·4	+1·2	+2·0	+0·6	−2·0	−5·0	−5·4	−4·8	−2·8	0·0	+1·8	+1·9	+1·4	+1·6	+1·6	+1·2	+1·0	+1·0
Nov.	+0·1	−0·6	−0·3	−0·3	−0·7	−1·2	−0·9	−0·3	+0·3	0·0	−1·3	−2·1	−1·9	−1·2	+1·7	+1·7	+1·5	+2·0	+0·7	+0·7	+0·9	+0·8	+0·7	−0·3
Dec.	+1·0	+0·1	−0·4	−0·8	−0·6	−0·5	−0·4	−0·2	0·0	−0·1	−1·0	−1·2	−1·6	−1·5	+0·2	+1·4	+1·8	+0·7	+1·0	+1·0	+0·2	+0·1	−0·2	+1·0
Year	+0·7	+0·6	+0·9	+1·0	+1·3	+1·5	+1·4	+1·3	−0·1	−2·6	−5·7	−8·6	−7·9	−4·9	−1·3	+1·1	+2·9	+3·8	+3·6	+3·2	+2·7	+2·3	+1·7	+1·4
Winter	+0·1	−0·6	−0·8	−0·9	−0·9	−1·3	−1·1	−0·7	−0·2	−0·2	−1·3	−1·9	−1·8	−1·0	+1·4	+2·2	+2·1	+1·8	+1·4	+1·3	+1·0	+1·0	+0·4	+0·1
Equinox	+1·3	+1·6	+1·8	+1·7	+1·3	+1·7	+2·0	+2·5	+0·8	−2·2	−5·3	−8·8	−9·3	−6·5	−2·7	+0·5	+2·7	+3·3	+3·0	+2·8	+2·5	+2·0	+1·8	+1·7
Summer	+0·8	+0·9	+1·7	+2·4	+3·4	+4·1	+3·1	+1·9	−0·9	−5·4	−10·7	−15·1	−12·6	−7·3	−2·6	+0·5	+4·1	+6·3	+6·4	+5·4	+4·5	+4·0	+2·9	+2·3

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

INTERNATIONAL QUIET DAYS

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

27 ESKDALEMUIR 1965

DECLINATION (measured positive towards the west)

Hour GMT	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.	−0·89	−0·37	−0·35	−0·19	−0·05	−0·11	−0·27	−0·45	−0·87	−0·67	−0·05	+0·73	+1·73	+2·29	+1·71	+0·83	+0·53	+0·43	+0·15	−0·09	−0·49	−0·73	−1·13	−1·69
Feb.	−2·00	−0·79	−0·70	−0·36	−0·30	−0·49	−0·92	−1·44	−1·80	−1·87	−0·56	+1·70	+3·16	+3·77	+3·20	+2·04	+1·18	+0·93	+0·20	−0·02	−0·32	−0·81	−2·14	−1·66
Mar.	−0·87	−0·69	−0·47	−1·05	−1·01	−1·23	−1·65	−2·67	−3·21	−3·03	−1·11	+1·73	+4·09	+4·85	+4·39	+2·91	+1·29	+0·25	−0·03	−0·39	−0·45	−0·45	−0·57	−0·63
Apr.	−0·63	−0·88	−0·87	−1·21	−1·59	−1·94	−2·75	−3·73	−4·33	−3·60	−1·59	+1·55	+4·33	+5·24	+4·61	+3·43	+2·19	+1·28	+0·39	+0·31	+0·09	−0·02	−0·41	+0·13
May	−1·14	−1·31	−1·43	−1·74	−2·23	−3·27	−3·80	−4·09	−4·01	−2·56	+0·09	+2·73	+5·36	+5·83	+4·93	+3·58	+2·41	+1·57	+0·78	+0·19	−0·29	−0·22	−0·41	−0·97
June	−0·36	−0·65	−1·00	−1·57	−2·34	−3·47	−4·74	−5·15	−4·56	−2·97	−0·68	+1·89	+3·90	+4·45	+4·50	+4·01	+2·98	+1·93	+1·24	+0·85	+0·50	+0·57	+0·42	+0·25
July	−1·35	−1·59	−1·84	−2·01	−2·75	−4·35	−4·63	−4·09	−3·92	−2·73	−0·41	+2·63	+5·09	+6·05	+5·60	+4·11	+2·57	+1·47	+0·91	+0·55	+0·48	+0·39	+0·23	−0·41
Aug.	−1·19	−1·73	−2·06	−2·05	−2·49	−3·45	−4·01	−4·25	−3·74	−1·81	+0·61	+3·45	+5·33	+6·01	+4·74	+3·43	+2·07	+1·09	+0·65	+0·61	+0·26	−0·11	−0·71	−0·65
Sept.	−0·92	−1·10	−0·97	−1·20	−1·52	−1·66	−2·12	−2·78	−2·91	−1·94	+0·50	+2·84	+4·56	+4·54	+3·39	+1·96	+0·88	+0·22	+0·32	+0·22	−0·15	−0·48	−0·70	−0·98
Oct.	−1·35	−0·98	−0·95	−0·76	−0·72	−1·03	−1·38	−1·80	−2·55	−2·52	−1·23	+1·10	+3·09	+4·02	+3·89	+2·72	+1·30	+0·51	+0·10	−0·14	−0·21	−0·30	−0·41	−0·40
Nov.	−0·68	−0·23	−0·26	−0·03	0·00	−0·15	−0·64	−0·95	−1·54	−1·67	−0·46	+1·29	+2·30	+2·53	+1·90	+1·07	+0·70	+0·43	+0·20	−0·09	−0·66	−0·87	−1·08	−1·11
Dec.	−0·62	−0·53	−0·20	−0·05	0·00	−0·33	−0·42	−0·63	−0·70	−0·55	+0·12	+0·85	+1·74	+1·89	+1·14	+0·61	+0·36	+0·47	+0·08	−0·11	−0·48	−0·71	−0·84	−1·09
Year	−1·00	−0·90	−0·93	−1·02	−1·25	−1·79	−2·28	−2·67	−2·85	−2·16	−0·40	+1·87	+3·72	+4·29	+3·67	+2·56	+1·54	+0·88	+0·42	+0·16	−0·14	−0·31	−0·65	−0·77
Winter	−1·05	−0·48	−0·38	−0·16	−0·09	−0·27	−0·56	−0·87	−1·23	−1·19	−0·24	+1·14	+2·23	+2·62	+1·99	+1·14	+0·69	+0·57	+0·16	−0·08	−0·49	−0·78	−1·30	−1·39
Equinox	−0·94	−0·91	−0·81	−1·05	−1·21	−1·47	−1·97	−2·75	−3·25	−2·77	−0·86	+1·81	+4·02	+4·66	+4·07	+2·75	+1·41	+0·57	+0·19	0·00	−0·18	−0·31	−0·52	−0·47
Summer	−1·01	−1·32	−1·56	−1·84	−2·45	−3·63	−4·29	−4·39	−4·06	−2·52	−0·10	+2·67	+4·92	+5·59	+4·94	+3·78	+2·51	+1·51	+0·89	+0·55	+0·24	+0·16	−0·12	−0·45

INCLINATION

Hour GMT	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.	+0·15	+0·15	+0·11	+0·06	−0·06	−0·17	−0·30	−0·27	−0·07	+0·09	+0·29	+0·36	+0·28	+0·10	+0·04	−0·08	−0·10	−0·12	−0·17	−0·18	−0·14	−0·03	−0·06	+0·09
Feb.	−0·12	−0·12	−0·10	−0·19	−0·24	−0·37	−0·46	−0·41	−0·07	+0·32	+0·61	+0·70	+0·65	+0·43	+0·08	+0·01	0·00	−0·02	−0·01	−0·11	−0·06	−0·09	−0·32	−0·09
Mar.	−0·14	+0·01	−0·02	−0·04	−0·10	−0·20	−0·32	−0·20	+0·02	+0·46	+0·72	+0·74	+0·38	+0·27	+0·23	+0·20	+0·16	−0·01	−0·21	−0·36	−0·43	−0·45	−0·37	−0·35
Apr.	−0·40	−0·18	−0·22	−0·28	−0·28	−0·23	−0·06	+0·18	+0·63	+1·30	+1·56	+1·31	+1·03	+0·59	+0·10	−0·24	−0·34	−0·58	−0·68	−0·71	−0·69	−0·70	−0·55	−0·57
May	−0·25	−0·13	0·00	−0·02	−0·03	+0·09	+0·31	+0·54	+0·76	+1·01	+1·06	+0·76	+0·31	+0·03	−0·15	−0·33	−0·41	−0·66	−0·57	−0·61	−0·41	−0·40	−0·49	−0·41
June	−0·26	−0·20	−0·09	−0·09	−0·01	+0·07	+0·39	+0·73	+0·99	+1·05	+1·11	+1·01	+0·91	+0·57	+0·29	−0·09	−0·50	−0·69	−1·17	−1·19	−0·92	−0·72	−0·66	−0·54
July	−0·17	−0·06	−0·20	−0·24	−0·27	−0·02	+0·39	+0·83	+1·13	+1·42	+1·42	+1·11	+0·67	+0·37	−0·17	−0·48	−0·72	−0·78	−0·83	−0·83	−0·88	−0·64	−0·54	−0·51
Aug.	−0·40	−0·21	−0·10	−0·20	−0·08	+0·17	+0·42	+0·67	+0·96	+1·15	+1·25	+0·81	+0·38	+0·20	+0·04	−0·26	−0·25	−0·30	−0·70	−0·72	−0·85	−0·68	−0·64	−0·66
Sept.	−0·29	−0·26	−0·15	−0·13	−0·13	−0·07	+0·02	+0·34	+0·53	+0·70	+0·96	+0·83	+0·50	+0·23	+0·09	−0·11	−0·20	−0·40	−0·51	−0·44	−0·32	−0·35	−0·44	−0·40
Oct.	−0·29	−0·22	−0·20	−0·29	−0·35	−0·38	−0·32	−0·11	+0·26	+0·75	+1·14	+1·19	+1·03	+0·66	+0·29	−0·03	−0·17	−0·36	−0·46	−0·45	−0·43	−0·42	−0·43	−0·41
Nov.	−0·01	+0·03	+0·01	−0·03	−0·22	−0·30	−0·35	−0·29	+0·03	+0·44	+0·79	+0·79	+0·51	+0·24	+0·08	−0·06	−0·19	−0·27	−0·33	−0·23	−0·14	−0·15	−0·17	−0·17
Dec.	+0·23	+0·20	+0·14	+0·01	−0·12	−0·21	−0·22	−0·18	−0·01	+0·16	+0·19	+0·22	+0·10	−0·06	−0·09	+0·07	+0·16	−0·13	−0·18	−0·15	−0·13	−0·10	−0·02	+0·11
Year	−0·16	−0·09	−0·07	−0·12	−0·15	−0·14	−0·04	+0·15	+0·43	+0·74	+0·92	+0·82	+0·56	+0·31	+0·07	−0·11	−0·21	−0·36	−0·49	−0·50	−0·45	−0·39	−0·39	−0·32
Winter	+0·06	+0·07	+0·04	−0·04	−0·16	−0·27	−0·33	−0·28	−0·03	+0·25	+0·47	+0·52	+0·39	+0·17	+0·03	−0·02	−0·03	−0·14	−0·17	−0·17	−0·11	−0·09	−0·14	−0·02
Equinox	−0·28	−0·15	−0·15	−0·18	−0·21	−0·22	−0·17	+0·05	+0·36	+0·80	+1·09	+1·02	+0·73	+0·44	+0·18	−0·05	−0·14	−0·34	−0·47	−0·49	−0·49	−0·48	−0·45	−0·43
Summer	−0·27	−0·15	−0·10	−0·14	−0·10	+0·08	+0·38	+0·69	+0·96	+1·16	+1·21	+0·92	+0·57	+0·29	0·00	−0·29	−0·46	−0·61	−0·82	−0·84	−0·77	−0·61	−0·59	−0·53

HORIZONTAL COMPONENT

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

"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 GEOMAGNETIC FORCE

INTERNATIONAL DISTURBED DAYS

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

28 ESKDALEMUIR 1965

NORTH COMPONENT

Hour GMT	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.	+14·4	+8·4	+4·7	+4·6	+5·1	+11·2	+7·3	+14·7	+8·1	+5·1	−1·3	−3·1	−6·6	−11·5	−15·9	−13·0	−5·6	−8·4	−9·3	−5·8	−2·7	−4·8	+0·3	+4·3
Feb.	+13·0	+6·3	+5·6	+8·5	+15·1	+15·6	+12·7	+9·0	+4·5	−3·6	−11·9	−19·8	−19·0	−16·2	−11·2	−6·3	−13·1	−9·8	−11·0	−7·4	+6·9	+15·7	+9·9	+6·4
Mar.	+8·0	+9·8	+8·6	+13·4	+13·1	+1·6	+6·6	+2·0	−13·5	−14·1	−11·6	−15·7	−11·8	−10·3	−5·9	−8·7	−4·5	−2·7	+2·9	+5·3	+11·0	+11·1	+1·9	+3·6
Apr.	+16·4	+16·7	+17·0	+18·0	+21·0	−0·1	−16·1	−25·9	−23·5	−30·0	−31·3	−26·3	−20·3	−15·3	−11·6	+3·9	+8·5	+11·8	+11·6	+17·0	+17·4	+13·7	+13·8	+13·6
May	+10·1	+18·1	+11·7	+7·4	+8·3	+1·6	−4·3	−5·7	−7·8	−13·6	−23·0	−23·9	−18·6	−13·6	−14·7	−4·3	+5·8	+9·7	+14·3	+15·5	+10·1	+12·3	+8·5	−4·1
June	+1·3	+10·8	+11·1	+2·6	−1·0	+4·6	−2·5	−15·9	−30·9	−40·3	−36·9	−29·5	−18·7	−4·3	+12·9	+15·3	+24·1	+21·9	+29·0	+19·6	+6·3	+9·9	+6·5	+4·2
July	+11·7	+10·2	+6·9	+5·3	+10·6	+5·5	+1·2	−1·9	−6·1	−20·3	−26·9	−29·1	−25·3	−7·1	−8·6	+1·3	+10·9	+13·4	+12·6	+7·3	+9·4	+7·5	+6·9	+4·3
Aug.	+10·5	+8·8	+4·5	+1·8	+8·1	−4·3	−0·7	−11·2	−18·9	−22·2	−24·4	−20·0	−17·1	−7·2	−6·7	+1·0	+9·2	+17·8	+15·9	+15·4	+7·3	+13·5	+9·3	+9·7
Sept.	+12·5	−0·6	+4·4	+10·0	+15·8	+14·7	+11·7	+2·8	−13·3	−14·8	−14·7	−15·6	−26·1	−14·7	−3·6	−8·4	+4·4	+7·3	+8·9	+4·9	+8·5	+1·7	−1·7	+5·8
Oct.	+12·1	+11·8	+3·5	+3·1	+10·4	+15·7	+14·6	+7·1	+0·5	−6·8	−13·7	−20·7	−23·7	−14·7	−9·4	−9·3	−3·1	+4·0	+4·9	+1·2	+0·2	+0·7	+9·8	+2·0
Nov.	+8·4	+10·5	+10·7	+15·7	+13·5	+13·7	+13·8	+10·6	+6·5	−1·6	−8·1	−7·2	−13·4	−9·0	−5·1	−3·0	−5·0	−3·4	−14·1	−8·5	−11·7	−10·1	−3·2	+0·1
Dec.	+5·6	+2·6	+2·2	+9·0	+11·0	+11·9	+15·1	+14·4	+5·6	+2·9	−2·9	−10·8	−6·3	−12·1	−15·3	−8·8	−11·6	−6·1	−3·3	−11·5	+2·5	+0·8	+2·7	+2·5
Year	+10·4	+9·5	+7·6	+8·3	+10·9	+7·6	+5·0	0·0	−7·4	−13·3	−17·2	−18·5	−17·2	−11·3	−7·9	−3·4	+1·7	+4·6	+5·2	+4·5	+5·4	+6·0	+5·4	+4·3
Winter	+10·4	+6·9	+5·8	+9·4	+11·2	+13·1	+12·2	+12·2	+6·1	+0·7	−6·0	−10·2	−11·4	−12·2	−11·8	−7·7	−8·8	−7·0	−9·4	−8·3	−1·2	+0·4	+2·4	+3·3
Equinox	+12·2	+9·4	+8·3	+11·2	+15·0	+8·0	+4·2	−3·4	−12·5	−16·4	−17·8	−19·6	−20·5	−13·7	−7·5	−5·6	+1·3	+5·1	+7·0	+7·1	+9·2	+6·8	+5·9	+6·3
Summer	+8·4	+11·9	+8·6	+4·3	+6·5	+1·8	−1·6	−8·7	−15·9	−24·1	−27·8	−25·7	−19·9	−8·0	−4·3	+3·4	+12·6	+15·8	+18·0	+14·4	+8·3	+10·8	+7·7	+3·5

WEST COMPONENT

Hour GMT	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.	−18·5	−16·2	−12·1	−3·6	−0·8	+4·5	+9·7	+6·2	−0·3	+3·1	+4·4	+11·3	+16·1	+16·7	+16·6	+12·1	+14·0	+7·3	+0·5	−7·9	−18·7	−14·1	−14·9	−15·4
Feb.	−8·5	−6·4	−6·4	−7·4	−6·9	+1·8	+9·1	+10·6	+6·5	+3·5	+6·0	+12·5	+19·6	+23·2	+25·5	+17·6	+6·6	+2·0	−7·1	−4·9	−27·3	−34·2	−24·2	−11·2
Mar.	−14·1	−13·8	−13·9	−16·1	−14·2	−5·2	+15·5	+14·1	+0·7	+0·3	+1·1	+11·9	+21·8	+26·9	+26·1	+19·5	+14·9	−6·2	−10·6	−11·5	−14·4	−14·6	−10·7	−7·7
Apr.	−7·1	−8·1	−9·5	−16·8	−11·7	−13·9	−14·5	−8·6	−16·6	−15·2	−3·9	+6·1	+17·7	+30·1	+30·3	+28·6	+20·7	+14·1	+3·4	−0·6	−4·8	−5·3	−5·0	−9·3
May	−5·2	−1·3	−17·7	−18·9	−20·4	−9·9	−14·6	−19·9	−16·5	−9·5	+0·6	+15·9	+26·7	+31·1	+28·7	+24·7	+21·2	+14·7	+8·9	+6·4	+1·0	−8·5	−15·4	−21·9
June	−15·8	−4·9	−14·1	−16·3	−9·7	−15·6	−27·7	−27·5	−18·9	−10·1	+1·6	+17·9	+31·5	+38·2	+38·0	+40·1	+35·1	+19·8	+13·4	−3·2	−15·2	−14·8	−24·3	−17·4
July	−4·5	−9·7	−13·4	−18·1	−16·6	−10·6	−10·8	−17·5	−18·0	−16·4	−7·9	+7·8	+18·5	+26·1	+26·1	+26·5	+23·8	+15·9	+10·7	+3·0	+3·6	−4·6	−8·8	−5·3
Aug.	−10·9	−11·1	−11·8	−14·3	−13·1	−11·9	−8·0	−16·5	−19·3	−14·1	−1·4	+15·2	+27·1	+33·7	+32·3	+28·4	+24·8	+13·6	+8·5	−6·0	−21·0	−17·5	−5·1	−1·7
Sept.	−30·7	−35·8	−17·1	−8·5	−3·2	−1·2	+0·2	+1·3	+0·6	+4·7	+8·7	+26·4	+31·7	+31·8	+31·9	+23·4	+17·7	+11·2	−2·4	−2·3	−23·2	−23·6	−23·6	−17·9
Oct.	−6·7	−15·0	−17·5	−7·3	−4·9	−2·0	−2·4	−4·8	−7·2	−8·6	−0·6	+15·1	+18·3	+27·2	+27·9	+19·6	+17·6	+10·3	+4·5	−6·6	−12·8	−21·0	−14·1	−8·9
Nov.	−9·3	−8·1	−6·5	−1·8	−2·2	+4·5	+4·2	+4·1	+4·7	+3·8	+6·3	+15·1	+20·3	+20·8	+20·0	+18·7	+12·8	+2·5	−5·9	−12·3	−19·3	−25·2	−27·3	−19·9
Dec.	−8·0	−3·2	+ 1·5	+4·7	−0·4	+2·6	+3·8	+4·6	+6·4	+8·7	+9·7	+9·4	+15·7	+18·3	+6·2	+12·4	+3·9	−3·3	+1·7	−15·6	−24·5	−19·0	−23·4	−12·3
Year	−11·6	−11·1	−11·5	−10·4	−8·7	−4·7	−3·0	−4·5	−6·5	−4·1	+2·1	+13·7	+22·1	+27·0	+25·8	+22·6	+17·8	+8·5	+2·2	−5·1	−14·7	−16·9	−16·4	−12·4
Winter	−11·1	−8·5	−5·9	−2·0	−2·6	+3·4	+6·7	+6·4	+4·3	+4·8	+6·6	+12·1	+17·9	+19·7	+17·0	+15·3	+9·3	+2·1	−2·7	−10·2	−22·4	−23·1	−22·4	−14·7
Equinox	−14·7	−18·1	−14·5	−12·2	−8·5	−5·5	−0·3	+0·5	−5·6	−4·7	+1·4	+14·9	+22·4	+29·0	+29·1	+22·8	+17·7	+7·3	−1·3	−5·2	−13·8	−16·1	−13·4	−11·0
Summer	−9·1	−6·7	−14·2	−16·9	−14·9	−12·0	−15·3	−20·4	−18·2	−12·5	−1·8	+14·2	+25·9	+32·3	+31·2	+29·9	+26·2	+16·0	+10·4	+0·1	−7·9	−11·3	−13·4	−11·5

VERTICAL COMPONENT

Hour GMT	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.	−8·6	−10·8	−10·7	−9·2	−7·6	−6·8	−7·2	−9·0	−5·9	−6·2	−5·4	−4·8	−2·6	+2·6	+7·3	+9·8	+8·8	+10·4	+13·6	+13·4	+9·9	+9·2	+6·2	+3·6
Feb.	−10·6	−11·2	−7·4	−6·0	−9·0	−13·5	−15·4	−12·2	−8·4	−7·4	−7·4	−7·4	−4·0	−0·8	+3·8	+11·8	+20·4	+27·3	+30·6	+22·4	+16·8	+4·0	−6·0	−10·4
Mar.	+0·6	−4·8	−8·6	−11·2	−12·8	−14·3	−17·3	−14·6	−9·8	−8·0	−9·4	−9·2	−7·2	−1·4	+5·2	+13·2	+16·8	+25·3	+25·6	+19·2	+10·2	+4·2	+4·2	+4·0
Apr.	−2·0	−0·9	−6·2	−10·1	−17·9	−18·6	−14·3	−14·7	−9·6	−5·9	−3·8	−5·3	−3·6	−0·1	+6·8	+15·9	+19·3	+16·6	+17·3	+15·1	+10·8	+8·1	+3·4	−0·3
May	−5·1	−10·0	−12·2	−7·9	−5·0	−4·2	−5·5	−4·8	−5·6	−10·3	−10·6	−10·8	−9·7	−2·0	+5·2	+9·9	+13·8	+16·6	+17·5	+15·8	+14·8	+10·3	+1·2	−1·4
June	−28·9	−33·8	−24·2	−21·7	−19·0	−17·4	−11·7	−10·2	−12·0	−13·3	−13·4	−10·8	−4·5	+6·8	+26·8	+38·9	+47·2	+46·2	+36·9	+25·0	+13·0	+7·1	−4·8	−22·2
July	−4·5	−5·0	−6·6	−14·3	−13·4	−15·8	−16·7	−13·2	−9·6	−7·3	−7·6	−7·0	−5·3	−0·6	+4·8	+9·7	+14·6	+20·4	+21·1	+22·0	+17·2	+12·5	+5·4	−0·8
Aug.	−13·1	−15·4	−12·1	−3·1	+0·5	+0·6	−4·1	−1·1	−2·1	−4·2	−8·1	−12·3	−11·5	−5·8	+1·3	+6·3	+8·7	+14·6	+18·9	+20·7	+20·1	+10·4	+2·5	−11·7
Sept.	−33·1	−28·6	−18·9	−10·7	−4·7	−2·8	−1·7	−2·3	−1·7	−1·2	−1·3	−3·9	−1·5	+1·6	+6·9	+15·3	+18·9	+22·2	+25·3	+22·9	+16·5	+2·0	−7·9	−11·3
Oct.	−0·6	−8·7	−7·0	−5·3	−5·8	−7·1	−7·0	−4·9	−1·2	−1·3	−4·6	−6·9	−4·4	−1·7	+2·6	+10·1	+9·6	+8·9	+8·6	+12·1	+12·6	+5·7	−1·8	−1·9
Nov.	−3·3	−6·2	−10·4	−15·9	−15·6	−13·8	−10·5	−7·6	−4·4	−3·7	−4·8	−3·8	−1·7	+2·0	+4·6	+5·9	+7·2	+9·6	+15·1	+17·6	+17·2	+15·5	+8·2	−1·2
Dec.	−9·8	−8·1	−6·4	−8·3	−7·3	−7·2	−7·5	−7·3	−6·4	−6·9	−4·8	−3·7	−3·6	+0·7	+8·8	+10·7	+11·9	+16·6	+13·3	+16·1	+11·2	+3·9	−1·6	−4·3
Year	−9·9	−12·0	−10·9	−10·3	−9·8	−10·1	−9·9	−8·5	−6·4	−6·3	−6·8	−7·2	−5·0	+0·1	+7·0	+13·1	+16·4	+19·6	+20·3	+18·5	+14·2	+7·7	+0·7	−4·8
Winter	−8·1	−9·1	−8·7	−9·9	−9·9	−10·3	−10·1	−9·0	−6·3	−6·1	−5·6	−4·9	−3·0	+1·1	+6·1	+9·5	+12·1	+16·0	+18·1	+17·4	+13·8	+8·1	+1·7	−3·1
Equinox	−8·8	−10·7	−10·2	−9·3	−10·3	−10·7	−10·1	−9·1	−5·6	−4·1	−4·8	−6·3	−4·2	−0·4	+5·4	+13·6	+16·1	+18·3	+19·2	+17·3	+12·5	+5·0	−0·5	−2·4
Summer	−12·9	−16·1	−13·8	−11·7	−9·2	−9·2	−9·5	−7·3	−7·3	−8·8	−9·9	−10·2	−7·7	−0·4	+9·5	+16·2	+21·1	+24·5	+23·6	+20·9	+16·3	+10·1	+1·1	−9·0

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

INTERNATIONAL DISTURBED DAYS

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

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Hour GMT	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24
DECLINATION (measured positive towards the west)																								
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
Jan.	-4·22	-3·54	-2·60	-0·88	-0·34	+0·51	+1·68	+0·72	-0·34	+0·44	+0·92	+2·38	+3·46	+3·76	+3·88	+2·88	+3·00	+1·77	+0·44	-1·38	-3·64	-2·66	-3·00	-3·24
Feb.	-2·16	-1·51	-1·48	-1·78	-1·92	-0·19	+1·38	+1·80	+1·14	+0·83	+1·62	+3·20	+4·60	+5·23	+5·50	+3·74	+1·78	+0·75	-1·02	-0·72	-5·72	-7·41	-5·20	-2·46
Mar.	-3·10	-3·11	-3·08	-3·69	-3·30	-1·09	+2·88	+2·75	+0·62	+0·55	+0·64	+2·93	+4·78	+5·75	+5·44	+4·21	+3·14	-1·15	-2·22	-2·49	-3·28	-3·31	-2·20	-1·67
Apr.	-2·01	-2·22	-2·51	-4·01	-3·09	-2·78	-2·33	-0·81	-2·49	-1·98	+0·33	+2·15	+4·27	+6·58	+6·47	+5·59	+3·85	+2·40	+0·27	-0·73	-1·57	-1·54	-1·49	-2·35
May	-1·40	-0·91	-3·96	-4·06	-4·38	-2·05	-2·78	-3·78	-3·04	-1·43	+0·94	+4·04	+6·00	+6·71	+6·26	+5·10	+4·04	+2·59	+1·28	+0·74	-0·16	-2·13	-3·38	-4·24
June	-3·21	-1·36	-3·22	-3·35	-1·90	-3·28	-5·47	-4·94	-2·70	+0·61	+1·62	+4·62	+6·97	+7·80	+7·16	+7·49	+6·18	+3·20	+1·65	-1·34	-3·26	-3·31	-5·10	-3·64
July	-1·32	-2·29	-2·92	-3·81	-3·70	-2·31	-2·20	-3·43	-3·38	-2·57	-0·62	+2·59	+4·60	+5·47	+5·52	+5·25	+4·38	+2·71	+1·70	+0·35	+0·38	-1·19	-2·00	-1·21
Aug.	-2·55	-2·54	-2·52	-2·93	-2·90	-2·24	-1·57	-2·92	-3·20	-2·03	+0·58	+3·76	+6·03	+7·00	+6·72	+5·65	+4·64	+2·10	+1·13	-1·74	-4·46	-3·99	-1·34	-0·68
Sept.	-6·60	-7·15	-3·59	-2·06	-1·19	-0·75	-0·38	+0·15	+0·59	+1·46	+2·27	+5·85	+7·26	+6·89	+6·51	+4·98	+3·39	+1·99	-0·80	-0·63	-4·95	-4·78	-4·67	-3·79
Oct.	-1·77	-3·42	-3·64	-1·57	-1·34	-0·96	-0·99	-1·22	-1·46	-1·49	+0·36	+3·76	+4·51	+5·98	+5·92	+4·25	+3·64	+1·92	+0·73	-1·36	-2·58	-4·23	-3·18	-1·86
Nov.	-2·15	-2·00	-1·67	-0·92	-0·92	+0·43	+0·36	+0·44	+0·71	+0·82	+1·55	+3·28	+4·53	+4·48	+4·19	+3·86	+2·74	+0·61	-0·68	-2·16	-3·45	-4·70	-5·35	-4·00
Dec.	-1·79	-0·74	+0·23	+0·62	-0·46	+0·11	+0·24	+0·42	+1·09	+1·64	+2·05	+2·26	+3·37	+4·06	+1·77	+2·78	+1·18	-0·45	+0·46	-2·72	-4·99	-3·82	-4·77	-2·54
Year	-2·69	-2·57	-2·58	-2·37	-2·12	-1·22	-0·77	-0·90	-1·04	-0·36	+1·02	+3·40	+5·03	+5·81	+5·45	+4·65	+3·50	+1·54	+0·25	-1·18	-3·14	-3·59	-3·47	-2·64
Winter	-2·58	-1·95	-1·38	-0·74	-0·91	+0·21	+0·91	+0·85	+0·65	+0·93	+1·53	+2·78	+3·99	+4·38	+3·83	+3·31	+2·17	+0·67	-0·20	-1·75	-4·45	-4·65	-4·58	-3·06
Equinox	-3·37	-3·97	-3·21	-2·83	-2·23	-1·39	-0·21	+0·22	-0·69	-0·37	+0·90	+3·67	+5·21	+6·30	+6·09	+4·76	+3·51	+1·29	-0·51	-1·30	-3·09	-3·47	-2·89	-2·42
Summer	-2·12	-1·77	-3·15	-3·54	-3·22	-2·47	-3·01	-3·77	-3·08	-1·66	+0·63	+3·75	+5·90	+6·75	+6·41	+5·87	+4·81	+2·65	+1·44	-0·50	-1·87	-2·65	-2·95	-2·44
INCLINATION																								
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
Jan.	-0·94	-0·63	-0·43	-0·49	-0·51	-0·95	-0·77	-1·25	-0·67	-0·53	-0·10	-0·05	+0·18	+0·62	+1·03	+0·95	+0·42	+0·72	+0·94	+0·80	+0·64	+0·71	+0·31	-0·01
Feb.	-1·01	-0·62	-0·48	-0·62	-1·13	-1·38	-1·32	-1·01	-0·58	+0·01	+0·53	+0·97	+0·92	+0·77	+0·53	+0·50	+1·28	+1·29	+1·56	+1·09	+0·28	-0·53	-0·51	-0·54
Mar.	-0·34	-0·60	-0·61	-0·97	-1·01	-0·40	-1·04	-0·65	+0·64	+0·72	+0·51	+0·66	+0·34	+0·32	+0·21	+0·67	+0·53	+0·88	+0·57	+0·26	-0·30	-0·45	+0·10	-0·05
Apr.	-1·04	-1·02	-1·16	-1·23	-1·68	-0·29	+0·87	+1·43	+1·50	+1·99	+2·00	+1·52	+1·03	+0·65	+0·57	-0·19	-0·32	-0·53	-0·37	-0·73	-0·82	-0·64	-0·76	-0·79
May	-0·73	-1·42	-0·87	-0·46	-0·43	-0·10	+0·32	+0·48	+0·56	+0·74	+1·23	+1·12	+0·67	+0·48	+0·76	+0·25	-0·28	-0·39	-0·61	-0·70	-0·31	-0·46	-0·35	+0·48
June	-0·61	-1·49	-1·16	-0·52	-0·29	-0·55	+0·20	+1·11	+1·94	+2·42	+2·07	+1·45	+0·75	+0·01	-0·62	-0·51	-0·82	-0·52	-1·14	-0·63	+0·09	-0·30	-0·26	-0·62
July	-0·82	-0·68	-0·46	-0·49	-0·83	-0·63	-0·37	0·00	+0·37	+1·33	+1·67	+1·64	+1·31	+0·14	+0·38	-0·15	-0·63	-0·56	-0·43	+0·03	-0·23	-0·13	-0·22	-0·24
Aug.	-0·89	-0·83	-0·46	-0·03	-0·37	+0·43	+0·04	+0·90	+1·41	+1·51	+1·42	+0·83	+0·52	-0·06	+0·10	-0·24	-0·67	-0·96	-0·67	-0·43	+0·26	-0·43	-0·49	-0·91
Sept.	-1·28	-0·25	-0·56	-0·82	-1·11	-1·02	-0·81	-0·26	+0·82	+0·89	+0·83	+0·62	+1·31	+0·64	+0·04	+0·66	-0·03	-0·06	+0·07	+0·27	+0·11	+0·21	+0·19	-0·45
Oct.	-0·73	-0·81	-0·20	-0·25	-0·77	-1·18	-1·10	-0·53	+0·02	+0·51	+0·79	+1·01	+1·23	+0·61	+0·36	+0·63	+0·24	-0·16	-0·16	+0·30	+0·44	+0·34	-0·52	-0·07
Nov.	-0·53	-0·74	-0·88	-1·40	-1·24	-1·29	-1·21	-0·93	-0·59	-0·03	+0·34	+0·21	+0·60	+0·40	+0·22	+0·13	+0·36	+0·43	+1·36	+1·13	+1·41	+1·33	+0·73	+0·19
Dec.	-0·51	-0·33	-0·32	-0·85	-0·90	-0·99	-1·21	-1·18	-0·60	-0·46	-0·04	+0·51	+0·14	+0·60	+1·15	+0·70	+1·01	+0·85	+0·52	+1·33	+0·40	+0·26	+0·05	-0·13
Year	-0·79	-0·79	-0·63	-0·68	-0·85	-0·69	-0·54	-0·16	+0·40	+0·76	+0·94	+0·87	+0·75	+0·43	+0·39	+0·28	+0·09	+0·09	+0·13	+0·22	+0·17	-0·01	-0·15	-0·26
Winter	-0·75	-0·58	-0·53	-0·84	-0·95	-1·15	-1·13	-1·09	-0·61	-0·25	+0·18	+0·41	+0·47	+0·60	+0·73	+0·57	+0·77	+0·83	+1·09	+1·09	+0·68	+0·43	+0·14	-0·13
Equinox	-0·85	-0·67	-0·63	-0·82	-1·14	-0·72	-0·52	-0·01	+0·75	+1·03	+1·03	+0·95	+0·98	+0·55	+0·29	+0·44	+0·11	+0·03	+0·03	+0·02	-0·14	-0·14	-0·25	-0·35
Summer	-0·76	-1·10	-0·74	-0·37	-0·48	-0·21	+0·04	+0·63	+1·07	+1·51	+1·60	+1·26	+0·81	+0·14	+0·15	-0·17	-0·60	-0·61	-0·71	-0·43	-0·05	-0·33	-0·33	-0·32
HORIZONTAL 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.	+10·9	+5·4	+2·5	+3·9	+4·9	+11·8	+8·9	+15·5	+7·9	+5·6	-0·5	-1·1	-3·7	-8·4	-12·7	-10·7	-3·1	-7·0	-9·1	-7·1	-5·9	-7·2	-2·3	+1·5
Feb.	+11·3	+5·1	+4·4	+7·1	+13·7	+15·7	+14·1	+10·7	+5·6	-2·9	-10·7	-17·3	-15·3	-11·9	-6·6	-3·1	-11·7	-9·3	-12·1	-8·1	+2·0	+9·5	+5·5	+4·3
Mar.	+5·4	+7·2	+6·0	+10·4	+10·4	+0·7	+9·2	+4·4	-13·2	-13·8	-11·2	-13·4	-7·8	-5·4	-1·2	-5·2	-1·8	-3·8	+1·0	+3·2	+8·3	+8·4	0·0	+2·2
Apr.	+14·9	+15·0	+15·1	+14·8	+18·6	-2·5	-18·4	-27·0	-26·1	-32·2	-31·5	-24·8	-16·9	-9·8	-6·1	+8·8	+12·0	+14·1	+12·0	+16·6	+16·3	+12·6	+12·7	+11·8
May	+9·1	+17·6	+8·5	+4·0	+4·6	-0·1	-6·8	-9·0	-10·5	-15·0	-22·5	-20·8	-13·7	-8·0	-9·5	0·0	+9·4	+12·1	+15·6	+16·4	+10·1	+10·6	+5·7	-7·8
June	-1·5	+9·8	+8·5	-0·3	-2·7	+1·8	-7·3	-20·5	-33·7	-41·4	-36·1	-25·9	-12·9	+2·4	+19·3	+22·1	+29·9	+25·0	+30·9	+18·7	+3·5	+7·2	+2·1	+1·1
July	+10·7	+8·4	+4·5	+2·1	+7·5	+3·6	-0·7	-4·9	-9·1	-22·8	-27·9	-27·3	-21·7	-2·4	-3·9	+5·9	+14·9	+16·0	+14·3	+7·7	+9·9	+6·6	+5·3	+3·3
Aug.	+8·5	+6·7	+2·4	-0·7	+5·7	-6·3	-2·1	-13·9	-22·0	-24·3	-24·3	-17·1	-12·1	-1·3	-1·0	+5·9	+13·3	+19·9	+17·1	+14·1	+3·6	+10·3	+8·3	+9·3
Sept.	+7·0	-6·8	+1·4	+8·4	+15·0	+14·3	+11·6	+3·0	-13·0	-13·8	-13·0	-10·8	-20·2	-9·0	+2·0	-4·2	+7·4	+9·1	+8·4	+4·4	+4·4	-2·4	-5·8	+2·6
Oct.	+10·8	+9·0	+0·4	+1·8	+9·4	+15·1	+14·0	+6·2	-0·8	-8·2	-13·6	-17·8	-20·2	-9·8	-4·4	-5·8	0·0	+5·7	+5·6	0·0	-2·0	-3·0	+7·2	+0·4
Nov.	+6·7	+8·9	+9·4	+15·1	+12·9	+14·3	+14·3	+11·1	+7·2	-0·9	-6·9	-4·5	-9·7	-5·3	-1·6	+0·3	-2·7	-2·9	-14·9	-10·5	-14·8	-14·3	-7·9	-3·3
Dec.	+4·1	+2·0	+2·4	+9·7	+10·8	+12·2	+15·5	+15·0	+6·6	+4·3	-1·2	-9·0	-3·5	-8·8	-14·0	-6·5	-10·8	-6·6	-2·9	-14·0	-1·8	-2·5	-1·4	+0·4
Year	+8·2	+7·4	+5·5	+6·4	+9·2	+6·7	+4·4	-0·8	-8·4	-13·8	-16·6	-15·8	-13·1	-6·5	-3·3	+0·6	+4·7	+6·0	+5·5	+3·5	+2·8	+3·0	+2·5	+2·1
Winter	+8·3	+5·3	+4·7	+8·9	+10·6	+13·5	+13·2	+13·1	+6·8	+1·5	-4·8	-8·0	-8·1	-8·6	-8·7	-5·0	-7·1	-6·5	-9·7	-9·9	-5·1	-3·6	-1·5	+0·7
Equinox	+9·5	+6·1	+5·7	+8·9	+13·3	+6·9	+4·1	-3·3	-13·3	-17·0	-17·3	-16·7	-16·3	-8·5	-2·4	-1·6	+4·4	+6·3	+6·7	+6·1	+6·7	+3·9	+3·5	+4·3
Summer	+6·7	+10·6	+6·0	+1·3	+3·8	-0·3	-4·2	-12·1	-18·8	-25·9	-27·7	-22·8	-15·1	-2·3	+1·2	+8·5	+16·9	+18·3	+19·5	+14·2	+6·8	+8·7	+5·3	+1·5

"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 1965

The ranges are derived from the diurnal inequalities printed in Tables 24 to 29

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	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.	15·2	24·8	8·4	10·7	19·1	2·9	30·6	35·4	24·4	5·30	0·92	13·1	3·98	0·66	10·0	8·10	2·28	28·2
Feb.	22·9	30·0	14·4	20·2	27·0	7·6	35·5	59·7	46·0	6·59	1·44	21·5	5·91	1·16	17·8	12·91	2·94	33·0
Mar.	24·4	34·2	20·9	24·0	38·3	16·0	29·1	43·0	42·8	7·15	1·32	22·3	8·06	1·19	22·4	9·44	1·92	24·2
Apr.	34·8	46·3	19·2	36·2	45·9	14·8	52·3	47·1	37·9	9·49	2·05	35·3	9·57	2·27	38·1	10·59	3·68	50·8
May	35·1	48·6	25·1	33·1	49·4	29·0	42·0	53·0	28·3	10·06	1·81	35·5	9·92	1·72	34·0	11·09	2·65	40·1
June	45·1	55·9	28·5	39·5	47·3	18·8	69·3	67·8	81·0	11·38	2·49	47·1	9·65	2·30	39·6	13·27	3·91	72·3
July	40·2	50·8	22·9	38·1	51·0	21·2	42·5	44·6	38·7	10·35	2·16	40·3	10·68	2·30	39·8	9·33	2·50	43·9
Aug.	34·8	52·4	22·3	36·4	50·3	19·6	42·2	54·7	36·1	10·60	1·93	34·9	10·26	2·10	36·6	11·46	2·47	44·2
Sept.	27·3	40·5	21·1	26·6	36·5	13·1	41·9	67·7	58·4	8·52	1·62	24·7	7·47	1·47	25·7	14·41	2·59	35·2
Oct.	27·7	35·1	12·9	27·6	32·0	7·4	39·4	48·9	21·3	7·07	1·55	25·2	6·57	1·65	27·2	10·21	2·41	35·3
Nov.	20·0	27·5	10·3	19·0	20·8	4·1	29·8	48·1	33·5	5·77	1·23	18·3	4·20	1·14	17·8	9·88	2·81	30·0
Dec.	13·5	24·1	9·1	7·9	14·7	3·4	30·4	42·8	26·4	4·95	0·87	12·3	2·98	0·45	6·9	9·05	2·54	29·5
Year	24·0	35·0	17·3	25·3	34·6	12·4	29·4	43·9	32·3	7·27	1·21	22·6	7·14	1·42	24·7	9·40	1·79	25·8
Winter	17·2	25·7	9·6	14·3	18·9	4·1	25·3	42·8	28·4	5·48	1·07	16·0	4·01	0·85	11·6	9·03	2·24	23·4
Equinox	27·4	37·9	18·1	28·2	37·6	12·6	35·5	47·2	29·9	7·88	1·50	24·6	7·91	1·58	27·0	10·27	2·17	30·6
Summer	38·0	51·7	24·5	45·6	48·7	21·5	45·8	52·7	40·6	10·58	2·09	39·4	9·98	2·05	36·8	10·52	2·70	47·2

NON-CYCLIC CHANGE

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	All days			Quiet days			Disturbed days		
	H	*D*	*Z*	*H*	*D*	*Z*	*H*	*D*	*Z*
	γ	′	γ	γ	′	γ	γ	′	γ
Jan.	+0·1	−0·03	0·0	+0·9	−0·33	−1·0	−5·8	+0·61	+2·2
Feb.	0·0	+0·01	+0·1	+0·7	+0·38	+0·2	−0·9	0·00	−2·4
Mar.	+0·3	−0·03	+0·1	+3·2	+0·23	−1·1	−3·4	+0·68	+1·9
Apr.	+0·1	−0·01	+0·1	+2·5	−0·14	+0·7	−4·4	−0·71	−0·1
May	+0·3	−0·02	−0·1	+4·6	0·00	+1·9	−12·4	−0·94	+0·4
June	+0·4	−0·08	−0·3	+2·9	+0·17	−0·7	−2·1	+0·87	−3·7
July	−0·8	+0·06	+0·5	+2·5	+0·35	+0·4	−10·0	−0·47	0·0
Aug.	+0·3	+0·02	0·0	+5·0	+0·21	+0·9	+2·2	+1·89	−4·9
Sept.	−0·3	−0·04	+0·2	+0·7	+0·49	+1·9	+6·3	+4·08	+9·4
Oct.	0·0	−0·05	+0·1	+1·1	+0·95	−0·7	−4·5	+0·12	−5·4
Nov.	+0·6	−0·07	−0·5	+2·1	−0·06	−0·6	−5·9	−2·08	−5·1
Dec.	−0·3	+0·07	+0·5	+3·0	+0·07	−1·2	−4·1	+0·73	+1·5
Year	+0·1	−0·01	+0·1	+2·4	+0·19	+0·1	−3·7	+0·40	−0·5
Winter	+0·1	−0·01	0·0	+1·7	+0·01	−0·7	−4·2	−0·19	−0·9
Equinox	0·0	−0·03	+0·1	+1·9	+0·38	+0·2	−1·5	+1·04	+1·5
Summer	+0·1	−0·01	0·0	+3·7	+0·18	+0·6	−5·6	+0·34	−4·1

AVERAGE RANGE OF DIURNAL INEQUALITY 1932-53 WITH 1965 AS PERCENTAGE OF THIS

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		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
	1965(%)	60	84	60	72	85	91	48	79	39
Winter	1932-53	19·3	6·95	21·2	16·2	4·44	5·9	34·4	11·45	66·5
	1965(%)	83	79	45	72	90	69	68	79	43
Equinox	1932-53	43·1	10·18	37·1	39·7	9·69	14·8	75·4	15·11	108·9
	1965(%)	57	77	49	68	82	85	41	68	27
Summer	1932-53	59·7	11·84	33·9	50·4	11·76	21·9	83·7	13·11	82·4
	1965(%)	66	89	72	73	85	98	56	80	49

"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 GEOMAGNETIC 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 GMT

Longitude of Eskdalemuir Observatory, 3°12'W.

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North component

	a_1	b_1	a_2	b_2	a_3	b_3	a_4	b_4
	γ	γ	γ	γ	γ	γ	γ	γ
ALL DAYS								
Jan.	+2·3	+3·7	-2·2	-1·7	+2·6	-0·5	+0·3	-0·1
Feb.	+6·7	+3·4	-4·2	-2·1	+2·6	-1·6	-0·9	+0·1
Mar.	+9·1	+2·5	-4·8	-1·8	+1·5	-1·4	-0·4	+0·8
Apr.	+14·1	-3·4	-7·1	+1·8	+2·3	-1·7	+0·2	+0·4
May	+12·3	-5·1	-7·1	+1·3	+1·6	-0·4	+0·1	+0·5
June	+13·4	-8·5	-8·8	+2·7	+1·0	-0·5	+0·5	+0·7
July	+13·1	-6·8	-8·6	+1·0	+1·7	-0·5	-0·1	-0·4
Aug.	+12·9	-6·3	-5·9	+2·7	+0·6	-1·4	+0·7	+0·7
Sept.	+11·4	-1·7	-5·5	+1·4	+1·2	-1·6	+0·4	+0·1
Oct.	+9·7	+1·3	-6·2	-0·3	+3·0	-1·5	-0·2	+0·8
Nov.	+4·6	+3·3	-4·5	+0·4	+2·9	-1·4	-0·2	+0·3
Dec.	+1·6	+2·6	-2·7	-1·2	+1·4	-1·3	0·0	+0·5
Year	+9·3	-1·3	-5·6	+0·3	+1·9	-1·2	0·0	+0·4
Winter	+3·8	+3·3	-3·4	-1·1	+2·4	-1·2	-0·2	+0·2
Equinox	+11·1	-0·3	-5·9	+0·3	+2·0	-1·5	0·0	+0·5
Summer	+12·9	-6·7	-7·6	+1·9	+1·2	-0·7	+0·3	+0·4
QUIET DAYS								
Year	+8·7	-1·9	-5·6	+0·2	+1·6	-1·0	-0·1	+0·6
Winter	+3·2	+0·6	-3·8	-0·6	+1·7	-1·1	-0·3	+0·5
Equinox	+10·4	-1·1	-6·4	-0·3	+2·4	-1·0	-0·3	+0·7
Summer	+12·5	-5·2	-6·8	+1·7	+0·7	-0·9	+0·2	+0·4
DISTURBED DAYS								
Year	+11·5	-1·0	-5·6	+1·8	+1·1	-1·1	+0·5	+0·1
Winter	+6·7	+8·3	-2·5	-1·5	+2·4	-1·7	-0·1	-0·4
Equinox	+13·8	-1·2	-6·1	+2·5	-0·3	-1·0	+0·7	-0·5
Summer	+14·1	-10·1	-8·2	+4·2	+1·3	-0·8	+0·7	+0·9

West component

	a_1	b_1	a_2	b_2	a_3	b_3	a_4	b_4
	γ	γ	γ	γ	γ	γ	γ	γ
ALL DAYS								
Jan.	-7·6	-1·6	-1·6	+4·7	-1·5	-1·7	+0·6	+0·8
Feb.	-8·5	-3·2	-0·1	+6·3	-1·1	-2·0	+0·6	+2·8
Mar.	-8·4	-6·1	+2·8	+7·9	-0·4	-4·6	+1·2	+2·4
Apr.	-5·2	-12·8	+4·0	+9·4	-2·3	-4·2	+0·9	+1·2
May	-7·5	-16·0	+6·3	+7·4	-3·2	-1·7	+0·9	+0·7
June	-8·1	-18·7	+5·2	+10·5	-3·5	-0·8	+0·4	+0·5
July	-6·6	-18·9	+4·4	+9·1	-1·8	-2·3	+0·2	+0·9
Aug.	-10·9	-14·5	+7·7	+8·6	-2·6	-2·4	+1·5	+1·1
Sept.	-12·0	-11·2	+3·7	+6·3	-3·3	-2·9	+1·5	+1·2
Oct.	-7·7	-8·0	+1·4	+7·9	-1·7	-3·8	+2·3	+1·4
Nov.	-7·7	-2·7	-0·1	+6·1	-1·5	-1·8	+1·7	+1·3
Dec.	-7·8	+0·3	-0·7	+4·4	-1·4	-0·3	+0·5	+0·7
Year	-8·2	-9·3	+2·7	+7·3	-2·0	-2·4	+1·0	+1·3
Winter	-7·9	-1·8	-0·6	+5·4	-1·4	-1·5	+0·8	+1·4
Equinox	-8·4	-9·1	+2·9	+7·8	-1·8	-3·9	+1·5	+1·5
Summer	-8·3	-17·0	+5·9	+8·9	-2·8	-1·8	+0·7	+0·7
QUIET DAYS								
Year	-4·7	-9·1	+3·2	+6·6	-2·7	-2·9	+0·8	+1·2
Winter	-4·2	-2·9	+0·1	+4·2	-2·1	-1·7	+0·7	+1·4
Equinox	-4·1	-8·6	+3·4	+7·7	-2·7	-4·2	+1·2	+1·7
Summer	-5·8	-15·6	+6·2	+7·9	-3·4	-2·8	+0·6	+0·5
DISTURBED DAYS								
Year	-15·7	-6·7	+0·9	+9·0	+0·7	-2·1	+2·3	+1·4
Winter	-15·7	+1·6	-0·9	+7·1	+1·4	-0·5	+1·9	+1·5
Equinox	-17·0	-5·6	+0·7	+8·5	+1·2	-4·2	+2·0	+1·5
Summer	-14·4	-16·1	+2·9	+11·4	-0·4	-1·7	+2·9	+1·2

Vertical component

	a_1	b_1	a_2	b_2	a_3	b_3	a_4	b_4
	γ	γ	γ	γ	γ	γ	γ	γ
ALL DAYS								
Jan.	+0·5	-4·0	-1·5	-0·7	+0·3	-0·6	-0·7	-0·4
Feb.	+0·3	-6·4	-2·9	0·0	+0·5	+0·7	-0·9	-0·8
Mar.	+3·5	-5·5	-4·4	-0·4	+1·8	+1·1	-0·9	-0·4
Apr.	+4·5	-3·7	-4·3	-1·0	+1·7	+0·7	-0·9	+0·1
May	+5·9	-4·5	-6·0	+0·1	+1·5	-0·7	-0·6	+0·3
June	+2·6	-7·5	-8·1	-0·4	+1·3	-0·6	-0·5	-0·3
July	+4·2	-5·5	-5·7	-0·5	+1·1	+0·4	-0·4	-0·2
Aug.	+3·4	-4·9	-6·6	-1·4	+1·4	-0·4	-1·0	-0·3
Sept.	+1·7	-5·9	-6·3	-0·9	+0·8	+0·3	-0·7	-0·1
Oct.	+2·0	-3·5	-2·7	-1·4	+1·2	+0·2	-0·9	-0·2
Nov.	+0·7	-4·5	-0·9	-1·4	+0·4	-0·3	-0·9	+0·1
Dec.	+0·6	-4·3	-1·8	-0·3	+0·1	-0·1	-0·4	-0·1
Year	+2·5	-5·0	-4·3	-0·7	+1·0	+0·1	-0·7	-0·2
Winter	+0·5	-4·8	-1·7	-0·6	+0·3	-0·1	-0·7	-0·3
Equinox	+2·9	-4·6	-4·4	-0·9	+1·4	+0·6	-0·8	-0·2
Summer	+4·0	-5·6	-6·6	-0·5	+1·3	-0·3	-0·6	-0·1
QUIET DAYS								
Year	+3·1	-1·0	-3·1	-0·1	+1·4	0·0	-0·6	0·0
Winter	+0·3	-1·6	-0·6	-0·1	+0·7	0·0	-0·5	-0·2
Equinox	+3·6	-0·3	-3·2	-0·3	+1·7	+0·4	-0·7	0·0
Summer	+5·6	-1·3	-5·5	+0·2	+1·9	-0·4	-0·7	+0·2
DISTURBED DAYS								
Year	-0·9	-14·5	-6·2	-1·5	-0·1	+0·7	-1·1	-0·3
Winter	-0·3	-13·3	-4·2	-1·9	-0·8	+0·6	-0·9	+0·2
Equinox	-1·2	-13·0	-5·3	-1·1	+0·3	+1·8	-0·9	-0·5
Summer	-1·3	-17·9	-9·0	-2·1	+0·2	-0·6	-1·6	-1·0

HARMONIC COMPONENTS OF THE DIURNAL INEQUALITY OF GEOMAGNETIC 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

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North component

	c_1	α_1	c_2	α_2	c_3	α_3	c_4	α_4
	γ	°	γ	°	γ	°	γ	°
ALL DAYS								
Jan.	4·3	35	2·8	238	2·6	111	0·3	125
Feb.	7·5	66	4·7	250	3·0	131	0·9	292
Mar.	9·4	77	5·1	256	2·1	144	0·9	343
Apr.	14·5	107	7·3	291	2·9	136	0·4	41
May	13·3	115	7·3	287	1·6	113	0·5	23
June	15·9	126	9·2	294	1·2	128	0·9	50
July	14·8	121	8·6	283	1·8	115	0·4	211
Aug.	14·6	119	6·4	301	1·6	166	1·0	55
Sept.	11·5	102	5·7	290	2·0	152	0·4	89
Oct.	9·8	86	6·2	274	3·3	126	0·8	359
Nov.	5·7	58	4·5	281	3·2	125	0·4	338
Dec.	3·1	34	2·9	252	1·9	143	0·5	18
Year	9·4	101	5·7	280	2·2	132	0·4	18
Winter	5·0	53	3·6	257	2·7	127	0·3	325
Equinox	11·1	95	5·9	279	2·5	137	0·5	12
Summer	14·6	121	7·8	291	1·4	129	0·5	53
QUIET DAYS								
Year	8·9	105	5·7	279	1·9	132	0·6	360
Winter	3·3	83	3·8	267	2·1	133	0·6	343
Equinox	10·5	99	6·4	273	2·6	123	0·8	353
Summer	13·5	116	7·0	290	1·2	153	0·5	40
DISTURBED DAYS								
Year	11·6	98	5·9	294	1·6	145	0·5	96
Winter	10·6	42	2·9	246	3·0	135	0·4	200
Equinox	13·9	98	6·7	299	1·0	204	0·8	135
Summer	17·3	129	9·2	304	1·5	132	1·2	49

West component

	c_1	α_1	c_2	α_2	c_3	α_3	c_4	α_4
	γ	°	γ	°	γ	°	γ	°
ALL DAYS								
Jan.	7·7	261	5·0	348	2·3	230	1·0	50
Feb.	9·1	253	6·3	6	2·2	218	2·9	25
Mar.	10·4	237	8·4	26	4·6	194	2·5	40
Apr.	13·9	205	10·3	29	4·8	218	1·5	50
May	17·7	208	9·7	47	3·6	252	1·1	64
June	20·4	207	11·8	33	3·6	267	0·6	49
July	20·0	202	10·1	32	2·9	227	0·9	25
Aug.	18·2	220	11·5	48	3·6	237	1·8	68
Sept.	16·5	230	7·3	37	4·4	238	1·9	66
Oct.	11·1	227	8·0	16	4·2	213	2·7	72
Nov.	8·1	254	6·1	5	2·3	231	2·1	65
Dec.	7·8	275	4·4	358	1·4	267	0·9	49
Year	12·4	225	7·9	27	3·1	229	1·6	52
Winter	8·1	260	5·4	360	2·0	233	1·7	44
Equinox	12·4	226	8·3	27	4·3	214	2·1	57
Summer	18·9	209	10·7	40	3·3	247	1·1	55
QUIET DAYS								
Year	10·2	211	7·3	32	4·0	233	1·4	47
Winter	5·1	239	4·2	7	2·7	240	1·5	38
Equinox	9·6	209	8·4	31	5·0	222	2·1	47
Summer	16·6	204	10·0	44	4·4	241	0·8	62
DISTURBED DAYS								
Year	17·1	250	9·1	12	2·2	171	2·7	72
Winter	15·7	279	7·2	359	1·5	119	2·5	64
Equinox	17·9	255	8·5	11	4·4	174	2·5	67
Summer	21·6	225	11·8	21	1·7	203	3·1	81

Vertical component

	c_1	α_1	c_2	α_2	c_3	α_3	c_4	α_4
	γ	°	γ	°	γ	°	γ	°
ALL DAYS								
Jan.	4·1	176	1·6	262	0·7	164	0·8	250
Feb.	6·4	180	2·9	276	0·9	46	1·2	243
Mar.	6·5	151	4·4	271	2·1	67	0·9	259
Apr.	5·8	133	4·4	263	1·9	78	0·9	288
May	7·4	131	6·0	277	1·7	123	0·6	313
June	7·9	164	8·1	273	1·4	125	0·6	254
July	6·9	146	5·7	272	1·2	78	0·5	254
Aug.	6·0	149	6·7	264	1·4	118	1·1	264
Sept.	6·2	167	6·4	269	0·8	78	0·7	271
Oct.	4·0	153	3·0	249	1·2	88	0·9	268
Nov.	4·6	174	1·6	219	0·5	135	0·9	291
Dec.	4·4	175	1·8	266	0·1	133	0·4	264
Year	5·6	157	4·3	267	1·0	96	0·7	268
Winter	4·8	177	1·8	258	0·3	109	0·8	262
Equinox	5·5	151	4·5	265	1·5	77	0·8	270
Summer	6·9	148	6·6	272	1·4	114	0·6	271
QUIET DAYS								
Year	3·3	112	3·1	275	1·4	101	0·6	284
Winter	1·6	173	0·6	269	0·7	97	0·5	258
Equinox	3·6	97	3·3	272	1·8	87	0·7	280
Summer	5·7	106	5·5	279	1·9	113	0·7	301
DISTURBED DAYS								
Year	14·5	187	6·3	262	0·7	2	1·2	266
Winter	13·3	185	4·6	252	1·0	315	0·9	296
Equinox	13·0	189	5·4	265	1·8	20	1·0	257
Summer	17·9	187	9·3	264	0·7	172	1·9	249

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

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(a) Disturbances without sudden commencement All times GMT

Serial Number	From		To		Range (γ)			Notes
	Date	Hour	Date	Hour	*H*	*D*	*Z*	
1a	23 Feb.	09	23 Feb.	24	93	119	126	
2a	22 Mar.	17	23 Mar.	22	166	160	71	
3a	18 Aug.	13	21 Aug.	19	175	183	100	
4a	27 Sept.	09	28 Sept.	22	163	141	171	

Note: These are the main examples in a very quiet year. Only in this respect are they noteworthy.

(b) Disturbances with sudden commencement (ssc) All times GMT

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*
								γ	γ	γ			
1b	20 Jan.	16 13	-	-	No	No	No	+20	-4	0		small	
2b	6 Feb.	14 15	8 Feb.	02	No	No	No	+26	-14	-2	116	140	122
3b	12 Mar.	12 29	-	-	Yes	Yes	Yes	+36	-22	-3		small	
4b	17 Apr.	13 14	21 Apr.	03	Yes	Yes	Yes	+28	-16	-3	284	193	162
5b	15 June	11 00	19 June	02	No	No	No	+20	+12	-5	268	191	275
6b	6 July	04 52	-	-	Yes	Yes	Yes	+14	-23	-3		small	
7b	18 July	15 34	-	-	No	No	No	+77	-24	-7		small	
*8b	15 Sept.	14 53	19 Sept.	22	No	No	No	+32	-17	-1	154	197	131
9b	5 Oct.	02 40	-	-	Yes	Yes	No	+22	-13	-2		very small	

*ssc not well defined.

In the case of an ssc*, that is, an ssc preceded, on at least one component, by one or more small oscillations, timing of the sudden commencement has been made from the main stroke.

(c) Disturbances due to solar flare (sfe) Nil.

H

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

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	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	
Hour GMT													volts per metre													
1						170+	145+	80+						150+	110+	110+	140	335	365	370	370	380	380	370		
2 0a	380	395	425	285	440	290	220	215	180	230	245	235	190	245	385	460	350	370	330	245	230	170	225	230	290	(24)
3 0a	190	225	220	155	210	220	190	200	195	185	190	225	245	240	260	330	320	310	300	320	275	210	135	110	227	(24)
4	100	90	75	75	80	90	90	95	110	55		60	65+	100			180	155								
5	60	60	25	65	130	55	40	25			125			70+	70	65	125	100+	60	100	95	75	60	100		
6	75+	70+	100+	125	120	115	110	90	65	45	45															
7										180	180											125	120	95+		
8	100+	110	105	105	110	125	105	90	85	120	115															
9																	195+	120+	160		200	100	155	155		
10	55+																									
11						55+													105+	130+	110+	145+	80+			
12		90+		75+								90+	115+			95+					120	125	105	130		
13			70			80	55	95	90+	30+	105+															
14																			200+	155	195+	185+		120+		
15	100+	110+												275+	260+	170+					150+					
16	130+	195+	105+													180+			110+	225+						
17																			150+							
18	195+						85	100	110	105	130	150	180	190	155	115	390	410	340	370	405	390	300	195		
19 0a	190	180	155	130	115	140	135	120	100	130	160	155	155	105	115	-	-	-	-	-	-	-	-	-	139	(15)
20	-	-	-	-	-	-	-	-	-	-	110	120	125	-	-	-	-	85+	105	125	105	50	90	65		
21			45	45	40	40	50	55	65	65	70	70	100	170	175	145	120	95	75	110	150	105	65	60		
22						15	25	35	50	60	70	80		85	145	130										
23																										
24			120	110	105	120	125	130	85	90	130	175+	210	140	125	130	115	155	180	155	210	90	115	135		
25	105	120	90	55	55	60	50	55	100	90	155	155	165	110	95	75	85			170						
26		105+	60+	65	110	115	145	75	65																	
27															190	155	145	160	170							
28	110	90	75	75	100	85	75	85							80	90	150	175	155	175+	275	180+	185	205		
29 0a								250				170	185	170	160	190	210	185	215	185	180	150	110	100	176	(14)
30 0a	100	110	170	125	160	170	225	235	180	225	280	300	425	370	290	370	520	425	425	325	325	310	290	285	277	(24)
31 0a	290	230	140	160	145	130	110	110	100	110	110	170	195	230	275	230	145	120	130	240	520	425	290	225	201	(24)
Mean	145	145	124	110	137	115	110	113	105	115	139	154	181	177	181	179	213	213	199	213	230	189	169	161	159	
	(15)	(15)	(16)	(15)	(14)	(18)	(18)	(19)	(15)	(15)	(16)	(14)	(13)	(15)	(16)	(17)	(15)	(15)	(18)	(16)	(17)	(17)	(16)	(16)		
Fair Weather Mean	169	161	132	113	137	116	108	114	106	121	141	157	198	180	180	191	214	241	215	221	247	193	175	169	167	
	(9)	(10)	(13)	(14)	(14)	(16)	(17)	(18)	(14)	(14)	(15)	(12)	(11)	(12)	(14)	(13)	(14)	(12)	(14)	(13)	(14)	(14)	(15)	(14)		
Mean of 0a days																									[218	(6)]

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

35 ESKDALEMUIR — Factor 2·20 — FEBRUARY 1965

	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	
Hour GMT													volts per metre													
1 0a	205	140	135	135	140	125	95	120	145	175	135	165	190	170	165	165	155	140				175	120	115	148	(21)
2 0a	75	90	100	80	65	70	75	85	80	130	160	205	170	210	275	175	165	150	110	175	175	135	110	165	135	(24)
3	200	110	100	125	110	75	70	45	90	140	200	325	425	400	370	355	255	195	195	155	195	120	110	110		
4 0a	85	85	75	70	65	80	90	100	90	95	110	120	140	125	120	90	75	100	120	125	145	220	155	145	109	(24)
5	155	200	175	150	175	220	165	150	110	110	125	110	130	135	225	275	225	110	85				125	85		
6			60	25				100	105	110	95	90	85	85	75	55	60	100	-10+	170	160			75		
7			60	90	100										140	135	145	105+	90+	70	100	125	150	120		
8	55	55	50	80	85	100	100	65	60	80	80	95+	125+	110										55		
9	75	50	65	75	35	55	55+	50	60			125	135	110	115+					90+	95	90	55	105		
10 0a	95	55	45	40	45	55	40	40	50+	55	35	50+	80	100	80	75	75	55	70	55	75	80	80	80	63	(24)
11	80	75	55	55	70	65	70	115	105	95	80+	65+			140+	105+	80+	155+								
12			75+	60	55														110							
13						90+	120	120	135	140	130	125+	130+	135+	175+	165+	190+	100+	120	120		110	125	125		
14 0a	120	110	105	85	75	70	70	80	85	95	80	90	110	110	100	95	90	125	190	135	125	110	100	100	102	(24)
15	100	90	90	75	80	80	90	85	80	75			85	95	95	80+	105+	130	100	80	75	40	85	40		
16	65	75	60	65	60	70	80	70	70	100	125	105	75		115	100	95	90	75	70	75	85	80	100		
17	85	90	60		65	80				100+	130			85				95+	75+	70+	75	85	70	105		
18	50	45	45	30	20									30	80+	85	55	75	70	80	85	85	85	80		
19			60																							
20			70	25+	10+	15+				85	80	65	65+		70	75	100	85	85	110	125	100	85	75		
21	85	65	75	65	60	60	60	60	60						80											
22													80	70	65	95	80	95	75	55	45	40	35	35		
23	30	25	25	20	30	25	30	45	15	60	75	60	65	75	70	80	80		125	95			100			
24								55							85	90	90	55	80	70	120	100	50	60		
25	40	35	60	60	40	55	50	65	75	100	100			100+			110			30+	60	30	55	75		
26	30	55	60	75	80	55	75					135	140	140	105+	105	90	55	75	55	70	75	85	80		
27	75	95	75	65	65	65	50	55	55								65	55	35	40	40	30	65	45		
28	50	60	40				100	80	70	90	110	105	120													
Mean	88	80	73	70	70	75	78	79	81	102	109	120	131	127	131	126	114	103	94	93	102	97	92	90	97	
	(20)	(20)	(25)	(22)	(22)	(20)	(19)	(20)	(19)	(18)	(17)	(17)	(18)	(18)	(21)	(19)	(21)	(20)	(20)	(20)	(18)	(19)	(21)	(22)		
Fair Weather Mean	88	80	73	73	72	78	79	79	83	102	111	131	135	128	133	128	112	101	101	98	102	97	92	90	99	
	(20)	(20)	(24)	(21)	(21)	(18)	(18)	(20)	(18)	(17)	(16)	(13)	(15)	(16)	(16)	(16)	(18)	(16)	(17)	(17)	(18)	(19)	(21)	(22)		
Mean of 0a days																									[111	(5)]

The potential gradient is reckoned as positive when the potential increases upwards. The small + denotes a non-fair weather hour (see Introduction). No entry is made for hours with hydrometeors and dashes are inserted for hours of defective record. The number of hours or days used in computing each mean is shown in round brackets. The mean for 0a days (see Introduction) and the figure in round brackets, which is the number of days used in computing this mean, are entered in square brackets.

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

35 ESKDALEMUIR — Factor 2·20 — MARCH 1965

volts per metre

Day	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																	175	160	180	215	220	160	130	130		
2	85	80	75	65	70	70	80	85	105	125	210	125	190	260	365	375	385	225	180	175	190	125	90	175		
3	180	155																								
4		150			105	90							150						140		125	145	150			
5				175	155		160	135	135		245	280	295	355	315	285	190	160	140	130	130	70	100	140		
6 0a	110	95	65	75	95	130	155	175	155	150	140	155	130	130	95	75	85	90	65	60	65	75	80	80	105	(24)
7	60	75	55+	30+	80+	20+														30+	100	105				
8		70	20	15								65	80		65			55	165	80	10	105	70			
9								30+	35+	95+	150+	150+	95+	95+	95+	160+	130	80	65	65	50	30	15	35		
10	30	30	30	40	35	40	20	30	50	65	155	170	140	135	130	185+	110+	35+	45+	35+	45+	20+	20+	40+		
11	35	40	55	55	40	45	50	40	90	100	95	130	155	145	140	125	90	45	35	30	20	55	45	40		
12				30+	35+	40+	55	50	45	80	100	130	100	100	90	80	40	30	70	25	55	35	30	25+		
13	35	30	30	30	35	40	45	45	65	50	75				45+	50	55			45+						
14																										
15																								110		
16	110+		85+					80+		80+	105+						65+			130+			135+			
17			105+	115+	145+	145+	140+	175+	115+	115+	105+	115+	195+	135+		105+	130+	190+	225+	190+	210+			75		
18																								65		
19	80	75	55	65	65	85	95	90	105	110+	95+	90+														
20				70+			25	65	65	75			55	65												
21								60	75	75	80	90	75	65	60	75	45	40	60	70	80					
22																										
23																										
24																										
25		65	120	190	155	110	90	115	145		100	70			145	160	100									
26		75	105+	160+				170+	30+			45+		45+	40+	30+	70+									
27									130+	110+																
28													100+	145	135+	115+	75+	40+	90+		15+	20+	30+	25+		
29	30	40	40	30	25	25	30	45	85	180	215	225	180	195	165	150	155	80	55	40	30	25	25+	10+		
30	45+	15+	45+	25+		5+	25	45	85	80	105	125	155	180	150	140	185	235	35	85	85	125	120	35		
31	-15+	-25+	10+	40+	100+	145	100	130	100	70	85	135	160	170	175	160	130	45	40	-30+	-35+	-30+	-15+	-5+		
Mean	65 (12)	65 (15)	60 (15)	71 (17)	81 (14)	71 (14)	76 (14)	87 (18)	90 (18)	97 (16)	129 (16)	131 (16)	141 (16)	148 (15)	138 (16)	142 (16)	123 (18)	101 (15)	99 (16)	81 (17)	82 (17)	71 (15)	68 (15)	65 (15)	95	
Fair Weather Mean	72 (9)	75 (13)	54 (9)	74 (10)	78 (10)	78 (10)	72 (13)	79 (14)	93 (14)	95 (11)	134 (12)	142 (12)	143 (13)	162 (12)	158 (12)	152 (11)	136 (13)	104 (12)	95 (13)	89 (11)	89 (13)	88 (12)	83 (10)	89 (10)	101	
Mean of 0a days																									[105	(1)]

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

35 ESKDALEMUIR — Factor 2·22 — APRIL 1965

volts per metre

Day	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	30	10	40	45	45	55	60	75	90	95	100	145	185	205	125	115	115	80			0+	35	25	15		
2	30	25	15	45	45	60	60	110	115	70	110	185	160	115	85	45	40	5	-5+	30	15	55	50	40		
3	5	30	65	55	60					140	80	110	180	165	95	85	125	135	65	35	35	75	75	80		
4	55	90										110+	110+	125+	125+	105+	105	85	65	55	60	60	55	45		
5	35	40	40	45	35	35	50					50	60	45			70+	40	55	45	30	30	40	50		
6	30	40	30							135+	35+	75+	100+	115+	120	90	95+	-15+	85							
7												70+	90+	90+	60+	85+		130	60	55	75	65	75	25+		
8	45	30															150	110	100	75	75	80	85	85		
9	85	80	70	75	70	60					105+	140+	115+													
10							150+	145+							110	105+					95+	120	145	120		
11	95+	125+	75+	90+	60	70+	60+	55+	70+		90+													155		
12	145							110+	115+								180			190	200	190	160+			
13	110	85+			85	85			115+	135+	295+		125+		110+	130	125	125	110	110	130	90	55	60		
14	55	50	30	45	55																					
15 0a			125+								125+									185	205	175	140	130	155	(7)
16	110	75	85+	65			125+	115+	100+	90+	115+	120	115+	90+	65	60										
17									100	80+							90+						155	130		
18	135	125	110			100	105	105	100+										150	145	140	125				
19	110	110				110+							125+	250+									180	150		
20 0a	130	120	100	115	100	110	135	150	145	130	100	105	145	150	125	115	140	130	105	80	55	60	50	50	110	(24)
21	55	40	50	50	60	50	75	95	90	85	90	90	90	85	95	105	90	70	60	20	25	40	45	30		
22	40	40	35	35	50	40	65	105	90	80	105	95	110	120	115	120	125	115	70	55	10	20				
23							30			85+	75+	60+	75+	80+	120	115	165			95	75	75	110	55		
24	60	70	55	50	80	85	100	95	115											65+		30+	40	55		
25	60	55	65	75	60	60	85	90	90+	85	90+	90	95+	75+	50+						85	40	65			
26				80											40+									120		
27	80	80												115+		95+				70	100	95	95	95		
28	120	75	60	55	50+	45+	70+																75	45+		
29					45	65	60					210	175	105		70+			100	85	85	110	90	180+		
30 0a	195+	115+	120+	160+	120	145	105	90	90	70	75	70+	70+	70+	70+	65+	65	55	45	40	35	50	55	40	84	(24)
Mean	79 (23)	69 (22)	65 (18)	68 (16)	64 (16)	73 (16)	83 (16)	103 (13)	102 (14)	98 (13)	106 (15)	108 (16)	118 (18)	118 (17)	94 (16)	94 (16)	112 (15)	82 (13)	76 (14)	80 (18)	77 (20)	77 (21)	85 (22)	80 (22)	88	
Fair Weather Mean	73 (21)	62 (19)	55 (14)	60 (14)	65 (15)	73 (13)	77 (12)	102 (9)	104 (8)	94 (8)	94 (7)	120 (10)	138 (8)	124 (8)	105 (10)	98 (10)	119 (12)	90 (12)	82 (13)	81 (17)	80 (18)	79 (20)	81 (21)	79 (19)	89	
Mean of 0a days																									[116	(3)]

The potential gradient is reckoned as positive when the potential increases upwards. The small + denotes a non-fair weather hour (see Introduction). No entry is made for hours with hydrometeors and dashes are inserted for hours of defective record. The number of hours or days used in computing each mean is shown in round brackets. The mean for 0a days (see Introduction) and the figure in round brackets, which is the number of days used in computing this mean, are entered in square brackets.

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

35 ESKDALEMUIR — Factor 7·39 to 28th then 2·19 — MAY 1965

Hour GMT	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	30	30	30		105	140	100	100	105	75	55	40	55	50	55	55	55	65	55	40	20	5	25	
2	20	30	15	15	5	35			15				50		45					5	25				
3	50	40	40	40	80	120											70+	85+		60+	60	40	35		
4								15	10	15+	40+	65+	70+			30+		35	85+	75	60	50			
5							60+					55+					75+	85+	80+	85+	80+	50+	55	50	
6	75	85	65	85	70	55	50	55	35+	60+	65	65+													
7									245+	150+	120+									135+	70+	120	65	50	
8	25+	75+								75+															
9							90+			100+										165+			125	130	
10	115	105	90	50	100+	105	105	90+	80	75+	80+	55	55	70	75+	95	80	85	65	45	35	20	50	30	
11	25	30	55	40	60	70	75	100	115	130	165	200+	85+	85+					75+	30	45	70	110	55	
12									100+							50+		80+	50	20	15+	30+	25+	5+	
13	10+	30+	25+	40+	15+	50+	45+	105	75	145	150	145	150+	130	115	150	155	130	75	10	50	35	30		
14	10	25	40	45	45	85	100	145	160	155	180	185	130	130	120	155+	130	130+	70+	50					
15								280+	90+		115+	85+	65+	55+	85+	90+	90+	115+	85+	70+				55+	
16										75+	100+	100+	45				45+	15+							
17																									
18				40+								120+	85+	85+				110+			55	.40	45	40	
19	35	40	55	45	40	50	65	70+	45+	95+	110	65+	80+	75+	70+	55+	45+	20	10	25	5	-5+	15	5	
20 0a	35	45	35	40	30	40	55	110	120	120	120	120	110+	120+	115+	105+	110+	110	110	50	55	70	40	30	79 (24)
21	20	25	15	-	-						-	-									-	-	-	-	
22													100+												
23			35			55							180+	75+	100+	45+							70	90	
24	105	130	195	260	260	255	285	220										55	50+	15+	50	50	40	45	
25	50	75	40		90	100+	130					130+						85+	55+	50+	45				
26															125+	170+	155+	135+							
27	80	85	-90+	60+	75	45	75	75+	70+	60+	50+	-	-	-	-	-	-	-	20+	50+	20+	30+	40+	40	
28	40	50	60			60	65+	70+		60+	70+	70+	60+	35+	40+	20+	30								
29		55+	45+	0+	5+	5+	5+	15+	20	60	80+	105	120	120+	120	115	105	105	75	60	35	30	40+	20	
30	-5+	20	35	25	30	30	50+	70+	65+	60	45	35+	35	60	50+	30+	20	80	115	120	145	150+	40+	60	
31	60+	40+	30+	40	55	65	65	75	55	45	40	35	50	60+		80+	85	85	95	85	80	60	30	30	
Mean	43 (18)	53 (19)	43 (19)	53 (16)	64 (15)	74 (18)	86 (17)	100 (16)	82 (17)	88 (18)	94 (17)	94 (18)	84 (18)	83 (14)	85 (13)	83 (15)	83 (15)	84 (19)	69 (17)	60 (21)	51 (19)	51 (17)	48 (18)	45 (17)	71
Fair Weather Mean	49 (14)	54 (15)	54 (15)	60 (12)	70 (12)	78 (15)	104 (11)	103 (9)	75 (10)	103 (8)	106 (9)	100 (7)	66 (8)	89 (5)	90 (5)	104 (4)	83 (8)	76 (10)	73 (9)	48 (13)	52 (15)	50 (12)	51 (14)	47 (15)	74
																								Mean of 0a days	[79 (1)]

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

35 ESKDALEMUIR — Factor 2·19 — JUNE 1965

Hour GMT	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	40	25+	95+	45+						65+	60+	75+	65+	75	55+	50	50	45	30	20+	15+	10+	-5+	
2	5+	0+	0+	5+	0+	-5+	15	30	40	70	50	40	45	30	45+	25	40	40	35	30	20+	5+	0+	0+	
3	0+	0+	0+	5+	5+	5+	60	45	50	45+	60+	50	30+	35	40	30+	50+	45	40	20	10+	5+	15+	15+	
4	15	15	5+	5+	5+	30	50	50	80	95	110	105	95	80	80	95	105	95	105	80					
5											395+	135+		130+	50+	30	45	60	30	0+	-5+	0+	0+		
6							0+	20+							85+	70+	15+	0+							
7						50	70	75	55+	80+	50+	45+	45+	75+	110+				35	40	35	20+	20	20	
8									205+	135+	60	50	60	45+	40	60	50	80	95	75	40	50	60	45	
9	45	30	45	40	50	50	60	65	60	60	60	65+	60+	55+	60+	55+	40+	40+	45	35+	30	20	25	30	
10	30									50	55	45	50+	60+	50+	45+	30	45	60	50	10	20	20	15	
11	20	20	15	15	15	30	55	65	90	95	115	100					50	75	85	85	40				
12														70	75	115	15+	40+							
13								245+	135+			80+	95+	95+	95+	80	90	85	80	40	35	40	25	25	
14	10+	5+							85	110+	95+	80+	105	135	105	95	20+							95+	
15																		190+	90+	70+	65+				
16									120+	95+	45+	100+		85+	60+	60+	60+	75	75	75	75	60	75	40	
17	30+	15+							25+	25+		40+			105+			15+	10+	10+					
18									150+															95+	
19	140	105	100	100	80			160	90	90+		90	90									165		50	
20					120+	180+	165+	125+	105+	175+				75+	90+	75+	75+	90+	35+	35+					
21															55+	75+	40+	65+					90	90	
22			85			100	135	165+	85+	80	85	90+			55	55+	40+	25+	35	40	70	60	15	10	
23	40	60	70	60	70	50							225+	145+			85+							150+	
24	130		90	85	85	95														330+	175	165			
25		115																	90	45+	15+		150+	290+	
26	350	215+	105+	60+						45+	80+		125+	75+	115+	90+	100+	45+	15+	15+	15+	10+	10+	10+	
27	10+	10+	10+		10+	15+				30+	20+	40+			5+	35+	55+	55	45	45	25	60	95	75	
28	80	75	90	50+	55+	-20+	35+	55+	65+	10+								115+	50+	85+			130	150	
29 0a	170	135	75	95	125	145	105	100	115	120	130	150	145	140	125	125	135	145	115	155	160	155	115	120	129 (24)
30	105	95	95	85	100	135+	135+	80		120+	75+	10+	0+	-10+	105	115+	90+	75	55+				65+	75+	
Mean	72 (17)	58 (16)	54 (15)	54 (13)	55 (14)	61 (14)	74 (12)	91 (14)	91 (17)	81 (19)	91 (17)	72 (19)	83 (15)	77 (18)	74 (22)	69 (20)	58 (22)	67 (23)	58 (22)	63 (22)	46 (18)	53 (16)	51 (18)	66 (21)	67
Fair Weather Mean	98 (12)	69 (10)	74 (9)	69 (7)	75 (7)	69 (8)	69 (8)	74 (9)	76 (8)	81 (7)	83 (8)	79 (8)	90 (6)	82 (6)	78 (9)	78 (8)	66 (9)	71 (13)	63 (16)	59 (13)	63 (11)	79 (10)	61 (11)	56 (12)	73
																								Mean of 0a days	[129 (1)]

The potential gradient is reckoned as positive when the potential increases upwards. The small + denotes a non-fair weather hour (see Introduction). No entry is made for hours with hydrometeors and dashes are inserted for hours of defective record. The number of hours or days used in computing each mean is shown in round brackets. The mean for 0a days (see Introduction) and the figure in round brackets, which is the number of days used in computing this mean, are entered in square brackets.

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

35 ESKDALEMUIR — Factor 7·39 to 5th then 2·24 — JULY 1965

Day	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	
	Hour GMT											volts per metre														
1	55	40	15+	-	-	30	70	120	125	105	135	120	75	55	50	15+	30+	40+	45+	35+	30+	15+	75	-		
2				40	45	15+	10+	10+	15+	30+	70+	60+	65+	70+	60+	55+	25+	25+	20+	15+	15+	20	35	65		
3	60	20+	40	70	10+	35	60	100	120+	135+	100+					130		70	75		10+	10+	35	40		
4 0a	35	45	45	35	35	35	85	55	80	80	70	70	55	85	80	80	50	55			15+	10+	50	90	56	(22)
5	65	45	35	60	45	105	45	45				25	55		30	65	65			70	45	25	90	75		
6 0a	40	25	-	-	-	-	-	40+	100+	110			105+				120+	100+	90	85	155	150	95	85	93	(14)
7	50	40	30	40	35	45	40							40	75+	90				90	80	85	55	60		
8	85	80	75	65	95	195	160	110	85+				95	95	85	75+							140	120		
9	130	120	85	125	125	135	135	165	140	120	90				30	60+	80	120	110	110	115	85	75	90		
10	70	60	60	65	65	110	120	110	100+	120	125+															
11	50	40												265+									85	160		
12		55	30	30	40	105	140	140	90	115+	120+	120+	85+	95+	100+											
13																										
14													105			35	55	60	40			30	75	20		
15	25	30		15	15	30	55	85	100	80	65	100	95	95	115	110	100	105	120	120	30	25	20	20		
16	20				60																					
17	85	45	30	25	30	70	90+	80+	70	90	95	100	120	135	125	110	90	85	45	35	25	30	25	30		
18	120						145	105	35+	5+	15+	10+	-15+	30+	50	55	60	55	60	80	100	50	45	40		
19	40	30	55	85	80	90	75	80	70	60	40	110	110	110	120	110+	85	80	85	90	120	90	175	65		
20	150					20+	-20+	15+	25+	20+	60+	25+	15+	40	30	40	45	15+	5+	15+	-10+	5+				
21					60	40	65			75	65	60+		50+		60+	55+	30+	10+	10+	20+	15+	10+	5+		
22	20	60		75	55	50+	55+	60+	55+	70+	55+	65+	75+	80+	75+	85+	80+	90+	85	55	30+	10+	5+	10+		
23	15+	20+																		25+	-100+	120	110	140+		
24	125	100	125	95	90	145	230	210	120																	
25						225				75										-20+	-25+	20+	40+	0+		
26				15	50	105	195	185+	140+	120+	145+	160+	150+	140+	125+	110+	80+		75+	60+	105+	65+	50	75		
27		120	125	85	115	120	105	105	130	130	135															
28																										
29																								170		
30 0a	170	275	275	225	185	170	225	230	250	210+	140+	135+	100+	110	90	70	100	100	140	120	110	90	90	65	153	(24)
31	40	40	55	60	90	135	120+	130+								100+	120+	110	120	120	110	70	90	60		
Mean	67 (21)	65 (20)	72 (15)	67 (18)	66 (20)	92 (23)	101 (23)	104 (22)	99 (20)	95 (20)	93 (18)	85 (15)	82 (17)	95 (17)	78 (17)	76 (20)	74 (18)	72 (17)	73 (17)	64 (19)	51 (21)	51 (22)	68 (23)	70 (23)	77	
Fair Weather Mean	69 (20)	69 (18)	76 (14)	67 (18)	69 (19)	102 (20)	115 (18)	117 (15)	118 (11)	100 (12)	93 (9)	91 (7)	91 (9)	89 (10)	74 (12)	77 (10)	74 (11)	85 (11)	90 (12)	90 (12)	89 (11)	70 (14)	76 (20)	76 (19)	86	
																								Mean of 0a days	[101	(3)]

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

35 ESKDALEMUIR — Factor 2·26 — AUGUST 1965

Day	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	
	Hour GMT											volts per metre														
1														100+	95+	100+	105		100	105	120	70	20+	5+		
2	10	5	5													50+		180+	125			40+	60	70		
3 0a	65	95	90	90	85	65	120	145	120	120+	130+	125+	100+	95+	105+	85+	120+	115+	90+	105	110	65	35	20	96	(24)
4	15	20	20	10	5	15	105	135	60	100	110+															
5									175+	140+	150+		85+			45+	60+	60+	40	60	65	70	45			
6						75+	85+				135+		125+	145+							230	180	165			
7						120+		95+	125+							60+	120+	80+	75+	40+	30+	25+		40+		
8	55					75	40	60	65	85	120+	90+	85+			85+				35+	5+	15+	5+	0+		
9 0a	65	65	90	135	115	205	170	115	135	145+	140+	125+	100+	100+	75+	95	75	85	70	35	110	90	100	135	107	(24)
10	120	160						270	165	140	60	35			70	80	65	75	75	75	55	45	60	55		
11 0a	55	55	70						90	75	135+	150+	120+	90+	85	65	60+	60	75	70	60	70	90	85	82	(19)
12 0a	65	65	55	65	75	95	80	125	185	170	150	155	150	140	120	95	80	65	70	40	30	35	50	80	93	(24)
13	75	75	85	90	110	185	185	140	165	175	175	185	180	175	95	125	105	95	215	160	90+	55	110	70		
14	55	65	75	60	80	35	105	115	50	15	50	65	60	65	50	30	60+		10+	55	20	60	40			
15									95		165+	130+	70+	50+			90+			50+	85	75	95	95		
16				60	65	100	80	105	35+			110+	75	75	45	25+	40							175		
17 0a	240	85	80	155	135					145	180	225+	190+	155+	125+	180+	150	205	180	145	165	180	185	145	163	(20)
18	85									60+				190	200	205+	200+	165	160+	215	200	255	205	205		
19	165	180	150	125	155	165	230	245	195	170	185	195		210	195	145	120		155			235	270	185		
20	185	190	185	170	210	305	360	345	195+	155	145	145+	160+	180+	170	150+										
21																165+	145+	95+	125+	125+	125		135	255		
22	55	40	35	75	60	90		140+	110+	110+	85+	80+	90+	90+				80+	50+	50	55	90				
23 0a		110	130	90	60	80	80	95	185+	60+	85+	90+	60+	120+	140	150	140	150	175	130	145	110	105	100	113	(23)
24	120	150																	185	170	220	180	150	135		
25	120	125	105	120	125	110+	145+	180	150+	125+	130+	105+	145+					70		110	90+					
26		75	95	50	110+					135+	100+	95+	90+	120	115	120	120	115	130	135	120	115	120	130		
27	105	90	75	75	75	80	90	100	100	140	155	150	165	195	130	120	125	155	145		150	150				
28						510+	345+	195+	175+	120+	115+	100+	95+	125+				100+								
29	165																			110+	115+	120	95	95		
30	85	85		80	60	60	55					90+	60+	80+										165		
31			125	140	130				210	170	110	135+			150+		130+	165+	120	120	200	175	185	100		
Mean	95 (20)	91 (19)	86 (17)	94 (17)	97 (17)	132 (18)	142 (16)	153 (17)	133 (21)	122 (21)	128 (22)	123 (21)	110 (20)	125 (20)	116 (17)	104 (21)	105 (20)	111 (19)	113 (21)	97 (22)	108 (24)	104 (24)	106 (22)	107 (22)	113	
Fair Weather Mean	95 (20)	91 (19)	86 (17)	94 (17)	97 (16)	111 (14)	131 (13)	155 (14)	126 (13)	128 (12)	134 (9)	131 (6)	106 (5)	146 (8)	118 (12)	103 (10)	102 (11)	113 (11)	124 (15)	105 (17)	119 (19)	115 (21)	115 (20)	121 (19)	115	
																								Mean of 0a days	[109	(6)]

The potential gradient is reckoned as positive when the potential increases upwards. The small + denotes a non-fair weather hour (see Introduction). No entry is made for hours with hydrometeors and dashes are inserted for hours of defective record. The number of hours or days used in computing each mean is shown in round brackets. The mean for 0a days (see Introduction) and the figure in round brackets, which is the number of days used in computing this mean, are entered in square brackets.

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

35 ESKDALEMUIR — Factor 2·30 — SEPTEMBER 1965

Hour GMT	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 0a	125	170	155	160	205	220	290	235	235+	170+	150+	185+	150+	145+	135+	170+	145+	130	105	105	130	95	135	125	161	(24)
2 0a	100	90	80	80	65	70	85	105	90	95	105	125	90	80	105+	90+	100	95	75+	55+	80	100	85	100	89	(24)
3	90	100	130	80									50+	75+	100+											
4													110+	130+	120+	100	105	100	125	70+	105					
5				80	80				100	60	65+	45+	35+	15+	25+	25								195	175	
6	90	65	55	70	60	80	125	180	60	65																
7	120	135	95		60	80	105+	105+	220+	175+	150+	130+	145+	130+	140+	120+		65+	120	115		55	95	70		
8	65									185+	175+	150+			110	120	125+	125+	110	110	105			125		
9			180	145	140	135					95															
10	60	100	85	90	85	90	80	80		80	90+	75+	55+	125+												
11	155	210			105					150	110+	85+	85+				85+	90+	65+	65	80	80	95	85		
12 0a	90	90	70	55	55	55	85	85		85	95	60			75+	135	120	125	50	40	45	40	40	50	74	(21)
13 0a	50	55	60	50	55	65	90	100	120	90	90+	85+	95+	95+	95+	90	125	115	135	135	115	125	110	85	93	(24)
14	65	55	40	30	25	30	45	65																		
15																										
16							335+			170+	110+	120+	130+	155+	160+	150	125+	100+	105	65	30			15+		
17	20	25	15	15	20	15+			15	20+	10+	125+														
18											105+	110+	105+	135+	150+	150+		170	195	190	185	160	125	130		
19 0a	110	100	65	75	80	90	110			125	160	160+	165+	185+	160+	175+	155+	120+	105+	130+	150+	135	120	95	126	(22)
20 0a	90	95+	80	95	130	115	95	100+	65+															75	94	(10)
21	235	170	150	150	110	115	125	135	90	140+	160+	150+	95+	50+												
22																				310	390	355	285	250		
23	355	285	290	235	220	145	110	175	230	115	90	85	110			130	140									
24										455+	250				90	190	110		145							
25								295	180																	
26										180+	130+		130+	130+	115+	110	80	110	160	175			155	150		
27 0a	125	120	150	190	165	160	200		180	175+	160+	150+	115+	115+	110	105	95	70	75	75	70	85			128	(21)
28					100	100	90	100	135	160							135	130	125	190	180	215	195	125		
29	140	185	100	70	110	95																				
30						310+			215	135	90+	40+	50+	65	55	60+	90+	80	110			100	95	65		
Mean	116 (18)	121 (17)	106 (17)	98 (17)	98 (19)	109 (18)	131 (15)	135 (13)	138 (14)	141 (20)	119 (20)	111 (17)	101 (17)	109 (15)	109 (16)	120 (16)	116 (15)	108 (15)	113 (16)	122 (15)	128 (13)	129 (12)	133 (13)	107 (16)	117	
Fair Weather Mean	116 (18)	122 (16)	106 (17)	98 (17)	98 (19)	103 (16)	118 (13)	141 (11)	129 (11)	105 (11)	133 (6)	90 (3)	100 (2)	73 (2)	91 (4)	115 (10)	112 (9)	113 (10)	120 (13)	131 (12)	126 (12)	129 (12)	133 (13)	114 (15)	113	
Mean of 0a days																									[109	(7)]

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

35 ESKDALEMUIR — Factor 2·39 — OCTOBER 1965

Hour GMT	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	85				95+												420	270	235	165+	135+	70+	100+		
2	105																230+							235+		
3			140+						265+	210+	285	230	190	215	155	185	120	95	65	110	110					
4						135+								150		160	95	80				85	125+	80+		
5	80+	90			125+	165+					110+	155	155	195	80	180	210						65+	55+		
6	90+	85+	35+	85+				170+	65+	15+	50+	20+	100+	190	95	45	80	240								
7																										
8 0a								180	175	140	100	105	115	120	130	135	130	145	155	155	180	170+	95+	95+	137	(17)
9 0a	85+	105+	55+	60+	65+	70+	100+	90	85	75	95	100	95	130	135	155	180	230	275	295	300	185	110	85	132	(24)
10	85	80	75	90	95	75	80	90	70	105	95	105	115	150	170	180	160	95	115	135	65	60	60	60		
11 0a	40	30	40	45	30	25	100	100	90	110	110	115	120	110	100	115	75	95	105	55+	50	70	85	75	79	(24)
12 0a	75	65	65+	75+	55+	65+	70	70+	85+	105	110	130	135	145	130	70	90+	170+	210+	130+	75+	160+	280	265	118	(24)
13	225+	155	140	105	80	85	90	115+	115+	160	135	120+	205	175+	110+	180+	140+	115+	90+	145+	195+	180+	150+	100+		
14	80	75	85+	90	60	65	50+	35+															140	180		
15				125	155+	130	120+	180+	210+	155	155+	170	160+	125+	120	130	95+	155	245	215	225	185	210	165		
16	105	90	65	70	60	55	55	60	70	55	40	125+	205	220	285	215	165+	140+	295	245	200+	225+	235+	220+		
17	180+		170+	175	170	195	210	270	225	185	155					165	215	195	215	220	200	180	180	170		
18 0a	145	115	95	75	60	65	65	75	85	130	110	95	130	135	150	135	110	120	125	120	135	130	100	95	108	(24)
19 0a	85	110	105	100	100	90	115	120	130	125	130	115	120	130+	120	140	165	140	140	145	120	125	125	115	121	(24)
20	115	115	115	110	95	120	130	155	200	195+	230+	255	305	270	260	230	105	155	135	215	205	220	305	305		
21 0a	260	295	240	260	210	245	215	295	320	305	290	195	190	190	180	165	145	150	170	170	170	135+	140	140	211	(24)
22 0a	135	130	140	125	160	155	150	165	165	195	175	155	150	155	175	155	140	145	150	190	155	135	105	115	151	(24)
23	95	95	105	105	105	110	120	130	165	175	185	165	145	190	290	310	250	250	135	120	210	240	285	255		
24 0a	175	170+	160+	110+	95	160+	95+	95+	95	80	80	80	90	105	90	105	140	140	115	130	130	100	100	90	114	(24)
25 0a	80	100	80	130+	110+	115+	115	130	85				65	85	135	160	165	210	200	170	180	160			134	(21)
26				115+	105+			115+	115+	110+	45+	150+	180+	75+	105	95										
27		125+																								
28																	170				140					
29																170+	145+	185								
30									95+																	
31		65	50+	70	65	95																				
Mean	115 (20)	109 (20)	103 (19)	106 (20)	100 (20)	110 (21)	111 (17)	132 (20)	139 (21)	138 (19)	134 (20)	136 (19)	148 (20)	155 (21)	151 (20)	156 (23)	147 (24)	167 (22)	169 (19)	168 (19)	161 (20)	152 (19)	148 (20)	143 (21)	137	
Fair Weather Mean	110 (15)	106 (16)	109 (11)	110 (14)	99 (14)	108 (14)	117 (13)	143 (13)	140 (14)	140 (15)	140 (15)	145 (15)	149 (17)	162 (17)	153 (19)	154 (21)	147 (18)	171 (19)	171 (17)	179 (16)	161 (16)	144 (13)	159 (14)	151 (14)	140	
Mean of 0a days																									[131	(10)]

The potential gradient is reckoned as positive when the potential increases upwards. The small + denotes a non-fair weather hour (see Introduction). No entry is made for hours with hydrometeors and dashes are inserted for hours of defective record. The number of hours or days used in computing each mean is shown in round brackets. The mean for 0a days (see Introduction) and the figure in round brackets, which is the number of days used in computing this mean, are entered in square brackets.

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

35 ESKDALEMUIR — Factor 2·25 — NOVEMBER 1965

Hour GMT; volts per metre

Day	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		125+																								
2						110	145	180	145	110		215+	210+	155+	170+	140+	185	190	280	255	300	400	235	165		
3 0a	115	120	80	85	110	85	105	135	120	145	195	165	180+	180+	145	145	125	200+	150	155	220	350	350	340	167	(24)
4 0a	290	275	270	230	130	155	120	110	130	155	135	105	115	130	150	195	175	145	160	170	175	180	135	105	164	(24)
5 0a	125	140	110	155	195	200	215	175	165	135	140	135	145	135	110	130	120	85	125	100	75	75	70	85	131	(24)
6 0a	70	75	70	70	75	130					235	105	90+	75+	135	175	185	220+		185	150	110	60+		159	(22)
7																										
8									160	240+	305+	320+	290	290	180	120	180	150	190	240	240	175	145	145		
9 0a	135	105	130	130	145	190	410	425	420	465	300	395	470	375	170		135	145	225	235	350	275+			268	(21)
10											75	95	105	105	115	95	120	115	105	100	145	200	155	120		
11	110	105	90	95	85	90	100	110	80	110			120+				165+	165	210	235	190+	200		210		
12	170	130			80																	220	170	195		
13	135	145	110			105													140		110	135	190	155		
14 0a	125	155	135	240	205	270	355		145				195	220	215	200	220	350	350			255	205	195	224	(18)
15 0a	155	150	105	80	80	75	90	85	105	125	125	115	135	170	210	200	255	365	420	325	455	320	395	185	197	(24)
16	105	175	170	145	155	125	125	135	135	155	110	200	175	185	190+						80+			150		
17	85	100	60	20+	15+	60+	50+	30																		
18																										
19																										
20															160			165	180	210						
21		125				110	105	115	135			145	300	340	330	385	435	610	420	445	515	505	445	620		
22																										
23	170	195			140+																	160	120	95		
24						185	195	155	140	155	145	230	270	260												
25	155	130	105	80	65																					
26									280	350	340	395	380	315			255	280	305	225	220					
27																										
28			295										280	215	295	355	485	300	325	255						
29							160+																			
30																										
Mean	139 (14)	141 (16)	133 (13)	121 (11)	114 (13)	135 (14)	167 (13)	150 (11)	166 (13)	195 (11)	182 (11)	202 (13)	216 (16)	210 (15)	184 (14)	185 (11)	217 (14)	232 (15)	239 (15)	224 (14)	230 (14)	237 (15)	206 (13)	197 (14)	184	
Fair Weather Mean	139 (14)	142 (15)	133 (13)	131 (10)	120 (11)	141 (13)	179 (11)	163 (10)	166 (13)	191 (10)	180 (10)	190 (11)	238 (12)	228 (12)	185 (12)	200 (10)	221 (13)	236 (13)	239 (15)	224 (14)	246 (12)	235 (14)	218 (12)	197 (14)	189	
Mean of 0a days																									[187	(7)]

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

35 ESKDALEMUIR — Factor 2·19 — DECEMBER 1965

Hour GMT; volts per metre

Day	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 0a				225	275	400	425	255	285	155	195	255	265	335	300	190	190	305	300	310	415	305	260	250	281	(21)
2	200																					250				
3	370									230	275+			215+					370	380	300	275	320	260		
4	195	165	195	155	170	140	140	145	165	180	190															
5					365	380	355	335	220			190+	230	220+	200+											
6								495+		780+	690+	270+	230+	255+	240+	390+	540+				460	640	920	600+		
7	355	370	365	860	505	255	290	300	310	550	300	335	505	435	505	505	400	390	610	370	400	310	265	255		
8																								135+		
9																										
10									155	210	220	300	320	220	185	260	240	235	310	300	210	220	150	125		
11	100	85	80	95	85	65										145	155	175	195+	150+	175+	175	220	115		
12	130	135	115	100			70											85+			30+			40+		
13	25+						55								215	190+				290	225	170	175			
14		115	140	120	105										400	370										
15																							220+	285+		
16	265	220				200+						240+			155+	195+	170+	190+	185+	120+				415		
17	355			255																						
18					95	110	120	135	150	170	170	150	125	110	120		70	120	165	205	175	195	120	120		
19	155	185	225	175	170	140										135	130	145	165	200	155	145	155	165		
20	200	120	155	130	100	85	85	150	160	105	120	115	115	125	190+	195	155	230	275	275	260	235	245	205		
21	170			115							60					145	160	235	205	230	135	130	120	95		
22	85	70	60	25+	20+																					
23							100	35	205	310			300	265	320			265								
24			50+	80+	180+		150+				210+	230	275	290	290+	285	275+	280+	170	220		125	170	115		
25						150	105	80	75	130	165	175	220	200		130+	175	170	275	305	310	305	300	265		
26 0a	225	280	225	255	200	110	85	85	115	130	125	115	140+	140	165	200	335	320	315	375	385	435	285	275	222	(24)
27 0a	270	285	205	155	110	95	85	80	125	130	135	140	170	230	285	380	255	275	300	235	155	150	155	115	188	(24)
28 0a	105	95	80	85	85	85	85	85	90	105	140	175	165	135	155	115	120	150	145	135	145	175	125	105	120	(24)
29	115	60	110	130																	360	370				
30	205	205	185	130	125				95	115	110	115	155	155	185	245			225							
31				170	160	85	195													570	450	320	280	220		
Mean	196 (18)	171 (14)	156 (14)	181 (18)	172 (16)	164 (14)	160 (14)	187 (12)	152 (13)	228 (14)	213 (16)	200 (14)	224 (13)	224 (15)	241 (16)	244 (18)	225 (15)	220 (15)	263 (17)	275 (17)	264 (18)	259 (19)	249 (18)	208 (20)	211	
Fair Weather Mean	206 (17)	171 (14)	165 (13)	197 (16)	182 (14)	162 (13)	161 (13)	159 (11)	152 (13)	186 (13)	172 (13)	191 (11)	231 (11)	223 (12)	253 (11)	249 (14)	199 (12)	229 (12)	273 (15)	293 (15)	284 (16)	259 (19)	251 (17)	194 (16)	210	
Mean of 0a days																									[203	(4)]

The potential gradient is reckoned as positive when the potential increases upwards. The small + denotes a non-fair weather hour (see Introduction). No entry is made for hours with hydrometeors and dashes are inserted for hours of defective record. The number of hours or days used in computing each mean is shown in round brackets. The mean for 0a days (see Introduction) and the figure in round brackets, which is the number of days used in computing this mean, are entered in square brackets.

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Monthly, seasonal and annual means for hours without hydrometeors and for fair weather hours

36 ESKDALEMUIR 1965

Hour GMT	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																								
	No hydrometeors																								
Jan.	145	145	124	110	137	115	110	113	105	115	139	154	181	177	181	179	213	213	199	213	230	189	169	161	159
Feb.	88	80	73	70	70	75	78	79	81	102	109	120	131	127	131	126	114	103	94	93	102	97	92	90	97
Mar.	65	65	60	71	81	71	76	87	90	97	129	131	141	148	138	142	123	101	99	81	82	71	68	65	95
Apr.	79	69	65	68	64	73	83	103	102	98	106	108	118	118	94	94	112	82	76	80	77	77	85	80	88
May	43	53	43	53	64	74	86	100	82	88	94	94	84	83	85	83	83	84	69	60	51	51	48	45	71
June	72	58	54	54	55	61	74	91	91	81	91	72	83	77	74	69	58	67	58	63	46	53	51	66	67
July	67	65	72	67	66	92	101	104	99	95	93	85	82	95	78	76	74	72	73	64	51	51	68	70	77
Aug.	95	91	86	94	97	132	142	153	133	122	128	123	110	125	116	104	105	111	113	97	108	104	106	107	113
Sept.	116	121	106	98	98	109	131	135	138	141	119	111	101	109	109	120	116	108	113	122	128	129	133	107	117
Oct.	115	109	103	106	100	110	111	132	139	138	134	136	148	155	151	156	147	167	169	168	161	152	148	143	137
Nov.	139	141	133	121	114	135	167	150	166	195	182	202	216	210	184	185	217	232	239	224	230	237	206	197	184
Dec.	196	171	156	181	172	164	160	187	152	228	213	200	224	224	241	244	225	220	263	275	264	259	249	208	211
Year	102	97	90	91	93	101	110	119	115	125	128	128	135	137	132	131	132	130	130	128	127	123	119	112	118
Winter	142	134	121	121	123	122	129	132	126	160	161	169	188	185	184	183	192	192	199	201	207	195	179	164	163
Equinox	94	91	83	86	86	91	100	114	117	119	122	121	127	133	123	128	125	115	114	113	112	107	109	99	110
Summer	69	67	64	67	71	90	101	112	101	97	101	93	90	95	88	83	80	83	78	71	64	65	68	72	82
	Fair weather																								
Jan.	169	161	132	113	137	116	108	114	106	121	141	157	198	180	180	191	214	241	215	221	247	193	175	169	167
Feb.	88	80	73	73	72	78	79	79	83	102	111	131	135	128	133	128	112	101	101	98	102	97	92	90	99
Mar.	72	75	54	74	78	78	72	79	93	95	134	142	143	162	158	152	136	104	95	89	89	88	83	89	101
Apr.	73	62	55	60	65	73	77	102	104	94	94	120	138	124	105	98	119	90	82	81	80	79	81	79	89
May	49	54	54	60	70	78	104	103	75	103	106	100	66	89	90	104	83	76	73	48	52	50	51	47	74
June	98	69	74	69	75	69	69	74	76	81	83	79	90	82	78	78	66	71	63	59	63	79	61	56	73
July	69	69	76	67	69	102	115	117	118	100	93	91	91	89	74	77	74	85	90	90	89	70	76	76	86
Aug.	95	91	86	94	97	111	131	155	126	128	134	131	106	146	118	103	102	113	124	105	119	115	115	121	115
Sept.	116	122	106	98	98	103	118	141	129	105	133	90	100	73	91	115	112	113	120	131	126	129	133	114	113
Oct.	110	106	109	110	99	108	117	143	140	140	140	145	149	162	153	154	147	171	171	179	161	144	159	151	140
Nov.	139	142	133	131	120	141	179	163	166	191	180	190	238	228	185	200	221	236	239	224	246	235	218	197	189
Dec.	206	171	165	197	182	162	161	159	152	186	172	191	231	223	253	249	199	229	273	293	284	259	251	194	210
Year	107	100	93	96	97	102	111	119	114	121	127	131	140	141	135	137	132	136	137	135	138	128	125	115	122
Winter	151	139	126	129	128	124	132	129	127	150	151	167	201	190	188	192	187	202	207	209	220	196	184	163	166
Equinox	93	91	81	85	85	91	96	116	117	109	125	124	133	130	127	130	129	119	117	120	114	110	114	108	111
Summer	78	71	73	73	78	90	105	112	99	103	104	100	88	101	90	91	81	86	87	75	81	79	76	75	87
																				Annual mean for 0a days					[133]

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

KEW

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

37 KEW OBSERVATORY — Factor 4·34 — JANUARY 1965

Hour GMT	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	425	370	320	390	400	445	530	620	675	815	830	795	630	665	620	665	675	675	620	620	565	565	320	175	
2	370	310	265	150	205	285	445	565	610	585	585	550	540	725	715	700	770	645	620	520	595	495	335	495	
3	445	480	240	175	140	80	135	150	250	265	300	380	400	480	435	255	275	255	115	275	125	150	105	175	
4	195	175	90	175	160	135	240	450	600	770	760	665	815	875	885	975	990	1045	905	460	275	460	370	635	
5 S	565	380	380	425	415	380	345	495	585	830	805	920	840	565	595	600	745	805	715	585	445	435	380	450	570 (24)
6	480	400	405	450	470	445	505	600	735	-	-	885	760	680	770	760	595	445	390	445	460	370	240	265	
7	175			-95^{+}	-30^{+}	55^{+}	45^{+}	80^{+}	105^{+}	250^{+}	250^{+}	370^{+}	405^{+}	325^{+}		370^{+}	310^{+}	310^{+}	135^{+}	-100^{+}			-10^{+}	60^{+}	
8 S	10^{+}	20^{+}	35^{+}	80^{+}	105^{+}	105^{+}	210^{+}								575^{+}	480	575	760	655	665	335	250	290	275	
9 S	335	400	335	195	325	370	425	540	630	645	540					175^{+}	210^{+}	250^{+}	175^{+}	250^{+}	240	300	370	275	452 (24)
10	220	195	135	150	205	175	185					20^{+}	-10^{+}	70^{+}	0^{+}	90^{+}	175^{+}	125^{+}	70^{+}	70^{+}	60^{+}	0^{+}	70^{+}	35^{+}	
11	20^{+}	0^{+}	0^{+}	0^{+}	0^{+}			115^{+}		265^{+}	300^{+}	390^{+}	495^{+}	425^{+}	380^{+}	390^{+}	320^{+}								
12					0^{+}				115	170	210			135	205	390	585	600	575	630				205	
13	195	185		170	175	210	310	415	575	585	515													135	
14	205	205	220	220	195	240	240^{+}	335^{+}	425^{+}	480^{+}	405^{+}	380^{+}	345	390	390	480	565	595	540	495				250	
15	290	250	275	285				290^{+}	390^{+}	320	405	435	355	355	345	370	405	495	645	830	750	575	485	365	
16	400	480	400	335														140^{+}	230^{+}	160^{+}	345^{+}	345^{+}	320^{+}		
17				140^{+}			185^{+}	230^{+}	275^{+}	370^{+}		425^{+}	390^{+}			210^{+}	335^{+}			210^{+}	285^{+}	310^{+}	300^{+}	240^{+}	
18 S			55^{+}	95^{+}		105^{+}	160^{+}	125^{+}	300	365	405	380	380	335	445		460	530	600	635	620	585	495	265	
19 S	70	80	175	230	290	290	425	480	575	665	700	595	550	515	460	480	520	530	515	595	415	230	285	195	361 (24)
20			95^{+}																			115	185	170	
21	60	70	70	35	125	140	175	450	575	920^{+}	965^{+}	975^{+}	850^{+}	860^{+}	710^{+}	600^{+}	505	450	425	275	255	140			
22 S				-110^{+}	185	425	645	400	445	470	450	520	620	550	710	760	805	675	600	565	550	515	435	415	
23 S	345	335	160	255	320	320	425	565	725^{+}	860^{+}	955^{+}	1025^{+}	850	620	485	445	380	370	405	435	425				485 (24)
24								210^{+}			345	565	610	555	415	515	450	370	345	335					
25														435	645	530	565	435	285	255	265	275	70	95	
26 S	35	20	90	60	60	60	135	105							700^{+}	710^{+}	610	480	485	370	345	405	355	285	
27 S	275	195	290	275	115	140^{+}	195^{+}	435^{+}	515^{+}		655^{+}	875^{+}	710^{+}	655^{+}	620^{+}					600^{+}	405^{+}	530^{+}	405^{+}	275^{+}	445 (24)
28	195	140	80	210	210								815^{+}	690^{+}	630^{+}	630^{+}	600^{+}	635^{+}	610	575	445	445	390	380	
29 S	285	240	175	160	195	210	210	310																185	389 (24)
30 S	150	90	45	90	60	115	230	325^{+}	370^{+}	380^{+}	520^{+}	520^{+}	470^{+}	400^{+}	415^{+}	425^{+}	425^{+}	485^{+}	505^{+}	530^{+}	550^{+}	565^{+}	495^{+}	495^{+}	361 (24)
31	415^{+}	325^{+}	265^{+}	-	-	-	-	-	-	-	-	-	480^{+}	495^{+}	445^{+}	460^{+}	520	540	575	735	750	690	725	530	
Mean	257 (24)	232 (23)	192 (24)	175 (26)	188 (23)	225 (21)	291 (22)	360 (23)	474 (20)	527 (19)	545 (20)	583 (20)	559 (22)	513 (23)	525 (24)	499 (25)	514 (26)	506 (25)	470 (25)	445 (27)	413 (23)	380 (23)	322 (23)	282 (26)	395
Fair Weather Mean	272 (21)	250 (20)	218 (19)	222 (20)	224 (19)	254 (17)	335 (16)	439 (14)	513 (13)	540 (12)	527 (13)	608 (11)	592 (13)	525 (15)	541 (15)	560 (15)	579 (19)	563 (19)	531 (20)	515 (20)	437 (18)	389 (18)	343 (17)	296 (21)	428
Mean for selected quiet days																									[438 (7)]

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

37 KEW OBSERVATORY — Factor 4·50 — FEBRUARY 1965

Hour GMT	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	385	260	165	-	-	-	385	395	600	740^{+}	825^{+}	775^{+}	695^{+}		490^{+}	445^{+}	515^{+}	540^{+}	585	755	875	815	740	740	
2	465	415	380	430	380	540	535	455	660	845	540	540	620	540	415	515	630	440	585	445	445	505			
3													670^{+}	445	445	465	475	440	515	430	285	525	170	205	
4	345	325	190	25^{+}	10^{+}	-55^{+}	140^{+}	190^{+}	225^{+}															-35^{+}	
5	-20^{+}	-20^{+}	-100^{+}	-65^{+}	-90^{+}	-70^{+}	-105^{+}				265^{+}	200^{+}	70^{+}	10^{+}			70^{+}		155^{+}	240^{+}	250^{+}	260^{+}	165	190	
6	110	120	130	155	180	180	200	275	345	335		240	275	190			-45^{+}	95^{+}	190	190	240	275	180	140	
7	70^{+}				50^{+}	155^{+}	190^{+}													360	345	355	360	250	
8 S	225^{+}	-20^{+}	25^{+}	110^{+}			145	260	360	385	440						405^{+}		465	420	445	430	465	360	
9 S	320	265	370	440	500	655	620	755	1000	990	990	835	705	465	500	535	475	440	445	325	130	145	205	225	560 (24)
10 S	260	145				105	225	300	355	480	430	480	505	550	570	575	490	455	420	325	325	265	215	225	
11 S	105	180	215	225	230	240	325	415	480	430	480	535	505	465	385	380	415	445	310	310	265	250	120	145	344 (24)
12 S	170	215	205	200	265	265	240	250	335	285	250	285	285	370	265	225	250	275	285	275	225	290	290	230	260
13	190	140	130				155^{+}	325^{+}	420^{+}			385^{+}	355^{+}	345^{+}	275^{+}	325	325	290	275	320	275	290	240	155	
14 S			130	140	155	190	225	260	300	320	265	225	155	170	120	120	145	205	250	265	230	190	285	335	
15 S	355	205	120	95	145	180	200	275	290	335	335	310				190	240	265	170	215	180	140	120	15	218 (24)
16	45	-80	-10	60	95	170	205	345^{+}		250^{+}	300	300	320	335	325	360	420	415	370	75^{+}			110^{+}		
17										790^{+}	755^{+}	635^{+}		695^{+}	730^{+}	680^{+}			655^{+}	610^{+}	670^{+}	570^{+}	535^{+}	505^{+}	
18	395	360	345	290	200	275	325	-	-	705	670	500	455	345	345	380	285	325						15^{+}	
19																215	445	490	575	370	200	310	480	515	
20 S	380^{+}	180^{+}	85^{+}	75^{+}	60^{+}							380	440	260	370	370	370	385	380	385	360	335	275	300	
21 S	240	155	155	130	130							250	260	300	325	265	275	345	320	290	260	345	380	405	244 (24)
22	260^{+}	165^{+}	240^{+}	290^{+}	395^{+}	155^{+}	225^{+}	325^{+}		525	630	575	575	480	420	385	380	310	380	370	265	140	85	225	
23	275	200	130	70	190	180		380	430	535	535	560	560	420	455	540	500	405	415	325	230	370	355	225	
24 S	320	370	265	250	260	335	385	445	465	515	585	655		635^{+}							380	430	500	370	
25 S	430	440	335	320	310	360	380	430	600	600	620	630	575	445			480^{+}		430	680^{+}	600^{+}	465	475	380	444 (24)
26 S	385	380	310	230	275	360	355	455	610	670	645	500	360	360	380	355	415	335	380	395	525	500	360	215	406 (24)
27 S	170	130	85	105	145	215	320	205	370	480	585	585	430	360	290	250	260	325	385	260	325	430	395	405	
28 S	430	385	320	265	290	335	145	225	380	575	325	285	300	290	230	230	275	285	370	225		260	260	290	360 (24)
Mean	263 (24)	214 (23)	183 (23)	183 (21)	199 (21)	239 (20)	265 (22)	348 (20)	457 (18)	539 (20)	523 (20)	464 (23)	434 (21)	385 (22)	386 (19)	372 (21)	354 (24)	358 (21)	388 (24)	354 (25)	347 (24)	356 (25)	311 (25)	270 (26)	341
Fair Weather Mean	284 (19)	243 (19)	209 (19)	213 (16)	234 (16)	287 (16)	307 (17)	361 (16)	474 (16)	530 (17)	507 (17)	456 (19)	431 (17)	377 (18)	365 (16)	352 (19)	372 (19)	362 (19)	386 (22)	345 (21)	324 (21)	350 (23)	310 (23)	285 (23)	349
Mean for selected quiet days																									[355 (8)]

The potential gradient is reckoned as positive when the potential increases upwards. The small $^{+}$ denotes a non-fair weather hour (see Introduction). No entry is made for hours with hydrometeors and dashes are inserted for hours of defective record. The number of hours or days used in computing each mean is shown in round brackets. The mean for selected quiet days (see Introduction) and the figure in round brackets, which is the number of days used in computing this mean, are entered in square brackets.

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

37 KEW OBSERVATORY — Factor 4·27 — MARCH 1965

Hour GMT; volts per metre

	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	240	215	155	75	95	105	260	385	465	480+							550+	540+	525+	505+	480	385	120	310		
2	205	140	165	105	120	105	225	420	585	620	535+	395+						360	585	490	380		140+	215		
3	395	265	360	325	345	200	275	395	720+	595+	415+	430+	260+	205+	190+	240+			300	335	215	165	130	110		
4	120+	170+	145+																				50+	165+		
5	260	230	190	250	240	205	345	445	620	755+	500+	550+				670+	620+	620+	620+	360	200	265	310	445		
6	335	190	190	190	140	0	15	225	200	165	430	430	430	380	385	360	445	310	480	395	345	395	550	635		
7 S	200+	165+	260+	170+	190	145	165	205					690+	500	385	360	275	240	415	440	505	610	645	635		
8 S	575	465	260	215	240					595	775	750	655	515	465	445	480	420	455	415	260	335	300	105	480	(24)
9	-10+	0+	145+	95+						430	445	440	560	635	550	430	155	60	170	240	140	190	165	95		
10 S	60	70	25	60	120+	170+	165+	415	515	515	300	285	265	285	300	325	355	360	335	430	505	500	420	370		
11 S	405	300	285	230	230	265	260	440	570	475	325	335	325	310	310	320	370	395	380	380	415	385	360	325	363	(24)
12 S	275	275	275	200	215	240	200	310	455	455	335	320	300	320	300	290	300	335	370	370	285	250	420	385	318	(24)
13	355	225	215	165	165					370	300	240	205	170	170	130	95	35+			205	165	95	215		
14			75+			75+	140+			260+	250+	250+	190+	240+			320+			380+	355	300	35	120		
15			180+	140+		110+	130+	170+	265+	265+	300+	360+	310+	325+	325+						170+	170	190	240		
16	225	215	205	215	240	250	275	265		325+	300+	320+	310+					395+	440	575	445	505	455	525		
17	500	430	430	475	345		275+	290+	290+	265+	170+	310+										395+	420+	360+		
18 S	345+	225+	225+	335+			265+								455	395	500	455	385	415	310	190	205	165		
19 S	190	140	140	205	190	265	325	415	655	610+	635+	660+	620+					480+	535+			50+	75+	105+	376	(24)
20	15+	85+	85+	45+	70+	85+	130+										85+	120+	0+	345+	445+	385+	325+	275+		
21	215+	180+	310+	260+	45+									240+	230+									140+		
22	120+	95+	35+		-20+	165+	225+	260+	345+	420	570	415	355	335	355									240+		
23	230+	215+					230+	310+						355+		345+	420+	455+			240+	265	105	120		
24	130+	190+	165+	165+	170+	215+	250+	380+	465+	355+	420+	360+		430+	380+			300	320	405	415	505	570	465		
25			170	180	190	230	285					290+	290+	260+	260+	310+	300+									
26			155	145	140	180	285	360	380	415	405	355	360	360	320	325	275	230	260	345			155	75		
27 S	155	105	155	120	155	170	240	285	275	290	260	205	205	200	200	230	200	215	290	335	225	225	230	290	219	(24)
28 S	320	275	285	265	300	310	345	395	385	325	310	260	320	405	325	275	230	240	355	395	405	310	240	310	316	(24)
29	225+	275+	275+	190+	240+			465+	380+	570	585	575	320	225	200	180	140	140	145	120	205	500	405	310		
30 S	260	165	120	200	215	320	230	775	845	875	790	585+	660+	540+	535+	505+	505+	395+	480+	480+	360+	310+	370+	225+	396	(24)
31 S	200+	205	205	250	260	285+	445	440	465+	480+	505+	585+	655+	620+	515+	550+	515	405	360	300	200	120	-105+	-285+		
Mean	242	204	196	195	186	186	239	366	467	455	429	404	395	357	341	352	340	326	373	384	321	315	264	256	316	
	(27)	(27)	(30)	(27)	(25)	(22)	(25)	(22)	(19)	(24)	(23)	(24)	(21)	(22)	(21)	(19)	(21)	(23)	(22)	(22)	(24)	(25)	(28)	(30)		
Fair Weather Mean	297	230	210	204	211	199	261	386	496	466	448	384	358	357	337	313	310	298	356	375	325	321	291	294	322	
	(16)	(17)	(19)	(19)	(19)	(15)	(16)	(16)	(12)	(14)	(13)	(12)	(12)	(13)	(14)	(13)	(14)	(15)	(17)	(18)	(20)	(21)	(21)	(22)		

Mean for selected quiet days [353 (7)]

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

37 KEW OBSERVATORY — Factor 4·27 — APRIL 1965

Hour GMT; volts per metre

	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	-20	-105	15	-10	-55	130	300	525	635	800	910	875	790	740	670	560	500	380	610	430	335	230	60+		
2														755+	630+	420+	230+	140+	120	120	240	360	260+	240+		
3 S	240+	240+	205+	170+	205+	155+	230+	360+	310+	500	405	335	285	170	120	130	110	215	215	250	275	260	265	250	246	(24)
4	180	95	110	140													180+	145+	180	325	455	480	515	525		
5 S			225+	215+			275+	480+	680+	645+	620+	395+	285+	240+	240+	230	225	225	260	260	325	260	240	265		
6 S	165	165	155	155	205	250	395	550	595	505	355	265	200	200	165	190	155	170	155	225					263	(24)
7							215+			240	335	345	310	335		355+				75	310	395	360	240		
8	145	105	140	25+				395+	465+	560+	310+	260+	225+	230+						465+	260	475	260	75		
9	25	0	70	25	190	370	600	635	800	825	570	445	320	260	250	240	260									
10		60+	35+	140+	140+							225+	290+			165	240	250	240	230	265	285	325	265		
11	215	200	200	225	250	325	310	335	265	260	200				70+	260+				355	455	475	395	355		
12	260	250	240	225	250	290	385	480	415+			345+	310+	300+					440+			480	440	360		
13	335	320	310	345	395	415	575	635	620	405	285		370+				260	275	310	345	405	385	370	345		
14	320	310	415	475	430	490	560	655	550	370														415+		
15	180+					200+	370+	500+	490+	275	355	380	345	335	355	360	380	370	380	370	380	335	325	290		
16 S	265	230	200	190	200	310	360	320	285	275	215	215	155	165	170	180	215	230	260	325	275	310	275	165	241	(24)
17	110	145	140	145	45	95	190	225	200										290+				200+	120+		
18				180	190	190	230	225	200	205			155+	170+			205+	225+		250+	240+		225+			
19			170+	140+			230+	225+													120+	335	440	370		
20	215	225												225+	250+	225+	260+	230+	215+	165	140	105	105	95		
21 S	130	120	120	130	155	265	345	355	385	360	355	370	310	320	265	275	240	240	250				75	70	235	(24)
22 S	140	120	95	50+	25+					345	360	360	325	325	310	310	300	265	265	250	225	230	155	145	224	(24)
23 S	230	260	205	145	60	105	170	500	455	405	465	465	325	360	325	275	405	345	320	290	355	380	360	355		
24 S	335	345	250	310	320	395		415	420	380	345	285	250	230	200	200	225	225	250	205	240	290	345	265	355	(24)
25 S	275	240	230	240	325	190	190	155	215	230	180	170	145	85	155				310+	205+			165+		232	(24)
26			180	290	310	300	385	430	430									380+								
27												-							-			-	-	-		
28	-	-	-	-	-	-			-		-	-	-	-			-			-	-	-	-	-		
29	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
30	-	-	-	-	-	-	-	-	-	-	505	490	600	550	405			260	200	265	105	-20	35	-25		
Mean	195	179	171	181	205	252	323	409	437	412	392	368	320	318	291	280	262	261	265	279	289	324	277	238	289	
	(19)	(19)	(21)	(22)	(18)	(17)	(19)	(20)	(19)	(18)	(17)	(17)	(19)	(19)	(16)	(16)	(17)	(18)	(19)	(20)	(19)	(19)	(23)	(22)		
Fair Weather Mean	194	183	174	202	221	262	345	414	425	388	382	387	342	317	288	269	275	275	252	274	302	324	290	245	293	
	(17)	(17)	(17)	(16)	(15)	(15)	(14)	(15)	(14)	(16)	(15)	(13)	(13)	(13)	(12)	(12)	(13)	(13)	(15)	(17)	(17)	(19)	(19)	(18)		

Mean for selected quiet days [257 (7)]

The potential gradient is reckoned as positive when the potential increases upwards. The small + denotes a non-fair weather hour (see Introduction). No entry is made for hours with hydrometeors and dashes are inserted for hours of defective record. The number of hours or days used in computing each mean is shown in round brackets. The mean for selected quiet days (see Introduction) and the figure in round brackets, which is the number of days used in computing this mean, are entered in square brackets.

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

37 KEW OBSERVATORY — Factor 4·47 — MAY 1965

volts per metre

Hour GMT	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	-25	-145	-180	-75	-155	-110	-10	20	240	320	205$^+$	170$^+$	140$^+$				35	140	355	295						
2	-55$^+$	230	205	150	125	180	230	250	205	265	250	180	135	105	105	125	140	160	185	240		100$^+$				
3		90	135				330$^+$	295$^+$	345$^+$	285$^+$	275$^+$		240$^+$	230$^+$	195$^+$											
4					135$^+$	150$^+$	225$^+$												240	275	240	250		230		
5 S						140	230	345	320	275	275			260	230	320	275	310	295	305	295	285	260	205		
6 S	225	205	215	230	260	320	385	455	400	240	205	240	225	225	250	215	240	240	125	135	275	265	150	55	267	(24)
7	115$^+$	100$^+$			100$^+$	205$^+$	330$^+$	275$^+$		310$^+$	320$^+$	320$^+$						275$^+$	265$^+$			285	310	265		
8	160	160	195	205	185	205	265	260	185	215	170	180	160$^+$	140$^+$	90$^+$	55$^+$	-10$^+$				-10$^+$	-20$^+$	25$^+$	90$^+$		
9 S	25$^+$						140$^+$	215$^+$	240	260	240	240	230	225	225	195	170	170	275	320	185	125	185	230		
10 S	225	265	260	260	265	260	435	455	445	295	265	275	240	225	225	225	195	185	180	125	60	35	20	80	262	(24)
11	90	80	55	105	100	105	135	330	340	320	265	225	195	185	180	150	170	160	150	170	170	105	25$^+$	60$^+$		
12 S	100$^+$	105$^+$	70$^+$	60$^+$	115$^+$	0$^+$	80$^+$	105$^+$	275	260	275	260	240	265	250	250	195	225	285	250	275	285	170	90		
13 S	70	90	105	115	150	180	375	410	385	310	260	225	230	215	215	205	205	185	215	195	205	185	240	230	229	(24)
14	150	125	135	185	215	250	375	455	525	285	375	330	275	260	205	240	215	195	170	225	215		185	260		
15 S	205	195	205	185	185	275	365	275	355	320	275	230	215	265	195	140	140	140	160	195	305	225	225	195	228	(24)
16	160	195	180	180	195							140$^+$	160$^+$	125$^+$		260$^+$		160	230	265						
17			160$^+$	60$^+$			180$^+$	265$^+$		250$^+$	230$^+$	215$^+$	205$^+$	230$^+$	265$^+$											
18 S	-	-	-	-	-	-	-	330	310	250	250	205				150$^+$	215	225	215	230	180	230	230	215		
19 S	180	195	250	305	340	465	445	425	410	320	320			285$^+$		230	275	205	135	100	150	170	160	160	284	(24)
20 S	105	70	80	80	160	225	305	365	375	275	230	215	195	185	170	195	185	170	195	225	305	180	105	80	195	(24)
21	80	100	140	80	70	90	180	285	285	230	215	185	170	160	170	140	100	115	70	180	215	180	160	135		
22 S	100	90	90	100	115	140	195	240	260	225	225	180	185	160	140	135	150	150	170	185	205	195	160	170	165	(24)
23	170	80$^+$			105$^+$	265	275	265	265	205	160	170	180	150	180	140	140	195	180	105	185	225	305	285		
24					-	-	265$^+$	285$^+$	265$^+$		250$^+$				240$^+$		260	260	250	265	310	310	260	195		
25	135	135	170		125$^+$	205	215	265	250	250	250			240$^+$	240$^+$				150$^+$	320	365	365	355	340		
26	285	240	230	240	305			445$^+$												260$^+$	375$^+$					
27		160$^+$	215	215	225	320	390	400		340$^+$	320$^+$				-	-	-									
28						0$^+$	135$^+$	160$^+$		275$^+$	285$^+$	250$^+$	195$^+$		215$^+$	215$^+$	180$^+$	140$^+$	160$^+$		140$^+$	80$^+$	70$^+$	100$^+$		
29 S	60	80	80	80	105	125	215	230	250	240	250	215	185$^+$	215$^+$	180$^+$	125$^+$	160$^+$	160$^+$	185	215	265	265	260	230	182	(24)
30	195	185	170	170				160$^+$			150$^+$		140$^+$	140$^+$	160$^+$	195$^+$	115$^+$		240$^+$	230$^+$				70$^+$		
31			195$^+$	125$^+$	215$^+$				305$^+$	425$^+$	340$^+$	340$^+$	305$^+$	340$^+$	345$^+$	265$^+$	320$^+$	305$^+$		305	310	375				
Mean	125 (22)	132 (23)	146 (23)	145 (21)	158 (23)	182 (22)	257 (26)	295 (28)	315 (23)	279 (26)	255 (28)	227 (22)	202 (22)	210 (23)	203 (23)	190 (22)	177 (23)	194 (23)	203 (25)	225 (25)	227 (23)	204 (23)	184 (21)	173 (23)	205	
Fair Weather Mean	143 (18)	136 (19)	147 (20)	156 (18)	167 (17)	202 (18)	278 (18)	319 (19)	316 (20)	268 (20)	250 (19)	222 (16)	209 (13)	206 (14)	196 (14)	194 (15)	184 (18)	189 (19)	203 (21)	223 (23)	236 (20)	227 (20)	208 (18)	192 (19)	211	
Mean for selected quiet days																									[227	(8)]

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

37 KEW OBSERVATORY — Factor 4·50 — JUNE 1965

volts per metre

Hour GMT	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 S		95$^+$	185$^+$	185$^+$	245$^+$		315$^+$	515$^+$											210$^+$	150	120	115	105	85		
2 S	140	165	175	140	190	185	350	480	555	565	530	400	385	385	355	270	245	190	175	175	210	165	150	105	270	(24)
3	45	45	45	115	225	235	305	365	460	390	410	425	385	390	400	410	340	260	225	260	175	190	15	105		
4	50	45	10	70	60	130	200	330	505	645	565	575	495	425	375	340	390	385	120	105	85	70	80	70		
5	130$^+$	85$^+$	15$^+$	10$^+$	25$^+$	105$^+$	155$^+$	245$^+$	155$^+$	140$^+$	185	155	140	140	115	85			85	85	80	95	105	140		
6	190	200	105	150$^+$	25$^+$	45$^+$	105	150	130	155	130	115	115	115	120		175	165	150	165	175	190	270	260		
7	175	190	150	190	120	175	225	340	245	235	140	140	115$^+$	95$^+$	85$^+$	80$^+$										
8					95$^+$															225$^+$	315$^+$	260$^+$	165$^+$	330$^+$		
9 S	260$^+$	245$^+$	225$^+$	250$^+$	175$^+$	50$^+$		250$^+$		155$^+$	200$^+$	245$^+$				225	225	210	175	185	200	175	140	120		
10 S	115	95	80	70	140	340	435	540	515	530	450	470	425	375	330	280	235	235	190	175	190	85	85	50	277	(24)
11 S	45	60	80	50	45	60	175	225	245	250	155	130	140	130	165	200	190	200	190	210	210	190	190	200		
12 S	235	235	235	235	260	165$^+$	155$^+$	200$^+$						175$^+$			295	210	210	245	190	250	315	295	198	(24)
13 S			245$^+$	270$^+$	225$^+$			225$^+$	235$^+$	175$^+$	85$^+$				245	215	235	175	155	155	165	140	105	120		
14 S	185	210	130	120	185	235	225	305	340	225	245	225	165	155	140	150	140	130	175	185	185	185	270	225	173	(24)
15 S	225	155	165	140	150	150	140	235	280	260	270	270	190$^+$					80$^+$	140$^+$	105$^+$	215$^+$	175$^+$	175$^+$	165$^+$	199	(24)
16 S	140	120	150	150	155	165	250	280	260	200$^+$															170	(24)
17	-45$^+$	60$^+$	115$^+$	155	225	250	330	365	295	250	245	215	200	175	190	210	190	235	225	150						
18 S			0$^+$	0$^+$	15$^+$													190$^+$	215$^+$	245$^+$	285$^+$	225$^+$	190$^+$	150$^+$		
19 S	140	140	140	130	155	185	215$^+$	245$^+$	245$^+$	225$^+$	210$^+$	185$^+$	155$^+$	140$^+$	130$^+$	115$^+$	115$^+$	120$^+$	130$^+$	85$^+$	130$^+$	200$^+$	235$^+$	225$^+$	161	(24)
20 S	225	165	185	200	210	225	270	280	320	260	165	155	140	140	115	105	95	95	105	105	150	175	250	105	181	(24)
21	155	215	215	210	140		-	-	-				-	-	-	-										
22	-	-													-	-	-	-	-	-		-	-	-		
23	-	-	-	-	-	-	210$^+$	235$^+$	210$^+$	190$^+$							190$^+$	190$^+$	185$^+$	185	225	250	225	235		
24	200	200	155	155	185	225	250	350$^+$			-	-	-	-	-	-	-	-	-		-	-	-	-		
25 S	-	-			-	-	-	-	235$^+$	185$^+$	155$^+$	105$^+$	95$^+$	70$^+$		115$^+$						155$^+$	140$^+$	140$^+$		
26 S	105	140	175	200	200	215	235	280	280	260	215	225	175	155	155	150	155	165	185	210	225	235	260	225	186	(24)
27 S	190	190	155	130	120	155	225	245	210	200	200	175	155	150	155	130	140	150	150	175	175	245	175	60	181	(24)
28	105	175	155	115	130	175	320	575$^+$	375	355	280	250	235	225	215	210	200	190	190	190	210	235	200	95		
29	95	50	60	130	185	210	270	385	530	515	450	330	425	460	410	420	435	355	340	305	355	340	330	270		
30	185	225	150			295	410	550	520	530	470	520	445	355	390			435	260	245	155	80				
Mean	143 (23)	146 (24)	135 (26)	143 (25)	149 (26)	181 (22)	251 (23)	328 (25)	325 (22)	300 (23)	274 (21)	265 (20)	241 (19)	224 (19)	227 (18)	206 (18)	222 (18)	208 (21)	182 (23)	180 (24)	192 (23)	184 (24)	182 (23)	164 (23)	211	
Fair Weather Mean	147 (20)	151 (20)	136 (20)	142 (19)	162 (19)	201 (18)	262 (18)	335 (16)	357 (17)	352 (16)	300 (17)	281 (17)	268 (15)	252 (15)	242 (16)	227 (15)	230 (16)	223 (17)	184 (18)	183 (20)	183 (19)	179 (19)	182 (18)	154 (18)	222	
Mean for selected quiet days																									[200	(10)]

The potential gradient is reckoned as positive when the potential increases upwards. The small $^+$ denotes a non-fair weather hour (see Introduction). No entry is made for hours with hydrometeors and dashes are inserted for hours of defective record. The number of hours or days used in computing each mean is shown in round brackets. The mean for selected quiet days (see Introduction) and the figure in round brackets, which is the number of days used in computing this mean, are entered in square brackets.

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

37 KEW OBSERVATORY — Factor 4·53 — JULY 1965

Hour GMT	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	-10	0	80	70	80	180	440	520	485	450	425	395	370	335	295	325	280	245	200	155	65	55	155	90		
2 S	100	80	145	190	215	180	325	395	340	305	270	200	190	235	215	215	160	170	170	170	160	190	170	125		
3 S	135	55	145	155	200	180	250	430	430	380	290	250	160	115	110	90	155	160	55+				260+	55+	195	(24)
4 S	110	135	155	200	160	225	350	325	145	200	180	170	90	125	110	70	70	90	90	135	180	225	225	235	167	(24)
5 S	180	145	145	155	160	250	340	395	340	290	290	250	205	160	145	200	250	225	250	235	260	290	280	235	236	(24)
6	170	170	180	160	170	190	200	270	270	260	270	200	245				170+	145+					-	-		
7	-	-	-	-	-		-	-	290+	245+	205+	215+	235+	200+	215+											
8 S		-140+	- 30+	- 45+	55+	180	295	395	385	370	325	250	250	215	235	215	205	180	155	135	160	160	170	245		
9 S	170	245	200	200	160	215	250	270	350	350	290	295	290		270+				235+	180+		190+	125+	200+	231	(24)
10	235	170	215	245	250	280	325			260	250	270	225			180	170	160	125	170	280	260	250	270		
11	260	190	160	155	170	205	80	90	115			160+	190+	135+		70+							-75+	-110+		
12	-10+																		65+	70+	145+	170+	115+	145+		
13	55+	90+	90+	90+	80+	25+	155+	215+	235+	245+	250+	235+	235+	245+	270+	115+	225+							180+		
14 S	205	200	245	215	145	290	405	325	290	245	290	290	215	235	245	235	200	200	190	215	135	110	180	180	229	(24)
15	145+	90+	90+	45+	55+			360+	340+	335+	370+		135+	270+	180+	215+	270+	205+						160+		
16 S	125	125	135	100	145	200	325	450	405	350	350	325	295	315	280	260	245	205	200	200	235	235	190	235	247	(24)
17 S	190	190	180	215	315	295	350	215	145	110	115	145	155	110	80	115	80	70	70	80	90	110	145	135		
18 S	115	110	70	65	90	110			110	155	245	315	235	200	160	125	70	80	100	70	100	100	80	45	126	(24)
19	55	100	70	70	90	90	-	-	-	235+	200+	170+		160+	200+	145+	160+	160+	170+			270+	215+			
20		65+	125+						575+	520+						485+	270+	335+				110+	65+	160+		
21	115+	110+	100+	180+	100+	125+	205+	215+	245+	225+	215+	245+	245+					135+	125+			205	155	135		
22	100	100	125	110	125	170	190	270	250	250	260	280	205	-	-	215	155	160	80+	155	170	200	215	205		
23				215+	280+	350+	430+													335	250	200	110	70		
24	125	125	160	205	215	270	315	325	315	270	245	225	225		170+	155+	160+	215+	225+							
25		315+	245+	235	225			200	235	215	180									-	-	-	-	-		
26	-	-	-	-				-	350	270	280	270	290	245	260	250	215	215	200	250	205	250	280	235		
27 S	205	235	235	235	270	280	325	360	385	290	340	250	260	260	245	245	200	190	200	245	280	270	205	245	261	(24)
28	190+						115+	100+	145+		215	180	160	180	160	155	160	170	145	170	155					
29 S			45+	55+	70+		190+			280+	325+	280+	250+	235+	235+	245+	200+	245+	235+	235	190	200	200	180	243	(24)
30 S	155	160	180	135	145	200		440+		460+			260+	350+		430+	515+				260+	205+	180+	180+		
31 S	200+	115+		135+	170	205	295	315	260	260	215	205	155	155	145	155	125	135	100	190	160	160	180	205	190	(24)
Mean	138 (24)	127 (25)	140 (25)	146 (26)	159 (26)	204 (23)	280 (22)	313 (22)	297 (25)	290 (27)	265 (26)	243 (25)	222 (26)	213 (21)	201 (21)	205 (24)	196 (24)	178 (23)	154 (22)	179 (19)	183 (19)	189 (22)	170 (24)	162 (25)	202	
Fair Weather Mean	146 (18)	141 (18)	157 (18)	164 (19)	175 (20)	210 (20)	298 (17)	326 (17)	295 (19)	278 (19)	266 (20)	251 (19)	222 (19)	206 (14)	192 (14)	191 (16)	171 (16)	166 (16)	157 (14)	185 (17)	181 (17)	189 (17)	188 (17)	181 (17)	206	
Mean for selected quiet days																									[213	(10)]

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

37 KEW OBSERVATORY — Factor 4·63 — AUGUST 1965

Hour GMT	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	200	215	210	200	200	235	280	270	255	255+	200+	200+	170+	165+	145+			125+	135+	155+	260+	325	355	315		
2	310	260	260	235		155+		270+													210+	190+	100+	180+		
3 S	190	170	145	135	190	255	260	390	435	315	280	270	245	235	235	210	200	190	280	255	255	280	370	335	255	(24)
4 S	280	235	225	225	245	345	455	480	435	345	260	270	260	225	225	245	235	280	345	390	360	325	225	200	296	(24)
5 S	170	165	215	180	245	270	470	470	345	290	290		180+	200	235	235	235	310	390	335	255	165	280	310	267	(24)
6 S	315	260	245	210	260	360	460	505	445	360	280	255	270	255	255	215	180	125	155	200	200	215	260	245	272	(24)
7	310	225	225	235	245	270	355	455	455	310	235	190	170	165	135	110	90	120	155	190	125	90	100	110		
8 S	90	70	70	100	100	225	325	390	325	235	200	200	165	165	210	200	170	165	155	165	315	235	245	120	193	(24)
9	55	45	65	35	70	70	165	415	435	415	360	210	235+	335+				245+	280	235	145	235	165	210		
10	165	110	120	145							255+	235+	260+	235+		180+	215+		245+	200+	165+	110+	255+	310+		
11 S								415+	525+	560+	360	255	190	225	145	145	110	145	145	370	360	380	290	235		
12 S	155	100	90	100	90	125	455	535	595	435	290	315	270	215	310	290	315	200	180	90	-75	-150	-160	-20	251	(24)
13	0	-65	-120	20	65	155	310	325	345	390	400	455	470	380	500	500	560	455	270	325	325	145	65	65		
14	125+	100+	120+	100+	90+	90+	155+	215+		170+			135	215	155	165	170	155	90	165	360	300	390	400		
15	325+	170+	90+	110+						155+	215	180	165	145	155	145	170	165	180	210	235	325	270	125		
16	170	65	90	215	165	165	270	470	550	525	515	415	390	325	290	255	190	155	255	200	100	65	110	125		
17	125+	145+	135+	125+	110+	210+	480	560	690	590	595	470	370	280	280	235	255	165	70	110	100	125	120	80		
18 S	190	165	210	125	165	235	455	545	535	415	310	225	90	70	80	225	245	235	210	280	315	270	260	235		
19 S	155	135	165	210	180	215	255	310	260	315	260	210	190	255	190+	210+	215+								232	(24)
20			70	65	55	65	110	270	455	455	370	280	235	225	190	190	145	165	200	180	120	155	245	255		
21																		210+	280	280	325	180	270	245		
22	315	245	165	155	215	210	255	310	380	280	225					145+				200+	120+	345+	280+	235+		
23 S	145	135	155	200	70	200	370	470	425	455	345	325	335	335	310	215	270	290	225	165	180	135	165	200		
24 S	155	165	200	170	170	235	345	380	380					170+	310+							180+	245+	225+	233	(24)
25 S	225	215	190	210	215	290	415	590	560	445	380	335		280+		255	170	180	180	165	190	200	170	180		
26 S	125	155	100	155	210	225	300		325	300	290	225	145+												201	(24)
27					135+	290+	405+	455+	370+	605+	535+	270+	315	260	245	255	200	190	80	45	155	170	235	200		
28	165	180	135+	135+	180+	165+	180+	200+		260+	245+	170+	200+	110+	165+	200+	135+		90+			270+	290+	290+		
29 S	280	310	280	290	280	290	335	315	335	300+	225+	170+	125+	165+	110+	125+	120+	120+	200+	215+	335	355	255	200		
30 S	155	180	155	165	180	180	225	235	300	225	190	170	110	125	125	135	100	45	155	155	70	125	180	200	194	(24)
31						90+	155+	210+	315+	355+		335+			270+	260+						255+	235+	235+		
Mean	188 (26)	160 (26)	149 (27)	157 (27)	165 (25)	208 (27)	317 (26)	387 (27)	419 (25)	361 (27)	312 (26)	265 (25)	228 (25)	222 (26)	220 (24)	214 (25)	204 (23)	193 (23)	198 (25)	211 (25)	212 (26)	207 (29)	216 (29)	208 (29)	234	
Fair Weather Mean	188 (23)	163 (23)	153 (23)	164 (23)	172 (21)	220 (21)	334 (22)	414 (21)	421 (22)	374 (19)	317 (21)	277 (19)	243 (18)	226 (19)	227 (18)	222 (19)	211 (19)	197 (19)	204 (21)	215 (21)	216 (22)	202 (23)	212 (23)	199 (23)	240	
Mean for selected quiet days																									[239	(10)]

'The potential gradient is reckoned as positive when the potential increases upwards. The small + denotes a non-fair weather hour (see Introduction). No entry is made for hours with hydrometeors and dashes are inserted for hours of defective record. The number of hours or days used in computing each mean is shown in round brackets. The mean for selected quiet days (see Introduction) and the figure in round brackets, which is the number of days used in computing this mean, are entered in square brackets.

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

37 KEW OBSERVATORY — Factor 4·47 — SEPTEMBER 1965

Hour GMT; volts per metre

	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	225	305	330	240	180	285	500	485	455	420	360	305	145+	-20+	145+			-25+	65+	70+	-10+	10+	90+	35+		
2	45+	35+	55+	70+	25+	65+	100+	-10+	-10+	45+	80+	150+	125+	90+	135+	45+	-45+	25+	0+	-135+	-155+	-155+	-155+			
3																							-45+	10+		
4 S	-10	10	100	125	180	235	275	350	340	285	275	240	190	195	190	145	190	160	190	305	455	360	360	320		
5 S								500+	375+	320+	225+	205+	195+	145+	145+	145+	150+	305	205	240	190	225	225	225	248	(24)
6	160	180	145	150	145	250	350	360	375	360	320	275	215+		270+			250+	180+	45+	-55+	105+	150+	235+		
7 S	250+	45+	90+	135+	150+	190+	340	385	420	445	275	260	235	215	190	195	195	240	315	270	305	315	320	270		
8 S	260	235	180	205	235	295											260+	240+	70+	65+	90+	35+	190+	275+	275	(24)
9	270	275	330	315	260	260	360	360	530	475	375	320	250	285	235	160	90		-	-	-	-	-	-		
10	-	-	-	-	-	-	-	-	305	295	195		190+													
11		90+																-	-	-	-	-	-	-		
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
13 S		-	-	-	-	-	250+	520+	660+	430	455	440	430	365	340	330	340	340	275	305	240	205	190	205		
14 S	195	145	160	275	270	170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	314	(24)
15 S	-	-	-	-	-	-	-	410	330	320	260	240	160	180	215	205	215	170	215	340	430	340	275	190		
16 S	145	105	105	100	145	160		225+			205+			115+	150+		180+	205+	145+	180+	160+	170+	215+	135+	207	(24)
17								590+	535+	535+		340+								205+	250+	150+	180+	115+		
18	100+	90+	65+	45+	10+	65+	105	215	215	205	160	240				135+	190	195	270	365	385	420	295	235		
19 S	320	250	195	160	160	115	190	305	320	410	340	270	170	150	145	150	160	190	190	270	295	260	285	235	231	(24)
20 S							285	500	620	545	430	330	275	285	260	270	195	215	225	195	250	270	205+	205+		
21 S									340	375	305	315	320	285	270	305	260	305	235	205	285	285	160	270	294	(24)
22	160+	170+								545	565	455	410	385	385	320	320	350	315	320	430	330	375	340		
23					170+	180+	235+	270+	330+	340	320	330	275	305	360	385	330	360	440	305	385	275	225	295		
24								135+		215	260	190	180	240	250	305	315	305	275	250		35+	90+	105+		
25										240+	205+	170+	150+	145+												
26		170+				145	215	240	235	190+	240+							330+	500+	455+						
27	145	145	145	135	180	215	360	520	490	410	350	520+		365	295	275	295	350	475	330	160+	125+				
28 S			170+	190+	215+	295+					485	465	320	340	340	385	385	375	440	410	330	240	195	190		
29 S	180	215	250	275	260	275	320	420	420	375	330	270	240	235	205	250	195	225	180	160+			115+	205+	311	(24)
30	150+	160+																						-		
Mean	173 (15)	154 (17)	166 (14)	173 (14)	173 (15)	200 (16)	278 (14)	357 (19)	383 (19)	354 (22)	305 (23)	301 (21)	236 (19)	227 (19)	238 (19)	236 (17)	222 (19)	243 (21)	248 (21)	234 (22)	233 (19)	200 (20)	188 (21)	205 (20)	239	
Fair Weather Mean	189 (10)	187 (10)	194 (10)	198 (10)	201 (10)	219 (11)	300 (11)	379 (12)	385 (14)	379 (17)	337 (18)	309 (16)	266 (13)	274 (14)	263 (14)	263 (14)	245 (15)	272 (15)	283 (15)	294 (14)	332 (12)	294 (12)	264 (11)	252 (11)	274	
Mean for selected quiet days																									[269	(7)]

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

37 KEW OBSERVATORY — Factor 4·55 — OCTOBER 1965

Hour GMT; volts per metre

	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	-	-					145+	170+			305+	340+	250	215	205	115	215	240	365	360	330	340				
2											535+	430+	320+		270+	270+		455+	485	465	410	410	445	385		
3 S	365	375	250+	170+	170+	240+	240+	270	285	285	235	250	205	225	240	275	305	350	350	340	330	360	320	250	279	(24)
4 S	215	195	195	260	215	195	275	475	545	520	465	455	455	410	375	405	430	580	500	410	315	275	270+		362	
5											540	595	505	615	605	660	670	615	450	175	275	185	175	145		
6												435	420	490	380	350	280	310	435	380						
7									295	420	435	545	390	320	280	310	365	210	195	195	195	170	110	140		
8	140	140	70	155												330+	430	430	360	330	365	285	250	250		
9 S	215	195	195	215	240	305	420	555	520	410	395	315	275	320	360	410	485	520	485	455	430	420	395	375	373	(24)
10 S	340	275	240	235	240	250	285	315	295	275	295	340	285	350	340	375	465	465	535	555	600	535	580	565	376	(24)
11 S	465	375	395	330	275	445	600	770	785	770	760	750	645	600	545	610	545	420	275	430	350	445	520	420	522	(24)
12	420	375	340	375	365	420	555	565	625	680	590	645	620	625	580	620	510	580	535	250	125	180	145	80		
13	105	195	105	170	170	160	150	260	445	375	180	250	235	205	215	215	275	180	215	235	170	285	195	350		
14	285+	45+										160+	315	285	275	315	365									
15		20+	65+	150+	235	375	510	645	810	620	610	520	375	385	350	285	330	330	350	420	365	360	285	240		
16	305	250	180	80	105+	105+	170+	225+	-	-	-	-	320	260	205	215	225	235	125+	45+	35+					
17												375	305	285	205	240	285	190	170+	25+	10+	20+				
18	20+	20+	10+	20+	25+	25+	55+	195+	365	405	500	555	520	600	660	705	645	645	660	635	555	485	305	125		
19	20+	20+	20+	10+	0	10+	55+	105+	160+	555	580+	405+	375+	465+	575	645	705	620	490	270	195	215	160	145		
20 S	90	225	250	205	125	190	320	410	645	680	590	510	555	445	465	445	530	610	565	565	535	465	455+	620+		
21 S	375+	315+	305+	275+	190+					555+	670	680	520	475	445	350	305	145	105	375	340	430	405	340	438	(24)
22	320+	315+	305+											500+	250+	465+	500+	305+	315+	330+						
23													440	360	350	360	340	405	575	575	645	555	500	535		
24	520	395	375	405	315+	250+	250+	340+	365+	215+	205	250	190	195	215	260	285	340	385	375	395	385	350	360		
25 S	360	350	330	315	330	330	365	475	545	660	645	680	625	440	410	500	575	520	430	375	320+	285+	320+		432	(24)
26														360+	410+	430+			-							
27 S								385+	500+	320	295	285	320	295	340	365	420	430	430	385	395	320	320	275	321	(24)
28	270	250	225	180	115	105	105	215	305							365	420	430	490	575	500	440	440	315		
29 S	250	170	145	150	225	285	340	430	465	520	445	410	330	320	270	320	455	485	445	410	445	430	420	445	359	(24)
30	250	285	285	240	215	180	190	205	235	215+	205+						235+	215	205	235	250	240	250	225		
31	195	145	145	125	115	125	125	135	125			320+											35+	65+		
Mean	263 (21)	224 (22)	211 (21)	203 (20)	193 (19)	222 (18)	271 (19)	357 (20)	438 (19)	471 (18)	451 (21)	437 (24)	392 (25)	388 (26)	364 (27)	387 (29)	414 (28)	402 (28)	390 (28)	363 (28)	341 (26)	341 (25)	319 (24)	302 (22)	339	
Fair Weather Mean	282 (16)	262 (16)	232 (15)	229 (15)	205 (14)	259 (13)	326 (13)	409 (14)	456 (16)	496 (14)	462 (17)	465 (19)	396 (23)	379 (23)	370 (24)	389 (25)	418 (26)	404 (26)	413 (25)	391 (25)	370 (23)	357 (23)	329 (20)	298 (20)	358	
Mean for selected quiet days																									[385	(9)]

The potential gradient is reckoned as positive when the potential increases upwards. The small + denotes a non-fair weather hour (see Introduction). No entry is made for hours with hydrometeors and dashes are inserted for hours of defective record. The number of hours or days used in computing each mean is shown in round brackets. The mean for selected quiet days (see Introduction) and the figure in round brackets, which is the number of days used in computing this mean, are entered in square brackets.

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

37 KEW OBSERVATORY — Factor 4·61 — NOVEMBER 1965

Hour GMT	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 S	90$^+$	55$^+$	-10$^+$				65$^+$	125$^+$		270$^+$	260$^+$	235$^+$			245$^+$	235$^+$	280$^+$	290$^+$	295	295	305	280	250	235	
2 S	200	180	155	135	155	160	200	290	380	360	360	325	380	385	470	430	665	740	685	205	25	25	65	0	241 (24)
3	-55	-55	110	350	235	190	325	630	790	665	700	740	530	360	405	340	360	650	685	505			250$^+$	-95$^+$	
4	55	110	200	250	260	290	380	505	565	610	560	575	485	460	430	385	460	370	350	180	70	80	55	55	
5	90	250	280	340	430	430	335	370	515	650	700	820	955	685	620	755	610	1000	650	430	250	125	-55	110	
6	155	200	225	260	290	270	325	360	450	395	260	160$^+$	245$^+$	280$^+$	385$^+$	515$^+$	470$^+$	380$^+$	155$^+$	90$^+$	-55$^+$		-10$^+$	-30$^+$	
7	25$^+$	155$^+$	20$^+$	80$^+$	0$^+$																				
8		180$^+$	170$^+$							325$^+$	295$^+$	290$^+$	280$^+$	260$^+$	245$^+$	260$^+$	430$^+$			405	385	340	350	315	
9	280	160	135	80	305	305	305	-	-	-						-	-			-	-				
10							125$^+$	215$^+$				450$^+$	385$^+$	440$^+$	430$^+$	395$^+$	290$^+$				90$^+$	90$^+$	180$^+$	305$^+$	
11	155	245	170	200	20	100	215	360		595	720	470	595	790											
12 S	235	205	235	200	250	305	350	620	865	955$^+$	800$^+$	650$^+$	720$^+$	610$^+$	565$^+$	565$^+$	720	740	800	830	775	775	845	745	
13 S	730	710	515	470	450	460	520	790	965	1000	910	425	385	470	430	325	380	460	740	865	630	800	865	875	678 (24)
14 S	875	460	405	485	530	515	630	765	710	710	685	630	460	470	425	430	520	640	610	650	630	605	425	270	630 (24)
15 S	180	80	125	115	160	305	325	550	700	810	880	965	1060	1060	980	865	775	515	810	720	650	595	485	415	468 (24)
16 S	305	270	235	235	235	245	290	540	495	565$^+$	540$^+$	520$^+$	630$^+$	565$^+$			380$^+$	485$^+$	395	505	395	350	340	270	612 (24)
17	225$^+$	205$^+$	-20$^+$						360$^+$	560$^+$	740$^+$	720$^+$	450$^+$	595$^+$										360$^+$	
18	485$^+$	485$^+$	560$^+$	505$^+$	450$^+$		280$^+$																		
19									720$^+$	745$^+$	880$^+$	910$^+$	485$^+$	325$^+$	250$^+$	685$^+$	520$^+$	485$^+$							
20																			155$^+$	235$^+$		20$^+$	0$^+$	-30$^+$	
21	-45$^+$	-40$^+$	-55$^+$					100$^+$	190$^+$	295$^+$	260$^+$	245$^+$	270$^+$	245$^+$		270$^+$	415$^+$	470$^+$	415	560	560	650	470	540	
22 S	540	515	385	395	325	425	505	665	865	765	790	790				340	370	340	305	340	395	470	335	305	
23 S	380	450	520	450	550	505	515	790	990	980	990	835	755	610	540	450						250	270	290	549 (24)
24	260	235	235	200	215	270	325	430	530	650	560	665	575	515	665	685	880	935	1000	855	900	740	775	765	
25	730$^+$	360$^+$				160$^+$	340$^+$	430$^+$														205	170	335	
26	360	360	270	290	380	450	610	865	1045	1100	1080	1135	1240	1150	1025	1000	1100								
27 S					260$^+$		340$^+$	430$^+$	665$^+$						430$^+$	380$^+$	430	575	560	605	595	530	475	450	
28 S	395	360	315	305	315	315	325	350	460	505	460	460	425	440	440	505	685	800	800	810	790	610	450		436 (24)
29																					180	200	110	55	
30	90	110	125	200	250	305	360		450	515			450	360	370	405	475	430			200	340	280	260	
Mean	281 (24)	250 (25)	221 (24)	277 (20)	289 (21)	316 (19)	347 (23)	485 (21)	635 (20)	637 (22)	640 (21)	592 (22)	560 (21)	527 (21)	492 (19)	487 (21)	534 (21)	573 (18)	554 (17)	505 (18)	409 (19)	385 (21)	321 (23)	296 (23)	442
Fair Weather Mean	291 (18)	269 (18)	258 (18)	276 (18)	296 (18)	325 (18)	380 (18)	555 (16)	673 (16)	687 (15)	690 (14)	680 (13)	638 (13)	597 (13)	567 (12)	532 (13)	602 (14)	630 (13)	607 (15)	547 (16)	455 (17)	419 (19)	366 (19)	349 (18)	487
Mean for selected quiet days																									[516 (7)]

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Mean values for hours without hydrometeors and for fair weather hours

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Hour GMT	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	295	250	240	305	340	445	445	535	675	820	870	765	535	570	650	765	810	800	835						
2												480$^+$	420$^+$	400$^+$	445$^+$					390$^+$				285$^+$	
3	305$^+$			180	215	225	260	365	550	515	500	500							215$^+$		320	390	105	125	
4	115	185	170	230	260	390	390	535	695	785	890	945	730											140$^+$	
5	105$^+$	60$^+$	80$^+$	160$^+$	225$^+$									140$^+$	355	340	445	550	425	570	445	425$^+$			
6 S	260	285	275	265	260	295	345	445	585	490	435	410	340	305	285	330	345	375	375	310	320	340	265	215	340 (24)
7 S	240	260	285	275	320	375	480	625	705	710	660	585	500	615	660	650	605	675	595	435	455	435	320	480	498 (24)
8	410	305	445	465	390	390	515	675	570	775	730	685													
9			20$^+$	60$^+$	90$^+$	80$^+$													375$^+$	390$^+$	385$^+$	340$^+$	260$^+$	215$^+$	
10 S	180$^+$	160	180$^+$	170$^+$				225$^+$	465$^+$	470$^+$	465$^+$	425$^+$	385	435	420	550	550	505	480	425	535	320	330	320	
11 S	420	365	330	345	295	295						240$^+$	195$^+$		275$^+$	285$^+$	470$^+$	545$^+$	625$^+$	675$^+$	785$^+$	640	585	515	400 (24)
12	480$^+$	385$^+$														525	535	365	490	480	490				
13 S	105$^+$	170$^+$			140	100	160	285	250	285	265	365	435	605	525	605	625	630	605	585	505	515	410	385	
14 S	365	365	365	320	225												410	455	425	375	260	10	230	170	418 (24)
15	150$^+$	100$^+$	125$^+$	00$^+$	45$^+$	45$^+$	55$^+$				150$^+$	160$^+$	250$^+$	375$^+$	310$^+$	285$^+$				295$^+$	340$^+$	305$^+$	125$^+$		
16										660$^+$	480	465	490	465	480	515	595	550	585	570	515	550	560	630	
17	570$^+$	480$^+$										100$^+$		180$^+$										00$^+$	
18	00$^+$	35$^+$		20$^+$																					
19 S												275	425	455	455	480	505	550	535$^+$	765$^+$					
20 S	525$^+$	595$^+$	545$^+$	410$^+$	410	320	310	425	420	480	515	560	580	420	425	410	480	525	500	605	535	410	390	320	493 (24)
21 S	310	355	390	260	180	70	260	425	640	570	750	730	710	570	545	550	595	470	455	425	365	330	330	340	
22 S	275	295	240	205	230	285		265$^+$		665$^+$	480$^+$	505$^+$					355	340	310	230					441 (24)
23						35$^+$	135$^+$	230$^+$					425	455	535	525	425	545	465			650	695	605	
24	375	275	250					225$^+$				550	730	710	580	515	390			140$^+$	140$^+$				
25	80$^+$	-20$^+$	55$^+$		140$^+$	115$^+$	180$^+$	180$^+$			305$^+$				205$^+$	160$^+$	275	375	515	340	340	135	115	170	
26	60	195	265	285	295	320	410	525	640	710	750	830	880	785	710	830	820	640	605						
27			640$^+$	535$^+$	275	465	605	470	345	275	265	390	505	695	595	605	425	375	465	675	580	585	625	730	
28	585	550	305	180	250	420	535	605	675	800	910	820	830	665	820	790	765	945	960	980	870	630	640	585	
29	535	425	545	695	615	625	560	545	500	435	425											205$^+$	260$^+$	195$^+$	
30	265	240	215	195	215	265	330		410	480	425	455			295$^+$	445	470	515	535	480	515	425	385	320	
31	345	285	265	240	265			250$^+$	445$^+$	765$^+$						535$^+$	625$^+$			525$^+$			100$^+$		
Mean	294 (25)	275 (24)	283 (22)	264 (22)	258 (22)	278 (20)	351 (17)	412 (19)	536 (16)	594 (18)	541 (19)	511 (22)	520 (18)	491 (18)	479 (20)	509 (21)	524 (22)	537 (20)	517 (22)	485 (22)	458 (19)	402 (19)	354 (19)	337 (20)	425
Fair Weather Mean	324 (15)	300 (16)	306 (15)	296 (15)	288 (18)	330 (16)	400 (14)	497 (13)	547 (14)	581 (14)	591 (15)	583 (16)	567 (15)	554 (14)	536 (15)	555 (17)	521 (20)	536 (19)	535 (18)	499 (15)	470 (15)	424 (15)	399 (15)	394 (15)	460
Mean for selected quiet days																									[432 (6)]

The potential gradient is reckoned as positive when the potential increases upwards. The small $^+$ denotes a non-fair weather hour (see Introduction). No entry is made for hours with hydrometeors and dashes are inserted for hours of defective record. The number of hours or days used in computing each mean is shown in round brackets. The mean for selected quiet days (see Introduction) and the figure in round brackets, which is the number of days used in computing this mean, are entered in square brackets.

POTENTIAL GRADIENT (close to the ground, over an open level surface).
Monthly, seasonal and annual means for hours without hydrometeors and for fair weather hours

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	Hour GMT 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												
													No hydrometeors												
Jan.	257	232	192	175	188	225	291	360	474	527	545	583	559	513	525	499	514	506	470	445	413	380	322	282	395
Feb.	263	214	183	183	199	239	265	348	457	539	523	464	434	385	386	372	354	358	388	354	347	356	311	270	341
Mar.	242	204	196	195	186	186	239	366	467	455	429	404	395	357	341	352	340	326	373	384	321	315	264	256	316
Apr.	195	179	171	181	205	252	323	409	437	412	392	368	320	318	291	280	262	261	265	279	289	324	277	238	289
May	125	132	146	145	158	182	257	295	315	279	255	227	202	210	203	190	177	194	203	225	227	204	184	173	205
June	143	146	135	143	149	181	251	328	325	300	274	265	241	224	227	206	222	208	182	180	192	184	182	164	211
July	138	127	140	146	159	204	280	313	297	290	265	243	222	213	201	205	196	178	154	179	183	189	170	162	202
Aug.	188	160	149	157	165	208	317	387	419	361	312	265	228	222	220	214	204	193	198	211	212	207	216	208	234
Sept.	173	154	166	173	173	200	278	357	383	354	305	301	236	227	238	236	222	243	248	234	233	200	188	205	239
Oct.	263	224	211	203	193	222	271	357	438	471	451	437	392	388	364	387	414	402	390	363	341	341	319	302	339
Nov.	281	250	221	277	289	316	347	485	635	637	640	592	560	527	492	487	534	573	554	505	409	385	321	296	442
Dec.	294	275	283	264	258	278	351	412	536	594	541	511	520	491	479	509	524	537	517	485	458	402	354	337	425
Year	213	191	183	187	193	224	289	368	432	435	411	388	359	340	331	328	330	332	329	320	302	291	259	241	303
Winter	274	243	220	225	233	265	313	401	525	574	562	537	518	479	471	467	481	493	482	447	407	381	32[illegible]	296	401
Equinox	218	190	186	188	189	215	278	372	431	423	394	377	336	323	309	314	309	308	319	315	296	295	262	250	296
Summer	149	141	143	148	158	194	276	331	339	307	277	250	223	217	213	204	200	193	184	199	203	196	188	177	213
													Fair weather												
Jan.	272	250	218	222	224	254	335	439	513	540	527	608	592	525	541	560	579	563	531	515	437	389	343	296	428
Feb.	284	243	209	213	234	287	307	361	474	530	507	456	431	377	365	352	372	362	386	345	324	350	310	285	349
Mar.	297	230	210	204	211	199	261	386	496	466	448	384	358	357	337	313	310	298	356	375	325	321	291	294	322
Apr.	194	183	174	202	221	262	345	414	425	388	382	387	342	317	288	269	275	275	252	274	302	324	290	245	293
May	143	136	147	156	167	202	278	319	316	268	250	222	209	206	196	194	184	189	203	223	236	227	208	192	211
June	147	151	136	142	162	201	262	335	357	352	300	281	268	252	242	227	230	223	184	183	183	179	182	154	222
July	146	141	157	164	175	210	298	326	295	278	266	251	222	206	192	191	171	166	157	185	181	189	188	181	206
Aug.	188	163	153	164	172	220	334	414	421	374	317	277	243	226	227	222	211	197	204	215	216	202	212	199	240
Sept.	189	187	194	198	201	219	300	379	385	379	337	309	266	274	263	263	245	272	283	294	332	294	264	252	274
Oct.	282	262	232	229	205	259	326	409	456	496	462	465	396	379	370	389	418	404	413	391	370	357	329	298	358
Nov.	291	269	258	276	296	325	380	555	673	687	690	680	638	597	567	532	602	630	607	547	455	419	366	349	487
Dec.	324	300	306	296	288	330	400	497	547	581	591	583	567	554	536	555	521	536	535	499	470	424	399	394	460
Year	230	210	199	205	213	247	319	403	447	445	423	409	378	356	344	339	343	343	343	337	319	306	282	262	321
Winter	293	265	248	252	261	299	355	463	552	585	579	582	557	513	502	500	519	523	515	477	421	395	355	331	431
Equinox	241	215	203	208	209	235	308	397	441	432	407	386	341	332	315	309	312	312	326	333	332	324	293	272	312
Summer	156	148	148	157	169	208	293	349	347	318	283	258	235	223	214	209	199	194	187	201	204	199	197	181	220
																				Annual mean for selected quiet days					[324]

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

Mean value for periods of twenty minutes about 1430 GMT

F = Potential gradient, unit 1 v.cm.$^{-1}$ i = Air-earth current, unit 10^{-18} amp. cm.$^{-2}$

λ+ = Conductivity due to positive ions, unit 10^{-16} ohm.$^{-1}$ cm.$^{-1}$

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	JANUARY			FEBRUARY			MARCH			APRIL			MAY			JUNE		
	F	*i*	λ+	*F*	*i*	λ+	*F*	*i*	λ+	*F*	*i*	λ+	*F*	*i*	λ+	*F*	*i*	λ+
1	6·58	174	26	4·41	196	44	...	...	...	7·30	267	37	...	...	...	...	...	...
2	...	...	...	3·89	214	55	...	...	...	...	...	...	...	...	...	3·30	238	72
3	...	...	...	...	...	...	2·19	121	55	...	...	...	...	...	...	4·04	263	65
4	8·18	275	34	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	6·56	216	33	...	...	...	4·93	204	41	2·39	192	80	2·48	188	76	...	...	...
6	...	...	...	...	...	...	...	...	...	1·48	134	91	2·71	211	78	...	...	...
7	...	...	...	...	...	...	...	...	...	3·11	257	83	...	...	...	...	...	...
8	4·50	185	41	...	...	...	4·74	270	57	...	...	...	...	...	...	...	...	...
9	...	...	...	4·80	227	47	4·86	171	35	2·46	214	87	...	...	...	...	...	...
10	...	...	...	5·68	240	42	3·10	159	51	...	...	...	2·12	161	76	3·56	233	65
11	3·60	217	60	3·80	217	57	2·93	244	83	...	...	...	1·76	190	108	1·69	181	107
12	3·19	182	57	2·45	183	75	2·86	260	91	...	...	...	2·52	199	79	...	...	...
13	...	...	...	...	...	...	...	...	...	...	...	...	2·23	228	102	...	...	...
14	4·05	216	53	...	...	...	...	...	...	...	...	...	1·98	214	108	1·45	156	108
15	3·45	219	63	...	...	...	3·27	264	81	...	...	...	...	...	...	...	...	...
16	...	...	...	3·26	206	63	...	...	...	...	...	...	...	...	...	...	...	...
17	...	...	...	6·89	273	40	...	...	...	...	...	...	2·67	216	81	1·78	125	70
18	...	...	...	3·57	251	70	...	...	...	...	...	...	...	...	...	...	...	...
19	4·47	233	52	...	...	...	...	...	...	...	...	...	2·79	204	73	...	...	...
20	...	...	...	...	...	...	...	...	...	...	...	...	1·64	173	106	...	...	...
21	...	...	...	...	...	...	...	...	...	...	...	...	1·56	164	105	2·65	165	62
22	...	...	...	4·08	193	47	3·39	198	58	...	...	...	...	...	...	...	...	...
23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
24	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25	6·46	242	37	...	...	...	...	...	...	...	...	...	2·25	209	93	1·17	117	100
26	...	...	...	3·51	255	73	3·07	185	60	...	...	...	...	...	...	...	...	...
27	5·86	293	50	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
28	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2·22	174	78
29	...	...	...				1·81	177	98	...	...	...	...	...	...	4·48	247	55
30	...	...	...				4·76	237	50	...	...	...	...	...	...	3·68	312	85
31	...	...	...				5·09	294	58				...	...	...			
Mean	5·17	223	46	4·21	223	56	3·62	214	63	3·35	213	76	2·23	196	90	2·73	201	79
No. of days used	11	11	11	11	11	11	13	13	13	5	5	5	12	12	12	11	11	11

	JULY			AUGUST			SEPTEMBER			OCTOBER			NOVEMBER			DECEMBER		
	F	*i*	λ+	*F*	*i*	λ+	*F*	*i*	λ+	*F*	*i*	λ+	*F*	*i*	λ+	*F*	*i*	λ+
1	2·93	224	76	...	...	...	...	...	...	2·06	154	75	...	...	...	6·94	194	28
2	1·81	187	103	...	...	...	1·56	111	71	...	...	...	4·96	204	41	4·57	157	34
3	...	...	...	2·27	170	75	...	...	...	...	...	...	4·06	246	61	...	...	...
4	...	...	...	2·34	169	72	...	...	...	3·75	237	63	4·11	135	33	...	...	...
5	...	...	...	2·63	164	62	...	...	...	6·17	150	24	6·36	250	39	...	...	...
6	...	...	...	2·47	166	67	2·25	167	74	...	...	...	...	...	...	3·08	106	34
7	1·91	189	99	...	...	...	1·83	153	84	2·80	200	71	...	...	...	7·12	226	32
8	...	...	...	...	...	...	...	...	...	...	...	...	2·24	157	70	...	...	...
9	...	...	...	3·58	243	68	...	...	...	...	...	...	...	...	...	...	...	...
10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3·87	125	32
11	...	...	...	1·36	111	82	...	...	...	5·09	249	49	...	...	...	...	...	...
12	...	...	...	3 11	165	74	...	...	...	5·70	267	47	5·19	231	45	...	...	...
13	2·68	231	86	5·11	282	55	3·44	185	54	2·27	159	70	...	...	...	...	...	...
14	2·45	234	96	...	...	...	2·03	159	78	2·87	186	65	...	...	...	...	...	...
15	...	...	...	...	...	...	2·01	108	54	...	...	...	9·82	348	35	...	...	...
16	2·69	286	106	2·88	226	78	...	...	...	...	...	...	...	...	...	...	...	...
17	...	...	...	2·82	204	72	...	...	...	...	...	...	...	...	...	...	...	...
18	...	...	...	1·17	106	91	...	...	...	6·25	176	28	...	...	...	...	...	...
19	1·97	254	129	1·75	133	76	...	...	...	5·72	298	52	...	...	...	...	...	...
20	...	...	...	1·82	213	117	2·58	182	71	4·87	195	40	...	...	...	...	...	...
21	...	...	...	...	...	...	2·76	185	67	4·71	158	34	...	...	...	...	...	...
22	1·56	146	94	...	...	...	3·64	199	55	...	...	...	...	...	...	...	...	...
23	...	...	...	2·70	246	91	3·38	231	68	...	...	...	5·52	201	36	...	...	...
24	...	...	...	...	...	...	2·48	161	65	...	...	...	6·44	166	26	...	...	...
25	...	...	...	...	...	...	...	...	...	4·52	212	47	...	...	...	...	...	...
26	3·05	196	64	...	...	...	...	...	...	...	...	...	9·54	235	25	...	...	...
27	2·35	166	71	2·23	165	74	2·90	190	66	3·38	187	55	...	...	...	...	...	...
28	...	...	...	...	...	...	3·50	174	50	...	...	...	...	...	...	...	...	...
29	2·15	182	85	...	...	...	...	...	...	2·77	163	59	...	...	...	...	...	...
30	3·88	296	76	...	...	...	...	...	...	...	...	...	3·70	153	41	...	...	...
31	...	...	...	...	...	...				...	...	...				...	...	...
Mean	2·45	216	90	2·55	184	77	2·64	170	66	4·20	199	52	5·63	211	41	5·12	162	32
No. of days used	12	12	12	15	15	15	13	13	13	15	15	15	11	11	11	5	5	5

Year:		*F*	*i*	λ+
	Mean	3·66	201	64
	No. of days used	134	134	134

AIR POLLUTION: HOURLY MEANS FOR EACH MONTH

40 KEW OBSERVATORY — Complete days only — 1965

	Hour GMT 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
	microgrammes per cubic metre																									
Jan.	70	50	50	40	30	*30*	30	50	70	90	90	90	80	80	80	80	90	130	140	*140*	130	110	90	90	80	30
Feb.	70	70	60	60	*50*	50	50	60	80	80	80	70	60	50	50	50	60	70	*90*	90	90	90	90	90	70	21
Mar.	80	70	60	60	60	60	70	90	90	90	80	70	50	50	*40*	40	50	50	90	*110*	110	110	100	90	70	25
Apr.	50	40	40	*30*	30	40	50	60	*80*	70	60	60	50	40	40	30	*30*	30	40	60	70	70	60	50	50	21
May	20	20	20	20	20	20	20	30	20	20	20	*20*	20	20	20	20	20	20	30	*30*	30	30	30	20	20	22
June	20	20	20	20	*10*	20	20	*30*	30	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	21
July	10	10	10	*10*	10	10	10	20	*20*	20	20	20	10	10	10	10	10	10	10	10	10	10	10	10	10	24
Aug.	20	20	20	20	20	20	30	30	*40*	30	20	20	10	*10*	10	10	10	20	20	20	30	30	30	20	20	30
Sept.	30	20	20	20	20	30	40	*50*	50	40	30	20	20	20	*20*	20	20	30	40	50	40	40	30	30	30	30
Oct.	90	80	80	80	70	60	70	90	*100*	100	100	80	70	50	60	*50*	70	80	90	100	100	100	100	90	80	30
Nov.	60	50	50	40	40	*40*	40	50	70	80	80	70	60	60	60	70	80	100	110	130	*130*	130	110	80	80	28
Dec.	80	50	40	40	30	30	*30*	40	60	70	70	60	60	50	50	50	60	70	100	100	120	*120*	110	100	70	31
Year	50	40	40	40	*30*	30	40	50	60	60	60	50	40	40	40	40	40	50	70	70	*70*	70	70	60	50	313
Winter	70	50	50	50	40	*40*	40	50	70	80	80	70	70	60	60	60	70	90	110	110	*120*	110	100	90	70	110
Spring	70	50	50	50	50	50	60	70	90	80	70	70	50	50	40	*30*	40	40	70	90	*90*	90	80	70	60	46
Autumn	60	50	50	50	50	50	50	70	*70*	70	70	50	50	*30*	40	30	50	50	70	70	70	70	70	60	50	60
Summer	20	20	20	20	10	20	20	30	*30*	20	20	20	10	*10*	10	10	10	20	20	20	20	20	20	20	20	97

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